

## Original installation and operating manual

### CLEARPOINT® 3eco coalescing filter

- |        |        |        |        |
|--------|--------|--------|--------|
| > S040 | > S075 | > M015 | > M025 |
| > S045 | > S100 | > M018 | > M027 |
| > S050 | > M010 | > M019 | > M030 |
| > S055 | > M012 | > M020 | > M032 |
|        |        | > M022 |        |
|        |        | > M023 |        |

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# 1. General

## 1.1 Contact

Manufacturer	Service and tools
<p><b>BEKO TECHNOLOGIES GmbH</b></p> <p>Im Taubental 7   41468 Neuss                      Tel. + 49 2131 988 - 1000                      info@beko-technologies.com                      www.beko-technologies.com</p>	<p><b>BEKO TECHNOLOGIES, Corp.</b></p> <p>900 Great Southwest Pkwy SW                      Atlanta GA, Tel. +1 (800) 235-6797                      E-mail: beko.usa@bekousa.com                      www.bekousa.com</p>

INFORMATION	Country specific manufacturer representation
	<p>The contact to the country-specific manufacturer's representative can be found in the address mirror on the back or can be established via the contact form on the manufacturer's website.</p>

## 1.2 Installation information and operating manual

INFORMATION	Copyright protection
	<p>The content of this installation and operating manual, in the form of text, images, photos, drawings, diagrams, and other illustrations, is copyright protected by the manufacturer. This applies in particular to copies, translations, microfilm versions, and saving and processing this document in electronic systems.</p>

Publication date	Revision version	Reason for change	Scope of change
10/31/2018	00_03	Change to standards and directives	Initial creation
9/23/2020	01_00	Change of technical data	Changes

This installation and operating manual, referred to in the following as the manual, must be legible and must be stored near the product at all times.

The manual must be included if the product is sold or handed over to another party.

NOTE	Observe the manual!
	<p>This manual contains all basic information required to safely operate the product, and operators must read the manual before carrying out all work. Otherwise hazards could occur for personnel or materials, and functional or operating disruptions could occur.</p>

## 1.3 Additional valid documents

This manual describes all steps required to install and operate the **CLEARPOINT® 3eco** coalescing filter.

Further information on installing and operating accessories is provided in the following installation and operating manuals:

- **BEKOMAT® 3x**
- **CLEARPOINT®** differential pressure gauge

## 1.4 Explanation of symbols and pictograms used

The symbols used in the following indicate important and safety-related information that must be observed in handling the product and to ensure safe and optimal operation.

### 1.4.1 In documentation

Symbol	Description/explanation
	General warning symbol (danger, warning, caution)
	Warning of pressurized system
	Warning of electrical voltage
	Observe the installation and operating manual
	General instructions
	Wear safety shoes
	Use respiratory protection protection class FFP 3 (particle filtering half mask)
	Wear protective gloves (cut-resistant and liquid-resistant)
	Wear safety glasses with side protection (goggles)
	General information

### 1.4.2 On the device

Symbol/pictogram	Description/explanation
	<p><b>General hazard symbol (danger, warning, caution)</b>                      This symbol is indicated on the type plate and maintenance sticker for filter element replace.</p>
	<p><b>Maintenance sticker for filter element replace</b>                      This sticker notes when the filter element should be replaced next and indicates that the installation and operating manual must be observed.</p>
	<p><b>Filter element sticker</b>                      This sticker is on the base of the filter element and provides information on the filter element and direction of flow.</p>
	<p><b>Eco label</b>                      Products with this label feature the special added value of energy saving and are part of the eco line of BEKO TECHNOLOGIES products.</p>
	<p><b>QR Code</b>                      If QR code sticker is affixed to the filter housing, the manual is available on the BEKO TECHNOLOGIES homepage.</p>

## 1.5 Intended use

### **CLEARPOINT® Filters and accessories**

The **CLEARPOINT® 3eco** coalescing filter, hereinafter also referred to as filter or product, is used for the filtration of aerosols and solid particles in pressurized systems.

Any other use besides that described in this manual is deemed improper and poses a risk to personnel and the environment.

Please observe the following to ensure proper use:

- Read and observe this 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 free from corrosive, aggressive, poisonous, flammable, oxidizing or non-organic components.  
In case of doubt, analyze the media or accessories.
- Only use the product and accessories in areas that are free from toxic and corrosive chemicals and gases.
- Only use the product and accessories within a pipeline system designed for the technical data with appropriate connections, pipe diameters and installation clearances.
- Only use the product and accessories outside of explosion hazard areas.
- Only use the product and accessories away from direct sunlight and heat sources, and outside of areas that may frost.
- Only combine the product and accessories with recommended products and components indicated in the manual from **BEKO TECHNOLOGIES**.
- Comply with the specified maintenance plan.

Before using the product and accessories, the operator must ensure that all conditions and requirements for ensuring proper use are available.

The product and accessories are designed only for stationary use in commercial or industrial areas. All work described for mounting, installation, operating, maintenance, disassembly and disposal may only be carried out by skilled technical personnel.

## 1.6 Foreseeable misuse

If the product or accessories are used in a manner other than as described in the chapter “1.5 Intended use” on page 7, this is considered foreseeable misuse. Foreseeable misuse includes using the product or accessories in a manner not intended by the manufacturer or suppliers, but which may occur due to foreseeable human behavior.

Foreseeable misuse includes:

- Carrying out modifications of all kinds, especially constructive and process-related alterations.
- Disabling or failing to use available or recommended safety equipment.
- Using fluids for preparation that are not included in fluid group 2 in accordance with DGRL 2014/68/EU or contain aggressive components. If in doubt, a gas analysis or a condensate analysis should be performed.

This list does not claim to be exhaustive, since it is not possible to indicate all possible misuses in advance. If the operator knows of misuses of the product or accessories that are not listed here, the manufacturer must be informed of these promptly.

## 1.7 Target audience and personnel

This manual is intended for the personnel listed below who are involved in working on the product or its accessories.

<b>INFORMATION</b>	<b>Personnel requirements!</b>
	Personnel may not undertake any actions involving the product or accessories if they are under the influence of drugs, medications, alcohol or other substances that may impair their perception.

### Operating personnel

Operating personnel are persons who are able to safely operate the product and accessories through their knowledge of the manual and through instruction on the product and accessories. The operating personnel is able to recognize possible malfunctions and dangerous situations independently and to initiate appropriate measures.

### Professional technicians - Transport and storage

Transportation and storage technicians are personnel whose training, professional experience and qualifications have given them all the skills necessary to safely complete any actions associated with transportation, to recognize potential hazards independently and take measures to prevent those hazards. These skills include, in particular, experience in handling hoists, forklifts and lifting equipment and devices as well as an understanding of regional applicable laws, standards and directives related to transportation and storage.

### Professional technicians - Compressed gas technology

Compressed gas technology technicians are personnel whose training, professional experience and qualifications have given them all the skills necessary to safely complete any actions associated with fluids and pressurized systems, to recognize potential hazards independently and take measures to prevent those hazards. These skills include, in particular, experience in handling measurement, control and regulation technology as well as an understanding of regional applicable laws, standards and directives related to compressed gas technology.

### Professional technicians - Service

Professional technicians - service personnel are persons who have the skills and qualifications for all the aforementioned definitions concerning professional technicians. Professional technicians - service personnel must be verifiably trained and authorized for all work on the product.

## 1.8 Responsibilities of the operator

The operator must ensure the following in order to avoid accidents, disruptions and environmental impacts:

- Before taking any action, check whether this manual belongs to the product.
- The product and accessories are used, maintained and serviced properly.
- All applicable legal requirements, safety regulations, accident prevention and fire protection regulations are observed.
- All specifications and operating instructions for safe work and instructions for responding to accidents and fires are accessible at the operating location at all times.
- The product and accessories are used only with the recommended and functional safety equipment.
- All assembly, installation and maintenance work is carried out only by qualified technicians.
- Personnel have the required personal protective equipment, and this equipment is used.
- Suitable technical safety measures are used to ensure that equipment is operated within the permitted operating parameters.

## 2. Safety information

### 2.1 Safety instructions and warnings

This chapter provides an overview of all important safety aspects for the protection of persons and for the safe and trouble-free operation of the product and accessories.

The following chapters list the dangers that arise from this product and the accessories even when used as intended. To minimize the risk of personal injury and material damage and to avoid dangerous situations, observe the safety instructions listed and comply with the warnings in the other chapters of this manual.

Basic warnings and required qualifications of the technical personnel are listed at the beginning of each chapter in the section "Warnings".

Action-specific warnings are located directly before potentially dangerous action steps or an action sequence.

#### 2.1.1 Safe operation

Starting up and operating the product and accessories outside the permissible limits and operating parameters may result in serious injury or death. Unauthorized tampering and unauthorized modifications to the product and accessories can result in serious injury or death.

Please observe the following points to ensure safe operation of the product and accessories:

- Use suitable protective equipment for all work on the product or accessories.
- Observe the limit values and operating parameters specified on the type plate and in the instructions.
- Observe the installation and ambient conditions.
- Check whether operating parameters are changed or restricted through the use of permitted accessories.
- Observe the maintenance intervals.

#### 2.1.2 Pressurized systems

Contact with fluids that escape quickly or abruptly or through bursting system components can result in serious injury or death.

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

- Set up a safe area around the work site during all assembly, installation, maintenance and repair work.
- Before starting work, bleed the pressurized system and secure it against unintentional pressurization.
- Before pressurization, check all pipe connections of the system for leak tightness and retighten them if necessary.
- Pressurize the system slowly.
- Avoid pressure shocks and high differential pressures during operation.
- Compensate vibrations occurring in the pipeline network by using vibration dampers.

#### 2.1.3 Electrical voltage

Contact with electrically live components can result in serious injury or death.

Observe the following points for the safe handling of electrically live components:

- Set up a safe area around the work site during all installation, maintenance and repair work.
- Before starting work, disconnect the product and accessories from the power supply and secure them against unintentional reconnection.
- Connect the product and accessories to a power supply only when undamaged.
- Observe all applicable regulations (e.g. adjustable VDE 0100 / IEC 60364 / ATEX) during installation.
- Connect the protective conductor (grounding) in accordance with applicable regulations.
- Only operate the product and accessories with a complete and closed cover.

## 2.1.4 Transport and storage

Improper transport or storage can lead to personal injury or damage to property.

For safe transport and storage of the product and accessories, observe the following points:

- Use personal protective equipment for all work with packaging material.
- Handle the packaging of the product and the accessories with care.
- Transport and handle the packaged product and accessories according to the labeling on the packaging (observe attachment points for hoists, center of gravity and orientation such as holding vertically, do not throw, etc.).
- Use proper, functional transportation equipment and hoists.
- Observe permitted transportation and storage parameters.
- Do not store the product and accessories exposed to direct sunlight and heat sources.

## 2.1.5 Installation

Improper assembly or electrical installation of the product and accessories can result in personal injury and damage to property, as well as impairment of operation.

For safe assembly and electrical installation, observe the following points:

- Mount the product, the accessories, all parts and materials used free of mechanical tension.
- Check all plug connections for correct seating.
- Avoid the risk of tripping by using appropriate cable and hose guides.
- Avoid mechanical stress on the cables.
- Fasten and fix all hoses in such a way that they cannot make any percussive movements.
- Securely pipe the inlet and outlet lines.

## 2.1.6 Maintenance

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

Please observe the following points for safe maintenance and repair:

- Use suitable protective equipment for all maintenance and repair work on the product or accessories.
- Establish a safe area around the work area for all maintenance and repair work.
- Before starting work, bleed the pressurized product and accessories and secure them against unintentional pressurization.
- Before starting work, disconnect the product and accessories from the power supply and secure them against unintentional reconnection (log out, tag out).
- Only use materials permitted for the specific purpose and suitable tools in proper condition.
- Only use cleaned pipes and hoses that are free of dirt and corrosion.
- Do not use abrasive or aggressive cleaning agents or solvents that could damage the external coating (e.g. labels, type plate, corrosion protection, etc.).
- Do not clean or operate the device with hard or pointed implements.
- Use an antistatic, damp cloth for external cleaning.
- Observe the local hygiene regulations.
- Ensure order and cleanliness during maintenance and repair work. Prevent impurities from penetrating into the opened product or accessories. Store the dismantled components and accessories directly in a safe place.
- After completion of the maintenance and repair work, remove all tools, cleaning media and parts no longer required from the work location.
- Dispose of the product and accessories only after they have been cleaned and freed of any media residue.
- All components and assemblies, operating and auxiliary materials and cleaning agents must be disposed of appropriately and according to regional statutory specifications and provisions.
- Dispose of electrical and electronic components via a specialist disposal company.

## 2.1.7 Handling hazardous substances

Substances contained in the condensate that are hazardous to health and the environment can irritate and damage the skin, eyes and mucous membranes on contact. In addition, condensate contaminated with pollutants must not be allowed to enter the sewerage system, water bodies or the ground.

The following points must be observed for safe handling of condensate contaminated with pollutants:

- Use suitable protective equipment when handling condensate.
- Collect and dispose of spilled condensate in accordance with local regulations.

## 2.1.8 Use of replacement parts, accessories or materials

The use of incorrect replacement parts, accessories or materials, as well as auxiliary and operating materials, may pose a mortal danger or the danger of severe injuries. Functional and operational disruptions may occur, as well as material damage.

- Only use undamaged original parts, auxiliary and operating materials specified by the manufacturer in carrying out all work.
- Only use materials permitted for the specific purpose and suitable tools in proper condition.
- Only use cleaned pipelines free from dirt and corrosion.

## 2.2 Warning

Warning notices caution against dangers in handling the product and accessories.

Observe the warning notices in order to avoid accidents, personal injury and damage to property as well as impairments in operation.

### Structure of the warnings:

SIGNAL WORD	Type and source of danger!
 Symbol	Possible consequences if the hazard is not observed <ul style="list-style-type: none"> <li>• Measures to avoid the hazard</li> </ul>

### Signal words:

<b>DANGER</b>	<b>Imminent danger</b> Consequences of non-compliance: Death or severe personal injury
<b>WARNING</b>	<b>Imminent danger</b> Consequences of non-compliance: Death or severe personal injury are possible
<b>CAUTION</b>	<b>Potential danger</b> Consequences of non-compliance: Personal injury or property damage are possible
<b>NOTICE</b>	<b>Additional information</b> Consequences of non-compliance: Property damage and disadvantages in operation are possible. No danger to personnel or safe operation.

### 3. Transport and storage

<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p>
	<ul style="list-style-type: none"> <li>• The work on the product and accessories described in the following may only be carried out by transportation and storage technicians and must be documented.</li> </ul>
<b>CAUTION</b>	<b>Improper transportation or storage!</b>
 	<p>Improper transportation or storage may result in personal injury or property damage.</p>
	<ul style="list-style-type: none"> <li>• Use personal protective equipment for all work with packaging material.</li> <li>• Handle the packaging of the product and the accessories with care.</li> <li>• Package all parts with suitable materials in a shock-resistant manner.</li> <li>• Transport and handle packaging according to the label (observe hoist attachment points and center of gravity, keep alignment vertical, do not throw, etc.).</li> <li>• Use proper, functional transportation equipment and hoists.</li> <li>• Observe permitted transportation and storage parameters.</li> <li>• Do not store the product and accessories exposed to direct sunlight and heat sources.</li> </ul>
<b>NOTICE</b>	<b>Handling packaging materials!</b>
	<p>The improper disposal of packaging materials may result in environmental damage.</p>
	<ul style="list-style-type: none"> <li>• Dispose of packaging materials in accordance with the regional laws, directives and guidelines of the country of use.</li> </ul>

For permitted storage and transportation conditions see “4.8 Maintenance sticker for filter element replacement” on page 23.

## 4. Product information

### 4.1 Product description

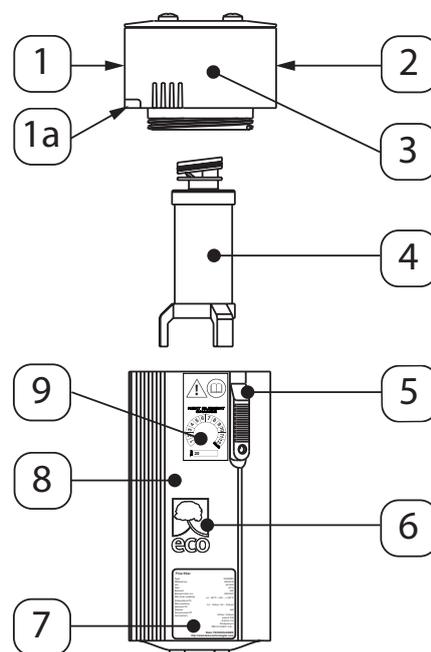
CLEARPOINT® 3eco coalescing filters are used for the filtration of aerosols and solid particles in pressurized systems.

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 produced during filtration can be drained off manually or automatically.

### 4.2 Product overview

The filter consists of the following components:



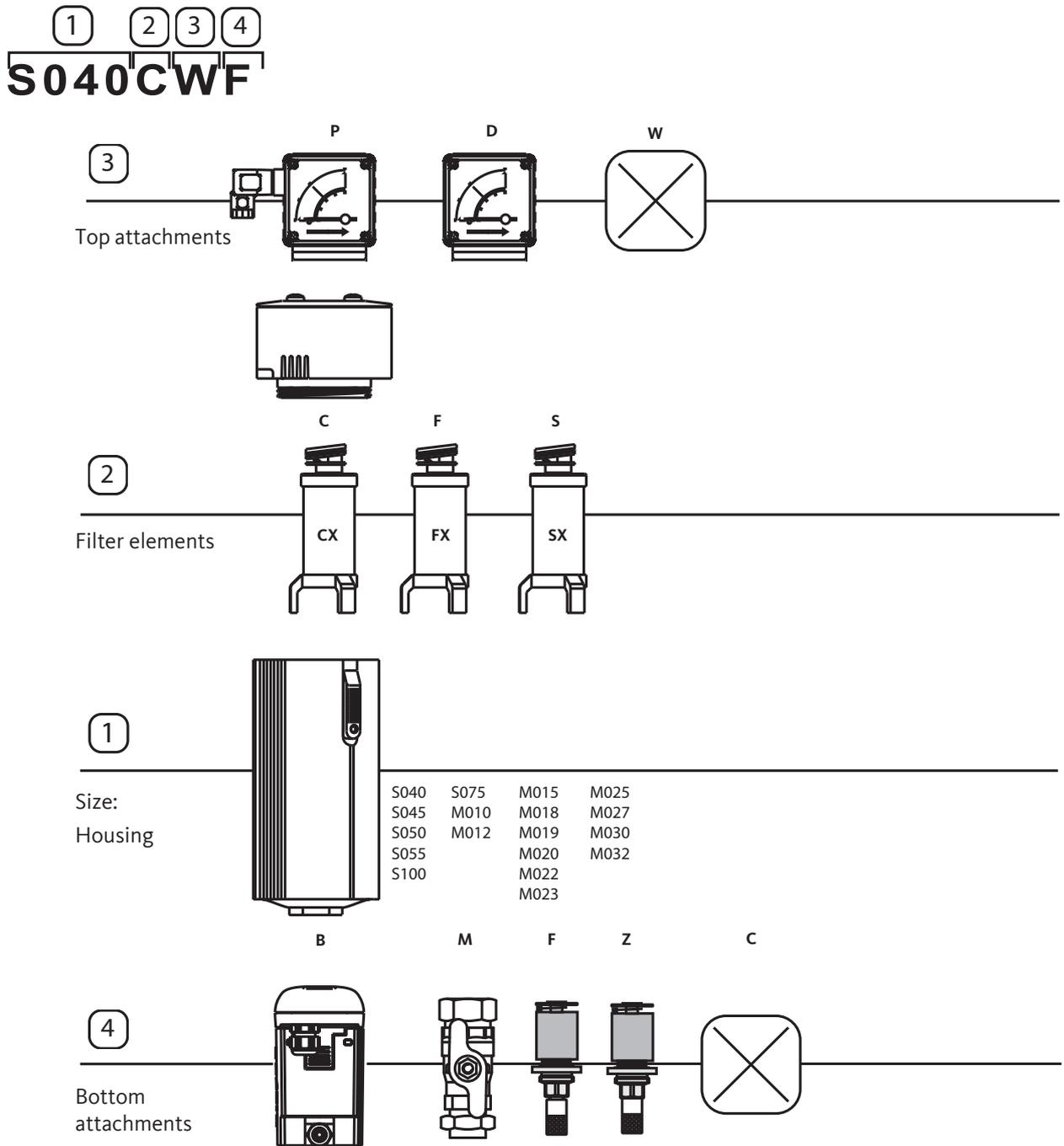
Position no.	Explanation / description
[1]	Inlet at the filter head, additionally labeled with 1a.
[2]	Outlet on filter head
[3]	Filter head
[4]	Filter element
[5]	Safety slide with locking screw
[6]	Eco label
[7]	Type plate
[8]	Filter housing with internal sealing ring
[9]	Maintenance sticker for filter element replace

### 4.3 Product identification

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

- [1] = Size: Housing
- [2] = Filter elements
- [3] = Top attachments
- [4] = Bottom attachments

The following section explains the product designation using the example “S040CWF”:



Top attachments		
Position no.	Abbreviation	Designation
[3]	P	Differential pressure gauge with potential-free contact
	D	Differential pressure gauge without potential-free contact
	W	No display device

Filter elements					
Position no.	Abbreviation	Designation	99.9% Separation rate solid particles [ $\mu\text{m}$ ]	Residual oil content [ $\text{mg}/\text{m}^3$ ]	Compressed air class in accordance with (ISO 8573 - 1)
[2]	CX	Coarse filter	2 ... 5	$\leq 5$	[4: - :4]
	FX	Fine filter	0.5 ... 1	$\leq 0.05$	[2: - :2]
	SX	Superfine filter	0.1 ... 0.3	$\leq 0.005$	[1: - :2] <sup>*1</sup>

<sup>\*1</sup> Depending on the ambient conditions and operating parameters, class [1: - :1] can also be achieved.

Position no.	Model series	Size	Designation
[1]	S	040	Filter housing
	S	045	
	S	050	
	S	055	
	S	075	
	S	100	
	M	010	
	M	012	
	M	015	
	M	018	
	M	019	
	M	020	
	M	022	
	M	023	
	M	025	
	M	027	
	M	030	
M	032		

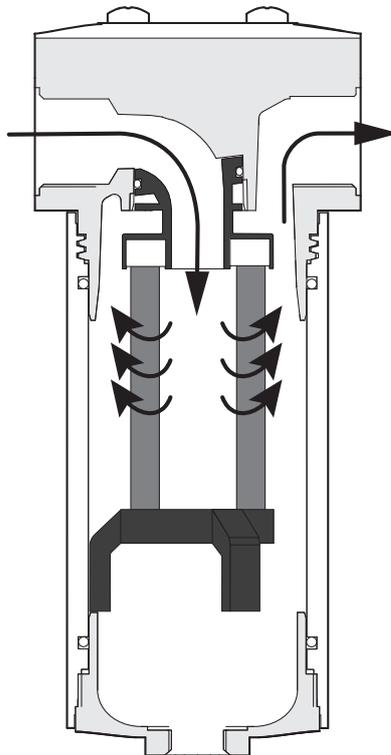
Bottom attachments		
Position no.	Abbreviation	Designation
[4]	B	<b>BEKOMAT® 31, 32, 33</b>
	M	Manual drain
	F	Float drain, open when not pressurized (NO - normally open)
	Z	Float drain, closed when not pressurized (NC - normally closed)
	C	without condensate drain

## 4.4 Functional description

### 4.4.1 Filtration

In the **CLEARPOINT® 3eco** coalescing filter, the flow through the filter element is from the inside to the outside. The pressurized fluid flows into the inner area of the filter element and from there through the filter element into the filter housing. In the process, solids as well as oil and water aerosols are separated in the filter material. Due to gravity, the liquid components in the filter material move downwards, drip off and collect at the bottom of the filter housing. From there they are drained off manually or automatically. In the course of time, particles are deposited in the filter material. As a result, the flow resistance (differential pressure) of the filter element increases.

The degree of particle load or contamination of the filter element can be read off a differential pressure gauge. Additional information is provided in the installation and operating manual included with the differential pressure gauge.



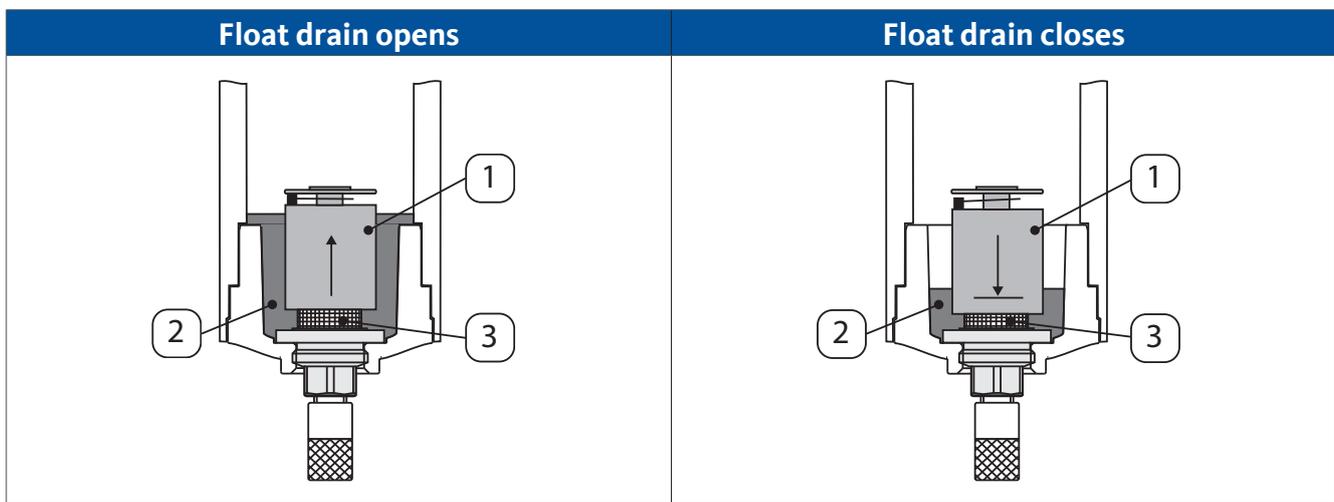
### 4.4.2 Condensate drainage through float drain

<b>INFORMATION</b>	<b>Condensate drain!</b>
	Condensate drainage depends on the product combination and may vary.

Float drains are mechanical automatic condensate drains whose closing mechanism is triggered by the buoyancy of a float **[1]**. If the condensate **[2]** in the filter housing rises above a certain level, the buoyancy of the float **[1]** opens the outlet channel **[3]** for the condensate. The float closes again when the condensate **[1]** drops below a certain level. A small amount of condensate remains in the filter housing.

Two different float drains are used for discharging the condensate:

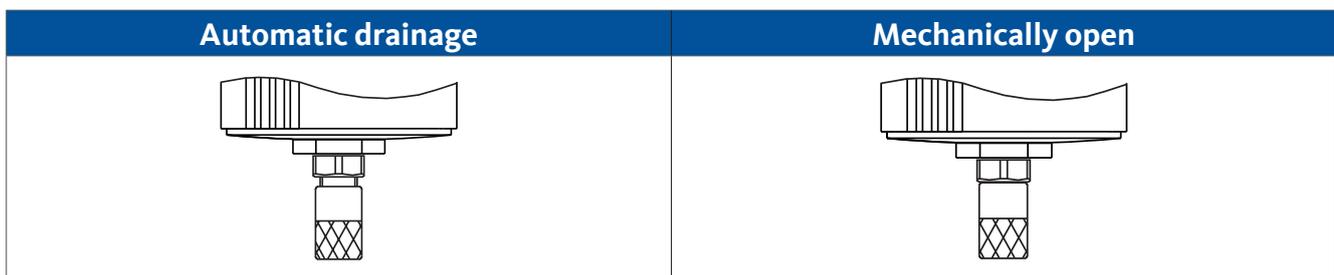
- Normally open (NO) - at operating pressure ≤ 0,5 bar(g) / 7.25 psi(g) the float drain opens
- Normally closed (NC) - the float drain is closed even at a pressure above 0 bar(g) / psi(g)



Both types of float drains are delivered from the factory set in the "automatic drainage" position.

The knurled screw is turned down to the stop.

The float drain can be set to the "mechanically open" position to test the drain function or to relieve the pressure on the filter during maintenance work. Turn the knurled screw counterclockwise (left-hand thread) up to the stop.



For further information on possible product combinations see "4.3 Product identification" on page 17.

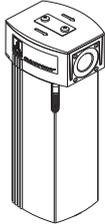
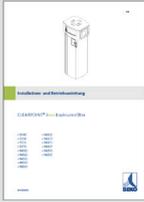
### 4.4.3 Condensate drainage with BEKOMAT®.

Condensate drainage can also be carried out by the **BEKOMAT®** automatic condensate drain. Further information can be found in the installation and operating instructions of the **BEKOMAT®**.

### 4.5 Scope of delivery

<b>INFORMATION</b>	<b>Possible product combinations!</b>
	The scope of delivery may vary depending on the product combination.

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

Image	Description/explanation
	Filter
	Original installation and operating manual (Alternately QR Code on product.)

For further information on possible product combinations see “4.3 Product identification” on page 17.

## 4.6 Type plate

<b>NOTICE</b>	<b>Handling the type plate!</b>
	Do not remove or cover the type plate, and protect it against damage.

The type plate is located on the housing, and provides identification and operating parameters for the filter. Provide this data for system identification when contacting the manufacturer or supplier.

**Super Fine filter**

Type: S055SWC  
 Material-no.: 4002851  
 Lot: 201725  
 Year: 2017  
 Element: 06S  
 Element mat.-no.: 4002724  
 Min./max. working temperature TS: +2 ... 60 °C / +35 ... +140 °F  
 Max. working pressure PS: 0,3 ... 16 bar / 4.4 ... 232 psi  
 Volume: 0,42 l  
 Test pressure PT: 23 bar / 334 psi  
 Connection: pipe G 1/2  
 drain G 1/2  
 Fluidgroup 2  
 PED2014/68/EU / Cat. -



**BEKO TECHNOLOGIES Corp.**  
[www.bekousa.usa](http://www.bekousa.usa)  
 Made in USA

Example illustration

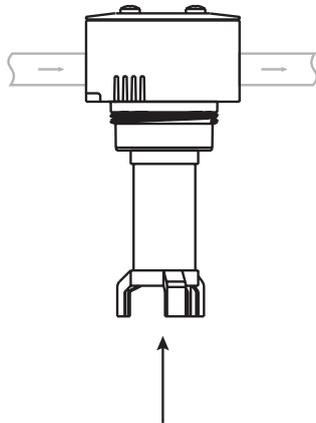
Position on type plate	Description
<b>Super Fine Filter</b>	BEKO filter designation
<b>Type</b>	Sales designation
<b>Material-no.</b>	Material number
<b>Lot</b>	Lot number
<b>Year</b>	Year of manufacture
<b>Element</b>	Filter element type
<b>Element mat.-no.</b>	Filter element material number
<b>Min. / max. working temperature TS</b>	Min. / max. working temperature range
<b>Max. working pressure PS</b>	Max. working pressure range
<b>Volume</b>	Housing volume
<b>Test Pressure PT</b>	Test pressure
<b>Connection</b>	Threaded connections
<b>Pipe G 1/2</b>	Threaded connection inlet / outlet
<b>Drain G 1/2</b>	Condensate drain threaded connection
<b>Fluidgroup 2</b>	Fluid group according to PED 2014/68/EU
<b>PED2014/68/EU / Cat. -</b>	Category in accordance with Pressure Directive 2014/68/EU

For more information regarding the symbols printed on the type plate, see “1.4 Explanation of symbols and pictograms used” on page 5.

### 4.7 Filter element sticker

The filter element can be identified by a sticker on its base.

Different filter elements are available for different applications and degrees of filtration.



Sticker on the filter element base

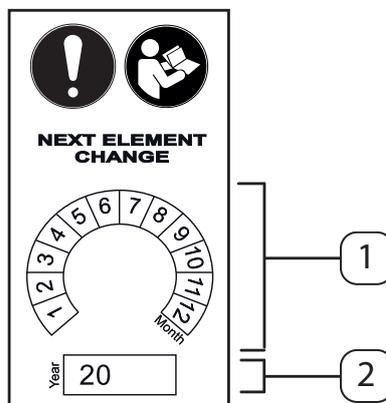


Filter element sticker - view of filter element base

Position no.	Explanation / description
[1]	Replacement element part number
[2]	Lot number
[3]	Product group
[4]	Direction of flow
[5]	04FX filter element designation
[6]	04F, 04G previous model filter element designation in brackets

### 4.8 Maintenance sticker for filter element replacement

The next upcoming filter element replacement date is marked on this sticker. Mark the relevant month [1] and enter the associated [2] year.



Position no.	Explanation / description
[1]	Month for next filter element replacement
[2]	Year for next filter element replacement

## 5. Technical data

### 5.1 Filter performance data

CLEARPOINT® 3eco		S040	S045	S050	S055	S075	S100	M010	M012	M015
Connection (inches)		3/8	1/2	1/2	1/2	3/4	1	1	1	1 1/2
Volume flow rate at 7 bar(g) (101.53 psi(g)) energy-optimized m <sup>3</sup> /h (scfm)*1		42.5 (25)	51 (30)	85 (50)	136 (80)	170 (100)	212 (125)	272 (160)	340 (200)	425 (250)
Differential pressure (psi, saturated)	<b>CX</b>	~64.8 (~ 0.94)								
	<b>FX</b>	80 (1.45)	115 (1.96)	150 (2.32)	150 (3.48)	185 (1.89)	105 (2.76)	120 (2.76)	165 (3.48)	80 (1.67)
	<b>SX</b>	100 (1.67)	125 (2.32)	170 (2.47)	120 (3.91)	135 (2.25)	135 (3.19)	135 (3.05)	180 (3.99)	103 (1.96)
Category according to PED 2014/68/EU		-	-	-	-	-	-	-	-	-
Min. / max. operating pressure		0.3 ... 16 bar(g) (4.4 ... 232 psi(g))								
Min. / max. operating temperature		+2 ... +60 °C (+35 ... +140 °F)								
Load test in accordance with AD2000		10000 load change corresponds to pressure difference ≥3.2 bar (46 psi) at 16 bar(g) (232 psi(g))								
Medium		Fluids in fluid group 2 in accordance with PED 2014/68/EU, free from aggressive and corrosive components								
Weight kg / (lb)*2		0.75 (1.65)	0.75 (1.65)	0.85 (1.87)	1.2 (2.65)	1.7 (3.75)	1.9 (4.18)	2.1 (4.63)	2.2 (4.85)	4.1 (9.04)
Volume l / (gal)*2		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 (0.59)

\*1 Volume flow rate at 7 bar(g) (101.03 psi(g)) based on +20 °C (+68 °F) and 1 bar(abs) 14.5 psi(a)

CLEARPOINT® 3eco		M018	M019	M020	M022	M023	M025	M027	M030	M032
Connection (inches)		1 1/2	1 1/2	2	2	2	2 1/2	2 1/2	3	3
Volume flow rate at 7 bar(g) / (101.53 psi(g)) energy-optimized m³/h (scfm)*1		561 (330)	765 (450)	850 (500)	1020 (600)	1360 (800)	1700 (1000)	2209 (1300)	2548 (1500)	3228 (1900)
Differential Pressure (psi, saturated)	<b>CX</b>	~64.8 (~0.94)								
	<b>FX</b>	90 (1.89)	190 (2.53)	120 (2.83)	150 (3.05)	200 (4.35)	100 (2.03)	115 (2.39)	120 (2.68)	145 (3.34)
	<b>SX</b>	110 (2.25)	110 (2.97)	140 (3.34)	170 (3.63)	210 (4.79)	125 (2.47)	130 (2.83)	140 (3.12)	165 (3.77)
Category according to PED 2014/68/EU		-		I	I	I	II	II	II	II
Min. / max. operating pressure		0.3 ... 16 bar(g) (4.4 ... 232 psi(g))								
Min. / max. operating temperature		+2 ...60 °C (+35 ... +140 °F)								
Load test in accordance with AD2000		10000 load change corresponds to pressure difference ≥3,2 bar (46 psi) at 16 bar(g) (232 psi(g))								
Medium		Fluids in fluid group 2 in accordance with PED 2014/68/EU, free from aggressive and corrosive components								
Weight kg / (lb)*2		4.5 (9.92)	4.5 (10.61)	5.1 (11.24)	6.1 (13.45)	7.1 (15.65)	19.9 (43.87)	22.6 (49.82)	25.9 (57.10)	29.9 (65.92)
Volume l / (gal)*2		2.97 (0.73)	3.4 (0.9)	3.4 (0.9)	4.23 (1.12)	5.24 (1.38)	13.88 (3.67)	16.49 (4.36)	19.51 (5.15)	23.24 (6.14)

\*1 Volume flow rate at 7 bar(g) (101.03 psi(g)) based on +20 °C (+68 °F) and 1 bar(abs) (14.5 psi(a))

## 5.2 Filter element performance data

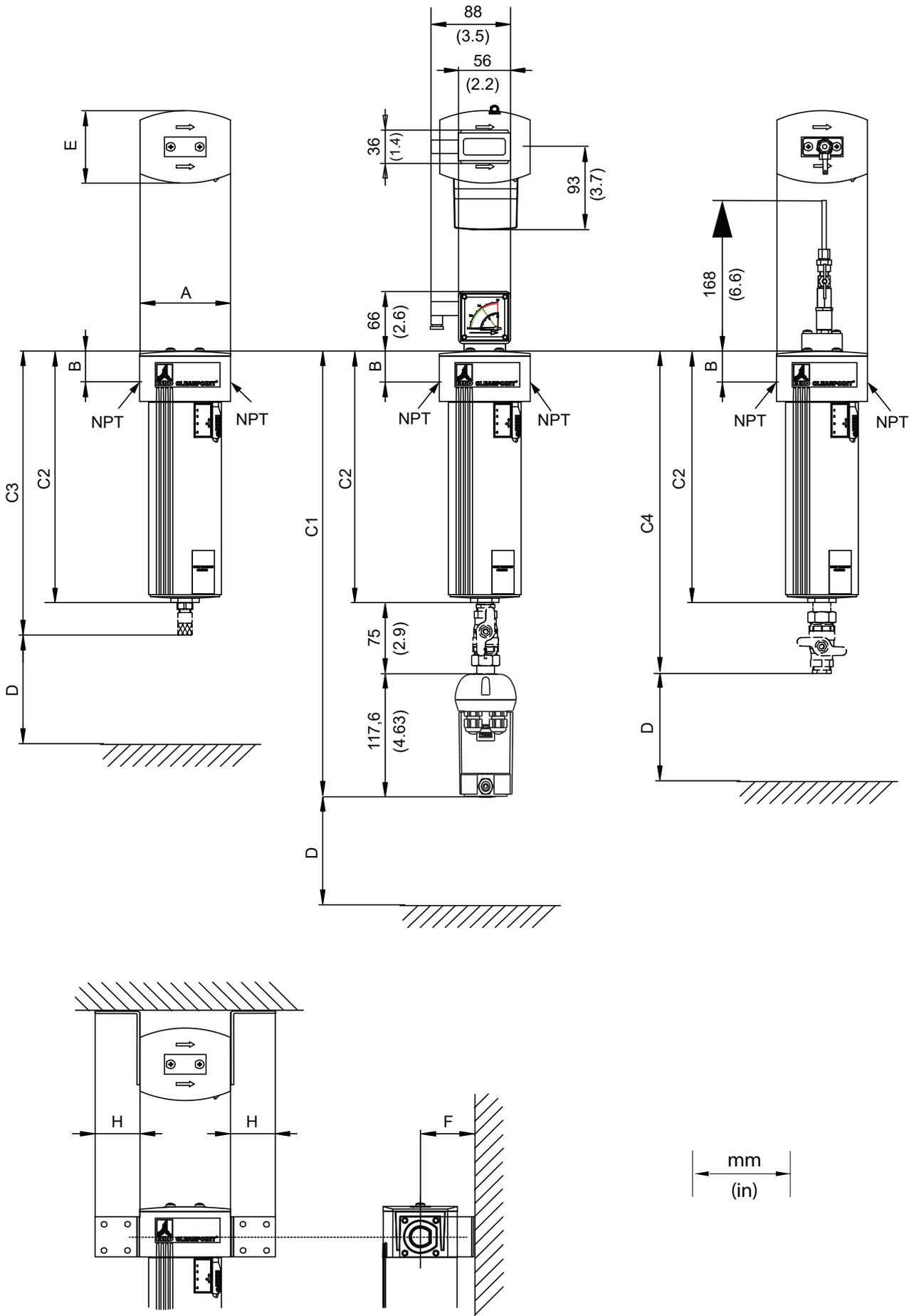
The performance data of the filter elements refer to the validation according to ISO 12500-1, and -3.

Type	Description	Solid particles [ $\mu\text{m}$ ]	Aerosol content [ $\text{mg}/\text{m}^3$ ]	
			Inlet	Outlet
<b>CX</b>	Coarse filter	Separation rate 99.9 % for particles 2.0 - 5.0	30	5
<b>FX</b>	Fine filter	Separation rate 99.9 % for particles 0.5 - 1.0	10	0.05
<b>SX</b>	Superfine filter	Separation rate 99.99 % for particles 0.1 - 0.3	10	0.005

### 5.3 Materials

Components	Material	
Housing head (filter head)	Aluminum, anodized, powder-coated	
Housing body	Aluminum (extruded profile), anodized, powder coated	
Housing lid	Polyamide, glass fiber reinforced	
Housing base	Aluminum, anodized, powder-coated	
M5 screws	Steel, black galvanized	
Safety slide	Zinc cast iron, gasket FKM	
O-rings	Standard: NBR   oil-free: FKM	
Float drain	Plastic   Brass   NBR	
Manual drain	Brass, nickel-placed	
Wall bracket	Stainless steel	
Sticker	PCV soft, poly acrylate adhesive	
<b>BEKOMAT®</b>	see installations and operating instructions <b>BEKOMAT®</b>	
Differential pressure gauge	See differential pressure gauge installation and operating manual	
Oil test indicator	See oil check indicator installation and operating manual	
Filter element	Element head and base	Polyamide, glass fiber reinforced
	Supporting body interior/exterior	Stainless steel expanded metal
	Filter fleece	Borosilicate fibers
	Supporting material in pleats	Polypropylene
	Drainage material	Polyester needle felt
	Potting compound	Polyurethane
	O-rings	Standard: NBR; oil-free: FKM

## 6. Dimensions



Filter Size	Connection thread	A	B	C1	C2	C3	C4	D	E	F	H	Filter element
Type	NPT [inch]	mm (inch)										Type* <sup>1</sup>
S040	3/8	75 (2.95)	28 (1.10)	395 (14.59)	180 (7.09)	208 (8.19)	243 (9.57)	150 (5.91)	60 (2.36)	64.5 (2.54)	39.5 (1.56)	04
S045	3/8	75 (2.95)	28 (1.10)	395 (14.59)	180 (7.09)	208 (8.19)	243 (9.57)	150 (5.91)	60 (2.36)	64.5 (2.54)	39.5 (1.56)	04
S050	1/2	75 (2.95)	28 (1.10)	425 (15.77)	210 (8.27)	238 (9.37)	273 (10.75)	150 (5.91)	60 (2.36)	64.5 (2.54)	39.5 (1.56)	05
S055	1/2	75 (2.95)	28 (1.10)	480 (17.93)	265 (10.43)	293 (11.54)	328 (12.91)	150 (5.91)	60 (2.36)	64.5 (2.54)	39.5 (1.56)	06
S075	3/4	100 (3.94)	34 (1.34)	489 (18.52)	283 (11.02)	308 (12.13)	346 (13.62)	150 (5.91)	80 (3.15)	63 (2.48)	45 (1.77)	06
S100	3/4	100 (3.94)	34 (1.34)	489 (18.52)	283 (11.02)	308 (12.13)	346 (13.62)	150 (5.91)	80 (3.15)	63 (2.48)	45 (1.77)	06
M010	1	100 (3.94)	34 (1.34)	568 (21.18)	353 (13.78)	378 (14.88)	416 (16.38)	150 (5.91)	80 (3.15)	63 (2.48)	45 (1.77)	10
M012	1	100 (3.94)	34 (1.34)	603 (22.66)	388 (15.16)	413 (16.26)	451 (17.76)	150 (5.91)	80 (3.15)	63 (2.48)	45 (1.77)	12
M015	1 1/2	146 (5.75)	48 (1.89)	580 (21.87)	365 (14.37)	384 (15.12)	428 (16.85)	200 (7.87)	120 (4.72)	78.5 (3.09)	60 (2.36)	15
M018	1 1/2	146 (5.75)	48 (1.89)	633 (23.96)	418 (16.46)	437 (17.20)	481 (18.94)	200 (7.87)	120 (4.72)	78.5 (3.09)	60 (2.36)	18
M019	1 1/2	146 (5.75)	48 (1.89)	683 (25.93)	468 (18.43)	487 (19.17)	531 (20.91)	200 (7.87)	120 (4.72)	78.5 (3.09)	60 (2.36)	20
M020	2	146 (5.75)	48 (1.89)	683 (25.93)	468 (18.43)	487 (19.17)	531 (20.91)	200 (7.87)	120 (4.72)	78.5 (3.09)	60 (2.36)	20
M022	2	146 (5.75)	48 (1.89)	780 (29.74)	565 (22.24)	584 (22.99)	628 (24.72)	150 (5.91)	120 (4.72)	78.5 (3.09)	60 (2.36)	22
M023	2	146 (5.75)	48 (1.89)	898 (34.39)	683 (26.89)	702 (27.64)	746 (29.37)	300 (11.81)	120 (4.72)	78.5 (3.09)	60 (2.36)	23
M025	2 1/2	260 (10.24)	77 (3.03)	886 (33.88)	671 (26.38)	684 (26.85)	734 (28.90)	300 (11.81)	200 (7.87)	130 (5.12)	120 (4.72)	25
M027	2 1/2	260 (10.24)	77 (3.03)	990 (37.97)	775 (30.47)	788 (30.94)	838 (32.99)	300 (11.81)	200 (7.87)	130 (5.12)	120 (4.72)	27
M030	3	260 (10.24)	77 (3.03)	1010 (42.70)	895 (35.20)	908 (35.67)	958 (37.20)	300 (11.81)	200 (7.87)	130 (5.12)	120 (4.72)	30
M032	3	260 (10.24)	77 (3.03)	1260 (48.62)	1045 (41.12)	1058 (41.50)	118 (43.62)	300 (11.81)	200 (7.87)	130 (5.12)	120 (4.72)	32

\*<sup>1</sup> indicate the filtration degree (type) when ordering!

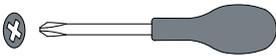
## 7. Installation

### 7.1 Warning

<b>DANGER</b>	<b>Use of incorrect replacement parts, accessories or materials!</b>
	<p>The use of incorrect replacement parts, accessories or materials, as well as auxiliary and operating materials, may pose a mortal danger or the danger of severe injuries. Functional and operational disruptions may occur, as well as material damage.</p>
	<ul style="list-style-type: none"> <li>• Only use undamaged original parts, auxiliary and operating materials specified by the manufacturer in carrying out all work.</li> <li>• Only use materials permitted for the specific purpose and suitable tools in proper condition.</li> <li>• Only use pipelines free from dirt, damage and corrosion.</li> </ul>
<b>DANGER</b>	<b>Pressurized system!</b>
	<p>The risk of death or severe injuries exists in case of contact with fast or sudden exiting fluids or due to bursting system parts.</p>
	<ul style="list-style-type: none"> <li>• Only carry out all work when the system is depressurized and secure the system against unintentional pressurization.</li> <li>• Set up a safe area around the work site during all assembly, installation, maintenance and repair work.</li> <li>• Before pressurizing the system, check and tighten all pipe connections.</li> <li>• Pressurize the system slowly.</li> <li>• Avoid pressure surges and high pressure differentials.</li> <li>• Mount all pipelines free of mechanical tension.</li> <li>• Permanently install inlet and outlet lines.</li> </ul>
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p>
	<p>All work on the product and accessories may only be carried out by professional technicians - compressed gas technology.</p>
<b>CAUTION</b>	<b>Improper assembly!</b>
	<p>Improper assembly of the product and accessories can result in personal injury and damage to property as well as impairments in operation.</p>
	<ul style="list-style-type: none"> <li>• Mount the product, the accessories, all parts and materials used free of mechanical tension.</li> <li>• Fasten and fix hoses in such a way that they cannot make any percussive movements.</li> </ul>

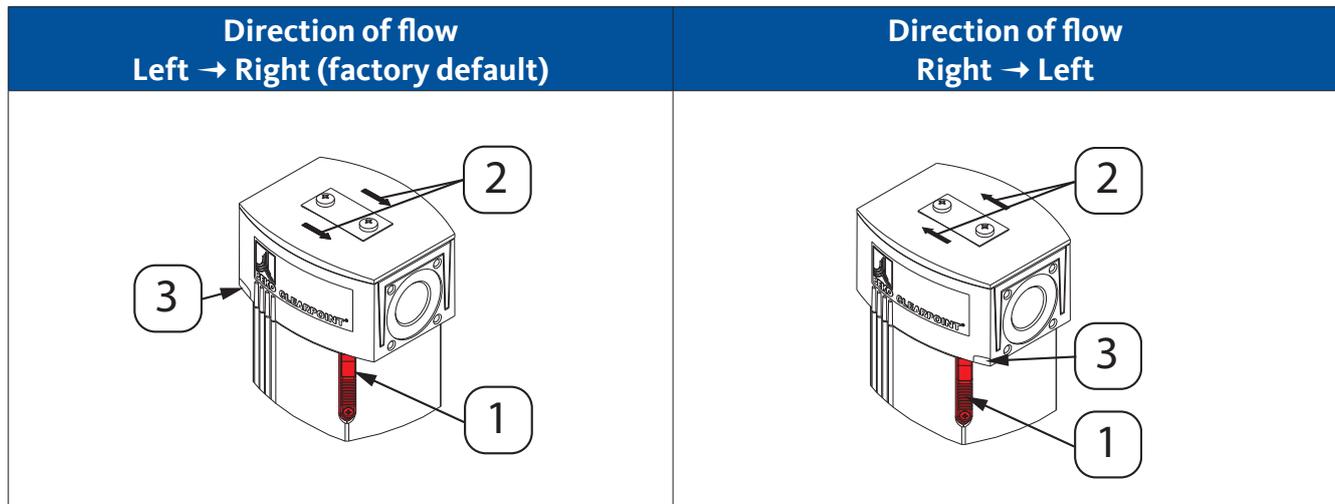
## 7.2 Installation work

The following requirements must be fulfilled to carry out assembly work and preparatory work must be completed.

Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>Screwdriver - Philip's head size 2.5 mm</li> </ul> 	<ul style="list-style-type: none"> <li>Additional installation and operating instructions for accessories used</li> <li>Sealing material such as PTFE strip (EN 837-2)</li> </ul>	<ul style="list-style-type: none"> <li>Protective gloves (liquid-resistant)</li> <li>Safety glasses with side protection (goggles)</li> <li>Hearing protection</li> <li>Class FFP 3 respirator</li> <li>Safety shoes</li> </ul>

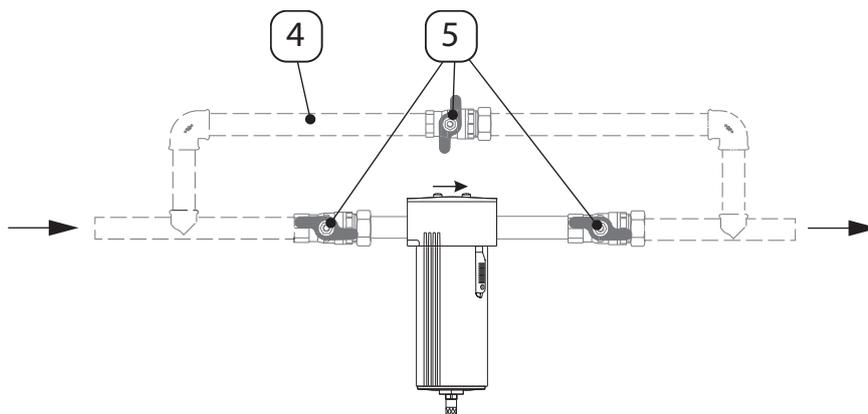
Preparatory work	
1.	Remove the dust cap from the following threads: <ul style="list-style-type: none"> <li>Inlet and outlet on the filter head</li> <li>Condensate drain on the filter base</li> </ul>
2.	Depressurize pipeline system or relevant pipe section.
3.	Observe the filter dimensions and ensure required space for installation. See "6. Dimensions" on page 28.
4.	Pipelines must be able to support the additional weight of the filter. Additional attachments should be mounted if necessary.
5.	Pipelines must be free from contamination and corrosion. Check pipe threads for damage. Defective pipes must be replaced promptly.
6.	Pipelines must be free from mechanical tension and vibration. Compensate for vibrations by using vibration dampers.
7.	Only use fittings suitable for this pressure and temperature range. The pipeline threads must match those on the filter head.
8.	Design the condensate drain such that no fluid or condensate can escape into the area around the filter. The condensate to be drained should be fed to a legally compliant treatment plant (e.g. <b>ÖWAMAT</b> ® or <b>BEKOSPLIT</b> ®).

The direction of flow for the filter must be observed during installation. This must match the direction of flow for the pipeline.



The housing head and housing body use a double trapezoidal thread. The direction of flow through the filter can be adjusted to that of the pipeline by turning the housing head 180°. The direction of flow is indicated by arrows **[2]** and a raised marking **[3]** on the head of the housing. The safety slide **[1]** must always be easily accessible on the front side.

For maintenance and repair work, it is recommended to install a bypass line **[4]** and shut-off valve **[5]**.



1. Attach sealing material, e.g. PTFE band (EN 837-2) to the pipe ends.
2. Screw pipe thread into the filter inlet until the connection is solid and sealed.
3. Screw pipe thread into the filter outlet until the connection is solid and sealed.

After completing assembly work, check to ensure the housing body is screwed in correctly, the safety slide is pushed up and the locking screw is hand-tightened. Complete a leak test to check installation work. For more information, see "10.7 Leak test" on page 45.

## 8. Commissioning

### 8.1 Warning

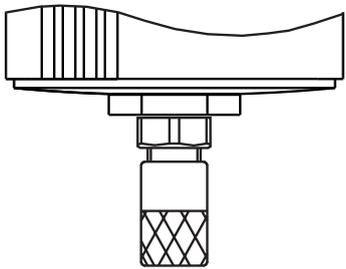
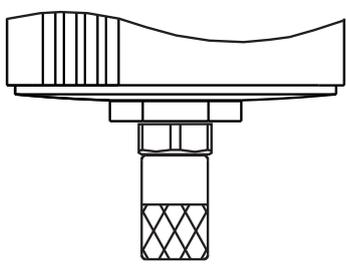
<b>DANGER</b>	<b>Operating outside of permitted limit values!</b>
	<p>Operating the product and accessories outside of the permitted limit values and operating parameters, unauthorized modifications and changes may pose a mortal hazard or the danger of severe injuries.</p>
	<ul style="list-style-type: none"> <li>• Observe the limit values and operating parameters specified on the type plate and in the instructions.</li> <li>• Observe the installation and ambient conditions.</li> <li>• Check whether operating parameters are changed or restricted through the use of accessories.</li> <li>• Observe the maintenance intervals.</li> </ul>
<b>DANGER</b>	<b>Pressurized system!</b>
	<p>The risk of death or severe injuries exists in case of contact with fast or sudden exiting fluids or due to bursting system parts.</p>
	<ul style="list-style-type: none"> <li>• Set up a safe area around the work site during all assembly, installation, maintenance and repair work.</li> <li>• Before pressurizing the system, check and tighten all pipe connections.</li> <li>• Pressurize the system slowly.</li> <li>• Avoid pressure surges and high pressure differentials.</li> </ul>
<b>DANGER</b>	<b>Electrical voltage!</b>
	<p>Contact with electrically live components may result in fatal or serious injury as well as functional and operational disturbances or material damage.</p>
	<ul style="list-style-type: none"> <li>• Only complete installation, maintenance and repair work on products and accessories for which the power has been shut down, and secure them against unintentional restart.</li> <li>• Set up a safe area around the work site during all installation, maintenance and repair work.</li> <li>• Only operate the product with a complete, closed cover or housing.</li> </ul>
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p>
	<ul style="list-style-type: none"> <li>• All work on the product and accessories may only be carried out by qualified technicians for compressed gas technology and trained electricians.</li> </ul>

## 8.2 Commissioning work

The following requirements must be fulfilled to carry out commissioning work and preparatory work must be completed.

Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>• none</li> </ul>	<ul style="list-style-type: none"> <li>• none</li> </ul>	<ul style="list-style-type: none"> <li>• none</li> </ul>

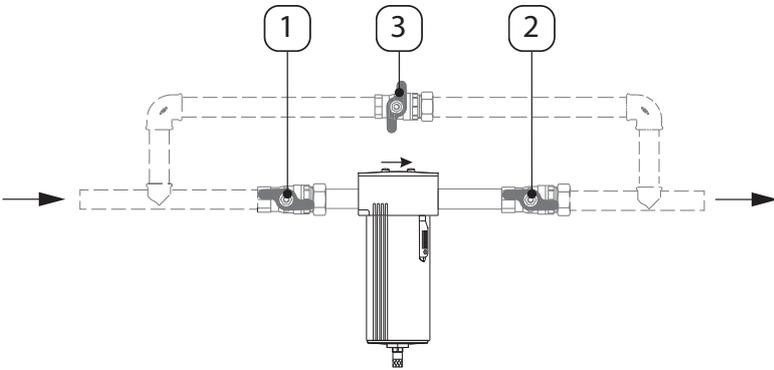
Preparatory work	
1.	Completed installation with leak test

Picture		Description
Automatic drainage	Mechanically open	
		<ol style="list-style-type: none"> <li>1. Turn knurled screw on the float drain from "<b>Mechanically open</b>" counterclockwise (left-hand thread) to "<b>Automatic drainage</b>".</li> </ol>

## 9. Operation

### 9.1 Warning

<b>DANGER</b>	<b>Operating outside of permitted limit values!</b>
	<p>Operating the product and accessories outside of the permitted limit values and operating parameters, unauthorized modifications and changes may pose a mortal hazard or the danger of severe injuries.</p> <ul style="list-style-type: none"> <li>• Observe the limit values and operating parameters specified on the type plate and in the instructions.</li> <li>• Observe the installation and ambient conditions.</li> <li>• Check whether operating parameters are changed or restricted through the use of accessories.</li> <li>• Observe the maintenance intervals.</li> </ul>
<b>NOTE</b>	<b>Operating personnel!</b>
	<p>Inadequate knowledge of the product and its accessories can lead to material and environmental damage as well as disruptions in operation due to incorrect operation.</p> <ul style="list-style-type: none"> <li>• The product and accessories may only be operated and handled by qualified operating personnel.</li> </ul>

Picture	Description
	<ol style="list-style-type: none"> <li><b>1. Slowly</b> open the shut-off valve <b>[1]</b> on the inlet side</li> <li><b>2. Slowly</b> open the shut-off valve <b>[2]</b> on the outlet side</li> <li>3. Close the shut-off valve <b>[3]</b> of the bypass line</li> </ol>

## 10. Maintenance and servicing

### 10.1 Warning

<b>DANGER</b>	<b>Pressurized system!</b>
	<p>The risk of death or severe injuries exists in case of contact with fast or sudden exiting fluids or due to bursting system parts.</p> <ul style="list-style-type: none"> <li>• Carry out all maintenance and repair work only when the system is depressurized and secure the system against unintentional pressurization.</li> <li>• Establish a safe area around the work area for all maintenance and repair work.</li> <li>• Before pressurizing the system, check and tighten all pipe connections.</li> <li>• Pressurize the system slowly.</li> <li>• Avoid pressure surges and high pressure differentials.</li> <li>• Mount all pipelines free of mechanical tension.</li> <li>• Compensate vibrations occurring in the pipeline network by using vibration dampers.</li> <li>• Securely pipe the inlet and outlet lines.</li> </ul>
<b>DANGER</b>	<b>Use of incorrect replacement parts, accessories or materials!</b>
	<p>The use of incorrect replacement parts, accessories or materials, as well as auxiliary and operating materials, may pose a mortal danger or the danger of severe injuries. Functional and operational disruptions may occur, as well as material damage.</p> <ul style="list-style-type: none"> <li>• Only use undamaged original parts, auxiliary and operating materials specified by the manufacturer in carrying out all work.</li> <li>• Only use materials permitted for the specific purpose and suitable tools in proper condition.</li> <li>• Only use cleaned pipelines free from dirt and corrosion.</li> </ul>
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p> <ul style="list-style-type: none"> <li>• All work on the product and accessories may only be carried out by professional service technicians.</li> </ul>

### 10.2 Maintenance schedule

Maintenance	Interval
Cleaning work	At regular intervals, depending on contamination
Visual inspection	Weekly
Replacing the float drain	Annually
Replace the filter element	Annually or at a differential pressure $\geq 0.4$ bar (5.8 psig)
Leak test	Recommendation: At the end of all assembly and maintenance and repair work on the product

## 10.3 Cleaning

### 10.3.1 Warning

<b>CAUTION</b>	<b>Improper cleaning and use of incorrect cleaning agents!</b>
	<p>Improper cleaning and the use of incorrect cleaning agents could result in slight injuries and health or property damage.</p> <ul style="list-style-type: none"> <li>• Never clean the device with a wet cloth.</li> <li>• Do not use abrasive or aggressive cleaning agents or solvents that could damage the external coating (e.g. labels, type plate, corrosion protection, etc.).</li> <li>• Do not clean or operate the device with hard or pointed implements.</li> <li>• Use an antistatic, damp cloth for external cleaning.</li> <li>• Replace illegible product labels (pictograms, designations) promptly.</li> </ul>
<b>NOTICE</b>	<b>Local hygiene regulations!</b>
	In addition to the cleaning information provided, local hygiene regulations may also apply.

### 10.3.2 Cleaning work

The following requirements must be fulfilled to carry out cleaning work and preparatory work must be completed.

Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>• none</li> </ul>	<ul style="list-style-type: none"> <li>• Mild cleaning agent</li> <li>• Cotton or disposable cloth</li> </ul>	<ul style="list-style-type: none"> <li>• Protective gloves (liquid-resistant)</li> <li>• Safety glasses with side protection (goggles)</li> <li>• Hearing protection</li> <li>• Class FFP 3 respirator</li> <li>• Safety shoes</li> </ul>

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

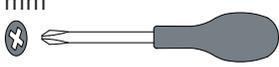
1. Spray the cleaning agent on a new cotton or disposable cloth.
2. Rub over the entire component.
3. Then dry the device with a clean cloth or let it dry at room temperature.

## 10.4 Visual inspection

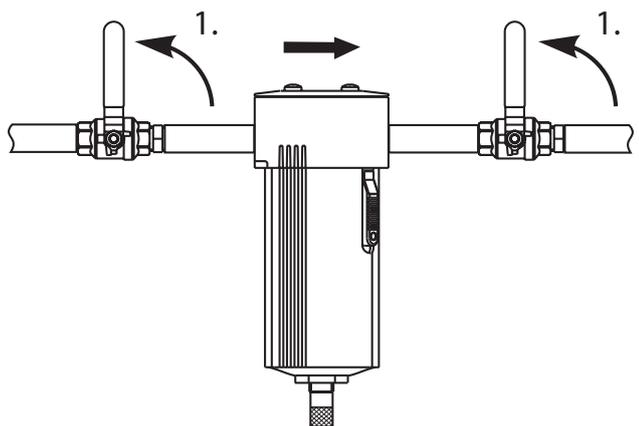
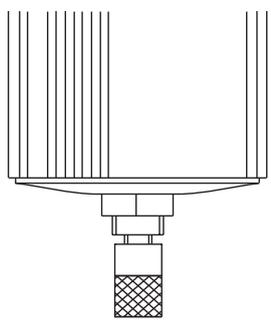
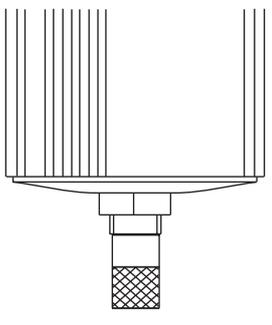
A visual inspection of the filter must be completed to check all components for mechanical damage and corrosion. Damaged components must be replaced promptly.

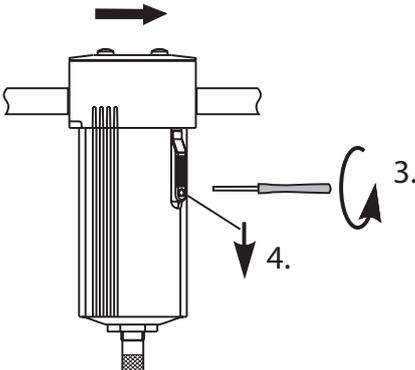
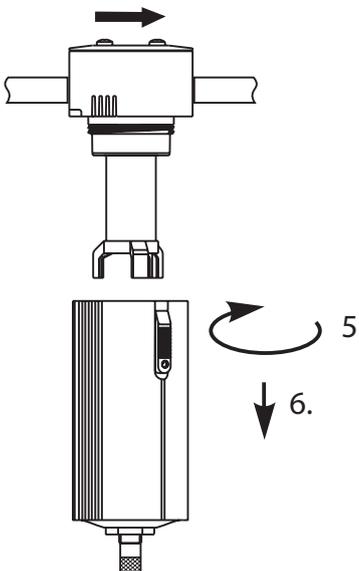
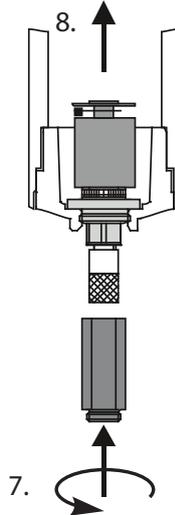
## 10.5 Replacing the float drain

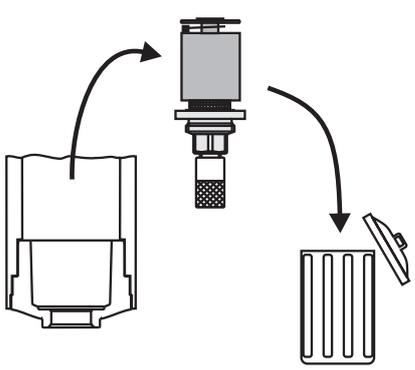
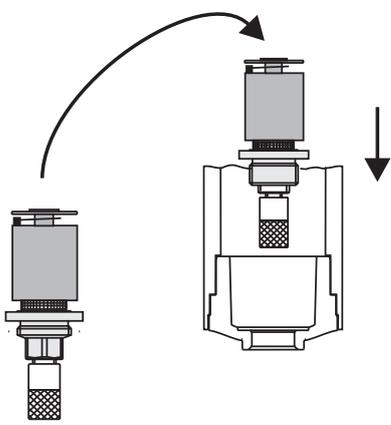
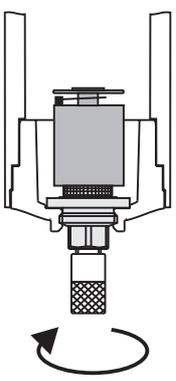
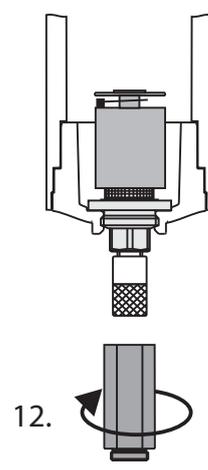
The following requirements must be fulfilled, and preparatory work must be completed before exchanging the float drain.

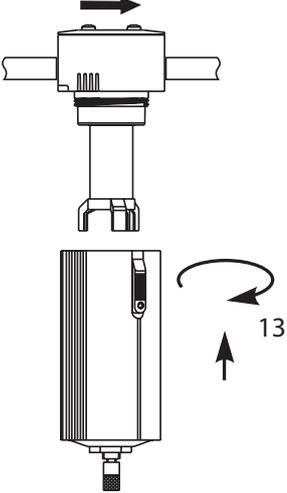
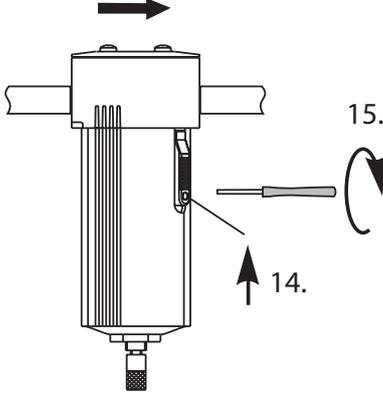
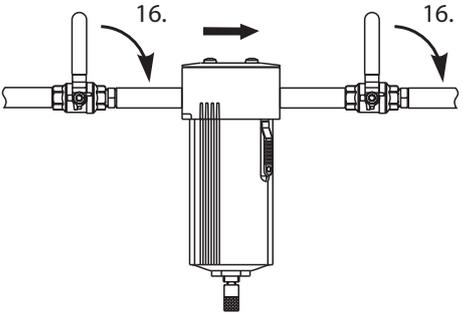
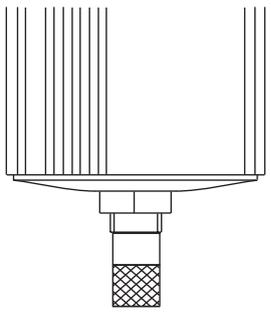
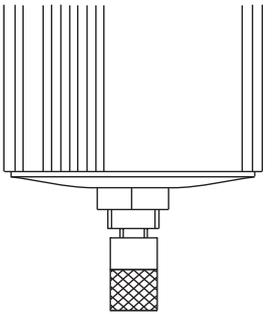
Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>Screwdriver - Philip's head size 2.5 mm</li> </ul> 	<ul style="list-style-type: none"> <li>New float drain with enclosed adapter</li> </ul>	<ul style="list-style-type: none"> <li>Protective gloves (liquid-resistant)</li> <li>Safety glasses with side protection (goggles)</li> <li>Hearing protection</li> <li>Class FFP 3 respirator</li> <li>Safety shoes</li> </ul>

Preparatory work	
1.	Open any bypass lines.

Picture	Description
	<p>1. Close shut-off valves upstream and downstream of the filter or the corresponding system section.</p>
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>2. </p> <p>Automatic drainage</p> </div> <div style="text-align: center;">  <p>Mechanically open</p> </div> </div>	<p>2. Turn knurled screw on the float drain counterclockwise (left-hand thread) from "Automatic drainage" to "Mechanically open".</p>

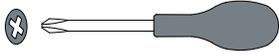
	<p>3. Loosen the locking screw on the safety slide. 4. Push the safety slide down.</p>
	<p>5. Unscrew the housing body. 6. Remove the housing body by pulling it down.</p>
	<p>To unscrew the float drain, use the SW13 adapter supplied with the float drain.</p> <p>7. Unscrew the float drain with adapter counterclockwise. 8. Remove the top of the float drain from the housing body.</p>

<p>9.</p> 	<p>9. Dispose of the float drain properly and in accordance with regional regulations.</p> <p>For more information, see “13. Disposal” on page 50.</p>
<p>10.</p> 	<p>10. Insert new float drain in the housing body.</p>
 <p>11.</p>  <p>12.</p>	<p>11. Screw the float drain into the housing body clockwise by hand.</p> <p>12. Tighten the float drain with the adapter.</p>

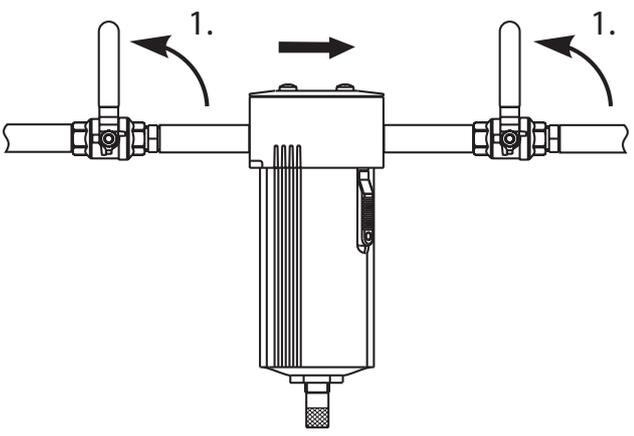
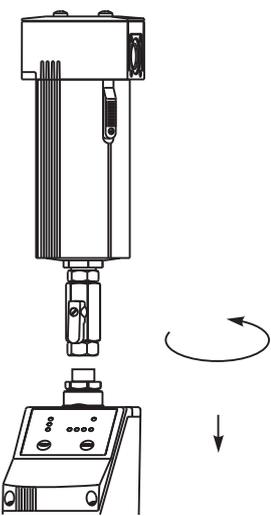
	<p>13. Screw housing body back onto filter head.          → Make sure that the safety slide is pointing forward after assembly.</p>
	<p>14. Push the safety slide up.          15. Tighten the locking screw on the safety slide.</p>
	<p>16. Slowly open the shut-off valves upstream and downstream of the filter or relevant system section.</p>
<div style="display: flex; justify-content: space-around;"> <div data-bbox="183 1646 454 1960">  <p>Mechanically open</p> </div> <div data-bbox="518 1646 790 1960">  <p>17. ↺ Automatic drainage</p> </div> </div>	<p>17. Turn knurled screw on float drain counterclockwise (left-hand thread) from "<b>Mechanically open</b>" to "<b>Automatic drainage</b>"; for this purpose, unscrew knurled screw until stop.</p>

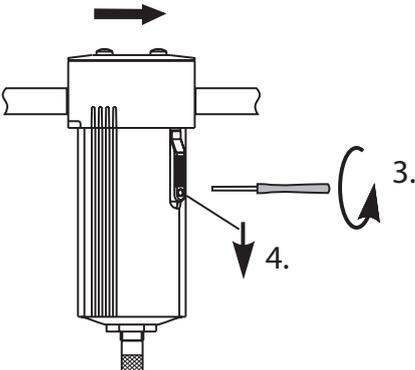
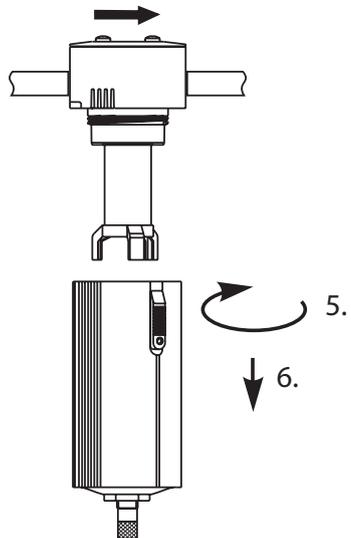
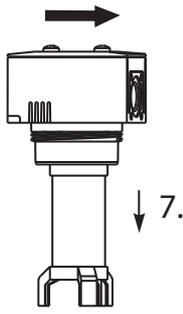
## 10.6 Replace the filter element

The following requirements must be fulfilled to replace the filter element and preparatory work must be completed.

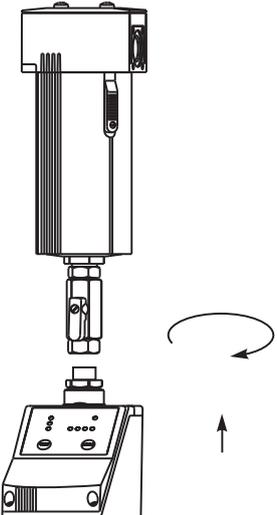
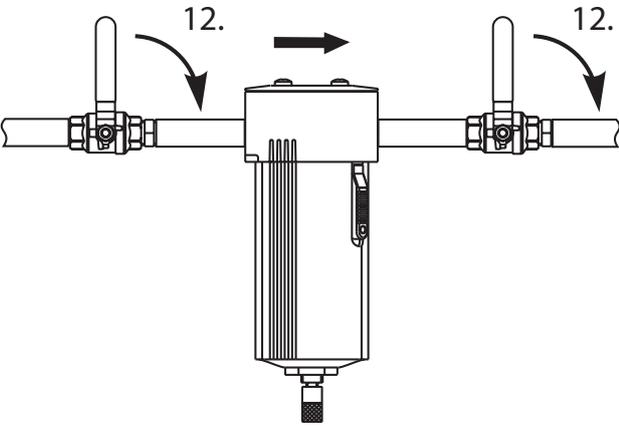
Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>Screwdriver - Philip's head size 2.5 mm</li> </ul> 	<ul style="list-style-type: none"> <li>New filter element</li> </ul>	<ul style="list-style-type: none"> <li>Protective gloves (liquid-resistant)</li> <li>Safety glasses with side protection (goggles)</li> <li>Hearing protection</li> <li>Class FFP 3 respirator</li> <li>Safety shoes</li> </ul>

Preparatory work	
1.	Open any bypass lines.

Picture	Description
	<p>1. Close the shut-off valves upstream and downstream of the filter or relevant system section and depressurize filter</p>
	<p>2. When using the <b>BEKOMAT</b>®, it must be separated from the lower part of the filter.</p> <p>For further information, see the enclosed installation and operating instructions for the <b>BEKOMAT</b>®.</p>

	<p>3. Loosen the locking screw on the safety slide. 4. Push the safety slide down.</p>
	<p>5. Unscrew the housing body. 6. Remove the housing body by pulling it down.</p>
	<p>7. Pull the used filter element down out of the housing head.</p>

	<p>8. Insert the new filter element into the housing head.</p> <p>→ The direction of flow indicated on the housing head and the filter element base must correspond to each other.</p>
	<p>9. Screw the housing body onto the housing head.</p> <p>→ Ensure that the safety slide points forward.</p>
	<p>10. Push the safety slide up.</p> <p>11. Tighten the locking screw on the safety slide.</p>

	<p>12. When using the <b>BEKOMAT®</b>, it must be reconnected.</p> <p>For further information, see the enclosed installation and operating instructions for the <b>BEKOMAT®</b>.</p>
	<p>13. Slowly open the shut-off valves upstream and downstream of the filter or relevant system section.</p>

## 10.7 Leak test

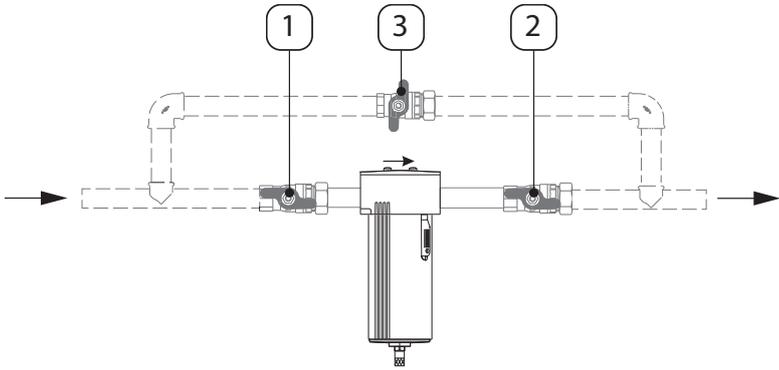
The leak test is a non-destructive testing method and is used to prove the leak tightness of vacuum and overpressurized systems. The leak test can be completed in different ways. **BEKO TECHNOLOGIES** does not make any recommendations here. The operator of the compressed gas system is responsible for selecting the testing process, and testing should be completed in accordance with applicable standards and directives (e.g. DIN EN 1779).

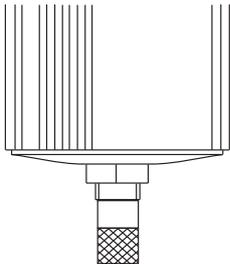
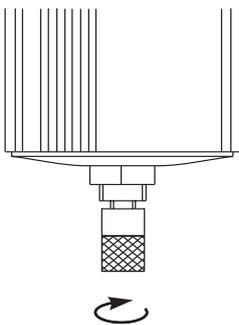
# 11. Shutting down

## 11.1 Warning

<b>DANGER</b>	<b>Pressurized system!</b>
	<p>The risk of death or severe injuries exists in case of contact with fast or sudden exiting fluid or due to bursting system parts.</p> <ul style="list-style-type: none"> <li>• Only work on the system when it is depressurized and secure the system against unintended restart.</li> <li>• Establish a safe area around the work area for all maintenance and repair work.</li> </ul>

<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p> <ul style="list-style-type: none"> <li>• All work on the product and accessories may only be carried out by professional service technicians.</li> </ul>

Picture	Description
	<ol style="list-style-type: none"> <li>1. Open the shut-off valve <b>[3]</b> of the bypass line (if available)</li> <li>2. Close the shut-off valve <b>[2]</b> on the outlet side</li> <li>3. Close the shut-off valve <b>[1]</b> on the inlet side</li> </ol>

Picture Automatic drainage	Picture Mechanically open	Description
		<ol style="list-style-type: none"> <li>4. Turn the knurled screw on the float drain from "Automatic drainage" counterclockwise (left-hand thread) to "Mechanically open" or press the <b>BEKOMAT® TEST</b> button until the filter is depressurized.</li> </ol>

## 12. Disassembly

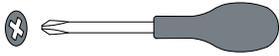
### 12.1 Warning

<b>DANGER</b>	<b>Pressurized system!</b>
	<p>The risk of death or severe injuries exists in case of contact with fast or sudden exiting fluids or due to bursting system parts.</p> <ul style="list-style-type: none"><li>• Only work on the system when it is depressurized and secure the system against unintended restart.</li><li>• Establish a safe area around the work area for all maintenance and repair work.</li></ul>

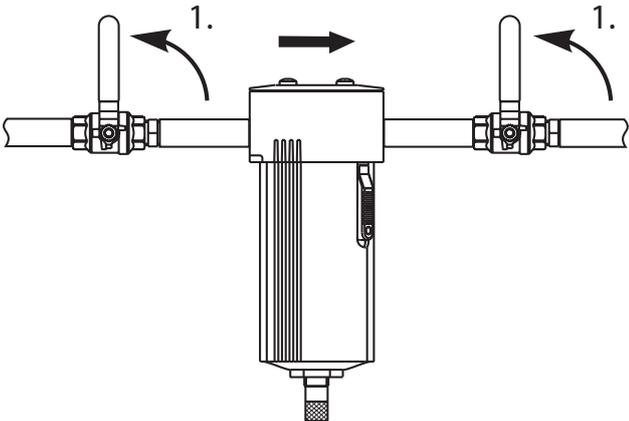
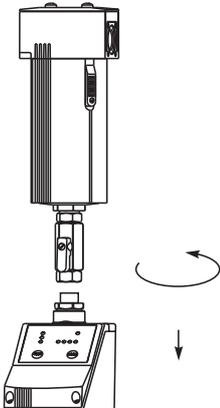
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>If personnel have insufficient qualifications, this may result in accidents, personal injury and property damage as well as operating disruptions while working on the product or its accessories.</p> <ul style="list-style-type: none"><li>• All work on the product and accessories may only be carried out by qualified technicians for compressed gas technology and trained electricians.</li></ul>

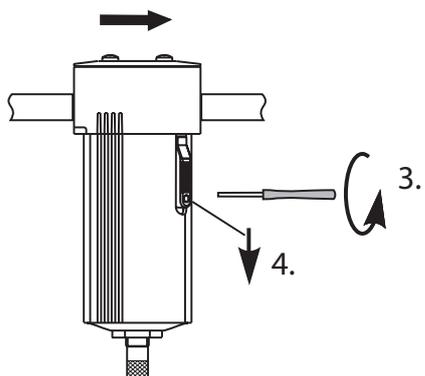
## 12.2 Disassembly work

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

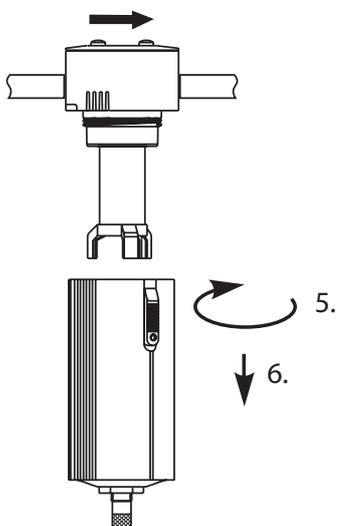
Preconditions		
Tool	Material	Protective equipment
<ul style="list-style-type: none"> <li>Screwdriver - Philip's head size 2.5 mm</li> </ul> 	<ul style="list-style-type: none"> <li>No material necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Protective gloves (liquid-resistant)</li> <li>Safety glasses with side protection (goggles)</li> <li>Hearing protection</li> <li>Class FFP 3 respirator</li> <li>Safety shoes</li> </ul>

Preparatory work	
1.	Open any bypass lines

Picture	Description
	<p>1. Close the shut-off valves <b>[1]</b> upstream and downstream of the filter or the relevant section of the system, depressurize the filter and secure the system against unauthorized pressurization.</p>
	<p>2. When using the <b>BEKOMAT®</b>, it must be separated from the lower part of the filter.</p> <p>For further information, see the enclosed installation and operating instructions for the <b>BEKOMAT®</b>.</p>



- 3. Loosen the locking screw on the safety slide.
- 4. Push the safety slide down.



- 5. Unscrew the housing body.
- 6. Remove the housing body by pulling it down.
- 7. Remove filter element.
- 8. Remove the filter head from the pipe and close off the ends of the pipe appropriately.
- 9. Dispose of components properly

## 13. Disposal

### 13.1 Warning

<b>NOTICE</b>	<b>Improper disposal!</b>
	Improper disposal of components and assemblies, operating and auxiliary materials and cleaning agents may cause environmental hazards.
	<ul style="list-style-type: none"> <li>• All components and assemblies, operating and auxiliary materials and cleaning agents must be disposed of appropriately and according to regional statutory specifications and provisions.</li> <li>• In case of doubt, consult regional disposal companies before disposal.</li> </ul>

### 13.2 Disposal of components

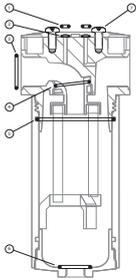
The following requirements must be met before disposal:

<b>Preconditions</b>	
1.	The product and accessories have been taken out of service and dismantled.
2.	The product and the accessories are cleaned and freed from existing media residues.

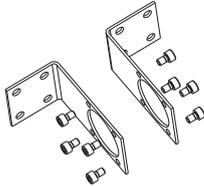
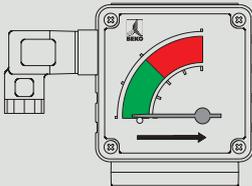
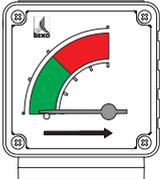
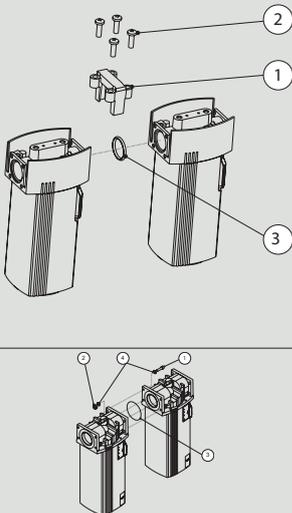
<b>Description</b>	
1.	Dispose all material regarding the national guidelines and regulations.

## 14. Spare parts and accessories

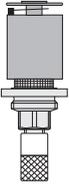
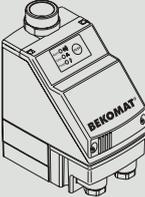
### 14.1 Replacement parts

Designation	Material no.	Image	Separate documentation
O-Ring set for S040, S045, S050, S055	4026562		Enclosed instruction leaflet
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		

## 14.2 Accessories top attachments

Designation	Material no.	Image	Separate documentation
Wall mount for S040, S045, S050, S055	4003328		Not available
Wall mount for S075, S100, M010, M012	4003329		
Wall mount for M015, M018, M019, M020, M022, M023	4003330		
Wall mount for M025, M027, M030, M032	4003331		
Differential pressure gauge with potential-free contact	4001481		Enclosed operation and installation manual
Differential pressure gauge without potential-free contact	4010931		Enclosed operation and installation manual
Connection set for S040, S045, S050, S055	403332		Enclosed instruction leaflet
Connection set for S075, S100, M010, M012	403333		
Connection set for M015, M018, M019, M020, M022, M023	403334		
Connection set for M025, M027, M030, M032	403335		

### 14.3 Accessories bottom attachments

Designation	Material no.	Image	Separate documentation
Float drain (open when not depressurized)	4025536		Enclosed instruction leaflet
Float drain (closed when not depressurized)	4025537		
<b>BEKOMAT® 31:</b>	4025098		Enclosed operation and installation manual
<b>BEKOMAT® 32:</b>	4025088		
<b>BEKOMAT® 33:</b>	4025091		

## 15. Troubleshooting and repair / FAQ

Symptom(s)	Possible causes	Remedy
Poor gas quality	Load too high, intermittent load	<ul style="list-style-type: none"> <li>Change operating method</li> <li>Avoid pressure surges</li> <li>Comply with the specified operating parameters, in particular during start-up</li> </ul>
	Non-functional condensate drain	<ul style="list-style-type: none"> <li>Ensure regular condensate drainage</li> </ul>
	Filter undersized	<ul style="list-style-type: none"> <li>Resize filter with indicated operating parameters and replace if necessary</li> </ul>
	Filter element installed incorrectly	<ul style="list-style-type: none"> <li>Observe the direction of flow / installation direction for the filter element</li> </ul>
	O-ring was damaged during installation	<ul style="list-style-type: none"> <li>Purchase new filter element and o-ring, install carefully</li> </ul>
High pressure differential	Incorrectly dimensioned unit	<ul style="list-style-type: none"> <li>Resize filter with indicated operating parameters and replace for a larger one if necessary</li> </ul>
	High level of contamination	<ul style="list-style-type: none"> <li>Shorten maintenance interval for exchanging the filter element,</li> <li>Stepped filtration may be necessary</li> </ul>
	Destroyed filter elements	<ul style="list-style-type: none"> <li>Change operating method</li> <li>Stepped filtration may be necessary</li> </ul>
Condensate in downstream components	Condensate drain defective or functional fault	<ul style="list-style-type: none"> <li>Replacement of the float drain or maintenance of the <b>BEKOMAT</b>®</li> </ul>
	Cooling downstream of filtration section	<ul style="list-style-type: none"> <li>Drying required before filtration</li> </ul>
Leaks	Aging of seals	<ul style="list-style-type: none"> <li>Replace seals during maintenance work</li> </ul>
	Mechanical damage	<ul style="list-style-type: none"> <li>Send in filter for repairs or replace with a new one</li> </ul>

## 16. Product specifications and certifications

Symbol/pictogram	Description/explanation
CRN approved	Canadian Registration Number for sizes S040 ... M032

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## 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**

A handwritten signature in black ink, appearing to read "C. Riedel", written over a horizontal line.

i.V. Christian Riedel  
Leiter Qualitätsmanagement International

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## EU Conformity declaration

We herewith declare that the products identified in the following are in accordance with the requirements of the relevant directives and technical standards. This declaration only refers to products that are in a condition in which they were delivered by us. Parts that were not attached by the manufacturer and/or subsequently performed interventions are not included.

Product designation:	Container for threaded filter CLEARPOINT®
Models:	M025, M027, M030, M032
Max. Operating Pressure:	16 bar(g)
Product Description and Function:	Container for CLEARPOINT® threaded filter

### Pressure Equipment Directive 2014/68/EU

Conformity assessment process applied:	Module A2
Category:	II
Description of pressure equipment:	Pressure equipment for group 2 fluids
Notified agency:	TÜV NORD Systems GmbH & Co. KG Große Bahnstraße 31 22525 Hamburg
Certificate no.:	07/202/1410/Z/0237/17/D/0035

Products are labeled with the symbols pictured:

CE 0045

The manufacturer has the sole responsibility for issuing this conformity declaration.

Neuss, 2/26/2020

Signed for and on behalf of:

**BEKO TECHNOLOGIES GMBH**

i.V. Christian Riedel  
Manager Quality Management





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