



## Assembly instructions

### METPOINT® Pressure Safety Device

- > PP 50 - 220
- > PP 50 - 400

## ■ Content

<b>1. General</b> .....	<b>4</b>
1.1 Contact.....	4
1.2 Information regarding assembly instructions.....	4
1.3 Other Applicable Documents .....	4
1.4 Explanation of the symbols and pictograms utilised.....	5
1.4.1 In the documentation .....	5
1.4.2 On the device.....	5
1.4.3 On the packaging.....	5
1.5 Intended use.....	6
1.6 Reasonably foreseeable inappropriate use.....	6
1.7 Legal warranty and liability for property defects.....	6
1.8 Target group and personnel .....	7
1.9 Responsibility of the owner.....	7
<b>2. Safety-related information</b> .....	<b>8</b>
2.1 General instructions.....	8
2.2 Safety instructions.....	9
<b>3. Transport and storage</b> .....	<b>10</b>
<b>4. Product information</b> .....	<b>11</b>
4.1 Product description.....	11
4.2 Product overview .....	11
4.3 Scope of delivery .....	12
4.4 Rating plate .....	13
<b>5. Assembly</b> .....	<b>14</b>
5.1 Warning.....	14
5.2 Assembly work.....	15
<b>6. Maintenance and servicing</b> .....	<b>23</b>
6.1 Maintenance schedule.....	23
6.2 Cleaning .....	23
6.2.1 Warning.....	23
6.2.2 Cleaning works .....	23
6.4.1 Visual inspection.....	23
<b>7. Technical data</b> .....	<b>24</b>
7.1 Dimensions.....	24
<b>8. Dismantling</b> .....	<b>25</b>
8.1 Warning.....	25
8.2 Dismantling work.....	26
<b>9. Disposal</b> .....	<b>29</b>




# 1. General

## 1.1 Contact

Manufacturer	Customer service and tools
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## 1.2 Information regarding assembly instructions

INFORMATION	Copyright protection
	The contents of the assembly instructions in the form of text, illustrations, photographs, technical drawings, diagrams and other representations are protected by the copyright of the manufacturer. This applies especially to duplication, reproduction, microfilming and storage as well as processing in electronic systems.

Publication date	Revision status	Reason for amendment	Scope of amendment
16.10.18	V00	Operating material launch	New installation

The assembly instructions, hereinafter referred to as the instructions, must be kept at all times near the product and in a permanently legible condition.

If the operating material is sold or transferred on, then the instructions must be handed over along with the operating material.

## 1.3 Other Applicable Documents

These instructions contain all the required steps for assembling the METPOINT® pressure safety device and fixing the METPOINT® FLM SF53 mass flow rate meter.





Additional information regarding the installation and configuration of the METPOINT® FLM SF53 is contained in the following installation and operating instructions:

- METPOINT® FLM SF53(10-221)



## 1.4 Explanation of the symbols and pictograms utilised

The symbols and pictograms utilised below indicate safety-relevant and important information which must be adhered to when handling the operating material and to ensure safe and optimum operation.

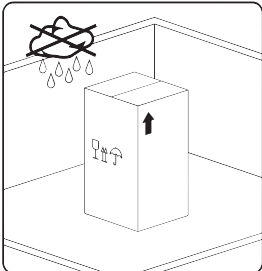
### 1.4.1 In the documentation

Symbol/Pictogram	Description/Explanation
	General hazard symbol (danger, warning, caution)
	Pressurised gas system
	General information signs
	Supplementary information / notes

### 1.4.2 On the device

Symbol/Pictogram	Description/Explanation
	General hazard symbol (danger, warning, caution) (This symbol is only located on the type plate.)
	Observe assembly instructions. (This symbol is only located on the type plate.)


### 1.4.3 On the packaging

NOTE	Notes regarding transport and storage
	<p>The operating material must be</p> <ul style="list-style-type: none"> <li>• stored in the original packaging and retained in a dry as well as frost-free room. The ambient conditions, transport and storage parameters must hereby never undershoot/ exceed the details specified on the type plate.</li> <li>• Always protect it against external weathering effects even in a packaged condition.</li> <li>• Secure the plant so that it cannot topple over or fall and protect it against vibration at the storage location.</li> </ul>

## 1.5 Intended use

The METPOINT® pressure safety device was developed for the safe installation, removal and fixing of the METPOINT® FLM SF53 mass flow meter in a pipe which is situated under operating pressure.

The intended use of the METPOINT® pressure safety device requires that the notes in the installation and operating instructions are fully implemented and that the pressure safety device is only utilised by qualified personnel or staff according to the technical data.

<b>CAUTION</b>	<b>Danger caused by incorrect or unintended use!</b>
	<p>Only operate the METPOINT® pressure safety device for the intended purpose and within the limit range specified in the technical data. Do not operate the unit with any media (fluids, gas/ vapour mixtures) other than those listed above. Any other use of the device, which exceeds the intended use, is hereby deemed to be improper and can cause a hazard for the safety of people and the environment.</p> <ul style="list-style-type: none"> <li>• The METPOINT® pressure safety device may only be utilised for assembling the METPOINT® FLM SF53 mass flow meter.</li> <li>• The device is not suitable for operation in explosion hazard areas as well as in areas with aggressive atmospheres.</li> </ul>

## 1.6 Reasonably foreseeable inappropriate use

A foreseeable inappropriate misuse is deemed to have occurred when the pressure safety device, or any of its accessories, are utilised in a manner other than that described in the chapter "Intended Use". Reasonably foreseeable inappropriate use includes the use of the operating material in a manner not intended by the manufacturer or supplier but which may result from foreseeable human behaviour.

Reasonably foreseeable inappropriate use includes in particular:

- Executing of modifications of all kinds, in particular design and process engineering interventions, as these can lead to personal injury and material damage as well as function and operational malfunction and device failure.
- The overriding, bridging or non-application of the recommended safety devices.

This list is not exhaustive as not all possible inappropriate use can be foreseen in advance. If the owner and operator is aware of any inapplicable misuse of the pressure safety device and its accessories not listed here, then the manufacturer must be informed immediately.

## 1.7 Legal warranty and liability for property defects

The owner and operator must take into account the intended use. The owner and operator will be completely liable for every not described action and utilisation which exceeds the stated intended use.


All liability or warranty claims will be invalidated insofar as the pressure safety device is not operated according to the intended use or is operated outside the limits specified in the technical data.

Improper utilisation hereby includes:

- incorrect technical installation, commissioning, servicing, maintenance or operation
- the use of defective components
- non-compliance with the safety-relevant information, action steps and instruction contained in this manual
- the performance of any kind of modification, in particular constructive and process technology interventions on the product
- the use of third-party spare parts or accessories, which have not been approved by the manufacturer, during maintenance and repair work
- Non-compliance with servicing, maintenance and inspection intervals

## 1.8 Target group and personnel

These instructions are intended for the specialist personnel listed below who are to be involved in work on the METPOINT® pressure safety device, METPOINT® FLM SF53 or their accessories.

INFORMATION	Personnel requirements
	The personnel may not execute any actions on the METPOINT® pressure safety device or its accessories when they are under the influence of drugs, medications, alcohol or other substances that may impair their consciousness.

Skilled personnel- Transport and storage
Skilled 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 operating material, to instruct, to recognise possible dangerous situations independently and to execute measures to avoid danger. Skills include experience with hoists, forklifts and lifting equipment and knowledge of local laws, standards and guidelines relating to transport and storage.

Qualified personnel - compressed gas technology
Skilled personnel - compressed gas technology are people who, due to their training, professional experience and qualification, possess all the necessary capabilities to safely execute actions, and instruct all actions related to compressed gases and pressurised systems, to independently foresee potential hazardous situations and implement appropriate measures to avert any danger. The capabilities include, in particular, experience in handling measurement and control technology as well as knowledge of the regionally applicable laws, standards and regulations for compressed gas technology.

## 1.9 Responsibility of the owner

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

- Before all actions, an inspection must be executed to ensure that the present instructions also in fact belong to the operating material.
- The operating material is used, maintained and retained as intended.
- All applicable statutory requirements, safety regulations and accident prevention regulations have been adhered to.
- All regulations and operation manual for safe working and information regarding behaviour in the event of accidents and fires at the operating location are accessible to personnel at all times.
- The operating material is used with functioning, recommended safety devices that are not overridden.
- Personnel have the recommended personal protective equipment at their disposal and it is used.
- Appropriate technical safety measures have been implemented to ensure that the permissible operating parameters are not exceeded or undershot.

## 2. Safety-related information

### 2.1 General instructions

Safety instructions warn against residual risks when handling the operating material. Warning notices in the instructional text precede the procedure that poses a hazard to personnel or the environment.

These safety and warning notices must be strictly observed in order to prevent accidents, personal injury, damage to property and impairments during operation.

#### Residual risks

The use of technical products involves risks. Danger, hazards and risks which cannot be prevented by design measures or protective devices are residual risks. The safety instructions in this manual refer to known residual risks.


Should additional hazards become apparent during operation, then the owner and/or operator is obliged to inform the manufacturer immediately of these hazards.

#### Structure of the safety instructions

The content of the safety instructions is based on the **SAFE** principle:

- S - Safety symbol and signal word
- A - Type and source of danger
- F - Possible consequences of disregarding the danger in the order of its severity
- E - Measures to prevent danger

#### Structural design of the safety instructions:

SIGNAL WORD	Type and source of danger
 Safety symbol	Possible consequences if the danger is ignored
	<ul style="list-style-type: none"> <li>• Measure to prevent the danger</li> </ul>

#### Signal words according to ISO 3864 and ANSI Z.535.6





<b>DANGER</b>	<b>Immediate imminent danger</b> Consequences of non-compliance: Death or serious personal injury
<b>WARNING</b>	<b>Imminent danger</b> Consequences of non-compliance: Death or serious personal injury are possible
<b>CAUTION</b>	<b>Potential danger</b> Consequences of non-compliance: injury and/or damage to property
<b>NOTE</b>	<b>Additional notes, information, tips</b> Consequences of non-compliance: Disadvantages during operation, actions and maintenance. No danger to people or regarding the safe operation.





## 2.2 Safety instructions

In order to prevent accidents, personal injury and damage to the device as well as impairments during operation, it is essential to adhere to the specified safety and warning notices.

The personal protective equipment specified in the safety instructions must be selected and made available by the owner and operator depending on the system parameters and properties.


<b>DANGER</b>	<b>Operation of plant outside the permissible limit range!</b>
	<p>Operation of the system/operating material outside the permissible limits and operating parameters, unauthorised intervention and modifications may result in death or serious injury.</p>
	<ul style="list-style-type: none"> <li>• To ensure a safe operation of the system/operating material which are entered on the type plate and in the instructions.                             <ul style="list-style-type: none"> <li>• Limit values, operating parameters and maintenance intervals, as well as</li> <li>• installation and ambient conditions that must be observed.</li> </ul> </li> <li>• Inspect whether the operating parameters have been amended or restricted by the use of accessories.</li> <li>• Only use the system/product for its intended use.</li> </ul>
<b>DANGER</b>	<b>Compressed air!</b>
	<p>Contact with quickly or suddenly escaping compressed air or bursting plant components may result in serious injury or death.</p>
	<ul style="list-style-type: none"> <li>• Always utilise pressure-resistant installation materials.</li> <li>• Depressurise the system or the relevant system section before executing any work.</li> <li>• Secure the system or section against unintentional pressurisation.</li> <li>• Slowly pressurise the system with compressed gas.</li> </ul>
<b>DANGER</b>	<b>Use of incorrect spare parts, accessories or installation materials!</b>
	<p>The use of incorrect spare parts, accessories or installation materials, as well as auxiliary and operating materials, may result in death, serious injury as well as functional and operating malfunctions or material damage.</p>
	<ul style="list-style-type: none"> <li>• For all installation, servicing and maintenance work, only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer.</li> <li>• Only use fittings and connecting elements approved for the respective application as well as suitable tools in perfect operating condition.</li> <li>• Only use cleaned pipes that are free of dirt.</li> </ul>
<b>WARNING</b>	<b>Non-application of personal protective equipment!</b>
	<p>Non-application of personal protective equipment or inadequate protective equipment during work on the operating material may result in accidents, personal injury and damage to the device as well as impairments during operation.</p>
	<ul style="list-style-type: none"> <li>• All work on the operating material must be executed using the personal protective equipment recommended for the operation in question which must be in perfect condition.</li> <li>• Inspect the personal protective equipment regularly for faultlessness and functionality and replace damaged parts immediately.</li> </ul>

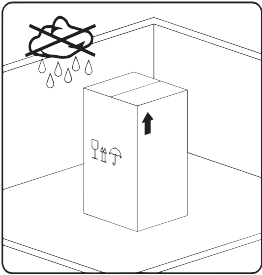
### 3. Transport and storage

<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>Insufficient qualification of the personnel can lead to accidents, personal injury and damage to the device as well as impairments during work on the operating material.</p> <p>The work on the product described below may only be executed and documented by qualified personnel for transport and storage<sup>1</sup>.</p>
<b>CAUTION</b>	<b>Inappropriate transport or storage!</b>
	<p>Inappropriate transport or storage may result in personal injury or damage to the device.</p> <ul style="list-style-type: none"> <li>• Wear protective gloves when working with packaging material</li> <li>• Use personal protective equipment, inspect it regularly for faultlessness and functionality and replace damaged parts immediately.</li> <li>• The product may only be transported or stored by qualified<sup>1</sup> personnel for transport and storage.</li> <li>• Handle packaging and operating material with care.</li> <li>• Pack all parts with shockproof suitable material.</li> <li>• Consider the transport and handle packaging according to the markings (observe hoist attachment points, the centre of gravity and orientation e.g. hold vertical, do not throw etc.).</li> <li>• Use proper, in proper working order means of transport and lifting equipment.</li> <li>• Always adhere to the specified transport and storage parameters.</li> <li>• Store the operating material only outside of areas exposed to direct sunlight and heat sources.</li> <li>• Do not put the operating material into operation when damaged.</li> </ul>

Permissible storage and transport conditions, refer to “7. Technical data” on Page 24.

Skilled personnel- Transport and storage	
<p><sup>1</sup>Qualified personnel for transport and storage are people who, due to their training, professional experience and qualification, have all the necessary skills to safely execute all actions in connection with the transport and storage of the product, to instruct other people and are able to identify possible hazardous situations independently and to implement measures to prevent any danger. Skills include experience with hoists, forklifts and lifting equipment and knowledge of local laws, standards and guidelines relating to transport and storage.</p>	

<b>NOTE</b>	<b>Handling packaging material!</b>
	<p>Inappropriate disposal of packaging materials can cause environmental damage.</p> <ul style="list-style-type: none"> <li>• The packaging material is recyclable.</li> <li>• Dispose of the packaging material in accordance with the regional laws, provisions, guidelines and regulations of the country and place of use.</li> </ul>

<b>NOTE</b>	<b>Note for transport and storage!</b>
	<p>The operating material must be</p> <ul style="list-style-type: none"> <li>• stored in the original packaging and retained in a dry as well as frost-free room. The ambient conditions, transport and storage parameters must hereby never undershoot/ exceed the details specified on the type plate.</li> <li>• Always protect it against external weathering effects even in a packaged condition.</li> <li>• Secure the plant so that it cannot topple over or fall and protect it against vibration at the storage location.</li> </ul>









## 4. Product information

### 4.1 Product description

The METPOINT® pressure safety device ensures maximum possible safety levels and reliability for the METPOINT® FLM SF53. It enables safe assembly and dismantling of the sensors during ongoing processes and provides particularly high functional reliability at operating pressures higher than 10.0 bar (gauge).



### 4.2 Product overview

The METPOINT® pressure safety device comprises the following components:

Figure	Description
	[1] Ball valve, G1/2" female thread, ISO 228-1
	[2] Lower bracket
	[3] Middle bracket
	[4] Upper bracket
	[5] Guide rods (2x)
	[6] Thread locking rods (2x)
	[7] Positioning handles
	[8] End nut M8
	[9] Locking bolt M8

### 4.3 Scope of delivery




The following table shows the scope of delivery for the METPOINT® pressure safety device.

Figure	Description/Explanation
	<p>METPOINT® pressure safety device</p>
	<p>Assembly instructions</p>


## 4.4 Rating plate

The rating plate, which contains the identification and operating parameters of the pressure safety device, is located on the middle bracket.

When contacting the manufacturer or supplier, always retain this data ready for identification.

PP 50-220	
Year of construction	2018
Type	4042067
Weight	3,3 kg
<b>Measuring Gas System</b>	
Measuring Gas	Compressed Air
Max. Working Pressure	50 bar(g)
Working Temperature	+5 ... +80 °C
	<b>BEKO TECHNOLOGIES GmbH</b> Im Taubental 7 D-41468 Neuss, GERMANY Tel: +49 2131 988-0 www.beko-technologies.com
	 




Position on rating plate	Description
PP 50-220	Product designation: PP 50-220
Year of manufacture: 2018	Month of manufacture: 2018
Model: 4042067	Model designation: 4042067
Weight: 3.3 kg	Weight: 3.3 kg
Measuring gas system	Measuring gas system
Measuring Gas: Compressed Air	Measuring gas: Compressed air
Maximum working pressure: 50 bar(g)	Maximum operating pressure: 50 bar (gauge)
Working temperature: +5 ... +80 °C,	Operating temperature +5 ... +80 °C,

NOTE	Handling the type plate!
	Never damage, remove or make the type plate illegible.

For more information regarding the symbols printed on the type plate, refer to “1.4 Explanation of the symbols and pictograms utilised” on Page 5.

## 5. Assembly

### 5.1 Warning

<b>DANGER</b>	<b>Use of incorrect accessories, materials or spare parts!</b>
	<p>The use of incorrect accessories, parts, materials or incorrect spare parts as well as auxiliary and operating materials, may result in death, serious injury as well as functional and operating malfunctions or material damage.</p> <ul style="list-style-type: none"> <li>• Only use original parts specified by the manufacturer and in perfect operating condition for all assembly work.</li> <li>• Only use tools which approved and suitable for the respective application as well as materials which are in perfect condition.</li> </ul>
<b>DANGER</b>	<b>Compressed air</b>
	<p>Contact with quickly or suddenly escaping compressed air or bursting plant components may result in serious injury or death.</p> <ul style="list-style-type: none"> <li>• Always execute all assembly work only when the system is depressurised.</li> <li>• Always utilise pressure-resistant installation materials.</li> </ul>
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>Insufficient qualification of the personnel can lead to accidents, personal injury and damage to the device as well as impairments during work on the operating material.</p> <p>The work on the product described below may only be executed and documented by qualified personnel for compressed gas technology<sup>1</sup>.</p>


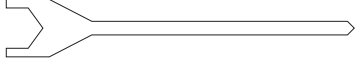

#### Qualified personnel - compressed gas technology

<sup>1</sup>Qualified personnel for compressed gas technology are people who, due to their training, professional experience and qualification, possess all the necessary capabilities to safely execute actions, and instruct all actions related to compressed gases and pressurised systems, to independently foresee potential hazardous situations and implement appropriate measures to prevent any danger.

The capabilities include, in particular, experience in handling measurement and control technology as well as knowledge of the regionally applicable laws, standards and regulations for compressed gas technology.

## 5.2 Assembly work

The following prerequisites must be fulfilled before the assembly work can be executed.

Prerequisites		
Tools	Material	Protective equipment
<ul style="list-style-type: none"> <li>Torque wrench SW17</li> </ul>  <ul style="list-style-type: none"> <li>Aligning aid for METPOINT® FLM</li> </ul>  <ul style="list-style-type: none"> <li>Open-end wrench with wrench jaw size SW17, SW27 and SW32</li> </ul> 	<ul style="list-style-type: none"> <li>Sealing materials such as e.g. PTFE tape (EN 837-2).</li> </ul>	<ul style="list-style-type: none"> <li>Safety goggles</li> <li>Protective gloves</li> </ul>

### Please note:

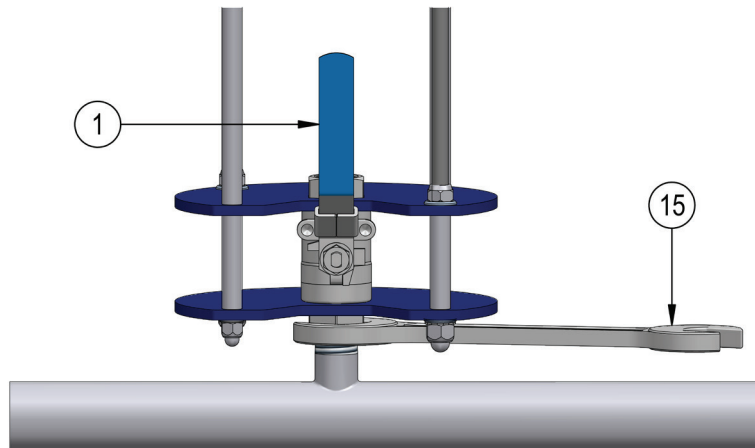
- Only ever use fittings and connecting elements which are approved for this application.
- Only ever use pipework, valves and fittings which are suitable for the pressure and temperature range. Always adhere to the manufacturer's instructions.
- Always pay attention to the correct installation of the components.
- Only use clean, unpolluted pipework.
- Inspect all pipework, bolted and screwed connections after assembly and tighten them when necessary!
- Prior to commissioning, a leak test must be executed by appropriately qualified, skilled personnel and observing the safety regulations.

1. Set up the measuring point with a pipe socket **R½" male thread (EN 10226-1 or ISO 7-1)** according to the specifications of the installation and operating instructions for the **METPOINT® FLM SF53** mass flow meter.

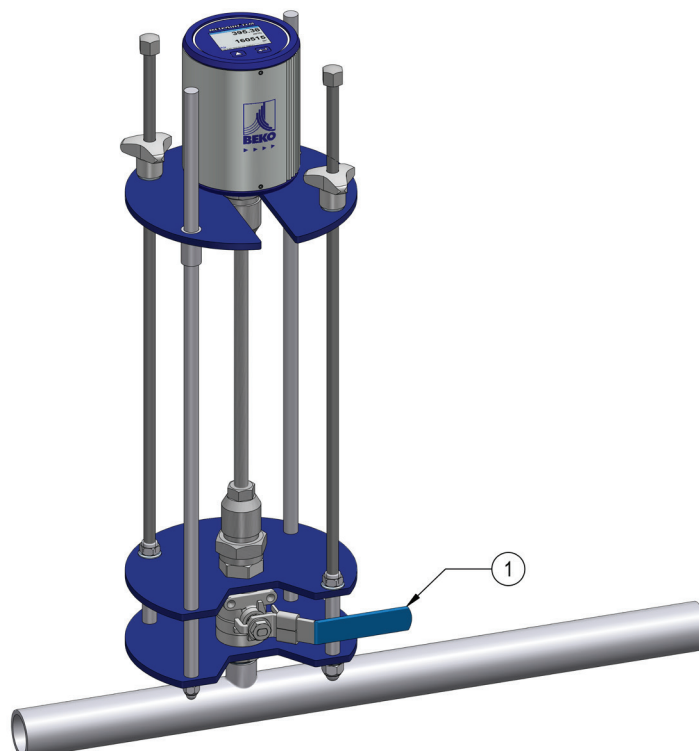


With a tapered R-thread, execute **the sealing in the thread with additional sealing materials**. Always utilise a suitable, media compatible sealant **such as e.g. PTFE tape (EN 837-2)** for sealing.

2. Screw the pressure safety device as pressure-tight onto the pipe spigot and align it in such a way that the ball valve can be operated manually.



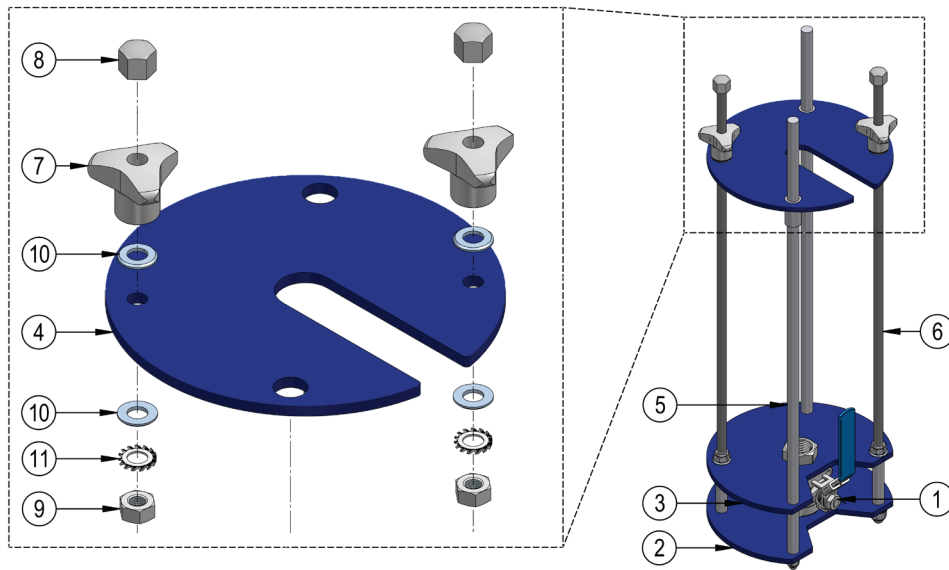
- Screw the device into the mounting thread manually.
  - Always ensure that the sealing surface of the part to be accommodated has a perfect, clean and undamaged surface.
  - The threads must not be canted when screwing in.
  - Only screw on the device using a suitable tool via the key surfaces of the ball valve **[1]**.
  - Subsequently tighten it with the open-end wrench with wrench jaw size SW27 **[15]**.
3. Close the ball valve **[1]** before assembling the mass flow meter.



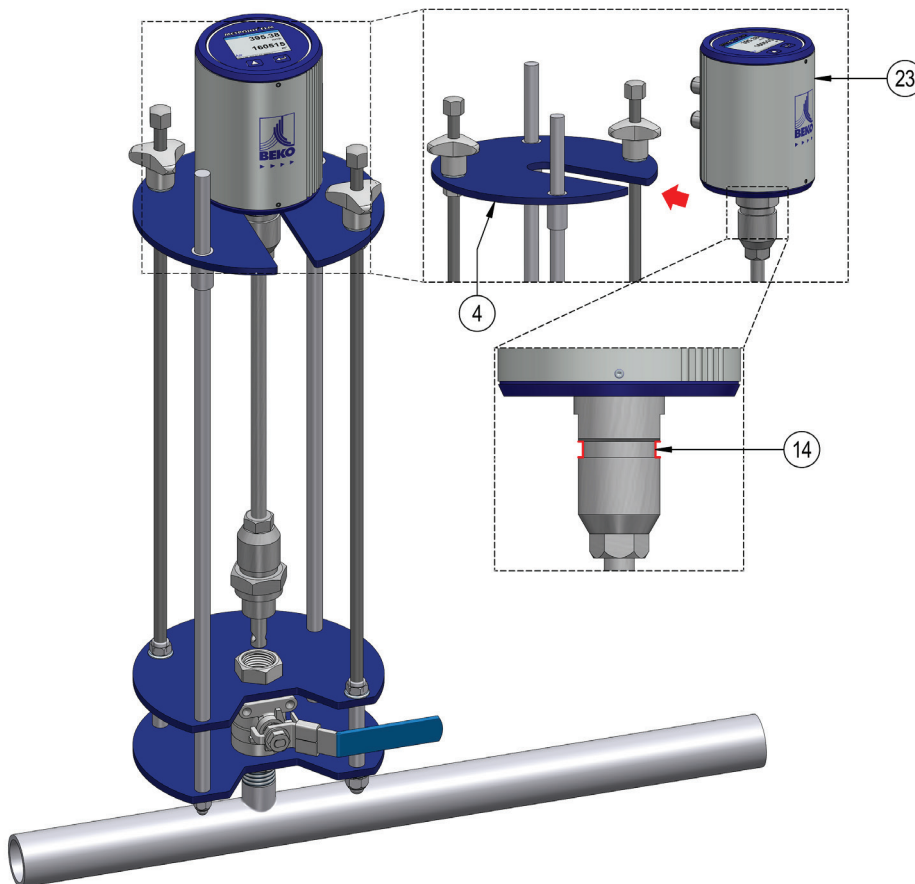


The following assembly work can be executed on the pressurised system:

- Loosen the fixing bolts [7] and [9] on the upper bracket [4] so far until the bracket can be moved freely.



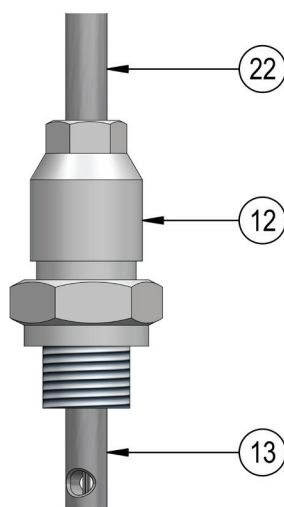
- Position the upper bracket [4] with the cut-out in the groove [14] below the sensor head of the METPOINT® FLM SF53 [23].



6. Connect the through-bolt fitting [12] of the mass flow meter FLM SF53 with the ball valve [1] as pressure-tight.

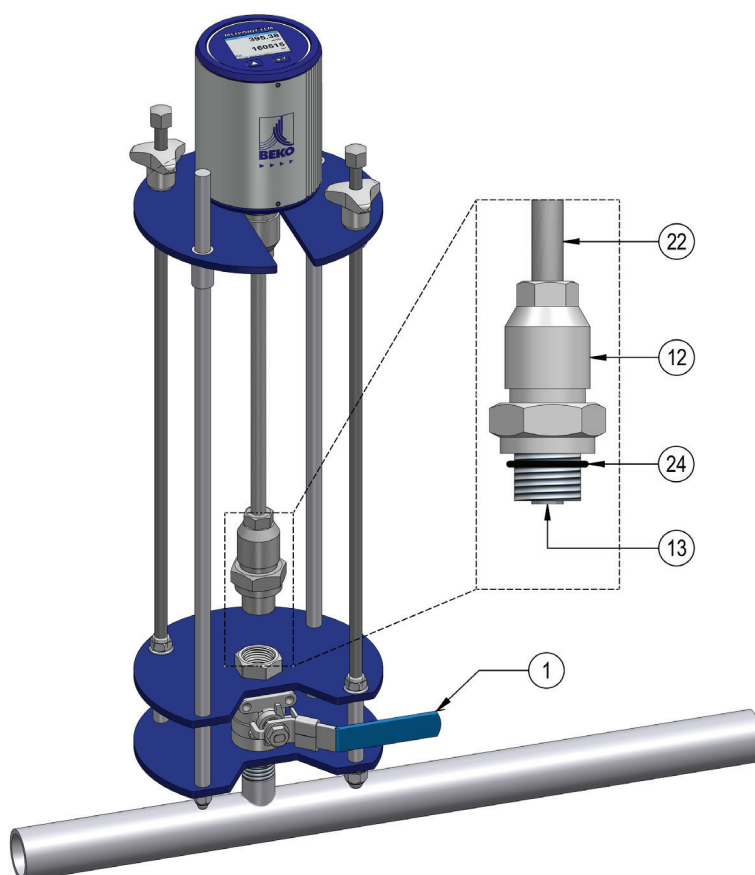
**ATTENTION!**

The sensor tip [13] must not touch the ball of the ball valve [1].

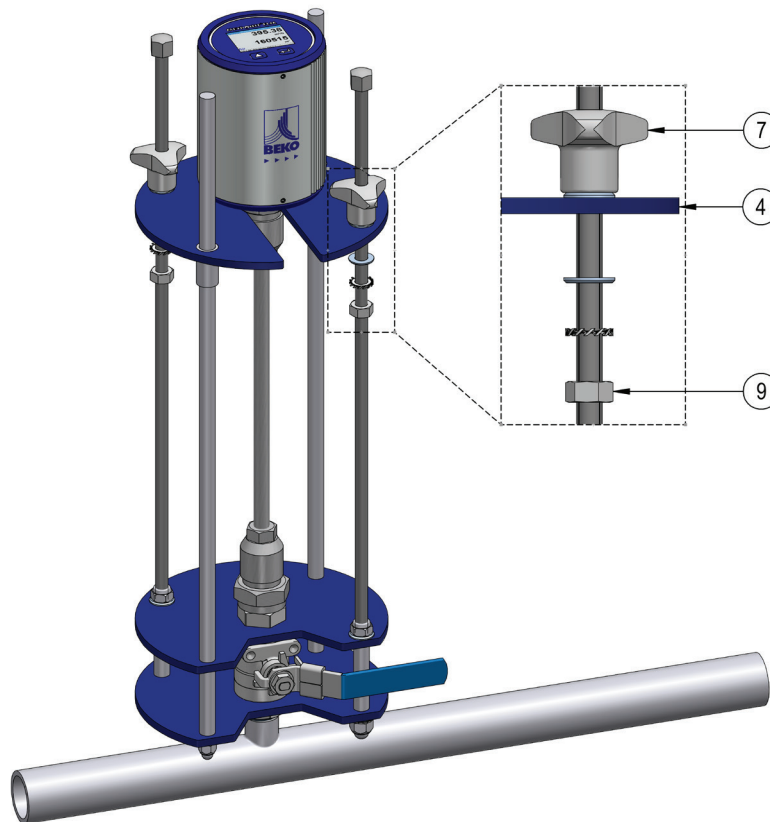


Before connecting with the ball valve, the sensor pipe [22] must be brought into the upper position in the through-bolt fitting [12].

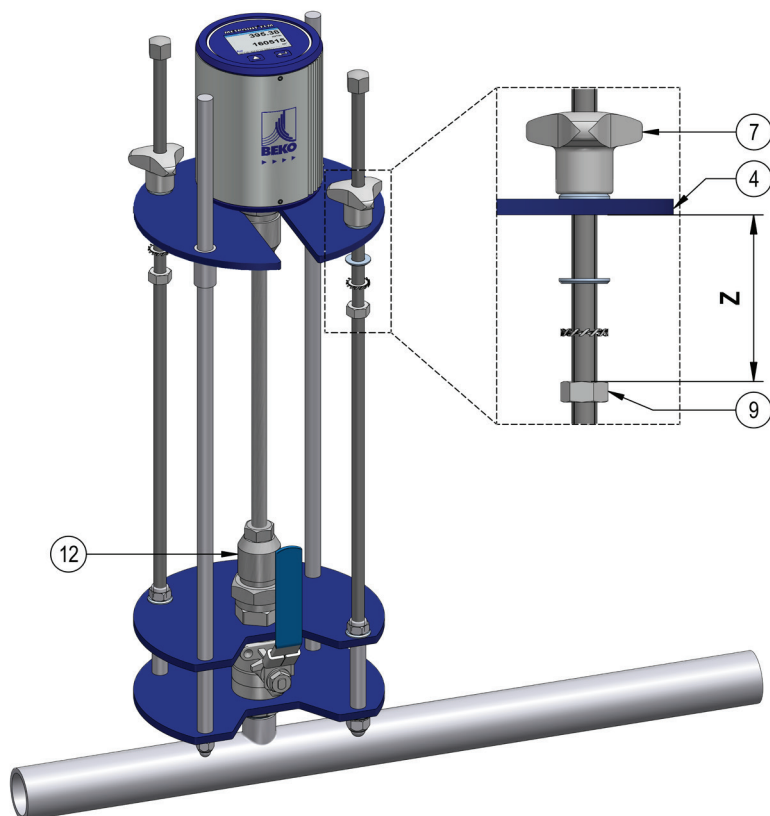
Always ensure that the O-ring [24] is correctly assembled.



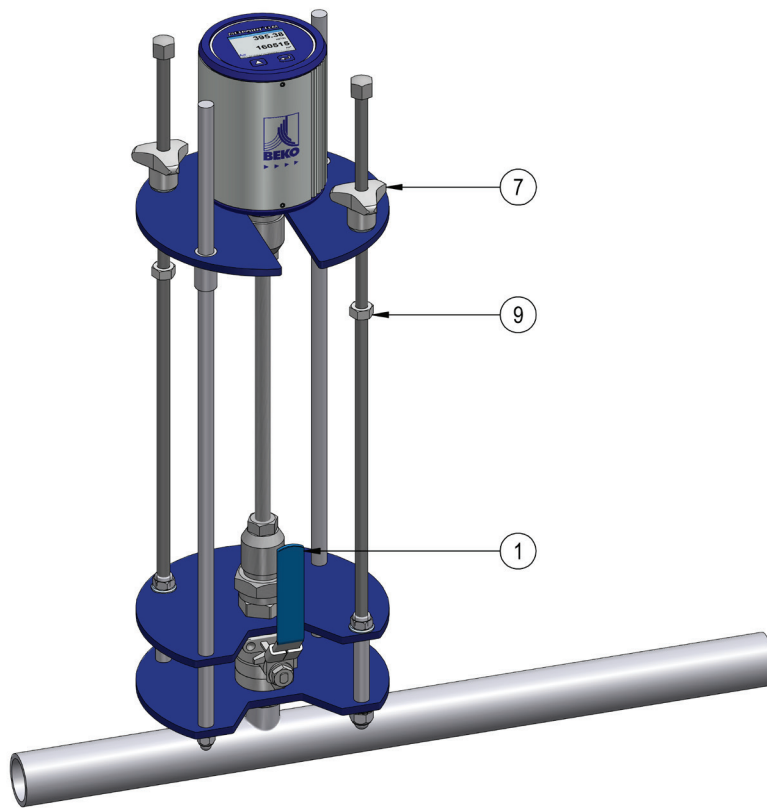
7. Adjust the positioning handles [7] in such a way that the upper bracket [4] is secured upwards.



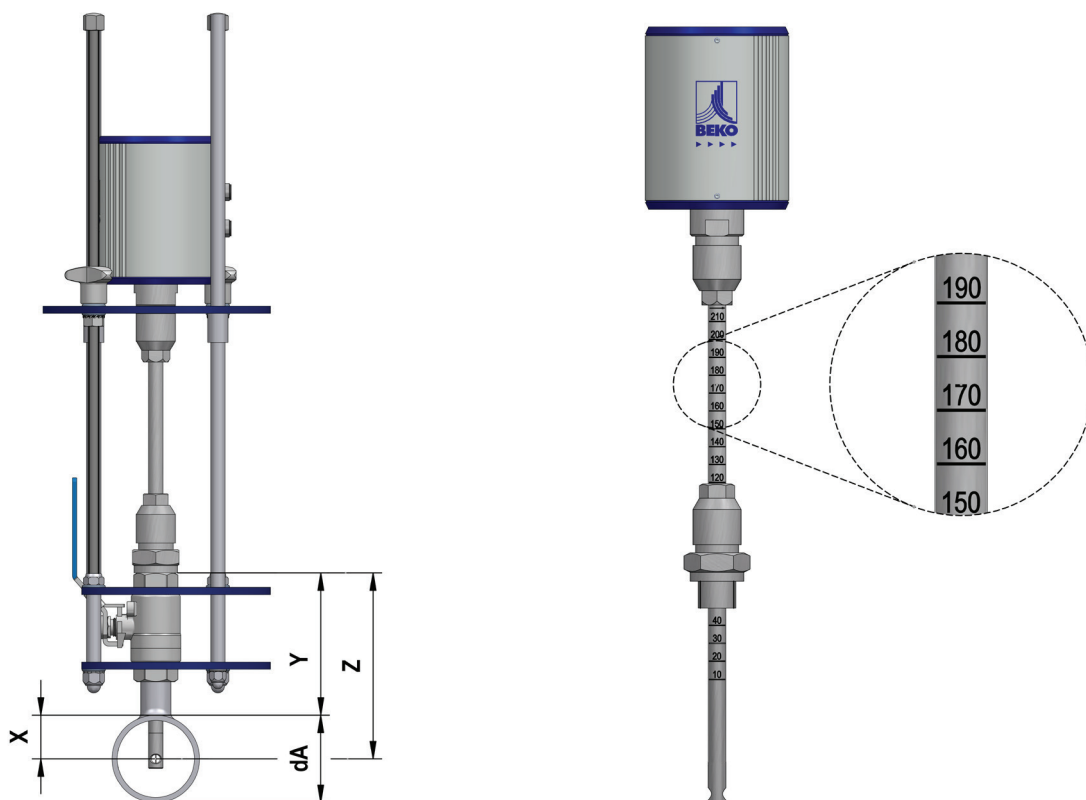
8. Turn the locking screws [9] downwards until the required distance  $Z = Y + dA/2$  is reached.



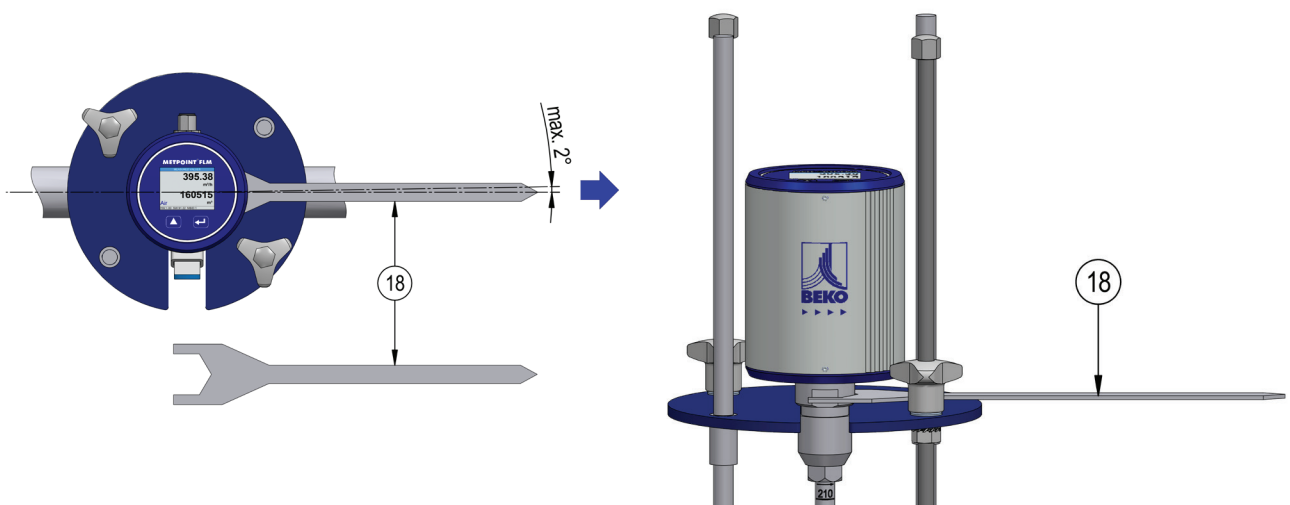
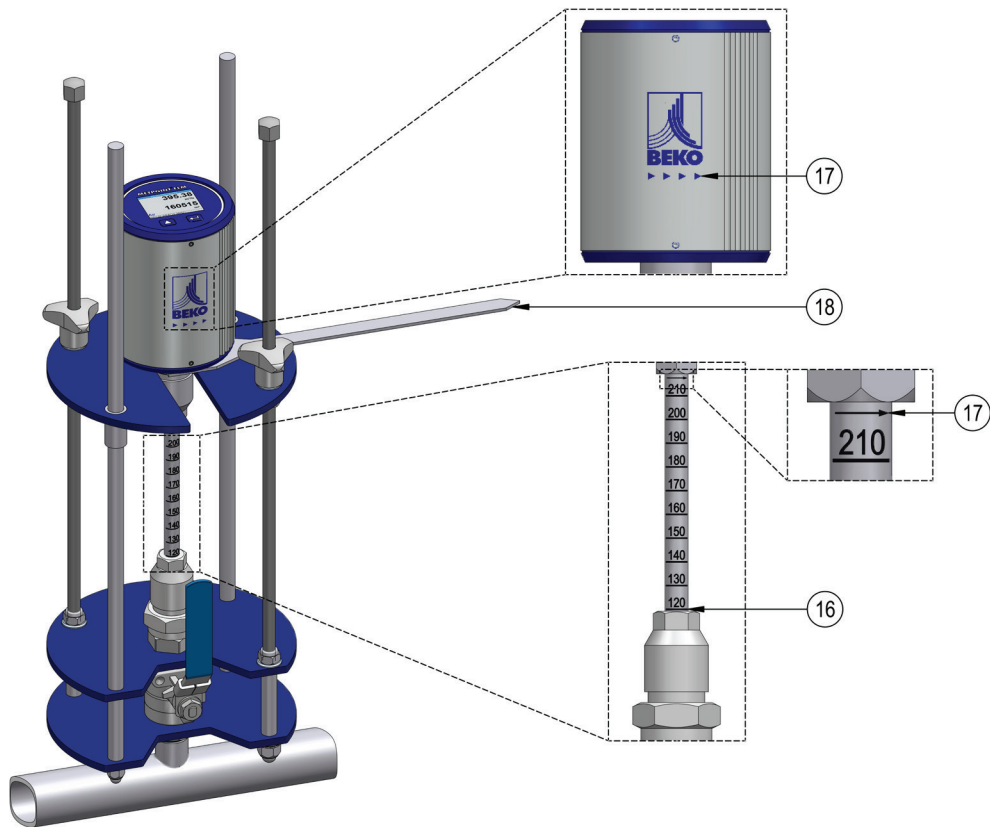
9. Slowly open the ball valve [1].



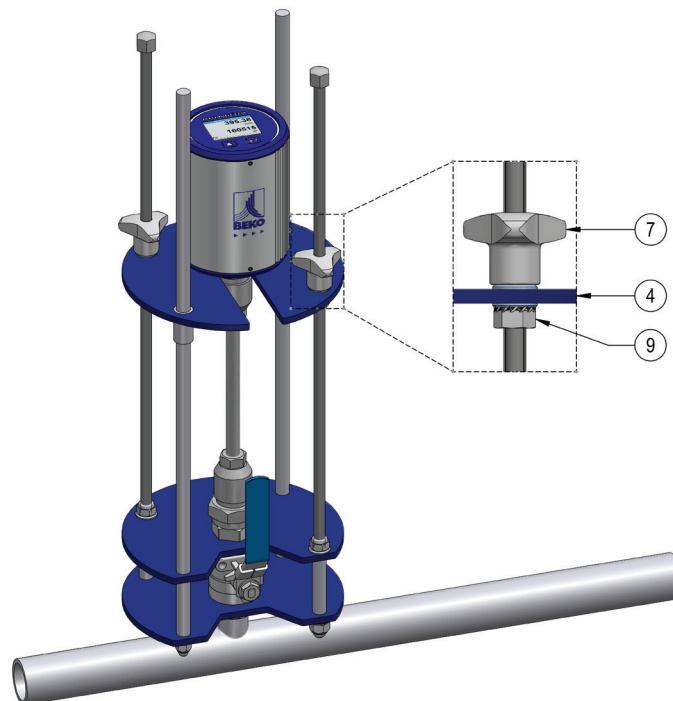
10. Utilise **equal actuation** for both positioning handles [7] in order to position the sensor in the middle of the pipe. The depth scale engraved on the sensor pipe will provide assistance here.



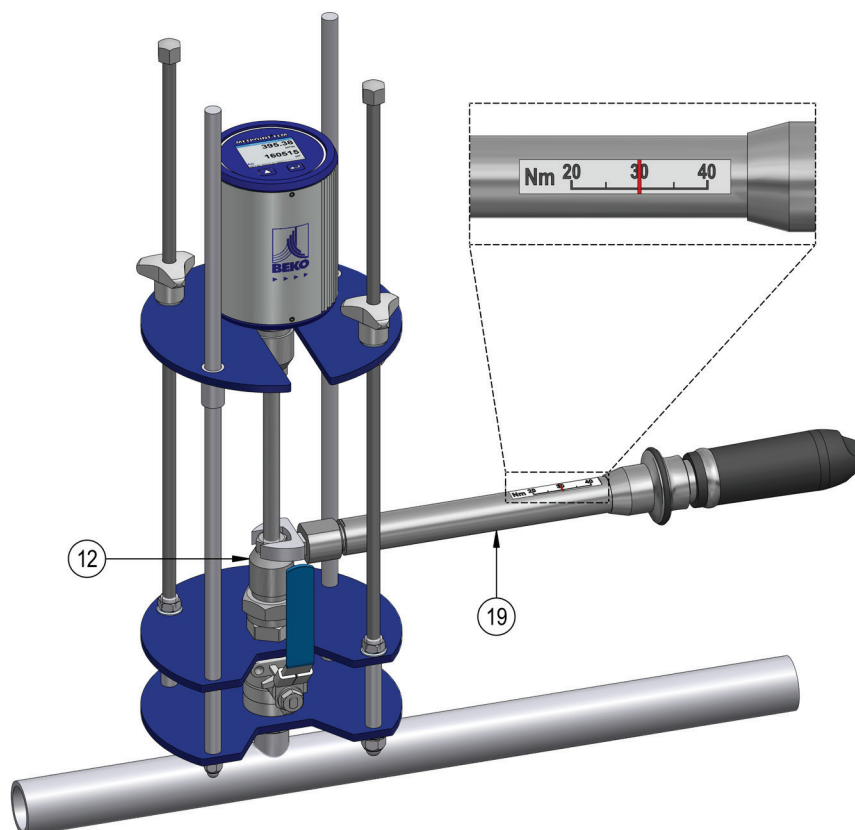
11. The sensor must then be aligned according to the flow direction. Assistance is provided by the engraved flow direction arrows [17] and the alignment aid [18].



12. After the operating position of the sensor has been reached, fix the upper bracket [4] with the locking bolts [9] and the positioning handles [7].



13. Tighten the **clamping sleeve** for the through-bolt fitting [12] of the mass flow meter with a torque of **30 Nm** . Only use a suitable torque wrench [19] with SW17 for this purpose.



14. Execute the airtight or leak test for the entire system.


## 6. Maintenance and servicing

### 6.1 Maintenance schedule

Maintenance	Interval
Cleaning works	At regular intervals, depending on the degree of contamination
Visual inspection	Weekly

### 6.2 Cleaning

#### 6.2.1 Warning

CAUTION	Inappropriate cleaning and use of the wrong cleaning media!
	<p>Inappropriate cleaning and the use of the wrong cleaning media may result in minor injuries as well as damage to health and property.</p> <ul style="list-style-type: none"> <li>Never clean the device with a wet cloth.</li> <li>Never use abrasive or aggressive cleaning agents or solvents which could damage the outer coating (e.g. labels, type plate, corrosion protection, etc.).</li> <li>Never clean the device with hard or pointed implements.</li> <li>For external cleaning, use a dust brush or damp cotton cloths that cannot become statically charged.</li> <li>Immediately replace operating material labels (pictograms, labels) that have become illegible.</li> </ul>

#### 6.2.2 Cleaning works

The cleaning of the METPOINT® pressure safety device will be executed with a fog-damp (but not wet) cotton cloth or disposable tissue as well as mild conventional detergent.

1. Spray a little detergent onto the clean cotton cloth or disposable tissue.
2. Wipe the component all over the surface.
3. Dry the device subsequently with a clean cloth or let it dry at room temperature.
4. Observe all hygiene instructions applicable on the site.

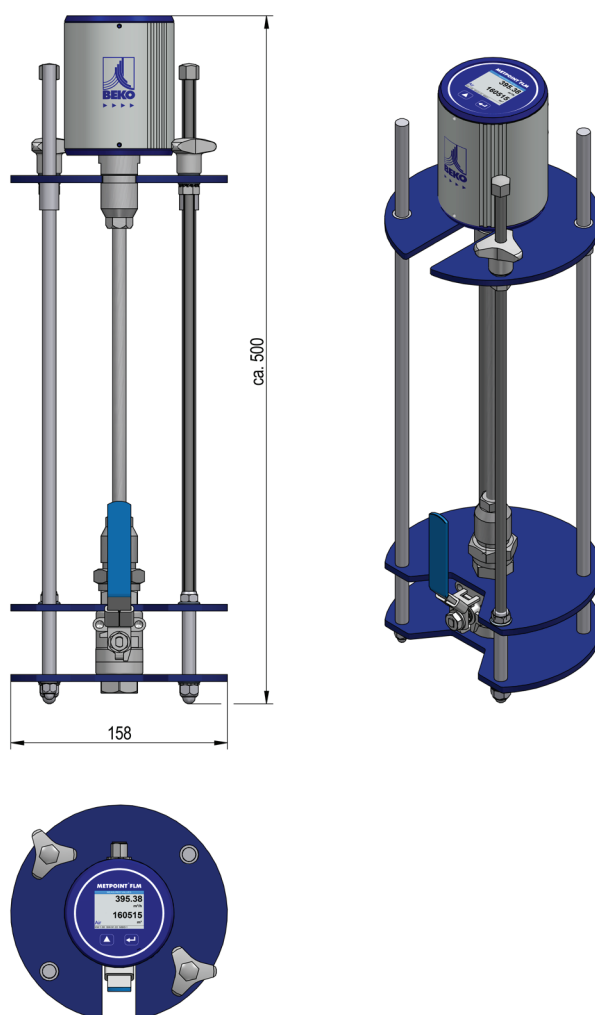
#### 6.4.1 Visual inspection

During the visual inspection of the METPOINT® pressure safety device, all components must be inspected for mechanical damage and corrosion.

## 7. Technical data

Operating and environmental parameters	
Medium	Compressed air, free of aggressive, corrosive, caustic, toxic, flammable or combustion supporting materials and substances. The use of a compressed air preparation adapted to the measurement task is necessary.
Applications	For installation, removal and secure fixing of the METPOINT® FLM SF53 thermal mass flow meter in compressed air pipework.
Minimum/Maximum Ambient temperature	+5 ... +45 °C, relative humidity ≤ 75 % without dew point
Minimum/Maximum Storage temperature	+10 ... +50 °C,
Min./Max. Compressed air temperature	+5 ... +80 °C,
Maximum operating pressure	50 bar (gauge)
Compressed air connection	G½" female thread according to ISO 228-1
Weight	Approx. 3.3 kg
Materials	Ball valve: 1.4408 stainless steel Guide rods: 1.4301 stainless steel Threaded locking rods: 1.4571 stainless steel Brackets: Carbon steel, S235JR, 1.0038, powder-coated

### 7.1 Dimensions






Details in mm



## 8. Dismantling

### 8.1 Warning

<b>DANGER</b>	<b>Use of incorrect accessories, materials or spare parts!</b>
	<p>The use of incorrect accessories, parts, materials or incorrect spare parts as well as auxiliary and operating materials, may result in death, serious injury as well as functional and operating malfunctions or material damage.</p> <ul style="list-style-type: none"> <li>• Only use original parts specified by the manufacturer and in perfect operating condition for all dismantling work.</li> <li>• Only use tools which approved and suitable for the respective application as well as materials which are in perfect condition.</li> </ul>
<b>DANGER</b>	<b>Compressed air</b>
	<p>Contact with quickly or suddenly escaping compressed air or bursting plant components may result in serious injury or death.</p> <ul style="list-style-type: none"> <li>• Always execute all assembly work only when the system is depressurised.</li> <li>• Always utilise pressure-resistant installation materials.</li> </ul>
<b>WARNING</b>	<b>Insufficient qualification!</b>
	<p>Insufficient qualification of the personnel can lead to accidents, personal injury and damage to the device as well as impairments during work on the operating material.</p> <p>The work on the product described below may only be executed and documented by qualified personnel for compressed gas technology<sup>1</sup>.</p>

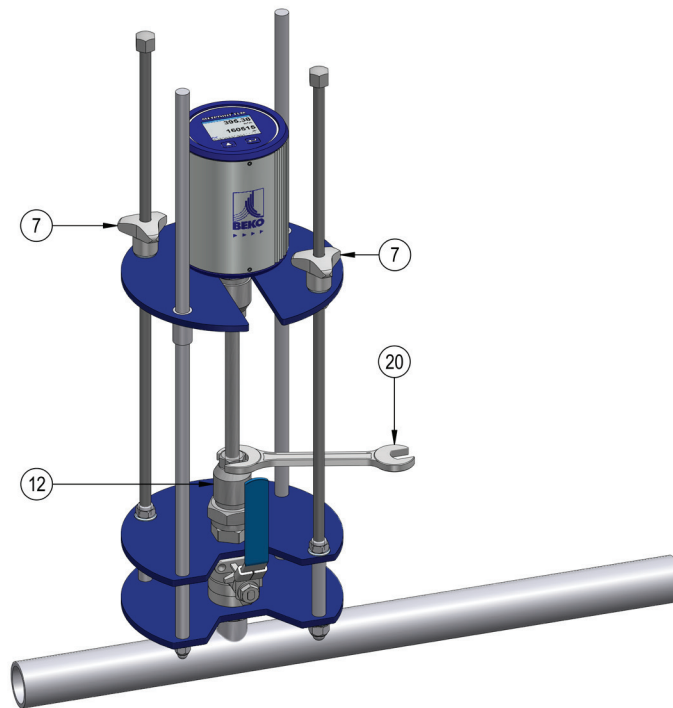
#### Qualified personnel - compressed gas technology

<sup>1</sup>Qualified personnel for compressed gas technology are people who, due to their training, professional experience and qualification, possess all the necessary capabilities to safely execute actions, and instruct all actions related to compressed gases and pressurised systems, to independently foresee potential hazardous situations and implement appropriate measures to prevent any danger.

The capabilities include, in particular, experience in handling measurement and control technology as well as knowledge of the regionally applicable laws, standards and regulations for compressed gas technology.

## 8.2 Dismantling work

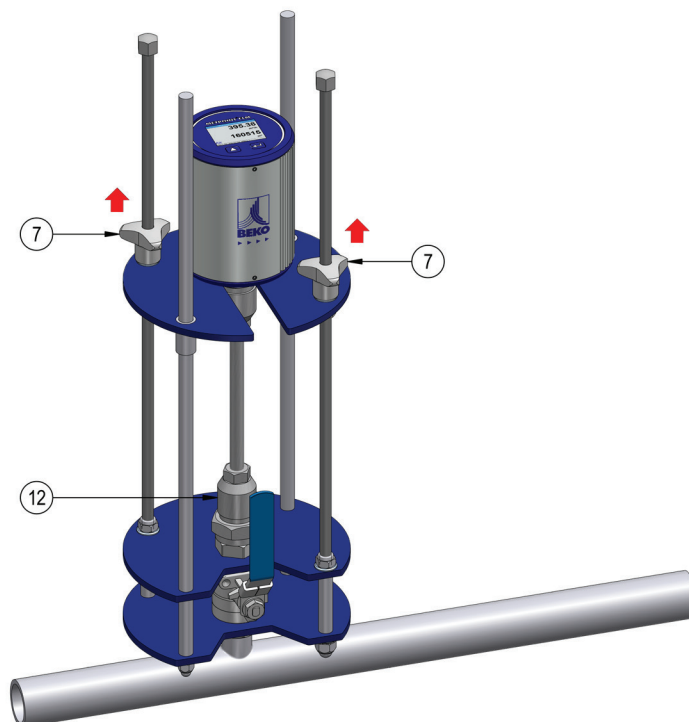
1. Slightly loosen the clamping sleeve of the through-bolt fitting [12] with a fork wrench with wrench jaw size SW17 [20]. Always ensure that the fixing bolts [7] are still tightened.



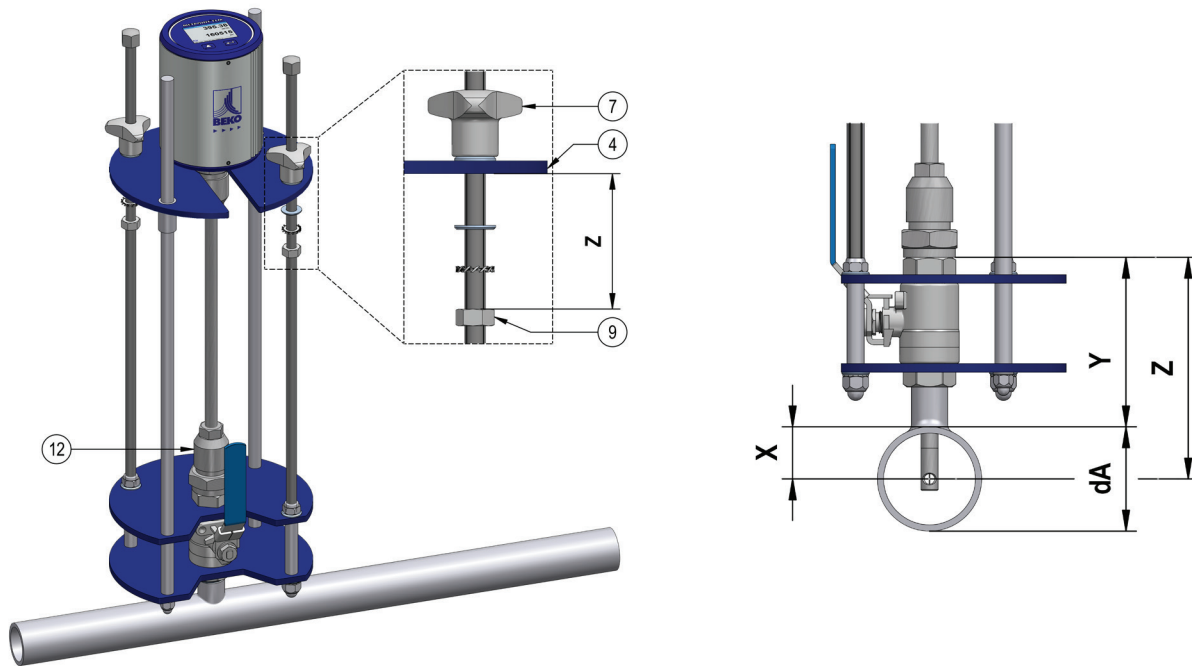
**Remove the connection cable from the sensor head before dismantling.**

2. Loosen both fixing bolts [7] simultaneously and rotate them evenly upwards. The operating pressure slowly pushes the sensor rod upwards until the sensor tip [13] reaches the end-stop in the through-bolt fitting [12].

If the sensor pipe does not move upwards, despite the loosened fastening bolts [7], then the clamping sleeve of the through-bolt fitting [12] must be carefully loosened a bit further.



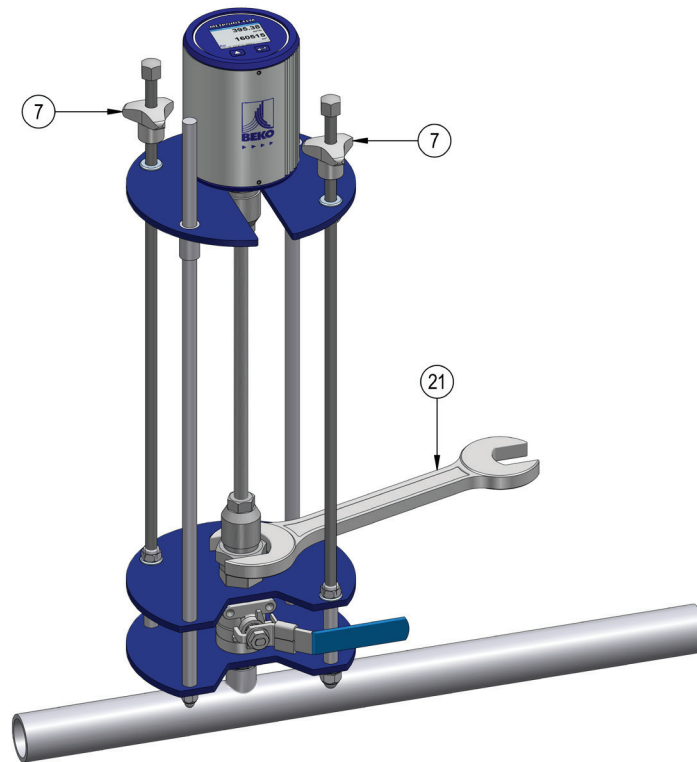
- The sensor tip **[13]** reaches the end-stop in the through-bolt fitting **[12]** when the fastening bolts **[7]** have been turned upwards by the required distance  $Z$ .  $Z = Y + dA/2$



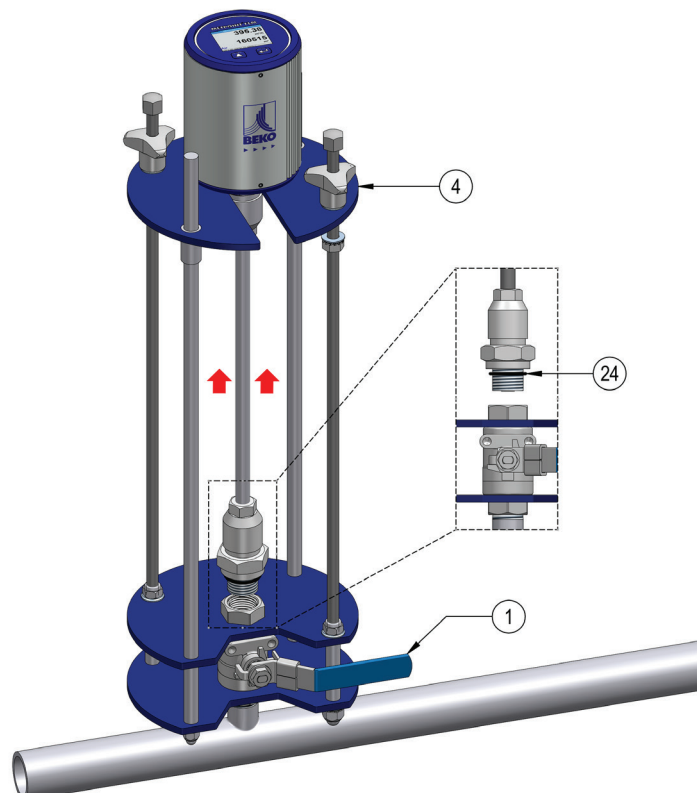
- Only when it can be ensured that the sensor tip has reached the upper end-stop can the ball valve **[1]** be closed carefully. When the ball valve cannot still be closed, then the sensor tip **[13]** has not reached the end-stop yet.

The sensor tip has safely reached the upper end-stop when the fastening bolts **[7]** have been rotated upwards by the distance  $Z + 20 \text{ mm}$ .

- Turn both fixing bolts **[7]** upwards by another 20 mm and carefully loosen the through-bolt fitting **[12]** from the ball valve **[1]** by utilising a 32 mm open-end wrench **[21]**.




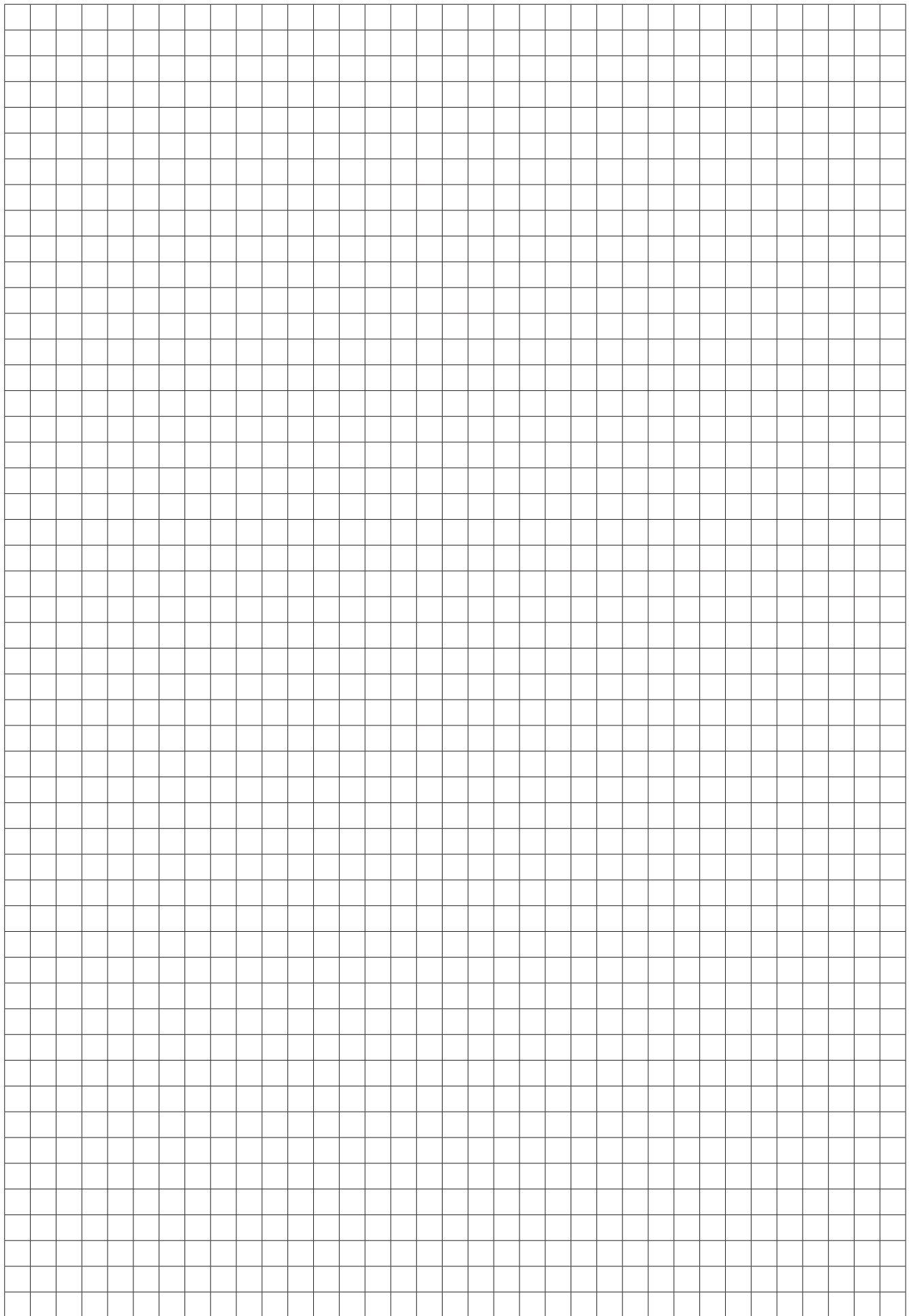
- Further unscrew the loosened mass flow meter METPOINT® FLM SF53 and thereby carefully guide it upwards together with the upper bracket **[4]** until the FLM SF53 is completely screwed out of the ball valve **[1]** and can be removed to the front from the cut-out of the upper bracket **[4]**.

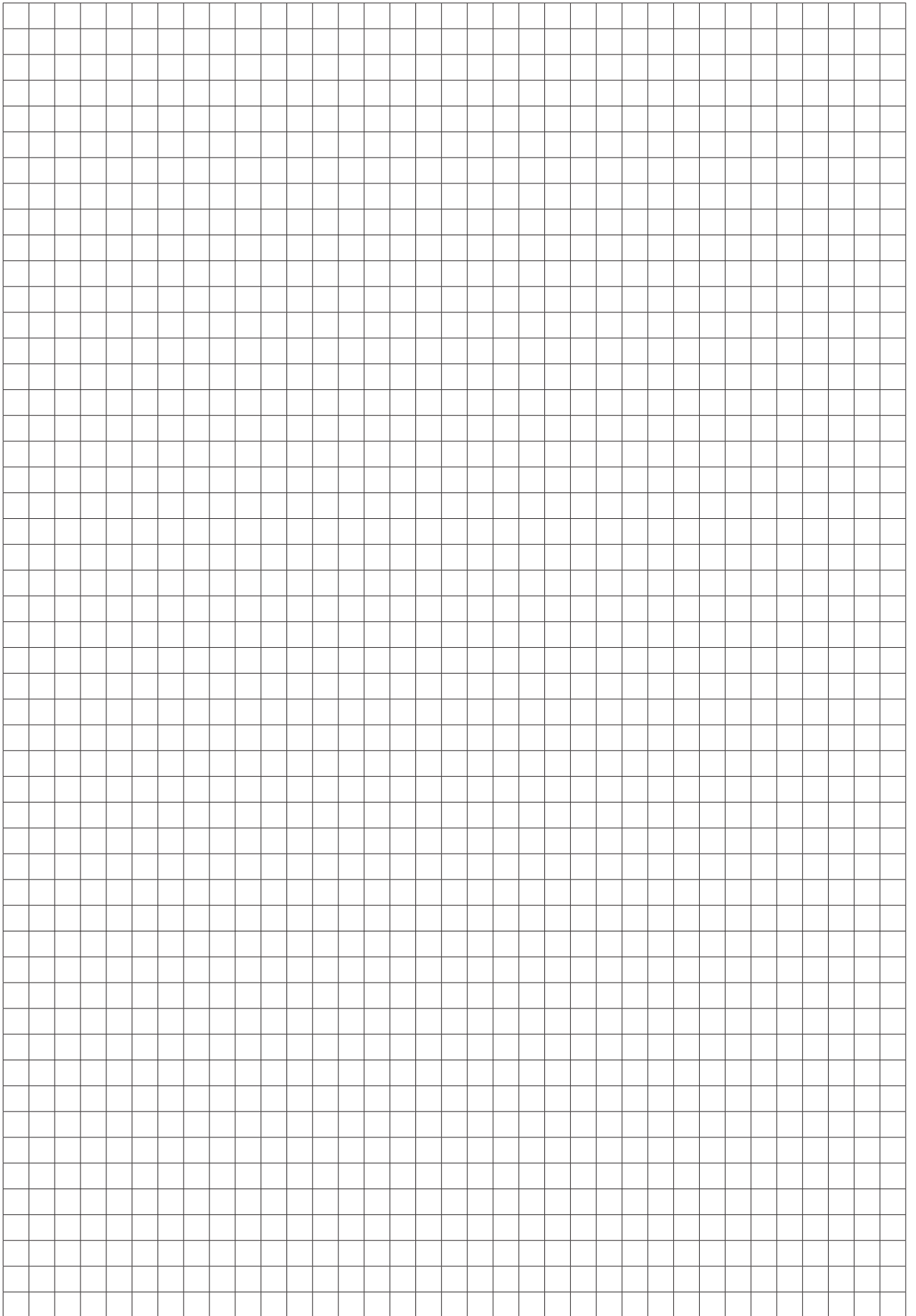


## 9. Disposal

To dispose of the product, dismantle it. Materials such as glass, plastics and some chemical compounds are mostly recoverable, reusable, or recyclable.

NOTE	<b>Inappropriate disposal!</b>
	<p>Inappropriate disposal of parts and components, operating and auxiliary materials as well as cleaning media can cause environmental damage.</p> <ul style="list-style-type: none"> <li>• Dispose of all parts and components, operating and auxiliary materials as well as cleaning media professionally and in accordance with regional legal provisions, regulations and requirements.</li> <li>• In case of uncertainties regarding disposal, always consult a regional waste management company.</li> </ul>





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