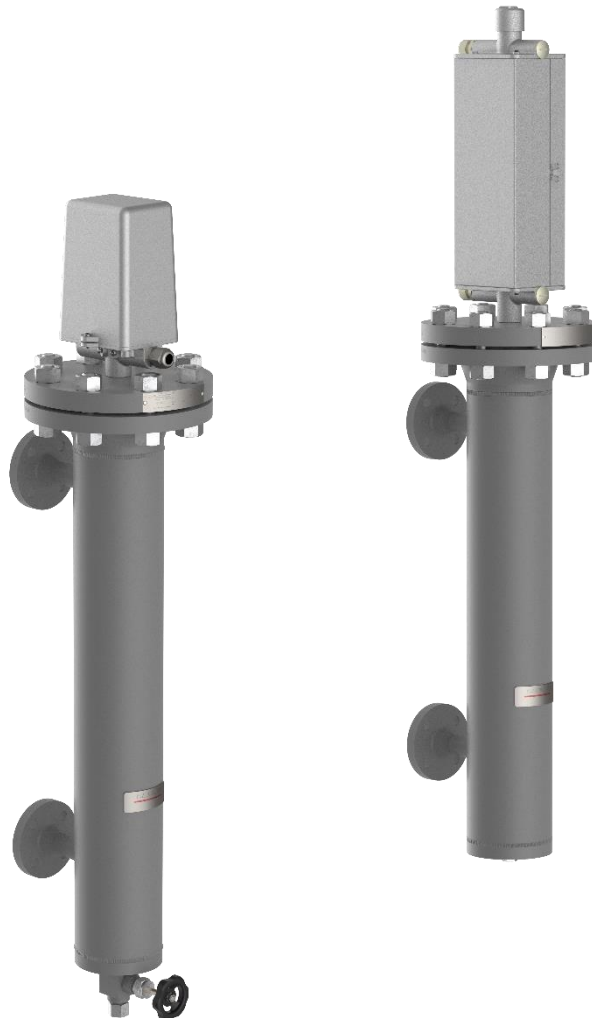




## Level limiter and controller

RBA24, RBA34



Version 03/2025

D-07-B-50203-EN-02

## Installation and operating instructions

(English translation)

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# 1 About this document

## 1.1 Introduction

The Installation and operating instructions are part of the Level limiter and controller RBA24 and RBA34. It must be made available to the responsible departments "Incoming goods, transport, assembly, commissioning and maintenance". The Installation and operating instructions must be stored in such a way that the qualified person always has access to them. If the gauge is passed on to a third party, these Installation and operating instructions must also be included in the national language of the third party.

### NOTICE

Safe and trouble-free operation of the Igema GmbH Level limiter and controller is not possible without precise knowledge of the individual components.



- Installation and operating instructions Note installation and operating instructions.
- Familiarise yourself with all relevant documents.

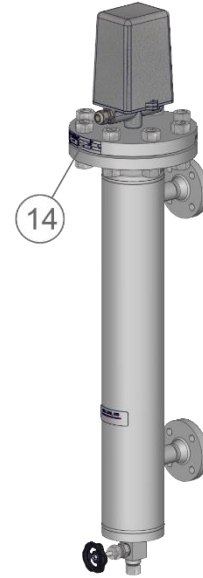
The Installation and operating instructions contains important information for the proper use and safe operation of the Level limiter and controller. Please also note important information on the repair, maintenance, care, safety and value retention of your measurement and control system.

If the Installation and operating instructions or the accompanying documents are partially not available or have become unusable, a new copy of the document for the gauge can be obtained by specifying the document number on the cover page. It is also possible to download the operating instructions after scanning the QR code shown on the back.

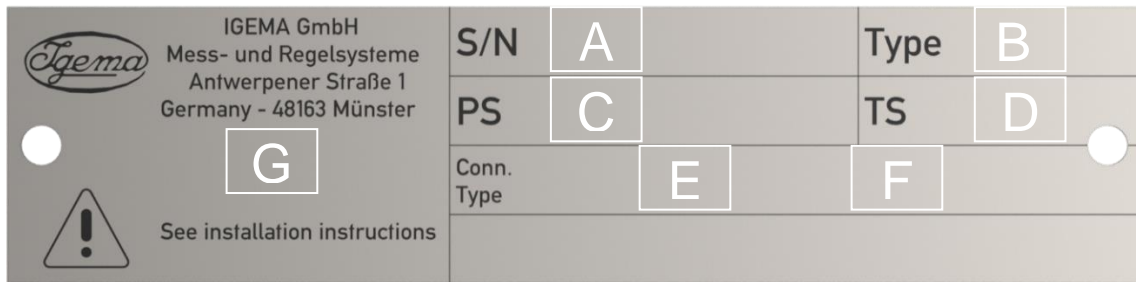
1.2 Product identification and rating plate

On the basis of the rating plate, the Installation and operating instructions can be assigned to the corresponding Level limiter and controller. The Installation and operating instructions belongs to the Level limiter and controller of the device type **RBA24** and **RBA34**.

Additions that are entered after the description and describe the design of the Level limiter and controller do not release these Installation and operating instructions from belonging to the Level limiter and controller.






According to DIN EN19 the following are marked on the rating plate:



A	Year of manufacture and order number	E	Pressure level
B	Type designation	F	Nominal width
C	maximum permissible pressure	G	CE mark (depending on version)
D	maximum permissible temperature		


### 1.3 Related documents







In addition to this Installation and operating instructions, the operating instructions for the blow-through and drain valves and the data sheet for the globe valves must be observed.

Product	Document number/ Link	QR-Code
Blow-through valves WA4, WA5 & WA6	63373 <a href="http://www.igema.com/document/63373">www.igema.com/document/63373</a>	
Globe valves WA3, WA10	50546 <a href="http://www.igema.com/document/50546">www.igema.com/document/50546</a>	
Drain valves	62825 <a href="http://www.igema.com/document/62825">www.igema.com/document/62825</a>	

## 1.4 Marking of safety precautions

In the following Installation and operating instructions, safety instructions are marked with the following symbols:

 <b>SIGNAL WORD</b>	
<b>Nature and source of danger</b>	<b>SYMBOL(S)</b>
Consequences of non-compliance	
<ul style="list-style-type: none"> <li>Measures/ prohibitions to avoid the danger</li> </ul>	

	This symbol with the signal word <b>DANGER</b> and a background warning colour indicates a danger that will result in death or serious injury if not avoided.
	This symbol with the signal word <b>WARNING</b> and a background warning colour indicates a danger that can lead to death or serious injury if not avoided.
	This symbol with the signal word <b>CAUTION</b> and a background warning colour indicates a danger that can lead to injuries if not avoided.
	This symbol with the signal word <b>NOTICE</b> and a background colour indicates a danger that can lead to property damage if not avoided.
	This symbol with the signal word <b>ENVIRONMENT</b> and a background colour indicates a danger that can lead to environmental pollution if not avoided.
	This symbol with the signal word <b>TIP</b> and a background colour indicates a user tip that provides additional and useful tips.

## 1.5 Copyright

This Installation and operating instructions contains texts and drawings that may not be reproduced, distributed or otherwise communicated in whole or in part without the express permission of the manufacturer.

The copyright of the operating instructions remains with:

**Igema GmbH**  
**Antwerpener Str. 1**  
**48163 Muenster**  
**Germany**

Violations oblige you to pay compensation.

## 2 Safety Instructions

### 2.1 Requirements for personnel

#### NOTICE

##### **Property damage caused by incorrect installation, commissioning, maintenance and operation**



Only qualified persons who are familiar with the measurement and control systems are allowed to carry out work.

Only trained electricians may install and connect electrical equipment.

**Igema GmbH can be commissioned for the installation and maintenance.**

#### CAUTION

##### **Risk of injury due to external influences**



External influences can lead to injuries in the absence of protective equipment

- Put on personal protective equipment according to category II

### 2.2 Safety at work

#### DANGER

##### **Explosion hazard due to ignition sources**



Working in potentially explosive atmospheres during assembly, commissioning, maintenance and disassembly can lead to explosions.

- Ventilate the environment
- Switch off the system
- Allow explosive gases to escape.
- Carry out a gas value measurement before starting work.



## WARNING

### Risk of injury due to leaking medium



Inflammatory, irritating and harmful substances can escape from the gauge and lead to skin injuries and burns. This danger is also to be expected in the case of an unpressurised cooled system.

- Wear protective clothing including safety glasses.
- Check the danger posed by the medium and, if necessary, wear respiratory protection or support.
- Observe the order of work.
- Perform work only when the gauge is depressurised and emptied.
- In principle, do not consider any system to be depressurised.

### Risk of injury due to high temperatures



Surfaces of the gauges and areas near the gauges heat up to the maximum permissible temperature and can cause severe burns if touched.

- Check the danger of the medium.
- Wear protective clothing including safety glasses.
- Before carrying out maintenance and dismantling work, wait until the system is adjusted to the atmospheric conditions.

### Danger of suffocation due to dangerous gases



Escaping gases can lead to suffocation.

- Check the danger of the medium.
- Wear protective clothing including safety glasses and respiratory protection.
- Before carrying out maintenance and dismantling work, wait until the system is adjusted to the atmospheric conditions.

### Risk of injury due to corrosive liquids



Corrosive liquids can cause serious injuries in case of skin contact

- Check the danger of the medium.
- Wear protective clothing including safety glasses.



## CAUTION

### Risk of injury due to unsecured working area

An unsecured working area can endanger working and bystanders.

- Ensure safe access.
- Delimit and mark the secured working area.
- Sufficiently illuminate the working area.

### Risk of injury due to heavy loads

There is a risk of injury when handling large and/or heavy gauges.

- Observe the load handling regulation.
- Use lifting equipment to move heavy and bulky appliances.

### Danger of health damage due to noise



Noise leads to damage to the health of the hearing.

- Wear hearing protection.
- Avoid or limit noise if possible.

## 2.3 Intended use



## NOTICE

### Property damage caused by irregular use

- Only use the float switches as water level limiter (*BA14, RBA24, RBA24*) or two-point water level controller (*RBA24/ RBA34*) on tanks.
- Maintain maximum pressure and temperature ranges of all components.
- Ensure the suitability of the float switch for the planned use/application.
- Ensure the compatibility of the float switch and the medium.
- Observe the correct orientation and flow direction.

## 2.4 Damage to the product

### NOTICE

#### **Property damage caused by incorrect storage and transport**

Incorrect transport and storage can cause damage to the float switch.

- Avoid bumps and hard setdown.
- Store the float switch protected from environmental influences and in a dry place.
- Secure the float switch against damage.

#### **Material damage due to magnetic effects**

Magnetic influences can change the magnetisation of the permanent magnets used.

- Exclude magnetic fields in the area of the permanent magnets.

## 3 Contents of the packaging

### 3.1 Included

1 RBA24 / RBA34\*

1 Installation and operating instructions

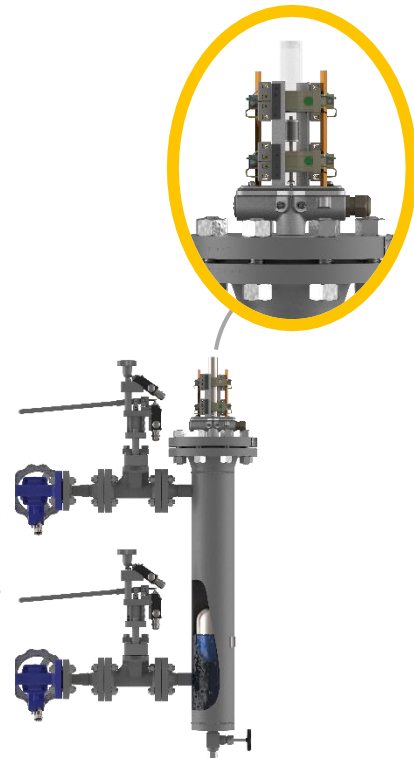
*\* The Level limiter and controller will be delivered as a pre-assembled unit, unless otherwise contractually agreed*

## 4 System Description

### 4.1 Function

The RBA24 and RBA34 float switch is a level limiter with a safety function that can be used both as a multipoint level controller and as a limiter for steam generators. Thanks to its robust design and precise operation, it fulfils important tasks in the secure control and monitoring of the fill level in steam boilers.

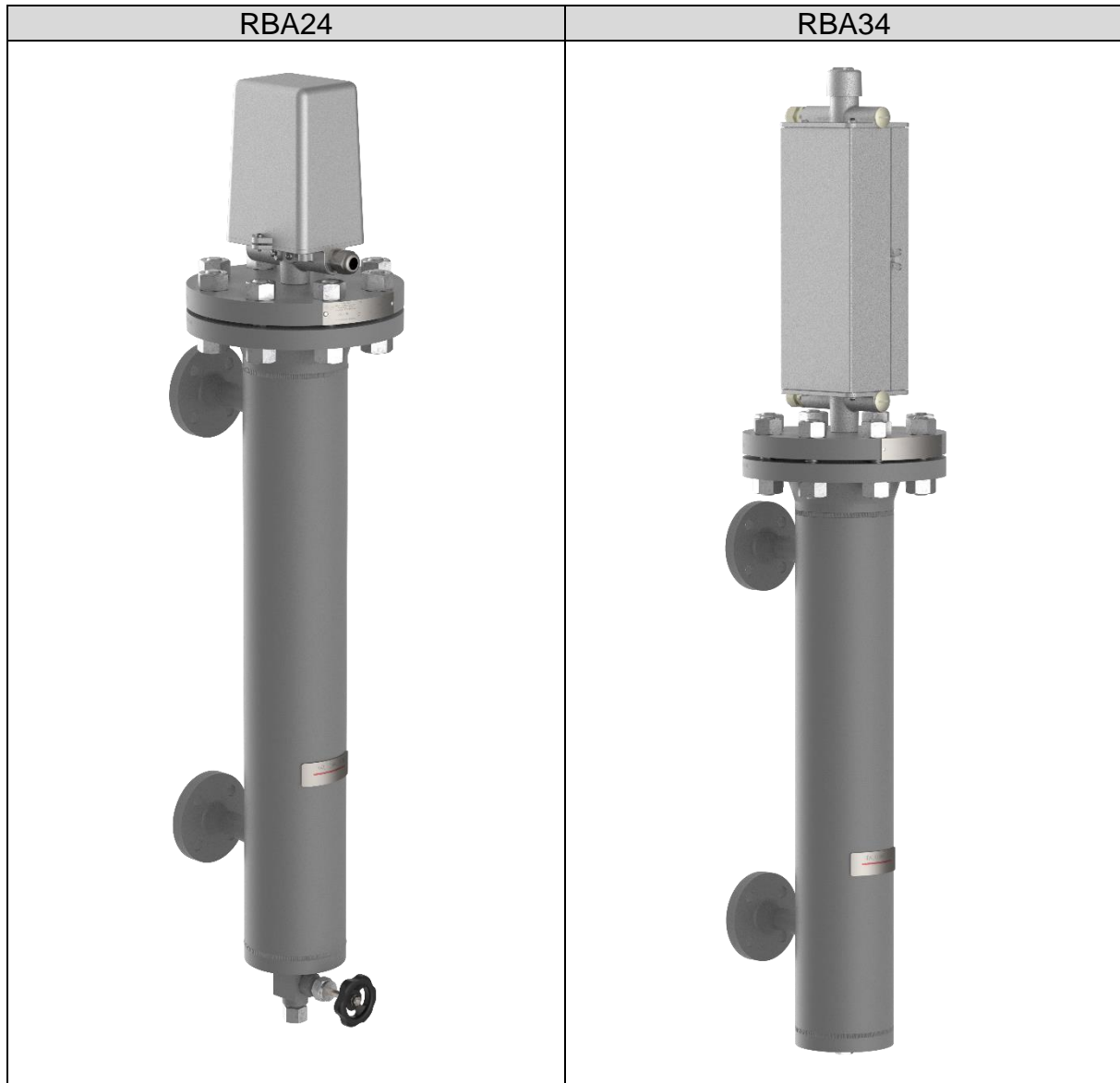
The operating principle is based on the communicating tubes: The float in the add-on housing follows the liquid level and is being connected to a transmitter magnet via a float rod. This magnet controls the magnetic lock switches in the switch housing without contact. As soon as the level reaches a certain position, the magnet activates the corresponding switches, enabling precise and reliable control. This contactless switching technology ensures high reliability and a long service life, as mechanical wear is avoided.



### 4.2 Type examinations

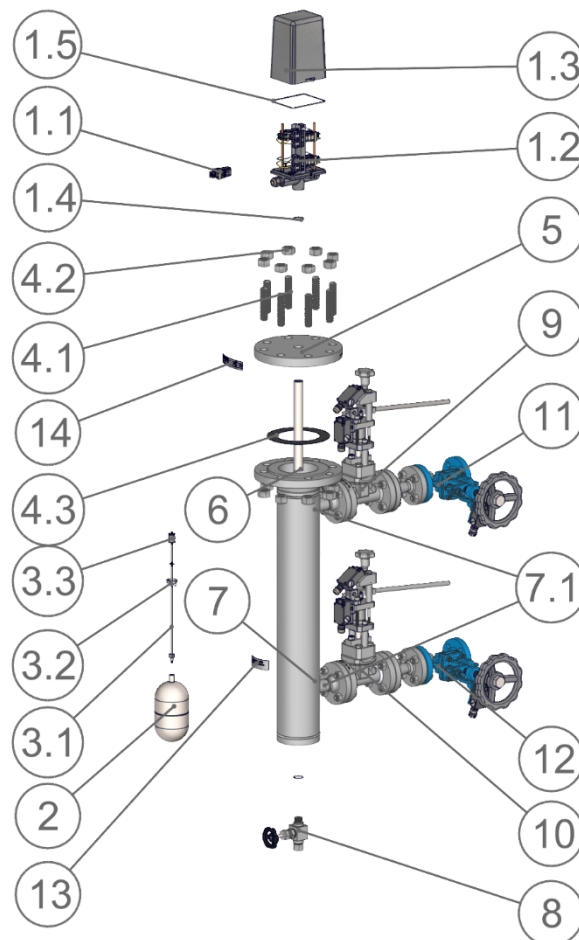
Type	EC type-examination Registration number
RBA24, RBA34	Z-D-003-17979/24

### 4.3 Different variants



## 5 Construction

### 5.1 Construction



The structure is described using an RBA24.

1.1	Magnetic locking switch M130-KG	5	Upper part
1.2	Lower part of switch housing	6	Transducer tube
1.3	Switch housing cover	7	Mounting housing
1.4	Sealing ring	7.1	Connection pipe
2	Float	8	Drain valve
3.1	Float rod	9	Upper blow-through valve
3.2	Encoder tube cap with retaining spring	10	Lower blow-through valve
3.3	Transducer magnet	11	Upper flow valve
4.1	Threaded bolt	12	Bottom flow valve
4.2	Hexagon nut	13	Level mark
4.3	Grooved metal gasket	14	Rating plate ( <i>chap. 1.2</i> )

### 5.2 Basic equipment

The float switch is supplied with a G 1/2" drain plug and a switch housing in accordance with protection class DIN VDE 0470: IP54 with built-in magnetic lock switch M130-KG. Customer specific equipment is possible.

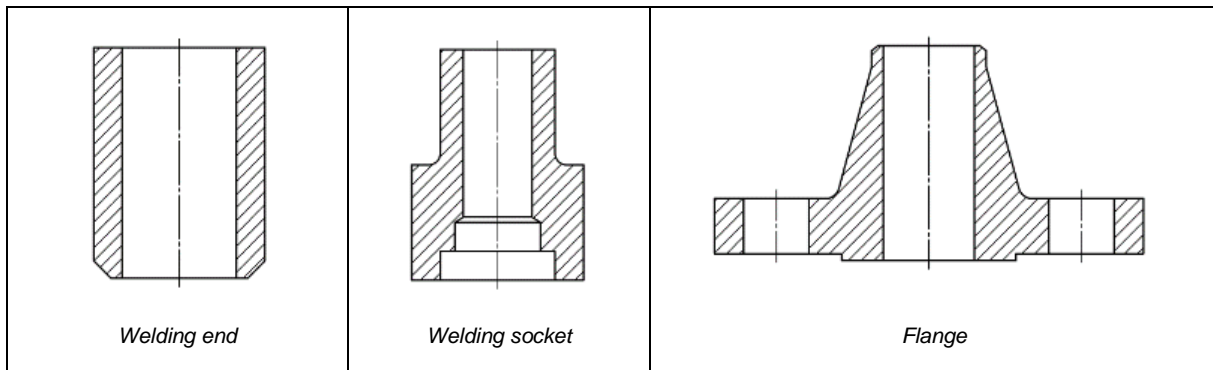


Screw plug G 1/2"



Magnetic locking switch M130-KG

### 5.3 Optional connection variants



All connection variants are available according to DIN or ASME standard

### 5.4 Optional versions

Examples of optional version		
Customer specific drain valve		Higher degrees of protection for the switch housing
<p>Example: AV520</p>	<p>Example: AV250</p>	<p>Example: Protection class according to DIN VDE 0470: IP65</p>

## 6 Technical data

### 6.1 Operating limit

Operating limit RBA24, RBA34	perm. Pressure [PS]	perm. Temperature [TS]
PN40	32 bar 464 psig	239 °C 462 °F
PN100	80 bar 1160 psig	296 °C 565 °F

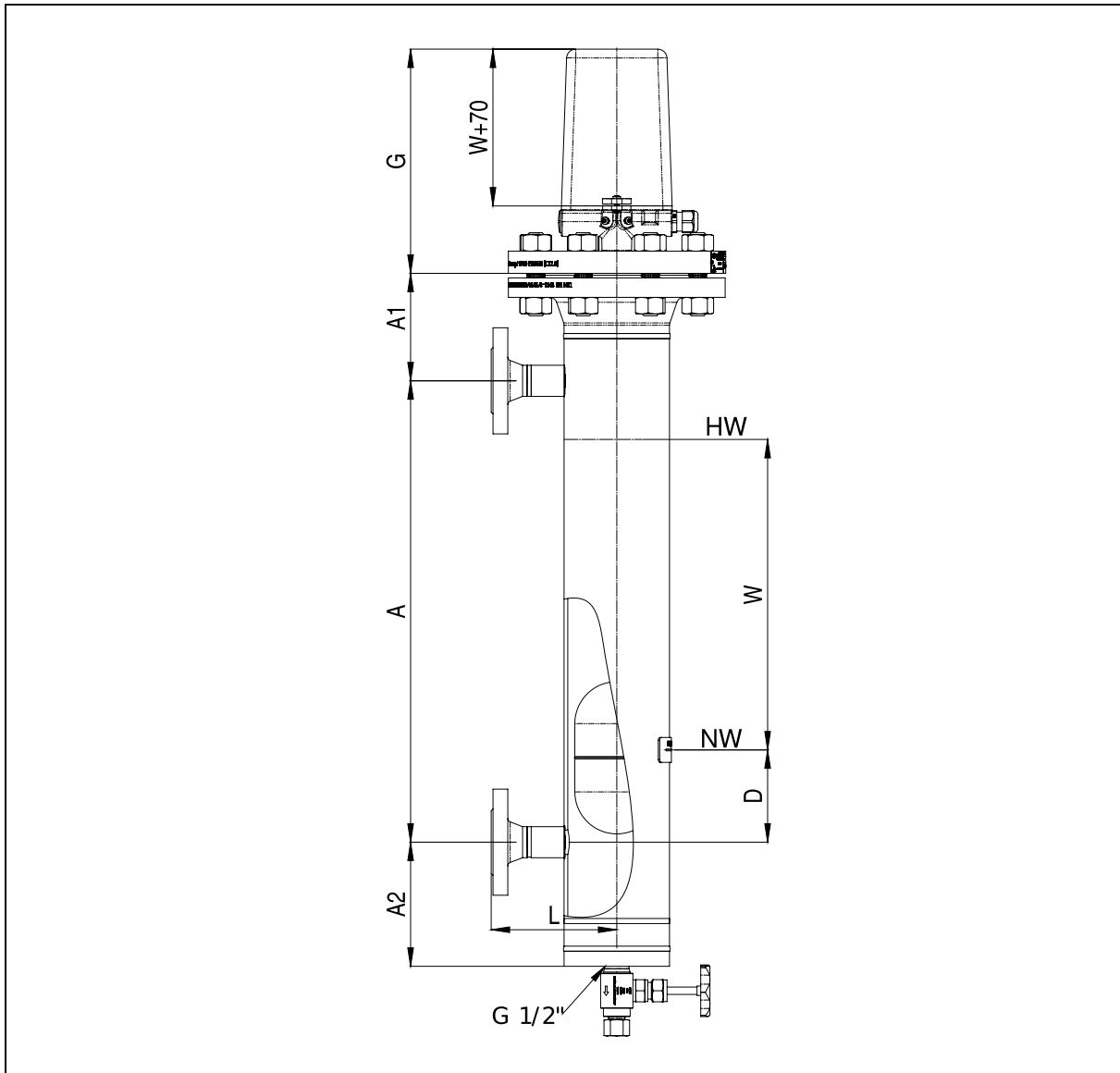
The maximum permissible operating pressure of the Level limiter and controller is determined by the lowest permissible pressure of the attached component.

### 6.2 Magnetic locking switch M130-KG

Article-No.	15-01122			
Switching behaviour	bi-stable			
Switching function	1 NO contact / 1 NC contact			
Switching accuracy	± 3mm			
Connection strand	1 x 0.5 mm <sup>2</sup> (16 x ø 0.2) - Cu tin-plated / PTFE			
Strand length L	200 mm			
Permissible ambient temperature	-70°C to +260°C			
Switching voltage U	24 ≤ VAC ≤ 250		≤ 24 VDC	
Switching current I	min.	max.	min.	max.
	8 mA	2 A	8 mA	1 A

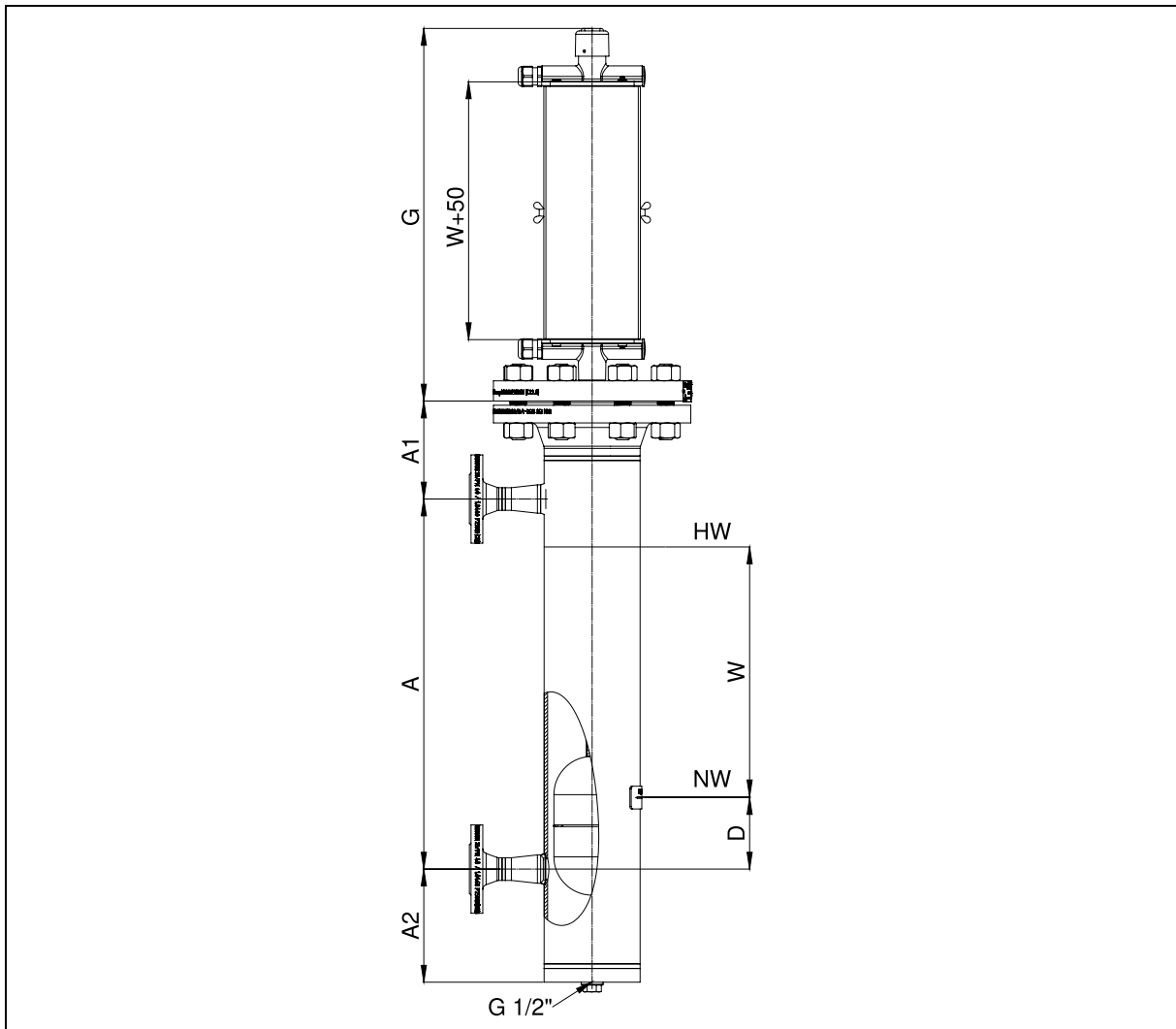
6.3 Dimensions

RBA24



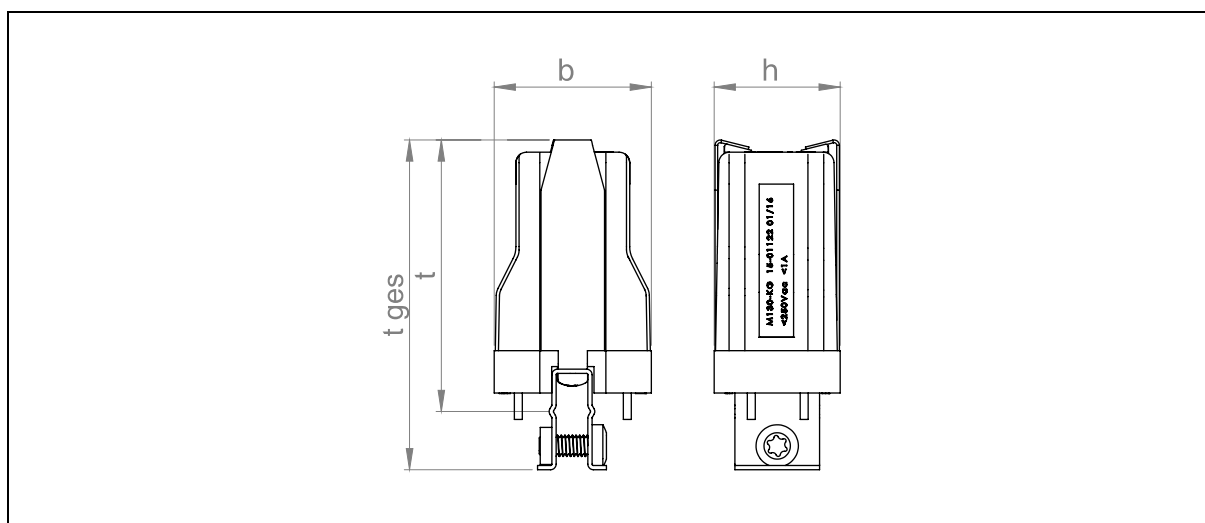
Pressure stage	<b>[PS]</b>	32bar / 464psig		80bar / 1160psig	
Perm. Temperature	<b>[TS]</b>	239°C / 462°F		296°C / 565°F	
		<b>[mm]</b>	<b>[inch]</b>	<b>[mm]</b>	<b>[inch]</b>
Connection dimension	<b>[A1]</b>	135	5.3	145	5.7
Connection height	<b>[A2]</b>	165	6.5	195	7.7
Switch adjustment range	<b>[W]</b>	100mm - 150mm / 3.9inch - 5.9inch			
Installation height	<b>[G]</b>	[W]+150	[W]+5.9	[W]+170	[W]+6.7
lower switchpoint	<b>[D]</b>	>50mm / 1.9inch (lower dimensions on customer request)			

## RBA34



Pressure stage	<b>[PS]</b>	32bar / 464psig		80bar / 1160psig	
Perm. Temperature	<b>[TS]</b>	239°C / 462°F		296°C / 565°F	
		<b>[mm]</b>	<b>[inch]</b>	<b>[mm]</b>	<b>[inch]</b>
Connection dimension	<b>[A1]</b>	135	5.3	145	5.7
Connection height	<b>[A2]</b>	165	6.5	195	7.7
Switch adjustment range	<b>[W]</b>	250mm / 9.8inch 350mm / 13.8inch 450mm / 17.7inch 550mm / 21.7inch 650mm / 25.6inch 750mm / 29.5inch			
Installation height	<b>[G]</b>	[W]+180	[W]+7.1	[W]+210	[W]+8.3
lower switchpoint	<b>[D]</b>	>50mm / 1.9inch (lower dimensions on customer request)			

## Magnetic locking switch



		[mm]	[inch]
Installation depth	<b>[t]</b>	49	2
Total depth	<b>[t<sub>ges</sub>]</b>	60	2 1/3
Width	<b>[b]</b>	30	1 1/6
Height	<b>[h]</b>	24	1

### 6.4 Component label

The component label is only valid if shut-off valves are fitted between the process connection and the boiler connection, and a drain valve is fitted to the drain connection.

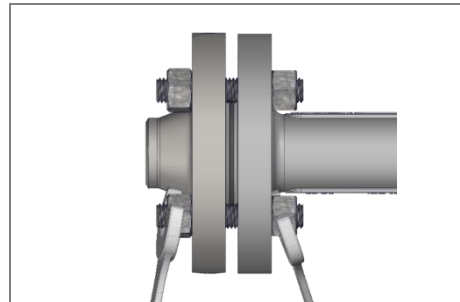
The function test is carried out by lowering the water level in the mounting housing

Smaller A2 dimensions are possible on request, depending on the D dimension and the nominal width of the process connection.

## 7 Assembly

### 7.1 Version with flange

- Observe the orientation of the gauge.
- Check sealing surfaces for cleanliness
- Install the flange connection between the gauge and the boiler/pressure vessel according to the applicable standard



### 7.2 Version with welding end



#### WARNING

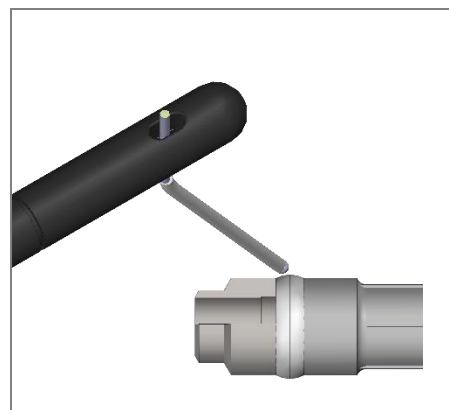
##### Eye damage due to lack of personal protective equipment



Lack of eye protection during welding leads to eye damage in working and bystanders.

- Secure the working area.
- Wear a welding protective mask.

- Observe the orientation of the gauge.
- Remove protection caps. (locking for transport)
- Assembly only by using welding process 111 (shielded metal arc welding) or 141 (gas tungsten arc welding).
- Check on an application-specific basis whether a subsequent heat treatment of the weld seams is required.



### 7.3 Shut-off and blow-through valves

Flow direction "⇒" must point in the direction of the mounting housing!

### 7.4 LW mark

It is important to ensure that the height of the LW mark on the device's mounting housing corresponds to the actual LW level!

## 7.5 Power connection

 **NOTICE****Material damage due to strong heat development**

Increased temperature leads to damage to the product

- Do not insulate products.

**Property damage caused by incorrect installation, commissioning, maintenance and operation**

Only trained electricians may install and connect lighting device.

**Igema GmbH can be commissioned for the installation and maintenance.**

Install magnetic lock switch

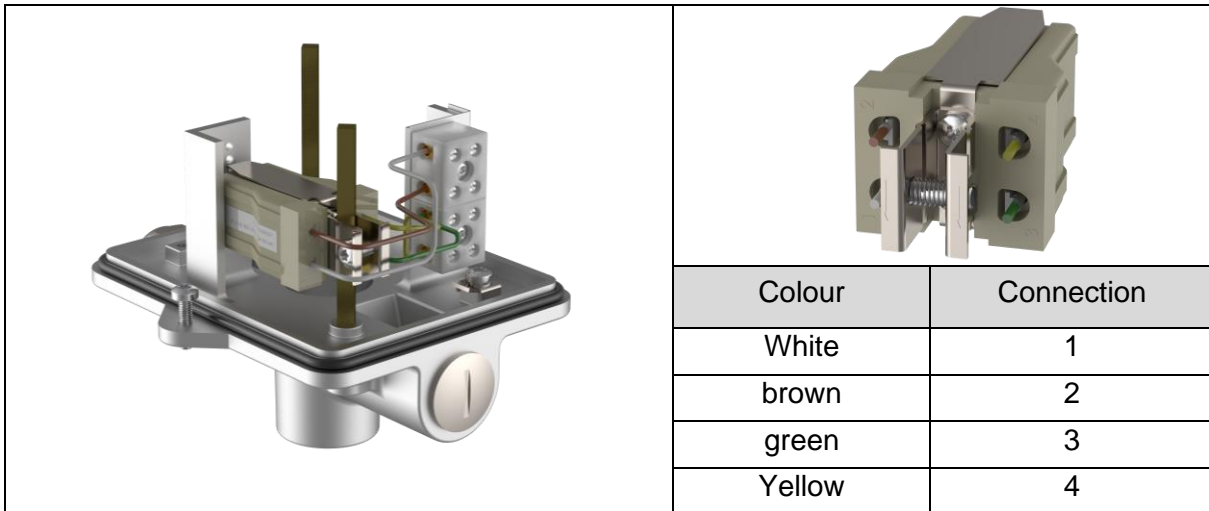
 **NOTICE****Material damage due to unsuitable cables**

- Use cable suitable for the area of use.
- Lay the cable protected from external influences (e.g. in a cable duct).

The VDE regulations and the specifications of the local grid operator corresponding to these regulations must be observed when installing the magnetic circuit breaker.

 **TIP**

Igema GmbH recommends using acetic acid-free silicone cable for the connecting cable inside the connection housing.



- Ensure that the connections with the white and brown cables (connection 1 and 2) are facing the outside of the switch housing.

## 7.6 Connecting the magnetic lock switch electrically

### **i** NOTICE

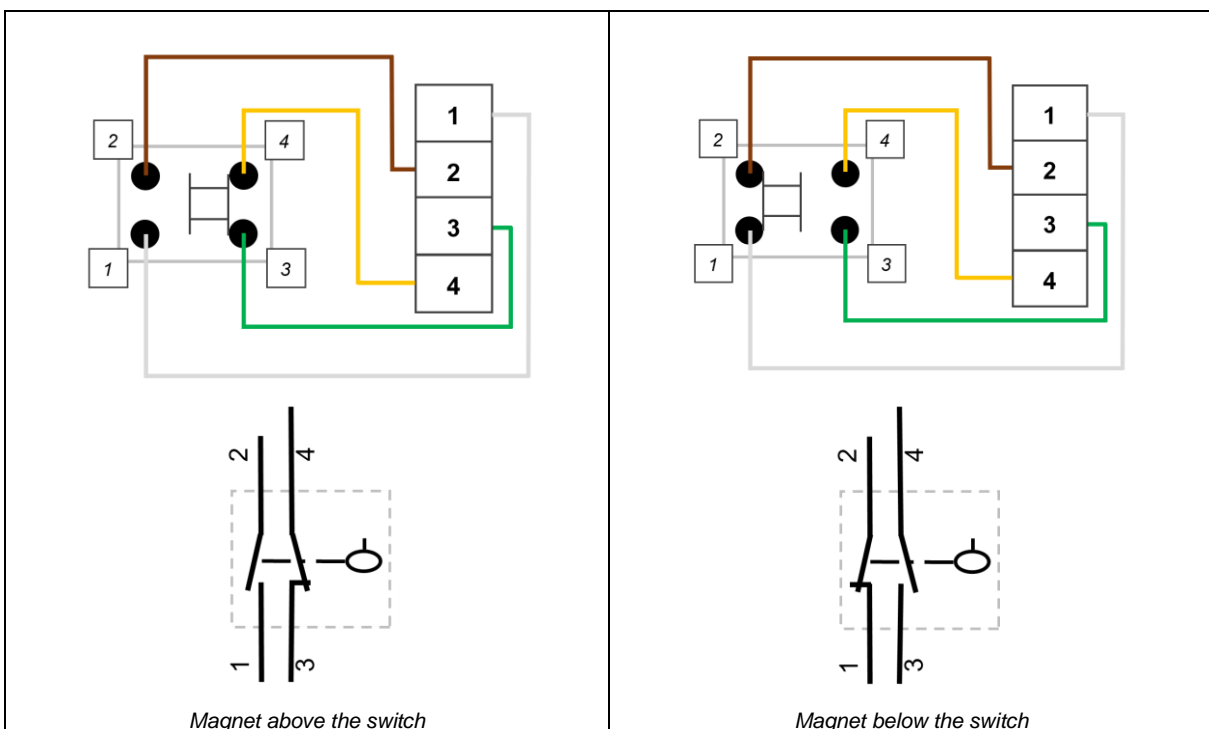
**Property damage caused by incorrect installation, commissioning, maintenance and operation**



Only trained electricians may commission electrical components and carry out maintenance work on them.

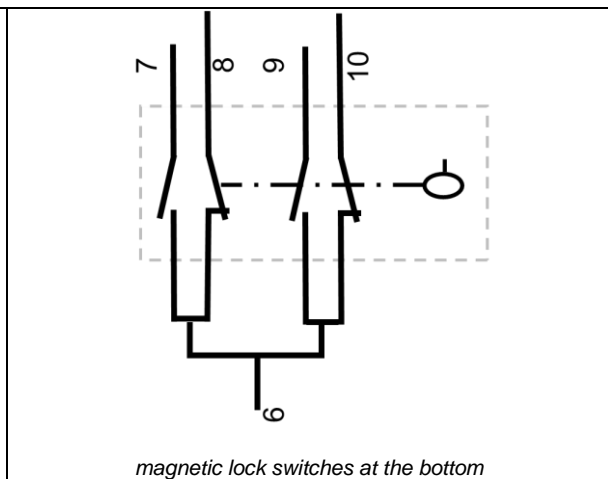
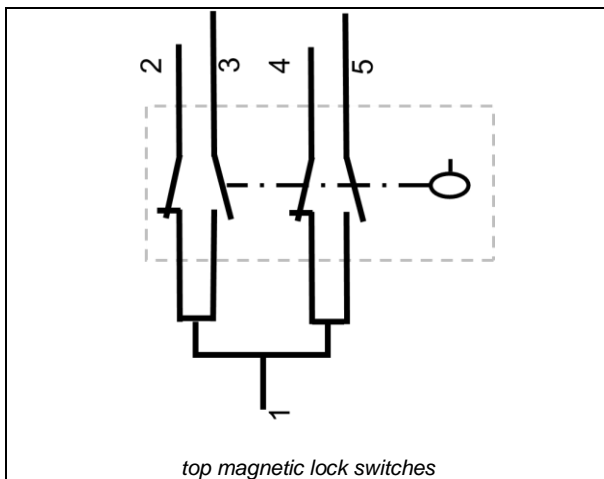
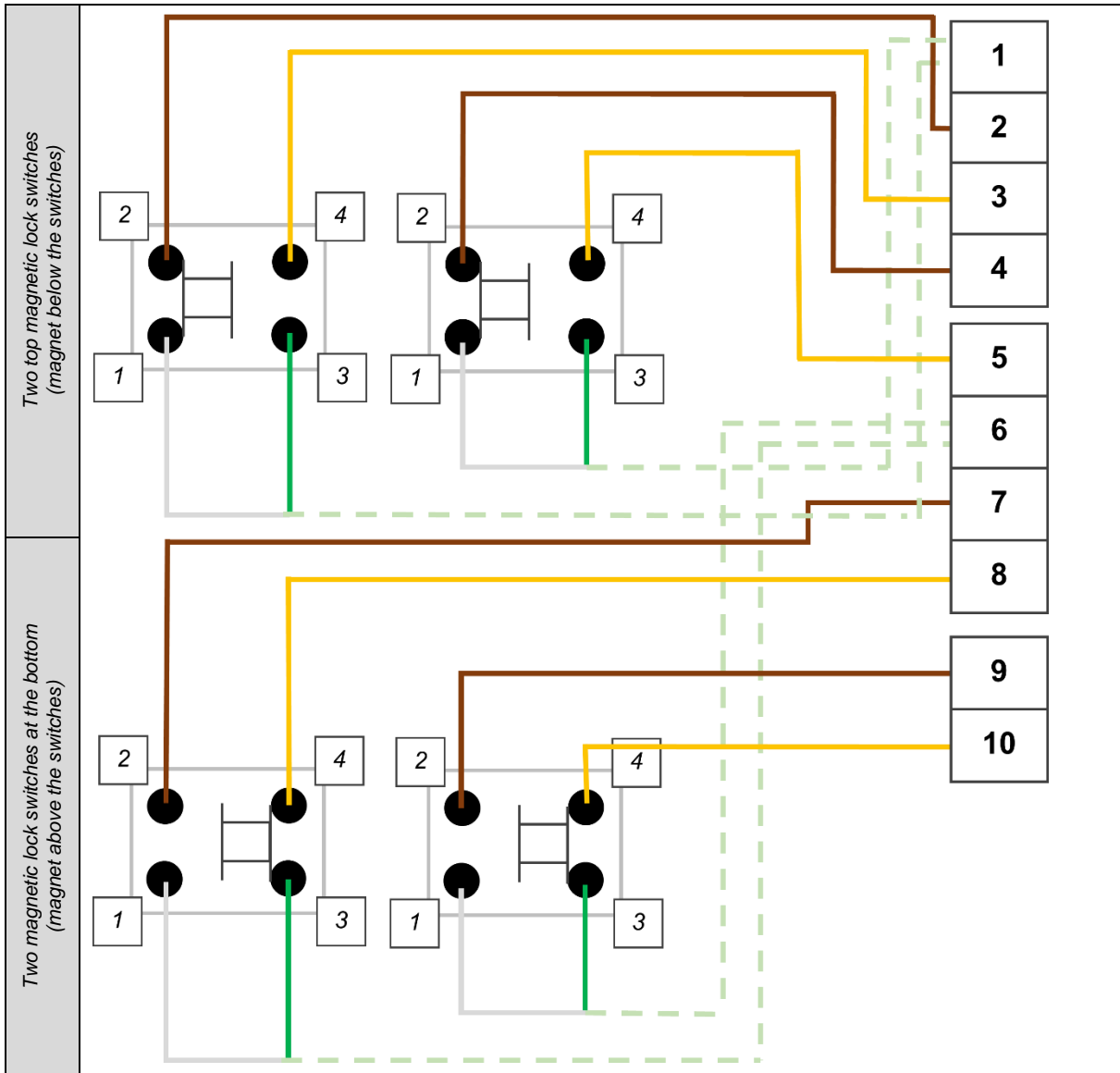
**Igema GmbH can be commissioned for work on electronic components.**

Connection as SPDT circuit (standard)



Connection as DPDT circuit (redundancy of two switches)

**In normal operation, the encoder magnet is located between the magnetic lock switches.**



## NOTICE

### Installation of the switch in circuits after risk assessment

Safety principles in accordance with DIN EN ISO 13849 regarding safety-relevant circuits (e.g. PLC) in which the switch is installed must be observed.

### Delayed switching due to switching time

- Observe the switching time of the magnetic lock switch when setting up a safety circuit.

## TIP

To extend the contact life of the magnetic locking switch we recommend the use of commercial RC combinations or an appropriate varistor when using inductive consumers (e.g. 0.1  $\mu\text{F}/100\ \Omega$ )

- Loosen the screws on the housing cover and remove the cover from the lower part of the housing.

***Magnetic locking switch(es) is/are already permanently installed in the appliance and electrically connected according to the wiring diagram (as NC contact, NO contact or changeover contact).***

- Check that the switch has been installed correctly.

***The switch base is labelled with an arrow pointing downwards when correctly installed.***

- Make the electrical connection via the connection terminals.

## NOTICE

### Property damage due to heat build-up

Cables can melt on contact with hot elements and cause functional restrictions.

- After electrical connection, ensure that the cables do not come into contact with hot components.

## 8 Commissioning

### 8.1 Before commissioning

#### Torque

All level indicators are subjected to a pressure test before delivery. In individual cases, material placement may occur due to transport, storage, installation or initial operating hours.

### NOTE

#### Leaks due to insufficient torques

- Check screw connections for appropriate torque and a tight fit.
- 24 hours after commissioning, check all screw connections again for the correct torque and possibly retighten.
- Check for leaks in the first few days after commissioning

perm. pressure <b>PS</b> [bar]	Tightening torque Md → <b>Md<sub>max</sub></b> [Nm]					
	in steps					
	1	2	3	4	5	6
32	40	65	90	115	<b>145</b>	-
80	80	110	140	170	195	<b>210</b>

#### Magnetic locking switch

- Ensure that the magnetic lock switch is firmly attached to the transducer tube.

### 8.2 Curing of the surface coating

For optimum mechanical and chemical resistance of the surface coating, the manufacturer recommends a curing time of 1 hour at approx. 150°C (302°F).

### • INFO

#### Material damage due to rapid heating

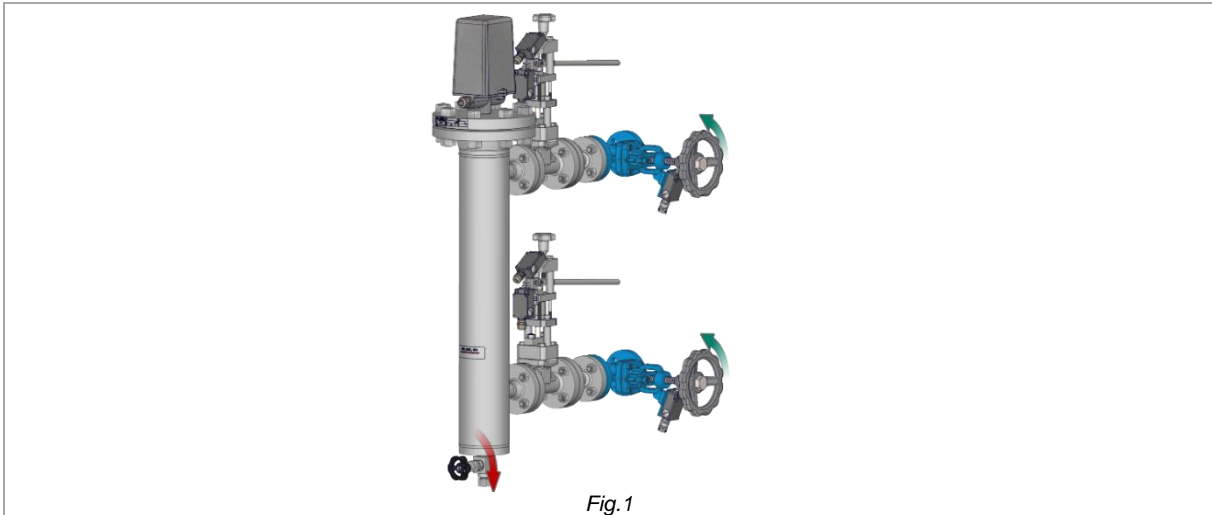
Heating too quickly can damage the coating and impair its durability.

- When using the appliance for the first time, regulate the heat supply gradually using the shut-off valves.

**TIP**

The most gentle curing process for the surface coating is achieved by simultaneous start-up with the boiler.

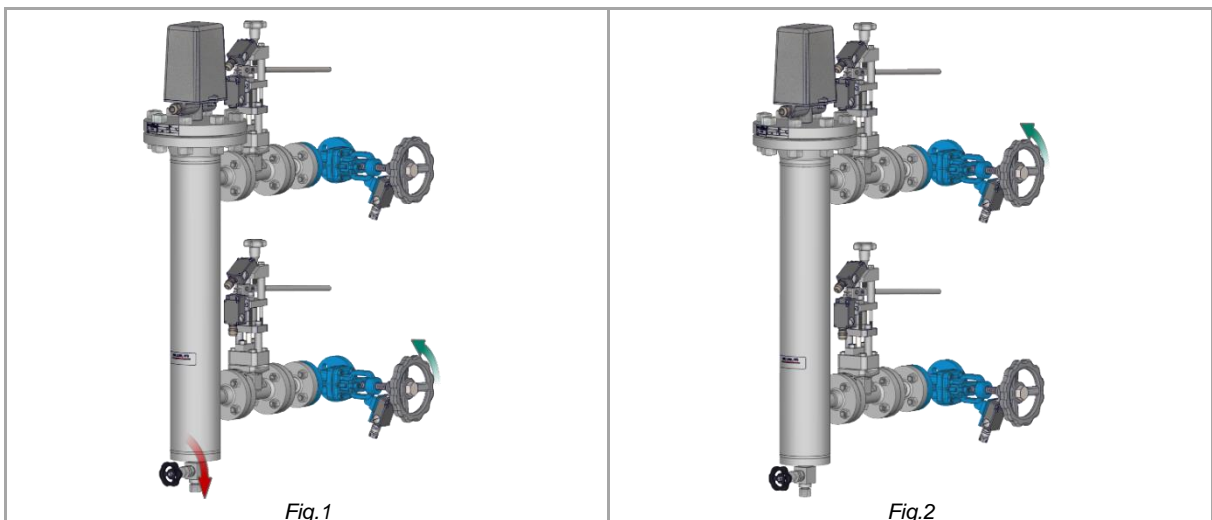
8.3 Commissioning the device simultaneously with the boiler



**Figure 1:**

- Close the drain valve.
- Open the shut-off valves fully.

8.4 Starting up the device when the boiler is under pressure



**Figure 1:**

- Close the drain valve.
- Open the lower shut-off valve slowly.

**Figure 2:**

- Open the upper shut-off valve slowly.

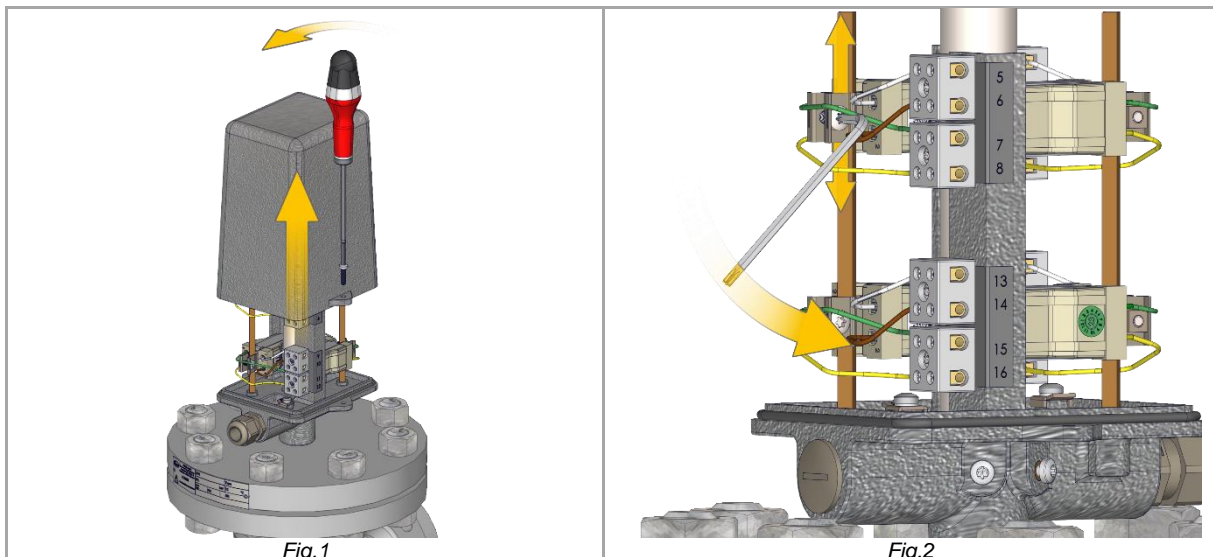
## 8.5 After commissioning

**WARNING****Risk of injury due to electrical voltage**

Electrical voltage can lead to injuries when touching conductive cables.

- De-energise the system before maintenance work.

During operation, check the setting of the magnetic locking switch and adjust the height if necessary.

**Figure 1:**

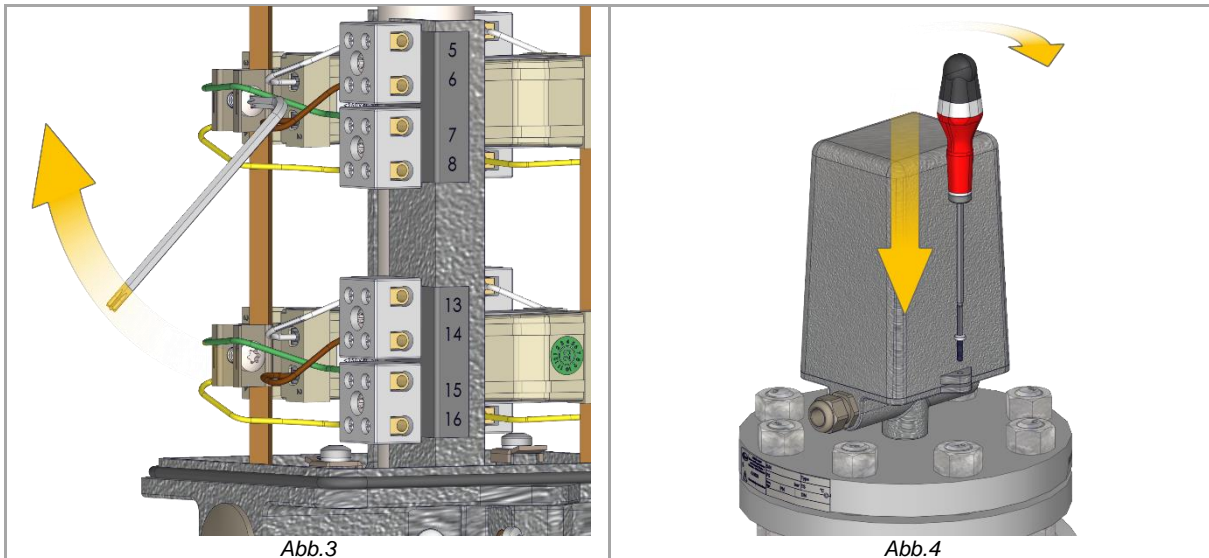
- Loosen the screws on the housing cover and remove the housing cover.

**Figure 2:**

- Slightly loosen the screw on the switch base.

***The magnetic lock switch can be moved on the switch rod.***

- Move the magnetic lock switch to the appropriate height and hold it in place.



**Figure 3:**

- Tighten the screw on the switch base again.

**Figure 4:**

- Replace the housing cover and tighten the screws.

## 9 Maintenance and operational monitoring

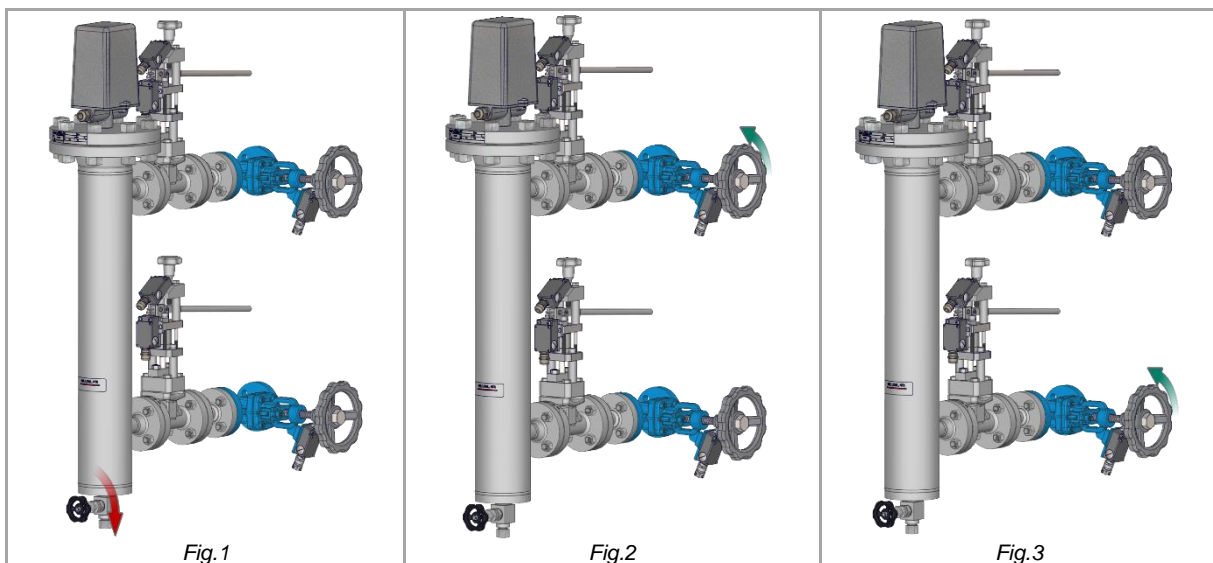
### 9.1 Functional test

#### **i** NOTICE

##### **Mandatory functional check**

A functional test is mandatory for water level limiters before commissioning.

- Specify the scope of testing and testing deadlines between the operator, boiler supplier and local expert.



- The mounting housing must be depressurised. (*chap. 9.2*)

***The float device sinks below LW and the magnetic locking switch switches. The function test is passed if the magnetic lock switch has switched successfully.***

#### **Figure 1:**

- Close the drain valve.

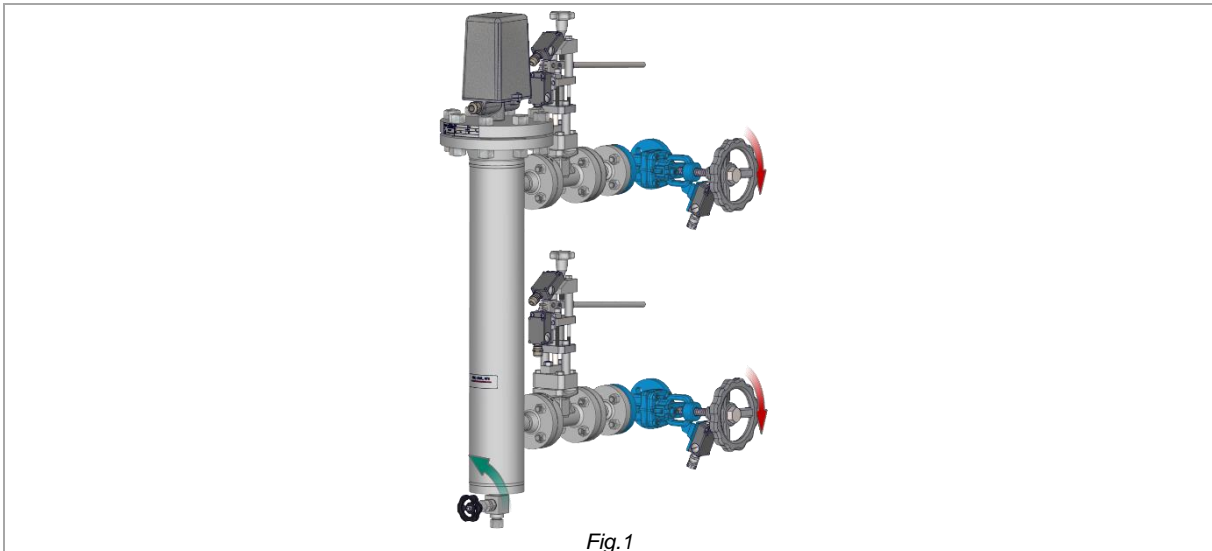
#### **Figure 2:**

- Open the upper shut-off valve slowly

#### **Figure 3:**

- Open the lower shut-off valve slowly.

## 9.2 Release pressure



**Figure 1:**

- Close shut-off valves
- Open the drain valve

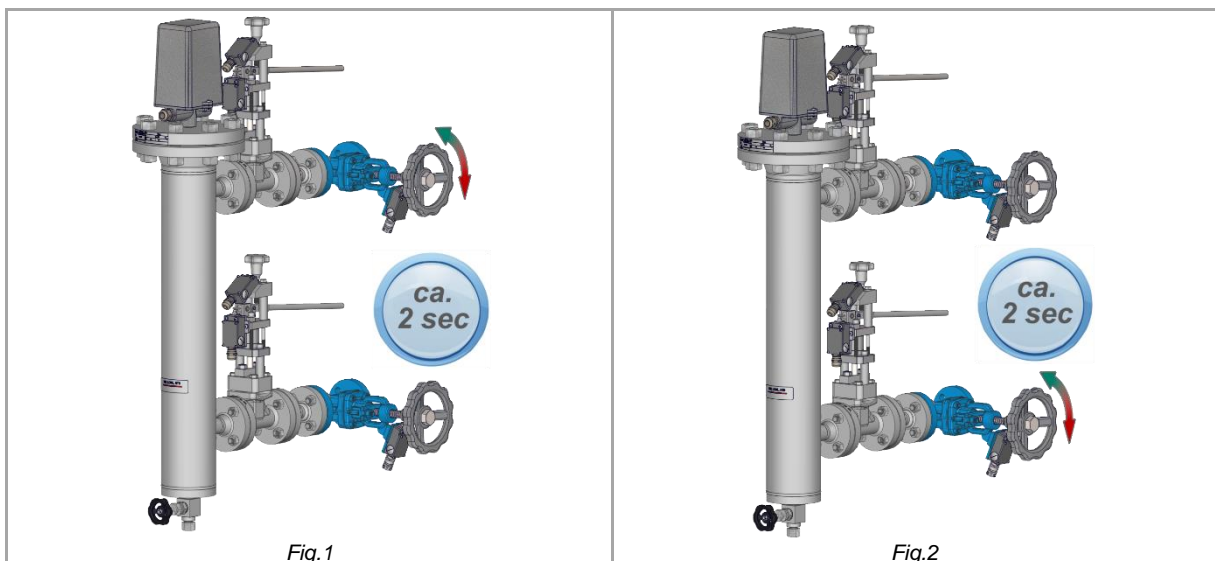
***The gauge is emptying.***

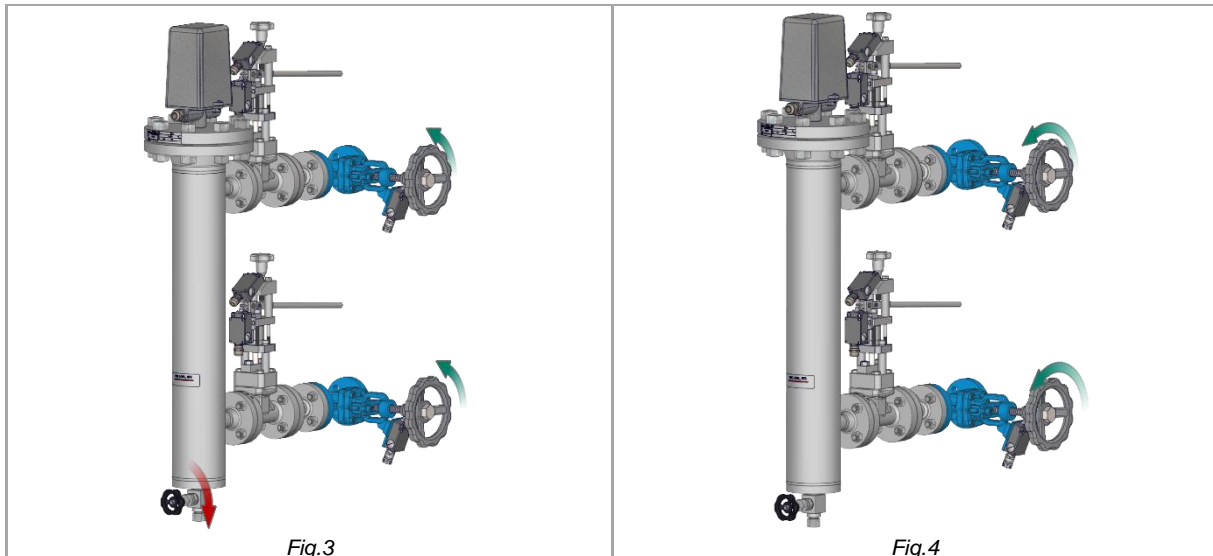
***The gauge can be put back into operation. (chap. 8)***

## 9.3 Blowing through the connecting lines

### **i NOTICE**

For water level controllers and limiters, separate blowing through of the connecting lines including the attachment housing is required.





- The gauge must be depressurised.

**Figure 1:**

- Open upper shut-off valve slightly, close after approx. 2 seconds.

**Figure 2:**

- Open lower shut-off valve slightly, close after approx. 2 seconds.

**Figure 3:**

- Close the drain valve.
- Open the shut-off valves a little.

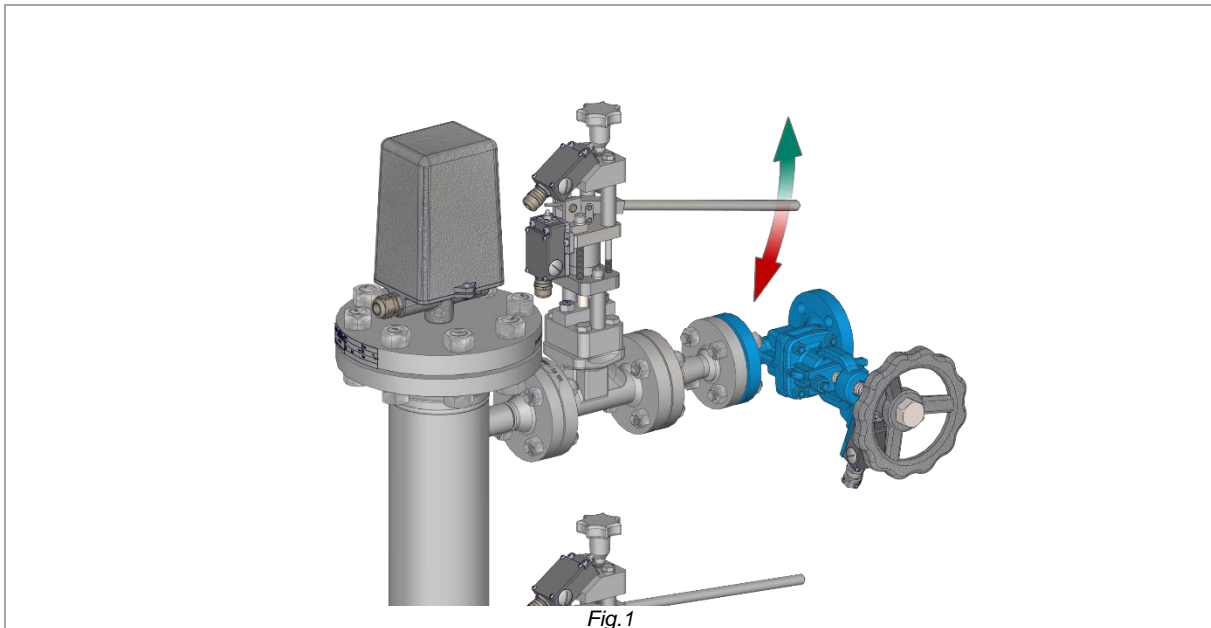
***The mounting housing fills up.***

**Figure 4:**

- The mounting housing must be filled
  - Open the shut-off valves fully.

 **TIP**

It is easier to clean the connecting pipes if blow-through valves are installed in them.



- The boiler must be in operation.

**Figure 1:**

- Briefly actuate the upper blow-through valve

***The flow is stopped when actuated. A renewed release of the flow ensures a renewed sudden flow, which cleans the pipe.***

- Repeat the process on the lower blow-through valve.

#### 9.4 Condition check during boiler overhaul

During the boiler inspection, check that the float switch, particularly the float device, magnetic locking switch and the associated shut-off valves are in perfect condition.

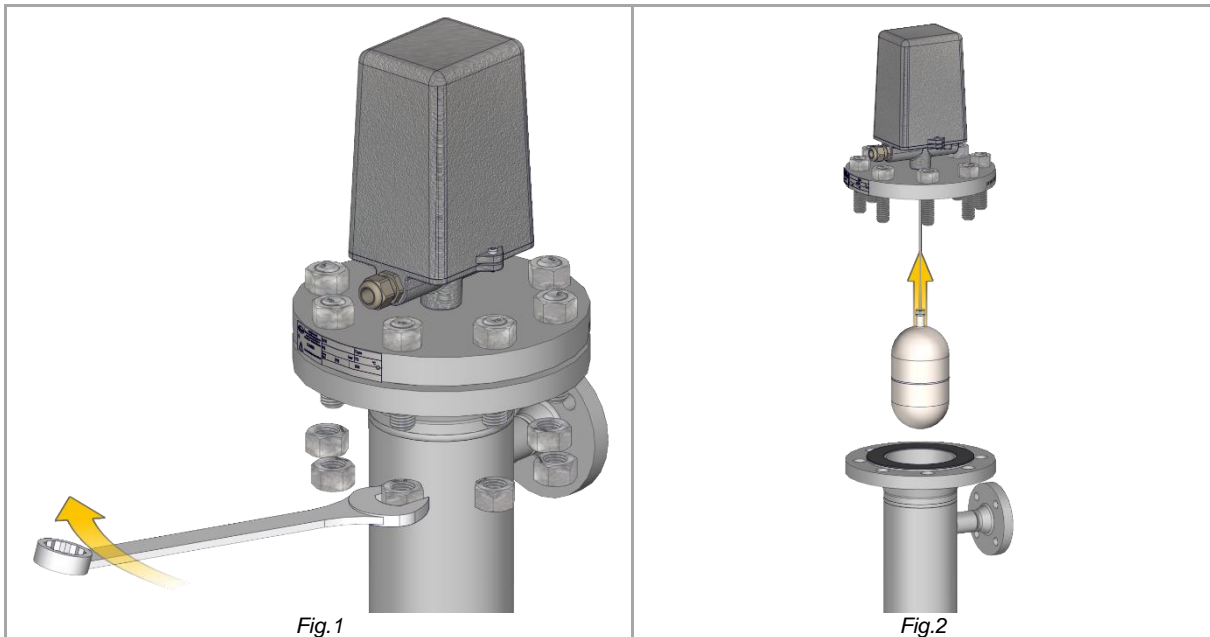
### NOTICE

#### **Malfunction due to bent float rod**

A bent float rod can cause the float to tilt in the mounting housing.

- When installing and removing, ensure that the float rod is not bent.

Opening the mounting housing



- The float switch must be depressurised.

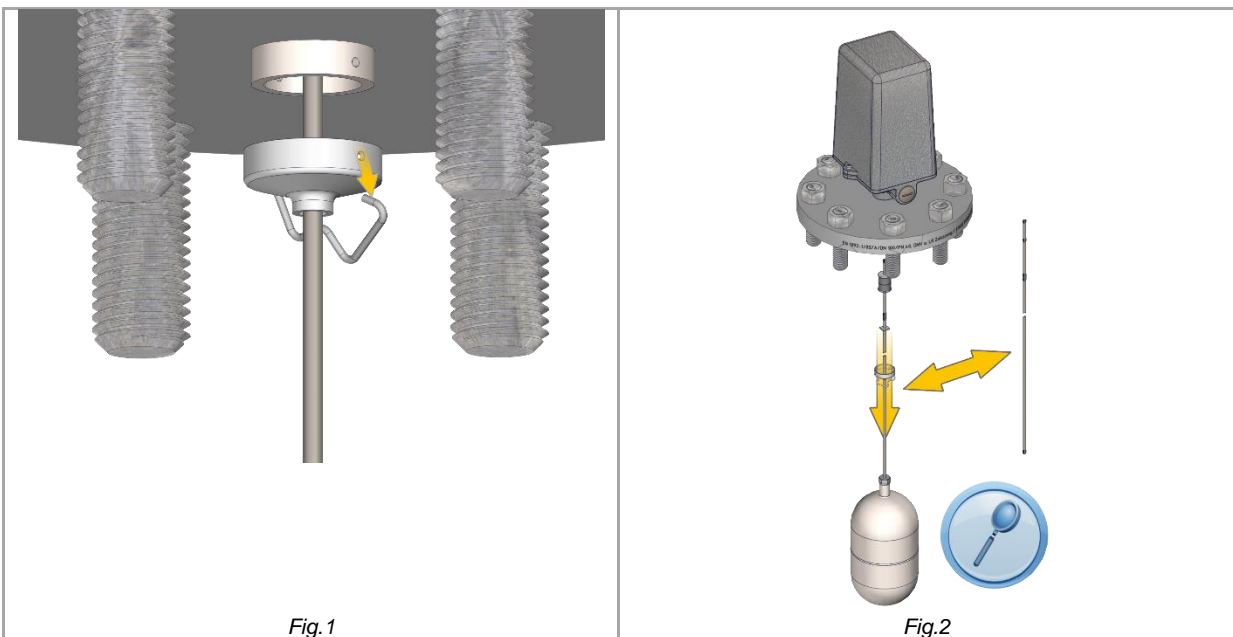
**Figure 1:**

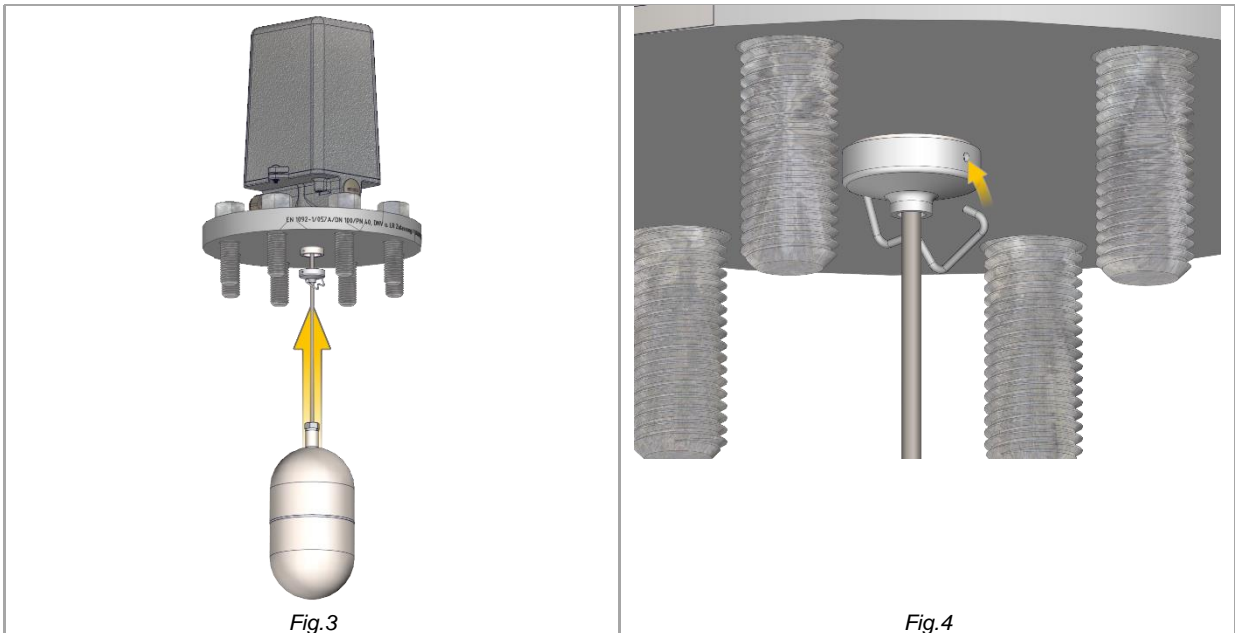
- Undo and remove the hexagon nuts at the bottom of the threaded bolts.

**Figure 2:**

- Lift the upper part of the appliance with the float device, threaded bolts and hexagon nuts upwards out of the mounting housing.

Checking or replacing float device





### ***Opening the mounting housing***

#### **Figure 1:**

- Bend out the retaining spring and loosen the encoder tube cap.

#### **Figure 2:**

- Pull the float rod with float out of the transducer tube
- Check the float and float equipment for damage.
- Replace deformed or corroded parts.

#### **Figure 3:**

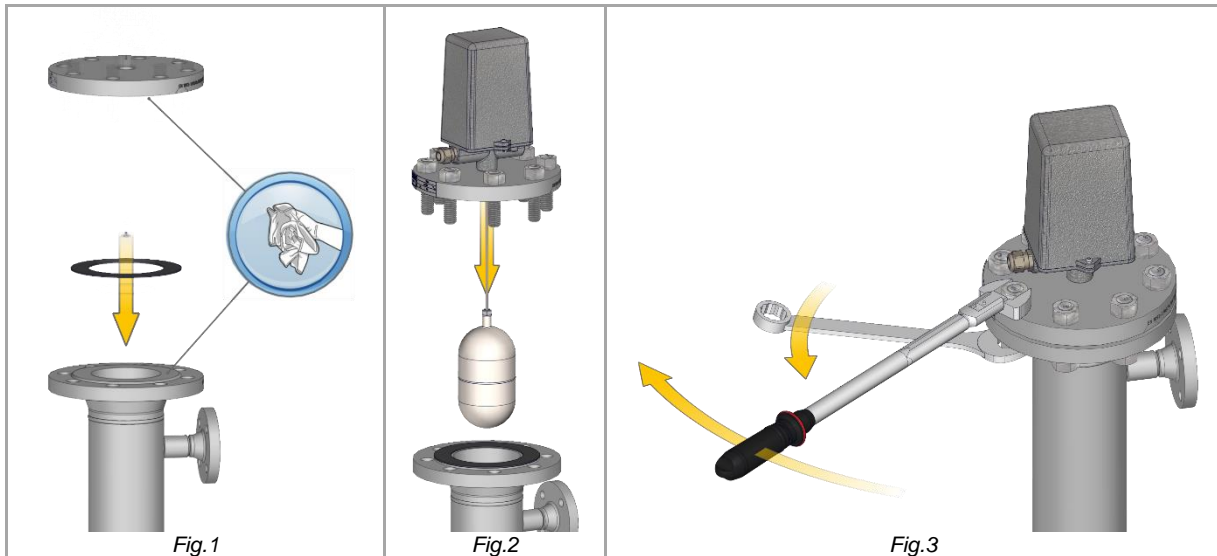
- Insert the complete float device into the transducer tube.

#### **Figure 4:**

- Place the transducer tube cap on the transducer tube and secure it with a spring wire clamp.

### ***Closing the mounting housing***

Closing the mounting housing



**Figure 1:**

- Check that the sealing surfaces of the device flanges are in perfect condition.
- Place a new gasket between the flanges on the mounting housing.

**Figure 2:**

- Insert the upper part of the appliance with the float device into the mounting housing.

**Figure 3:**

- Tighten the screw connections evenly and crosswise in several passes to the specified maximum tightening torque. (*chap. 8.1*)

***The gauge can be put back into operation. (chap. 8)***

## 10 Case of damage

Fault	Possible cause	Remediation
Float does not float	Bent float rod, defective float	Check float device, replace if necessary ( <i>chap. 9.4</i> )
	Contamination in mounting housing	Depressurise ( <i>chap. 9.2</i> ) Blow through connection lines ( <i>chap. 9.3</i> )
Magnetic lock switch does not switch	Defective switch	Replacing the magnetic lock switch ( <i>chap. 10.1</i> )

### 10.1 Replace magnetic lock switch



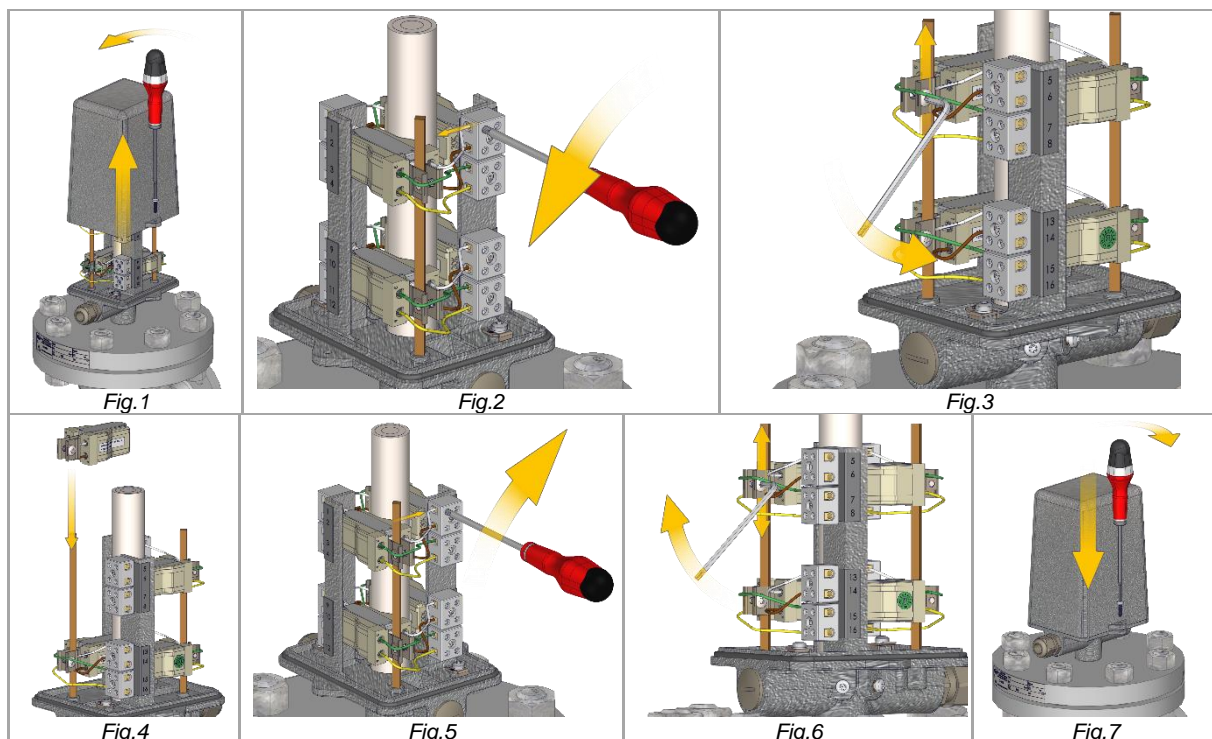
## WARNING

### Risk of injury due to electrical voltage



Electrical voltage can lead to injuries when touching conductive cables.

- De-energise the system before maintenance work.



**Figure 1:**

- Loosen the screws on the switch housing cover.
- Remove the switch housing cover.

**Figure 2:**

- Loosen the cable gland of the cables of the switch to be removed.
- Pull out the cable.

**Figure 3:**

- Loosen the screw on the switch base.
- Pull the switch upwards over the switch rod.

**Figure 4:**

- Slide the new switch onto the switch rod.

**Figure 5:**

- Insert the cable into the corresponding connections of the connection terminal.
- Tighten the screws in the connection terminal until the cables are clamped.

**Figure 6:**

- Align the height of the magnetic lock switch on the switch rod.
- Tighten the screw on the switch base until the switch is firmly seated on the switch rod.

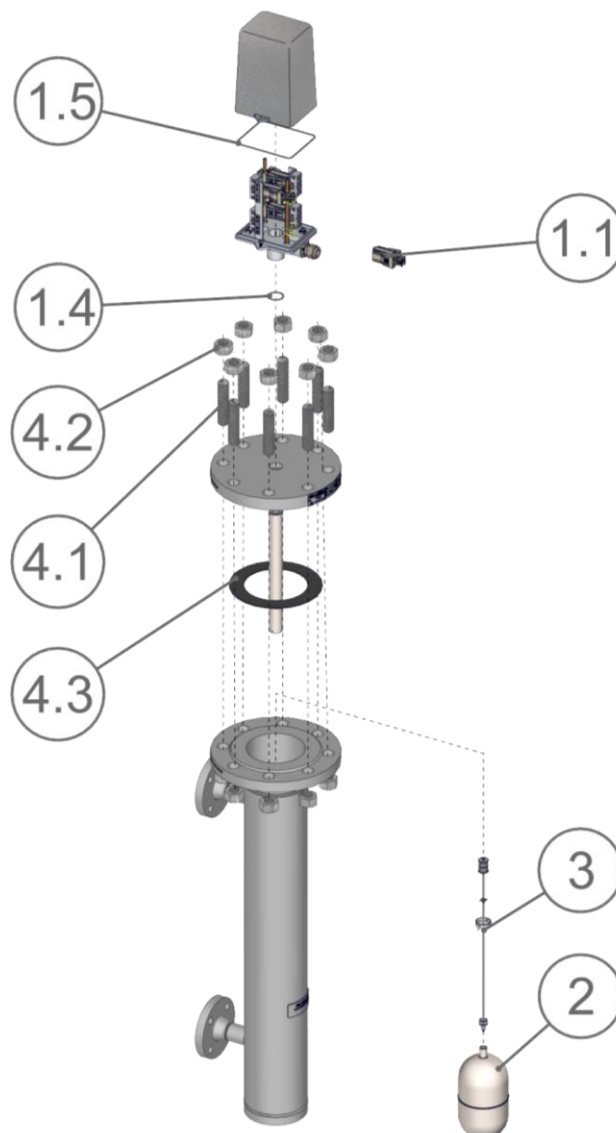
**Figure 7:**

- Fit the switch housing cover and tighten with screws.

## 11 Spare parts

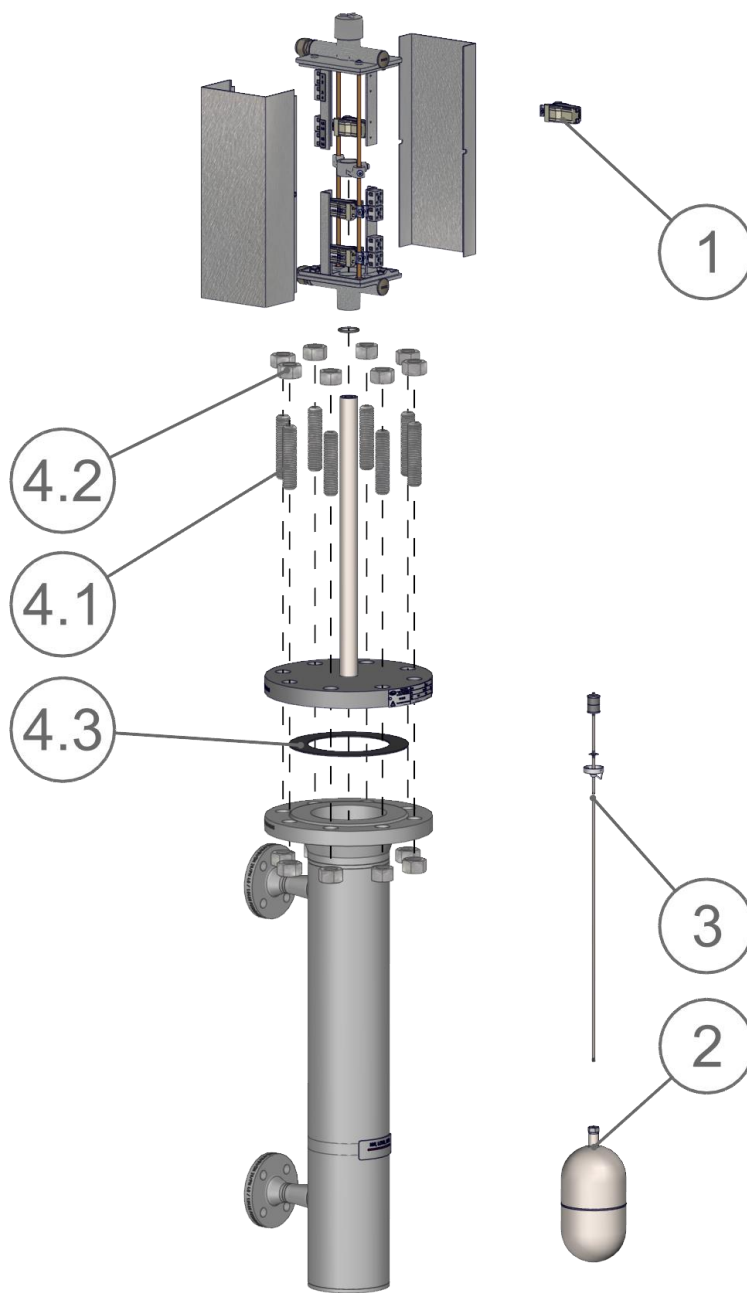
### 11.1 RBA24

Pos.	Description	Size	Article-No.	Quantity
1.1	Magnetic locking switch M130-KG	-	15-01122	-
1.4	O-ring	24.2x3mm	40-00300	1
1.5	O-ring	110x3mm	40-00301	(1)
2	Float	-	40-00918	1
3	Float device	-	15-000006	1
4.1, 4.2, 4.3	Connection set for flange	32bar	15-03379	1
		80bar	15-03362	



11.2 RBA34

Pos.	Description	Size	Article-No.	Quantity
1.1	Magnetic locking switch M130-KG	-	15-01122	-
1.4	O-ring	24.2x3mm	40-00300	1
2	Float	-	40-00918	1
3	Float device	-	15-000006	1
4.1, 4.2, 4.3	Connection set for flange	32bar	15-03379	1
		80bar	15-03362	

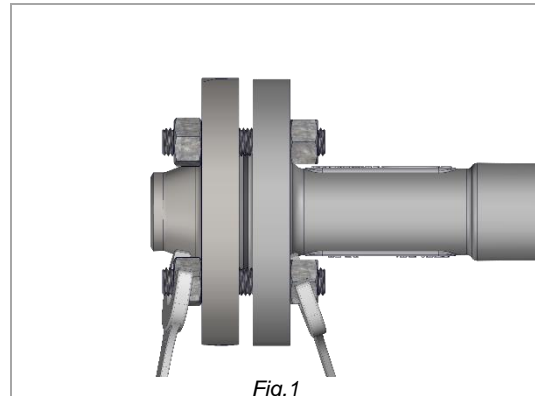


## 12 Decommissioning and disposal

### 12.1 Dismantling the float switch

***During the following work, the individual components hang freely and must be secured against falling.***

- Loosen nuts on flange connections.
- Removing bolts from flanges
- Secure loose components against falling



Valves and gauges that are firmly connected to each other (e.g. welded connections) must be separated from each other at the connection points. For this purpose, the appropriate tool must be selected according to the application and environment.

***The gauge hangs freely after the work in the following step and must be secured against falling down***

#### NOTICE

##### Property damage due to impacts

When handling the gauge, it may be damaged by impacts.

- Secure the display body against falling.

### 12.2 Disposal

#### ENVIRONMENT

##### Danger to the environment due to residues



Residues can pose a danger to the environment.

- For returns, observe the applicable safety and environmental laws according to GGVSEB [The Dangerous Goods Ordinance on Roads, Railways and Inland Waterways].
- Indicate possible dangers and take precautionary measures.
- Label possible residues and enclose the safety data sheet.
- Register hazardous substance with the logistics service provider.

**Danger to the environment from waste materials**

Incorrectly disposed waste materials cause damage to the environment.

- Separating waste materials.
- Comply with local and legal regulations for waste disposal.

**CAUTION****Health hazard due to dangerous residues**

Residues of hazardous substances pose a health hazard.

- Indicate possible dangers and take precautionary measures.



This high-quality IGEMA product was designed, manufactured and tested with the application of the QM System guidelines in accordance with DIN EN ISO 9001:2015.

If the device supplied indicates transport damage or gives cause for complaint in spite of our final quality check, please contact our SERVICE department on telephone +49 2501 92424-0 immediately.





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