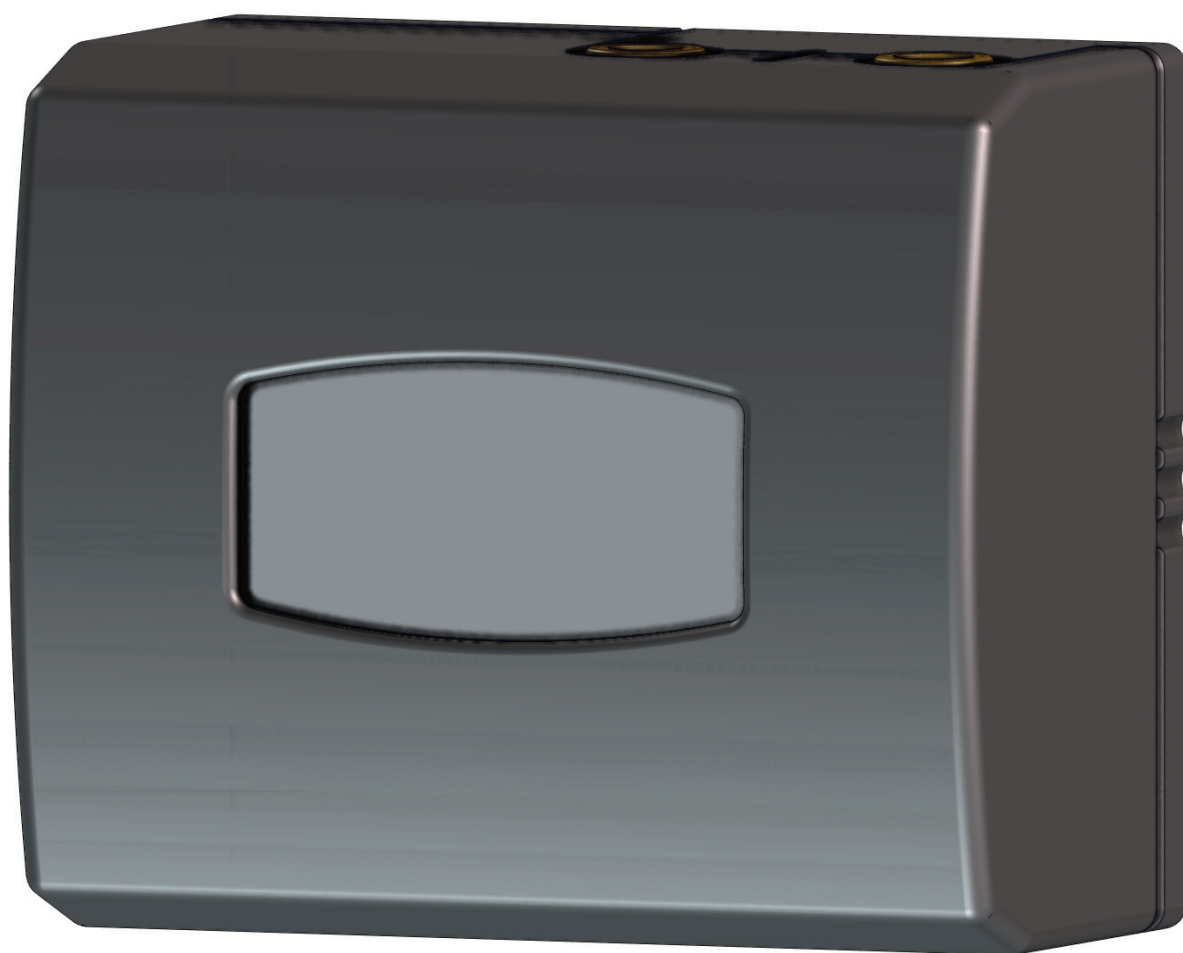


# Friwa Compact

## Operating instructions EN



# Friwa Compact

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## 1 Key background information

### 1.1 Limitation of liability

The contents of these operating instructions have been created with due consideration of applicable legislation and standards.

The device has been developed in accordance with the state of the technological art<sup>1</sup>.

The manufacturer accepts no liability for damage resulting from:

- ▶ Disregard for or non-compliance with the operating instructions
- ▶ Deliberate misuse
- ▶ Incorrect use
- ▶ The use of untrained professionals (for maintenance and repair work, etc.)
- ▶ Technical modifications to the device that have not been discussed with the manufacturer.
- ▶ Use of spare parts that have not been approved by the manufacturer

### 1.2 Responsibilities of the operator

The safety, accident prevention and environmental protection regulations applicable to the area in which the device is used must be complied with.

The following is of particular relevance:

- ▶ The operator must ensure that these operating instructions are available for the entire life cycle of the Friwa Compact.
- ▶ The operator must ensure that the maintenance intervals described in these operating instructions are complied with.
- ▶ The operator must regularly check the function and integrity of all safety equipment on a regular basis.

## NOTICE



When assembling and operating the Friwa Compact, be aware of country-specific standards and guidelines.

### 1.3 Documentation

#### 1.3.1 Contents and structure

These operating instructions are an integral part of the device. They contain instructions and information regarding the safe use of the device and must be made available to all users for the device's entire life cycle.





These operating instructions are intended for use by trained professionals.

<sup>1</sup> Technical modifications reserved!

# Friwa Compact

## 1.3.2 Labelling system used in the documentation

The following types of alert are used:

Alert type	Representation	Meaning
Acute danger of death	 <b>DANGER</b>	Dangerous situation that will inevitably cause death or severe injury if it is not avoided
Risk of death and severe injury	 <b>WARNING</b>	Dangerous situation that may cause severe injury or death if it is not avoided
Risk of mild to moderate injury	 <b>CAUTION</b>	Dangerous situation that may cause mild to moderate injury if it is not avoided
Information, tips to make operation easier	 <b>NOTICE</b>	Indicates information that does not relate to personal hazards, e. g. warnings regarding material damage

⚠ *Indicates a general safety notice*

■ Indicates an instruction

⇒ *Indicates the consequences of an action*

## 1.4 Target group

These operating instructions are intended for use by trained professionals.

The operator of this device must ensure that suitable and safe conditions are in place as described in these operating instructions.

**Professional** – Trained expert who understands the risks of Friwa Compact and who is familiar with the technology used in the device. Professionals are trained and capable of assembling, maintaining and repairing the device.

## 1.5 Replacing wear parts

Be aware that the Friwa Compact contains parts which, depending on how frequently and how much they are used, will be subject to technology-related wear and tear, even if they are cared for and maintained properly. Mechanical parts and components that come into contact with hot water and steam are particularly affected by this, such as hoses, gaskets, valves, etc.

Wear-related defects of course do not represent faulty workmanship and are therefore not covered by the warranty or guarantee; regardless of this, faults and malfunctions must always only be rectified by trained professionals. For more information, contact your dealer.

## 2 Safety

### 2.1 Important safety notices

- ⚠ Read these operating instructions carefully before use.**
- ⚠ Only connect the Friwa Compact to a power supply that has a suitable mains voltage.**
- ⚠ Before carrying out any maintenance, cleaning or repair work, the power supply to the Friwa Compact must be disconnected.**
- ⚠ Maintenance, cleaning and repair work must only be carried out by trained professionals.**
- ⚠ In the event of damage to the Friwa Compact, or if its function is impaired, the Friwa Compact must not be used. Contact your dealer immediately.**
- ⚠ Note the maintenance instructions and intervals.**
- ⚠ Protect the Friwa Compact from the influences of weather.**
- ⚠ Never use the Friwa Compact outdoors.**
- ⚠ For your own safety and to ensure the long service life of the Friwa Compact, you should only use original spare parts.**
- ⚠ The device must only be used in accordance with the instructions for correct use.**

### 2.2 Instructions for correct use

#### 2.2.1 Area of use

The Friwa Compact has been built in accordance with the state of the technological art and in compliance with safety technology regulations. No liability will be accepted for any damaged cause by inappropriate use, misuse, incorrect connections or incorrect maintenance / repair by untrained personnel. Such cases will also invalidate all warranty clauses.

The Friwa Compact is used to deliver sanitary drinking water that is free from Legionella. It operates in accordance with the instantaneous water heater principle and switches on automatically when drinking water is requested (e. g. by opening a tap).

The Friwa Compact is fully pre-assembled and designed for installation on a wall.


The Friwa Compact is not intended to be used by persons (including children) with limited physical, sensory or mental capacities or a lack of knowledge and experience.

#### 2.2.2 Environmental conditions relevant to safety

- The Friwa Compact must not be assembled or operated outdoors.
- The components are not UV resistant.
- The installation site of the Friwa Compact must be chosen so that maintenance and repair work can be carried out when required.


# Friwa Compact


## 2.3 Observance of the operating instructions


NOTICE	
	<p>Read these operating instructions carefully before use.</p> <p>To ensure the device is operated safely, the instructions in this operating manual as well as regional regulations (e. g. health and safety regulations) that must be made available to the operator of the device must be complied with.</p>

## 2.4 Residual risks and safety measures

⚠ DANGER	
	<p><b>Electrical energy!</b></p> <p>Risk of death from electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not touch live cables or components with wet hands.</li><li>➤ Be aware of health and safety regulations when handling electric current.</li></ul>

⚠ WARNING	
	<p><b>Hot water!</b></p> <p>Risk of severe scalding.</p> <ul style="list-style-type: none"><li>➤ Fit suitable scald protection (such as a safety fitting or thermostatic mixer tap) at each draw-off point. Further instructions regarding scald protection can be found in DIN 1988 Sheet 2, Section 4.2.</li><li>➤ When draining the Friwa Compact, do not touch the hot water.</li><li>➤ Allow the Friwa Compact to cool down before carrying out any maintenance, cleaning or repair work.</li></ul>

⚠ WARNING	
	<p><b>Hot surfaces!</b></p> <p>Risk of severe scalding.</p> <ul style="list-style-type: none"><li>➤ During operation, do not touch any pipes or components.</li><li>➤ Allow the Friwa Compact to cool down before carrying out any maintenance, cleaning or repair work.</li><li>➤ Wear heat-resistant safety gloves when having to work on any hot components.</li></ul>

NOTICE	
	<p><b>Working on the device by inadequately trained personnel!</b></p> <p>Risk of injury and material damage.</p> <ul style="list-style-type: none"><li>➤ Maintenance, cleaning and repair work must only be carried out by trained professionals.</li></ul>

## 3 List of components

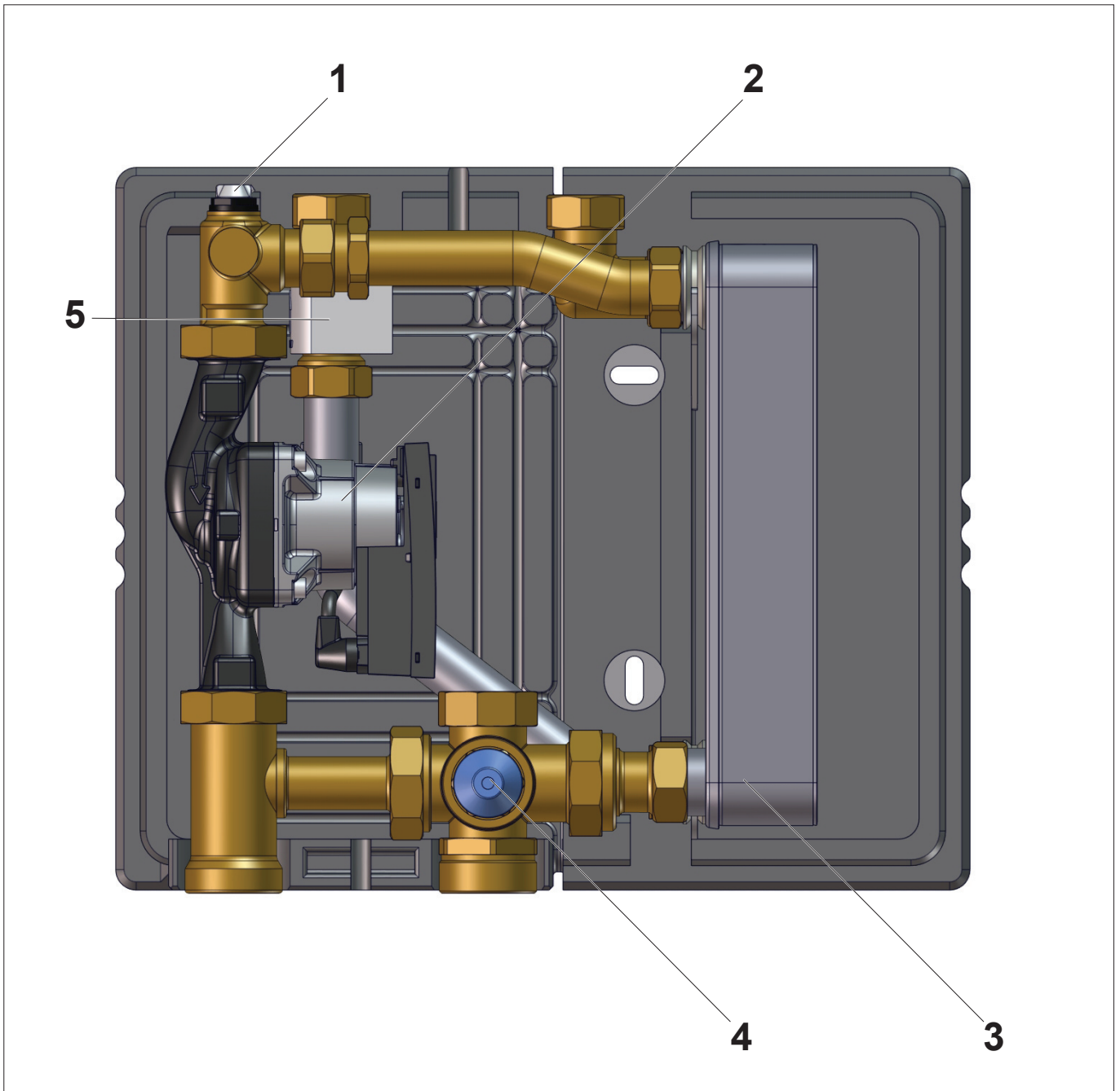









Fig. 1: List of components

- |   |                      |   |                      |
|---|----------------------|---|----------------------|
| 1 | Venting valve        | 4 | Thermal mixing valve |
| 2 | Circulation pump     | 5 | Flow switch          |
| 3 | Plate heat exchanger |   |                      |

# Friwa Compact

## 4 Installation and first commissioning

### 4.1 Safety

 <b>DANGER</b>	
	<p><b>Electrical energy!</b></p> <p>Risk of death from electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not touch live cables or components with wet hands.</li><li>➤ Be aware of health and safety regulations when handling electric current.</li></ul>
 <b>CAUTION</b>	
	<p><b>Poor water quality!</b></p> <p>Hard water forms limescale deposits on the Friwa Compact and reduces the water quality.</p> <ul style="list-style-type: none"><li>➤ Measure the hardness of the water in the supply system.</li><li>➤ Install a water softening system if the hardness is 17 °dH or above.</li></ul>
<b>NOTICE</b>	
	<p><b>Risk of material damage!</b></p> <p>The Friwa Compact is not splash or drip-proof.</p> <ul style="list-style-type: none"><li>➤ Only install the Friwa Compact in a dry location.</li></ul>
<b>NOTICE</b>	
	<p><b>Material damage caused by pressure shocks!</b></p> <p>Opening the shut-off cocks too quickly can cause pressure shocks.</p> <ul style="list-style-type: none"><li>➤ Always open the shut-off cocks slowly and in a controlled manner.</li></ul>
<b>NOTICE</b>	
	<p>The Friwa Compact must only be assembled and installed by trained professionals.</p> <p>When assembling and operating the Friwa Compact, be aware of country-specific standards and guidelines.</p> <p>Do not make any changes to components (e. g. pumps, valves, etc.), supply or drainage lines and/or safety equipment that could impair the operating safety of the Friwa Compact.</p> <p>Ensure that the power supply to the Friwa Compact is accessible at all times.</p>



## 4.2 Installation

- ⚠ *A safety valve must be installed in the cold water supply. It must not be possible to shut this valve off.*
- ⚠ *A state-of-the-art water filter must be installed in the cold water supply.*
- ⚠ *When a circulating system is used, the generally recognised technical regulations and the hygiene specifications set out in DVGW worksheet W551 must be observed.*
- ⚠ *The various pumping stations (fresh water station / heating circuit station) must be hydraulically decoupled, e. g. through the use of suitable check valves.*
- ⚠ *The installation of flushing devices before and after the plate heat exchanger in the primary and secondary circuit for descaling or cleaning when required is recommended.*
- ⚠ *To avoid electrochemical corrosion, the installation sequence must be observed closely when using galvanised pipes and fittings! The fittings are pre-installed at the factory, however they must be checked for leaks during commissioning (pressure test).*
- ⚠ *In order to avoid scalds when drawing off hot water, a thermostatic mixer valve must be fitted on the heat exchanger's hot water outlet or at the drawing-off points.*

### NOTICE



Assemble the Friwa Compact so that the controller is positioned at eye level.

1. Remove the front cover on the Friwa Compact.

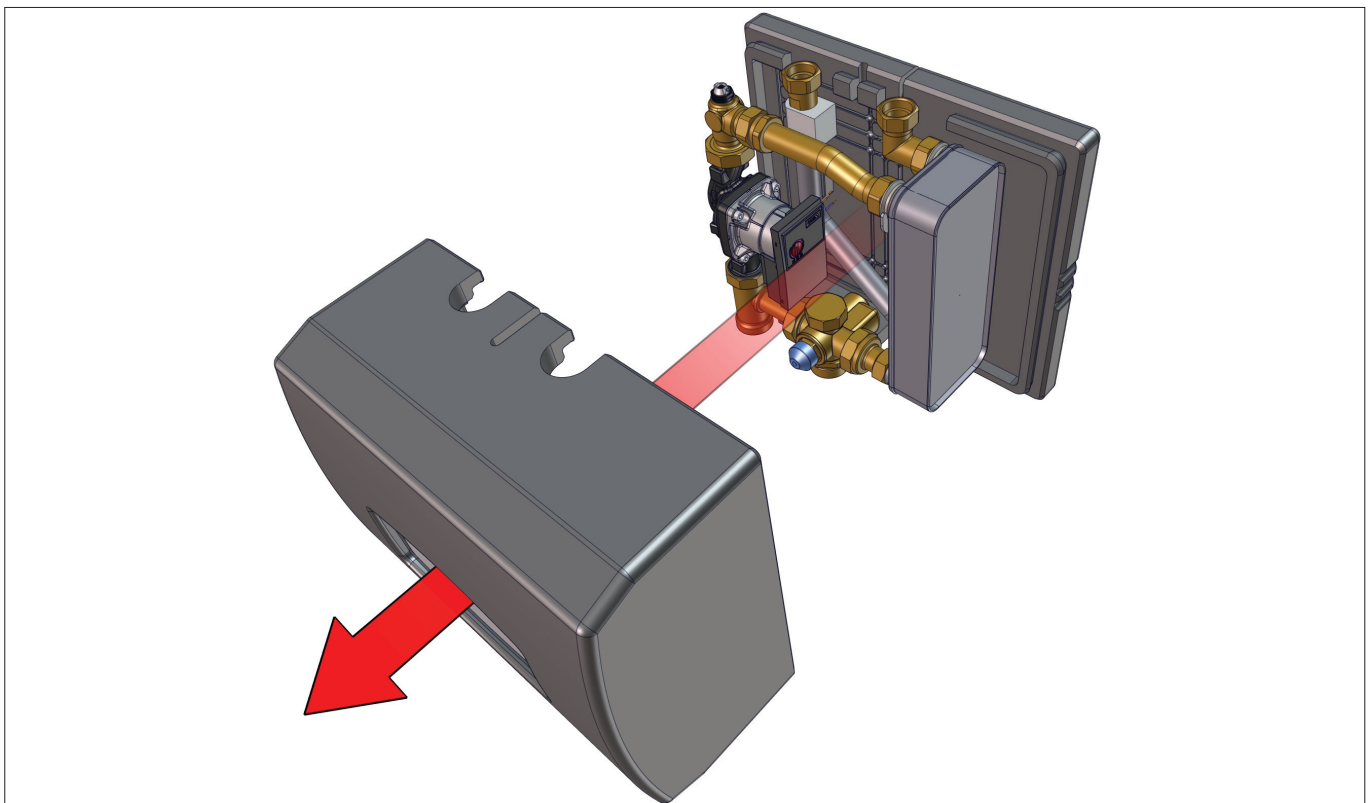


Fig. 2: Removing the panel

# Friwa Compact

2. Draw on the drilling points for assembling the Friwa Compact.

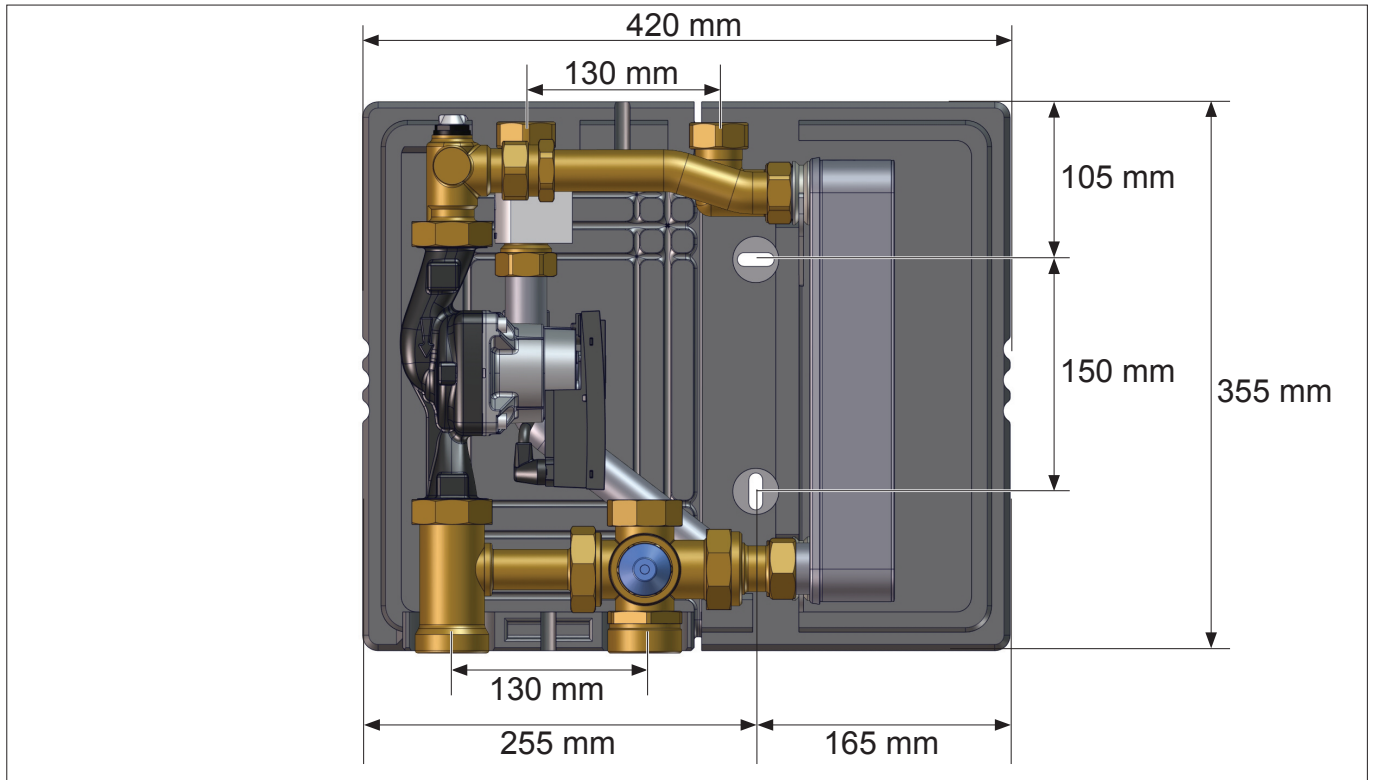


Fig. 3: Drilling pattern

3. Drill the holes in accordance with the screw and dowel size.
4. Insert the dowels (item C).
5. Screw the hanger bolts (item B) into the dowels.
6. Position the Friwa Compact and secure it with nuts (item A).

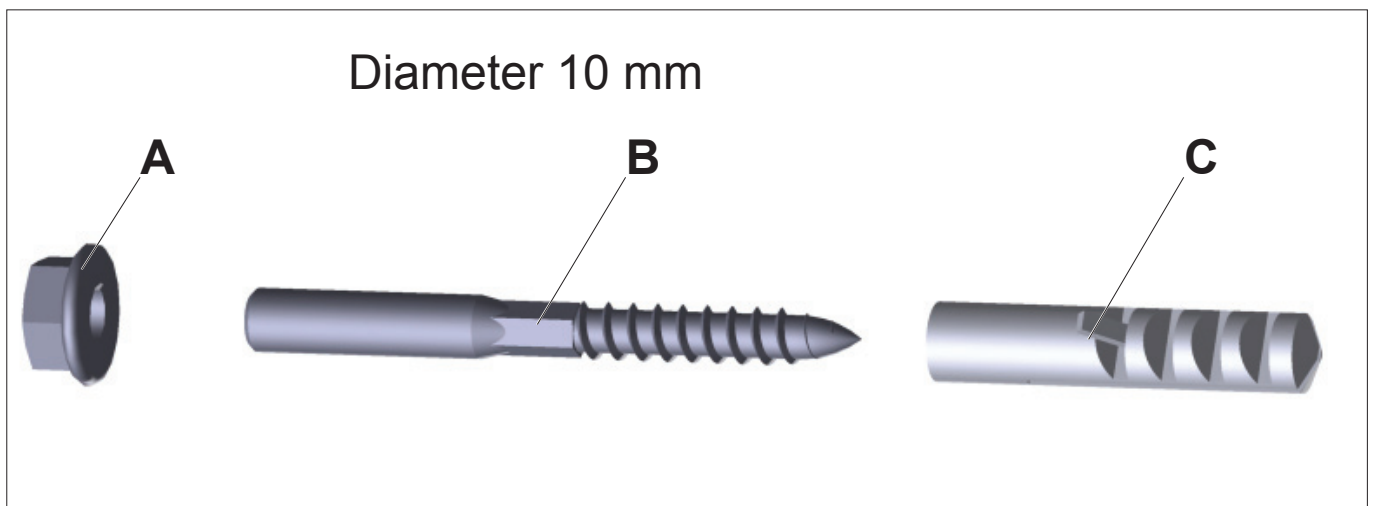


Fig. 4: Friwa CompactWall installation

- Fit the shut-off cocks at the connections for the Friwa Compact.

## NOTICE



In accordance with the current country-specific drinking water regulations, a suitable safety mechanism against overpressure must be installed in the fresh water supply on site.

If shut-off fittings are installed between Friwa Compact and the safety valve, these must be secured against third-party tampering during operation by suitable means (e. g. sealing wire or safety panel).

- Connect the connections from the Friwa Compact to the on-site supply lines.

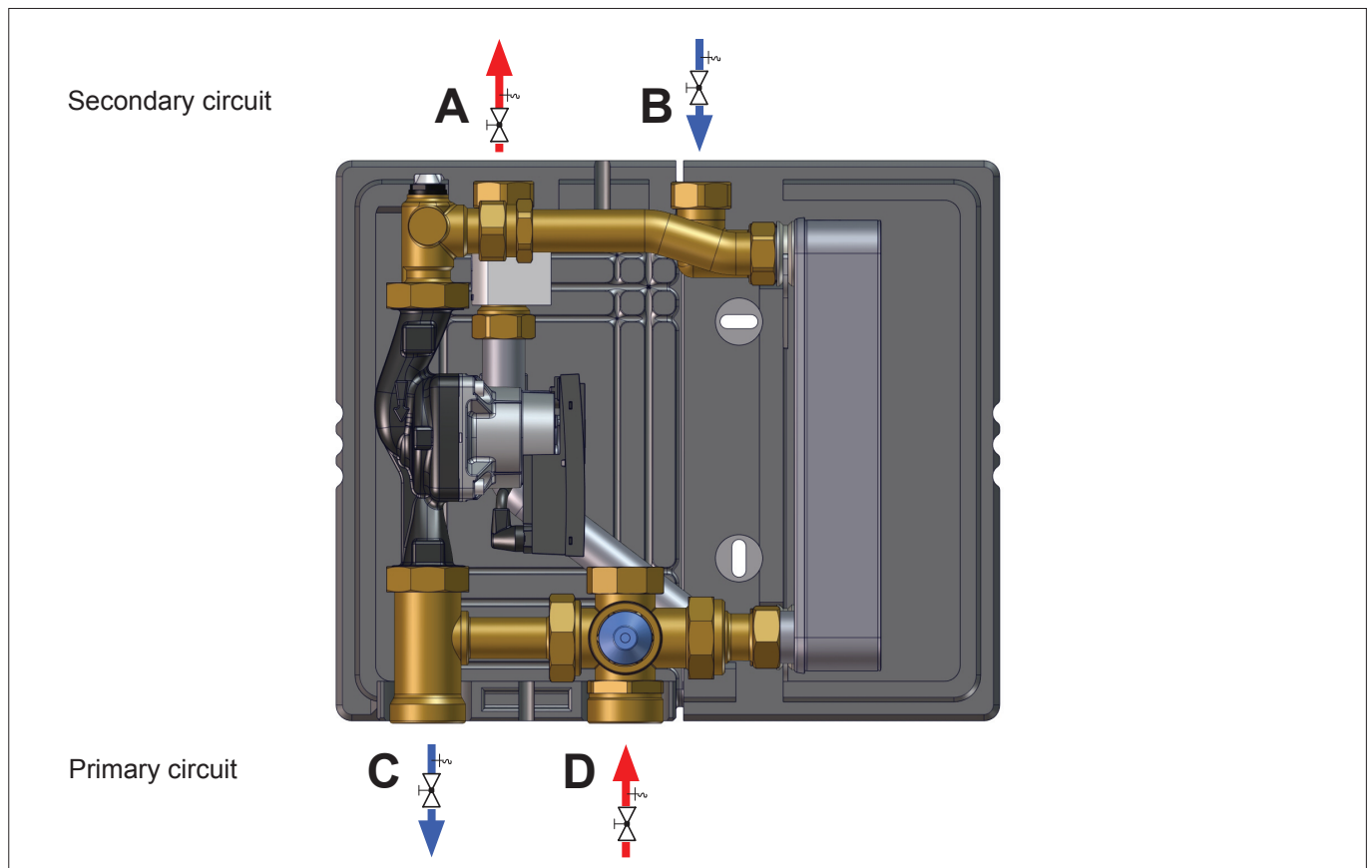


Fig. 5: Connecting Friwa Compact

- Check all screw connections to ensure they are tight.

# Friwa Compact

## 4.3 Initial commissioning

1. Slowly open the shut-off valves (items C+D, Fig. 5 on page 11) on the primary circuit.
2. Open the venting valve (item A, Fig. 6) and keep it open until no more air escapes.

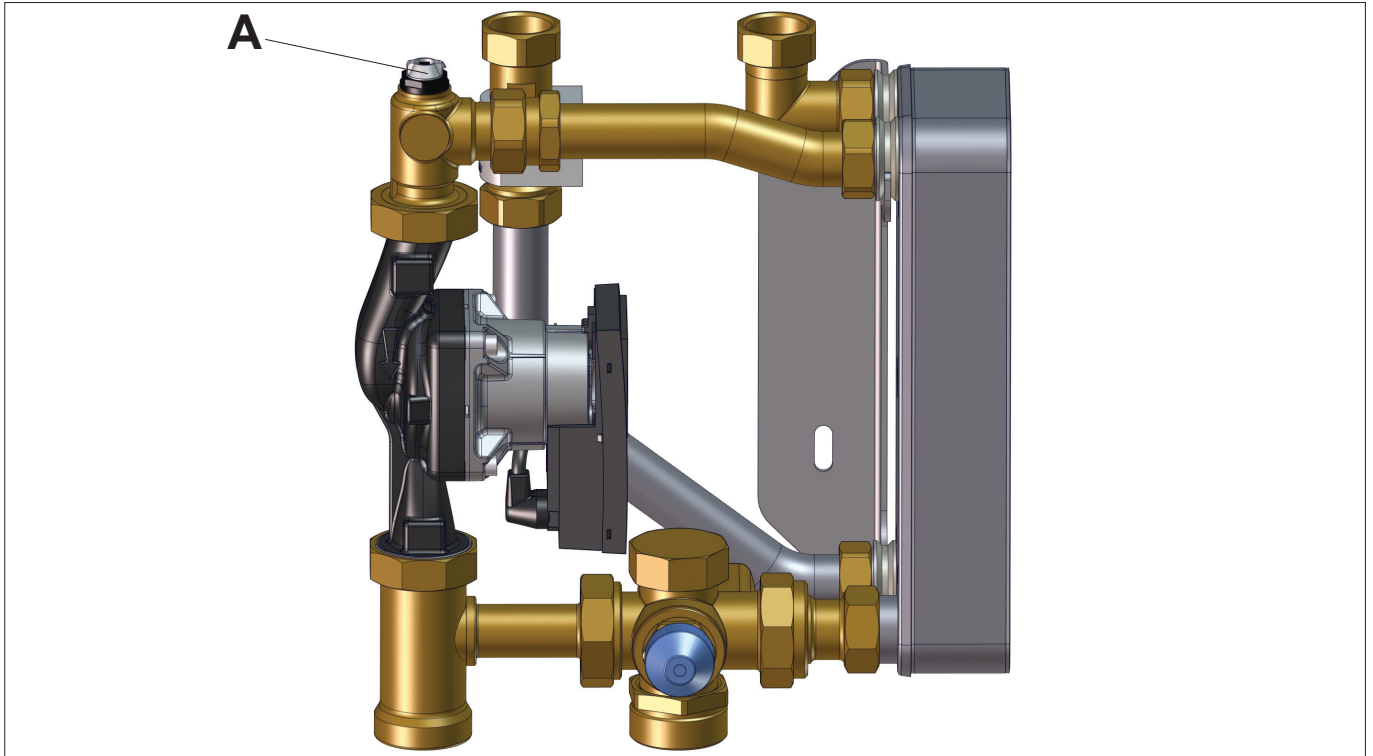


Fig. 6: Venting valve

3. Connect the power supply to Friwa Compact.

### DANGER



#### Electrical energy!

Risk of death from electric shock.

- Do not touch live cables or components with wet hands.
- Be aware of health and safety regulations when handling electric current.

### NOTICE



The electrical installation of the Friwa Compact must only be performed by trained professionals. The electrical installation of the Friwa Compact can be carried out using a plug for an on-site wall socket or as a fixed routing via an isolator.

⇒ *The Friwa Compact is ready for operation once the energy supply has been connected. It operates in accordance with the instantaneous water heater principle and switches on automatically when drinking water is requested (e. g. by opening a tap).*

## NOTICE



### Faulty circulation pump caused by dry running!

The circulation pump starts up before the Friwa Compact is vented.

- Only switch the circulation pump on once the Friwa Compact has been completely filled and vented. Audible noises during operation of the circulation pump means that there is still air in the system.


4. Slowly open the shut-off cocks (items A+B, Fig. 5 on page 11) on the secondary circuit.
5. Slowly open one draw-off point (e. g. tap in the kitchen or bathroom) and allow the water to run until all lines are filled and the air has been completely released from the system.

# Friwa Compact


## 5 Maintenance

### 5.1 Safety


#### **DANGER**

	<b>Electrical energy!</b>
	<p>Risk of death from electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not touch live cables or components with wet hands.</li><li>➤ Be aware of health and safety regulations when handling electric current.</li><li>➤ Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on before carrying out any maintenance, cleaning or repair work.</li></ul>

#### **WARNING**

	<b>Hot water!</b>
	<p>Risk of severe scalding.</p> <ul style="list-style-type: none"><li>➤ When draining the Friwa Compact, do not touch the hot water.</li><li>➤ Allow the Friwa Compact to cool down before carrying out any maintenance, cleaning or repair work.</li></ul>

#### **WARNING**

	<b>Hot surfaces!</b>
	<p>Risk of severe scalding.</p> <ul style="list-style-type: none"><li>➤ When maintaining, cleaning or repairing the device, do not touch any pipes or components.</li><li>➤ Allow the Friwa Compact to cool down before carrying out any maintenance, cleaning or repair work.</li><li>➤ Wear heat-resistant safety gloves when having to work on any hot components.</li></ul>

### 5.2 Recommended maintenance intervals

Task	Interval
Check the shut-off cock and ball cock for clearance	Annually
Check the plate heat exchanger for calcified deposits	When required
Clean the plate heat exchanger	When required
Check for any noise coming from the pumps	Annually
Check Friwa Compact for any leaks (visual inspection)	Annually

## 5.3 Maintenance work

### 5.3.1 Dismantling the circulation pump

1. Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on.

## DANGER



### Electrical energy!

Risk of death from electric shock.

- ▶ Do not touch live cables or components with wet hands.
- ▶ Be aware of health and safety regulations when handling electric current.
- ▶ Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on before carrying out any maintenance, cleaning or repair work.

2. Remove the front cover on the Friwa Compact.
3. Shut off the shut-off cocks on the supply and return lines (see Fig. 5 on page 11).
4. De-pressurise the Friwa Compact (for example by opening the bleeder screws, Fig. 6 on page 12).

## NOTICE



During the depressurisation process of the Friwa Compact, water can leak out.

5. Open the junction box.
6. Release the corresponding strain reliefs.
7. Disconnect the wiring of the circulation pump (item C) in the junction box.
8. Loosen the nuts (item A) and remove the circulation pump (item C).

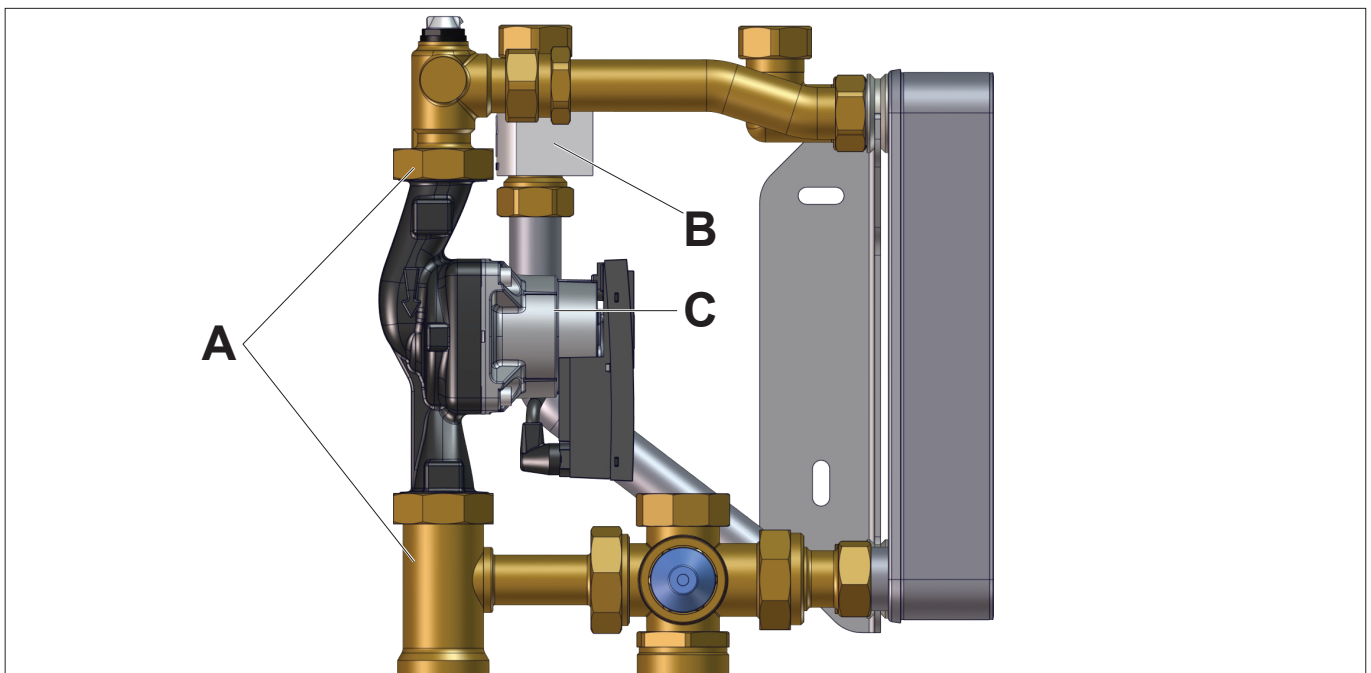


Fig. 7: Dismantling the circulation pump

# Friwa Compact

## 5.3.2 Assembling the circulation pump


1. Replace damaged or faulty gaskets if required.
2. Insert the circulation pump and tighten the nuts (for tightening torques, see “Technical data” on page 20).
3. Connect the wiring from the circulation pump to the junction box (see electric diagram, Fig. 11 on page 19).
4. Assemble the corresponding strain reliefs.
5. **Slowly** open the shut-off cocks on the supply and return lines (Fig. 5 on page 11).
6. Prime the Friwa Compact slowly with pressure and vent it if necessary.
7. Restore the power supply to the Friwa Compact.

## 5.3.3 Dismantling the plate heat exchanger

1. Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on.

 <b>DANGER</b>	
	<p><b>Electrical energy!</b></p> <p>Risk of death from electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not touch live cables or components with wet hands.</li><li>➤ Be aware of health and safety regulations when handling electric current.</li><li>➤ Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on before carrying out any maintenance, cleaning or repair work.</li></ul>

2. Remove the front cover on the Friwa Compact.
3. Shut off the shut-off cocks on the supply and return lines (Fig. 5 on page 11).
4. De-pressurise the Friwa Compact (for example by opening the bleeder screws, Fig. 6 on page 12).

<b>NOTICE</b>	
	<p>During the depressurisation process of the Friwa Compact, water can leak out.</p>



5. Loosen the nuts (item A) and remove the plate heat exchanger (item B) and the adapter (item D).
6. Remove the plastic rings (item C) for later use on the new plate heat exchanger.

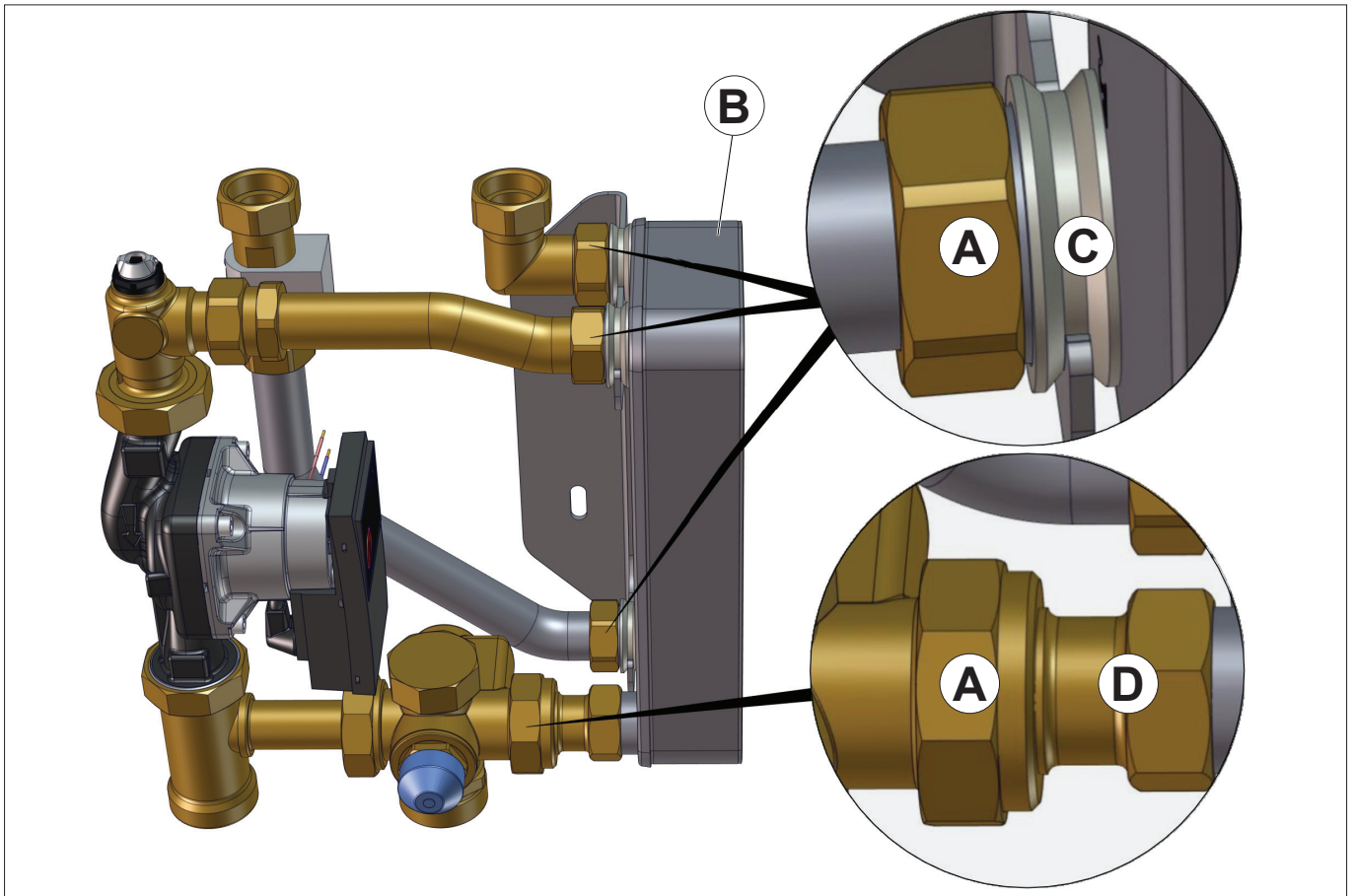


Fig. 8: Dismantling the plate heat exchanger

### 5.3.4 Assembling the plate heat exchanger

1. Fit the plastic rings (item C) from the old plate heat exchanger onto the new one.
2. Fit the connecting piece (item D) from the old plate heat exchanger onto the new one.
3. Replace damaged or faulty gaskets if required.
4. Insert the plate heat exchanger and tighten the nuts (item A) (for tightening torques, see “Technical data” on page 20).
5. **Slowly** open all of the shut-off cocks on the supply and return lines (Fig. 5 on page 11).
6. Prime the Friwa Compact slowly with pressure and vent it if necessary.
7. Restore the power supply to the Friwa Compact.

# Friwa Compact

## 5.3.5 Removing the flow switch

1. Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on.

 <b>DANGER</b>	
	<p><b>Electrical energy!</b></p> <p>Risk of death from electric shock.</p> <ul style="list-style-type: none"><li>➤ Do not touch live cables or components with wet hands.</li><li>➤ Be aware of health and safety regulations when handling electric current.</li><li>➤ Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on before carrying out any maintenance, cleaning or repair work.</li></ul>

2. Remove the front cover on the Friwa Compact.
3. Shut off the shut-off cocks on the supply and return lines (Fig. 5 on page 11).
4. De-pressurise the Friwa Compact (for example by opening the bleeder screws, Fig. 6 on page 12).

<b>NOTICE</b>	
	<p>During the depressurisation process of the Friwa Compact, water can leak out.</p>

5. Release the corresponding strain reliefs.
6. Disconnect the wiring of the flow switch (item B) in the junction box (Fig. 11 on page 19).
7. Loosen the nuts (item A) on the flow switch (item B) and remove it.

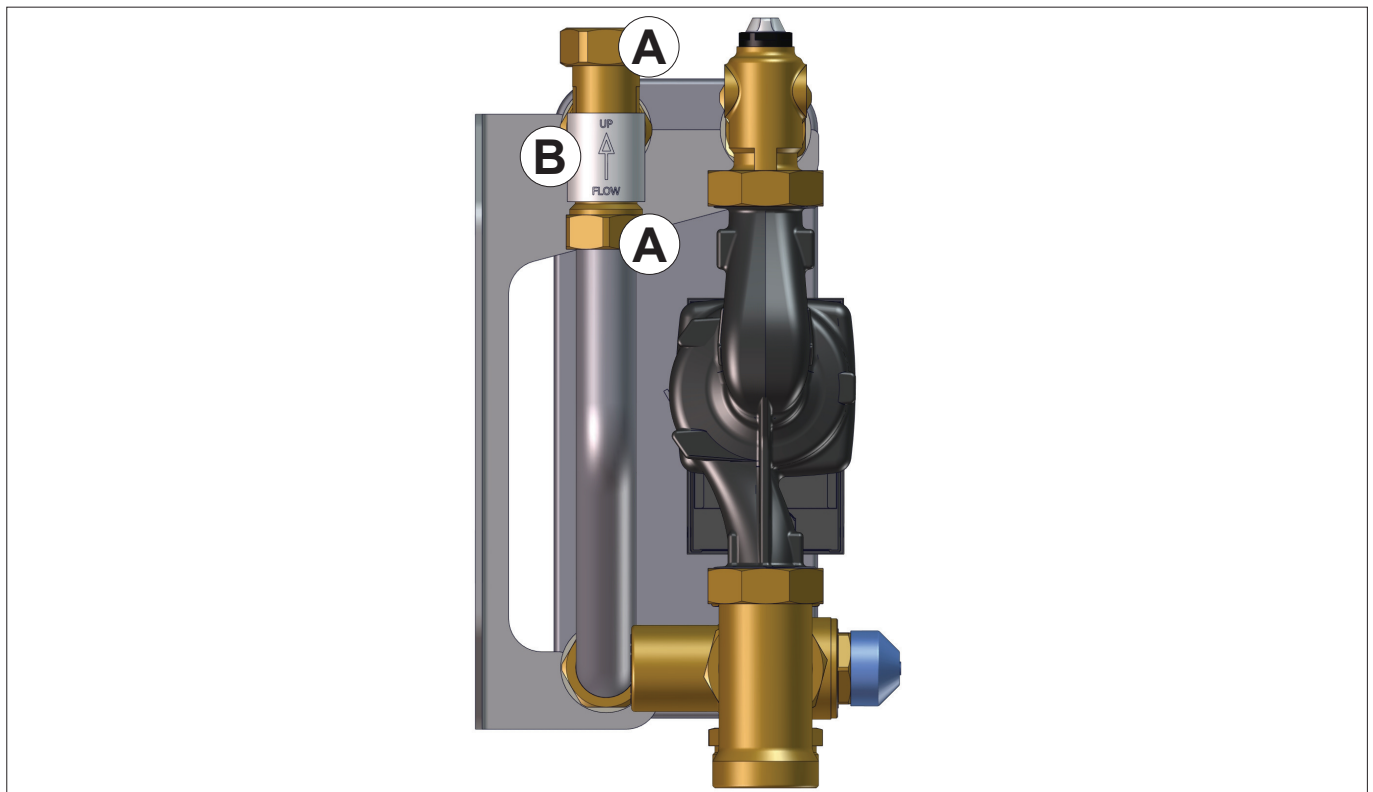


Fig. 9: Removing the flow switch

## 5.3.6 Assembling the flow switch

1. Place the flow switch in the correct installation position using a gasket (Fig. 10).

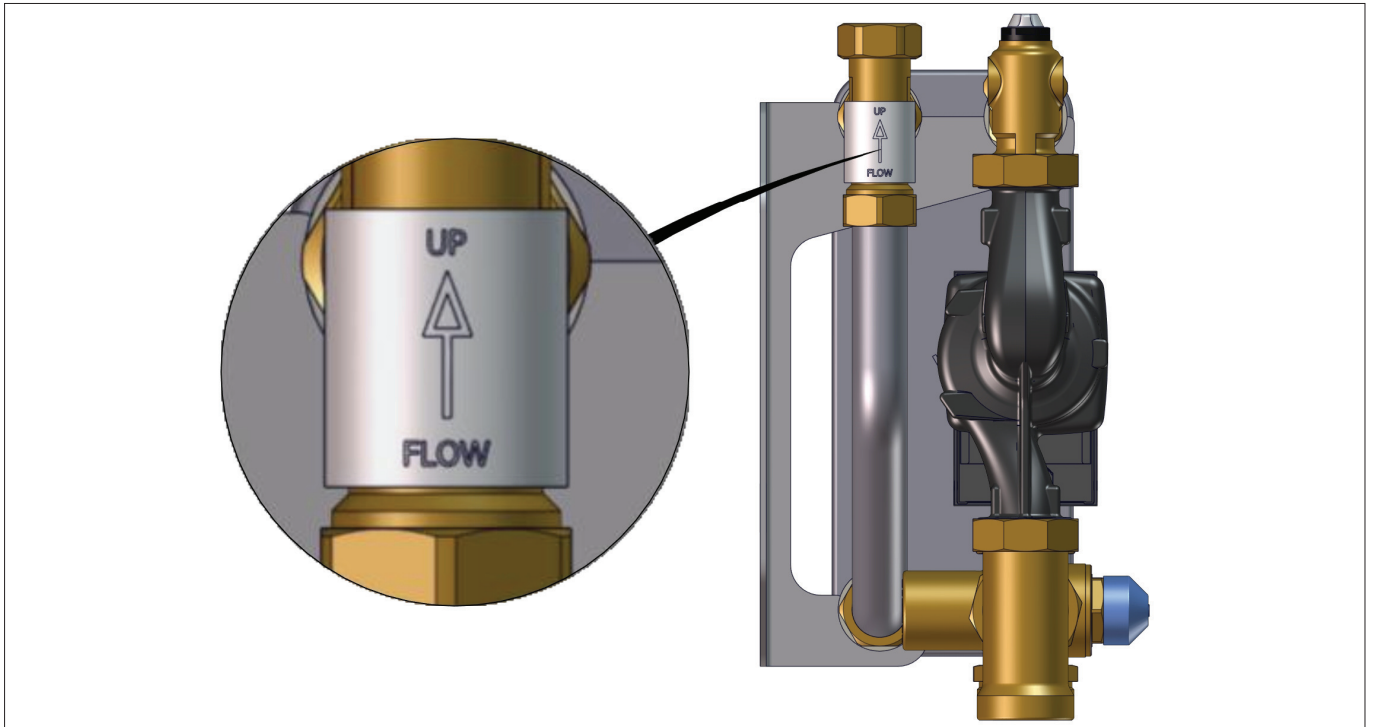


Fig. 10: Flow switch – installation position

2. Tighten the nuts (item A, Fig. 9 on page 18) (for tightening torques, see “Technical data” on page 20).
3. Connect the wiring from the flow switch to the junction box (see electric diagram, Fig. 11 on page 19).
4. Assemble the corresponding strain reliefs.
5. **Slowly** open all of the shut-off cocks on the supply and return lines (Fig. 5 on page 11).
6. Prime the Friwa Compact slowly with pressure and vent it if necessary.
7. Restore the power supply to the Friwa Compact.

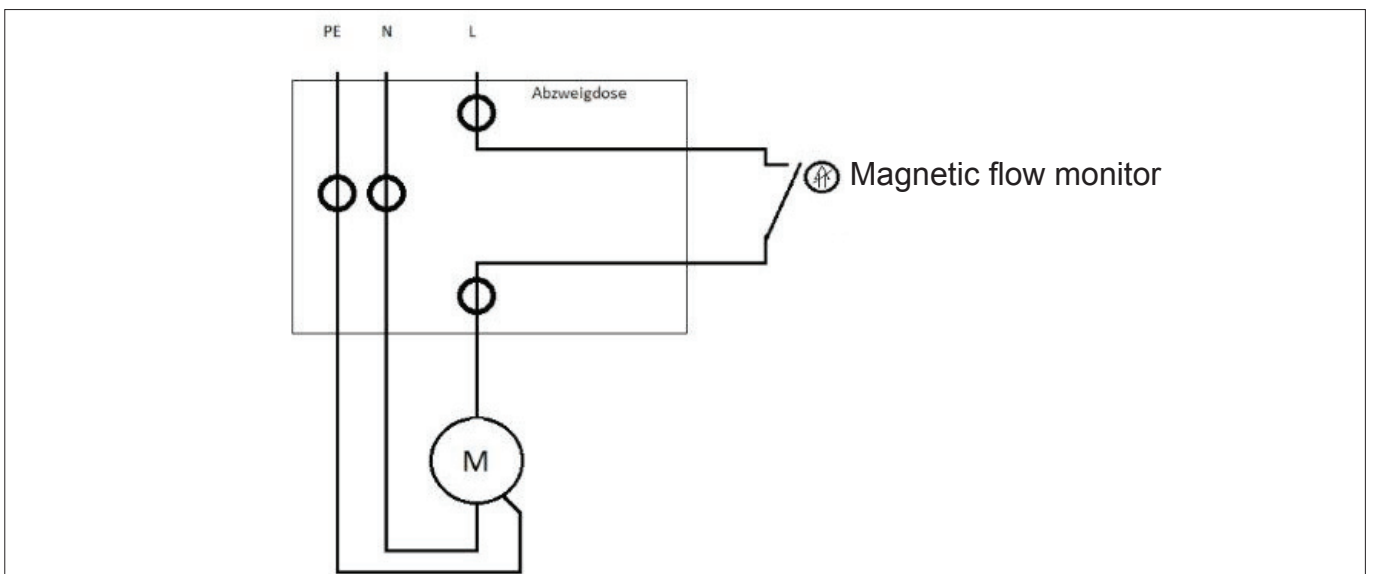


Fig. 11: Flow switch electric diagram

# Friwa Compact

## 6 Technical data

General	
Dimensions (W x H x D)	450 x 355 x 232 mm
Weight	Approx. 13-17 kg (depending on type)
Energy supply	230 V ~ 50 Hz
Maximum operating pressure	10 bar
Maximum permissible draw-off volumetric flow	25 l/min

Friwa Compact type 8022				
Draw-off volumetric flow [l/min]	Draw-off temperature [°C]	Primary supply temperature [°C]	Primary return temperature [°C]	Primary volumetric flow [l/min]
15	46	54	36	16
10	50	53	40	16
5	53	53	47	14
2.5	54	54	51	12

Friwa Compact type 8023				
Draw-off volumetric flow [l/min]	Draw-off temperature [°C]	Primary supply temperature [°C]	Primary return temperature [°C]	Primary volumetric flow [l/min]
25	42	53	32	22
20	46	53	36	21
15	50	53	40	19
10	53	54	45	16
5	56	56	51	12

Friwa Compact type 8024				
Draw-off volumetric flow [l/min]	Draw-off temperature [°C]	Primary supply temperature [°C]	Primary return temperature [°C]	Primary volumetric flow [l/min]
30	38	53	30	23
25	42	53	32	22
20	46	53	35	21
15	50	53	40	19
10	53	54	45	16
5	56	56	51	12
2.5	57	57	55	6

Tightening torque for screw connections with Reinz AFM 34 gasket	
3/4"	35 Nm
1"	55 Nm
1 1/4"	90 Nm
1 1/2"	130 Nm
2"	190 Nm

## 7 Decommissioning, recommissioning

### 7.1 Decommissioning

1. Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on.

#### DANGER



##### Electrical energy!

Risk of death from electric shock.

- Do not touch live cables or components with wet hands.
- Be aware of health and safety regulations when handling electric current.
- Disconnect the energy supply to the Friwa Compact and ensure it cannot be switched back on before carrying out any maintenance, cleaning or repair work.

2. Remove the front cover on the Friwa Compact.
3. Close all shut-off cocks (Fig. 5 on page 11).

#### In the event of prolonged periods of non-use:

4. De-pressurise the Friwa Compact (for example by opening the bleeder screws, Fig. 6 on page 12).

#### NOTICE



During the depressurisation process of the Friwa Compact, water can leak out.

### 7.2 Recommissioning

1. Perform recommissioning as described in section “Initial commissioning” on page 12.
2. Adequately flush all of the drawing-off points before using Friwa Compact for the first time after a period of non-use.

# Friwa Compact

---

## 8 Dismantling

Dismantling can be performed for two reasons:

- In order to reassemble the device elsewhere.
- In order to dispose of the device.

### NOTICE



If the Friwa Compact is to be reassembled elsewhere, the dismantling process must be prepared properly. All installation and fastening parts must be carefully dismantled, labelled and, if necessary, packaged for transportation. This will ensure that, upon reassembly, all the parts can be correctly assigned and fitted back in the appropriate place.

## 9 Disposal

### 9.1 Safety



### WARNING



**Incorrect disposal pollutes the environment and the groundwater!**

- When disposing of system parts and operating materials, the regulations and guidelines set down by the legislator of the respective country must be observed.

### 9.2 Disposal

1. Separate the components of the Friwa Compact into recyclable materials, hazardous materials and operating materials.
2. Dispose of the Friwa Compact components or recycle them.

