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WilSon W1

Electronic Twin Plate HIU

Operating Instructions

WilSon Energy Limited
Unit 7 | Mayden Business Park Northern Road | Newark | Nottinghamshire | NG24 2EU
Tel: **01636 857240** Email: **enquiries@wilsonenergy.co.uk**
Web: **www.wilsonenergy.co.uk**


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Electronic Twin Plate HEU

Information on the operating instructions

These operating instructions facilitate the safe and efficient use of the heat interface unit. The operating instructions are an integral part of the product and must be kept in its immediate vicinity and acces-sible to the personnel at all times.

The personnel must have carefully read and understood these instructions before starting any work. Compliance with all the safety warnings and instructions provided in this manual is a basic prerequi-site for working safely.

In addition, the local occupational health and safety regulations and the general safety guidelines for the area of use of the heat interface unit apply.

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1 Overview

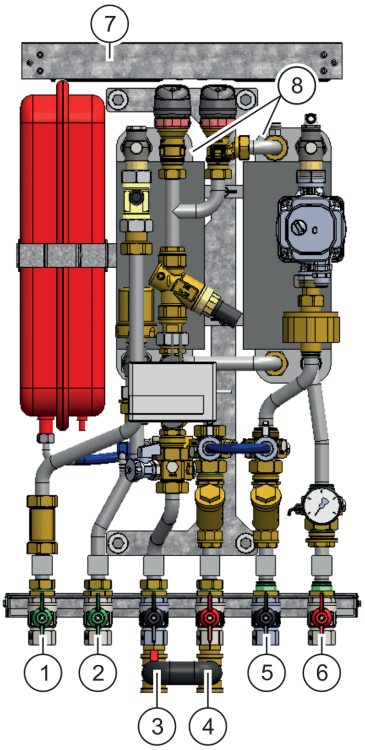


Fig. 1: Overview

1 Cold water main supply line connection
2 Hot water distribution connection
3 Primary connection for the heat supply return line
4 Primary connection for the heat supply flow line
5 Heating connection return line
6 Heating connection flow line
7 Controller
8 Heat exchanger

The heat interface unit is equipped with heating connections (Fig. 1/5, 6), drinking water connections (Fig. 1/1, 2) and heat supply connections (Fig. 1/3, 4). In the event of DHW or a heat demand, the controller (Fig. 1/7) regulates the water volume on the primary side. Heat is exchanged from the primary to secondary circuit by means of the heat exchanger (Fig. 1/8).

Information about the individual components and the possible options can be found in Chapter 3 'Functional description' on page 23.

1.1 Designs

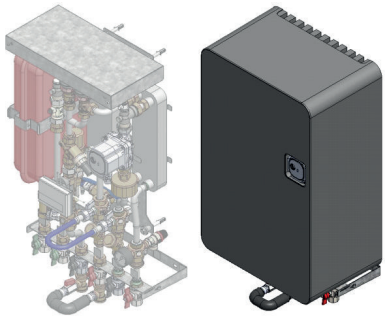


Fig. 2: Designs

The heat interface unit is insulated in EPP as a standard feature. An optional front cover can be added and installed on the insulation (*Chapter 3.5 'Options' on page 29*).

1.2 Other applicable documents

The table below contains an overview of the other applicable documents. All documents are available on the supplier's website.

Document	Remark
Declaration of conformity	In the annex to these instructions
Electrical circuit diagram	Enclosed with the heat interface unit
Primary circulation pump instructions	
Differential pressure control valve instructions	
Assembly instructions for the accessory pipe connection set	
Data sheet	Available from our website: https://wilsonenergy.co.uk
W1 controller instructions	
Data sheet for drinking water thresholds and the materials used in the plate heat exchanger	

2 Safety

2.1 Symbols in these instructions

Categories and symbols for the safety warnings

Safety warnings are indicated by symbols in these instructions. The safety warnings are introduced by signal words that indicate the extent of the danger.

DANGER!

This combination of symbol and signal word indicates an immediate, dangerous situation that can result in death or severe injury if it is not avoided.

WARNING!

This combination of symbol and signal word indicates a potentially dangerous situation that can result in death or severe injury if it is not avoided.

CAUTION!

This combination of symbol and signal word indicates a potentially dangerous situation that can result in minor or mild injury if it is not avoided.

NOTICE!

This combination of symbol and signal word indicates a potentially dangerous situation that can result in property damage if it is not avoided.

ENVIRONMENT!

This combination of symbol and signal word indicates potential dangers for the environment.

Safety warnings in instructions

Safety warnings may refer to specific, individual instructions. Safety warnings like this are embedded in the instructions to ensure they do not distract the reader when performing the activity. The signal words described above are used.

Example:

1. Release the screw.
2. 

   CAUTION!

   Danger of entrapment on the cover!

   Close the cover carefully.

3. Tighten the screw.

Special safety warnings

To draw attention to special dangers, the following symbols are used in safety warnings:

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – hot surface.
	Warning – danger zone.

Tips and recommendations

This symbol highlights useful tips and recommendations, as well as information for efficient and fault-free operation.

Other symbols

Instructions, outcomes, lists, references and other elements are highlighted in these instructions by the following symbols:

Symbol	Explanation
→	Step-by-step instructions
ð	Outcomes of instructions
	References to sections of these instructions and to other applicable documents
■	List without a specific order
[Button]	Operating element (e.g. button, switch), display element (e.g. indicator lamps)
'Display'	Screen elements (e.g. buttons, function key allocation)

2.2 Proper use

The heat interface unit is to be used solely for the decentralised heating of drinking water and for the distribution of hot water. It is designed for use in self-contained drinking water systems and heating systems.

Proper use also includes compliance with all information in these instructions.

Any use extending beyond, or use other than, proper use is considered improper use.

WARNING!

Danger in the event of improper use!

Improper use of the heat interface unit may result in dangerous situations.

- Never connect the heat interface unit directly to a source of heat (e.g. boiler or solar circuit).
- Never use the heat interface unit in one of the following areas:
  - Outdoors
  - Rooms susceptible to moisture
  - Rooms in which the use of electrical units is prohibited
  - Rooms susceptible to frost

2.3 Safety equipment

2.3.1 Safety equipment installed

2.3.1.1 Main shut off valve

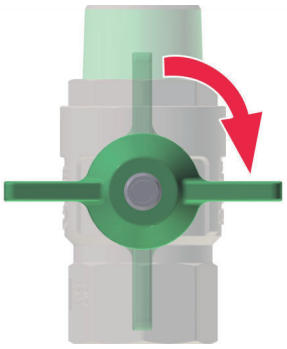


Fig. 3: Position of the ball valves

The ball valves (Fig. 3) are used to shut off circuits at the connection points.

1. Shut the ball valves in the event of a fault or leak.

   The ball valve is shut off once the handle is horizontal.

2. If it is not clear which ball valve needs to be shut off, shut off all ball valves.

2.3.1.2 Safety DCW valve (Option)

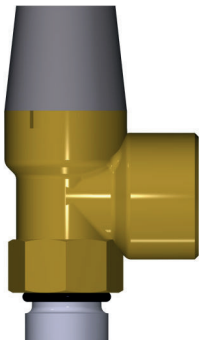


Fig. 4: Safety DCW valve

The safety DCW valve (Fig. 4) depressurises the station in the event of excess pressure on domestic cold/hot water site. The safety valve is calibrated for a pressure of 10 bar and does not need to be set during commissioning.

A pressure relief line must be connected to the safety valve during installation (*Chapter 5.4.5 'Connecting the pressure relief line to the safety valve' on page 39*).

2.3.1.3 Backflow preventer

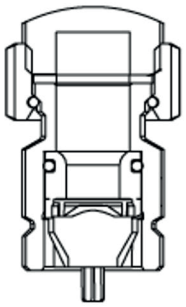


Fig. 5: Backflow preventer

The backflow preventer (*Further information on page 12*) is installed in the screw connection for the pump. It prevents incorrect circulation and is integrated into the pump connections as an insert.

2.3.2 Safety equipment to be installed by the operator

Earthing

The unit must be connected to earth by a trained electrician in accordance with local regulations. The earthing can be fastened to the installation frame or to the base plate.

Fuses for electrical circuit

The electrical circuit must be equipped with fuses in compliance with local regulations. Furthermore, an electrical fuse exclusively for the unit must be provided. This fuse must be clearly labelled. An easily visible description of the location of the fuse must be affixed to the unit.

Pressure safeguard

The operator must ensure that the pressures permitted in the in-house water system are complied with.

Pressure drain outlet pipe

The unit is equipped with a safety valve on secondary heating. The operator must ensure that a pressure drain outlet pipe is designed and installed in accordance with technical regulations.

2.4 Safety labels attached

WARNING!

Danger in the event of illegible signage!

Over the course of time, stickers and signs can get dirty or be rendered unrecognisable by other means. As a result, dangers can no longer be identified and the requisite operating instructions cannot be followed. This creates a risk of injury.

- All safety, warning and operating instructions must be kept in a clearly legible condition at all times.
- Replace damaged stickers and signs immediately.

The following stickers and signs are located in the work area. They refer to the immediate surroundings in which they are attached.

Live parts

The connection module marked by this sign may be live. Work on the connection module must only be carried out by specialist personnel (*Chapter 2.7 'Personnel requirements' on page 19*).

2.5 Residual risks

The unit is designed to be state-of-the-art and complies with all current safety requirements. However, there are residual risks that make caution necessary when using the unit. The residual risks and the practices and measures they result in are listed in the following.

2.5.1 Electric current

Electric power

DANGER!

Danger to life due to electric power!

There is an immediate risk of fatal electric shock if live components are touched. Damage to the insulation of the individual components can be fatal.

- Have all work on the electrical equipment performed by skilled electricians.
- In the event of damage to the insulation, cut off the power supply immediately and initiate repairs.
- Before working on live components of electrical systems and equipment, de-energise these components and secure them in this state for the duration of the work. Adhere to the following safety rules in this regard:
  - Disconnect.
  - Secure against restart.
  - Verify that components have been de-energised.
  - Ground and short-circuit.
  - Cover or shield any adjacent live components.
- Never bypass or disable any fuses. Comply with the correct amperage specification when replacing fuses.
- Keep moisture away from all live components. This may lead to short circuits.

2.5.2 Mechanical dangers

Sharp edges and pointed corners

CAUTION!

Danger of injury posed by sharp edges and pointed corners!

Sharp edges and pointed corners may cause skin grazes and cuts.

- Proceed with caution when working in the vicinity of sharp edges and pointed corners.
- If in doubt, wear safety gloves.

Stability (weight)

CAUTION!

Danger of injury due to the unit tipping over!

If the unit is not bolted to the wall, it may tip over and injure persons or damage property.

– Until the unit is bolted down, lean it against a wall or lay it down on its back.

2.5.3 High temperatures

Danger of scalding

WARNING!

Danger of scalding when tank temperatures exceed 60 °C!

When tank temperatures exceed 60 °C, there is a danger of burns on the lines in the station and scalding due to the escape of water.

– Ensure that additional thermal mixer valves are installed at the taps as protection from scalding.
– As soon as the station is operating, wear protective gloves when working on piping and on the heat exchanger.

Hot surfaces

WARNING!

Danger of injury due to hot surfaces!

Component surfaces can heat up significantly during operation. Skin contact with hot surfaces causes severe burns on the skin.

– Always wear heat-resistant protective clothing and protective gloves for all tasks in the vicinity of hot surfaces.
– Prior to all tasks, ensure that all surfaces have cooled down to ambient temperature.

2.5.4 Chemical dangers

Pitting corrosion

NOTICE!

Damage to metallic pipes and components due to pitting corrosion!

The water quality has an effect on the corrosion properties of the metallic materials installed.

- Observe the technical rules for installations made of mixed materials.
- Observe the corrosion protection for metallic materials in water distribution systems in accordance with EN 12502.
- Observe the data sheet “Drinking water thresholds and the materials used in the plate heat exchanger” (*Chapter 1.2 ‘Other applicable documents’ on page 8*).

2.5.5 Other dangers

Pressurised media

DANGER!

Danger of injury due to pressurised lines!

The lines of the unit can release pressures of up to 10 bar. If the lines are unscrewed incorrectly, this may result in serious injuries.

- Always have lines screwed on or opened by a heating technician without exception.
- Always have options installed or removed by a heating technician without exception.
- Prior to opening the lines, always close the line section and depressurise it via the air bleed valves.
- If a bolted connection cannot be opened, this may indicate that the line is still pressurised. Ensure that the line section is depressurised.

Proliferation of legionellae

WARNING!

Proliferation of legionellae due to stagnant water!

If the unit is not used for an extended period, there is a risk of the proliferation of legionellae due to stagnant water.

- Flush drinking water pipes with hot water at a temperature of at least 55 °C when restarting the unit.

Legionellae are bacteria of which one species is harmful to humans. Legionellae can easily proliferate in pipes with warm, stagnant water. Flushing the pipes with water at a temperature of at least 55 °C kills the legionellae.

Water damage due to leaks

NOTICE!

Water damage due to leaking pipes!

Leaking pipes can result in water damage due to constant dripping.

- Inspect pipes and bolted connections in accordance with the maintenance plan every year.
- If dripping noises occur, then inspect pipes and bolted connections even if this is not specified by the maintenance plan.

Damage due to calcination

NOTICE!

Increased calcination due to poor water quality!

Depending on the composition of the water and the system operating conditions, increased calcination may cause damage to the system.

- Implement measures to increase the corrosion protection and against limescale in accordance with country-specific regulations and standards.
- Carry out drinking water analyses in accordance with country-specific regulations and standards.
- If applicable, install a suitable water softening system in the drinking water inlet line in the building infeed line.

2.6 Operator's responsibilities

Operator

The operator is the person who operates the heat interface unit for commercial or economic purposes, or allows a third party to use/employ the system, and who assumes the legal product liability for protecting the user, personnel or third parties during operation.

Operator's responsibilities

The heat interface unit may be used for commercial purposes. The operator of the heat interface unit is therefore subject to the legal obligation to ensure occupational safety.

Along with the safety instructions in these instructions, the applicable occupational health and safety regulations and environmental protection regulations, as well as the country-specific drinking water ordinances, must be complied with in the area of use of the heat interface unit.

The following applies in particular:

- The operator must be informed about the applicable occupational safety regulations and must identify additional dangers resulting from the specific working conditions at the site at which the heat interface unit is used in a hazard assessment. This must be implemented in the form of operating instructions for operation of the heat interface unit.
- The operator must be check whether the operating instructions created by the operator correspond to the current status of regulations, and modify them, if applicable, over the full term of use of the heat interface unit.
- The operator must clearly assign and define responsibilities for installation, operation, troubleshooting, maintenance and cleaning.
- The operator must ensure that all persons who work with the heat interface unit have read and understood these instructions.

Furthermore, the operator is responsible for ensuring the heat interface unit remains in a technically flawless condition. The following therefore applies:

- The operator must take preventive measures against corrosion, limescale and calcination in accordance with country-specific regulations and standards.
- The operator must ensure drinking water hygiene and the hot water quality in the drinking water circuit in accordance with country-specific regulations and standards.
- The operator must ensure that the maintenance intervals described in these instructions are complied with.
- The operator must have all safety equipment inspected for functionality and completeness in regular intervals.
- The operator must ensure that the electrical circuit is equipped with fuses in compliance with local regulations. Furthermore, an electrical fuse must be provided exclusively for the heat interface unit. This fuse must be clearly labelled. An easily visible description of the location of the fuse must be affixed to the heat interface unit.

2.7 Personnel requirements

WARNING!

Danger of injury due to insufficient personnel qualification!

If unqualified personnel perform work on the unit or are standing in the danger area of the unit, this will result in dangers that can cause injury and property damage.

- All activities may only be performed by personnel qualified for the activities.
- Keep unqualified personnel away from the danger areas.

The personnel qualifications listed in the following are specified for the different areas of activity in these instructions:

Electrician
An electrician, due to professional training, knowledge and experience, as well as knowledge of the relevant standards and regulations, is able to perform work on electrical systems and identify and avoid potential dangers of their own accord.

The electrician is trained for the specific work environment in which work is carried out and is familiar with the relevant standards and regulations.

Heating and sanitary technician
The heating and sanitary technician is trained and certified for the specific area of activity in which he/she works and is familiar with the applicable standards and regulations.

The heating and sanitary technician is able to perform work on all heating and water heating systems due to his/her professional training and experience, and can identify and avoid potential dangers of his/her own accord.

Furthermore, the technician must provide proof of his/her professional qualification that certifies his/her ability to perform work on heating systems and water heating systems.

The heating and sanitary technician must have read and understood these instructions.

The skills the heating and sanitary technician must demonstrate include:

- Understanding of technical relationships
- Reading and understanding technical drawings and diagrams
- Installation of system components
- Installation and connection of heating pipes
- Performing maintenance work
- Disassembly and repair or replacement of system components when a problem occurs

Operator
The operator is the person who operates the unit or allows a third party to use/employ the system and who assumes the legal product liability for protecting the user or third parties during operation.

The operator is also responsible for adhering to the maintenance intervals.

The operator has been trained by manufacturer and sub-contractors in use of the unit and its components, and can identify potential dangers of their own accord and avoid dangerous situations.

Essential requirements

Only persons who can be expected to perform their work reliably may be approved as service personnel. Persons with an impaired ability to react, e.g. due to drugs, alcohol or medication, are not approved as service personnel.

Observe the age-related and vocation-specific regulations applicable at the site of use when choosing personnel.

Unauthorised persons

WARNING!

Danger to life for unauthorised persons due to dangers in the work area!

Unauthorised persons who do not satisfy the requirements described here are not aware of dangers in the work area. This is why there is a danger of severe injuries or even death for unauthorised per-sons.

- Keep unauthorised persons away from the danger and work area.
- If in doubt, speak to the persons and instruct them to leave the danger and work area.
- Stop work as long as unauthorised persons are in the danger and work zone.

2.8 Personal protective equipment

Personal protective equipment is used to protect persons from compromising their safety and health when working.

Personnel must wear personal protective equipment specifically indicated in the individual sections of these instructions when performing the different tasks on and with the heat interface unit.

Description of the personal protective equipment

The personal protective equipment is explained in the following:

Protective gloves
The heat-resistant gloves are used for protection from hot lines and from crush injuries.

Protective goggles
The protective goggles are used to protect the eyes during assembly when working with cutting tools.

Safety shoes
Safety shoes protect the feet from crush injuries, falling parts and slipping on slippery surfaces.

2.9 Environmental protection

ENVIRONMENT!

Danger to the environment due to incorrect use of inhibitors in hot water!

Considerable damage to the environment can occur in the event of incorrect use of hot water with inhibitors, and in particular in the event of disposal.

- Hot water to which inhibitors have been added must not be disposed of in waste water, but rather at a collection point for toxic substances.
- Observe the safety instructions for the inhibitors used.
- If inhibitors are accidentally released into the environment, take suitable measures immediately. If in doubt, inform the responsible local authorities about the damage and ask about suitable measures to take.

2.10 Tools and resources

Tools

Adjustable spanner
The adjustable spanner is used for releasing and tightening bolts.

Hand truck
The hand truck is used to transport the packages across long transport routes. A forklift can also be used in place of a hand truck.

Hexagon socket screw key
The hexagon socket screw key is used for releasing and tightening bolts.

Spirit level
The spirit level is used for aligning the unit horizontally and vertically during assembly.

Resources

Cloth
The cloth is used for collecting remaining fluids when a pipe section is opened and removed.

Insulating material
In the course of installation, it is necessary to ensure that the base plate or installation frame are sound-insulated by means of suitable insulating material such as insulating mats or multi-component foam. The insulating material is not part of the scope of delivery and must be provided by the customer.

Means of bolting
Depending on the type of installation and floor conditions, suitable drills, screws and other resources must be chosen.

Operating instructions for the heat interface unit
The operating instructions for the heat interface unit should be kept in the immediate vicinity of the home transfer station, and be readily accessible, at all times.

Spare parts
Spare parts (*Chapter 12 ‘ Spare parts’ on page 58*) can be obtained from Customer Service (see page 3 for the contact details). Only carry out the relevant activity when all the necessary spare parts are available.

3 Functional description

3.1 Circuits and connection points in the heat interface unit

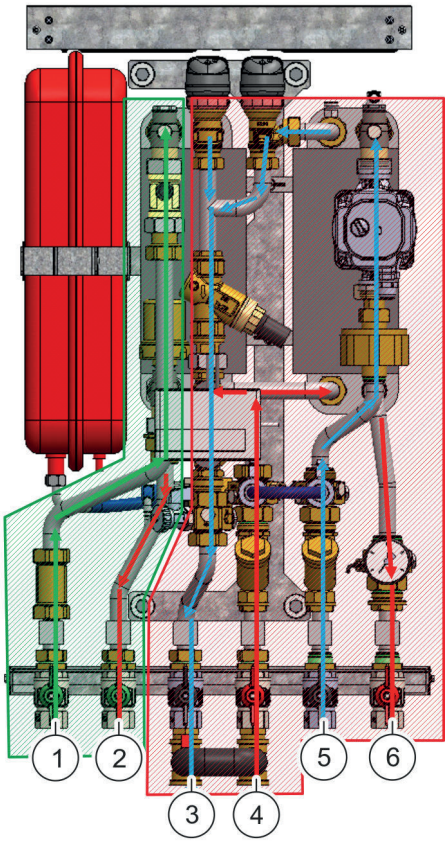


Fig. 6: Schematic overview of the lines

Arrows	Direction of flow
(green)	Secondary cold water circuit
(blue)	Cold water heater return line
(red)	Hot water
1	Cold water main supply line connection
2	Hot water distribution connection
3	Primary connection for the heat supply return line
4	Primary connection for the heat supply flow line
5	Heating connection return line
6	Heating connection flow line

All components for the heating water circuit, heat supply and distribution are located in the red area (Fig. 6).

All components for the domestic cold water supply and domestic hot water distribution are located in the green area (Fig. 6).

3.2 Functional principle

The heat interface unit heats drinking water in a section of a building. A section of a building, for example, can be a flat in a block of flats or a floor in a hotel.

In addition, the heat interface unit supplies the section of the building with the thermal heat required for radiators.

3.3 Components

Components and options

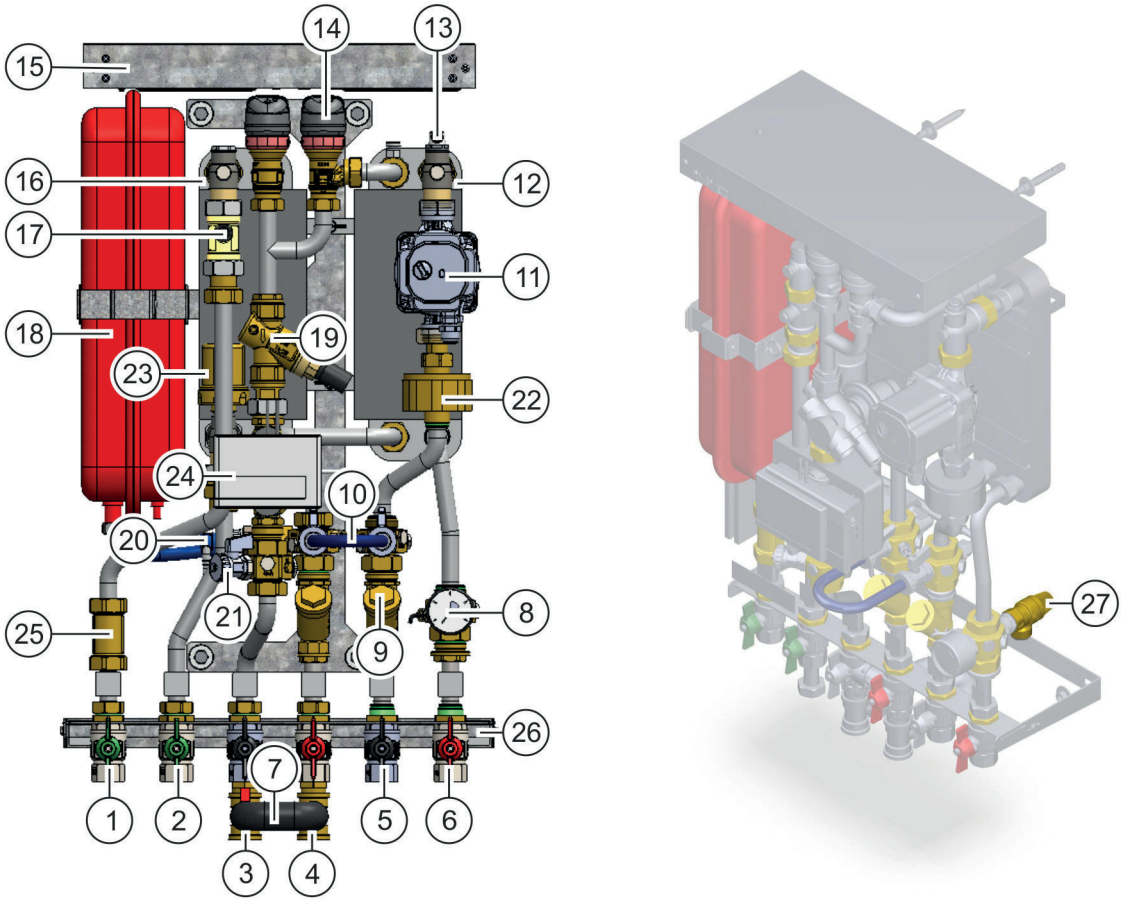


Fig. 7: Components and options

1 Cold water main supply line connection
2 Hot water distribution connection
3 Primary connection for the heat supply return line
4 Primary connection for the heat supply flow line
5 Heating connection return line
6 Heating connection flow line
7 Accessory: Flushing bypass (*page 29*)
8 Pressure indicator
9 Strainer (*page 25*)
10 Fill bypass
11 Heating circulation pump (*page 26*)
12 Heat exchanger: Primary circuit (*page 28*) 13 Air bleed valve (*page 26*)
14 Control valves
15 Controller
16 Heat exchanger: Secondary circuit (*page 28*)
17 Flow rate sensor (*page 28*)
18 Expansion vessel (*page 26*)
19 Option: Differential pressure control valve (*page 27*)
20 Thermal actuator
21 Fill and drain valve (*page 27*)
22 Option: Magnetic separator
23 Option: Water hammer damper (*page 30*)
24 Option: Heat meter
25 Option: Secondary DCW/DHW safety valve (*page 12*)
26 Accessory: Connecting rail incl. ball valves and bypass (*page 29*)
27 Safety valve secondary heating (behind manometer)(*page 27*)

3.3.1 Heating circuit

3.3.1.1 Strainer

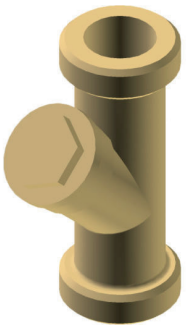


Fig. 8: Strainer

One strainer (Fig. 8) is located in the heating return line and in the primary heating supply line respectively, and filters the dirt particles from the hot water.

3.3.1.2 Heat meter adaptor

Fig. 9: Heat meter adaptor

The heat meter adaptor (Fig. 9) is used when no heat meter is installed.

For details regarding removal of the adaptor, see *Chapter 9 'Installing and removing options' on page 46*.

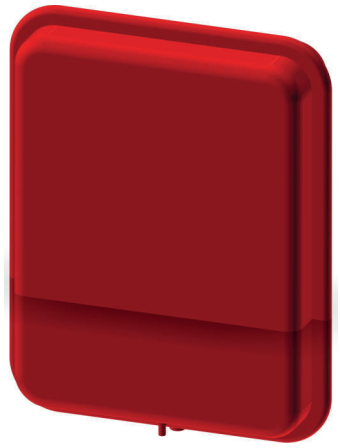
With regard to installation of the heat meter, observe the installation instructions for the heat meter. Note the following installation dimensions regarding the installation:

As of a hot water requirement of 1000 l/h, select the 1-inch version with an installation length of 130 mm according to the pressure loss of the meter.

Heat meter installation length	110 mm for ¾ inch or 130 mm for 1 inch
Maximum installation depth from the middle of the pipe section	66 mm
Maximum width of the meter	85 mm

A full range of heat meters are available with various communication outputs i.e. Wired mBus, Wireless mBus, LoRaWAN. Please contact our sales department on 01636 857 240 or at enquiries@wilsonenergy.co.uk for available options applicable to your needs.

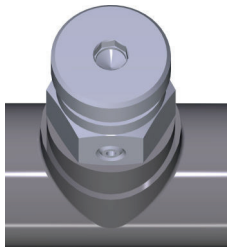
3.3.1.3 Expansion vessel



The expansion vessel (Fig. 10) permits the controlled expansion of the water at a constant pressure while it is being heated.

Fig. 10: Expansion vessel

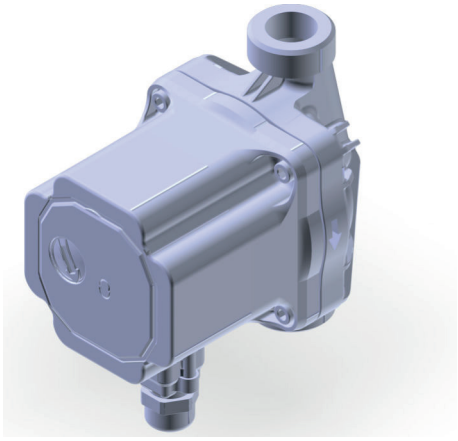
3.3.1.4 Air bleed valve



The air bleed valves (Fig. 11) are used for bleeding and ventilation when filling or draining the unit and the pipe networks connected.

Fig. 11: Air bleed valve for hot water

3.3.1.5 Integrated heating circulation pump



The integrated heating circulation pump (Fig. 12) supplies the connected radiators with the required heating water flow rate.

Fig. 12: Heating circulation pump

3.3.1.6 Differential pressure control valve

Fig. 13: Differential pressure control valve

The differential pressure control valve (Fig. 13) ensures the requisite constant supply pressure. It is set to 300 mbar ex-works.

The differential pressure control valve must be set during commissioning (*Chapter 8.1 'Setting the differential pressure control valve' on page 45*).

3.3.1.7 Capillary tube

Fig. 14: Capillary tube

The capillary tube (Fig. 14) measures the differential pressure between the primary connection heat supply flow and the return.

3.3.1.8 Safety valve secondary heating

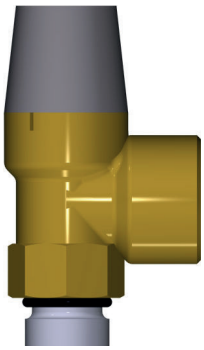


Fig. 15: Safety valve

The safety valve (Fig. 15) depressurises the heat interface unit in the event of excess pressure. The blow off pressure on the secondary heating side totals 3 bar.

A pressure relief line must be connected to the safety valve during installation (*Chapter 5.4.5 'Connecting the pressure relief line to the safety valve' on page 39*).

3.3.1.9 Fill and drain valves

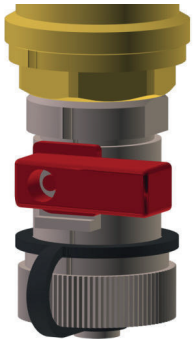
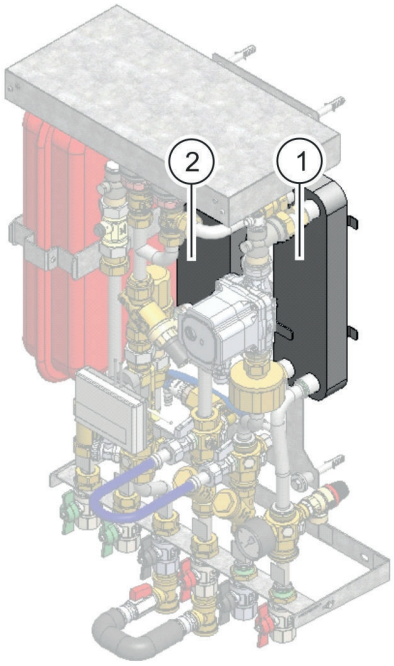


Fig. 16: Fill and drain valves

The fill and drain valves (Fig. 16) are used to fill and drain the relevant pipe sections.

3.3.2 Heat exchanger



1 Primary circuit heat exchanger
2 Secondary circuit heat exchanger

The two copper-brazed heat exchangers (Fig. 17/1, 2) generate the hot water for the heating circuit and the fresh water circuit.

To ensure that the domestic hot water has a temperature of 55 °C, the water from the heating supply must have a temperature of at least 65 °C, depending on the required tap flow rate.

Fig. 17: Heat exchanger

3.3.3 Secondary circuit

3.3.3.1 Flow rate sensor

The flow rate sensor (Fig. 18) measures the flow rate, ensuring a constant flow rate can be set in the control system for the taps, regardless of the pressure.

The flow rate sensor is already connected and set ex-works.

Fig. 18: Flow rate sensor

3.4 Accessory:

3.4.1 First fix rail

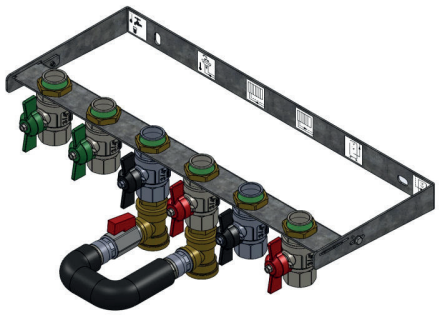


Fig. 19: First fix rail

If the section of the building is not yet ready for the installation of the heat interface unit, a first fix rail can be installed in advance. All the pipes are routed to this rail from below and can be filled and vented up to the shut-off valves.

The unit is subsequently mounted on the fix rail(*Chapter 5 'Assembly' on page 34*).

3.4.2 Flushing bypass

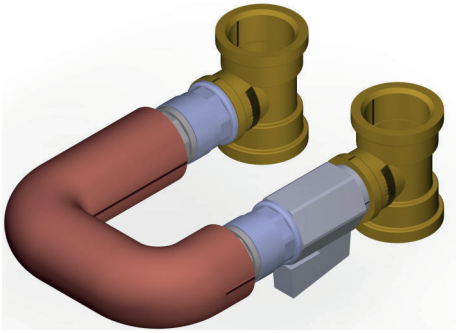


Fig. 20: Flushing bypass

By using the flushing bypass (Fig. 20), the primary circuit can be flushed without water flowing through the heat interface unit.

NOTICE!

The valves of the flushing bypass must be closed when the unit is in normal operation.

3.4.3 Pipe connection set

The pipe connection set makes it easier to connect lines that are guided into the unit from above. The unit is subsequently mounted on the connecting rail (*Chapter 1.2 'Other applicable documents' on page 8*).

3.5 Options

3.5.1 White front cover

When the unit is installed in a living area, the white front cover can help integrate the unit better into the flat.

3.5.2 Differential pressure control valve

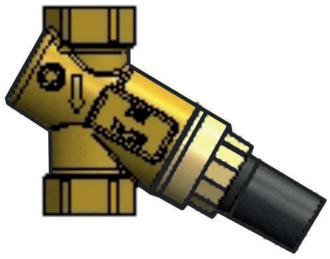


Fig. 21: Differential pressure control valve

The differential pressure control valve ensures there is a constant differential pressure in the subsystem (*Further information on page 45*).

3.5.3 Water hammer damper

To prevent water hammer from damaging the system, a water hammer damper is used. Water hammer is caused by shut-off valves closing quickly.

3.5.4 Safety DCW valve (Option)

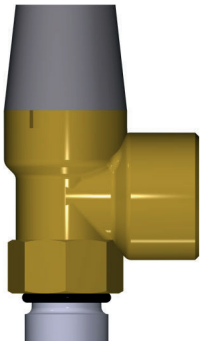


Fig. 22: Safety valve

The safety valve (Fig. 22) depressurises the unit in the event of excess pressure. The safety valve is calibrated for a pressure of 10 bar and does not need to be set during commissioning.

A pressure relief line must be connected to the safety valve during installation (*Chapter 5.4.5 'Connecting the pressure relief line to the safety valve' on page 39*).

3.5.5 Flow limiter

The use of a flow limiter limits the district cold water (DCW) to a specific quantity. This causes a not insignificant loss of pressure.

4 Transport and storage

4.1 Safety during transport

WARNING!

Risk of back injuries due to heavy loads!

The heat interface unit weighs up to 35 kg. Improper transportation can result in long-lasting back problems.

- Always have two persons lift the heat interface unit.
- Use appropriate lifting and transport equipment, such as forklift trucks or hand trucks.

CAUTION!

Danger of crushing due to falling loads!

If the heat interface unit falls down, there is a risk that parts of the body will be crushed.

- Wear safety shoes and protective gloves.
- Ensure that the heat interface unit is always properly secured during transportation with transport aids.
- Ensure that the transport route is free of persons and obstacles.

Improper transport

NOTICE!

Damage to property due to improper transport!

Improper transport can cause packages to fall or tip over. This can cause substantial damage to property.

- When unloading the packages on delivery and during transportation within the company, proceed with caution and observe the symbols and instructions on the packaging.
- Use appropriate lifting and transport equipment, such as a hand truck or forklift, and secure the package properly.
- Only remove packaging shortly before installation.

The domestic hot water module and the heating module are supplied in two packages and must be assembled after delivery at the installation site.

4.2 Transporting the heat interface unit

Inspection for transport damage

Inspect the heat interface unit for completeness and any transport damage immediately upon receipt.

If there is any visible transport damage, proceed as follows:

- Do not accept the delivery, or only conditionally.
- Make a note of the extent of the damage on the transport documents or on the delivery note issued by the transport company.
- Make a claim.

Claim each defect as soon as it has been identified. Claims for compensation can only been asserted within the applicable claim periods.

Transporting packages

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves
- Safety shoes

Tool:
- Hand truck

1. Have a second person assist you in putting the package on the hand truck fasten it in correctly. Make sure that it is stable.
2. Transport the package to the installation site.
3. Have a second person assist you in lifting down the package from the hand truck.

4.3 Unpacking the heat interface unit

Personnel:
- Heating and sanitary technician

Prerequisites:

- The heat interface unit is at the installation site.

1. Lift the heat interface unit out of the packaging with the assistance of a second person.
2. Keep the packaging for any further transport of the heat interface unit.

4.4 Storing the heat interface unit

If the heat interface unit is placed in storage prior to installation, comply with the following conditions:

- *Store the heat interface unit in its original packaging.*
- *Store the heat interface unit in a dry, dust-free and frost-free room.*

5 Assembly

Beware of the heat interface unit falling

CAUTION!

Risk of injury due to the heat interface unit falling!

If the load-bearing capacity of the installation location or the means of bolting it in place are not designed for the weight of the heat interface unit, there is a risk of injuries to persons and damage to property due to the heat interface unit falling down.

- Ensure that the load-bearing capacity of the wall is sufficient. If necessary, consult a structural engineer.
- Ensure that the means of bolting the unit in place are dimensioned for the weight of the heat interface unit.
- The weight specifications can be found in chapter *Ä Chapter 16 'Technical data' on page 65*.

5.1 Requirements of the installation location

Requirements of the installation location:

- The room must be dry and frost-free.
- The installation location must satisfy protection class IP30.
- The installation location must be designed for the dimensions of the heat interface unit. The dimensions can be found in chapter *Chapter 16 'Technical data' on page 65*.
- The heat interface unit must be connected to a mains voltage of 230 VAC ± 10% with a grid frequency of 50–60 Hz.

Requirements of the water quality:

- Take corrosion protection and limescale into account in accordance with country-specific regulations and standards.
- Carry out a drinking water analysis in accordance with country-specific regulations and standards.
- If necessary, install suitable water filters in the drinking water supply line of the building inlet.

5.2 Mounting the connecting rail

If the pipes in the section of the building are awaiting testing but the heat interface unit cannot yet be installed, the fix rail can be mounted. The pipes in the section of the building can be connected to the connecting rail and the supply lines can then already be tested for leaks this way.

Personnel: ■ Heating and sanitary technician

1. Determine the exact position of the heat interface unit in order to mount the fix rail below it. For the dimensions of the unit *Chapter 16.3 'Installation dimensions and weights' on page 65*.
2. Hold the fix rail in position at the installation location and use a spirit level to ensure that the fix rail is aligned horizontally and vertically.
3. *Choose the drill and type of bolt in accordance with the wall material.*

   Use the designated points (Fig. 23/1) to bolt on the fix rail in the installation location.
4. Close the ball valves.

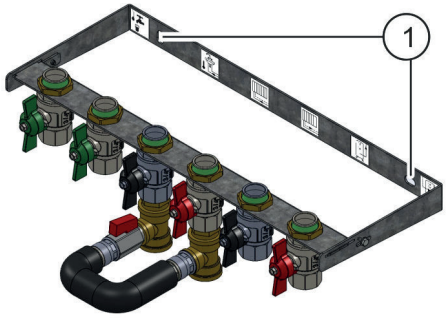


Fig. 23: Bolting on the fix rail

5.3 Mounting the heat interface unit

Personnel: Heating and sanitary technician

Protective equipment: Protective goggles

Tool: Spirit level Material:

n Insulating material

■ Means of bolting

1. Lift the heat interface unit to the installation location using two persons.
2. Hold the heat interface unit in position at the installation location and use a spirit level to ensure that the heat interface unit is aligned horizontally and vertically.
3. Mark the points for the bolted connection on the base plate and the installation location.
4. Decouple the base plate using suitable insulating material.

5. **CAUTION!**
Risk of injury due to airborne drilling dust and chips!
Wear protective goggles.

Tighten the bolts to fasten the heat interface unit to the installation location.

Choose the drill and type of bolt in accordance with the wall material.

Connecting the fix rail

6. If a first fix rail has already been installed, connect the pipes.

Fitting the cover

7. If the heat interface unit was supplied with a cover, hook the cover onto the top of the base plate.
8. Fasten the cover onto the base plate using 6 screws (2 on each side and 2 on the underside).

5.4 Connecting pipes

5.4.1 Preparing the heat interface unit

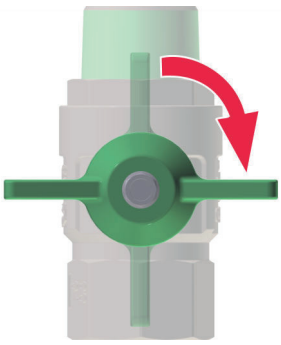


Fig. 24: Ball valves closed

The following items must be checked and ensured before connecting the heat interface unit:

- The water quality was checked and, if necessary, appropriate measures to ensure the required water quality have been taken.
- The supply lines have been routed to the installation location of the heat interface unit in accordance with the project planning documents.
- The supply lines are fitted with suitable sleeves for the connec-tion couplings.
  Connection couplings: 3/4" female (with piping kit 3/4" male with O-ring seal)
- The supply lines have been sufficiently flushed and checked for leaks.
- The supply lines are properly insulated.
- The lines to the taps have been shut off.
- The cold water supply line is shut off.
- The heat interface unit has been installed and sound-insulated in accordance with *Ä Chapter 5 'Assembly' on page 34*.
- The heat interface unit is de-energised.
- The ball valves (Fig. 24) are closed.

Route the supply lines to the heat interface unit.

5.4.2 Connecting the drinking water pipes (hot and cold)

NOTICE!

Damage to property due to excessive system pressure!

If the system pressure in the heating module is higher than the maximum operating pressure of 10 bar, there is a risk of damage to property due to leaking pipes.

– Install and set a pressure reducer in the hot water connection in accordance with the country-specific regulations and standards.

Personnel:
- Heating and sanitary technician

Tool:
- Adjustable spanner

Prerequisite:

- The heat interface unit has been prepared in accordance with *Chapter 5.4.1 'Preparing the heat interface unit' on page 36*.

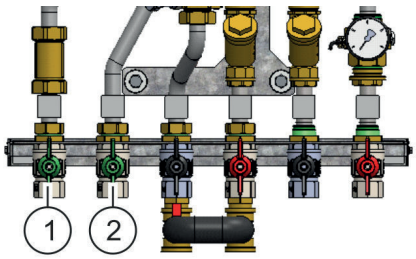


Fig. 25: Connection couplings for the water lines

1. Connect the fresh water main supply line to the cold water main supply line connection (Fig. 25/1) and tighten it by hand.
2. Connect the hot water line to the hot water distribution connection (Fig. 25/2) and tighten it by hand.
3.

NOTICE!

Damage due to excessive strain on the pipes!

To avoid subjecting the pipes to excessive tension, hold the pipes in place and tighten the bolted connections using an adjustable spanner.

⇨ The water lines have been connected.

5.4.3 Connecting the primary connections for the heat supply

Personnel: ■ Heating and sanitary technician

Tool: ■ Adjustable spanner

Prerequisite:

■ The heat interface unit has been prepared in accordance with *Chapter 5.4.1 'Preparing the heat interface unit' on page 36*.

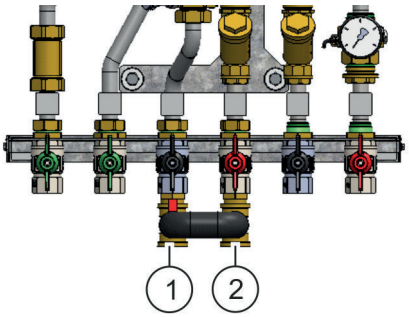


Fig. 26: Heat supply flow and return lines

1. Connect the heating return main supply line to the primary connection for the heat supply return line (Fig. 26/1) and tighten it by hand.
2. Connect the heating flow main supply line to the primary connection for the heat supply flow line (Fig. 26/2) and tighten it by hand.
3.

NOTICE!

Damage due to excessive strain on the pipes!

To avoid subjecting the pipes to excessive tension, hold the pipes in place and tighten the bolted connections using an adjustable spanner.

⇨ The main supply lines for heating have been connected.

5.4.4 Connecting the lines for the radiators or the underfloor heating

Personnel: ■ Heating and sanitary technician

Tool: ■ Adjustable spanner

Prerequisites:

■ The heat interface unit has been prepared in accordance with *Chapter 5.4.1 'Preparing the heat interface unit' on page 36*.

■ The heating lines have been connected in accordance with *Chapter 5.4.3 'Connecting the primary connections for the heat supply' on page 38*.

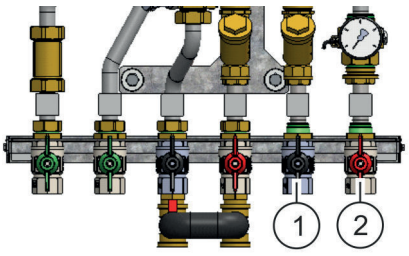


Fig. 27: Connecting the radiators

1. Connect the return line to the heating connection return line (Fig. 27/1) and tighten it by hand.
2. Connect the flow line to the heating connection flow line (Fig. 27/2) and tighten it by hand.

3.

NOTICE!

Damage due to excessive strain on the pipes!

To avoid subjecting the pipes to excessive tension, hold the pipes in place and tighten the bolted connections using an adjustable spanner.

⇨ The radiator lines have been connected.

Use the same procedure for the optional lower connections. If filling is necessary, proceed in accordance with Chapter 7 'Preliminary commissioning' on page 42.

5.4.5 Connecting the pressure relief line to the safety valve

Personnel: ■ Heating and sanitary technician

The heat interface unit has a discharge line that runs from the safety valve to the lower edge of the unit.

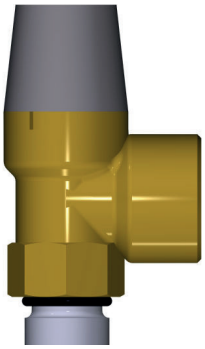


Fig. 28: Connecting the pressure relief line

Route and connect a pressure relief line to the discharge line of the safety valve (Fig. 28).

In this regard, observe the country-specific regulations and standards, e.g. EN 12828.

5.5 Electrical installation

5.5.1 Connecting the heat interface unit to earth

Personnel: ■ Electrician

Depending on the fastening principle that is used, the earthing can either be attached to the installation frame or to the base plate.

→ Connect the heat interface unit to earth in accordance with the country-specific regulations.

5.5.2 Connecting the main electrical cable

DANGER!

Danger due to electric current!

When working with power cables, there is an immediate danger of severe, or even fatal, injury due to electric current.

- Ensure that the cable is not live when performing installation work.
- Only have work on electric cables performed by an electrician.
- Never connect voltage to open cables.
- Before connecting the cable to voltage, ensure that no persons are near electric cables.

Personnel: ■ Electrician

1. → Loosen the screws and remove the cover of the main connection module.
2. → Connect the main connection in accordance with the electrical circuit diagram supplied.
3. → Ensure that the main connection is fused separately.

5.5.3 Connecting the standby module

Personnel: Heating and sanitary technician

→ Connect the standby module to the room thermostat.

6 Shutting down in an emergency

Personnel:
- Operator
- Heating and sanitary technician

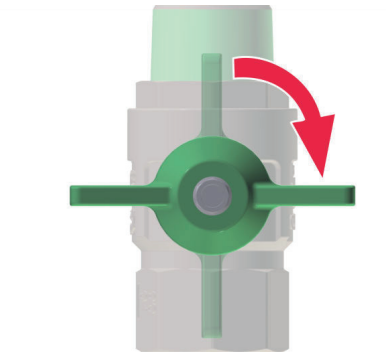


Fig. 29: Closing the ball valves

In the event of an emergency, proceed as follows:

1. Close all ball valves (Fig. 29) on the heat interface unit.
   ⇨ The flow and return lines are closed.
2. Switch off the fuse of the heat interface unit.
   ⇨ The heat interface unit has been shut down.
3. Have a heating technician rectify the fault.
4. Inspect the heat interface unit before restarting it and ensure that all the components are correctly installed and in proper working order.

7 Preliminary commissioning

Danger of scalding

WARNING!

Danger of scalding when tank temperatures exceed 60 °C!

When tank temperatures exceed 60 °C, there is a danger of burns on the lines in the station and scalding due to the escape of water.

- Ensure that additional thermal mixer valves are installed at the taps as protection from scalding.
- As soon as the station is operating, wear protective gloves when working on piping and on the heat exchanger.

Damage due to calcination

NOTICE!

Increased calcination due to poor water quality!

Depending on the composition of the water and the system operating conditions, increased calcination may cause damage to the system.

- Implement measures to increase the corrosion protection and against limescale in accordance with country-specific regulations and standards.
- Carry out drinking water analyses in accordance with country-specific regulations and standards.
- If applicable, install a suitable water softening system in the drinking water inlet line in the building infeed line.

Personnel: ■ Heating and sanitary technician

Prerequisites:

- The heat interface unit has been installed and connected in accordance with *Chapter 5 'Assembly' on page 34*.
- The water quality has been tested and found to be good.

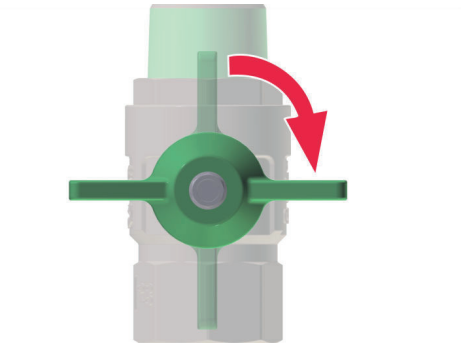


Fig. 30: Ball valves closed **Filling**

1. Ensure that all ball valves (Fig. 30) are closed.
2. Check the tightness of all bolted connections and retighten if necessary.

the heat interface unit

3. To fill the heat interface unit, open the main supply line for fresh water outside the heat interface unit.

Filling the secondary circuit for drinking water distribution

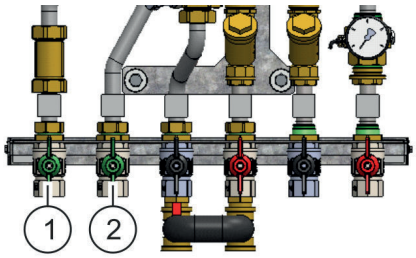


Fig. 31: Opening the fresh water ball valve

4. Slowly open the main supply line for cold water (Fig. 31/1).
   ⇨ The secondary circuit fills up.
5. Open the hot water distribution connection (Fig. 31/2).
6. In order to flush and bleed the lines, open the taps.
   ⇨ The drinking water system (hot) is filled, flushed and bled.

Filling the primary circuit

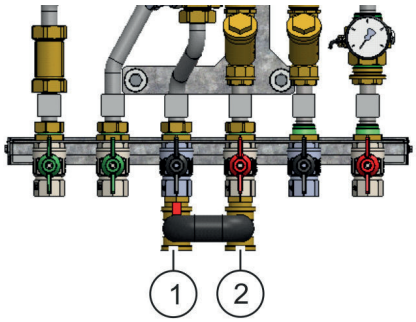


Fig. 32: Opening the ball valve for the heating supply and heating return

7. **WARNING!**
   Risk of burns due to hot pipes!

   Open the primary connection for the heat supply flow line (Fig. 32/2).
   ⇨ The primary circuit fills up.
8. Open the primary connection for the heat supply return line (Fig. 32/1).

Filling the heating circuit

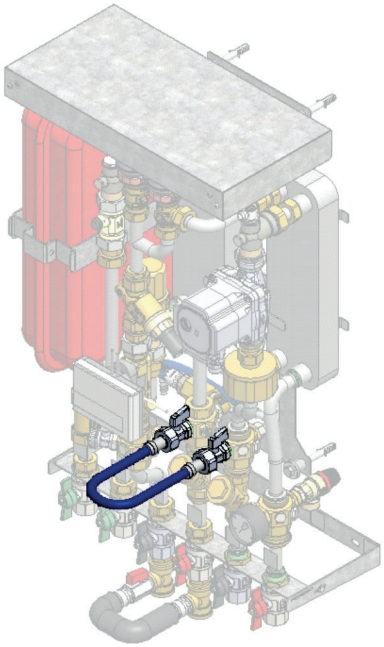


Fig. 33: Fill and drain valves

9. **WARNING!**
Risk of burns due to hot pipes!

Fill the heating circuit using the bypass (Fig. 33):

a) Open the heating flow line connection

b) Open the heating return line connection

10. To bleed the primary circuit, open the air bleed valve.

⇨ The primary circuit is filled and bled.

NOTICE!
The way the heating circuit is bled is based on the hygroscopic fibre disc principle. The system therefore cannot be checked for leaks using air.

11. Check the tightness of all bolted connections.

12. To set the parameters, see *Chapter 8 'Final commissioning' on page 45*.

8 Final commissioning

8.1 Setting the differential pressure control valve

Personnel:
- Heating and sanitary technician

Fig. 34: Differential pressure control valve

1. Determine the differential pressure using the data sheet *Chapter 1.2 'Other applicable documents' on page 8*).
2. Set the differential pressure on the setting scale.
   ⇨ The differential pressure control valve (Fig. 34) has now been set.

8.2 Handing over the heat interface unit to the operator

Personnel:
- Operator
- Heating and sanitary technician

Material:
- Operating instructions for the heat inter-face unit

These operating instructions for the heat interface unit and the other applicable documents (A Chapter 1.2 'Other applicable documents' on page 8) should be kept in the immediate vicinity of the heat inter-face unit.

1. Hand the operating instructions for the heat interface unit over to the operator.
2. Enter the set parameters in the log (*Appendix A 'Commissioning report' on page 72*).
3. Instruct the operator on how the heat interface unit functions, and its individual components.
4. Make the operator aware that the heat interface unit cannot function correctly if the controller is not correctly set. Make the operator aware that only one heating technician should calibrate the heat interface unit.
5. Point out the yearly maintenance intervals to the operator.

9 Installing and removing options

If options are replaced or subsequently installed, the heat interface unit must be temporarily shut down and the corresponding pipes drained.

- *Chapter 13.1 'Shutting down the heat interface unit for a short period (<24 h)' on page 60*
- *Chapter 13.3 'Emptying the heat interface unit' on page 61*

Observe the applicable installation instructions in respect of the installation of the options.

Removing the adaptor

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves

Tool: Adjustable spanner

Material: ■ Cloth

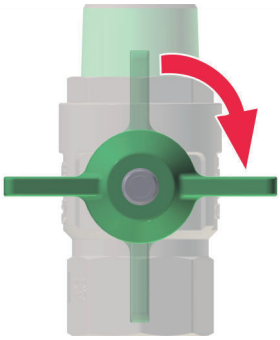


Fig. 35: Ball valves closed

1. *Observe the flow chart (Chapter 3.1 'Circuits and connection points in the heat interface unit' on page 23).*

Close the ball valve (Fig. 35) of the respective supply line so that no water is flowing through the adaptor.

2. **WARNING!**
Risk of burns due to hot pipes!

If the pipe section is one through which hot water flows, wait until the pipe section has cooled down.

Fig. 36: Adaptor

3. Release and remove the bolted connection of the adaptor (Fig. 36) using an adjustable spanner when moving an energy meter.

4. Collect the remaining water using a cloth.

⇨ The adaptor has been removed.

5. Install the heat meter or cold water meter in accordance with the relevant installation instructions.

10 Cleaning and maintenance

10.1 Safety during maintenance

Securing against a restart

WARNING!

Danger to life due to unauthorised restart!

An unauthorised restart of the power supply during maintenance presents a danger of severe injuries or even death for persons in the danger zone.

– Before starting any work, shut off all power supplies and secure them against a restart.

Hot lines

WARNING!

Danger of burns due to hot lines!

There is a danger of being burned on the lines when working on the heat interface unit.

- As soon as the heat interface unit is operating, wear protective gloves when working on the heat interface unit.
- Ensure that the ball valves of the hot water lines are closed when performing work on the heat interface unit.
- Proceed with caution when working on the heat interface unit.

Improperly performed maintenance work

WARNING!

Danger of injury due to improperly performed maintenance work!

Improperly performed maintenance can result in severe injury and significant property damage.

- Ensure freedom of movement before starting work.
- Ensure the assembly site is tidy and clean!Loosely stacked components and tools, or those left lying around, are a cause of accidents.
- If components were removed, ensure they are installed correctly, refit all fastening elements and adhere to any screw tightening torques.
- Observe the following before restarting:
  - Ensure that all maintenance work is performed and completed in accordance with the specifications and notes in these operating instructions.
  - Ensure that there are no persons in the danger zone.
  - Ensure that all covers and safety equipment are installed and that they function properly.

10.2 Overview of maintenance work

The following sections describe the maintenance work that is necessary to ensure optimal and fault-free operation of the heat interface unit.

Refer to the documentation for the circulation pump and the controller when performing maintenance on the circulation pump and the controller (xxx Link xxx).

If increased wear is identified during regular inspections, shorten the required maintenance intervals to correspond to the actual signs of wear. Should you have any questions regarding the maintenance work and intervals, contact Customer Service (see page 3 for the contact details).

Interval	Maintenance work	Personnel
Every year	Clean the heat interface unit (*Chapter 10.3.1 'Cleaning the heat interface unit' on page 49*).	Operator
	Clean the strainer (*Chapter 10.3.2 'Cleaning the strainer' on page 50*).	Operator Heating and sanitary technician
	Check the piping and bolted connections of the heat interface unit for leak-tightness. If you are unsure, consult a heating technician. If there is a leak, replace the bolted connection or the pipe at this point (*Chapter 10.3.3 'Replacing a bolted connection or pipe' on page 51*).	Operator Heating and sanitary technician
	Check whether all ball valves can be closed and opened. To do so, close each ball valve once and open it again. If you are unsure, consult a heating technician.	Operator
	Check the wiring of the main terminal box and the connection module.	Electrician
	Check the water quality. If necessary, take appropriate measures to comply with country-specific regulations regarding water quality.	Heating and sanitary technician
	Check the wall fasteners and the housing of the heat interface unit.	Operator Heating and sanitary technician
	Check the controller software for updates in accordance with the documentation for the controller.	Heating and sanitary technician

10.3 Maintenance work

10.3.1 Cleaning the heat interface unit

NOTICE!

Property damage due to incorrect cleaning agents!

Aggressive cleaning agents can damage pipes, bolted connections or other components of the heat interface unit.

– Do not use any aggressive cleaning agents.

Personnel: Operator

Protective equipment: Protective gloves

1. Clean the heat interface unit using a moist cloth. **2.**

WARNING!
Danger of burns due to hot lines!

Clean pipes and bolted connections using a moist cloth or a brush, and remove any dust.

10.3.2 Cleaning the strainer

Personnel:
- Operator
- Heating and sanitary technician

Protective equipment: Protective gloves

Tool: **1.** Adjustable spanner

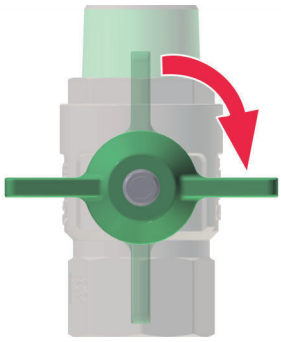


Fig. 37: Closing the ball valves

Observe the flow chart (Chapter 3.1 'Circuits and connection points in the heat interface unit' on page 23).

Close the ball valve (Fig. 37) of the supply line so that water no longer flows through it.

If the pipes or bolted connections of the main supply lines leak, close the main supply lines.

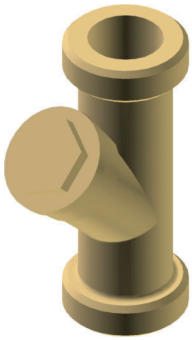


Fig. 38: Fresh water strainer

2. **WARNING!**
Risk of burns due to hot pipes!

Loosen the bolted connection of the strainer (Fig. 38/1) with an adjustable spanner.

3. Remove the strainer.
4. Rinse the strainer with water.
5. Insert the strainer and tighten with an adjustable spanner.

10.3.3 Replacing a bolted connection or pipe

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves

Tool: Adjustable spanner

Material:
- Spare parts
- Cloth

Prerequisites:
- The leak has been pinpointed.
- The replacement material is available (*Chapter 12 ‘ Spare parts’ on page 58*).

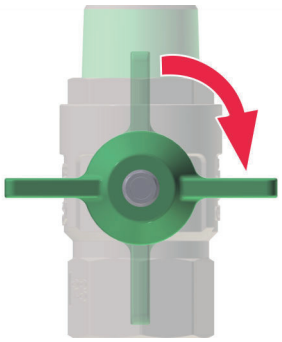


Fig. 39: Ball valve closed

1. *Observe the flow chart (Chapter 3.1 ‘Circuits and connection points in the heat interface unit’ on page 23).*

Close the ball valve (Fig. 39) of the supply line to the leaking point so that water no longer flows through it.

If the pipes or bolted connections of the main supply lines leak, close the main supply lines.

2. **WARNING!**
Risk of burns due to hot pipes!

If the pipe section is one through which hot water flows, wait until the pipe section has cooled down.

3. Loosen and remove the bolted connection at the leak using an adjustable spanner.

4. Collect the remaining water using a cloth.

5. Insert the new pipe or new bolted connection.

6. Ensure that O-ring seals are available.

7. Tighten the new pipe or new bolted connection using an adjustable spanner.

8. Open the corresponding ball valve.

9. Check the spare part for leak-tightness.

⇨ The leak has been repaired.

11 Faults

11.1 Safety when repairing faults

Improperly performed work when repairing faults

WARNING!

Risk of injury due to improperly repairing faults!

Improperly performed work when repairing faults can result in severe injuries and substantial damage to property.

- Only repair faults that require action once it has been ensured that the heat interface unit has been shut down and secured against being restarted.
- Only release blockages once it has been ensured that the release will not cause any dangerous movement of machine parts.
- If in doubt, contact Customer Service (see page 3 for the contact details).
- Observe the following before restarting:
  - Ensure that the all fault repair work has been performed and completed in accordance with the information and instructions in these operating instructions.
  - Ensure that there are no persons in the danger zone.
  - Ensure that all covers and safety equipment are installed and that they function properly.

Securing against a restart

WARNING!

Danger to life due to unauthorised restart!

An unauthorised restart of the power supply when searching for faults and during fault rectification presents a danger of severe injuries or even death for persons in the danger zone.

– Before starting any work, shut off all power supplies and secure them against a restart.

11.2 Fault repair

Fault description	Cause	Remedy	Personnel
No hot water at the taps.	Ball valves are closed.	Open the ball valves.	Operator
	Primary energy supply is not reliable.	Check whether there is hot water at the heat exchanger. If there is no hot water at the heat exchanger, check the central heating.	Operator
	Heat exchanger is defective.	Replace the heat exchanger (*Chapter 11.3 'Replacing the heat exchanger' on page 54*).	Heating and sanitary technician
	Primary circulation pump defective.	Replace the primary circulation pump *Chapter 11.4 'Replacing the pump' on page 54*).	Heating and sanitary technician
	Backflow preventer defective.	Replace the backflow preventer *Chapter 11.5 'Replacing the backflow preventer' on page 55*).	Heating and sanitary technician
	Controller defective or power supply disconnected.	Check the power supply (*Chapter 1.2 'Other applicable documents' on page 8*).	Electrician
Insufficient hot water at peak times.	Temperature sensor or flow rate sensor defective.	Replace the temperature sensor or flow rate sensor (*Chapter 11.7 'Replacing the temperature sensor' on page 57*, *Chapter 11.6 'Replacing the flow rate sensor' on page 56*).	Heating and sanitary technician
Black water at the taps.	Heat exchanger is defec-tive or cold water supply is contaminated.	Replace the heat exchanger (*Chapter 11.3 'Replacing the heat exchanger' on page 54*). Check the water quality.	Heating and sanitary technician
Insufficient water pressure at the taps.	Calcified water tap at the taps.	Unscrew the water tap and decalcify.	Operator
	Calcified pipes in the heat interface unit or in the entire pipe system.	Check the water quality and, if neces-sary, take appropriate measures to comply with country-specific regulations regarding water quality.	Heating and sanitary technician
Safety valve blows off.	Pressure or temperature on DCW/DHW or secondary heating are too high.	Check the temperature or pressure and, if necessary, regulate it.	Heating and sanitary technician
	Safety valve defective.	Check the network pressure and, if necessary, replace the safety valve.	Heating and sanitary technician
No heat transfer despite open control valve and demand by the controller.	Dirty heat exchanger due to incorrect flushing and unclean heating water.	Flushing or replacing the heat exchanger.	Heating and sanitary technician

11.3 Replacing the heat exchanger

Personnel: ■ Heating and sanitary technician

Tool: ■ Adjustable spanner
■ Hexagon socket screw key

1. Shut down the heat interface unit for a short period (*Chapter 13.1 'Shutting down the heat interface unit for a short period (<24 h)' on page 60*).
2. Drain the heat interface unit (*Chapter 13.3 'Emptying the heat interface unit' on page 61*).
3. Loosen all the pipe fasteners (Fig. 40/1) of the pipes to the heat exchanger to be replaced.
4. *The red marking on the heat exchanger indicates how the heat exchanger should be positioned.*

   Observe the position of the red marking and remove the old heat exchanger.
5. Install the new heat exchanger so that the red marking is in the same position.
6. To bolt the new heat exchanger in place, tighten the 4 bolted connections (Fig. 40/1).
7. Restart the system (*Chapter 7 'Preliminary commissioning' on page 42*).

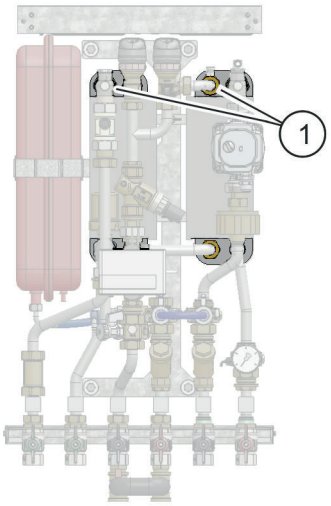


Fig. 40: Loosening the pipe fasteners

11.4 Replacing the pump

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves

Tool: Adjustable spanner

Material: ■ Spare parts
■ Cloth

1. *Observe the flow chart (Chapter 3.1 'Circuits and connection points in the heat interface unit' on page 23).*

   Close the main shut off valve (Fig. 41) for the supply line to the pump to ensure no more water can flow through the pump.

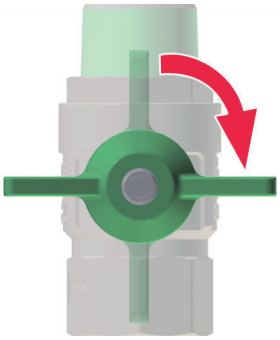


Fig. 41: Main shut off valve closed

2. **WARNING!**
Risk of burns due to hot pipes!

If the pipe section is one through which hot water flows, wait until the pipe section has cooled down.

3. Release the bolted connection for the pump using an adjustable spanner, and lift the pump off.
4. Collect the remaining water using a cloth.
5. Install the new pump.
6. Ensure that new O-ring seals are available.
7. Tighten the bolted connections using an adjustable spanner.
8. Restart the heat interface unit (*Chapter 7 'Preliminary commissioning' on page 42* and *Chapter 8 'Final commissioning' on page 45*).
9. Set the pump in accordance with the controller instructions for the unit (*Chapter 1.2 'Other applicable documents' on page 8*).

11.5 Replacing the backflow preventer

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves

Tool: Adjustable spanner

Material:
- Spare parts
- Cloth

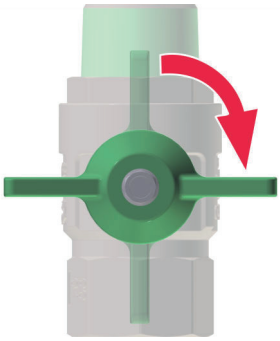


Fig. 42: Main shut off valve closed

1. *Observe the flow chart (Chapter 3.1 'Circuits and connection points in the heat interface unit' on page 23).*

Close the main shut off valve (Fig. 42) for the supply line to the backflow preventer to ensure no more water can flow through the backflow preventer.

2. **WARNING!**
Risk of burns due to hot pipes!

If the pipe section is one through which hot water flows, wait until the pipe section has cooled down.

3. Release the bolted connection for the backflow preventer using an adjustable spanner, and place the backflow preventer to one side.

4. Collect the remaining water using a cloth.
5. Install a new backflow preventer.
6. Ensure that O-ring seals are available.
7. Tighten the new backflow preventer using an adjustable spanner.
8. Restart the heat interface unit (*Chapter 7 'Preliminary commissioning' on page 42* and *Chapter 8 'Final commissioning' on page 45*).

11.6 Replacing the flow rate sensor

Personnel: Heating and sanitary technician

Protective equipment: Protective gloves

Tool: Adjustable spanner

Material:
- Spare parts
- Cloth

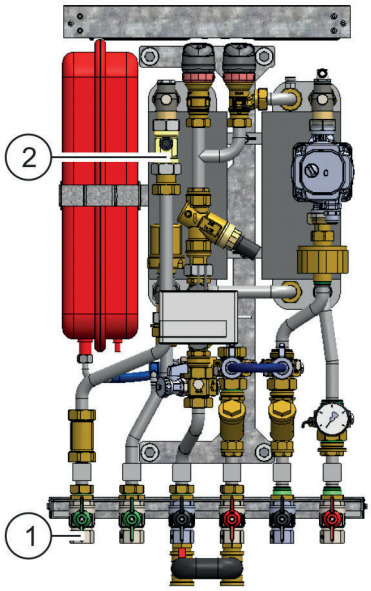


Fig. 43: Replacing the flow rate sensor

1. *Observe the flow chart (Chapter 3.1 'Circuits and connection points in the heat interface unit' on page 23).*

   Close the main shut off valve (Fig. 43/1) for the supply line to the backflow preventer to ensure no more water can flow through the backflow preventer.

2. **WARNING!**
   Risk of burns due to hot pipes!

   If the pipe section is one through which hot water flows, wait until the pipe section has cooled down.

3. Release the bolted connection for the flow rate sensor (Fig. 43/2) using an adjustable spanner.
4. Remove the flow rate sensor.
5. Collect the remaining water using a cloth.

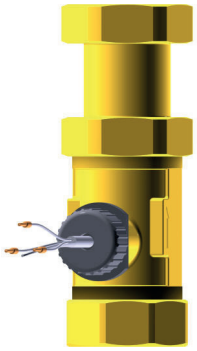


Fig. 44: Flow rate sensor

6. Install a new flow rate sensor (Fig. 44).
7. Ensure that O-ring seals are available.
8. Tighten the new flow rate sensor using an adjustable spanner.
9. Tighten the primary hot water return line using an adjustable spanner.
10. Restart the heat interface unit (*Chapter 7 'Preliminary commissioning' on page 42* and *Chapter 8 'Final commissioning' on page 45*).

11.7 Replacing the temperature sensor

Personnel: ■ Heating and sanitary technician

1. Shut down the heat interface unit for a short period (*Chapter 13.1 'Shutting down the heat interface unit for a short period (<24 h)' on page 60*).
2. Wait until the pipes have cooled down.
3. To remove the temperature sensor (Fig. 45), release the M10 bolt.
4. Remove the bolted connection with the temperature sensor.
5. Secure the new temperature sensor and O-ring against slipping out using an M10 bolt.
6. Restart the heat interface unit (*Chapter 14 'Restarting' on page 62*).

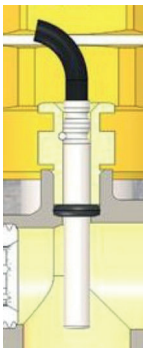


Fig. 45: Releasing the temperature sensor

12 Spare parts

12.1 Ordering spare parts

Please specify the following when ordering spare parts:

- Unit number (indicated on the type plate)
- Year of manufacture (indicated on the type plate)
- Designation of the spare part
- Order number for the spare part
- Quantity
- Preferred form of delivery (post, freight, shipment, airmail, express)
- Shipping address

12.2 Spare parts list

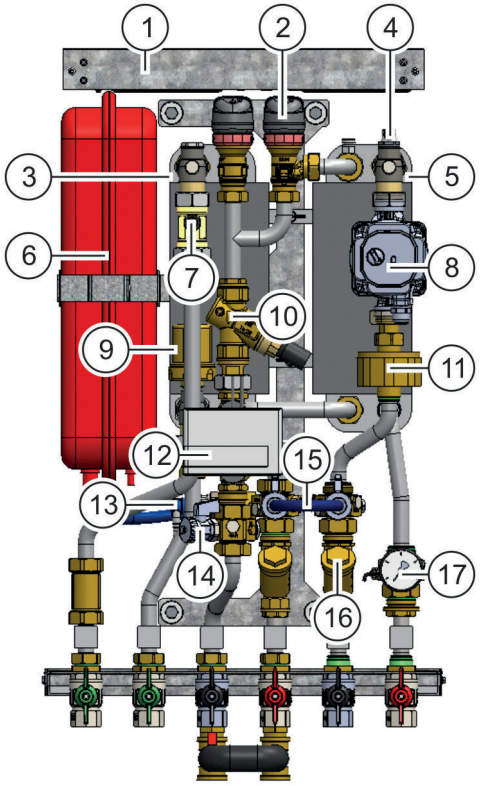


Fig. 46: Spare parts

No.	Part number	Designation
1	W1-SP306084	W1 Controller
2	W1-SP306081	Control valve
3/5	W1-SP306072	Heat exchanger XB06H-1-10 WRAS
	W1-SP306073	Heat exchanger XB06H-1-16 WRAS
	W1-SP306074	Heat exchanger XB06H-1-26 WRAS
	W1-SP306075	Heat exchanger XB06H-1-40 WRAS
	W1-SP306076	Heat exchanger XB06H-1-60 WRAS
4	W1-SP304005	Air Bleed Valve Vent DN15, 1/2" with O-Ring
6	W1-SP306071	Expansion tank RP 250x438x105 - 3/8"
7	W1-SP305143	Flow rate sensor 0-60 l/min
8	W1-SP307225	Pump ES2 C 15-60/130 - UK
9	W1-SP307279	Water hammer damper AG 1/2" (optional)
10	W1-SP6080	Differential pressure control valve (EDP.1 DN20 female to female 3/4" dp 5 - 50 kPa)
11	W1-SP30XX	Magnetic separator (optional)
12	W1-SP6090	Heat Meter Seno Star
13	W1-SP306087	Thermal actuator
14	W1-SP307053	Fill & Drain Valve 1/2"
15	W1-SP213280	Fill and drain bypass kit
16	W1-SP307220	Strainer DN20 female to female 3/4" L=70 mm (TW)
17	W1-SP6078	Screw-in sensor M10x1 – 1.5 m cpl. - NTC

13 Decommissioning

13.1 Shutting down the heat interface unit for a short period (<24 h)

Shutting down for a short period is appropriate if maintenance work has to be carried out on the heat interface unit.

Personnel: ■ Heating and sanitary technician

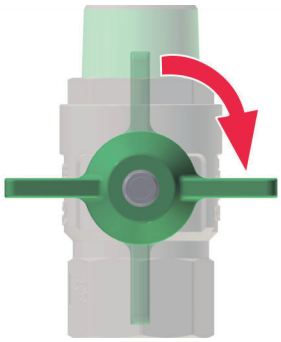


Fig. 47: Closing the ball valves

1. Close all the ball valves (Fig. 47).
   ⇨ The flow and return lines are closed.
2. Switch off the electrical fuse of the heat interface unit and secure it against being switched on again.
3. Wait until the heat interface unit has cooled down.
   ⇨ The heat interface unit has been shut down for a short period.

In order to remove an optional component from the piping or install an equipment option in the piping, the corresponding circuit must be drained Chapter 13.3 'Emptying the heat interface unit' on page 61).

13.2 Shutting down the heat interface unit for an extended period (>1 month)

Shutting down for an extended period is appropriate if the building section will not be occupied for a lengthy period.

Personnel: ■ Operator

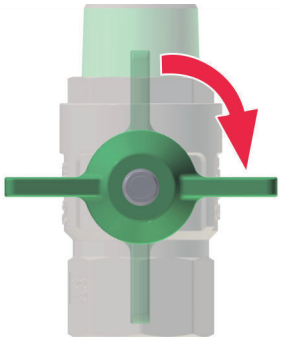


Fig. 48: Closing the ball valves

1. Close all the ball valves (Fig. 48).
   ⇨ The flow and return lines are closed.
2. Switch off the electrical fuse of the heat interface unit.
3. Drain all taps and leave them open.
4. Drain all of the pipes of the heat interface unit in accordance with *Chapter 13.3 'Emptying the heat interface unit' on page 61*.
5. Ensure that the heat interface unit is protected against frost.

13.3 Emptying the heat interface unit

Draining the primary side of the heat interface unit

Personnel: ■ Heating and sanitary technician

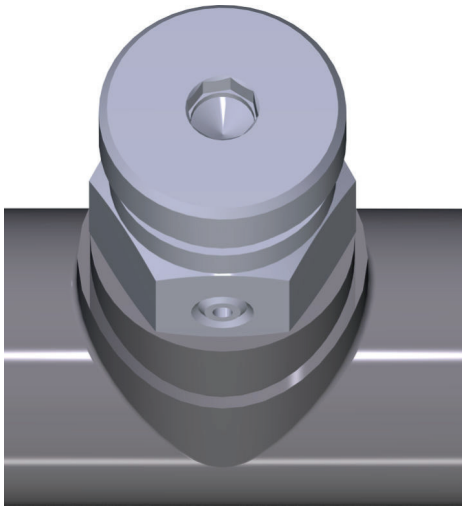


Fig. 49: Opening the valves

1. To depressurise the primary circuit of the heat interface unit, open the air bleed valves (Fig. 49).
2. Shut down the central heating connection in accordance with the project planning documents.
3. To remove the remaining water from the pipes, loosen the bolted connections on the adaptors and collect the remaining water using a cloth.

   ⇨ The heating distributor has been drained.

Draining the secondary side of the heat interface unit

Personnel: ■ Heating and sanitary technician

1. To depressurise the secondary circuit of the heat interface unit, open the connected taps.
2. To remove the remaining water from the pipes, loosen the bolted connections on the adaptors and collect the remaining water using a cloth.

   ⇨ The drinking water connection has been drained.

14 Restarting

Proliferation of legionellae

WARNING!

Proliferation of legionellae due to stagnant water!

If the unit is not used for an extended period, there is a risk of the proliferation of legionellae due to stagnant water.

– Flush drinking water pipes with hot water at a temperature of at least 55 °C when restarting the unit.

Legionellae are bacteria of which one species is harmful to humans. Legionellae can easily proliferate in pipes with warm, stagnant water. Flushing the pipes with water at a temperature of at least 55 °C kills the legionellae.

Restarting

Restart the heat interface unit in accordance with the following chapters.

- *Chapter 7 ‘Preliminary commissioning’ on page 42*
- *Chapter 8 ‘Final commissioning’ on page 45*

15 Disassembly, disposal

15.1 Safety during disassembly and disposal

Electrical installation

DANGER!

Danger due to electric current!

Danger to life in the event of contact with live components. Electrical components may make unchecked movements when switched on and cause severe injuries.

– Switch off the power supply before starting disassembly, and disconnect it for good.

Improper disassembly

WARNING!

Risk of injury in the event of improper disassembly!

Any residual energy still present, sharp-edged components, sharp angles and corners on or in the unit, or on the tools required, can cause injuries.

- Ensure there is sufficient space before starting work.
- Handle open, sharp-edged components carefully.
- Ensure the workplace is tidy and clean! Loosely stacked components and tools, or those left lying around, can cause accidents.
- Disassembly components correctly. Observe the high inherent weight of certain components. If necessary, use lifting equipment.
- Secure the components so that they cannot fall or tip over.
- Should anything be unclear, contact Customer Service (see page 3 for the contact details).

15.2 Disassembling the heat interface unit

Before starting disassembly:

- Switch off the heat interface unit and secure it against a restart.
- Decommission the heat interface unit for an extended period *Chapter 13.2 'Shutting down the heat interface unit for an extended period (>1 month)' on page 60*).
- Physically disconnect the full energy supply from the heat interface unit, allow any residual energy still present to discharge.
- Remove operating materials and resources, and any remaining materials used for work on the unit, and dispose of them in an environmentally friendly manner.

Then clean subassemblies and components correctly and dismantle them in accordance with the applicable local occupational health and safety regulations.

15.3 Disposing of the heat interface unit

ENVIRONMENT!

Danger to the environment due to incorrect disposal!

Incorrect disposal can cause a hazard for the environment.

- Have electrical scrap, electronic components, lubricants and other resources disposed of by a certified specialist company.
- If in doubt, obtain information about environmentally responsible disposal from the local authorities or specialised disposal companies.

If no agreement covering return and disposal was made, then dispose of dismantled components by recycling them:

- Scrap metals.
- Give plastic elements to a recycling company.
- Dispose of other components after sorting them by material.

16 Technical data

16.1 Design and operating data

Observe the supplementary design and operating data in the data sheet (Chapter 1.2 'Other applicable documents' on page 8).

Power values

Data	Value	Unit
Tap output	18	l/min
Hot water temperature at tank temperature 55 °C	42	°C
Hot water temperature at tank temperature 70 °C	53	°C
Pressure losses	300	mbar
Maximum operating temperature	95	°C
Operating pressure, secondary	6	bar
Operating pressure, primary	3	bar

16.2 Components

Materials

Specification	Value
Heat exchanger	Stainless steel 1.4401, copper brazed or on request Stainless steel 1.4404, stainless steel brazed
Pipes	Stainless steel 1.4404
Valves	Brass CW617N
Seals	Centellen WS3820

16.3 Installation dimensions and weights

Heat interface unit in EPP

Data	Value	Unit
Maximum weight	approx. 40	kg
Width	455	mm
Depth	290	mm

Data	Value	Unit
Height (without connecting rail)	700	mm
Height (with connecting rail)	826.5	mm

16.4 Connection values

Electrical

Data	Value	Unit
Voltage	220 – 240	V
Power consumption, maximum	100	W
Grid frequency	50–60	Hz
IP code	IP44	

16.5 Connections

Specification	Value
Ball valves	3/4" female

16.6 Type plate

The type plate is installed on the base plate.

16.7 Emissions

Data	Value	Unit
Circulation pump noise level	< 43	dB(A)

17 Index

Appendix

Contents of the annex

A Commissioning report

Fill in the table below before handover to the operator:

Parameter	Value
Primary supply flow line temperature	
Primary supply return line temperature	
Set domestic hot water temperature at the unit	
Set secondary heating temperature at the unit	
Measured domestic hot water temperature at the taps	