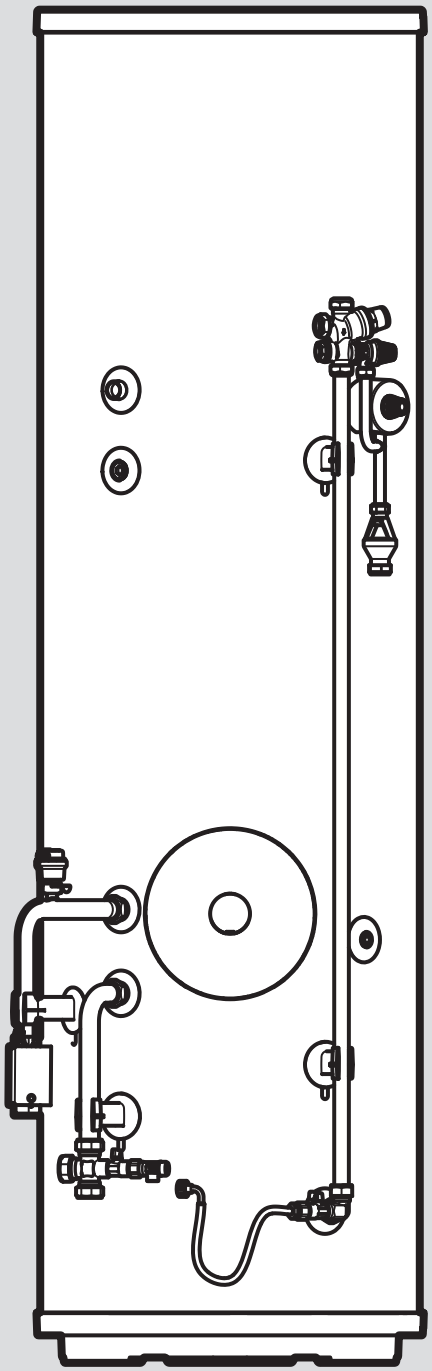
uniSTOR pure, uniSTOR plus

VIH RW ...



8000014609_03 - 07.02.2025

en Operating instructions

en Installation and maintenance instructions

Operating instructions

Contents

1 Safety

1.1 Action-related warnings

Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning signs and signal words:

Warning symbols and signal words

Danger!
Imminent danger to life or risk of severe personal injury

Danger!
Risk of death from electric shock

Warning.
Risk of minor personal injury

Caution.
Risk of material or environmental damage

1.2 Intended use

There is a risk of injury or death to the user or others, or of damage to the product and other property in the event of improper use or use for which it is not intended.

The product is intended as a system component for domestic hot water generation and storage for closed central heating installations.

Intended use includes the following:

– observance of the operating instructions included for the product and any other installation components
– compliance with all inspection and maintenance conditions listed in the instructions.

This product can be used by children aged from 3 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the product in a safe way and understand the hazards involved.

Children from 3 to 8 years may only operate the fittings that are connected to the unit.

Children must not play with the product

Cleaning and user maintenance work must not be carried out by children unless they are supervised.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.

Caution.

Improper use of any kind is prohibited.

1.3 General safety information

1.3.1 Installation by skilled tradesmen only

The installation, inspection, maintenance and repair of the product, as well as the gas ratio settings, must only be carried out by a competent person.

1.3.2 Danger caused by improper operation

Improper operation may present a danger to you and others, and cause material damage.

- ▸ Carefully read the enclosed instructions and all other applicable documents, particularly the "Safety" section and the warnings.
- ▸ Only carry out the activities for which instructions are provided in these operating instructions.

1.3.3 Risk of death due to changes to the product or the product environment

- ▸ Never remove, bridge or block the safety devices.
- ▸ Do not tamper with any of the safety devices.
- ▸ Do not damage or remove any tamper-proof seals on components.
- ▸ Do not make any changes:
  – to the product itself
  – to the water and electricity supply lines
  – to the expansion relief valve
  – to the drain pipework
  – to constructional conditions that may affect the operational reliability of the product

1.3.4 Risk of injury and material damage due to maintenance and repairs carried out incorrectly or not carried out at all

- Never attempt to carry out maintenance work or repairs on your product yourself.
- Faults and damage should be immediately eliminated by a competent person.
- Adhere to the maintenance intervals specified.

1.3.5 Risk of burns or scalding caused by hot parts

Parts of the product become hot during operation.

- Only touch the product and its parts once these have cooled down.

1.3.6 Risk of material damage caused by frost

- Ensure that the heating installation always remains in operation during freezing conditions and that all rooms are sufficiently heated.
- If you cannot ensure the operation, have a competent person drain the heating installation.

1.3.7 Risk of material damage caused by dry fire

- If the product is switched on when it has been drained, the immersion heater may be damaged by dry fire.
- Do not close any isolation valves in the water pipe leading to the product.
- If the product cannot be supplied with water, disconnect the power supply to the product.

2 Notes on the documentation

2.1 Observing other applicable documents

► Always observe all operating instructions enclosed with the installation components.

2.2 Storing documents

► Store these instructions and all other applicable documents for further use.

2.3 Validity of the instructions

These instructions apply only to:

Product article number

VIH RW 90/5 C SLPPES	8000011508
VIH RW 150/5 C SLPPES	8000011509
VIH RW 175/5 C SLPPES	8000011510
VIH RW 210/5 C SLPPES	8000011511
VIH RW 150/5 C SLPPIAES	8000011620
VIH RW 175/5 C SLPPIAES	8000011621
VIH RW 210/5 C SLPPIAES	8000011622
VIH RW 150/5 B PPIAES	8000012320
VIH RW 175/5 B PPIAES	8000012321
VIH RW 210/5 B PPIAES	8000012322
VIH RW 250/5 C PPIAES	8000012323
VIH RW 300/5 C PPIAES	8000012324
VIH RW 150/5 B PPES	8000011517
VIH RW 175/5 B PPES	8000011518
VIH RW 210/5 B PPES	8000011519
VIH RW 250/5 C PPES	8000011520
VIH RW 300/5 C PPES	8000011521

2.4 Benchmark

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY, COMPLIANCE AND BEST PRACTICE FOR THE INSTALLATION, COMMISSIONING, SERVICING AND MAINTENANCE OF DOMESTIC HEATING AND HOT WATER SOLUTIONS

Vaillant is a licensed member of the Benchmark Scheme which aims to improve the standards of installation and commissioning of domestic heating and hot water systems in the UK and to encourage regular servicing to optimise safety, efficiency and performance.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council. For more information visit www.benchmark.org.uk.

► Please ensure that the installer has fully completed the Benchmark Checklist on the inside back pages of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation. The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).

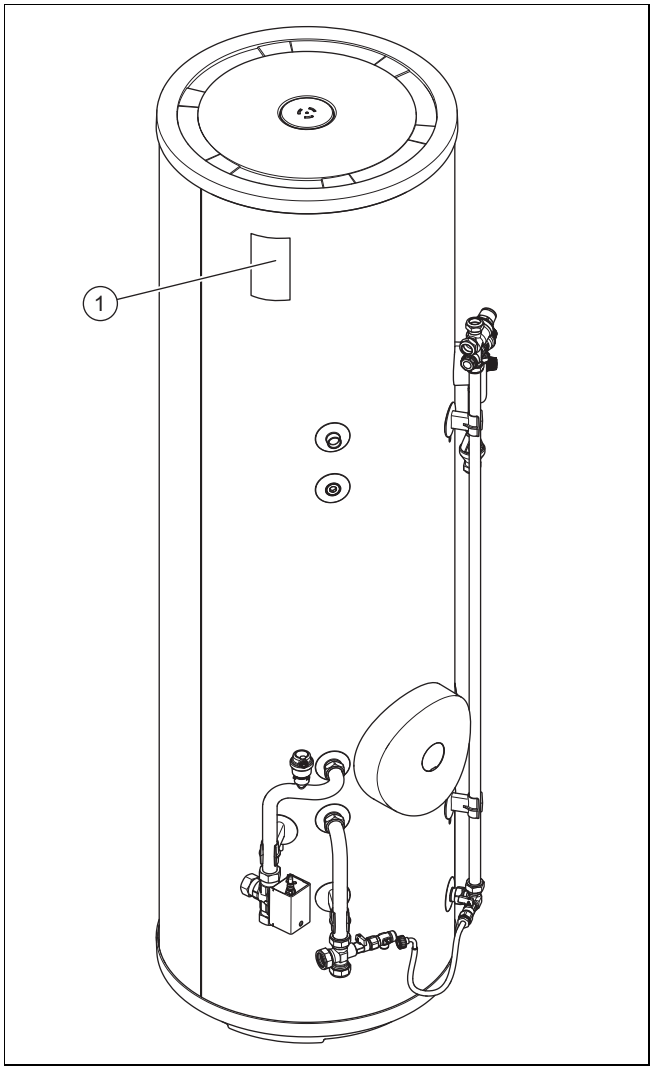
All installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

This product should be serviced regularly to optimise its safety, efficiency and performance. The service engineer should complete the relevant Service Record on the Benchmark Checklist after each service.

The Benchmark Checklist will be required in the event of any warranty.

3 Product description

3.1 Serial number



The serial number can be found on the data plate **(1)**.

3.2 Information on the data plate

The data plate is attached to the product at the factory.

The product meets the requirements of standard EN 12897:2016.

Information	Meaning
VIH RW ../5 C	Product designation/product generation
SLPPES/SLPPIAES SL PP IA E S	Product equipment Slimline PrePlumbed Internal expansion vessel Immersion heater Cylinder material: Stainless steel
IP44	IP rating
210737002011688409080050 11N8	Barcode and serial number 7th to 16th digit = product article number

3.3 CE marking

The CE marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

The declaration of conformity can be viewed at the manufacturer's site.

3.4 UKCA mark

The UKCA marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

The declaration of conformity can be viewed at the manufacturer's site.

3.5 Hot Water Association

Vaillant is a full member of the Hot Water Association and promotes the scheme in association with its cylinder range. Details are available on the web site www.vaillant.co.uk

The HWA Charter's Code of Practice requires that all members adhere to the following:

– To supply fit for purpose products clearly and honestly described
– To supply products that meet, or exceed appropriate standards and building and water regulations
– To provide pre and post sales technical support
– To provide clear and concise warranty details to customers

4 Function

4.1 Setting the domestic hot water temperature

Danger!
Risk of death from legionella.

Legionella multiply at temperatures below 60 °C.

- ► Have a competent person inform you about the measures that should be taken to protect against Legionella in your installation.
- ► Do not set any water temperatures below 60 °C without consulting the competent person first.

Condition: With control

- ► Observe the instructions for the control. Depending on the control, you can set the domestic hot water temperature on the control.

Condition: Without control

- ► Consult your competent person to adjust the domestic hot water temperature on the cylinder.

4.2 Switching off domestic hot water generation

- ► Switch off the heat generator or the domestic hot water generation at the heat generator.

5 Troubleshooting

5.1 Detecting and eliminating faults

- ► If problems occur whilst operating the product, you can carry out certain self-checks with the aid of the table in the appendix.
  Troubleshooting (→ Page 9)
- ► If the product is not functioning correctly, even though you have checked the points listed in the table, contact a competent person to carry out troubleshooting.

6 Care and maintenance

6.1 Maintenance

An annual inspection of the product carried out by a competent person is a prerequisite for ensuring that the product is permanently ready and safe for operation, reliable, and has a long working life.

6.2 Caring for the product

- ► Clean the casing with a damp cloth and a little solvent-free soap.
- ► Do not use sprays, scouring agents, detergents, solvents or cleaning agents that contain chlorine.

6.3 Scale deposition on the immersion heater

Immersion heaters may be damaged by scale deposition, especially at high temperatures.

If you regularly use the immersion heater, it may be useful to replace it with a titanium immersion heater (accessory).

- ► Consult your competent person.

With the standard immersion heater, the tap water must not exceed the limit values for calcium carbonate and chlorides:

- – Calcium carbonate ($CaCO_3$) ≤ 180 mg/l
- – Chlorides ≤ 120 mg/l

The titanium immersion heater can be used up to the following concentrations:

- – Calcium carbonate ($CaCO_3$) ≤ 180 mg/l
- – Chlorides ≤ 250 mg/l

7 Decommissioning

7.1 Temporarily decommissioning the product

- ► Temporarily decommission the product only if there is no risk of frost.
- ► Disconnect the product from the power supply.
- ► Switch off the heat generator or the domestic hot water generation at the heat generator.

7.2 Permanently decommissioning the product

- ► Employ a competent person to permanently decommission the product.

8 Recycling and disposal

Disposing of the packaging

- ► The competent person who installed your product is responsible for the disposal of the packaging.

Disposing of the product

If the product is labelled with this mark:

- ► In this case, do not dispose of the product with the household waste.
- ► Instead, hand in the product to a collection centre for waste electrical or electronic equipment.

Deleting personal data

Personal data may be misused by unauthorised third parties.

If the product contains personal data:

- ► Ensure that there is no personal data on or in the product (e.g. online login details or similar) before you dispose of the product.

9 Guarantee and customer service

9.1 Guarantee

For information on the manufacturer's guarantee, you can visit www.vaillant.co.uk.

9.2 Customer service

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.co.uk.

Appendix

A Troubleshooting

Fault	Solution
Water escapes from the product	– If possible, catch the water in a vessel and inform a competent person.
Domestic hot water temperature too low.	– Check whether the heat generator is switched on. – Check whether the power supply to the cylinder is switched on. – Inform a competent person.
Water escapes at the expansion relief valve	– Inform a competent person.

Installation and maintenance instructions

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Imminent danger to life or risk of severe personal injury

Danger!
Risk of death from electric shock

Warning.
Risk of minor personal injury

Caution.
Risk of material or environmental damage

1.2 Risk caused by inadequate qualifications

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

- Set-up
- Dismantling
- Installation
- Start-up
- Inspection and maintenance
- Repair
- Decommissioning

► Proceed in accordance with current technology.

1.3 Intended use

There is a risk of injury or death to the user or others, or of damage to the product and other property in the event of improper use or use for which it is not intended.

The product is intended as a system component for domestic hot water generation and storage for closed central heating installations.

The product must only be installed in a dry, permanently frost-free room.

Intended use includes the following:

- observance of accompanying operating, installation and maintenance instructions for the product and any other system components
- installing and setting up the product in accordance with the product and system approval
- compliance with all inspection and maintenance conditions listed in the instructions.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.

Caution.

Improper use of any kind is prohibited.

1.4 General safety information

1.4.1 Risk of death due to lack of safety devices

The basic diagrams included in this document do not show all safety devices required for correct installation.

► Install the necessary safety devices in the installation.
► Observe the applicable national and international laws, standards and directives.

1.4.2 Risk of death from electric shock

There is a risk of death from electric shock if you touch live components.

Before commencing work on the product:

► Disconnect the product from the power supply by switching off all power supplies at all poles (electrical partition with a contact gap of at least 3 mm, e.g. fuse or circuit breaker).
► Secure against being switched back on again.
► Check that there is no voltage.

1.4.3 Risk of burns or scalding caused by hot components

► Only carry out work on these components once they have cooled down.

1.4.4 Risk of material damage caused by using an unsuitable tool

► Use the correct tool.

1.4.5 Risk of material damage caused by frost

- Do not install the product in rooms prone to frost.

1.4.6 Risk of injury due to the heavy weight of the product

- Make sure that the product is transported by at least two people.

1.5 Regulations (directives, laws, standards)

- Observe the national regulations, standards, directives, ordinances and laws.

2 Notes on the documentation

2.1 Observing other applicable documents

► Always observe all the operating and installation instructions included with the system components.

2.2 Storing documents

► Pass these instructions and all other applicable documents on to the end user.

2.3 Validity of the instructions

These instructions apply only to:

Product article number

VIH RW 90/5 C SLPPES	8000011508
VIH RW 150/5 C SLPPES	8000011509
VIH RW 175/5 C SLPPES	8000011510
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VIH RW 210/5 B PPES	8000011519
VIH RW 250/5 C PPES	8000011520
VIH RW 300/5 C PPES	8000011521

2.4 Benchmark

Vaillant is a licensed member of the Benchmark Scheme.

Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer's instructions by a competent person approved at the time by the Health and Safety Executive and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.

Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the Scheme.

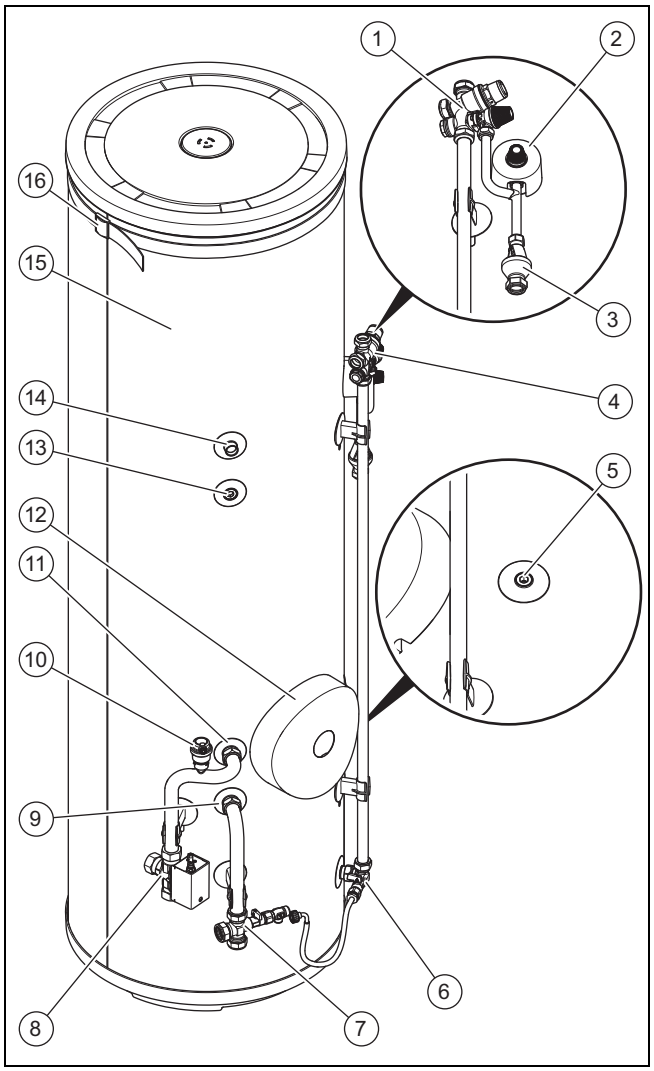
Benchmark is managed and promoted by the Heating and Hotwater Industry Council.

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY, COMPLIANCE AND BEST PRACTICE FOR THE INSTALLATION, COMMISSIONING, SERVICING AND MAINTENANCE OF DOMESTIC HEATING AND HOT WATER SOLUTIONS

For more information visit www.benchmark.org.uk.

3 Product description

3.1 Product design



1	Safety assembly	9	Cylinder heating return
2	Temperature and pressure relief valve	10	Automatic air vent
3	Tundish	11	Cylinder heating flow
4	Cold water connection	12	Electronics box (immersion heater interface)
5	Dry pocket for the temperature sensor	13	Secondary return connection (only for cylinders ≥ 210 l)
6	Cold water connection with drain valve and filling hose	14	Domestic hot water connection
7	Double non-return valve	15	Cylinder
8	3-port valve	16	Tilt protection

3.2 CE marking

The CE marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

The declaration of conformity can be viewed at the manufacturer's site.

3.3 UKCA mark

The UKCA marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

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3.4 Hot Water Association

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- To supply products that meet, or exceed appropriate standards and building and water regulations
- To provide pre and post sales technical support
- To provide clear and concise warranty details to customers

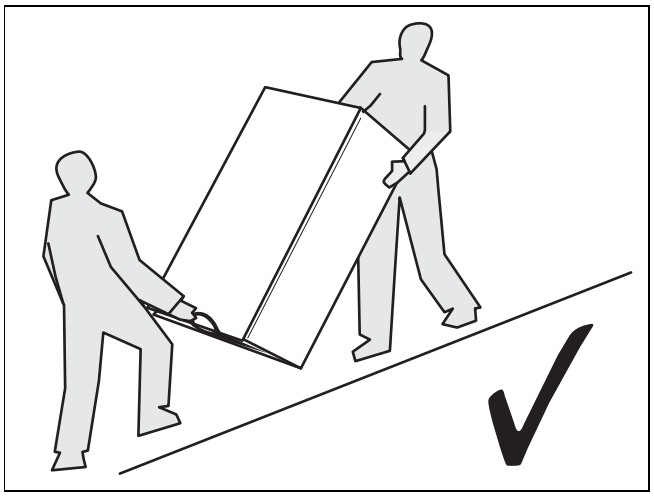
4 Set-up

4.1 Transport

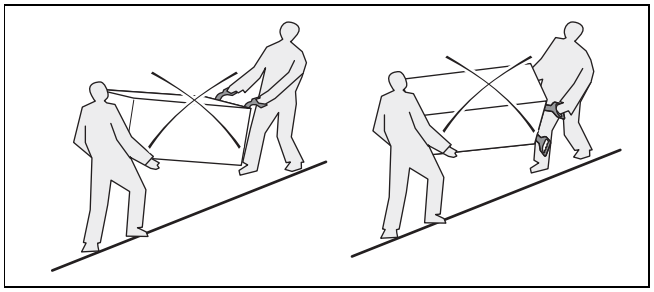
Caution.
Risk of material damage caused by incorrect transport.

The components attached to the cylinder must not be used to transport the cylinder. Otherwise there is a risk that the cylinder could malfunction.

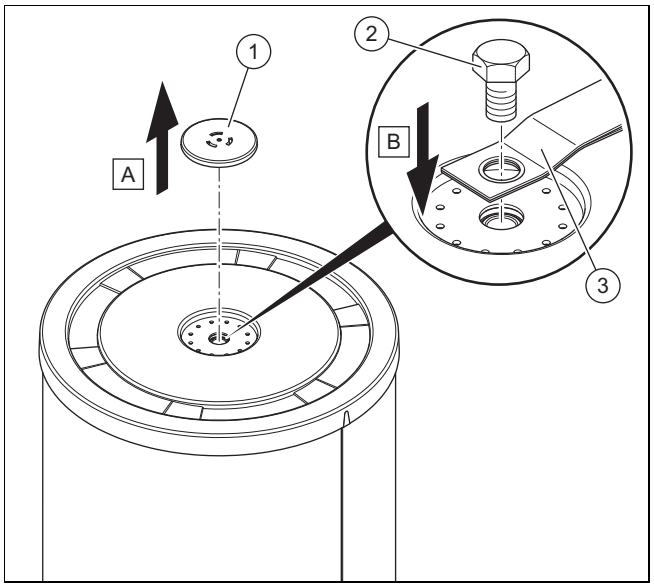
- ► Do not use the components attached to the cylinder to transport it.
- ► Use the transport aid from the scope of delivery on the upper side and the recessed handle on the underside to transport the product.



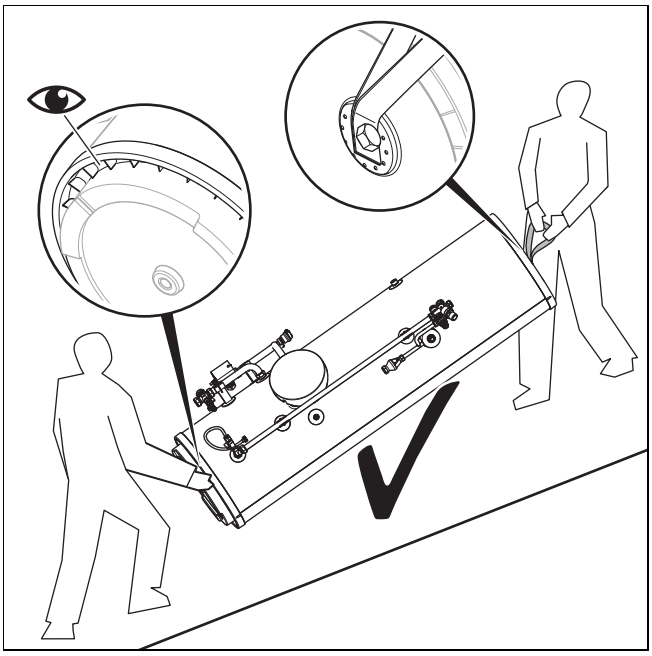
► Always transport the product as illustrated above.



► Never transport the product horizontally.



1 Cover
2 Transport aid screw
3 Transport aid



► If required, use the transport aid from the scope of delivery.

4.2 Unpacking the product

Caution.
Risk of material damage caused by unpacking incorrectly.

The components could become damaged when unpacking the product.

► Carefully unpack the product.

1. Remove the product from its box.
2. Remove the protective film from all of the product's components.

4.3 Checking the scope of delivery

► Check that the scope of delivery is complete.

Quantity	Designation
1	Domestic hot water cylinder with – Temperature and pressure relief valve – Safety assembly with pressure reducer – Tundish – Potable water drain valve with filling hose – 3-port valve – Automatic air vent – Double non-return valve
1	Enclosed documentation
1	Tilt protection
1	Expansion vessel (only for products without an internal expansion vessel)
1	Self-adhesive cable holder
1	Rubber stopper for temperature sensor
1	Transport aid set

4.4 Installing the product

Caution.
Material damage due to frost

If the water in the system freezes, there is a risk of damage to the domestic hot water cylinder.

► Install the cylinder in a dry, permanently frost-free room.

Caution.
Material damage due to escaping water

In the event of damage, water may escape from the cylinder.

► Select the installation site so that, in the event of damage, large volumes of water can be drained safely (e.g. into a floor drain).

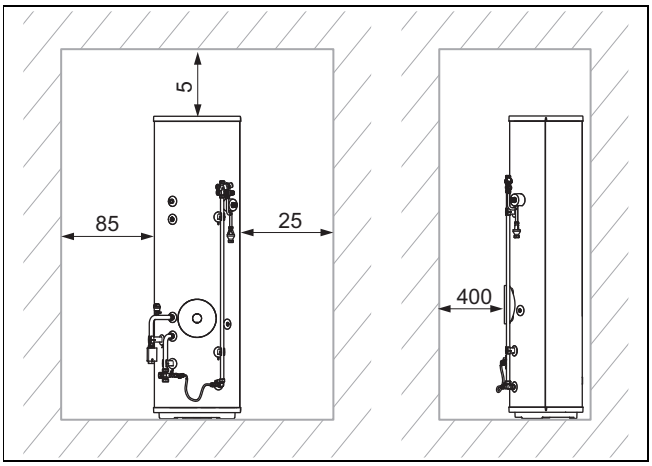
Caution.
Material damage due to high load

When filled, the cylinder may damage the ground on which it stands due to its weight.

► Take into consideration the weight of the filled cylinder and the load-bearing capacity of the floor.
► If required, reinforce the installation area.

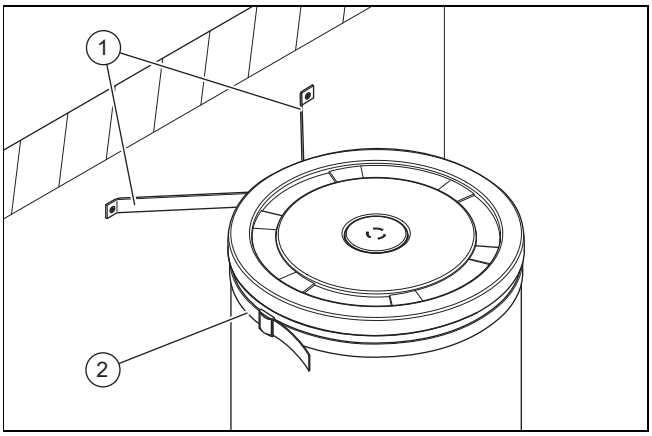
► Only install the product indoors.
► When selecting the installation site, take into consideration the routing of the pipework system.
► Install the product as close as possible to the heat generator in order to minimise heat losses.
► Set up the product in a suitable location and, when doing so, pay attention to the following points:
  – Plan the installation of the tundish and the drain pipework. (→ Page 17)
  – The installation surface must be level and must not have an incline greater than 10%.
  – The installation surface must have sufficient load-bearing capacity to support the total weight of the product.
  – Install the product in such a way that the thermostat and immersion heater can be accessed easily. Minimum clearance to the front: 400 mm
  – On products with an external expansion vessel: Leave sufficient space around the product for installing, maintaining and replacing the expansion vessel.
► To prevent heat losses, insulate the pipework system in accordance with the applicable energy-saving regulations.

4.4.1 Minimum clearances



4.5 Installing the tilt protection

1. Place the product against the wall with a clearance of 5–125 mm.



2. Place the belt **(2)** at the top around the product so that the two loose ends **(1)** point in the direction of the wall.
3. Tighten the belt.
4. Secure the two loose ends to the wall using suitable fixing material.
   – Use screws, washers and wall plugs that are suitable for the condition of the wall.

5 Installation

5.1 Hydraulic installation

Caution.

Risk of material damage due to heat transfer during soldering.

The heat that is transferred during soldering may damage the cylinder and its components as well as the connection seals.

- ► Protect the product and its components.
- ► Only solder connectors if the connectors are not yet screwed to the fittings.

Caution.

Risk of material damage by drilling through the product.

The product may be damaged by drilling work.

- ► Do not drill through the product.

Caution.

Risk of material damage to the cylinder.

If an unvented hot water cylinder is fitted at a high level (eg, loft space), potential damage to the cylinder may occur if the correct method of draining is not followed.

- ► In certain circumstances and at the discretion of the installer, install a WRAS approved automatic air vent on the hot water outlet at the highest point.

Caution.

Material damage due to escaping water

Improper installation may cause water to leak from the cylinder.

- ► Tighten all hydraulic connections until the system is tight.

5.1.1 Preliminary works

- ► Thoroughly clean and flush all central heating and primary hot water circuits.
- ► Add a suitable chemical inhibitor to the primary heating circuit to protect against scale and corrosion (→ Page 37).
- ► In hard water areas, take suitable measures to treat the feed water to water heaters and the hot water circuit of combination boilers to reduce limescale accumulation.
- ► Prepare and commisssion domestic central heating systems in accordance with BS 7593.

5.1.2 Descaling the water

Scale deposition increases as the water temperature increases.

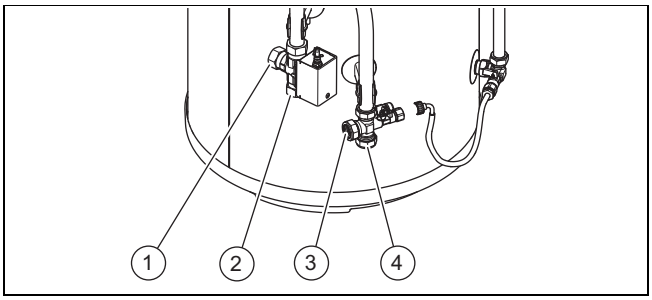
- ► Descale the water as required.

5.1.3 Connecting the product to the heat generator circuit

1. Connect the heat generator circuit to the connections for heating flow and heating return on the product.
   – Minimum diameter of the copper pipe: ≥ 28 mm

Note

Ensure that the distance between the heat generator and the product is as small as possible in order to prevent heat losses.



2. Connect the connection **(1)** for the 3-port valve to the heat generator's heating flow.
3. Connect the connection **(2)** for the 3-port valve to the heating circuit's flow.
4. Connect the connection **(3)** to the heat generator's heating return.
5. Connect the connection **(4)** to the heating circuit's return.

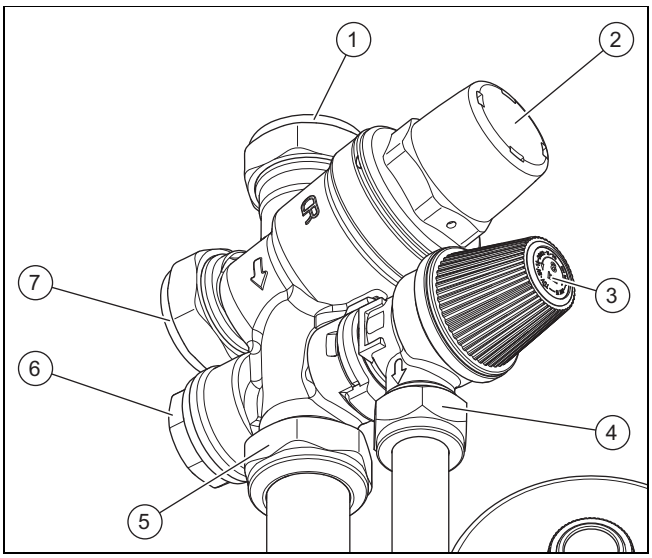
5.1.4 Connecting the cold water pipe

Caution.

Excessive pressure in the domestic hot water cylinder

Excessive pressure in the domestic hot water cylinder may cause the cylinder to burst.

- ► Ensure that the expansion relief valves are not blocked.
- ► Ensure that there is no isolation valve between the safety group and the cylinder.



1	Cold water connection	5	Flow of the cold water supply to the cylinder
2	Pressure reducer	6	Connection for the expansion vessel
3	Expansion relief valve	7	Offset cold water connection
4	Expansion relief valve drain		

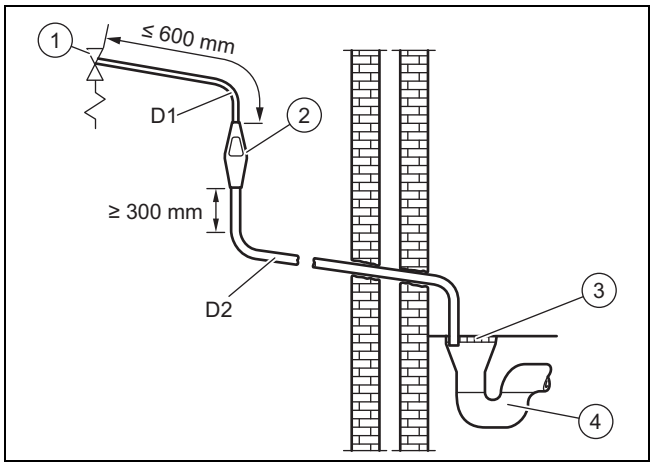
1. Connect the cold water pipe to the connection **(1)** for the safety assembly.
   – Diameter of the cold water pipe: ≥ 22 mm
2. Seal any connections that are not used with tightly sealed caps.
3. Secure the heat insulation to the safety assembly.

5.1.5 Installing an expansion vessel

Validity: Product with external expansion vessel

- ► Install the expansion vessel close to the product.
- ► Install a pipe at the expansion vessel and connect the terminal to the safety group.
- ► Adjust the pressure in the expansion vessel to the installation's requirements.

5.1.6 Installing the drain pipework



1	Temperature and pressure relief valve	D1	Metal drain pipe between the temperature and pressure relief valve and the tundish
2	Tundish	D2	Drain pipe routed behind the tundish with a downward gradient
3	Mesh		
4	Drain with siphon		

It is a requirement of Building Regulation G3 that any discharge from an unvented system is conveyed to where it is visible but will not cause danger to persons in or about the building. The tundish and discharge pipes should be fitted in accordance with the requirements and guidance notes of Building Regulation G3. The G3 Requirements and Guidance section 3.50 - 3.63 are reproduced in the following sections of this manual. For discharge pipe arrangements not covered by G3 Guidance advice should be sought from your local Building Control Officer. Any discharge pipe connected to the pressure relief devices (expansion valve and temperature/pressure relief valve) must be installed in a continuously downward direction and in a frost free environment. Water may drip from the discharge pipe of the pressure relief device. This pipe must be left open to the atmosphere. The pressure relief device is to be operated regularly to remove lime deposits and to verify that it is not blocked. The tundish should not be placed adjacent to electrical outlets or devices in case any splashing occurs during discharge that may cause an electrical hazard.

Size of the outlet valve	Minimum diameter of the drain pipe D1	Minimum diameter of the drain pipe from the tundish D2	Maximum permissible resistance, information on the length of a straight pipe	Resistance per elbow or bend
G1/2"	15 mm	22 mm 28 mm 35 mm	≤ 9 m ≤ 18 m ≤ 27 m	0.8 m 1.0 m 1.4 m
G3/4"	22 mm	28 mm 35 mm 42 mm	≤ 9 m ≤ 18 m ≤ 27 m	1.0 m 1.4 m 1.7 m
G1"	28 mm	35 mm 42 mm 54 mm	≤ 9 m ≤ 18 m ≤ 27 m	1.4 m 1.7 m 2.3 m
Note: The above table is based on copper tube. Plastic pipes may be of different bore and resistance. Sizes and maximum lengths of plastic should be calculated using data prepared for the type of pipe being used.				

5.1.6.1 Discharge pipe D1

3.50 Each of the temperature relief valves or combined temperature and pressure relief valves specified in 3.13 or 3.17 should discharge either directly or by way of a manifold via a short length of metal pipe (D1) to a tundish.

3.51 The diameter of discharge pipe (D1) should be not less than the nominal outlet size of the temperature relief valve.

3.52 Where a manifold is used it should be sized to accept and discharge the total discharge from the discharge pipes connected to it.

3.53 Where valves other than the temperature and pressure relief valve from a single unvented hot water system discharge by way of the same manifold that is used by the safety devices, the manifold should be factory fitted as part of the hot water storage system unit or package.

5.1.6.2 Tundish

3.54 The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the valve, with no more than 600 mm of pipe between the valve outlet and the tundish. Note: To comply with the Water Supply (Water Fittings) Regulations, the tundish should incorporate a suitable air gap.

3.55 Any discharge should be visible at the tundish. In addition, where discharges from safety devices may not be apparent, e.g. in dwellings occupied by people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place, e.g. electronically operated.

3.56 The discharge pipe (D2) from the tundish should: (a) have a vertical section of pipe at least 300 mm long below the tundish before any elbows or bends in the pipework (see diagram); and (b) be installed with a continuous fall thereafter of at least 1 in 200.

5.1.6.3 Discharge pipe D2

3.57 The discharge pipe (D2) should be made of: (a) metal; or (b) other material that has been demonstrated to be capable of safely withstanding temperatures of the water discharged and is clearly and permanently marked to identify the product and performance standard (e.g. as specified in the relevant part of BS 7291).

3.58 The discharge pipe (D2) should be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9 m long, i.e. for discharge pipes between 9 m and 18 m the equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device; between 18 and 27 m at least 3 sizes larger, and so on; bends must be taken into account in calculating the flow resistance. See diagram, Table and the worked example. Note: An alternative approach for sizing discharge pipes would be to follow Annex D, section D.2 of BS 6700:2006 Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

3.59 Where a single common discharge pipe serves more than one system, it should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected.

3.60 The discharge pipe should not be connected to a soil discharge stack unless it can be demonstrated that the soil discharge stack is capable of safely withstanding temperatures of the water discharged, in which case, it should:

(a) contain a mechanical seal, not incorporating a water trap, which allows water into the branch pipe without allowing foul air from the drain to be ventilated through the tundish;

(b) be a separate branch pipe with no sanitary appliances connected to it;

(c) if plastic pipes are used as branch pipes carrying discharge from a safety device they should be either polybutylene (PB) to Class S of BS 7291-2:2006 or cross linked polyethylene (PE-X) to Class S of BS 7291-3:2006; and

(d) be continuously marked with a warning that no sanitary appliances should be connected to the pipe.

Note: 1. Plastic pipes should be joined and assembled with fittings appropriate to the circumstances in which they are used as set out in BS EN ISO 1043-1. 2. Where pipes cannot be connected to the stack it may be possible to route a dedicated pipe alongside or in close proximity to the discharge stack.

5.1.6.4 Termination of discharge pipe

3.61 The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge.

3.62 Examples of acceptable discharge arrangements are:

(a) to a trapped gully with the end of the pipe below a fixed grating and above the water seal;

(b) downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility; and

(c) discharges at high level: e.g. into a metal hopper and metal downpipe with the end of the discharge pipe clearly visible or onto a roof capable of withstanding high temperat-

ure discharges of water and 3 m from any plastic guttering system that would collect such discharges.

3.63 The discharge would consist of high temperature water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

5.1.6.5 Sample calculation

The following example corresponds to a G1/2 temperature and pressure relief valve with a **(D2)** drain pipe with four 90° elbows and a length of 7 m from the tundish to the drainage point. According to the table, the following applies:

Maximum resistance allowed for a straight length of 22 mm copper discharge pipe (D2) from a G1/2 temperature relief valve is 9.0 m.

Subtract the resistance for 4 No. 22 mm elbows at 0.8 m each = 3.2 m.

Therefore the permitted length equates to: 5.8 m.

5.8 m is less than the actual length of 7 m therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28 mm pipe (D2) from a G1/2 temperature relief valves equates to 18 m.

Subtract the resistance of 4 No. 28 mm elbows at 1.0 m each = 4.0 m.

Therefore the maximum permitted length equates to: 14 m.

As the actual length is 7 m, a 28 mm (D2) copper pipe will be satisfactory.

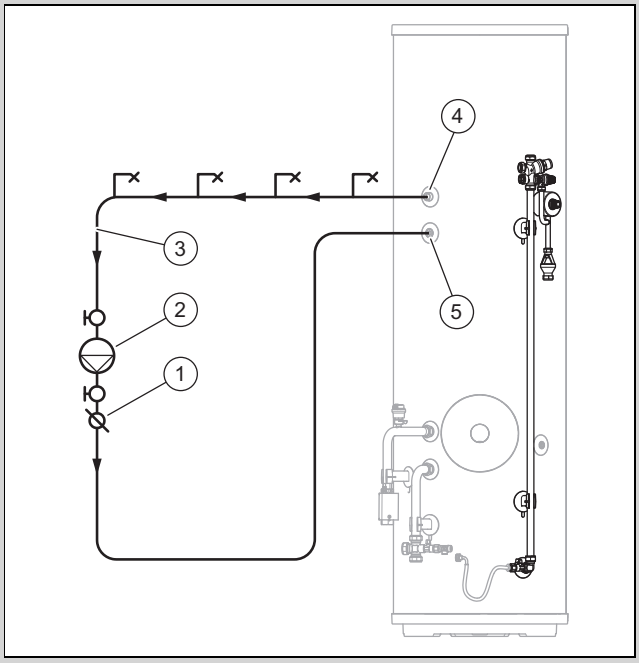
5.1.6.6 Drain for expansion relief valve

The installation of the drain on the expansion relief valve is permitted as long as this does not present a danger to anyone inside or out side the building at the drainage point. During the installation, note the following:

- The possibility (taking the wind into account) that a person might stay in the area where the water is drained for a prolonged period of time.
- The temperature of the drained water.
- The position of the windows and other openings.
- The probability of prams being under the drain opening.
- The resistance of the surface to hot water.
- The possibility of ice formation if water drains onto access paths.

5.1.7 Installing the secondary return

Validity: Product with secondary return



1	Non-return valve	4	Domestic hot water connection
2	Circulation pump	5	Secondary return connection
3	Secondary return		

Carry out the installation in accordance with the basic diagram above.

5.2 Electrical installation

The electrical installation must only be carried out by a qualified electrician.

Danger!

Risk of death from electric shock!

The power supply terminals L and N are live:

- ► Switch off the power supply.
- ► Secure the power supply against being switched back on.

Caution.

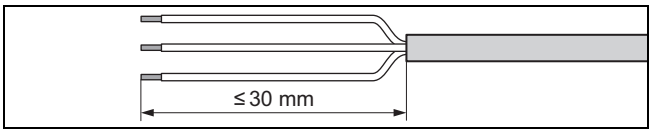
Risk of material damage by drilling through the product.

The product may be damaged by drilling work.

- ► Do not drill through the product.

5.2.1 Stripping the flexible lines

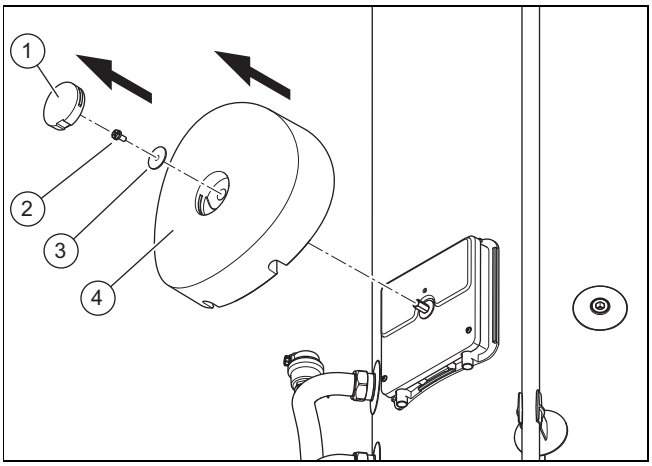
1. If required, shorten the connection cables.



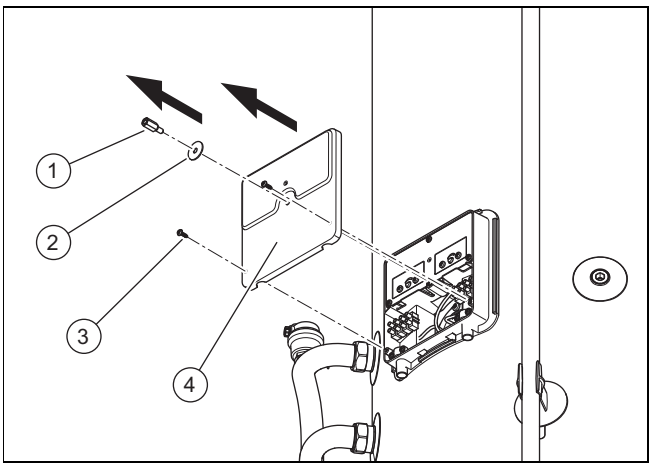
2. Strip the flexible line as shown in the figure. In doing so, ensure that the insulation on the individual conductors is not damaged.

5.2.2 Opening the electronics box

Note
The screwed connection of the electronics box insulation enables ingress protection rating IPX4.



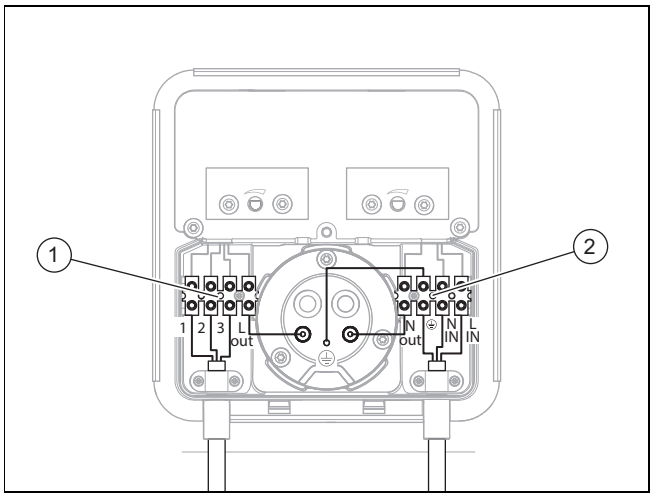
1	Screw cover	3	Washer
2	Screw	4	Electronics box insulation



1	Screw-in nut	3	Electronics box cover screws
2	Washer	4	Electronics box cover

1. Open the electronics box as shown in the figures.

5.2.3 Connecting the cable



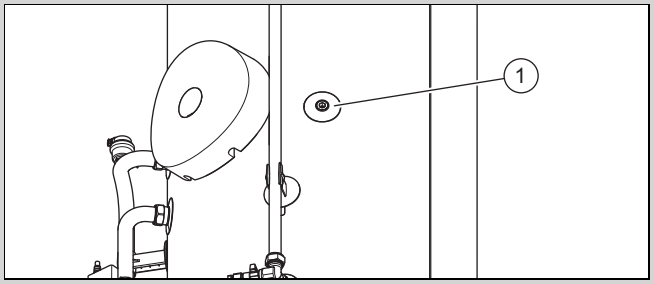
1	Connecting the integrated temperature cut-out	2	Immersion heater power supply

1. Install a separate power supply for the immersion heater in accordance with the applicable standards.
2. Use heat-resistant cables, e.g. sheathed cables (NYM):
   – Cross-section of the cable: 1.5 to 2.5 mm²
3. Use conductor end sleeves for flexible cables.
4. Install a double-pole disconnector with a contact gap of at least 3 mm at both poles on the main power supply.
5. Protect the electrical circuit using a fuse and a residual-current circuit breaker.
   – Fuse: 16 A
   – Residual-current circuit breaker: 30 mA
6. Connect the power supply for the immersion heater to connections L, N and ⏚ for terminal **(2)**.
7. Secure the cables in the electronics box using the strain reliefs.

5.2.4 Installing the temperature sensor

Note
The temperature sensor is used to control the product via a multi-functional module or a control.

Condition: With a multi-functional module or control



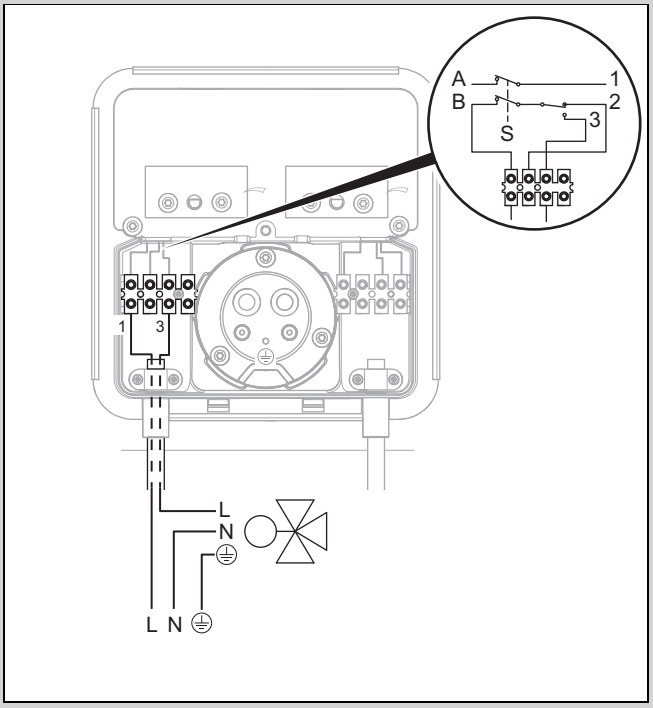
- ► Install the temperature sensor in the dry pocket **(1)**.
- ► Insulate the dry pocket using suitable insulating material.
- ► Connect the temperature sensor to the multi-functional module or the control (Installation instructions for the control or multi-functional module).
- ► Use the rubber stopper provided to secure the temperature sensor against slipping out.
- ► Then secure the temperature sensor cable using the cable holder provided on the cylinder so that the cable does not hang freely in the room.

5.2.5 Connecting the 3-port valve

Condition: Heat generator from the same manufacturer in the heat generator circuit

If you are using a heat generator from the same manufacturer together with a multi-functional module or a control, you do not require a temperature cut-out for the heat generator circuit.

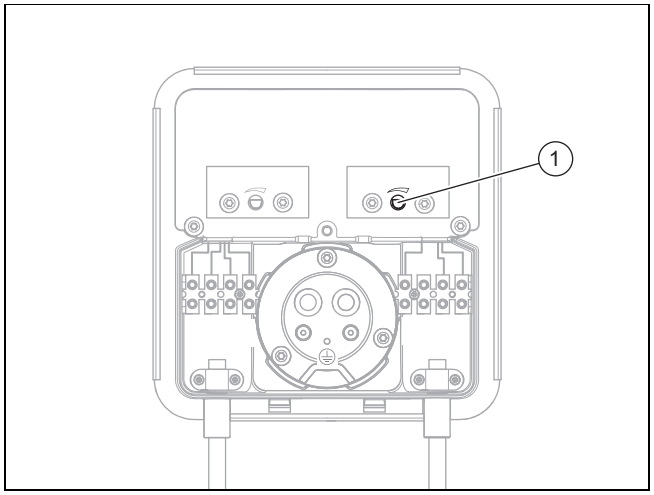
Condition: Heat generator from another manufacturer in the heat generator circuit



- ► Connect the 3-port valve to the integrated temperature cut-out and temperature control so that the domestic hot water cylinder can be disconnected from the heat generator in the event of overheating.
- ► If the alignment of the 3-port valve does not match the desired installation situation, loosen the upper union nut, turn the 3-port valve by 180° and retighten the union nut to the following torque: 57 (-0/+7) Nm.

6 Start-up

6.1 Setting the thermostat for the immersion heater



The domestic hot water temperature is controlled via the immersion heater thermostat **(1)**.

- Adjustment range: 10–68 °C
- Factory setting: 55 °C

- ► Only use the immersion heater if the following values for the water quality are complied with:
  - Calcium carbonate ($CaCO_3$) ≤ 180 mg/l
  - Chlorides ≤ 120 mg/l (standard immersion heater)
  - Chlorides ≤ 250 mg/l (titanium immersion heater, accessories)
- ► Observe the applicable regulations regarding legionella prevention.

Condition: Without a multi-functional module or control

- ► Set the domestic hot water temperature as you require on the immersion heater's thermostat.

Condition: With a multi-functional module or control

- ► Set the immersion heater thermostat to its maximum.

6.2 Cold water inlet pressure

The efficiency of the domestic hot water supply depends on the cold water inlet pressure and the flow rate.

We recommend a pressure of at least 1.5 bar and a flow rate of at least 20 l/min.

If multiple draw-off points are to be supplied at the same time, we recommend a correspondingly higher pressure and flow rate.

6.3 Filling and purging the product

Note
It is not permitted to use valves or expansion relief valves for the purging.

1. Ensure that the drain valve is closed.
2. Open the hot water taps at the draw-off points.
3. Open the cold-water stopcock.
4. If present, open the automatic air vent that is installed on-site in the potable water system.
5. Let the water flow in order to remove any air bubbles.
6. Close the automatic air vent as soon as the air has escaped.
7. Close the hot water taps.
8. Check whether there are any leaks. Check the immersion heater in particular.
9. Open the hot water tap at the highest draw-off point, then the hot water tap at the lowest draw-off point, and allow the water to flow.
   – Water running time: ≥ 5 min
10. Close all of the hot water taps.

6.4 Filling and purging the heat generator circuit

1. Connect the filling hose to the draining cock on the cold water connection and the double non-return valve.
2. Open the valves on the draining cock and the double non-return valve.
3. Flush, fill and purge the heat generator circuit (→ Installation instructions for the heat generator).
4. Close the valves on the draining cock and the double non-return valve.
5. Remove the filling hose from the draining cock on the cold water connection and double non-return valve.

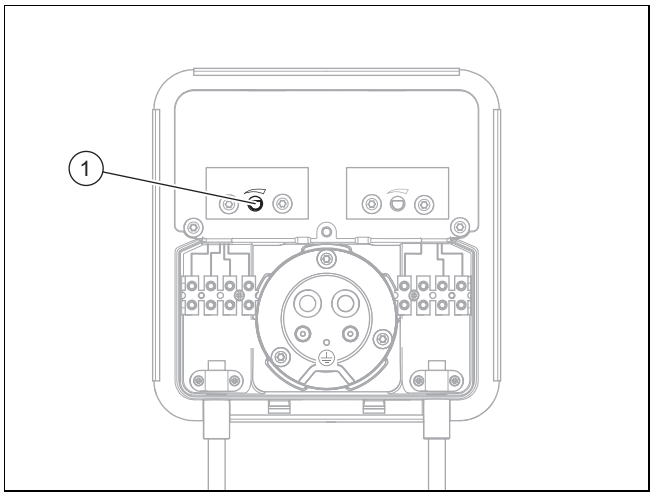
6.5 Setting the thermostat for the heat generator circuit

Caution.
Risk of material damage caused by dry fire

If the product is switched on when it has been drained, the immersion heater may be damaged by dry fire.

- ► You must disconnect the product from the power supply every time before you drain it.
- ► Before starting up the product, fill it completely.

1. Open the electronics box. (→ Page 20)



2. Set the product's thermostat to the desired temperature.
   – The temperature must be lower than the maximum flow temperature of the heat generator.
3. Start up the heat generator.
4. Drain the heat generator circuit as soon as the operating temperature has been reached in order to remove any residue from the heating installation.
5. Open the automatic air vent on the product.
6. Fill and purge the heat generator circuit. (→ Page 22)

6.6 Insulating piping, connections and external parts

Note
Energy efficiency can be guaranteed only for products that are fully and professionally insulated.

1. Determine the required thickness of the insulation in accordance with the following table:

Pipe internal diameter	Thickness of the insulation
≤ 22 mm	20 mm
> 22 mm ≤ 35 mm	30 mm
> 35 mm ≤ 100 mm	Equal to the internal diameter
> 100 mm	100 mm

2. Insulate the piping.
3. Insulate the connections.
4. Insulate the external parts, e.g. the safety assembly.

7 Handing the product over to the end user

Danger!
Risk of death from legionella.

Legionella multiply at temperatures below 60 °C.

► Ensure that the end user is familiar with all of the Anti-legionella measures in order to comply with the applicable regulations regarding legionella prevention.

► Complete the commissioning checklist in the appendix.
► Once the installation is complete, show the end user where the safety devices are and how they work.
► Inform the end user how to handle the product.
► In particular, draw attention to the safety warnings which the end user must follow.
► Inform the end user of the necessity to have the product maintained according to the specified intervals.

8 Troubleshooting

8.1 Detecting and eliminating faults

► If problems occur whilst operating the product, check certain points with the aid of the table in the appendix.
Detecting and eliminating faults (→ Page 28)

8.2 Procuring spare parts

The original components of the product were also certified by the manufacturer as part of the declaration of conformity. If you use other, non-certified or unauthorised parts during maintenance or repair work, this may result in the product no longer meeting the applicable standards, thereby voiding the conformity of the product.

We strongly recommend that you use original spare parts from the manufacturer as this guarantees fault-free and safe operation of the product. To receive information about the available original spare parts, contact the contact address provided on the back page of these instructions.

► If you require spare parts for maintenance or repair work, use only the spare parts that are permitted for the product.

9 Inspection and maintenance

9.1 Observing inspection and maintenance intervals

Adhere to the minimum inspection and maintenance intervals. The inspection may require maintenance to be carried out earlier, depending on the results.

Inspection and maintenance work – Overview (→ Page 29)

The immersion heater can be removed in order to inspect the inside of the cylinder.

9.2 Checking the quality of the heating water

► Check the inhibitor level of the primary heating circuit and, if necessary, add the suitable inhibitor to the primary circuit, to protect against scale and corrosion (→ Page 37).

9.3 Draining the product

Caution.
Risk of material damage caused by dry fire

If the product is switched on when it has been drained, the immersion heater may be damaged by dry fire.

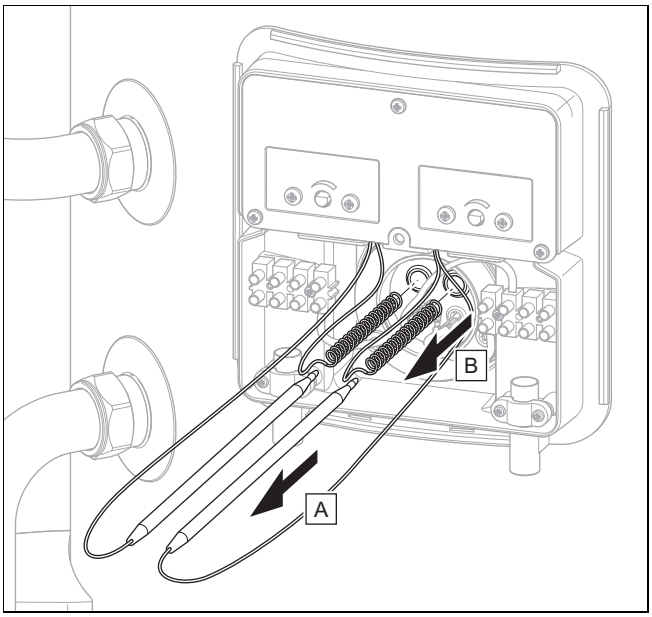
► You must disconnect the product from the power supply every time before you drain it.
► Before starting up the product, fill it completely.

1. Disconnect the product from the mains power.
2. Close the cold-water stopcock.
3. Secure a hose to the drain valve.
4. Position the hose at a suitable drain.
5. Open the highest hot water tap in the installation.
6. Open the automatic air vent (if present).
7. Open the drain valve and drain the product completely.
8. Close the hot water tap and the drain valve.
9. Remove the hose.

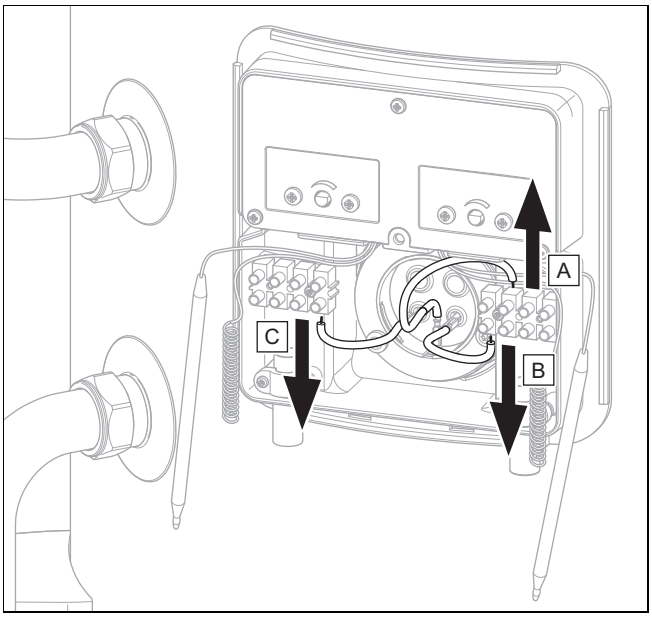
9.4 Servicing the immersion heater

Note
If the immersion heater is frequently defective, we recommend installing a titanium immersion heater.

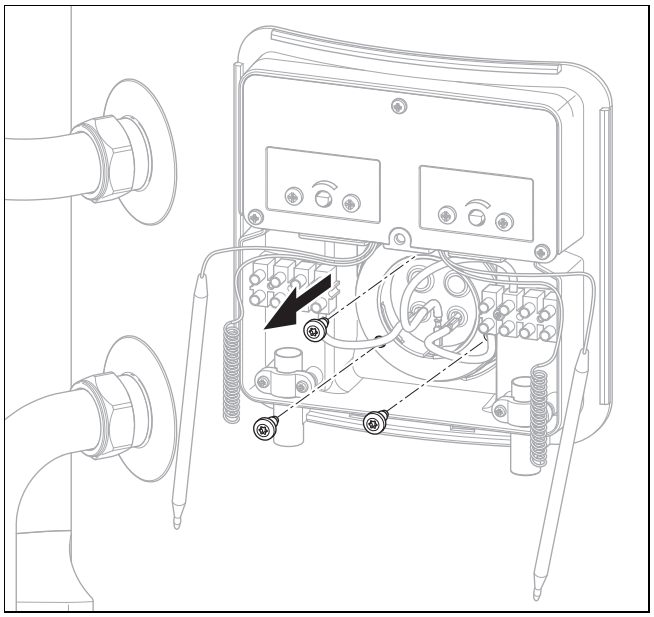
1. Switch off the power supply to the immersion heater and secure it against being switched back on.
2. Drain the product. (→ Page 23)
3. Open the electronics box. (→ Page 20)



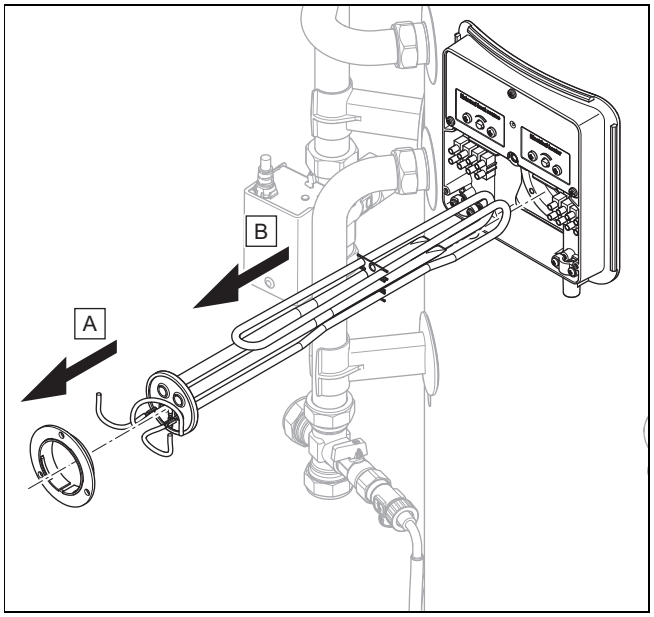
4. Remove the temperature sensors from the sensor sleeves.
   – In doing so, ensure that the capillary tubes do not bend too much.



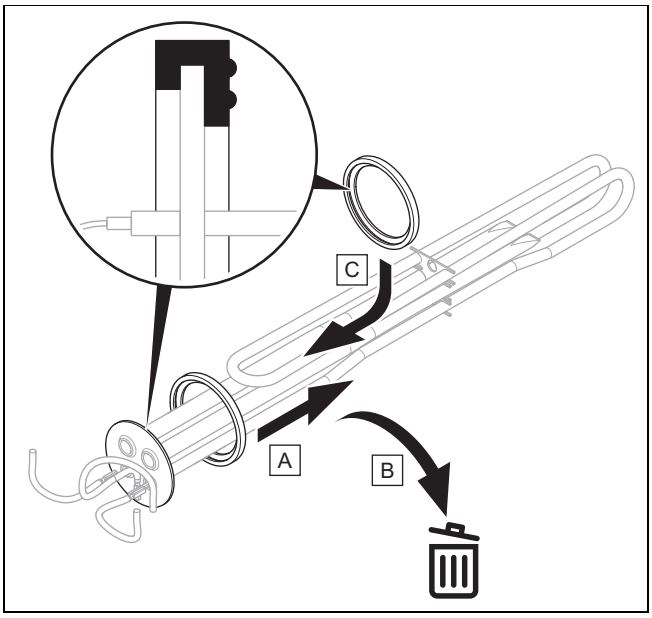
5. Undo the cables from the terminals.



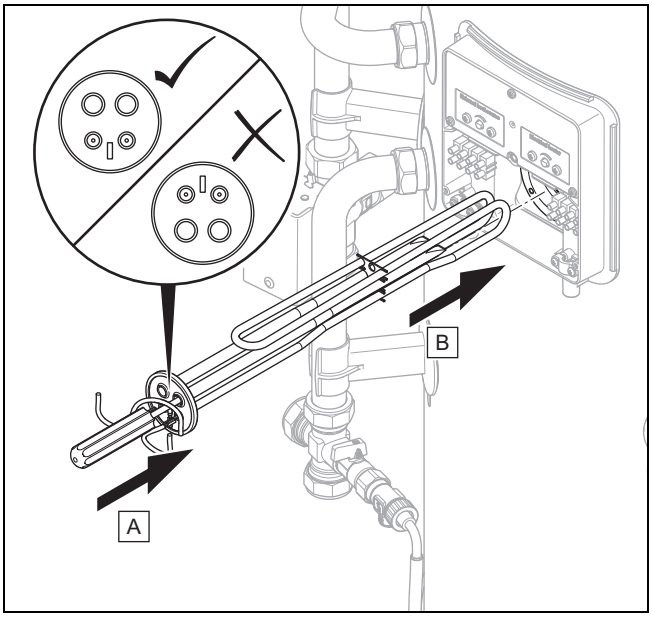
6. Remove the three screws.



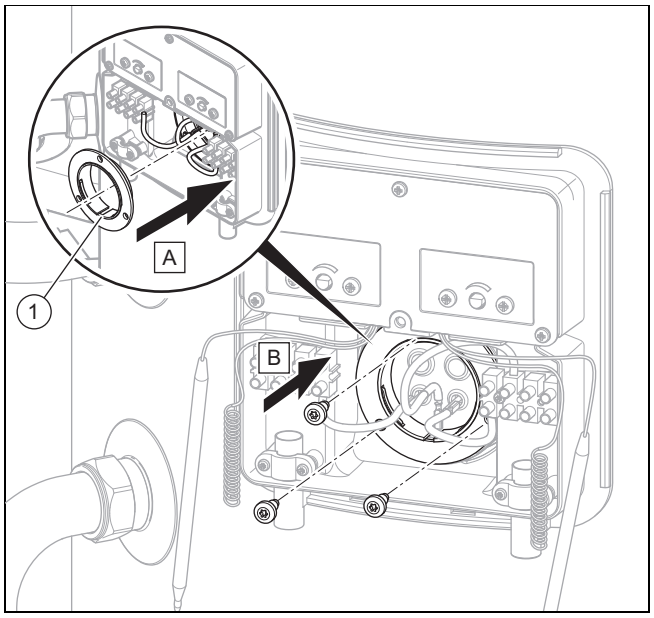
7. Remove the retaining ring.
8. Remove the immersion heater.



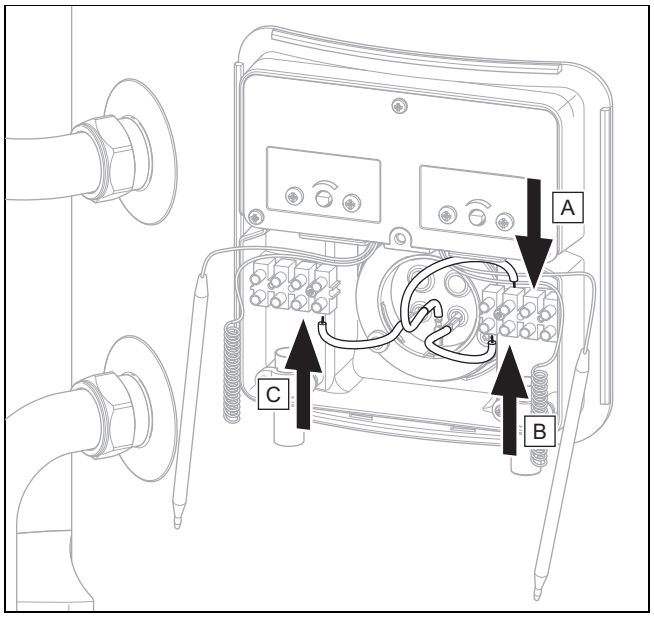
9. Dispose of the seal.
10. Check the immersion heater for damage and scale deposition.
11. If required, remove the scale with a wire brush, a flat scraper or by placing it into a citric acid/vinegar solution.
12. Install a new seal and ensure that the seal is seated correctly.



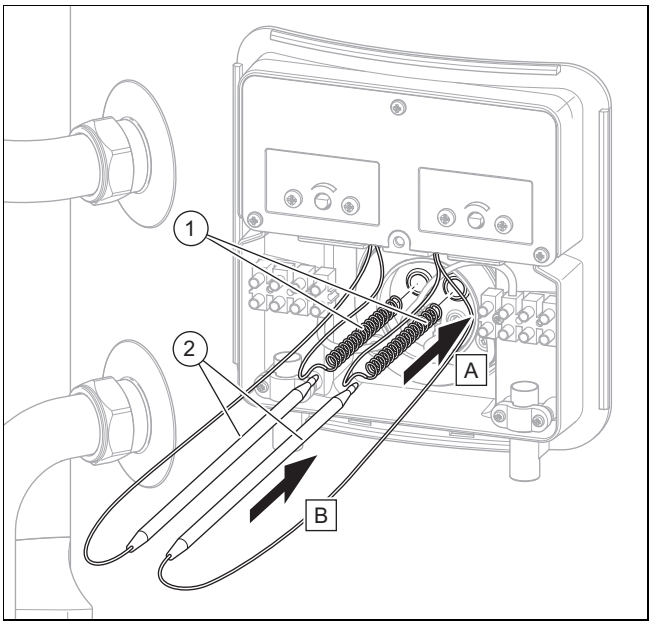
13. Install the immersion heater.
14. Align the immersion heater correctly by placing a screwdriver, for example, into one of the sensor sleeves and using this to keep the immersion heater horizontal.



15. Use the retaining ring and the three screws to secure the immersion heater.
    - Ensure that the cut-out **(1)** in the retaining ring points downwards.
    - Torque: 6 ± 1 Nm



16. Reconnect the cables.
    - Yellow-green on ⏚
    - Black on **L OUT**
    - Blue on **N OUT**



17. On both sides, slide only the spiral-shaped part of the temperature sensor **(1)** for the safety cut-out into the sensor sleeve.
18. Then also insert the temperature sensor **(2)** for the control into the sensor sleeve.
19. Slide both temperature sensors together into the sensor sleeve as far as the insulation.
20. Install the cover for the electronics box.

9.5 Checking the safety assembly's expansion relief valve and the cylinder's temperature and pressure relief valve

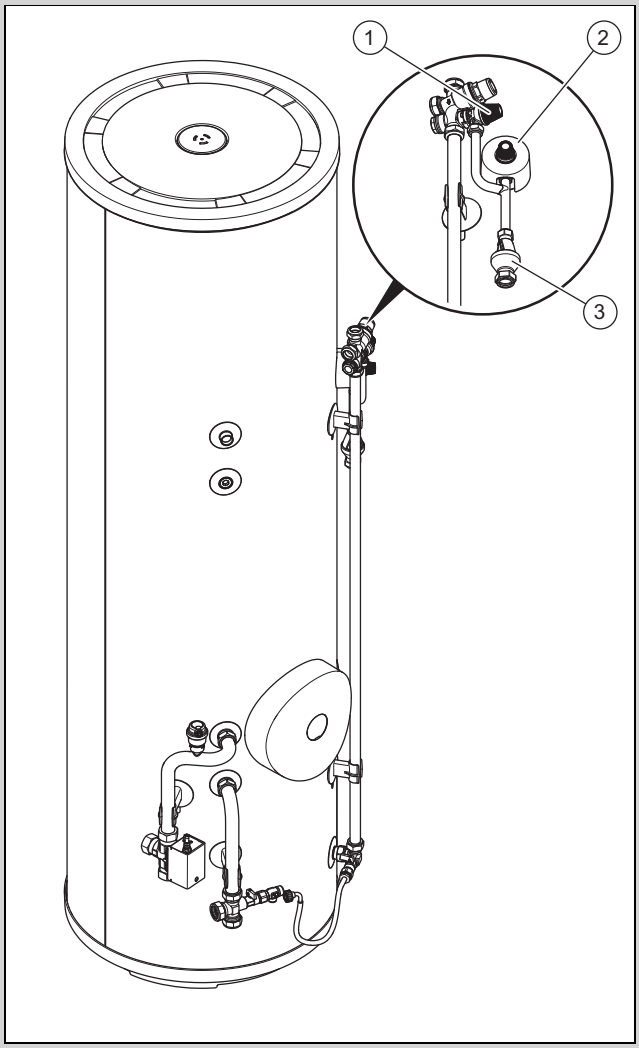
1. Open all expansion relief valves by turning the rotary knob.
2. Check whether the water is flowing into the tundish.
3. Check that the expansion relief valves are in the correct position and then check the pressure.
4. Check and, if required, clean the pressure reducer.

9.6 Topping up the internal expansion vessel

Validity: Product with internal expansion vessel

Note
The internal expansion vessel must be refilled if water is continuously dripping out of the tundish.

1. Scan the QR code to view information about the maintenance work.



2. Shut off the heat supply to the cylinder.
3. Close the cold-water isolation valve that is installed on-site.
4. Open the hot water tap at the lowest draw-off point.
5. Open the temperature and pressure relief valve **(2)** by turning the knob on the valve.
6. Hold the temperature and pressure relief valve open until water no longer escapes from the hot water tap and the gurgling in the valve has stopped.
7. Release the knob on the temperature and pressure relief valve.
8. Open the cold-water isolation valve that is installed on-site.
9. As soon as water flows out of the hot water tap, close the hot water tap.
10. If water continues to escape from the expansion relief valve **(1)** or the tundish **(3)**, contact a competent person.

9.7 Checking the pre-charge pressure of the expansion vessel

Validity: Product with external expansion vessel

1. Drain the product. (→ Page 23)
2. Measure the pre-charge pressure of the expansion vessel at the vessel valve.

Condition: Pressure <0.3 MPa (3 bar)

► Top up the expansion vessel in accordance with the static height of the heating installation, ideally with nitrogen, otherwise with air.

3. If water escapes from the valve of the expansion vessel, you must replace the expansion vessel.
4. Fill and purge the product. (→ Page 22)

10 Decommissioning the product

► Switch off the heat generator.
► Disconnect the product from the power grid.
► Close the cold-water stopcock.
► Drain the product. (→ Page 23)
► Drain the heat generator circuit.
► Remove the hydraulic connections and the temperature sensor.
► Remove the cables for the temperature sensor from the heat generator, control or multi-functional module.

11 Disposing of the packaging

► Dispose of the packaging correctly.
► Observe all relevant regulations.
► For detailed information refer to www.vaillant.co.uk.

12 Customer service

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.co.uk.

Appendix

A Detecting and eliminating faults

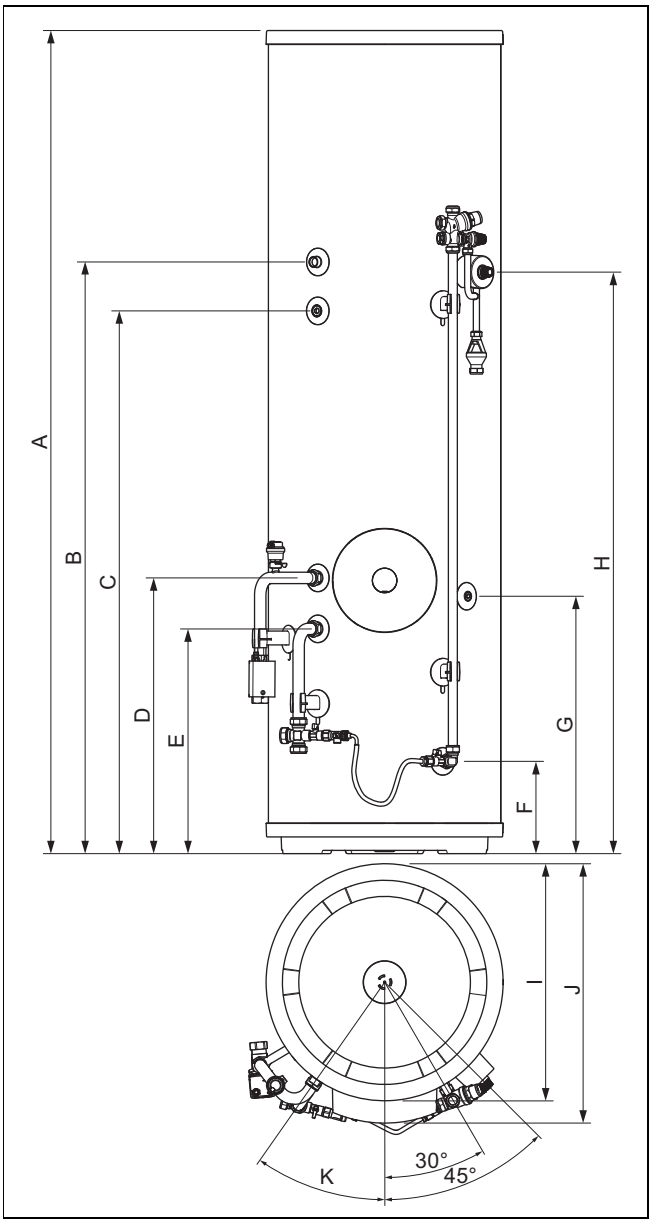
Fault	Possible cause	Remedy
No water at the draw-off point	1. Cold-water stopcock closed 2. Filter in pressure reducer blocked 3. Safety assembly not installed correctly	1. Open the cold-water stopcock. 2. Close the cold-water stopcock, and clean the filter and the pressure reducer. 3. Check whether the safety assembly has been installed correctly.
Low flow rate and pressure at a draw-off point	1. Cold water inlet pressure insufficient 2. Filter in pressure reducer blocked	1. Ensure that the cold water inlet pressure complies with the minimum requirements. (→ Page 21) 2. Close the cold-water stopcock, and clean the filter and the pressure reducer.
Water in the draw-off point is cold	1. Domestic hot water generation is switched off 2. Heat generator does not work 3. Immersion heater is switched off 4. Immersion heater does not work 5. Immersion heater thermal cut-out has triggered 6. Heat source thermal cut-out has triggered 7. 3-port valve incorrectly hydraulically connected 8. 3-port valve incorrectly electrically connected	1. Set the domestic hot water generation at the control or at the heat generator. 2. Check the heat generator and eliminate any faults (→ Installation and maintenance instructions for the heat generator). 3. Set the domestic hot water generation with immersion heater at the control or at the heat generator. 4. Measure the resistance of the immersion heater. Target value: 19 Ω 5. Eliminate the cause for the overheating. Replace the thermal cut-out. 6. Eliminate the cause for the overheating. Replace the thermal cut-out. 7. Check the connections for the 3-port valve. 8. Check the wiring for the 3-port valve.
Domestic hot water temperature too low	1. Domestic hot water temperature on control is set too low 2. Heat generator switched off 3. Power supply to cylinder switched off	1. Check the setting for the domestic hot water temperature on the control. 2. Check whether the heat generator is switched on. 3. Check whether the power supply to the cylinder is switched on.
Domestic hot water temperature too high	1. Thermostat set too high 2. Defective thermostat	1. Use a thermometer to check the temperature. Recommended temperature: 60 °C If required, reduce the temperature at the thermostat. 2. Replace the thermostat.
Water drips out of the safety assembly's expansion relief valve	1. Internal expansion vessel: Air volume in the expansion vessel is too small 2. External expansion vessel: Pre-charge pressure in the expansion vessel is too low	1. Top up the internal expansion vessel. (→ Page 26) 2. Check the pre-charge pressure in the external expansion vessel and top up the air. (→ Page 27)
Water runs out of the safety assembly's expansion relief valve	1. Pressure reducer does not work correctly 2. Seal at the expansion relief valve is damaged or dirty	1. Check the pressure at the safety assembly's outlet. If the pressure is > 0.3 MPa (3 bar), replace the pressure reducer's cartridge. 2. Check the seal for the expansion relief valve at the safety assembly. Clean or replace the seal.
Water drips out of the temperature and pressure relief valve	1. Internal expansion vessel: Air volume in the expansion vessel is too small 2. External expansion vessel: Pre-charge pressure in the expansion vessel is too low 3. Temperature and pressure relief valve defective	1. Top up the internal expansion vessel. (→ Page 26) 2. Check the pre-charge pressure in the external expansion vessel and top up the air. (→ Page 27) 3. Check that the temperature and pressure relief valve is working correctly. If required, replace the temperature and pressure relief valve.

Fault	Possible cause	Remedy
Extremely hot water (> 90 °C) is running out of the temperature and pressure relief valve	1. Temperature and pressure relief valve open due to a defective thermal cut-out	1. Switch off the power supply to the immersion heater. Switch off the external heat source. Do NOT close the cold-water stopcock. If water no longer flows out, check the thermal cut-outs and, if required, replace them.
Water drips out of the temperature and pressure relief valve's thread	1. Component was not screwed in far enough 2. Seal defective	1. Screw the component clockwise deeper into the thread. Observe whether the leak persists. 2. Replace the component.

B Inspection and maintenance work – Overview

N°	Work	Maintenance interval
1	Check the connections for tightness.	12 months
2	Check the temperature and pressure relief valve.	12 months
3	Actuate the expansion relief valve to check that it is working and to remove any scale deposition.	12 months
4	Products with external expansion vessel: Check the pressure in the expansion vessel. (→ Page 27)	12 months
5	Products with internal expansion vessel: Top up the internal expansion vessel. (→ Page 26)	12 months
6	Check the heat output for domestic hot water generation at the valve (if required, clean the filter).	12 months
7	Check the target domestic hot water temperature.	12 months
8	Service the immersion heater. If required, remove any scale deposition.	12 months
9	Check the seal of the immersion heater for damage.	12 months
10	Check the quality of the heating water. (→ Page 23)	12 months
11	Fill out the cylinder's benchmark checklist.	12 months

C Product dimensions



Dimensions (mm)

	A	B	C	D	E	F	G	H	I	J	K
VIH RW 90/5 C SLPPES	989.7	773.5	–	628.5	503.5	208.5	583.5	748.5	490	520	40°
VIH RW 150/5 C SLPPES	1,519.7	1,303.5	–	628.5	503.5	208.5	583.5	1,278.5	490	520	40°
VIH RW 175/5 C SLPPES	1,744.7	1,303.5	–	628.5	503.5	208.5	583.5	1,503.5	490	520	40°
VIH RW 210/5 C SLPPES	1,999.7	1,783.5	1,663.5	758.5	633.5	208.5	713.5	1,758.5	490	520	40°
VIH RW 150/5 C SLPPIAES	1,519.7	1,082	–	628.5	503.5	208.5	583.5	1,057	490	520	40°
VIH RW 175/5 C SLPPIAES	1,744.7	1,214.5	–	628.5	503.5	208.5	583.5	1,189.5	490	520	40°
VIH RW 210/5 C SLPPIAES	1,999.7	1,469.5	1,349.5	758.5	633.5	208.5	713.5	1,444.5	490	520	40°
VIH RW 150/5 B PPES	1,134	896	–	546	421	226	501	866	580	636	35°
VIH RW 175/5 B PPES	1,294	1,056	–	546	421	226	501	1,031	580	636	35°
VIH RW 210/5 B PPES	1,539	1,301	1,181	676	551	226	631	1,276	580	636	35°
VIH RW 250/5 C PPES	1,794	1,556	1,436	676	551	226	631	1,521	580	636	35°
VIH RW 300/5 C PPES	2,019	1,781	1,661	676	551	226	631	1,776	580	636	35°
VIH RW 150/5 B PPIAES	1,134	846	–	546	421	226	501	821	580	636	35°
VIH RW 175/5 B PPIAES	1,294	891	–	546	421	226	501	866	580	636	35°
VIH RW 210/5 B PPIAES	1,539	1,136	1,016	676	551	226	631	1,111	580	636	35°

	A	B	C	D	E	F	G	H	I	J	K
VIH RW 250/5 C PPIAES	1,794	1,226	1,106	676	551	226	631	1,207	580	636	35°
VIH RW 300/5 C PPIAES	2,019	1,451	1,331	676	551	226	631	1,426	580	636	35°

D Technical data

Technical data – General

	VIH RW 90/5 C SLPPES	VIH RW 150/5 C SLPPES	VIH RW 175/5 C SLPPES	VIH RW 210/5 C SLPPES
Volumetric capacity	90 l	150 l	175 l	210 l
Domestic hot water volumetric capacity in accordance with EN 12897	88.4 l	144 l	176 l	199 l
Volume of the heat exchanger	5.84 l	5.84 l	5.84 l	7.70 l
Volume of the internal expansion vessel	–	–	–	–
Min. volume of the external expansion vessel	4 l	7 l	8 l	9 l
Maximum pressure of the heating tube coil during operation	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum operating pressure	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Pressure of the pressure reducer	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Opening pressure in the expansion relief valve	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Temperature and pressure relief valve	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)
Temperature and pressure relief valve	90 °C	90 °C	90 °C	90 °C
Load pressure in the expansion vessel	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum temperature of the heating circuit	85 °C	85 °C	85 °C	85 °C
Maximum domestic hot water temperature	85 °C	85 °C	85 °C	85 °C
Maximum volume flow of heating circuit	2,000 l/h	2,000 l/h	2,000 l/h	2,000 l/h
Standby heat loss (24 h)	< 1.31 kWh	< 1.44 kWh	< 1.76 kWh	< 2.06 kWh
Heat loss (ErP)	< 54.6 W	< 60.0 W	< 73.2 W	< 85.8 W
V40 volume	160.54 l	260.59 l	316.37 l	359.56 l
Pressure loss via the heating circuit	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)
Net weight	35.5 kg	45.25 kg	50 kg	57.1 kg
Weight when filled	123.9 kg	189.25 kg	226 kg	256.1 kg

	VIH RW 150/5 C SLPPIAES	VIH RW 175/5 C SLPPIAES	VIH RW 210/5 C SLPPIAES	VIH RW 150/5 B PPES
Volumetric capacity	150 l	175 l	210 l	150 l
Domestic hot water volumetric capacity in accordance with EN 12897	146 l	171 l	197 l	–
Volume of the heat exchanger	5.84 l	5.84 l	7.70 l	6.24 l
Volume of the internal expansion vessel	15 l	15 l	17 l	–
Min. volume of the external expansion vessel	–	–	–	7 l
Maximum pressure of the heating tube coil during operation	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum operating pressure	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Pressure of the pressure reducer	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Opening pressure in the expansion relief valve	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Temperature and pressure relief valve	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)

	VIH RW 150/5 C SLPPIAES	VIH RW 175/5 C SLPPIAES	VIH RW 210/5 C SLPPIAES	VIH RW 150/5 B PPES
Temperature and pressure relief valve	90 °C	90 °C	90 °C	90 °C
Load pressure in the expansion vessel	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum temperature of the heating circuit	85 °C	85 °C	85 °C	85 °C
Maximum domestic hot water temperature	85 °C	85 °C	85 °C	85 °C
Maximum volume flow of heating circuit	2,000 l/h	2,000 l/h	2,000 l/h	2,000 l/h
Standby heat loss (24 h)	< 1.39 kWh	< 1.71 kWh	< 2.01 kWh	–
Heat loss (ErP)	< 57.9 W	< 71.1 W	< 83.8 W	–
V40 volume	197.88 l	227.28 l	257.86 l	–
Pressure loss via the heating circuit	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)
Net weight	45.5 kg	49.9 kg	57.1 kg	–
Weight when filled	191.5 kg	220.9 kg	254.1 kg	–

	VIH RW 175/5 B PPES	VIH RW 210/5 B PPES	VIH RW 250/5 C PPES	VIH RW 300/5 C PPES
Volumetric capacity	175 l	210 l	250 l	300 l
Domestic hot water volumetric capacity in accordance with EN 12897	–	–	–	–
Volume of the heat exchanger	6.24 l	9.36 l	9.36 l	9.36 l
Volume of the internal expansion vessel	–	–	–	–
Min. volume of the external expansion vessel	8 l	10 l	12 l	13 l
Maximum pressure of the heating tube coil during operation	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum operating pressure	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Pressure of the pressure reducer	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Opening pressure in the expansion relief valve	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Temperature and pressure relief valve	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)
Temperature and pressure relief valve	90 °C	90 °C	90 °C	90 °C
Load pressure in the expansion vessel	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum temperature of the heating circuit	85 °C	85 °C	85 °C	85 °C
Maximum domestic hot water temperature	85 °C	85 °C	85 °C	85 °C
Maximum volume flow of heating circuit	2,000 l/h	2,000 l/h	2,000 l/h	2,000 l/h
Standby heat loss (24 h)	–	–	–	–
Heat loss (ErP)	–	–	–	–
V40 volume	–	–	–	–
Pressure loss via the heating circuit	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)
Net weight	–	–	–	–
Weight when filled	–	–	–	–

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Volumetric capacity	150 l	175 l	210 l	250 l
Domestic hot water volumetric capacity in accordance with EN 12897	–	–	–	–
Volume of the heat exchanger	6.24 l	6.24 l	9.36 l	9.36 l
Volume of the internal expansion vessel	15 l	17 l	15 l	17 l
Min. volume of the external expansion vessel	–	–	–	–

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Maximum pressure of the heating tube coil during operation	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum operating pressure	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Pressure of the pressure reducer	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Opening pressure in the expansion relief valve	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)	0.8 MPa (8.0 bar)
Temperature and pressure relief valve	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)
Temperature and pressure relief valve	90 °C	90 °C	90 °C	90 °C
Load pressure in the expansion vessel	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)	0.3 MPa (3.0 bar)
Maximum temperature of the heating circuit	85 °C	85 °C	85 °C	85 °C
Maximum domestic hot water temperature	85 °C	85 °C	85 °C	85 °C
Maximum volume flow of heating circuit	2,000 l/h	2,000 l/h	2,000 l/h	2,000 l/h
Standby heat loss (24 h)	–	–	–	–
Heat loss (ErP)	–	–	–	–
V40 volume	–	–	–	–
Pressure loss via the heating circuit	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)	0.01 MPa (0.10 bar)
Net weight	–	–	–	–
Weight when filled	–	–	–	–

	VIH RW 300/5 C PPIAES
Volumetric capacity	300 l
Domestic hot water volumetric capacity in accordance with EN 12897	–
Volume of the heat exchanger	9.36 l
Volume of the internal expansion vessel	17 l
Min. volume of the external expansion vessel	–
Maximum pressure of the heating tube coil during operation	0.3 MPa (3.0 bar)
Maximum operating pressure	0.8 MPa (8.0 bar)
Pressure of the pressure reducer	0.3 MPa (3.0 bar)
Opening pressure in the expansion relief valve	0.8 MPa (8.0 bar)
Temperature and pressure relief valve	1 MPa (10 bar)
Temperature and pressure relief valve	90 °C
Load pressure in the expansion vessel	0.3 MPa (3.0 bar)
Maximum temperature of the heating circuit	85 °C
Maximum domestic hot water temperature	85 °C
Maximum volume flow of heating circuit	2,000 l/h
Standby heat loss (24 h)	–
Heat loss (ErP)	–
V40 volume	–
Pressure loss via the heating circuit	0.01 MPa (0.10 bar)

	VIH RW 300/5 C PPIAES
Net weight	–
Weight when filled	–

Technical data – Hydraulic connection

	VIH RW 90/5 C SLPPES	VIH RW 150/5 C SLPPES	VIH RW 175/5 C SLPPES	VIH RW 210/5 C SLPPES
Cold water connection	3/4"	3/4"	3/4"	3/4"
Domestic hot water connection	3/4"	3/4"	3/4"	3/4"
Heat generator heating flow	1"	1"	1"	1"
Heat generator heating return	1"	1"	1"	1"
Secondary circuit return	–	–	–	3/4"
Temperature sensor dry pocket	8 mm	8 mm	8 mm	8 mm
Diameter of the immersion heater	44 mm	44 mm	44 mm	44 mm
Maximum calcium carbonate content $CaCO_3$	180 mg/l	180 mg/l	180 mg/l	180 mg/l
Maximum chloride content in the standard immersion heater	120 mg/l	120 mg/l	120 mg/l	120 mg/l
Maximum chloride content in the titanium immersion heater	250 mg/l	250 mg/l	250 mg/l	250 mg/l

	VIH RW 150/5 C SLPPIAES	VIH RW 175/5 C SLPPIAES	VIH RW 210/5 C SLPPIAES	VIH RW 150/5 B PPES
Cold water connection	3/4"	3/4"	3/4"	3/4"
Domestic hot water connection	3/4"	3/4"	3/4"	3/4"
Heat generator heating flow	1"	1"	1"	1"
Heat generator heating return	1"	1"	1"	1"
Secondary circuit return	–	–	3/4"	–
Temperature sensor dry pocket	8 mm	8 mm	8 mm	8 mm
Diameter of the immersion heater	44 mm	44 mm	44 mm	44 mm
Maximum calcium carbonate content $CaCO_3$	180 mg/l	180 mg/l	180 mg/l	180 mg/l
Maximum chloride content in the standard immersion heater	120 mg/l	120 mg/l	120 mg/l	120 mg/l
Maximum chloride content in the titanium immersion heater	250 mg/l	250 mg/l	250 mg/l	250 mg/l

	VIH RW 175/5 B PPES	VIH RW 210/5 B PPES	VIH RW 250/5 C PPES	VIH RW 300/5 C PPES
Cold water connection	3/4"	3/4"	3/4"	3/4"
Domestic hot water connection	3/4"	3/4"	3/4"	3/4"
Heat generator heating flow	1"	1"	1"	1"
Heat generator heating return	1"	1"	1"	1"
Secondary circuit return	–	3/4"	3/4"	3/4"
Temperature sensor dry pocket	8 mm	8 mm	8 mm	8 mm
Diameter of the immersion heater	44 mm	44 mm	44 mm	44 mm
Maximum calcium carbonate content $CaCO_3$	180 mg/l	180 mg/l	180 mg/l	180 mg/l
Maximum chloride content in the standard immersion heater	120 mg/l	120 mg/l	120 mg/l	120 mg/l
Maximum chloride content in the titanium immersion heater	250 mg/l	250 mg/l	250 mg/l	250 mg/l

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Cold water connection	3/4"	3/4"	3/4"	3/4"
Domestic hot water connection	3/4"	3/4"	3/4"	3/4"
Heat generator heating flow	1"	1"	1"	1"
Heat generator heating return	1"	1"	1"	1"

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Secondary circuit return	–	–	3/4"	3/4"
Temperature sensor dry pocket	8 mm	8 mm	8 mm	8 mm
Diameter of the immersion heater	44 mm	44 mm	44 mm	44 mm
Maximum calcium carbonate content $CaCO_3$	180 mg/l	180 mg/l	180 mg/l	180 mg/l
Maximum chloride content in the standard immersion heater	120 mg/l	120 mg/l	120 mg/l	120 mg/l
Maximum chloride content in the titanium immersion heater	250 mg/l	250 mg/l	250 mg/l	250 mg/l

	VIH RW 300/5 C PPIAES
Cold water connection	3/4"
Domestic hot water connection	3/4"
Heat generator heating flow	1"
Heat generator heating return	1"
Secondary circuit return	3/4"
Temperature sensor dry pocket	8 mm
Diameter of the immersion heater	44 mm
Maximum calcium carbonate content $CaCO_3$	180 mg/l
Maximum chloride content in the standard immersion heater	120 mg/l
Maximum chloride content in the titanium immersion heater	250 mg/l

Technical data – Electrics

	VIH RW 90/5 C SLPPES	VIH RW 150/5 C SLPPES	VIH RW 175/5 C SLPPES	VIH RW 210/5 C SLPPES
Immersion heater power supply	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz
Output of the immersion heater	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW
IP rating	IPX4	IPX4	IPX4	IPX4

	VIH RW 150/5 C SLPPIAES	VIH RW 175/5 C SLPPIAES	VIH RW 210/5 C SLPPIAES	VIH RW 150/5 B PPES
Immersion heater power supply	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz
Output of the immersion heater	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW
IP rating	IPX4	IPX4	IPX4	IPX4

	VIH RW 175/5 B PPES	VIH RW 210/5 B PPES	VIH RW 250/5 C PPES	VIH RW 300/5 C PPES
Immersion heater power supply	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz
Output of the immersion heater	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW
IP rating	IPX4	IPX4	IPX4	IPX4

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Immersion heater power supply	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz	230 ... 240 V / 50 Hz
Output of the immersion heater	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW	2.7 to 3.0 kW
IP rating	IPX4	IPX4	IPX4	IPX4

	VIH RW 300/5 C PPIAES
Immersion heater power supply	230 ... 240 V / 50 Hz
Output of the immersion heater	2.7 to 3.0 kW
IP rating	IPX4

Technical data – Material

	VIH RW 90/5 C SLPPES	VIH RW 150/5 C SLPPES	VIH RW 175/5 C SLPPES	VIH RW 210/5 C SLPPES
Cylinder material	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)
Insulation material	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Insulation thickness	50 mm	50 mm	50 mm	50 mm
Propellant for insulating material	GWP < 5	GWP < 5	GWP < 5	GWP < 5
ODP	0	0	0	0

	VIH RW 150/5 C SLPPIAES	VIH RW 175/5 C SLPPIAES	VIH RW 210/5 C SLPPIAES	VIH RW 150/5 B PPES
Cylinder material	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)
Insulation material	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Insulation thickness	50 mm	50 mm	50 mm	60 mm
Propellant for insulating material	GWP < 5	GWP < 5	GWP < 5	GWP < 5
ODP	0	0	0	0

	VIH RW 175/5 B PPES	VIH RW 210/5 B PPES	VIH RW 250/5 C PPES	VIH RW 300/5 C PPES
Cylinder material	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)
Insulation material	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Insulation thickness	60 mm	60 mm	60 mm	60 mm
Propellant for insulating material	GWP < 5	GWP < 5	GWP < 5	GWP < 5
ODP	0	0	0	0

	VIH RW 150/5 B PPIAES	VIH RW 175/5 B PPIAES	VIH RW 210/5 B PPIAES	VIH RW 250/5 C PPIAES
Cylinder material	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)	Duplex steel (1.4162)
Insulation material	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Insulation thickness	60 mm	60 mm	60 mm	60 mm
Propellant for insulating material	GWP < 5	GWP < 5	GWP < 5	GWP < 5
ODP	0	0	0	0

	VIH RW 300/5 C PPIAES
Cylinder material	Duplex steel (1.4162)
Insulation material	Polyurethane
Insulation thickness	60 mm
Propellant for insulating material	GWP < 5
ODP	0

E Heating water quality

Parameter	Maximum value
Particle size	1.5 mm
Water hardness	11 °dH
Air content	70 mg/l
Sludge	70 mg/l
Magnetite (Fe_3O_4, particle size ≤ 0.4 mm)	100 mg/l
Electrical conductivity at 25 °C	1,500 µS/cm
Additives	
Sentinel X 300, Sentinel X 400	2 %
Fernox F3	1 %
Fernox F1, Fernox F2	1 %
Sentinel X 100, Sentinel X 200	2 %
Fernox Antifreeze Alpha 11, Sentinel X 500	50 %

F Potable water quality

Parameter	Maximum value
Water hardness	25 °dH
Water hardness for operation with immersion heater	10 °dH
Electrical conductivity at 20 °C	2,500 µS/cm
Electrical conductivity at 25 °C	2,790 µS/cm
Iron	0.2 mg/l
Solute oxygen	10 mg/l
Fluoride	1.5 mg/l
pH value	6.5 to 9.5
Sulphates	240 mg/l
Calcium carbonate	2.5 mol/m³
Chloride	250 mg/l
Nitrate	50 mg/l
Sodium	200 mg/l
Ammonia	0.5 mg/l

Benchmark Commissioning and Servicing Section

It is a requirement that the cylinder is installed and commissioned to the manufacturers instructions and the data fields on the commissioning checklist completed in full.

To instigate the cylinder guarantee the cylinder needs to be registered with the manufacturer within one month of the installation.

To maintain the cylinder guarantee it is essential that the cylinder is serviced annually by a competent person who has been trained on the cylinder installed. The service details should be recorded within Benchmark.

www.benchmark.org.uk

MAINS PRESSURE HOT WATER STORAGE SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the storage system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer Name ______________ Telephone Number ______________

Address ______________

Cylinder Make and Model ______________

Cylinder Serial Number ☐☐

Commissioned by *(print name)* ______________ Registered Operative ID Number ______________

Company Name ______________ Telephone Number ______________

Company Address ______________

______________ Commissioning Date ______________

To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:

Building Regulations Notification Number *(if applicable)* ______________

ALL SYSTEMS PRIMARY SETTINGS (indirect heating only)

Is the primary circuit a sealed or open vented system?	Sealed ☐	Open ☐	
What is the maximum primary flow temperature?		☐	°C

ALL SYSTEMS

What is the incoming static cold water pressure at the inlet to the system?			☐	*bar*
Has a strainer been cleaned of installation debris (if fitted)?		Yes ☐	No ☐	
Is the installation in a hard water area (above 200ppm)?		Yes ☐	No ☐	
If yes, has a water scale reducer been fitted?		Yes ☐	No ☐	
What type of scale reducer has been fitted?				
What is the hot water thermostat set temperature?			☐	°C
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?			☐	*l/min*
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?			Yes ☐	
Type of control system (if applicable)	Y Plan ☐	S Plan ☐	Other ☐	
Is the cylinder solar (or other renewable) compatible?		Yes ☐	No ☐	
What is the hot water temperature at the nearest outlet?			☐	°C
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed			Yes ☐	

UNVENTED SYSTEMS ONLY

Where is the pressure reducing valve situated (if fitted)?			
What is the pressure reducing valve setting?		☐	*bar*
Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested?	Yes ☐	No ☐	
The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations		Yes ☐	
Are all energy sources fitted with a cut out device?	Yes ☐	No ☐	
Has the expansion vessel or internal air space been checked?	Yes ☐	No ☐	

THERMAL STORES ONLY

What store temperature is achievable?	☐	°C
What is the maximum hot water temperature?	☐	°C

ALL INSTALLATIONS

The hot water system complies with the appropriate Building Regulations	Yes ☐
The system has been installed and commissioned in accordance with the manufacturer's instructions	Yes ☐
The system controls have been demonstrated to and understood by the customer	Yes ☐
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer	Yes ☐

Commissioning Engineer's Signature ______________

Customer's Signature ______________

(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

www.benchmark.org.uk

SERVICE RECORD

It is recommended that your hot water system is serviced regularly and that the appropriate Service Record is completed.

Service Provider
Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE 1 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 2 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 3 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 4 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 5 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 6 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 7 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 8 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 9 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

SERVICE 10 Date
Engineer Name
Company Name
Telephone Number
Comments
Signature

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