



VED

**EXP**



For the operator

# Instructions for use

VED

Electric instantaneous water heater

# Table of contents

## Table of contents

<b>1</b>	<b>Notes on the documentation</b> .....	3
1.1	Storing documents .....	3
1.3	Applicability of the instructions .....	3
1.4	Identification plate .....	3
1.5	CE label .....	3
<b>2</b>	<b>Safety</b> .....	4
2.1	Classification of action-related warnings .....	4
2.2	Intended use .....	4
2.3	General safety information .....	4
<b>3</b>	<b>Functions and operation</b> .....	5
<b>4</b>	<b>Energy-saving tips</b> .....	6
<b>5</b>	<b>Detecting and rectifying faults</b> .....	6
<b>6</b>	<b>Care</b> .....	6
<b>7</b>	<b>Maintenance, guarantee and customer service</b> .....	6
<b>8</b>	<b>Recycling and disposal</b> .....	6

# 1 Notes on the documentation

The following information is intended to help you throughout the entire documentation. Further documents apply in combination with these instructions for use.

We accept no liability for any damage caused by failure to observe these instructions.

## Other applicable documents

- When operating the VED heater, you must also observe all operating instructions that are included with other components of your system.

### 1.1 Storing documents

- Store the enclosed operating instructions and all other applicable documents in such a way that they are available whenever required and for any subsequent operators of the system.

### 1.3 Applicability of the instructions

These instructions apply for the following only:

Type designation	Article number
VED H 12/7	0010007731
VED H 18/7	0010007732
VED H 21/7	0010007733
VED H 24/7	0010007734
VED H 27/7	0010007735

Tab. 1.1 Identifying the unit

### 1.4 Identification plate

The unit's article number is part of the serial number. To find out the serial and article numbers, refer to the identification plate. The identification plate can be found to the right, next to the operator control panel, under the cover.



Fig. 1.1 Example of an identification plate

### Explanation of the symbols on the identification plate

	CE mark, see section 1.5
	The VDE GS mark confirms that the unit complies with standards and has been tested for safety
	Symbol confirming conformity with the electromagnetic compatibility standard
	Ensure proper disposal at the end of its useful life (not household waste)
	Read the operating and installation instructions
	Serial number as a bar code and in plain text. The 7th to 16th digits of the serial number form the unit's article number

### 1.5 CE label

CE labelling shows that, based on the type overview, the units comply with the basic requirements of the applicable directives.

### 2 Safety

#### 2.1 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 symbol	Signal word	Explanation
	<b>Danger!</b>	Imminent danger to life or risk of severe personal injury
	<b>Danger!</b>	Risk of death from electric shock
	<b>Warning.</b>	Risk of minor personal injury
	<b>Caution.</b>	Risk of material or environmental damage

Tab. 2.1 Meaning of warning symbols and signal words

#### 2.2 Intended use

Vaillant VED electric instantaneous water heaters have been constructed using state-of-the-art technology in accordance with the recognised safety rules and regulations. Nevertheless, there is still a risk of death or serious injury to the user or others or of damage to the unit and other property in the event of improper use or use for which the unit is not intended.

This unit is not designed to be used by persons (including children) with limited physical, mental or sensory capabilities or by persons who do not have enough experience and/or knowledge, unless they are supervised by a person who is responsible for their safety or have been instructed by him/her about how to use the unit. Children must be supervised to ensure that they do not play with the unit.

The Vaillant VED electric instantaneous water heater must only be used to heat up drinking water. The Vaillant VED electric instantaneous water heaters are suitable for use only in an enclosed, frost-free room in a domestic environment. The Vaillant VED electric instantaneous water heaters are not suitable for use in secondary returns.

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. The manufacturer/supplier is not liable for any damage resulting from such use. In this case, the user alone bears the risk. Intended use includes the following:

- observance of the accompanying operating, installation and maintenance instructions for the Vaillant product and any other parts and components of the system
- compliance with all inspection and maintenance conditions listed in the instructions.

#### Caution.

Improper use of any kind is prohibited.

#### 2.3 General safety information

##### Assembly and settings

All work involved in the installation, set-up, maintenance and repair of the VED electric instantaneous water heater must only be carried out by an approved heating specialist company, who also assumes the responsibility for installing the unit properly and commissioning it for the first time. The VED electric instantaneous water heater must be installed in strict compliance with these installation instructions.

##### Risk of death from electric shock from live lines and connections!

During all work on the open unit, particularly on electrical lines and connections, there is a risk of death from electric shock.

- Do not carry out any work on the unit yourself.
- Inform your heating specialist company if your VED is not working correctly.

##### Risk of death from electric shock from live lines and connections!

The drinking water used must demonstrate resistance greater than or equal to 900 ohm at 15 °C. Otherwise, the unit must not be used.

- Before installing the unit, ask the competent person at your local water company to inform you about the water resistance and conductivity.
- Consult a competent person if you have any doubt as to the requirements for water quality.

##### Risk of being scalded by hot water!

The outlet temperatures at the draw-off points can be up to 60 °C.

- When using a VED electric instantaneous water heater, be aware of the risk of scalding from high outlet temperatures.
- There is a particular risk of scalding whenever your VED is set to stage II.
- In normal operating mode, set the output selector on your VED to stage I to avoid scalding.

#### Material damage inside the unit caused by poor quality water

A VED electric instantaneous water heater must only be used to heat up drinking water. This potable water must meet the specific German or Austrian legal requirements for quality. Otherwise, it is not possible to rule out the risk of corrosion inside the unit.

- Consult a competent person if you have any doubt as to the requirements for water quality.

#### Risk of frost.

If a VED electric instantaneous water heater is placed out of operation for a relatively long period of time in an unheated room in cold weather, the water in the unit and pipes may freeze.

- Consult a competent person if you have any doubt as to requirements.
- Ensure that your VED electric instantaneous water heater is installed in a permanently frost-free room.

#### Material damage to the unit caused by changes

No changes must be made to your VED.

#### In the event of a fault

- If your VED is not producing hot water or if any other fault occurs, inform an approved heating specialist company.
- If the VED ever malfunctions, inform your heating specialist company.
- Do not carry out any repairs yourself.
- Do not open the unit cover under any circumstances.

### 3 Functions and operation

If you turn on the hot water at a draw-off point (mixer or separate tap), your VED will automatically warm up the drinking water.



#### Danger!

#### Risk of being scalded by hot water.

The water temperature at the draw-off points can reach 60°C.

- When using a VED electric instantaneous water heater, be aware of the risk of scalding from high outlet temperatures.
- There is a particular risk of scalding whenever your VED is set to stage II.
- In normal operating mode, set the output selector on your VED to stage I to avoid scalding

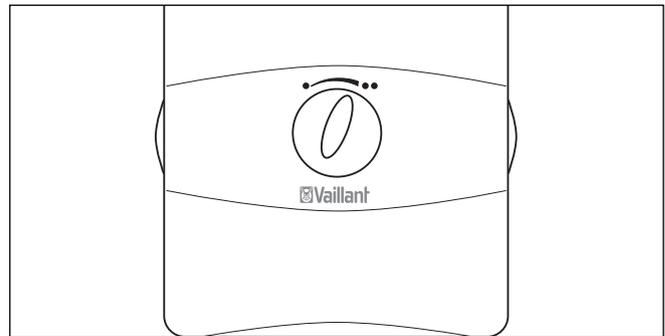


Fig. 3.1 Output selector

- Set the output selector to stage I or stage II.
  - If the output selector is set to stage I, your VED is in partial load operation. If the output selector is set to stage II, your VED is in full load operation.
  - For more information on the possible hot water temperatures, refer to the "Technical Data" section of the installation instructions.

Also take note of the following:

- The desired temperature may not be reached when drawing large volumes in cold weather.
- If this occurs, briefly set the output selector to stage II or reduce the water volume being drawn. In both cases, the water temperature will increase very quickly.

## 4 Energy-saving tips

You can help to save energy by following the tips and advice below:

### Appropriate hot water temperature

The water should only be heated up to the extent that is necessary for use. Any further heating will result in unnecessary energy consumption. For you, this means that you should:

- Set your VED to stage I in normal operating mode.
- Briefly set the output selector to stage II in special cases where you need more hot water than stage I is able to provide. After using the hot water, remember to set the output selector back to stage I.

## 5 Detecting and rectifying faults



### Danger!

#### Risk of death from electric shock.

Live lines and connections may cause a potentially lethal electric shock.

- Do not attempt to repair the unit yourself under any circumstances.
- Under no circumstances should the unit cladding be removed.
- If the unit ever malfunctions, inform an approved heating specialist company immediately.

## 6 Care

There is no need to care for your Vaillant VED electric instantaneous water heater because all internal parts are protected against dirt and moisture. You can clean the exterior of the unit with a damp cloth and a little soap.



Do not use any abrasive scouring or cleaning agents when cleaning the unit cladding.

## 7 Maintenance, guarantee and customer service

The permanent operational readiness, safety, reliability and long service life of your electronic VED electric instantaneous water heater require annual inspections and maintenance work to be carried out by a competent person.



### Danger!

#### Risk of injury and material damage due to incorrect maintenance and repairs.

If you fail to carry out maintenance, or if you carry this out incorrectly, this may adversely affect the operating reliability of the unit.

- Never attempt to perform maintenance or repairs on your VED electric instantaneous water heater by yourself.
- You must employ an approved heating specialist company to complete such work. We recommend making a maintenance agreement.



### Caution.

#### Possible material damage to the unit.

A lack of maintenance can affect the functional safety of the VED. E.g. unit defects caused by limescale formation. In areas of hard water (more than 14 °dH = 2.5 CaCO<sub>3</sub> mmol/l) or very hard water (more than 20 °dH = 3.6 CaCO<sub>3</sub> mmol/l), a significantly more frequent maintenance interval may be required.

- Have your VED inspected at least every 3 years by a competent person.
- If you live in an area with very hard water, Vaillant recommends that you have the maintenance service carried out once a year by a competent person.

## 8 Recycling and disposal



If your Vaillant unit is labelled with this symbol, it does not belong with your household waste at the end of its useful life.

- Instead, take the unit to a collection point for recycling electrical and electronic devices.

For more information on where to take your used electrical or electronic devices, contact your town or district authorities, waste disposal company, or the competent person who installed the unit.

For the competent person

# Installation instructions

VED

Electric instantaneous water heater

# Table of contents

## Table of contents

<b>1</b>	<b>Notes on the documentation</b> .....	3
<b>1.1</b>	<b>Observing other applicable documents</b> .....	<b>3</b>
1.2	Storing documents .....	3
1.4	Applicability of the instructions .....	3
1.5	CE label .....	3
<b>2</b>	<b>Safety</b> .....	<b>4</b>
2.1	Safety and warning information .....	4
2.2	Intended use .....	4
2.3	General safety information .....	4
<b>3</b>	<b>Equipment and functional description</b> .....	<b>6</b>
3.1	Overview .....	6
3.2	Function.....	6
<b>4</b>	<b>Installation</b> .....	<b>6</b>
4.1	Scope of delivery .....	6
4.2	Installation site .....	7
4.3	Required minimum clearances .....	7
4.4	Mounting the unit to the wall .....	8
4.5	Connecting the hot and cold water .....	10
4.6	Connecting the unit to the electricity supply.....	12
<b>5</b>	<b>Starting up/decommissioning</b> .....	<b>13</b>
5.1	Purging the unit .....	13
5.2	Fitting the unit cladding.....	13
5.3	Checking the system's functionality .....	14
5.4	Decommissioning.....	14
<b>6</b>	<b>Handing over to the operator</b> .....	<b>14</b>
<b>7</b>	<b>Replacement parts and accessories</b> .....	<b>14</b>
<b>8</b>	<b>Detecting and rectifying faults</b> .....	<b>15</b>
<b>9</b>	<b>Inspection and maintenance</b> .....	<b>16</b>
<b>10</b>	<b>Technical data</b> .....	<b>17</b>

## 1 Notes on the documentation

The following information is intended to help you throughout the entire documentation. Other documents apply in addition to these installation instructions. We accept no liability for any damage caused by failure to observe these instructions.

### 1.1 Observing other applicable documents

- When installing the VED unit, you must observe all the installation instructions for the assemblies and components of the system.

These installation instructions are enclosed with the various system parts and supplementary components.

- Furthermore, observe all operating instructions enclosed with components of the system.

### 1.2 Storing documents

- Pass these installation instructions and all other applicable documents and, if necessary, any required tools to the system operator.

The system operator should retain these instructions and tools so that they are available when required.

### 1.4 Applicability of the instructions

These instructions apply for the following only:

Type designation	Article number
VED H 12/7	0010007731
VED H 18/7	0010007732
VED H 21/7	0010007733
VED H 24/7	0010007734
VED H 27/7	0010007735

**Tab. 1.1 Identifying the unit**

The unit's article number is part of the serial number. To find out the serial and article numbers refer to the identification plate. The identification plate can be found to the right, next to the operator control panel, under the cover.

### 1.5 CE label



CE labelling shows that, based on the type overview, the units comply with the basic requirements of the following directives:

- Electromagnetic compatibility directive (Council Directive 2004/108/EC)
- Low voltage directive (Council Directive 2006/95/EC)

### 2 Safety

#### 2.1 Safety and warning information

When installing the VED electric instantaneous water heater, you must observe the general safety instructions and warning notes that appear before all of the actions.

##### 2.1.1 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 symbol	Signal word	Explanation
	<b>Danger!</b>	Imminent danger to life or risk of severe personal injury
	<b>Danger!</b>	Risk of death from electric shock
	<b>Warning.</b>	Risk of minor personal injury
	<b>Caution.</b>	Risk of material or environmental damage

Tab. 2.1 Meaning of warning symbols and signal words

#### 2.2 Intended use

Vaillant VED electric instantaneous water heaters have been constructed using state-of-the-art technology in accordance with the recognised safety rules and regulations. Nevertheless, there is still a risk of death or serious injury to the user or others or of damage to the unit and other property in the event of improper use or use for which the unit is not intended.

This unit is not designed to be used by persons (including children) with limited physical, mental or sensory capabilities or by persons who do not have enough experience and/or knowledge, unless they are supervised by a person who is responsible for their safety or have been instructed by him/her about how to use the unit. Children must be supervised to ensure that they do not play with the unit.

The Vaillant VED electric instantaneous water heater must only be used to heat up drinking water. The Vaillant VED electric instantaneous water heaters are suitable for use only in an enclosed, frost-free room in a domestic environment. The Vaillant VED electric instantaneous water heaters are not suitable for use in secondary returns.

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. The manufacturer/supplier is not liable for any damage resulting from such use. In this case, the user alone bears the risk. Intended use includes the following:

- observance of the accompanying operating, installation and maintenance instructions for the Vaillant product and any other parts and components of the system
- compliance with all inspection and maintenance conditions listed in the instructions.



**Caution.**

Improper use of any kind is prohibited.

#### 2.3 General safety information

##### Assembly and settings

All work involved in the installation, set-up, maintenance and repair of the VED electric instantaneous water heater must only be carried out by an approved heating specialist company, who also assumes the responsibility for installing the unit properly and commissioning it for the first time. The VED electric instantaneous water heater must be installed in strict compliance with these installation instructions.

### **Risk of death from electric shock from live lines and connections!**

During all work on the open unit, particularly on electrical lines and connections, there is a risk of death from electric shock.

- When working on the open unit, interrupt the power supply. The unit must be de-energised.
- Check that the unit is de-energised.
- Ensure that the power cannot be restored inadvertently to the unit while you are working on it.

### **Risk of death from electric shock from live lines and connections!**

The drinking water used must demonstrate resistance greater than or equal to 900 ohm at 15°C. Otherwise, the unit must not be used.

- Before installing the unit, ask your water company to inform you about the water resistance and conductivity.

### **Risk of being scalded by hot water!**

The outlet temperatures at the draw-off points can be up to 60°C.

- Inform the operator that there is a risk of scalding due to high outlet temperatures, especially when the VED is set to stage II.
- Recommend to the operator that, in normal operating mode, the output selector is set to level I to avoid scalding.

### **Material damage inside the unit caused by poor quality water**

A VED electric instantaneous water heater must only be used to heat up drinking water. This potable water must meet the specific German or Austrian legal requirements for quality. Otherwise, it is not possible to rule out the risk of corrosion inside the unit.

### **Material damage due to improper use and/or unsuitable tools**

Improper use and/or the use of unsuitable tools may result in material damage (e.g. water leaks).

- Always use a suitable open-end spanner to tighten or undo threaded connections.
- Do not use pipe wrenches, extensions, etc.

### **Risk of frost.**

If a VED electric instantaneous water heater is placed out of operation for a relatively long period of time in an unheated room in cold weather, the water in the unit and pipes may freeze.

- Install the VED electric instantaneous water heater in a permanently frost-free room.
- Store the VED electric instantaneous water heater in a permanently frost-free area.

### **Material damage to the appliance caused by changes**

No changes must be made to the VED.

- Do not make any changes to the unit yourself.
- Inform the operator that they must not make any changes to the unit or to the electricity lines or water pipes.

### **In the event of a fault**

- Read the "Detecting and rectifying faults" section to find out what you must do in the case of fault.
- Inform the operator that they must not attempt to repair the unit under any circumstances.
- Inform the operator that they must not remove the unit cladding.

### 3 Equipment and functional description

#### 4 Installation

### 3 Equipment and functional description

#### 3.1 Overview

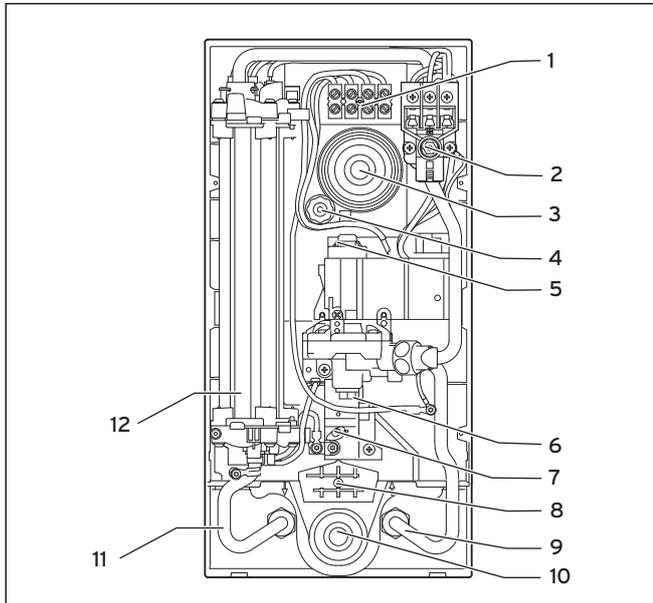


Fig. 3.1 Overview of the VED

Number	Component
1	Mains connection terminal
2	Safety switch
3	Upper anti-spray-water sleeve
4	Adjustment spindle
5	Flow Switch
6	Flow switch
7	Partial load switch
8	Space for optional mains connection terminal
9	Cold water connection
10	Lower anti-spray-water sleeve
11	Hot water connection
12	Heating block

Tab. 3.1 VED components

#### 3.2 Function

Using bare wire heating in the unit's heating block, drinking water is heated and can then be guided to one or more draw-off points. The amount and heat of the hot water is dependent on the VED performance category and settings. The performance of each VED unit is listed in the Technical Data table in section 11.

### 4 Installation



#### Risk of death!

#### Risk of death due to improper installation!

All work involved in the installation, set-up, maintenance and repair of the VED electric instantaneous water heater must only be carried out by a recognised competent person, who also assumes the responsibility for installing the unit properly and commissioning it for the first time. The VED electric instantaneous water heater must be installed in strict compliance with these installation instructions.



Flush the cold water pipes thoroughly before installation.

#### 4.1 Scope of delivery

- Check that the scope of delivery is complete (see tab. 4.1).

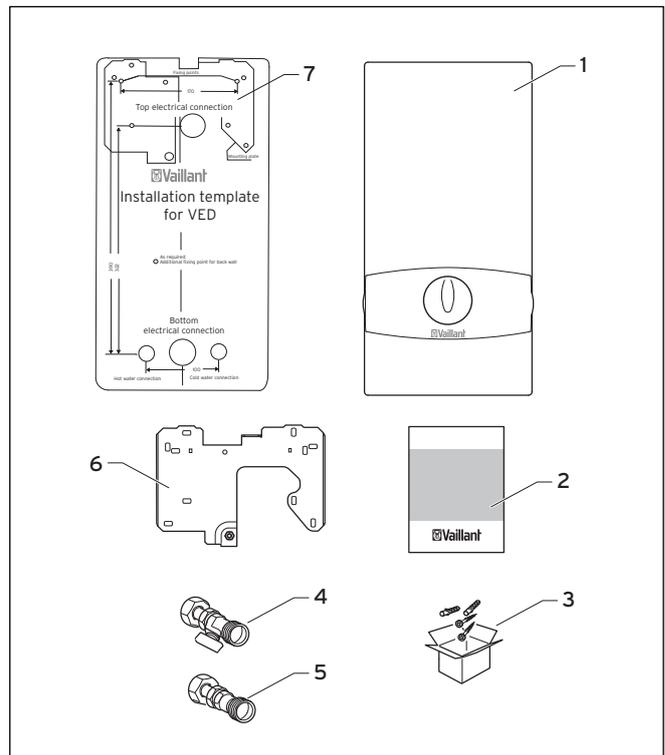


Fig. 4.1 Scope of delivery

No.	Quantity	Name
1	1	VED electric instantaneous water heater
2	1	Operating and installation instructions
3	1	Box containing fixings (2 bolts, 2 rawl plugs, 1 seal, 1 special fixing screw)
4	1	Cold water connection piece R 1/2 with a cold water stop valve
5	1	Hot water connection piece R 1/2 supplied in the box
6	1	Installation plate
7	1	Installation template

**Tab. 4.1 Scope of delivery**

The VED electric instantaneous water heater is completely pre-assembled. Once the unit has been fitted to the wall, only the water and electrical installation needs to be completed.

#### 4.2 Installation site



**Caution.**

**Risk of frost damage to the unit.**

If a VED electric instantaneous water heater is placed out of operation for a relatively long period of time in an unheated room in cold weather, the water in the unit and pipes may freeze. This results in damage to the unit.

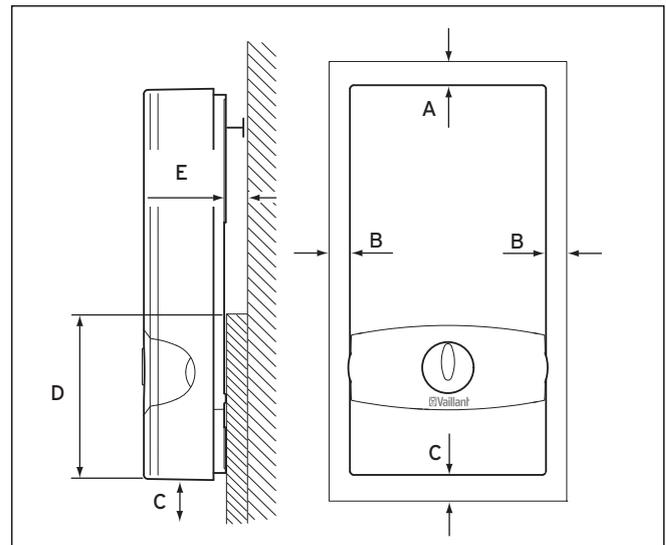
- Install the unit in a permanently frost-free room.



The VED electric instantaneous water heater meets the current safety regulations for protected zone 1 and can therefore also be installed above the bath or in a shower area.

- Wherever possible, install the unit near the draw-off point that will be most used.

#### 4.3 Required minimum clearances



**Fig. 4.2 Installation clearances**

**Key**

- A At least 50 mm
- B At least 50 mm
- C At least 120 mm
- D At least 130 mm
- E Maximum 22 mm

The bottom section of the unit (**D**) must be level with the unit's bearing area on the wall; to a height of at least 130 mm. Any possible wall offset (e.g. due to tiles) must not exceed 22 mm (**E**). The distance to the floor must be at least 120 mm (**C**). The distance above, to the left and to the right of the unit must be at least 50 mm.

## 4 Installation

### 4.4 Mounting the unit to the wall

#### 4.4.1 Unit and connection dimensions

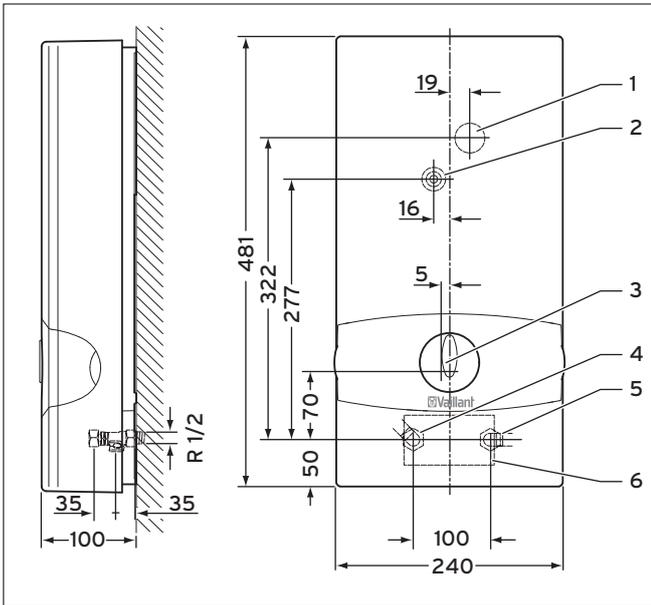


Fig. 4.3 Unit dimensions

#### Key

- 1 Upper anti-spray-water sleeve
- 2 Central attachment
- 3 Output selector
- 4 Hot water connection R 1/2
- 5 Cold water connection R 1/2
- 6 Lower anti-spray-water sleeve
- R Outside thread R 1/2

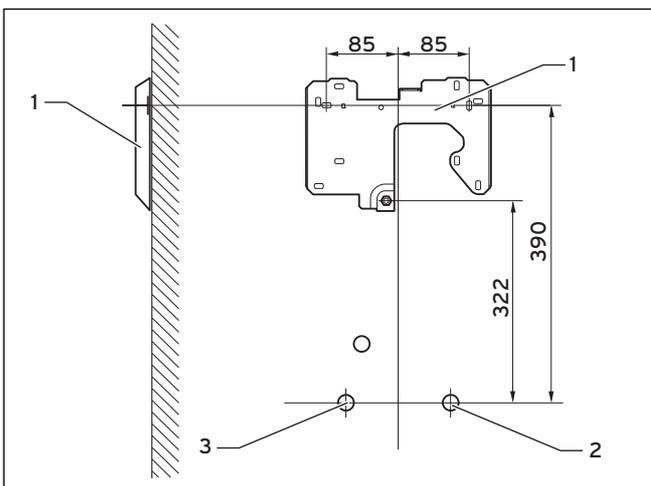


Fig. 4.4 Connection dimensions

#### Key

- 1 Installation plate
- 2 Cold water connection
- 3 Hot water connection

### 4.4.2 Removing the unit cladding

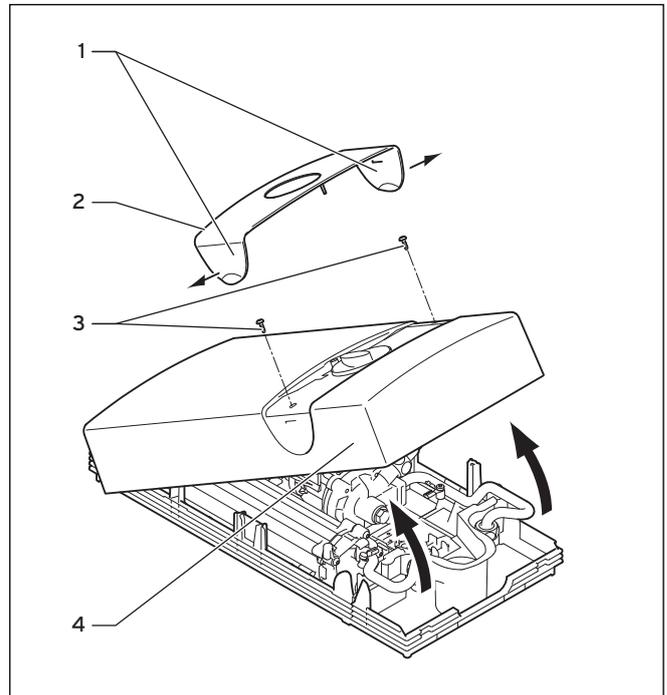


Fig. 4.5 Removing the unit cladding

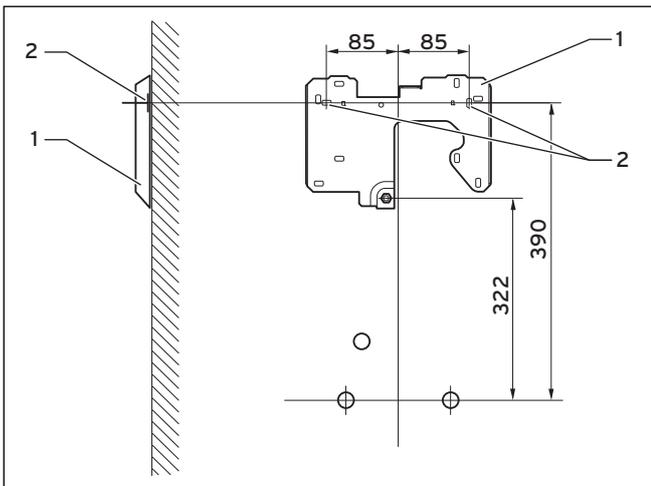
- Grip the two straps (1) on the panel (2).
- Splay the two straps (pull them away from the unit).
- Remove the panel (2).
- Undo both bolts (3).
- Remove the cover (4) from the unit.

### 4.4.3 Installing the unit



The VED electric instantaneous water heater must be hung on the wall vertically.

- Ensure that the wall and all fixing elements are able to bear the load. A VED weighs approx. 4.4 kilos when filled with water.
- Using figures 4.2 to 4.4, double check that the desired installation location meets the requirements.



**Fig. 4.6 Fitting the installation plate**

- Hold the installation template against the wall and mark the fixing points.
- Fix the installation plate (1) to the fixing points (2) using the rawl plugs and screws.



When replacing a unit, you can use the previous drill holes as long as they are compatible with the additional holes on the installation plate.

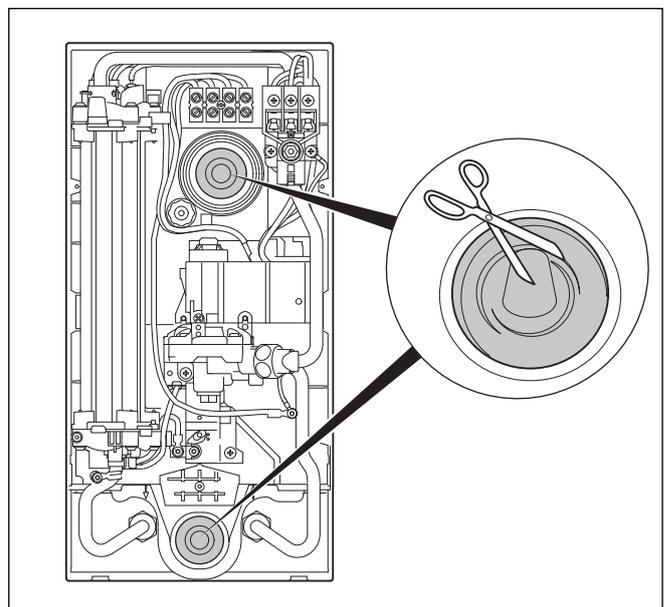


**Danger!**

**Risk of death from electric shock due to water penetration if the anti-spray-water sleeve is completely cut away.**

The anti-spray-water sleeve should prevent water penetrating the unit along the length of the mains connection cable. If the anti-spray-water sleeve is completely cut away, water can very easily penetrate and damage the unit and, in the worst case scenario, can cause a potentially lethal electric shock.

- Never cut off the anti-spray-water sleeve completely.
- Cut the end of the anti-spray-water sleeve in such a way that the sleeve tightly surrounds the mains connection cable.



**Fig. 4.7 Cutting the anti-spray-water sleeve for the cable routing**

- Depending on the location of the mains connection cable in relation to the wall, fit the anti-spray-water sleeve at the top or the bottom (see fig. 4.7).



Fit the anti-spray-water sleeve in such a way that the sleeve tightly surrounds the mains connection cable. Water must not penetrate the unit's interior.

- Feed the cable through the anti-spray-water sleeve into the unit's interior.

## 4 Installation

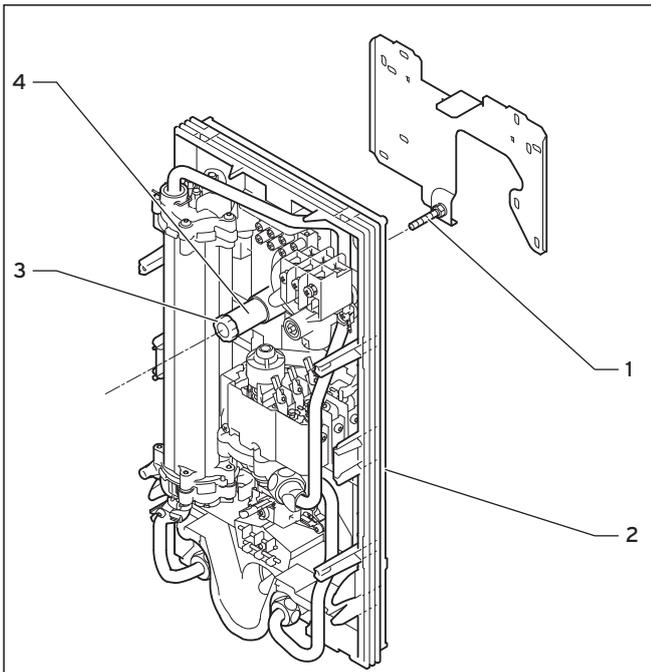


Fig. 4.8 Fitting and adjusting the unit

- Fit the unit (2) to the retaining screw (1) on the installation plate.
- Adjust the unit using the adjustment spindle (4).
- Fix the unit using the fixing screw (3).
- Align the unit (vertically and observing the clearances detailed in fig. 4.2 to 4.4).

### 4.5 Connecting the hot and cold water

- Observe the following conditions in order to correctly fit the water connections:
  - All cold and hot water pipes can be made of steel, copper or plastic. It is important to check with the manufacturer that pipes made of plastic can be used with temperatures of 65 °C in normal operating mode. In addition, plastic pipes must be suitable for a significantly higher load in the short term.
  - An expansion relief valve on the cold water pipe is not required.
  - To simplify fitting the water connection, the bottom section of the unit can be folded up (see (1) in fig. 4.10). After fitting the connection, you must fold the bottom section of the unit back down until it is engaged again. **The folding frame must not be removed.**
  - When connecting the VED to a plastic pipe system, a Vaillant pressure monitor (order no. 300768) must be used.

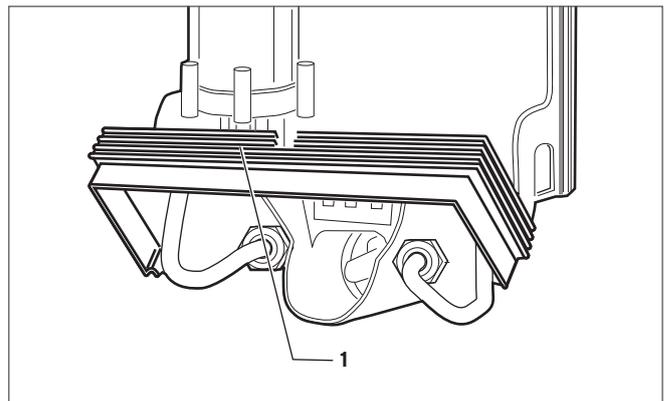


Fig. 4.10 Unit's folding frame



**Caution.**  
**Risk of damage to the unit resulting from improper use and/or unsuitable tools.**

Improper use and/or the use of unsuitable tools may result in material damage (e.g. water leaks).

- Always use a suitable open-end spanner to tighten or undo threaded connections.
- Do not use pipe wrenches, extensions, etc.



**Caution.**  
**Possible damage caused by leaking water connections.**

Leaks may occur due to strains in the line material.

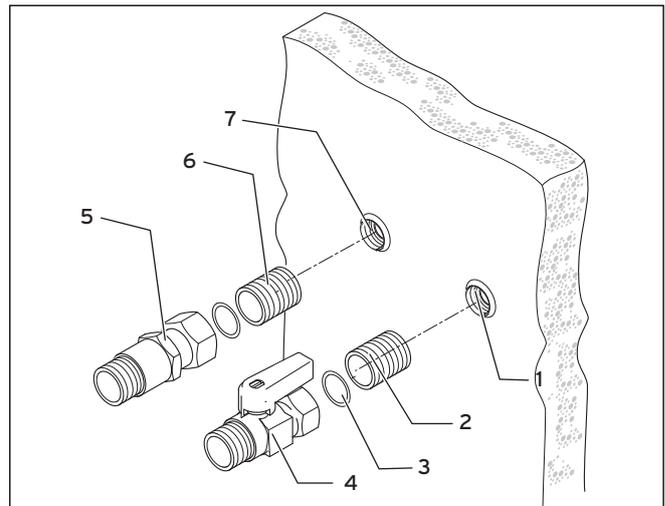
- Take care not to strain the lines as you tighten the water connections.



**Caution.**  
**Possible damage caused by unsuitable plastic pipes.**

Damage may be caused by unsuitable plastic pipes.

- Note that when plastic pipes are used, a pressure monitor (article no. 300768) must be fitted. The pressure monitor is not included in the scope of delivery.
- When using plastic pipes, ensure that they withstand a maximum temperature of 95 °C and maximum pressure of 1 MPa (10 bar) for at least one hour (check manufacturer's specifications).
- When using plastic pipes, ensure that they conform with DIN 16893 and DIN 16892 (check manufacturer's specifications).



**Fig. 4.9 Water connections**

- Put hemp on the two double nipples (**2** and **6**) and use the connections to screw the double nipples to the wall (**1** and **7**).
- Insert the seals (**3**) in the cap nuts of the cold (**4**) and hot water connections (**5**).
- Screw the cold water connection piece (**4**) to the cold water connection double nipple (**2**) in the wall (**1**).
- Screw the hot water connection piece (**5**) to the hot water connection double nipple (**6**) in the wall (**7**).
- Insert a seal in the cap nut of the unit-side hot water connection.



**Caution.**  
**Risk of damage due to pipes being blocked by foreign bodies in the water.**

A water filter that stops foreign bodies entering the unit must be fitted to the cold water flow. The unit must not be used without a water filter. A water filter has been fitted inside the cold water pipe at the factory.

- During installation, check that the water filter is present.

- Check that the cold water filter fitted at the factory is in the correct position in the unit-side cold water connection. The cold water filter is an additional seal on the cold water side.

## 4 Installation

### 4.6 Connecting the unit to the electricity supply



**Danger!**  
**Risk of death from electric shock from live lines and connections!**

- Isolate all supplies from the power supply before carrying out electrical work.
- Check that there is no voltage in the supply lines and connections.
- Ensure that the power cannot be restored inadvertently to any of the supply lines and connections while you are working on the unit.

- When connecting the electricity supply, also observe the local regulations from the electricity supply company as well as the specifications on the identification plate.
- Also note the following conditions:
  - The unit must be installed using a permanent connection.
  - The permanent connection must be equipped with a customer-supplied partition that has a contact separation of at least 3 mm on all lines. A line protection switch, for example, is suitable for this purpose.
  - The unit must be connected to the protective earth.
  - The unit is delivered pre-assembled. When connecting the electricity supply, only the electricity line needs to be fed in to the unit and connected. This happens using one of the two anti-spray-water sleeves that prevent water penetrating the unit; see fig. 4.7, Cutting the anti-spray-water sleeve for the cable routing. The connection is fixed to the upper section of the unit at the factory. If required, it can be connected to the lower section of the unit but the electricity line must be fed through the lower anti-spray-water sleeve.

#### 4.6.1 Electrical connection from above

The electricity line is fed through the upper anti-spray-water sleeve (2). Figure 4.7 explains how the anti-spray-water sleeve must be prepared.

- Connect the individual conductors to L1, L2 and L3, and the protective earth to the mains connection terminal (1 in fig. 4.10).

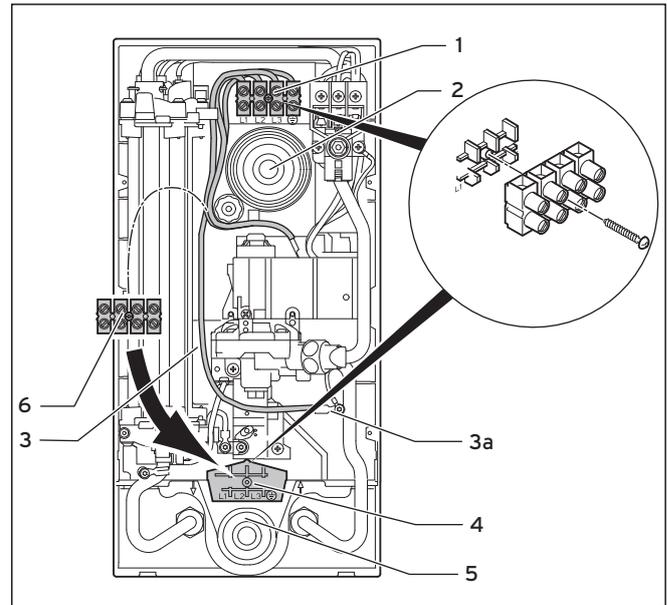


Fig. 4.10 Electrical connection from above or below

#### 4.6.2 Electrical connection from below

The electricity line is fed through the lower anti-spray-water sleeve (5). Figure 4.7 explains how the anti-spray-water sleeve must be prepared.

- Unscrew the mains connection terminal (1) (see fig. 4.10).
- Move the mains connection terminal (6), including the internal cable, to the lower position (4) in the unit.
- Screw the mains connection terminal to the lower position (4).
- Pay particular attention to the internal protective earth (3) that is screwed to position 3a.
- Check again that the mains connection terminal cables are correctly positioned.
- Connect the individual conductors to L1, L2 and L3, and the protective earth to the mains connection terminal (1 in fig. 4.10).

#### 4.6.3 Optional load-shedding relay

If required, a load-shedding relay that conforms with current standards can be connected to the VED. This relay will turn other power consumers off while hot water is being drawn off so that there is no overloading. The load-shedding relay must fulfil the following criteria:

- Input current < 15 A
- Continuous current > 50 A
- Install the optional load-shedding relay to the outer conductor that is connected to the L2 mains connection terminal of the VED.

## 5 Starting up/decommissioning

### 5.1 Purging the unit



**Caution.**

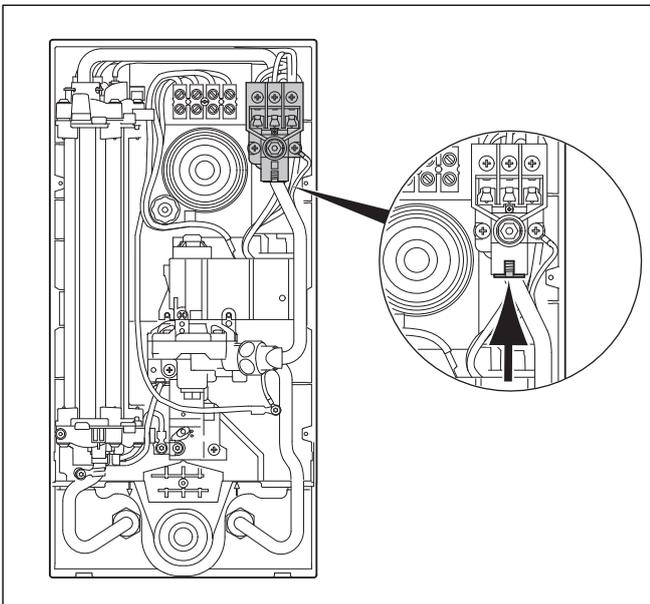
**Risk of damage from heating wire dry fire.**

The unit must be purged every time it is started up. Otherwise, there is a risk of dry fire and, as a consequence, damage to the unit.

- Ensure that the unit is de-energised every time the unit is started up or decommissioned.
- Check that there is no voltage in the supply lines and connections.
- Ensure that the power cannot be restored inadvertently to any of the supply lines and connections while you are working on the unit.

To start up the unit, proceed as follows:

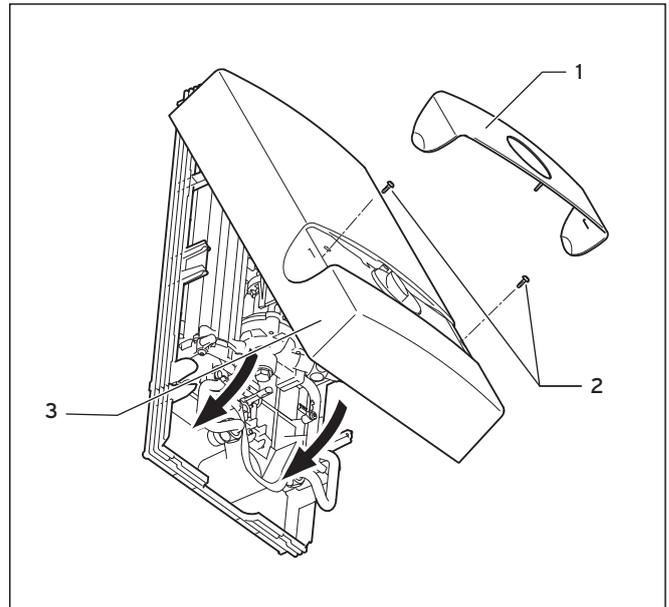
- De-energise the unit.
- Open the cold water stop valve.
- Close and open the hot water draw-off valve several times. The unit will then be purged. In normal operating mode, the unit will not need to be purged again.



**Fig. 5.1 Safety switch**

- Push the safety switch (1) in, as shown in figure 5.1.

### 5.2 Fitting the unit cladding



**Fig. 5.2 Fitting the unit cladding**

- Put the unit cladding (3) on.
- Tighten both bolts (2).
- Grip the panel (1) using the two straps.
- Splay the two straps (slightly pull the panel apart).
- Put the panel (1) on.
- Make sure that the hot water draw-off valve is closed.

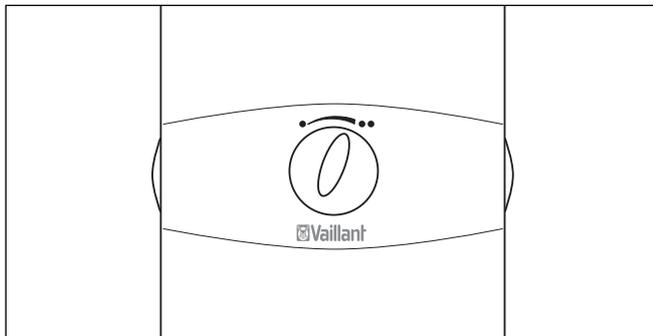
### 5.3 Checking the system's functionality

- Connect the unit to the electrical mains.  
The following output levels are available on the VED:

Output levels	Nominal output
Level 1 (low draw-off rate)	1/3 of the nominal output
Level 1 (high draw-off rate)	2/3 of the nominal output
Level 2 (low draw-off rate)	1/2 of the nominal output
Level 2 (high draw-off rate)	1/1 of the nominal output

**Tab. 5.1 Adjustable output levels**

- The temperature at level I with a high draw-off rate is approx. 30 °C. This will reach approx. 60 °C at level II with a low draw-off rate.



**Fig. 5.3 Output selector switch**

- Set the output selector to level I and draw off a small volume of water.
- Check all 4 output levels that are specified in tab. 5.1.

### 5.4 Decommissioning

#### 5.4.1 Taking out of service temporarily

The VED can be taken out of service temporarily, e.g. for maintenance work.

- De-energise the unit.
- Close the cold water stop valve.

#### 5.4.2 Taking out of service permanently

To shut down the VED permanently, proceed as follows:

- De-energise the unit.
- Close the cold water stop valve.
- Carefully loosen the cold and hot water connections.
- Capture the residual water (up to 0.4 litres) left inside the unit using a suitable container.
- Remove the unit from its mounting.

## 6 Handing over to the operator



### **Danger!**

#### **Risk of being scalded by hot water!**

Above a water temperature of 43 °C, there is a risk of scalding. When setting the output regulator to level II, temperatures can reach up to 60 °C.

- Inform the operator that there is a risk of scalding above a water temperature of 43 °C.
- Recommend to the operator that, in normal operating mode, the output selector is set to level I to avoid scalding.

You must inform the operator of the unit about the handling and function of their VED.

- Provide the operator with all relevant instructions and unit documentation for safe-keeping.
- Go through the instructions for use with the operator.
- Answer any questions the operator may have.
- Draw special attention to the safety information which the operator must follow.
- Inform the operator of the necessity to ensure that the system is regularly inspected/maintained by a competent person (inspection and maintenance contract).
- Make the operator aware that the instructions should be kept near the VED.

## 7 Replacement parts and accessories

The original components of the unit were also certified as part of the CE declaration of conformity. If you do not use certified Vaillant genuine spare parts, this voids the CE conformity of the unit. We therefore strongly recommend that you fit Vaillant genuine spare parts.

You can find information about available Vaillant genuine spare parts from the contact address provided on the reverse of this document.

- If you require spare parts for servicing or repair work, use only Vaillant genuine spare parts.

## 8 Detecting and rectifying faults

The faults listed here must only be rectified by an approved heating specialist company. When rectifying faults, note the following:

- Only use genuine spare parts for repairs.
- Make sure the parts are correctly fitted and that their original position and alignment are retained.
- Before replacing water-bearing components, you must drain the unit completely. To do this, loosen the cold and hot water connections.



When detecting and rectifying faults, always follow the order stated in tab. 8.1 for each individual point.

Fault/cause	Procedure	Testing/rectifying
No power.	1. Check the electrical connections	Ensure that the unit is supplied with the L1, L2 and L3 mains voltage. Check the protective devices. De-energise the unit and open the unit cladding. Check all the connection line connectors.
Resistance is outside the range of < 200 ohm.	2. Check the electrical function of the heating element	Measure the resistance value between the connections 1 and 4 on the electronics. The resistance must be < 200 ohm.
Water flow not adequate, water pressure is too low.	3. Check the minimum water flow rate	Ensure that there is an adequate water flow rate of more than 3 l/min. If the water volume is too low, check the water pressure, the fittings and the filter in the inlet.
The safety switch has been triggered.	4. Check the safety switch	Carry out the checks as described in points 1 - 3 and start up the unit again. If the safety switch is triggered again, the unit is defective. Inform Vaillant customer service.

**Tab. 8.1 Possible faults and remedial action**

### 9 Inspection and maintenance



**Danger!**

**Risk of death from electric shock from live lines and connections!**

- Isolate all electrical supplies and connections from the power supply before carrying out maintenance or repair work.
- Check that there is no voltage in the supply lines and connections.
- Ensure that the power cannot be restored inadvertently to any of the supply lines and connections while you are working on the unit.

- A functional and visual inspection of the unit must be carried out every three years by a competent person.
- If the water is very hard, more regular de-scaling may be necessary.
- If the water has a large volume of suspended matter, the water filter in the cold water flow must be replaced more often. At the same time, the water filter has a sealing function.

Carry out the following actions:

- Replace the water filter in the cold water flow.
- Check for deposits in the hot water pipe between the heating block and the hot water connection.
- When re-assembling the unit, insert a new flat seal into the hot water connection.
- Check whether the unit needs to be de-scaled and do so if required.



If the unit needs to be completely de-scaled, attach a decalcification pump between the cold and hot water connection.

- After de-scaling the unit, flush it thoroughly with water.
- After de-scaling the unit, purge it (see section 5).



**Caution.**

**Risk of damage caused by leaks.**

After changing the water filter in the cold water flow, leaks may occur due to the new filter being incorrectly fitted.

- When fitting a new water filter in the cold water flow, make sure that the filter is correctly positioned in the pipe and that the connection is sealed.

## 10 Technical data

Name	Unit	VED H 12/7 0010007731	VED H 18/7 0010007732	VED H 21/7 0010007733	VED H 24/7 0010007734	VED H 27/7 0010007735
For supplying		one or more draw-off points <sup>1)</sup>				
Design		Appliance for wall-mounted installation				
Configuration		Bare wire heating coil				
Capacity	l	0.4				
Dimensions						
Width	mm	240				
Height	mm	481				
Depth	mm	100				
Weight when filled with water	kg	4.4				
Draw-off volume - partial load	l/min	2.7	3.8	4.4	5.1	5.7
Draw-off volume - full load	l/min	3.8	5.8	6.7	7.7	8.6
Switch-on flow pressure, partial load	MPa	0.020	0.030	0.035	0.040	0.045
Switch-on flow pressure, full load	MPa	0.035	0.055	0.070	0.090	0.100
Outlet temperatures at 10 °C for output selector level II						
Partial load	°C	40				
Full load	°C	50				
Outlet temperatures at 10 °C for output selector level I						
Partial load	°C	30				
Full load	°C	40				
Measuring record for output selector level II						
Partial load*	kW	5.2/6.0	7.8/9.0	9.1/10.5	10.4/12.0	11.6/13.5
Full load* ( $\Delta T$ of 37 K)	kW	12/10.3	18/15.5	18.1/21.0	20.7/24.0	23.3/27.0
Measuring record for output selector level I						
Partial load*	kW	3.4/4.0	5.2/6.0	6.0/7.0	6.7/8.0	7.8/9.0
Full load* ( $\Delta T$ of 25 K)	kW	6.9/8.0	10.3/12.0	12.1/14.0	13.8/16.0	15.5/18.0
Rated overpressure	MPa	1				
Measuring voltage	V	3/PE~ 380/400				
Measuring frequency	Hz	50 Hz				
Minimum water resistance	$\Omega$ cm	$\geq 900$				
Safety		Complies with German and Austrian safety regulations; radio-shielded; does not interact with the mains supply				
Level of protection		IP 25 = sprayed-water protection				

**Tab. 10.1 Technical data**

1) = Closed unit (pressure resistant)

\* at 380/400 V





## Manufacturer

Vaillant GmbH

Berghauser Str. 40 ■ D-42859 Remscheid ■ Telefon 0 21 91/18-0

Telefax 0 21 91/18-28 10 ■ [www.vaillant.de](http://www.vaillant.de) ■ [info@vaillant.de](mailto:info@vaillant.de)

0020149586\_00 EXPen 072012 - Subject to change