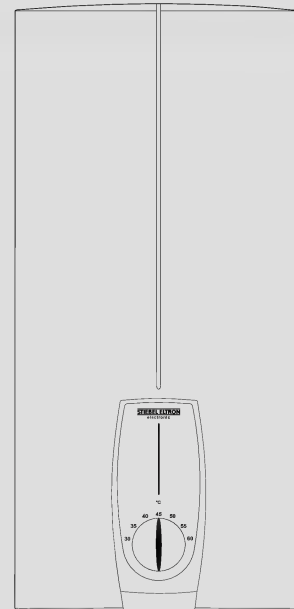


BEDIENUNG UND INSTALLATION
OPERATING AND INSTALLATION
UTILISATION ET INSTALLATION
GEBRUIK EN INSTALLATIE
OPERACIÓN E INSTALACIÓN
OBSŁUGA I INSTALACJA
OBSLUHA A INSTALACE
ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ И УСТАНОВКЕ
COMANDĂ ŞI MONTARE/ASAMBLARE/INSTALARE

Elektronisch geregelter Durchlauferhitzer | Electronically controlled instantaneous water heater | Chauffe-eau instantané à régulation électronique | Elektronisch geregelte doorstroomverwarmer | Calentador instantáneo electrónico | Elektronicznie regulowany przepływowy ogrzewacz wody | Elektronicky regulované průtokové ohřivače | Проточный водонагреватель с электронной регулировкой | Încălzitor prin trecere reglat electronic

- » DHB-E 11 SLi electronic
- » DHB-E 13 SLi electronic
- » DHB-E 13 A
- » DHB-E 18 SLi 25 A electronic
- » DHB-E 18/21/24 SLi electronic
- » DHB-E 27 SLi electronic



STIEBEL ELTRON

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WARRANTY | ENVIRONMENT AND RECYCLING

OPERATION

1. General information

The chapter "Operation" is intended for appliance users and heating contractors.

The chapter "Installation" is intended for heating contractors.



Note

Read these instructions carefully before using the appliance and retain them for future reference. Pass on the instructions to a new user if required.

1.1 Safety instructions

1.1.1 Structure of safety instructions



KEYWORD Type of risk

Here, possible consequences are listed that may result from failure to observe the safety instructions.

► Steps to prevent the risk are listed.

1.1.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution
	Burns (burns, scalding)

1.1.3 Keywords

KEYWORD	Meaning
DANGER	Failure to observe this information will result in serious injury or death.
WARNING	Failure to observe this information may result in serious injury or death.
CAUTION	Failure to observe this information may result in non-serious or minor injury.

Operation

Safety

1.2 Other symbols in this documentation

**Note**

General information is identified by the symbol shown on the left.

► Read these texts carefully.

Symbol

Meaning



Material damage
(Appliance and consequential losses, environmental pollution)



Appliance disposal

► This symbol indicates that you have to do something. The action you need to take is described step by step.

1.3 Units of measurement

**Note**

All measurements are given in mm unless stated otherwise.

2. Safety

2.1 Intended use

This appliance is designed for domestic use. It can be used safely by untrained persons. The appliance can also be used in a non-domestic environment, e.g. in a small business, as long as it is used in the same way.

The appliance is a pressurised appliance for heating domestic hot water. You can equip the appliance with one or more draw-off points.

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions is also part of the correct use of this appliance. Any modifications or conversions to the appliance void all warranty rights.

2.2 Safety instructions

Observe the following safety instructions and regulations.

Only qualified contractors should install and commission this appliance.

The authorised contractor is responsible for adherence to all currently applicable instructions during installation and commissioning.

Operate the appliance only when fully installed and with all safety equipment fitted.

**CAUTION Burns**

There is a risk of scalding at outlet temperatures above 43 °C.

**CAUTION Burns**

If operating with preheated water, e.g. from a solar thermal system, the DHW temperature may vary from the selected set temperature.

**WARNING Injury**

The appliance may be used by children aged 8 and up and persons with reduced physical, sensory or mental capabilities or a lack of experience provided that they are supervised or they have been instructed on how to use the appliance safely and have understood the resulting risks. Children must never play with the appliance. Children must never clean the appliance or perform user maintenance unless they are supervised.

**Material damage**

Never use the appliance following an interruption to the water supply. This can destroy the bare wire heating system. Run water for at least a minute before restarting the appliance (see chapter "Troubleshooting").

2.3 CE designation

The CE designation shows that the appliance meets all essential requirements according to the:

- Low Voltage Directive
 - Electromagnetic Compatibility Directive
- The maximum permissible mains impedance is indicated in chapter "Specification / Data table".

3. Appliance description

The DHB-E electronically controlled instantaneous water heater with automatic output matching keeps the outlet temperature constant. This occurs independently of the inlet temperature, up to the output limit. The DHW outlet temperature can be variably adjusted.

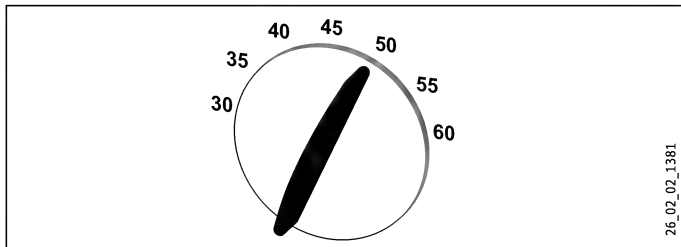
The bare wire heating system is suitable for hard and soft water areas, as it has low susceptibility to scale build-up. This system ensures rapid and efficient DHW availability.

**Note**

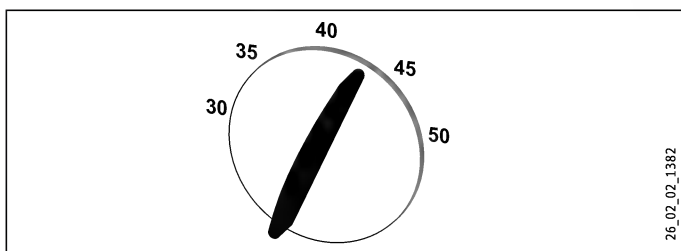
The appliance is equipped with an air detector that largely prevents damage to the heating system. If, during operation, air is drawn into the appliance, the appliance shuts down for one minute, thereby protecting the heating system.

4. Operation

DHB-E ... SLi



DHB-E ... A



Should the outlet temperature fail to reach the required level, when the draw-off valve is fully opened, and the temperature selector has been set to maximum, then more water flows through the equipment, than can be heated by the internal heater cartridge.

- ▶ Reduce the flow rate with the draw-off valve.

4.1 Outlet capacities

Subject to season, different maximum mixed water or outlet capacities can result from varying cold water temperatures. For further information, see chapter Specification.

4.2 Thermostatic valve

We recommend adjusting the appliance to the maximum temperature setting.

4.3 Temperature limit/Anti-scalding protection

The maximum outlet temperature for the appliance can be limited to 43 °C. Refer in this case to your local heating contractor..

5. Cleaning, care and maintenance

- ▶ Never use abrasive or corrosive cleaning agents. A damp cloth is sufficient for cleaning the appliance.

Maintenance work, such as checking the electrical safety, must only be carried out by a heating contractor.

6. Troubleshooting



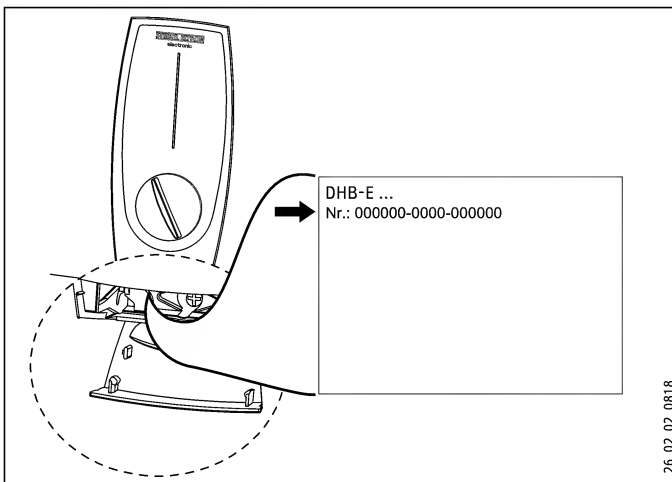
Material damage

Following an interruption of the water supply the appliance must be recommissioned by carrying out the following steps, in order to prevent the destruction of the bare wire heating system.

- ▶ Disconnect the appliance from the power supply by removing the fuses/tripping the MCBs.
- ▶ Open the tap until the appliance and its upstream cold water inlet line are free of air.
- ▶ Switch the mains power back ON again.

Fault	Cause	Remedy
The appliance will not start in spite of a fully open DHW valve.	There is no power.	Check the fuse/MCB in your fuse box/distribution panel.
	The flow rate is too low. The jet controller in the tap or shower head is scaled up or contaminated.	Clean and/or descale the jet controller or shower head.
	The heater is faulty.	Telephone your contractor.
Required temperature 45 °C is not achieved.	The water supply has been interrupted.	Vent the appliance and cold water inlet pipe of air.
	Cold water inlet temperature is > 45 °C.	Reduce the cold water inlet temperature.

If you cannot remedy the fault, notify your heating contractor. To facilitate and speed up your enquiry, please provide the serial number from the type plate (000000-0000-000000).



INSTALLATION

7. Safety

7.1 General safety instructions

All required steps up to and including commissioning must be carried out by a qualified contractor. During this process, these installation instructions must be observed.

We guarantee trouble-free function and operational reliability only if the original accessories and spare parts intended for the appliance are used.

7.2 Instructions, standards and regulations



Material damage

Observe the type plate. The specified voltage must match the mains voltage.



WARNING Electrocutation

Carry out all electrical connection and installation work in accordance with applicable standards, including national and regional regulations.



WARNING Electrocutation

Only use a permanent connection to the power supply. The appliance must be able to be separated from the power supply by an isolator that disconnects all poles with at least 3 mm contact separation.



Note

Water supply observe all applicable national and regional regulations and instructions.

- The protection rating IP 25 (hoseproof) can only be ensured with a correctly fitted cable grommet.
- The specific electrical resistance of the water used must not fall below that stated on the type plate! In a linked water network, observe the lowest electrical water resistance (see chapter "Application areas"). Your water supply utility will advise you of the specific electrical water resistance or conductivity.

7.3 Water installation

7.3.1 Cold water line

- Permissible materials: Galvanised steel pipe, stainless steel pipe, copper pipe or plastic pipe.

7.3.2 DHW line

- Permissible materials: Stainless steel pipe, copper pipe or plastic pipe.



Material damage

If plastic pipework systems are used, take into account the most extreme operating and fault conditions that could occur at the appliance; see chapter "Specification / Fault conditions"



Note

Observe the plastic pipe manufacturer's instructions.

- Safety valves are not permissible in the DHW line of the instantaneous water heater!
- Never operate with taps/valves intended for open vented appliances!

7.4 Risk of frost

Install the appliance in a room free from the risk of frost.

- ▶ Store the dismantled appliance in a room free from the risk of frost, as water residues remaining inside the appliance can freeze and cause damage.

8. Appliance description

The bare wire heating system is suitable for hard and soft water areas. The heater has low susceptibility to scale build-up.

The appliance is suitable for heating cold water or for reheating preheated water. For temperatures, see chapter "Specification / Data table".

The max. inlet temperature for reheating must not be exceeded. There will be no reheating, if the inlet temperatures exceed this maximum value.

Observe the "Max. inlet temperature". The appliance can be damaged at higher temperatures. If a "central thermostat" is installed (see chapter "Installation / Accessories"), you can limit the "Max. inlet temperature".

The outlet temperature can be infinitely adjusted. The electronic control unit enables automatic matching of the electrical output corresponding to the selected temperature subject to the actual throughput.

8.1 Standard delivery

- Mounting bracket
- Installation template
- Twin nipple
- Cross-piece
- Tee
- Flat gaskets
- Strainer
- Flow limiter
- Plastic profile washer/Plastic cap
- Flexible plastic couplings
- Cap and back panel guides

Installation

Appliance description

8.2 Assembly

The following conditions have been prepared for the appliance at the factory:

- Power supply from "below", installation on unfinished walls
- Water connection, installation on unfinished walls

The appliance must be fitted vertically, over or undersink, to a solid wall.

8.3 Temperature limit/Anti-scalding protection

The maximum temperature can be limited to 43 °C via the user interface on the appliance cap. For this, the following steps are necessary:

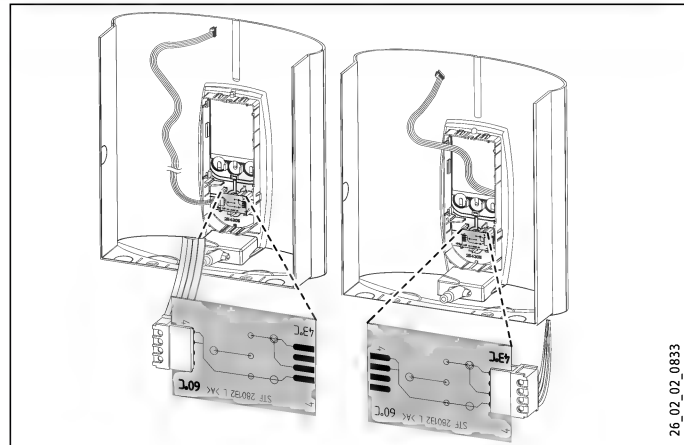
- ▶ Remove the appliance cover.
- ▶ Remove the electronic PCB from the user interface on the appliance cap. Be careful of the snap-on hooks.
- ▶ Move the plug from left to right (position "43 °C").
- ▶ Refit the user interface, ensuring the snap-on hooks click into place. Observe the positions of the pushbutton and shaft.



CAUTION Burns

If operating with preheated water, the set temperature limit and anti-scalding protection may be ineffective.

- ▶ In this case, restrict the temperature at the upstream central thermostatic valve; see chapter "Accessories".



8.4 Installation versions

The following installation versions are possible/permissible:

- Power supply for unfinished walls - from above
- Power supply for finished walls
- Water installation for finished walls
- Installation with repositioned appliance cap
- Installation for offset tiles
- Installation of a load shedding relay

8.5 Accessories

Taps/valves

- WKMD – twin-lever pressure-tested kitchen tap
- WBMD – twin-lever pressure-tested bath tap

Plug G ½ A

These plugs are required if you use twin-lever pressure-tested taps for finished walls other than the ones recommended by us.

Installation sets for installation on finished walls

- Solder fitting – copper pipe for solder connection Ø 12 mm.
- Compression fitting – copper pipe.
- Compression fitting – plastic pipe: Sanfix-Plus or Sanfix-Fosta).

Universal mounting frame

- Mounting frame with electrical wiring.

Pipe assembly for undersink appliances

The set for undersink installation is required if you want to have the water connections (G ¾ A) above the appliance.

Pipe assembly, offset installation

This pipe set with pipe bends is required if you want to have the appliance vertically offset against the water connection by approx. 90 mm downwards.

Pipe assembly for replacing a gas water heater

This pipe set is required if the installation has existing gas water heater connections (cold water connection on the left and DHW connection on the right).

DHB replacement pipe kit

2 water couplings. These allow the appliance to be connected to the available water plug-in connections of a DHB.

Load shedding relay LR 1-A

The load shedding relay for installation in the electric distribution board enables priority control of the instantaneous water heater when electric storage heaters are being operated simultaneously, for example.

ZTA 3/4 – Central thermostatic valve

Thermostatic valve for centralised premixing, e.g. an instantaneous water heater in conjunction with a solar thermal system.

9. Installation

9.1 Installation information

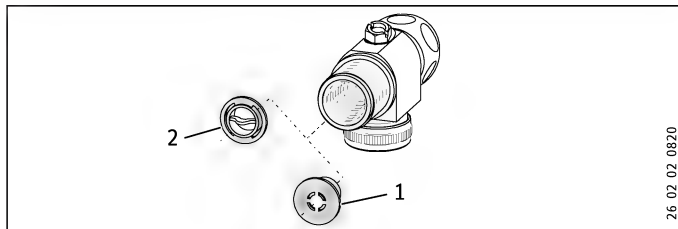
9.1.1 Flow pressure

If the flow rate required for the appliance to switch on is not achieved even with the tap fully open, remove the flow limiter. Replace it with the plastic profile washer supplied. If required the pressure in the water installation can also be raised.



Note

For the thermostatic valve to function correctly, the flow limiter for this valve must not be replaced with the plastic profile washer.



- 1 Flow limiter
- 2 Plastic profile washer

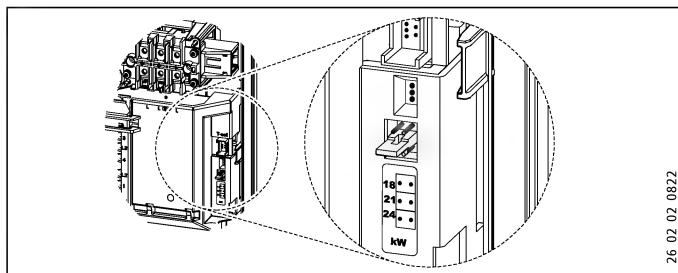
9.1.2 Flexible water connection lines

If the appliance is connected with flexible water connection lines, ensure that the bayonet fittings of the pipe bends do not become twisted inside the appliance.

9.1.3 Appliance with changeover connected load

The appliance DHB-E 18/21/24 SLi is set to 21 kW when delivered. If the appliance is installed with a different output, take the following steps:

- ▶ Re-plug the coding card according to the selected output; for selectable output and fuse protection of the appliance see "Specification".
- ▶ Mark the selected output on the type plate using a permanent marker.
- ▶ Install the flow limiter with a rating corresponding to that of the appliance. The colour of the flow limiter is given in the table "Specification"



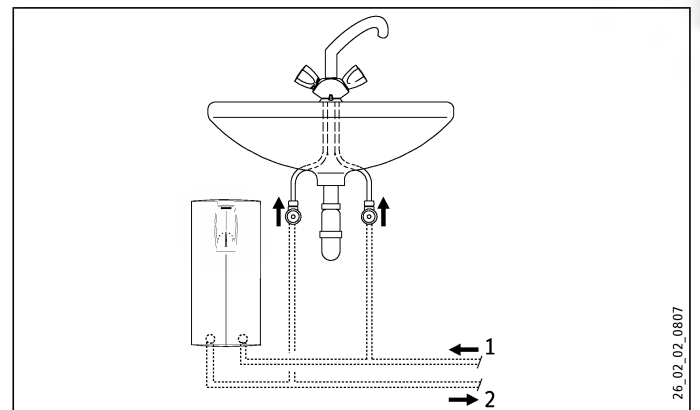
10. Assembly

10.1 Installation site

The appliance is exclusively designed for installation on a solid wall. Ensure the wall offers adequate load bearing capacity.

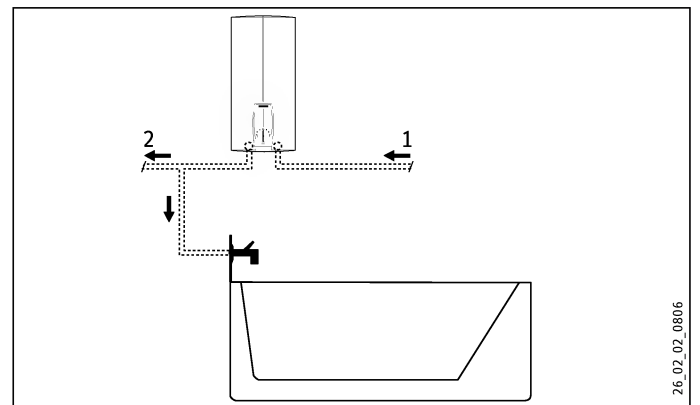
Always install the appliance vertically (over or undersink) in a room free from the risk of frost.

10.1.1 Undersink



- 1 Cold water supply
- 2 DHW outlet

10.1.2 oversink

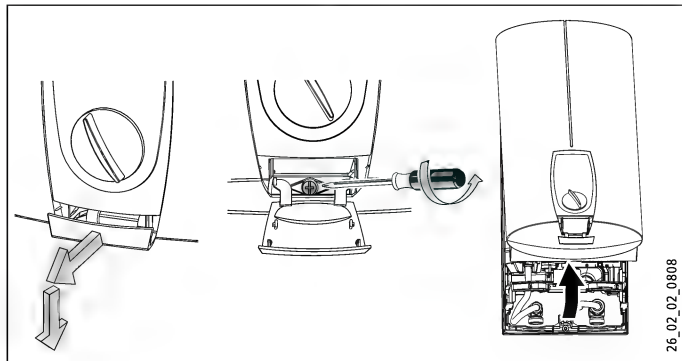


- 1 Cold water supply
- 2 DHW outlet

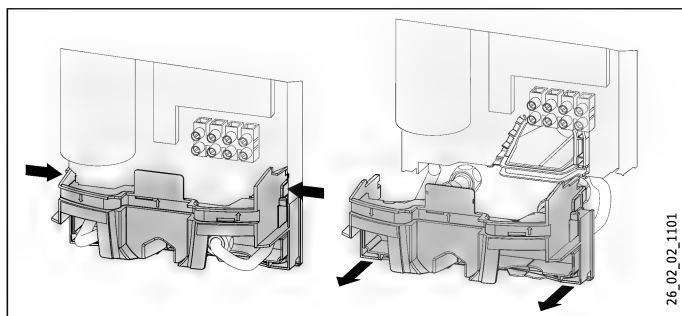
Installation Assembly

10.2 Assembly

10.2.1 Opening the appliance



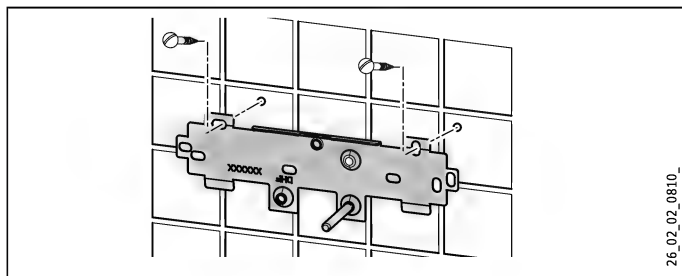
10.2.2 Removing the back panel



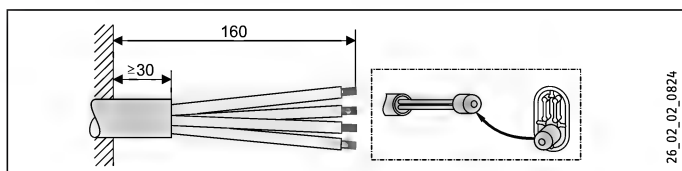
- ▶ Press the two locking hooks on the r.h. and l.h. side and remove the lower part towards the front.

10.2.3 Securing the mounting bracket

- ▶ Mark out the holes for drilling using the installation template. If the appliance is to be installed with water connections for finished walls, the fixing hole in the lower part of the template must also be marked out.
- ▶ Drill the holes and secure the mounting bracket with two screws and two rawl plugs. The screws and rawl plugs are not part of the standard delivery.

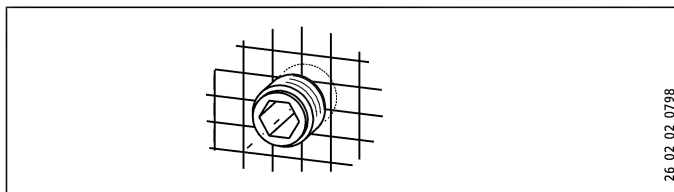


10.2.4 Preparing the power cable



- ▶ Prepare the power cable.
- ▶ Use the plastic cap as an installation aid..

10.2.5 Securing the twin nipples



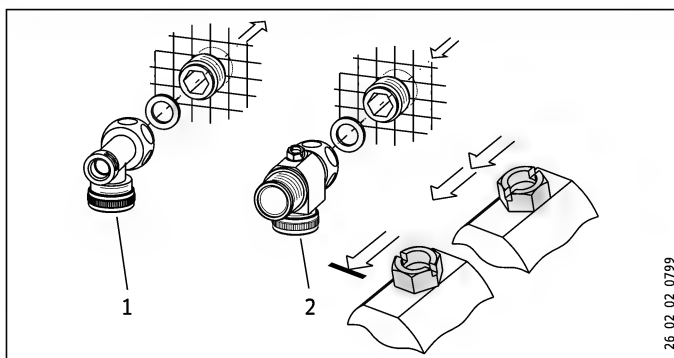
10.2.6 Preparing the water connection

- ▶ Secure the tee and cross-piece to the twin nipples with flat gaskets.
- ▶ Thoroughly flush the cold water supply line.



Note

Never use the three-way shut-off valve to reduce the flow rate; it is only designed to shut off a circuit.



- 1 Tee
- 2 Cross-piece

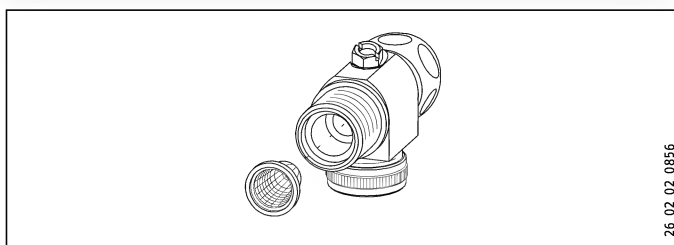
10.2.7 Fitting the strainer

- ▶ Fit the sieve provided in the cold water inlet of the appliance.



Note

The sieve must always be fitted for the function of the appliance to be guaranteed. If an appliance is being replaced during installation, ensure that a sieve is available.



Installation Assembly

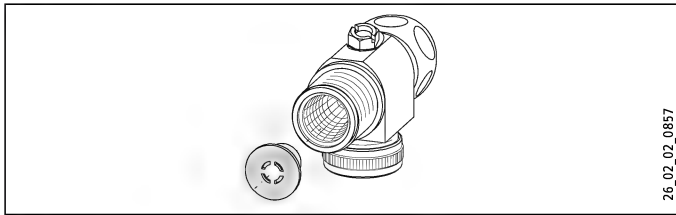
10.2.8 Installing the DMB flow limiter

- ▶ Position the flow limiter provided in the cold water inlet of the appliance.

A second flow limiter is provided with the DHB-E 18/21/24 SLi. Install the flow limiter with an output corresponding to that of the appliance.

Flow limiter, see "flow rate limit" in chapter "Specification":

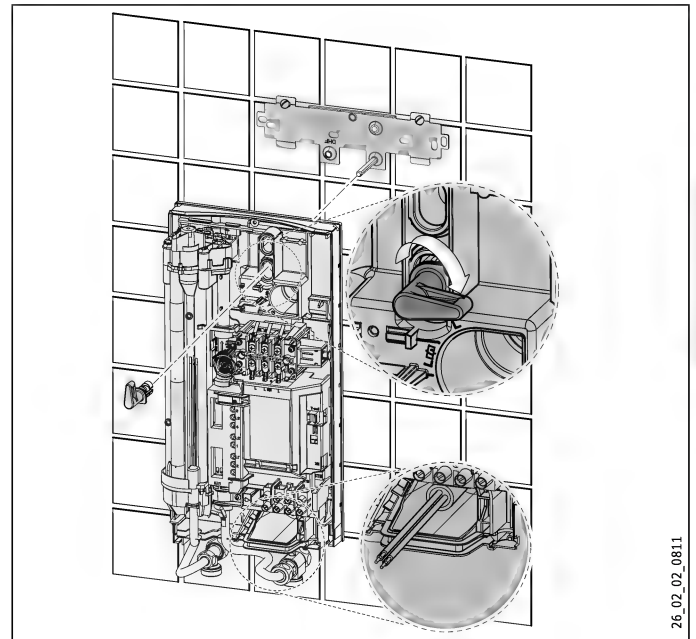
- 4.0 l/min = pink
- 7.5 l/min = blue
- 8.5 l/min = green



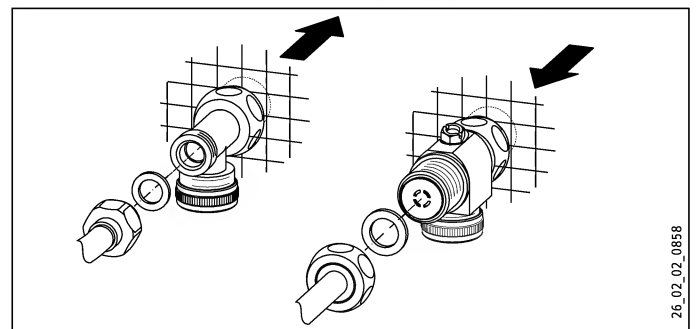
10.2.9 Mounting the appliance

The cable grommet pointing towards the wall may hinder the mounting of the appliance close to the wall. To prevent such problems, it is advisable to briefly press the cable grommet from behind into the back panel, to reduce the stiffness or the grommet.

- ▶ Remove the fixing toggle from the upper part of the back panel (diagram "Mounting the appliance").
- ▶ Route the power cable from behind through the cable grommet until it rests against the cable sheath. Align the power cable. If the cross-section of the power cable is greater than 6 mm, enlarge the hole in the cable grommet (see also "Power supply for larger cross-sections").
- ▶ Push the appliance over the stud of the mounting bracket, so that it breaks through the soft seal. If necessary pierce the soft seal with a screwdriver.
- ▶ Put the fixing toggle onto the stud of the mounting bracket that penetrates the back panel.
- ▶ Press the back panel firmly into place and lock the fixing toggle by turning it through 90°.



10.2.10 Finalising the water connection



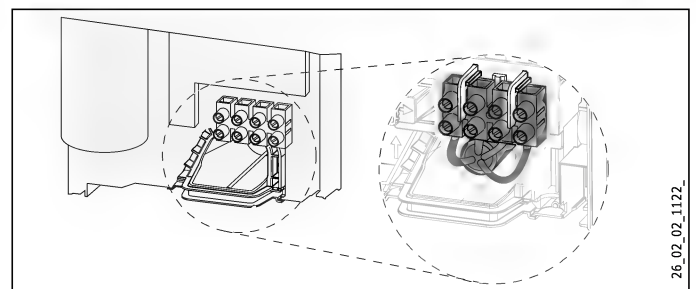
10.2.11 Connecting the power supply

- ▶ Connect the power cable to the mains terminal (see chapter "Wiring diagram").



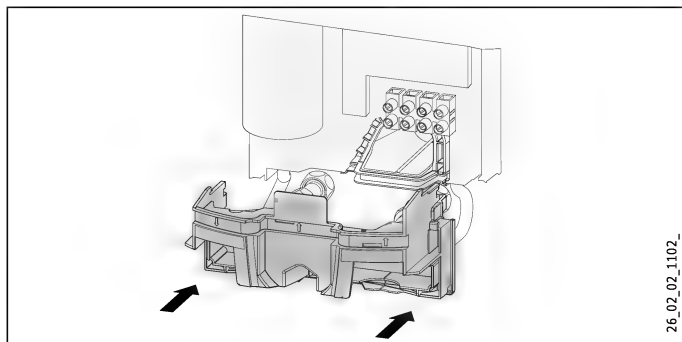
WARNING Electrocutation

Ensure that the appliance is earthed.



Installation Assembly

10.2.12 Fitting the lower back panel



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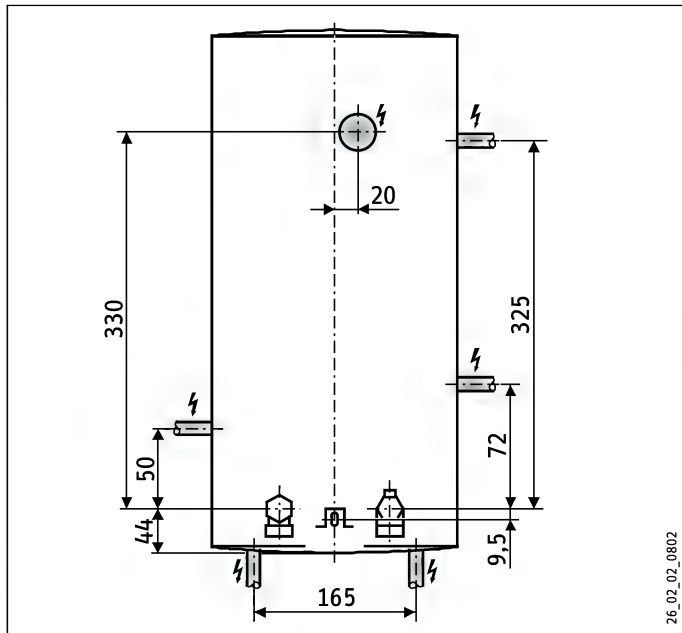
10.2.13 Completing the installation process

- ▶ Align the mounted appliance by loosening the fixing toggle, aligning the power supply and back panel, and then retightening the fixing toggle. If the back panel of the appliance is not flush against the wall, the appliance can be fixed with a screw in the lower part.

10.3 Installation versions

10.3.1 Power supply from above for unfinished walls

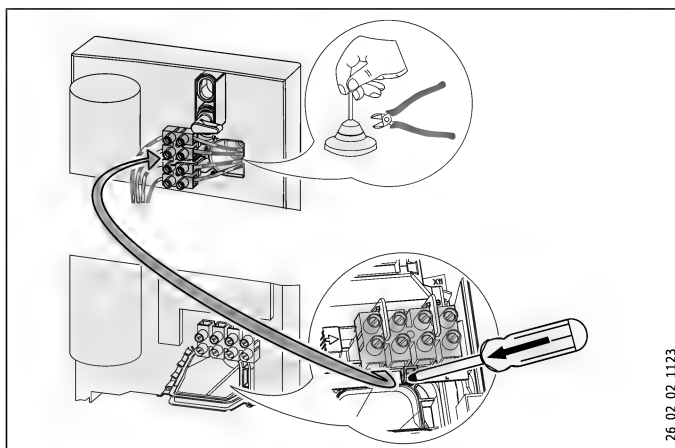
The following diagram shows the dimensions for the power supply from above.



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To connect the power supply, take the following steps:

- ▶ Open out the cable grommet to match the cross-section of the power cable.
- ▶ Push down and remove the locking hook that secures the mains terminal, then remove the mains terminal.
- ▶ Move the mains terminal in the appliance from the bottom to the top and click into place.



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10.3.2 Power supply for finished walls

The appliance can also be connected if the power supply has been routed over finished walls. This applies to the connection from below and above. Take the following steps:

- ▶ Cut or break knock-outs in the back panel and appliance cap. Possible knock-out points can be seen in the diagram "Dimensions for power supply".

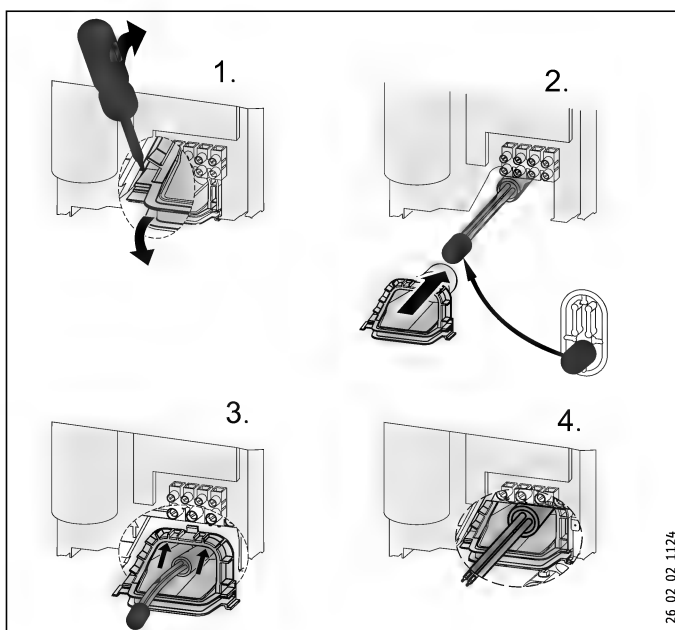


Note

If the appliance has been connected with a power supply on finished walls, the type of protection on the type plate must be changed from IP 25 to IP 24. Use a permanent marker for that.

- ▶ Cross out "IP 25" and mark the box "IP 24".

10.3.3 Power supply for large cross-sections



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If cables with a large cross-section are used, the cable grommet can be fitted after the appliance has been installed. Take the following steps:

- ▶ Before installing the appliance, use a screwdriver to push the cable grommet out.

Installation Assembly

- ▶ Push the appliance over the stud of the mounting bracket, so that it breaks through the soft seal.
- ▶ Push the fixing toggle onto the stud of the mounting bracket that penetrates the back panel.
- ▶ Press the back panel firmly into place and lock the fixing toggle by turning it through 90°.
- ▶ Push the cable grommet over the power cable. For this, use the installation aid. For a power cable of 10 or 16 mm², the hole in the cable grommet must be enlarged. Click the cable grommet into place in the back panel.

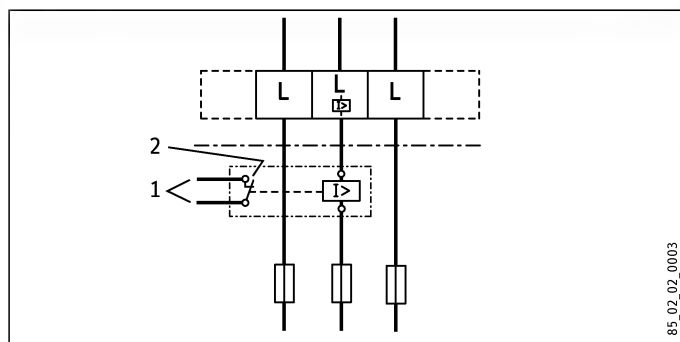
10.3.4 Connecting a load shedding relay

Install the load shedding relay in conjunction with other electric appliances, e.g. electric storage heaters. The relay responds when the instantaneous water heater starts. The load shedding relay is available from Stiebel Eltron as a accessory.



Note

Connect the phase that switches the load shedding relay to the indicated terminal of the mains terminal in the appliance.

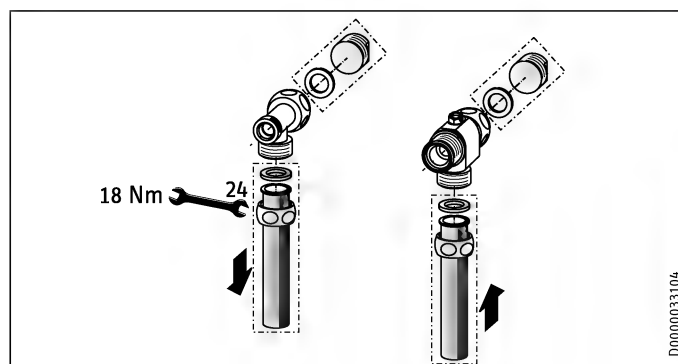


- 1 Control cable to the contactor of the second appliance (e.g. electric storage heater).
- 2 Control contact, opens when switching the instantaneous water heater on.

10.3.5 Water installation for finished walls

Suitable pressure taps WKMD or WBMD for installation on finished walls are available as special accessories.

- ▶ Fit the water plugs with gaskets to seal the connection below the plaster. With Stiebel Eltron pressure taps, plugs and gaskets are part of the standard delivery. For third party pressure taps, plugs and gaskets can be ordered as special accessories.
- ▶ Install the tap.
- ▶ Push the lower part of the back panel under the connection pipes of the pressure tap and click it into place in the back panel.
- ▶ Secure the connection pipes to the appliance.



10.3.6 Water installation for finished walls with solder/ compression fitting

With the special accessories "solder fitting" or "compression fitting" (see "Special accessories"), copper or plastic pipes can be connected in installations for finished walls.

With special accessory "solder fitting", a threaded connection with on-site 12 mm copper pipes is possible. For this the following steps are required:

- ▶ Push the union nuts over the connection pipes.
- ▶ Solder the inserts to the copper pipes.
- ▶ Push the lower part of the back panel under the connection pipes and click it into place in the back panel.
- ▶ Secure the connection pipes to the appliance.



Note

Observe the valve manufacturer's installation instructions.

10.3.7 Water installation for finished walls, fitting the appliance cap

The following steps are necessary to complete the appliance cap installation.

- ▶ Cleanly break out the knock-out in the appliance cap. If necessary, use a file.
- ▶ Break the tabs out of the cap guides.

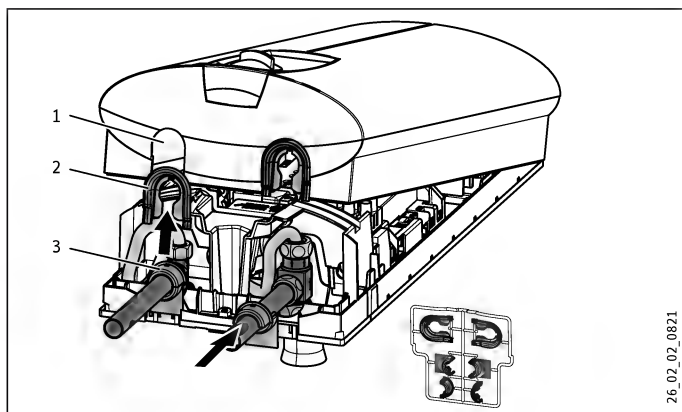


Note

The appliance can be sealed by fitting the cap guides with tabs if the tap pipes are slightly offset. The back panel guides are not required in this case.

- ▶ Click the cap guides provided into place in the knock-outs.
- ▶ Position the back panel guides on the pipes and push them together. Then push the guides until they meet the back panel.
- ▶ Secure the back panel at the bottom with a screw. This is also relevant if flexible water pipework is used.

Installation Assembly



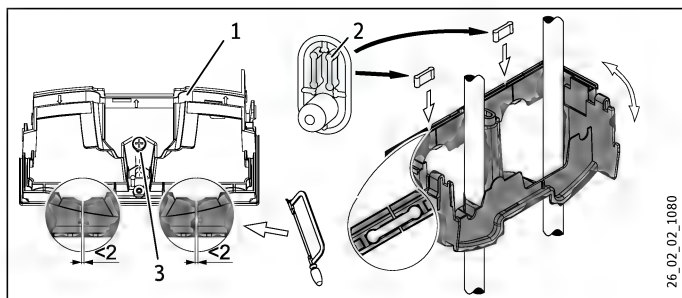
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- 1 Knock-out
- 2 Cap guides
- 3 Back panel guides

10.3.8 Installing lower part of back panel

If using threaded connections for finished walls, the lower part of the back panel can also be installed after fitting the taps/valves. To do this, carry out the following steps:

- ▶ Cut open the lower part of the back panel.
- ▶ Fit the lower part of the back panel by bending it out at the sides and guiding it over the pipes.
- ▶ Insert the connection pieces from behind into the lower part of the back panel.
- ▶ Click the lower part of the back panel into place.
- ▶ Secure the lower part of the back panel with a screw.



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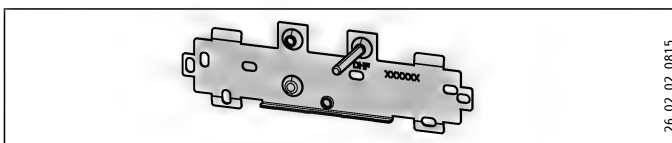
- 1 Back panel bottom section
- 2 Connection pieces from the pack
- 3 Screw

10.3.9 Installation in case of appliance replacement

An existing mounting bracket can be used when replacing Stiebel Eltron appliances (except "DHF"). For this, open a suitable knock-out in the back panel for the stud of the existing mounting bracket.

If the appliance is being installed in place of a DHF, move the stud on the mounting bracket as shown in the diagram "Mounting bracket for DHF appliance replacement". The stud cuts its own groove. Then turn the mounting bracket through 180° to be mounted on the wall. The logo "DHF" is then turned towards the reader.

If replacing a third party appliance, suitable holes for rawl plugs can be used.



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10.3.10 Undersink installation with turned appliance cap

The appliance cap can be positioned on the back panel turned through 180°. This is particularly advantageous for undersink installation. For this take the following steps:

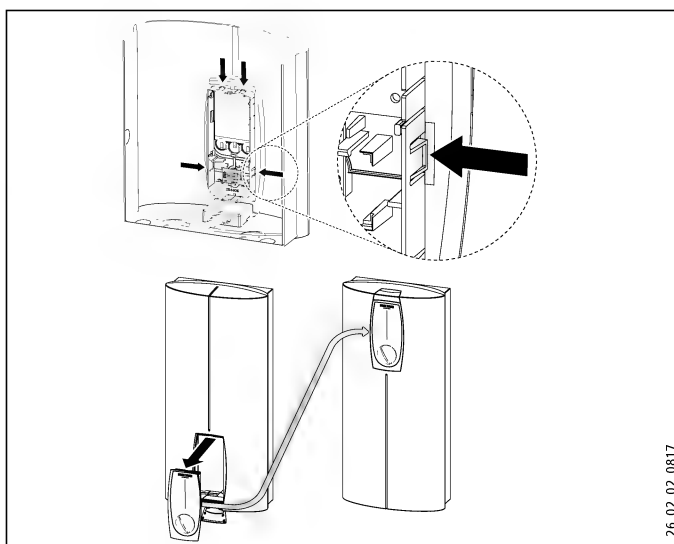
- ▶ Remove the user interface from the appliance cap by pressing the locking hooks.
- ▶ Turn the appliance cap and click the user interface into place, ensuring that all locking hooks click into place. To install the user interface more easily, press against the inner side of the appliance cap (in the shaded area, see diagram "Appliance cap for undersink installation").



Material damage

Never install a user interface with a faulty locking hook. Otherwise the safety of the appliance cannot be guaranteed.

- ▶ Plug the set value transducer cable into the "set temperature" PCB; see "Commissioning".
- ▶ Hook the appliance cap in at the bottom and pivot it up onto the back panel. Ensure the all-round seal of the back panel sits tightly by pushing the cap gently forwards and back.
- ▶ Close the appliance with the screw in the cap.

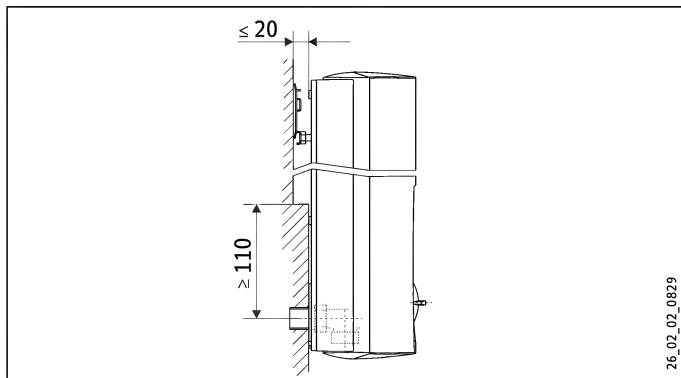


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Installation Commissioning

10.3.11 Installation for offset tiles

This appliance can be installed where tiles are offset. See diagram for maximum tile offset and minimum contact area of the appliance. Adjust the wall clearance and lock the back panel with the fixing toggle by turning it clockwise through 90°.



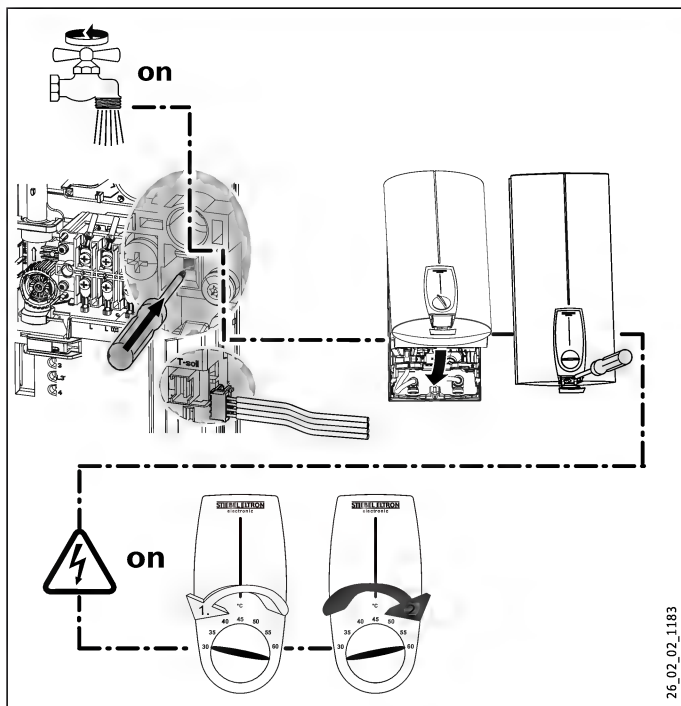
11. Commissioning

11.1 Commissioning



WARNING Electrocutation

Commissioning must only be carried out by an authorised contractor in accordance with safety regulations.



- ▶ Open and close all connected draw-off valves several times, until all air has been vented from the pipework and the appliance.
- ▶ Activate the safety pressure switch at flow pressure by pressing the reset button. The appliance is supplied with the safety pressure limiter deactivated.

- ▶ Push the temperature selector plug into the "set temperature" PCB. Ensure that the gasket pocket on the lower part of the back panel is not bent and that it seals the lower part of the user interface while the appliance cap is being installed.
- ▶ Fit the appliance cap and secure with a screw.
- ▶ Switch the mains power ON.
- ▶ Calibrate the temperature by turning the temperature selector as far as possible clockwise and then anti-clockwise.
- ▶ Check the appliance function.
- ▶ Remove the protective foil from the user interface.

12. Appliance handover

- ▶ Explain the appliance function to users and familiarise them with its operation.
- ▶ Make the user aware of potential dangers, especially the risk of scalding.
- ▶ Hand over these instructions to the user for safe-keeping.

Installation

Troubleshooting

13. Troubleshooting



WARNING Electrocutation

To test the appliance, it must be 'live'!

13.1 Display options for LED diagnostic traffic light

Possible indications

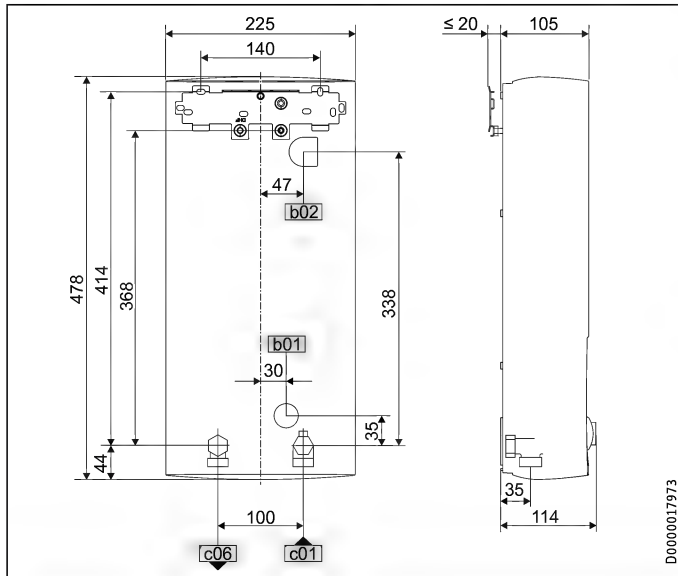
	Red	Illuminates in case of faults
	Yellow	Illuminates in heating mode
	Green	Flashing: appliance is supplied with mains power

13.2 Fault table

Fault / diagnostic traffic light LED display	Cause	Remedy
The appliance does not start.	The shower head / aerators are scaled up.	Descale or if necessary replace the shower head / perlators.
Inadequate flow rate.	The sieve in the appliance is dirty.	Clean the strainer.
The set temperature is not achieved.	One phase down.	Check the MCB/fuse in your fuse box.
Heating does not switch on.	The air sensor detects the presence of air in the water and briefly switches the heater off.	The appliance restarts after one minute.
No hot water and no traffic light display.	The MCB/fuse has responded/blown.	Check the MCB/fuse in your fuse box.
	Safety pressure limiter AP 3 has tripped.	Remove the cause of the fault (e.g. faulty pressure washer). Protect the system against overheating by opening a draw-off valve downstream of the appliance for 1 minute. This depressurises and cools down the heater. Activate the safety pressure limiter at flow pressure by pressing the reset button; see also chapter "Commissioning".
Traffic light display: Green flashing No hot water at flow rate > 3 l/min.	The PCB is faulty.	Check the PCB and replace if necessary.
	Flow sensor DFE is not plugged in. Flow sensor DFE is faulty.	Plug the flow sensor plug back in. Check the flow sensor and replace if necessary.
The set temperature is not achieved.	The set value transducer or connecting cable is faulty, or the connecting cable is not attached.	Attach the connecting cable; replace the set value transducer if required.
	Temperature limiting is activated.	Disable temperature limiting.
Traffic light display: Yellow constantly ON; green flashing No hot water at flow rate > 3 l/min.	The high limit safety cut-out has responded or its lead is broken.	Check the high limit safety cut-out and replace if necessary.
	The heater is faulty.	Measure the resistance of the heater and replace if necessary.
Traffic light display: Yellow constantly ON; green flashing Set temperature is not achieved.	The PCB is faulty.	Check the PCB and replace if necessary.
	The outlet sensor is faulty.	Check the connection and replace the outlet sensor if necessary.
Traffic light display: Red constantly ON; green flashing No hot water.	Appliance is operating at its output limit.	Reduce the flow rate or install the flow limiter.
	The outlet sensor is faulty.	Check the connection and replace the outlet sensor if necessary.
No hot water. Required temperature > 45 °C is not achieved.	The cold water sensor is faulty.	Check the PCB and replace if necessary.
	The cold water inlet temperature > 45 °C.	Reduce the cold water inlet temperature to the appliance.

14. Specification

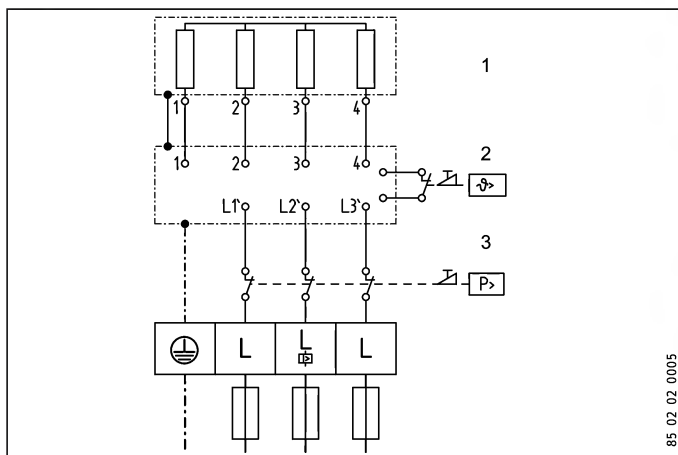
14.1 Dimensioned drawing



b01	Entry electrical cables		
b02	Entry electrical cables 1		
c01	Cold water inlet	Male thread	G 1/2 A
c06	DHW outlet	Male thread	G 1/2 A

14.2 Wiring diagram

3/PE ~ 380 - 415 V



- 1 Heater
- 2 High limit safety cut-out
- 3 Safety pressure limiter

14.3 Mixed water volume / outlet volume

Available temperature approx. 38 °C in the shower, for hand washing, filling the bath etc.

Mixed water volume

Appliance		kW	11	18	21	24	27
Cold water inlet temperature	6 °C	l/min	5.0	8.0	9.4	10.7	12.1
	10 °C	l/min	5.7	9.2	10.7	12.3	13.8
	14 °C	l/min	6.6	10.7	12.5	14.5	16.1

Outlet temperature approx. 60 °C for the kitchen sink and when using thermostatic valves.

Outlet volume

Appliance		kW	11	18	21	24	27
Cold water inlet temperature	6 °C	l/min	2.9	4.8	5.6	6.4	7.2
	10 °C	l/min	3.2	5.2	6.0	6.9	7.7
	14 °C	l/min	3.4	5.6	6.5	7.5	8.4

The values in the table are relative to a rated voltage of 400 V. The outlet volume is subject to the available supply pressure and the available mains voltage.

14.4 Applications / Conversion table

Specific electrical resistance and specific electrical conductivity, see "Specification".

Standard

specification at 15 °C		20 °C		25 °C				
Spec. Resistance	Spec. Conductivity	Spec. Resistance	Spec. Conductivity	Spec. Resistance	Spec. Conductivity			
$\rho \geq$	$\sigma \leq$	$\rho \geq$	$\sigma \leq$	$\rho \geq$	$\sigma \leq$			
Ωcm	mS/m	$\mu\text{S/cm}$	Ωcm	mS/m	$\mu\text{S/cm}$			
900	111	1111	800	125	1250	735	136	1361
1000	100	1000	890	112	1124	815	123	1227
1100	91	909	970	103	1031	895	112	1117
1200	83	833	1070	93	935	985	102	1015
1300	77	769	1175	85	851	1072	93	933

14.5 Pressure drop

14.5.1 Taps/valves

Pressure drop at flow rate 10 L/min

Mono-lever mixer tap, approx.	MPa	0.04 - 0.08
Thermostatic valve, approx.	MPa	0.03 - 0.05
Hand shower, approx.	MPa	0.03 - 0.15

14.5.2 Sizing the pipework

When calculating the size of the pipework, a pressure drop for the appliance of 0.1 MPa is recommended.

14.6 Fault conditions

In case of faults, loads up to a maximum of 95 °C at a pressure of 1.2 MPa can occur temporarily in the installation.

Installation Specification

14.7 Country-specific approvals and certifications

Test symbols can be seen on the type plate.

Notice for Australia / New Zealand:

The installation shall comply with AS/NZS 3500.4.

14.8 Specification

		DHB-E 11 SLi			DHB-E 13 SLi			DHB-E 13 A			DHB-E 18 SLi 25A			DHB-E 18/21/24 SLi			DHB-E 27 SLi		
		232013			232014			232360			232015			232016			232017		
Electrical details																			
Rated voltage	V	380	400	415	380	400	415	380	400	415	380	400	415	380	400	415	380	400	415
Rated output	kW	9.7	10.7	11.5	12.2	13.5	14.5	12.2	13.5	14.5	16.2	18	19.4	16.2/19/21.7	18/21/24	19.4/22.6/25.8	23.5	26	28
Rated current	A	14.7	15.5	16	18.5	19.5	20.2	18.5	19.5	20.2	24.7	26	27	27.6/29.5/33.3	29/31/35	30.1/32.2/36.3	35.6	37.7	38.9
Fuse	A	16	16	16	20	20	20	20	20	20	25	25	32	32/32/35	32/32/35	32/32/40	40	40	40
Phases		3/PE			3/PE			3/PE			3/PE			3/PE			3/PE		
Frequency	Hz	50/60	50/60	50/-	50/60	50/60	50/-	50/60	50/60	50/-	50/60	50/60	50/-	50/60	50/60	50/-	50/-	50/-	50/-
Specific resistance $\rho_{15} \geq$ (at $\vartheta_{cold} \leq 25^\circ\text{C}$)	$\Omega \text{ cm}$	900	900	1000	900	900	1000				900	900	1000	900	900	1000	900	900	1000
Specific conductivity $\sigma_{15} \leq$ (at $\vartheta_{cold} \leq 25^\circ\text{C}$)	$\mu\text{S/cm}$	1111	1111	1000	1111	1111	1000				1111	1111	1000	1111	1111	1000	1111	1111	1000
Specific resistance $\rho_{15} \geq$ (at $\vartheta_{cold} \leq 45^\circ\text{C}$)	$\Omega \text{ cm}$	1200	1200	1300	1200	1200	1300				1200	1200	1300	1200	1200	1300	1200	1200	1300
Specific conductivity $\sigma_{15} \leq$ (at $\vartheta_{cold} \leq 45^\circ\text{C}$)	$\mu\text{S/cm}$	833	833	770	833	833	770				833	833	770	833	833	770	833	833	770
Max. mains impedance at 50Hz	Ω										0.474	0.450	0.433	0.356	0.338	0.326	0.316	0.300	0.289
Max. mains impedance at 60 Hz	Ω										0.392	0.372		0.294	0.279				
Connections																			
Water connection		G 1/2 A			G 1/2 A			G 1/2 A			G 1/2 A			G 1/2 A			G 1/2 A		
Application limits																			
Max. permissible pressure	MPa	1			1			1			1			1			1		
Max. inlet temperature for reheating	$^\circ\text{C}$	45			45			45			45			45			45		
Values																			
Max. permissible inlet temperature	$^\circ\text{C}$	60			60			60			60			60			60		
ON	l/min	>3.0			>3.0			>3.0			>3.0			>3.0			>3.0		
Flow rate for pressure drop	l/min	3.1			3.9			5.2			5.2			5.2/6.0/6.9			7.7		
Pressure drop at flow rate	MPa	0.07 (0.02 without DMB)			0.11 (0.03 without DMB)			0.08 (0.06 without DMB)			0.08 (0.06 without DMB)			0.08/0.10/0.13 (0.06/0.08/0.10 without DMB)			0.16 (0.12 without DMB)		
Flow rate limit at	l/min	4.0			4.0			7.5			7.5			7.5/7.5/8.5			8.5		
DHW delivery	l/min	5.6			6.9			6.9			9.2			9.2/10.7/12.3			13.8		
$\Delta\vartheta$ if presented	K	28			28			28			28			28			28		
Hydraulic data																			
Rated capacity	l	0.4			0.4			0.4			0.4			0.4			0.4		
Versions																			
Connected load options		-			-			-			-			X			-		
Temperature adjustment	$^\circ\text{C}$	30 - 60			30 - 60			30-50			30 - 60			30 - 60			30 - 60		
Protection class		1			1			1			1			1			1		
Insulation block		Plastic			Plastic			Plastic			Plastic			Plastic			Plastic		
Heating system		Bare wire			Bare wire			Bare wire			Bare wire			Bare wire			Bare wire		
Cap and back panel		Plastic			Plastic			Plastic			Plastic			Plastic			Plastic		
Colour		white			white			white			white			white			white		
IP-Rating		IP25			IP25			IP25			IP25			IP25			IP25		
Dimensions																			
Height/Width/Depth	mm	478	225	105	478	225	105	478	225	105	478	225	105	478	225	105	478	225	105
Weights																			
Weight	kg	3.6			3.6			3.6			3.6			3.6			3.6		

Warranty

The warranty conditions of our German companies do not apply to appliances acquired outside of Germany. In countries where our subsidiaries sell our products, it is increasingly the case that warranties can only be issued by those subsidiaries. Such warranties are only granted if the subsidiary has issued its own terms of warranty. No other warranty will be granted.

We shall not provide any warranty for appliances acquired in countries where we have no subsidiary to sell our products. This will not affect warranties issued by any importers.

Environment and recycling

We would ask you to help protect the environment. After use, dispose of the various materials in accordance with national regulations.

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STIEBEL ELTRON

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