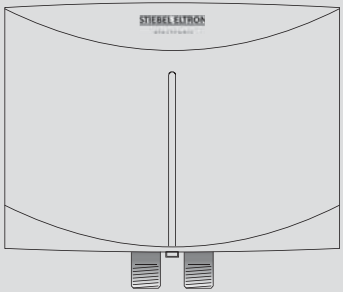
OPERATION AND INSTALLATION
OPERACIÓN E INSTALACIÓN
UTILISATION ET INSTALLATION

THERMOSTATIC POINT OF USE TANKLESS ELECTRIC WATER HEATER
CALENTADOR DE AGUA ELÉCTRICO SIN TANQUE CON CONTROL TERMOSTÁTICO DE TEMPERATURA
CHAUFFE-EAU INSTANTANÉ THERMOSTATIQUES POUR POINT D'UTILISATION

- » MINI-E 2-1
- » MINI-E 2.5-1
- » MINI-E 3-1
- » MINI-E 3.5-1
- » MINI-E 4-2
- » MINI-E 6-2



Conforms to ANSI/UL Std. 499
Certified to CAN/CSA Std. E335-1 & E335-2-35

Conforme a ANSI/UL Std. 499
Certificación con CAN/CSA Std. E335-1 & E335-2-35

Conforme à la norme ANSI/UL Std. 499
Certifié à la norme CAN/CSA Std. E335-1 & E335-2-35

Tested and certified by WQA to NSF/ANSI 372
for lead free compliance.

Probado y certificado por WQA NSF/ANSI 372 para
el cumplimiento de las regulaciones sin plomo.

Testé et certifié par WQA à la NSF/ANSI 372 pour une
utilisation sans plomb.

STIEBEL ELTRON

TABLE OF CONTENTS

SPECIAL INFORMATION

- Ensure the appliance can be separated from the power supply by a circuit breaker that disconnects all poles.
- If the power cable is damaged, it must only be replaced by a qualified contractor and the repair must be authorized by Stiebel Eltron using the original spare part.
- Secure the appliance as described in the section “Installation”, pg. 8.
- Observe the maximum permissible pressure described in section 15.4, “Data table”, pg. 20.
- Drain the appliance as described in the section “Drain the appliance”, pg. 16.

OPERATION

1. General information

The chapter "Operation" is intended for homeowners, heating contractors, plumbers and electricians.

The chapter "Installation" is intended for heating contractors, plumbers and electricians only.

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

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.

1.2 Other symbols in this documentation

Note:
Notes are bordered by horizontal lines above and below the text. General information is identified by the symbol shown on the left.

Symbol	
	Material losses (appliance damage, consequential losses and environmental pollution)
	Appliance disposal

2. Safety

2.1 Intended use

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

This appliance is suitable for heating domestic hot water (DHW) or for heating preheated water. The appliance is designed for one hand-washing sink.

Any other use beyond that described shall be deemed inappropriate. Observation of these instructions and of instructions for any accessories used is also part of the correct use of this appliance.

2.2 General safety instructions

DANGER: Scalding
During operation, the tap can reach temperatures in excess of 122°F / 50°C. There is a risk of scalding at outlet temperatures in excess of 109°F / 43°C.

DANGER: Electrocution
Any damaged power cables must be replaced by a qualified electrician. This prevents potential hazards due to improper installation.

Material losses:
Protect the appliance and the tap against freezing.

Material losses:
Only use the provided aerator. Prevent scale build-up at the tap outlets (See chapter 6, “Cleaning, care and maintenance”, pg. 7).

ENGLISH

3. Register your product

You must register this product within 90 days of purchase on our web site in order to activate the standard warranty or to be eligible for the extended warranty. Go to our web site at www.stiebel-eltron-usa.com and click on "Register Your Product".

Before beginning the registration process, we suggest that you gather the necessary information which will be as follows:

Type, Example: Mini-E 6-2 (from the label that is on the unit)

Number listed after "Nr."
Place of Purchase
Purchase Date
First & Last Name
Email address
Physical Address
Phone Number
Installation Date

IF YOU HAVE ANY QUESTIONS CONCERNING THE REGISTRATION PROCESS OR WARRANTY OPTIONS, PLEASE CONTACT STIEBEL ELTRON USA DIRECTLY AT (800)582-8423.

4. Appliance description

This electronically controlled tankless electric water heater maintains a constant outlet temperature up to its output limit, regardless of the inlet temperature.

This appliance has been factory-set to 100°F / 38°C. Once this temperature has been reached, the main control board automatically maintains this temperature. The output is matched to the set temperature and prevents this temperature from being exceeded.

The appliance heats the water directly at the draw-off point as soon as the tap is opened. Short pipe runs ensure that energy and water losses are minimal.

The DHW output temperature depends on the cold water temperature, water heater capacity and the flow rate.

The bare wire heating system is suitable for hard and soft water areas. This heating system has a low susceptibility to scale build-up. The heating system ensures quick and efficient hot water provided at the point-of-use.

Your qualified contractor can adjust the maximum temperature setting (see 11.4, "Settings", pg. 13).

You must use the aerator provided with the appliance.

If you have questions regarding the way you plan to use this device, please call our technical service line at (800)582-8423 (USA and Canada).

For service outside the U.S. and Canada, please call us at (413)247-3380. You can also e-mail us at info@stiebel-eltron-usa.com or fax us at (413)247-3369.

5. Adjustment

The appliance heating system switches on automatically as soon as you open the tap. The water is heated. The water temperature can be adjusted at the tap:

Increasing the temperature

▶ Reduce the flow rate at the tap.

Reducing the temperature

▶ Open the tap further or add more cold water.

Following an interruption of the water supply

See 11.3, “Recommissioning”, pg. 13.

6. Cleaning, care and maintenance

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

▶ Check the taps/valves regularly. Lime-scale deposits can be removed using commercially available descaling agents.

▶ Have the electrical safety of the appliance periodically checked by an electrician.

▶ Regularly descale or replace the provided aerator (See 8.2, “Optional accessories”, pg. 8).

INSTALLATION

7. Safety

Only a qualified contractor should carry out installation, commissioning, maintenance and repair of the appliance.

7.1 General safety instructions

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

Material losses:
Observe the max. permissible inlet temperature. Higher temperatures may damage the appliance. You can limit the inlet temperature by means of a central thermostatic valve (See 8.2, “Optional accessories”, pg. 8).

Note:
Observe all applicable national, state & local regulations codes, and instructions.

8. Appliance description

8.1 Standard delivery

The following are delivered with the appliance:

- Filter screen in the cold water inlet
- Aerator
- Power cable

8.2 Optional accessories

Mini-E TLC - Thermostatic mixing valve

For ASSE 1070-2004 compliance, use optional Mini-E TLC kit available from Stiebel Eltron.

Visit www.stiebel-eltron-usa.com for more information.

9. Preparations

► Flush the water line thoroughly.

Water installation

A safety valve is not required by Stiebel Eltron, but one may be required by local plumbing code. Check the codes before installation.

Note:
Fitting the supplied aerator provides an optimum water flow.

10. Installation

10.1 Installation site

Do not install in an area that can be exposed to temperatures below 41°F / 5°C.

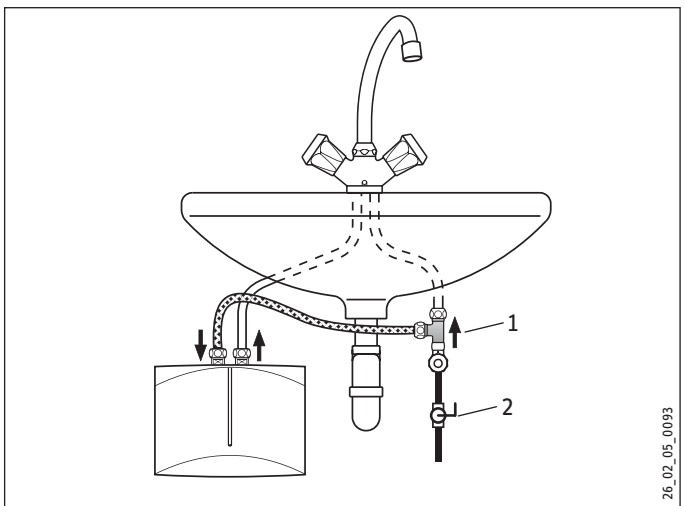
Ensure access to the opening screws on both sides of the cover so that they can be easily removed if service is necessary.

The appliance is suitable for an undersink or oversink installation. It can be installed with water connections at the top or at the bottom.

DANGER: Electrocution
The adjusting screw for setting the temperature is 'live', and the IP25 protection is only given when the appliance back panel is fitted.

10.2 Installation options

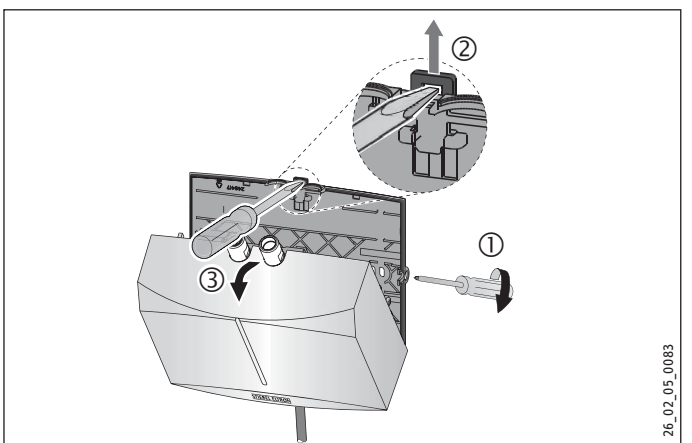
10.2.1 Typical installation



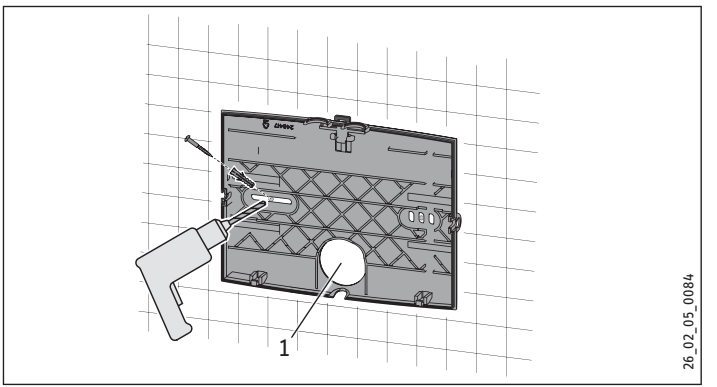
1 Tee
2 Shut-off valve

10.2.2 Appliance installation

Note:
▶ Mount the appliance on the wall.
The wall must have a sufficient load-bearing capacity for the weight of the device.



1 Undo the cover screws by two turns.
2 Undo the snap fastener using a screwdriver.
3 Remove the appliance cover with the heater towards the front.

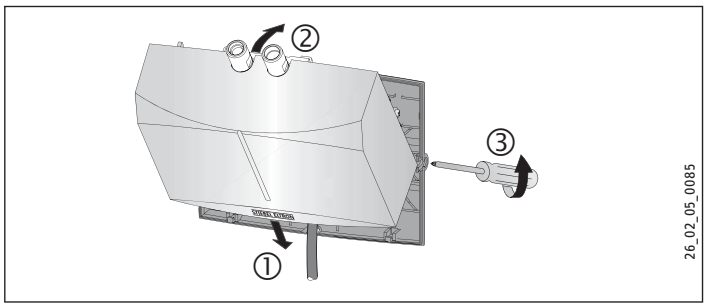


1 Knockout for hard-wiring

▶ Using pliers, break out the knock-out for the power cable in the appliance cover. Correct the contours with a file if necessary.

▶ Use the appliance back panel as a drilling template.

▶ Secure the appliance back panel to the wall with suitable plugs and screws.



1 Hook in the appliance cover
2 Click the heater into place using the snap fastener.
3 Secure the appliance cover with the cover fastening screws.

Faucet installation

▶ Install the connections to the faucet. For this, also observe the faucet operating and installation instructions.

Material losses:
▶ When making the connections, counter the torque on the appliance using a 14 mm wrench.

10.3 Connecting the power supply

DANGER: Electrocution
Carry out all electrical connection and installation work in accordance with national, state & local regulations.

DANGER: Electrocution
Ensure that the appliance is grounded.
Ensure the appliance can be separated from the power supply by a circuit breaker that disconnects all poles.

ENGLISH

DANGER: Electrocution
The appliances are delivered with a power cable to be connected to a permanent power supply.
Ensure that the proper wire gauge is installed with the appliance in accordance with the minimum recommended wire size in section 15.4, “Data table”, pg. 20.

Material losses:
When making the connection to a standard wall socket, ensure that the socket is freely accessible to be easily disconnected in case of an issue.

Material losses:
Take note of the product label. The specified voltage must match the mains voltage.

- If the appliance is to be hardwired, connect the power cable as shown in the wiring diagram (see 15.2, “Wiring diagram”, pg. 18).

11. Commissioning

11.1 Initial start-up

- Before you activate the power supply, fill the appliance with water first to avoid dry firing the heating element.
- Check for leaks.
- Activate the power supply.
- Run the tap.
- Check the function of the appliance.

11.2 Appliance handover

- Explain the appliance function to users and familiarize them with its operation.
- Make users aware of potential dangers, especially the risk of scalding.
- Hand over these instructions.

11.3 Recommissioning

Material losses:
Following an interruption of the water supply, recommission the appliance by carrying out the following steps in order to prevent irreparable damage to the bare wire heating system.

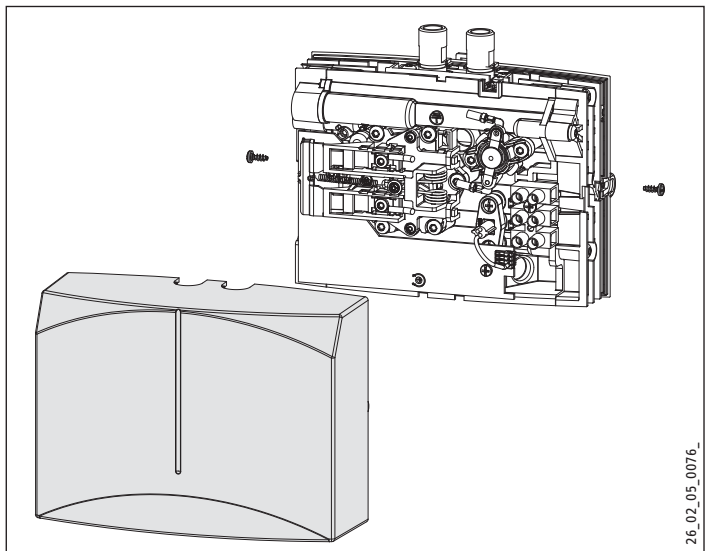
- ▶ Deactivate the power supply.
- ▶ See 11.1, “Initial start-up”, pg. 12.

11.4 Settings

You can alter the maximum temperature setting using the potentiometer on the interior of the appliance.

DANGER: Electrocution
The temperature may only be adjusted if the appliance is isolated from the power supply.

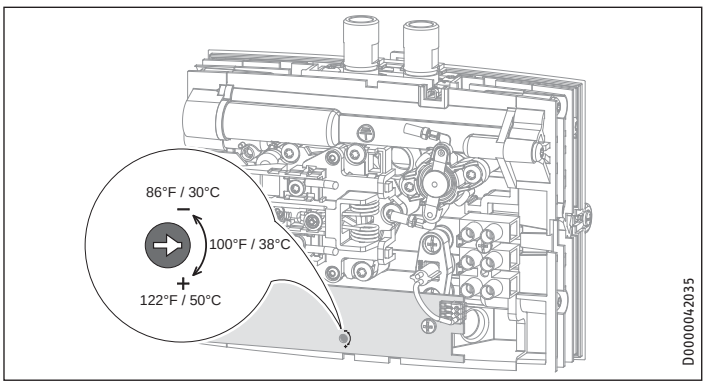
DANGER: Electrocution
The adjusting screw for setting the temperature is live when the power supply is active.



- ▶ Remove the appliance cover.

Setting the maximum temperature

Factory setting: 100°F / 38°C



Do not adjust the temperature unless the power supply has been deactivated/disconnected.

- ▶ Using a flat screwdriver, set the potentiometer to the maximum required temperature.
- ▶ Re-fit the appliance cover.

12. Shutting down

- ▶ Turn off the circuit breaker connected to the appliance.
- ▶ Drain the appliance (See , “Draining the appliance”, pg. 16).

13. Troubleshooting

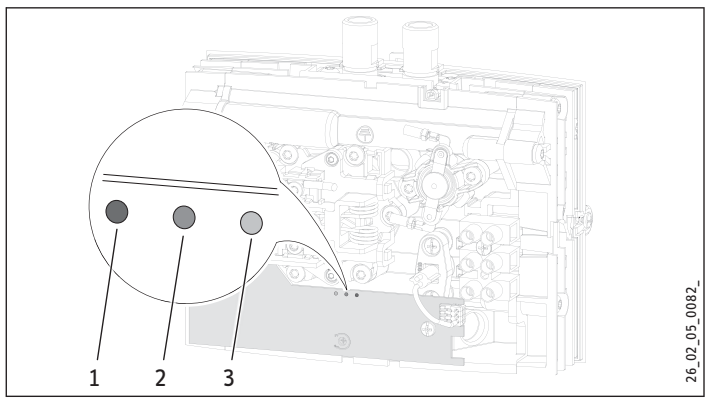
Problem	Cause	Remedy
The appliance will not start despite the tap being fully open.	No power to the appliance	Check the fuses/circuit breaker.
	The flow rate is too low.	Increase the flow rate.
	The filter screen in the cold water line is blocked.	Clean the filter screen after shutting off the cold water inlet line.
	The heater is faulty.	Check the resistance of the heating system and replace the appliance if required. Contact Stiebel Eltron for additional troubleshooting
	The safety pressure cutout has activated.	Remedy the cause of the fault. Isolate the appliance from the power supply and depressurize the water line. Reset the safety pressure cutout.

Problem	Cause	Remedy
The required temperature is not being reached.	The maximum temperature set inside the appliance is too low.	Have your qualified installer adjust the maximum temperature.
	The appliance is operating beyond its output limit.	Reduce the flow rate.

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

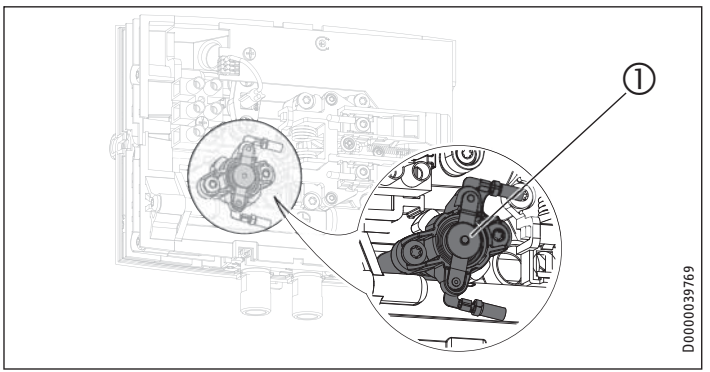
Mini-E Nr.: 000000-0000-000000

LED indicators



1 Illuminates red in case of a fault
2 Illuminates yellow during heating operation or flashes yellow when unit is heating at capacity
3 Flashes green if the main control board is receiving power

The safety pressure cutout



1 Safety pressure cutout for Mini-E

If the safety pressure cutout is consistently tripping, there may be an issue with the hot water supply or the appliance. Contact your installation contractor to troubleshoot the appliance.

14. Maintenance

DANGER: Electrocution
Before any work on the appliance, disconnect the power supply.

Draining the appliance

DANGER: Scalding
Hot water may escape during the draining process.

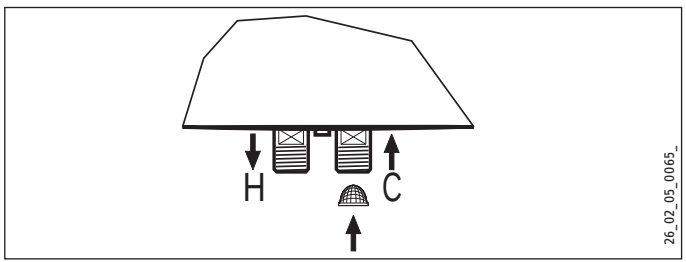
If the appliance needs to be drained for maintenance or to protect the appliance when there is a risk of frost, proceed as follows:

- ▶ Close the shut-off valve in the cold water inlet line.
- ▶ Open the draw-off valve.
- ▶ Undo the water connections on the appliance.

Note:
The filter screen should be checked regularly for debris and scale, and cleaned or replaced if necessary.
Always shut off power and water to the unit prior to removing the filter screen.

Cleaning the filter screen

You can clean the filter screen after removing the cold water supply connection.



Checking the ground conductor

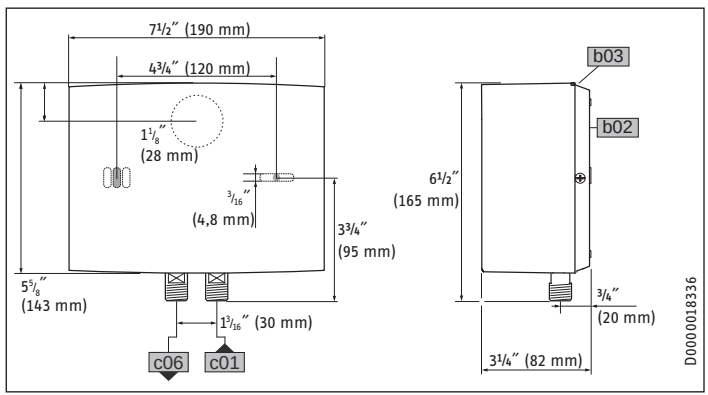
▶ Check the ground conductor on the appliance connection cable.

Appliance storage

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

15. Specification

15.1 Dimensions and connections



		Mini
b02	Electric cable entry 1	
b03	Electric cable entry 2	
c01	Cold water inlet	⅜″ G male*
c06	DHW outlet	⅜″ G male*

*This is a parallel thread for connection to a ⅜″ O.D. flex connector or ⅜″ compression fitting

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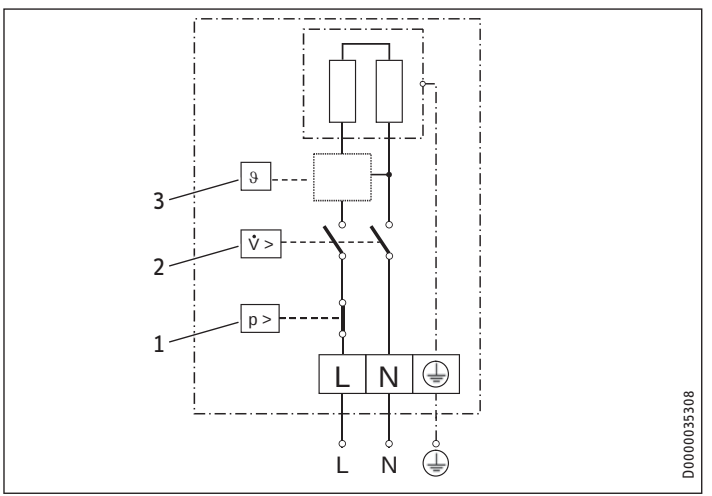
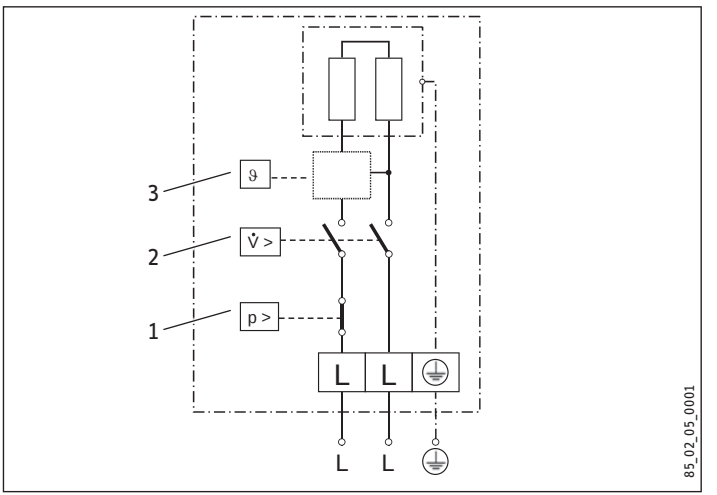
15.2 Wiring diagram

15.2.1 Mini-E 2-1, Mini-E 2.5-1, Mini-E 3-1 & Mini-E 3.5-1 ~ 110-120 V



1 Safety pressure cutout
2 Flow activation switch
3 Main control board with outlet temperature sensor

15.2.2 Mini-E 4 and Mini-E 6 ~ 220-240 V



1 Safety pressure cutout
2 Flow activation switch
3 Main control board with outlet temperature sensor

Material losses:
▶ In an installation with a permanent power supply, connect the power cable according to the designations on the socket terminals.

15.3 Temperature rise table

		Temp. rise above incoming water temp. (°F)								Temp. rise above incoming water temp. (°C)							
		GPM								l/min							
Unit	Heating Capacity	0.32	0.42	0.48	0.53	0.69	0.85	1.06	1.14	1.2	1.6	1.8	2.0	2.6	3.2	4.0	4.3
Mini-E 2-1*	1.8 kW @ 110-120 V	39	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-
Mini-E 2.5-1	2.4 kW @ 110-120 V	51	39	34	30	24	19	15	14	28	22	19	17	13	11	8	8
Mini-E 3-1	3.0 kW @ 110-120 V	64	49	43	38	30	24	19	18	36	27	24	21	17	13	11	10
Mini-E 3.5-1	3.5 kW @ 110-120 V	75	57	50	45	35	28	22	21	42	32	28	25	19	16	12	12
Mini-E 4-2	2.6 kW @ 208 V	55	42	37	33	25	20	16	15	31	23	21	18	14	11	9	8
	3.5 kW @ 220-240 V	75	57	50	45	35	28	22	21	42	32	28	25	19	16	12	12
Mini-E 6-2	4.3 kW @ 208 V	-	-	61	55	42	34	27	25	-	-	34	31	23	19	15	14
	5.7 kW @ 220-240 V	-	-	81	73	56	45	36	34	-	-	45	41	31	25	20	19

*Mini-E 2-1 is internally restricted to 0.40 GPM (1.5 l/min)

Note: The output of the heating element depends on the supplied voltage. Fluctuating or varying voltages may cause the appliance to deliver hot water at different values than the ones in the above table.

15.4 Data table

	Mini-E 2-1	Mini-E 2.5-1	Mini-E 3-1	Mini-E 3.5-1	Mini-E 4-2		Mini-E 6-2	
	236011	236135	236010	236136	236009		236008	
Electrical data								
Phases	1 - 50/60 Hz							
Voltage[1]	110-120 V	110-120 V	110-120 V	110-120 V	220-240 V	208 V	220-240 V	208 V
Wattage	1.8 kW	2.4 kW	3.0 kW	3.5 kW	3.5 kW	2.6 kW	5.7 kW	4.3 kW
Amperage draw	15 A	20 A	25 A	29 A	15 A	13 A	24 A	21 A
Min. recommended circuit breaker size [2]	15 A	20 A	25 A	30 A	15 A		25 A	
Min. recommended wire size [3] (copper)	14 AWG	12 AWG	10 AWG	10 AWG	14 AWG		10 AWG	
Connections								
Water connection	3/8″ O.D. flex connector or 3/8″ compression fitting							
Application limits								
Max. permissible pressure	150 psi / 10 bar							
Max. inlet temperature for reheating	122°F / 50°C							
Temperature & Flow Values								
Max. permissible inlet temperature	140°F / 60°C							
Temperature setting range, DHW	86-122°F / 30-50°C							
Minimum water flow to activate unit	0.21 gpm / 0.8 l/min	0.3 gpm / 1.15 l/min	0.3 gpm / 1.15 l/min	0.3 gpm / 1.15 l/min	0.3 gpm / 1.15 l/min		0.47 gpm / 1.8 l/min	
Pressure drop at activation flow rate	7.2 psi / 0.5 bar	7.2 psi / 0.5 bar	7.2 psi / 0.5 bar	7.2 psi / 0.5 bar	8.7 psi / 0.6 bar		10.2 psi / 0.7 bar	

[1] Nominal mains voltage is 110-120V and 220-240V.

[2] This is our recommendation for over-current protection sized at 100% of load. Check local codes for compliance if necessary. Tankless water heaters are considered a non-continuous load.

[3] AWG copper must be used. Conductors should be sized to maintain a voltage drop of less than 3% under load.

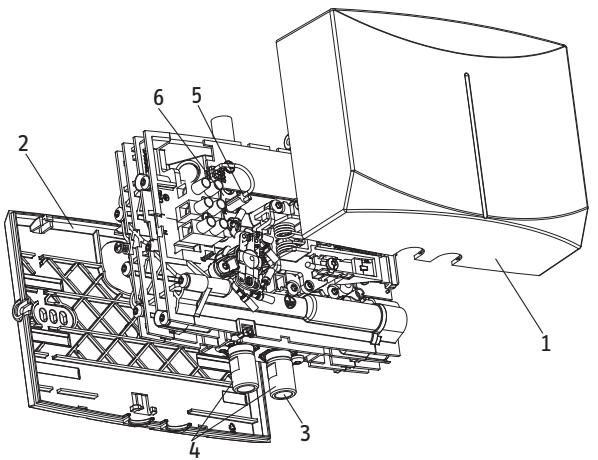
SPECIFICATION

	Mini-E 2-1	Mini-E 2.5-1	Mini-E 3-1	Mini-E 3.5-1	Mini-E 4-2	Mini-E 6-2
Miscellaneous						
IP rating	IP25					
Insulating block	Plastic					
Heating element	Bare wire					
Color	White					
Included aerator	0.5 gpm / 1.9 l/min	0.5 gpm / 1.9 l/min	0.5 gpm / 1.9 l/min	0.5 gpm / 1.9 l/min	0.66 gpm / 2.5 l/min	Two 0.5 gpm / 1.9 l/min[4]
Dimensions						
Height	6½″ / 165 mm					
Width	7½″ / 190 mm					
Depth	3¼″ / 82 mm					
Weights						
Weight	3.3 lbs / 1.5 kg					

[4] If plumbing a single sink, substitute a single 1.0 gpm / 3.8 l/min aerator/flow reducer.

ENGLISH

16. Spare parts list



No.	No. Spare part	Mini-E 2-1 Mini-E 2.5-1 Mini-E 3-1 Mini-E 3.5-1 Mini-E 4-2 Mini-E 6-2
1	Front cover	271013
2	Rear housing	271011
3	Filter screen	272777
4	Plumbing connection	272757
5	NTC temperature sensor	295276
6	Sensor bracket	293818
	O-rings	083043

17. Warranty

Subject to the terms and conditions set forth in this limited warranty, Stiebel Eltron, Inc. (the "Manufacturer") hereby warrants to the original purchaser (the "Owner") that each Tankless Electric Domestic Hot Water Heater (the "Heater") shall not (i) leak due to defects in the Manufacturer's materials or workmanship for a period of seven (7) years from the date of purchase or (ii) fail due to defects in the Manufacturer's materials or workmanship for a period of three (3) years from the date of purchase. As Owner's sole and exclusive remedy for breach of the above warranty, Manufacturer shall, at the Manufacturer's discretion, send replacement parts for local repair; retrieve the unit for factory repair, or replace the defective Heater with a replacement unit with comparable operating features. Manufacturer's maximum liability under all circumstances shall be limited to the Owner's purchase price for the Heater.

This limited warranty shall be the exclusive warranty made by the Manufacturer and is made in lieu of all other warranties, express or implied, whether written or oral, including, but not limited to warranties of merchantability and fitness for a particular purpose. Manufacturer shall not be liable for incidental, consequential or contingent damages or expenses arising directly or indirectly from any defect in the Heater or the use of the Heater. Manufacturer shall not be liable for any water damage or other damage to property of Owner arising, directly or indirectly, from any defect in the Heater or the use of the Heater. Manufacturer alone is authorized to make all warranties on Manufacturer's behalf and no statement, warranty or guarantee made by any other party shall be binding on Manufacturer.

Manufacturer shall not be liable for any damage whatsoever relating to or caused by:

1. any misuse or neglect of the Heater, any accident to the Heater, any alteration of the Heater, or any other unintended use;
2. acts of God and circumstances over which Manufacturer has no control;
3. installation of the Heater other than as directed by Manufacturer and other than in accordance with applicable building codes;
4. failure to maintain the Heater or to operate the Heater in accordance with the Manufacturer's specifications;
5. operation of the Heater under fluctuating water pressure or in the event the Heater is supplied with non-potable water, for any duration;
6. improper installation and/or improper materials used by any installer and not relating to defects in parts or workmanship of Manufacturer;
7. moving the Heater from its original place of installation;
8. exposure to freezing conditions;
9. water quality issues such as corrosive water, hard water, and water contaminated with pollutants or additives;

Should owner wish to return the Heater to manufacturer for repair or replacement under this warranty, Owner must first secure written authorization from Manufacturer. Owner shall demonstrate proof of purchase, including a purchase date, and shall be responsible for all removal and transportation costs. If Owner cannot demonstrate a purchase date this warranty shall be limited to the period beginning from the date of manufacture stamped on the Heater. Manufacturer reserves the right to deny warranty coverage upon Manufacturer's examination of Heater. This warranty is restricted to the Owner and cannot be assigned.

Some States and Provinces do not allow the exclusion or limitation of certain warranties. In such cases, the limitations set forth herein may not apply to the Owner. In such cases this warranty shall be limited to the shortest period and lowest damage amounts allowed by law. This warranty gives you specific legal rights and you may also have other rights which vary from State to State or Province to Province.

Owner shall be responsible for all labor and other charges incurred in the removal or repair of the Heater in the field. Please also note that the Heater must be installed in such a manner that if any leak does occur, the flow of water from any leak will not damage the area in which it is installed.

This Warranty is valid for U.S.A. & Canada only. Warranties may vary by country. Please consult your local Stiebel Eltron Representative for the Warranty for your country.

Environment and recycling

Please help us to protect the environment by disposing of the packaging in accordance with the national regulations for waste processing.