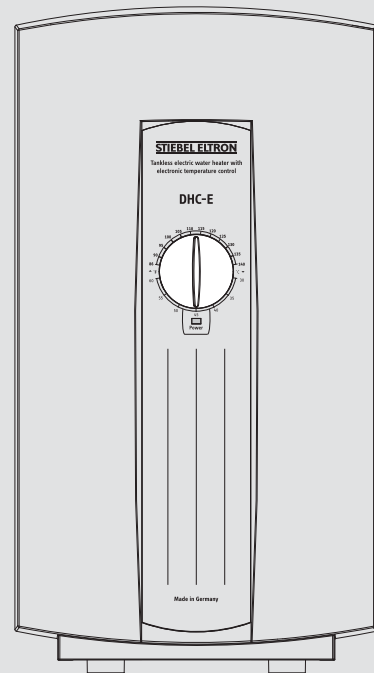


## OPERATING AND INSTALLATION

### TANKLESS ELECTRIC WATER HEATERS

- » DHC-E 8/10
- » DHC-E 12



The DHC-E series is tested and certified by WQA against NSF/ANSI 372 for "lead free" compliance.

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**STIEBEL ELTRON**

## CONTENTS | OPERATION

### GENERAL INFORMATION

#### OPERATION

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#### INSTALLATION

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#### WARRANTY

#### ENVIRONMENT AND RECYCLING

## OPERATION

### 1. General information



#### Note

Read these instructions carefully before using the appliance and familiarize yourself with its functions. Keep these instructions safe. Pass on the instructions to a new user if required.

#### 1.1 Safety information

##### 1.1.1 Structure of safety information



#### KEYWORD Type of risk

Here, possible consequences are listed that may result from not observing the safety information.

► Steps to prevent the risk are listed.

##### 1.1.2 Symbols. type of risk

Symbol	Type of risk
	Injury
	Electrocution
	Burns or scalding

##### 1.1.3 Keywords

KEYWORD	Description
DANGER	If this information is not observed, it will result in serious injury or death.
WARNING	If this information is not observed, it can result in serious injury or death.
CAUTION	If this information is not observed, it can lead to medium or minor injury.

## OPERATION

## SAFETY

### 1.2 Other symbols in this document



#### Note

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

► Read these notes carefully.

Symbol	
	Damage to the appliance and environment
	Appliance disposal

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

## 2. Safety

Observe the following safety information and regulations.

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

### 2.1 Intended use

The appliance is intended for heating domestic hot water and can supply several 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.

### 2.2 General Information

Read this entire manual. Failure to follow all the guides, instructions and rules could cause personal injury or property damage. Improper installation, adjustment, alteration, service and use of this appliance can result in serious injury.

This appliance must be installed by a licensed electrician and plumber. The installation must comply with all national, state and local plumbing and electric codes. Proper installation is the responsibility of the installer. Failure to comply with the installation and operating instructions or improper use voids the warranty.

Save these instructions for future reference. Installer should leave these instructions with the consumer.

If you have any questions regarding the installation, use or operation of this water heater, or if you need any additional installation manuals, please call our technical service line, see last side.

### 2.3 Safety Precautions



#### DANGER Injury

Please read and follow these instructions.

Failure to follow these instructions could result in serious personal injury or death.



#### Damage to the appliance and the environment

The appliance must be installed by a licensed electrician and plumber. The installation must comply with all national, state and local plumbing and electric codes.

Service of the appliance must be performed by qualified service TECHNICIANS.



#### DANGER Electrocutation

Before proceeding with any installation, adjustment, alteration, or service of this appliance all circuit breakers and disconnect switches servicing the appliance must be turned off. Failure to do so could result in serious personal injury or death.



#### DANGER Electrocutation

Never remove the appliance's cover unless the electricity servicing the appliance is turned off. Failure to do so could result in personal injury or death.



#### DANGER Electrocutation

The appliance must be properly grounded. Failure to electrically ground the product could result in serious personal injury or death.



#### DANGER Burns

Water temperatures over 125 °F can cause severe burns instantly or death from scalding. A hot water scalding potential exists if the thermostat on the appliance is set too high. Households with small children, disabled or elderly persons may require that the thermostat be set at 120 °F or lower to prevent possible injury from hot water.



#### WARNING Injury

Where children or persons with limited physical, sensory or mental capabilities are to be allowed to control this appliance, ensure that this will only happen under supervision or after appropriate instructions by a person responsible for their safety.

Children should be supervised to ensure that they never play with the appliance.

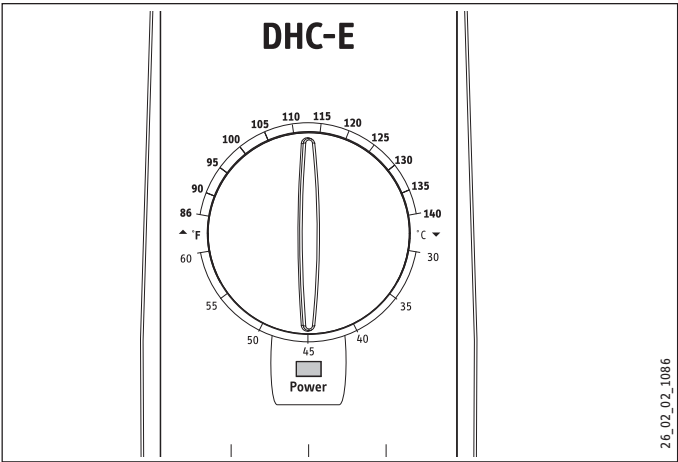
### 2.4 Test symbols

See type plate on the appliance.

OPERATION  
GENERAL

3. General

The tankless water heater differs from conventional storage type water heaters in several ways. It does not store hot water. Instead, water is heated instantaneously as it flows through the appliance. Due to the absence of stand-by losses, the appliance offers greater energy efficiency than storage type water heaters.



The input of heat into the water is electronically controlled. The appliance will deliver any water temperature between 86 °F (30 °C) and 140 °F (60 °C). Please set the desired temperature using the knob on the front cover. In case the “Power” light is flashing while the appliance operates, the water flow rate exceeds the heating capacity of the appliance. Reduce the hot water flow rate in order to let the appliance achieve the set point temperature. The maximum temperature is electronically limited to 140 °F (60 °C). In case you have questions regarding the way you plan to use the appliance, please call our technical service line, see last side.

4. Troubleshooting

Symptom	Possible Cause	► Solution
No hot water	circuit breaker off	turn circuit breaker on
	not enough flow rate to activate appliance	clean faucet aerator or shower head
Water not hot enough	water flow too high	reduce water flow rate until light on front cover stops blinking

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

## INSTALLATION

### MOUNTING THE APPLIANCE

# INSTALLATION

## 5. Mounting the appliance

### 5.1 Application

One appliance can be used for the following applications:

- one or multiple hand washing sinks
- one kitchen sink
- cabins with flow restriction at shower head.

A combination of two appliance can be used for whole apartment and house applications. Please contact STIEBEL ELTRON for special installation instructions.

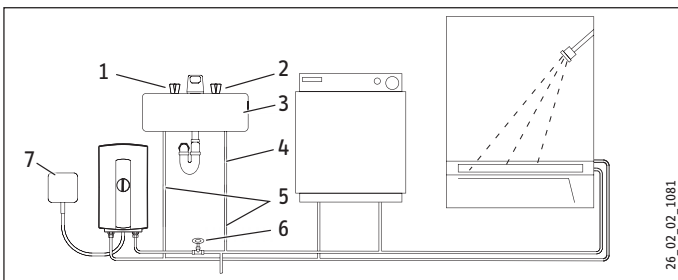
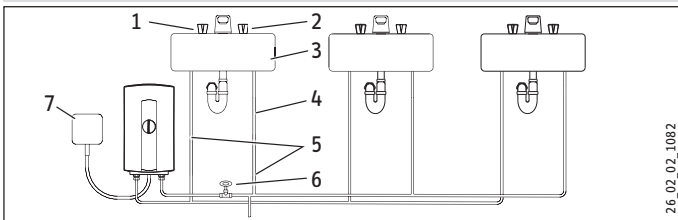
All areas with a ground water temperature likely to exceed 65 °F (18 °C) year round:

Whole apartment or house



#### CAUTION Electrocutation

Unit must be installed in a vertical position with the water fittings pointing downward. Do not install appliance where it would routinely be splashed with water. Electric shock may result.



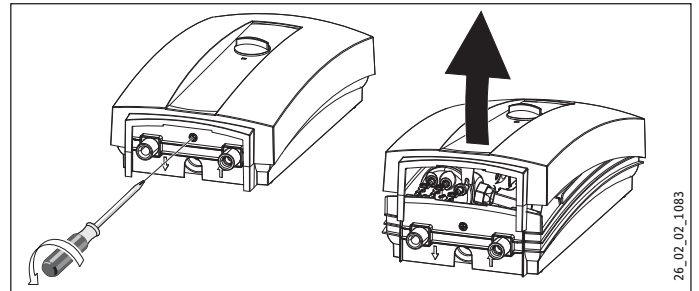
- 1 Hot valve (left)
- 2 Cold valve (right)
- 3 Sink
- 4 1/2" main pipe
- 5 Water supply line for faucet installation
- 6 Shut-off valve
- 7 Electrical junction box

### 5.2 Mounting

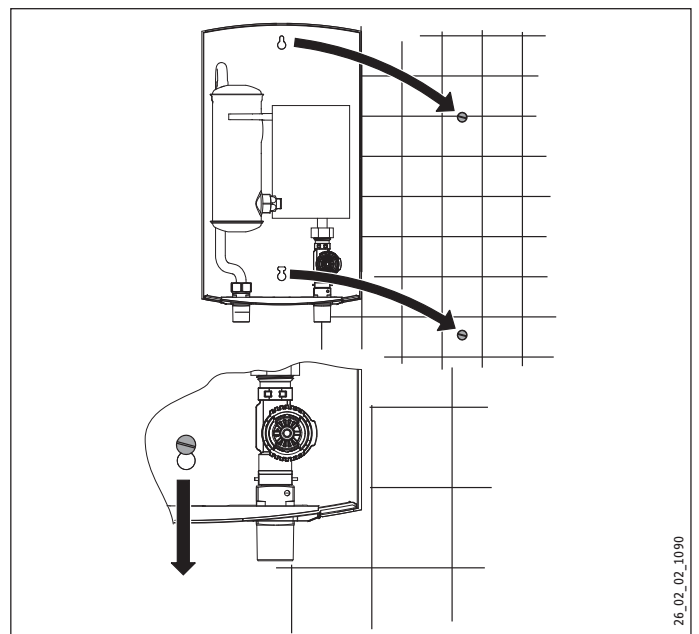
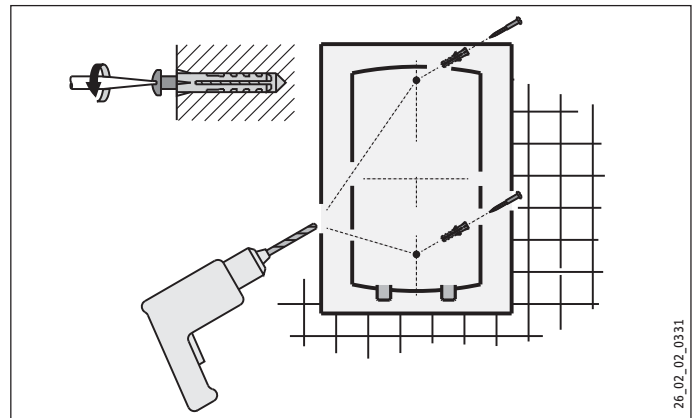
- Install appliance as close as possible to the main hot water draw-off points.

- Install appliance in a frost free area. If frost may occur, remove appliance before freezing temperatures set in.

- Leave a minimum of 5" of clearance on all sides for servicing.



- Remove plastic cover.



- Screw the screws into the wall and hang the appliance. Screws and plastic wall anchors for mounting on masonry or wood are provided.
- Secure the screws.

## INSTALLATION

### ELECTRICAL CONNECTION

#### 5.3 Water connections



##### Damage to the appliance and the environment

Excessive heat from soldering on copper pipes near the DHC may cause damage.

- ▶ All plumbing work must comply with national and applicable state and local plumbing codes.
- ▶ A pressure reducing valve must be installed if the cold water supply pressure exceeds 150 PSI (10 bar).
- ▶ Make certain that the cold water supply line has been flushed to remove any scale and dirt.
- ▶ Install isolating valve in cold water line as shown in illustration "Mounting the appliance". This allows the appliance to be isolated for maintenance purposes.
- ▶ Cold water connection (inlet) is on the right side of the appliance, hot water connection (outlet) is on the left side of appliance.
- ▶ Tankless water heaters such as the DHC-E are not required to be equipped with a Pressure and Temperature Relief Valve (P&T). If the local inspector will not pass the installation without a P&T, it should be installed on the hot water outlet side of appliance.
- ▶ The appliance is designed for connection to copper tubing, PEX tubing or a braided stainless steel hose with a 1/2" NPT female tapered thread. If soldering near the appliance is necessary, please direct the flame away from the plastic housing of the appliance in order to avoid damage.
- ▶ When all plumbing work is completed, check for leaks and take corrective action before proceeding.

## 6. Electrical connection



##### DANGER Electrocutation

Carry out all electrical connection and installation work in accordance with relevant regulations.



##### Damage to the appliance and the environment

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



##### DANGER Electrocutation

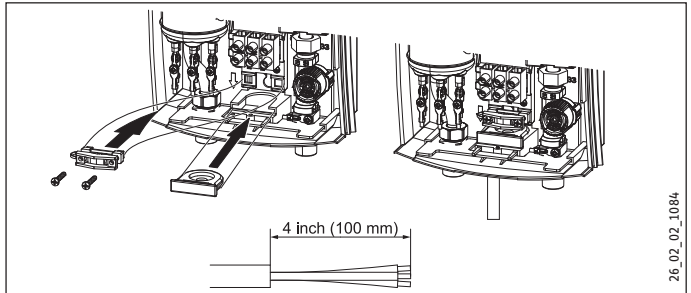
Before beginning any work on the electric installation, be sure that main breaker panel switch is „off“ to avoid any danger of electric shock. All mounting and plumbing must be completed before proceeding with electrical hook-up. Where required by local, state or national electrical codes the circuit should be equipped with a „ground fault interrupter“.



##### DANGER Electrocutation

As with any electric appliance, failure to electrically ground appliance may result in serious injury or death.

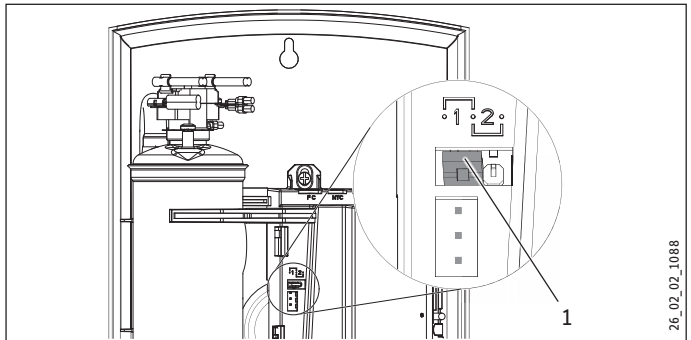
- ▶ The appliance should be connected to a properly grounded dedicated branch circuit of proper voltage rating. In installations with several appliance, each appliance requires an independent circuit. Please refer to the technical data table for the correct wire and circuit breaker size.



- ▶ The wire must be fed through the rubber seal located between the hot and cold water connections. Then feed wires through strain relief clamp and tighten clamp down on wire. The „live“ wires must be connected to the slots on the terminal block marked L and L. The ground wire must be connected to slot marked with the ground symbol. Strain relief clamp with screws and rubber seal are provided.

#### 6.1 DHC-E 8/10 - Appliance with output power options

For the DHC-E 8/10 instantaneous water heater, the output power is adjustable in 2 stages. In its delivered condition the appliance is set to 7.2 kW @ 240 V.



1 coding plug

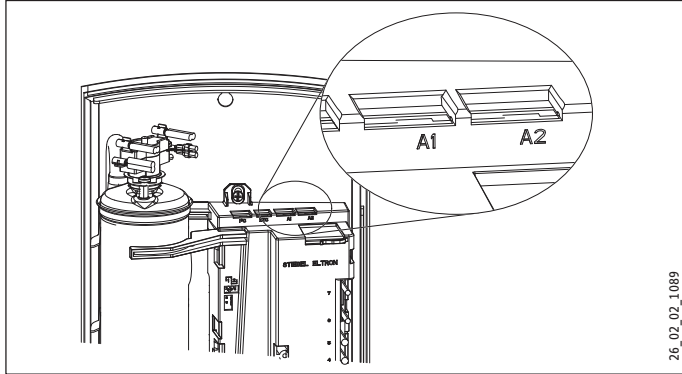
If the appliance should be installed with a different output power, take the following steps:

- ▶ Select the output power:
  - 1 = 7.2 kW @ 240 V;
  - 2 = 9.6 kW @ 240 V.
- ▶ Set coding plug on the appliance according to the output power selected. For rated current and fuse, see specification.
- ▶ Mark the selected output power on the type plate with a permanent marker.

## INSTALLATION

### PUTTING THE WATER HEATER INTO OPERATION

#### 6.2 Temperature setting/anti-scalding protection



- Connect the lead of the electronic temperature control to position „A1“ in order to get the maximum outlet temperature of 140 °F (60 °C).

The maximum temperature can be limited to 109 °F (43 °C):

- Connect the lead of the electronic temperature control to position „A2“.
- Reinstall the plastic cover.

#### 7. Putting the water heater into operation



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



**Damage to the appliance and the environment**  
Open hot water faucet for a few minutes until water flow is continuous and all air is purged from water pipes. The appliance's plastic cover must be installed before the circuit breaker is turned on.

- Turn on circuit breaker to bring electrical power to the appliance.
- Turn the temperature selector clockwise and anti-clockwise, to calibrate the set value transducer.
- Adjust the water temperature to the desired level using the knob on the front cover of the appliance.
- Turn on hot water and wait twenty seconds until temperature has stabilized.
- Check the water temperature with your hand and make sure that it does not feel too hot. Reduce if necessary.
- Explain to the user how the appliance works and familiarise him or her with its use.
- Advise the user about possible hazards (hot water temperature up to 140 °F (60 °C). Hand over these instructions, to be kept for future reference.

- A setting of 108 °F - 116 °F (42 - 47 °C) is recommended for most applications.

#### 7.1 Appliance handover

Explain the functions of the appliance to the user. Draw special attention to the safety information. Hand the operating and installation instructions to the user.

### 8. Troubleshooting

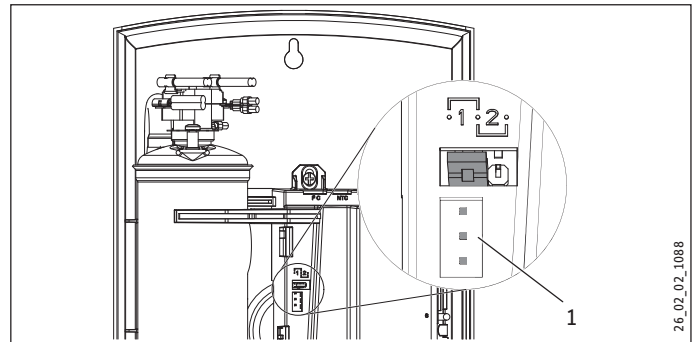


**Danger of electrocution**  
To test the appliance, it must be supplied with power.

#### 8.1 Display options LED diagnostic „traffic lights“

##### Display options

	green	flashing: The appliance is supplied with power
	yellow	illuminates when the appliance is heating water
	red	illuminates in case of faults



1 LED diagnostic „traffic lights“

#### 8.2 Fault table

Symptom	Possible Cause	► Solution
No hot water	circuit breaker off safety thermal cut-out tripped	turn circuit breaker on reset thermal cut-out
	not enough flow rate to activate appliance	clean filter screen at appliance clean faucet aerator or shower head
Not enough hot water	filter screen clogged	clean filter screen at appliance
Water not hot enough	water flow too high	reduce water flow rate until light on front cover stops blinking supply correct voltage to appliance

- If you are not able to resolve a problem please contact us, see last side, before removing the appliance from the wall. STIEBEL ELTRON is happy to provide technical assistance. In most instances, we can resolve the problem over the phone.

## INSTALLATION

## NORMAL MAINTENANCE

### 9. Normal maintenance

STIEBEL ELTRON tankless water heaters are designed for a very long service life. Actual life expectancy will vary with water quality and use. The appliance itself does not require any regular maintenance.

However, to ensure consistent water flow, it is recommended to periodically remove scale and dirt that may build up at the aerator of the faucet(s), the filter screen in the appliance, or in the shower head.

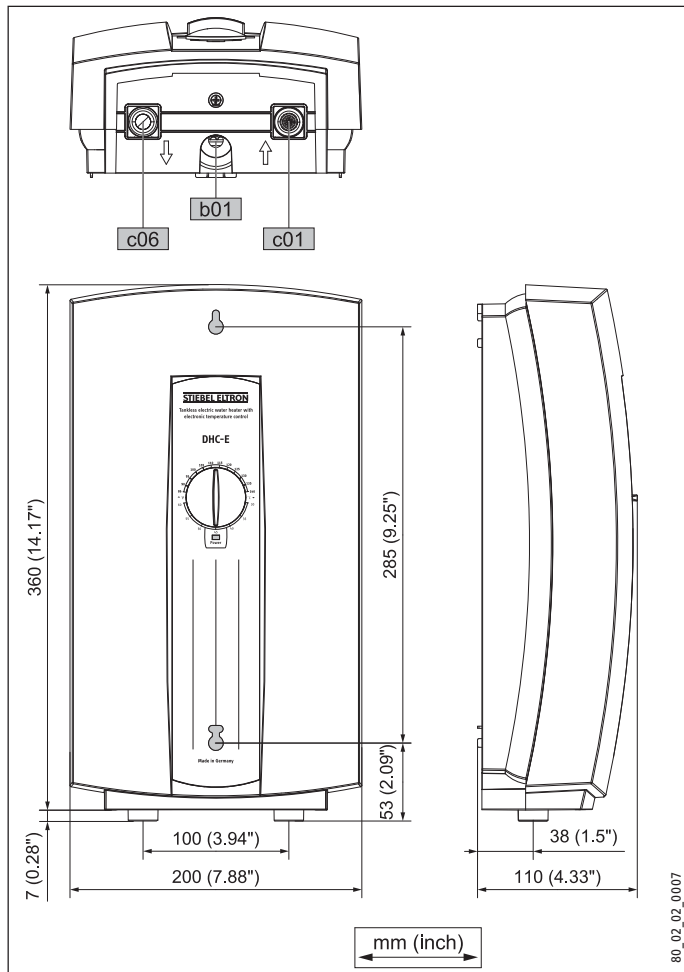


#### Damage to the appliance and the environment

Other than the filter screen, the appliance does not contain any parts serviceable by the lay person. In case of malfunction please contact a licensed plumber or electrician.

### 10. Technical Data

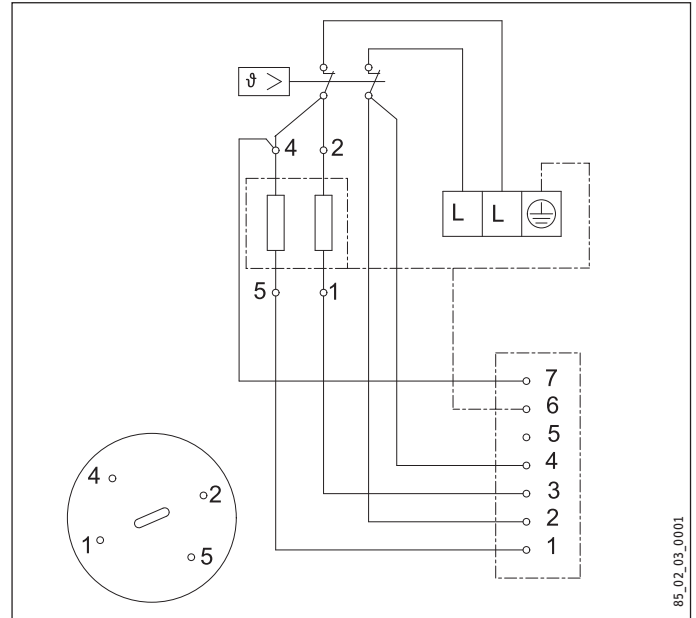
#### 10.1 Dimensioned drawing



- c01 cold water connection
- c06 hot water connection
- b01 electrical supply cable

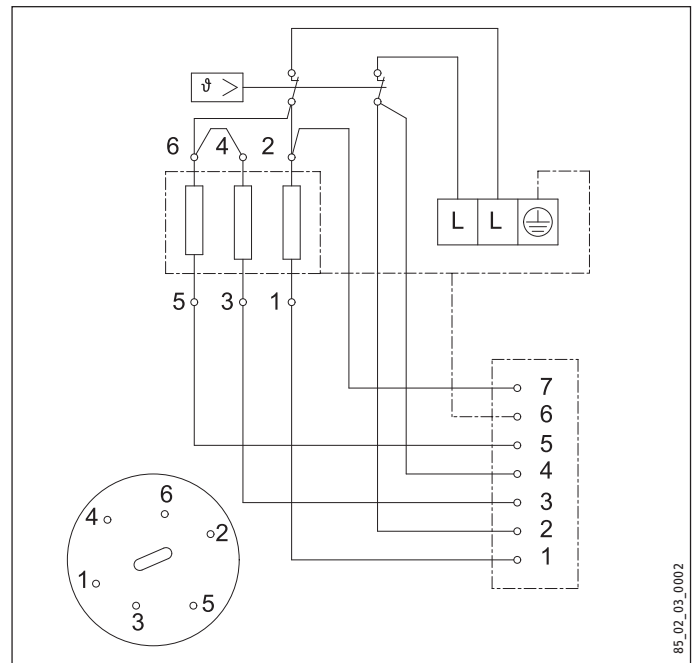
#### 10.2 Wiring diagram

##### DHC-E 8/10



2/GRD ~ 208 ... 240 V

##### DHC-E 12



2/GRD ~ 208 ... 240 V



# INSTALLATION

## TECHNICAL DATA

### 10.3 Maximum temperature increase above ambient water temperature

#### 10.3.1 Warm water flow rate [ GMP ]

Warm water outlet temperature 104 °F												
Cold water inlet temperature	°F	39	50	59	68	77	86	95	104	113	122	131
DHC-E 8/10	5.4 kW @ 208 V	0.57	0.68	0.82	1.02	1.36	2.04	4.09	-	-	-	-
	7.2 kW @ 240 V	0.76	0.91	1.09	1.36	1.82	2.72	5.45	-	-	-	-
	7.2 kW @ 208 V	0.76	0.91	1.09	1.36	1.82	2.72	5.45	-	-	-	-
	9.6 kW @ 240 V	1.01	1.21	1.45	1.82	2.42	3.63	6.61	-	-	-	-
DHC-E 12	9 kW @ 208 V	0.95	1.14	1.36	1.70	2.27	3.26	6.24	-	-	-	-
	12 kW @ 240 V	1.26	1.51	1.82	2.27	3.03	4.35	6.61	-	-	-	-
Warm water outlet temperature 113 °F												
Cold water inlet temperature	°F	39	50	59	68	77	86	95	104	113	122	131
DHC-E 8/10	5.4 kW @ 208 V	0.50	0.58	0.68	0.82	1.02	1.36	2.04	4.09	-	-	-
	7.2 kW @ 240 V	0.66	0.78	0.91	1.09	1.36	1.82	2.72	5.45	-	-	-
	7.2 kW @ 208 V	0.66	0.78	0.91	1.09	1.36	1.82	2.72	5.45	-	-	-
	9.6 kW @ 240 V	0.89	1.04	1.21	1.45	1.82	2.42	3.63	6.61	-	-	-
DHC-E 12	9 kW @ 208 V	0.83	0.97	1.14	1.36	1.70	2.18	3.12	5.96	-	-	-
	12 kW @ 240 V	1.11	1.30	1.51	1.82	2.27	2.90	4.16	6.61	-	-	-
Warm water outlet temperature 140 °F												
Cold water inlet temperature	°F	39	50	59	68	77	86	95	104	113	122	131
DHC-E 8/10	5.4 kW @ 208 V	0.36	0.41	0.45	0.51	0.58	0.68	0.82	1.02	1.36	2.04	4.09
	7.2 kW @ 240 V	0.49	0.54	0.61	0.68	0.78	0.91	1.09	1.36	1.82	2.72	5.45
	7.2 kW @ 208 V	0.49	0.54	0.61	0.68	0.78	0.91	1.09	1.36	1.82	2.72	5.45
	9.6 kW @ 240 V	0.65	0.73	0.81	0.91	1.04	1.21	1.45	1.82	2.42	3.63	6.61
DHC-E 12	9 kW @ 208 V	0.61	0.68	0.76	0.85	0.97	1.09	1.25	1.49	1.89	2.70	5.11
	12 kW @ 240 V	0.81	0.91	1.01	1.14	1.30	1.45	1.66	1.99	2.52	3.59	6.61

#### 10.3.2 Warm water flow rate [ l/min ]

Warm water outlet temperature 40 °C												
Cold water inlet temperature	°C	4	10	15	20	25	30	35	40	45	50	55
DHC-E 8/10	5.4 kW @ 208 V	2.15	2.58	3.09	3.87	5.16	7.73	15.47	-	-	-	-
	7.2 kW @ 240 V	2.86	3.44	4.12	5.16	6.87	10.31	20.62	-	-	-	-
	7.2 kW @ 208 V	2.86	3.44	4.12	5.16	6.87	10.31	20.62	-	-	-	-
	9.6 kW @ 240 V	3.82	4.58	5.50	6.87	9.16	13.75	25.00	-	-	-	-
DHC-E 12	9 kW @ 208 V	3.58	4.30	5.16	6.44	8.59	12.35	23.63	-	-	-	-
	12 kW @ 240 V	4.77	5.73	6.87	8.59	11.46	16.47	25.00	-	-	-	-
Warm water outlet temperature 45 °C												
Cold water inlet temperature	°C	4	10	1	20	25	30	35	40	45	50	55
DHC-E 8/10	5.4 kW @ 208 V	1.89	2.21	2.58	3.09	3.87	5.16	7.73	15.47	-	-	-
	7.2 kW @ 240 V	2.51	2.95	3.44	4.12	5.16	6.87	10.31	20.62	-	-	-
	7.2 kW @ 208 V	2.51	2.95	3.44	4.12	5.16	6.87	10.31	20.62	-	-	-
	9.6 kW @ 240 V	3.35	3.93	4.58	5.50	6.87	9.16	13.75	25.00	-	-	-
DHC-E 12	9 kW @ 208 V	3.14	3.68	4.30	5.16	6.44	8.23	11.81	22.55	-	-	-
	12 kW @ 240 V	4.19	4.91	5.73	6.87	8.59	10.98	15.75	25.00	-	-	-
Warm water outlet temperature 60 °C												
Cold water inlet temperature	°C	4	10	15	20	25	30	35	40	45	50	55
DHC-E 8/10	5.4 kW @ 208 V	1.38	1.55	1.72	1.93	2.21	2.58	3.09	3.87	5.16	7.73	15.47
	7.2 kW @ 240 V	1.84	2.06	2.29	2.58	2.95	3.44	4.12	5.16	6.87	10.31	20.62
	7.2 kW @ 208 V	1.84	2.06	2.29	2.58	2.95	3.44	4.12	5.16	6.87	10.31	20.62
	9.6 kW @ 240 V	2.45	2.75	3.05	3.44	3.93	4.58	5.50	6.87	9.16	13.75	25.00
DHC-E 12	9 kW @ 208 V	2.30	2.58	2.86	3.22	3.68	4.12	4.73	5.64	7.16	10.20	19.33
	12 kW @ 240 V	3.07	3.44	3.82	4.30	4.91	5.49	6.30	7.52	9.55	13.60	25.00

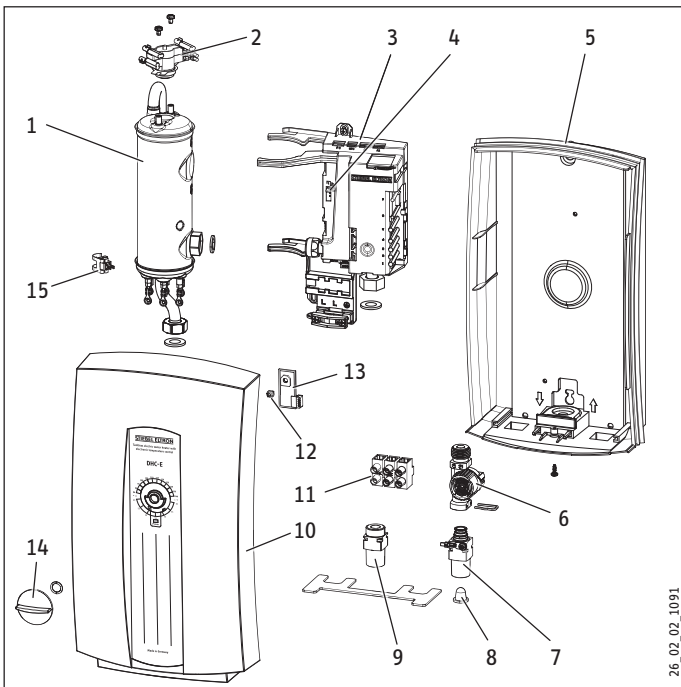
## INSTALLATION SPARE PARTS

### 10.4 Data table

		DHC-E 8/10								DHC-E 12			
Part number		224201								230628			
Phase		1	1	1	1	1	1	1	1	1	1	1	1
Voltage	V	208	220	230	240	208	220	230	240	208	220	230	240
Coding plug	Position	1	1	1	1	2	2	2	2	-	-	-	-
Output power	kW	5.4	6.0	6.6	7.2	7.2	8.1	8.8	9.6	9	10	11	12
Ampere	A	28	30	31	32	35	37	39	40	44	46	48	50
Min. required circuit breaker size	A	40	40	40	40	50	50	50	50	60	60	60	60
Recommended wire size	AWG COPPER	10	-	-	8	8	-	-	8	6	-	-	6
Recommended wire size	mm <sup>2</sup>	-	6	6	-	-	10	10	-	-	10	10	-
Protection level		IP 24								IP 24			
Min. water flow to activate appliance	GPM / l/min	0.37 / 1.4								0.37 / 1.4			
Nominal water volume	GAL / l	0.13 / 0.5								0.13 / 0.5			
Working pressure max.	PSI / bar	150 / 10								150 / 10			
Tested to pressure	PSI / bar	300 / 20								300 / 20			
Weight	lbs. / kg	5.9 / 2.7								5.9 / 2.7			
Water connections		1/2" NPT								1/2" NPT			

- Suitable for supply with up to 131 °F / 55 °C
- Tankless water heaters are considered a non-continuous load
- Conductors should be sized to maintain a voltage drop of less than 3 % under load

### 11. Spare parts



No.	No. Spare part	DHC-E 8/10	DHC-E 12
1	Heating system	292575	292576
2	Safety thermal cut out	286369	286369
3	Electronic control appliance	291851	291852
4	Coding plug	283455	---
5	Back panel	292578	292578
6	Flow sensor DFE	286461	286461
7	Cold water connection	291699	291699
8	Filter screen	275981	275981
9	Hot water connection	278634	278634
10	Plastic cover	292577	292577
11	Wiring block	279998	279998
12	Axis connection plug	254312	254312
13	Electronic temperature control	286359	286359
14	Temperature adjustment knob	254307	254307
15	Outlet temperature sensor	280677	280677

## WARRANTY | ENVIRONMENT AND RECYCLING

## Warranty

Residential & commercial warranty: Stiebel Eltron, Inc. warrants to the original owner that the DHC-E tankless electric water heater will be free from defects in workmanship and materials for a period of three (3) years from the date of purchase, and free from leakage for a period of seven (7) years from the date of purchase. Should the part(s) prove to be defective under normal use during this period, Stiebel Eltron, Inc. will be responsible for replacement of the defective part(s) only. Stiebel Eltron, Inc. is not responsible for labor charges to remove and/or replace the defective part(s), or any incidental or consequential expenses.

Should the owner wish to return the tankless electric water heater for repair, the owner must first secure written authorization from Stiebel Eltron, Inc. The owner shall be required to show proof of purchase date, and to pay all transportation costs to return the defective part(s) or tankless electric water heater for repair or replacement. Warranty is void if water heater has been installed or used improperly or if design has been altered in any way.

Make any warranty claim in the country where you purchased the appliance. In such cases, please contact our representation or the importer.

Our warranty applies only if:

- These installation instructions have been observed
- Exclusively accessories designated for this appliance have been used
- All required steps up to and including commissioning have been carried out by a qualified contractor
- Maintenance as specified has been carried out
- Exclusively our spare parts have been used for repairs

## Environment and recycling

Please help us protect the environment. Dispose of the appliance and its packaging in accordance with national regulations.