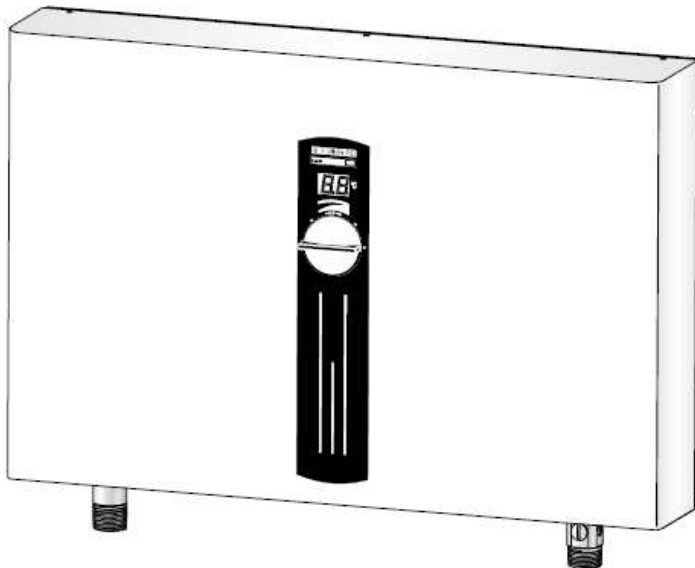


## DHC-E 20, DHC-E 30

# DHC-E TANKLESS ELECTRIC WATER HEATERS INSTALLATION INSTRUCTIONS FOR THE LICENSED PLUMBER AND ELECTRICIAN



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## Maximum temperature increase above ambient water temperature

<b>105 °F Warm water outlet temperature</b> <b>105 °F Temperatura del agua caliente</b>			<b>Warm water flow rate [ GPM ]</b> <b>Flujo de agua caliente [ GPM ]</b>							
Type / Tipo	kW		<b>Cold water inlet temperature</b> <b>agua fría temperatura de entrada</b>							
			39 °F	50 °F	59 °F	68 °F	77 °F	86 °F	95 °F	104 °F
<b>DHC-E 20</b>	@ 208 V	14.4	1.51	1.82	2.18	2.72	3.63	5.45		
	@ 220 - 240 V	19.2	2.02	2.42	2.91	3.63	4.84			
<b>DHC-E 30</b>	@ 208 V	21.6	2.27	2.72	3.27	4.09	5.45			
	@ 220 - 240 V	28.8	3.03	3.63	4.36	5.45				

<b>40 °C Warm water outlet temperature</b> <b>40 °C Temperatura del agua caliente</b>			<b>Warm water flow rate [ l/min ]</b> <b>Flujo de agua caliente [ l/min ]</b>							
Type / Tipo	kW		<b>Cold water inlet temperature</b> <b>agua fría temperatura de entrada</b>							
			4 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C
<b>DHC-E 20</b>	@ 208 V	14.4	5.73	6.87	8.25	10.31	13.75	20.62		
	@ 220 - 240 V	19.2	7.64	9.16	11.00	13.75	18.33			
<b>DHC-E 30</b>	@ 208 V	21.6	8.59	10.31	12.37	15.47	20.62			
	@ 220 - 240 V	28.8	11.46	13.75	16.50	20.62				

<b>113 °F Warm water outlet temperature</b> <b>113 °F Temperatura del agua caliente</b>			<b>Warm water flow rate [ GPM ]</b> <b>Flujo de agua caliente [ GPM ]</b>							
Type / Tipo	kW		<b>Cold water inlet temperature</b> <b>agua fría temperatura de entrada</b>							
			39 °F	50 °F	59 °F	68 °F	77 °F	86 °F	95 °F	104 °F
<b>DHC-E 20</b>	@ 208 V	14.4	1.33	1.56	1.82	2.18	2.72	3.63	5.45	
	@ 220 - 240 V	19.2	1.77	2.08	2.42	2.91	3.63	4.84		
<b>DHC-E 30</b>	@ 208 V	21.6	1.99	2.33	2.72	3.27	4.09	5.45		
	@ 220 - 240 V	28.8	2.66	3.11	3.63	4.36	5.45			

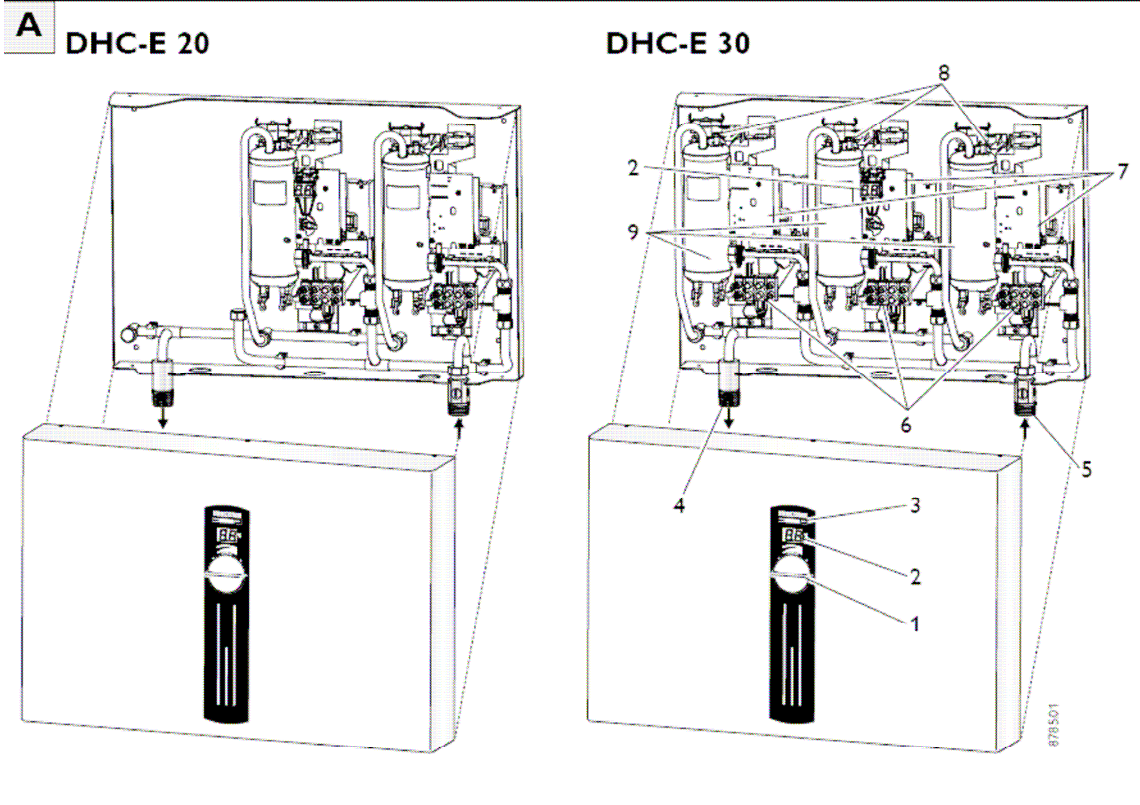
<b>45 °C Warm water outlet temperature</b> <b>45 °C Temperatura del agua caliente</b>			<b>Warm water flow rate [ l/min ]</b> <b>Flujo de agua caliente [ l/min ]</b>							
Type / Tipo	kW		<b>Cold water inlet temperature</b> <b>agua fría temperatura de entrada</b>							
			4 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C
<b>DHC-E 20</b>	@ 208 V	14.4	5.03	5.89	6.87	8.25	10.31	13.75	20.62	
	@ 220 - 240 V	19.2	6.71	7.86	9.16	11.00	13.75	18.33		
<b>DHC-E 30</b>	@ 208 V	21.6	7.54	8.84	10.31	12.37	15.47	20.62		
	@ 220 - 240 V	28.8	10.06	11.78	13.75	16.50	20.62			

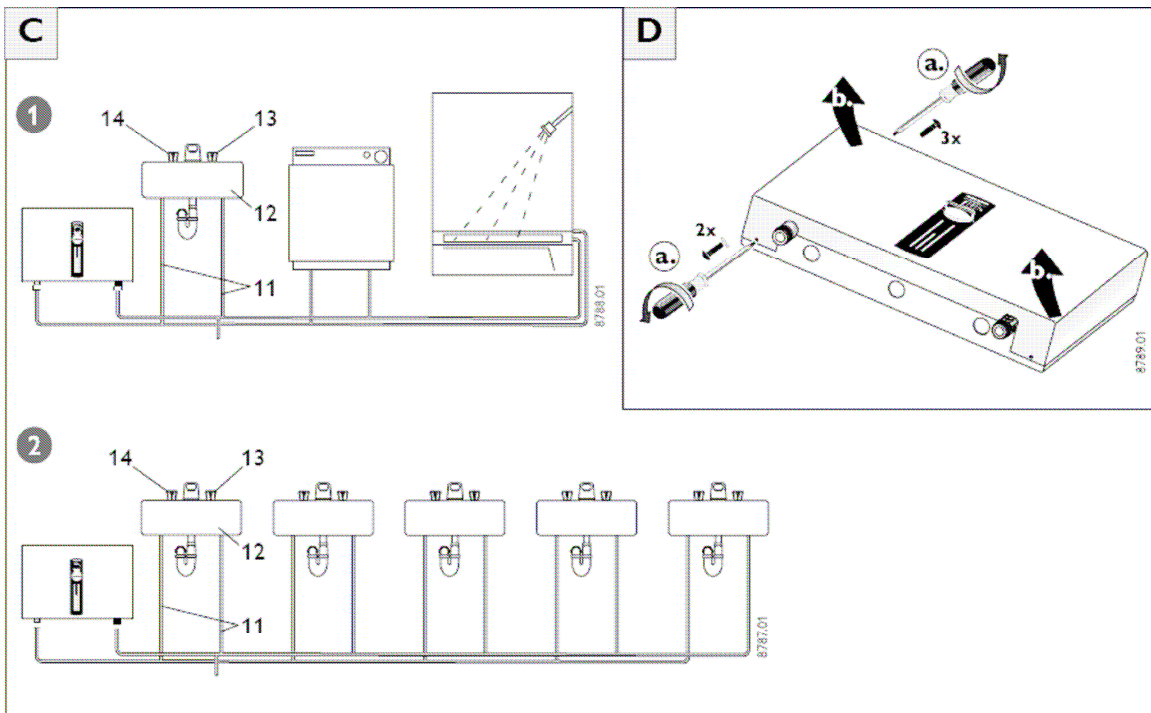
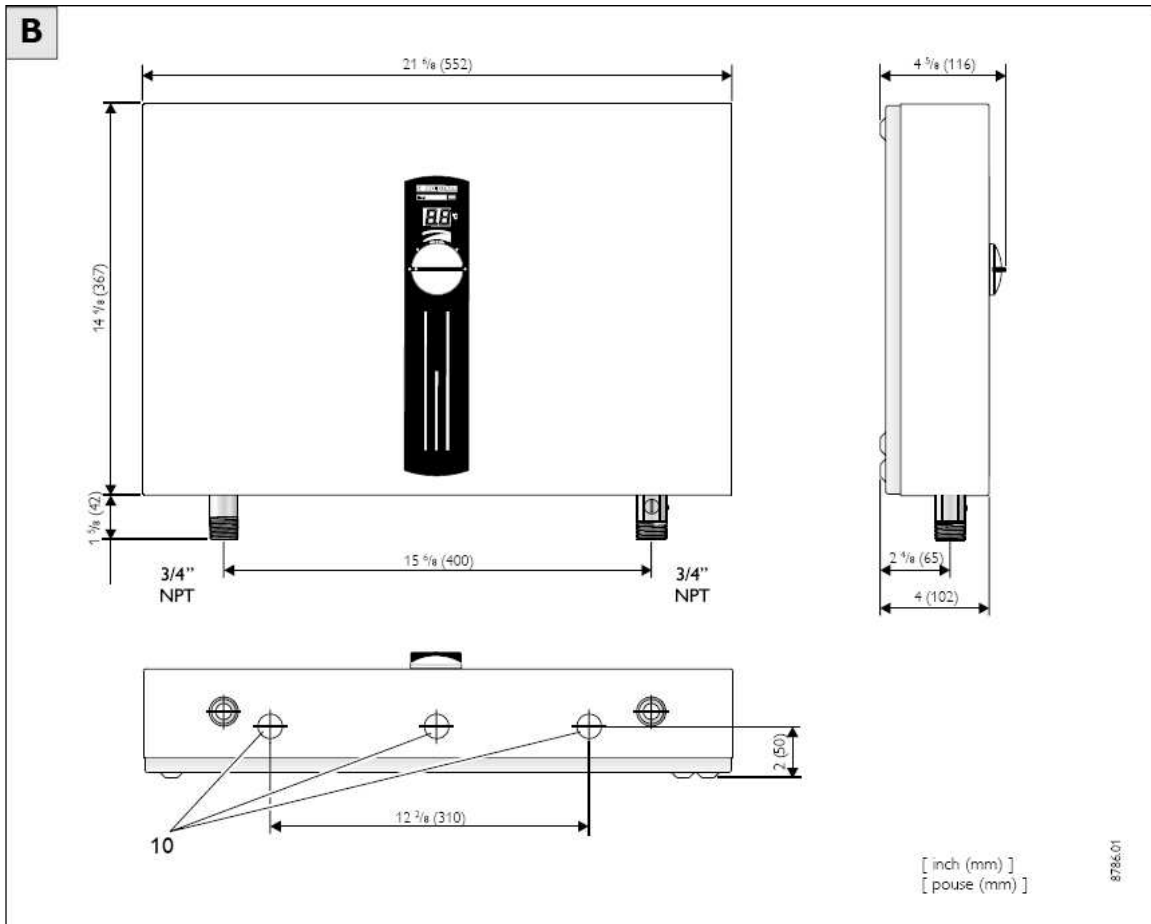
125.6 °F Warm water outlet temperature 125.6 °F Temperatura del agua caliente			Warm water flow rate [ GPM ] Flujo de agua caliente [ GPM ]							
Type / Tipo		kW	Cold water inlet temperature agua fría temperatura de entrada							
			39 °F	50 °F	59 °F	68 °F	77 °F	86 °F	95 °F	104 °F
<b>DHC-E 20</b>	@ 208 V	14.4	1.14	1.30	1.47	1.70	2.02	2.48	3.20	4.54
	@ 220 - 240 V	19.2	1.51	1.73	1.96	2.27	2.69	3.30	4.27	6.05
<b>DHC-E 30</b>	@ 208 V	21.6	1.70	1.95	2.21	2.55	3.03	3.71	4.81	
	@ 220 - 240 V	28.8	2.27	2.59	2.94	3.41	4.04	4.95	6.41	

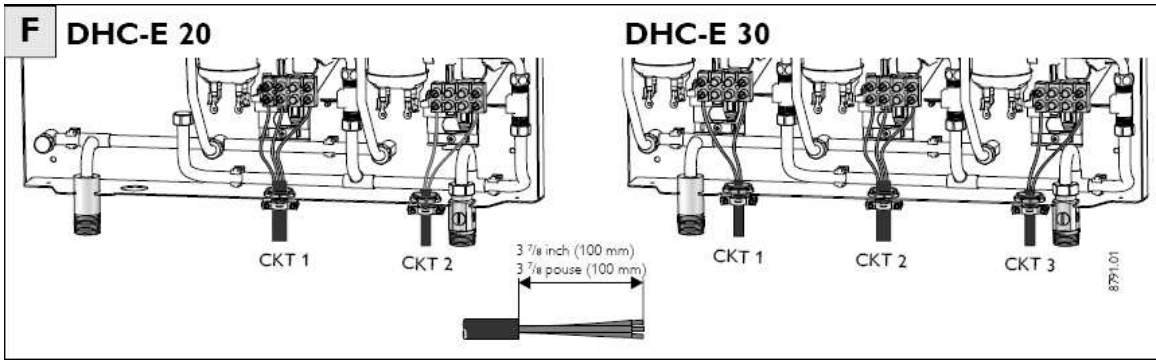
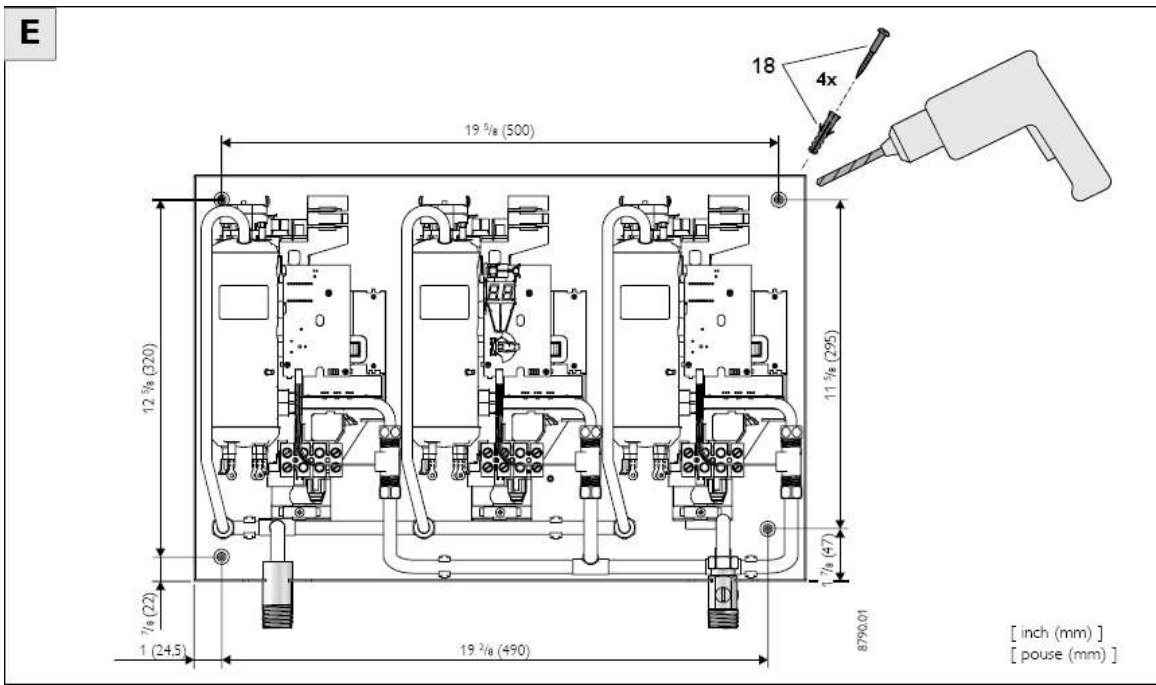
  

52 °C Warm water outlet temperature 52 °C Temperatura del agua caliente			Warm water flow rate [ l/min ] Flujo de agua caliente [ l/min ]							
Type / Tipo		kW	Cold water inlet temperature agua fría temperatura de entrada							
			4 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C
<b>DHC-E 20</b>	@ 208 V	14.4	4.30	4.91	5.57	6.44	7.64	9.37	12.13	17.18
	@ 220 - 240 V	19.2	5.73	6.55	7.43	8.59	10.18	12.50	16.17	22.91
<b>DHC-E 30</b>	@ 208 V	21.6	6.44	7.36	8.36	9.67	11.46	14.06	18.19	
	@ 220 - 240 V	28.8	8.59	9.82	11.15	12.89	15.27	18.75	24.26	

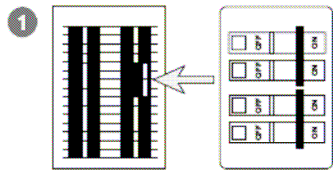
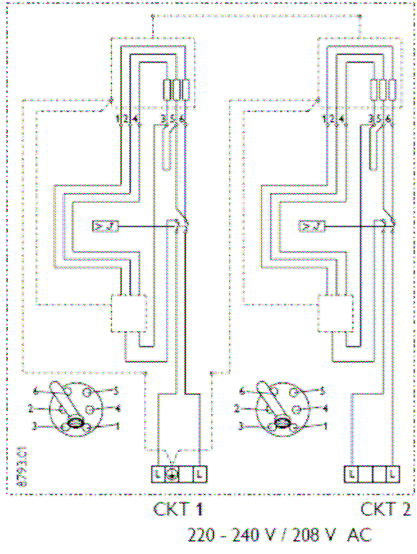
Table 1



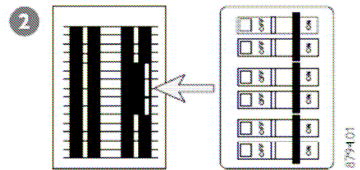
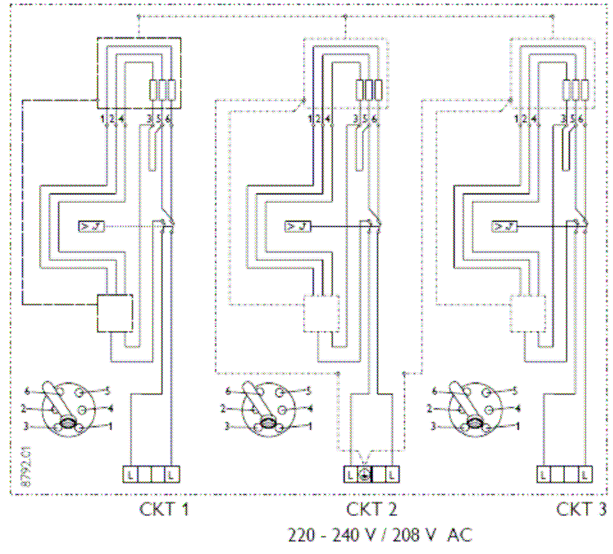


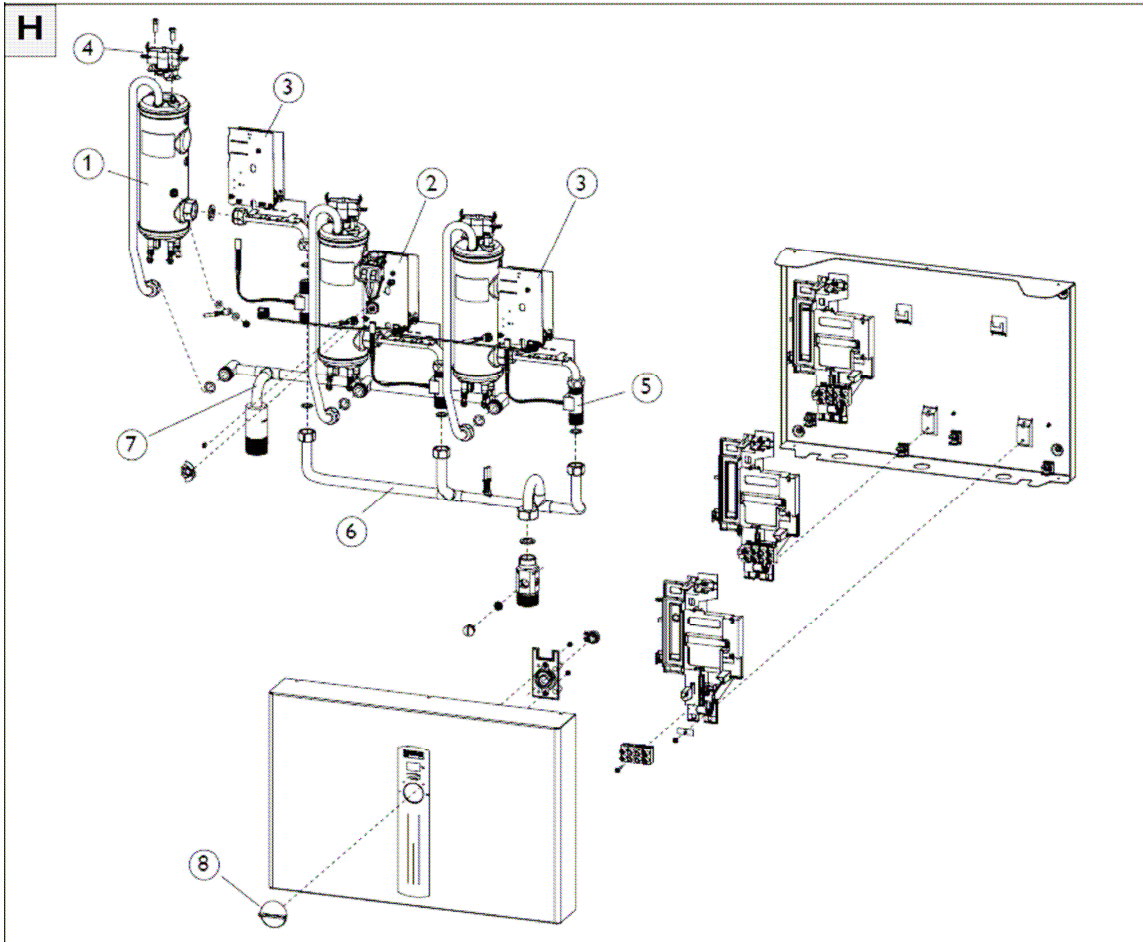


**G DHC-E 20**



**DHC-E 30**





THIS MANUAL MUST BE READ CAREFULLY BEFORE ATTEMPTING TO INSTALL THE DHC-E WATER HEATER. IF YOU DO NOT FOLLOW THE SAFETY RULES OR THE INSTRUCTIONS OUTLINED IN THIS MANUAL, THE UNIT MAY NOT OPERATE PROPERLY AND IT COULD CAUSE PROPERTY DAMAGE, SERIOUS BODILY INJURY AND/OR DEATH.

STIEBEL ELTRON, INC. WILL NOT BE LIABLE FOR ANY DAMAGES BECAUSE OF FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OUTLINED IN THIS MANUAL OR BECAUSE OF IMPROPER USE. IMPROPER USE INCLUDES THE USE OF THIS APPLIANCE TO HEAT ANY LIQUID OTHER THAN WATER. FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OR IMPROPER USE VOIDS WARRANTY. NEVER REMOVE THE UNIT'S COVER UNLESS THE ELECTRICITY IS TURNED OFF.

IF YOU HAVE ANY QUESTIONS REGARDING THE INSTALLATION OR OPERATION OF THIS WATER HEATER, OR IF YOU NEED AN ADDITIONAL INSTALLATION MANUALS, PLEASE CALL OUR TECHNICAL SERVICE LINE AT 800-582-8423 (USA AND CANADA ONLY). IF YOU ARE CALLING FROM OUTSIDE THE U.S. OR CANADA, PLEASE CALL USA 413-538-7850 AND WE WILL REFER YOU TO A QUALIFIED STIEBEL ELTRON SERVICE REPRESENTATIVE IN YOUR AREA.



## Legend to figures

- 1 Temperature adjustment knob
- 2 Temperature display
- 3 "Power" light
- 4 Hot water connection
- 5 Cold water connection
- 6 Wiring block
- 7 Electronic control unit
- 8 Safety thermal cut out
- 9 Heating system
- 10 Knock-outs for wires
- 11 Water supply line for faucet installation
- 12 Sink
- 13 Cold valve (right)
- 14 Hot valve (left)
- 15 Screws and plastic wall anchors

## General

The DHC-E 20 and DHC-E 30 are designed to supply hot water for a house or apartment. Unlike a conventional storage type water heater the DHC-E tankless water heater does not store hot water. Instead, water is heated instantaneously as it flows through the unit. Due to the absence of stand-by losses, the DHC-E offers greater energy efficiency than storage type water heaters.

The input of heat into the water is controlled electronically. The DHC-E will deliver any water temperature between 86 °F (30 °C) and 125 °F (52 °C). Please set the desired temperature using the knob on the front cover. The LED displays the temperature that the unit will produce in °C. Please use the conversion table on the unit in order to obtain degree Fahrenheit. The maximum temperature is electronically limited to 125 °F (52 °C).

In case the "Power" light is flashing while the unit operates, the water flow rate exceeds the heating capacity of the unit. Reduce the hot water flow rate in order to let the unit achieve the set point temperature. In case you have questions regarding the way you plan to use the DHC-E, 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 USA 413-538-7850. You can also e-mail us at [info@stiebel-eltron-usa.com](mailto:info@stiebel-eltron-usa.com) or fax us at USA 413-538-8555. One DHC-E can be used for the following applications.

**(C)1** Typical residential installation

**(C)2** Typical commercial installation

## Mounting the unit

**UNIT MUST BE INSTALLED IN A VERTICAL POSITION WITH THE WATER FITTINGS POINTING DOWNWARD. DO NOT INSTALL UNIT WHERE IT WOULD ROUTINELY BE SPLASHED WITH WATER. ELECTRIC SHOCK MAY RESULT.**

1. Install DHC-E as close as possible to the main hot water draw-off points.
2. Install DHC-E in a frost free area. If frost may occur, remove unit before freezing temperatures set in.
3. Leave a minimum of 5" of clearance on all sides for servicing.
4. Remove the cover **(D)** .
5. Mount unit securely to wall by putting four screws through mounting holes **(E)** . Screws and plastic wall anchors for mounting on masonry or wood are provided.

## Water connections

1. All plumbing work must comply with national and applicable state and local plumbing codes.
2. A pressure reducing valve must be installed if the cold water supply pressure exceeds 150 PSI (10 bar).
3. Make certain that the cold water supply line has been flushed to remove any scale and dirt.
4. An isolating valve is an integral part of the cold water inlet. This valve allows the unit to be isolated for maintenance purposes.
5. The cold water connection (inlet) is on the right side of the unit, and the hot water connection (outlet) is on the left side of the unit.  
**NOTE: EXCESSIVE HEAT FROM SOLDERING ON COPPER PIPES NEAR THE DHC-E MAY CAUSE DAMAGE.**
6. 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 the unit.
7. The DHC-E is designed for connection to copper tubing, PEX tubing or a braided stainless steel hose with a 3/4. NPT female tapered thread. If soldering near the unit is necessary, please direct the flame away from the housing of the unit in order to avoid damage.
8. When all plumbing work is completed, check for leaks and take corrective action before proceeding.



# STIEBEL ELTRON

## Electrical connection

**WARNING: BEFORE BEGINNING ANY WORK ON THE ELECTRIC INSTALLATION, BE SURE THAT MAIN BREAKER PANEL SWITCHES ARE "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 CIRCUITS SHOULD BE EQUIPPED WITH A "GROUND FAULT INTERRUPTER".**

1. All electrical work must comply with national and applicable state and local electrical codes.
2. The DHC-E should be connected to properly grounded dedicated branch circuits of proper voltage rating. Ground must be brought to the Ground at the circuit breaker panel. The DHC-E 20 and DHC-E 30 must have multiple power sources **G**.

A **DHC-E 20** requires two independent circuits. Use two AGW # 8 supply cables protected by two separate double pole 50 Amp. breakers (see **(1)**.) A **DHC-E 30** requires three independent circuits. Use three AGW # 8 supply cables protected by three separate double pole 50 Amp. breakers. In both cases, make sure that the unit is properly grounded (see **(2)**.) Please refer to the technical data table for the correct wire and circuit breaker size.

3. The wire must be fed through the knockouts located between the hot and cold water connections **F**. 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.
4. Reinstall the cover with screws.

**WARNING: AS WITH ANY ELECTRIC APPLIANCE, FAILURE TO ELECTRICALLY GROUND UNIT MAY RESULT IN SERIOUS INJURY OR DEATH.**

## Putting the water heater into operation

**WARNING: OPEN HOT WATER FAUCET FOR A FEW MINUTES UNTIL WATER FLOW IS CONTINUOUS AND ALL AIR IS PURGED FROM WATER PIPES. THE UNIT'S COVER MUST BE INSTALLED BEFORE THE CIRCUIT BREAKERS ARE TURNED ON.**

1. Turn on circuit breakers to bring electrical power to the unit.
2. Adjust the water temperature to the desired level using the knob on the front cover of the unit. The DHC-E displays the temperature in degree Celsius. There is a conversion table on the front cover that helps to convert from degree Celsius to degree Fahrenheit.
3. Turn on hot water and wait twenty seconds until temperature has stabilized.
4. Check the water temperature with your hand and make sure that it does not feel too hot. Reduce if necessary.

5. Explain to the user how the unit works and familiarize him or her with its use. Advise the user about possible hazards (hot water temperature up to 125 °F / 52 °C). Hand over these instructions, to be kept for future reference.

## Normal Maintenance

**STIEBEL ELTRON DHC-E** tankless water heaters are designed for a very long service life. Actual life expectancy will vary with water quality and use. The unit 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 or in the shower head. Also, the DHC-E has a built in filter screen that should be cleaned from time to time. In order to do this, turn off the cold water supply at the isolating valve and remove the cap of the filter screen (**H**). Clean screen and put the screen and cap back into their original position.

**OTHER THAN THE FILTER SCREEN, THE DHC-E DOES NOT CONTAIN ANY PARTS SERVICEABLE BY THE LAY PERSON. IN CASE OF MALFUNCTION PLEASE CONTACT A LICENSED PLUMBER OR ELECTRICIAN.**

## Technical Data

Model	DHC-E 20		DHC-E 30		
Phase	1		1		
Voltage	V	208	220 - 240	208	220 - 240
Wattage	kW	14.4	19.2	21.6	28.8
Max. amp. load	A	70	80	105	120
Min. required circuit breaker size	A	2 x 40	2 x 50	3 x 40	3 x 50
Required wire size	AWG COPPER	8	8	8	8
Min. water flow to activate unit	GPM / l/min	0.58 / 2.2		0.87 / 3.3	
Pressure loss in unit	PSI / bar	1.45 / 0.1		1.45 / 0.1	
Nominal water volume	GAL / l	0.26 / 1.0		0.39 / 1.5	
Working pressure max.	PSI / bar	150 / 10			
Tested to pressure	PSI / bar	300 / 20			
Weight	lbs. / kg	21 / 9.5		24.25 / 11	
Water connections	NPT	3/4"			

- Suitable for supply with water up to 107.6 °F / 42 °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

## Troubleshooting

Symptom	Possible Cause	Solution
No hot water	<ul style="list-style-type: none"> <li>- circuit breakers off</li> <li>- safety thermal cut-out tripped</li> <li>- not enough flow rate to activate unit</li> </ul>	<ul style="list-style-type: none"> <li>- turn circuit breakers on</li> <li>- reset thermal cut-out</li> <li>- clean filter screen at unit</li> <li>- clean faucet aerator or shower head</li> </ul>
Water not hot enough	<ul style="list-style-type: none"> <li>- water flow rate too high</li> <li>- voltage too low</li> </ul>	<ul style="list-style-type: none"> <li>- reduce water flow rate until light on front cover stops blinking</li> <li>- supply correct voltage to unit</li> </ul>
LED displays one of the following fault codes: 91, 92, 93, 94, 95, 96, 97	- problem with electronic control module	- contact STIEBEL ELTRON.

If you are not able to resolve a problem please contact us toll free at 800-582-8423 before removing the unit from the wall. STIEBEL ELTRON is happy to provide technical assistance. In most instances, we can resolve the problem over the phone.

## Spare parts

No. Spare part	Model	DHC-E 20	DHC-E 30
① Heating system		24 91 58	
② Electronic control device: Master		24 93 18	
③ Electronic control device: Slave		24 93 19	
④ Safety thermal cut out		17 03 05	
⑤ Flow sensor		24 91 59	
⑥ Cold water connection		24 91 67	
⑦ Warm water connection		24 91 68	
⑧ Temperature adjustment knob		16 35 73	

## WARRANTY

RESIDENTIAL & COMMERCIAL WARRANTY: STIEBEL ELTRON WARRANTS TO THE ORIGINAL OWNER THAT THE DHC-ETANKLESS ELECTRIC WATER HEATER WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF THREE 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.

**STIEBEL ELTRON, INC.**

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