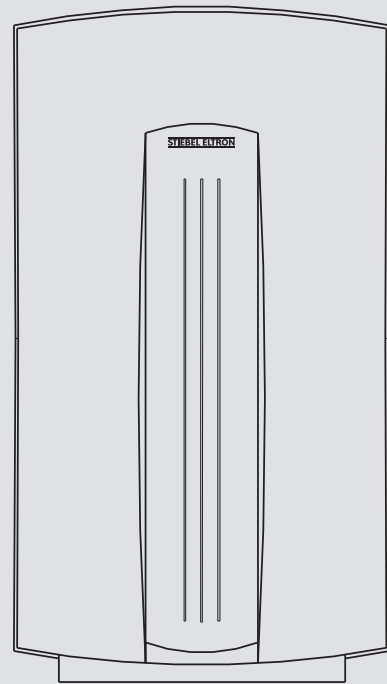


OPERATION AND INSTALLATION UTILISATION ET INSTALLATION OPERACIÓN E INSTALACIÓN

TANKLESS ELECTRIC WATER HEATER | CHAUFFE-EAU ÉLECTRIQUE SANS ACCUMULATEUR |
CALENTADOR DE AGUA INSTANTANEOS SIN TANQUE

- » DHC 3-1
- » DHC 3-2
- » DHC 4-2
- » DHC 4-3
- » DHC 5-2
- » DHC 6-2
- » DHC 8-2
- » DHC 9-3
- » DHC 10-2



STIEBEL ELTRON



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

CONTENTS | OPERATION

OPERATION

1.	General information	2
1.1	Safety information	2
1.2	Other symbols in this document	2
2.	Safety	2
2.1	Intended use	3
2.2	General Information	3
2.3	Safety Precautions	3
2.4	Test symbols	3
3.	General	3

INSTALLATION

4.	Mounting the unit	4
5.	Water connections	4
6.	Electrical connection	5
7.	Putting the water heater into operation	5
8.	Normal maintenance	5
9.	Technical Data	6
9.1	Wiring diagram	6
9.2	Data table	7
10.	Temperature increase above ambient water temperature	7
11.	Troubleshooting	8
12.	Spare parts	8

ENVIRONMENT AND RECYCLING | WARRANTY

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.

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.

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.

OPERATION

GENERAL

2.1 Intended use

The appliance is intended for heating domestic hot water and can supply one draw-off point.

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 (52 °C) can cause severe burns instantly or death from scalding.



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.

3. General

The DHC 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 unit. The powerful heating elements are activated by a flow switch as water is drawn from a hot water faucet connected to the DHC. Due to the absence of stand-by losses, the DHC has greater energy efficiency than storage type water heaters.

The temperature of the hot water delivered by the DHC depends on the wattage of the heating element, the temperature of the incoming cold water, and the water flow rate through the unit. In order for the DHC to operate properly, it must be carefully matched to the application.

In case you have questions regarding the way you plan to use the DHC, 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 413-247-3380. You can also e-mail us at info@stiebel-eltron-usa.com or fax us at 413-247-3369.

The DHC can be used for hand washing type applications in the U.S. and Canada:

- Restroom sinks in commercial/industrial facilities and homes
- Kitchen areas in commercial /industrial facilities and homes
- Cabins
- Special uses in photo developing shops, laboratories etc.

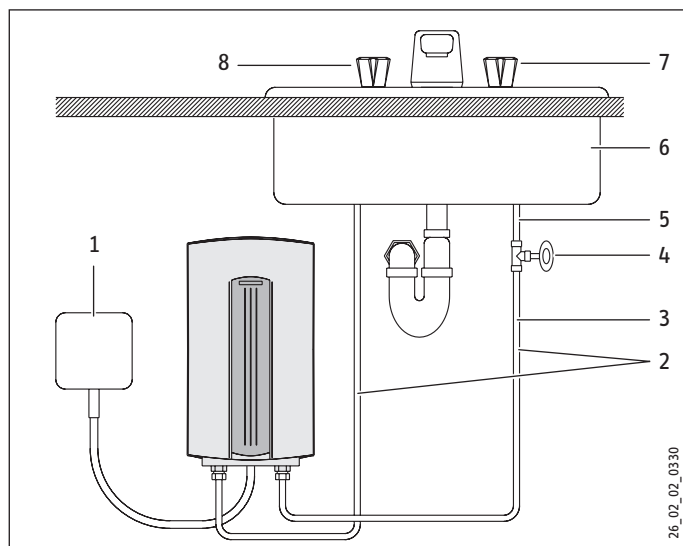
The DHC can also be used for whole apartments and homes in warm climate zones such as the Caribbean region, Central America and Mexico due to the higher ambient water temperatures.

INSTALLATION

MOUNTING THE UNIT

INSTALLATION

4. Mounting the unit

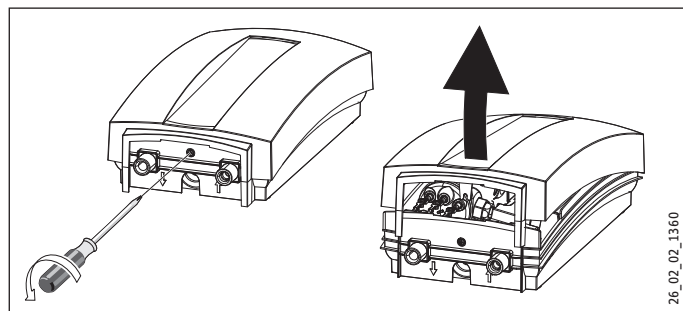


- 1 Electrical junction box
- 2 Water supply line for faucet installation
- 3 3/8" compression-T
- 4 Shut-off valve
- 5 1/2" main pipe
- 6 Sink
- 7 Cold valve (right)
- 8 Hot valve (left)

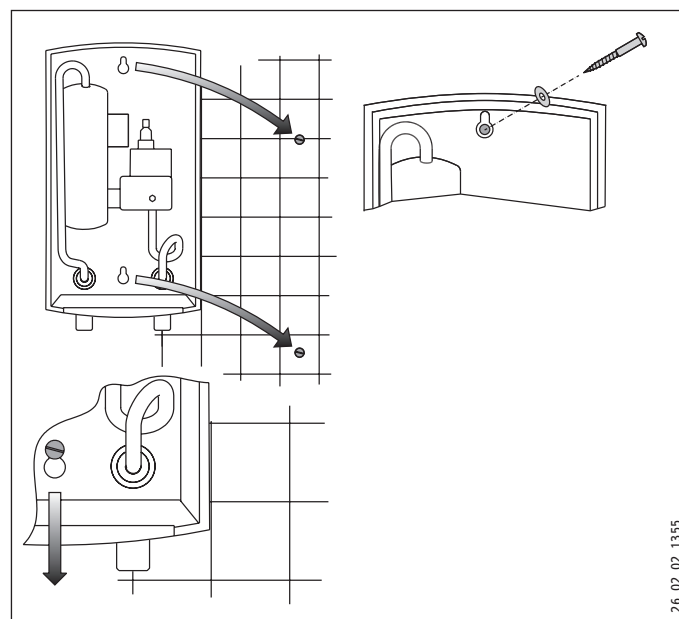
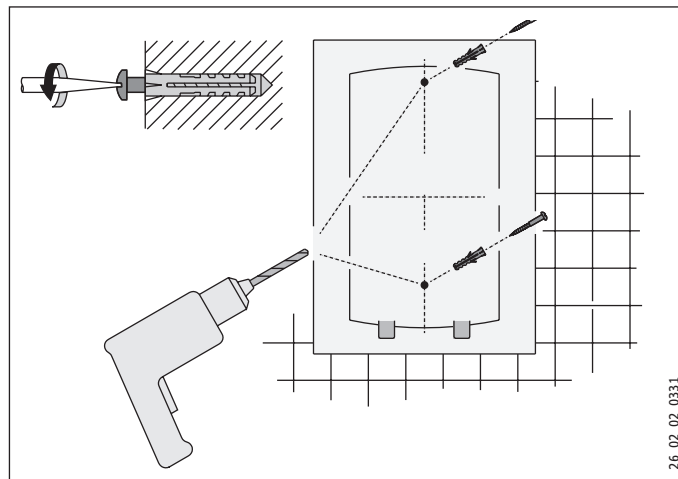


DANGER Electrocutation
UNIT MUST BE INSTALLED IN A VERTICAL POSITION WITH THE WATER FITTINGS POINTING DOWNWARD. DO NOT INSTALL UNIT WHERE IT WOULD ROUTINELY BE SPLASHED WITH WATER. ELECTRIC SHOCK MAY RESULT.

1. Install DHC as close as possible to the hot water draw-off point, for example, directly underneath the sink or next to the shower stall.
2. Install DHC 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 plastic cover.



5. Mount unit securely to wall by putting two screws through mounting holes. Screws and plastic wall anchors for mounting on masonry or wood are provided.



5. 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. Install isolating valve in cold water line as shown in illustration. This allows the unit to be isolated for maintenance purposes.
5. Cold water connection (inlet) is on the right side of the unit, hot water connection (outlet) is on the left side of unit.



Note

EXCESSIVE HEAT FROM SOLDERING ON COPPER PIPES NEAR THE DHC MAY CAUSE DAMAGE.

INSTALLATION

ELECTRICAL CONNECTION

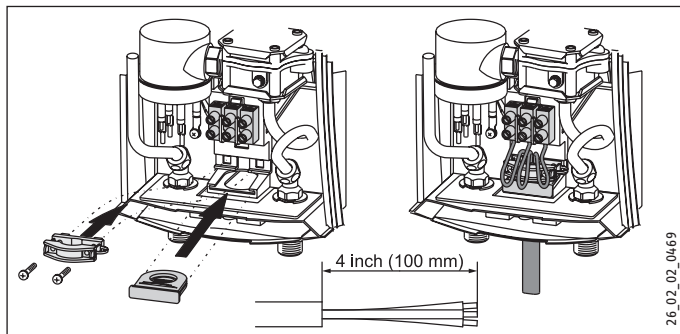
6. Tankless water heaters such as the DHC are not required to be equipped with a Pressure and Temperature Relief Valve (PTRV). If the local inspector will not pass the installation without a PTRV, it should be installed on the hot water outlet side of unit.
7. In case you are connecting to 1/2" water pipe, solder 1/2" NPT tapered female adapter by copper on ends of cold and hot water lines. In case you are connecting to 3/8" water pipe, use a 1/2" female pipe thread by 3/8" compression adapter. Braided flexible connectors will work as well. Connect cold and hot water lines to the unit.
8. When all plumbing work is completed, check for leaks and take corrective action before proceeding.

6. Electrical connection

**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“.

1. All electrical work must comply with national and applicable state and local electrical codes.
2. The DHC should be connected to a properly grounded dedicated branch circuit of proper voltage rating. In installations with several DHC units, each unit requires an independent circuit. Please refer to the technical data table for the correct wire and circuit breaker size.
3. 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 N and L (DHC 3-1 only) or L and L (all other versions). The ground wire must be connected to slot marked with the ground symbol.
4. Reinstall plastic cover.

**DANGER Electrocutation**

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

7. 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 PLASTIC COVER MUST BE INSTALLED BEFORE THE CIRCUIT BREAKER IS TURNED ON.

1. Turn on circuit breaker to bring electrical power to the unit.
2. Open hot water faucet to a degree so that water flow is „typical“ i.e. until the water flow is the same as that encountered during normal use.
3. Wait twenty seconds until temperature has stabilized. Then check water temperature. If temperature is too low, the water flow rate needs to be reduced. In order to do this, turn off the unit's circuit breaker, remove the cover and turn the flow adjustment screw shown in illustration clockwise 1/2 turn (180 degrees). Then reinstall plastic cover, turn on circuit breaker and check water temperature. This procedure should be repeated until the desired temperature is achieved. In case the water temperature is too high, turn the flow adjustment screw counter clockwise in the same manner until the desired temperature is achieved. The arrows in illustration refer to the water temperature.
4. In order to obtain temperature control at a single spout mixer-type faucet, restrict cold water flow to faucet by partially closing the cold water shut-off valve under the sink until cold water and hot water flow rates are approximately the same.

8. Normal maintenance

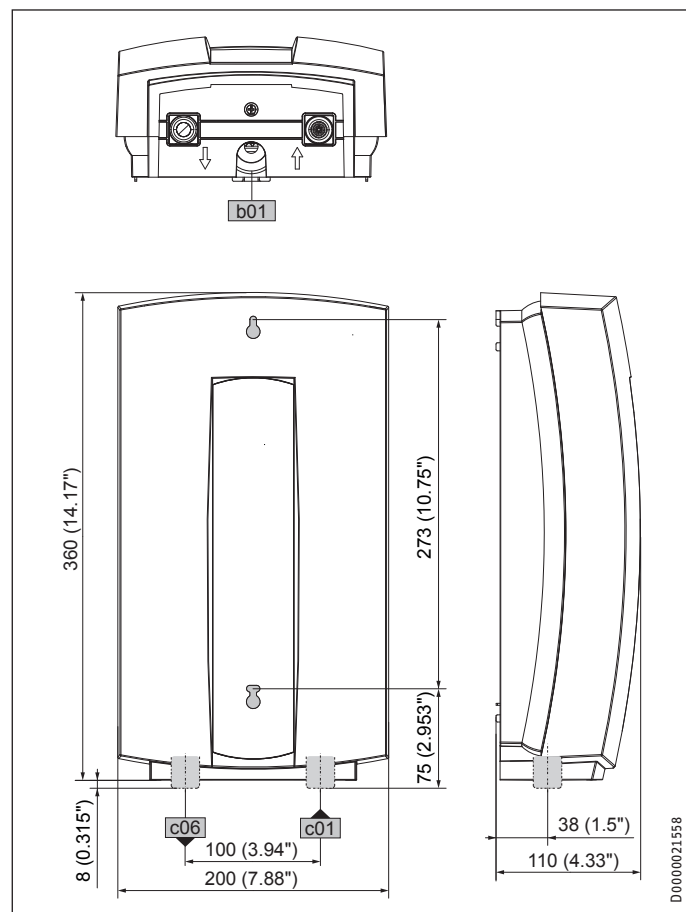
STIEBEL ELTRON DHC tankless heaters are designed for a very long service life. Actual life expectancy will vary with water quality and use. The unit itself does not require any regular maintenance. However, to ensure consistent water flow, it is recommended to periodically remove scale and dirt that may build up at the aerator of the faucet or in the shower head. Also, the DHC 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 ground wire. Twist cold water supply tube counterclockwise by 90° and pull towards bottom of unit. Clean screen and put the screen, the cold water supply tube and the ground wire back into their original position. Please be sure that the ground wire is reinstalled and that ground screw is securely tightened after this procedure.

**Note**

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

INSTALLATION TECHNICAL DATA

9. Technical Data



b01	electrical supply cable		
c01	cold water connection	" NPT	1/2
c06	hot water connection	" NPT	1/2

9.1 Wiring diagram

DHC 3-2, DHC 4-2, DHC 5-2

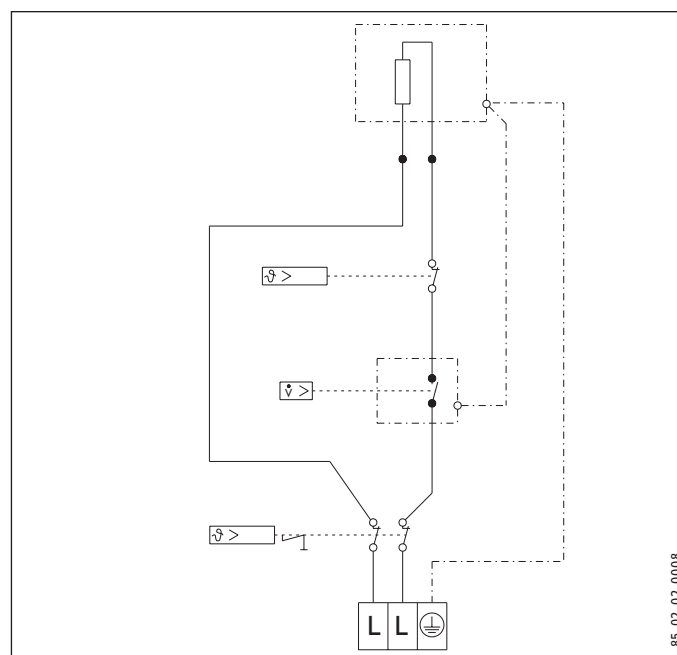


2/GRD ~ 208 / 240 V

DHC 4-3



2/GRD ~ 277V



35 02 02 0008

DHC 6-2, DHC 8-2, DHC 10-2

A



2/GRD ~ 208 / 240 V

DHC 9-3

A



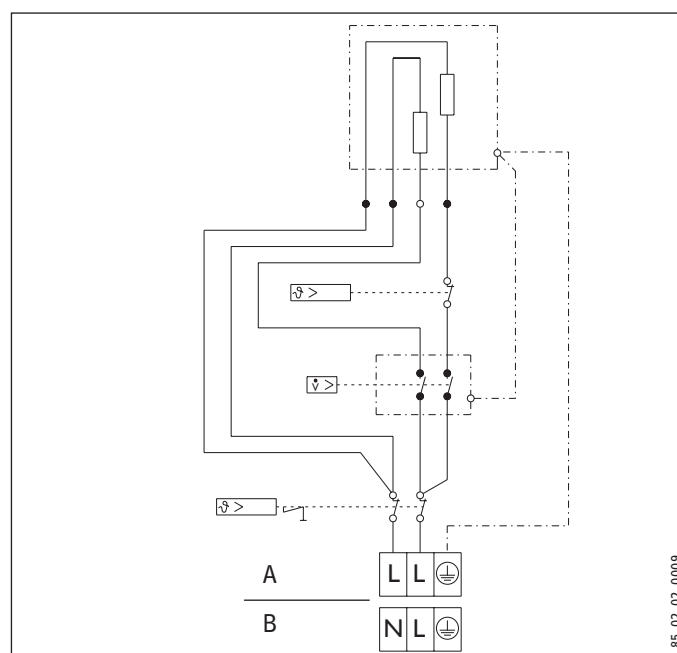
2/GRD ~ 277V

DHC 3-1

B



1/N/GRD ~ 120 V



5 02 02 0009

INSTALLATION

TEMPERATURE INCREASE ABOVE AMBIENT WATER TEMPERATURE

9.2 Data table

Model		DHC 3-1	DHC 3-2	DHC 4-2	DHC 4-3	DHC 5-2	DHC 6-2	DHC 8-2	DHC 9-3	DHC 10-2
		074050	074052	074053	074051	074054	074424	074055	232204	074056
Voltage	V	120	208 240	208 240	277	208 240	208 240	208 240	277	208 240
Phase		1	1 1	1 1	1	1 1	1 1	1 1	1	1 1
Wattage	kW	3.0	2.5 3.5	2.9 3.8	4.5	3.6 4.8	4.5 6.0	5.4 7.2	9.0	7.2 9.6
Ampere	A	25	12 14	14 16	17	18 20	22 25	26 30	32.5	35 40
Min. required circuit breaker size	A	30	15 20	20 20	20	30 30	30 30	30 40	40	50 50
Recommended wire size	AWG Copper	10	14 12	12 12	12	10 10	10 10	8 8	8	8 8
Min. water flow to activate unit	GPM / l/min	0.32 / 1.2	0.32 / 1.2	0.42 / 1.6	0.42 / 1.6	0.42 / 1.6	0.48 / 1.8	0.69 / 2.6	0.79 / 3.0	0.79 / 3.0
Pressure loss in unit	PSI / bar	2.88 / 0.23	2.88 / 0.23	2.88 / 0.23	2.88 / 0.23	2.88 / 0.23	2.88 / 0.23	3.13 / 0.25	3.75 / 0.30	3.75 / 0.30
Nominal water volume	GAL / l	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5	0.13 / 0.5
Working pressure max.	PSI / bar	150 / 10	150 / 10	150 / 10	150 / 10	150 / 10	150 / 10	150 / 10	150 / 10	150 / 10
Tested to pressure	PSI / bar	300 / 20	300 / 20	300 / 20	300 / 20	300 / 20	300 / 20	300 / 20	300 / 20	300 / 20
Weight	lbs. / kg	4.6 / 2.1	4.6 / 2.1	4.6 / 2.1	4.6 / 2.1	4.6 / 2.1	5.3 / 2.4	5.3 / 2.4	5.3 / 2.4	5.3 / 2.4
Water connections	" NPT	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2

- Suitable for supply with cold water
- Tankless water heaters are considered a non-continuous load
- Conductors should be sized to maintain a voltage drop of less than 3 % under load

10. Temperature increase above ambient water temperature

		[°F]										
Typ	kW	GPM (gallon per minute)										
		0.32	0.42	0.48	0.5	0.69	0.75	0.79	1.0	1.5	2.0	
DHC 3-1	3.0	65	49	43	41	30	27	26	20	14	10	
DHC 3-2	2.5	54	40	35	34	25	23	21	17	11	9	
	3.3	71	53	47	45	33	30	28	22	15	11	
DHC 4-2	2.9	-	47	41	40	29	26	25	20	13	10	
	3.8	-	61	54	52	38	35	33	26	17	13	
DHC 4-3	4.5	-	73	64	61	45	41	39	31	20	15	
DHC 5-2	3.6	-	58	51	49	36	33	31	25	16	12	
	4.8	-	77	68	65	48	44	41	33	22	16	
DHC 6-2	4.5	-	-	64	61	45	41	39	31	20	15	
	6.0	-	-	85	82	60	55	52	41	27	20	
DHC 8-2	5.4	-	-	-	-	54	49	46	37	25	18	
	7.2	-	-	-	-	71	65	62	49	33	25	
DHC 9-3	9.0	-	-	-	-	-	-	77	58	41	31	
DHC 10-2	7.2	-	-	-	-	-	-	62	49	33	25	
	9.6	-	-	-	-	-	-	82	65	44	33	

 Min. water flow to activate unit

Typ / Type	kW	[°C]									
		l/min	1.2	1.6	1.8	2.0	2.6	3.0	4.0	5.0	7.5
DHC 3-1	3.0	36	27	24	22	17	14	11	9	6	
DHC 3-2	2.5	30	22	20	18	14	12	9	7	5	
	3.3	39	30	26	24	18	16	12	9	6	
DHC 4-2	2.9	-	26	23	21	16	14	10	8	6	
	3.8	-	34	30	27	21	18	14	11	7	
DHC 4-3	4.5	-	40	36	32	25	22	16	13	9	
DHC 5-2	3.6	-	32	29	26	20	17	13	10	7	
	4.8	-	43	38	34	26	23	17	14	9	
DHC 6-2	4.5	-	-	36	32	25	22	16	13	9	
	6.0	-	-	48	43	33	29	22	17	11	
DHC 8-2	5.4	-	-	-	-	30	26	19	15	10	
	7.2	-	-	-	-	40	34	26	21	14	
DHC 9-3	9.0	-	-	-	-	-	43	32	26	17	
DHC 10-2	7.2	-	-	-	-	-	34	26	21	14	
	9.6	-	-	-	-	-	46	34	28	18	

 Min. water flow to activate unit

INSTALLATION

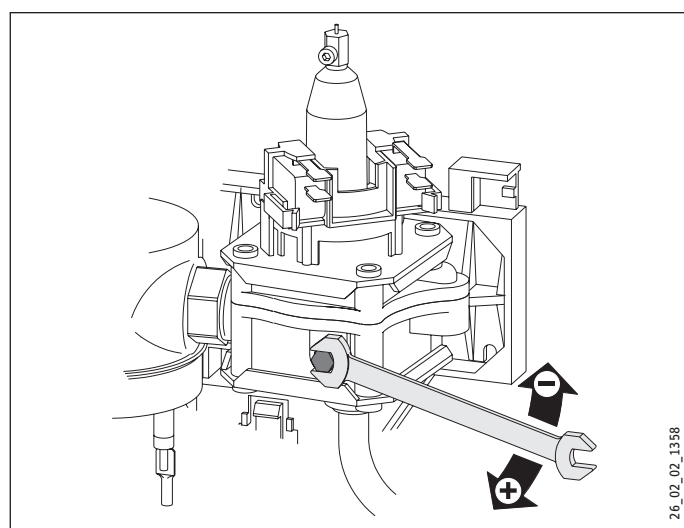
TROUBLESHOOTING

11. Troubleshooting

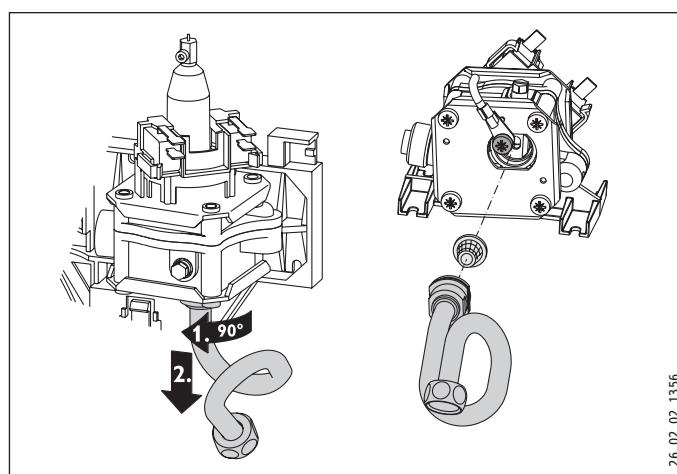
Symptom	Possible cause	Solution
No hot water but audible click can be heard when water is turned on	circuit breaker off	circuit breaker on.
	safety thermal cut-out tripped	reset thermal cut-out.
	water flow too low to activate flow switch	clean faucet aerator. open shut-off valve completely. open flow adjustment screw. clean filter screen at DHC unit.
Water not warm enough	water flow too high	reduce wter flow, close flow agjusment screw.
	voltage too low	supply correct voltage to unit.

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.

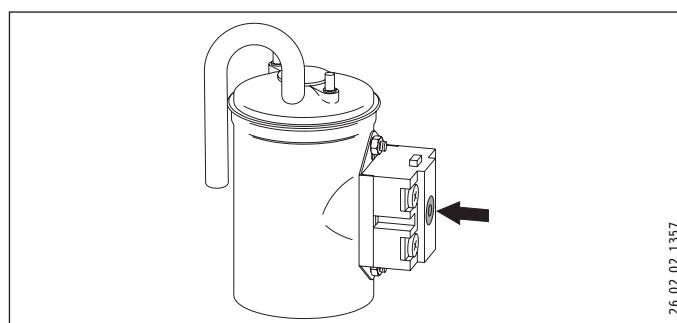
Open flow adjustment screw



Filter screen



Reset button from safety thermal cut out

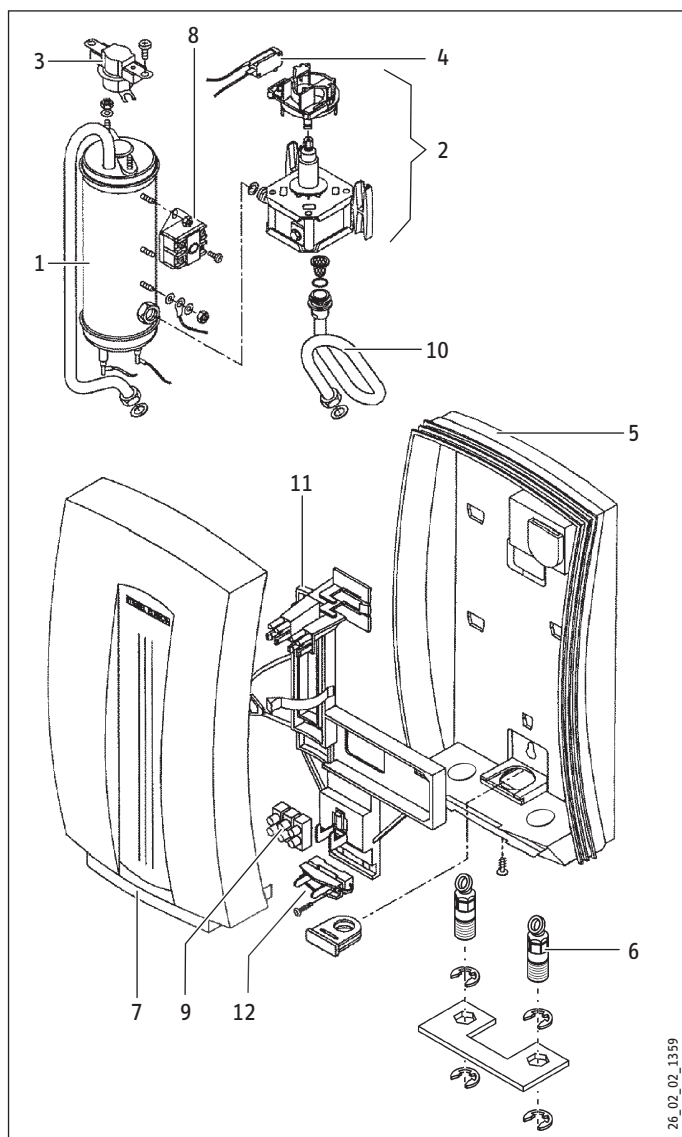


12. Spare parts

No.	Spare part	DHC 3-1	DHC 3-2	DHC 4-2	DHC 4-3	DHC 5-2	DHC 6-2	DHC 8-2	DHC 9-3	DHC 10-2
1	Heating system	165889	167769	167770	165890	167771	171117	167772	296874	167773
2	Flow switch	165273	165273	162162	162162	162162	171105	162164	162465	162165
3	Thermostat	162472	162472	162472	162472	162472	162472	162472	162472	162472
4	Switch	168026	168026	168026	168026	168026	168026	168026	168026	168026
5	Housing (back)	165891	165891	165891	165891	165891	165891	165891	165891	165891
6	Plumbing connection	165893	165893	165893	165893	165893	165893	165893	165893	165893
7	Housing (front)	165892	165892	165892	165892	165892	165892	165892	165892	165892
8	Safety thermal cut out	162474	162474	162474	162474	162474	162474	162474	162474	162474
9	Wiring block	026010	026010	026010	026010	026010	026010	026010	026010	026010
10	Copper tube	162314	162314	162314	162314	162314	162314	162314	162314	162314
11	Module chassis	162462	162462	162462	162462	162462	162462	162462	162462	162462
12	Wire strain relief clamp	055754	055754	055754	055754	055754	055754	055754	055754	055754

INSTALLATION | ENVIRONMENT AND RECYCLING | WARRANTY

SPARE PARTS



Environment and recycling

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

ENGLISH

WARRANTY

Residential & commercial warranty: Stiebel Eltron, Inc. warrants to the original owner that the DHC 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.

STIEBEL ELTRON, INC.

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West Hatfield, MA 01088, USA

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FAX: 413-247-3369

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