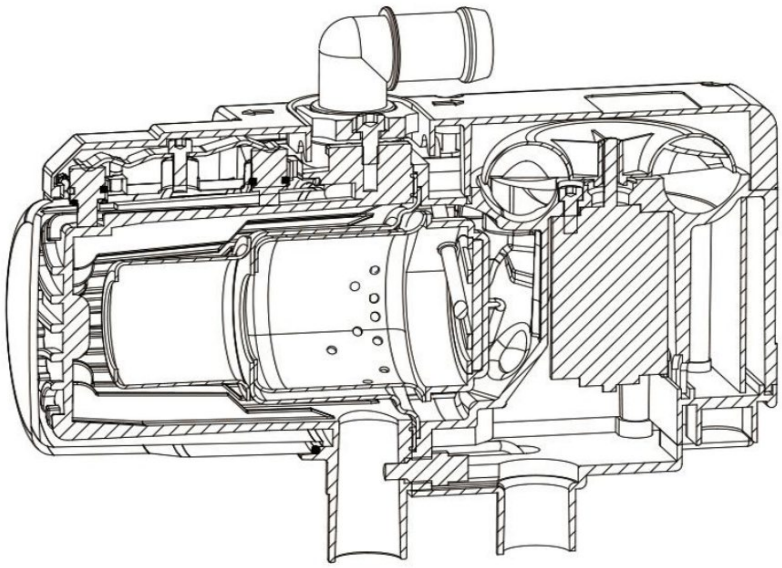
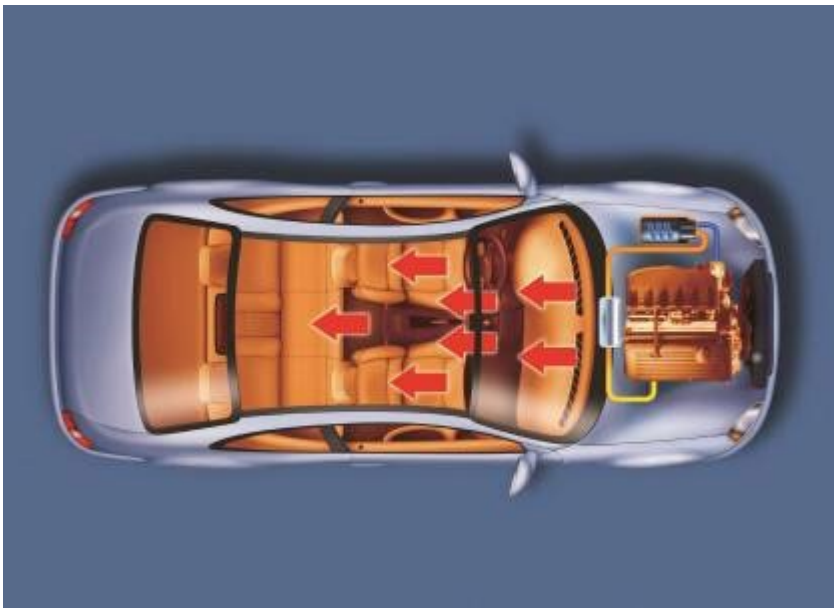


Hydrome

User manual

Table of Content

Introduction



Water heaters are prohibited to start near the gas station or the fuel depot and other places where there are forms of flammable solid material, gas or dust, such as fuel, coal and wood chips, dry grass and leaves, paper, cards, and so on. Neither should you start the heater in closed spaces, for example the garage.

After the installation is done, the bleed screw must be loosened before the first start-up. Make sure all of the air has emptied the system. And remember, do not start the heater without water in the system!

In order to keep the heater in good condition, the designated authorized dealers should help you check and maintain the heating system at least once every two years.

The heater can only run with the specified fuel and nominal voltage. Turn off the heater immediately in case of abnormal smoking, abnormal combustion noise or odor. Make sure that the heater stops running and look for abnormalities before starting the heater again.

In order to keep the heater in good condition, it should be started at least 3 times per year and run for at least 30 minutes. Use fuel costumized for storage if the heater will not be used for more than 10 weeks.

In this operating instruction’s manual, information about how to use the heater safely is given. Please read this carefully in order to have fully cognition of various functions. If you loose this instruction’s manual, please contact your supplier in order to retreive a new one.

Technical parameters

Model	5 kW	12 kW
Fuel consumption	0.58 l/h	1.32 l/h
Fuel	Diesel	Diesel
Nominal vontage	12/24 V	12/24 V
Working voltage	10–15 V / 18/32 V	10–15 V / 18/32 V
Power consuption	39 W	78 W
Weight	2.3 kg	6 kg
Dimension	230x100x110 mm	360x125x180 mm

Working principles of the parking heater

Water heaters can heat cars without an external power supply. The heater has its own water and fuel pump. The electricity for the heater comes from the vehicle's battery. The fuel pump starts to extract fuel from the fuel tank and is pushed into the combustion chamber. The heater ignites the fuel and starts to warm up the cooling system of the vehicle. The vehicles engine and coupe is gradually heating up. When the coolant temperature reaches 65 degrees, the heater will automatic stop and the remote will display that you have finished heating. These kind of heaters can be used in the heating equipment of the car without conflicting with other devices.

The cautions in installation and operation

During the installation process, please, make sure that the direction of the vehicles water stream is the same as the water pump of the heater. The water pump should be installed as low as possible.

The exhaust pipe should not be shorter than 25 cm or longer than 150 cm. The direction of the exhaust port should be pointed in the same direction as the airflow of the moving vehicle.

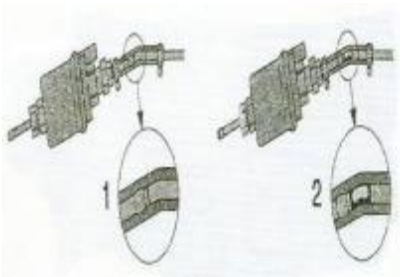
Installation of dosage-fuel pump

It is convenient to expel gas in the fuel line when you install it with up-tilt. Please pay attention to check the vent of the tank, in order to avoid the tank appear negative pressure. The bellows will protect the fuel pipeline which should be far away from the heat source, muffler, and exhaust pipe when installed. Please, tie them in the correct place. The distance cannot be longer than 50 cm.

The installation diagram of electro-magnetic pump and the installation of dosage-fuel of the pump's angle:

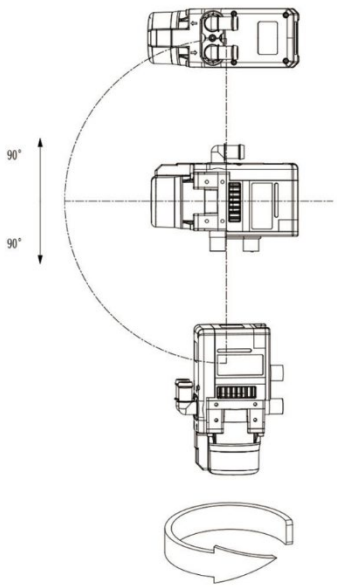
6. Connection of fuel line

Always use short pieces of rubber hose to connect the nylon hose with other parts along the fuel line. Press the nylon fuel line as deep as possible into the rubber hose to get a seamless connection without room for air bubbles.



1. Connect correctly.
2. Connect incorrectly – formation of bubbles will occur.

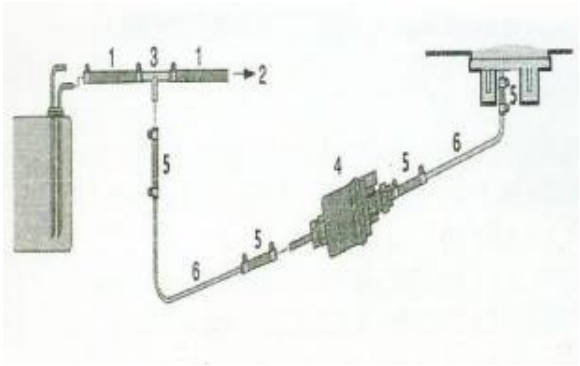
The angle range of installation



The notes of T-junction to take fuel

You cannot connect a T-junction between the vehicle's fuel pump and engine. It is dangerous! You cannot use the T-junction to get fuel if your car's pump is installed in the tank. Fuel should be extracted directly from the tank. **6.**

1. Unpressurised fuel line to engine.
2. The fuel line continues to the engine.
3. T-junction.
4. Heater for fuel pump.
5. Connecting rubber hose.
6. Nylon tubing.



Installation of fuel skimmer

Depending on the depth of the tank, the metal skimmer tube should be cut to the right lengt. The skimmer's end should be 2 – 5 cm above the bottom of the tank to avoid extracting dirt.

At the top of the tank, open up a hole around 25 mm wide and remove the burr. Install the fuel skimmer, fasten it tightly with seal, and adjust the direction of the fuel line connection.

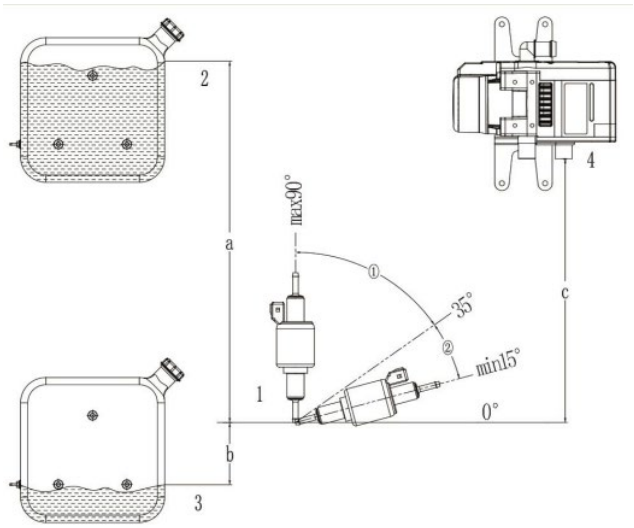
Fuel line limitations

1. Fuel inlet
2. Maximum fuel level
3. Minimum fuel level

a: Max:3 m

b: Max:1 m

c: Max:2 m



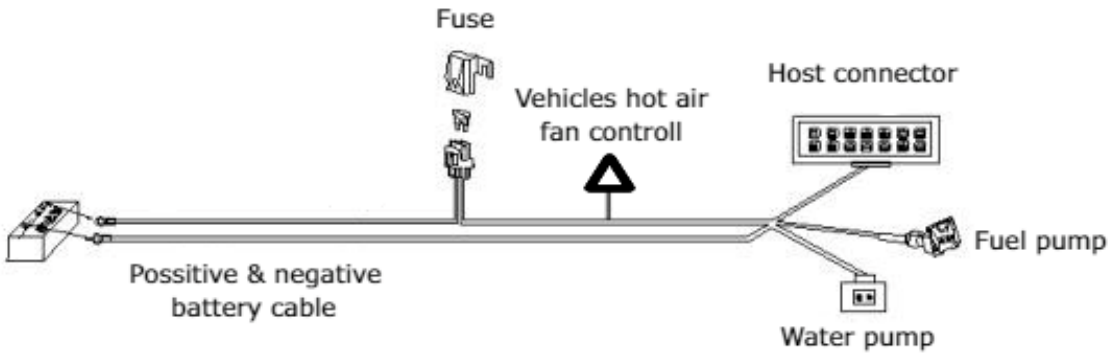
Fuel pump angle

Not recommended	0º – 15º
Best	15º – 35º
Recomended	35º – 90º

Make sure the fuel pump's outlet is always up-tilt when you install the fuel-pump.

Installation of cables

The positive and negative wire should be connected directly to the positive and negative electrodes of the vehicle's battery to ensure that the heater is always supplied.



The vehicle's hot air fan control connector:

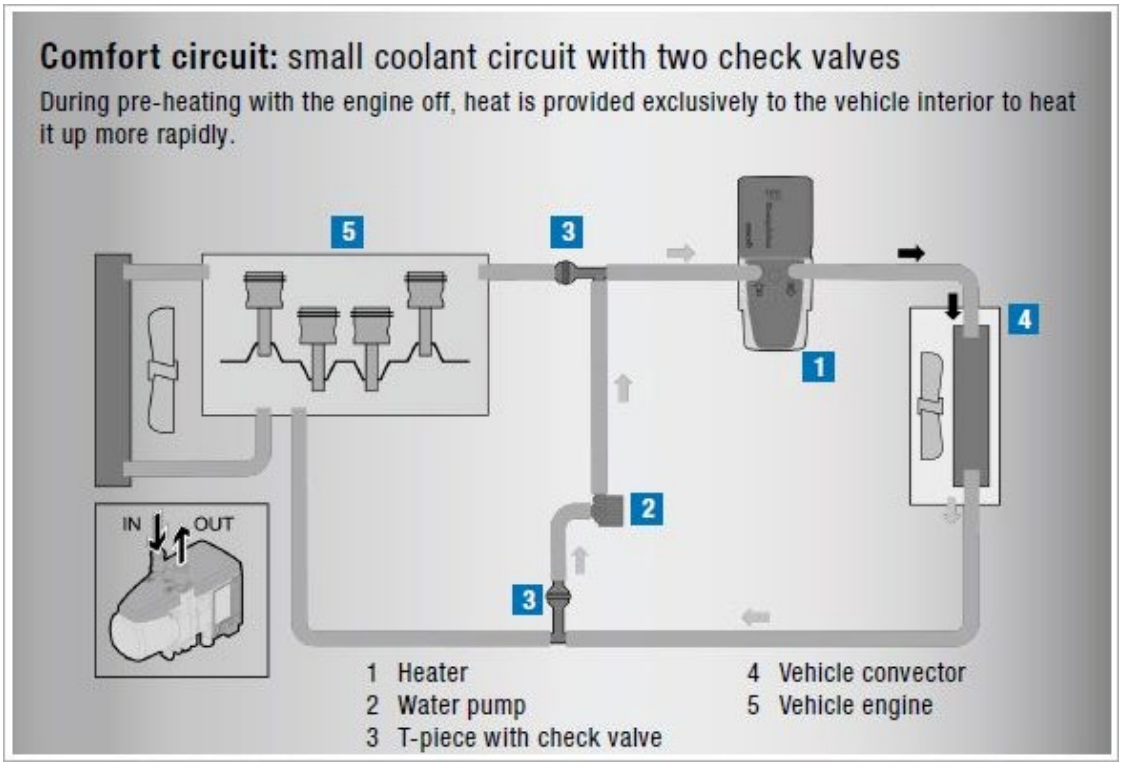
- Constant power 12 V or 24 V
- Remote power 12 V or 24 V (when heater is running)
- Ground

The cables of this connector can be cut to be connected to the vehicle.

Commissioning after heater installation

The heater must be bled out from all of the air in the system for the pump and the pipeline to get filled with coolant. The engine can be started after the heater is installed. It will help you bleed the air from the pipeline. The heater and pipeline will eventually be filled with water.

Please, pay attention and check the temperature of the water inside the coolant tank. The heater cannot work in case of a shortage of water, please add anti-freeze in time. It is strictly prohibited to start the heater without anti-freeze/coolant.



Operation principles

The heater will start to check its own parts by pressing the start button. The ignition plug may pre-heat for about 60 seconds during the start-up procedure. If the first ignition fails, the heater will make a second attempt to start. If the second attempt also fails, the controller will display a fault code.

The heater automatically reduces the power when the temperature reaches 5 degress under the set temperature. The heater will stop running when the temperature reaches the set temperature, but the water pump will continue running until the fan motor stops (3 minutes later).

It is forbidden to cut of the power to the heater while it is still running. If you shut of the heater suddenly, the high temperature exhaust will stay or even reverse direction, which can damage the PCB and other parts. Turn off the heater and wait 3 minutes, then cut the power after the water pump and fan have stopped.

Keep the fuel tank and pipeline clean from debris. Use a coolant medium suitable for the temerature and environment where the vehicle is being used.

Display overlook

Controller

a: Hours: [12:00]

b: Minutes: [12:00]

d: N E T: a blue light indicates signal – a red light indicates no signal.

c: TIMER: blue lights when running on timer – red lights during start-up.

• **ON/OFF**: Power button to start/stop the heater.

• **LEFT ARROW◀**: Reduce button.

• **SETTINGS** ⚙

• **RIGHT ARROW▶**: Increase button.

Operation instructions and page display

On standby page display: press [◀] or [▶] to switch pages.

Real-time time: Displays the current time

Press [**SETTINGS**] button, use [◀] and [▶] to adjust. Long press [**SETTINGS**] button to apply the adjustment.

Figure 1
Real time 12:00, [c] flashes

Timer function

Press [**SETTINGS**] button hours will flash, press [◀] and [▶] to adjust hours. The adjustment range is "0 – 23"

Press [**SETTINGS**] button minutes will flash, press [◀] and [▶] to adjust minutes. The range is "0 – 59"

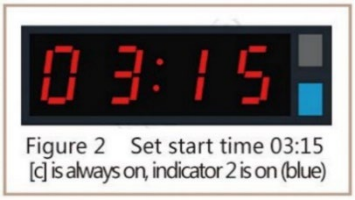


Figure 2 Set start time 03:15
[c] is always on, indicator 2 is on (blue)

When the value of the timer settings is adjusted to **"00:00" or "-- : --"**, it indicates that the timer turn off is disabled. Long press [**SETTINGS**] to apply the adjustment.

Running time (counts from the moment the heater starts)

Press [**SETTINGS**] button, adjust the hours and minutes with [◀] and [▶].

Adjust 10 minutes for each press, running time ranges from 10 – 60 minutes.

Long press [**SETTINGS**] to apply the adjustment.

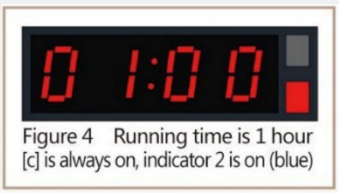


Figure 4 Running time is 1 hour
[c] is always on, indicator 2 is on (blue)

Unlimited running time

A-ON needs to be active and will continuously restart after the set temperature has been reached.

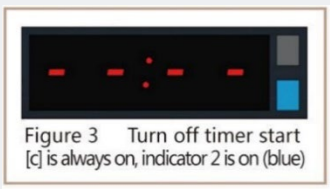


Figure 3 Turn off timer start
[c] is always on, indicator 2 is on (blue)

Water temperature

See the current water temperature and set the water temperature.

Press [**SETTINGS**] button and use [◀] or [▶] to adjust the temperature.

One press adjusts 5°C (adjustment range 0 – 90°C)

Long press [**SETTINGS**] to apply the adjustment.

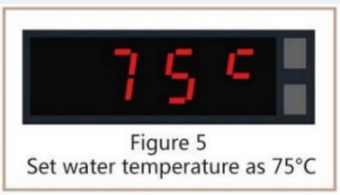


Figure 5
Set water temperature as 75°C

Self-starting switch
Set the heater to automatically start when water temperature has dropped.

A-OF indicates that the self-start mode is off.
If A-OF is displayed, the heater turns off permanently when the running time ends or when the preset water temperature is reached.

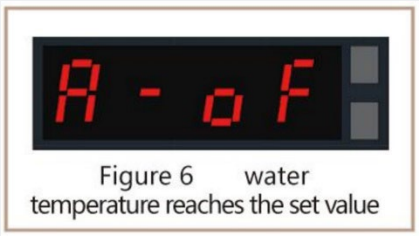


Figure 6 water temperature reaches the set value

A-ON indicates that the self-start mode is on
The self-start mode can be used both in restricted time mode and unlimited time mode. (See **3. Running time**)

Unlimited time mode.
If **A-ON** is displayed, the heater will run in cycles until the preset running time runs out or until the heater is manually turned off.

The heater runs until the set temperature is reached, shuts OFF and will automatically turn ON when the temperature has dropped 15 degrees.

Figure 7
Self-start mode display

GSM

Mobile phone matching

To match your phone number to the heater, press [SETTINGS] until it says [-PP-]. After this happens, call the heater, the heater will peep, [SEND] will appear on the display, and a SMS message will be retrieved. The SMS message says “ACCLIM: (your phone number)”.

If you dial the heater and the call hangs up after one signal, no match is found or the number is not authorized "**OFFL**"

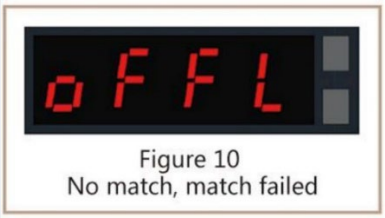


Figure 10
No match, match failed

Start/stop via GSM

Dial the phone number of the heater to start/stop the heater.

If the call hangs up on the **third tone**, the heater has started successfully.

If the call hangs up on the **first tone**, the start-up has not been successful.

After a successful start, your phone will receive a text message saying;

Heater: Started (00minutes Heating)
Temperature:20 C
Battery voltage:13V

If “send” is displayed in the controller screen, the SMS message has been sent.

If an unsuccessful stop using GSM has been made, the controller will display “Erro”

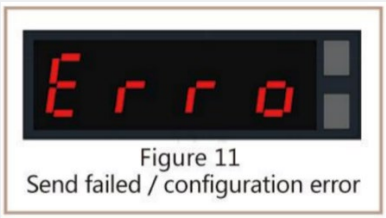


Figure 11
Send failed / configuration error

If start/stop is successful, the controller will display “SEnd”

Figure 8
Start success, send SMS

Heater status mode

Hold down the buttons [◀] and [▶] for 3 seconds to enter the engineering mode, press [◀] or [▶] to switch between:

01: Heater version number

02: Operating state of the heater

03: Heater shell temperature: t-1: - -°C

04: Heater exhaust gas temperature: t-2: - -°C

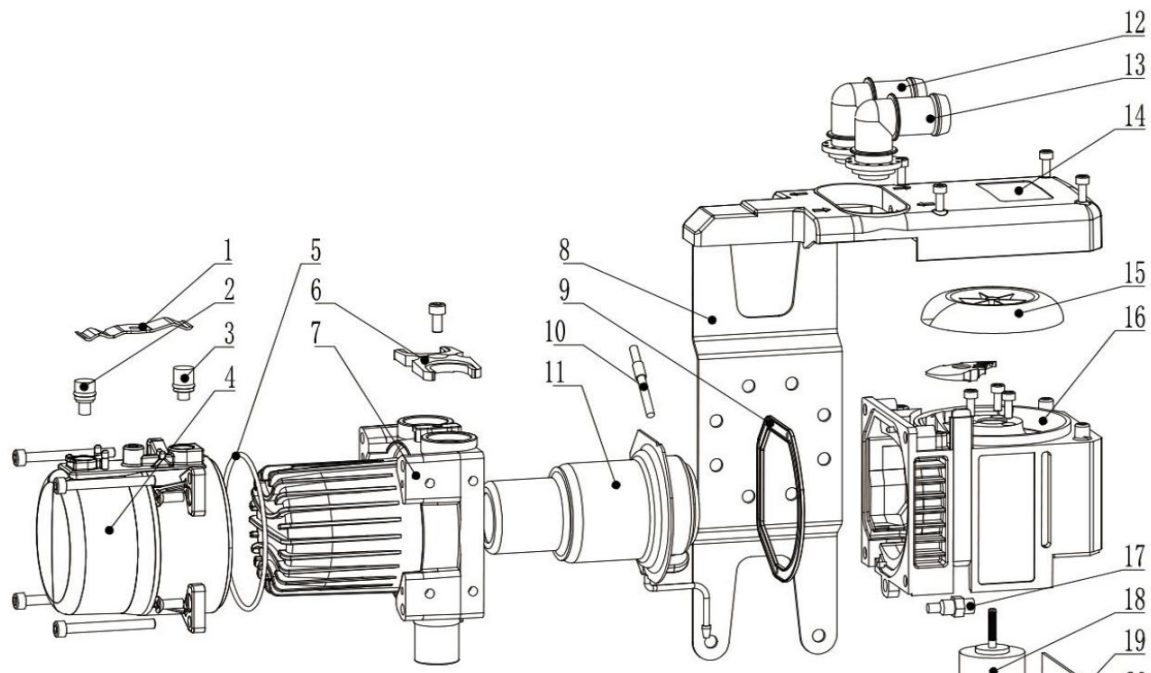
05: Heater voltage: - - V

06: Heater pump current: - - A

Do not touch any control for 10 seconds to go back to standby mode.

Fault code	Cause	Resolution
E-01	Start up failed twice	Check if the fuel line is filled and that the fuel moves forward when the pump is working. Check for folds or damages.
E-02	Flame extinguishment	Check whether the fuel level in the tank and if the oil path is blocked.
E-03	Voltage outside nominal range	Check your power supply and the power cables between the heater and the power supply.
E-04	Burning chamber temperature sensor fault	Check the temperature of the unit. If the temperature is within normal range and the problem remains – change the temperature sensor or the main board.
E-05	Water temperature sensor fault	Check the temperature of the unit. If the temperature is within normal range and the problem remains – change the temperature sensor or the main board.
E-06	Shell temperature sensor	Check the temperature of the unit. If the temperature is within normal range and the problem remains – change the temperature sensor or the main board.
E-07	Fuel pump fault	Check the cables to the fuel pump or the fuel pump itself.
E-08	Fan motor fault	Check if the fan motor runs effortlessly. If so, try putting a direct power supply to the fan motor. If it runs, replace the mainboard. If not, replace the fan motor.
E-09	Water pump fault	Check the cables to the water pump or test the water pump itself by putting a direct power supply to the motor.
E-10	Glow plug fault	Remove the glow plug and test its function by putting a direct power supply to the glow plug (9v). If it glows, replace the mainboard. If not, replace the glow plug.
E-11	Over-heat protection	The heater unit's temperature is outside nominal range. Check if there is air in the system and make sure the water flows flawless.
E-12	Lack of coolant	Check whether there is air in the water system or for blockages in the water system.
E-13	BOOT invalidation	Some kind of failure from the mainboard. Replace the mainboard.
E-16	Key failure	
E-17	BOOT	
E-18	Shut down failure	

Exploded view



1. sensor pressor
2. Ultra-high temperature sensor
3. water temperature sensor
4. outer water jacket
5. water jacket seal
6. water nozzle pressor
7. inner water jacket
8. master holder
9. combustor seal
10. ignitor plug
11. combustor
12. water outlet
13. water inlet
14. master cover
15. combustion-supporting wind turbine
16. aluminum body
17. flame sensor
18. motor
19. circuit board
20. circuit board terminal plugin
21. master low cover