

Integrated Heater

Operating Instructions

Dual Top Evo 6

- While heater is in use, the product surface or surrounding air from air outlet may become hot to the touch. Contact with skin may cause burns.
- Improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide leading to serious injury or death.
- NEVER attempt to install or repair a Webasto heating or cooling system unless you have successfully completed Webasto factory training and have the technical skills, technical information, tools and equipment required to properly complete the necessary procedures. Only genuine Webasto parts may be used.
- Webasto rejects any liability for problems and damage caused by the system being installed by untrained personnel.
- Webasto products produce temperatures high enough to ignite surrounding combustible materials such as inflammable liquids, gases, vapor, and other combustible matter. The heater must be switched off when loading or unloading inflammable materials to prevent the risk of explosion.
- ALWAYS and carefully follow Webasto installation and repair instructions and heed all WARNINGS.



WARNING: Cancer and Reproductive Harm
www.P65Warnings.ca.gov

Product Registration

The heater can be registered by visiting www.techwebasto.com or by scanning the code.
A proof of purchase is required for all heaters that are not registered.



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1 Introduction

Dear Customer,

Thank you for choosing the Dual Top Evo 6 integrated air and water heater system from Webasto. We hope that this product brings you years of reliable comfort and enjoyment during your travels.

The Dual Top Evo 6 heater has been designed as an integrated heating system to heat and to provide hot water (drinking water) in motor homes. Please note that the Dual Top Evo 6 is only specified for applications in motor homes or similar vehicles.

However, in order to fully understand all the heater's features, you must read these operating instructions. If you do not understand any information in the manuals or if you misplace any of them, please contact your authorised Webasto dealer immediately.

Please take the time to read this manual carefully. This enables you to use all features and makes you feel comfortable and safe.

To ensure safe use of the Dual Top Evo 6 heater, ALWAYS read and follow all instructions in this manual.

It is very important that an authorised Webasto dealer carries out any repair or maintenance not described in this manual.

2 Maintenance and Safety Information

DANGER

Webasto heaters must be switched “off” when re-fueling at filling stations and/or while loading or unloading flammable materials for transport, to prevent the risk of explosion. Please review the owner’s manual for safety and use instructions.

CAUTION

When heater is in use, the surface of the hot air outlet may become hot to the touch. Contact with skin may cause burns.

- 1
- The heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R122 (heater) with the following ECE permit numbers:
E1 03 5000 (EMC)
E1 00 0195 (Heating)

NOTE

The regulations of these guidelines are binding in the scope of the EU Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

- 2
- The year in which the heater was used for the first time must be permanently displayed on the identification plate by deleting the inapplicable years from the plate.
- 3
- The heater is not designed for heating hazardous substance transport compartments.
- 4
- The heater/boiler is designed to heat air and drinking water.

WARNING

- 5
- To prevent any harm, follow the instructions in chapter 7: "Maintenance".
- 6
- In case no water has been taken from the water supply system for a period of a week or more, drain the whole system and rinse it thoroughly before refilling it. See chapter 7: Maintenance.
- 7
- To avoid micro-organisms, water should not stay longer than a fortnight in the boiler.
Clean the boiler in a proper way if water was more than a fortnight in the boiler. It must be ensured that no dirt or soiling can get into the water circuit. In order not to restrict the water quality and the heater efficiency, it is advisable to conduct descaling regularly depending on the degree of hardness of the water used.
See chapter 7: "Maintenance".
- 8
- Webasto guarantees proper function of the Dual Top Evo 6 up to an altitude of 2,200 m.
In case the Dual Top Evo 6 has to be operated above this altitude, visit a Webasto Service Centre.
- 9
- If the vehicle to which the Dual Top Evo 6 is fitted becomes involved in an accident, or if the Dual Top Evo 6 falls to the floor, it must be returned to an authorised Webasto Service Centre for a safety inspection/repair.
- 10
- Warranty claims can only be made if it can be verified that the claimant has complied with the servicing and safety instructions.
- 11
- The heater must be switched off at filling stations and fuel storage areas as a result of the risk of explosion.

WARNING

- 12
- Do not operate the heater in enclosed spaces (such as garages) as a result of the risk of poisoning and asphyxiation.

WARNING

- 13 For safe use the heater needs inspection every two years, especially if used for extended periods and/or extreme environments.
- 14 In the event of persistent heavy smoke development, unusual combustion noises, a smell of fuel or if the heater suffers continuous fault cut-outs accompanied with fault messages, it must be taken out of service by removing the fuses (see Chapter 8: "Troubleshooting") and must not be reused until it has been inspected by an authorised Webasto Service Centre.
- 15 The heater may not be operated at locations at which highly flammable gases or dust can form, or at locations at which highly flammable liquids or solid materials are stored (e.g. near fuel, coal and wood dust, grain warehouses, dry grass and leaves, cardboard, paper etc.).
Danger of explosion!
- 16 The heat exchanger and water boiler on Dual Top Evo 6 heaters are exposed to very high thermal stress and must be replaced by genuine Webasto spare parts ten years after these are used for the first time.
- 17 The diesel fuel specified by the vehicle manufacturer must be used for the Dual Top Evo 6 heater. Class EL heating oil, L heating oil and PME (bio-diesel) shall not be used.
We know of no negative influences due to additives.
If fuel is extracted from the vehicle's tank, follow the additive instructions issued by the vehicle manufacturer.
If you change to low-temperature fuel, the heater must be operated for approx. 15 minutes so that the fuel system is filled with the new fuel.
- 18 The temperature in the area around the heater must not exceed 85 °C (storage temperature).

WARNING

- 19 Operation of the heater is only allowed under ambient temperatures between -30 and 50 °C.

- 20 Failure to follow the installation instructions and the notes contained therein will lead to all liability being refused by Webasto. The same applies if repairs are carried out incorrectly or with the use of parts other than genuine spare parts. This will result in the invalidation of the type approval for the heater and therefore of its homologation/ECE type licence.
- 21 Keep the air inlet and hot air outlet free of dirt and foreign bodies. Contaminated or blocked hot air ducts may cause overheating and thus result in the overheating cut-out activation.

- 22 Do not stand on the heater and do not place any heavy items on the heater or throw items at the heater.

WARNING

- 23 Do not place any items like clothing, textiles or similar materials over the heater or in front of the hot air inlet and the hot air ducts.

WARNING

- 24 The air flow through the heater must not be restricted or blocked by highly inflammable substances or materials such as rags, cleaning wool, etc.
- 25 Any repair or maintenance, which is not described in this manual, shall be carried out by Webasto-trained personnel.
- 26 The Dual Top Evo 6 heater shall be directly connected to the battery. Switching the heater on and off must only be done with the Dual Top Evo 6 control panel. Additional switches are not allowed.

WARNING

- 27 The heater may not be cleaned with a high-pressure cleaner.
- 28 Take good care of the vehicle, empty the content of the boiler and all water lines when there is a risk of frost.
There shall be no warranty claims for damage caused by frost!

3 Function description

The **Dual Top Evo 6** integrated heater from **Webasto** combines the benefits of an interior heater with a water boiler and contributes to a gas-free motor home.

Due to its outside installation and its operation with diesel fuel, the Dual Top Evo 6 saves valuable stowage space in the cab.

The Dual Top Evo 6 steplessly and precisely modulates the temperature for a consistent feeling of comfort.

The boiler can be drained simply and directly via the control panel.

Two different frost protection functions protect the Dual Top Evo 6 and the vehicle against frost while of winter vacation.

The heater detects the difference between the set temperature and the interior temperature and automatically adjusts the required heating capacity.

Depending on which function you wish to have, hot water **in summer mode**, just heat or heat and hot water **in winter mode**, several options are available.

3.1 Summer mode (hot water only)

The heater is used for providing hot drinking water. The water is heated up to and kept at 40 °C or 70 °C.

The device automatically selects the burner setting.

A water temperature sensor controls the water temperature. Due to variable operating and environmental influences, small water temperature deviations are possible.

The hot air fan for heating the interior is not activated.

3.2 Winter mode (heating without hot water production)

CAUTION

When heater is in use, the surface of the hot air outlet may become hot to the touch. Contact with skin may cause burns.

The desired interior temperature can be adjusted with the interior temperature selector (5 to 35 °C).

The device automatically selects the burner setting modulating between 1,500 W and 6,000 W depending on the output requirement (calculated from difference between selected temperature and current interior temperature).

The amount of heat is regulated to reach the pre-selected interior temperature quickly. Then only a limited amount of power is needed to hold the interior temperature.

Heating the interior is always possible with or without water in the boiler.

3.3 Winter mode (heating with hot water production)

The heater is used for heating the interior and production of hot water.

The desired interior temperature can be adjusted with the interior temperature selector (5 to 35 °C).

The water is heated up to 70 °C.

The device automatically selects the burner setting modulating between 1,500 W and 6,000 W depending on the output requirement (calculated from difference between selected temperature and current interior temperature).

The amount of heat is regulated to reach the pre-selected interior temperature quickly. Then only a limited amount of power is needed to hold the interior temperature.

A water temperature sensor controls the water temperature, while an interior temperature sensor controls the interior temperature.

Due to variable operating and environmental influences, small water temperature deviations are possible.

4 Operating Instructions

4.1 General

The operating instructions and the "Maintenance and Safety Information" must always be observed before the start!

The vehicle owner is responsible for the correct operation of the appliance.

Before using for the first time, it is essential to disinfect and rinse the entire water supply system with drinking water (see chapter 7: "Maintenance").

If the heater is not being used, always drain the water contents to avoid frost problems and breeding of micro-organisms!

Also drain the water prior to repair or maintenance work on the vehicle as the electrical safety/drainage valve may open when the appliance is switched off!

NOTE

Due to the fact that the heater is new, there may be a smell during the first couple of operation cycles.

NOTE

During continuous operation at low output levels, it is recommended that the heater be operated approx. once a month for 15 min. at full load to burn possible deposits in the burner.

4.1.1 Control Panel

Changes to the settings on the control panel are implemented after a short delay!

See Fig. 1.

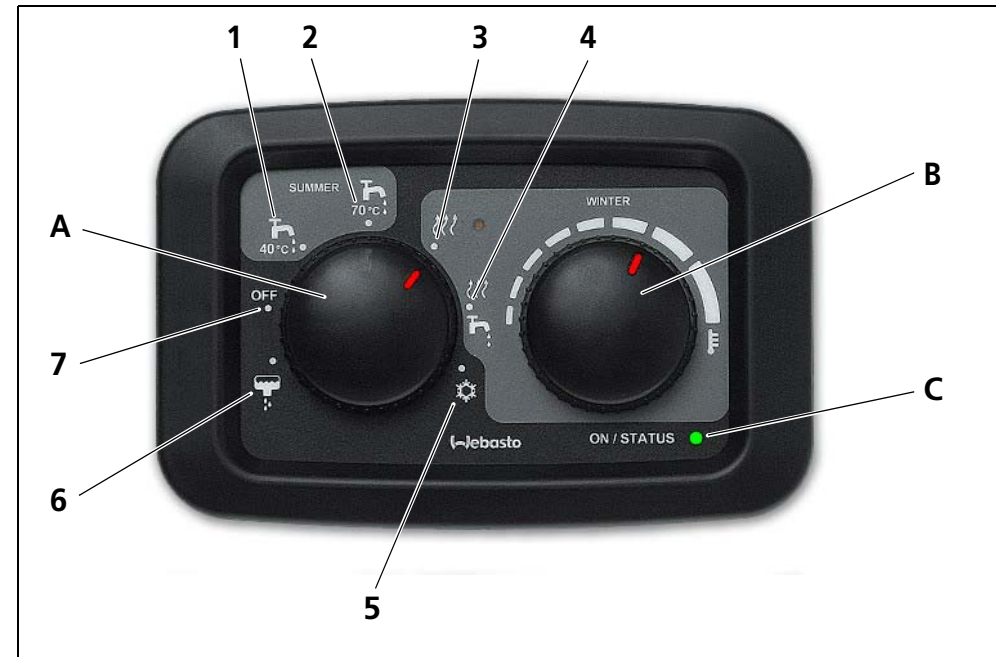


Fig. 1 Control Panel

- A = Mode selector knob
- B = Interior temperature selector
- C = Power indicator/fault message display (green / red).
- 1 = Summer operation, water temperature 40 °C
- 2 = Summer operation, water temperature 70 °C
- 3 = Winter mode, heating **without** hot water production
- 4 = Winter mode, heating **with** hot water production
- 5 = Frost protection mode
- 6 = Draining boiler
- 7 = Off

4.1.2 Interior temperature sensor

To measure the room temperature, a remote interior temperature sensor is located in the vehicle. The location of the sensor is determined by the installer, and is depended on the vehicle type and interior layout.

NOTE

The remote interior temperature sensor must be installed at medium height in the interior on vertical surfaces.

Avoid that the interior temperature sensor is:

- in the direct current of hot air (from the vehicle's own heating system or the hot air heater);
- close to heat sources;
- placed in direct sunlight (for example on the dashboard);
- installed inside a locker;
- installed behind curtains or the like.

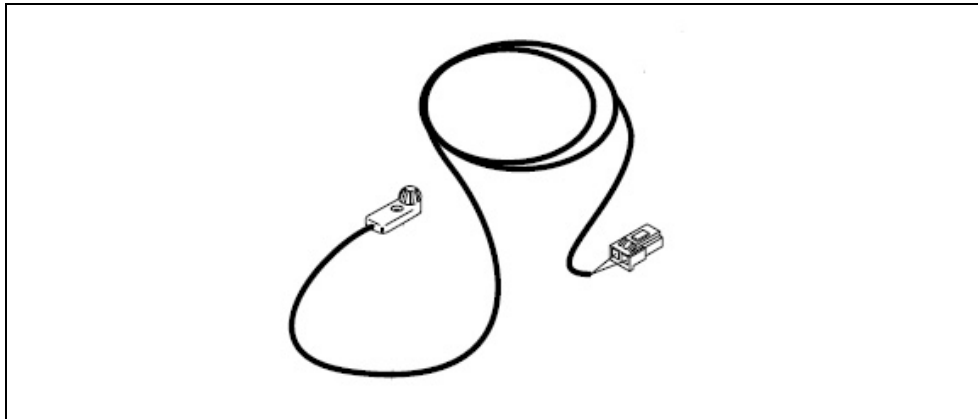


Fig. 2 Interior temperature sensor

4.2 Normal operation

4.2.1 Summer mode (hot water only)

- 1 Make sure that the boiler is filled with water.
- 2 Set selector knob (A) to summer mode, water temperature 40 °C (1) or 70 °C (2) on control panel.

The indicator (C) on the control panel lights green when the equipment is switched on. The red indicator on the mode selector knob (A) illuminates.

When the selected water temperature has been reached (40 °C or 70 °C) combustion inside the heater stops.

As soon as the water temperature has dropped below a certain value, the combustion is started again.

The indicator (C) on the control panel lights green as long as the equipment is switched on.

4.2.2 Winter mode (heating without hot water production)

CAUTION

When heater is in use, the surface of the hot air outlet may become hot to the touch. Contact with skin may cause burns.

- 1 Move interior temperature selector (B) on the control panel to desired thermostat setting for interior temperature.
- 2 Move mode selector knob (A) to winter mode, heating **without** hot water production (3) on control panel.

The indicator (C) on the control panel lights green when the equipment is switched on. The red indicator on the mode selector knob (A) as well as on the interior temperature selector (B) both illuminate.

When the selected interior temperature is approached, the heater starts to modulate.

The power is adjusted to a level necessary to maintain a constant temperature.

In case the interior temperature exceeds the selected temperature, due to environmental influences, the combustion inside the heater stops.

NOTE

Please note that, in case the boiler has been filled, the water is automatically heated as well. The water temperature may reach up to 80 °C depending on the power and the duration of the heating.

4.2.3 Winter mode (heating with hot water production)

CAUTION

When heater is in use, the surface of the hot air outlet may become hot to the touch. Contact with skin may cause burns.

- 1 Make sure that the boiler is filled with water.
- 2 Move interior temperature selector (B) on the control panel to desired thermostat setting for room temperature.
- 3 Move mode selector knob (A) to winter mode, heating **with** hot water production (4) on control panel.

The indicator (C) on the control panel lights green when the equipment is switched on. The red indicator on the mode selector knob (A) as well as on the interior temperature selector (B) both illuminate.

The heater gradually reduces the power until the selected interior temperature is reached. If the interior temperature has been reached, but the water temperature is still too low, the blown air circulation fan switches off and the water continues to be heated to a temperature of 70 °C.

The water temperature may reach up to 80 °C depending on the heating power that is required to achieve the interior temperature.

NO WATER control

When winter mode (heating **with** hot water production) is selected, but the boiler is without water, there will be a warning on the control panel.
The green LED with the winter mode icon, heating **without** hot water production (3), will flash.

In this case, the operating mode selector knob (A) on the control panel must be set to the winter mode, heating **without** hot water production (3) and water filled into the boiler if required.

Leaving mode selector knob (A) in the position winter mode, heating **with** hot water production (4), but filling the boiler with water may lead to automatic drainage of the boiler at temperatures lower than +6 °C.



Fig. 3 No water signal

4.2.4 Heating while driving

Heating the cabin and/or water while driving the vehicle is possible and allowed.

Attention when driving in cold conditions:

Run the Dual Top Evo 6 in winter mode (heating **with** hot water production) to protect the water pipes outside the vehicle against frost.

4.3 Frost

There are several features that protect the water supply system against frost.

- Drain water contents manually when there is risk of frost and when storing the vehicle for a longer period.
See paragraph 4.3.1: "Draining the boiler manually".
- The boiler is drained automatically in case you forgot to drain manually.
See paragraph 4.3.2: "Draining the boiler automatically".
- In case you don't want to drain the water supply system and you don't heat the interior of the vehicle, you can select the frost protection mode.
See paragraph 4.3.3: "Frost protection mode".

4.3.1 Draining the boiler manually

Drain water contents manually when there is risk of frost and when storing the vehicle for a longer period.

- 1 Interrupt power for vehicle system water pump (main switch or pump switch, depending on instructions of the vehicle manufacturer).
- 2 Open hot water taps in kitchen, bathroom, shower, etc. (set pre-selecting mixing taps or single-lever valves to "hot").
- 3 The electrical safety/drain valve is opened by turning and holding the mode selector knob (A) against the spring force in the position drain boiler (6) for at least 5 seconds.
Then, release the knob.
The electrical safety/drainage valve will open for approx. 90 minutes.
During drainage, all green icons on the control panel, as well as the red indicator on the mode selector knob (A), are blinking.

The boiler content is now discharged to the outside through the electrical safety/drainage valve.

Place a container beneath the outlet to check whether the water in the boiler has completely drained away (approx. 10 litres!).

NOTE

Any kind of water from the vehicle has to be discharged at a proper disposal facility.

NOTE

Drainage can be stopped by **again** moving mode selector knob (A) to drainage mode (6) for at least 5 seconds and then releasing the knob.

NOTE

Avoid the formation of micro-organisms in the lines and in the boiler during storage and make sure that the water supply system is completely drained. To do this, open all water valves, connect an air pressure of approx. 2 bar to the hot water line and leave it connected until the residual water is completely drained off.

4.3.2 Draining the boiler automatically

NOTE

When the heater is in the OFF position, the electronic control unit will 'wake up' every 30 minutes for 1 second in order to monitor the temperature. The draw is 5 mA each time the electronic control unit 'wakes up'.

NOTE

If the heater is not connected to a 12V power source the automatic drain feature is not available.

The electrical safety/drainage valve is opened electrically.

If the water temperature in the boiler is less than 6 °C, the boiler contents discharge automatically.

The boiler may automatically drain when:

- the appliance is switched "OFF";
- in winter mode when there is no active heat output (i.e.: selected interior temperature is reached, low outside temperature);
- if battery power is too low;
- there is a failure

While draining, all green icons on the control panel, as well as the red indicator on the mode selector knob (A), are blinking.

After approx. 90 min, the electrical safety/drainage valve will be closed again.

The drainage outlet of the electrical safety/drainage valve must always be kept clear (free from dirt, ice, leaves etc.)!

To avoid water loss and to protect the heater and boiler against frost, select the frost protection mode (5).

NOTE

When the frost protection mode is selected, diesel and electrical power are used. Make sure that there's enough diesel in the tank and the battery is charged. Check this frequently.

NOTE

Draining the boiler as well as the frost protection mode protect the heater and boiler against frost. Not all water lines in the vehicle can be protected against freezing due to installation variations.

When storing the vehicle, either choose a place that is well protected against low temperatures or drain the whole water system, including all lines and tubes (e.g. with air pressure, see note in paragraph 4.3.1: "Draining the boiler manually").

There shall be no warranty claims for damage caused by frost!

NOTE

Drainage can be stopped by moving mode selector knob (A) to drainage mode (6) for at least 5 seconds and then releasing the knob.

4.3.3 Frost protection mode

This mode is a safety feature for the heater only. It does not prevent the water circuits inside and outside the vehicle from freezing.

Store the vehicle at a place that is well protected against frost or drain water contents if there is a risk of frost!

To avoid freezing of the tubes and the boiler move mode selector knob (A) to frost protection mode (5).

The indicator (C) on the control panel lights green when the equipment is switched on. The red indicator on the mode selector knob (A) illuminates.

The heater functions as in the winter mode, heating **with** hot water production, but with lower values for air and water temperatures.

NOTE

Make sure that the boiler is filled with water when choosing frost protection mode.

NOTE

The frost protection mode enables the user to park the vehicle for a short time without being observed and without having to worry about frost and frost damage.

During winter storage or when parking the unused vehicle for a longer time, the entire water system should be drained and the heater disconnected from the battery to avoid unnecessary battery discharging or possible frost damage.

4.4 Switching off

Move mode selector knob (A) to "OFF" (7) to switch off.

The fan can continue to run after switching off in order to cool down the heater.
After this, the green indicator (C) goes off.

Always drain the boiler if there is a risk of frost!

5 Filling the boiler

Fill the vehicle fresh water tank with your own hose, which is kept and stored clean. Before filling the tank rinse the hose thoroughly (approx. 30 seconds).

WARNING

Always fill the tank with drinking water only and prevent dirt from getting into the entire water supply system.

- 1 Fill the boiler with water at an ambient temperature of at least 6 °C, or select
 - summer mode 40°C or 70°C,
see paragraph 4.2.1: "Summer mode (hot water only)", or
 - winter mode (heating **with** hot water production),
see paragraph 4.2.3: "Winter mode (heating with hot water production)",
to make sure the electrical safety/drainage valve does not open!
- 2 Make sure that the boiler is filled with water.
- 3 Open hot water taps in kitchen, bathroom, shower, etc. (set pre-selecting mixing taps or single-lever valves to "hot"). Leave water taps open until water flows out of taps. The air is pressed out of the boiler in the process and it fills with water.

If just the cold water supply system is being operated, without using the boiler, the latter also fills up with water. In order to avoid damage by frost, the water contents must be drained by operating the electrical safety/drainage valve (move mode selector knob (A) to drainage mode (6) for at least 5 seconds), also when the boiler has not been used. As an alternative, two shut-off valves, resistant to hot water, can be fitted in front of the cold and hot water connection.

When connecting to a central water supply (rural or city mains) or if using a more powerful water pump, a pressure reduction valve must always be installed to prevent a pressure above 2.5 bar developing in the boiler.

NOTE

Due to pressure differences in the system which result during filling or operation, small water quantities (approximately 30 ml / 24 h) can be drained out of the boiler, however there is no need to be concerned about complete draining.

6 Fault Message Output

If a fault occurs, a fault message is output on the control panel/fault message display (C) with flashing pulses.

After a series of 5 fast GREEN flashing pulses, the fault message output will be a repeated sequence of long RED flashing pulses. This procedure is repeated until the heater is switched off. The meaning of the number of red flashing pulses is shown in the table in chapter 8: "Troubleshooting". After that, again there will be 5 fast GREEN flashing pulses.

Depending on the type of fault, you may need to visit a Webasto Service Centre.

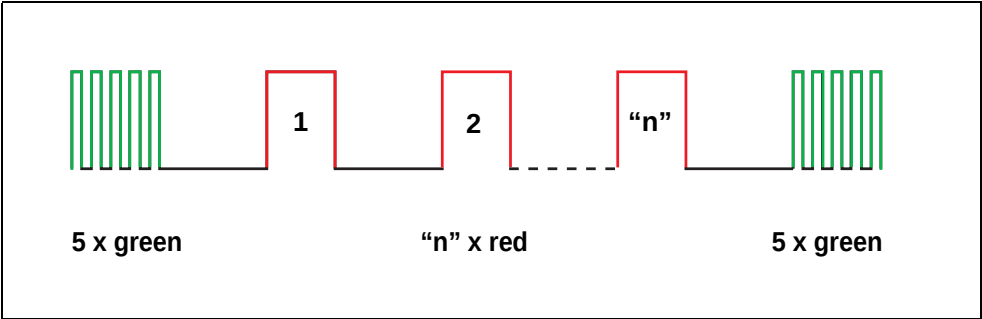


Fig. 4 Example fault message

7 Maintenance

Correct maintenance of a Webasto Dual Top Evo 6 integrated heater is important to ensure years of trouble free safe use and enjoyment.

We recommend taking the vehicle to your authorised Webasto dealer for periodic service and inspection.

It is very important that your dealer carries out any repair or maintenance, which is not described in this manual. Consult your dealer for help in determining your maintenance needs.

How much of your vehicle's service and maintenance you can do depends on your skill and experience, and whether you have the special tools required. If you want to learn how to work on your heater ask your dealer for advice.

WARNING

Many heater service and repair tasks require special knowledge and tools. Improper adjustment or service may result in damage to the heater or in an accident, which can cause serious injury.

- For best performance, your authorised Webasto dealer must inspect and service your heating system at least every 2 years, independent of the usage.
- DO NOT use high-pressure washer or compressed air to clean the heater. This can force dirt into areas that may cause damage.
- The heater must be switched "OFF" before cleaning.
- Drain the water system when there is risk of frost or when the vehicle is stored for a longer period.
- Use wine vinegar for descaling the boiler, this being introduced into the appliance via the water supply.
See paragraph 7.2: "Descaling".
- Regularly check all components of the water supply system.

7.1 Disinfection

- In case no water has been taken from the water supply system for a period of a week or more, drain the whole water system and rinse it thoroughly before refilling it.
- To avoid micro-organisms, water should not stay longer than a fortnight in the boiler. Disinfect the water supply system if water was more than a fortnight in the boiler.
- To prevent any harm, operate the heater full power every four weeks:
 - for at least 20 minutes continuously, winter mode, heating cabin **without** hot water production.
This prevents mechanical parts from seizing.
 - followed by operation for at least 30 minutes continuously, "Summer mode 70°C", hot water production only.
Water supply systems below 60 °C may breed micro-organisms.
- Clean and disinfect the water supply system immediately before rental or lending of the vehicle.
- Clean and disinfect the water supply system at least one time per year.

NOTE

Before winter storage, it is advisable to completely drain the water supply system with compressed air of 2 bar. To do this, open all taps, connect the compressed air to the hot water line and wait until the water has completely drained off.

- With suspicion on contamination with pathogens the water supply system has to be disinfected.
- Clean and disinfect the water supply system according to all local regulations (e.g. DVGW W 291).

For disinfection use a solution of Sodium Hypochlorite (NaOCl), dilution 5 %, 30 to 40 °C (e.g. Certisil®, Puriclean).

Other products can harm your health and/or the Dual Top Evo 6.

- ▶ Carefully follow all instructions of the NaOCl supplier.
- ▶ Carefully follow all instructions of the vehicle manufacturer.

- 1 Drain all water contents. See paragraph 4.3.1: "Draining the boiler manually".
- 2 Close all water taps.
- 3 Fill entire water supply system with NaOCl.
- 4 Select "Summer mode 40°C" to make sure the electrical safety/drainage valve does not open.
- 5 Make sure that the boiler is filled with NaOCl.
- 6 Open water taps in kitchen, bathroom, shower, etc. (set pre-selecting mixing taps or single-lever valves to "hot").
Leave the taps open until the air has been completely forced out of the Dual Top Evo 6, it is filled with NaOCl and NaOCl flows out of the taps. Then close the taps. Open the taps one by one, not all at the same time.
- 7 Leave it on for 1 to 2 hours.
- 8 Drain all NaOCl contents.
- 9 Repeat the described procedure (step 1 to 8) with drinking water 1 or 2 times. No need to leave it on for 1 to 2 hours.
- 10 Drain all water contents.
- 11 Fill entire water supply system with drinking water. See chapter 5: "Filling the boiler".

7.2 Descaling

Depending on the hardness of the water, used for heating in the Dual Top Evo 6, scaling and lime deposits can form in the coolant hoses and the boiler. In order not to restrict the water quality and the heater efficiency, it is advisable to conduct descaling regularly depending on the water quality.

Use common household products, such as "Kettle Klear" or a wine vinegar-water mixture with a ratio of 1:2 for descaling.

Other products can harm your health and/or the Dual Top Evo 6.

- 1 Drain all water contents. See paragraph 4.3.1: "Draining the boiler manually".
- 2 Close all water taps.
- 3 Fill the entire water supply system with wine vinegar-water mixture.
- 4 Select "Summer mode 40°C" to make sure the electrical safety/drainage valve does not open.
- 5 Make sure that the boiler contains the mixture.
- 6 Open water taps in kitchen, bathroom, shower, etc. (set pre-selecting mixing taps or single-lever valves to "hot"). Leave the water taps open until the entire air has been pressed out of the Dual Top Evo 6, they are filled with the wine vinegar-water mixture and it flows out of the water taps. Then close the taps. Open the taps one by one, not all at the same time.
- 7 Leave it on for 1 to 2 hours and wait for reaction phase.
- 8 Check whether the scale deposits have completely dissolved in the vinegar water. If not, allow the heater to run for another 30 minutes and then completely drain off the wine vinegar-water mixture.
- 9 Flush the water supply system with drinking water until it no longer smells like vinegar.
- 10 Then fill the boiler with fresh drinking water again. See chapter 5: "Filling the boiler".

8 Troubleshooting

If a fault occurs, first check the fuses and plug connections to ensure that they are in perfect condition and connected correctly.

If the action described below does not rectify the fault, have the heater checked by Webasto-trained personnel.

To reset the fault, switch the heater off, wait at least 5 seconds and then switch the heater on.

If serious malfunctions such as overheating or failure to start reoccur, the heater is locked and can be put back into service by deleting the failures.

Heater Lock Out Reset Procedure:

1. Using switch or standard timer control, turn heater on
2. Remove the main power connection to heater from battery or pull fuse for a minimum of 20 seconds.
3. Using switch or standard timer control, turn the heater off.
4. Reinstall main heater power connection where previously disconnected.

WARNING

All repair tasks are done at your own risk. To avoid injuries and damage, the device must be switched off and the battery disconnected before working on the Dual Top Evo 6.

WARNING

If black smoke is being emitted from the heater exhaust, the combustion air system and/or the exhaust system may be blocked. Check combustion air and exhaust system for blockages.

A blocked exhaust system or combustion air system can cause unsafe status of the heater!

Fault message output on control panel

Number of RED flashing pulses	Meaning	Remedy
00	No communication between control panel and heater, or control panel error	First, remove fuses 15 A (red cable) and 5 A. Then put in fuse 15A (red cable), followed by fuse 5 A. Check connections of control panel. Check fuse 15 A (red cable). Check wiring harness. Contact a Webasto Service Centre.
01	No start (after 2 attempts to start)	Check fuel supply (enough fuel, at least 8 ltr.; check fuel connection and tubes), reset heater (by switching off for at least 30 sec.)
02	Flame failure Restart not successful	See fault message 01
03	Under voltage or over voltage	Charge battery or connect to another power source (12 V DC), reset heater (by switching off for at least 5 sec.)
04	Fuel pump disconnection/short circuit/overheating	Check fuel pump cable and connectors, check for overheating (see faults 06 and 07), reset heater (by switching off for at least 5 sec.)
05	Hot air motor fault: disconnection/short circuit/fan speed out of range/fan blocked	Ensure that hot air fan can rotate freely, remove possible blocking objects, reset heater (by switching off for at least 5 sec.)
06	Overheating or exceeding gradient water temperature sensor	Check water level, reset heater (by switching off for at least 5 sec.) or select winter mode, heating without hot water production
07	Overheating or exceeding gradient hot air temperature sensor	Ensure that hot air can flow freely, air intake and outlets are not blocked. Reset heater (by switching off for at least 5 sec.)
08	Overheating of heaters' control unit	Ensure that cooling air can flow freely, reset heater (by switching off for at least 5 sec.)
09	Combustion air motor fault: disconnection/short circuit/overload/blocked	Ensure that cooling fan can freely rotate, remove possible blocking objects. Check fuse 15 A (red cable).
10	Control unit fault/heater locked	Put heater back into service (see beginning of paragraph) and restart heater. Contact a Webasto Service Centre.
11	Interior temperature sensor disconnection or short circuit	Check routing of cable, avoid that it is pinched or crushed, check the connector behind the control panel. Reset heater (by switching off for at least 5 sec.)
12	Hot air temperature sensor disconnection/short circuit	Reset heater (by switching off for at least 5 sec.) Contact a Webasto Service Centre.
13	Water temperature sensor disconnection/short circuit	See fault message 12
14	Glow plug/flame detector disconnection/short circuit	See fault message 12

Fault message output on control panel

Number of RED flashing pulses	Meaning	Remedy
15	Premature flame detection	See fault message 12
17	Electrical safety/drain valve disconnection/short circuit	See fault message 12

NOTE

Number of red flashing pulses 0 to 15: heater shuts off automatically.
17 red flashing pulses: no shut-off, but the flashing pulses indicate a failure.

8.1 Fuses

The Dual Top Evo 6 is equipped with 3 fuses: 5 A, 15 A and 15 A.
Each fuse must be connected to the corresponding cable (observe colour).

5 A: red-and-blue cable

15 A: red-and-black cable

15 A: red cable

When you replace a fuse, make sure that the Dual Top Evo 6 is switched off.

WARNING

In case of electrical deviations a fuse other than specified may cause fire.

9 WEBASTO LIMITED NON-TRANSFERABLE WARRANTY

Webasto Thermo & Comfort North America, Inc. (hereinafter referred to as Webasto) warrants their heaters and heater kits against defects in material and workmanship for two (2) years effective at the time of installation or vehicle registration date for original equipment installation (OEM). This warranty period may not exceed three (3) years from the original date of sale by Webasto. This warranty period may be superseded by written contractual agreements.

All models are limited to 2,000 maximum operating hours except for DBW series.

Replacement parts are covered for six (6) months or the remainder of the original warranty period, whichever is longer. The Thermo Top C heater is the only heater considered a replacement part.

The intent of the Webasto warranty is to protect the original end-user of the heater from defects and provide free repair and replacement of defective parts in the manner provided herein. During the warranty period, the exclusive remedy will be for Webasto, at their discretion, to repair or replace those parts which are demonstrated to be defective in material or workmanship.

While warranty is provided to the "original end-user", it is to be administered and serviced through an authorized Webasto dealer in accordance with the Webasto warranty policy or contractual agreement between Webasto and a second party. To locate the nearest Webasto authorized dealer for warranty service, visit <http://www.webasto.com> or call (800) 860-7866 in USA, (800) 667-8900 in Canada.

Limitations: Webasto specifically excludes and limits warranty from the following:

- Normal wear of service parts: **(filters and fuses are not covered)**
- Removal and replacement of heater (with the exception of the Thermo Top C 12 volt heater).
Note: *Thermo 50 Heaters have changed from a replacement heater to a repairable heater.*
- Damage to product in transit. All claims must be filed with carrier.
- Improper installation, which is not in accordance with valid, supplied installation instructions or approved OEM applications.
- Deterioration due to normal wear, corrosion, abuse, damage, accident, improper storage or operation, lack of reasonable and necessary maintenance.
- Modification of product by alteration, use of non-genuine parts or repair by unauthorized personnel.
- Economic loss for expenses related to travel, vehicle disability, personal injury or other incidental or consequential damages arising from any breach of this expressed warranty.

THIS WARRANTY IS NON-TRANSFERABLE.

IMPLIED WARRANTIES INCLUDING THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WARRANTY. WEBASTO DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

SOME STATES AND CANADIAN PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY AMONG STATES AND CANADIAN PROVINCES.

WEBASTO RETAINS THE RIGHT TO MODIFY THESE WARRANTY TERMS WITHOUT NOTICE IN ORDER TO COMPLY WITH POLICY OR LAWS GOVERNING WARRANTY ISSUES IN STATES OR COUNTRIES HAVING SPECIFIC REMEDIES DIFFERING OR ADDITIONAL TO THOSE DESCRIBED WITHIN THIS DOCUMENT.



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