Webasto
Feel the drive

Programmierbares Bedienelement
Programmable Control Panel
Pannello di comando programmabile

Bedienungsanweisung
Operating Instructions
Manuale operativo

DUAL TOP RHA 100

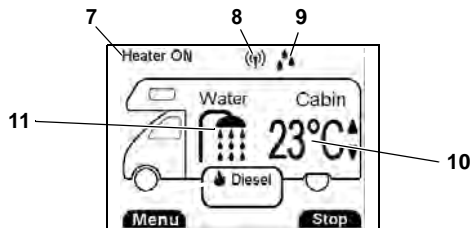**Fig./Abb. 1: Bedienelement /Control Panel /Pannello di comando**

Fig./Abb. 2: Statusanzeige /Status Display /Display di stato

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1 Introduction

Dear Customer,

Thank you for choosing this Webasto Programmable Control Panel for Dual Top integrated heaters. This product has been designed as a Control Panel for a Dual Top heating system in motor homes. Please note that this Control Panel and Dual Top heaters are only specified for applications in motor homes or similar vehicles.

We trust that the workshop / service centre that carried out the installation explained to you the operation and principle of functioning of your Webasto Dual Top to your complete satisfaction.

These Operating Instructions are intended to give you an additional overview of how to use the Programmable Control Panel. If you do not understand any information in the instructions or if you misplace any of them, please contact your authorised Webasto dealer immediately.

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

To ensure safe use of the Dual Top 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.

1.1.   Additional documentation to be used

These Operating Instructions contain most of the information and instructions required for operating the Dual Top RHA 100 integrated heaters with programmable control panels.
However, it is necessary to read additional documentation. The Operating Instructions for the Dual Top RHA 100 integrated heater must also be used. These operating instructions have been delivered together with the integrated heater and can also be downloaded from http://dealers.webasto.com. Go to "Product Documentation" and select product "Dual Top RHA 100". Then download the instructions in pdf format in the required language.

2   Function description

The **Webasto Dual Top RHA 100** integrated heater combines the benefits of an interior heater with a water boiler and contributes to a gas-free camper.

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

2.1.   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.

2.2. Winter mode (heating only)

The heater is used for providing hot air.
The desired interior temperature may be adjusted by pushing button (1) ▲ or button (2) ▼
(5 ~ 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 quickly reach the pre-selected interior temperature. Then only a limited amount of power is needed to hold the interior temperature.

Blown air heating is always possible with or without water in the boiler.

2.3.   Winter mode (heating and hot water)

The heater is used for heating the interior and production of hot water. Heat is produced by a diesel powered burner.

The desired interior temperature may be adjusted by pushing button (1) ▲ or button (2) ▼ (5 ~ 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 quickly reach the pre-selected interior temperature. 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.

2.4. Advanced functions

- Menu driven user guidance in 6 languages.

- Programmable timer: The device offers two free programmable 7 days, 24 hours heating programs.
  See paragraph 3.5.: Programming timer.

- Remote control by Webasto Telestart and Thermo Call (optional controls).
  See paragraph 3.6.: Remote control.

- Boiler drainage: possibility to drain the boiler manually with the Control Panel or automatically as frost protection.
  See paragraph 3.7.: Frost.

- Antifreeze: protects the boiler against frost.
  See paragraph 3.7.4.: Frost protection mode.

- Textual fault information: when a fault occurs, a fault message is displayed on the Control Panel. A number and a brief description inform the user about the kind of fault.
  See chapter 4: Fault message.

3   Operating Instructions

3.1.   General

Always observe the Operating Instructions for the Dual Top RHA 100 integrated heater (delivered together with the integrated heater or download from http://dealers.webasto.com) as well as for the Programmable Control Panel prior to starting!
Pay extra attention to "Servicing and safety instructions" and "Maintenance".

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

3.1.1. Control Panel

Changes to the settings on the Control Panel are implemented after a short delay!

See Fig. 1.

1 = Up - button ▲
2 = Down - button ▼
3 = START / STOP / OK - button
4 = MENU / BACK / CANCEL - button
5 = On/off - button ⚪
6 = Power indicator / fault indicator (green / red).

During normal operation you will see the status display. See Fig. 2.

7 = Indicator Heater ON / Heater OFF
8 = Remote indicator (ᵖ)
9 = Drainage indicator ⬩
10 = Interior heating / temperature indicator
11 = Water heating / temperature indicator

ad 1 and 2: Press up button (1) ▲ to increase and down button (2) ▼ to decrease desired temperature, set correct time and date, etc., move blinking cursor and to scroll through menu.

ad 6: Power indicator lights **GREEN** when Dual Top is switched on and START (3) is pressed. Also Heater ON on display (7). Heater functions or standby.

Power indicator is off when STOP (3) is pressed or when Dual Top is switched off. Also Heater OFF on display (7). No heater function, no standby.

Indicator blinks **RED** in case there is a fault.

ad 7: Heater ON when Dual Top is switched on and START (3) is pressed. Heater functions or standby.
Heater OFF when STOP (3) is pressed or when Dual Top is switched off. No heater function, no standby.

ad 8: Symbol "(ɕ)" appears when device is ready to accept signals of remote control.

ad 9: Symbol "♨" appears when drain valve is open.

ad 10: Desired interior temperature is displayed, not actual temperature.

ad 11: Desired water temperature is displayed, not actual temperature.

Backlight
The backlight of the display lights up when the Dual Top equipment is switched on, no matter if there is heater operation or not.
It will fade out after some minutes if no button is pressed.
Backlight will light up again after pressing ▲ or ▼.

Note:
The display may become darker when the temperature of the Control Panel becomes very high or when it is placed in direct sunlight.
Avoid that the Control Panel is exposed to high temperatures or direct sunlight.
In case aforementioned conditions could not be avoided, adjust display contrast in " 🔧 **Setup**" (see paragraph 3.4.2.: Language, temperature unit, hour format, display contrast).

3.1.2. External LED power indicator

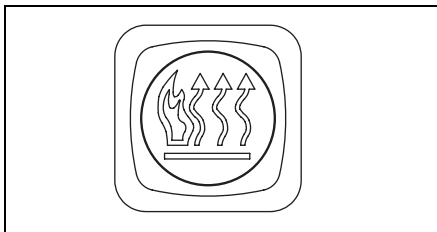An external LED is mounted in the field of view of the driver to indicate heater operation.

The function is the same as power indicator (6). See paragraph 3.1.1.: Control Panel.

Note:
The external LED does not have a fault indicator function.

Note:
The external LED is an indicator only. Although it looks like a button and it can be pressed, it has no additional function.

Fig. 3:   **External LED**

3.2. Before you start

After connecting the appliance to the 12V DC power supply, language, day, date and time have to be set.

1 Press ▲ and ▼ to select your preferred language:
   "**Deutsch**", **English**", "**Español**", "**Français**", "**Italiano**", or "**Svenska**".

2 Press OK.

3 Press ▲ and ▼ to select the correct day and date.

4 Press OK.

5 Press ▲ and ▼ to select the correct time.

6 Press OK.

Standard settings:
- Hour format: 24h
- Temperature unit: °C
- Interior temperature: 21 °C
- Remote control: Disabled
- Timer programs: OFF for all 7 days
                            lower interior temperature   T1 = 15 °C,
                            higher interior temperature T2 = 21 °C

3.3. Normal operation

3.3.1. Appliance is switched off

When the appliance is switched off, display shows "**Webasto Dual Top**" as well as actual time, day and date.

1 hour after switching off and touching buttons for the last time, display will go into "sleep" mode: it will become dark. When any button is touched, display described above appears again for at least 1 hour.

3.3.2. Switching on the heater

1   Press on/off 🔘 to switch on the Dual Top.
    Display shows the last used heating mode.*

2   Press START
    Now the heater will start running in the displayed operation mode.
    Power indicator (6) lights green and "**Heater ON**" (7) on display.

---

* Exception: in case the last used heating mode was initiated by remote control (Telestart or Thermo Call), the last non-remote control heating mode is shown.

3.3.3.   Switching off the heater

If you wish to switch the Dual Top off completely:

1   Press on/off ⏻ to switch off.
    Now the heater will stop heating.

2   The fan can continue to run after switching off in order to cool down the heater.
    "**Shutting down...**" on display.

3   After cooling phase the fan switches off.
    For 1 hour the display shows text "Webasto Dual Top" as well as actual time, day and date.

Always drain the boiler if there is a risk of frost!
See paragraph 3.7.: Frost.

Stopping heating operation to select another mode:

1   Press STOP.
    Now the heater will stop heating.

2   The fan can continue to run after switching off in order to cool down the heater.
    Display shows stopped heating mode.*
    Power indicator (6) goes off and "**Heater OFF**" (7) on display.

3   Use menu to select another mode.
    After cooling phase the fan switches off.
    When after some minutes no button is touched, the display shows text "Webasto
    Dual Top" as well as actual time, day and date.

*   *Exception: in case the last used heating mode was initiated by remote control (Telestart or Thermo
    Call), the last non-remote control heating mode is shown.*

3.3.4.   Setting desired interior temperature

When the appliance is switched on (see paragraph 3.3.2) and the status display is visible, you can set the desired interior temperature.*
The status display shows the camper and the actual heating program.
See Fig. 2.

Press ▲ to increase or ▼ to decrease the temperature.

Note:
Desired temperature is displayed, not actual interior temperature.
Selected interior temperature can be changed, no matter if heater is ON or OFF. As soon as heater is switched on (manually, by remote control or timer) in a cabin heating mode, appliance will heat interior to and keep it at this temperature.

* *If actual heating mode is initiated by remote control, desired interior temperature cannot be adjusted. Dual Top will heat up interior and keep the temperature at preset value, selected when setting ThermoCall or Telestart.*

3.3.5.   Summer mode (hot water only)

Make sure that the boiler is filled with water.
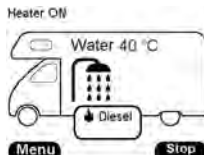
Make sure the device is switched on.

1 Press MENU.

2 Press ▲ and ▼ to select "🚿 **Hot Water**".

3 Press OK.

4 Press ▲ and ▼ and choose
   "🚿 **Economy 40°C**" or "🚿 **Comfort 70°C**".

5 Press OK.

6 "**Selection completed**" on display.

   Note:
   When heater is already "ON", text "**Selection completed, press OK to change operation mode**" appears.
   Press OK.

7   After 3 seconds power indicator (6) lights green and display changes to:

– "**Heater ON**"
– "🚿 **Water 40°C**" or "🚿 **Water 70°C**" (depending on selected water temperature)
– "🔥 **Diesel**"

The power indicator (6) lights green as long as there is a demand for hot water. To end this press STOP.

3.3.6.   Winter mode (heating without hot water production)
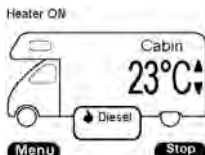
Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select " 🚐 **Heating Cabin**".

3   Press OK.

4   "**Selection completed**" on display.

Note:
When heater is already "ON", text "**Selection completed, press OK to change operation mode**" appears.
Press OK.

5   After 3 seconds power indicator (6) lights green and display changes to:

- "**Heater ON**"
- "**Cabin**", "**... °C**"
  (value depends on latest selected interior temperature; °C or °F depends on setting)
- "🔥 **Diesel**"

6 Press ▲ or ▼ to adjust desired interior temperature.

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.

3.3.7. Winter mode (heating with hot water production)
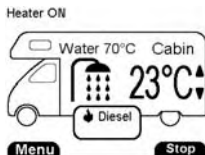
Make sure the device is switched on.

1 Press MENU.

2 Press ▲ and ▼ to select " 🏠 **Heating Cabin + Hot Water**".

3 Press OK.

4 "**Selection completed**" on display.

Note:
When heater is already "ON", text "**Selection completed, press OK to change operation mode**" appears.
Press OK.

5 After 3 seconds power indicator (6) lights green and display changes to:

- "**Heater ON**"
- "**Water 70°C**"
- "**Cabin**", "**... °C**"
  (value depends on latest selected interior temperature; °C or °F depends on setting)
- "🔥 **Diesel**"

6 Press ⏶ or ⏷ to adjust desired interior temperature.

The unit 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 heating **with** hot water production is selected, but the boiler is without water, there will be a warning on the display.
Text "**Mode changed   Low level sanitary water!**" blinks in a pop-up display.
The device automatically changes to winter mode, heating **without** hot water production.

Choose one of the following options:

A. Press STOP to end current mode and select winter mode, heating **without** hot water production. See paragraph 3.3.6.

B. Fill the boiler with water after changing to winter mode, heating **with** hot water production.

3.3.8.   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 in winter mode (heating **with** hot water production) to protect the water pipes outside the vehicle against frost.

3.4.   Settings setup

This chapter describes how to setup your favourite Dual Top system settings of day, date, time, language, temperature unit, hour format and display contrast correctly.

3.4.1.   Day, date, time

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select " 🔧 **Setup**".

3   Press OK.

4   Press ▲ and down ▼ to choose "**Set Date + Day**" or "**Set Time**".

5   Press OK.

6   Day and date or time (depends on selection) on display.
     Active field blinks.

7   Press ▲ or ▼ to adjust value of blinking field.

8   Press OK.

9   Now, the next field blinks. Repeat steps 7 and 8 until setting is correct.

10 Press BACK to return to main menu,
    or continue with another setting as described from step 4 to 9.

3.4.2.   Language, temperature unit, hour format, display contrast

Choose your favourite settings:

– Language: Deutsch / English / Español / Français / Italiano / Svenska
– Temperature unit: °C / °F
– Hour format: 12h / 24h
– Display contrast: **...** %

Make sure the device is switched on.

1 Press MENU.

2 Press ▲ and ▼ to select " 🔧 **Setup**".

3 Press OK.

4 Press ▲ and ▼ to choose
   "**Set Language**","**Set Temperature Unit**", "**Hour Format**" or "**Set Contrast**".

5 Press OK.

6 Press ▲ or ▼ to choose the desired language, temperature unit, hour format or display contrast.

7 Press OK.

8 Press BACK to return to main menu,
   or continue with another setting as described from step 4 to 7.

3.5.　Programming timer

This allows you to operate the system using a 24 hour 7 day programmable timer.
Within this there are 2 programs you can set for each day, hour by hour, whether the interior has to be heated or not (off, lower temperature, higher temperature) and if hot water (70 °C) has to be available or not.

3.5.1.　Program setting

Temperature setting

Make sure the device is switched on.

1　Press MENU.

2　Press ▲ and ▼ to select "⏰ **Programming Timer**".

3　Press OK.

4　Press ▲ and ▼ to choose "🌡 **Timer Program 1**" or "🌡 **Timer Program 2**" (values T1 and T2 depend on program settings).

5　Press OK.

6　Press ▲ and ▼ to select "🌡 **Set Cabin Temperatures**".

7　Press OK.

8   Press ▲ or ▼ to adjust desired T1 (lower interior temperature).

9   Press OK.

10 Press ▲ or ▼ to adjust desired T2 (higher interior temperature).
    Note: T2 has to be higher than T1.

11 Press OK.

12 Press BACK to return to main menu or continue with **Day setting**, step 6.

Note:
Temperatures T1 and T2 may be programmed to different values in Timer Program 1 and Timer Program 2.

Day setting

In case you want to set the days after setting temperatures T1 and T2, continue with step 6.

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "🕒 **Programming Timer**".

3   Press OK.

4   Press ▲ and ▼ to choose "🌡 **Timer Program 1**" or "🌡 **Timer Program 2**"
    (values T1 and T2 depend on program settings).

5   Press OK.

6   Press ▲ and ▼ to choose "**Set Monday**", "**Set Tuesday**", "**Set Wednesday**", etc.

7   Press OK.

8 Press ▲ and ▼ to:

   – select "**Show 24h Program**".
   Matrix with day, programmed hours and interior temperatures T1 and T2 appears.
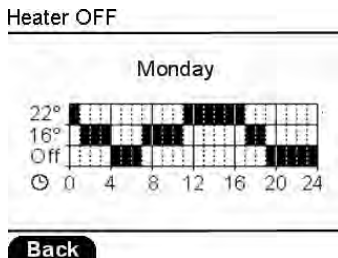
   Press BACK to return to main menu.

   – or select "**Modify 24h Program**".

9 Press OK.

10 Selected day and hour appear on display.
Matrix with programmable hours and interior temperatures T1 and T2 appears.
Field of actual time and temperature blinks.
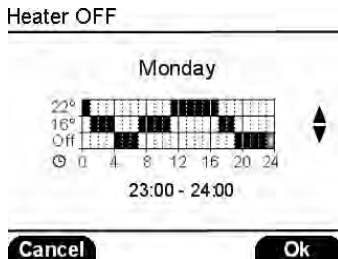
11 Press ▲ or ▼ to adjust desired temperature for selected day and hour: **OFF**, **T1** or **T2**.

12 Press OK.

13 Repeat step 11 and 12 until all 24 hours are programmed.
(You will see the hour period displayed at the bottom of the screen.)

14 "**Programming 24h successful**" on display.
   After 3 seconds, select another day as described in step 6 and continue to program remaining days.
   It's also possible to copy programmed values from one day to another. See **Day copying**, step 6.
   When all days have been programmed, press BACK to return to main menu.

Day copying

Instead of programming each day individually, it's also possible to copy programmed values from one day to another.
After copying you can leave the values identical, but it's also possible to make adjustments (see **Day setting**, step 6).

In case you copy days after setting temperatures T1 and T2 or programming and setting a day, continue with step 6.

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "🕒 **Programming Timer**".

3   Press OK.

4   Press ▲ and ▼ to choose "🕒 **Timer Program 1**" or "🕒 **Timer Program 2**"
   (values T1 and T2 depend on program settings).

5   Press OK.

6   Press ▲ and ▼ to choose "**Set Monday**", "**Set Tuesday**", "**Set Wednesday**", etc.

7   Press OK.

8   Press ▲ and ▼ to choose "**Copy Tuesday**", "**Copy Wednesday**", etc.

9   Press OK.

10 "**Copy of 24h program succesful**" on display.
    After 3 seconds, select another day as described in step 6 and continue to program remaining days.

    When all days have been programmed, press BACK to return to main menu.

3.5.2.   Heating by timer

This paragraph describes how to select a program to heat the interior and to provide hot water.
You can choose from 2 programs that define 7 days, 24 hours interior and water heating.
To change the programs see paragraph 3.5.1.: Program setting.

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "🕒 **Heating by Timer**".

3   Press OK.

4   Press ▲ and ▼ to choose "🔅 **Timer Program 1**" or "🔅 **Timer Program 2**"
     (values T1 and T2 depend on program settings).

5   Press OK.

6   Press ▲ and ▼ to choose "🚐 **Heating Cabin**" or "🚐 **Heating Cabin + Hot Water**".

7   Press OK.

8   "**Selection completed**" on display.

Note:
When heater is already "ON", text "**Selection completed, press OK to change operation mode**" appears.
Press OK.

9 After 3 seconds power indicator (6) lights green and display changes to:
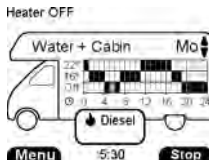
– "**Heater ON**" or "**Heater OFF**"
– "**Water**" (if Hot Water selected)
– "**Cabin**"
– "**♦ Diesel**"
– Day

– Time
– Matrix with programmed hours and interior temperatures.
  Field of actual time and temperature blinks.

Note:
Press ▲ and ▼ to view program settings of another day.

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3.6.   Remote control

The Webasto Dual Top heater can also be operated by following remote control devices: Webasto Telestart and Thermo Call.
These controls are optional. In case of interest please contact your Webasto dealer.
Signal of remote control over-rules commands of Control Panel, as long as remote control is enabled.

3.6.1.   Show actual mode

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "(ᵠ) **Setting ThermoCall/Telestart**".

3   Press OK.

4   Press ▲ and ▼ to select "**Show actual Mode**".

5   Press OK.

6   On display appears following message, depending on disabled or enabled remote control function:

    – Disabled: "**ThermoCall/Telestart disabled**"
    – Enabled: "**ThermoCall/Telestart enabled   Receiving a signal from ThermoCall/
                       Telestart system heats up cabin to ... °C and provides hot water**".

Note:
... °C or **...** °F: value and unit depend on setting and set interior temperature.

Note:
"and provides hot water" only appears when function "Heating Cabin + Hot Water" is selected.

7   Press BACK to return to the main menu.

3.6.2.   Enabling and setting Telestart and Thermo Call

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "(ぃ) **Setting ThermoCall/Telestart**".

3   Press OK.

4   Press ▲ and ▼ to select "**ThermoCall/Telestart enabling and setting**".

Note:
If text "**ThermoCall/Telestart not connected   Visit www.webasto-dualtop.com**" appears,
remote control device is not connected.
Press BACK to return to main menu.

5   Press OK.

6   Press ▲ and ▼ to choose "**Heating Cabin**" or "**Heating Cabin + Hot Water**".

7   Press OK.

8   Press ▲ and ▼ to adjust desired interior temperature.

9   Press OK.

10 "**Enabling ThermoCall / Telestart successful**" on display.
    After 3 seconds display changes to status of appliance at actual time.
    "(ꞓꞔ)" (8) on display.

3.6.3.   Disabling Telestart and Thermo Call

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "(ψ) **Setting ThermoCall/Telestart**".

3   Press OK.

4   Press ▲ and ▼ to select "**ThermoCall/Telestart disabling**".

5   Press OK.

6   "**Disabling ThermoCall / Telestart**" on display.
    After 3 seconds display changes to status of appliance at actual time.
    "(ψ)" (8) disappears from display.

3.6.4.   Start and stop heater operation using Telestart

This is only possible when Telestart is connected and enabled, indicated by "$(\!(\cdot)\!)$" (8) in display.

Starting heater operation:

     1   Press ON button of Telestart.
         LED of Telestart lights green, showing that signal was transferred successfully.

     2   The heater starts running in the (in paragraph 3.6.2.: Enabling and setting Telestart and Thermo Call) selected mode, independent from the actual heater status (heater off, heater on, drainage, ...).

Stopping heating operation:

     1   Press OFF button of Telestart.
         LED of Telestart lights red, showing that signal was transferred successfully.

     2   The heater stops any heating operation and switches off, independent from the actual heater status.
         Exception: running drainage will be continued.

Note:
If LED of Telestart blinks red after pressing ON or OFF button of Telestart, the signal was not transferred successfully.

3.7. Frost

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

- Drain water contents manually when there is risk of frost and when storing the vehicle for a longer period.
  See paragraph 3.7.1.: Draining the boiler manually.
- The boiler is drained automatically in case you forgot to drain manually.
  See paragraph 3.7.3.: Draining the boiler automatically.
- In case you don't want to drain the water system and you don't heat the interior of the vehicle, you can select the frost protection mode.
  See paragraph 3.7.4.: Frost protection mode.

3.7.1.   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.

3   Make sure the device is switched on.

4   Press MENU.

5   Press ▲ and ▼ to select "💧 **Draining Boiler**".

6   Press OK.

7   "**Press OK to confirm boiler drainage**" on display.

8   Press OK.

9   "**Draining...   Press MENU to select heating operation**" and
    "**Press STOP to abort drainage**" on display.
    "💧" (9) on display.

Note:
Any kind of heater operation will be stopped when manually starting boiler drainage.

Note:
To stop drainage see paragraph 3.7.2.: How to stop draining the boiler.

The water heater content is now discharged to the outside through the drainage valve.
Place a container beneath the outlet to check whether the water in the boiler has completely
drained away (approx. 10 litres!).

After approx. 90 min, text "**Drainage completed**" appears.

10   Press OK to end manual drainage.

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

Note:
Be aware of drainage behaviour when starting a heating operation (by menu guidance) without aborting or completing drainage procedure:

a) Drainage aborted when one of the following modes is selected:
 - Summer mode (hot water only)
 - Winter mode (heating **with** hot water production)
 - Frost protection mode;

b) Drainage continued in case of
 - Winter mode (heating **without** hot water production).

3.7.2.   How to stop draining the boiler

Boiler drainage can be stopped, if circumstances require this.

Make sure the device is switched on.

1   Press MENU.

2   Press ▲ and ▼ to select "♦ **Draining Boiler**".

3   Press OK.

4   "**Press OK to confirm boiler drainage**" on display.

5   Press OK.

6   "**Draining... Press MENU to select heating operation**" and
    "**Press STOP to abort drainage**" on display.
    "♦" (9) on display.

7   Press STOP.
    "**Drainage aborted**" on display.

8   Press OK.

3.7.3. Draining the boiler automatically

The drainage valve is opened electrically.

If the water temperature at the drainage valve is less than 6 °C, the boiler water contents may discharge automatically.

This function is active when:

- the appliance is switched "OFF";
- in winter mode (heating **without** hot water production) during a period when there is no heating action in the heater (e.g.: selected interior temperature is reached, low outside temperature);
- if battery power is too low;
- there is a failure!

Note that it only works when a 12 V power supply is available!

During drainage, " 💧 " (9) appears on display.

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

The drainage outlet of the electrical 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 (see paragraph 3.7.4.: Frost protection mode).

Note:
Automatic drainage can not be stopped.
However, when you switch mode to manual drainage, it can be aborted (see paragraph 3.7.2.: How to stop draining the boiler).

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

3.7.4. 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!

Make sure the device is switched on.

1 Press MENU.

2 Press ▲ and ▼ to select "**Frost Protection**".

3 Press OK.

4 "**Selection completed**" on display.

   Note:
   When heater is already "ON", "**Selection completed, press OK to change operation mode**" appears.
   Press OK.

5   After 3 seconds power indicator (6) lights green and display changes to:
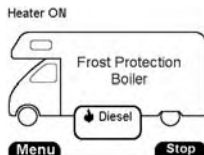
- – "**Heater ON**"
- – "**Frost Protection Boiler**"
- – "🔥 **Diesel**"

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

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

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

4   Fault message

When a fault occurs, power indicator / fault indicator (6) blinks RED.
Next to that, a fault message is shown on the display of the Control Panel.

The meaning of the messages is shown in the following table.

Depending on the type of fault, you may need to visit a Webasto service station.

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

Do this by disconnecting the power supply:

1   Ensure that the heater/ventilator is not running (to be established by the sound of the heater operating).
    If necessary wait until ventilators stop running.

2   Switch off Dual Top by pressing on/off button ⓞ .

3   Replace fuse 15 A for at least 5 seconds.

Now the heater is reset.

Note:
Please be aware that fault messages (numbers) are not the same on different types of Control Panels.

Fault message on Control Panel

Message	Meaning	Remedy
Message 01 No data connection	No communication between Control Panel and heater, or error Control Panel.	First, remove fuses 15A and 5A. Then put in fuse 15A, followed by fuse 5A. Check connections of Control Panel. Check fuse 15A. Contact a Webasto service station
Message 02 No start of combustion	No start (after 2 attempts to start)	Check fuel supply (enough fuel, at least 8 ltr.), reset heater (by pressing OK or switching off for at least **30** sec.)
Message 03 Combustion interrupted	Flame failure. Restart not successful	See message 02.
Message 04 High battery voltage	Operation voltage is above permitted value	Reset heater (by pressing OK or switching off for at least 5 sec.)
Message 05 Low battery voltage	Operation voltage is below permitted value	Charge battery, reset heater (by pressing OK or switching off for at least 5 sec.)

Fault message on Control Panel

Message	Meaning	Remedy
Message 06 Fuel pump disconnected or system overheated	Fuel pump disconnection / one of the three overheating switches detects too high temperature	Check fuel pump cable and connectors, check for overheating (see messages 10, 11, 12, 13 and 14), reset heater (by pressing OK or switching off for at least 5 sec.)
Message 07 Fuel pump short circuit	Fuel pump short circuit to ground	Check fuel pump cable and connectors
Message 08 Failure heating air ventilator	Hot air motor fault: disconnection / short circuit / fan speed out of range / fan blocked	Ensure that hot interior air fan can rotate freely, remove possible blocking objects, reset heater (by pressing OK or switching off for at least 5 sec.)
Message 09 Failure ventilator amplifier	No communication between amplifier of heating air ventilator and heaters control unit	Contact a Webasto service station
Message 10 High temperature sanitary water	Overheating water temperature sensor	Check water level, reset heater (by pressing OK or switching off for at least 5 sec.) or select winter mode without hot water production

Fault message on Control Panel

Message	Meaning	Remedy
Message 11 High temperature sanitary water	Exceeding gradient water temperature sensor	Check water level, reset heater (by pressing OK or switching off for at least 5 sec.) or select winter mode without hot water production
Message 12 High temperature heating air	Overheating hot air temperature sensor	Ensure that hot air can flow freely, air intake and outlets are not blocked. Reset heater (by pressing OK or switching off for at least 5 sec.)
Message 13 High temperature heating air	Exceeding gradient hot air temperature sensor	Ensure that hot air can flow freely, air intake and outlets are not blocked. Reset heater (by pressing OK or switching off for at least 5 sec.)
Message 14 Failure cooling air ventilation	Overheating of heaters' control unit	Ensure that cooling air can flow freely, reset heater (by pressing OK or switching off for at least 5 sec.)
Message 15 Failure combustion air motor	Combustion air motor interrupted	Ensure that cooling fan can freely rotate, remove possible blocking objects. Check fuse 15 A.

Fault message on Control Panel

Message	Meaning	Remedy
Message 16 Failure combustion air motor	Combustion air motor fault: disconnection / short circuit / overload / blocked	See message 15.
Message 17 Failure control unit	Control unit (heater) fault / heater locked	Put heater back into service (see above this table) and restart heater. Contact a Webasto service station
Message 18 Failure cabin temperature sensor	Interior temperature sensor disconnection / short circuit	Check routing of cable, avoid that it is pinched or crushed, check the connector behind the control panel. Reset heater (by pressing OK or switching off for at least 5 sec.)
Message 19	n/a	n/a
Message 20 Failure heating air temperature sensor	Hot air temperature sensor disconnection	Reset heater (by pressing OK or switching off for at least 5 sec.) Contact a Webasto service station.
Message 21 Failure heating air temperature sensor	Hot air temperature sensor short circuit	See message 20.
Message 22 Failure sanitary water temperature sensor	Water temperature sensor disconnection	See message 20.

Fault message on Control Panel

Message	Meaning	Remedy
Message 23 Failure sanitary water temperature sensor	Water temperature sensor short circuit	See message 20.
Message 24 Failure glow plug	Glow plug / flame detector disconnection	See message 20.
Message 25 Failure glow plug	Glow plug / flame detector short circuit	See message 20.
Message 26 Failure flame detection	Early flame detection	See message 20.
Message 27 Failure relay box	n/a	n/a
Message 28 Failure drain valve	Electrical drainage valve disconnection	See message 20.
Message 29 Failure drain valve	Electrical drainage valve short circuit	See message 20.
Message 30, 31, 32, 33	n/a	n/a

Fault message on Control Panel

Message	Meaning	Remedy
Message 34 System overheated or relay circuit disconnected	One of the three overheating switches detects too high temperatures	Check for overheating (see messages 10, 11, 12, 13 and 14). Reset heater (by pressing OK or switching off for at least 5 sec.) Contact a Webasto service station.

Note:

n/a = not available

Note:

All messages except message 28 and 29: heater shuts off automatically.
Failure of drainage valve (message 28 and 29) will not abort heater operation and will not be shown during heater operation.

4.1. Fuses

The Dual Top is equipped with 3 fuses: 5 A, 10 A and 15 A.
Each fuse shall be connected to the correct cable (color).

5 A: red / blue cable

10 A: red / black cable

15 A: red cable

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

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

5   Worldwide warranty

The following worldwide warranty is extended to cover Webasto Dual Top integrated air and water heater, manufactured or supplied by Webasto and is subject to qualifications indicated. Webasto warrants for the period set forth below that products be free from defects in workmanship and material, provided such products are installed, operated, and maintained in accordance with Webasto Dual Top written instructions. The warranty is for the end-customer whereby it is administered and processed inside the Webasto network of authorized dealers.

Terms and conditions

1   Please note that the Dual Top is only specified for applications in motor homes or similar vehicles.

2   The quality and good operation of Webasto Dual Top products are guaranteed by Webasto for a period of two (2) years, starting from the date of installation. OE installed equipment warranties begin with the purchase of the (recreational) vehicle, not from the date of installation.

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3   Webasto will compensate the costs for the replacement/repair of the defective part or component at the smallest subassembly level by using only but genuine components. In the case of labour, installation or other allowances, where accepted these cannot exceed the standard repair times. Any excess of such allowances for example due to poor accessibility or equipment will not be compensated.

4   This warranty is limited to repair & replacement only. It does not cover:

   •   damages incidental and or consequential to the failure of Webasto Dual Top equipment

   •   failure of the Dual Top equipment due to frost, normal wear, accident, misuse, abuse, negligence or improper installation, lack of reasonable and necessary maintenance, unauthorized installation or repair, alterations, civil disturbance or act of God.

5   All Dual Top products have to be installed by authorized installers or this installation has to be reviewed and approved by an authorized installer.

6   The Dual Top should be offered for repair / warranty at the official Webasto Service point. Travel- / transport costs are at the responsibility of the owner.

7   Proof of original purchase with date of installation is required to receive warranty service. Worldwide warranty can only be supported if purchase and installation is centrally registered in Webasto Warranty System.

Bei mehrsprachiger Ausführung ist Deutsch verbindlich.

In multilingual versions the German language is binding.

Nel caso di una versione plurilingue il tedesco è vincolante.