



Operation Manual

Thermo Pro 90 D (Diesel) **Coolant Heater 12 / 24 Volt**

Introduction

Dear Webasto Customer,

Thank you for choosing the Webasto Thermo Pro 90 Coolant Heater. We hope it will provide you with many years of reliable comfort.

The Thermo Pro 90 heater is used in conjunction with the original vehicle heating system for:

- cabin preheating
- engine preheating
- preheating of additional devices (e.g. units)

The auxiliary heating mode can also be operated with the vehicle engine running.

We presume that the principle and mode of operation of this product has been explained to your complete satisfaction by the workshop/service center which installed it. In these operating instructions we would like to once again provide you with an overview of the safe use of this product.

To become familiar with and understand all functions of the heater, you must read these operating instructions carefully. Then you can be sure that you can use all functions to your satisfaction and feel completely comfortable and safe. If you should lose these instructions, please contact an authorized Webasto dealer immediately to obtain a replacement copy (see also <http://www.techwebasto.com>).



Repair or maintenance work may only be carried out by an authorized Webasto dealer.

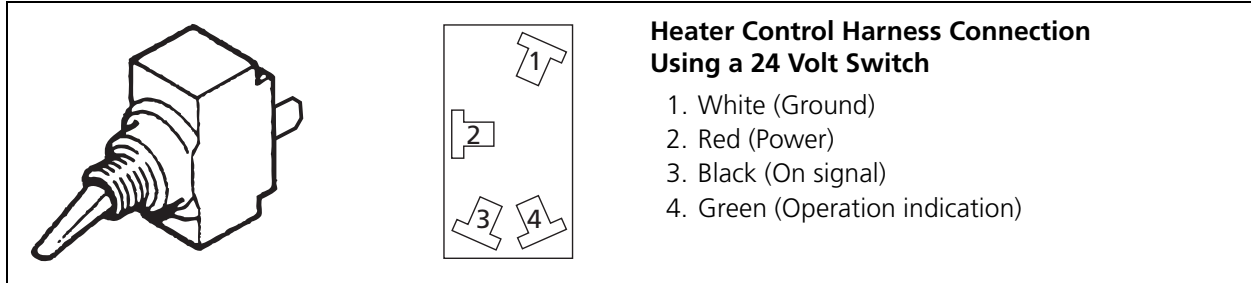
Maintenance and Safety Instructions

- 1. Webasto heaters must be switched "off" when re-fueling at filling stations to prevent the risk of explosion. Please review the owner's manual for safety and use instructions.**
2. The year in which the heater was used for the first time must be permanently displayed on the factory plate by deleting the inapplicable years from the plate.
3. The heater must not be operated without at least 20% brand name anti-freeze in the water of the heating circuit.
- 4. The heaters are not designed for heating hazardous substance transport compartments.**
5. Claims can only be made if it can be verified that the claimant has complied with the servicing and safety instructions.
- 6. The heater may not be operated in enclosed spaces (such as garages) as a result of the risk of poisoning and asphyxiation, even if a timer is used.**
7. The heater must be checked by Webasto-trained personnel at the latest at the start of the cold weather period.
8. In the event of long-lasting heavy smoke development, unusual combustion noises or a smell of fuel or if the heater suffers continuous fault cut-outs with error messages (flashing code), it must be shut down by removing the fuse and must not be reused until it has been inspected by Webasto-trained personnel.
- 9. Wherever flammable vapors or dust may form, the heater must be switched off as a result of the risk of explosion.**
10. May only be operated with the fuel specified on the rating plate and at the nominal voltage specified on the rating plate.
11. The temperature in the area around the heater must not exceed 85 °C / 185° F (storage temperature). If the temperature exceeds this level there is a risk of permanent damage to the electronics systems.
12. Non-compliance with the installation instructions and the warnings contained therein will lead to the exclusion of all liability by Webasto. The same applies if repairs are carried out incorrectly or by untrained technicians or with the use of parts other than genuine spare parts. This will result in the invalidation of the type approval for the heater unit.
13. To prevent mechanical parts seizing, the heater should be operated for approx. 20 minutes once a month.
14. The heater must be inspected every 2 years by a Webasto-trained specialist at the beginning of the heating season or earlier.
15. Do not stand on the heater and do not place any heavy items on the heater.
16. Do not place any items of clothing, textiles or similar materials over the heater.
17. The current of hot air in the heater must not be restricted or blocked by highly flammable substances or materials such as rags, cleaning wool, etc.
18. The heater must not be cleaned with a high pressure cleaner.

Operation Instructions

The heater can be switched on and off using the following Webasto controls:

Toggle Switch



Switch On:

Upon switching on the Webasto heater:

- the operation indicator lamp comes on;
- The heater motor and the coolant circulating pump begin to run;
- After about 10-25 seconds, the fuel pump begins to cycle and the fuel-air mixture in the combustion chamber is ignited;
- Flame is detected;
- At this time the heater is working and produces heat

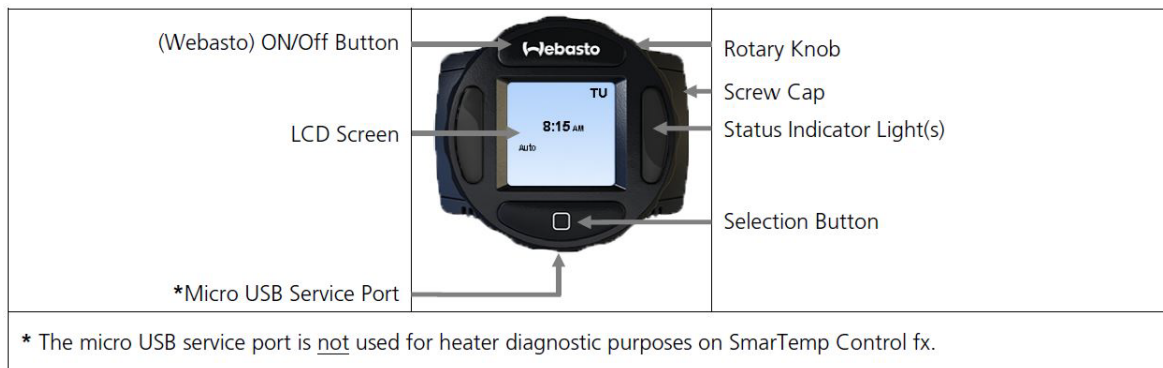
Switch Off:

Switching off the heater stops combustion. The operating indicator light remains on and run-down commences. The combustion air fan and circulation pump are deactivated after approximately 150 seconds. The operating indicator light goes out to indicate the heater is now fully off.

Reactivation of the heater during run-down is permitted. The burner immediately resumes operation after the run-up time.

SmarTemp Control fx

The Webasto SmarTemp Control fx is controlled using a rotary dial around the outside of the unit to scroll through menu options. Simply click the selection button to make your choice. The following sections will define each menu item and its default setting.



Menu Descriptions

*Depending on SmarTemp version, menu order may vary from order below.

	Definitions	Default
Mode	<p>Two modes are possible:</p> <ul style="list-style-type: none"> – Auto mode enables the pre-defined timer programs. Manual ON/OFF functionality is still possible while in this mode. – Manual Mode allows the heater to be operated via the Webasto button on the SmarTemp Control fx. While in Manual Mode, all Auto Mode functionality is permanently disabled. <p>Note: While in manual mode the heater will continue to operate based on the pre-defined “Duration” set by the user. See “Duration” for further detail.</p>	Manual
Language	Language changes between English, French, and Spanish	English
Duration	<p>Duration allows user to select the heater runtime of the heater. Set range is between 10 – 120 minutes selectable by 10 minute increments.</p> <p>Note: Duration time for all timers will default to the set duration time. User will have the ability to manually change duration for each timer.</p>	60 minutes
Error Code	<p>This section will log the last 5 error codes and the date that it was set. Highlight and select an error code for a full description.</p> <p>If the heater produces an error code, the status indicator lights will flash red and the error will display on the main screen. Error codes cannot be reset through the Webasto SmarTemp Control fx on the heater, a Webasto PC Diagnostics tool is needed. Refer to the heater service manual for resetting an error code.</p> <p>Note: Diagnostics via blink code is not available on <u>all</u> coolant heaters. Error Codes on products with no blink code functionality can still be obtained using the PC Diagnostics test tool. Refer to the applicable service manual by visiting www.techwebasto.com for detailed PC diagnostics information.</p>	No Errors
Options	Advanced Level adjustment; see below	

Timer & Date	Time & Date allows user to properly set the current date and time. User also has the ability to switch between AM/PM and 24 hour format. If the 24 hour format is selected the date format will change to dd/mm/yyyy. Use the rotary knob to choose the time / date and the selection button to confirm each entry. The Webasto button can be used to go back to the previous field if additional changes are needed.	AM/PM mm/dd/yyyy
Timer	<p>There are 4 heater start-up cycles possible 7 days per week. The timer is separated into to three categories. The user can select "Mon-Fri", set each specific timer (T1 – T4) for a typical work week all at once. A weekend "Sat-Sun" can be scheduled in the same manner or a full week by using the "Mon-Sun" selection. The "custom" link allows the user to set a specific timer (T1 – T4) for each individual day.</p> <p>When selecting a specific timer a sub-menu will appear (Edit, Skip, and Off). To change the timer cycle, select "edit". Changes are saved immediately. The "skip" feature allows a timer cycle to be skipped one time within a 7 day period. Timer will reactivate after this one-time skip cycle.</p> <p>Note: To turn a specific timer off permanently select "off".</p>	
LVD	<p>LVD "Low Voltage Disconnect" allows the user to adjust the battery voltage level at which the Webasto SmarTemp Control fx will shut the heater off. A warning (LED and message) will appear after 8 minutes of low voltage. The warning will remain on for 2 minutes before the heater is shut off.</p> <p>If battery voltage is equal to or less than the threshold selected +0.1v, the heater will not start. i.e. if an 11.5v threshold is selected the heater cannot be started until B+ has reached 11.7v.</p> <p>12 volt - Range between 11v – 12.5v 24 volt - Range between 21v – 25.5v</p>	11.4v 24.2v
Default	<p>Default allows the user to perform a reset to all default values.</p> <p>Note: A power loss will not reset user programmed values.</p>	N/A
Password	<p>A password can be set to prevent access to the advanced "Options" menu. Enter a 4 digit code passcode to begin securing the Options menu. Note: This is typically used in fleet vehicle applications.</p>	OFF
Hour Meter	<p>The hour meter logs the operating hours of an active ON signal to the heater. This does not reflect the true runtime of the heater itself.</p> <p>Note: For warranty purposes a diagnostic printout is still required where applicable. This hour meter is for reference only!</p>	N/A
SW Version	This displays the firmware version of the Webasto SmarTemp Control fx.	Installed Version
Back	Select this to return to the previous screen.	N/A

IMPORTANT - The Red status indicators (heater "ON") and LCD screen backlight turn off after 30 seconds. A touch of any button or a turn of the rotary knob will re-activate these lights. If the "Webasto" button is used to re-activate these lights, an additional press of this button is necessary to turn the heater off. Note that when the heater is "ON" the display is active.

Use the following link to obtain version specific controller operation instructions.

<http://www.techwebasto.com/documentation/heater/recreational.html>

Heater Lockout Procedure

The control unit continuously monitors the heater operation. The control unit identifies errors on individual heater components and faults during operation. Should the control unit experience component errors and operational faults, the heater may be shut down.

Causes:

The heater is shut down (fault lock-out) if:

- No or incorrect start
- Temperature sensor defective
- Overheating sensor interrupt or short circuit
- Overheating sensor installed incorrectly
- Ceramic glow pin interrupt or short circuit
- Fan motor overload or blocked or short circuit or interrupt
- Error in the fuel metering pump or circuit
- Under voltage or over voltage for longer than 20 seconds.
- Control unit defective
- Overheating

Effects:

The fuel supply is stopped if the heater overheats.

The heater continues to run in the same way as if it is switched off manually.

After the heater stops the control unit may set in fault lock-out mode.

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.

Rectify the cause of the fault.

IMPORTANT: Heater fault codes can be read using PC Diagnostics, however, the heater lockout reset must be manually performed using the procedure stated above.

Technical Information

- Rated Voltage: 12 / 24V
- Operating Voltage Range: 9V - 32V
- Low Voltage Disconnect Range: 12V: 11 – 12.5V | 24V: 21 – 25.5V
- Operating Temperature: - 40° ... +185 °F (- 40° ... +85 °C)
- **NOTE:** Display visible to -22°F (-30°C)
- Installation Dimensions: (L x H x D) 2.7" x 2.2" x .60" (69.4mm x 55.5mm x 15.2mm)



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