

Introduction

Dear Webasto Customer,

Thank you for choosing the Webasto Air Top 2000 ST air heater.

The Air Top 2000 ST heater is used

- to heat cabins, boats, trucks, minibuses, vans and motorhomes and
- to defrost vehicle windows.

We presume that the principle and mode of operation of your new heater has been explained to your complete satisfaction by the workshop/service centre which installed the heater. In these operating instructions we would like to once again provide you with an overview of the safe use of the Air Top 2000 ST heater.

Repair or maintenance work not described here may only be carried out by an authorised Webasto dealer.



Servicing and safety instructions

1. Within the territory governed by European Directive 70/156/EEC and/or EC/2007/46 (for new vehicle types from 29/04/2009), there are homologation approvals for the Air Top 2000 ST air heaters in accordance with the ECE-R 122 (Heating) and ECE-R 10 (EMC).

NOTE:

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

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 heaters are not designed for heating hazardous substance transport compartments.**
To install the Air Top 2000 ST D heater unit in hazchem vehicles, the requirements of the Directive ECE-R 122 must be met.
4. Claims can only be made if it can be verified that the claimant has complied with the servicing and safety instructions.
5. **The heater must be switched off at filling stations and tank farms as a result of the risk of explosion.**
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 or Telestart remote is used.**
7. The heater must be checked by an expert 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 inflammable vapours or dust may form (for example in the vicinity of fuel, carbon, wood dust or cereal stores or the like), the heater must be switched off as a result of the risk of explosion.**
10. **The heat transfer unit on air heaters is exposed to very high thermal stress and must be replaced by a genuine Webasto spare part ten years after it is used for the first time.**
If exhaust lines pass through areas used by personnel, they must also be replaced by genuine spare parts after ten years.
11. The fuel specified by the vehicle manufacturer is suitable for use in the Air Top 2000 ST B (petrol EN228).
The diesel fuel specified by the vehicle manufacturer is suitable for use in the Air Top 2000 ST D (diesel EN590).
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.
12. The temperature in the area around the heater must not exceed 85 °C (storage temperature). If the temperature exceeds this level there is a risk of permanent damage to the electronics systems.
13. 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 with the use of parts other than genuine spare parts. This will result in the invalidation of the type approval for the heater unit, and therefore of its homologation/ECE type licence.
14. Keep the hot air inlet and hot air outlet free of dirt and foreign bodies. Soiled or blocked hot air lines may cause overheating, and therefore result in the overheating cut-out tripping.
15. To prevent mechanical parts seizing, the heater should be operated for approx. 10 minutes every four weeks.
16. Do not stand on the heater and do not place any heavy items on the heater or throw items at the heater.
17. Do not place any items of clothing, textiles or similar materials over the heater or in front of the hot air inlet and the hot air outlet.
18. The current of hot air in the heater must not be restricted or blocked by highly inflammable substances or materials such as rags, cleaning wool, etc.
19. The heater must not be cleaned with a high pressure cleaner.

Control element



- Rotary knob for:
- Switching on and off
 - Setting the room temperature
 - Resetting after a fault cut-out

Indicator/error code display

! Changes to the settings on the control element will be carried out with a time delay

Switch on

Set the rotary knob on the control element to the desired temperature.

NOTE:

To prevent the hot and combustion air fan from blocking or scraping, ensure that there are no objects on or against the heater before you switch it on.

NOTE for ADR mode only:

The Air Top 2000 ST heater is switched on and off by hand using a switch. The use of automatic control systems is prohibited.

In class FL vehicles these heaters must not be used during loading and unloading procedures or at loading points.

In class FL vehicles the heaters are switched off automatically and the combustion air supply is interrupted for a maximum of 40 seconds if:

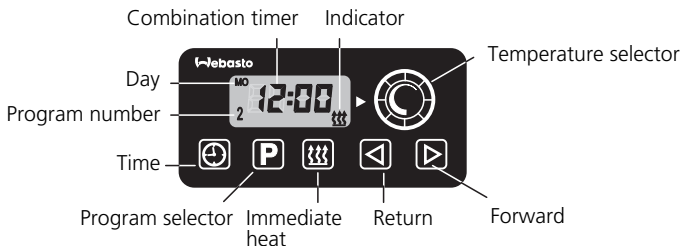
- The vehicle's engine is at a standstill; in this case the heater can be switched on again by hand.
- A pumping device that is part of the vehicle is started.

The control unit is then in fault lock-out mode. The ON/OFF switch must be set to OFF before the heater can be restarted.

Ventilation option

A separate switch allows the user to choose between heating and ventilation mode. In ventilation mode the fan speed depends on the position of the control element.

Combination timer



General information

The combination timer allows the heater start time to be selected for a period of up to seven days.

Three cut-in times can be programmed, although only one of them may be activated.

The combination timer has a temperature setpoint generator.

When the ignition is switched on the timer shows the current time and the day. When the heater is operating, the display and the buttons are lit.

When the timer is connected to the power supply all the symbols in the display will flash. The time and day must be set. The display remains blank in ADR vehicles.


















Operation

The operation of the timer is designed such that all the flashing symbols can be adjusted using the ◀ and ▶ buttons. If no button is pressed for five seconds the displayed time is saved. If the ◀ and ▶ buttons are pressed for longer than two seconds, they will switch to high speed adjustment.

If the ignition is switched off whilst the heater is in permanent heating mode, a remaining operating time of 15 minutes will appear on the display and the heater will continue to operate.

Error code

On heaters that output an error code (Air Top 2000 ST), a number, the error code, may appear in the display. In this case you should visit a Webasto service outlet.

Switch on	Manual: Press the  button (continuous heating mode) Automatic: By programming the start time
Switch off	Manual: Press the  button again Automatic: By programming the operating period When heater unit is running: By setting the remaining time
Set time/date	Press the  button for more than two seconds - the time flashes - set the time using the  and  buttons - the day flashes - set the day.
View time	Ignition off: Press  button
Program start time	Press the  button - program number flashes - set the start time using the  and  buttons - the day flashes - set the day. If you press the  button several times, you can set the program numbers 2 and 3 or go to the time mode.
View/Delete selected times	Press the  button several times until the required program number is displayed. To delete the selected time press the  button until the time is displayed with no program numbers.
Program operating time	The heater must be switched off. Press the  button for three seconds - the operating duration flashes - set the required operating duration using the  and  buttons (10 to 120 minutes).
Set remaining time	Set the required remaining time (1 to 120 minutes) using the  and  buttons. The remaining time is the time that the heater will continue to operate. It can only be changed whilst the heater is operating and the ignition is off.
Remote control	Possible using an external optional immediate heat button.
Vehicles with ADR equipment	It is not possible to set a time on ADR vehicles. The remaining time will be shown on the display whilst the heater is operating. The time can be adjusted.

Actions in event of faults

If an error occurs, first check the fuse and plug connections to ensure that they are in proper condition and connected correctly.
If the actions described below do not rectify the error, have the heater checked by Webasto-trained personnel.

Heater unit cuts out automatically

Cause

No combustion after start and repeat start

Flame extinguishes during operation

Heater unit overheats and indicator flashes

Vehicle voltage too low

Remedy

Switch heater unit off (for at least 2 seconds) and then on again

Switch heater unit off (for at least 2 seconds) and then on again

Make sure that hot air can flow freely, allow heater unit to cool down, Switch heater unit off (for at least 2 seconds) and then on again

Charge battery
Switch heater unit off (for at least 2 seconds) and then on again

Heater unit emits black smoke

Cause

Combustion air and/or exhaust system blocked

Remedy

Check combustion air and exhaust system for blockage

NOTE for ADR mode only:

After an ADR cut-out or the application of operating voltage by switching on the main vehicle switch and setting the control element to "ON" the control unit will be set to the "Fault cut-out" position.

Before the heater can be restarted the control element must be set to "OFF" or the immediate heat button on the combination or standard timer must be pressed.

Error code output on combination timer or control element

If the system is fitted with a combination timer, when an error occurs an error code is output on the timer's display until the heater has been rectified.

The error code is output if the heater is fitted with a control element after an error has occurred by the switch-on indicator/error code indicator flashing. After a burst of fast flashes the error code will be output by a sequence of long flashes, the number of which is shown in the table below.

Error code	Meaning
F 00	Control unit error
F 01	No start (after 2 starting attempts)
F 02	Flame failure (at least > 3)
F 03	Undervoltage or overvoltage
F 04	Premature flame recognition
F 05	Flame monitor (petrol heater) interrupt or short circuit
F 06	Temperature sensor interrupt or temperature sensor short circuit
F 07	Metering pump interrupt or metering pump short circuit
F 08	Fan motor interrupt or fan motor short circuit or fan motor overload or blocked
F 09	Glow plug interrupt or glow plug short circuit
F 10	Overheating
F 11	Overheating sensor interrupt or overheating sensor short circuit
F 12	Heater unit lock-out
F 14	Overheating sensor installed incorrectly
F 15	Setpoint generator short circuit

If serious malfunctions such as overheating or failure to start reoccur, the heater is locked (F 12) and can be put back into service by disconnecting the power supply with the heater switched on (e.g. by removing fuse).

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The telephone number of each country can be found in the Webasto service center leaflet or the website of the respective Webasto representative of your country.