

Operating instructions **Webasto** Air Top 3500 ST

Feel the drive

Webasto Thermosysteme International GmbH
Postfach 80 - D-82132 Stockdorf -
<http://www.webasto.de>

Servicing and safety instructions

1. The **Air Top 3500 ST / Air Top 5000 ST** heater has been type-tested and approved in accordance with EC Directives 72/245/EEC (EMC) and 2001/56/EC (heater) with the following EC permit numbers:

e1*72/255*95/54*1221*00
e1*2001/56*0021*00
e1*2001/56*0020*00

NOTE:

The provisions of these Directives are binding within the territory governed by EU Directive 70/156/EEC and should similarly be observed in countries without specific regulations.

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 3500 ST D / Air Top 5000 ST D heater in hazchem vehicles, the requirements of ADR must be satisfied in addition to the Road Traffic Registration Directive.

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 put out of service 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.

Servicing and safety instructions

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 combusting in Air Top 3500 ST B / Air Top 5000 ST B. Both leaded and unleaded fuel may be used. The diesel fuel specified by the vehicle manufacturer must be used for the Air Top 3500 ST D / Air Top 5000 ST D heater (diesel). Class EL heating oil (not L heating oil) may also be used as long as it complies with the normal quality available on the German market pursuant to DIN 51603.

The Air Top 3500 ST D / Air Top 5000 ST D heater is also licensed for use with PME (bio-diesel), which complies with DIN EN 14214.

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. 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 / EC type licence.

14. Keep the hot air inlet and hot air outlet free of dirt and foreign bodies. Contaminated or blocked hot air lines may cause overheating and thus 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 are implemented after a delay.

To switch on

Set the rotary knob on the control element to the required 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 operation only:

The Air Top 3500 ST and Air Top 5000 ST heaters are switched on and off manually using a switch. Automatic control systems are not allowed to be used. 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:

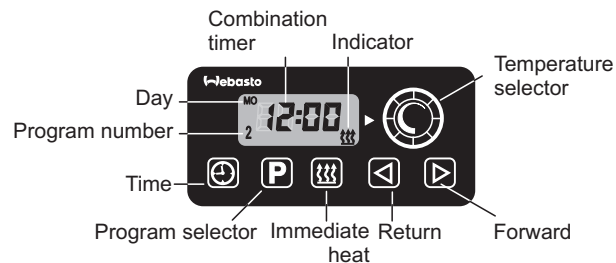
- the vehicle's engine is at a standstill; in this case the heater can be switched on again by hand.
- a pumping device that is part of the vehicle is started. The control unit is then in fault lock-out mode.

! 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	<p>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.</p> <p>The combination timer has a temperature setpoint generator. When the ignition is switched on the timer shows the current time and the day. If the heater is operating the display and the buttons are lit.</p> <p>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.</p>
Operation	<p>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 ▶ are pressed for longer than two seconds, they will switch to high speed adjustment.</p> <p>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.</p>
Error code	<p>On heaters that output an error code (Air Top 3500 ST / Air Top 5000 ST), a number, the error code, may appear in the display. In this case you should visit a Webasto service outlet.</p>

Switch on	<p>Manual: Press the ☀ (permanent heating mode)</p> <p>Automatic: By programming the start time</p>
Switch off	<p>Manual: Press the ☀ button again</p> <p>Automatic: By programming the operating period</p> <p>When the heater is operating: By setting the remaining time</p>
Set time/date	<p>Press the ⌚ button for more than two seconds - the time will flash - set the time using the ◀ and ▶ buttons - the day will flash - set the day.</p>
View time	<p>Ignition off: Press ⌚ button.</p>
Program Start time	<p>Press P button - program number will flash - set the start time using the ◀ and ▶ buttons - the day will flash - set the day.</p> <p>If you press the P button several times you can set program numbers 2 and 3 or go to time mode.</p>
View/Delete selected times	<p>Press the P button several times until the required program number is displayed.</p> <p>To delete the selected time - press the P button until the time is displayed with no program numbers.</p>
Program operating time	<p>The heater must be switched off. Press the ◀ button for three seconds - the operating duration will flash - set the required operating duration using the ◀ and ▶ buttons (10 to 120 minutes).</p>
Set remaining time	<p>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.</p>
Remote control	<p>Possible using an external optional immediate heat button.</p>
Vehicles with ADR equipment	<p>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.</p>

Troubleshooting

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

Heater cuts out automatically

Cause	Remedy
No combustion after start and repeat start	Switch the heater off (wait at least 2 seconds) and then on again
Flame extinguishes during operation	Switch the heater off (wait at least 2 seconds) and then on again
Heater overheats Indicator flashes	Check that the hot air can flow freely. Allow the heater to cool. Switch the heater off (wait at least 2 seconds) and then on again
Vehicle voltage too low	Charge battery Switch the heater off (wait at least 2 seconds) and then on again

Black smoke is emitted from the heater

Cause	Remedy
Combustion air and/or exhaust system blocked	Check combustion air and exhaust system for blockages

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.

If the system is fitted with a control element, when an error occurs an error code is output by the indicator/error code display 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 attempts to start)
F 02	Flame failure (at least > 3)
F 03	Undervoltage or overvoltage
F 04	Premature flame recognition
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 lock-out
F 13	Heater lock-out permanent
F 14	Overheating sensor incorrectly installed
F 15	Setpoint generator short circuit

If serious errors, such as overheating or no start, occur frequently, the heater will be set to permanent fault lock-out (F 12 or F 13) and cannot be restarted until it has been repaired by Webasto-trained personnel.