

Wasserheizgerät
Water heater

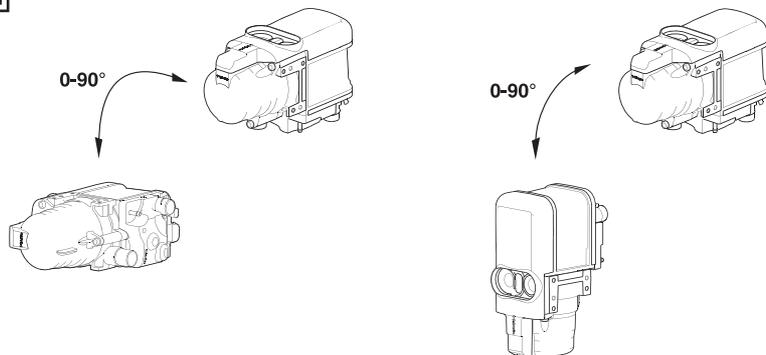
Einbauanweisung
Installation Instructions

Thermo Top Evo

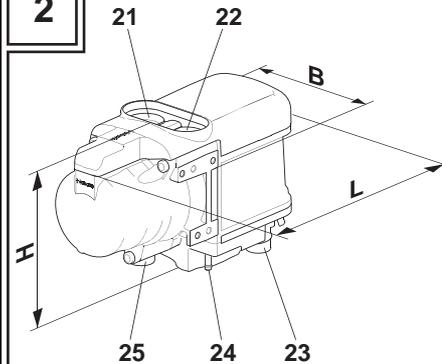
Thermo Top Evo - B (Benzin / Petrol)

Thermo Top Evo - D (Diesel)

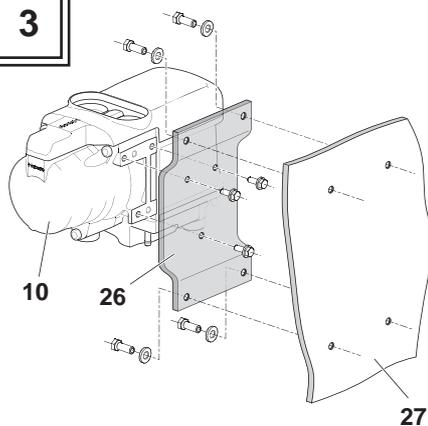
1



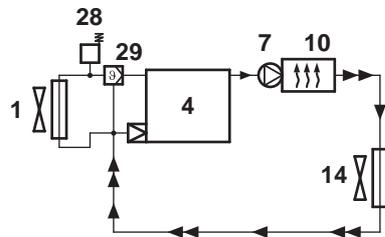
2



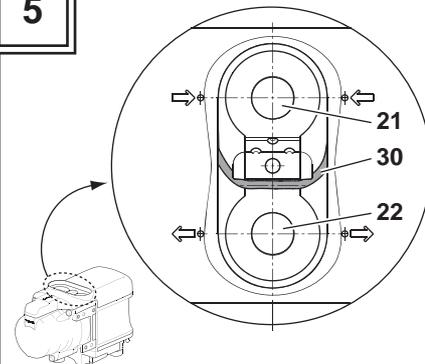
3



4

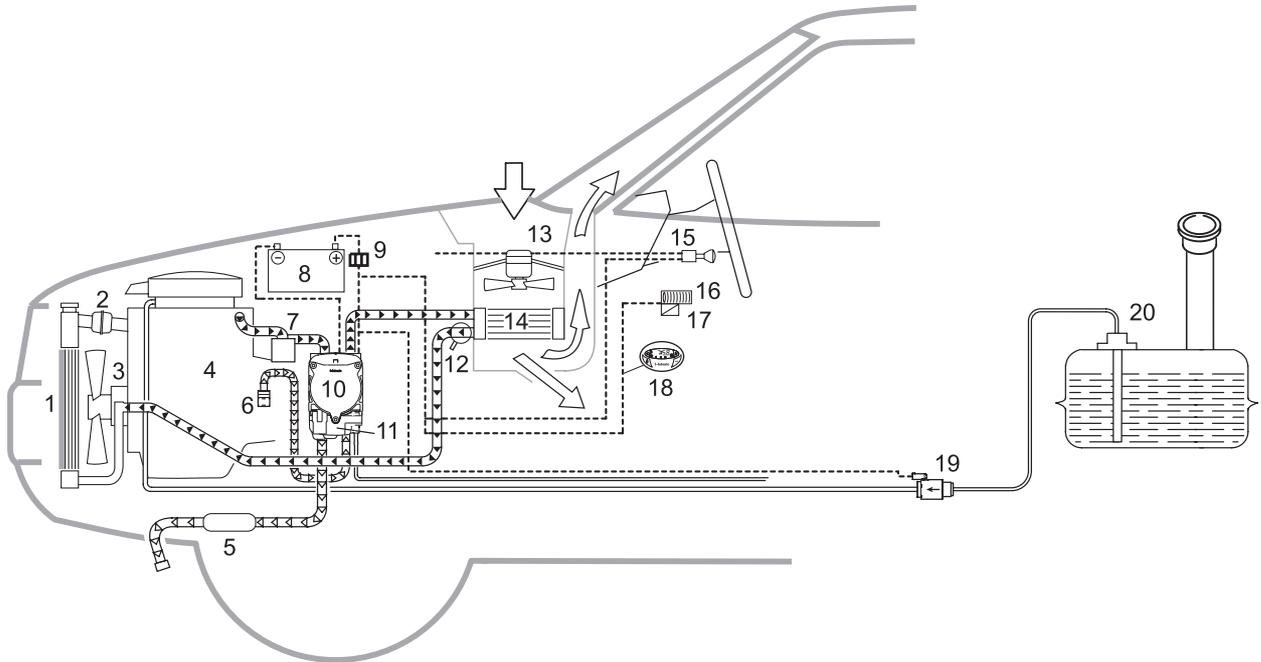


5

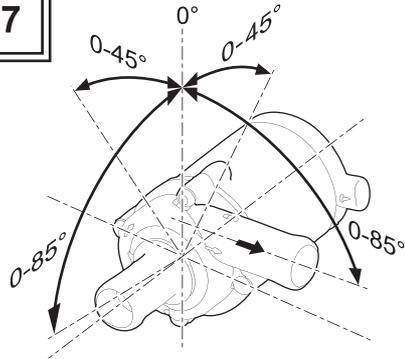


Thermo Top Evo

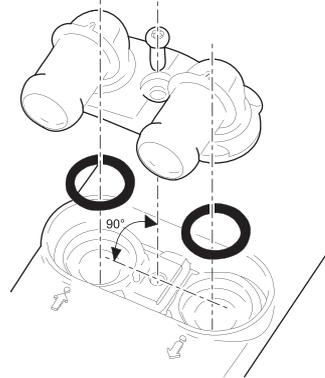
6



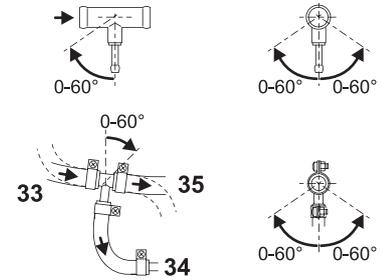
7



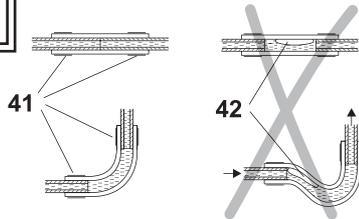
8



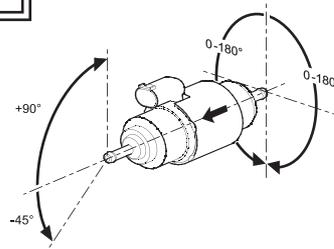
9



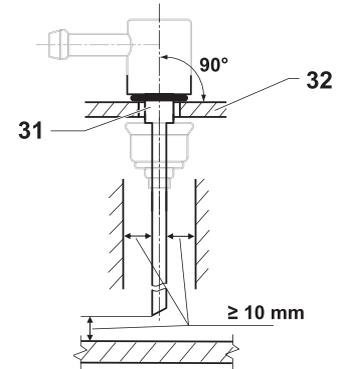
10



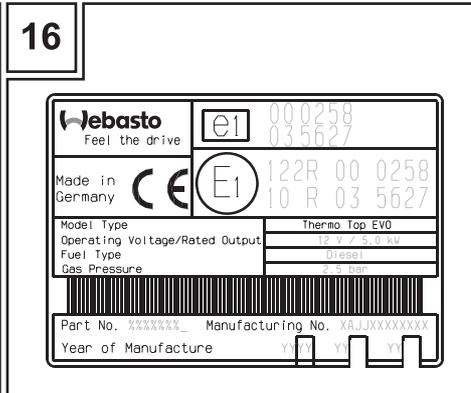
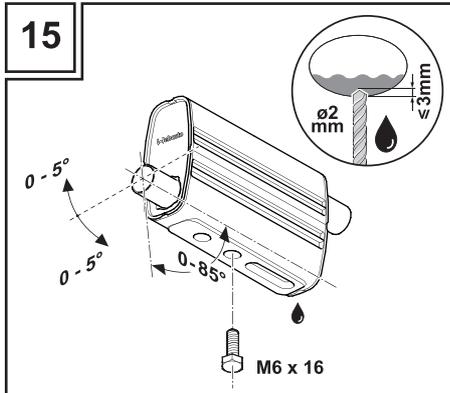
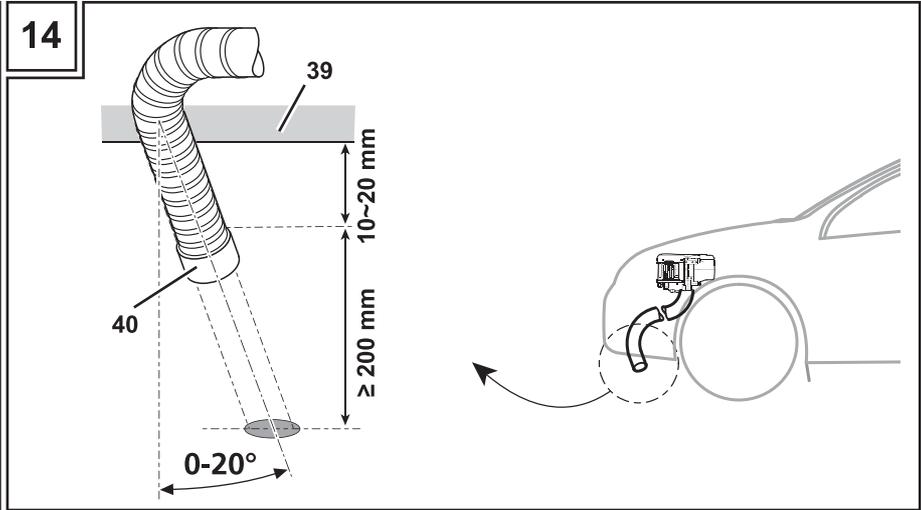
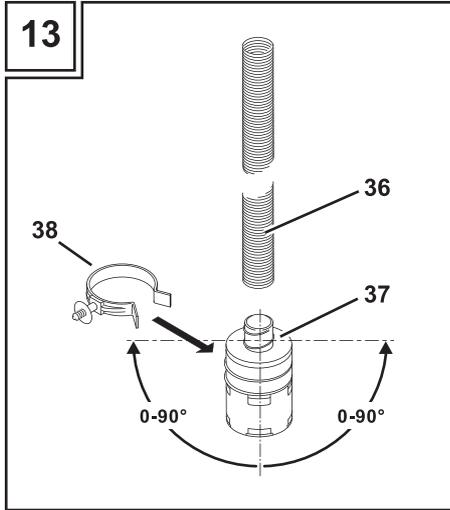
11



12



Thermo Top Evo





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.

To install and repair Webasto heating and cooling systems you need to have completed a Webasto training course and have the appropriate technical documentation, special tools and special equipment.

Only genuine Webasto parts may be used. See also Webasto air and water heaters accessories catalogue.



NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

ALWAYS carefully follow Webasto installation and repair instructions and heed all WARNINGS.

Webasto rejects any liability for problems and damage caused by the system being installed by untrained personnel.

GB Table of Contents

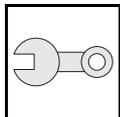
| | | | | | |
|--------|---|----|-------|--|----|
| 1 | Regulations governing installation | 20 | 10 | Exhaust System | 30 |
| 1.1. | Statutory regulations governing installation | 20 | 10.1. | Exhaust pipe | 30 |
| 1.2. | Additional documentation to be used | 20 | 10.2. | Exhaust silencer | 30 |
| 2 | Use / version | 21 | 10.3. | Recommendations for installation | 30 |
| 2.1. | Use of the water heaters | 21 | 11 | Electrical connections | 31 |
| 2.1.1. | Additional heater | 21 | 11.1. | Connection of control unit / heater | 31 |
| 2.1.2. | Auxiliary heater | 21 | 11.2. | Installation and connection of the timer | 31 |
| 2.2. | Version | 21 | 11.3. | Installation of other heater controls | 31 |
| 3 | Installation location and installation position | 22 | 11.4. | Vehicle fan | 31 |
| 4 | Type label | 23 | 12 | Circuit diagrams | 31 |
| 5 | Standard bracket | 23 | 13 | Initial start-up | 33 |
| 6 | Example for installation in a passenger car | 23 | 14 | Faults | 33 |
| 7 | Integration in coolant system | 24 | 15 | Technical data | 34 |
| 7.1. | Connection | 24 | 15.1. | Technical data for Thermo Top Evo | 34 |
| 7.2. | Installing coolant connection pieces | 24 | 15.2. | Technical data of circulation pump | 34 |
| 7.3. | Installing coolant hoses | 25 | | | |
| 7.4. | Installing circulation pump | 25 | | | |
| 7.5. | Checking | 25 | | | |
| 8 | Fuel integration | 26 | | | |
| 8.1. | Integration in engine supply or return line | 26 | | | |
| 8.2. | Integration via fuel removal unit | 26 | | | |
| 8.3. | Fuel line | 26 | | | |
| 8.3.1. | Line installation | 27 | | | |
| 8.3.2. | Line design | 27 | | | |
| 8.3.3. | Connecting two lines with a hose | 27 | | | |
| 8.3.4. | Metering pump | 27 | | | |
| 8.3.5. | Installation location | 27 | | | |
| 8.3.6. | Installation and attachment | 27 | | | |
| 8.4. | Label | 28 | | | |
| 8.5. | Cold-resistant fuels | 28 | | | |
| 9 | Combustion air supply | 29 | | | |
| 9.1. | Combustion air pipe | 29 | | | |
| 9.2. | Intake silencer | 29 | | | |
| 9.3. | Recommendations for installation | 29 | | | |

Explanatory Notes on Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

Sections in italics contain an excerpt from the Directive 2001/56/EC and ECE R122.

Mechanical system



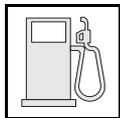
Electrical system



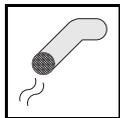
Coolant circuit



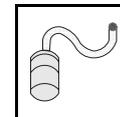
Fuel



Exhaust gas



Combustion air



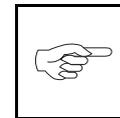
Technical information



Caution



Note





1 Regulations governing installation

1.1. Statutory regulations governing installation

Homologation approvals according to the EC Directives 72/245/EEC (EMC), ECE-R 10 (EMC), 2001/56/EC (Heating) and ECE R-122 (Heating) and ECE R-10 03 (EMC) exist for the Thermo Top Evo heater.

See chapter 15, "Technical data" for the approval number.



The provisions of these Directives are binding within the territory governed by EU Directive 70/156/EEC and/or EC/2007/46 (binding for new vehicle types as of 29/04/2009) and should also be observed in countries in which there are no special regulations!



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.

1.2. Additional documentation to be used

These installation instructions do not contain all necessary information and instructions with regard to the installation of Thermo Top Evo water heaters.

In addition, the operating instructions and the vehicle-specific installation instructions must also be used.



2 Use / version

2.1. Use of the water heaters

2.1.1. Additional heater

The Thermo Top Evo water heater was designed for installation in Class M1 motor vehicles. Installation in Class O, N 2, N3 motor vehicles and vehicles for transporting hazardous substances is not permissible. When installing in special vehicles, the applicable regulations must be taken into account. Other uses are possible in consultation with Webasto AG.

The Webasto Thermo Top Evo water heater is used in conjunction with the original vehicle heating system

- to heat the passenger compartment,
- to defrost the vehicle windows,
- to preheat water-cooled engines (if technically possible).

The water heater operates independently of the vehicle engine and is integrated in the vehicle's cooling system, fuel system and electrical system.

Other uses must be clarified with Webasto AG in advance.

2.1.2. Auxiliary heater

The Webasto Thermo Top Evo water heater operated in dependence on the vehicle engine and is integrated in the vehicle's cooling system, fuel system and electrical system.

When the engine is switched off, the water heater unit is automatically also switched off and the fuel supply is cut off within 5 seconds.

2.2. Version

Thermo Top Evo - D

Water heater for "diesel" fuel.

Thermo Top Evo - B

Water heater for "petrol" fuel.

The Thermo Top Evo water heater is designed for a 12 V power supply.

See chapter 15, "Technical data" for the technical design.



5 KW heater versions must not be used for island-coolant system applications.



3 Installation location and installation position

Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination. (Requirement from 2001/56/EC, Appendix VII, Point 2.2.1. and ECE R122, Point 5.3.2.1.).

The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields. (Requirement from 2001/56/EC, Appendix VII, Point 2.2.2. and ECE R122, Point 5.3.2.2.).

The heater is preferably installed in the engine compartment, i.e. in the area between the wheel well and the front bumper.

Installation should be carried out as low as possible to ensure automatic bleeding of the heater and circulation pump.



The openings of the heat exchanger may not face downward in any installation position.

Fig. 1 shows the permissible installation position of the heater.

For the position of the heat exchanger opening of the heater, see fig. 2. For dimensions of heater, see chapter 15, "Technical data".

Legend fig. 2:

- 21) Heat exchanger inlet
- 22) Heat exchange outlet
- 23) Combustion air inlet
- 24) Fuel inlet
- 25) Exhaust outlet
- L) Length
- B) Width
- H) Height



The heater may not be installed:

- in the direct area of radiation of exhaust systems
- below the wading line of the vehicle.
- above the coolant expansion tank.



4 Type label

The label referred to in paragraph 1.4 or a duplicate (duplicate model plate), must be positioned so that it can be easily read when the heater is installed in the vehicle. (Requirement from 2001/56/EC, Appendix VII, Point 2.2.4. and ECE R122, Point 5.3.2.4.).

Inapplicable years must be erased from the model plate and the current year must be retained.

Example see also fig. 16.

5 Standard bracket

The heater must be fastened on the bracket with at least 3x M5 bolts with 8 Nm.

The heater fastening screws are approved for bracket metal thickness of 1.5 to 3.0 mm.

The standard bracket must be secured to the car body or an intermediate bracket with at least four M6 screws.

The bracket must not be secured to the car body with self-tapping screws. If necessary, the bracket must be properly machined in accordance with the rules of technology.

See also fig. 3: Example of a Thermo Top Evo bracket.

Legend:

- 10) Water heater
- 26) Bracket for heater
- 27) Body

6 Example for installation in a passenger car

Fig. 6 shows an installation example of the heater in the vehicle.

Legend:

- 1) Radiator
- 2) Coolant thermostat
- 3) Coolant pump
- 4) Internal combustion engine
- 5) Exhaust silencer
- 6) Intake silencer, combustion-air intake pipe
- 7) Circulation pump
- 8) Battery
- 9) Fuse holder
- 10) Water heater
- 11) Control unit (in heater unit)
- 12) Mechanical shut-off valve
- 13) Fan of vehicle heater
- 14) Heat exchanger for vehicle heater
- 15) Switch for fan of vehicle heater
- 16) Fuse block in vehicle
- 17) Relay (for vehicle fan)
- 18) Heater control
- 19) Fuel metering pump
- 20) Fuel removal



7 Integration in coolant system

7.1. Connection

The heater is connected to the vehicle cooling system as shown in Fig. 4, 6 and 7. The coolant quantity present must at least be equivalent to the volume specified in Kapitel 15, "Technical data".

Legend fig. 4:

- 1) Radiator
- 4) Internal combustion engine
- 7) Circulation pump
- 10) Water heater
- 14) Heat exchanger for vehicle heater
- 28) Expansion tank
- 29) Thermostat

It is preferable to integrate the heater in the coolant system at the heat exchanger inlet.



Any coolant running off should be collected using an appropriate container.

The coolant hoses supplied by Webasto must always be used. If other hoses are used, they must at least comply with the standard DIN 73411, material class B. The hoses must be routed without kinking and preferably uphill from the heater to ensure perfect bleeding.

Only hoses with an inside diameter of 18 mm may be chosen.

Hose connections must be secured against slipping off with clips.

7.2. Installing coolant connection pieces



Never mount the retaining plate and the water connection pieces when the heater has been installed.

The contact surfaces of the O-rings in the heat exchanger must be clean and must not have any damage.

The O-rings must be wetted with water before being mounted in the heat exchanger.

Lay the O-rings in the openings of the heat exchanger. Mount the water connection pieces in the retaining plate. Move the connection pieces into the required installation position.

Fasten the retaining plate with the coolant connection pieces on the heat exchanger. DG 5X15 mm self-tapping screw, torque 7 Nm.

To ensure the self-bleeding of the heater, the water-outlet connection piece must be positioned pointing 0° to 90° upward if possible.



See fig. 8: Installing water connection pieces.



Ensure proper positioning of the sensor cable!



See fig. 5: Position of sensor cable.



Coolant circuit

Legend Fig. 5:

- 21) Heat exchanger inlet
- 22) Heat exchanger outlet
- 30) Sensor cable

7.3. Installing coolant hoses

The clamps on the heat-exchanger connection pieces must be mounted between the bead and the hose shoulder.

Care must be taken to bleed the cooling system before the heater is taken into service for the first time or after refilling with fresh coolant. Heater and lines should be installed in such a way as to ensure static bleeding.

Malfunctions due to overheating may occur during operation if the heater and lines have not been bled correctly.



Only spring band clamps approved by Webasto may be used for the installation of the coolant hoses.

7.4. Installing circulation pump

The circulation pump must be installed in the coolant circuit on the pressure side on the heater heat-exchanger inlet (see fig. 4).

Ensure the correct direction of flow of the circulation pump to the vehicle coolant circuit. The installation position of the circulation pump must be chosen so that the circulation pump is self-bleeding. It must be possible for the air volume trapped in the circulation pump to automatically escape upward via the connection piece. Incorrect installation can result in malfunctions of the circulation pump.

See fig. 7: Installation positions of U4847 Econ circulation pump.

7.5. Checking

After the heater and all coolant-carrying components have been installed, the entire coolant system must be checked for leaks with the system pressure specified by the vehicle manufacturer.



8 Fuel integration

The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage. (Requirement from 2001/56/EC, Appendix VII, Point 2.3.1. and ECE R122, Point 5.3.3.1.). In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled. (Requirement from 2001/56/EC, Appendix VII, Point 2.3.2. and ECE R122, Point 5.3.3.2.).

8.1. Integration in engine supply or return line

The fuel integration is carried out either in the supply or return line, or with a special fuel standpipe. On vehicles with a fuel pump, the fuel may not be removed from the fuel supply line!

- If the vehicle has a check valve to the fuel tank, fuel may not be removed from the return line.
- It must be ensured that no zero balance results in the vehicle system due to the fuel removal.
- If fuel is removed from the swirl pot, it must be ensured that this pot is not completely drained.

Proper installation is carried out as shown in fig. 9: Example of a fuel standpipe.

Legend:

- 33) from fuel tank
- 34) to metering pump
- 35) to engine

8.2. Integration via fuel removal unit

Also see chapter 6, "Example for installation in a passenger car"

The fuel standpipe is installed in the fuel removal unit of the fuel tank. See fig. 12.

Legend fig. 12:

- 31) Fuel standpipe
- 32) Fuel removal unit with hole

The installation surface of the fuel standpipe must be clean, flat and burr-free. When mounting the fuel standpipe in the fuel removal unit, ensure careful routing of the standpipe. This may not impair the operation of the parts of the fuel removal unit including the fuel gauge in any operating mode. The length of the standpipe must be chosen so that a minimum distance of 10 mm over the fuel tank bottom or 20 mm over the bottom of the fuel removal unit is ensured.

The specified securing measures of the vehicle manufacturer and the corresponding torques must be complied with.



Under no circumstances whatsoever may the fuel standpipe be installed in the fuel tank body, but instead only in the fuel removal unit.

8.3. Fuel line

The fuel line is divided into the intake and the delivery line. As a result, the intake line is a connection between the fuel tank and the metering pump, while the delivery line produces the connection between the metering pump and the heater.



Fuel

8.3.1. Line installation

When installing the fuel line, it must be kept as short as possible.

| | |
|---|------------|
| Intake line length [m] | max. 3.0 m |
| Intake height [m] (Height difference between fuel tank and metering pump) | max. 1.0 m |
| Delivery line length [m] | max. 9.0 m |

The line must be installed protected against damage (e.g. stone impact) in all areas.

The fuel line must always be routed in cool areas to prevent the formation of bubbles due to warming.

High fuel temperatures can cause heater malfunctions. As a result, the line may not be routed either past strong heat sources (e.g. exhaust gas) or near stored heat zones.

In addition, the steepest possible routing of the fuel line must be ensured from the fuel tank to the heater.

Fuel lines must be fastened in accordance with the latest technology so that, for example, line sag is avoided.

Rub protection must be installed at sharp-edged transitions.



Do not route fuel lines through the vehicle interior.

8.3.2. Line design

Only lines approved by Webasto may be used as fuel lines.

8.3.3. Connecting two lines with a hose

The correct connection of fuel lines with a hose is shown in fig. 10.

Legend fig. 10:

41) Hose clamp

42) Air bubble

Ensure that there are no leaks.

8.3.4. Metering pump

The metering pump is a combined delivery, metering and shut-off system and is subject to specific installation criteria (see fig. 11).

The Thermo Top Evo heater may only be operated together with the DP 42 metering pump.

8.3.5. Installation location

The metering pump may not be installed in the radiation area of hot vehicle parts. A heat shield must be used if necessary. The pump should preferably be installed near the tank.

The permissible ambient temperature is dependent on the fuel used, see chapter 15, "Technical data".

8.3.6. Installation and attachment

The metering pump must be secured with a vibration-damping mounting. The installation position is restricted as shown in fig. 11 (maximum inclination of metering pump, axial installation position of metering pump) to ensure good self-bleeding.

The arrow indicates the direction of flow of the fuel.



8.4. Label

A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. (Requirement from 2001/56/EC, Appendix VII, Point 2.3.3. and ECE R122, Point 5.3.3.3.).

Use the stickers provided (see fig. 17 for an example).

The sticker "Switch off heater when refuelling" must be applied near the filler neck.

8.5. Cold-resistant fuels

If you change to low-temperature fuel, the heater must be operated for approx. 15 minutes so that fuel line and fuel pump are also filled with the new fuel.

We know of no negative influences due to additives.



9 Combustion air supply

The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely. (Requirement from 2001/56/EC, Appendix VII, Point 2.5.2. and ECE R122, Point 5.3.5.2.).

9.1. Combustion air pipe

The intake opening for combustion air must be located so that it cannot become clogged with dirt. It must not point in the direction of travel.

An intake line is required for combustion air.

The withdrawal point for the combustion air must be located in a cool place where it is protected from splashing water and above the fording line of the vehicle.

A ventilation opening measuring at least 3 cm² is required if the intake opening is installed in an enclosed installation space.

9.2. Intake silencer

The air intake silencer must be installed in a position between 0° and 90° pointing downwards.
See fig. 13.

Legend fig. 13:

- 36) Combustion-air intake pipe
- 37) Combustion-air intake silencer
- 38) Mounting clip

9.3. Recommendations for installation

Screw a combustion-air intake pipe with a maximum length of 400 mm onto the combustion-air intake connection piece of the heater.

Screw the combustion-air intake silencer as far as possible into the combustion-air intake pipe.



Leaks can result in a higher noise level. Ensure an adequate distance from the exhaust system to prevent the intake of exhaust gas!

Depending on the installation, the combustion air intake silencer can be located in a suitable location and secured with the included mounting clip or other installation materials which utilise the latest technology.



10 Exhaust System

10.1. Exhaust pipe

The exhaust pipe (inside diameter 22 mm) can be routed with several bends (270° altogether, minimum bending radius 50 mm).

The total line length must be between 500 and 1000 mm.

10.2. Exhaust silencer

It is not permissible to operate the Thermo Top Evo heater without exhaust silencers.

The exhaust silencer must not be installed near the intake opening for the combustion air.

The exhaust silencer must be installed at least 200 mm from the heater.



Drill a $\varnothing 2$ mm condensed-water drain hole at the lowest point of the exhaust silencer.

Fig. 15 shows the exhaust silencer.

10.3. Recommendations for installation

The exhaust silencer and the exhaust pipe may not be fastened to temperature-sensitive vehicle parts (e.g. brake line, electr. lines, vehicle control units, headlights, underbody protection, plastic parts, etc.) and must be a sufficient distance of at least 20 mm from them.

Only approved Webasto spacer brackets may be used with this application.

The exhaust pipes are sufficiently fixed in place to ensure the minimum distances even during driving. Lines approved by Webasto must be used as exhaust pipes. It is recommended that the exhaust application be installed splash-water protected.



Collections of condensed water in the exhaust pipe must be drained off directly. If necessary, a condensed-water drain hole may be drilled at the lowest point.

Condensed-water drain holes may not blow onto temperature-sensitive vehicle parts.

The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows. (Requirement from 2001/56/EC, Appendix VII, Point 2.4.1. and ECE R122, Point 5.3.4.1.)

The exhaust outlet must be unobstructed. It must not be directed at vehicle parts. The exhaust outlet may not be located within the range of throw of the wheels.

Watch the maximum steering angle of the front wheels. It must be ensured that the exhaust outlet is not clogged and cannot be damaged under any operating conditions.

The opening of the exhaust pipe must not point in the direction of travel. Point the direction of outflow vertically downward or a maximum of 20° opposite the direction of travel.

After passing through the underbody cover, the exhaust pipe must be extended by another 10 mm.

Fig. 14: Exhaust outlet

Legend:

39) Engine under tray

40) Exhaust outlet



Electrical system

11 Electrical connections

Electrical components, such as relays, fuses, switches, etc., must be installed so that they are protected from the penetration of water (splash water, high-pressure cleaners, etc.).

11.1. Connection of control unit / heater

The electrical connection of the heater is designed as shown in fig. 18.

11.2. Installation and connection of the timer

A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off. (Requirement from 2001/56/EC, Appendix VII, Point 1.7.1. and ECE R122, Appendix 7, Point 7.1.).

The timer is connected as shown in the circuit diagram in fig. 18.



Do not press the display during installation. This can result in damage to the LCD display.

11.3. Installation of other heater controls

The installation of other heater controls must be carried out in accordance with the specific installation instructions.

The Telestart is installed in accordance with its installation instructions.

The Telestart transmitter is coded to the receiver as described in the Telestart operating instructions.

11.4. Vehicle fan

The vehicle fan is controlled by the fan relay, see the wiring diagram in fig. 18.



The connection in the control unit (heating) is designed for a current consumption of $I_{\max} = 0.5 \text{ A}$.

12 Circuit diagrams

For the wiring diagram legends see fig. 18:
System wiring diagram for Thermo Top Evo, 12 V.



The line cross-sections specified in the system wiring diagram apply for line lengths < 4.5 m.

Table 1: Cable colours

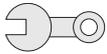
| | |
|----|--------|
| bl | blue |
| br | brown |
| ge | yellow |
| gn | green |
| gr | grey |
| or | orange |
| rt | red |
| sw | black |
| vi | violet |
| ws | white |



Table 2: Legend for wiring diagrams

| Item | Description | Comment |
|------|-------------------------------|------------------------------|
| ① | Present in vehicle | Vehicle fan |
| ② | Fan controller | |
| ③ | Air-conditioning control unit | |
| ④ | Aerial | |
| ⑤ | Plug connection | View of Line Side |
| X1 | 6-pin connector | Vehicle signal |
| X2 | 2-pin connector | Power supply |
| X3 | 4-pin connector | Temperature sensors |
| X4 | 2-pin connector | Circulation pump |
| X5 | 2-pin connector | Heating element |
| X6 | 2-pin connector | not in use |
| X7 | 2-pin connector | Metering pump |
| X8 | 2-pin connector | Diagnosis plug |
| X9 | 2-pin connector | Diagnosis bridge |
| X10 | 4-pin connector | Heater controls |
| X11 | 4-pin connector | Heater controls |
| X12 | 4-pin connector | Temperature sensor for W-Bus |
| X13 | 4-pin connector | Temperature sensor for W-Bus |
| X14 | 6-pin connector | Telestart T91/T100 HTM |
| X16 | 2-pin connector | Circulation pump |
| X17 | 4-pin connector | Telestart button |
| X18 | 4-pin connector | Telestart button |
| A1 | Heater | Thermo Top Evo |
| A2 | Control unit | |

| Item | Description | Comment |
|------|--------------------------|----------------------------|
| A3 | Digital timer 1533 | |
| A4 | Telestart T91 | |
| A5 | Telestart T100 HTM | |
| A6 | Fuse holder | |
| A7 | W bus temperature sensor | |
| A8 | IPCU | Fan controller |
| A9 | Relay socket with fuses | |
| A10 | Telestart button | |
| F1 | Fuse | 20 A |
| F2 | Fuse | 30 A |
| F3 | Fuse | 1 A |
| F4 | Fuse | 25 A |
| B1 | Temperature sensor | Coolant temperature sensor |
| B2 | Temperature sensor | Overheating |
| M1 | Motor | Combustion air fan |
| M2 | Motor | Circulation pump |
| M3 | Vehicle fan | |
| S1 | Vehicle fan switch | |
| S2 | Vehicle fan switch | |
| E | Heating element | |
| Y1 | Metering pump | DP 42 |
| K1 | Relay | Fan relay |



13 Initial start-up



The safety precautions in the operating and maintenance instructions must be observed!

The operating and maintenance instructions must be read through without fail before starting the heater.

After the heater has been installed, the coolant circuit and the fuel supply system must be carefully bled, taking into account the directions of the vehicle manufacturer.

It is recommended that the heater circulation pump be put into operation with the component test function of the Webasto Thermo Test Diagnosis to support bleeding.

Before the heater is operated for the first time, the coolant temperature should be < 30 °C, as the heater does not go into combustion operation at high engine temperatures.

Carry out first-time operation with the Webasto Thermo Test Diagnosis.

Prime the heater with fuel using the Webasto Thermo Test:

Press the fill line button and fill the lines until fuel is present at the heater.

Example:

43 sec. filling time with 300 cm line length, 7 Hz metering pump frequency.

The CO₂ setting must be checked while operating the heater for the first time (for value range, see chapter 15, "Technical data").

Webasto recommends a setting of 10 vol. %.

All water and fuel connections must be checked for leaks and secure attachment during the trial run of the heater. If the heater suffers a fault during operation, the fault must be located and remedied.

14 Faults

To remedy a fault which has resulted in a fault lock-out, proceed according to the workshop manual.



15 Technical data

15.1. Technical data for Thermo Top Evo

Except where limit values are specified, the technical data below refer to the usual heater tolerances of $\pm 10\%$ at an ambient temperature of $+20\text{ }^\circ\text{C}$ and at the rated voltage.

15.2. Technical data of circulation pump

| | |
|-------------------------------|--|
| Circulation pump | 4847 Econ |
| Delivery rate against 0.1 bar | approx. 900 l/h |
| Rated voltage | 12 V |
| Operating voltage range | 9 - 16.5 V |
| Rated power consumption | 14 W |
| Dimensions, circulation pump | Max. length: 109 mm Diameter: 48.5 mm |
| Weight | approx. 0.3 kg |

| Heater | Operation | Thermo Top Evo - B | | Thermo Top Evo - D | |
|---|----------------------------|--|------------------------|---|------------------------|
| | | 5 kW | 4 kW | 5 kW | 4 kW |
| EC approval mark | | e1*2001/56*2006/119*0258*... e1*72/245*2006/96*5627*... E1 122R-00 0258 E1 10 R-03 5627 | | | |
| Model | | Water heater with evaporator-type burner | | | |
| Heat output | Full load Part load | 5.0 kW 2.8 kW | 4.0 kW 2.8 kW | 5.0 kW 2.5 kW | 4.0 kW 2.5 kW |
| Fuel | | Petrol EN 228 DIN 51625 | | Diesel EN 590 | |
| Fuel consumption +/- 10% | Full load Part load | 0.705 l/h 0.395 l/h | 0.560 l/h 0.395 l/h | 0.620 l/h 0.310 l/h | 0.495 l/h 0.310 l/h |
| Rated voltage | | 12 V | | | |
| Operating voltage range | | 11 to 16.5 V | | | |
| Nominal power consumption without circulation pump +/- 10% (without vehicle fan) | Full load Part load | 33 W 15 W | 21 W 15 W | 33 W 12 W | 21 W 12 W |
| Perm. ambient temp.: Heater: - Operation - Storage Metering pump:- Operation - Storage | Summer fuel Winter fuel | -40 to +60 °C -40 to +120 °C -40 to +20 °C -40 to +10 °C -40 to +90 °C | | -40 to +80 °C -40 to +120 °C -40 to +30 °C -40 to +90 °C | |
| Perm. operating pressure (heat carrier) | | 2.5 bar | | | |
| Capacity of the heat exchanger | | 0.075 l | | | |
| Minimum quantity of coolant circuit | | 1.50 l | | | |
| Minimum flow rate for the heater | | 200 l/h | | | |
| CO ₂ in exhaust gas (perm. function range) | | 8 to 12.0 vol. % | | | |
| Dimensions of heater without attached parts Also see fig. 2. (Tolerance ± 3 mm) | | L = Length: 218 mm B = Width: 91 mm H = Height: 147 mm without coolant connection piece | | | |
| Weight | | 2.1 kg | | | |



Notes

Bei mehrsprachiger Ausführung ist Deutsch verbindlich.
In multilingual versions the German language is binding.

Webasto AG
Postfach 80
D - 82132 Stockdorf
Germany

National:
Hotline: 01805 93 22 78
(€0,14 aus dem deutschen
Festnetz)
Hotfax: 0395 5592 353
Hotmail: technikcenter@webasto.com
www.webasto.de

International:
www.webasto.com