Air Heater Unit

Webasto
Feel the drive

Air Top 2000 ST B Additional Heater

Air Top 2000 ST D Additional Heater

e1
*2001/56*0022

Installation Instructions

VW T5

Gasoline and Diesel
from Model Year 2004
For left-hand drive vehicles only

WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Volkswagen	Transporter	T5	L148

Foreword

These installation instructions apply to VW T5 vehicles with a Gasoline and Diesel engine (van with partition wall) from model year 2004 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded.
Vehicles and equipment variants, which are not listed in these installation instructions, have not been tested. However, installation according to these installation instructions may be possible. Depending on the version and the equipment variants of the vehicle, changes may be necessary relative to these "installation instructions" during installation and must be adjusted accordingly.

However, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Air Top 2000 ST* should be observed.

The installation location of heater controls and the routing of the air ducting parts must be coordinated with the final customer prior to installation!

WARNING!
Original load-bearing components of the vehicle and/or component used for crash safety may not be modified for the hot air and recirculating air ducting!

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with edge protectors (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

Heater Units/Installation Kit

Quantity	Description	Order No.:
1	Standard Delivery Scope ***Air Top 2000 ST*** Gasoline	9008324C
1	Standard Delivery Scope ***Air Top 2000 ST*** Diesel	9008321C
1	Comfort Delivery Scope ***Air Top 2000 ST*** Gasoline	9008325C
1	Comfort Delivery Scope ***Air Top 2000 ST*** Diesel	9008322C
1	Installation kit for VW T5 Gasoline and Diesel	9014156A

The installation kit contains the bracket with fastening parts.
The required air ducting parts must be ordered as an option from the Webasto Accessories Catalog in accordance with the customer order!

To be ordered as an option for vehicles <u>without</u> factory-installed additional heater:

Quantity	Description	Order No.:
1	Fuel standpipe	1300823B

To be ordered as an option for vehicles <u>with</u> factory-installed additional heater:

Quantity	Description	Order No.:
1	6x5x6 mm fuel standpipe	1310367A

To be ordered as an option when using fresh-air mode:

Quantity	Description	Order No.:
1	External temperature sensor	9005004B

To be ordered as an option when using Telestart:

Quantity	Description	Order No.:
1	Bag for retrofitting T80	9014433B

The materials used for this application example - in accordance with validity on page 2 - are contained in the following list. In case of deviations in accordance with the customer order, the materials actually required can be ordered from the currently valid Webasto Accessories Catalog.

Quantity	Description	Order No.:
1	Flexible tube PAK, inside dia.= 60 mm (cut to length)	398497
1	Flexible tube PAK, inside dia.= 55 mm (cut to length)	441376
5	Clamp, 50-70 mm dia.	139645
1	Air outlet, D1a = 60 mm; D2a = 92 mm; L = 65 mm	87389A
1	Air outlet, D1a = 55 mm; D2a = 87 mm; 45°	107836
1	Distributor with butterfly valve, outside dia.. = 55 mm; L = 95 mm	101374
1	Reducing piece, D1a = 60 mm; D2a = 55 mm; L = 35 mm	29852A

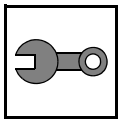
Special tools

- Torque wrench for 2.0 - 10 Nm
- Metric thread-setter kit
- Blind rivet tool

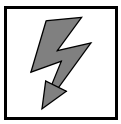
Explanatory Notes on Document

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.

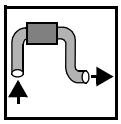
Mechanical system



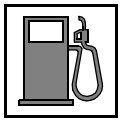
Electrical system



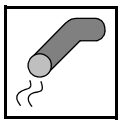
Hot air system



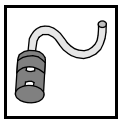
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:

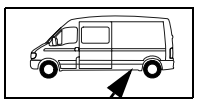
Specific risk of injury or fatal accidents.

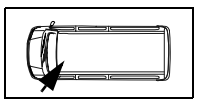
Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of Webas- to components or to the manufacturer's vehicle-specific documents.

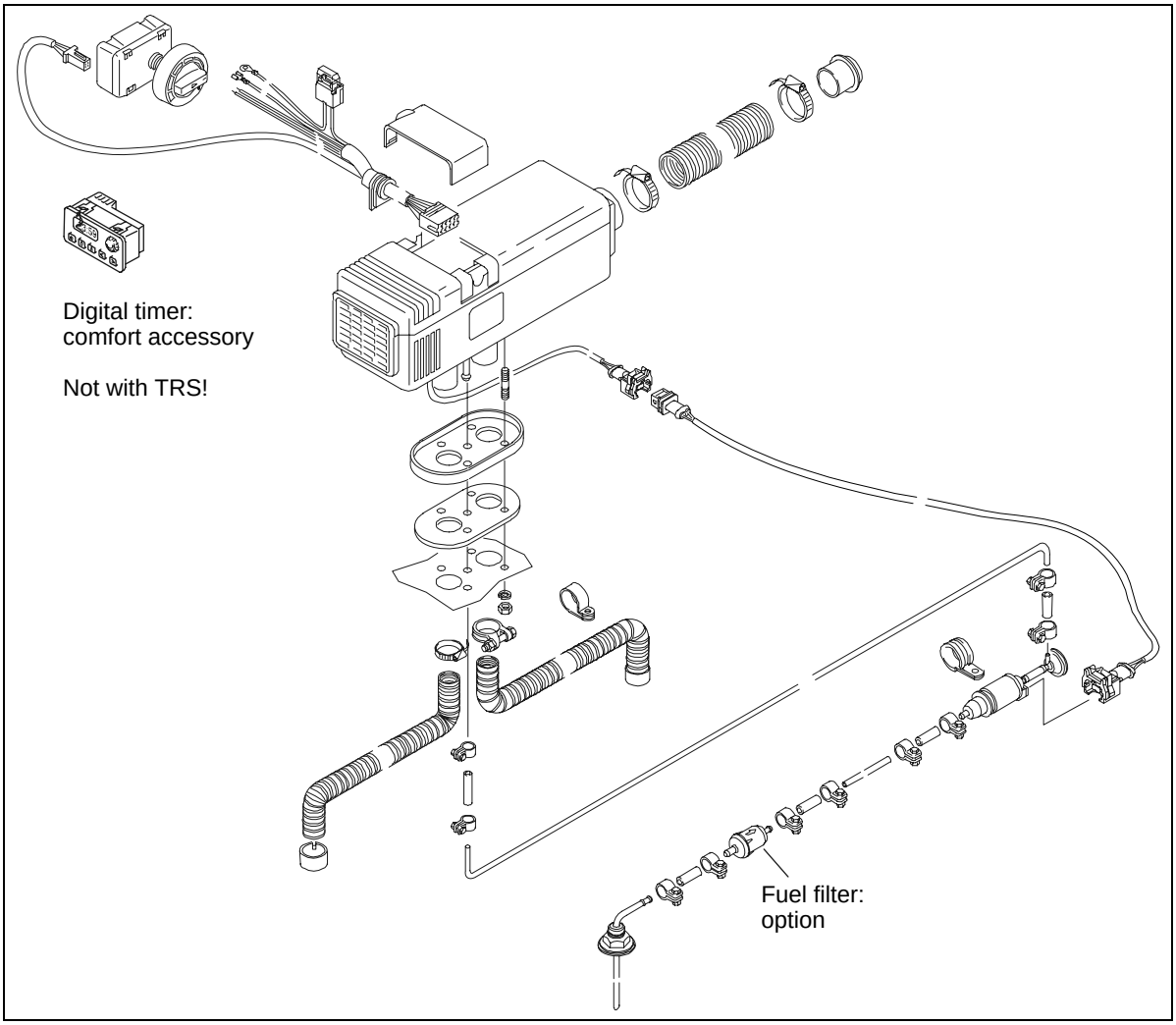
Reference to a special technical feature.



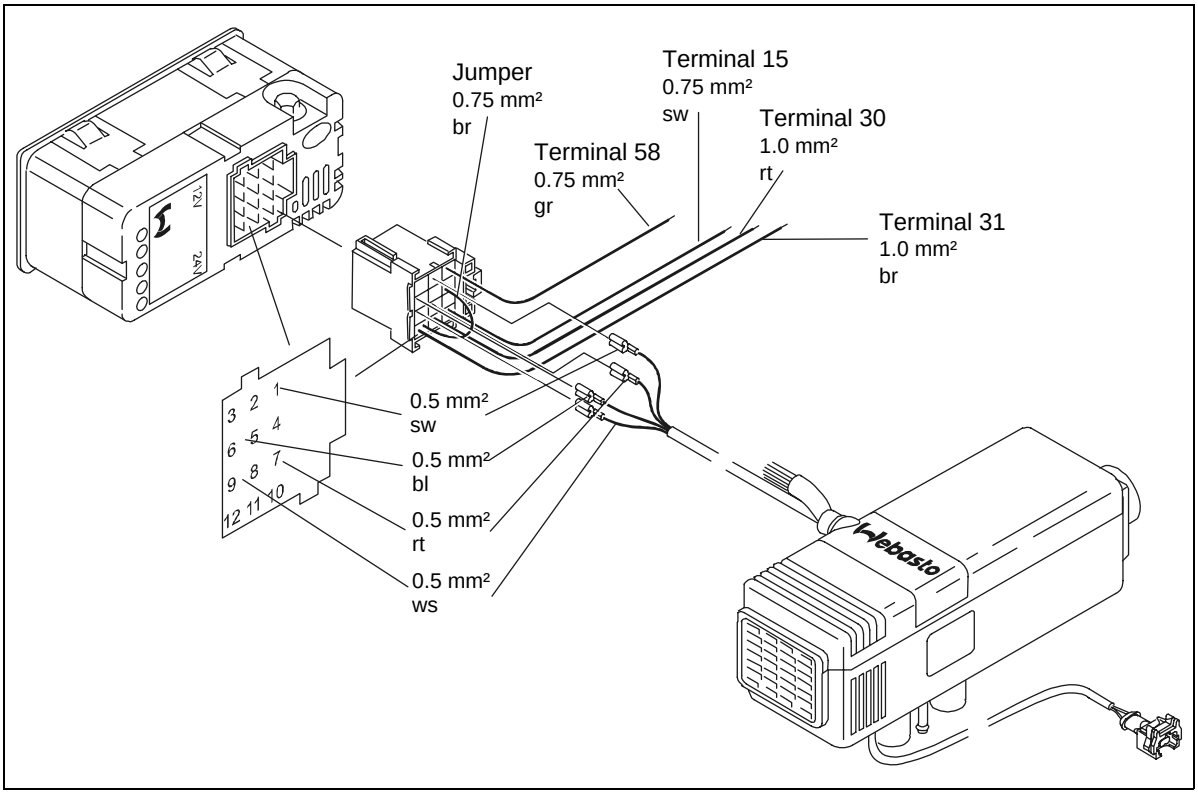


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

General Installation Diagram



Installation diagram for AT 2000 ST

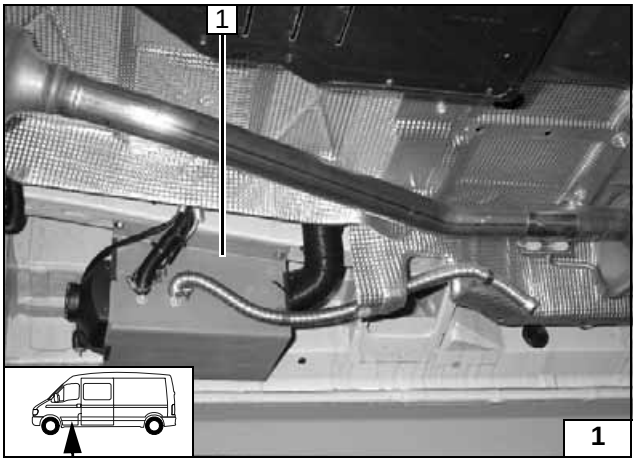


Connection diagram for comfort digital timer

Preliminary Work

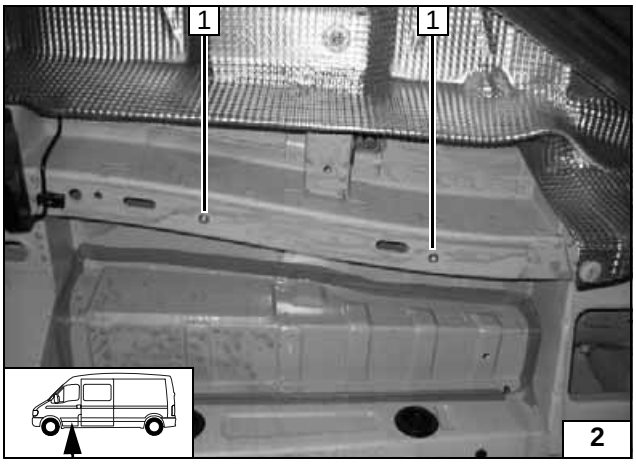
WARNING!

- Disconnect the battery "earth" or "ground" connection.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Remove the underbody protection on the right and left (if present).
- Remove the fuel tank (only on vehicles without installed auxiliary or additional heater).
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions (only on vehicles without installed auxiliary or additional heater).
- Remove the trim on the front passenger side entrance (only with recirculating air mode).
- Remove the lower instrument panel trim on the driver's side.



Heater unit installation location

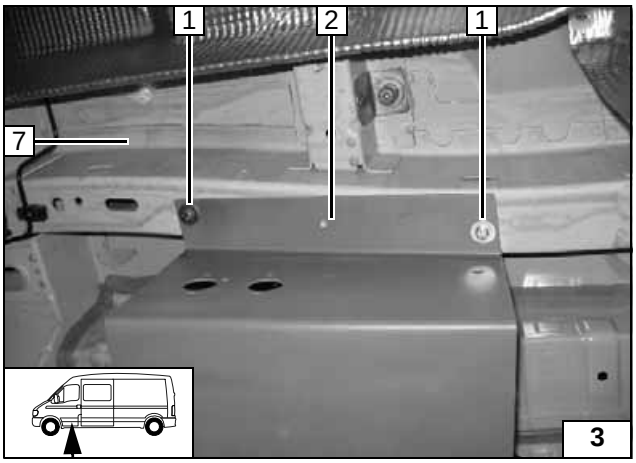
1 Heater unit



Preparing installation location

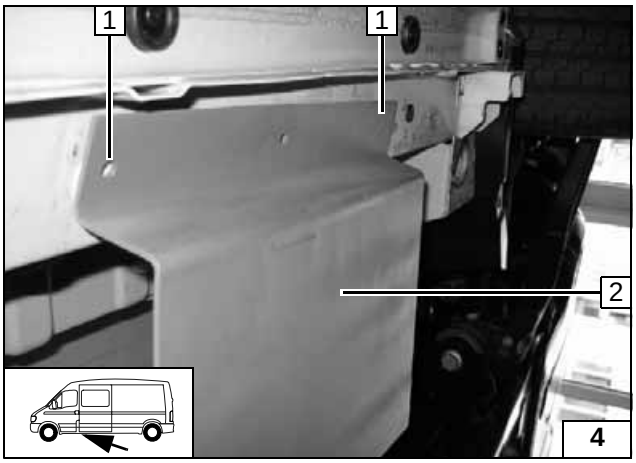
1 Rivet nut (2x) in existing holes

Installing rivet nuts



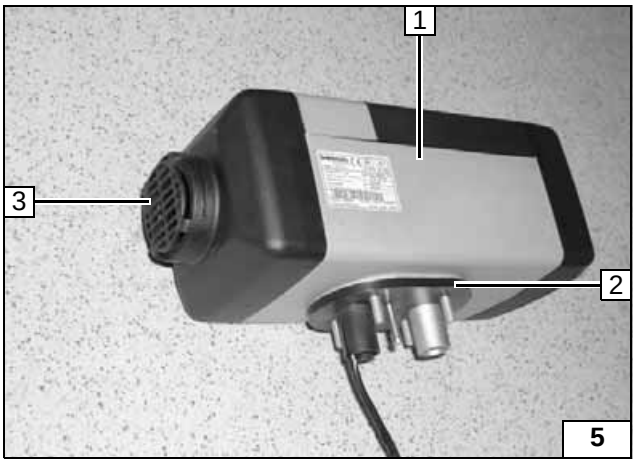
2 Bracket
1 M6x20 bolt, large diameter washer on rivet nuts

Loosely mount bracket



1 Copy hole pattern [2x] to door sill
2 Remove bracket, drill 9.1 mm dia. hole; install rivet nuts

Copying hole pattern

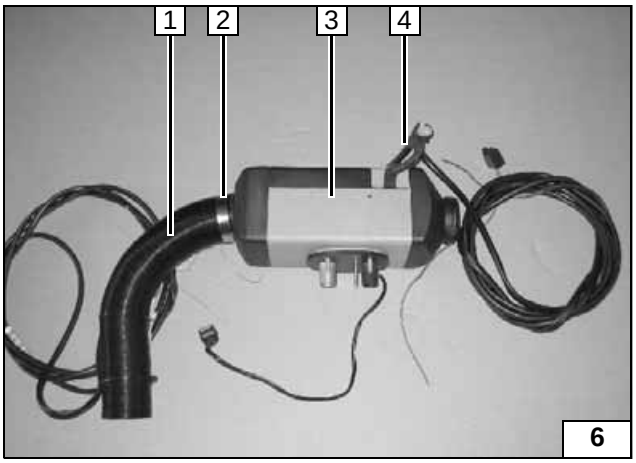


Preparing heater unit

With fresh-air mode, an underride protection as shown in Figure **33** must be installed if not present!

1 Heater unit
2 Mount base seal
3 Protective grill

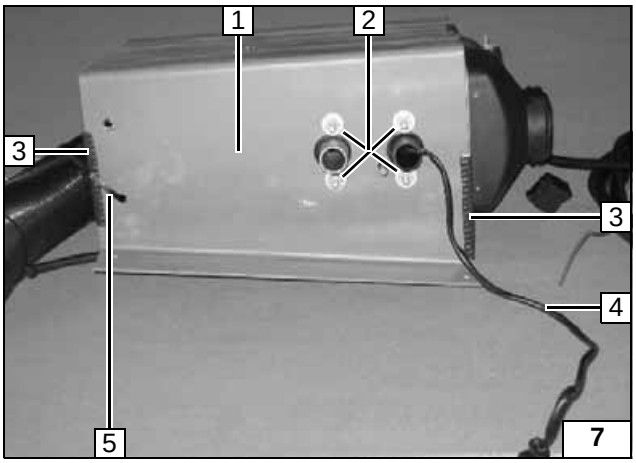
Preparing heater unit



Cut approx. 360 mm off 60 mm dia. flexible tube.

3 Heater unit
4 Wiring harness
1 60 mm dia. flexible pipe, 360 mm long
2 50-70 mm dia. hose clamp

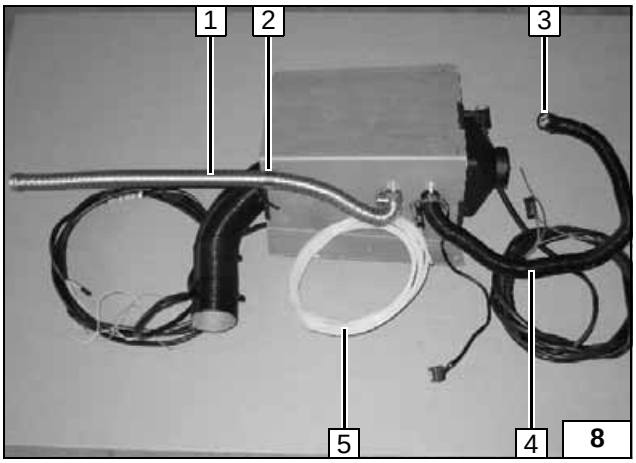
Premounting heater unit



Route through wire of metering pump **4** downward.
Fasten hot-air flexible tube on bracket with cable tie.

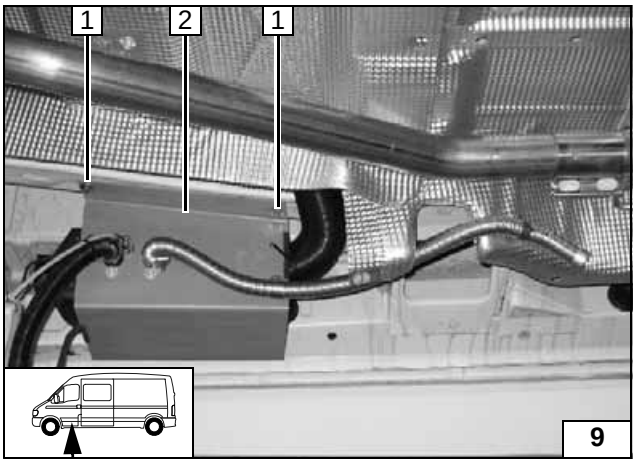
1 Bracket
2 Large diameter washer, spring lockwasher, M6 nut [4x each]
3 Mount edge protection, 70 mm long [2x]
5 Cable tie

Installing bracket



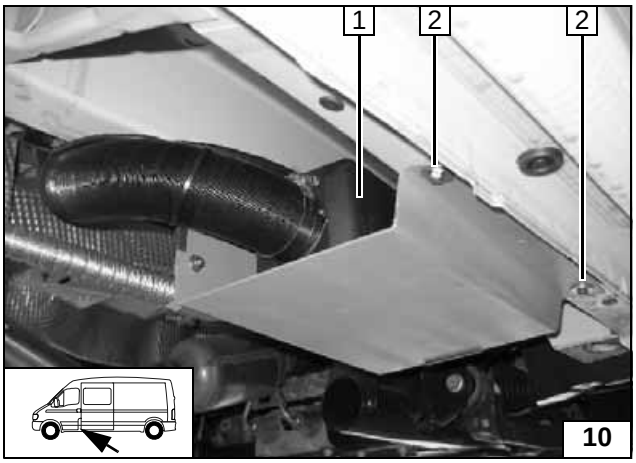
1 Exhaust pipe, hose clamp
2 P-clamp, 10 mm spacer sleeve, M6x20 bolt, flanged nut
4 Combustion-air intake pipe, 27 mm dia. hose clamp
3 Protective cap
5 Mecanyl fuel line, hose section, 10 mm dia. hose clamp [2x]

Installing lines



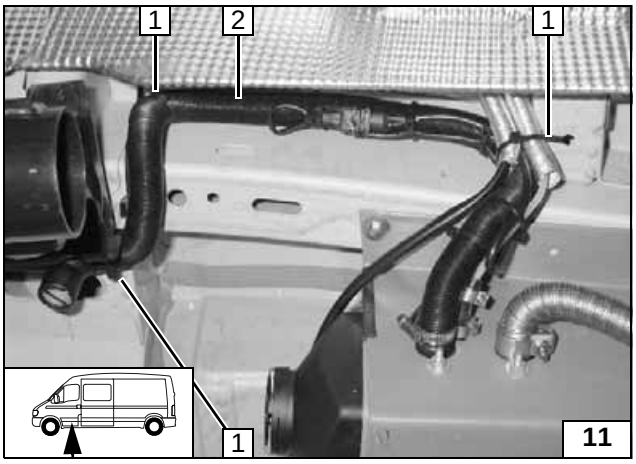
Installing heater unit

2 Preassembled heater unit
1 M6x20 bolt, spring lockwasher, flanged nut [2x each]



1 Preassembled heater unit
2 M6x20 bolt, spring lockwasher, flanged nut [2x each]

Installing heater unit



Combustion air

Shape combustion-air intake pipe as shown in picture.

2 Combustion-air intake pipe
1 Cable tie

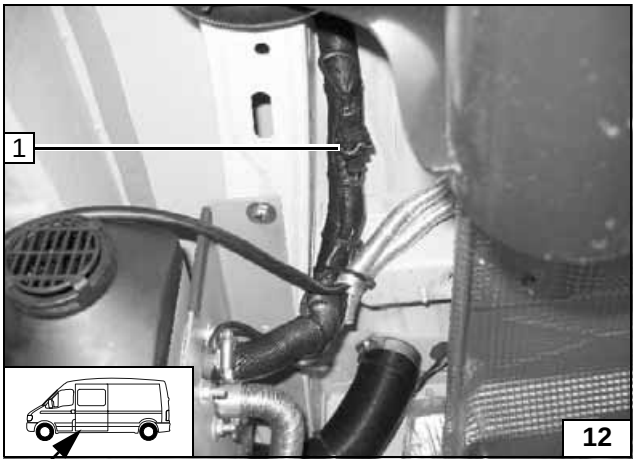
Fuel Connection

CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

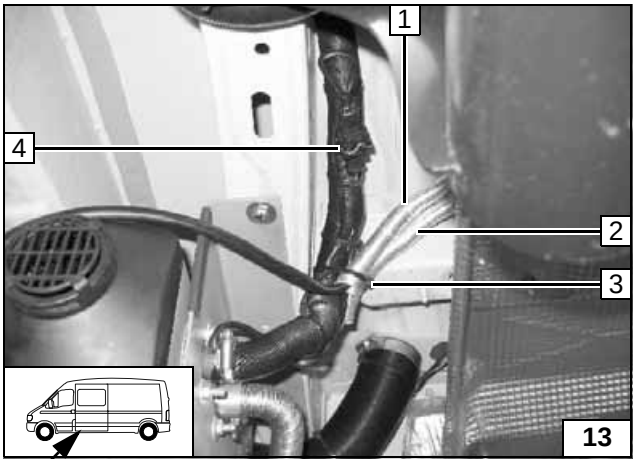
WARNING!
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



Complete connector with single wire seal [2x], tab connector and connector housing on wire of metering pump from heater unit and connect to wiring harness of metering pump.

1 Plug connection on wiring harness of metering pump

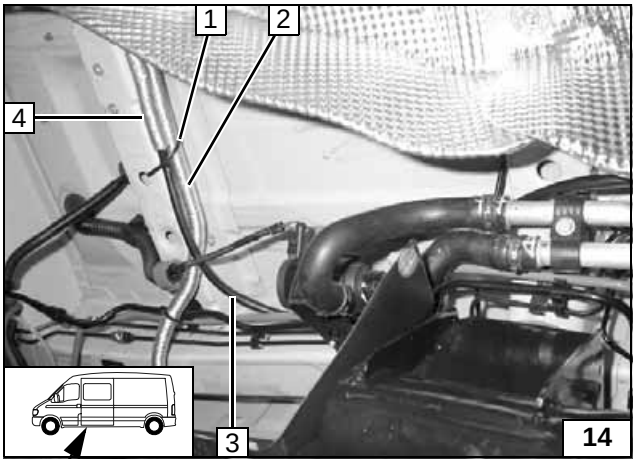
Connecting wiring harness of metering pump



Cut heat protection hose as shown in Figure **12** and **13**. Pull wiring harness of power supply and wiring harness of metering pump and Mecanyl fuel line into one heat protection hose each.

1 Wiring harness of power supply in heat protection hose
2 Mecanyl fuel line and wiring harness of metering pump in heat protection hose
3 Cable tie

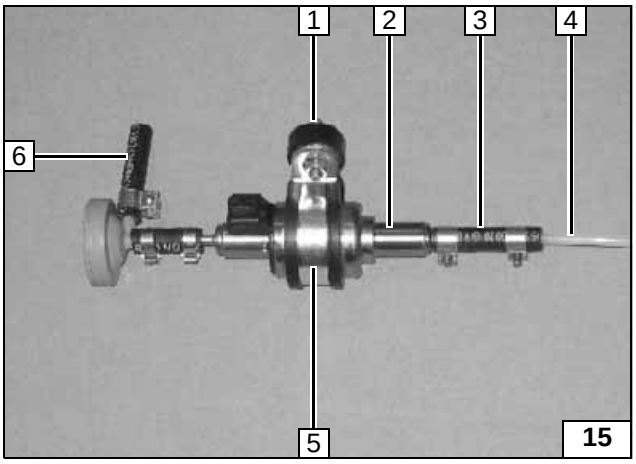
Installing lines



Route wiring harness of power supply and wiring harness of metering pump and Mecanyl fuel line over heat guard plate on left-hand side of vehicle. Route wiring harness of power supply further to battery.

4 Wiring harness of power supply in heat protection hose
2 Mecanyl fuel line and wiring harness of metering pump in heat protection hose
3 Wiring harness of power supply
1 Cable tie

Installing lines

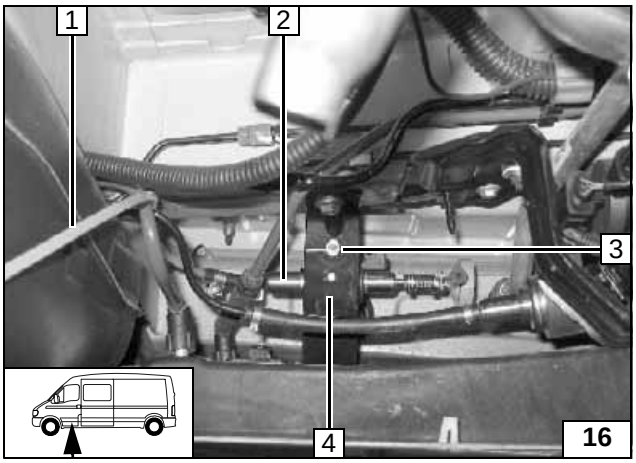


Metering pump

Cut Mecanyl fuel line to length at installation location of metering pump.

2 Metering pump
5 Rubber-coated pipe clamp
1 Silentblock, flanged nut
4 Hose section, 10 mm dia. hose clamps [2x]
6 Hose section, 10 mm dia. hose clamp
4 Remaining end of Mecanyl fuel line
3 Hose section, 10 mm dia. hose clamps [2x]

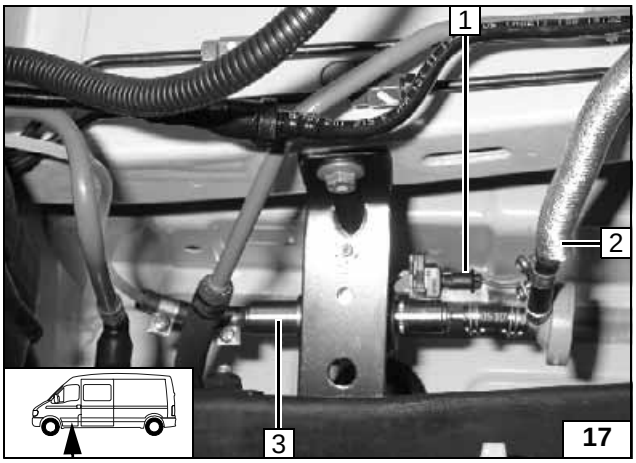
Preassembling metering pump



Ensure proper installation position of metering pump, see "Installation Instructions". Installation location on left on strut before vehicle fuel tank!

2 Preassembled metering pump
3 Flanged nut on silent block in existing hole
4 Original vehicle strut
1 Remaining end of Mecanyl fuel line

Installation location of metering pump

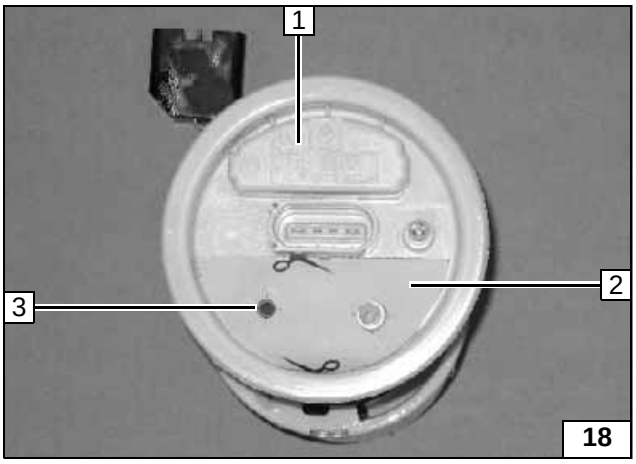


Fuel line from heater unit on pressure side of metering pump [side with connector].

3 Preassembled metering pump
1 Wiring harness for metering pump, single-wire sealing [2x], tab connector, connector housing
2 Fuel line from heater unit, 10 mm dia. hose clamp on premounted hose section

Connecting metering pump

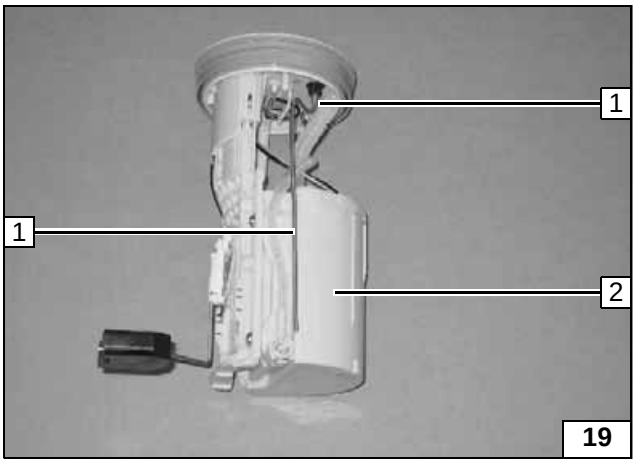
Fuel Removal on Vehicles without Additional or Auxiliary Heater



Remove fuel tank according to manufacturer's specifications. Remove fuel-tank sending unit according to manufacturer's specifications.
Cut out template and lay on.

1 Fuel-tank sending unit
2 Template
3 Copy hole pattern, 6 mm dia. hole

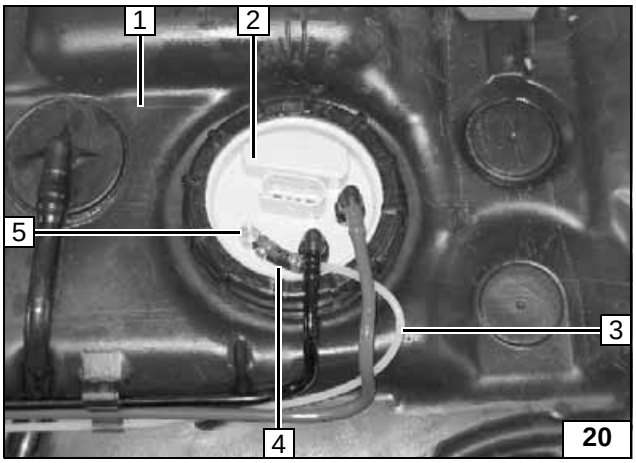
Removing fuel



Shape fuel standpipe according to template, cut to length and install, see "installation instructions".

2 Fuel-tank sending unit
1 Fuel standpipe

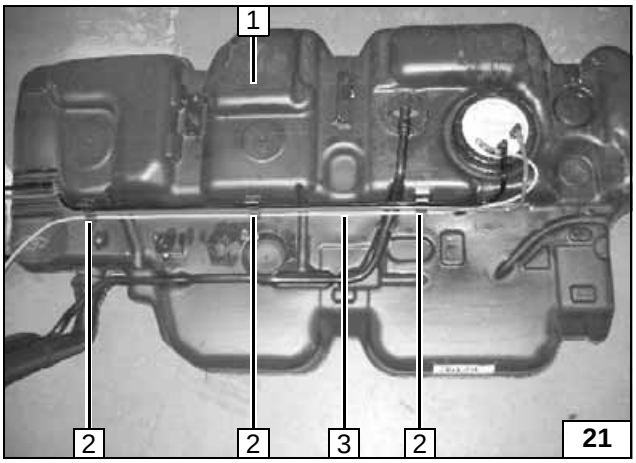
Installing fuel standpipe



Install fuel-tank sending unit according to manufacturer's specifications.

1 Fuel tank
2 Fuel-tank sending unit
5 Fuel standpipe
3 Remaining end of Mecanyl fuel line
4 Hose section, 10 mm dia. Caillau clamp [2x]

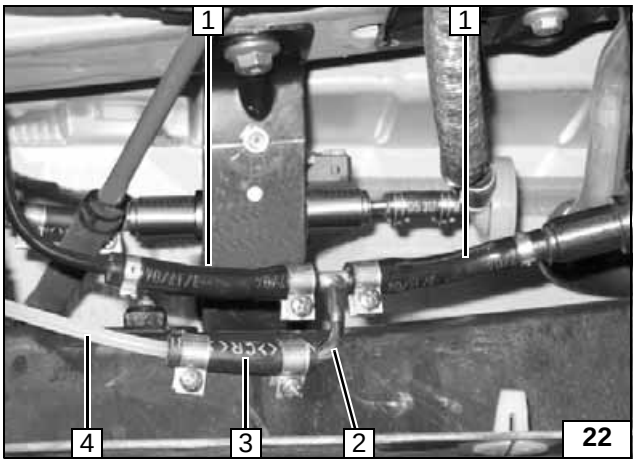
Connecting fuel line



Clip fuel line from fuel standpipe **3** into existing fastening points **2**.
Remount fuel tank.

1 Fuel tank
3 Remaining end of Mecanyl fuel line
2 Fastening points [3x]

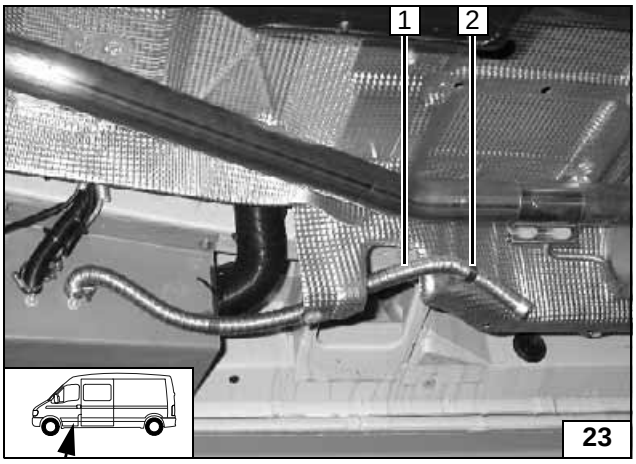
Installing fuel line



Fuel Removal on Vehicles with Additional or Auxiliary Heater

Cut off fuel line to additional or auxiliary heater as shown.
Mount fuel standpipe in cutting point as shown.

1 Fuel line to additional or auxiliary heater
2 Fuel standpipe, 10 mm dia. hose clamp [2x].
4 Remaining end of Mecanyl fuel line from metering pump
3 Hose section, 10 mm dia. hose clamp [2x]

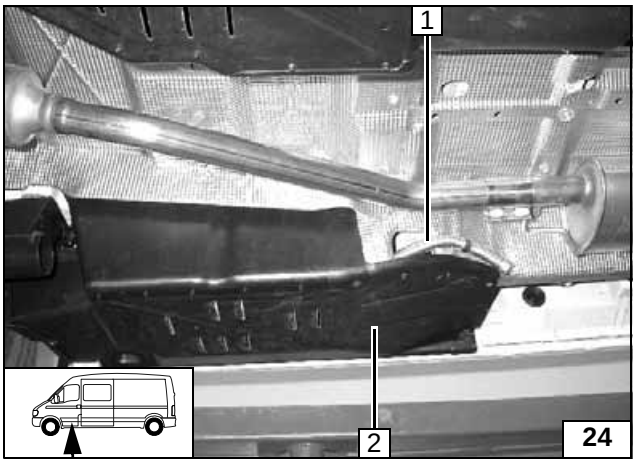


Exhaust system

Align exhaust pipe as shown.
Drill 2 mm dia. condensed-water drain hole at lowest point in exhaust pipe.
Ensure sufficient distance to neighboring components.

1 Exhaust pipe
2 P-clamp, 10 mm spacer sleeve, self-tapping screw

Fastening exhaust pipe

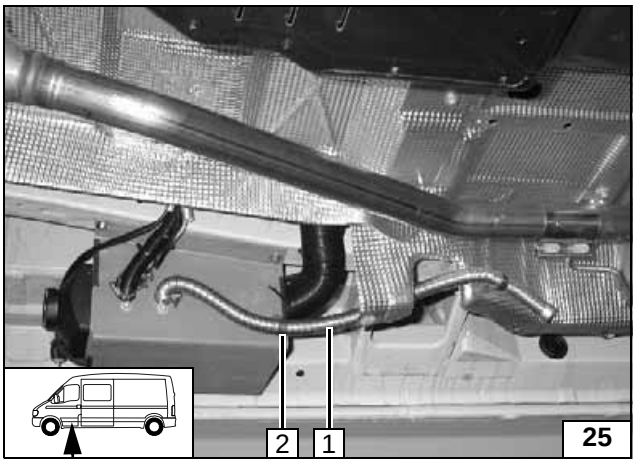


Optional Exhaust Muffler

Installation of exhaust muffler as shown in Figure **26** is not possible on a vehicle with underride protection equipment!

1 Exhaust pipe
2 Underride protection

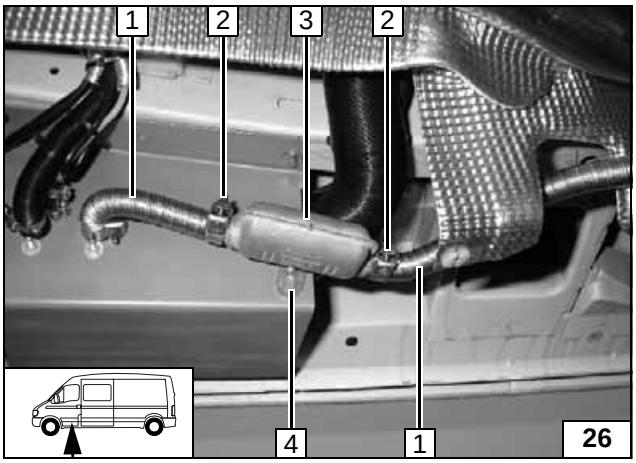
Exhaust muffler



Remove p-clamp at position **2** again.

1 Exhaust pipe
2 P-clamp

Removing p-clamp



Cut off exhaust pipe as shown in Figure and mount muffler.

1 Exhaust pipe
5 Angle bracket, M6x20 bolt, flanged nut on bracket
3 Exhaust muffler, M6x20 bolt, flanged nut on angle bracket
2 Hose clamp [2x]

Installing muffler

Optional Hot Air System

WARNING!
The routing of the air ducting parts shown is an application example on the van with a partition wall. Should other versions and equipment variants be used, then the appropriate adjustments must be made.
Before installation, the routing of the air ducting parts must be coordinated with the end customer!

Install flexible tubes so that they are kink-free. Unless specified otherwise, always fasten using brackets and cable ties.
The hot air ducting on this version example is executed as shown in the following diagram:

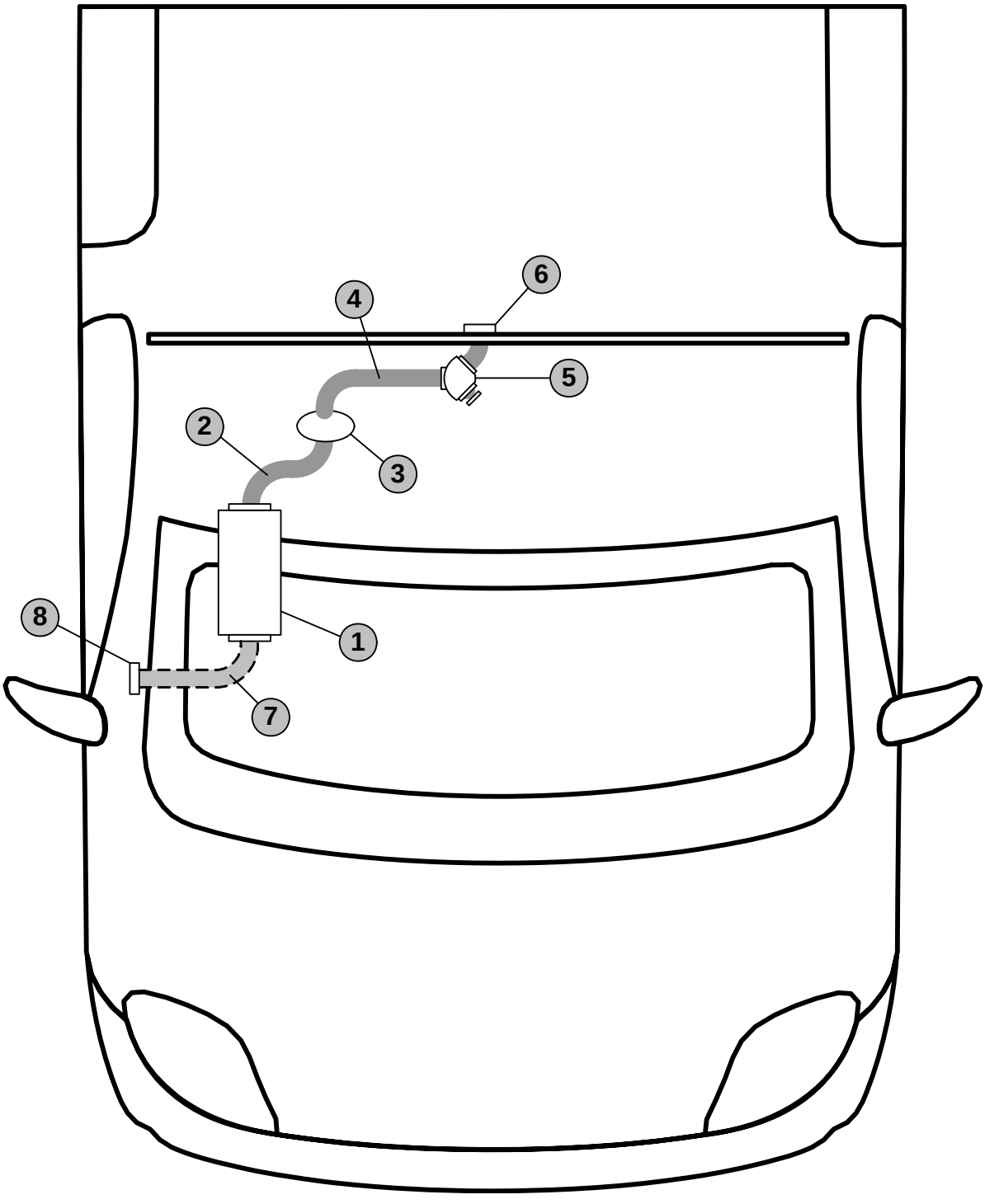
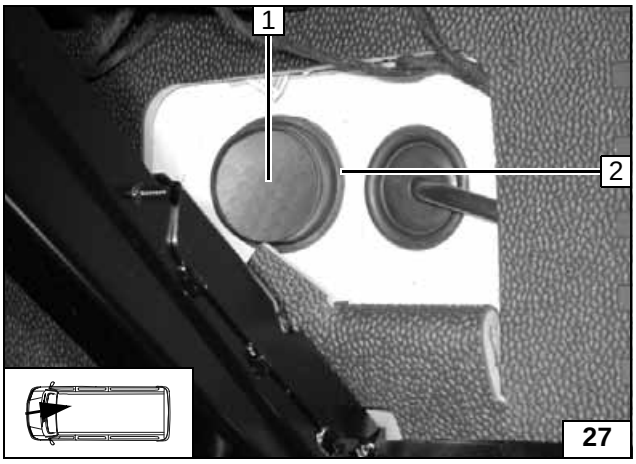


Diagram for hot air ducting

1 = Heater unit
2 = Flexible tube, 60 mm dia.
3 = Dia. 55x60 mm adapter
4 = Flexible tube, 55 mm dia.
5 = Air distributor
6 = Air outlet
7 = Flexible tube, 60mm dia.
8 = Air outlet

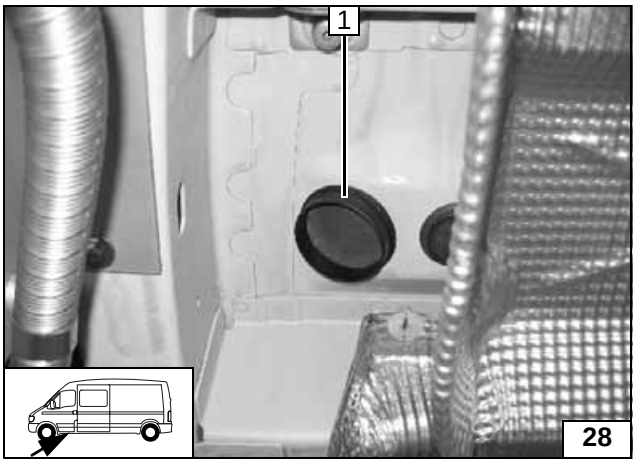


Optional Hot Air System

Fold back cover under front passenger seat. Lay on dia. 55x60 adapter as shown.

2 Dia. 55x60 mm adapter
1 Copy hole pattern, 60 mm dia. hole

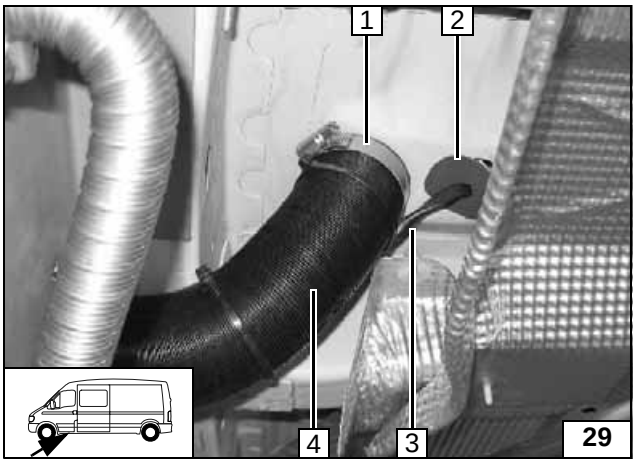
Hole under front passenger seat



Mount adapter in hole from above and glue in with Sicaflex.

1 Dia. 55x60 mm adapter

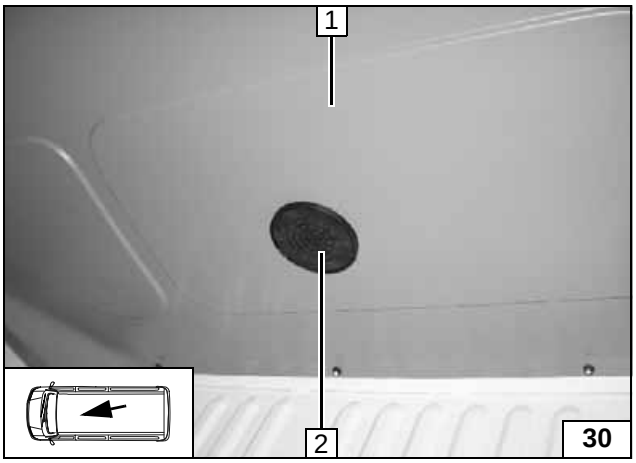
Gluing in adapter



Mount 60 mm dia. flexible tube on adapter. Route wiring harness of controls through protective rubber plug into passenger compartment.

4 60 mm dia. flexible pipe, 360 mm long
1 50-70 mm dia. hose clamp [2x]
3 Wiring harness of controls
2 Protective rubber plug

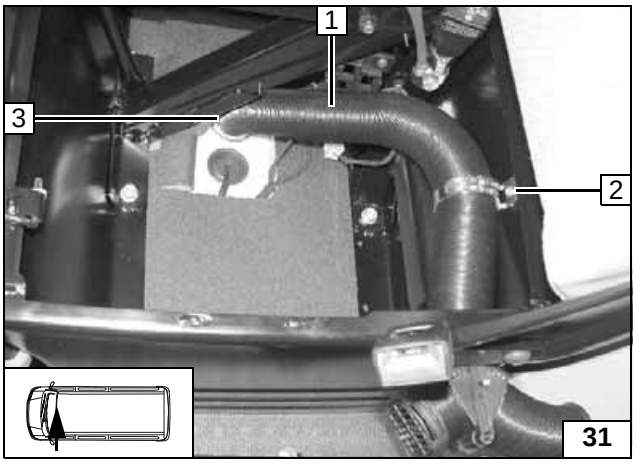
Pass throughs into passenger compartment



55 mm dia. hole at position **2** in partition wall. Mount air outlet and fasten with blind rivets.

1 Partition wall
2 Air outlet

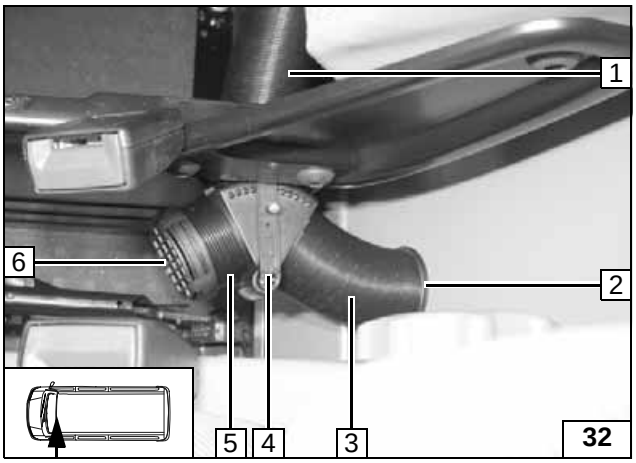
Hole in partition wall



Cut 55 mm dia. flexible tube **1** to length as shown and mount on adapter **3**.

1 55 mm dia. flexible tube
3 50-70 mm dia. hose clamp
2 Bracket with hose clamp, self-tapping screw [2x]

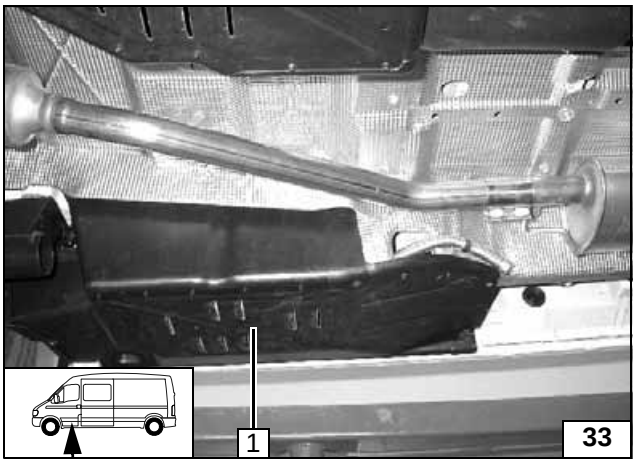
Routing under front passenger seat



Cut 55 mm dia. flexible tube **3** and **5** to length as shown. Mount air distributor as shown. Air outlet must be aligned so that hot air is not directed at controls (e.g. handbrake lever)!

1 55 mm dia. flexible tube from Adapter
4 Air distributor, adjustable
3 55 mm dia. flexible tube to air outlet
5 55 mm dia. flexible tube
2 Air outlet
6 End cap

Mounting distributor

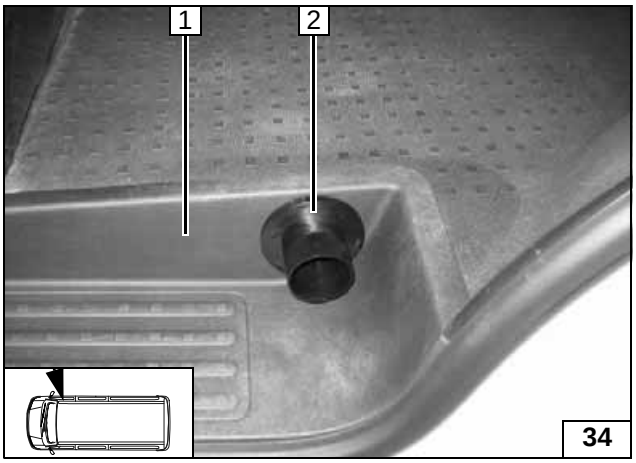


Optional Recirculating Air

No underride protection is required for the option recirculating air mode!

1 Underride protection

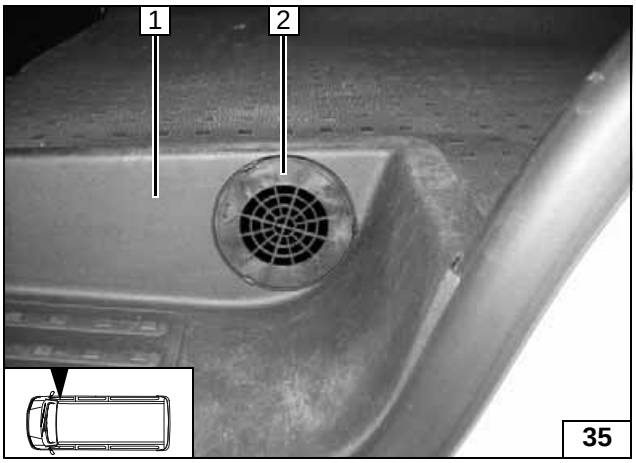
Underride protection



Lay air outlet on entrance trim on front passenger side as shown; copy inside dia. and hole pattern for fastening [3x] to trim. Remove air outlet and drill 60 mm dia. hole in trim and entrance on front passenger side.

1 Entrance trim on front passenger side
2 Air outlet

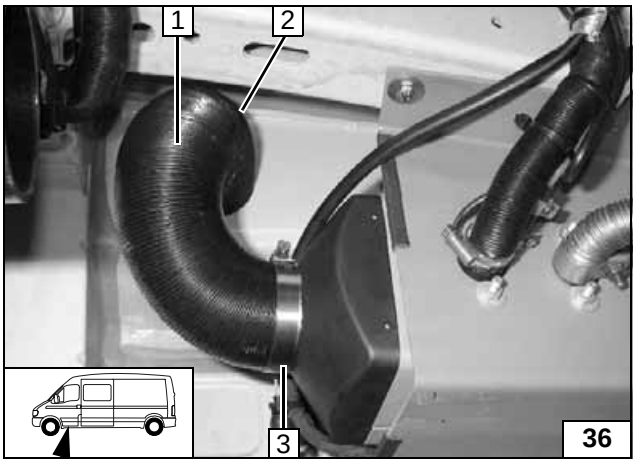
Installing air outlet



Hole for fastening air outlet [3x] in trim. Mount air outlet in trim and fasten with blind rivets.

1 Entrance on front passenger side
2 Air outlet

60 mm dia. hole in entrance

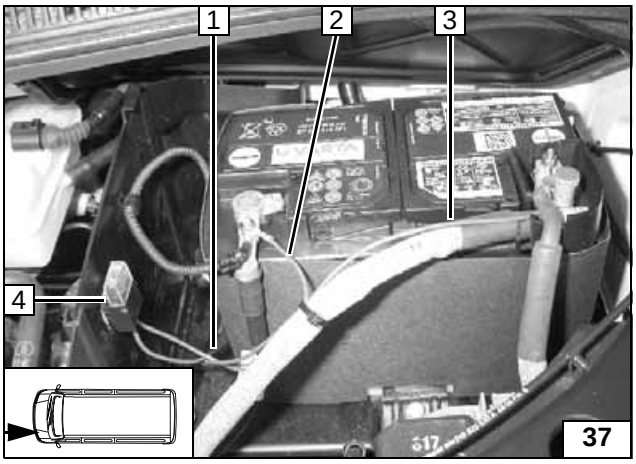


Remove protective grill at position **3**.
Cut 60 mm dia. flexible tube **1** to length as shown and mount on air outlet **3**.
Seal off pass through at position **2** with Sicaflex.

1 60 mm dia. flexible tube
2 Air outlet
3 50-70 mm dia. hose clamp

Installing intake hose

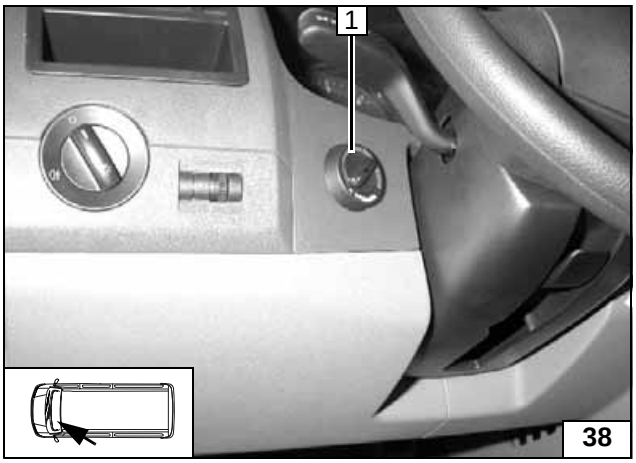
Following installation, seal off pass through at position **2** with Sicaflex.



Electrical Connections

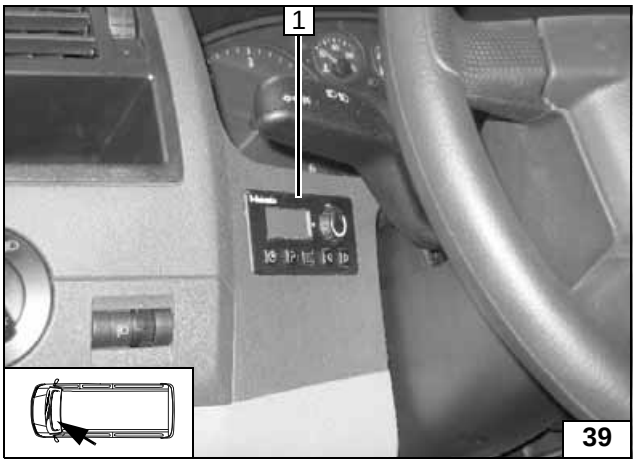
4 Fuse holder retaining plate, M4x12 bolt, washer, M4 nut
1 Wiring harness of power supply for heater unit
2 Ground wire on negative battery terminal
3 Positive wire on positive battery terminal

Installing fuse holder



1 Thermostat

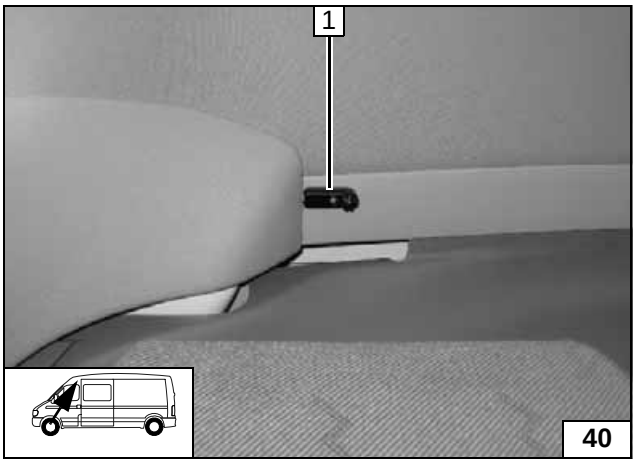
Installing heater control



Combination timer option

1 Combination timer

Installing combination timer

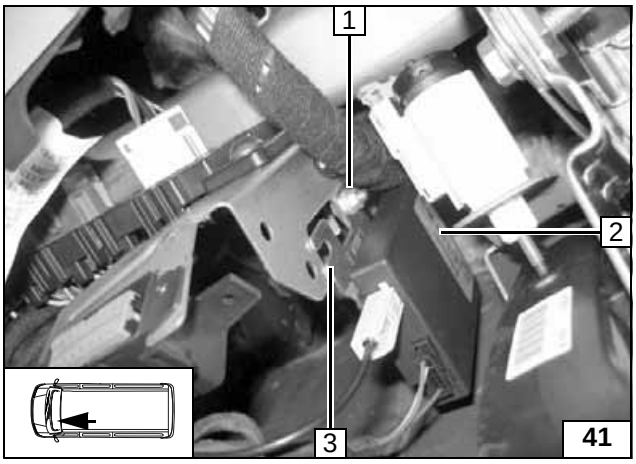


External temperature sensor

Installation is not carried out in recirculating air mode!

1 External temperature sensor

Installing temperature sensor

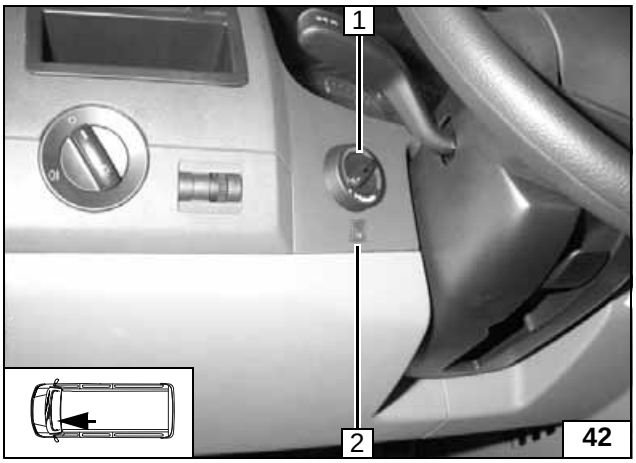


Remote option (Telestart)

Connect receiver for Telestart as shown in wiring diagram.

1 M5x16 bolt, flanged nut on existing hole
2 Telestart
3 Telestart bracket

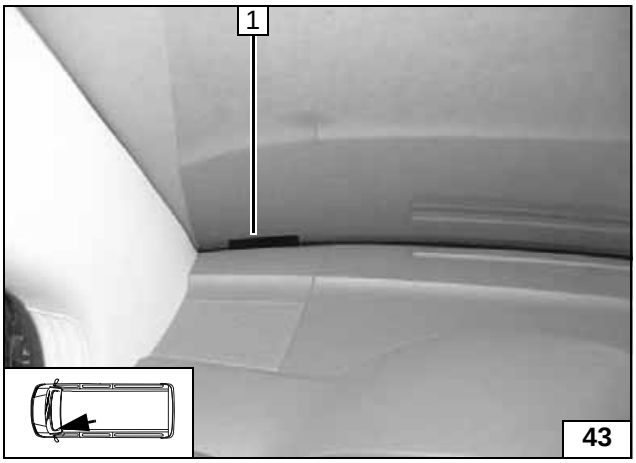
Installing receiver



Only applies for combination of standard heater control with Telestart!
Connect switch as shown in wiring diagram.

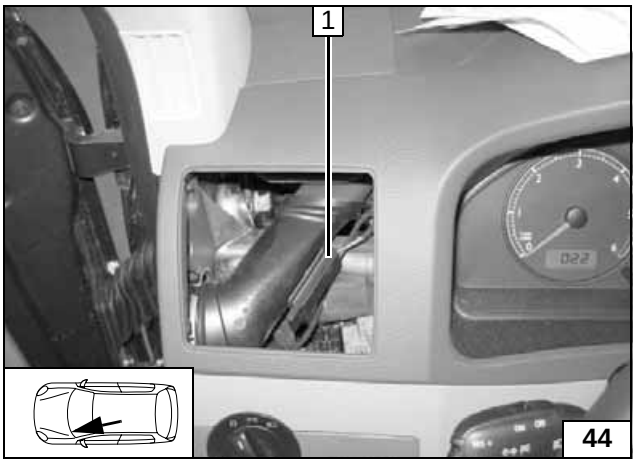
1 Standard heater control
2 Switch

Installing switch



1 Antenna

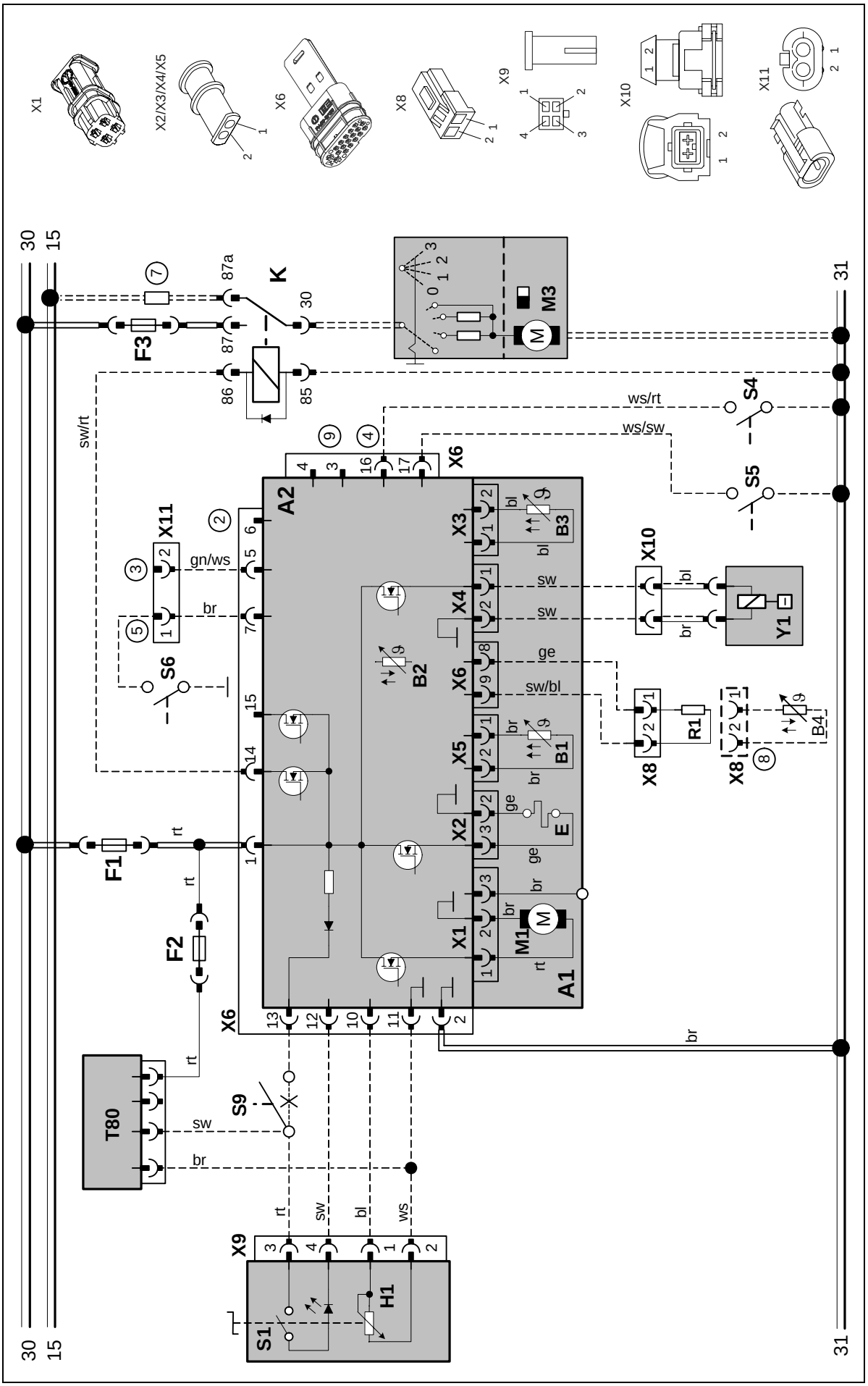
Installing antenna



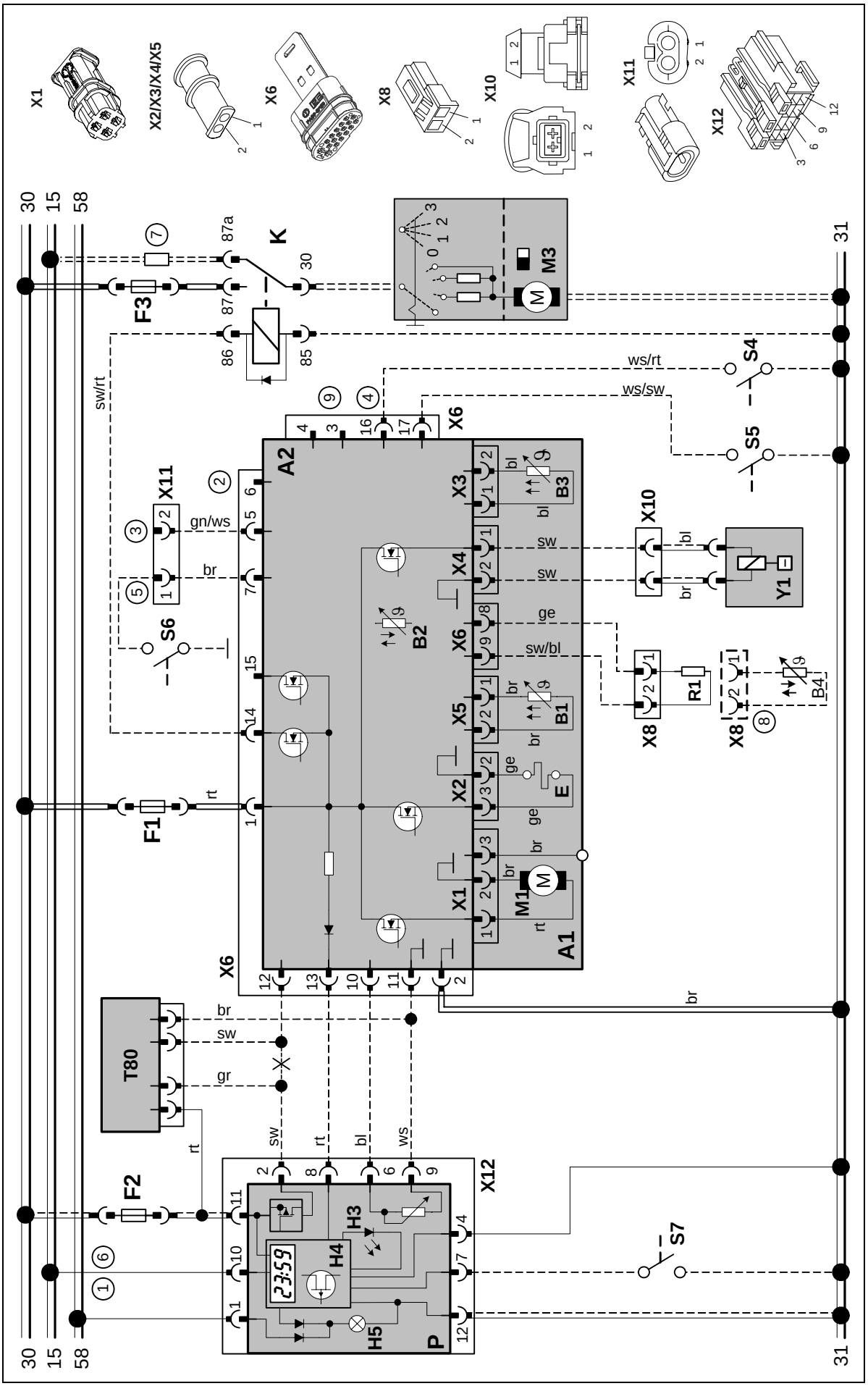
Only with Telestart HTM 100

1 Fasten temperature sensor with double-sided adhesive tape

Installing temperature sensor



System wiring diagram with heater control and vehicle fan



System wiring diagram with combination timer, Telestart and vehicle fan

Legend for Wiring Diagrams

①	**With positive wire from terminal (15/75) to connection 10:** Continuous operation with immediate heating as long as ignition is switched on **Without positive wire on connection 10:** Heating time is variably programmable (10 min. to 120 min.), default setting is 120 min.
②	K-wire diagnosis
③	W bus
④	Input pin (Pin 16/Connector X6, wire color on wiring harness: white/red (ws/rt)): "Ventilate“ (fan speed is dependent on position of heater control)
⑤	CO_2 setting (see workshop manual)
⑥	**NOTE:** If a connection is made to Terminal 30, continuous heating operation is possible with ignition switched off! In this case, no connection may be made to Terminal 15/75!
⑦	Fuse present in vehicle
⑧	If an external temperature sensor (B4) is used, then the resistor R1 is replaced with the temperature sensor (B4)
⑨	Connection only for ADR vehicles
⑩	**NOTE:** Gray (gr) and violet (vi) wires required for ADR function
⑪	Stop signal for battery isolator switch. The stop input (if present) of the isolator switch (S2) must be connected to the control unit, Pin 15/Connector X6

Legend for Wiring Diagrams

Wiring Colors	
rt	red
gr	gray
sw	black
br	brown
gn	green
bl	blue
ge	yellow
or	orange
vi	violet
ws	white

Wiring Cross-Sections		
	< 7.5 m	7.5 - 15 m
	0.5 mm^2	0.75 mm^2
	0.75 mm^2	1.0 mm^2
	1.0 mm^2	1.5 mm^2
	1.5 mm^2	2.5 mm^2
	2.5 mm^2	4.0 mm^2
	4.0 mm^2	6.0 mm^2

Pos.	Name	Remarks
A1	Heater unit	Air Top 2000 ST
A2	Control unit	
B1	Flame detector	Only on gasoline unit
B2	Temperature sensor	Internal
B3	Overheating sensor	Overheating protection
B4	Temperature sensor	External
E	Glow element	
F1	24 V 15 A/12 V 20 A fuse	Blade fuse, SAE J 1284
F2	Fuse, 3 A	Blade fuse, SAE J 1284
F3	25 A fuse	Blade fuse, SAE J 1284
H1	LED, green (in Pos. S1)	Operation indicator
H3	LED, red (in Pos. P)	Lighting for immediate heating button, ready display, switch-on check
H4	Heating symbol in display (in Pos. P)	Operation indicator
H5	Lamps (in Pos. P)	Display and button lighting
H6	Lamp (at least 1.2 W)	Switch-on check for feed device
K	Relay with freewheeling diode	For vehicle fan
M1	Engine	Combustion and hot air fan
M3	Engine	Vehicle fan
P	Combination digital timer (1531)	Digital timer and setpoint encoder
R1	Resistor 620 Ω	Only with internal temperature sensor
S1	Heater control	Setpoint encoder switch
S2	Isolator switch, 1 or 2-pin	Emergency-Stop-switch
S3	Switch	On and for feed device
S4	Switch	Ventilation
S5	Switch	Rollover sensor
S6	Switch	CO_2 setting
S7	Momentary-contact switch	Immediate heating button on remote control
S8	Battery isolator switch	
S9	Additional switch	Telestart switch-off function
V1	Diode	
V2	Diode	
X1	Plug connection, 2-pin	At Pos. A2 (ST B)
X2	Plug connection, 2-pin	At Pos. A2 (ST V)
X3	Plug connection, 2-pin	At Pos. A2 (ST U)
X4	Plug connection, 2-pin	At Pos. A2 (ST Z)
X5	Plug connection, 2-pin	At Pos. A2 (ST Y)
X6	Plug connection, 2-pin	At Pos. A2 (ST X)
X7	Plug connection, 12-pin	At Pos. A2 (ST1)
X8	Plug connection, 2-pin	
X9	Plug connection, 4-pin	At Pos. S1
X10	Plug connection, 2-pin	
X11	Plug connection, 2-pin	At Pos. Y1
X12	Plug connection, 12-pin	At Pos. P
Y1	Metering pump	
Y2	Solenoid valve	For feed device

Legend for Wiring Diagrams

Shut-down on fault

Faults in individual heater unit components and malfunctions during the entire operation are recognized in the control unit.

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

- No or faulty start-up
- Temperature sensor defective
- Open or short circuit in overheating sensor
- Overheating sensor mounted incorrectly
- Break or short circuit in glow element
- Fan motor overloaded, blocked, short circuit or open circuit
- Fault in metering pump circuit or overheating protection (only during start-up phase)
- Undervoltage < 10.5 V or overvoltage >16 V and longer than 20 sec. (on heater unit with 12 V)
- Undervoltage < 21 V or overvoltage >32 V and longer than 20 sec. (on heater unit with 24 V)
- Control unit defective
- Overheating
- Flame detector (only on gasoline heater units)

In case of overheating, the fuel feed is interrupted. A run-on is carried out as with manual shut-down. Following the run-on, the heater unit is in the fault lock-out mode. The overheating is indicated by the operation indicator flashing 10 times.

Eliminate fault cause.

For fault release, briefly switch the heater unit off and then on again (at least 2 sec.).

If serious malfunctions, such as overheating, or no start-up occurs increasingly frequently, then the heater unit is permanently locked (F12 or F13) and can only be returned to operation following repairs by specially trained Webasto experts.

Fault code output:

Note:
When equipped with a heater control, fault code output is carried out after a malfunction occurs by the switch-on check/fault code display flashing. After 5 rapid flashing pulses, the fault code output is carried out with a sequence of long flashing pulses in accordance with the numbers in the table below. When equipped with a combination timer, a fault output appears in the display of the digital timer after a fault occurs. When using the heater control, the fault number is indicated by the operating indicator lamp flashing:

Legend for Fault Code Output

Display	Fault Code
F00	Control unit fault/incorrect data record/customer bus faulty
F01	No start-up (after 2 starting attempts)/no flame formation
F02	Flame failure (repeated >3)
F03	Undervoltage or overvoltage
F04	Premature flame detection
F05	Flame detector (gasoline heater unit) open or short circuit
F06	Open or short circuit in temperature sensor
F07	Open or short circuit in metering pump
F08	Open circuit, short circuit, overloading or blocking in fan motor
F09	Break or short circuit in glow element
F10	Overheating: As a result, continuous heater unit lock-out
F11	Open or short circuit in overheating sensor
F12	Heater unit lock-out
F13	Continuous heater unit lock-out
F14	Overheating sensor in incorrect position
F15	Open circuit in setpoint encoder

Final Work

WARNING!
Reassemble the disassembled components in reverse order.
Check all hoses, hose, spring and Caillau clamps, as well as all electrical connections for firm seating.
Secure all loose cables using cable ties.
Spray the heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery
- Set the digital timer.
- Check the proper operation of the air heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.

Webasto

Feel the drive

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Printed in Germany 04/07Printed by: Steffen

Operating Instructions for End Customer

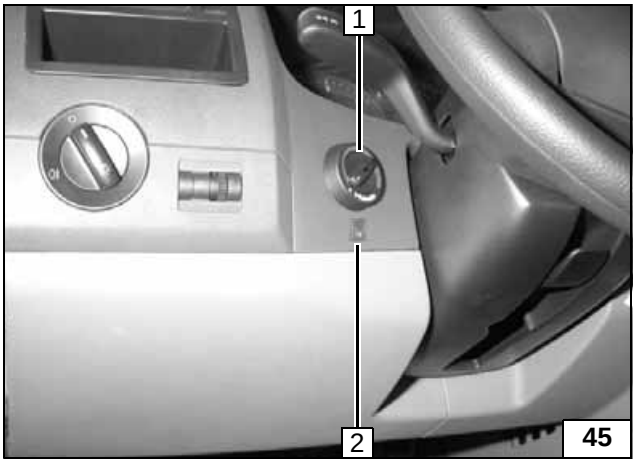
Please remove page and add to the vehicle operating instructions.

Only for vehicles with standard heater control and Telestart!

On vehicles with additional heater or auxiliary heater from factory, the fuel level may not be below 1/4 of a tank for proper operation of the *Air Top 2000 ST* air heater!

Before parking the vehicle, make the following settings:

Version A: Switching on heater with Telestart



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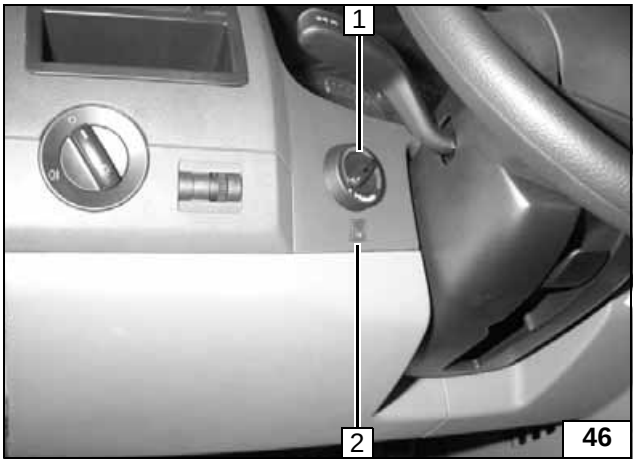
1. Switch S9 **2** set to "Open"
2. Temperature on standard heater control **1** set to "warm" (start-up after switch-on on hand-held transmitter)

Version B: Switching on heater with heater control



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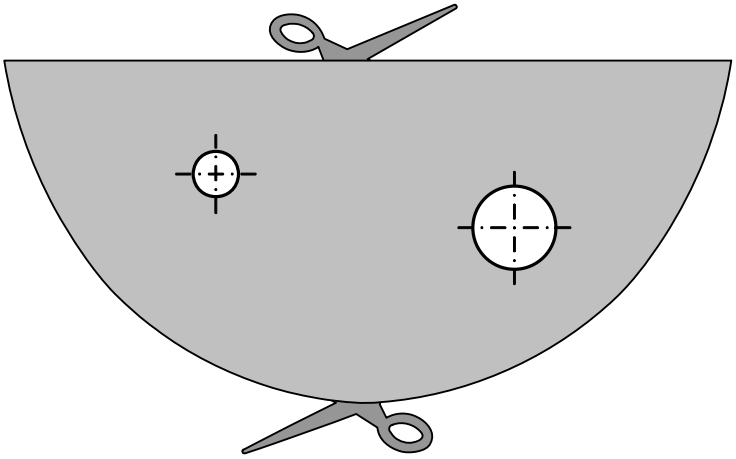
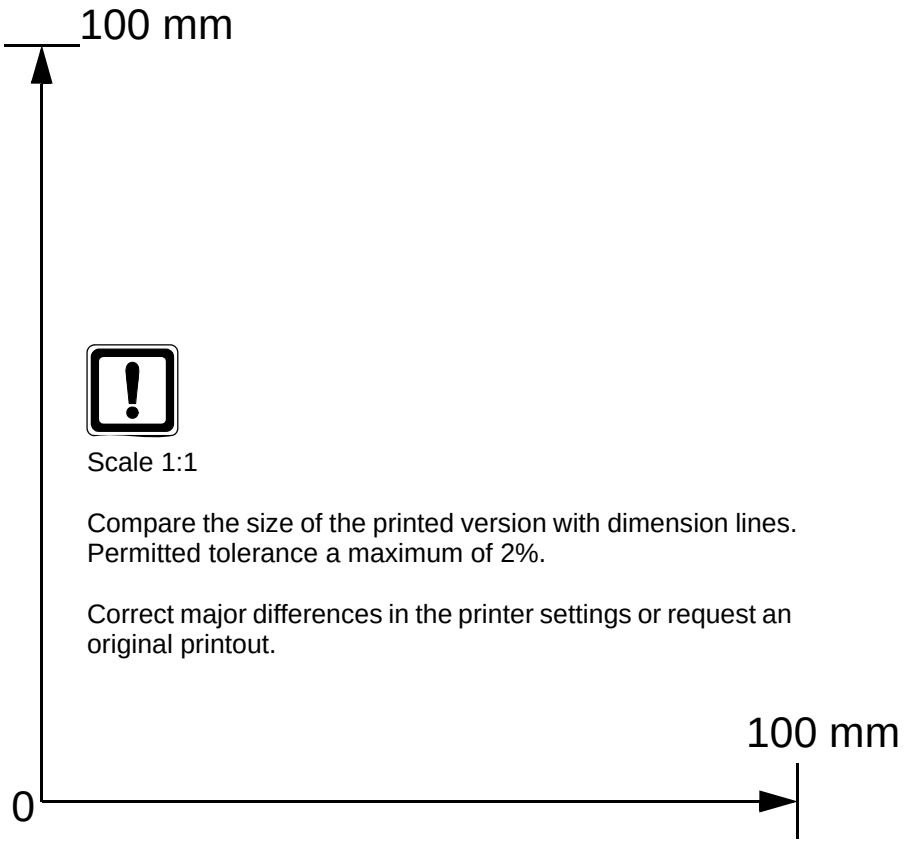
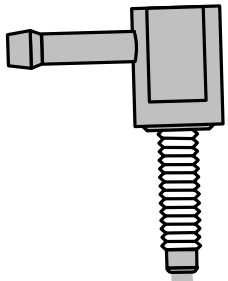
1. Switch S9 **2** set to "Close"
2. Temperature on standard heater control **1** set to "warm“ (immediate start-up)

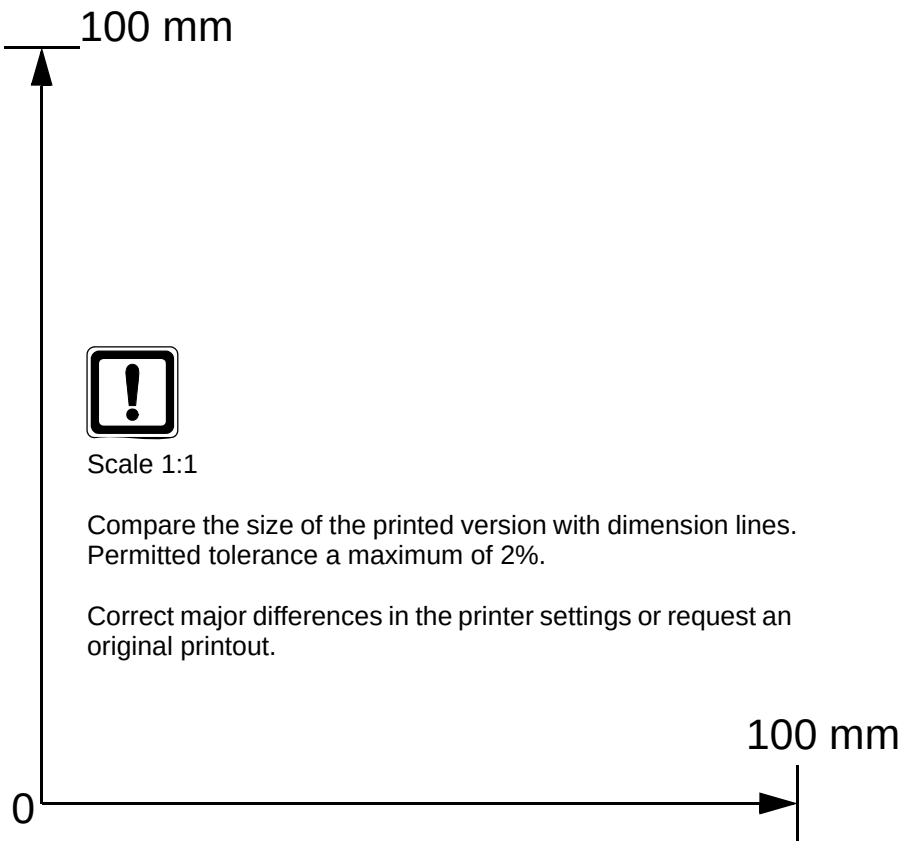
Template for Fuel sender





Template for Fuel Standpipe





Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Correct major differences in the printer settings or request an original printout.