

Air Heater

Air Top Evo 40 Air Heater



Installation Documentation

Ford Transit

Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Ford	Transit	FCD	e11 * 2007 / 46 * 1100 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm ³	Engine code
2.2 TDCi	Diesel	6-speed SG	74	2198	DRF5
2.2 TDCi	Diesel	6-speed SG	92	2198	DRF5
2.2 TDCi	Diesel	6-speed SG	114	2198	CVR5

From Model Year 2014
Left-hand drive vehicle

Verified equipment variants: Van with partition wall
 Passenger double-bench seat
 2WD / 4WD

Not verified: Passenger compartment monitoring
 Single front passenger seat

Total installation time: approx. 7.5 hours

Ford Transit

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Necessary Components

- Basic delivery scope of *Air Top 40* in accordance with price list
- Installation kit Ford Transit 2014 Diesel: **1323195A**
- Additional heater control required, choice of control in consultation with the end customer and in accordance with price list:
 - Heater control setpoint encoder : **82819B**
 - 12 V heater control combination timer including adapter cable: **9010385A**
 - Mounting kit for combination timer (frame): **474630**
 - Bag for external temperature sensor (for temperature control in cargo space): **93205A**
 - Telestart T91 in accordance with price list
 - Telestart T100 HTM in accordance with price list
 - Thermo Call in accordance with price list
 - Only in case of Telestart and/or Thermo Call: wiring harness extension **1319724A**
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

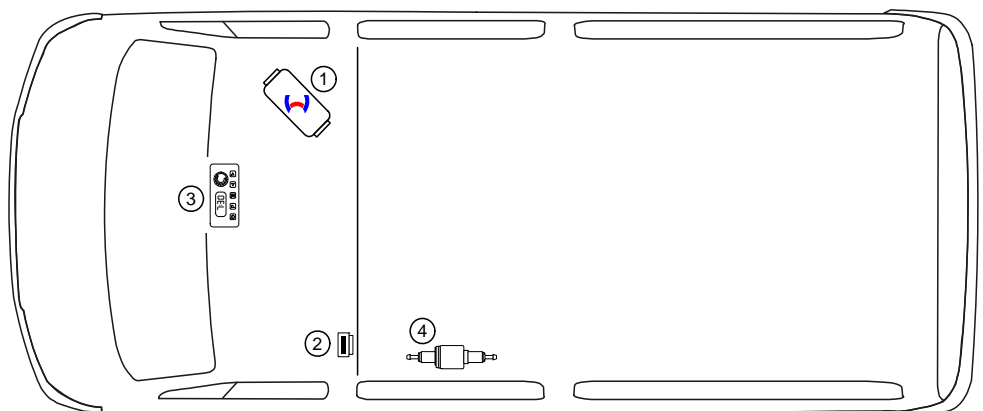
Note:

- Arrange for the vehicle to be delivered with the tank only about ¼ full!
- The installation location of the push button in the case of Telestart or Thermo Call should be confirmed with the end customer.

Installation Overview

Legend:

1. Heater
2. Heater fuse
3. Combination timer / setpoint encoder
4. Metering pump



Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting of the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.

The total installation time may vary for vehicle equipment other than provided.

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair



The 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 special company training course and have the appropriate technical documentation, special tools and special equipment.



Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. 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.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 228).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

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

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs, installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a willful or reckless breach of duty remain unaffected, as does the obligatory product liability.

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. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components!

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

2 Statutory regulations governing installation

Guidelines	AT 40
Heating Directive ECE R122	E1 00 0385
EMC Directive ECE R10	E1 03 5529

NOTE

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

IMPORTANT

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1./ 7.1. (Annex 7) A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. / 5.3. VEHICLE INSTALLATION REQUIREMENTS

2.1. / 5.3.1. (Part I) Scope

2.1.1. / 5.3.1.1 (Part I) Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. / 5.3.1.2 (Part I) Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. / 5.3.2. (Part I) Positioning of heater

2.2.1. / 5.3.2.1. (Part I) 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.

2.2.2. / 5.3.2.2. (Part I) 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.

2.2.3. / 5.3.2.3. (Part I) In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 / Subsection 5.3.2.2. (Part I) may be used.

2.2.4. / 5.3.2.4. (Part I) The label referred to in paragraph 1.4 / Annex 7 Subsection 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. / 5.3.2.5. (Part I) Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. / 5.3.3. (Part I) Fuel supply

2.3.1. / 5.3.3.1. (Part I) The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. / 5.3.3.2. (Part I) 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.

2.3.3. / 5.3.3.3. (Part I) A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. / 5.3.4. (Part I) Exhaust system

2.4.1. / 5.3.4.1. (Part I) The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. / 5.3.5. (Part I) Combustion air inlet

2.5.1. / 5.3.4.1. (Part I) The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. / 5.3.5.2. (Part I) The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. / 5.3.6. (Part I) Heating air inlet

2.6.1. / 5.3.6.1. (Part I) The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. / 5.3.6.2. (Part I) The inlet duct must be protected by mesh or other suitable means.

2.7. / 5.3.7. (Part I) Heating air outlet

2.7.1. / 5.3.7.1. (Part I) Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. / 5.3.7.2. (Part I) The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

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Information on Validity

This installation documentation applies to Ford Transit Diesel vehicles - for validity, see page 1 - from model year 2014 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

Vehicle and engine types, equipment variants and specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Information

Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamp pliers for Clic hose clamps of type W
- 28 mm, 29 mm, 90 mm dia. hole circle bit
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Metric thread-setter kit
- Webasto Thermo Test diagnosis with current software

Dimensions

- All dimensions are in mm

Tightening torque values

- Tightening torque of heater nuts M6 = 6Nm +1Nm!
- Tighten bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art- technology.





Assembling Heater

- A gasket must be inserted between the heater and body and replaced prior to every installation.

Explanatory Notes on Document

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

Special features are highlighted using the following symbols:

Mechanical system		Specific risk of injury or fatal accidents	
Electrical system		Specific risk due to electrical voltage	
Hot Air		Specific risk of damage to components	
Combustion Air		Specific risk of fire or explosion	
Fuel		Reference to general installation instructions of the Webasto components or to the manufacturer's vehicle-specific documents	
Exhaust Gas		Reference to a special technical feature	
Software		The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle	
		Tightening torque according to the manufacturer's vehicle-specific documents	

Ford Transit

Preliminary Work

Vehicle

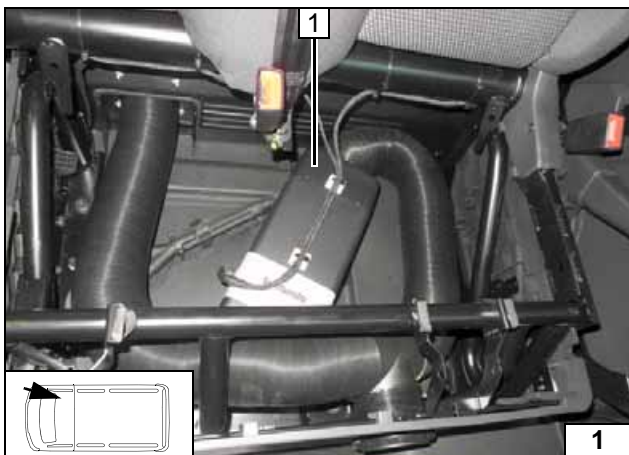
- Open the fuel tank cap and vent the fuel tank.
- Close the fuel tank cap again.
- Disconnect the battery.
- Remove the driver's seat.
- Expose the battery.
- Remove the seat surfaces of the front passenger's seats.
- Remove the A/C control panel according to the manufacturer's instructions (only with combination timer).
- Remove the lateral instrument panel trim on the driver's side (only in case of Telestart and Thermo Call).
- Remove the heat guard plate of the exhaust system below the installation location of the heater.

The following work should only be performed during the corresponding installation sequence:

- Remove the tank according to the manufacturer's instructions.
- Remove the fuel-tank sending unit in accordance with manufacturer's instructions.

Heater

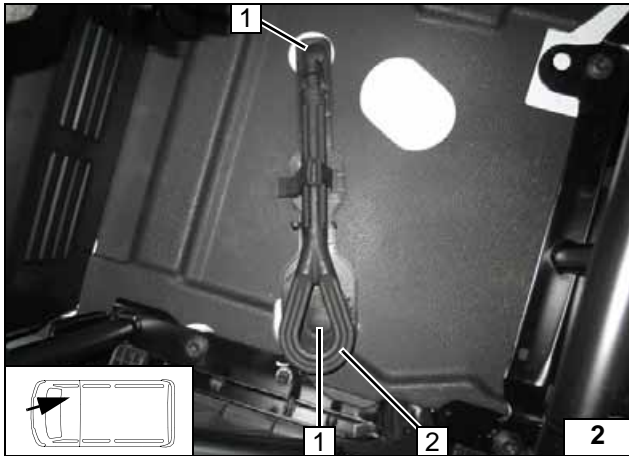
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) at the appropriate place in the engine compartment.



Heater Installation Location

- 1 Heater

Installation location

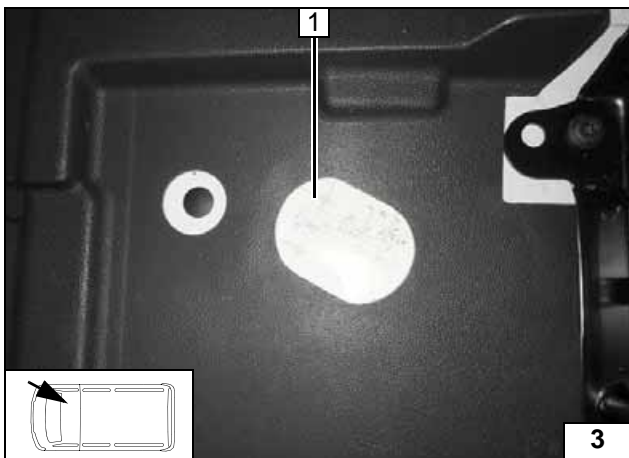


Preparing Installation Location

- 1 Detach retaining clip [2x] (one retaining clip will be reused)
- 2 Towing eye 2 with bracket



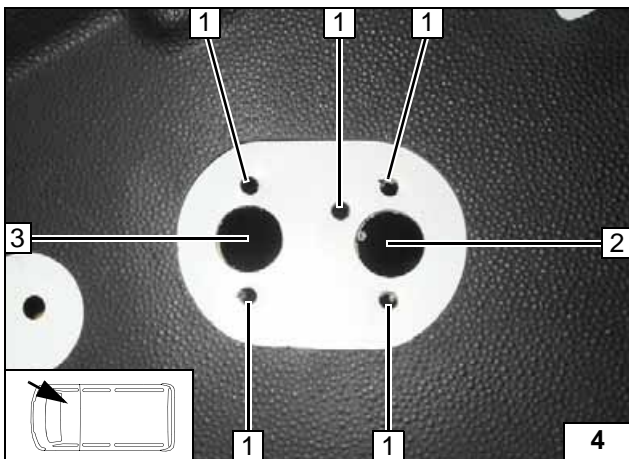
Removing towing eye



Cut out heater template 1 from the "General Installation Instructions", position in existing cut-out and secure to prevent slipping. Copy hole pattern [7x] with centre punch onto the underbody.



Copying hole pattern

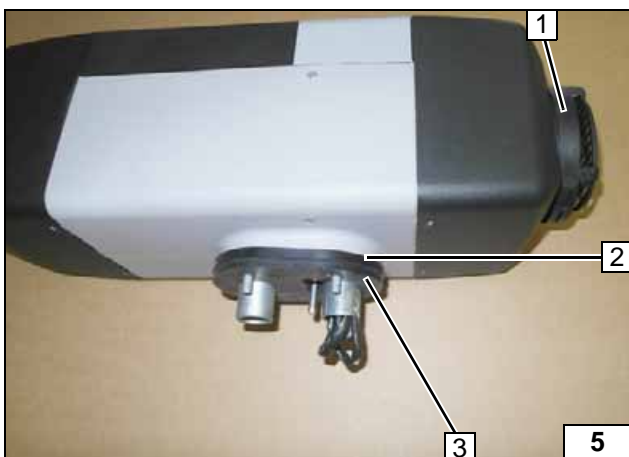


Remove template!

- 1 7.5 mm dia. holes [5x]
- 2 29 mm dia. hole [2x]
- 3 28 mm dia. hole [2x]



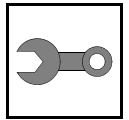
Holes in underbody



Preparing Heater

- 1 Hot air inlet cover cap
- 2 Base seal on stud bolts
- 3 Spacer plate on stud bolts

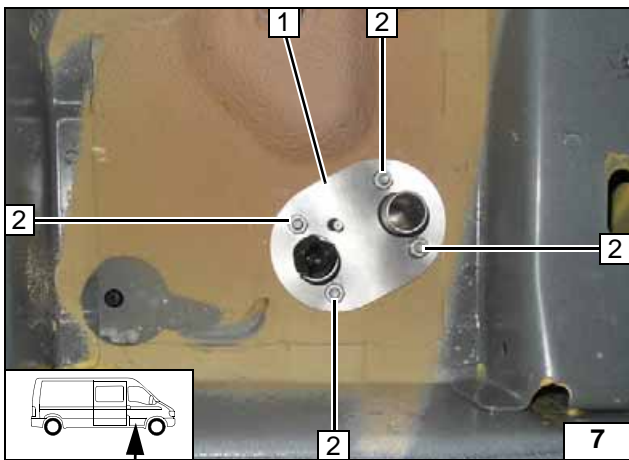
Preparing heater



Installing Heater

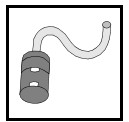
Insert heater 1 with stud bolts in 7.5 mm dia. holes.

Mounting heater

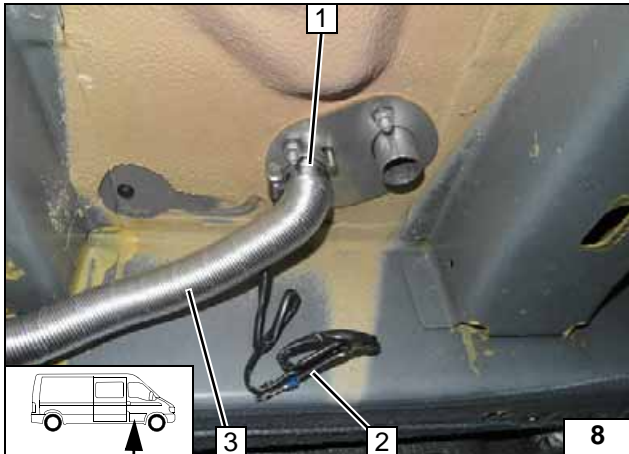


- 1 Plate
- 2 Spring lockwasher, M6 [4x] nut on stud bolt

Mounting heater



Mounting combustion air pipe



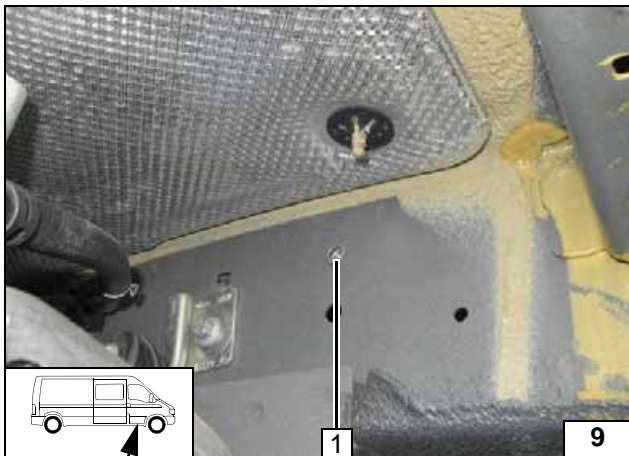
Combustion Air

Pull wiring harness of metering pump 2 out of the air intake connection piece and route it to the outside through the guide slit in the connection piece!

- 1 Position 24-27 mm dia. clamp and lock
- 3 Combustion air pipe

- 1 Rivet nut, existing hole

Installing rivet nut

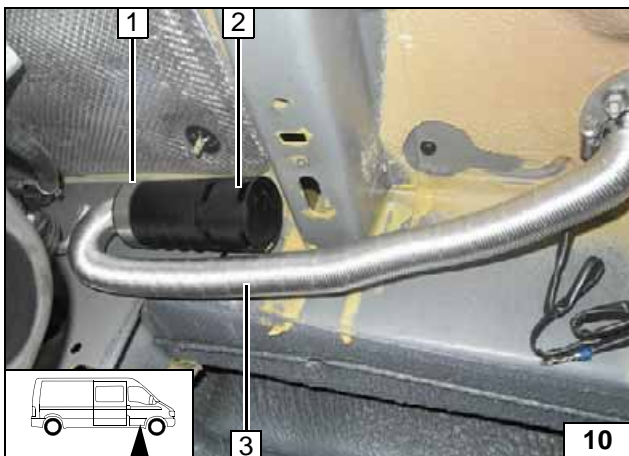


Remove the rubber coating from the 48mm dia. rubber-coated p-clamp See the following illustration for the installation.

- 1 48 mm dia. pipe clamp
- 2 Silencer
- 3 Combustion air pipe

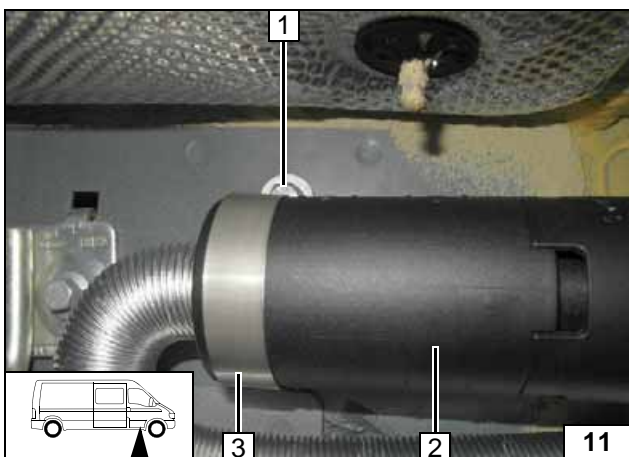


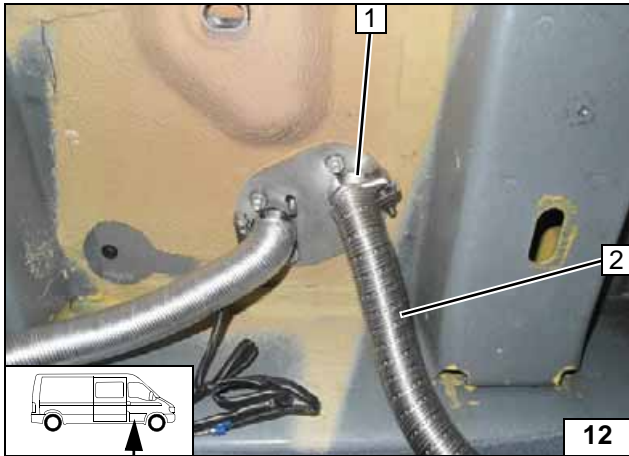
Mounting combustion air pipe



- 1 M6x20 bolt, spring lockwasher, large diameter washer with outer dia. $d_a = 17.6\text{mm}$ on rivet nut
- 2 Silencer
- 3 48 mm dia. pipe clamp

Mounting silencer

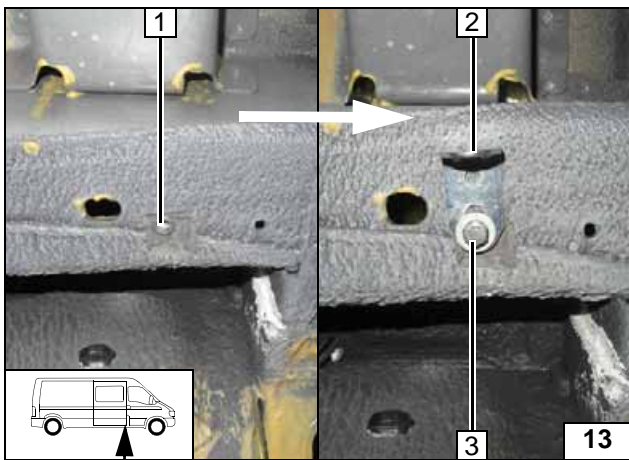




Exhaust Gas

- 1 Position hose clamp and lock
- 2 Exhaust pipe

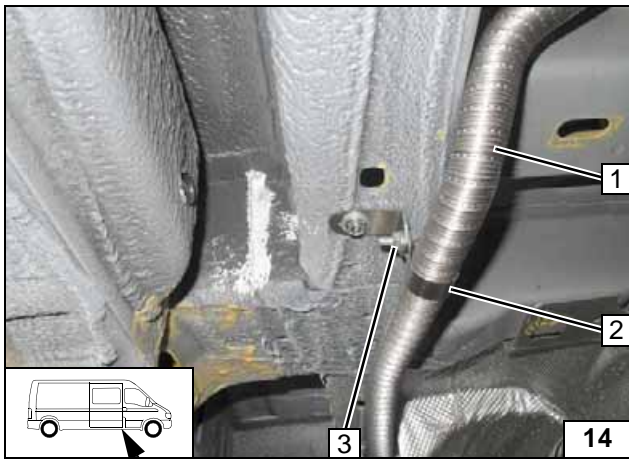
Mounting exhaust pipe



Remove underbody protection around existing hole at position 1.

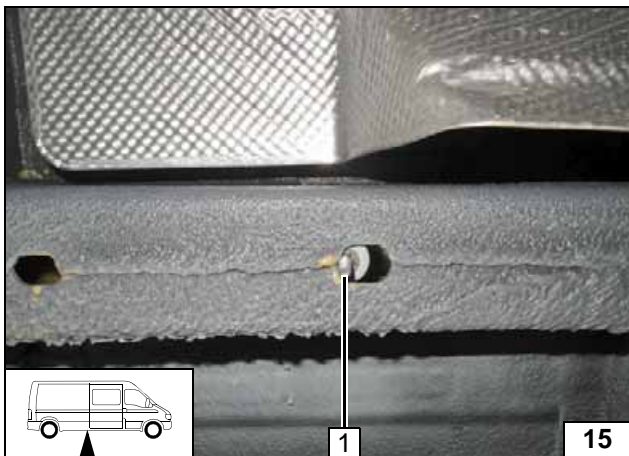
- 1 Drill out hole to 9.1 mm dia.; rivet nut
- 2 Angle bracket
- 3 M6x20 bolt, serrated lock washer, large diameter washer with outer dia. $d_a = 17.6\text{mm}$

Mounting angle bracket



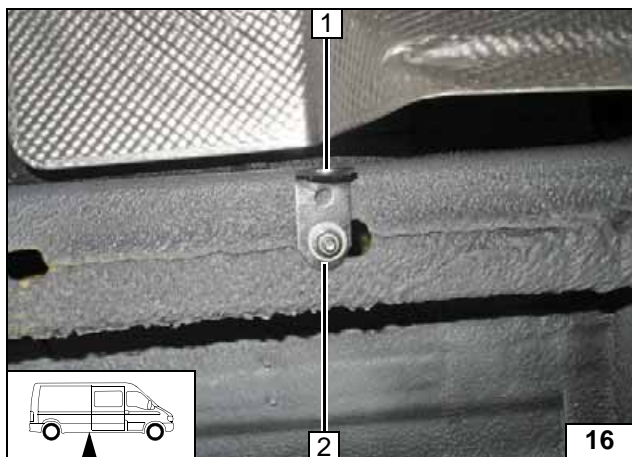
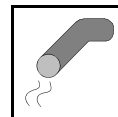
- 1 Exhaust pipe
- 2 P-clamp
- 3 M6x20 bolt, flanged nut

Mounting exhaust pipe



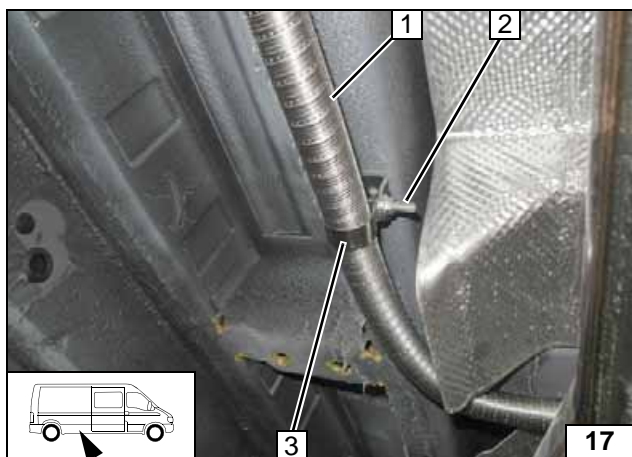
Premount M6x20 bolt 1 and large diameter washer with outer dia. $d_a = 21.6\text{mm}$ as well as pin lock and position in existing hole!

Inserting bolt



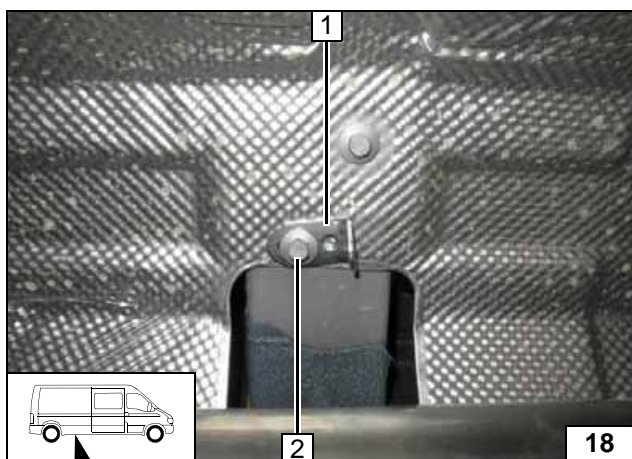
- 1 Angle bracket
- 2 M6 flanged nut, large diameter washer
dith outer dia. $d_a = 17.6\text{mm}$

Mounting
angle
bracket



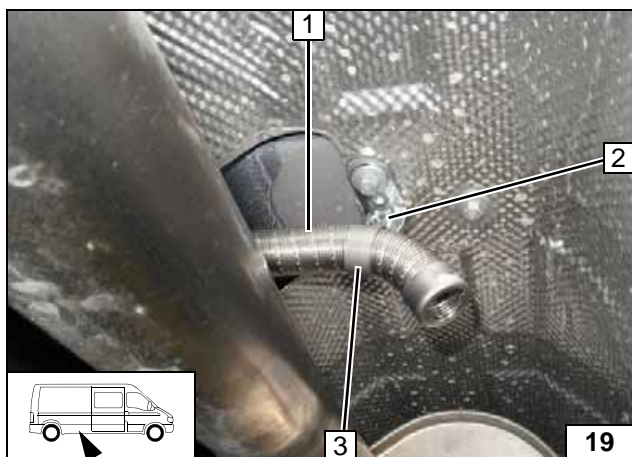
- 1 Exhaust pipe
- 2 M6x20 bolt, flanged nut
- 3 P-clamp

Mounting
exhaust
pipe



- 1 Angle bracket
- 2 Original vehicle bolt

Mounting
angle
bracket



- 1 Exhaust pipe
- 2 M6x20 bolt, flanged nut
- 3 P-clamp

Mounting
exhaust
pipe

Ford Transit



Fuel

CAUTION!

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

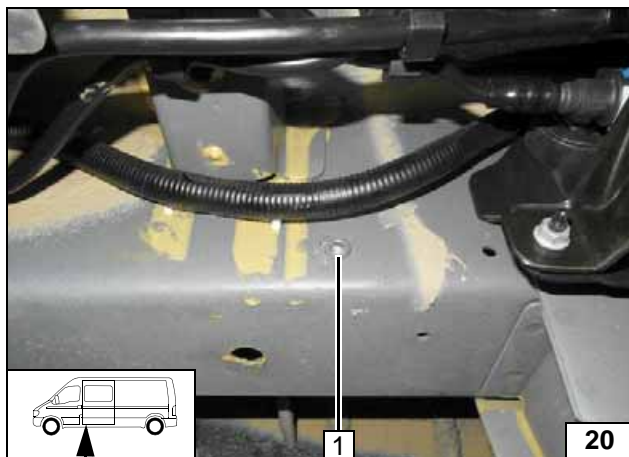
Any fuel running off should be collected in an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

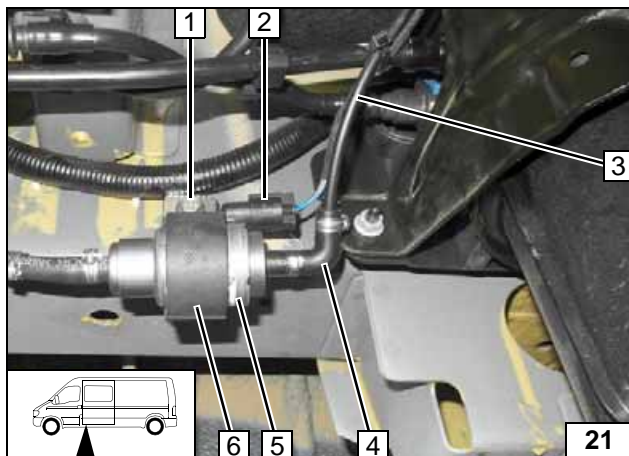
WARNING!

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



1 Drill out hole to 9.1 mm dia.; rivet nut

Installing rivet nut



- 1 M6x25 bolt, support angle bracket on rivet nut
- 2 Wiring harness extension connector of metering pump
- 3 Fuel line to heater
- 4 90° moulded hose, 10 mm dia. clamp [2x]
- 5 Metering pump
- 6 Mounting of metering pump



Installation/ connection of metering pump

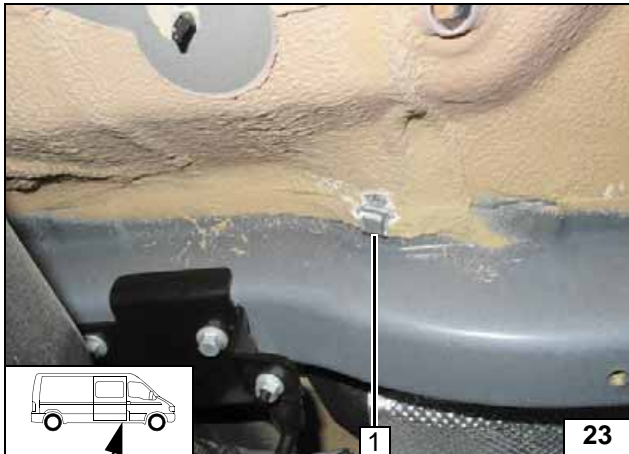


Remove underbody protection at position 1.

- 1 Retaining clamp



Installing retaining clamp

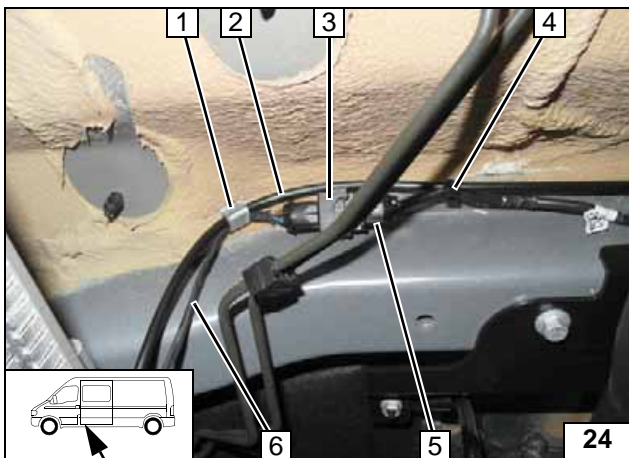


Remove underbody protection at position 1.

- 1 Retaining clamp



Installing retaining clamp

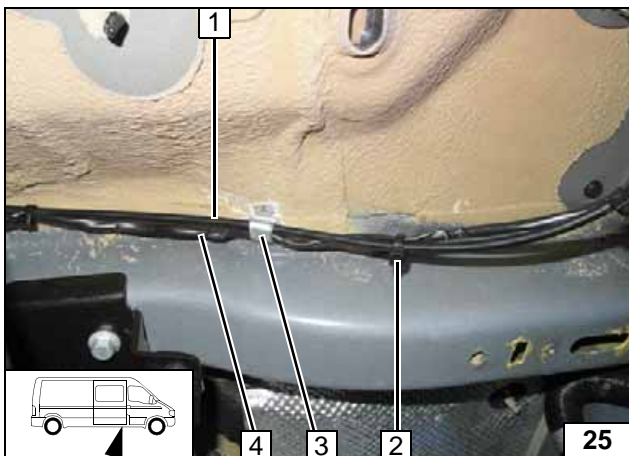


Insert first wiring harness extension 6 and then fuel line 2 into retaining clamp 1!

- 2 Fuel line to heater
- 3 Complete coupling piece of wiring harness extension
- 4 Cable tie
- 5 Metering pump wiring harness from heater, complete connector



Routing lines

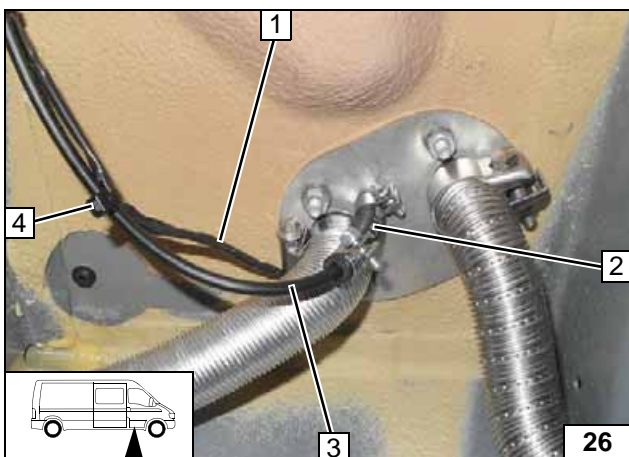


Insert first wiring harness of metering pump 4 and then fuel line 1 in retaining clamp 3!

- 2 Cable tie



Routing lines



- 1 Metering pump wiring harness
- 2 Hose section, 10 mm dia. clamp [2x]
- 3 Fuel line
- 4 Cable tie

Connecting heater



Fuel extraction



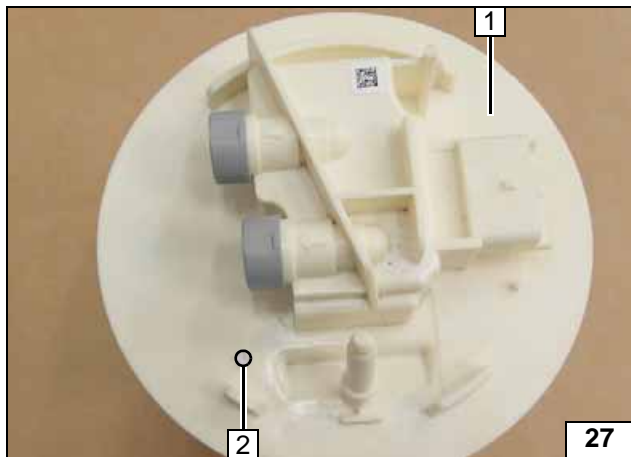
Installing fuel stand-pipe



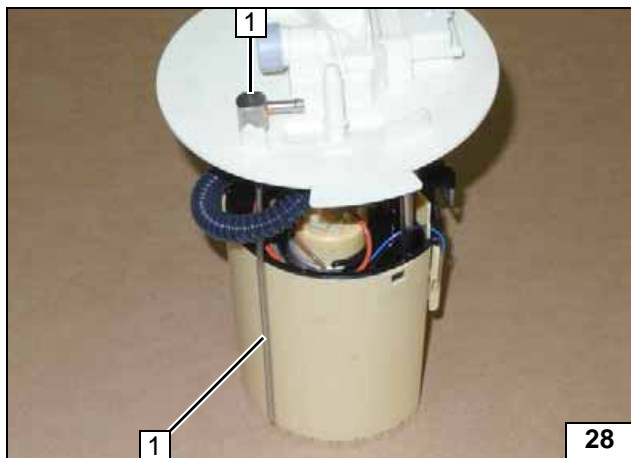
Connecting fuel line



Routing fuel line

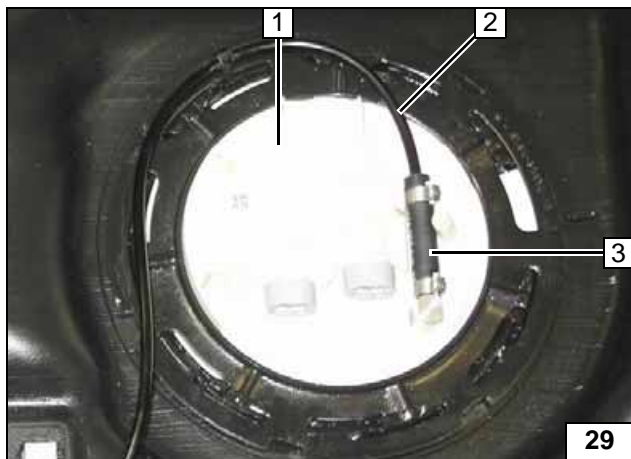


Remove fuel tank according to manufacturer's instructions. Remove fuel-tank sending unit **1** in accordance with manufacturer's instructions.
Copy hole pattern **2** in the centre of the perforation, 6 mm dia. hole.



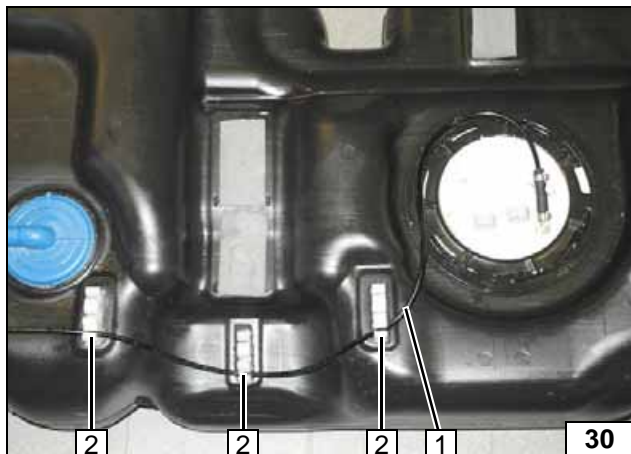
80 l tank = template **A**
100 l tank = template **B**

Shape fuel standpipe **1** according to template and cut to length.

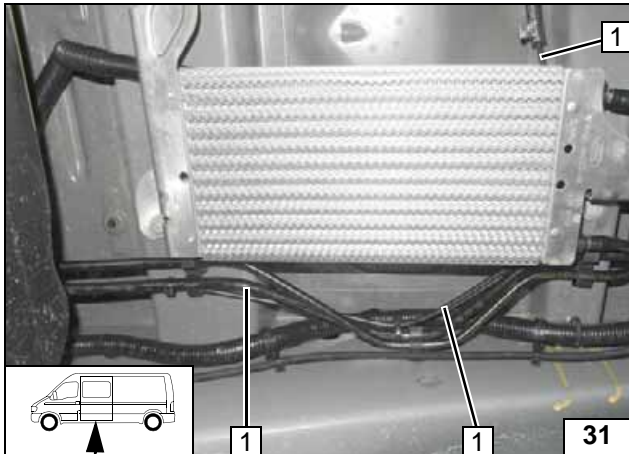
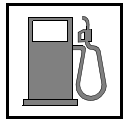


Install fuel-tank sending unit **1** in accordance with manufacturer's instructions.

- 2** Fuel line
- 3** Hose section, 10 mm dia. clamp [2x]

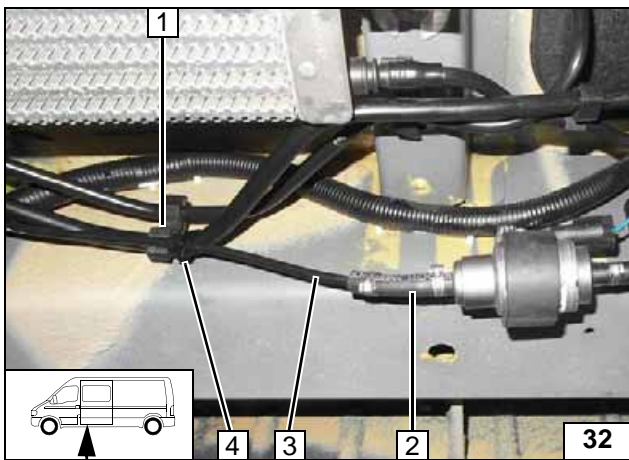


Insert fuel line **1** into original vehicle retaining clip **2** [3x]. Mount fuel tank according to manufacturer's instructions.



1 Fuel line of fuel standpipe

Routing
fuel line

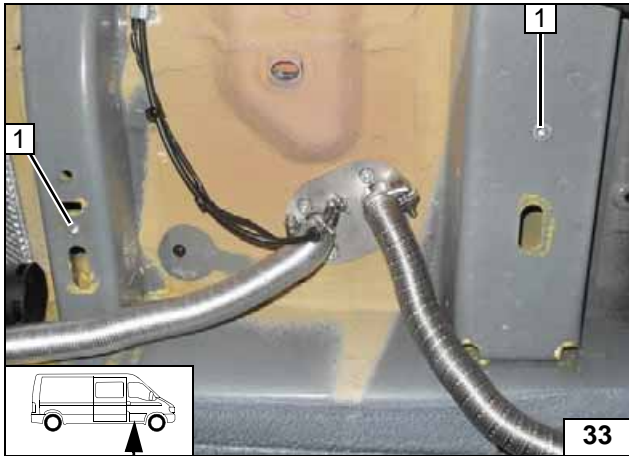


Check the position of the components; adjust if necessary. Check that they have freedom of movement.



- 1 Fuel line in original vehicle retaining clip
- 2 Hose section, 10 mm dia. clamp [2x]
- 3 Fuel line of fuel standpipe
- 4 Cable tie

Connect-
ing meter-
ing pump



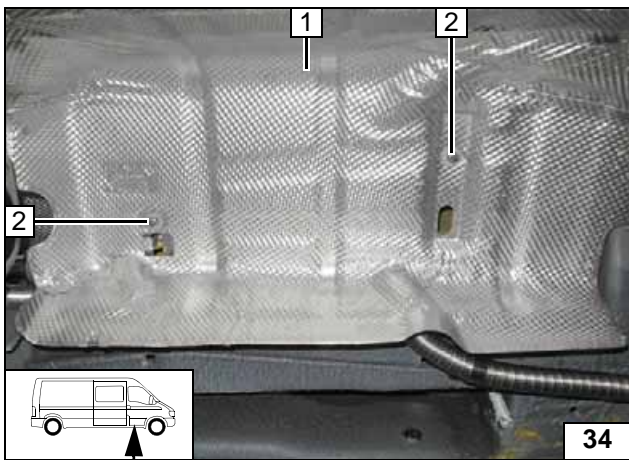
Assembling Heat Guard Plate

Remove rivet fragment at position 1 [2x].

- 1 Drill 9.1 mm dia. hole; install rivet nut [2x each]

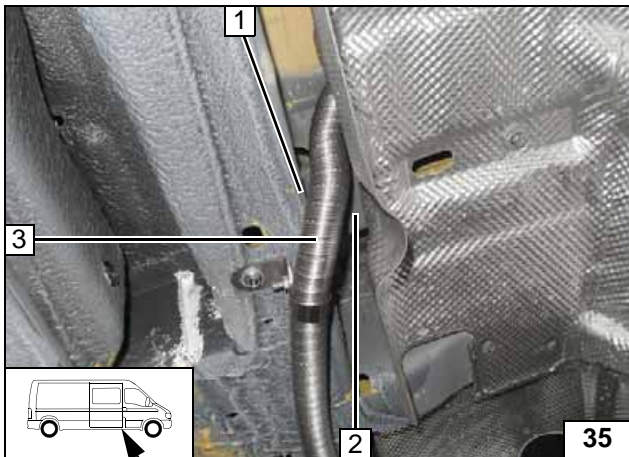


Installing rivet nut



- 1 Heat guard plate
- 2 M6x20 bolt, spring lockwasher, large diameter washer with outer dia. $d_a = 21.6\text{mm}$ on rivet nut [2x each]

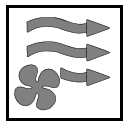
Assembling Heat Guard Plate



Ensure sufficient distance between exhaust pipe 3 and frame side member at position 1 as well as heat guard plate at position 2, correct exhaust pipe 3 if necessary.



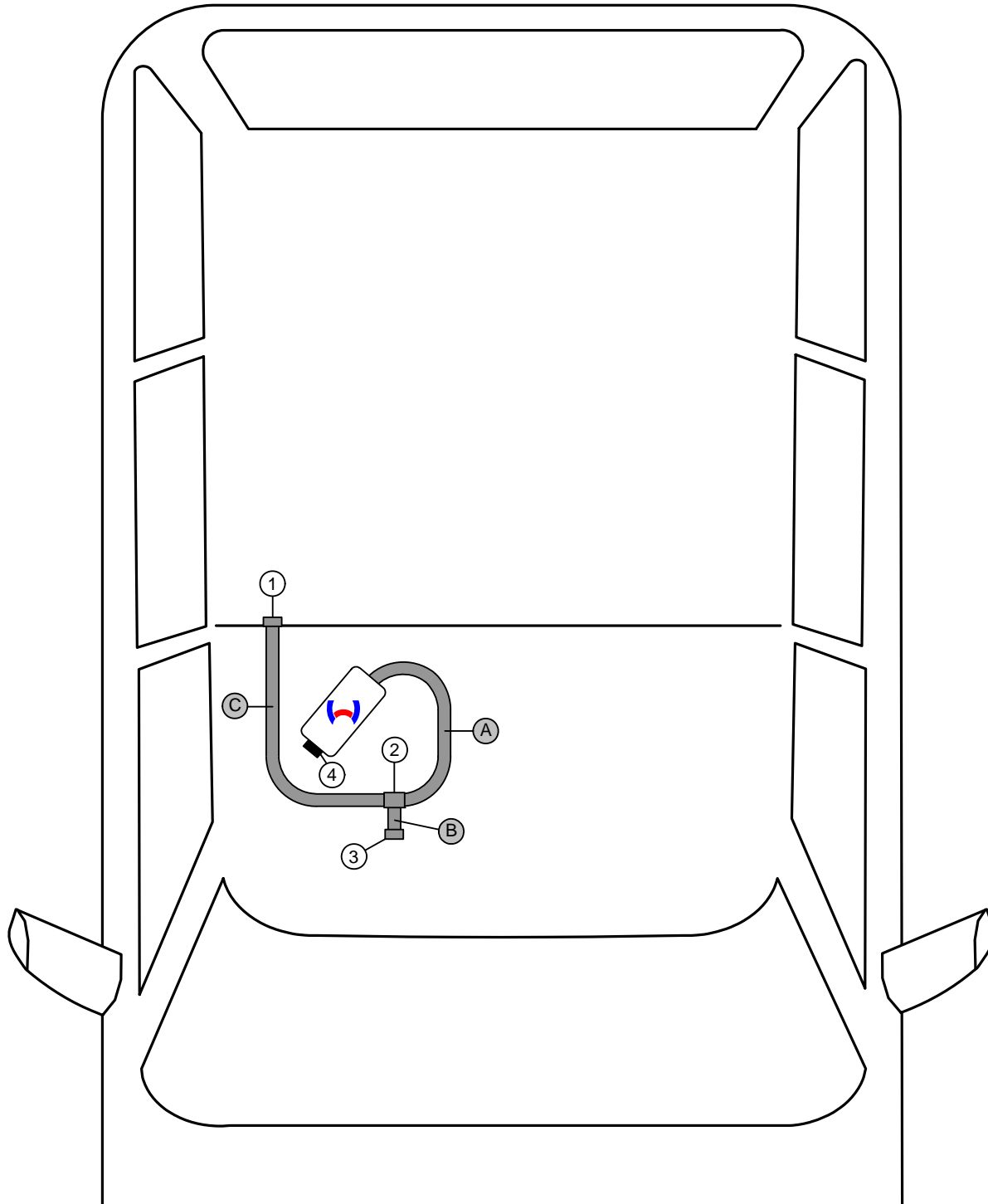
Checking distance



Hot Air

Route flexible tubes kink-free.

The following diagram shows the hot air distribution for the separate heating of the passenger compartment and / or cargo space. By closing or opening the respective air outlet, the hot air flow is regulated in the passenger compartment and / or cargo space.

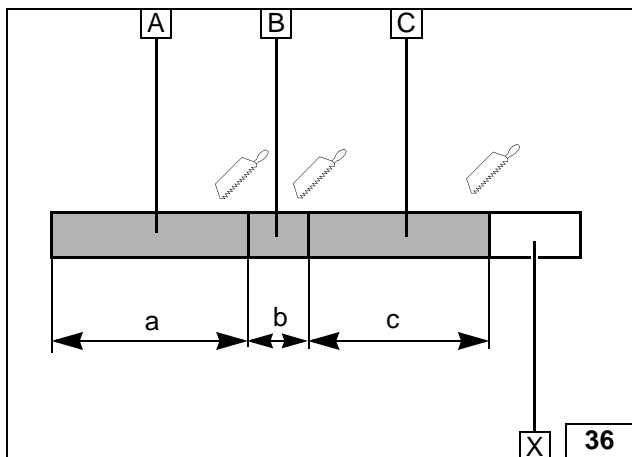
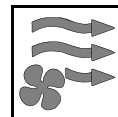


Flexible tube installation diagram

- 1 = Air outlet for cargo space
- 2 = 90x90x90 T-piece!
- 3 = Air outlet for passenger compartment
- 4 = Hot air inlet cover cap!

- A = 90 mm dia. flexible tube, 600 mm long
- B = 90 mm dia. flexible tube, 50 mm long
- C = 90 mm dia. flexible tube, 800 mm long



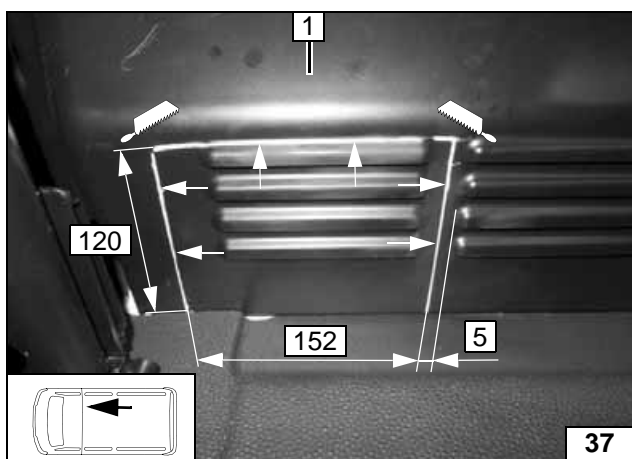


Discard section X.

- A = 600
- B = 50
- C = 800



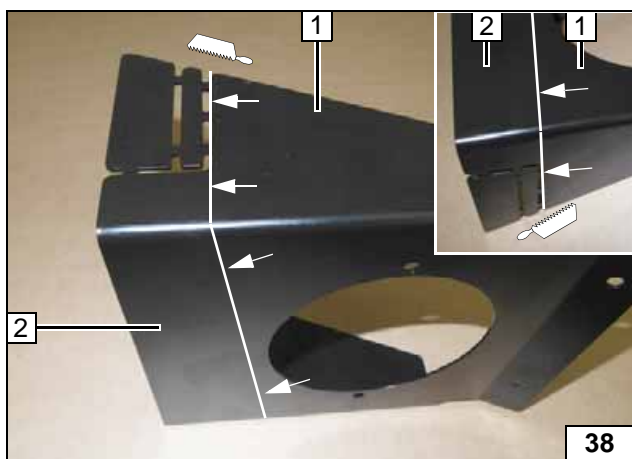
Cutting flexible tube to length



Cut rear panel on front passenger's side 1 along the markings. The lower edge will be cut later!



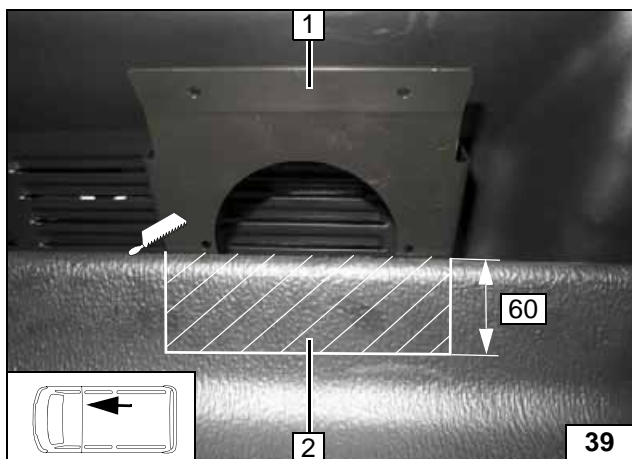
Cutting rear panel



Cut bracket of air outlet 1 on all sides. Discard section 2. Apply corrosion protection to cut edges.



Preparing bracket

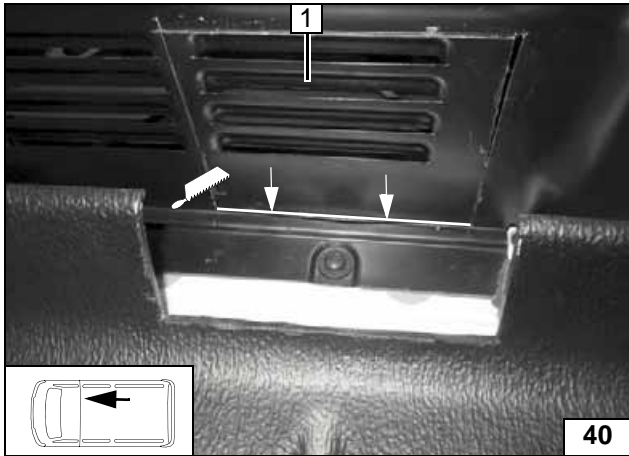
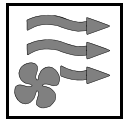


Place bracket of air outlet 1 on the cutting line. Draw lines corresponding to the outer edges of air outlet bracket 1 onto the trim. Cut out trim along the lines.



Cutting out trim

2 Discard section

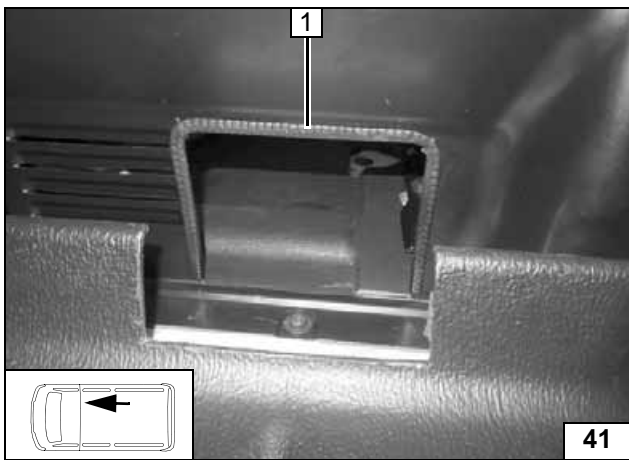


Cut out rear panel at the marking (in the corner). Apply corrosion protection to cut edges of rear panel!



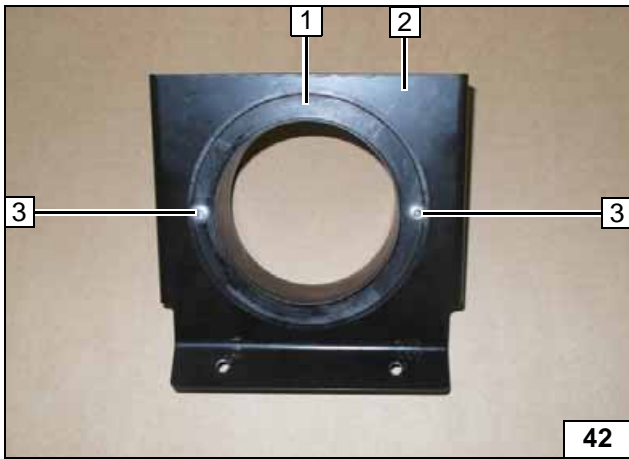
1 Discard section

Cutting out rear panel



1 Edge protection on cut edges

Installing edge protection

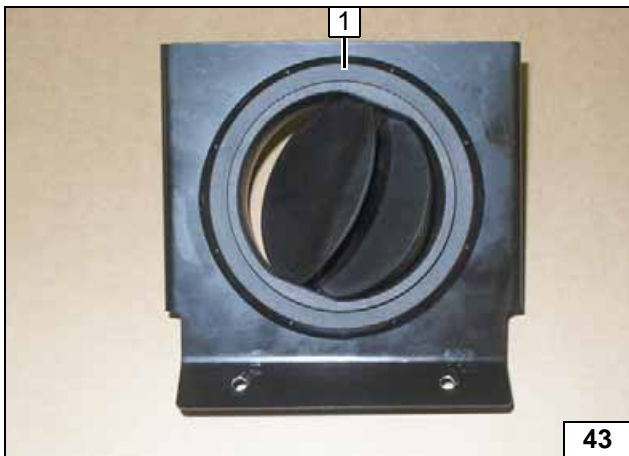


Position air outlet 1 in the middle of the hole of air outlet bracket 2 and align!



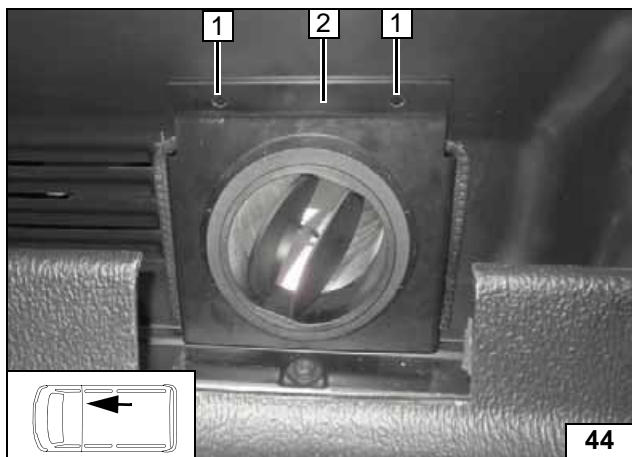
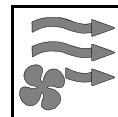
3 Copy hole pattern, 5.5 mm dia. hole; 5 mm dia. expanding rivet [2x each]

Assembling air outlet



1 Cover on air outlet

Installing cover

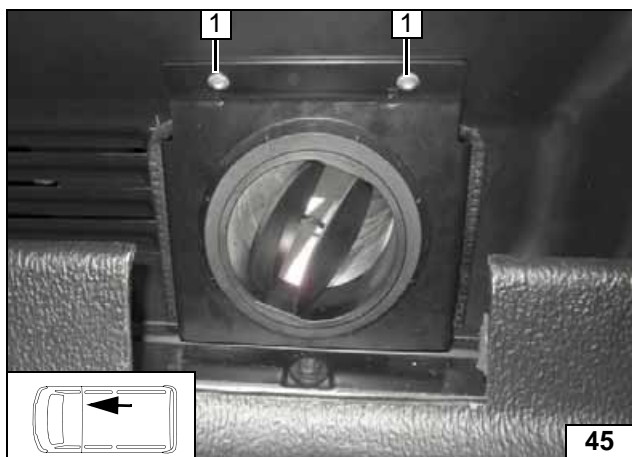


Insert air outlet bracket **2** in cutout.

- 1 Copy hole pattern, 5.5 mm dia. hole [2x]

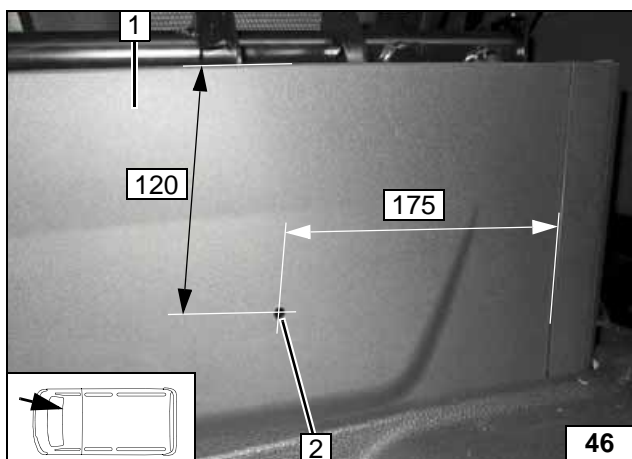


Copying hole pattern



- 1 5 mm dia. expanding rivet [2x]

Assembling air outlet bracket

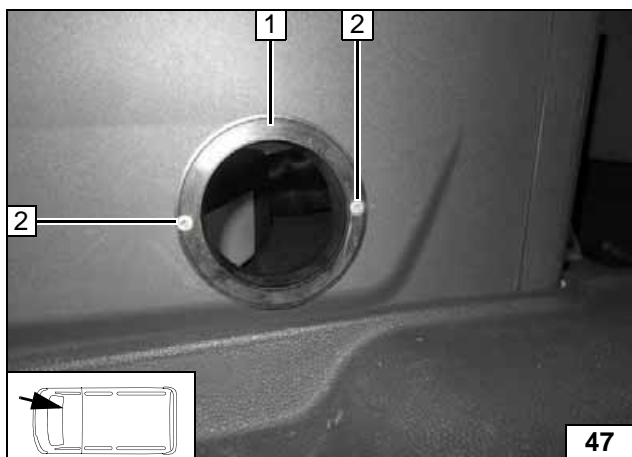


6mm dia. hole **2** as a guide and then drill out to 90mm dia.

- 1 Frontal trim of the front passenger's seat



Hole in trim

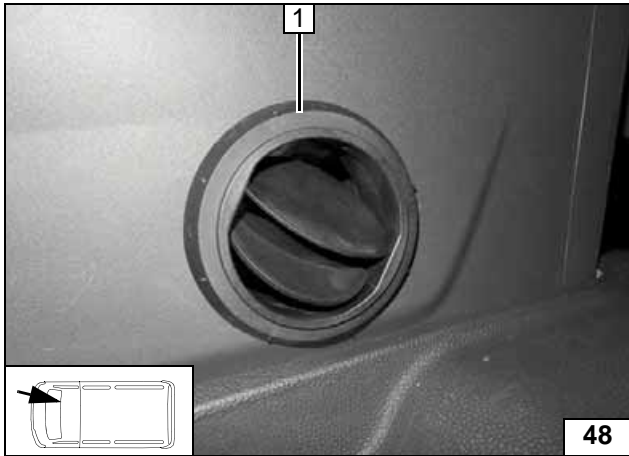
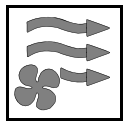


Position air outlet **1** in the middle of the 90mm dia. hole and align!

- 2 Copy hole pattern, 5.5 mm dia. hole; 5 mm dia. expanding rivet [2x each]

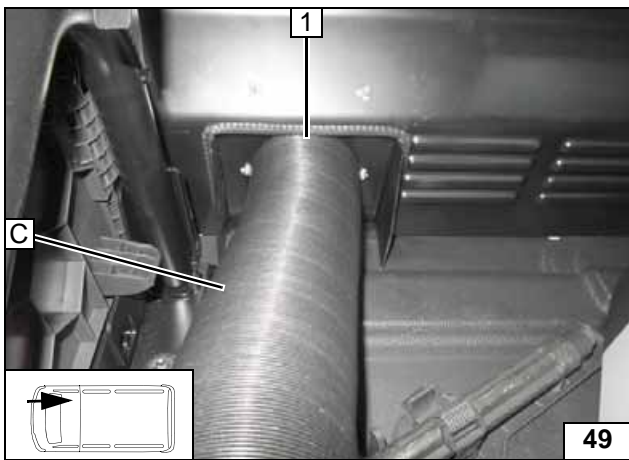


Assembling air outlet



1 Cover on air outlet

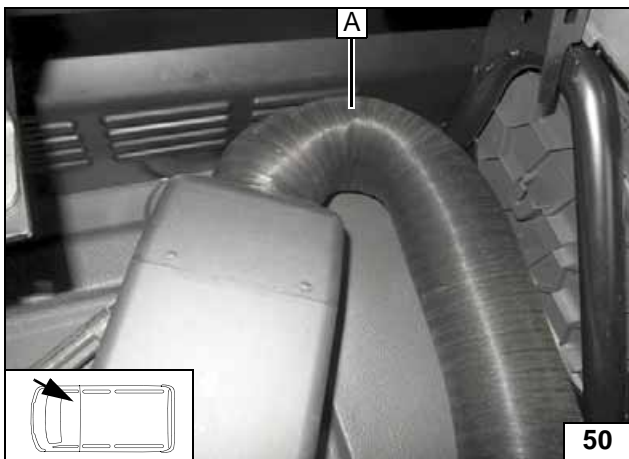
Installing cover



Screw flexible tube **C** onto air outlet of cargo space **1**!



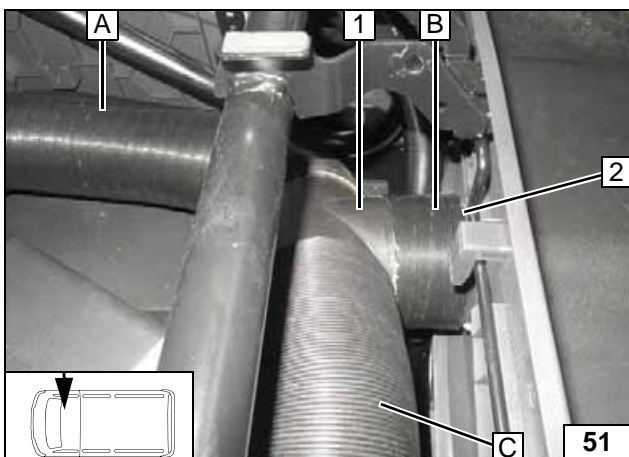
Assembling flexible tube **C**



Connect flexible tube **A** to hot air outlet, observe permissible bending radii.



Connecting heater

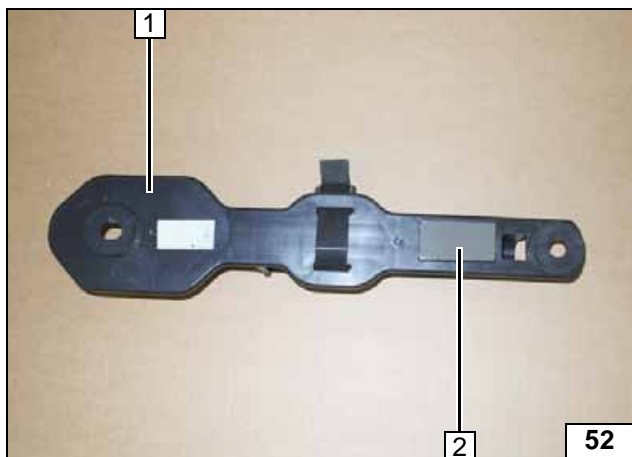
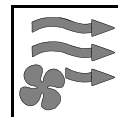


Screw flexible tube **B** onto air outlet of passenger compartment **2**!

- 1 90x90x90 T-piece

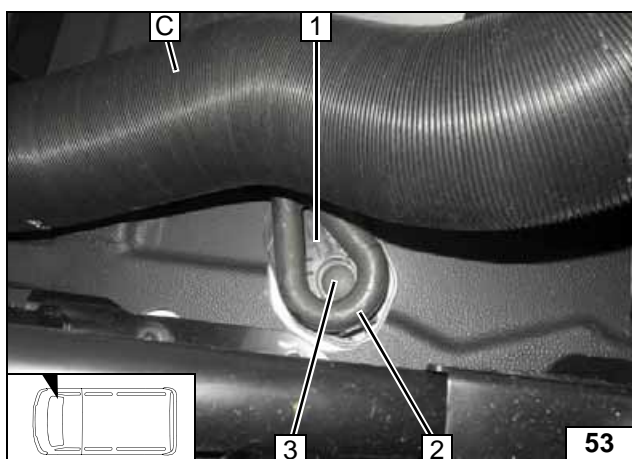


Installing flexible tubes



- 1 Towing eye bracket
- 2 Apply double-sided hook and loop fastening

Preparing towing eye bracket



Align bracket of towing eye 1 underneath flexible tube C (see following image) and secure with retaining clip 3!

- 2 Towing eye

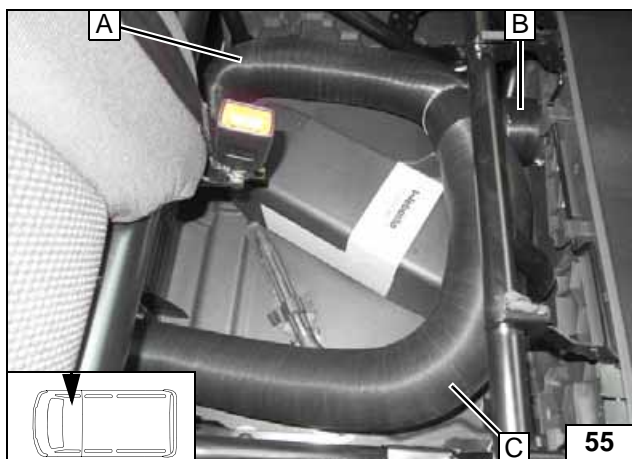
Installing towing eye



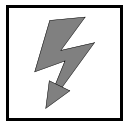
Paste on bracket of towing eye 1 as shown.

- 2 Close strap

Installing towing eye



Aligning flexible tubes



Electrical System

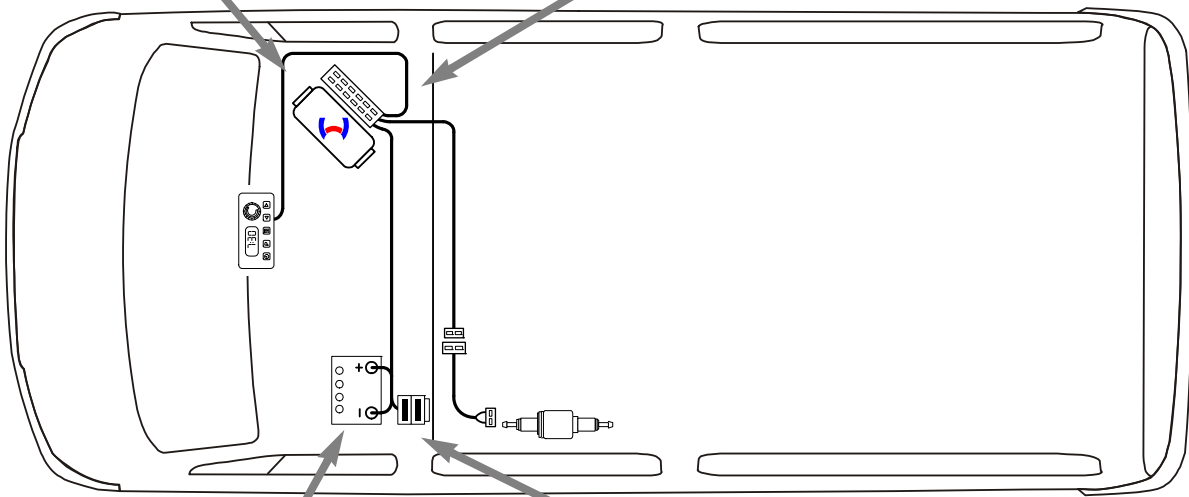
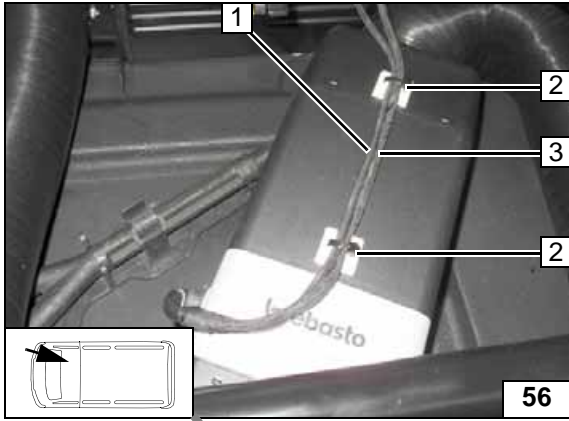
Connecting heater

Connect wiring harness of power supply **3** and wiring harness of heater control **1** with the heater!

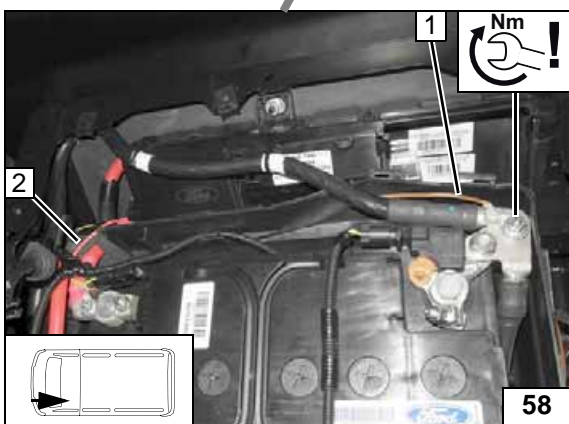
- 2 Adhesive base, cable tie [2x]

Wiring harness routing

Route wiring harness for heater control **1** to the right to the B-pillar, then up along the B-pillar and further to the heater control installation location. Route wiring harness of power supply **2** to the battery box under the driver's seat!



Wiring harness routing diagram



Plus and earth wire

- 1 Earth wire, cable lug to negative battery terminal
- 2 Positive wire, cable lug to positive battery terminal

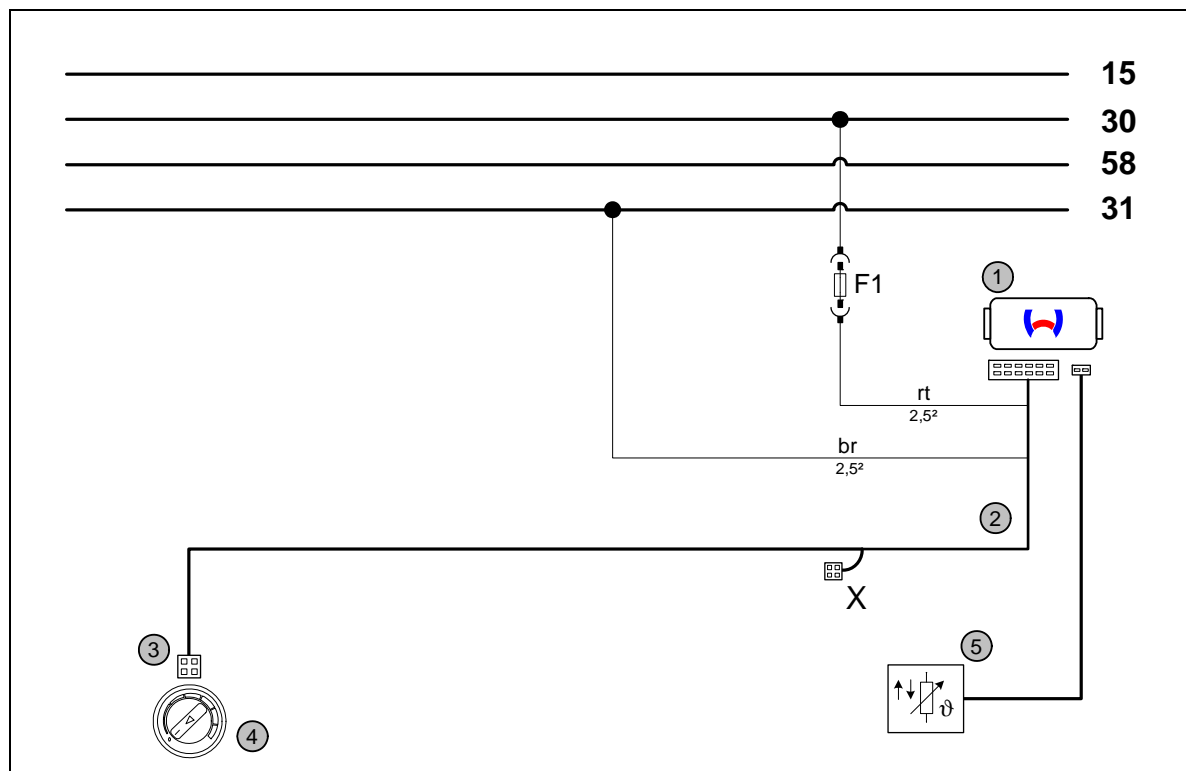
Fuse holder assembly

Affix fuse holder retaining plate **1** to the battery box using adhesive tape! Complete fuses F1 and F3 (F3 only in case of Telestart and/or Thermo Call).





Connection Diagram for Setpoint Encoder



Diagram

Parts		Colours and symbols	
F1	15A fuse (included in wiring harness)	rt	red
		br	brown
1	AT 40 Heater		
2	Heater wiring harness		
3	Potentiometer connector		
4	Setpoint encoder		
5	Heater temperature sensor		
		X	Connector (W-Bus) not used
		Wiring colours may vary.	

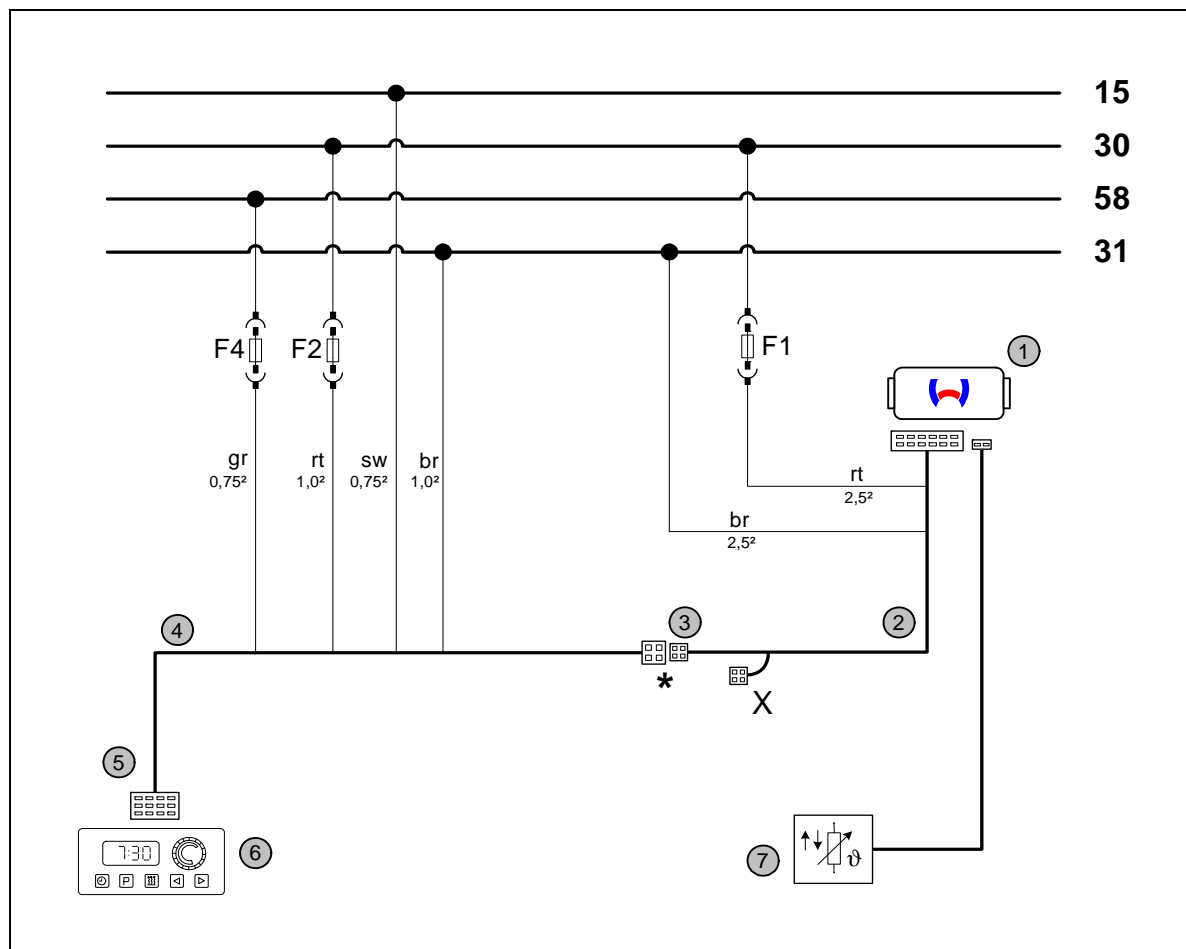
Legend



Connection Diagram for Combination Timer



Diagram

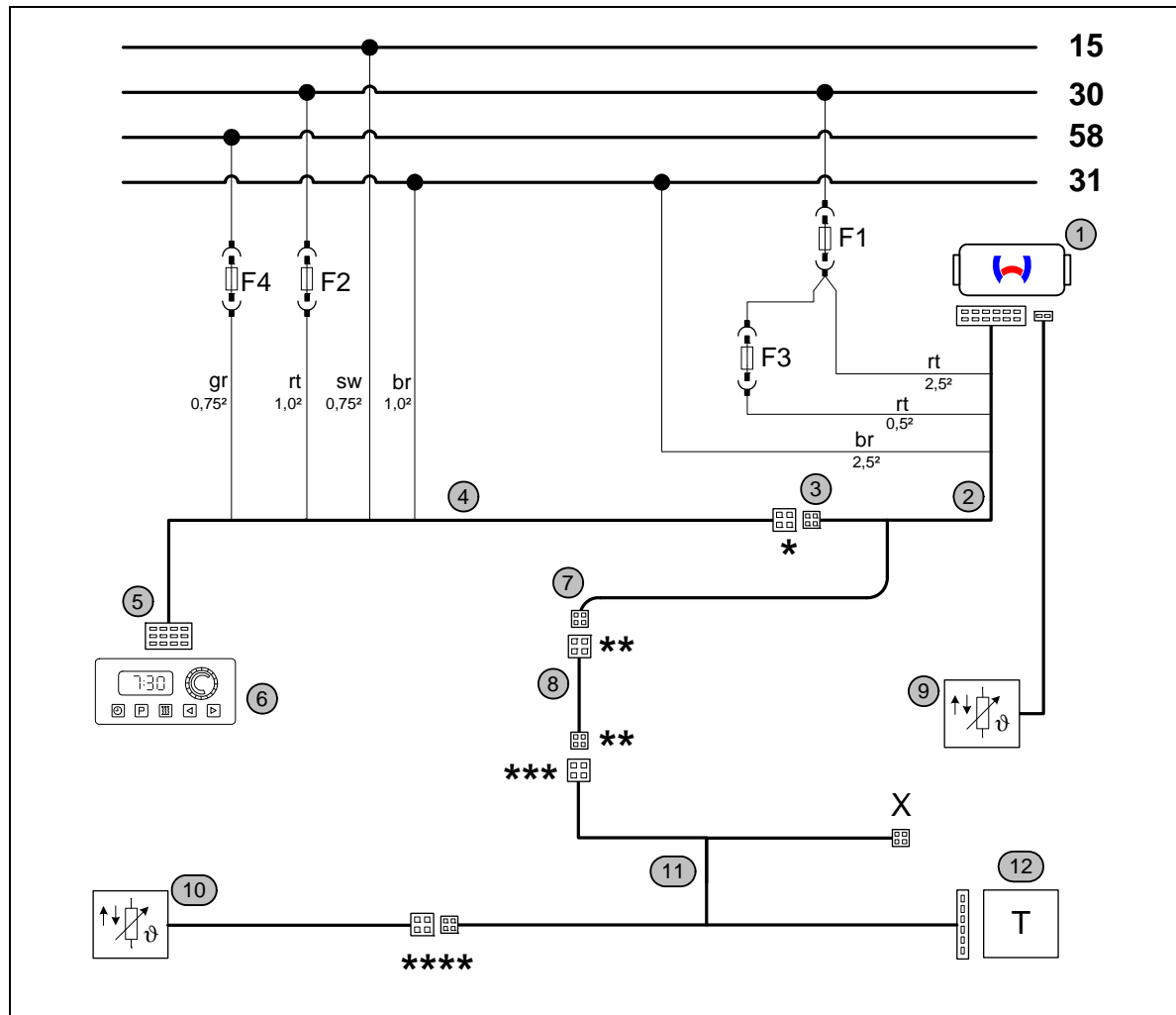


Parts		Colours and symbols	
F1	15A fuse (included in wiring harness)	rt	red
		br	brown
F2	5A fuse (not included in delivery scope)	sw	black
		gr	grey
F4	5A fuse (not included in delivery scope)	ws	white
		vi	violet
1	AT 40 Heater	bl	blue
2	Heater wiring harness		
3	Potentiometer connector		
4	Combination timer wiring harness (9006887C)	X	Connector (W-Bus) not used
5	Combination timer connector	*	Connect plugs white (ws) to vi (violet), blue (bl) to black (sw), red (rt) to brown (br) and black (sw) to red (rt).
6	Combination timer		
7	Heater temperature sensor	Wiring colours may vary.	

Legend



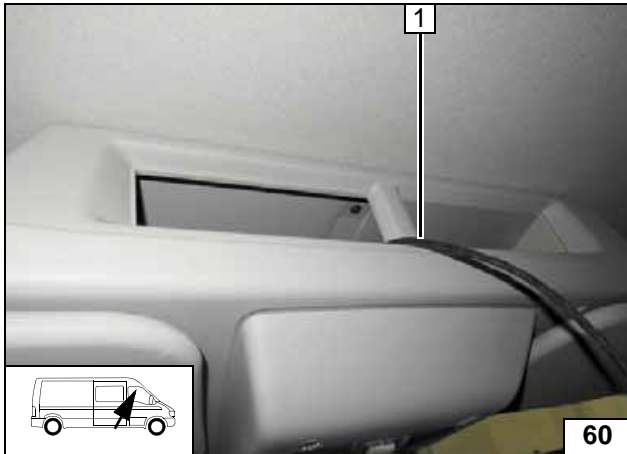
Connection Diagram for Combination Timer and Telestart



Diagram

Parts		Colours and symbols	
F1	15A fuse (included in wiring harness)	rt	red
F2	5A fuse (not included in delivery scope)	br	brown
F3	1A fuse (included in wiring harness! Only in case of Telestart and/or Thermo Call!)	sw	black
F4	5A fuse (not included in delivery scope)	gr	grey
1	AT 40 Heater	ws	white
2	Heater wiring harness	vi	violet
3	Potentiometer connector	bl	blue
4	Combination timer wiring harness (9006887C)	ge	yellow
5	Combination timer connector	X	Plug not used
6	Combination timer	*	Connect plugs white (ws) to vi (violet), blue (bl) to black (sw), red (rt) to brown (br), black (sw) to red (rt).
7	W-Bus connector	**	Connect plugs violet (vi) to yellow (ge), black (sw) not used, red (rt) to red (rt), brown (br) to brown (br).
8	Wiring harness extension (1319724A, only in case of Telestart and/or ThermoCall !)	***	Yellow (ge) wire in free socket opposite violet (vi)! Reinsulate and tie back grey (gr), black (sw) wires.
9	Temperature sensor of heater	****	Connect plugs using same colour wires.
10	Telestart temperature sensor (only on T100 HTM)		
11	Telestart wiring harness (9021440B)		
12	Telestart receiver		Wiring colours may vary.

Legend



Heater Control

Remove storage compartment on the left.

- 1 Route out wiring harness of heater control



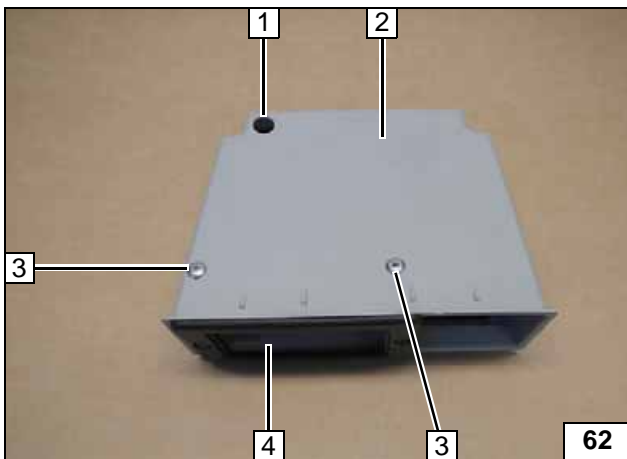
Routing wiring harness



Shape angle bracket 1 [2x] as shown in figure and adapt to the storage compartment.

- 2 M4 bolt, washer, nut [2x each]
- 3 Cover frame of heater control

Preparing trim piece

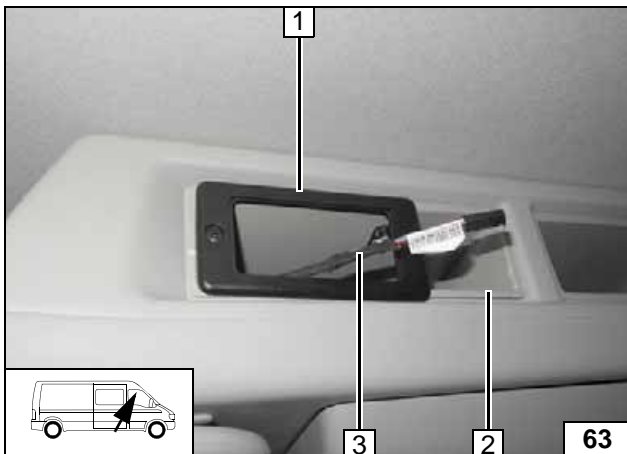


Copy hole pattern at position 3 [2x] onto storage compartment 2. 5.5 mm dia. hole [2x] at position 3 in storage compartment.

- 1 10 mm dia. hole
- 3 Expanding rivet [2x]
- 4 Cover frame of heater control



Premounting cover frame of heater control

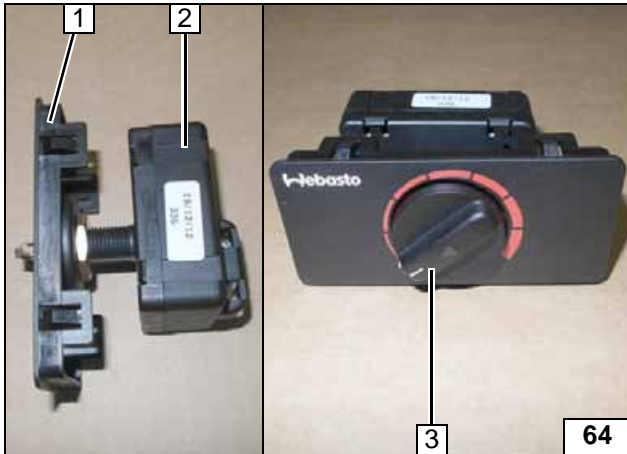


Route wiring harness of heater control 3 through 10mm dia. hole and lead out of cover frame 2!

- 1 Align cover frame of heater control if necessary



Inserting storage compartment

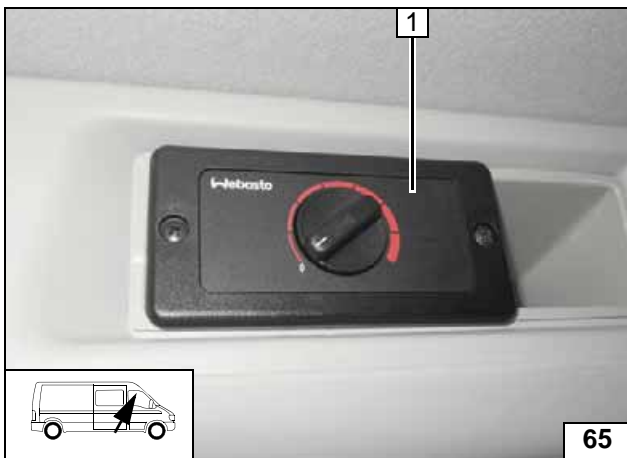


Heater control setpoint encoder

- 1 Assemble trim piece
- 2 Setpoint encoder
- 3 Push on rotary knob



Premounting setpoint encoder

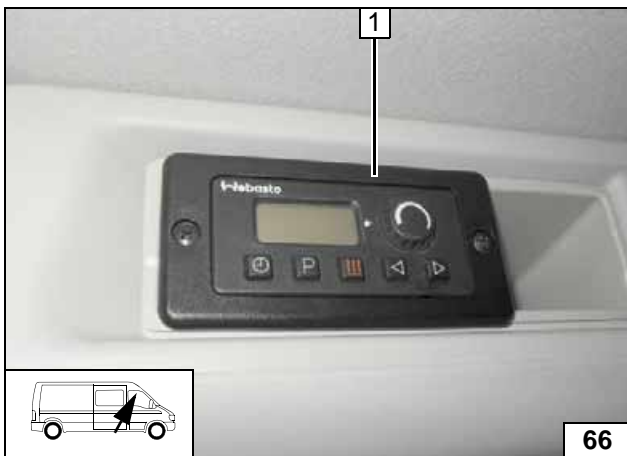


Connect wiring harness connector of heater control with "potentiometer" designation.

- 1 Insert trim piece in cover frame



Assembling setpoint encoder



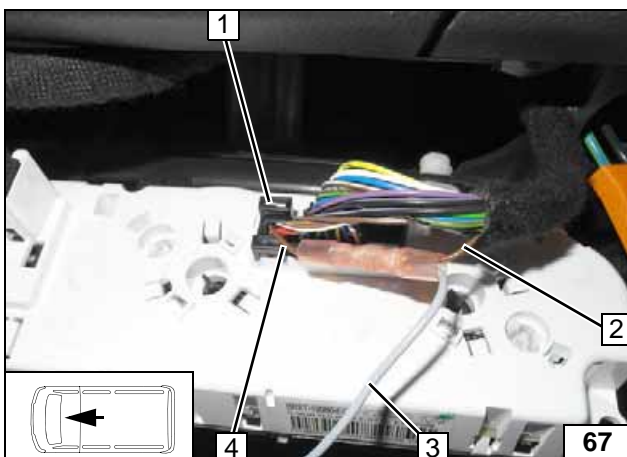
Combination timer heater control option

Connect wiring harness connector of heater control.

- 1 Insert combination timer in cover frame



Installing combination timer

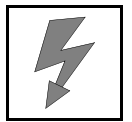


Connection to 26-pin connector 1 from A/C control unit. Produce connections as shown in wiring diagram.

- 2 Brown (br) wire of terminal 58
- 3 Grey (gr) wire of combination timer wiring harness
- 4 Brown (br) wire of 26-pin connector



Connecting terminal 58

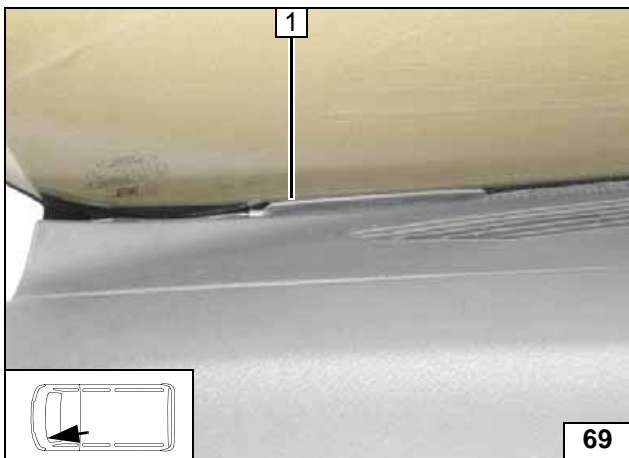


Remote Option (Telestart)

Use wiring harness extension! Fasten receiver 1 with adhesive tape.

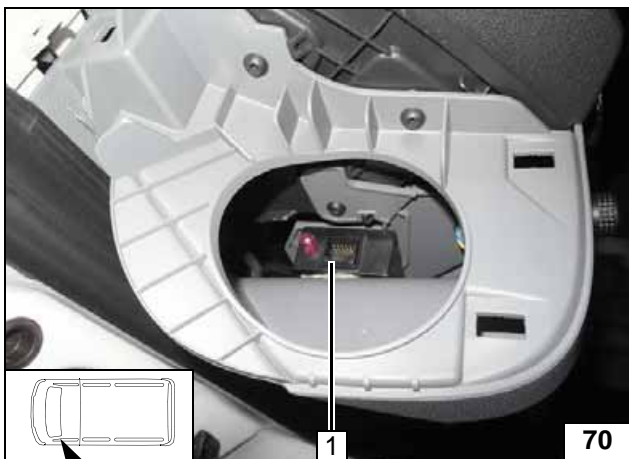


Mounting receiver



1 Antenna

Mounting antenna

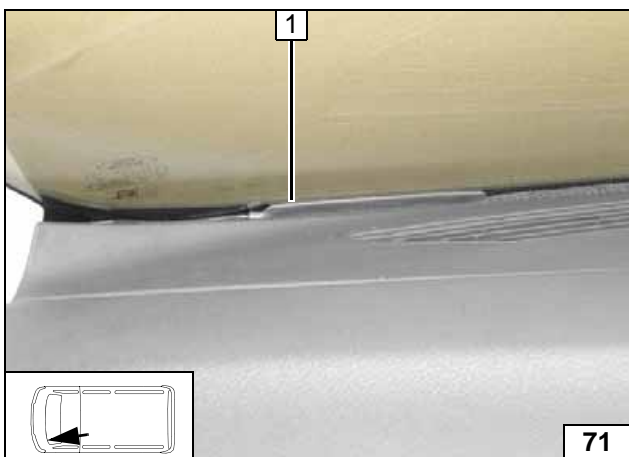


Thermo Call Option

Use wiring harness extension!
Fasten receiver 1 with adhesive tape.



Mounting receiver



1 Antenna

Mounting antenna



Final Work

WARNING!

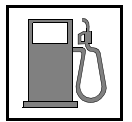
Mount removed parts in reverse order. Check all clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.

Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).



- **Connect the battery.**
- **Set and teach the heater control**
- **Place the "Switch off parking heater before refuelling" caution label in the area of the filler neck.**
- **See installation instructions for initial startup and function check.**

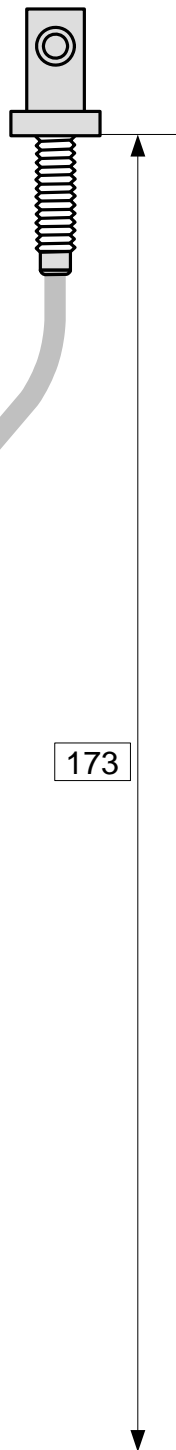




Template for Fuel Standpipe

A

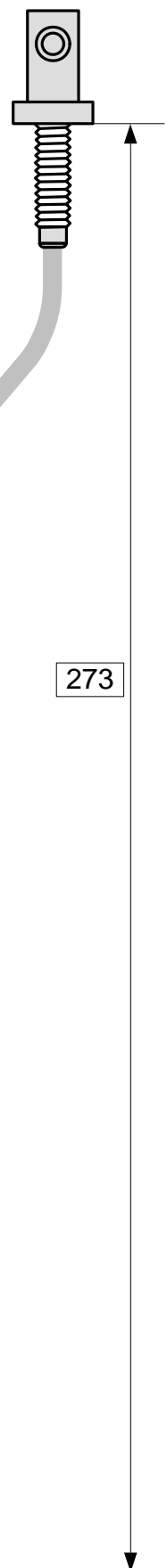
80 l Fuel tank



173

B

100 l Fuel tank



273

100mm



Scale 1:1

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

Set the printer settings to "no margin" or "minimise margins" and 100% of the normal size.

100mm

0

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

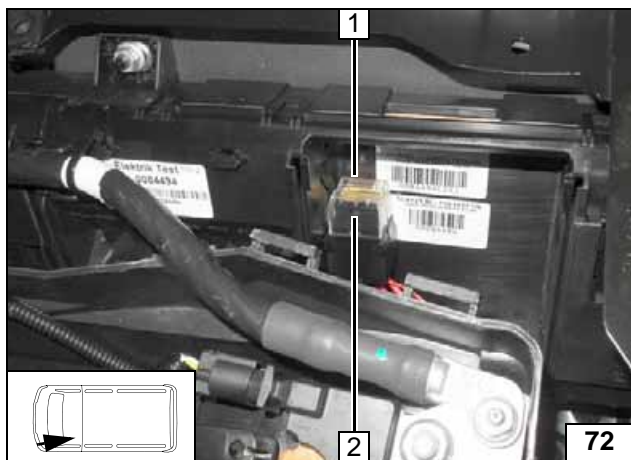
Example:

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

Follow the operating instructions for *Air Top 40*.



- 1 20A fuse F1 of heater
- 2 1A heater control fuse F3 (only in case of Telestart and/or Thermo Call)

Heater fuse

