

K Installation documentation

for Air Top 2000 STC water heater

Mercedes Benz Sprinter

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Mercedes Benz	Sprinter	W907	from 2018	e1* 2007/46* 0301*...
Mercedes Benz	Sprinter	W907	from 2018	e1* 2001/116* 0354*...

Motorisation	Fuel	Emission standard	Transmission type	Output[kW]	Displacement [cm ³]	Engine code
314 CDI	Diesel	Euro 6c	SG	105	2143	OM 651
316 CDI	Diesel	Euro 6c	SG	120	2143	OM 651
319 CDI	Diesel	Euro 6c	SG	140	2987	OM 642
319 CDI	Diesel	Euro 6c	AG	140	2987	OM 642

Validity	Equipment variants	Model
		Sprinter
Verified equipment variants	Single seat	x
	Twin seat	x
	Short wheelbase	x
	Long wheelbase	x
	Without partition wall	x
	With partition wall	x
	Single cabin	x
	Double cabin	x
Unverified equipment variants	Alarm system	x
	2. Battery	x

Total installation time	Note
6.1 hours	

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1 List of abbreviations

AG	Automatic transmission
Fig.	Figure
HG	Heater
MCC	MultiControl (control element)
SG	Manual transmission

2 Installation notes

2.1 Information on validity

This installation documentation applies to vehicles - see page 1 – 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 other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

2.2 Components used

Designation	Order number
Basic delivery scope of Air Top 2000STC diesel	In accordance with price list
Installation kit for Mercedes Benz Sprinter 2018 diesel	1326881A
In case of control element as well as Telestart indicator lamp in consultation with end customer	In accordance with price list
In case of MultiControl HD installation - installation frame for MultiControl	9030077_
In case of MultiControl HD installation – timer cable extension	1319724_
Exhaust silencer option	Order number
Exhaust silencer bag	1325850_
Cargo space heating option	Order number
Use the necessary parts from the accessories (hot air systems) for the desired cargo space heating.	According to the accessories catalogue

2.3 Information on total installation time

The total installation time includes the time needed for mounting and demounting 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.

2.4 Installation recommendations

Arrange for the vehicle to be delivered with the tank only about $\frac{1}{4}$ full.

The installation location of the push button in case of Telestart or ThermoCall should be discussed with the end customer.

Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

3 About this document

3.1 Purpose of the document

This installation documentation is part of the product and contains all the information required to ensure professional vehicle specific installation of the:

Air Top 2000STC heater

3.2 Warranty and liability

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 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 wilful 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 must be provided with rub protection.

Spray unfinished body areas, e.g. holes, with anti-corrosion wax (Tectyl 100K).

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

The initial start-up 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.

Statutory regulations governing installation

The Air Top 2000STC, Air Top 3900/5500 and Air Top 40/55 heaters have been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). 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.

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

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

Regulations and legal requirements

The regulations from the heater's general installation and operating instructions must be observed.

3.3.1 Safety information on installation

Danger posed by live parts

- ▶ Prior to installation, disconnect the vehicle from the voltage supply.
- ▶ Make sure the electrical system is earthed correctly.
- ▶ Always comply with legal requirements.
- ▶ Observe data on type label.

Danger of fire and leaking toxic gases due to improper installation

- ▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:
 - ⇒ Maintain minimum safety distances.
 - ⇒ Ensure adequate ventilation.
 - ⇒ Use fire-resistant materials or heat shields.
 - ⇒ In the case of M2 and M3 vehicles, the combustion heater must not be positioned in the passenger compartment.

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage
- ▶ Fit protectors on sharp edges.

3.4 Using this document

Before installing and operating the heater, read this installation documentation, the installation instructions of the heater, the operating instructions and supplementary sheets provided.

3.4.1 Explanatory Notes on the Document

There is an identification mark near the respective work step to allow you to quickly allocate the other applicable documents to the Webasto components to be installed:

Generally valid Webasto documentation	
Vehicle-specific installation documentation	
Vehicle-specific installation documentation of the cold start kit	
Webasto Comfort A/C control	
Webasto Standard A/C control	
Tank extracting device (e.g. FuelFix)	
Exhaust end fastener (EFIX)	
Combustion air intake silencer	
Spacer bracket (ASH)	

3.4.2 Use of symbols



DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

► Actions to protect yourself against risks.



WARNING

Type and source of the risk

Consequences: Failure to follow the instructions can lead to serious or even fatal injuries

► Actions to protect yourself against risks.



CAUTION

Type and source of the risk

Consequences: Failure to follow the instructions can lead to minor injuries

► Actions to protect yourself against risks.



Type and source of the risk

Consequences: Failure to follow the instructions can lead to material damage

► Actions to protect yourself against risks.



Reference to the vehicle manufacturer's specific documents.



a note on a special technical feature

3.4.3 Work step identification marks

The ongoing work step is indicated on the outside top corner of the page:

Mechanical system 	Electrical system 	High-voltage 	Hot air
Combustion air 	Fuel 	Exhaust 	Software

3.4.4 Orientation aid

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The arrow indicates the position on the vehicle and the viewing angle

3.4.5 Use of highlighting

Highlight	Explanation
►	Necessary action
⇒	Result of an action
1 / 12 / a1	Position numbers for the image descriptions

Highlight	Explanation
① / ⑫ / ①	Position numbers for the image descriptions for electrical wires and flex pipe sections of the hot air distributor

4 Technical Information

Dimension specifications

- All dimensions specified in mm

Tightening torque specifications

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

Heater mounting

- A seal must be fitted between the heater and the vehicle body. It should be replaced before each re-installation

Necessary special tools

- Hose clamp pliers for Clic hose clamps of type W
- 55mm dia. and 60mm dia. circle bit
- Automatic wire stripper 0.2 - 6 mm²
- Crimping pliers for cable lugs 0.5 – 10 mm²
- Crimping pliers for tab connector 0.14 – 6 mm²
- Crimping pliers for connector 0.25 – 6 mm²
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

5 Preparing measures

5.1 Vehicle preparation



Further information can be found in the vehicle manufacturer's technical documentation.

Vehicle area	Components to be removed	Other applicable documents
General	<ul style="list-style-type: none">▶ Open the fuel tank cap▶ Ventilate the fuel tank▶ Close the fuel tank cap again	
Passenger compartment	<ul style="list-style-type: none">▶ Disconnect the battery▶ Front passenger bench seat▶ Fold up the floor covering on the front passenger's side▶ Lower instrument panel trim on the driver's side▶ Partition wall (if present)	

5.2 Heater preparation

Engine compartment	<ul style="list-style-type: none">▶ Remove years that do not apply from the type and duplicate label▶ Attach the duplicate label (type label) in the appropriate place in the engine compartment	
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6 Installation overview

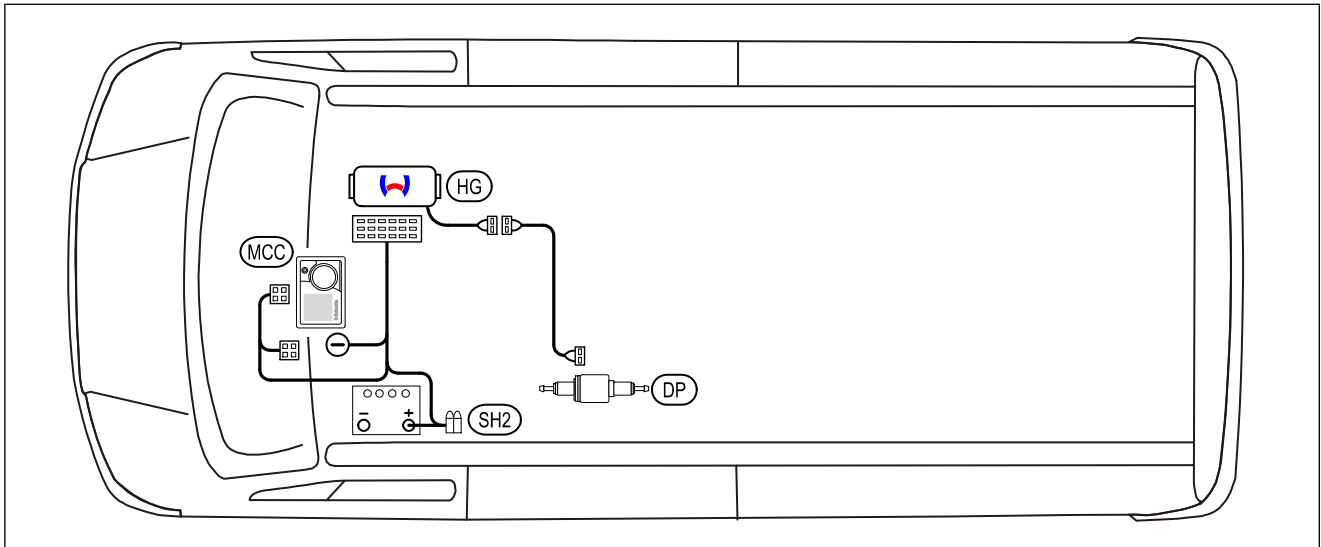
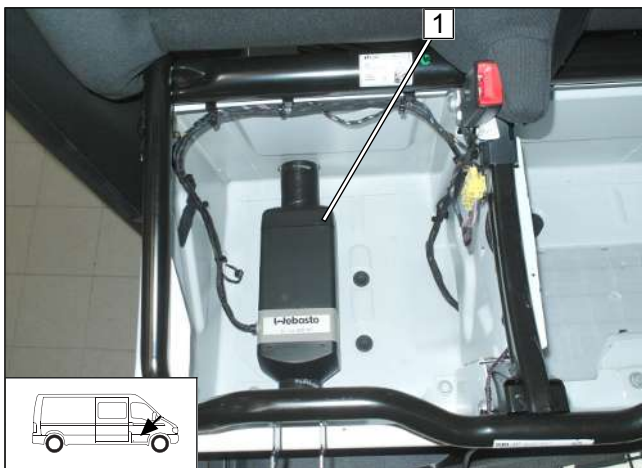


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
HG	Heater assembly
MCC	MultiControl (control element)
SH2	F1/F3 fuse holder

Heater installation location



1 Heater

Fig. 2



7 Mechanical system

7.1 Preparing installation location

Copying heater hole pattern

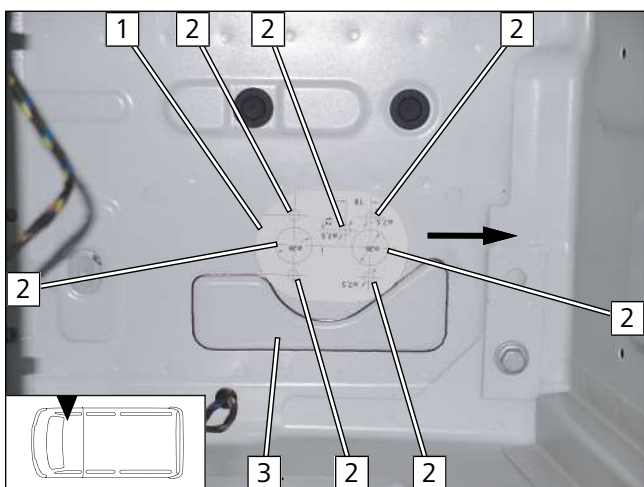


Fig. 3

► Position template **1** and align it with bead **3** as shown.

2 Copying hole pattern

Drilling holes

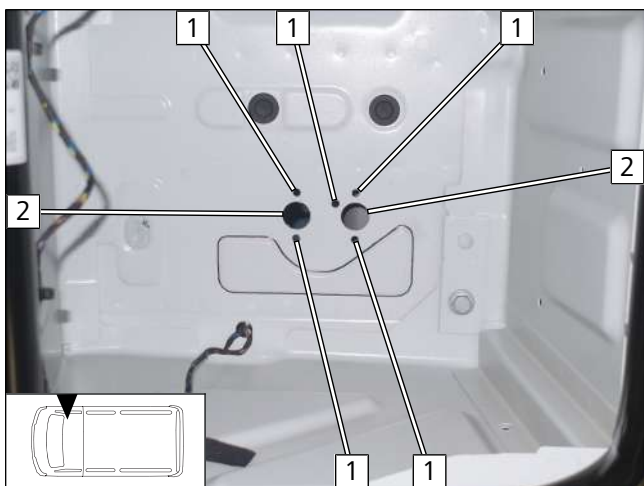
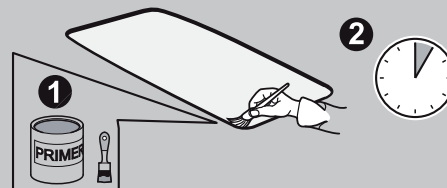


Fig. 4



Danger of damage to components

► Protect cutting edges / holes against corrosion by suitable means.



1 7mm dia. hole

2 26mm dia. hole

Copying hole pattern of heating air intake's air vent

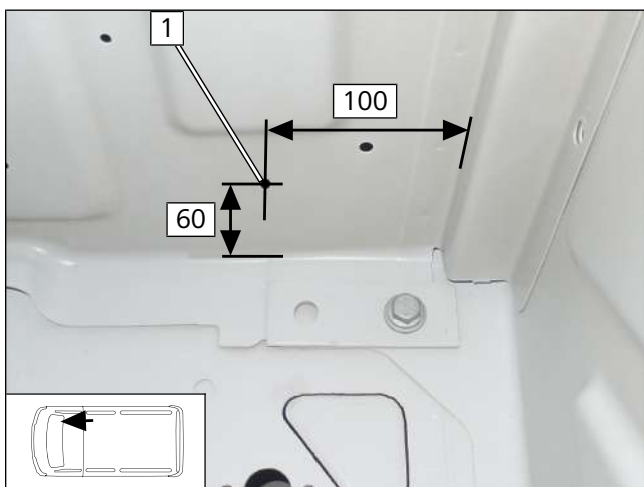


Fig. 5

1 Hole pattern



Creating hole for heating air intake's air vent

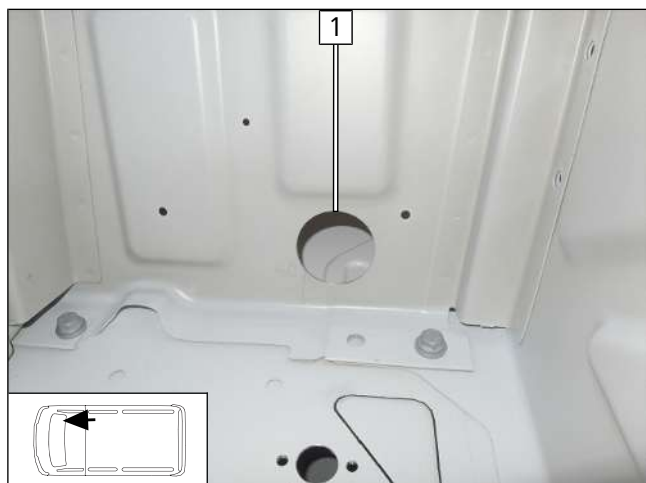


Fig. 6

- 1 64mm dia. hole

Copying hole pattern of air vent fastening

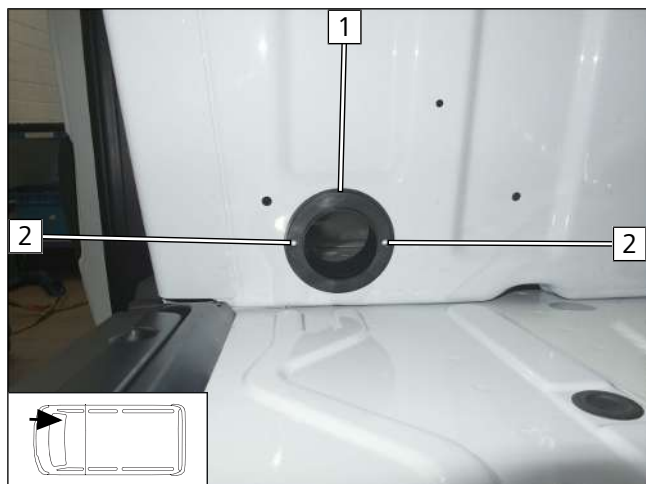



Fig. 7

- 1 Air vent
- 2 Copying hole pattern

Creating hole for air vent



Fig. 8

 Danger of damage to components
► Protect cutting edges / holes against corrosion by suitable means.



- 1 3mm dia. hole



Cutting out floor covering

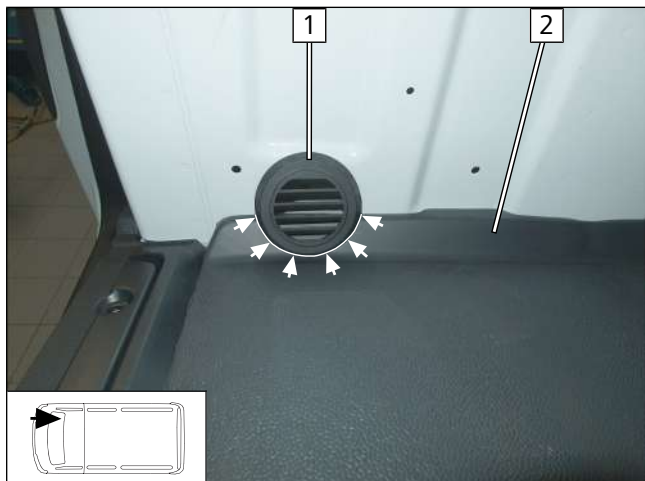


Fig. 9

- ▶ Lay out floor covering **2**, complete air vent **1** and position as shown.
- ▶ Copy the shape of the air vent.

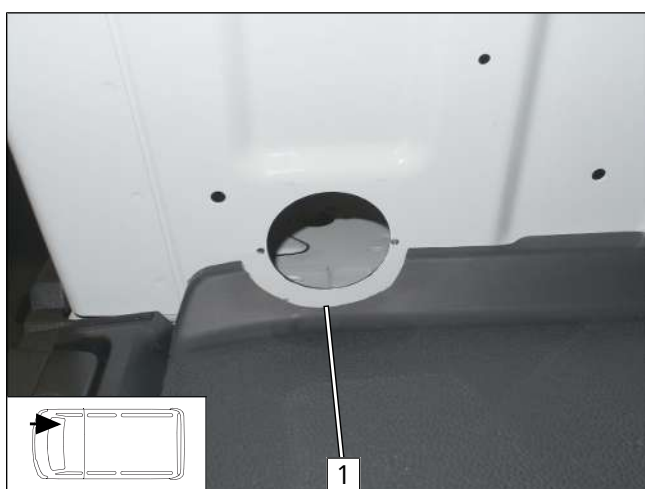


Fig. 10

- ▶ Cut out floor covering at position **1**.

Copying hole pattern of hot air vent

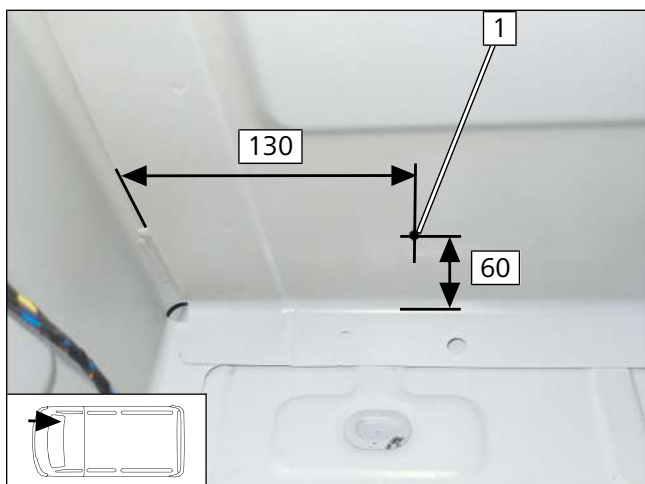


Fig. 11

- 1** Hole pattern



Creating hole for hot air vent

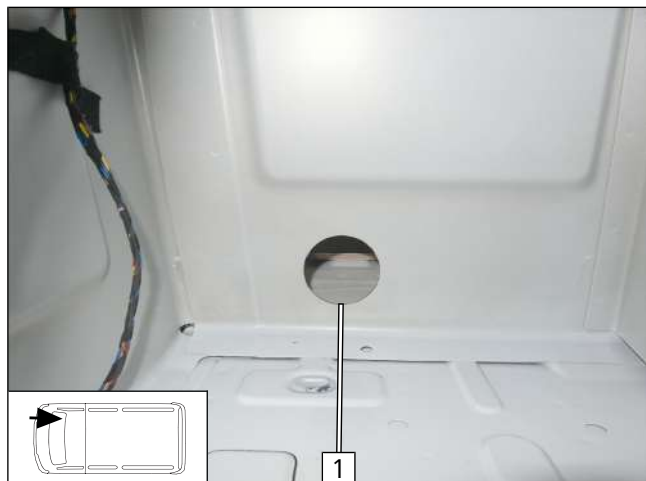


Fig. 12

- 1 64mm dia. hole

Copying hole pattern of air vent fastening

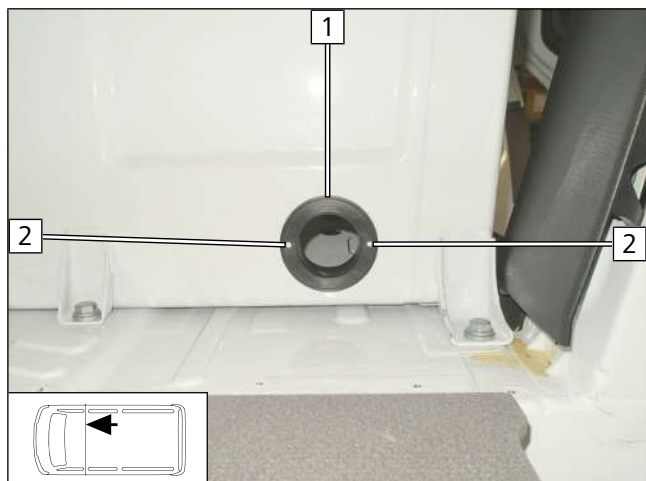


Fig. 13

- 1 Air vent
- 2 Copying hole pattern

Creating hole for air vent

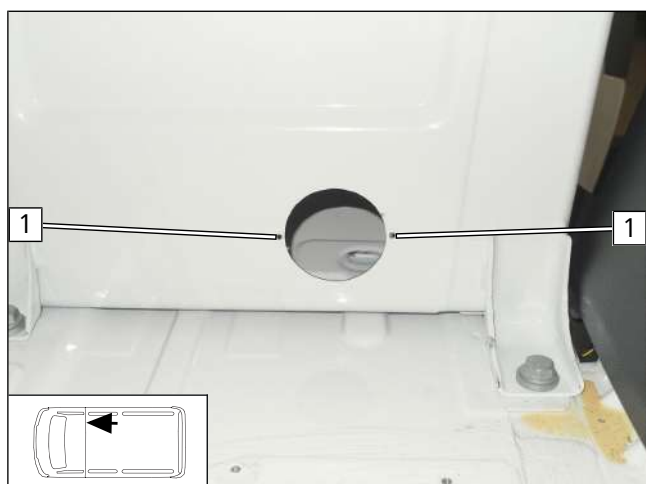


Fig. 14

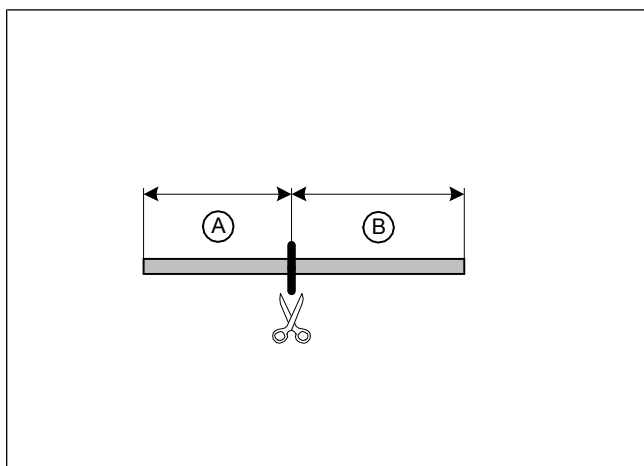


- 1 3mm dia. hole



7.2 Preparing heater

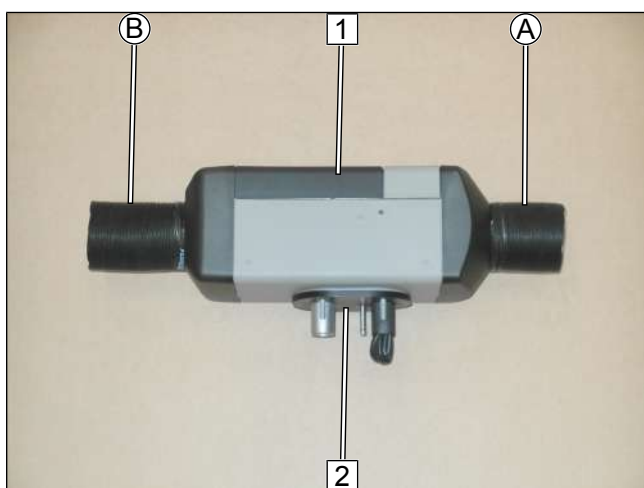
Cutting 60mm dia. flexible tube to length



(A)	60
(B)	95

Fig. 15

Preparing heater



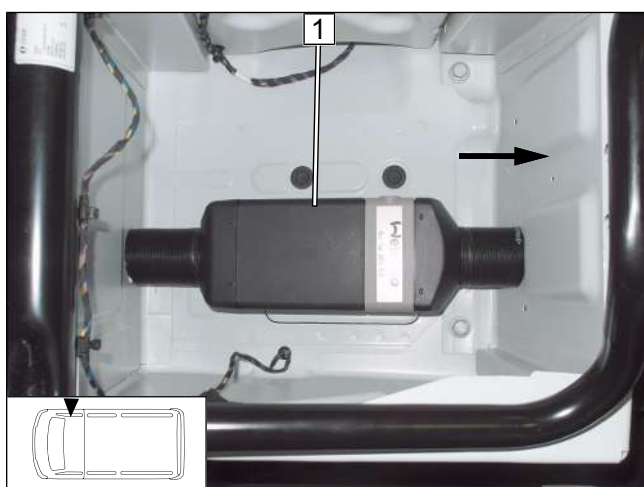
► Twist flexible tubes **(A)** and **(B)** onto heater **1** as shown.

2 Seal

Fig. 16

7.3 Heater mounting

Positioning heater

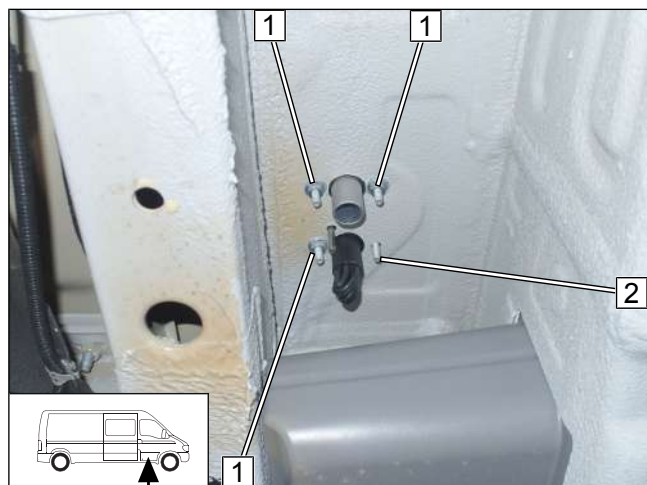


► Insert heater **1** into the prepared holes and align as shown.

Fig. 17



Fastening heater



► Stud bolt **2** is fastened later.

- 1** HG stud bolt, large diameter washer, flanged nut

Fig. 18



8 Fuel



DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours.

The Incorrect installation of the fuel extractor can cause damage and fire.

- ▶ Avoid electrostatic discharges and open fire.
- ▶ When working on the fuel system, ensure sufficient ventilation and bleeding.
- ▶ Open the fuel tank cap of the vehicle.
- ▶ Ventilate the fuel tank
- ▶ Re-close the tank lock.
- ▶ Catch any fuel running off with an appropriate container.



Danger of damage to components

- ▶ Install fuel line and fuel pump wiring harness so that they are protected against stone impact.
- ▶ Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

Premounting fuel pump

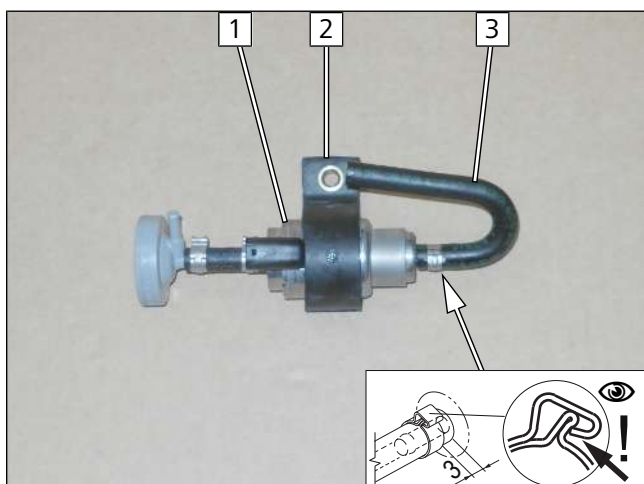


Fig. 19

- 1 Fuel pump
- 2 Fuel pump mount
- 3 180° moulded hose, 10mm dia. clamp

Mounting fuel pump

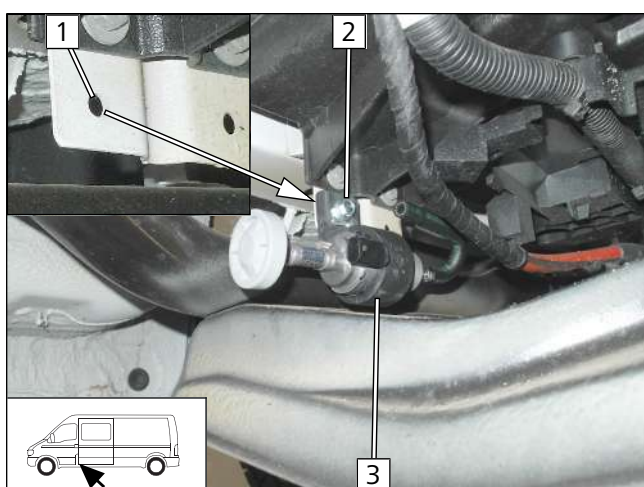


Fig. 20

- 1 Original vehicle hole
- 2 M6x25 bolt, support angle bracket, fuel pump mount, original vehicle hole, flanged nut
- 3 Premounted fuel pump



Cutting off original vehicle return line

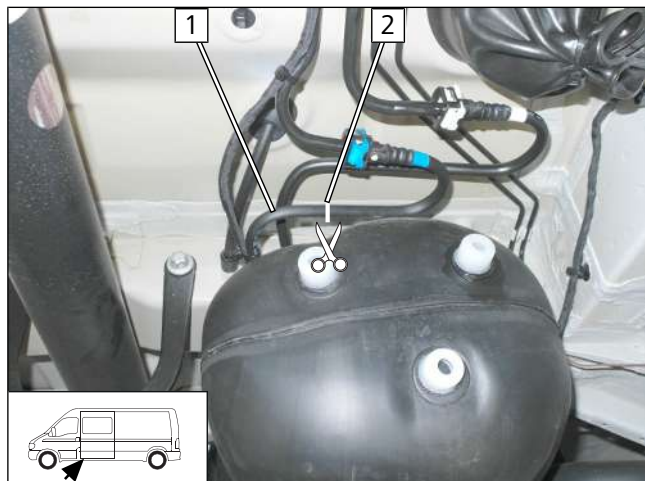


Fig. 21

- 1 Original vehicle return line (blue quick-release coupling)
- 2 Cutting point

Installing fuel extractor

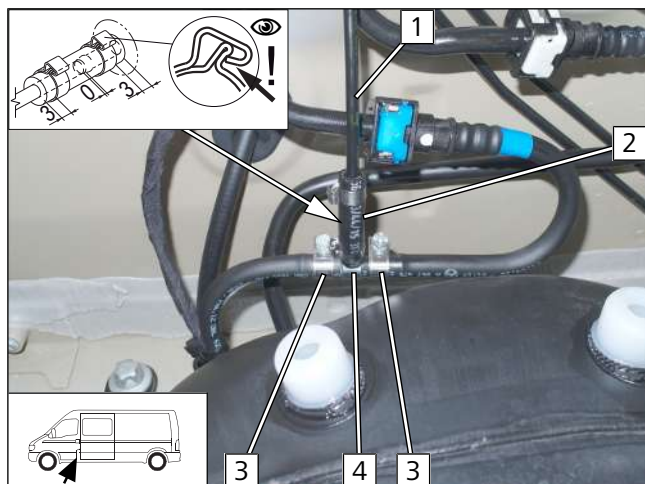


Fig. 22

- 1 Fuel line to fuel pump
- 2 Hose section, 10mm dia. clamp [2x]
- 3 10mm dia. clamp
- 4 8x5x8 mm fuel extractor

Routing fuel line

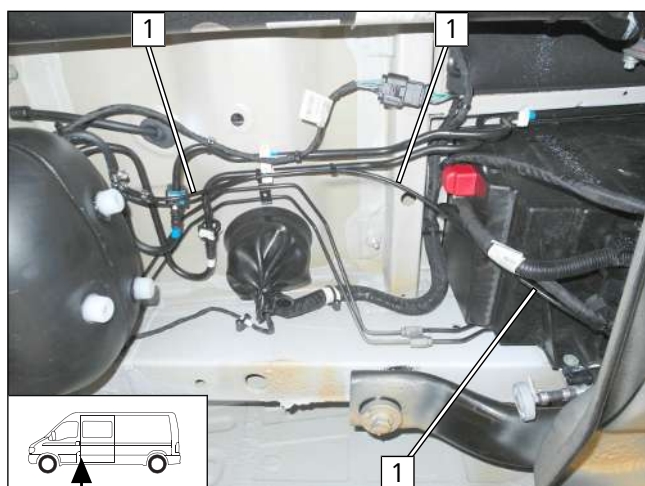


Fig. 23

- Route fuel line 1 along the original vehicle line to the fuel pump and fasten with cable ties.



Connecting fuel pump

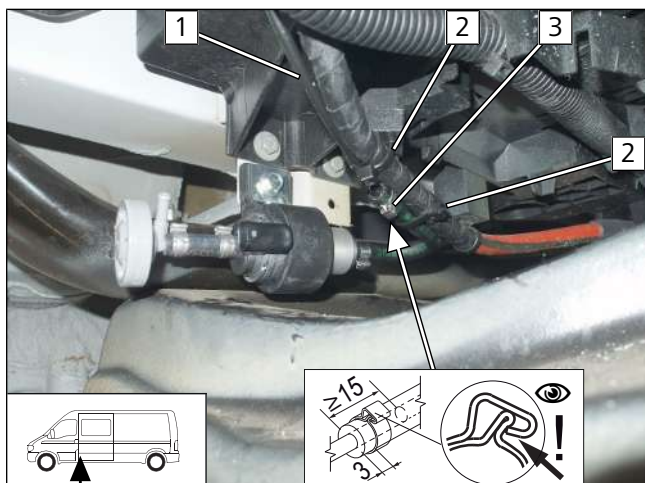


Fig. 24

- 1 Fuel line
- 2 Cable tie
- 3 10mm dia. clamp

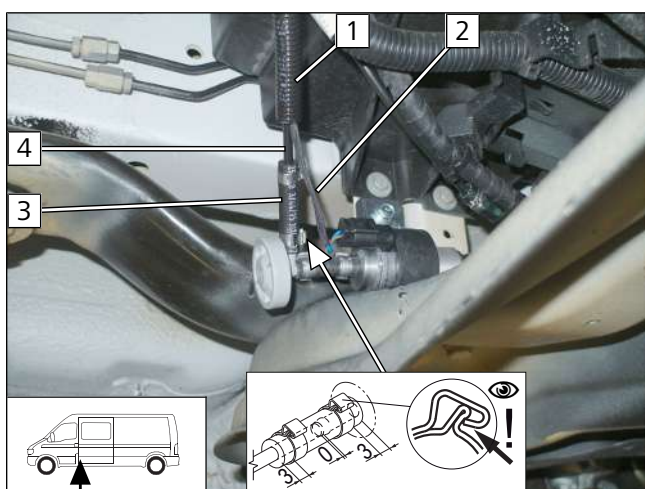


Fig. 25

- Draw heater fuel line 4 and fuel pump wiring harness 2 in corrugated tube 1.
- 3 Hose section, 10mm dia. clamp [2x]

Routing fuel line

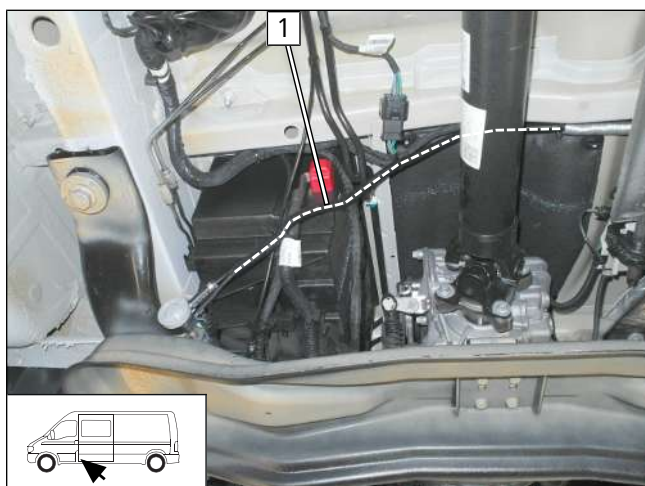


Fig. 26

- 1 Corrugated tube with HG fuel line and fuel pump wiring harness



Routing fuel line

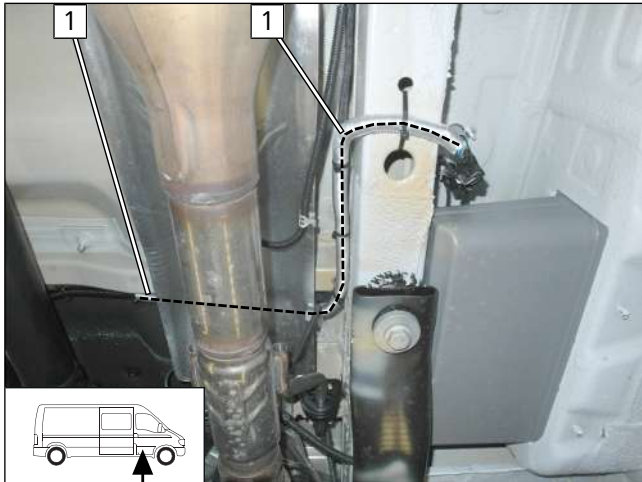


Fig. 27

- ▶ Draw heater fuel line and fuel pump wiring harness into heat protection hose **1**, route as shown and fasten using cable ties.

Connecting heater

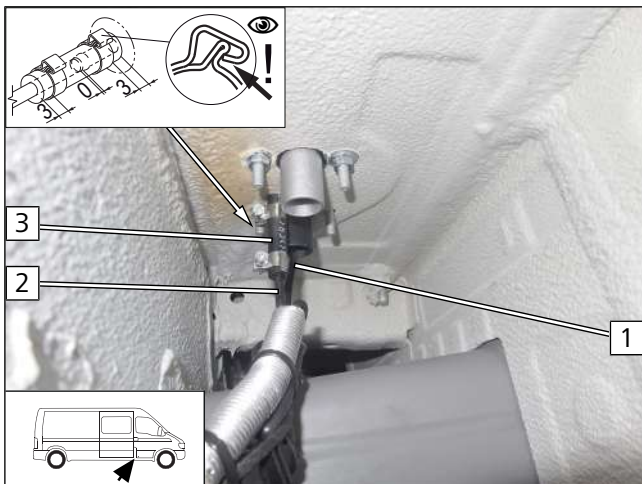


Fig. 28

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

Connecting metering pump wiring harness

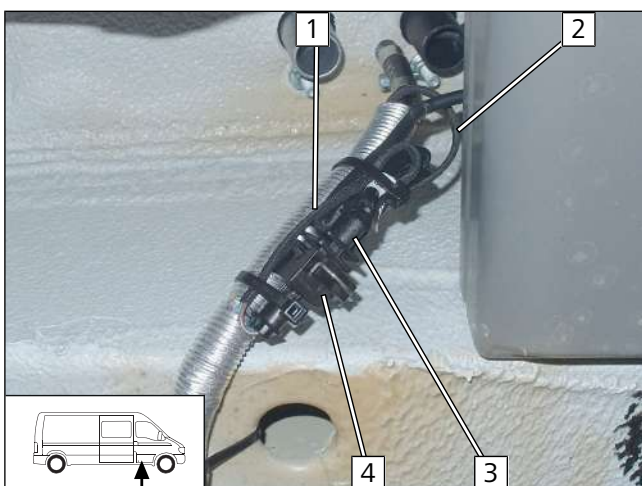


Fig. 29

- ▶ Mount fuel pump wiring harness from HG **1** in connector **3**.
- ▶ Mount fuel pump wiring harness from fuel pump **2** into socket **4**.
- ▶ Connect connector and socket.



9 Combustion air

Shortening combustion air pipe

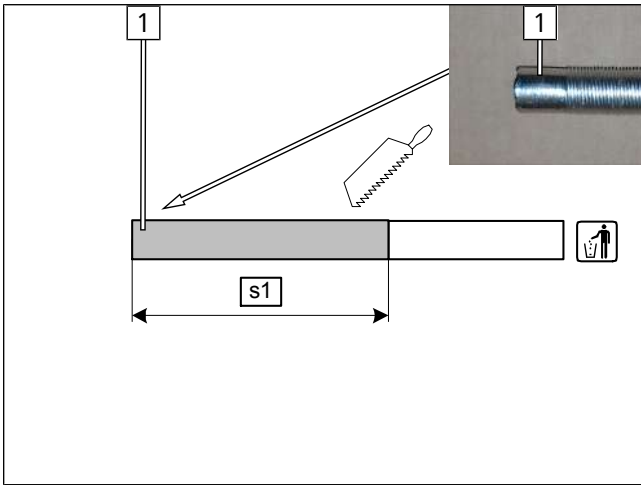


Fig. 30

s1 200

1 Widened side of the combustion air pipe

Bending perforated bracket

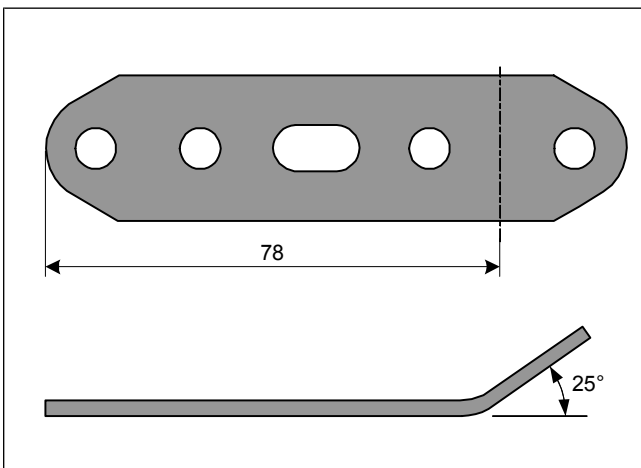


Fig. 31

Premounting combustion air intake silencer

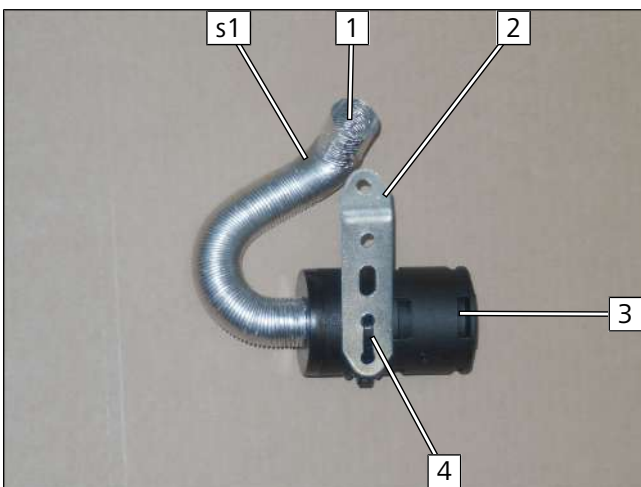


Fig. 32

1 Widened side of the combustion air pipe

2 Perforated bracket

3 Combustion air intake silencer

4 Cable tie



Mounting combustion air intake silencer



Fig. 33



Observe the installation instructions of the combustion air intake silencer.

- 1 HG stud bolt, perforated bracket, flanged nut

Installing combustion air pipe



Fig. 34

- 1 16-17mm dia. clamp



10 Exhaust

10.1 Option without exhaust silencer

Cutting exhaust pipe to length

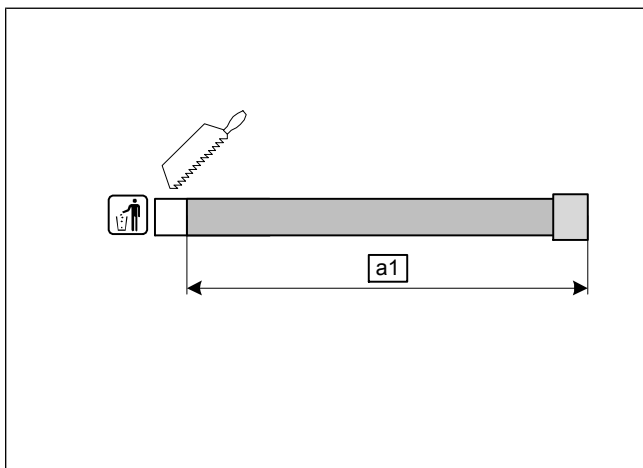


Fig. 35

a1 650mm

Mounting exhaust pipe **a1**

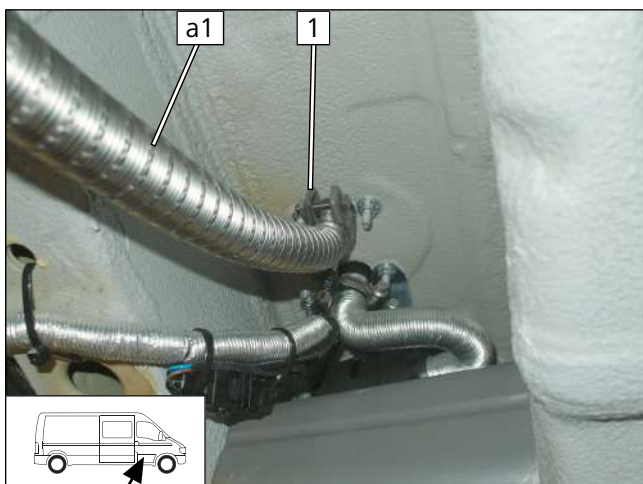


Fig. 36

1 Hose clamp

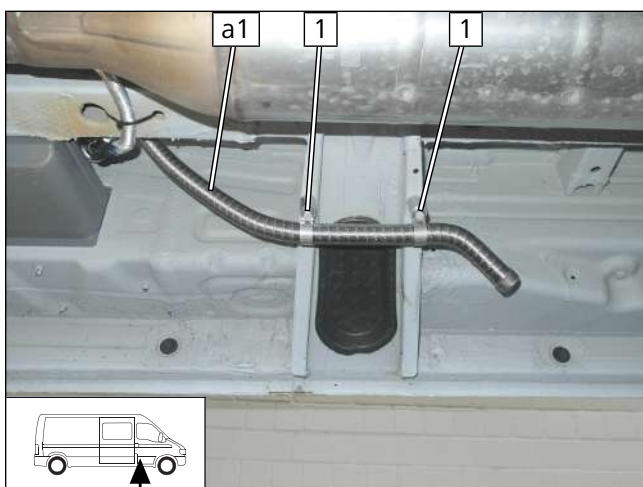


Fig. 37



Danger of damage to components

► Ensure sufficient distance between exhaust pipe **a1** and neighbouring components, correct if necessary.

1 M6x50 bolt, pipe clamp, 30mm shim, original vehicle hole, flanged nut



10.2 Option with exhaust silencer

Cutting exhaust pipe to length

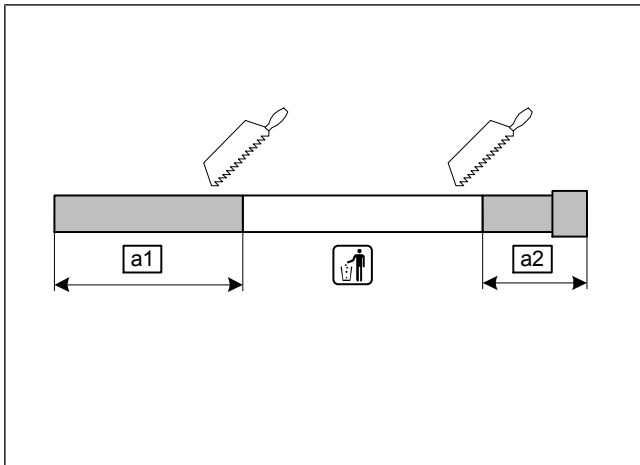


Fig. 38

a1 360mm

a2 170mm

Mounting exhaust pipe **a1**

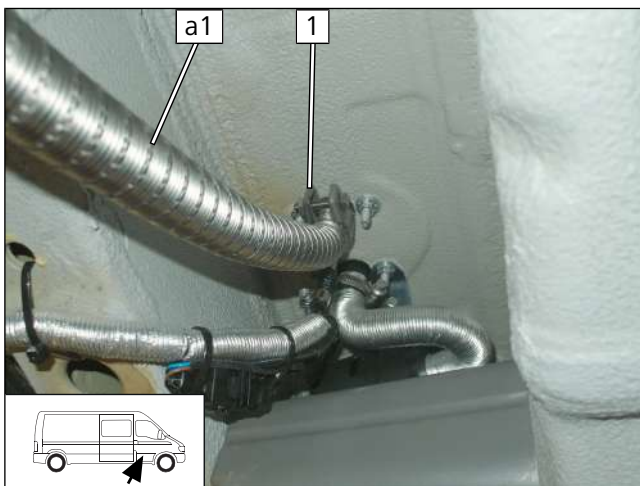


Fig. 39

1 Hose clamp

Mount exhaust silencer and exhaust pipe **a2**

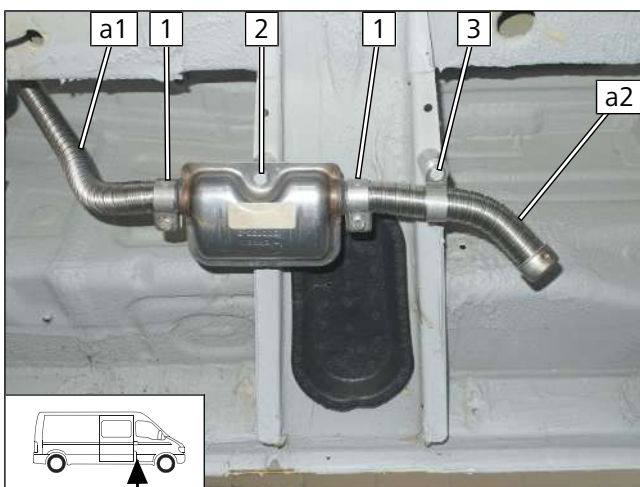


Fig. 40



Danger of damage to components

► Ensure sufficient distance from neighbouring components, correct if necessary.

1 Hose clamp

2 M6x50 bolt, exhaust silencer, 30mm spacer, original vehicle hole, flanged nut

3 M6x50 bolt, pipe clamp, 30mm spacer, original vehicle hole, flanged nut



11 Hot air

11.1 Hot air routing diagram

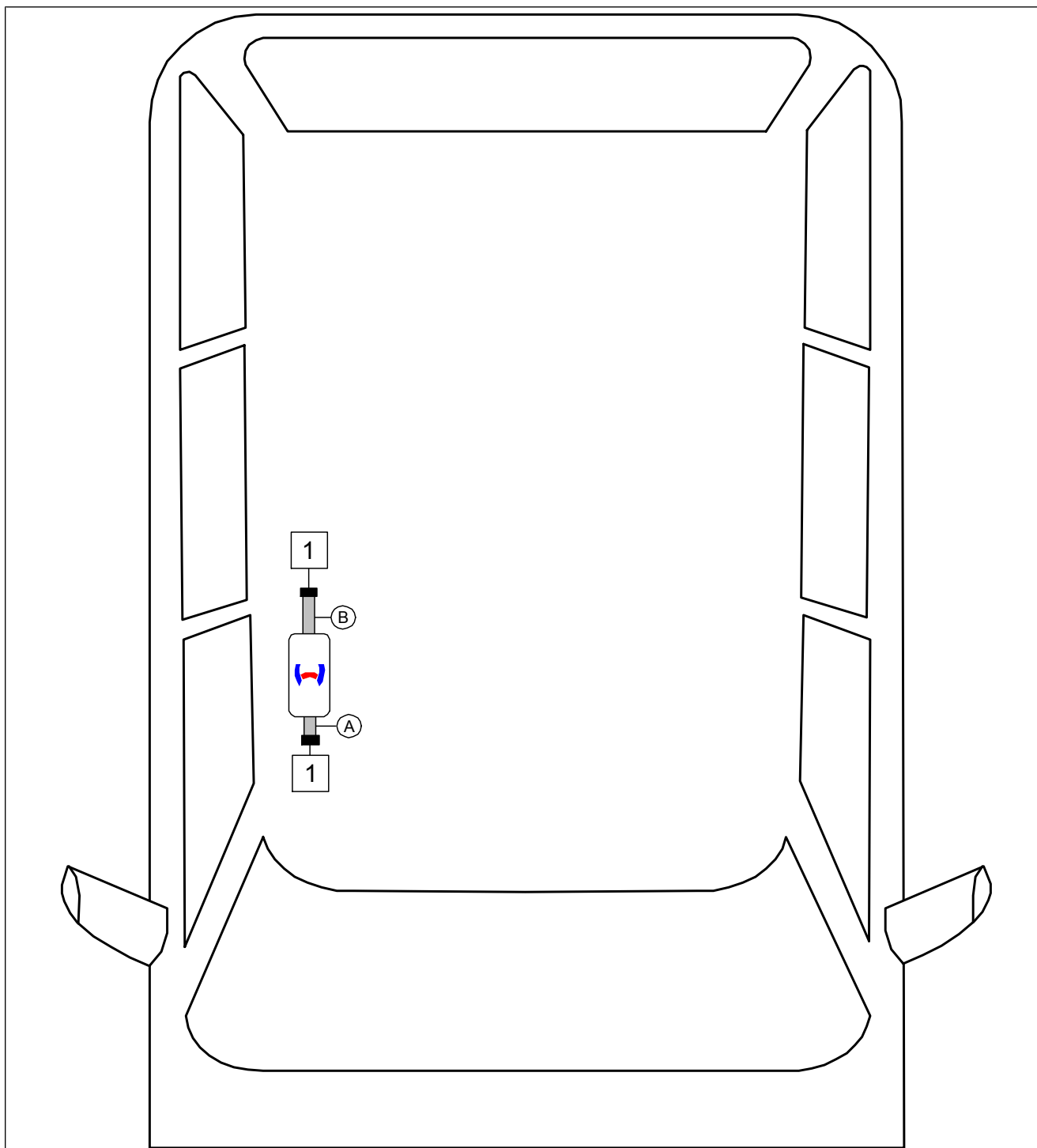


Fig. 41

1 60mm dia. air vent



11.2 Hot air routing

Mounting heating air intake's air vent

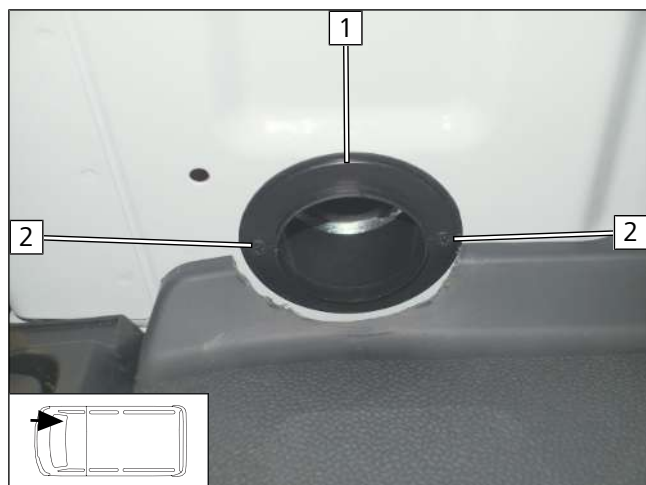


Fig. 42

► Twist air vent **1** through hole onto flexible tube **A** and fasten.

2 Countersunk-head self-tapping screw

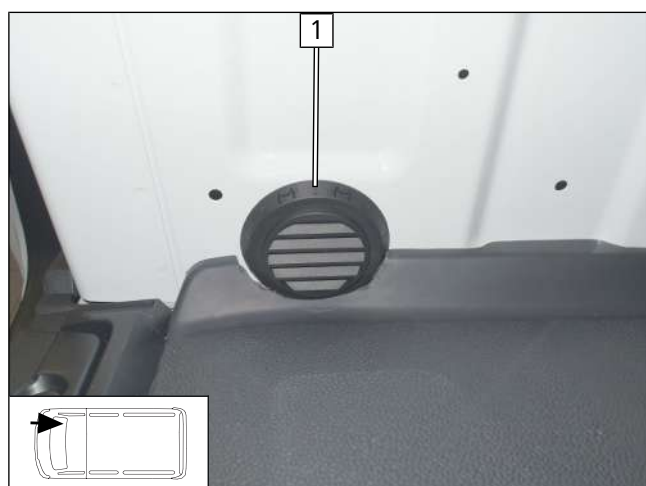


Fig. 43

► Mount grating **1**.

Mounting hot air vent

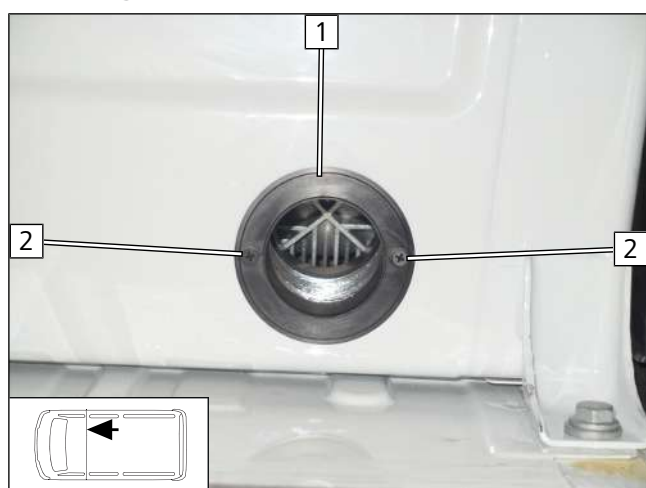
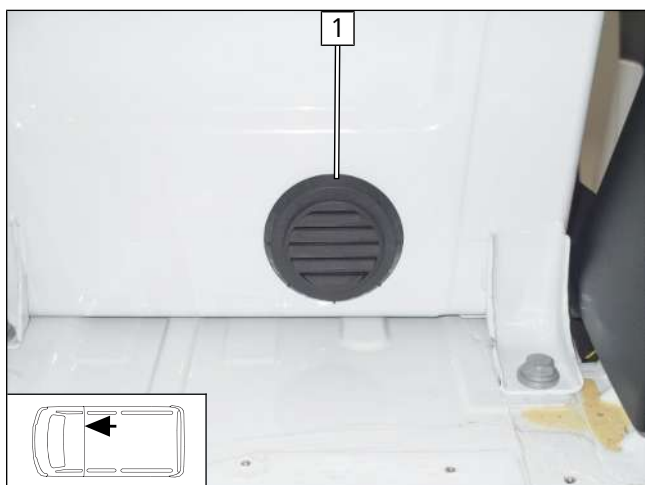


Fig. 44

► Twist air vent **1** through hole onto flexible tube **B** and fasten.

2 Countersunk-head self-tapping screw



► Mount grating **1**.

Fig. 45



12 Electrical system

Removing fuse holder

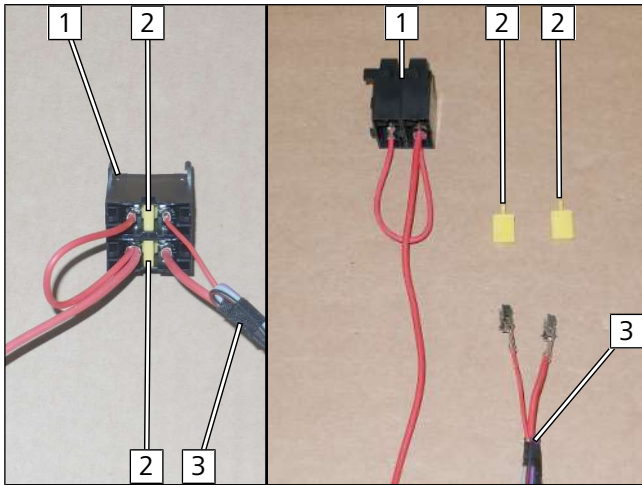


Fig. 46

► Detach HG wiring harness **3** from SH2 **1**.

2 Secondary lock

Connecting heater



Fig. 47

1 Heater wiring harness connector

Routing wiring harness

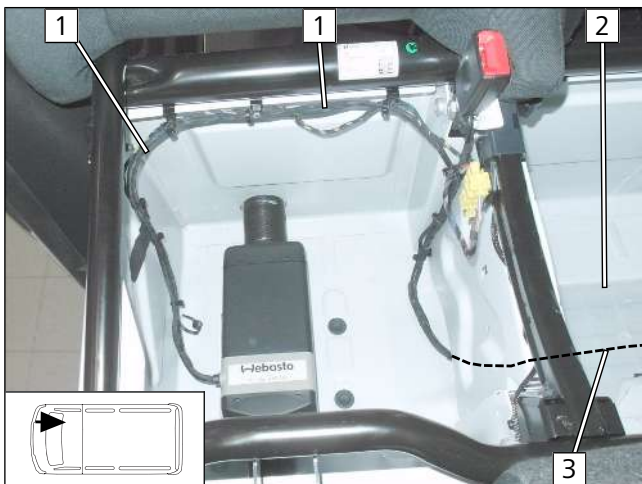


Fig. 48

► Route heater wiring harness **1** along original vehicle lines and fasten using cable ties.

2 Plastic shaft

3 Heater wiring harness in plastic shaft

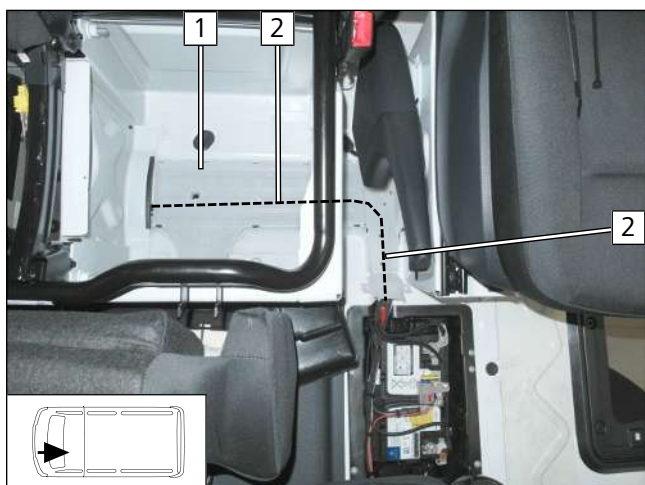


Fig. 49

- 1 Plastic shaft
- 2 Heater wiring harness in plastic shaft

Mounting SH2 socket

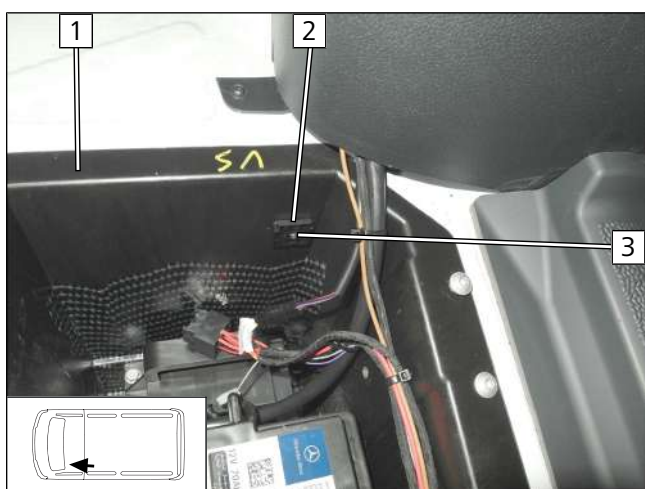


Fig. 50

- 1 Battery box
- 2 SH2 socket
- 3 Countersunk-head self-tapping screw

Completing SH2

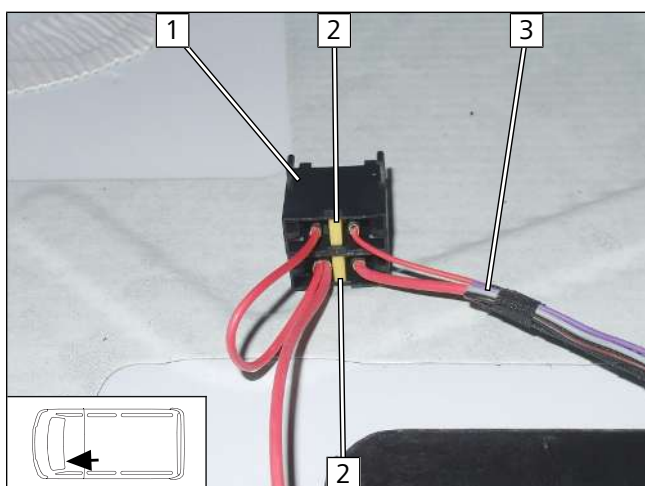


Fig. 51

- 1 SH2
- 2 Secondary lock
- 3 Heater wiring harness



Installing SH2

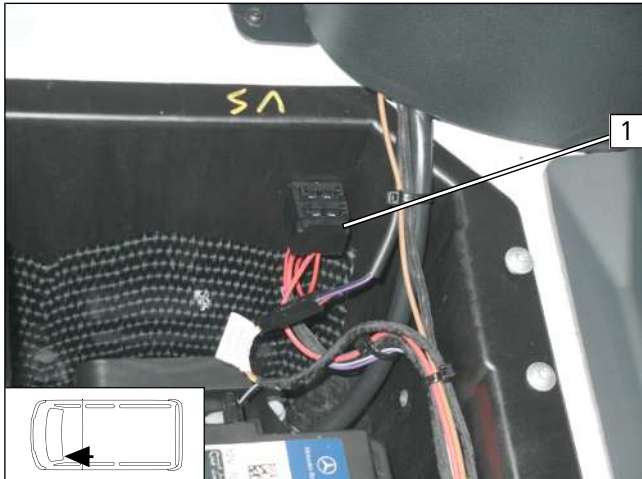


Fig. 52

1 SH2

Positive connection

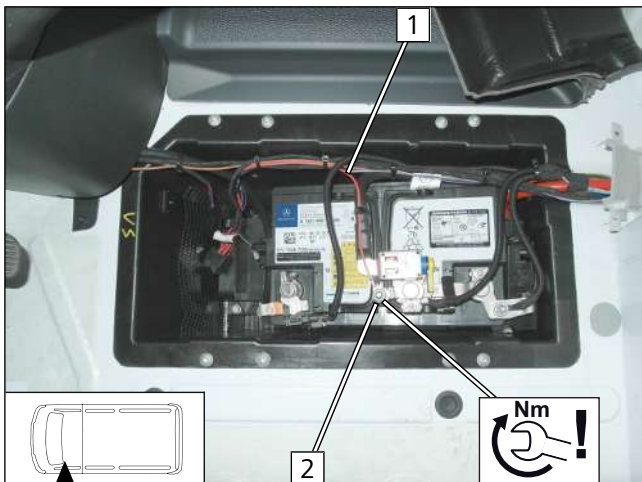


Fig. 53



DANGER

Fire hazard due to insufficient tightening torque

► Observe tightening torque

- 1 Positive wire
- 2 Positive support point

Earth connection

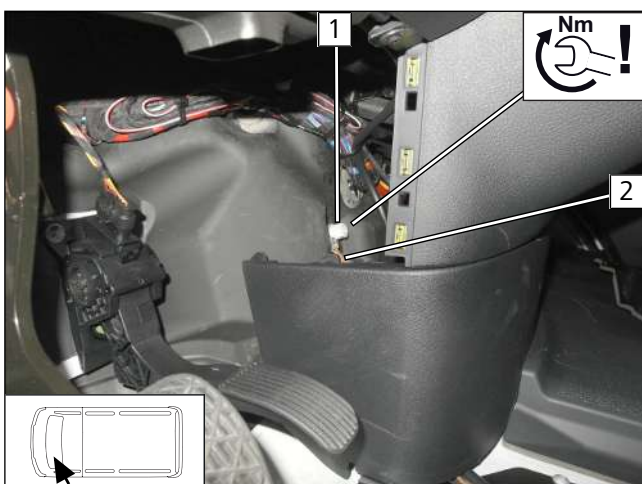


Fig. 54



DANGER

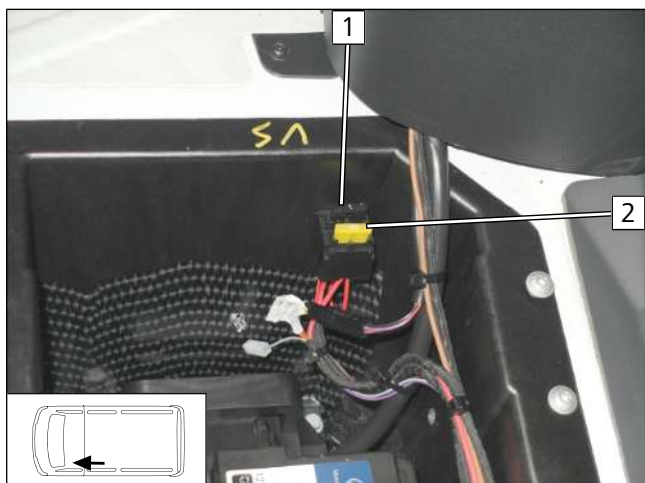
Fire hazard due to insufficient tightening torque

► Observe tightening torque

- 1 Earth support point
- 2 Earth wire



Inserting fuses



- 1 1A fuse F2
- 2 20A fuse F1

Fig. 55



13 Electrical system of control element

13.1 Rotary switch option

Mounting rotary switch

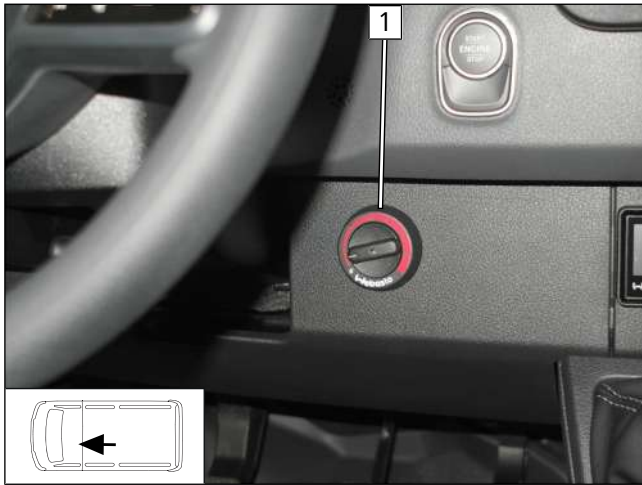


Fig. 56



Observe the rotary switch installation documentation.

- 1 Rotary switch

13.2 MultiControl HD option

Mounting MultiControl HD



Fig. 57



Observe the MultiControl HD installation documentation.

- 1 MultiControl HD installation frame



13.3 Telestart option

Mounting receiver

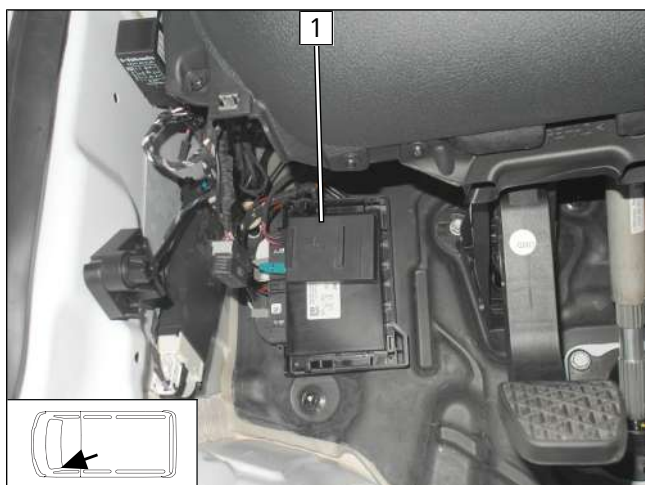


Fig. 58



Observe the Telestart installation documentation.

- Fasten receiver **1** using double-sided adhesive tape.

Mounting aerial



Fig. 59

- 1** Aerial

Mounting temperature sensor T100 HTM

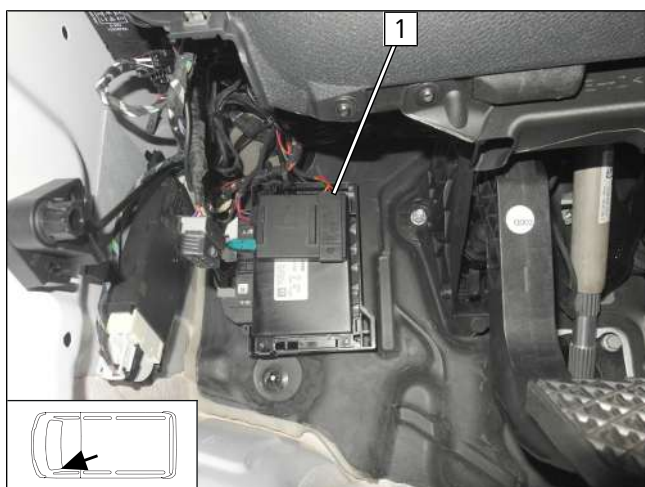


Fig. 60

- Fasten temperature sensor **1** using double-sided adhesive tape.



13.4 ThermoCall option

Mounting receiver

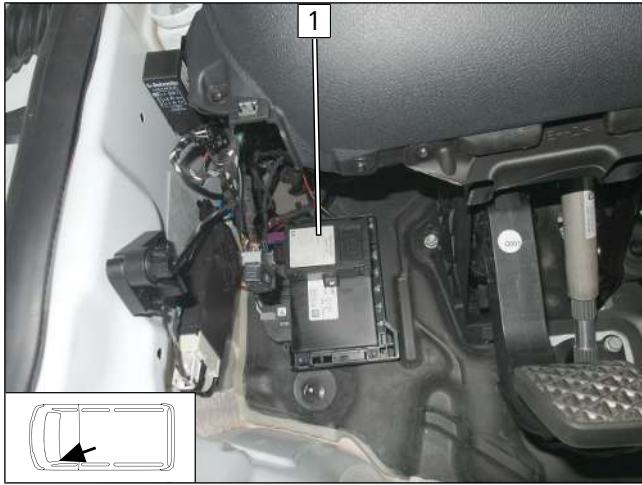


Fig. 61



Observe the ThermoCall installation documentation.

► Fasten receiver **1** using double-sided adhesive tape.

Mounting aerial



Fig. 62

1 Aerial



14 Final work



Further information can be found in the vehicle manufacturer's technical documentation.

- ▶ Mount removed parts in reverse order

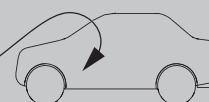
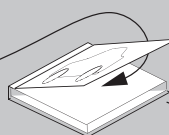
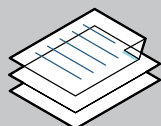


- ▶ Check all hoses, clamps and all electrical connections for firm seating
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K)
- ▶ Connect the battery



Further information can be found in the general installation and operating instructions of the Webasto components.

- ▶ Program MultiControl HD, teach Telestart transmitter
- ▶ Initial start-up and function check
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck



These are the original instructions. The German language is binding.
You can request your language if it is missing. The telephone number of each country can be found in the Webasto service centre leaflet or the website of the respective Webasto representative of your country.

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15 Operating instructions



Information regarding the heating time:

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.

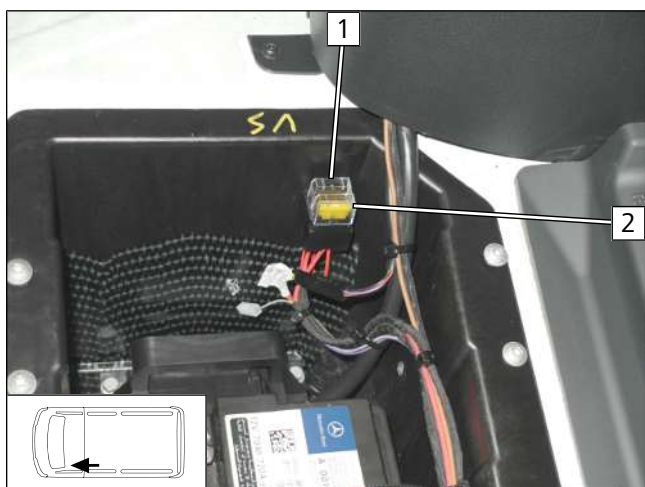


Vehicles with passenger compartment monitoring:

further information can be found in the vehicle operating instructions.

- ▶ Deactivate passenger compartment monitoring for the heating operation

15.1 Installation location of fuses



1 Control element fuse F3: 1A

2 Heater fuse F1: 20A

Fig. 63

