Water heater

Thermo Top Evo parking heater

E1
00 0258

Installation documentation
Peugeot Expert / Expert-Traveller
Citroen Jumpy / Space Tourer
Toyota Proace / Proace Verso
Opel Vivaro / Zafira Life

Validity

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Peugeot	Expert	K0	From model year 2016	e2 * 2007 / 46 * 0533 * ...
Peugeot	Expert Traveller	K0	From model year 2016	e2 * 2007 / 46 * 0532 * ...
Citroen	Jumpy	K0	From model year 2016	e2 * 2007 / 46 * 0531 * ...
Citroen	Space Tourer	K0	From model year 2016	e2 * 2007 / 46 * 0530 * ...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm^3	Engine code
2.0 D	Diesel	Euro 6	6-speed SG	90	1997	AH01 / DW10FC
2.0 D	Diesel	Euro 6	6-speed SG	110	1997	AH01 / DW10FC
2.0 D	Diesel	Euro 6d-temp	6-speed SG	110	1997	AH01 / DW10FD
2.0 D	Diesel	Euro 6	6-speed AG	130	1997	AH01 / DW10FC
2.0 D	Diesel	Euro 6d-temp	8-speed AG	130	1997	AH01 / DW10FC

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Toyota	Proace	V	From model year 2016	e2 * 2007 / 46 * 0538 * ...
Toyota	Proace	V	From model year 2016	e2 * 2007 / 46 * 0537 * ...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm^3	Engine code
2.0 D	Diesel	Euro 6	6-speed SG	90	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	6-speed SG	90	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	6-speed SG	106	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	8-speed AG	106	1997	4WZ / DW10
2.0 D	Diesel	Euro 6	6-speed SG	110	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-temp	6-speed SG	110	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	6-speed SG	110	1997	4WZ / DW10
2.0 D	Diesel	Euro 6	6-speed AG	130	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-temp	8-speed AG	130	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	8-speed AG	130	1997	4WZ / DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	8-speed AG	130	1997	4WZ / DW10

Peugeot / Citroen / Toyota / Opel

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Opel	Vivaro / Zafira Life	V	From model year 2020	e2 * 2007 / 46 * 0532 * ...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm^3	Engine code
2.0 D	Diesel	Euro 6d-temp-EVAP	6-speed SG	90	1997	DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	8-speed AG	90	1997	DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	6-speed SG	106	1997	DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	8-speed AG	106	1997	DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	6-speed SG	110	1997	DW10
2.0 D	Diesel	Euro 6d-temp-EVAP	8-speed AG	130	1997	DW10
2.0 D	Diesel	Euro 6d-ISC	8-speed AG	130	1997	DW10
2.0 D	Diesel	Euro 6d-ISC-FCM	8-speed AG	130	1997	DW10

SG = manual transmission
AG = Automatic transmission

Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
2 zone automatic air-conditioning
3 zone automatic air-conditioning
Halogen main headlights, front fog lights and daytime running lights
LED daytime running lights
Automatic Start-Stop system and start button
Second heat exchanger
Dynamic cornering lights
Passenger compartment monitoring (must be deactivated manually)

Not verified: Xenon main headlights

Total installation time: approx. 8.5 hours

Peugeot / Citroen / Toyota / Opel

Table of contents

Necessary components

Description	Order No.:
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit for Peugeot / Citroen / Toyota / Opel 2016 2.0 Diesel	1325306B
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list
In case of installation of MultiControl CAR - MultiControl installation frame	9030077_

Installation instructions

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

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.

Peugeot / Citroen / Toyota / Opel

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 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 should be fitted with rub protection. Spray unfinished body areas, e.g. drilled 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.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

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. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. 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. 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. 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 may be used.

2.2.4. The label referred to in paragraph 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. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. 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. 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. 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. Exhaust system

2.4.1. 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. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. 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. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. 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. 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.

Information on validity

This installation documentation applies to Peugeot Expert_Expert-Traveller / Citroen Jumpy_Space Tourer / Toyota Proace_Proace Verso und Opel Vivaro_Zafira Life Diesel vehicles - for validity, see page 1 - from model year 2016 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.

Technical information

Special tools
- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper, 0.2 - 6mm²
- Crimping pliers for male connector, 0.14 - 6mm²
- Crimping pliers for cable lug, 0.5 - 10mm²
- Crimping pliers for connector, 0.25 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 water connection piece retaining plate bolt = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

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.

Mechanics **Electrics** **Coolant circuit** **Combustion air** **Fuel** **Exhaust gas** **Software**

Special features are highlighted using the following symbols:

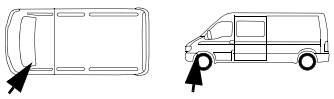
Specific risk of damage to components.

Specific risk due to electrical voltage.

Specific risk of fire or explosion.

Reference to a special technical feature.

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



Reference to the manufacturer's vehicle-specific documents.

Reference to specific installation instructions of Webasto components (demonstrated with the example of the FuelFix).

Reference to general installation instructions of Webasto components.

Tightening torque according to the manufacturer's vehicle-specific documents.

Preliminary work

Vehicle

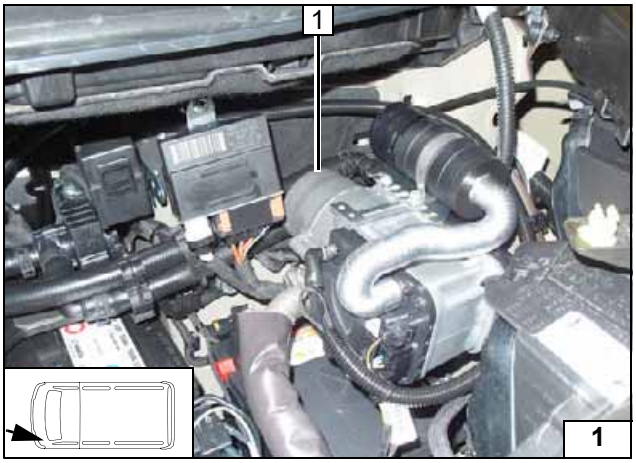
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the air filter box.
- Remove the engine control unit.
- Remove the underbody trim from the bumper.
- Drain off the coolant, it will be reused.
- Remove the lateral instrument panel trim on the left side.
- Remove the lower instrument panel trim (central electrical box cover in passenger compartment) on the driver's side.
- Remove the switch console (driving mode and dashboard illumination).
- Remove the shift lever trim.
- Remove the upper and lower shift lever trim.
- Remove the lower storage compartment on the front passenger's side.
- Remove the glove box (only when this is required during the installation).

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

- Detach the tank according to the manufacturer's instructions and lower it slightly (do not remove)

Heater

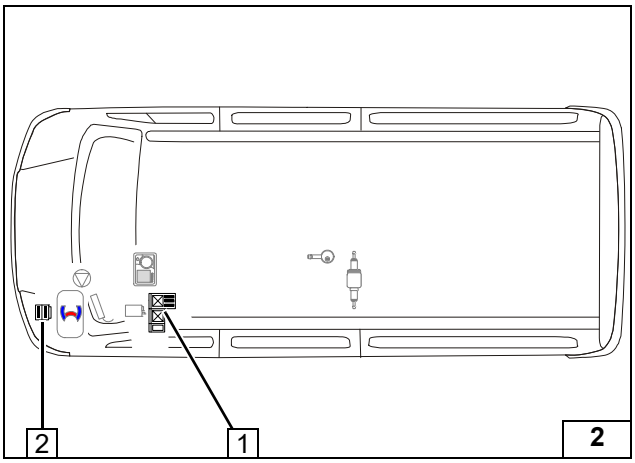
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater installation location

1 Heater

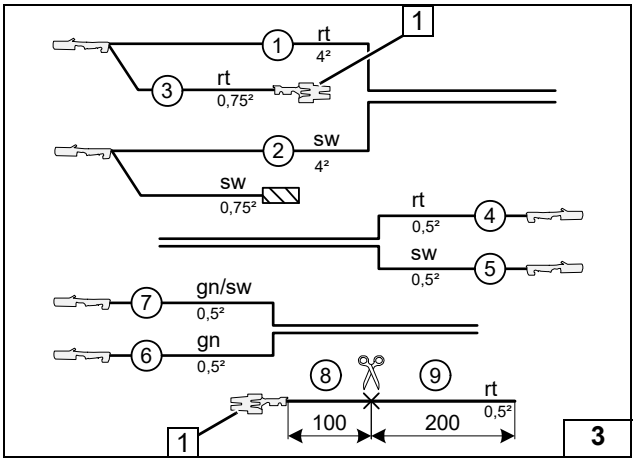
Installation location



Preparing electrical system

1 Passenger compartment relay and fuse holder, PWM GW, relay K2
2 Engine compartment fuse holder

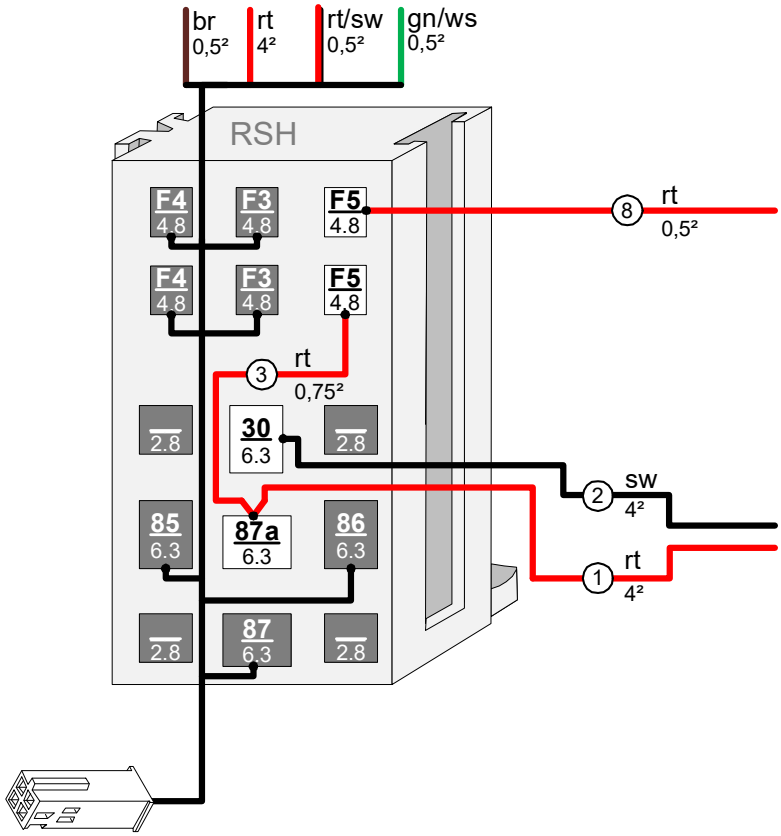
Installation overview



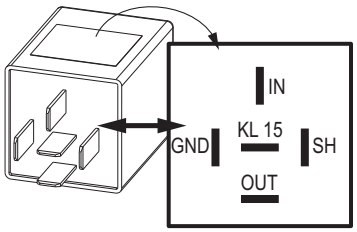
Wire sections retain their numbering in the entire document.

1 Flat spring contact [2x]
① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness
④ Red (rt) wire from wiring harness of PWM control
⑤ Black (sw) wire from wiring harness of PWM control
⑥ Green/black (gn/sw) wire of isolating relay wiring harness
⑦ Green (gn) wire of isolating relay wiring harness

Preparing / assigning wires



Connecting wires to passenger compartment relay and fuse holder socket



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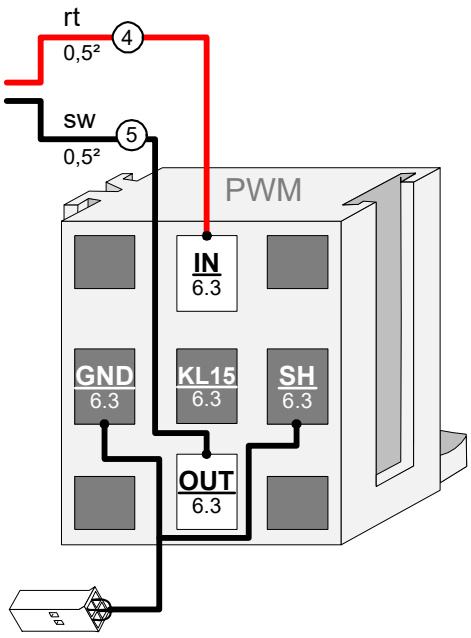
Check the PWM Gateway settings when starting up the heater and adjust if necessary.

Settings:

Duty cycle: 65 %
Frequency: 500 Hz
Voltage: not relevant
Function: Low side

View of PWM GW



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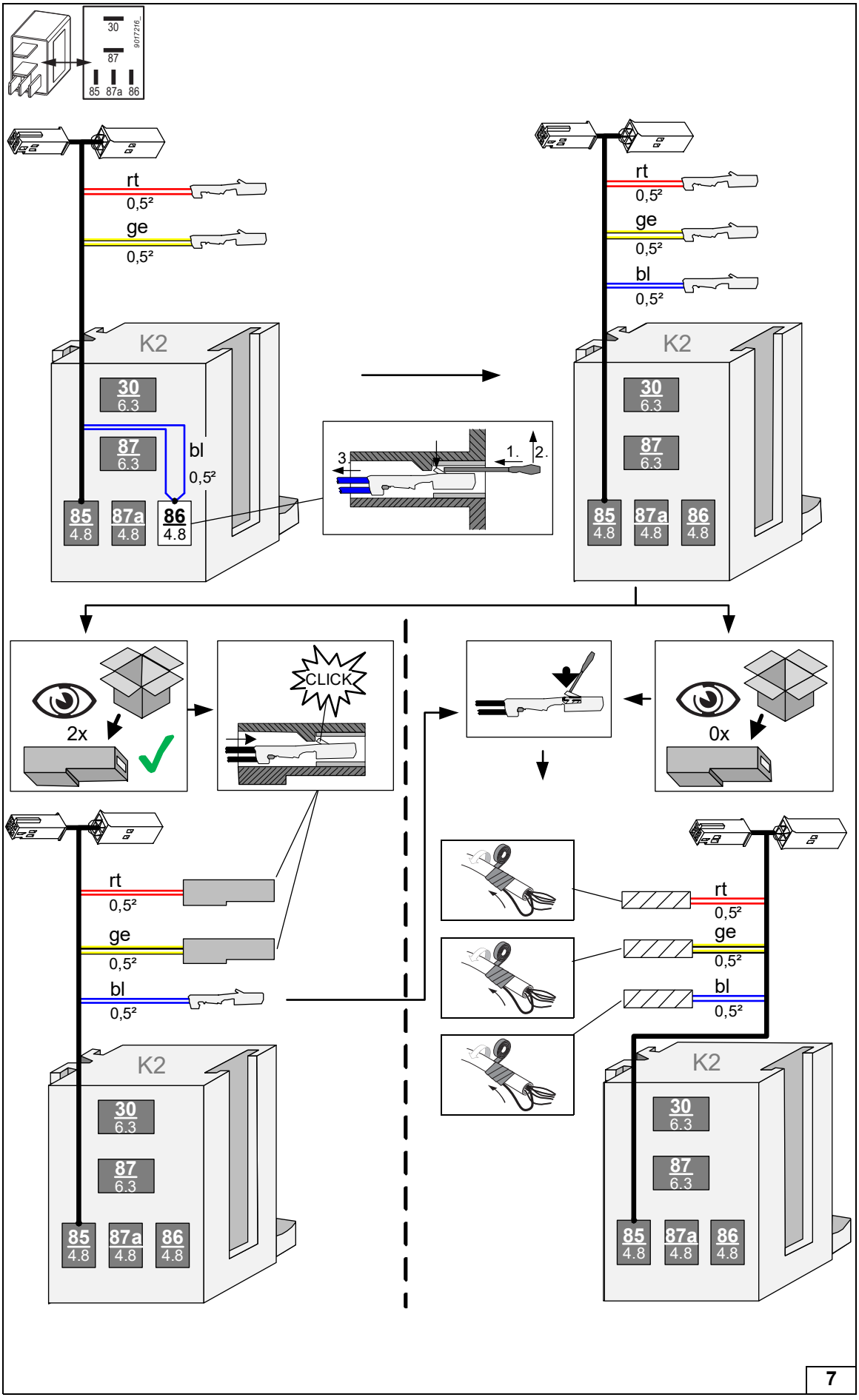
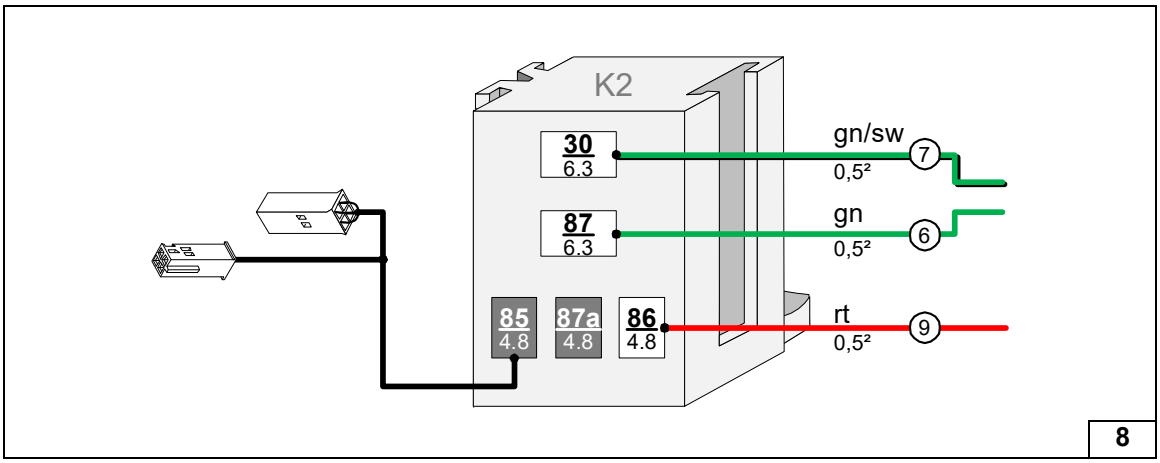
Connecting wires to socket of PWM GW



Disconnecting blue (bl) wire from relay K2 socket



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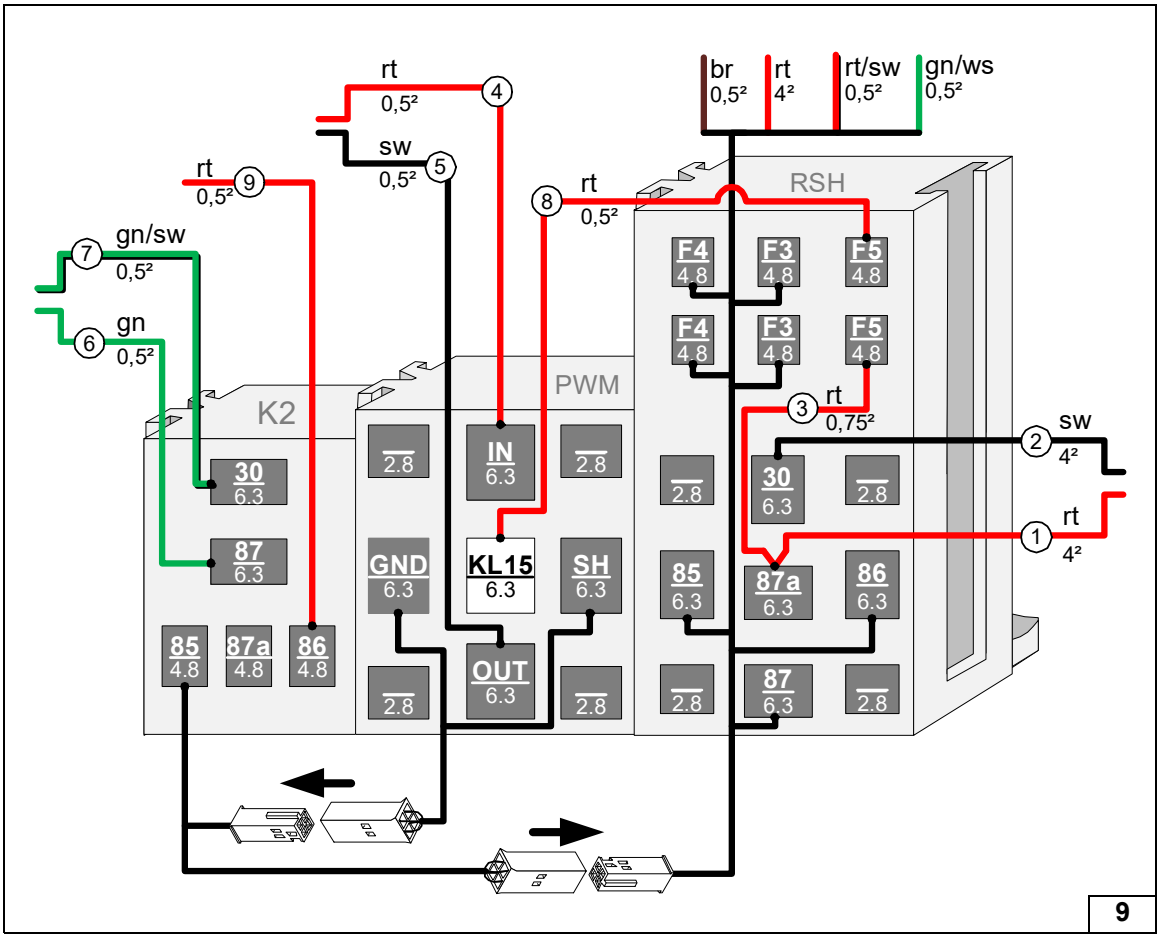
Connecting wires of relay K2 socket



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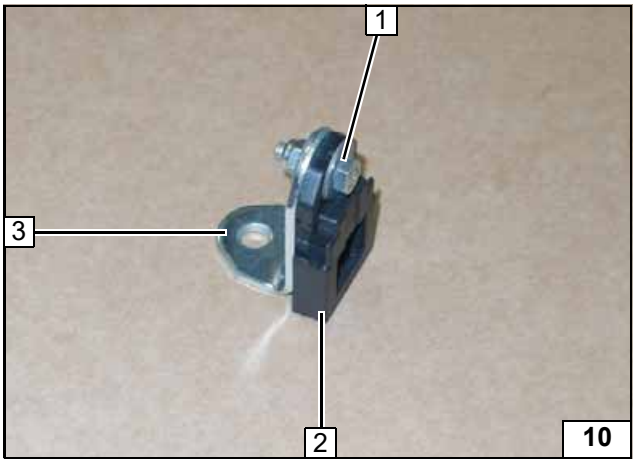
Interlocking relay K2, PWM GW and passenger compartment relay and fuse holder sockets/ connecting male and female connectors / connecting wire



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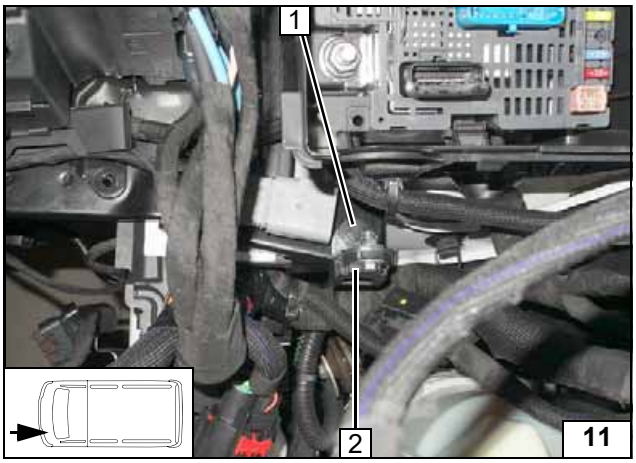
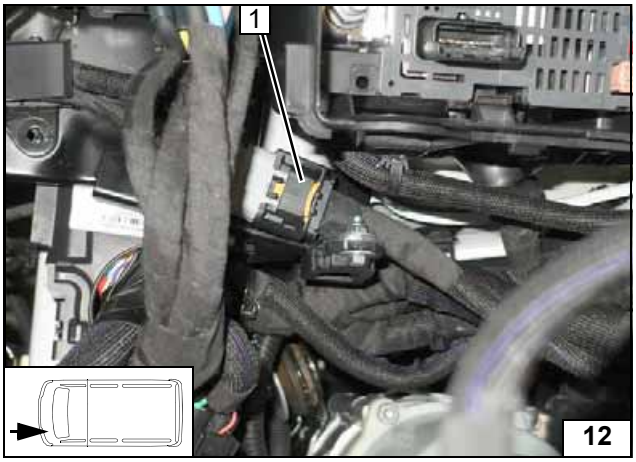
1 M5x16 bolt, large diameter washer [2x], nut
2 Retaining plate of engine compartment fuse holder
3 Angle bracket

Preparing engine compartment fuse holder



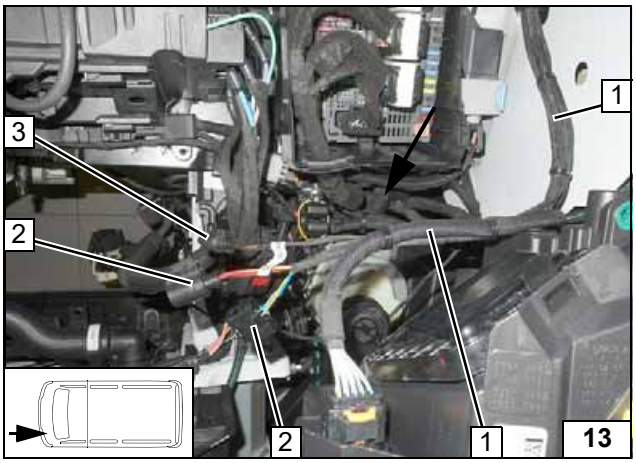
1 Original vehicle bolt
2 Retaining plate of engine compartment fuse holder

Mounting retaining plate of engine compartment fuse holder



1 Original vehicle connector

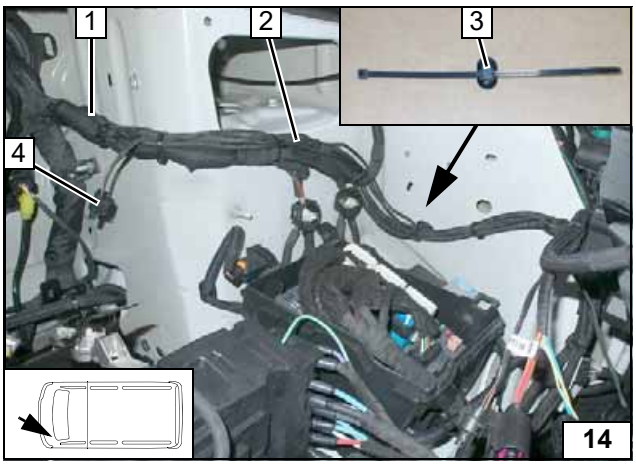
Installing original vehicle connector



Route heater, control element and coolant pump wiring harnesses along the original vehicle wires **1**.

2 Heater connector [2x]
3 Coolant pump connector

Routing lines



Replace cable tie on original vehicle cable tie holder **3**.

1 Wiring harnesses of heater and control element
2 Original vehicle wiring harness
4 Coolant pump connector

Routing lines

Electrical system

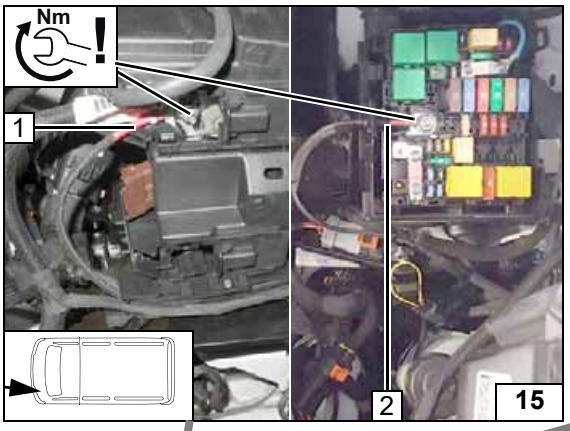
Positive wire

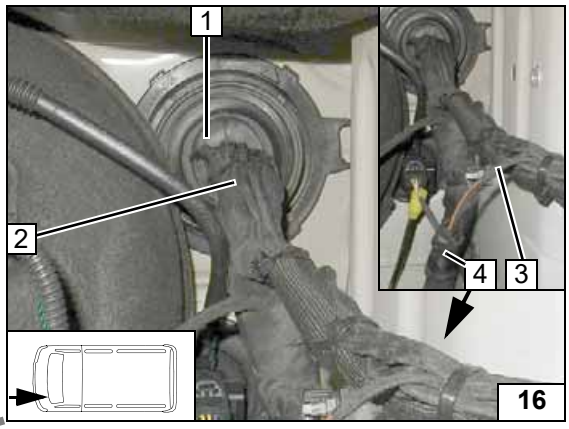
Variant 1:
Positive wire on positive distributor

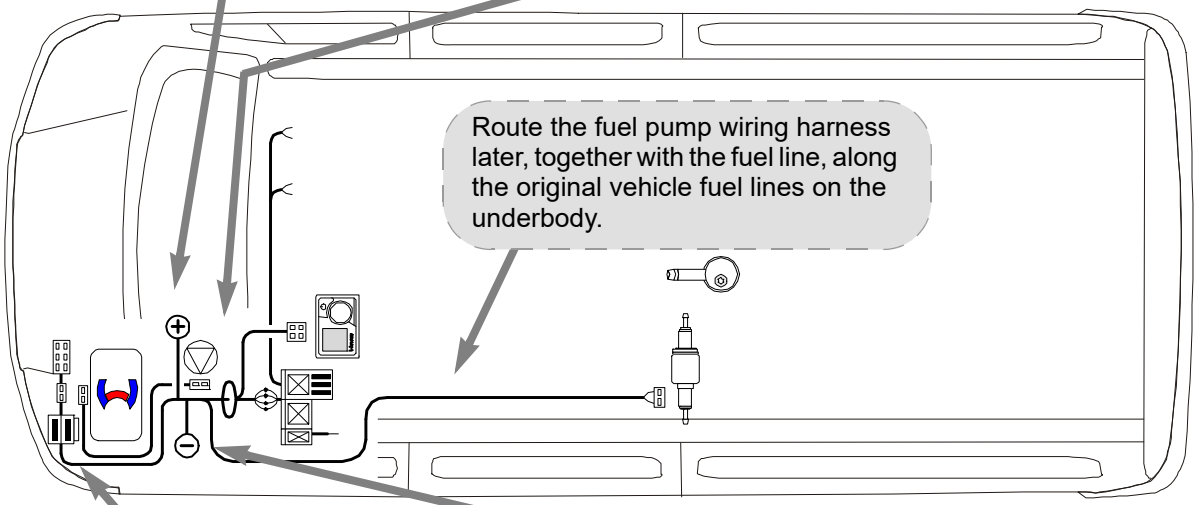
Variant 2:
Positive wire on positive connection of fuse box

Wiring harness routing/ pass through

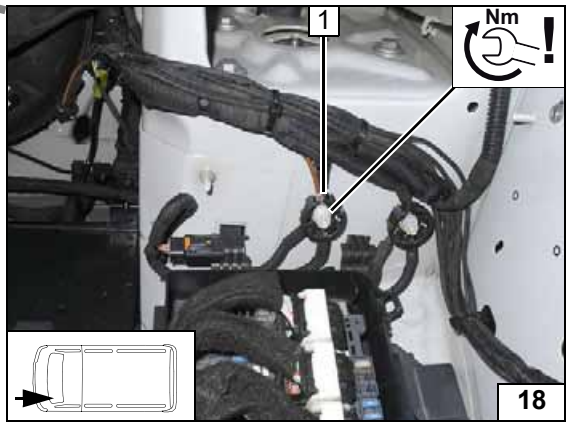
1 Protective rubber plug, make an extra opening carefully. Seal after the installation using suitable means.
2 Wiring harnesses of heater, control element
3 Coolant pump wiring harness
4 Coolant pump wiring harness connector







Wiring harness routing

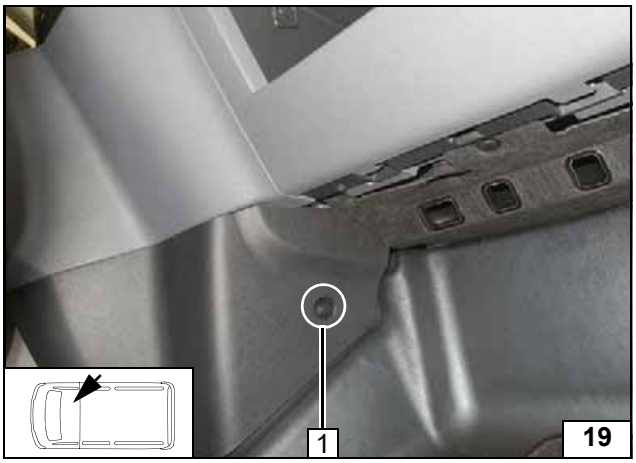


Engine compartment fuse holder

1 Fuses F1-2

Earth wire

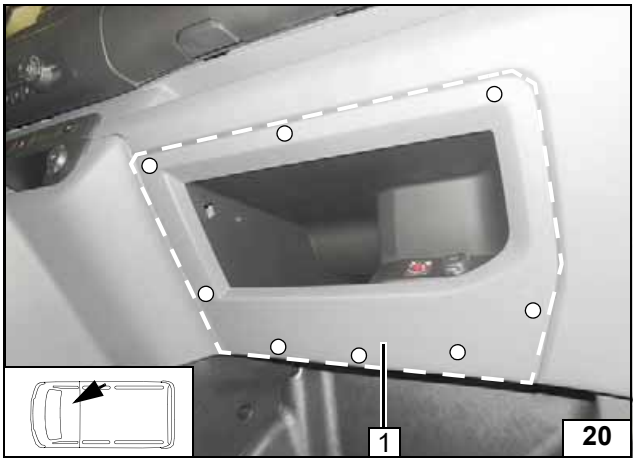
1 Earth wire on original vehicle earth support point



Instrument panel trim installation instructions

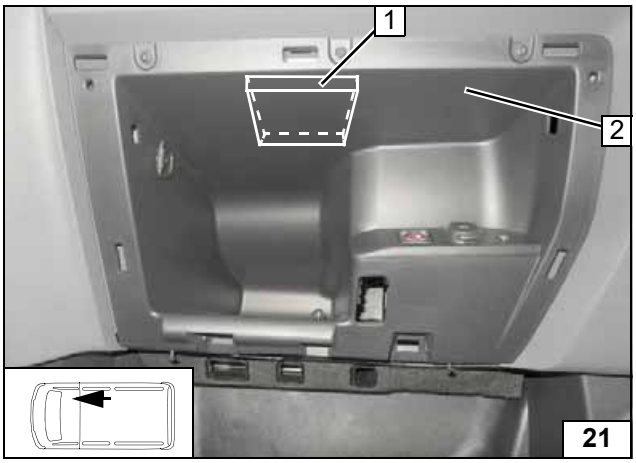
1 Bolt

Removing bolt



1 Storage compartment trim (if present)
○ Fastening point (clipped on) [8x]

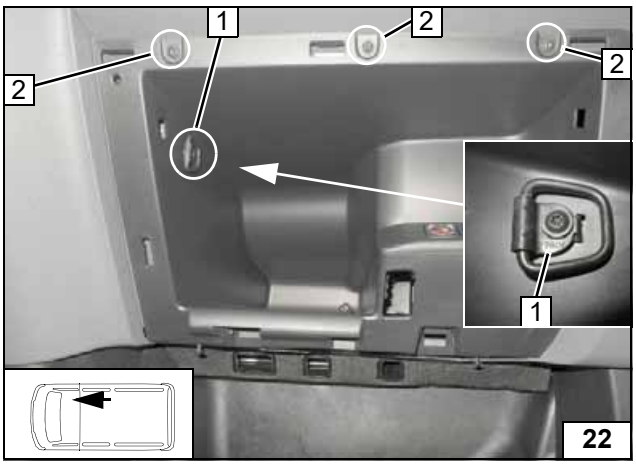
Removing lower storage compartment trim



Variant 1:
Without control unit **1** behind storage compartment **2**

Variant 2:
With control unit **1** behind storage compartment **2**

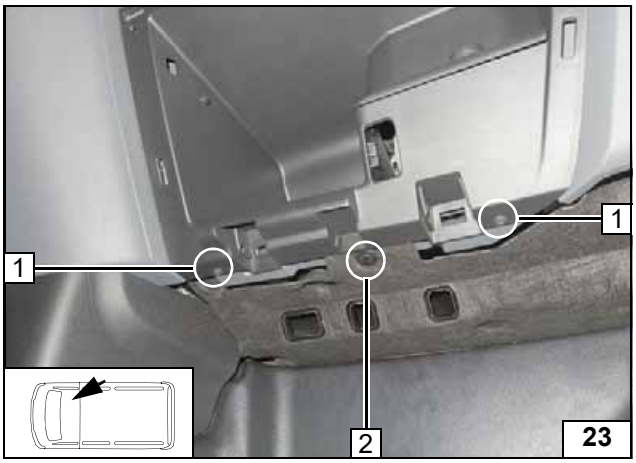
Determining variant



All versions

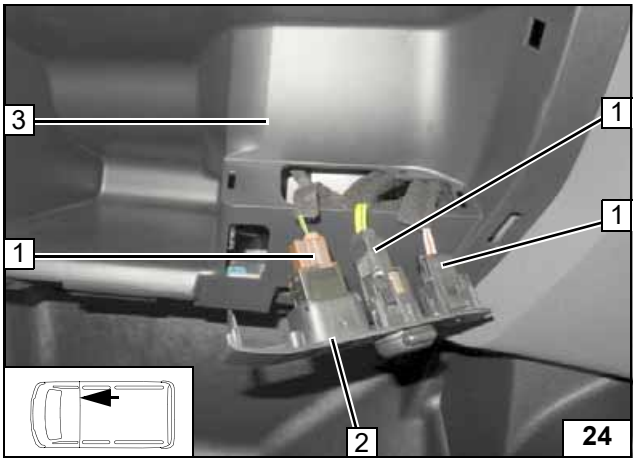
1 Remove bolt (optionally with bracket)
2 Remove bolts [3x]

Removing lower storage compartment



1 Remove bolts [2x]
2 Remove clip

Removing lower storage compartment



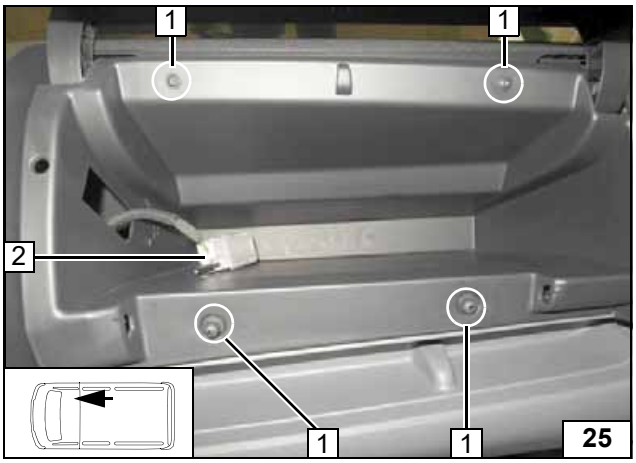
Variant 1

Unclip frame with socket outlet **2**.

1 Pull off connector [3x]

Remove lower storage compartment **3**.

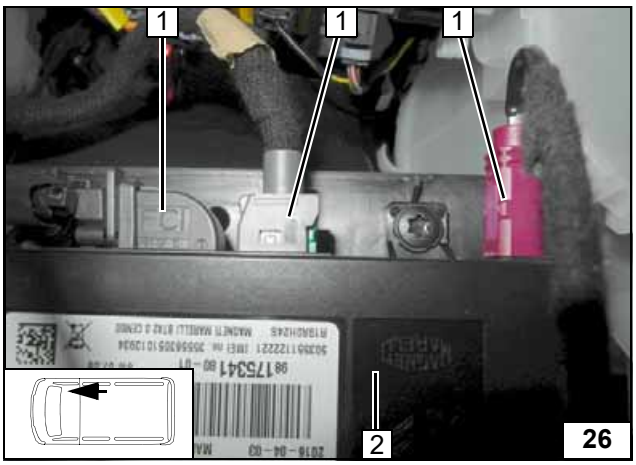
Removing frame with socket outlet



Variant 2

1 Remove bolts [4x]
2 Unclip glove box light, disconnect connector

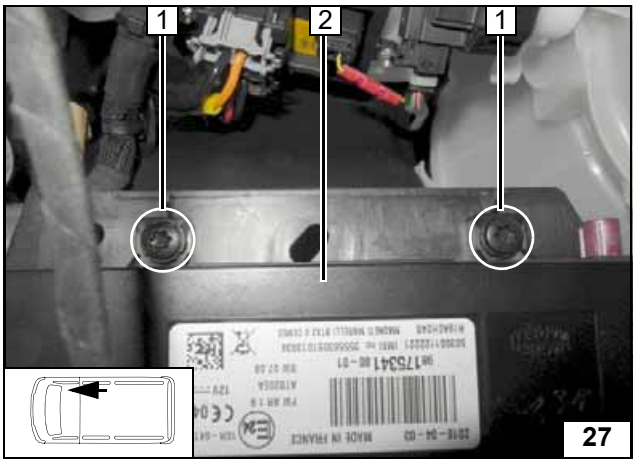
Removing glove box



Viewed from above, through the opening of the removed glove box.

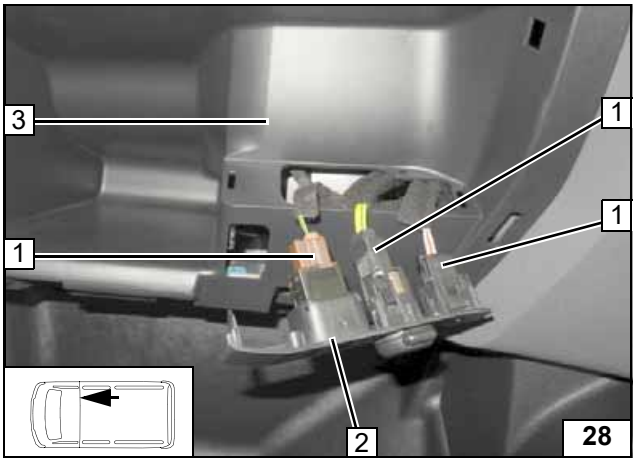
1 Connector [3x]
2 Control unit

Disconnecting connector from control unit



1 Remove bolts [2x]
2 Pull out control unit in driving direction

Removing control unit

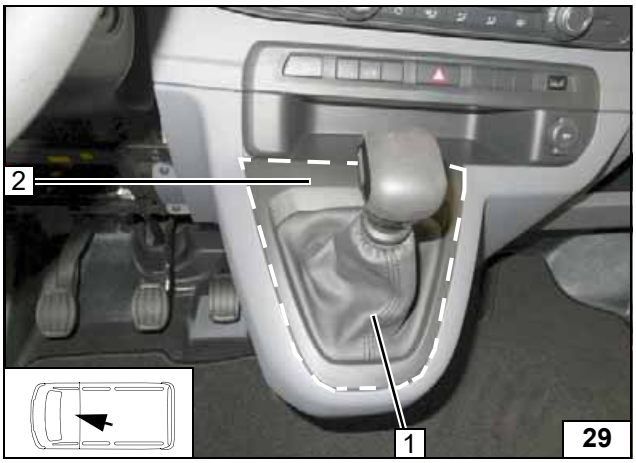


Unclip frame with socket outlet **2**.

1 Pull off connector [3x]

Remove lower storage compartment **3**.

Removing frame with socket outlet



All vehicles

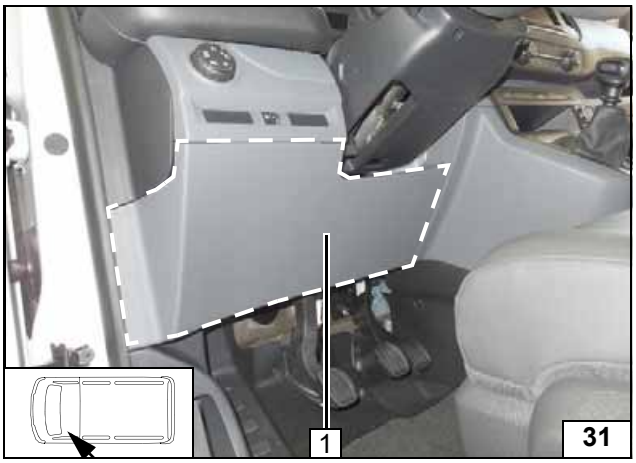
Unclip shift lever boot **1** from frame.

2 Frame, clipped on

Dismantling frame

1 Remove bolts [2x]

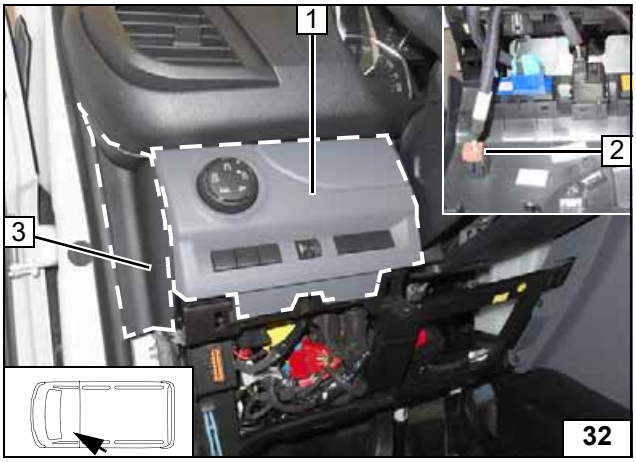
Dismantling frame



1 Trim, clipped on

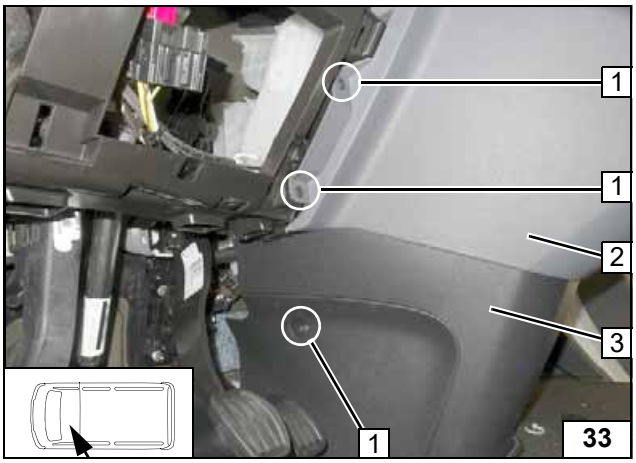
Removing trim

Pay attention to the connector in switch of Head-Up Display **2**, it can lead to confusion. Label the connector before disassembly!



1 Frame with switch, clipped on
2 Connector of Head-Up Display
3 Trim, clipped on

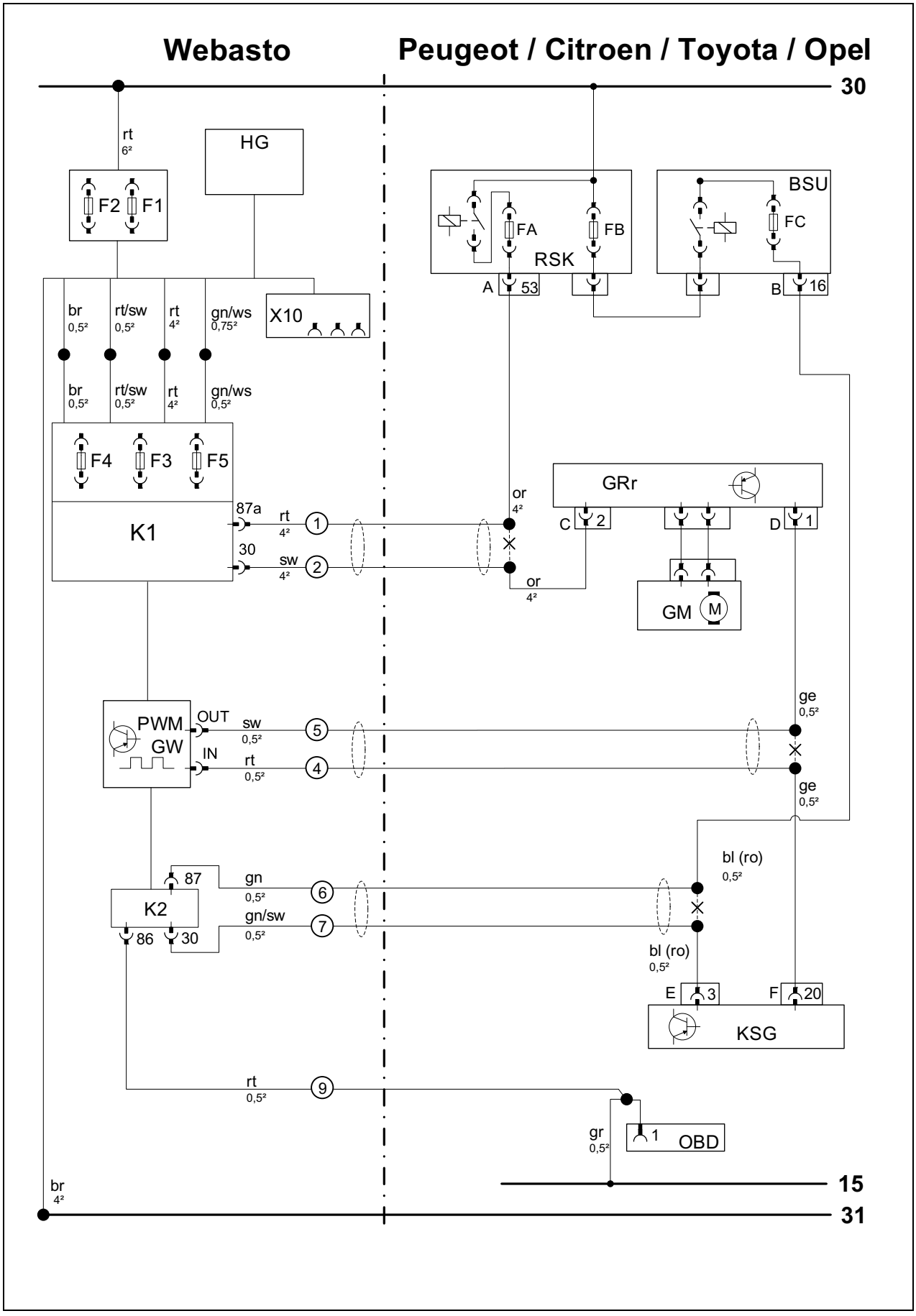
Removing shift gate and trim



1 Remove bolt [3x]
2 Upper centre console trim
3 Lower centre console trim

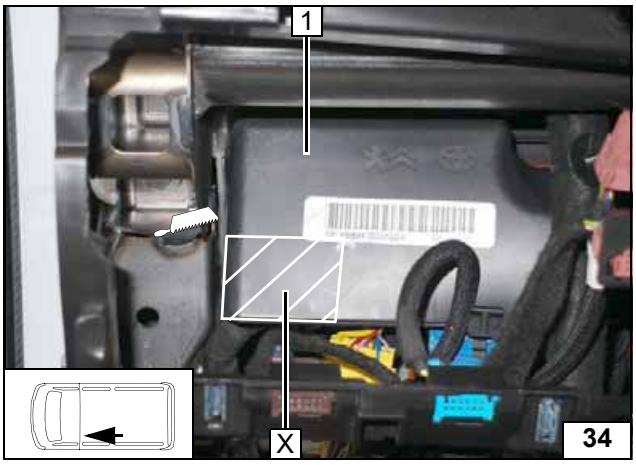
Removing lower and upper centre console trim

System wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	RSK	Relay and fuse box	rt	red
F1	20A fuse	FA	40A fuse	sw	black
F2	30A fuse	FB	10A fuse	ge	yellow
X10	4-pin female connector of control element	A	54-pin connector of RSK	gn	green
		BSU	Body control unit	or	orange
F3	1A fuse	FC	5A fuse	ws	white
F4	25A fuse	B	16-pin connector of KSG	br	brown
F5	1A fuse	GRr	Fan controller	ro	pink
K1	Fan relay	C	2-pin connector of GRr	bl	blue
PWM GW	Pulse width modulator	D	2-pin connector of GRr	gr	grey
		GM	Fan motor		
K2	Isolating relay	KSG	A/C control unit		
PWM GW settings:		E	6-pin connector of KSG		
Duty cycle:	65%	F	40-pin connector of KSG		
Frequency:	500Hz	OBD	OBD socket outlet		
Voltage:	not relevant			**X**	Cutting point
Function:	Low side			Wiring colours may vary.	

Legend

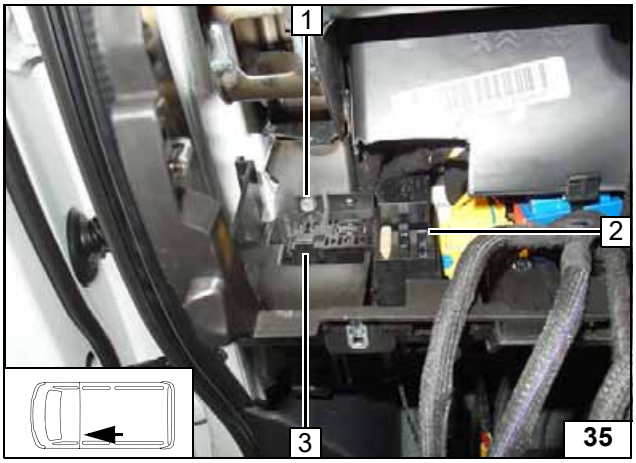


Fan controller

Cut out shaded area of trim **1** (if present).

X =

Adapting trim (depending on equipment)

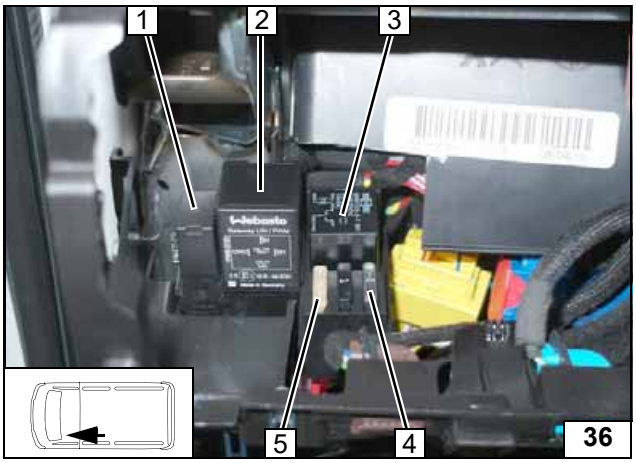


Produce all following electrical connections as shown in the system wiring diagram.

1 M5x16 bolt, large diameter washer [2x], original vehicle hole, nut
2 Passenger compartment relay and fuse holder
3 Relay K2 socket

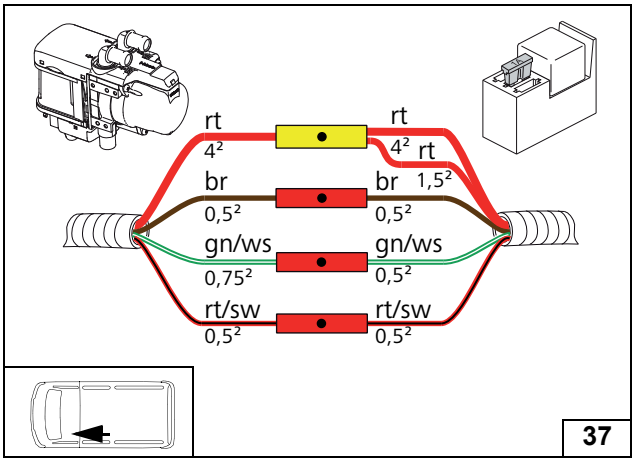
Installing passenger compartment relay and fuse holder

Mounting relay K1 / K2 and PWM GW

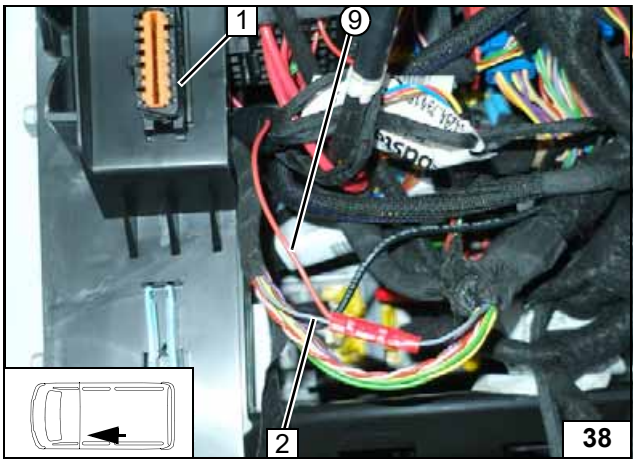


1 Relay K2
2 PWM GW
3 Relay K1
4 1A fuse F5
5 25A fuse F4

Connecting same colour wires of wiring harnesses

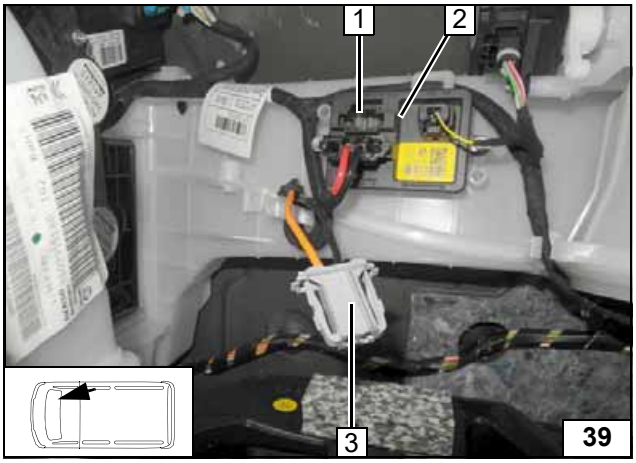


Connecting OBD socket outlet

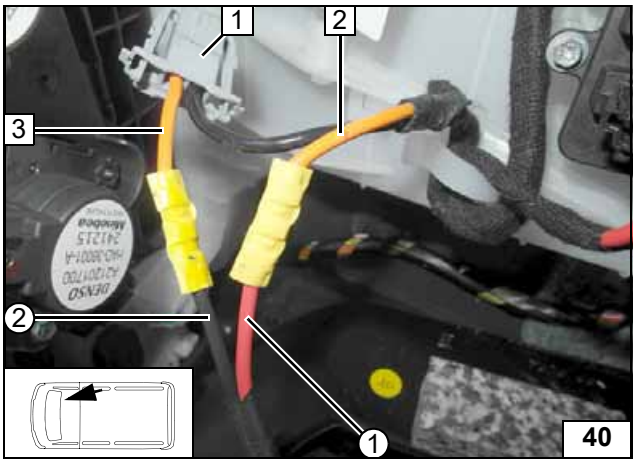


1 OBD socket outlet
2 Grey (gr) wire of OBD/ pin 1
⑨ Red (rt) wire of K2/86

Disconnecting connector

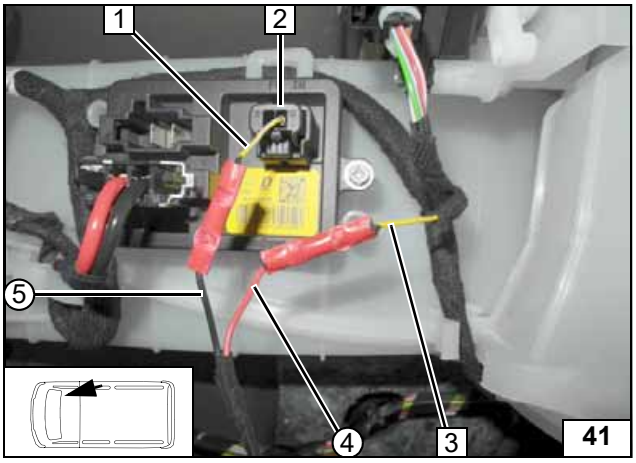


1 Socket of 2-pin connector C of GRr
2 Fan controller
3 2-pin connector C of GRr



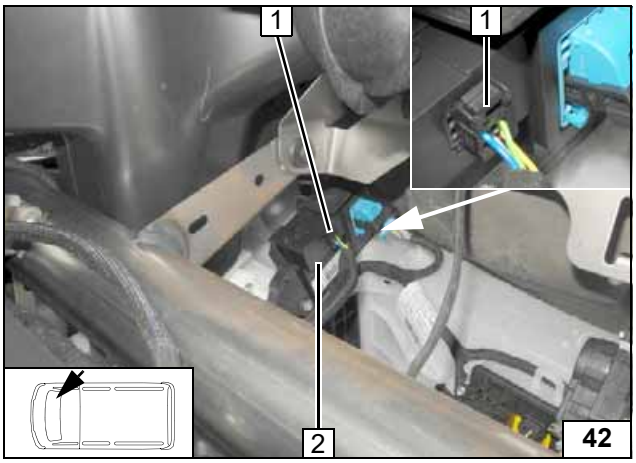
1 2-pin connector C of GRr
2 Orange (or) wire of fuse FA
3 Orange (or) wire of 2-pin connector C of GRr / pin 2
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor



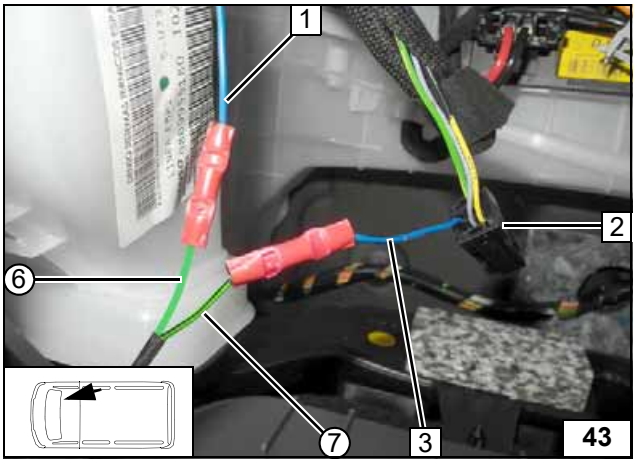
1 Yellow (ge) wire of 2-pin connector D of GRr/ pin 1
2 2-pin connector D of GRr
3 Yellow (ge) wire of 40-pin connector of A/C control unit / pin 20
④ Red (rt) wire from wiring harness of PWM control
⑤ Black (sw) wire from wiring harness of PWM control

Connecting fan controller



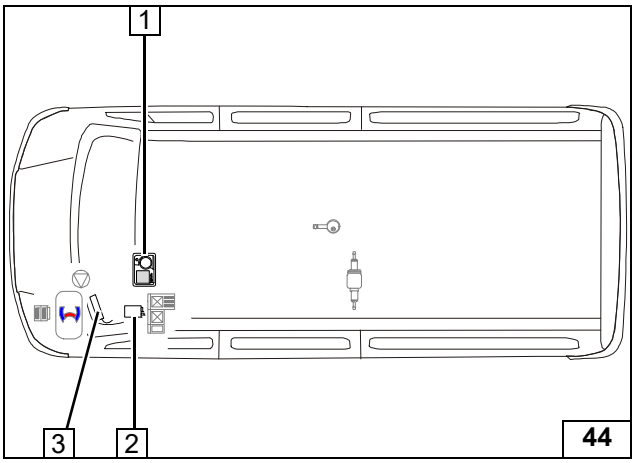
1 Socket of 6-pin connector E of A/C control unit
2 A/C control unit

Disconnecting A/C control unit connector



1 Blue (bl) or pink (ro) wire of fuse FC
2 6-pin connector E of A/C control unit
3 Blue (bl) or pink (ro) wire of 6-pin connector E of KSG / pin 3
⑥ Green (gn) wire of isolating relay wiring harness
⑦ Green/black (gn/sw) wire of isolating relay wiring harness

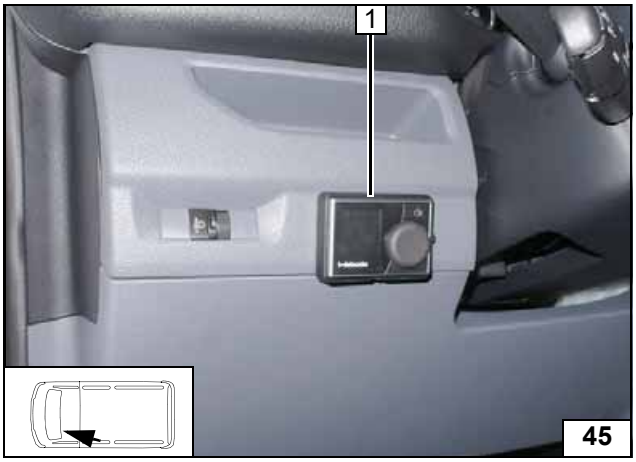
Connecting A/C control unit



Control element installation

1 MultiControl CAR
2 Telestart / ThermoCall receiver
3 Telestart / ThermoCall aerial

Installation overview

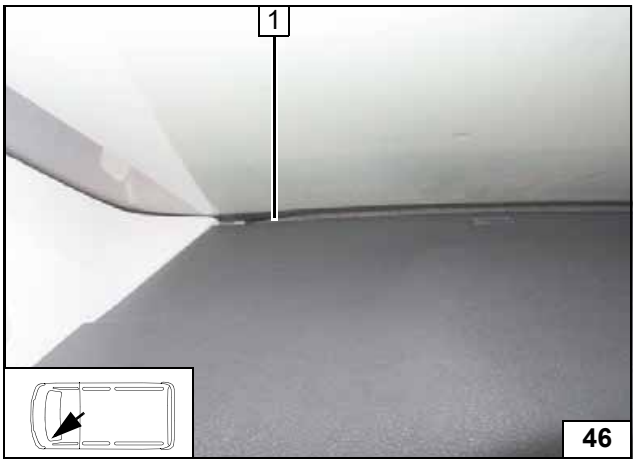


MultiControl CAR option

Shown on a Peugeot Expert.

1 Installation frame

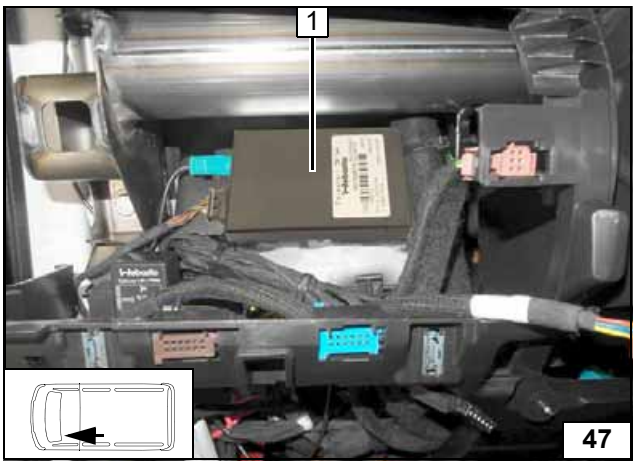
Installing MultiControl CAR



Remote option (Telestart)

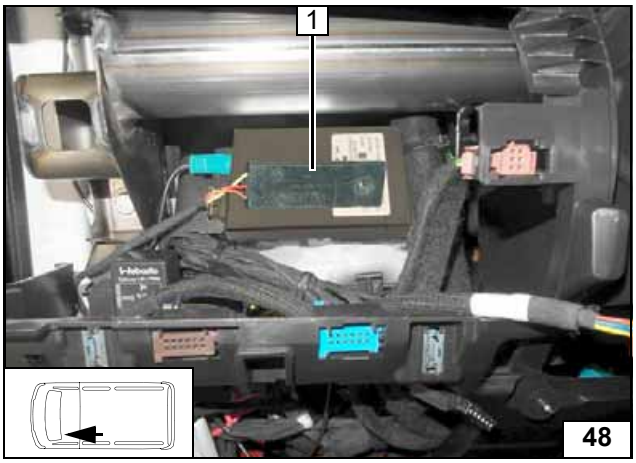
1 Aerial

Installing aerial



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

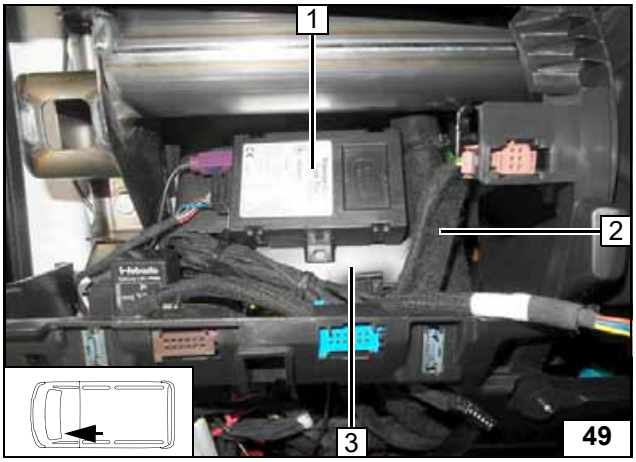
Installing receiver



Temperature sensor T100 HTM

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

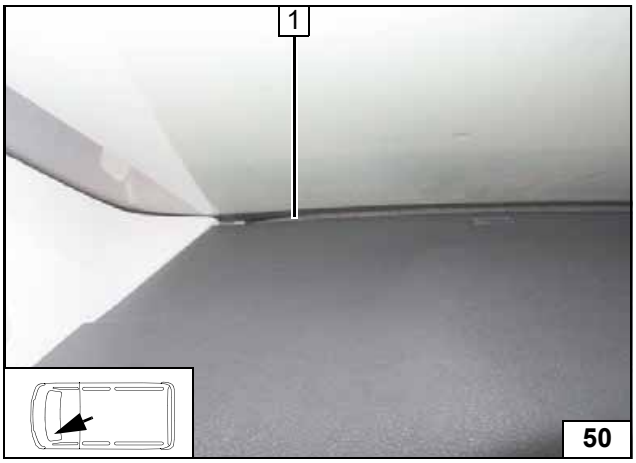
Installing temperature sensor



ThermoCall option

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

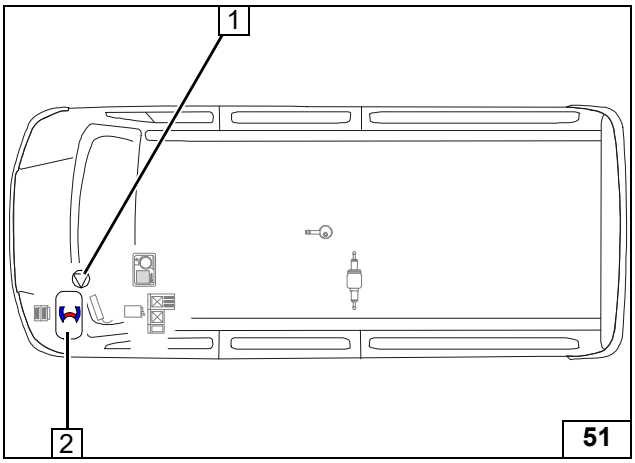
Installing receiver



1 Aerial (optional)

Installing aerial

Preparing installation location

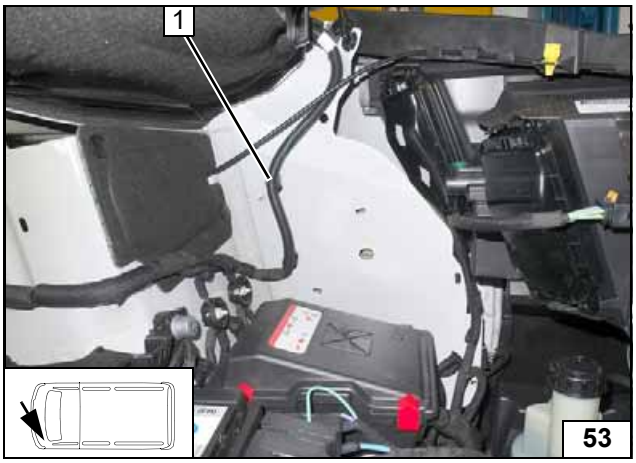


1 Coolant pump
2 Heater

Installation overview

Detach relay box **1** (if present) and lay aside. Connectors remain attached.

Detaching relay box

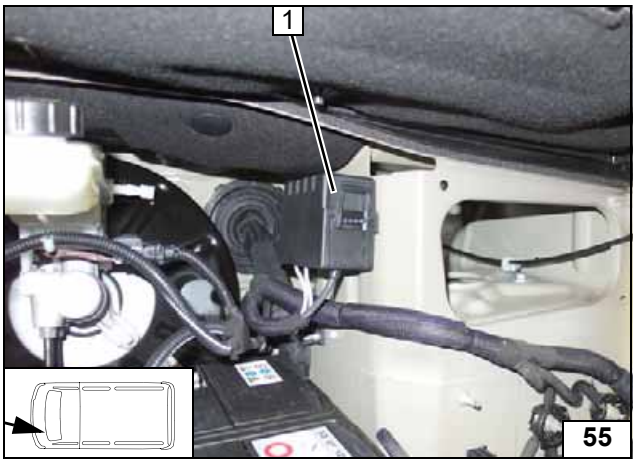


1 Original vehicle wiring harness with retaining clip

Detaching original vehicle wiring harness

1 Cover (if present)

Removing cover

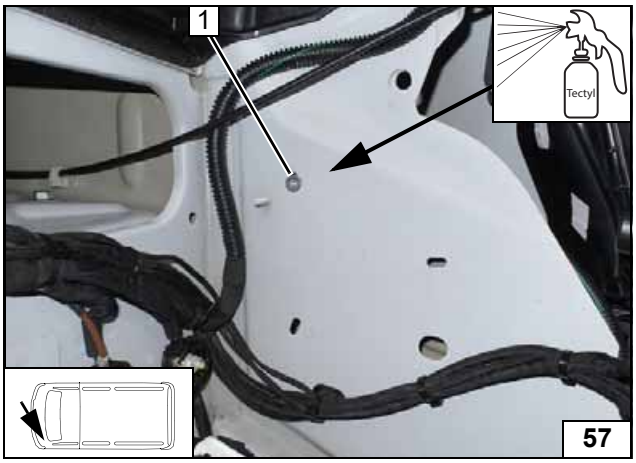


Detach fuse box **1** (if present) and lay aside. Connectors remain attached.

Detaching fuse box (depending on equipment)

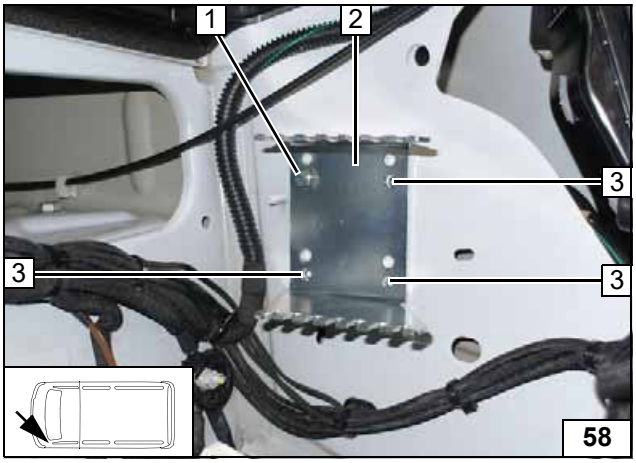
Remove original vehicle relay **1** (if present) with retaining clip.

Removing original vehicle relay (depending on equipment)



Enlarge oblong hole at position **1** carefully to Ø9, insert rivet nut.

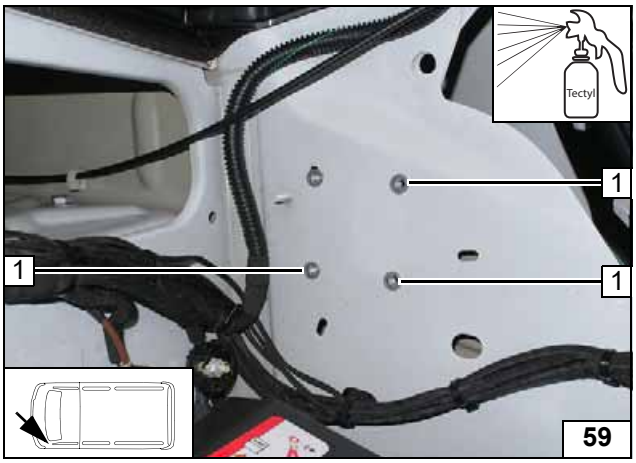
Installing rivet nut



1 M6x20 bolt, spring lock washer
2 Bracket
3 Hole pattern [3x]

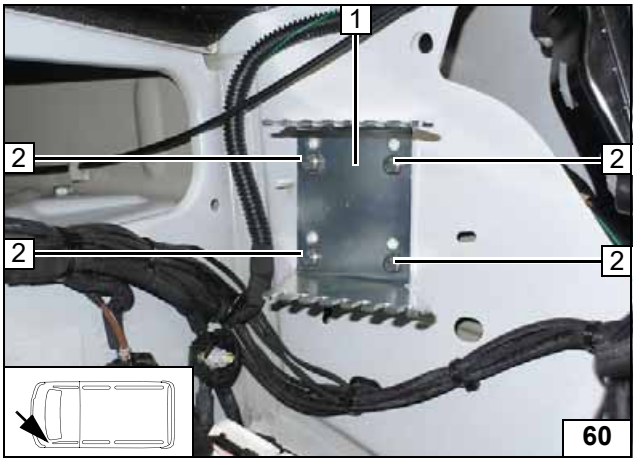
Remove the bracket again.

Copying hole pattern



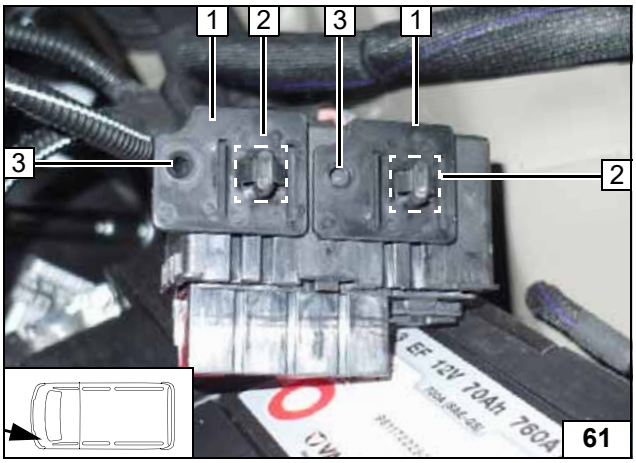
1 Ø9 hole; rivet nut [3x each]

Installing rivet nuts



1 Bracket
2 M6x20 bolt, spring lock washer [4x each]

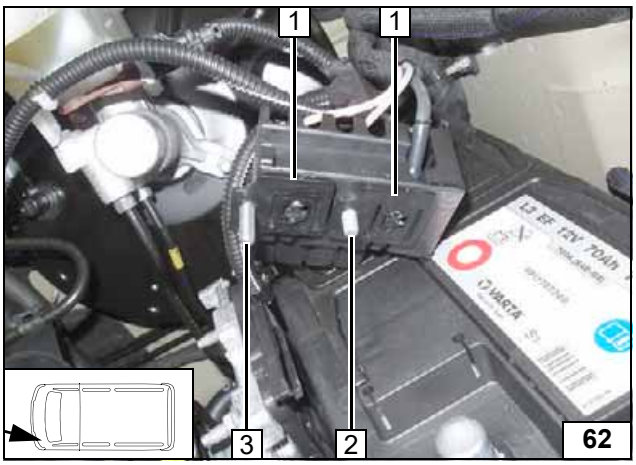
Installing bracket



Only vehicles with existing fuse box

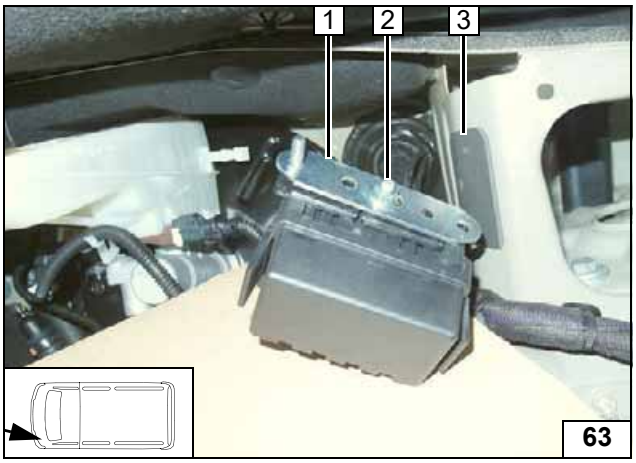
1 Remove bracket [2x]
2 Remove locking tab [2x]
3 Enlarge hole to Ø6 [2x]

Removing / preparing bracket



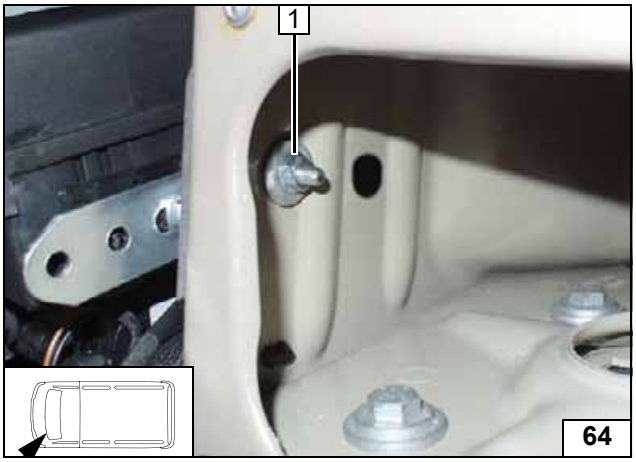
1 Bracket [2x]
2 M6x12 bolt
3 M6x20 bolt

Installing bracket



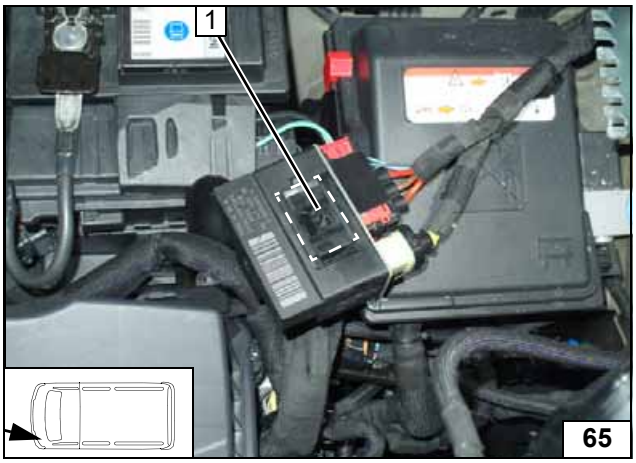
1 Perforated bracket
2 Flanged nut
3 Self-adhesive foam

Installing perforated bracket



1 Premounted M6x20 bolt, large diameter washer, flanged nut

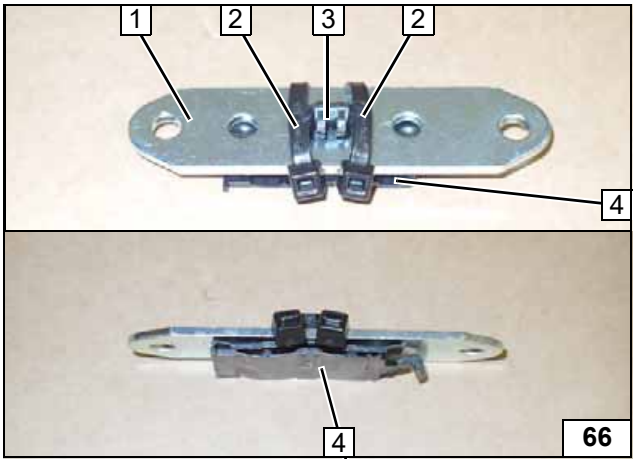
Installing fuse box



Only vehicles with existing relay box

1 Bracket (if present)

Dismantling bracket

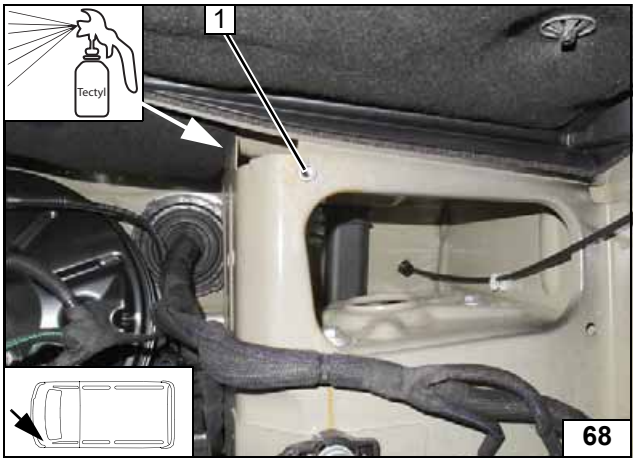


1 Perforated bracket
2 Cable tie [2x]
3 Retaining clip bracket
4 Relay box bracket

Premounting bracket

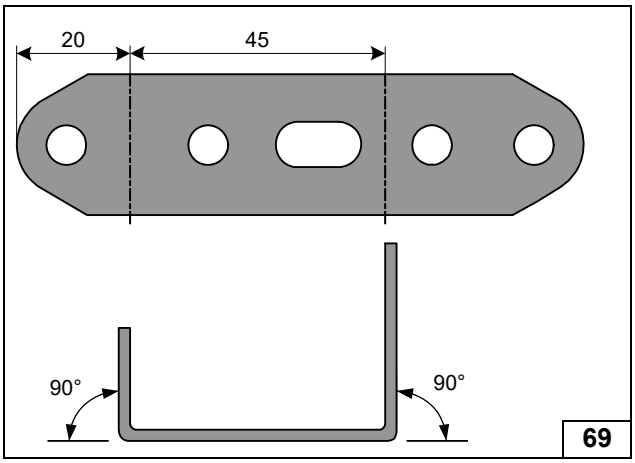
1 Relay box bracket

Installing bracket

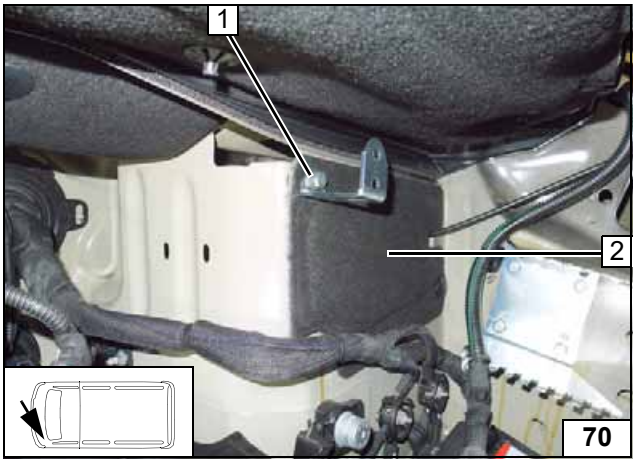


1 Enlarge existing hole to Ø9, rivet nut

Installing rivet nut



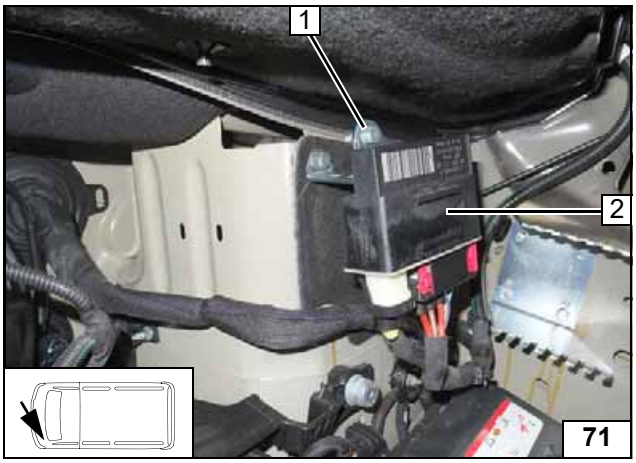
Bending perforated bracket



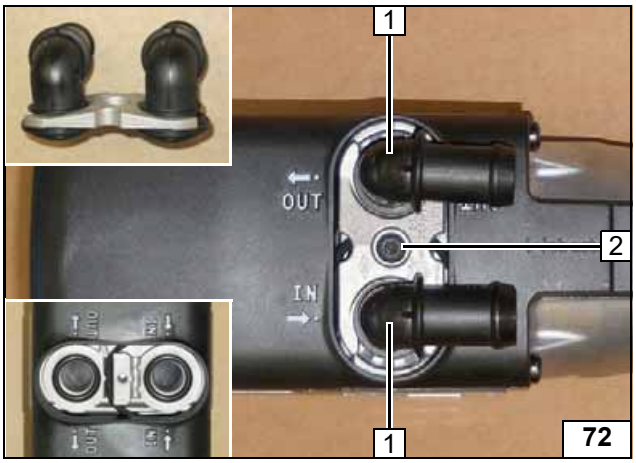
Install cover **2** (if available).

1 M6x20 bolt, spring lock washer, perforated bracket, original vehicle thread

Installing perforated bracket



1 M6x20 bolt, flanged nut
2 Original vehicle relay box

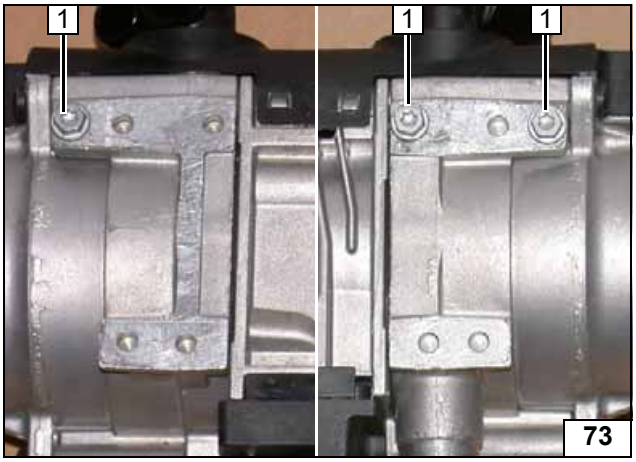


Preparing heater

All vehicles

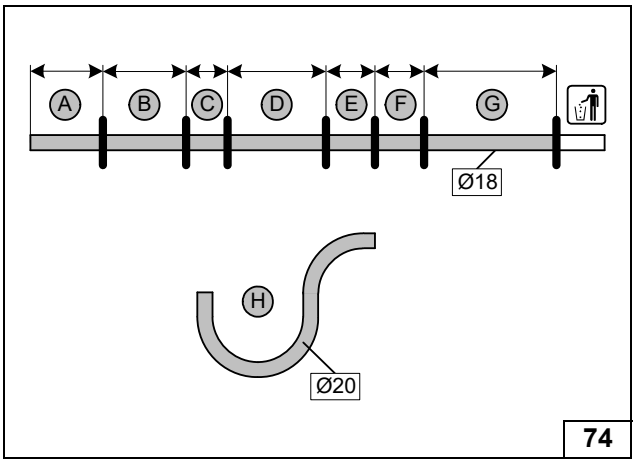
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



Screw 5x13 self-tapping bolts **1** [3x] into existing holes by a maximum of 3 thread turns.

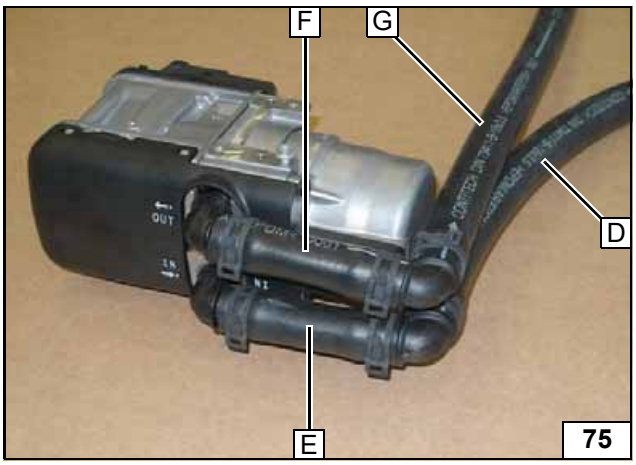
Premounting bolts loosely



Vehicles with one heat exchanger

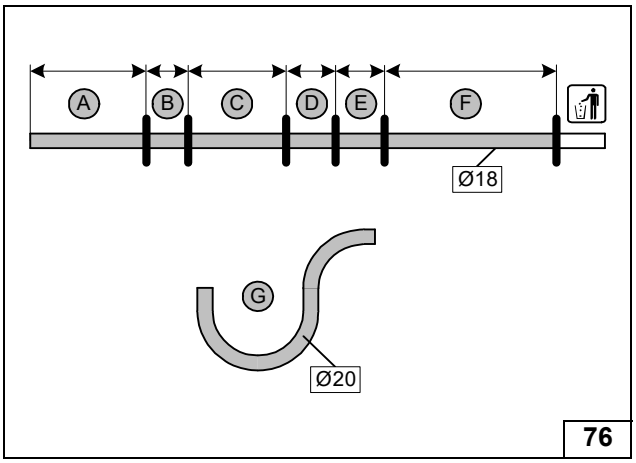
A = 210
B = 290
C = 60
D = 300
E = 100
F = 100
G = 660
H = 180° + 90°

Cutting hoses to length



All spring clips Ø25 [6x].
All connecting pipes, 90°, Ø18 [2x].

Premounting hoses

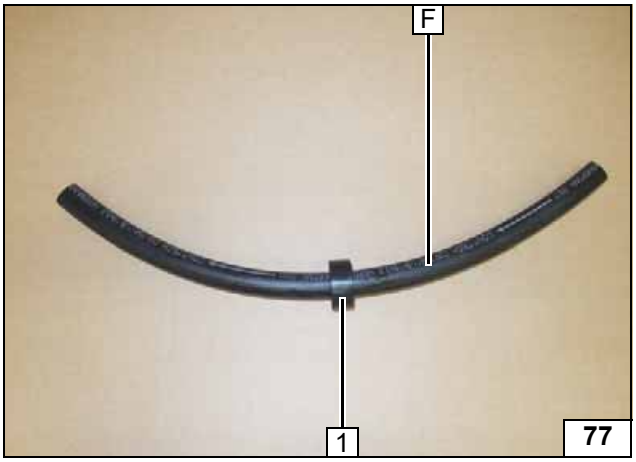


76

Vehicles with two heat exchangers

A = 345
B = 60
C = 300
D = 100
E = 100
F = 630
G = 180° + 90°

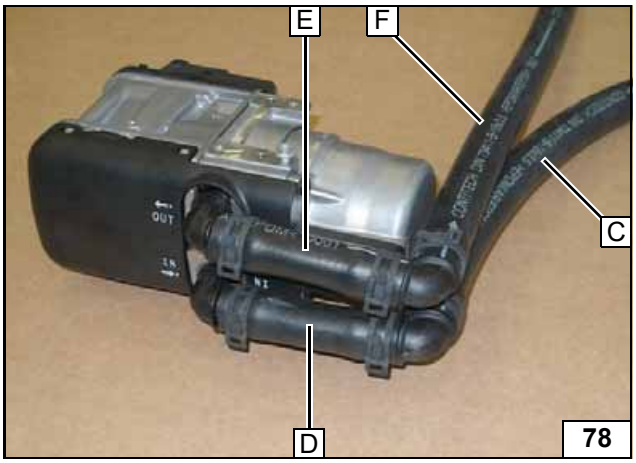
Cutting hoses to length



77

1 Black rubber isolator

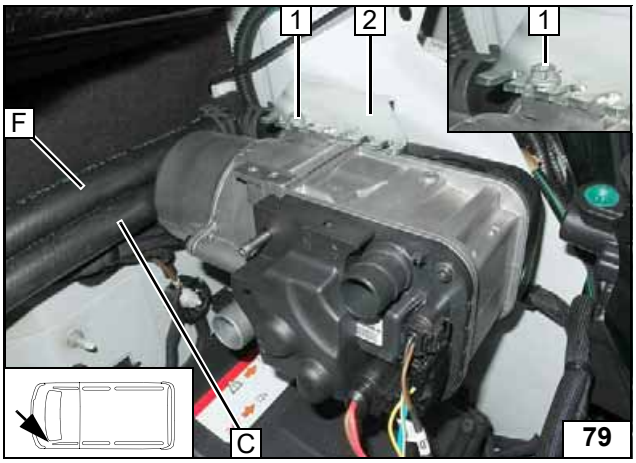
Premounting hose F



78

All spring clips Ø25 [6x].
All connecting pipes, 90°, Ø18 [2x].

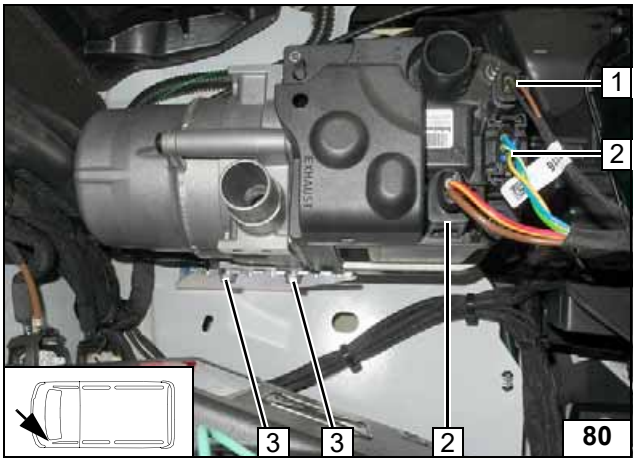
Premounting hoses



Installing heater

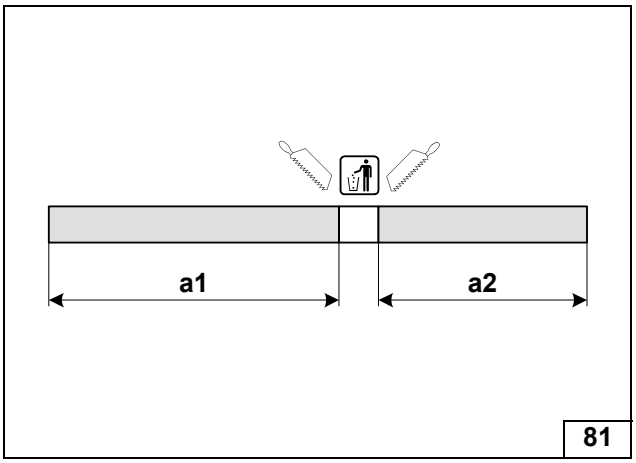
All vehicles

1 5x13 self-tapping bolt
2 Bracket



1 Coolant pump connector
2 Heater wiring harness connector [2x]
3 5x13 self-tapping bolt [2x]

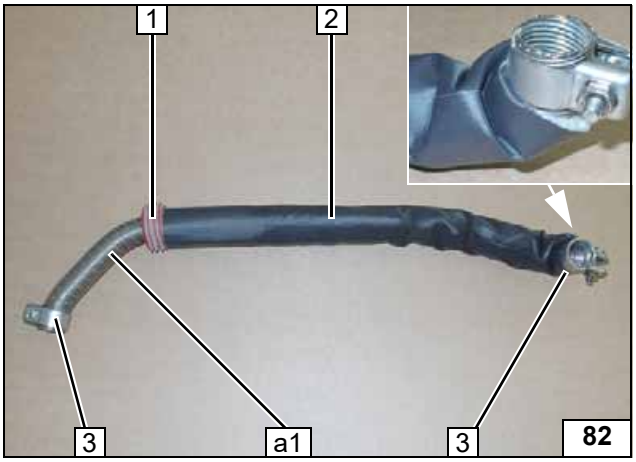
Installing heater



Exhaust gas

a1 = 570
a2 = 360

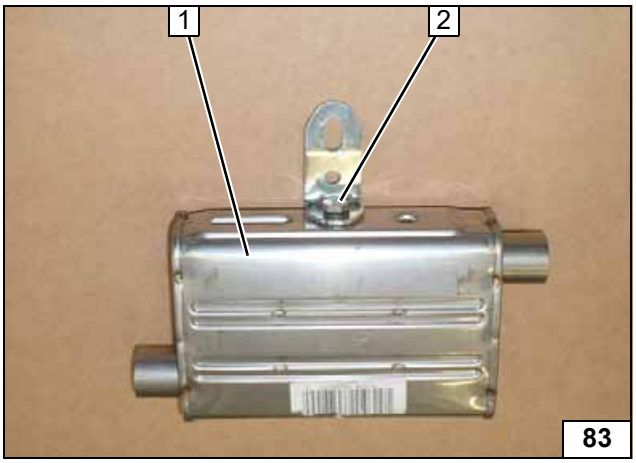
Preparing exhaust pipe



Bend exhaust pipe **a1** as shown.

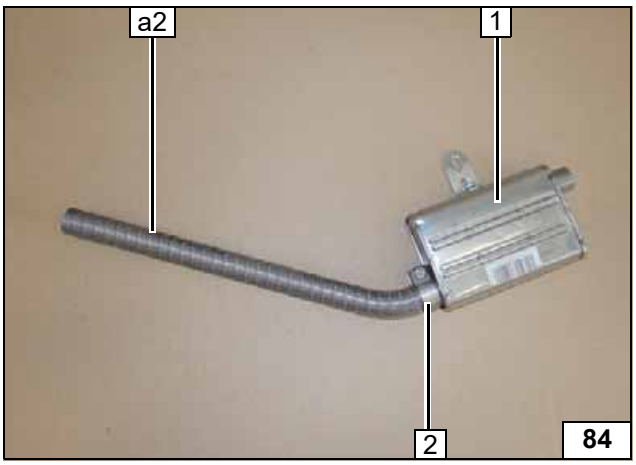
1 Spacer bracket
2 Exhaust insulation
3 Premount hose clamp [2x]

Premounting exhaust pipe a1



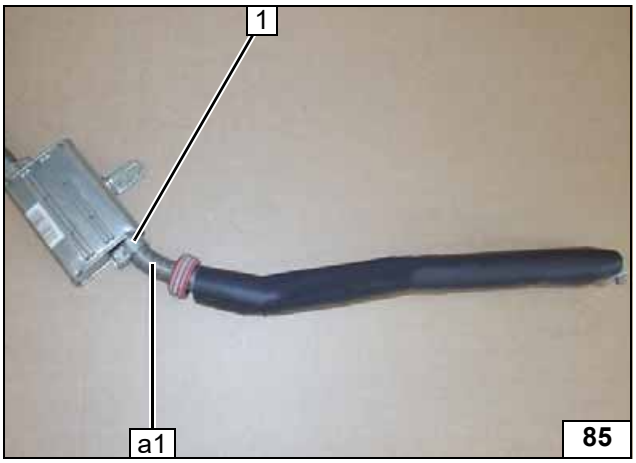
1 Exhaust silencer
2 M6x16 bolt, spring lock washer, angle bracket

Premounting exhaust silencer



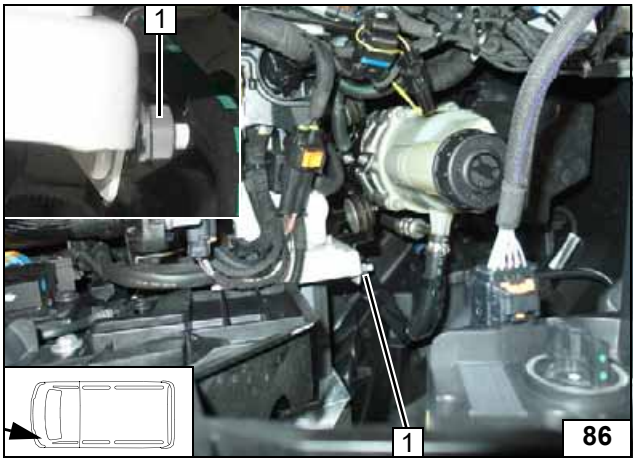
1 Exhaust silencer
2 Hose clamp

Premounting exhaust pipe a2



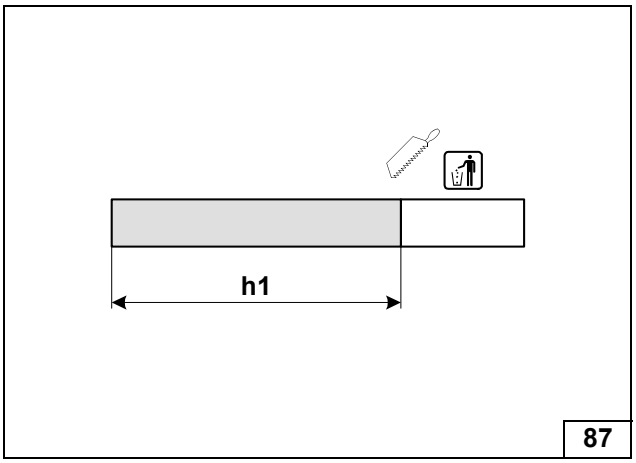
1 Hose clamp

Premounting exhaust pipe a1



1 Original vehicle nut, will be reused.

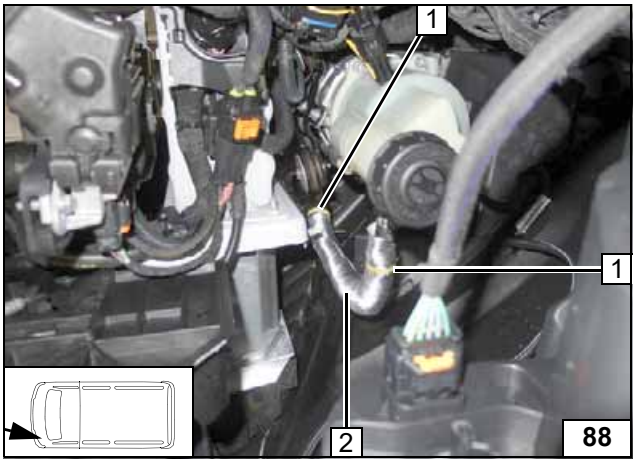
Removing original vehicle nut



h1 = 300

Cut heat protection tube to length and slit open lengthwise.

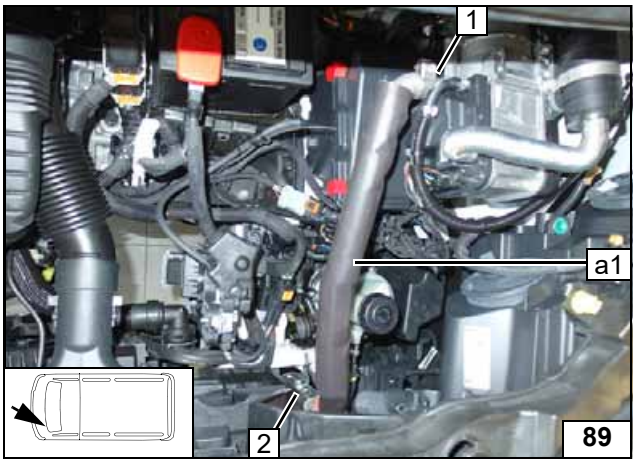
Preparing Ø28 heat protection tube



Pull heat protection tube **2** around original vehicle hydraulic line.

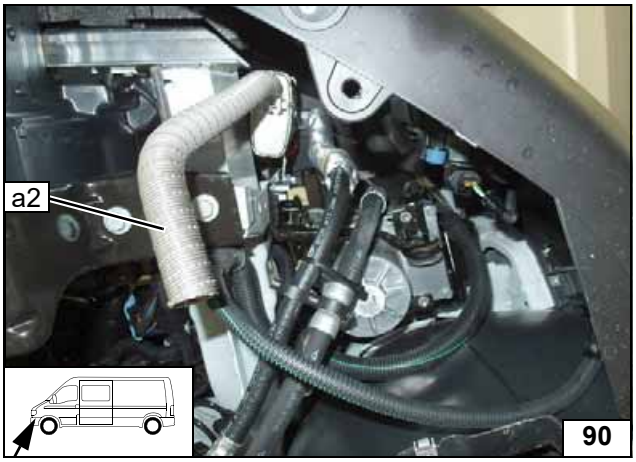
1 Cable tie (yellow) [2x]

Installing heat protection tube



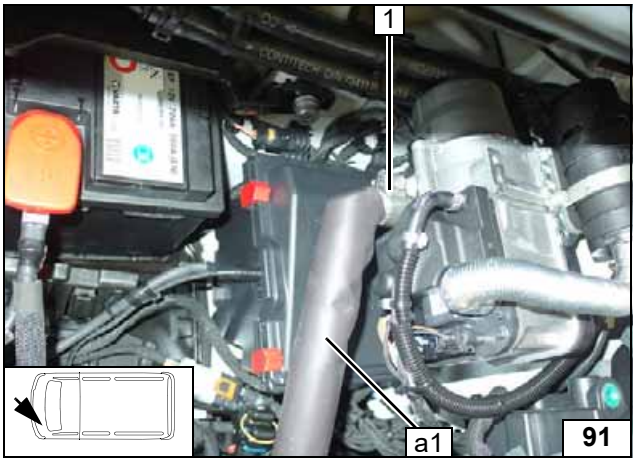
1 Heater exhaust outlet connection piece
2 Exhaust silencer
a1 Exhaust pipe in exhaust insulation

Aligning exhaust pipes and exhaust silencer in engine compartment



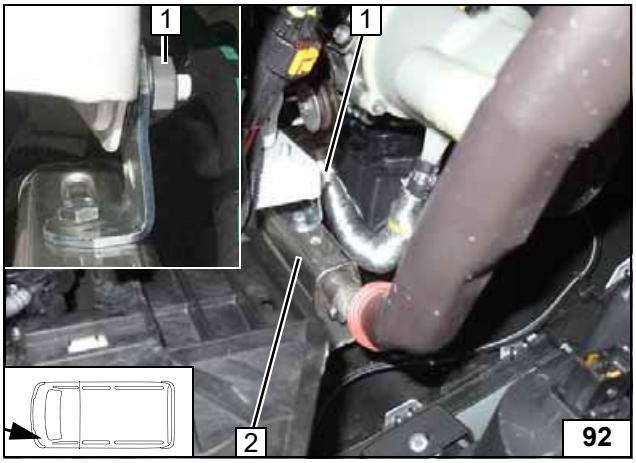
a2 Exhaust pipe

Positioning exhaust pipe a2



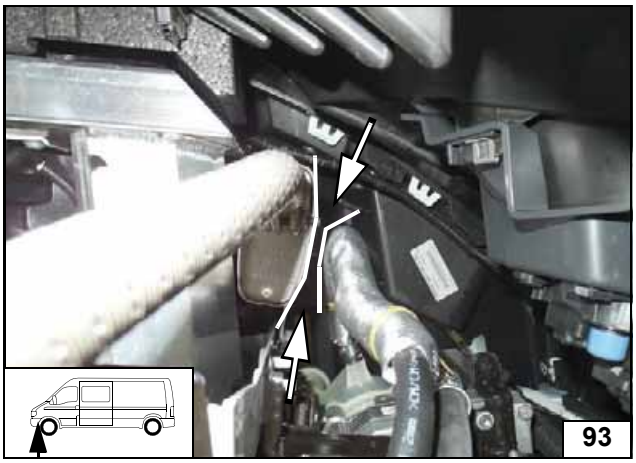
1 Hose clamp

Installing exhaust pipe a1



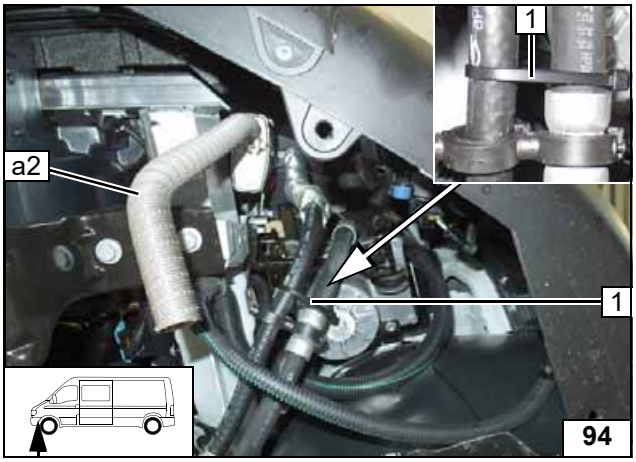
1 Original vehicle stud bolt, premounted angle bracket, flanged nut
2 Exhaust silencer

Installing exhaust silencer



≥ 10 mm

Distance check



1 Cable tie around original vehicle lines

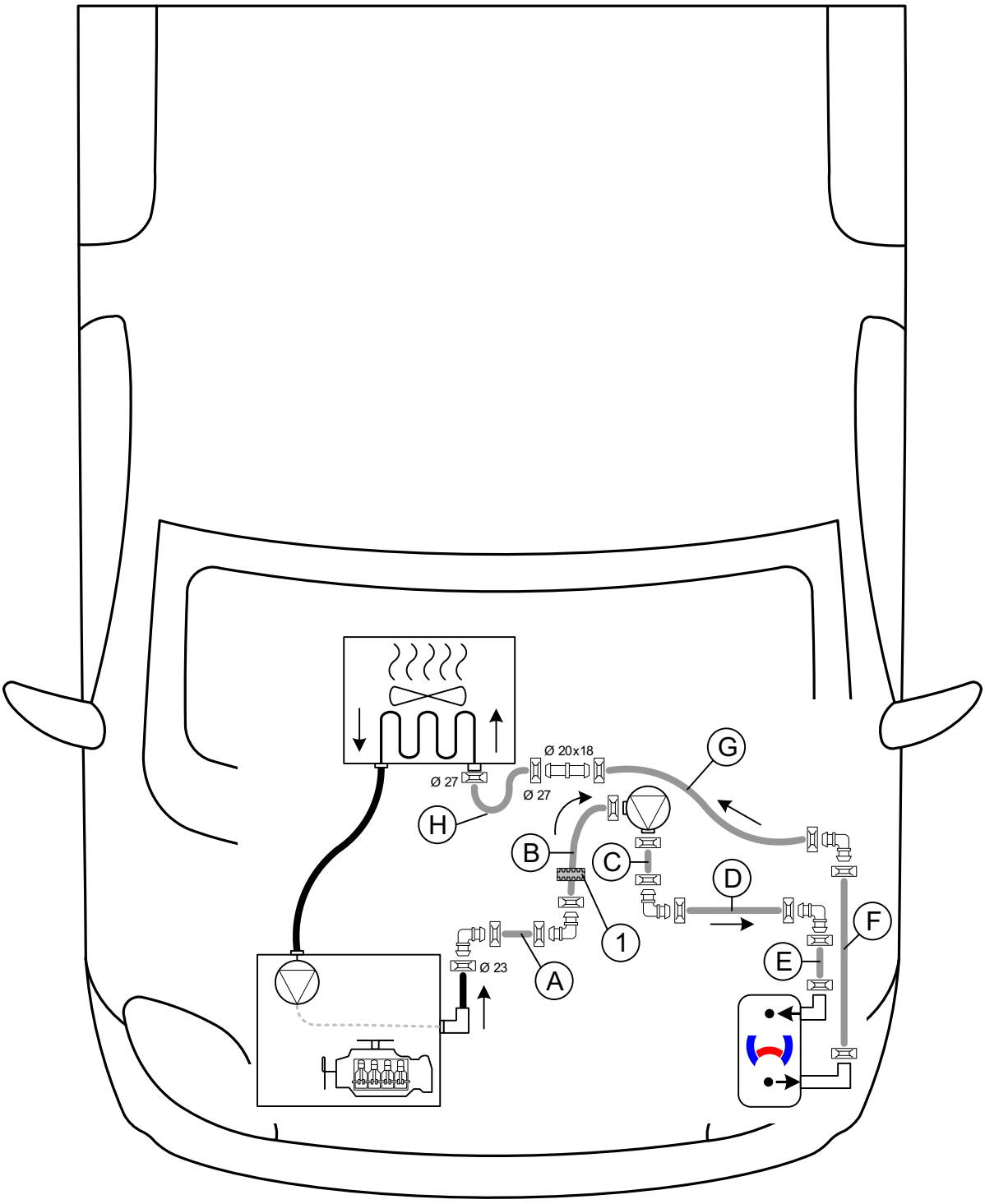
Aligning exhaust pipe a2

Coolant circuit with one heat exchanger

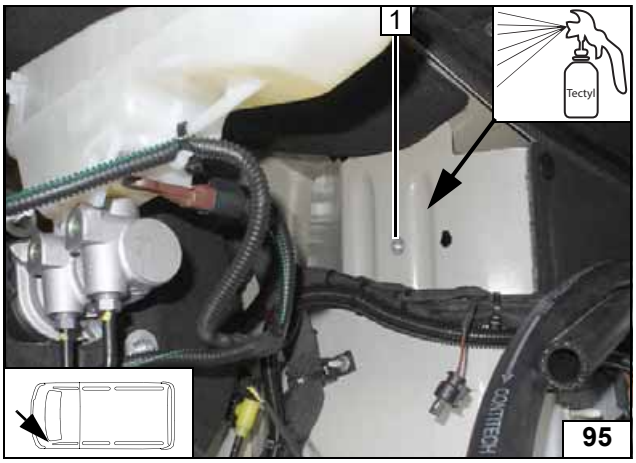
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

The connection should be modelled on an ‘inline’ circuit and based on the following diagram:

Hose routing diagram

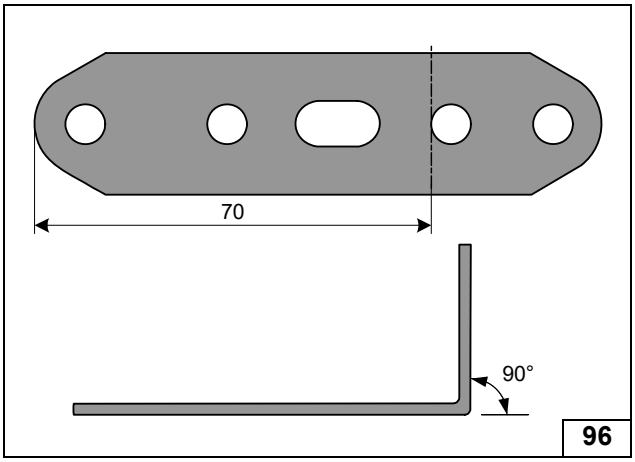


All spring clips without a specific designation = Ø25. All connecting pipes = Ø18x18.
1 = Black (sw) rubber isolator .

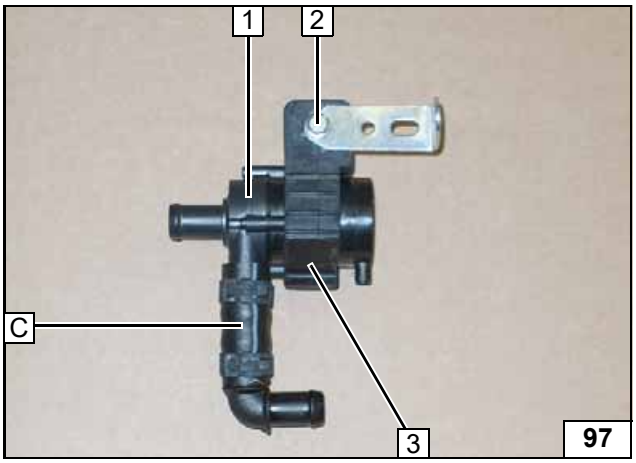


1 Enlarge existing hole to Ø9, rivet nut

Installing rivet nut

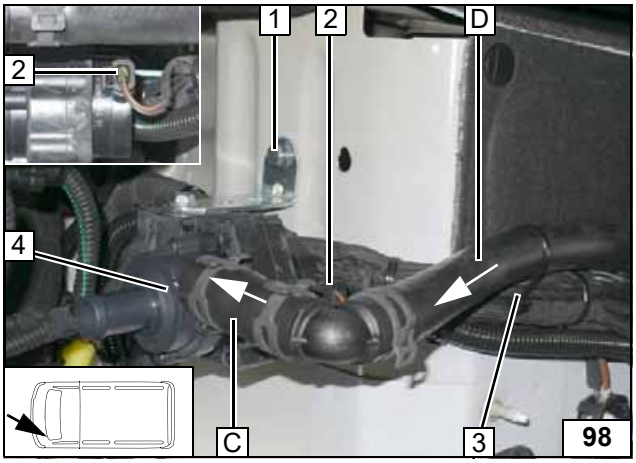


Bending perforated bracket



1 Coolant pump
2 M6x25 bolt, perforated bracket, flanged nut
3 Coolant pump mount

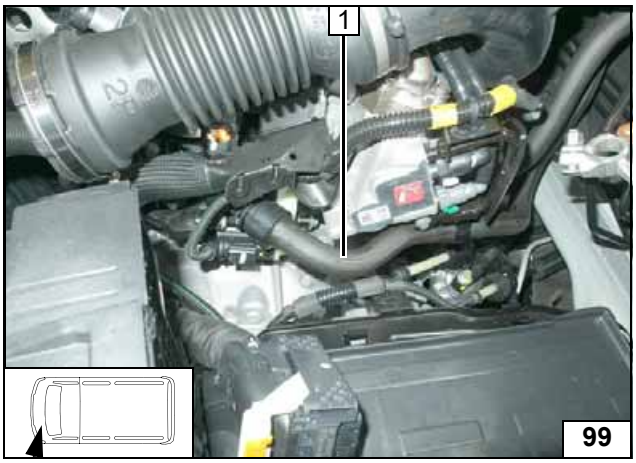
Premounting coolant pump



Shown on a vehicle without relay box and without fuse box!

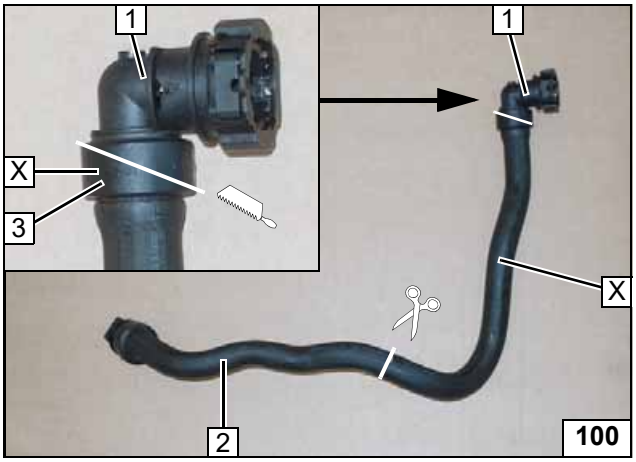
1 M6x20 bolt, spring lock washer, perforated bracket
2 Coolant pump wiring harness connector
3 Cable tie
4 Coolant pump

Mounting coolant pump



Remove hose on engine outlet / heat exchanger inlet **1**.

Cutting point

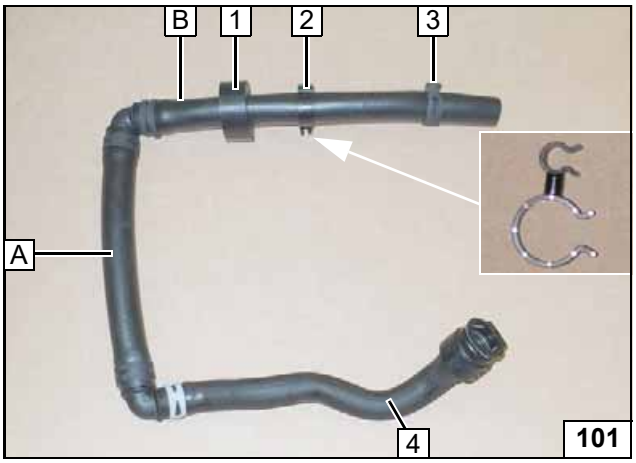


Cut off hose of engine outlet/heat exchanger inlet at the marking.
Cut off clamp ring **3** carefully!

1 Heat exchanger inlet connection piece
2 Engine outlet hose section

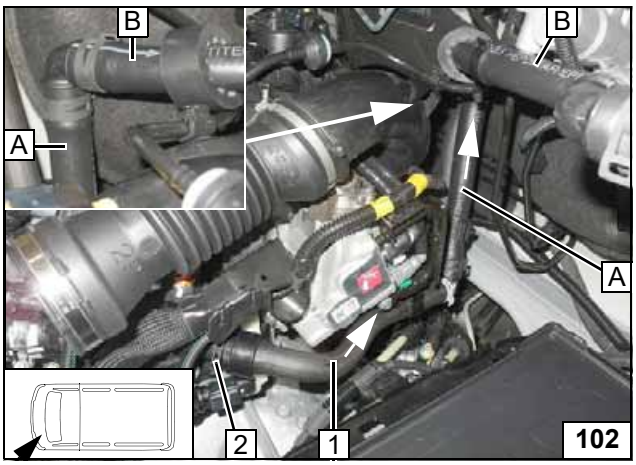
X =

Preparing hose



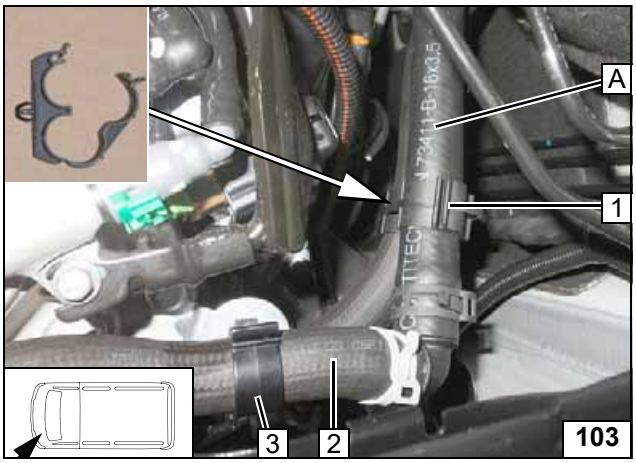
1 Black rubber isolator
2 Premount 22x4 hose bracket
3 Premount Ø25 spring clip
4 Engine outlet hose section

Premounting hoses A and B



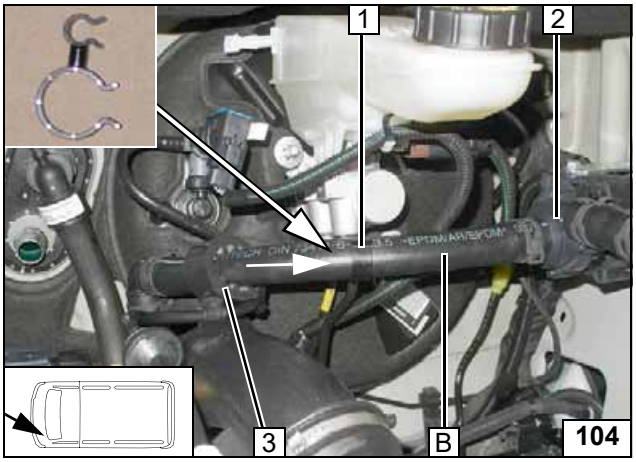
1 Engine outlet hose section
2 Connection piece of engine outlet

Connecting engine outlet



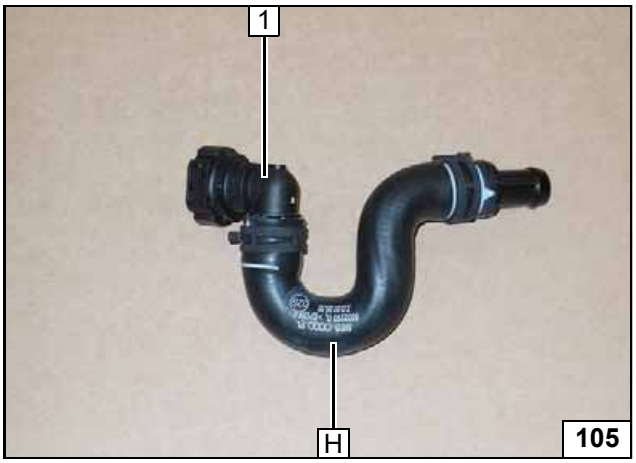
1 25x25 hose bracket
2 Engine outlet hose section
3 Original vehicle hose bracket

Routing hoses



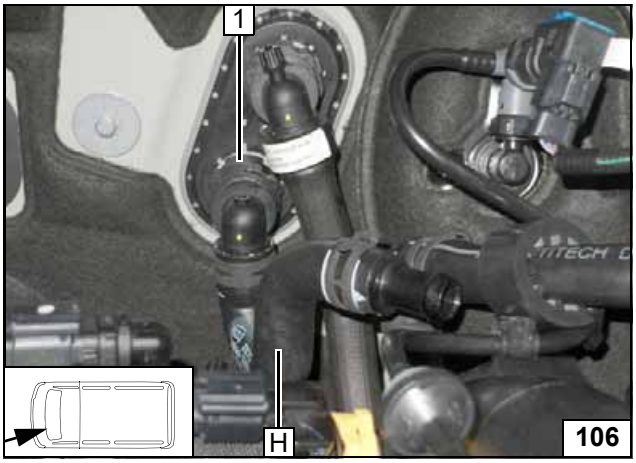
1 Black (sw) rubber isolator
2 Coolant pump
3 22x4 hose bracket on brake line

Coolant pump connection



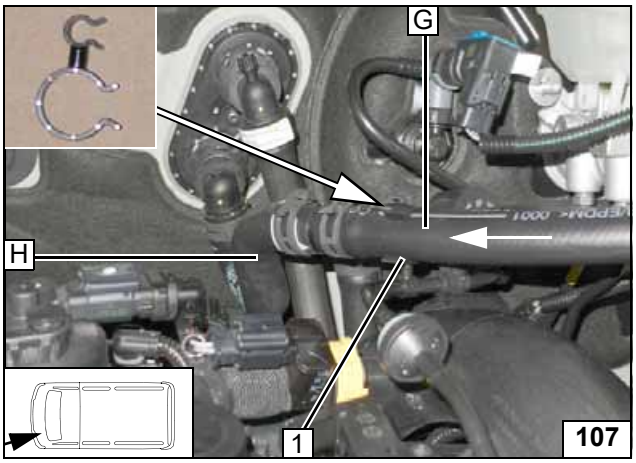
1 Heat exchanger inlet connection piece

Premounting hose H



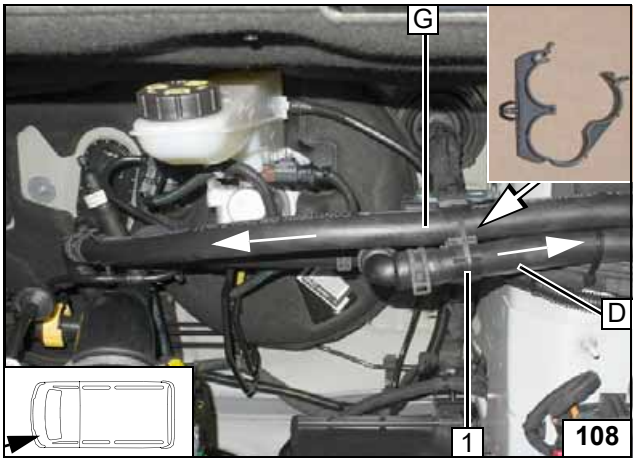
1 Connection piece of heat exchanger inlet

Heat exchanger inlet connection



1 22x4 hose bracket

Installing hose G



Align hoses.
Ensure sufficient distance from neighbouring components, correct if necessary.

1 25x25 hose bracket

Routing hoses

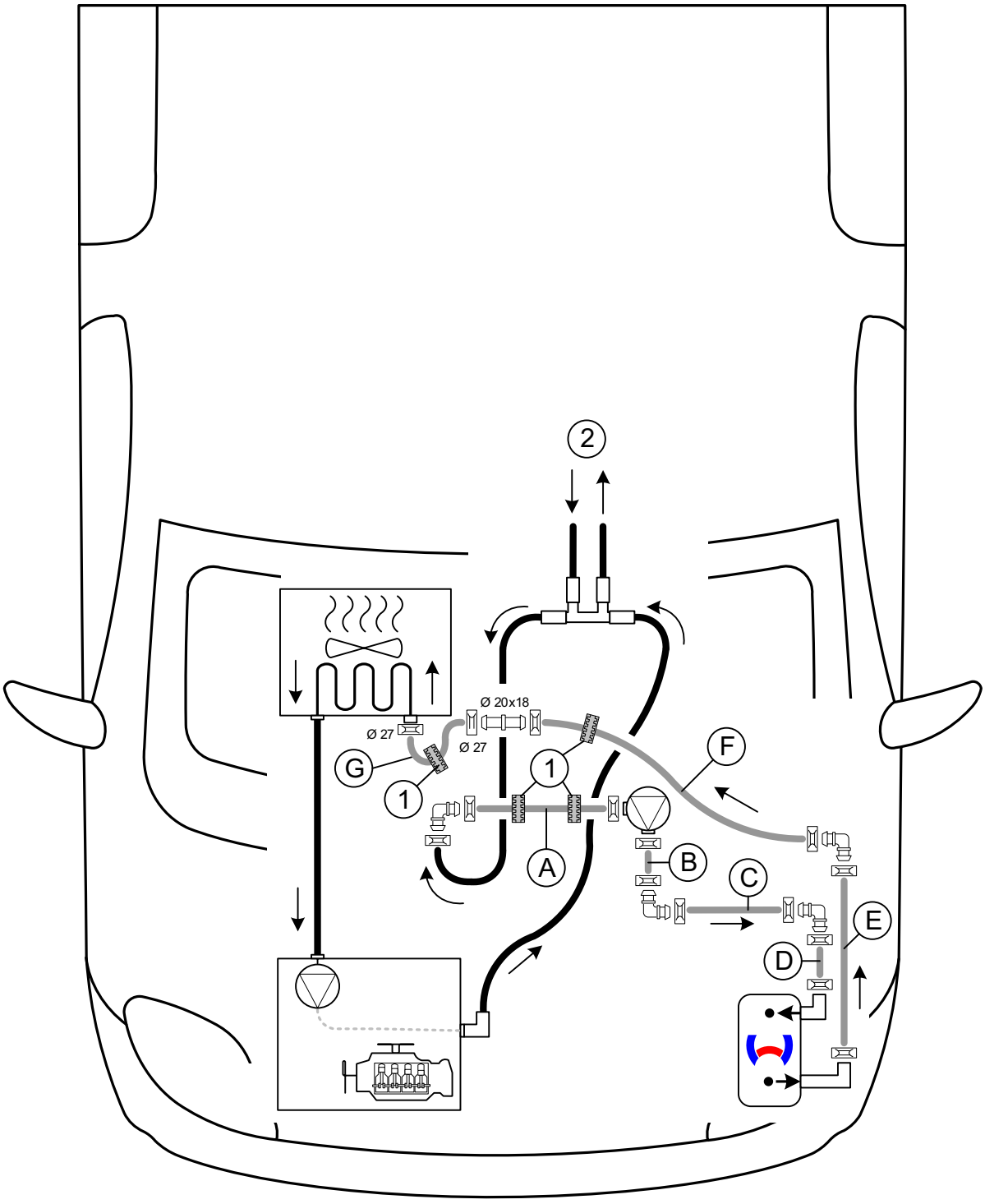
Observe the vehicle manufacturer's specifications when filling and bleeding the cooling system while using the Diagbox!

Coolant circuit with two heat exchangers

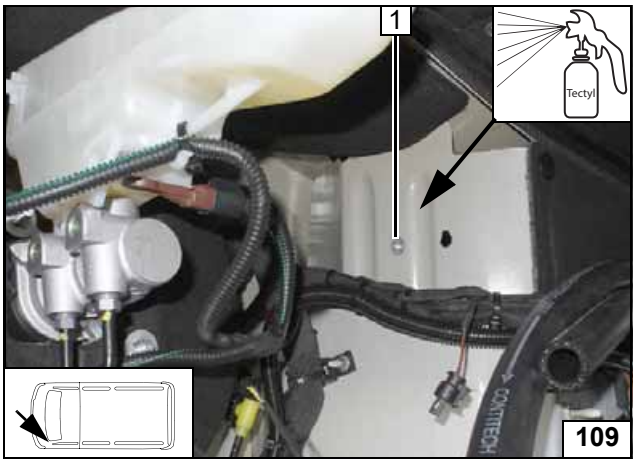
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

The connection should be modelled on an ‘inline’ circuit and based on the following diagram:

Hose routing diagram

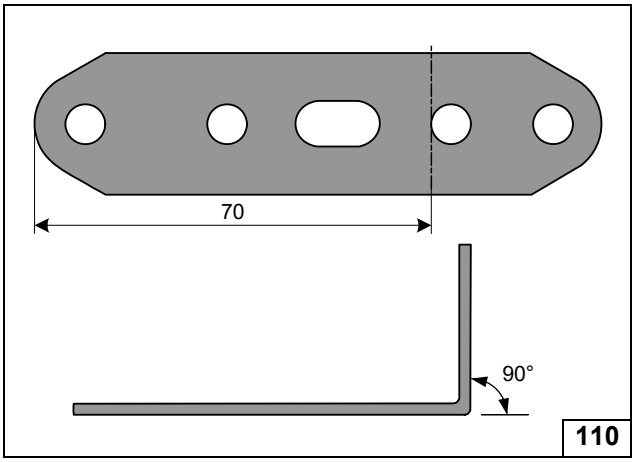


All spring clips without a specific designation = Ø25. All connecting pipes = Ø18x18.
1 = Black (sw) rubber isolator .
2 = Direction of flow of second heat exchanger!

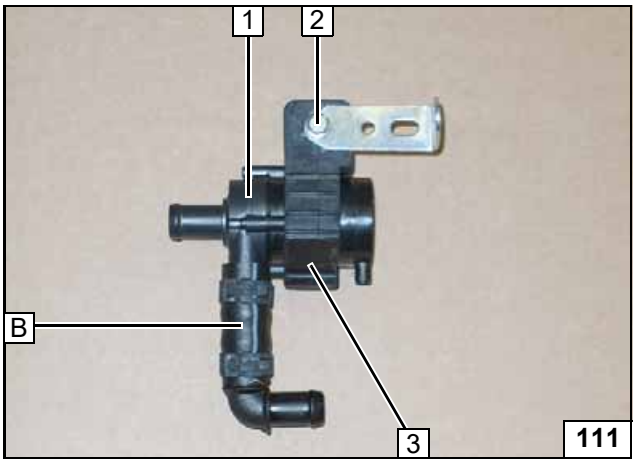


1 Enlarge existing hole to Ø9, rivet nut

Installing rivet nut

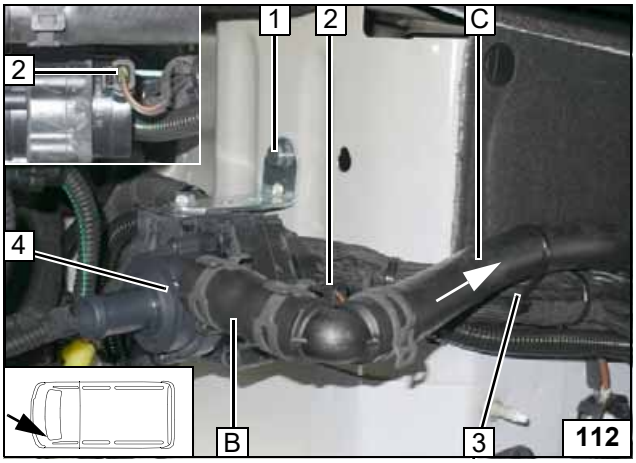


Bending perforated bracket



1 Coolant pump
2 M6x25 bolt, perforated bracket, flanged nut
3 Coolant pump mount

Premounting coolant pump



1 M6x20 bolt, spring lock washer, perforated bracket
2 Coolant pump wiring harness connector
3 Cable tie
4 Coolant pump

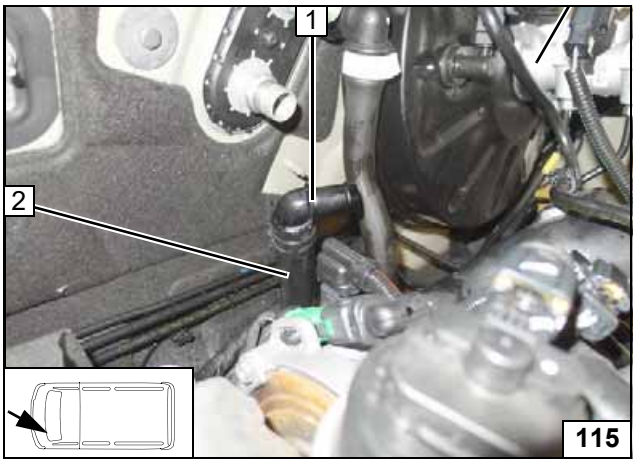
Mounting coolant pump

Remove quick-release coupling **1** from heat exchanger outlet connection piece to facilitate installation.

Preparing connection point

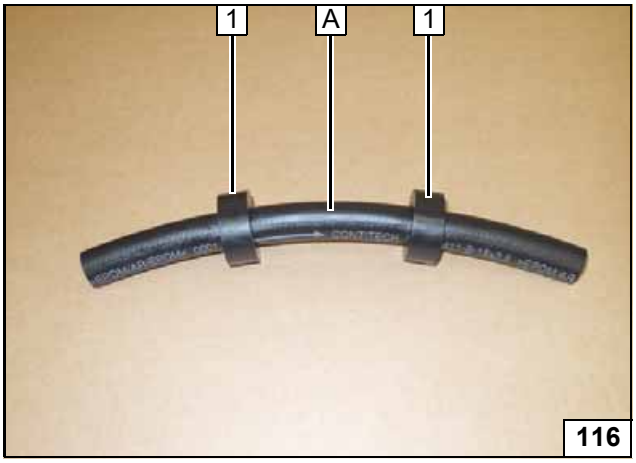
Cut off hose of engine outlet/heat exchanger inlet **2** at the marking.
Remove quick-release coupling **1**, will be reused!

Cutting point



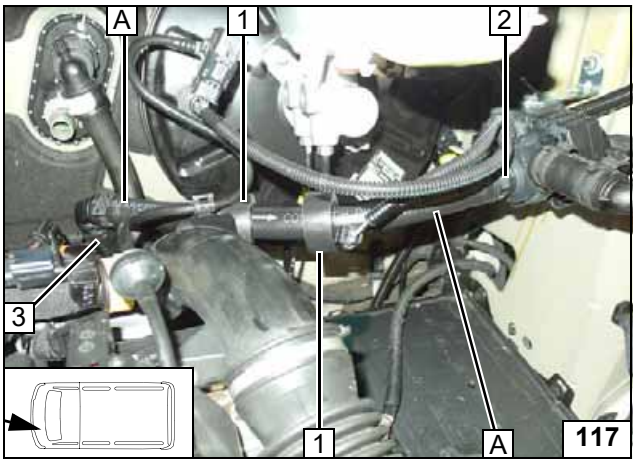
1 90°, Ø18x18 connecting pipe, spring clip
2 Engine outlet hose section

Installing connecting pipe



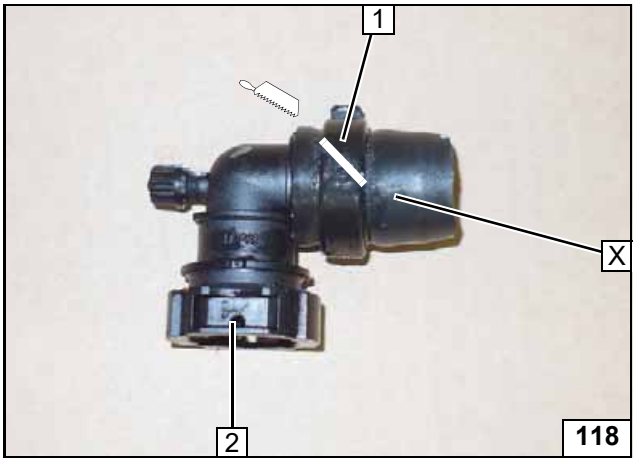
1 Black (sw) rubber isolator [2x]

Premounting hose A



1 Black (sw) rubber isolator [2x]
2 Coolant pump inlet connection piece
3 Engine outlet hose section

Installing hose A

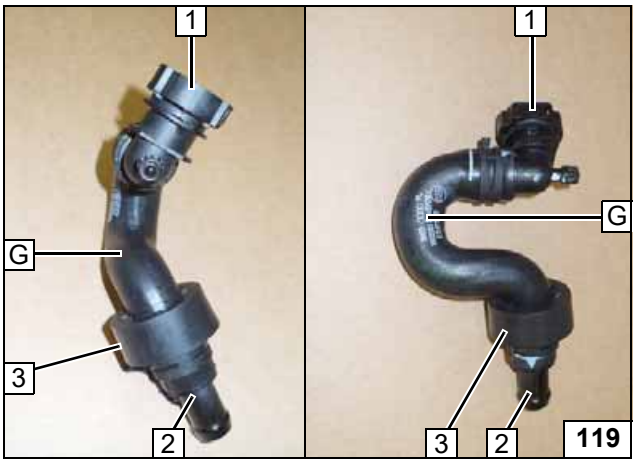


Cut off clamp ring **1** carefully!

2 Heat exchanger inlet connection piece

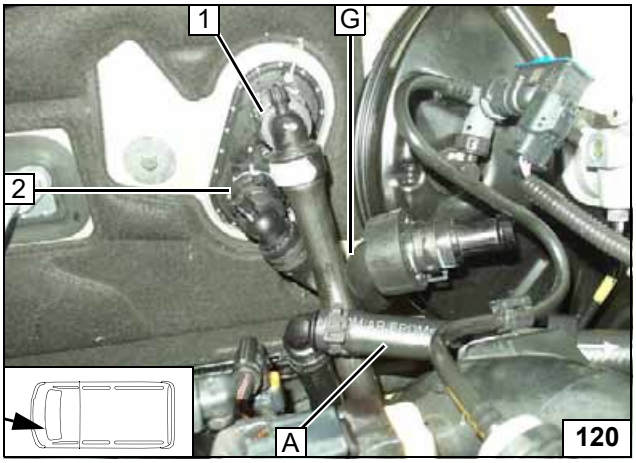
X =

Preparing quick-release coupling of heat exchanger inlet



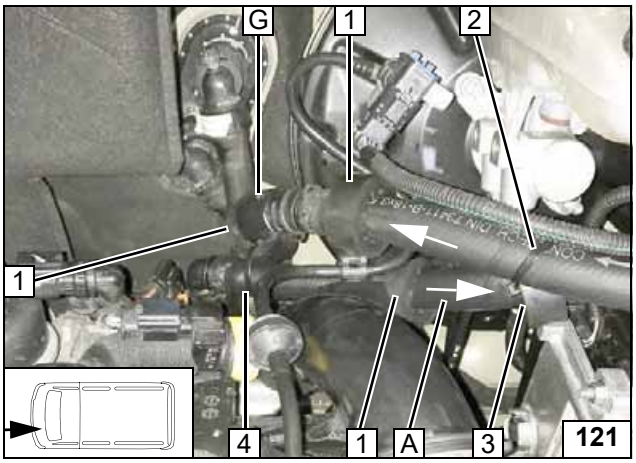
1 Quick-release coupling of heat exchanger inlet
2 180°, 18 x18 connecting pipe
3 Black rubber isolator

Premounting hose G



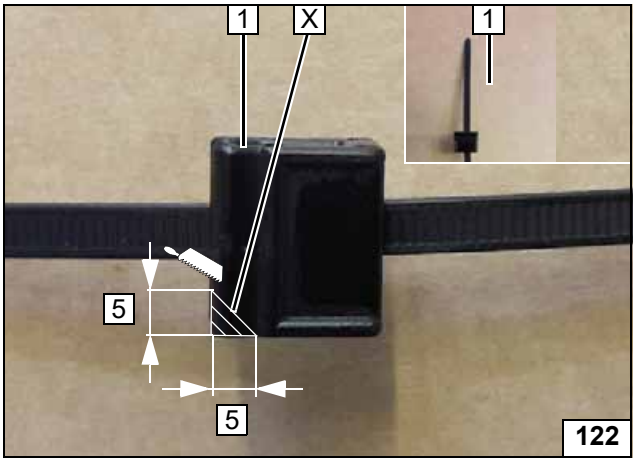
1 Quick-release coupling of heat exchanger outlet
2 Quick-release coupling of heat exchanger inlet

Installing hose G



1 Align black (sw) rubber isolator [3x]
2 Cable tie around hose **F** and black (sw) rubber isolator of hose **A**
3 Attach black (sw) rubber isolator onto brake line using a cable tie
4 Cable tie around hose **A** and black (sw) rubber isolator of hose **G**

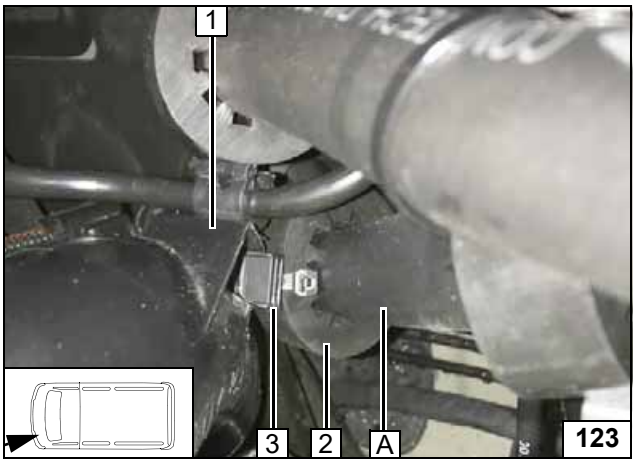
Securing hoses



1 Clip-type cable tie

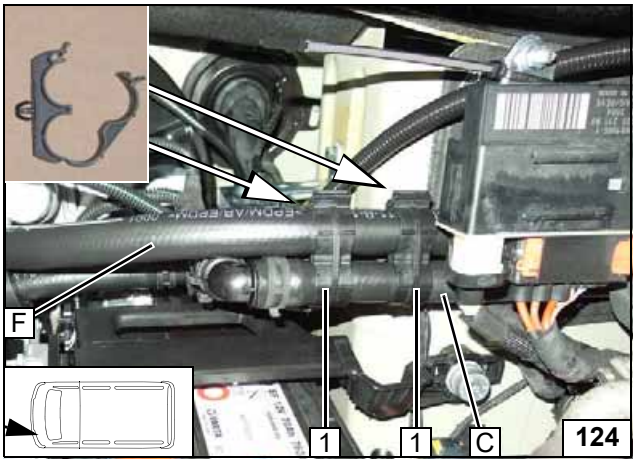
X =

Preparing edge clip cable tie



1 Charge-air tube tab
2 Black (sw) rubber isolator
3 Clip-type cable tie around black (sw) rubber isolator **2**

Securing hose A



Align hoses.
Ensure sufficient distance from neighbouring components, correct if necessary.

1 25x25 hose bracket [2x]

Securing hoses

Observe the vehicle manufacturer's specifications when filling and bleeding the cooling system while using the Diagbox!

Fuel

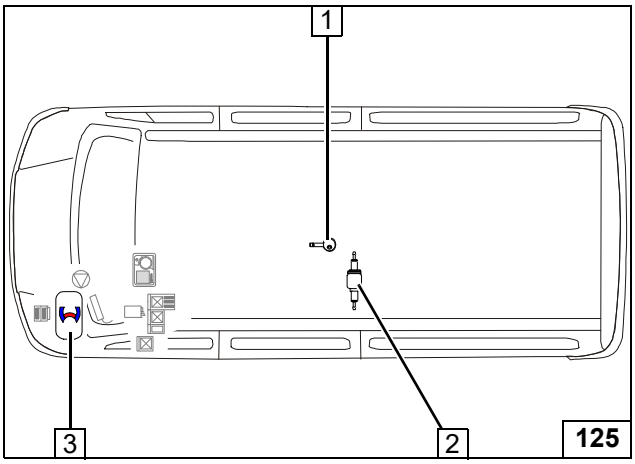
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

Route fuel line and fuel 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.

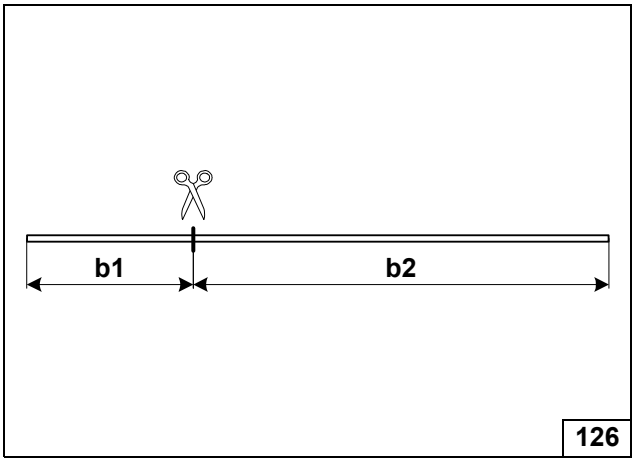
The fuel line and wiring harness are routed to the fuel pump as shown in the wiring harness routing diagram.

Installation overview



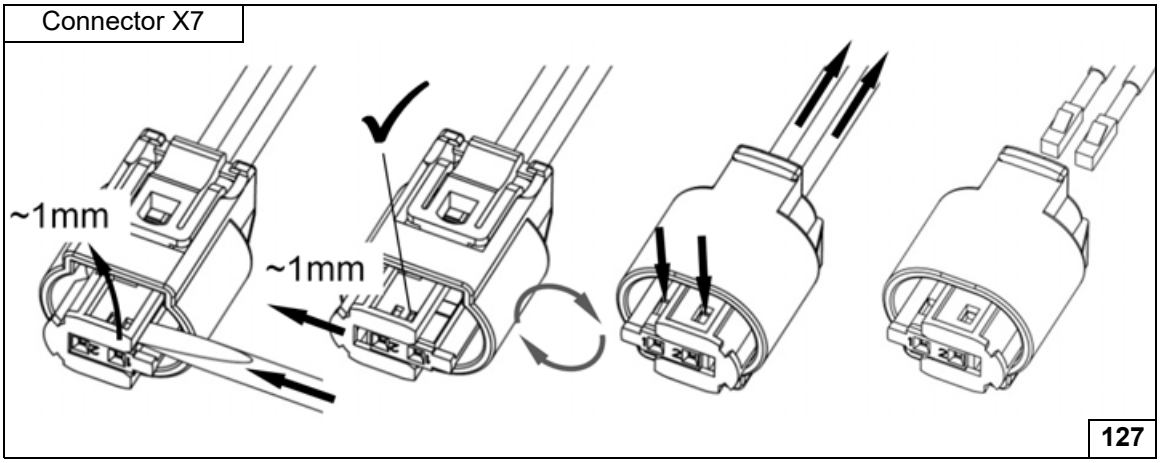
1 FuelFix
2 Fuel pump
3 Heater

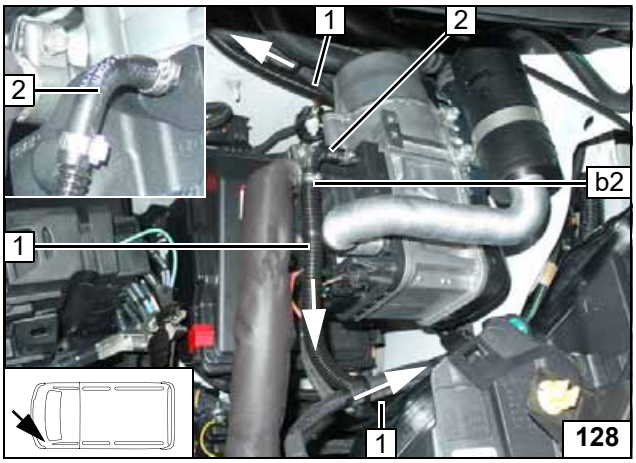
Cutting fuel line to length



b1 = 1500
b2 = 4500

Dismantling fuel pump connector

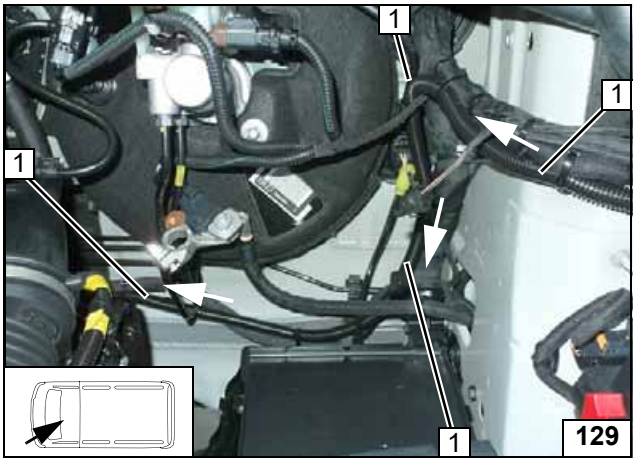




Draw fuel line **b2** and fuel pump wiring harness into Ø10 corrugated tube **1** and route behind heater along original vehicle lines to firewall.

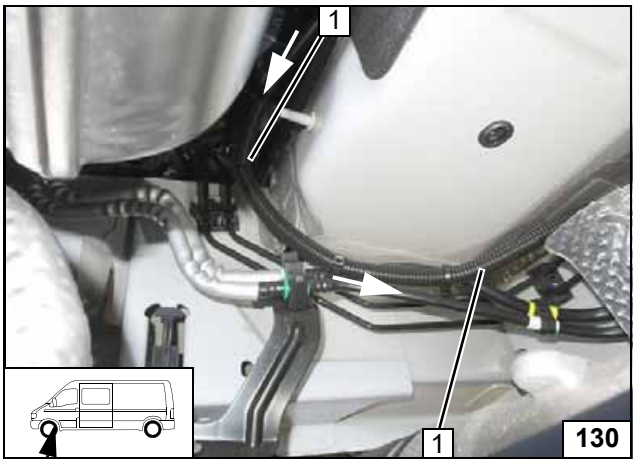
2 90° moulded hose, Ø10 clamp [2x]

Connecting heater



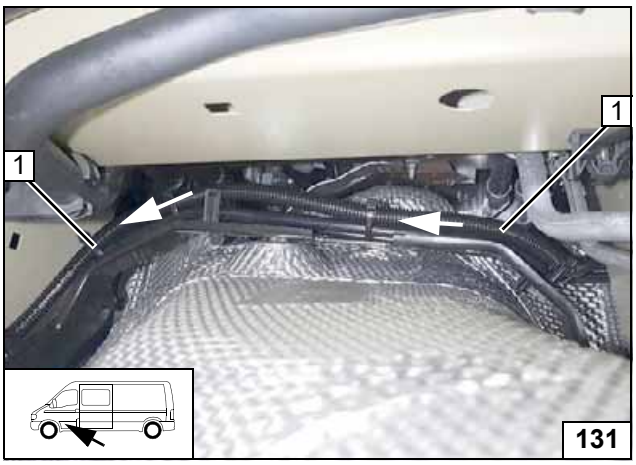
Route fuel line and fuel pump wiring harness in corrugated tube **1** along original vehicle lines on the firewall to the right side of the vehicle and to the underbody.

Routing lines



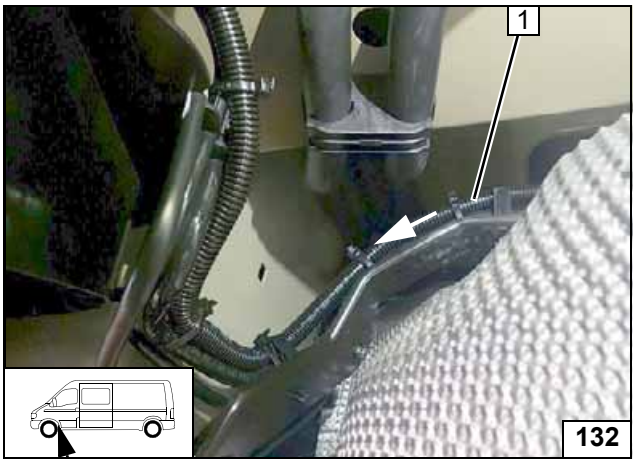
Route fuel line and fuel pump wiring harness in corrugated tube **1** along the original vehicle lines to the guard plate on the right side of the vehicle.

Routing lines



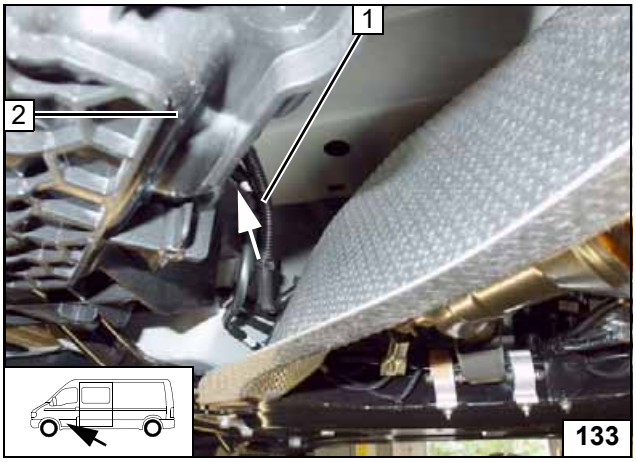
Route fuel line and fuel pump wiring harness in corrugated tube **1** along the original vehicle lines above the guard plate to the left side of the vehicle.

Routing lines



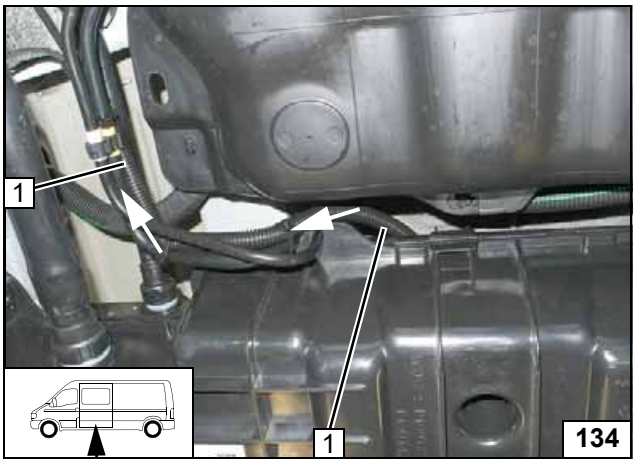
Route fuel line and fuel pump wiring harness in corrugated tube **1** along the original vehicle lines.

Routing lines



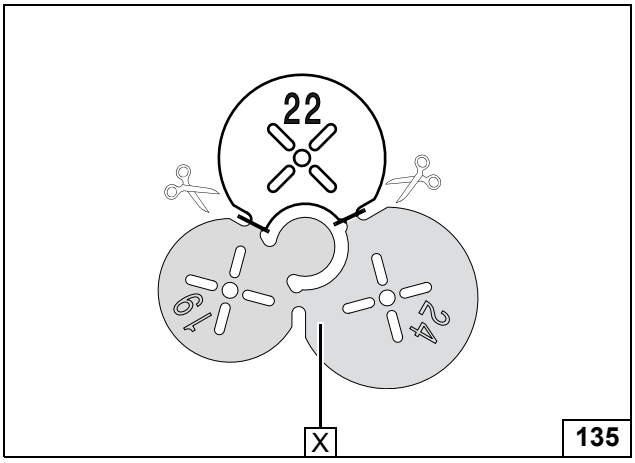
Route fuel line and fuel pump wiring harness in corrugated tube **1** along original vehicle lines above additional tank **2** to installation location of fuel pump.

Routing lines



Route fuel line and fuel pump wiring harness in corrugated tube **1** along the original vehicle lines to the installation location of the fuel pump.

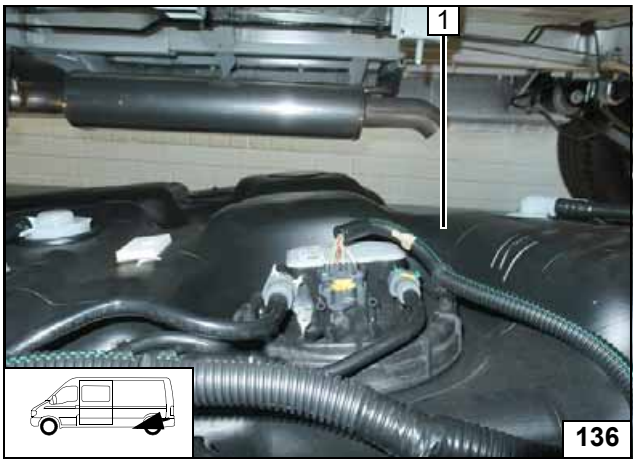
Routing lines



Installing FuelFix

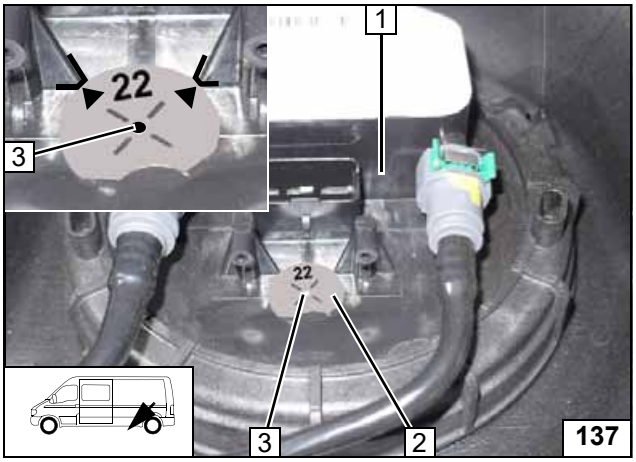
X =

Preparing drilling template



Lower tank **1** slightly according to the manufacturer's instructions (do not remove).

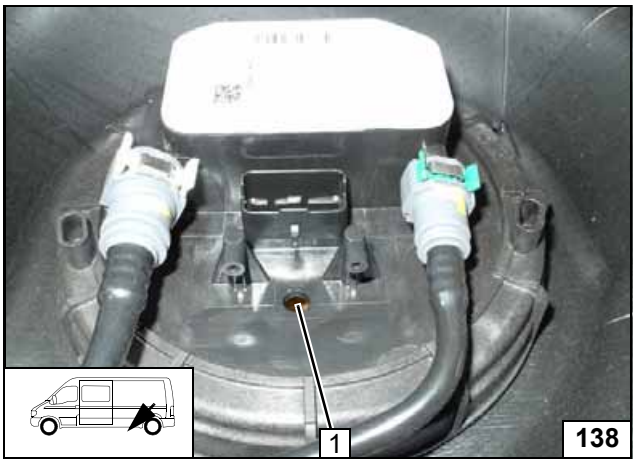
Lowering fuel tank



Work steps F1 and F2.

1 Tank fitting
2 Position Ø22 drilling template as shown
3 Hole pattern

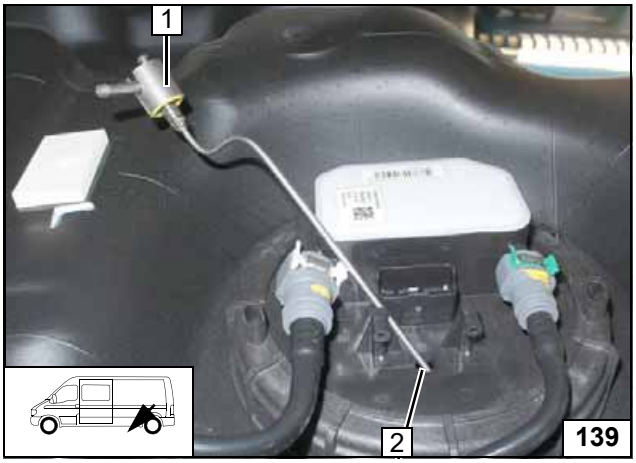
Copying hole pattern



Work step F3.

1 Hole made with provided drill

Hole for FuelFix



Work steps F4 and F5.

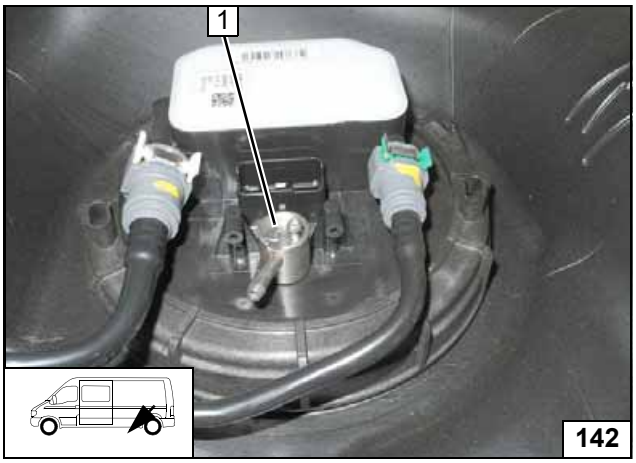
Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.

Inserting FuelFix

Work step F5.

Inserting FuelFix

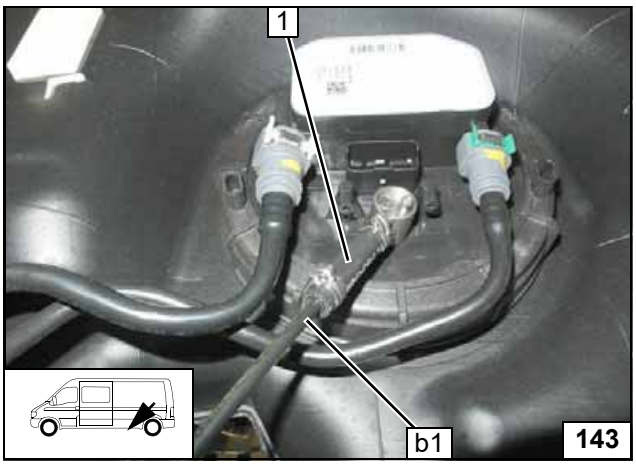
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

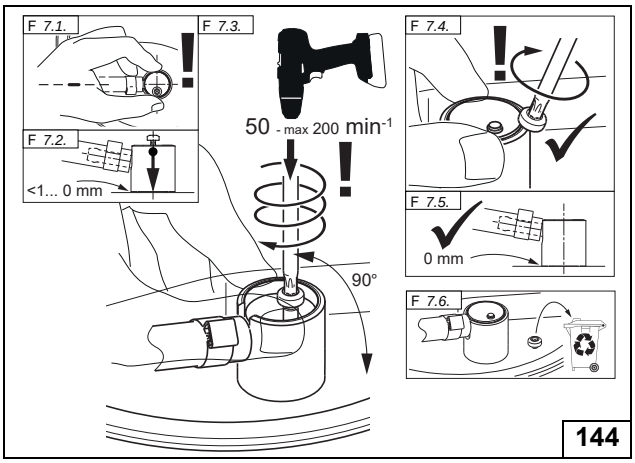
Aligning FuelFix



Work step F6.

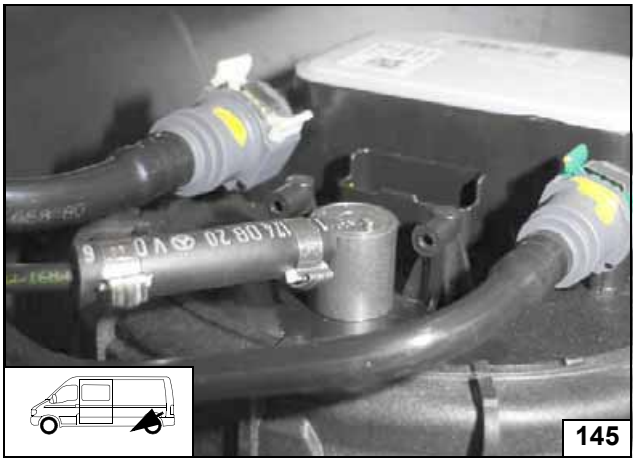
1 Hose section, Ø10 clamp [2x]

Connecting fuel line b1



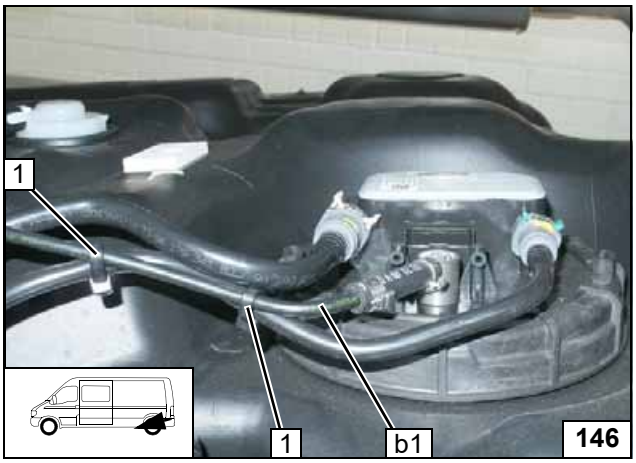
Work step F7.

Installing FuelFix



Work step F8.

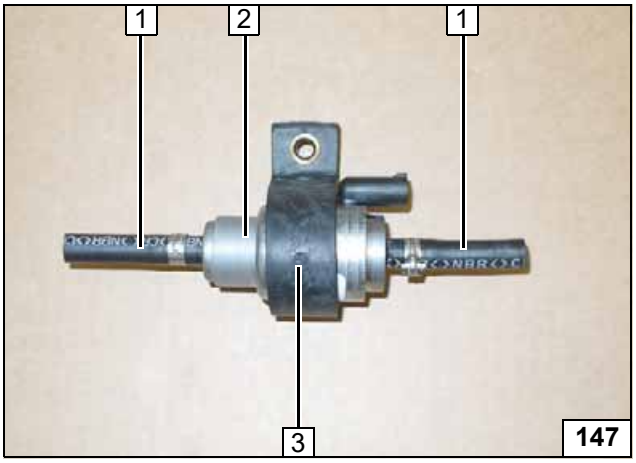
Ensuring firm seating of FuelFix



1 Cable tie as tension relief [2x]

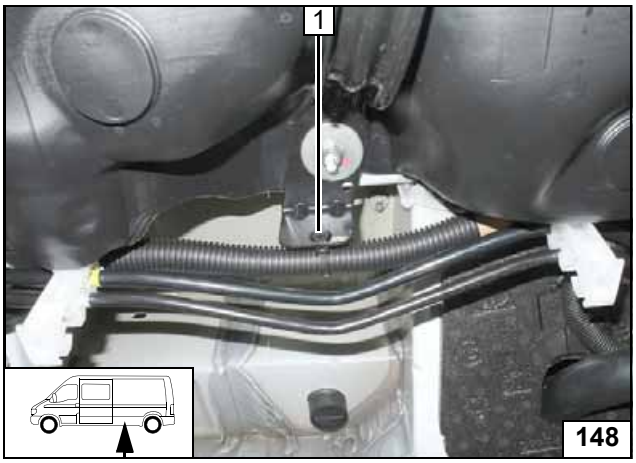
Routing fuel line b1

Install fuel tank in accordance with manufacturer's instructions.



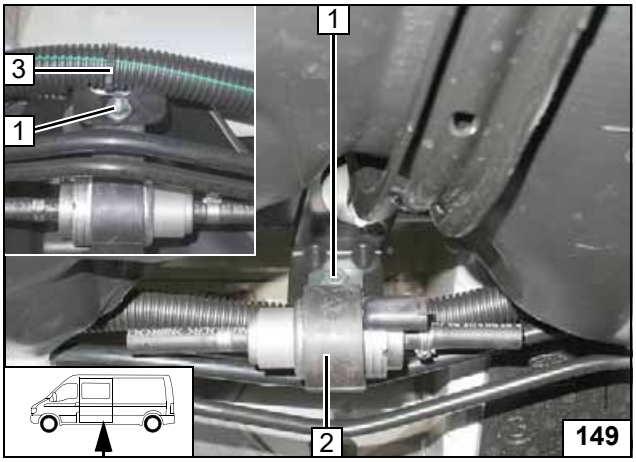
1 Hose section, Ø10 clamp [2x each]
2 Fuel pump
3 Fuel pump mount

Premounting fuel pump



Detach original vehicle wiring harness with retaining clip **1**.

Preparing installation location

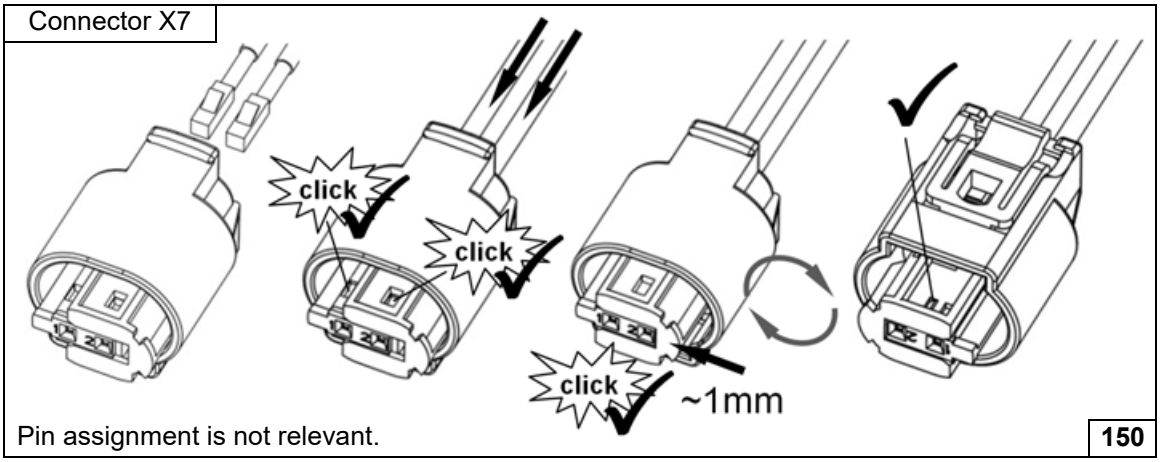


Fasten original vehicle wiring harness using cable tie **3**.

1 M6x25 bolt, original vehicle hole, flanged nut
2 Fuel pump mount

Mounting fuel pump

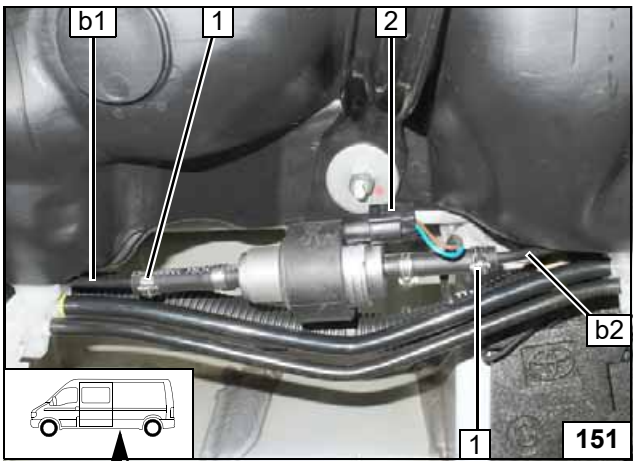
Connector X7



Pin assignment is not relevant.

150

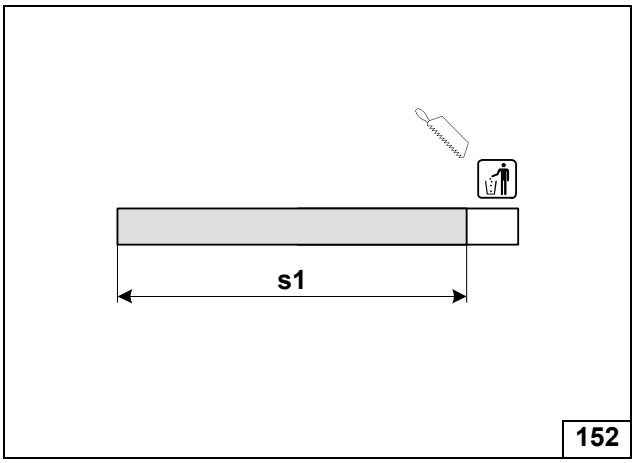
Completing fuel pump connector



Ensure sufficient distance from neighbouring components, correct if necessary.

1 Ø10 clamp [2x]
2 Fuel pump wiring harness, connector X7 mounted

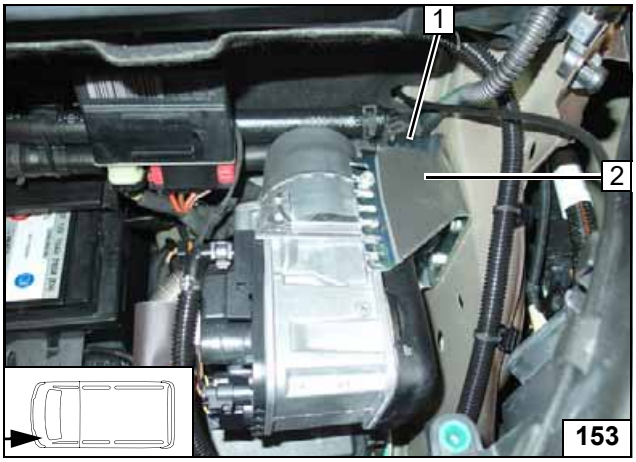
Fuel pump connection



Combustion air

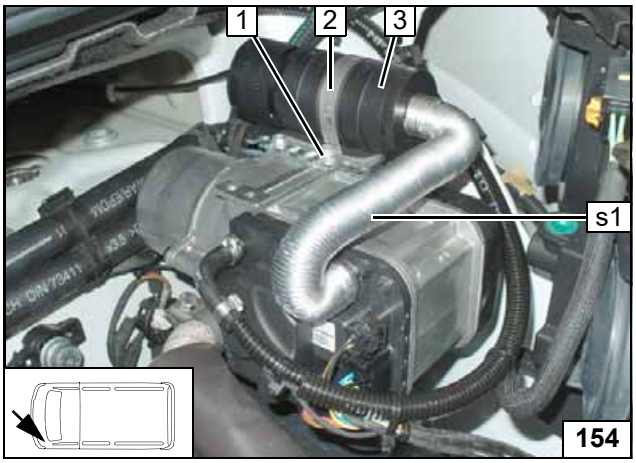
s1 = 240

Cutting combustion air intake pipe to length



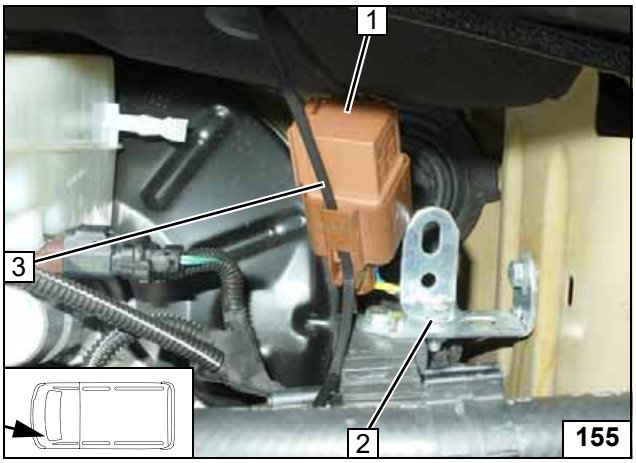
1 Bracket of heater
2 Self-adhesive foam

Affixing foam



1 5x13 self-tapping bolt
2 Ø51 clamp
3 Combustion air intake silencer

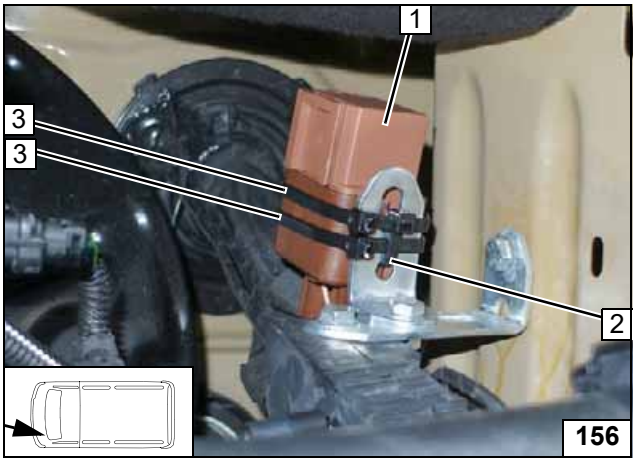
Mounting combustion air intake silencer and combustion air intake pipe



Original vehicle relay installation

1 Original vehicle relay
2 M6x20 bolt, angle bracket, mounted perforated bracket of coolant pump mount, flanged nut
3 Guide cable tie through bracket on relay

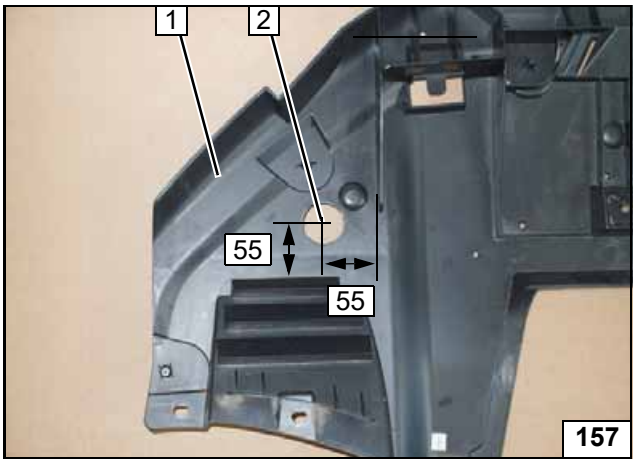
Mounting original vehicle relay (depending on equipment)



Fasten relay **1** using cable tie **3** [2x] as shown and fix using premounted cable tie **2**.

Original vehicle relay installation

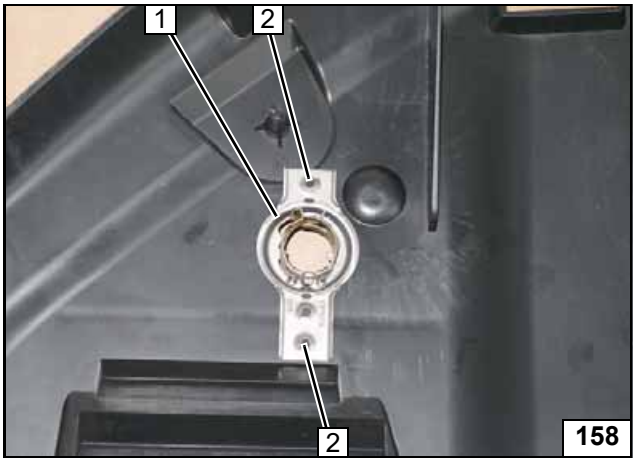
Exhaust end fastener installation



Work step E1.

1 Underride protection
2 Hole

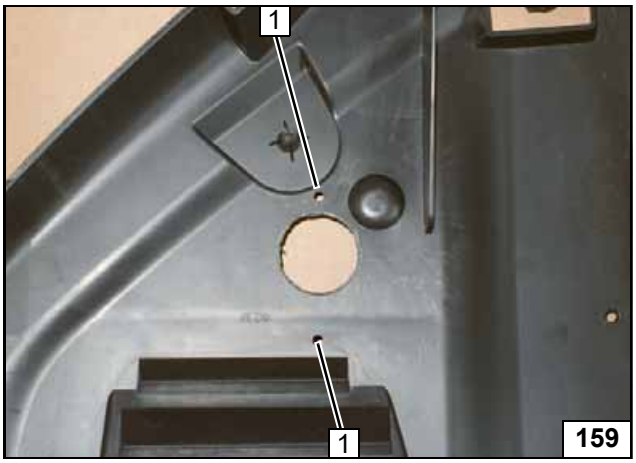
Hole in underride protection



Work step E3.

1 Exhaust end fastener
2 Hole pattern [2x]

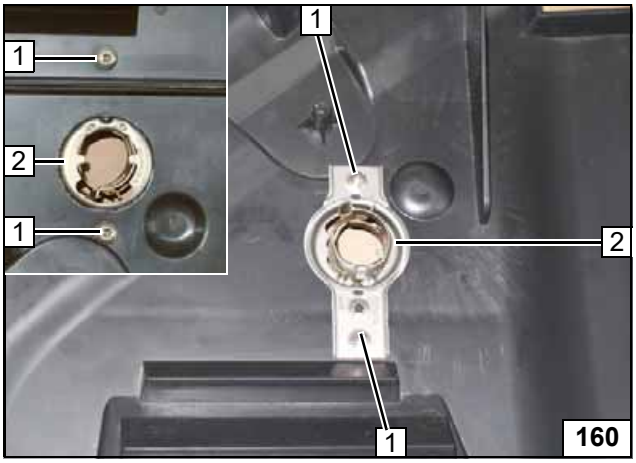
Copying hole pattern



Work step E4.

1 Hole [2x]

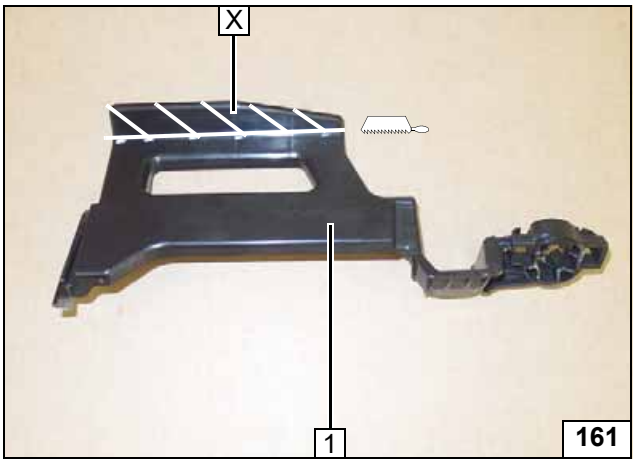
Holes in underride protection



Work step E5.

1 5x13 self-tapping screw [2x]
2 Exhaust end fastener

Installing exhaust end fastener

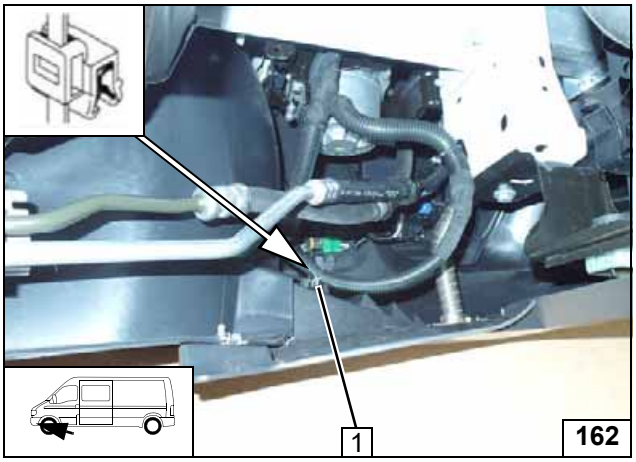


Final work

1 Battery strut

X = 

Adapting battery strut



1 Clip-type cable tie

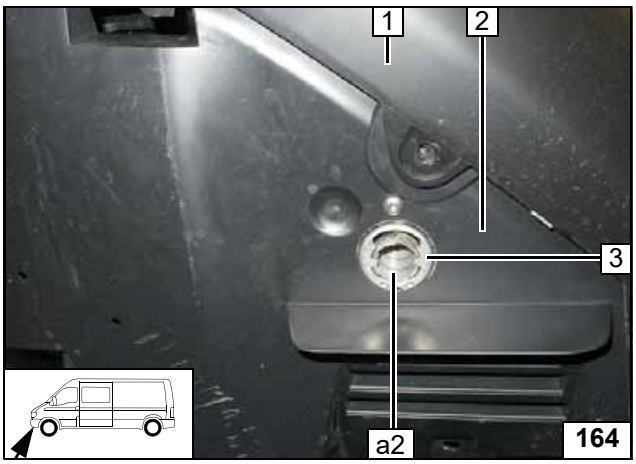
Attaching original vehicle line

Ensure sufficient distance between all wires / hoses and adjacent components, correct if necessary!

Checking distance

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **For initial start-up and function check, please see installation instructions.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler point.**



Install bumper **1**.
Mount underride protection **2**.

3 Exhaust end fastener

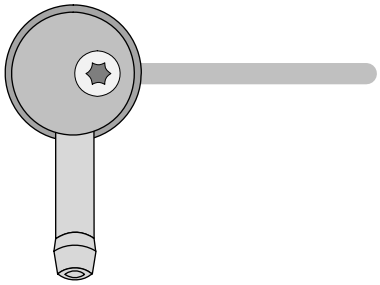
Installing exhaust pipe a2

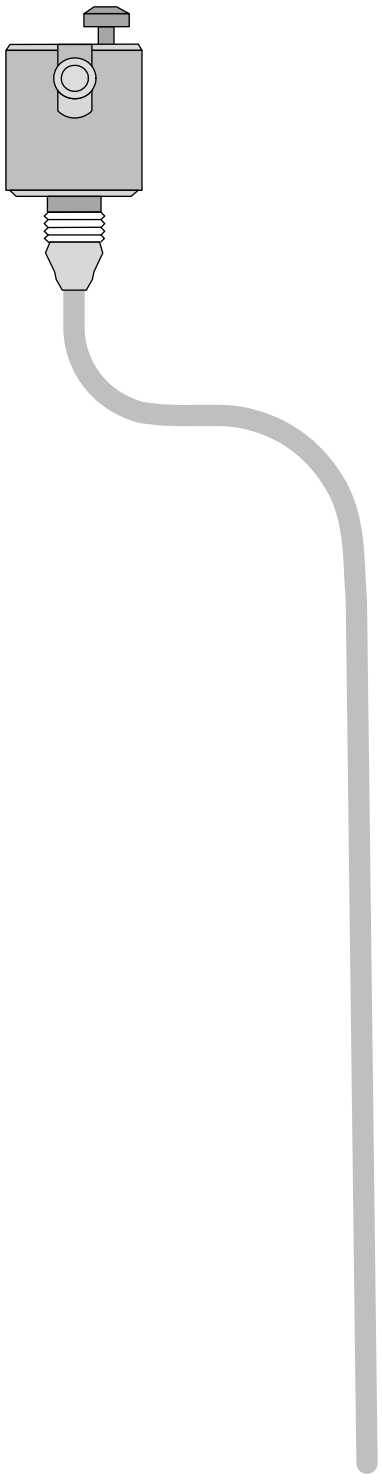
Work steps E6 - E8.

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

FuelFix template

Top view





100mm

Scale 1:1

Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.

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

100mm

0

Operating instructions for manual air-conditioning

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.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Note:
Because of the on-board integrated thermostat valve, error entries in the additional heater can possibly occur when parking heating mode is activated at the same time the motor is running.
Auxiliary heating mode is not recommended when the motor is running.

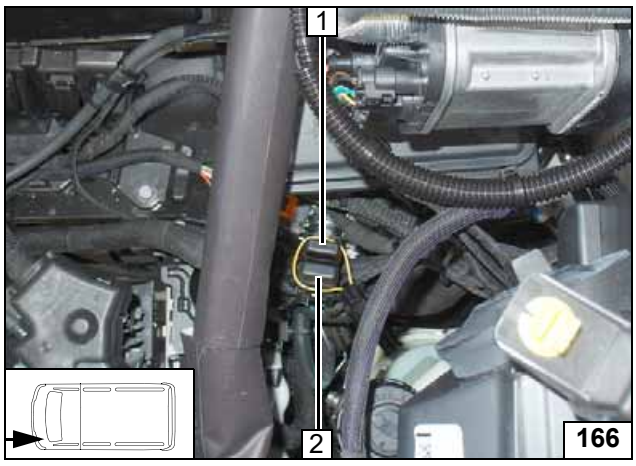
Information on active parking heating mode
The vehicle fan is deactivated when the vehicle is opened and it will be activated again when the ignition is switched on.
After re-closing the vehicle it may take several minutes before it becomes active again.

Before parking the vehicle, make the following settings:

It is not necessary to preset the fan speed.

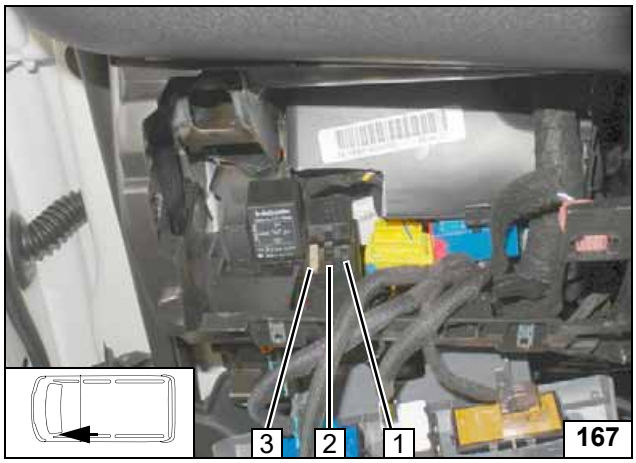
1 Set temperature to ‘max.’
2 Air outlet to windscreen

A/C control panel



1 30A passenger compartment main fuse F2
2 20A heater fuse F1

Engine compartment fuses



1 1A fan controller fuse F5
2 1A control element fuse F3
3 25A fan fuse F4

Passenger compartment fuses

Operating instructions for 2-zone air-conditioning

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.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Note:
Because of the on-board integrated thermostat valve, error entries in the additional heater can possibly occur when parking heating mode is activated at the same time the motor is running.
Auxiliary heating mode is not recommended when the motor is running.

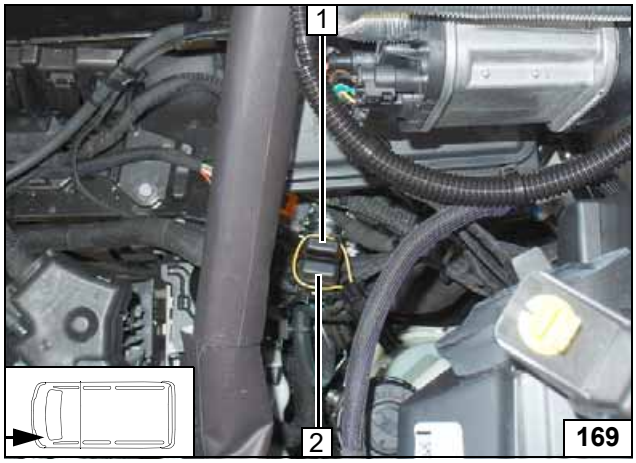
Information on active parking heating mode
The vehicle fan is deactivated when the vehicle is opened and it will be activated again when the ignition is switched on.
After re-closing the vehicle it may take several minutes before it becomes active again.

Before parking the vehicle, make the following settings:

It is not necessary to preset the fan speed.

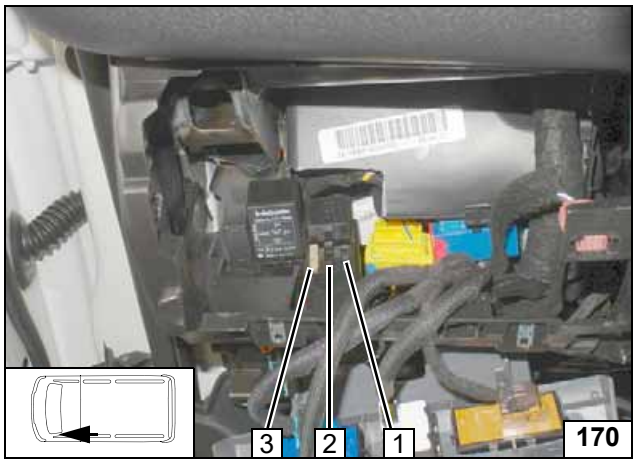
1 Set temperature on both sides to ‘Hi’
2 Air outlet to windscreen

A/C control panel



1 30A passenger compartment main fuse F2
2 20A heater fuse F1

Engine compartment fuses



1 1A fan controller fuse F5
2 1A control element fuse F3
3 25A fan fuse F4

Passenger compartment fuses