Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Opel Adam

Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Opel	Adam	M-A	e1 * 2001 / 116 * 0379 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.2 P	Petrol	5-speed SG	51	1229	A12XER/XEL (LWD)
1.2 P	Petrol	5-speed SG	51	1229	B12XEL (LWD)
1.4 P	Petrol	5-speed SG	64	1398	A14XER/XEL (L2Z)
1.4 P	Petrol	5-speed SG	64	1398	B14XEL (LDD)
1.4 P	Petrol	5-speed SG	74	1398	A14XER (LDD)
1.4 P	Petrol	5-speed SG	74	1398	B14XER (LDD)

SG = Manual transmission

From Model Year 2013
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
LED Daytime Running Lights
Euro 5 and Euro 6 emission standard
Start-Stop

Not verified: Passenger compartment monitoring

Total installation time: approx. 7 hours

Opel Adam

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Necessary Components

- Basic delivery scope *Thermo Top Evo* based on price list
- Installation kit for Opel Adam 2013 Petrol: **1320743B**
- To be ordered additionally in case of automatic air-conditioning: Additional kit for Opel automatic air-conditioning: **1321695B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and upon consultation with end customer

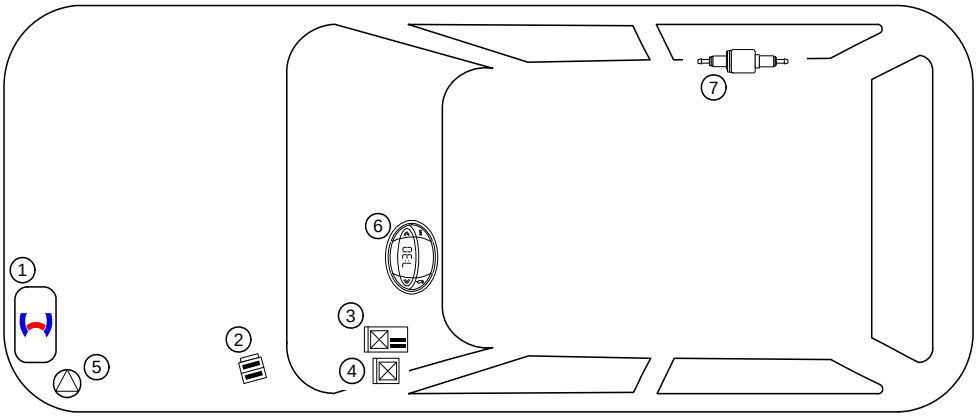
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full!
- The installation location of the push button in the case of Telestart or Thermo Call should be confirmed with the end customer.
- Depending on the available space and manufacturer's instructions, we recommend the use of a vehicle battery with more electrical capacity.

Installation Overview

Legend:

1. Heater
2. Fuse holder of engine compartment
3. Passenger compartment relay and fuse holder (only for manual air-conditioning)
4. CAN module (only for automatic air-conditioning)
5. Circulating pump
6. Digital timer
7. Metering pump



Notes on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

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

Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a 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, Order No. 111329).

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

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

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

2 Statutory regulations governing installation

Guidelines	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.

Opel Adam

Notes on Validity

This installation documentation applies to the Opel Adam Petrol vehicles - for validity, see page 1 - from model year 2013 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 Instructions

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 cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Webasto Thermo Test diagnosis with current software

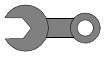
Dimensions
- All dimensions are in mm

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque of 5x15 bolt of water connection piece retaining plate = 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.

Mechanical system



Electrical system

Coolant circuit

Combustion air

Fuel

Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

Specific risk due to electrical voltage

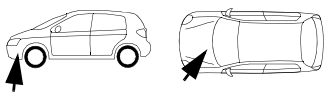
Specific risk of damage to components.

Specific risk of fire or explosion.

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

Reference to a special technical feature.

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



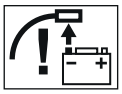
Tightening torque according to the manufacturer's vehicle-specific documents

Opel Adam

Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery and remove it together with the battery box.
  Warning: Do not reconnect the battery, until all the operations required to integrate the heater and its components, especially the CAN module, are completed. Failure to do so may result in malfunctions of the CAN module.
- Disconnect the coolant expansion tank and lay it aside.
- Remove the cowl panel.
- Move the engine compartment connector (see "Preparing installation location" section for description).
- Remove the heat shield plate on the fuel tank.
- Loosen the exhaust.
- Remove the cover of the light switch.
- Remove the lower instrument panel trim on the driver's side.



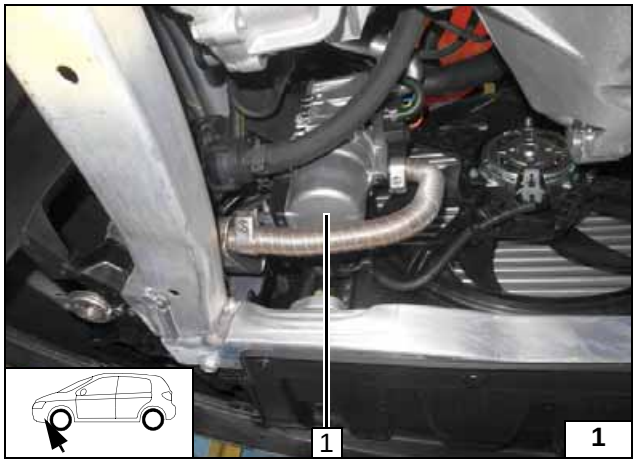
Carry out the following work only during the corresponding installation sequence:

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

Note:
The bumper has only been removed for documentary purposes.

Heater

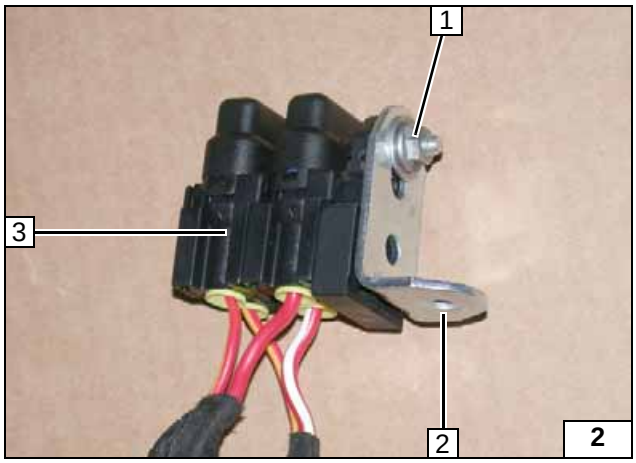
- Remove dates that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place inside the engine compartment



Heater Installation Location

1 Heater

Installation location



Preparing Electrical System

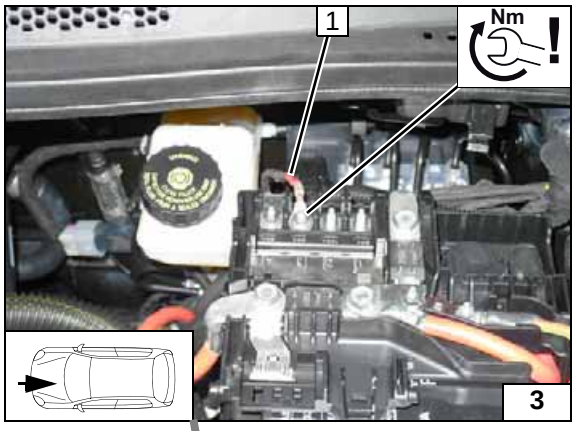
1 M5x16 bolt, large diameter washer [2x], nut
2 Angle bracket
3 Fuse holder of engine compartment

Preparing engine compartment fuse holder

Electrical System

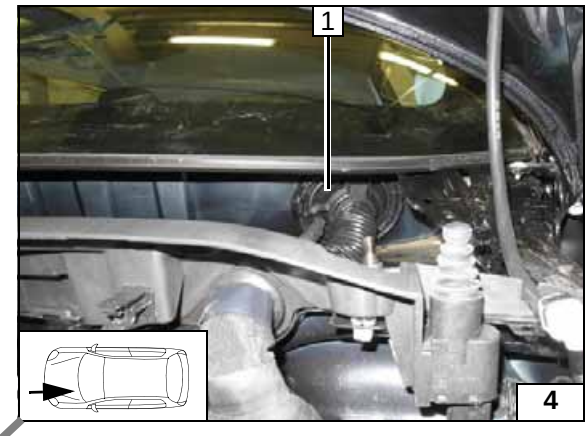
Positive wire

1 Positive wire on positive battery distributor, M5 flanged nut

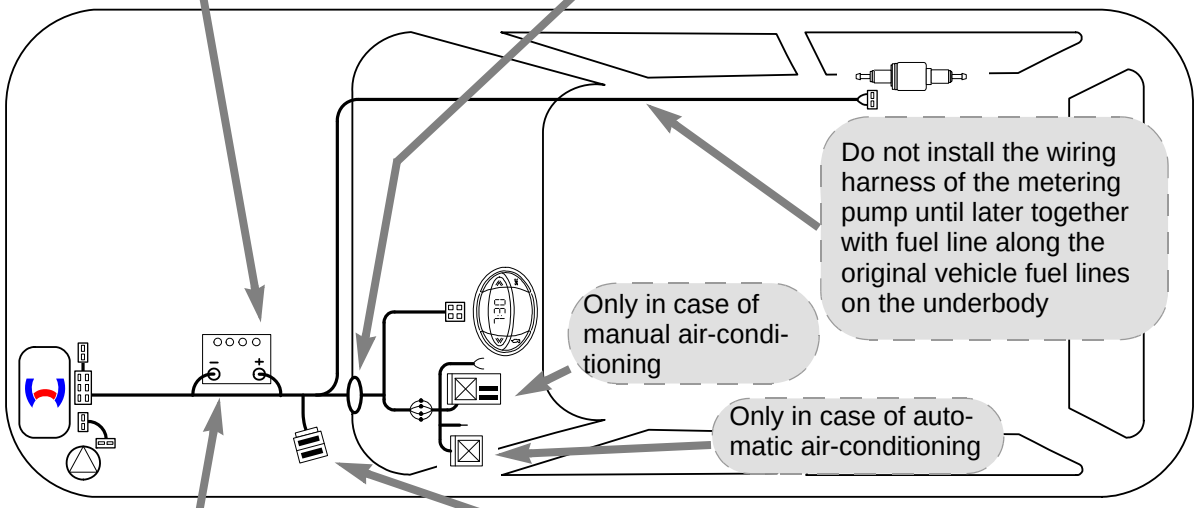


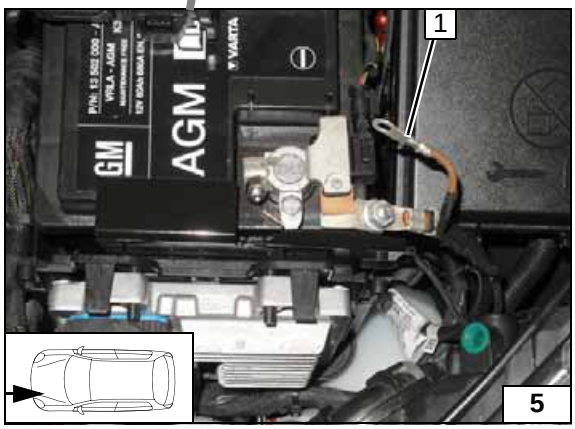
Wiring harness pass through

1 Protective rubber plug



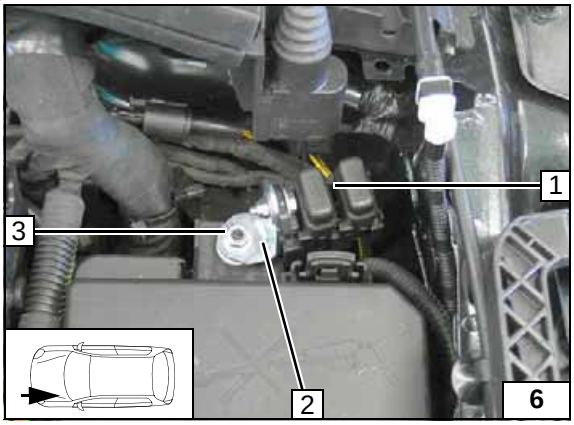
Wiring harness routing diagram





Earth wire

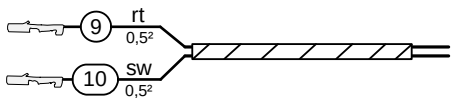
Route earth wire **1** to the negative battery terminal. Connection is carried out in "Final Work".



Engine compartment fuse holder

Replace 30A fuse F2 with 1A fuse in case of automatic air-conditioning!

1 F1-2 fuses
2 Angle bracket
3 Original vehicle stud bolt, M6 flanged nut



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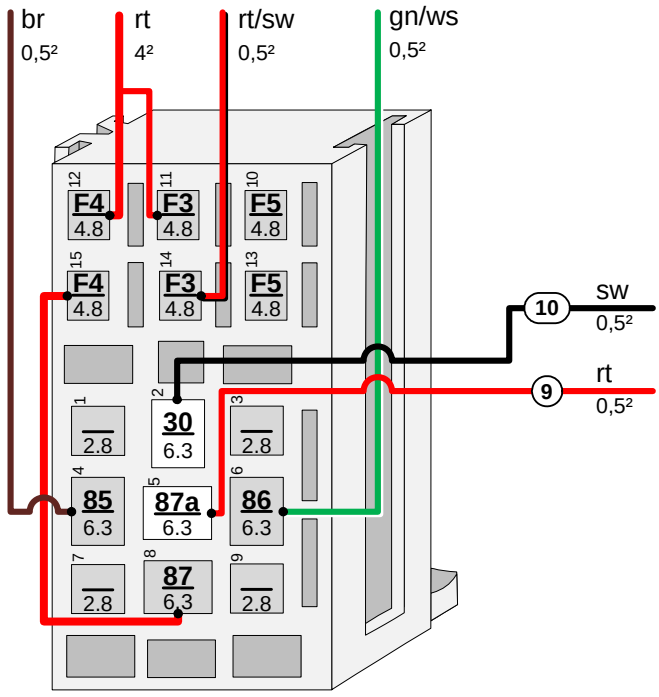
Manual Air-Conditioning Fan Controller

Wire sections retain their numbering in the entire document.

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

(9) Red (rt) wire of fan controller wiring harness
(10) Black (sw) wire of fan controller wiring harness

Preparing / assigning wires



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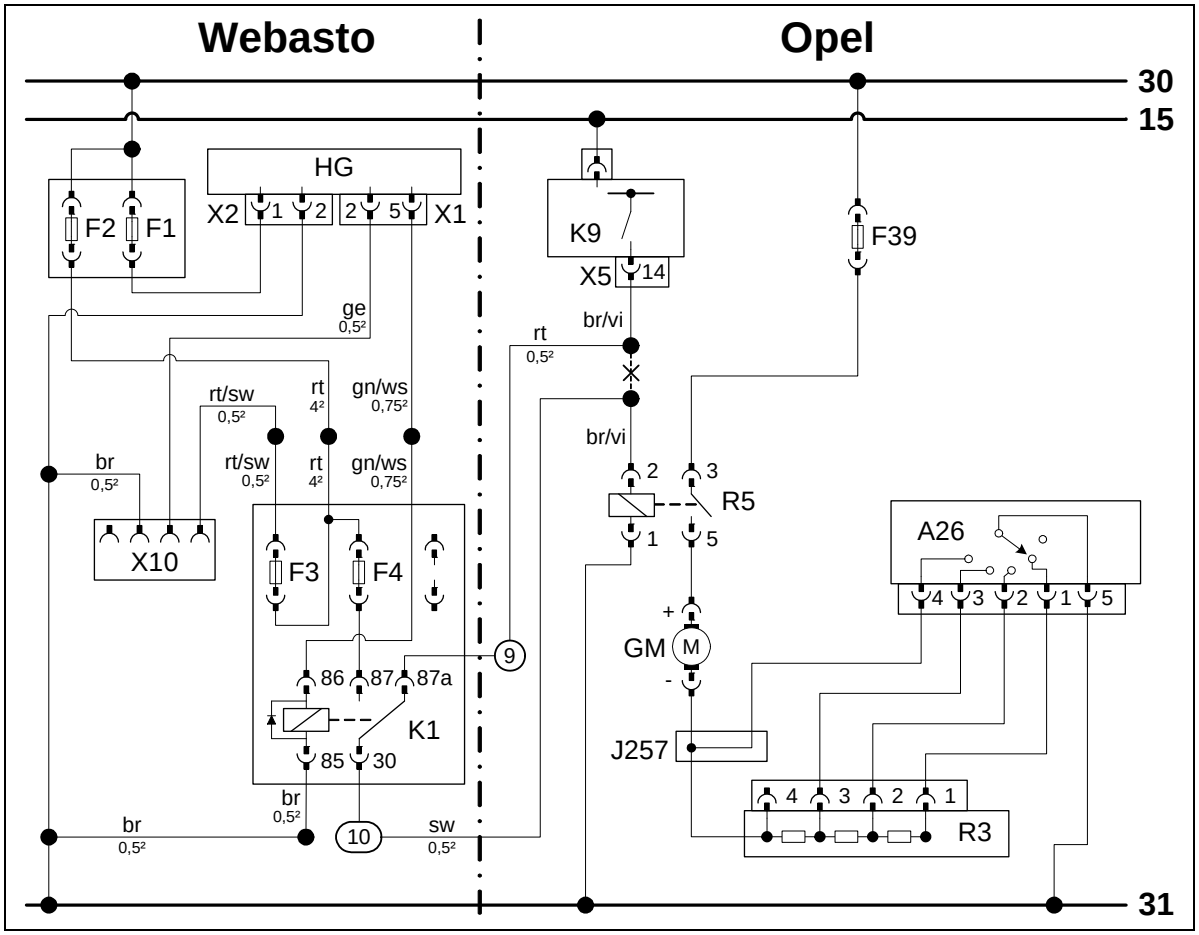
Connection of wires to passenger compartment relay and fuse holder

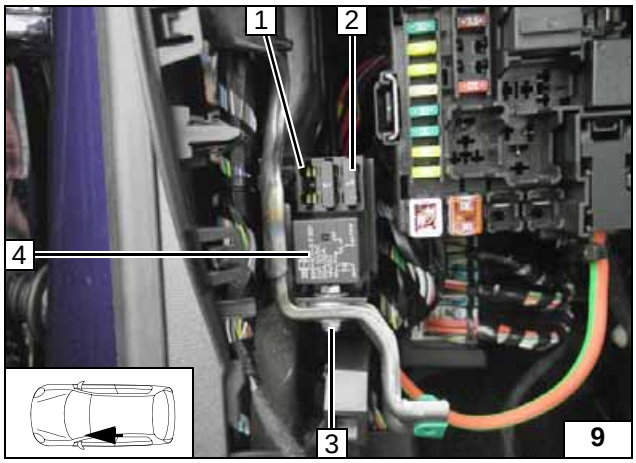
Wiring Diagram for Manual Air-Conditioning

Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	K9	Body control unit	rt	red
X1	6-pin heater connector	X5	K9 connector	sw	black
X2	2-pin heater connector	F39	Fuse 40A	ge	yellow
F1	Fuse 20A	R5	Fan relay	gn	green
F2	Fuse 30A	A26	Fan switch	ws	white
X10	4-pin connector of heater control	GM	Fan motor	br	brown
		J257	Intermediate connector	vi	violet
F3	Fuse 1A	R3	Resistor group		
F4	Fuse 1A				
K1	Fan relay			**X**	Cutting point
				Wiring colours may vary.	

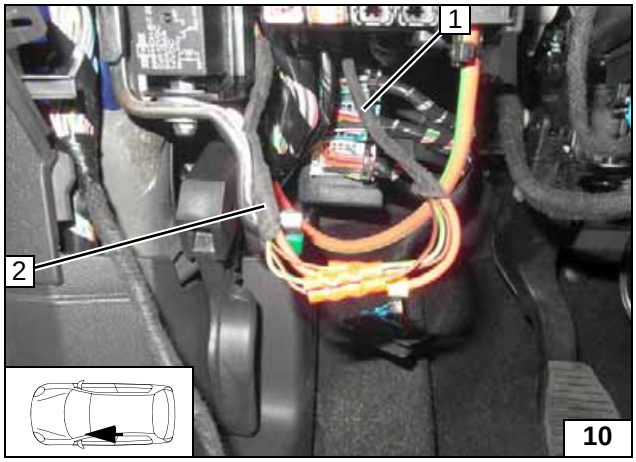
Legend



Insert 5mm shim between cross member and relay and fuse holder of passenger compartment **1**.

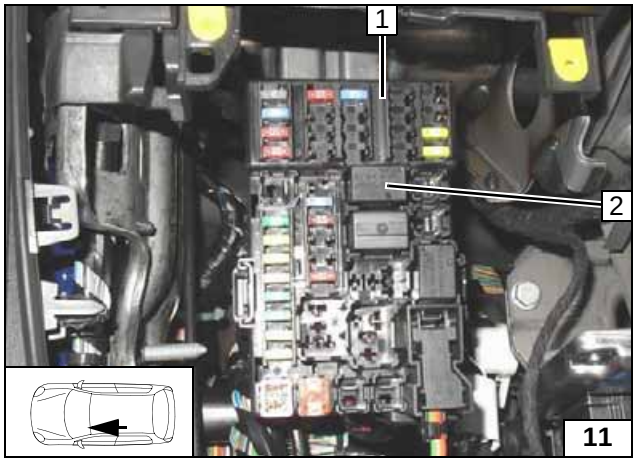
2 F4 1A fuse
3 M5x16 bolt, large diameter washer [2x], 5mm shim, nut, existing hole
4 K1 relay

Installing relay and fuse holder of passenger compartment



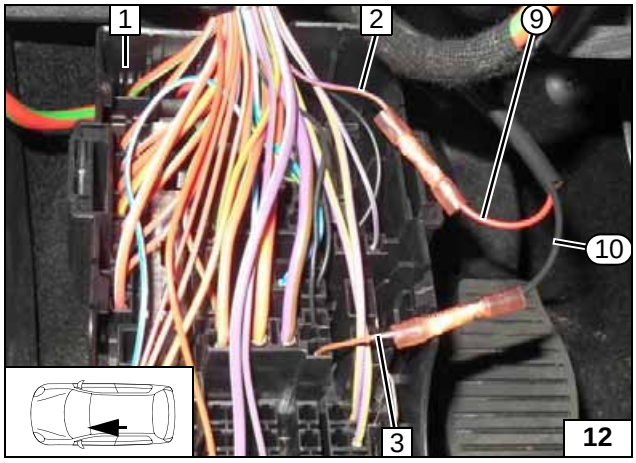
1 Wiring harness of heater
2 Wiring harness of passenger compartment relay and fuse holder

Connecting wiring harnesses using same colour wires



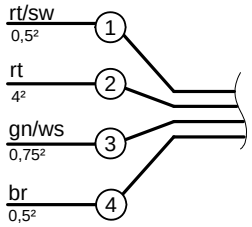
1 Fuse box of instrument panel
2 R5 fan relay

Connecting fan relay



1 Fuse box of instrument panel, detached (rear view)
2 Brown/violet (br/vi) wire of Terminal 15
3 Brown/violet (br/vi) wire of R5/2 fan relay
⑨ Red (rt) wire of K1/87a from fan controller wiring harness
⑩ Black (sw) wire of K1/30 from fan controller wiring harness

Connecting fan relay



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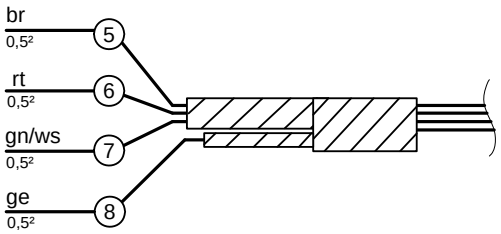

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Automatic Air-Conditioning Fan Controller

Wire sections retain their numbering in the entire document.

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

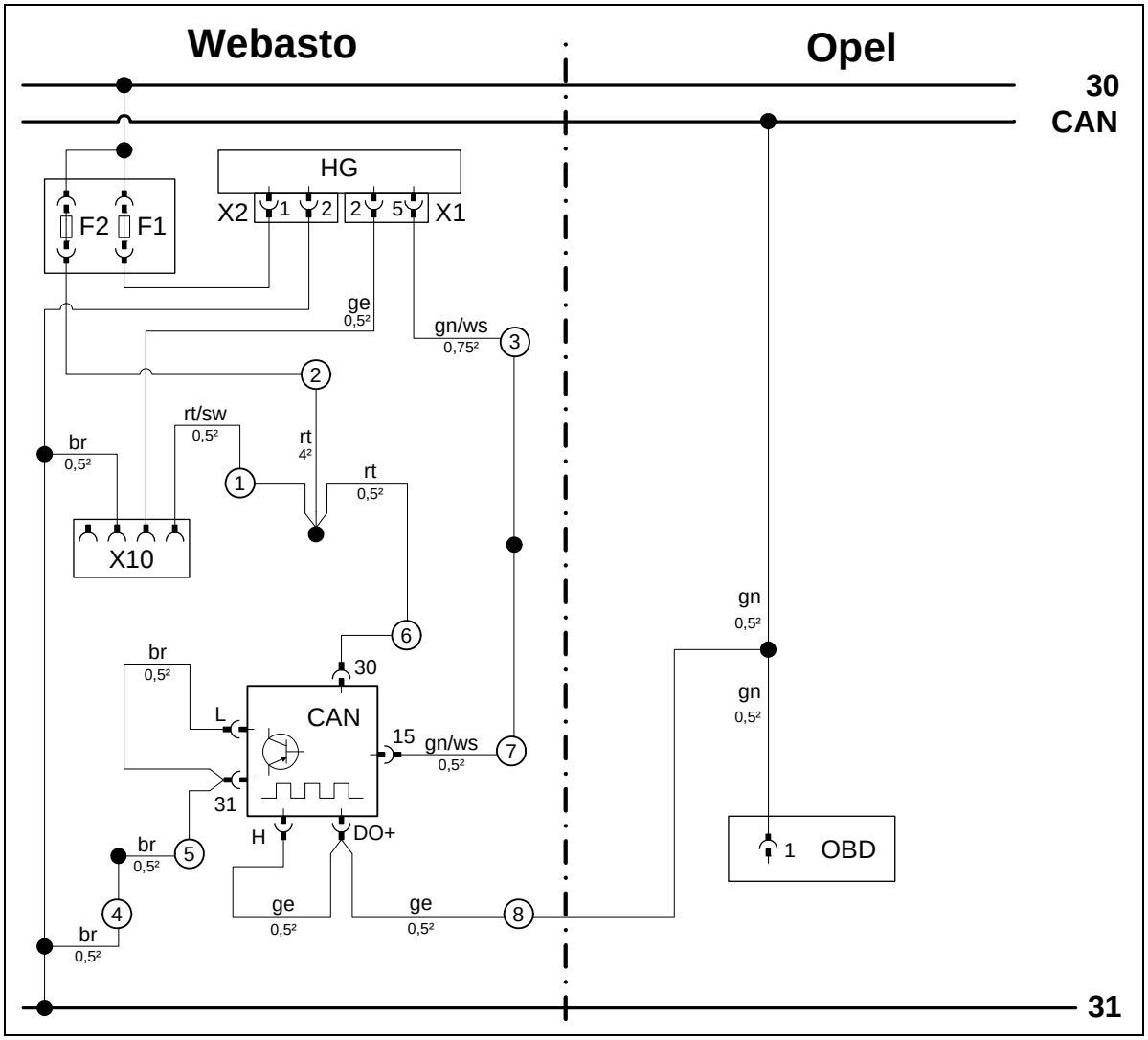
Assigning heater wiring harness

① Red/black (rt/sw) wire of heater wiring harness/ X10
② Red (rt) wire of heater wiring harness/ F2
③ Green/white (gn/ws) wire of heater wiring harness/ X1/5
④ Brown (br) wire of heater wiring harness/ earth 31

Assigning CAN wiring harness

⑤ Brown (br) wire from CAN wiring harness/ 31
⑥ Red (rt) wire from CAN wiring harness/ 30
⑦ Green/white (gn/ws) wire of CAN wiring harness/ 15
⑧ Yellow (ge) wire of CAN wiring harness/DO+

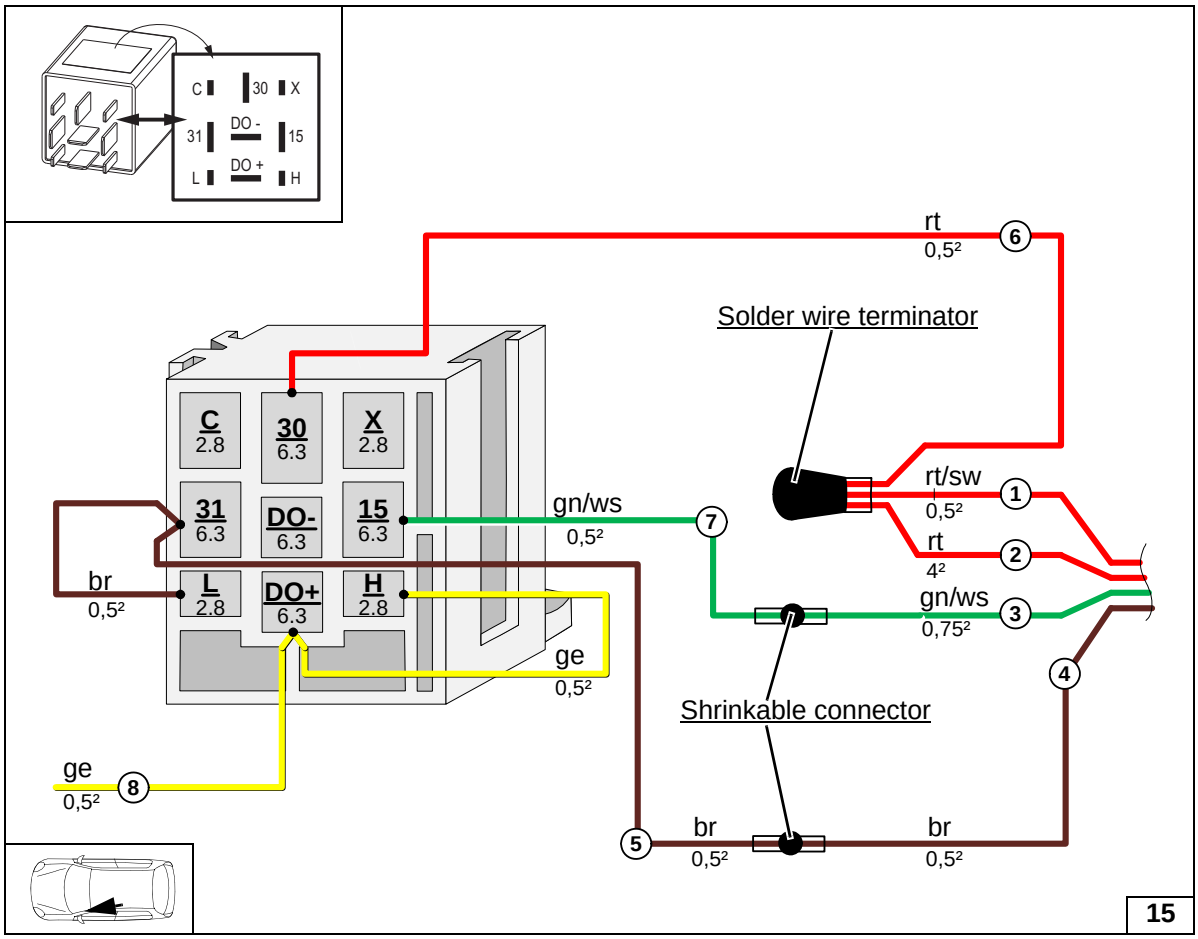
Wiring Diagram for Automatic Air-Conditioning



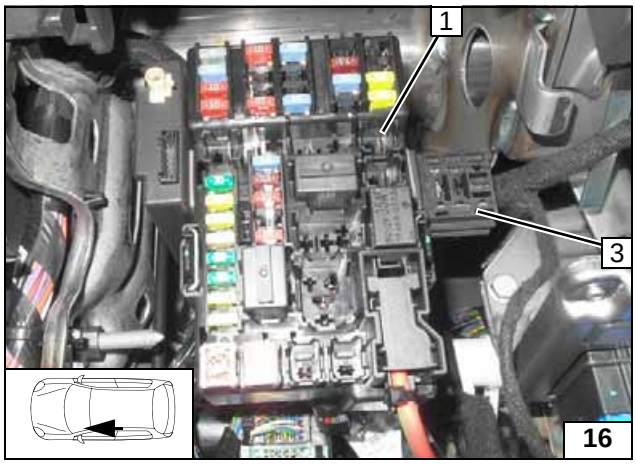
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	OBD	16-pin OBD connector	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector			ge	yellow
F1	Fuse 20A			gn	green
F2	Replace 30A with 1A fuse			br	brown
				ws	white
X10	4-pin connector of heater control				
CAN	CAN module				
				Wiring colours may vary.	

Wiring diagram

Legend

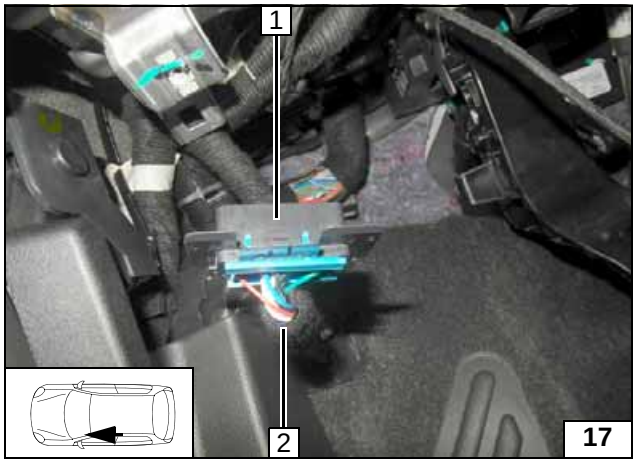


Connecting wires from heater wiring harness and CAN-module wiring harness in passenger compartment



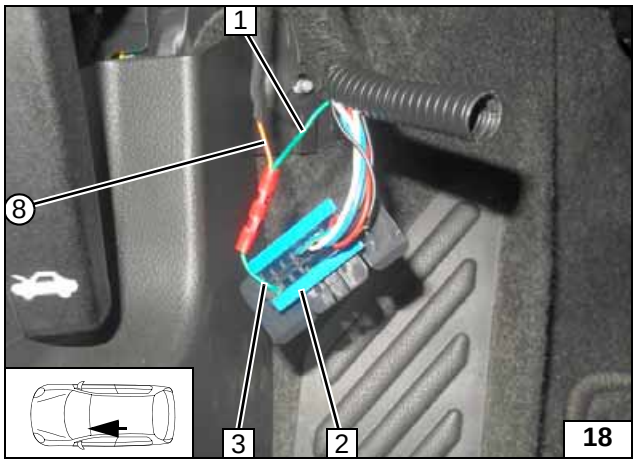
Installing CAN module socket

1 Fuse box of instrument panel
2 Fasten CAN module socket with double-sided adhesive tape



Remove insulation **2** from OBD connector **1**.

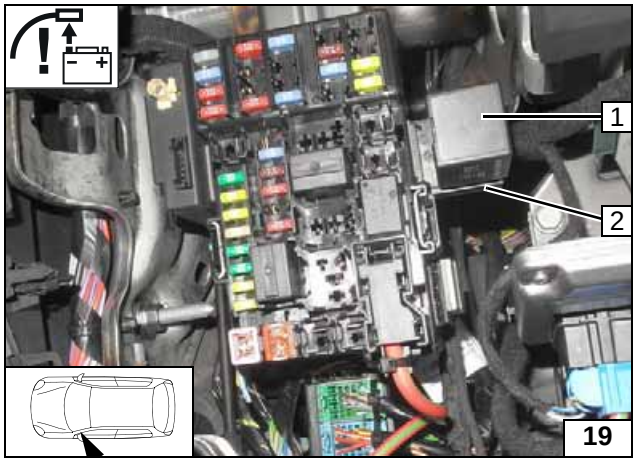
Disconnecting OBD connector



Produce connections by crimping and shrinking.

1 Green (gn) wire of CAN bus
2 16-pin OBD-connector
3 Green (gn) wire of OBD/1
⑧ Yellow (ge) wire of CAN module/DO+

Connecting OBD connector



Before installation see info on battery in section "Preliminary Work"!

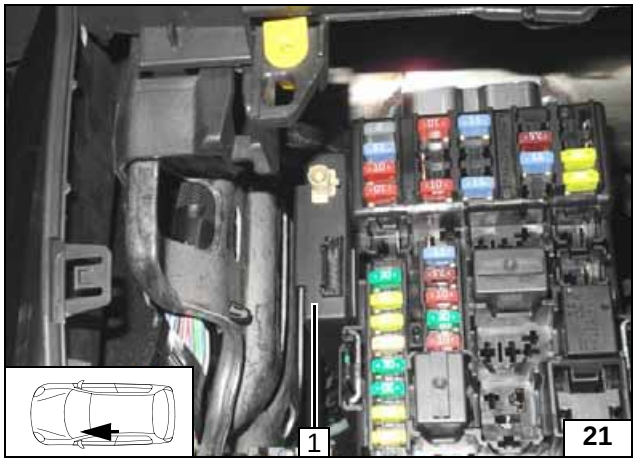
1 CAN module
2 CAN module socket

Installing CAN module

Digital Timer

1 Digital timer

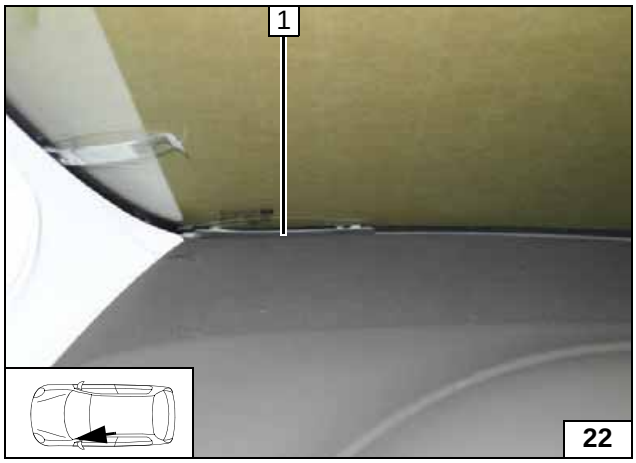
Installing digital timer



Remote Option (Telestart)

Fasten receiver **1** with adhesive tape.

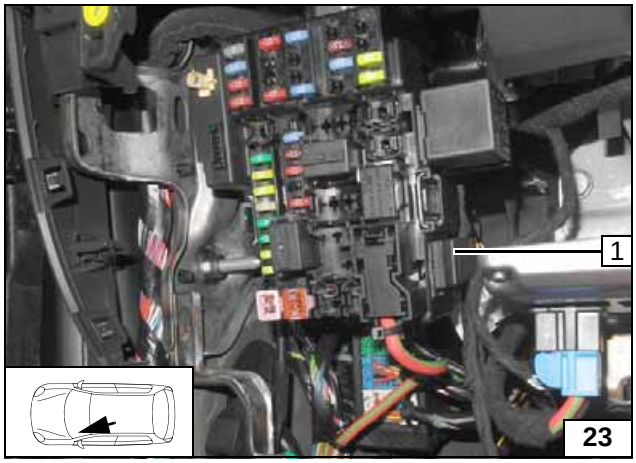
Mounting receiver



In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

1 Antenna

Mounting antenna



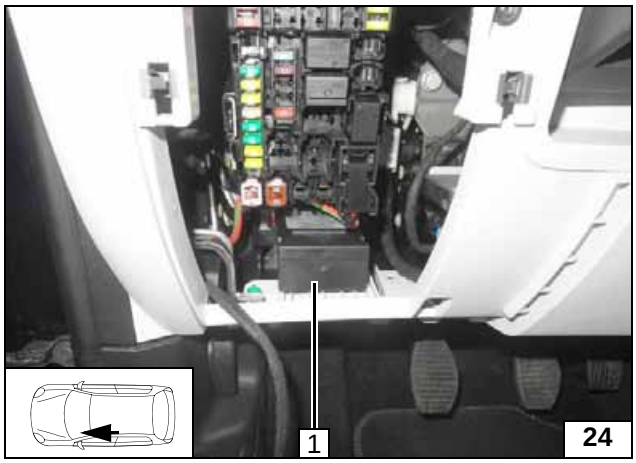
Installing T100 HTM temperature sensor

Figure shows vehicle with automatic air-conditioning!
Fasten temperature sensor **1** with adhesive tape.

Installing temperature sensor

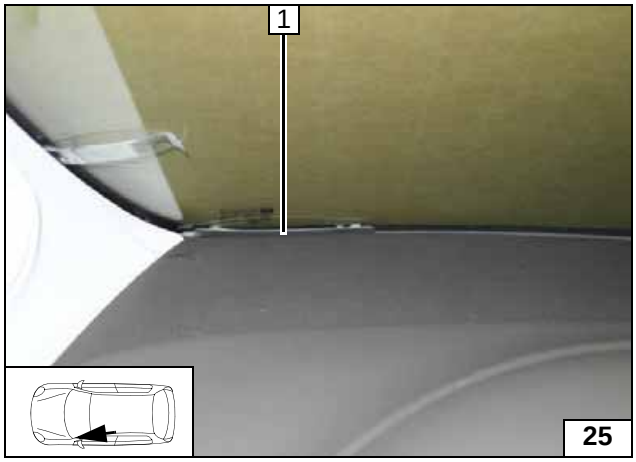
Remote Option (Thermo Call)

Mounting receiver



Fasten receiver **1** with adhesive tape.

Mounting antenna



In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

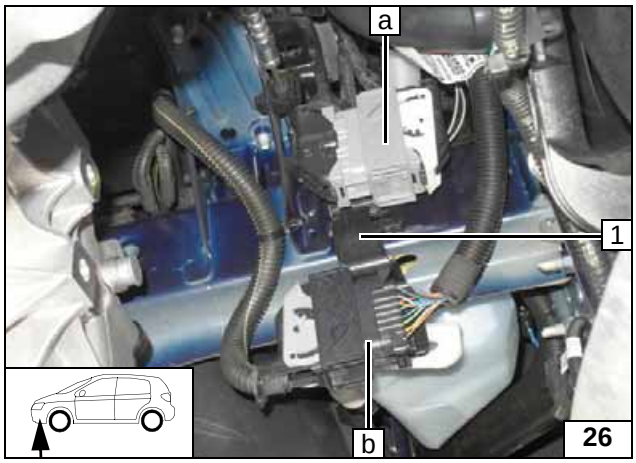
1 Antenna

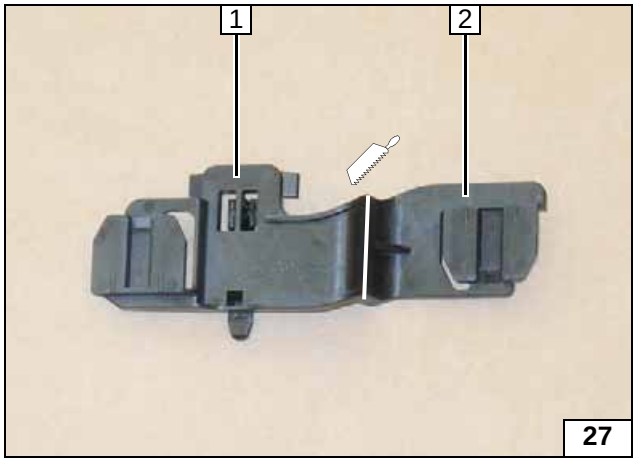
Preparing Installation Location

Detach original vehicle connector **a** and **b** from bracket **1**.

1 Remove bracket, will be reused.

Detaching connector





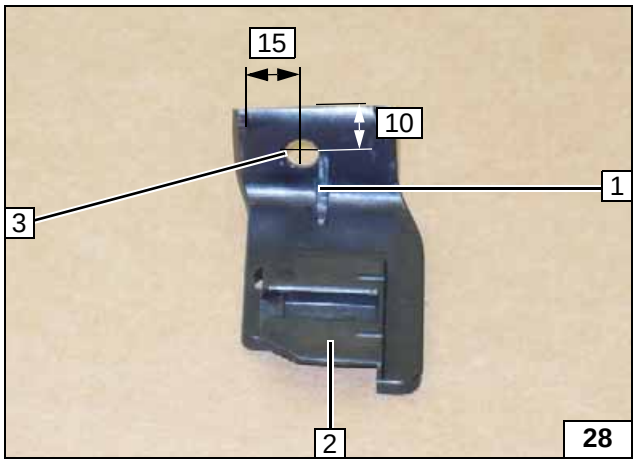
1 Discard section
2 Bracket, will be reused.

Preparing bracket

Remove rib **1** (e.g. by grinding).

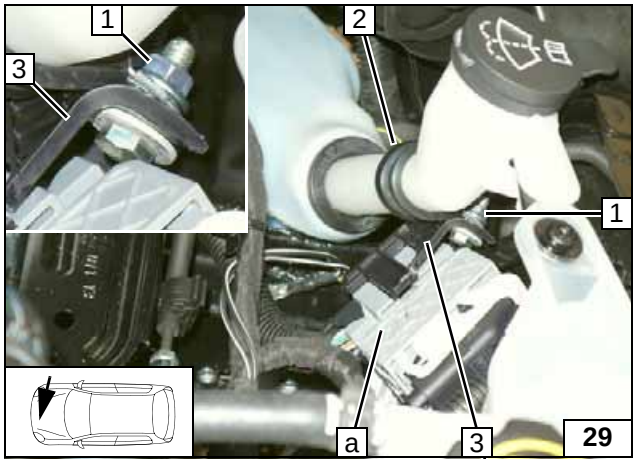
2 Bracket
3 7 mm dia. hole

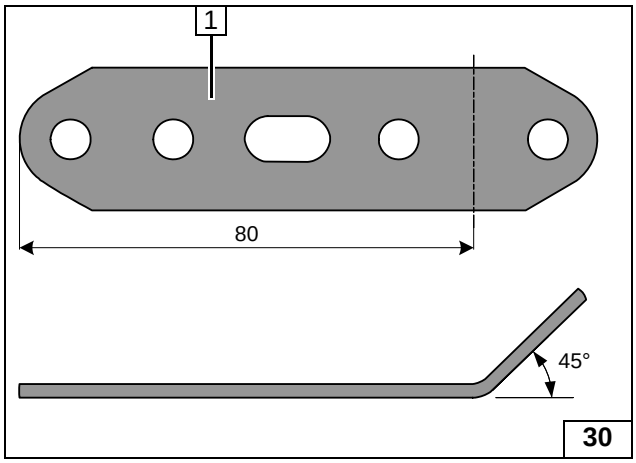
Preparing bracket



1 M6x20 bolt, large diameter washer, flanged nut
2 29 mm dia. rubber-coated p-clamp
3 Prepared bracket, connector **a**

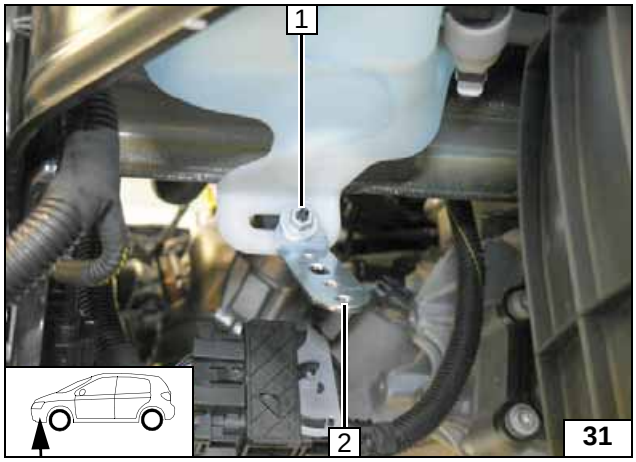
Installing connector a





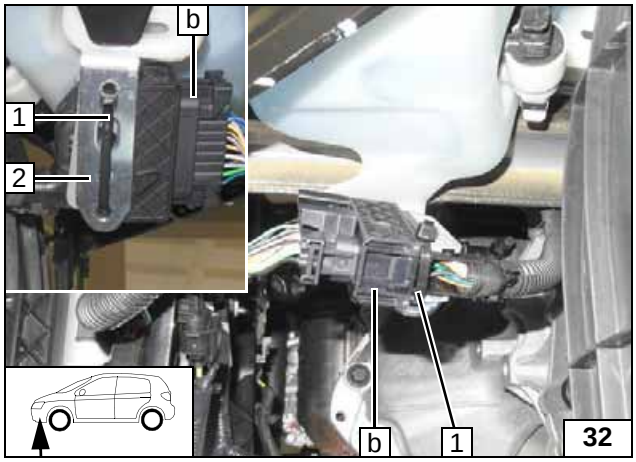
1 Perforated bracket

Angling down perforated bracket



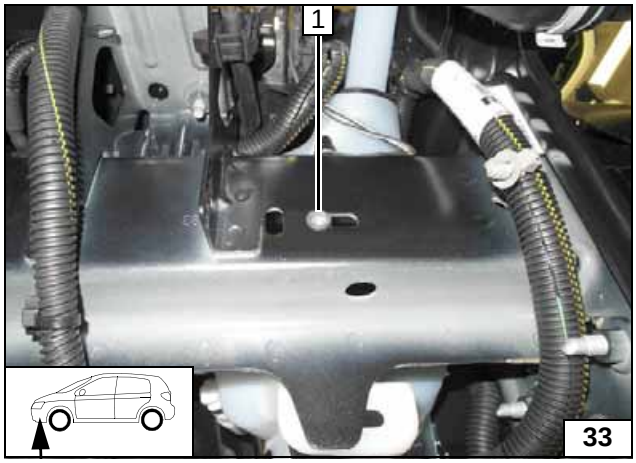
1 Original vehicle stud bolt and flanged nut, washer reservoir
2 Perforated bracket

Mounting perforated bracket



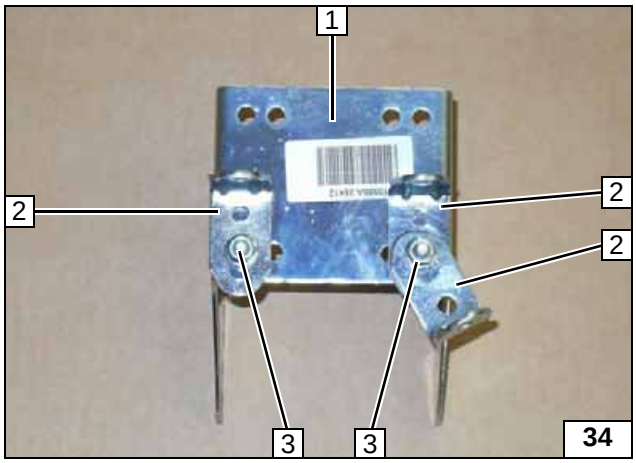
Install connector **b** with cable tie **1** on perforated bracket **2**.

Installing connector b



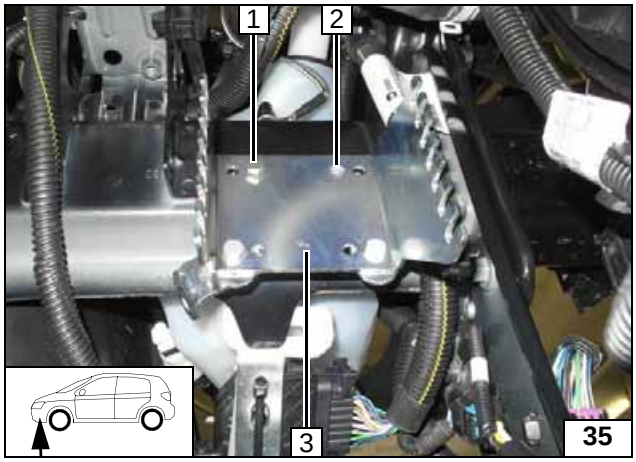
Drill out oblong hole at position **1** to 9.1mm dia. and mount rivet nut **1**.

Installing rivet nut



1 Bracket
2 Angle bracket [3x]
3 M6x16 bolt, flanged nut [2x]

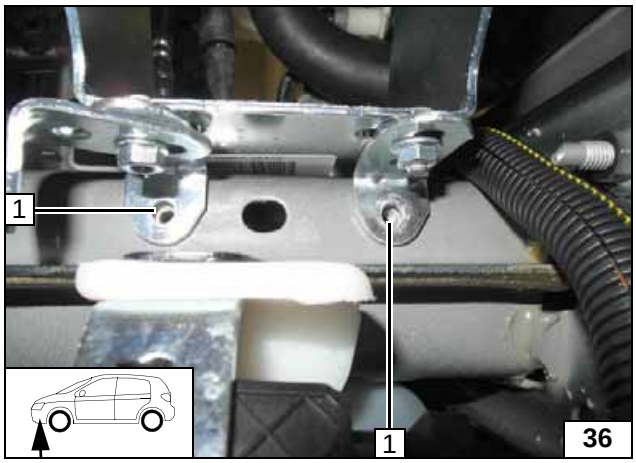
Preparing bracket of heater



Loosely mount bracket **3** and align it vertically.

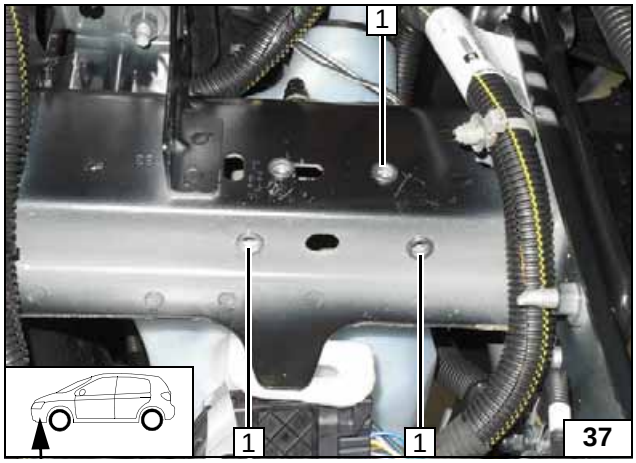
1 M6x20 bolt
2 Copy hole pattern

Copying hole pattern



1 Copy hole pattern

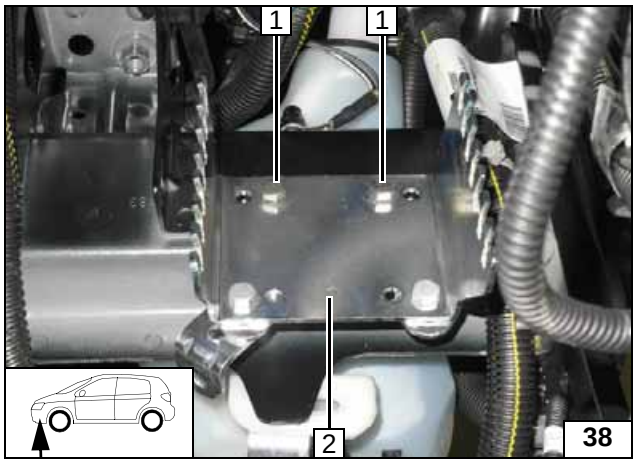
Copying hole pattern



Remove bracket.

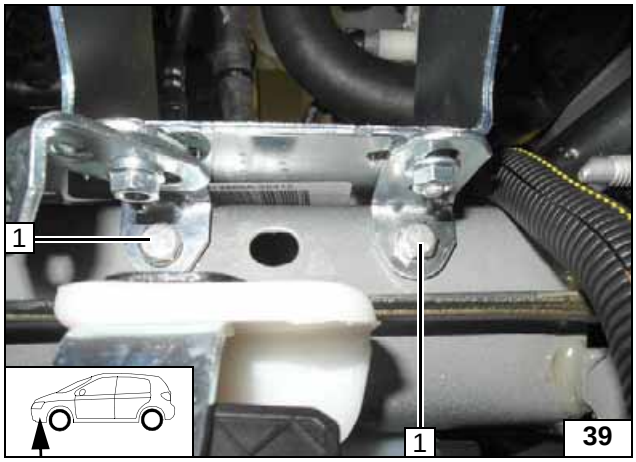
1 9.1 mm dia. hole; rivet nut [3x each]

Installing rivet nut



1 M6x20 bolt, spring lockwasher [2x]
2 Bracket

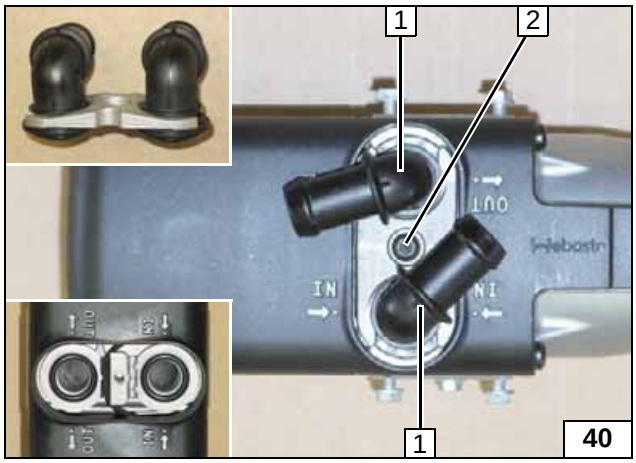
Mounting bracket



1 M6x20 bolt, spring lockwasher [2x]

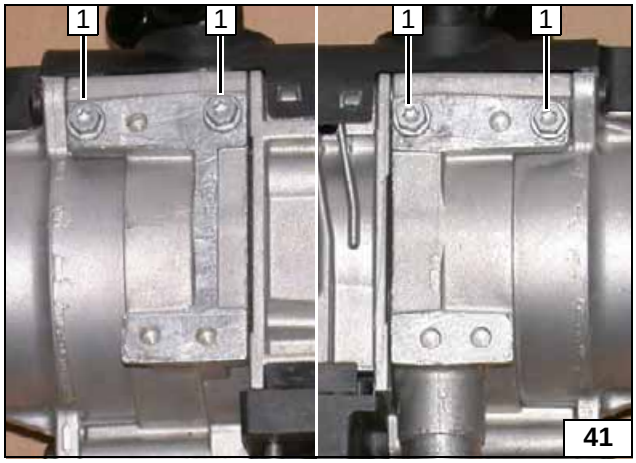
Mounting bracket

Preparing Heater



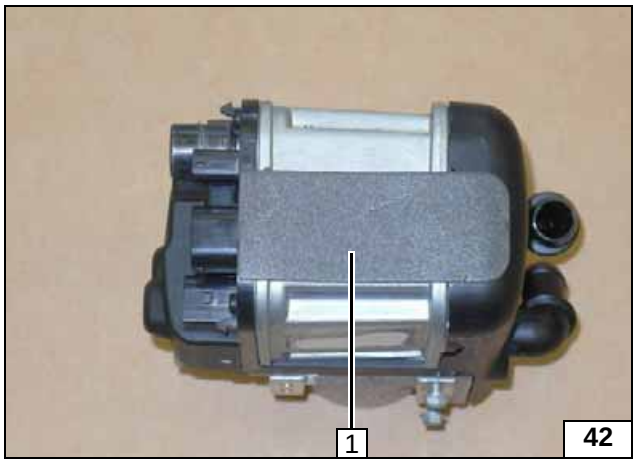
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Installing water connection pieces



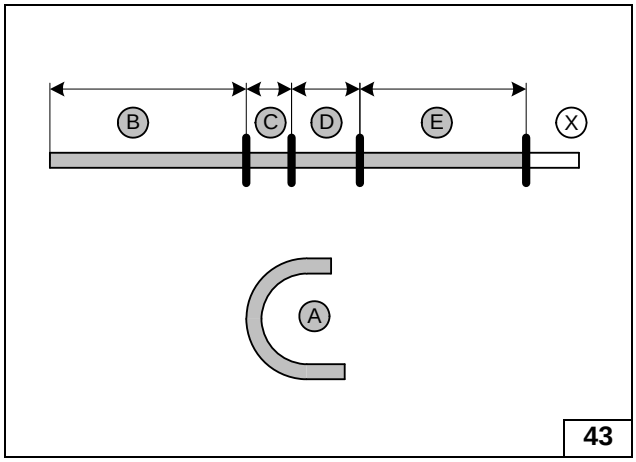
Screw 5x13 self tapping bolts **1** [4x] into existing holes by a maximum of 3 thread turns.

Premounting bolts loosely



1 Insulation protection strips

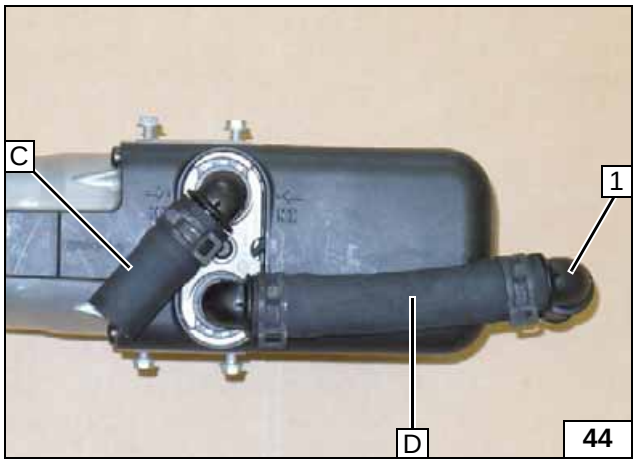
Gluing on insulation protection strips



Discard section **X**.
Hose **A** = 20mm dia. 180° moulded hose

B = 420
C = 60
D = 120
E = 370

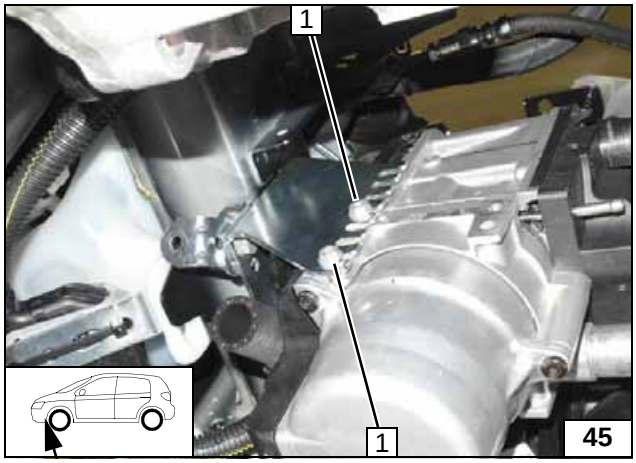
Cutting hoses to length



All spring clips = 25 mm dia.!

1 90° connecting pipe

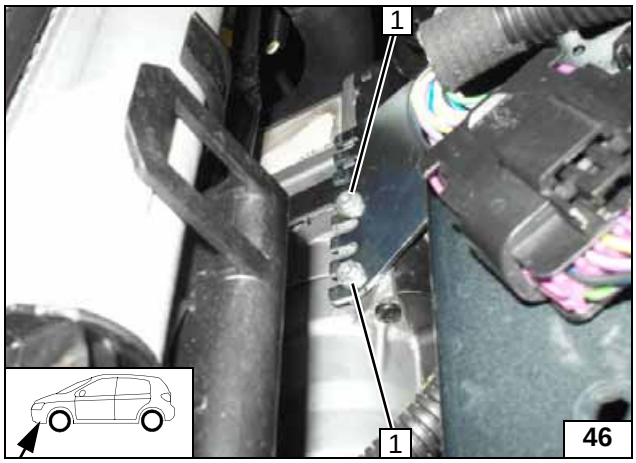
Premounting hoses



Installing Heater

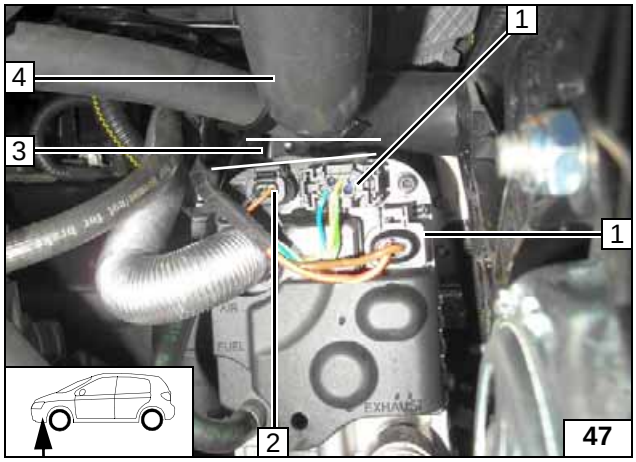
1 Tighten 5x13 self-tapping bolt [2x]

Mounting heater



1 Tighten 5x13 self-tapping bolt [2x]

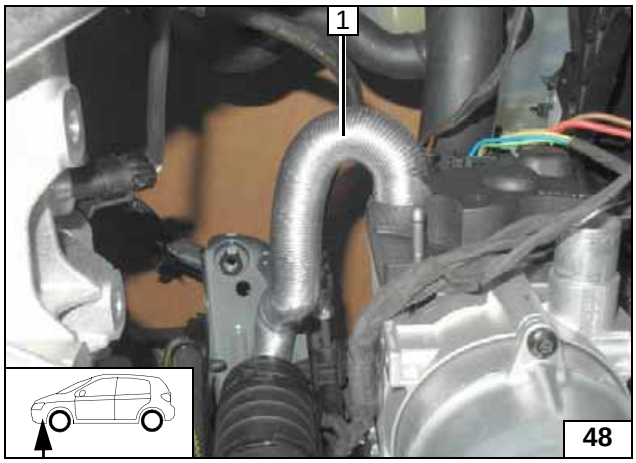
Mounting heater



Ensure sufficient distance between original vehicle coolant hose **4** and heater in area **3**.

1 Connector for wiring harness of heater [2x]
2 Connector for wiring harness of circulating pump

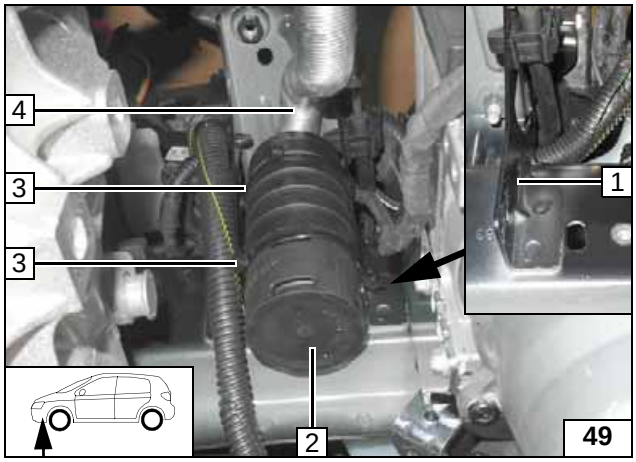
Installing wiring harnesses



Combustion Air

1 315mm combustion air pipe

Mounting combustion air pipe



Install silencer **2** with cable tie **3** [2x] through existing holes in original vehicle cross member **1**.

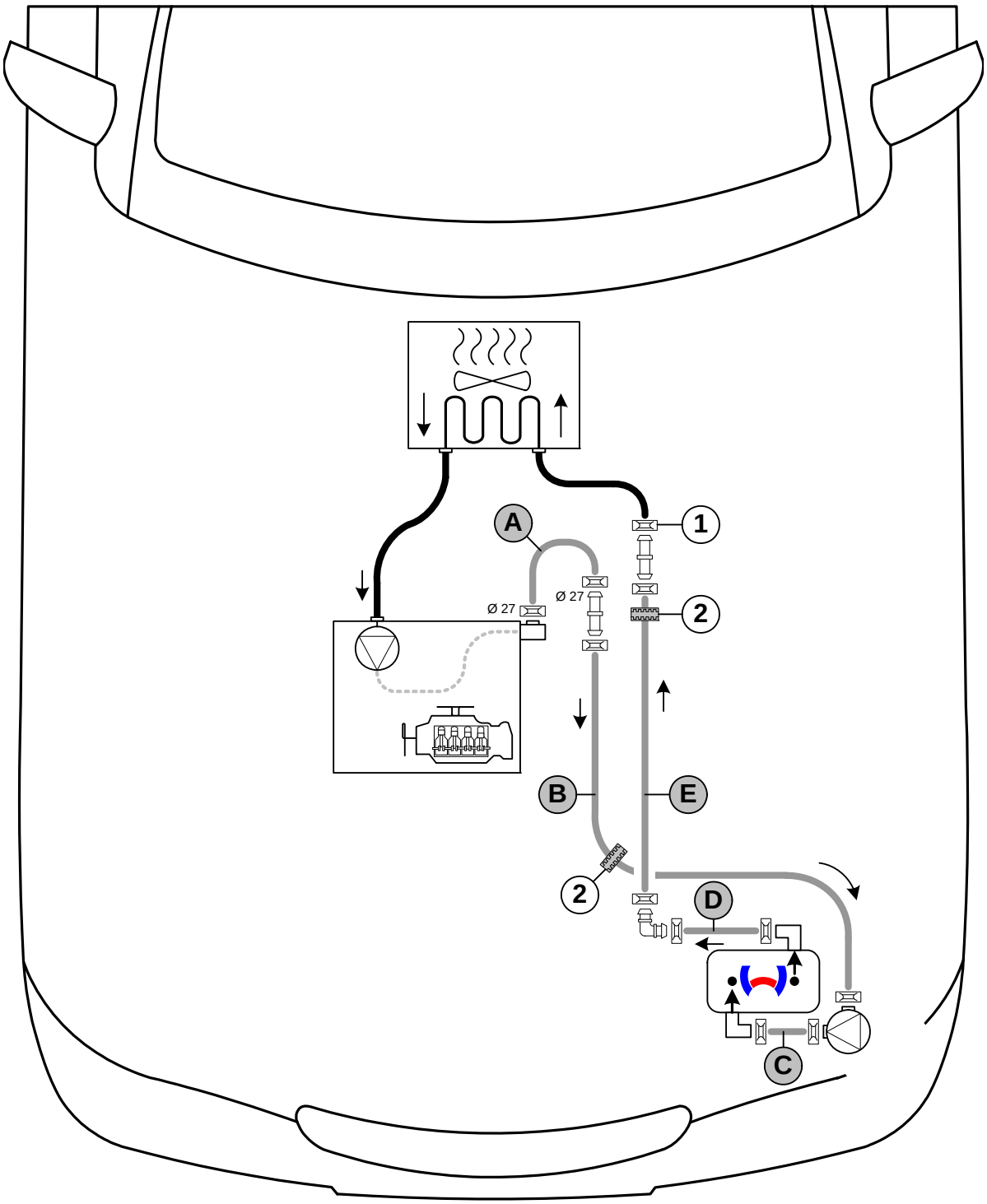
4 Combustion air pipe

Installing silencer

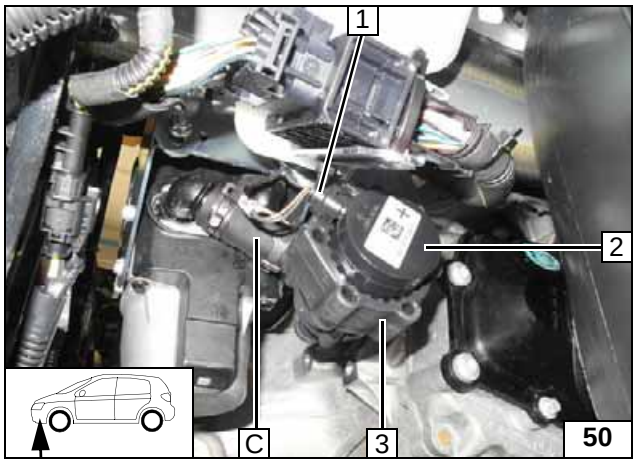
Coolant Circuit

WARNING!
Any coolant running off should be collected using an appropriate container. Route coolant hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can 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 installation diagram



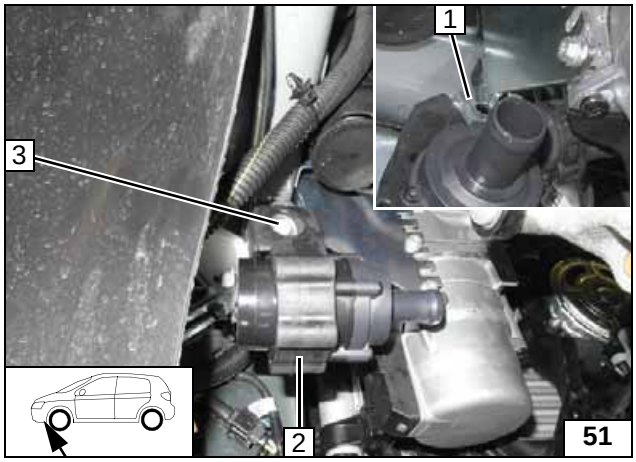
All vehicle spring clips without a specific designation = 25mm dia.!
1 = Original vehicle spring clip ! **2** = Black (sw) rubber isolator .
All connecting pipes = 18x20mm dia. Connecting pipe = 18x18mm dia.!



Install circulating pump **2** on hose **C**.

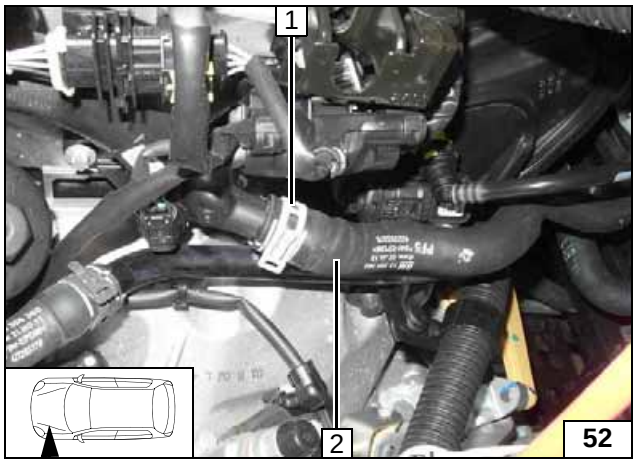
1 Wiring harness of circulating pump
3 Mounting of circulating pump

Installing circulating pump



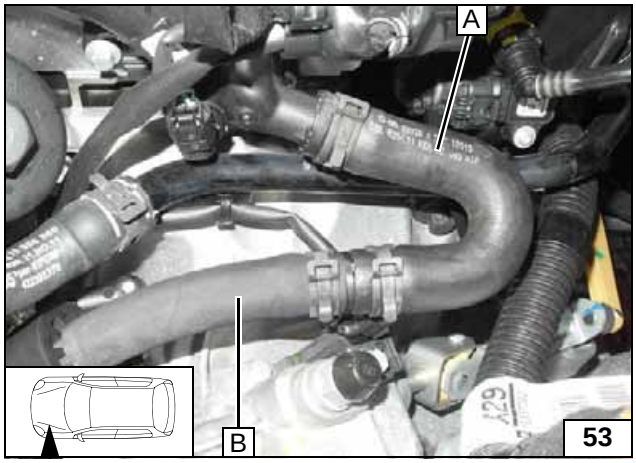
1 Premounted angle bracket
2 Mounting of circulating pump
3 M6x25 bolt, flanged nut on angle bracket **1**

Installing circulating pump

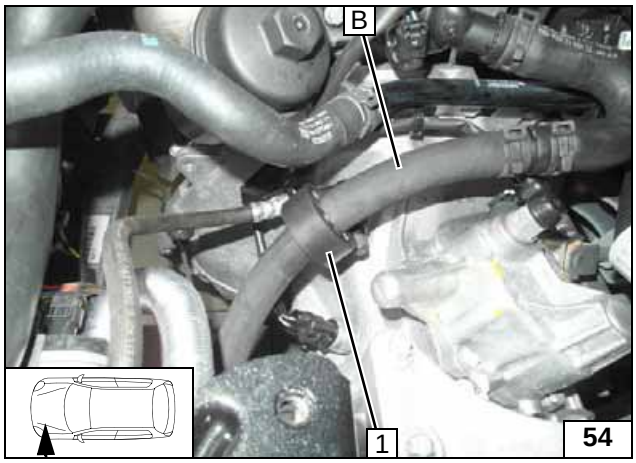


Disconnect hose to engine outlet/heat exchanger inlet **2** at connection piece of engine outlet. Spring clip **1** will be reused.

Cutting point

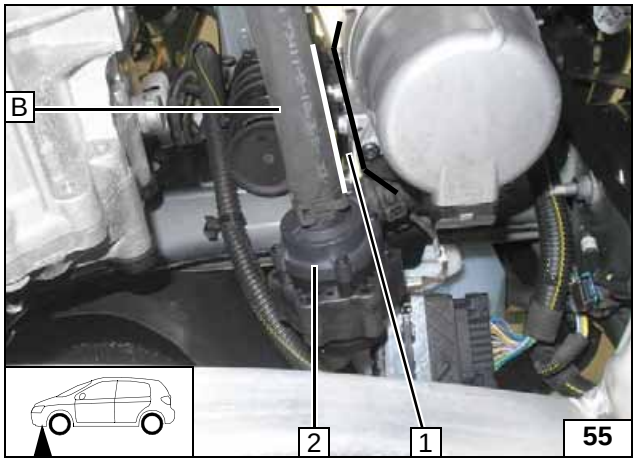


Connection to engine outlet



Slide black (sw) rubber isolator **1** onto hose **B** and align with clutch actuator.

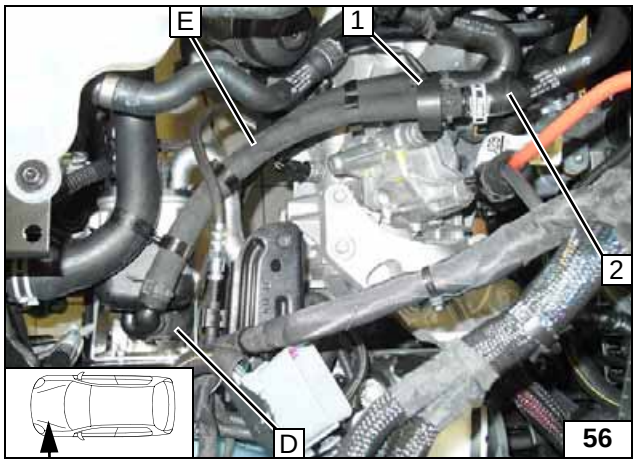
Routing in engine compartment



Ensure sufficient distance between hose **B** and heater in area **1**.

2 Circulating pump

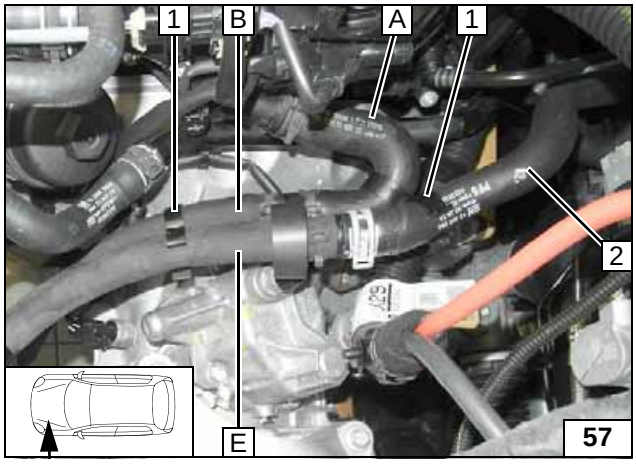
Connecting circulating pump



Slide black (sw) rubber isolator **1** onto hose **E** and align with connection point of hoses **A** and **B**.

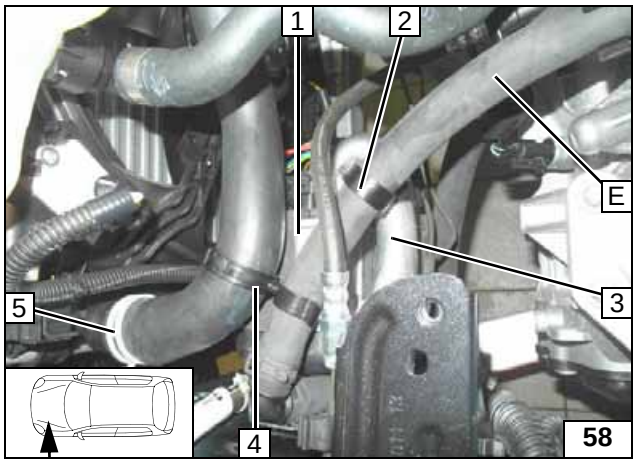
2 Hose on heat exchanger inlet

Connecting heat exchanger inlet



1 Hose bracket [2x]
2 Hose on heat exchanger inlet

Installing hose bracket



Align radiator hose with clamp **5** on the cooler in such a way that there is at least a distance of 10mm to heater **1**. Ensure sufficient distance from adjacent components; correct if necessary!

1 Heater
2 Hose bracket between hose **E** and combustion air pipe **3**
3 Combustion air pipe
4 Hose bracket between radiator hose and hose **E**

Installing hose bracket

Fuel

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

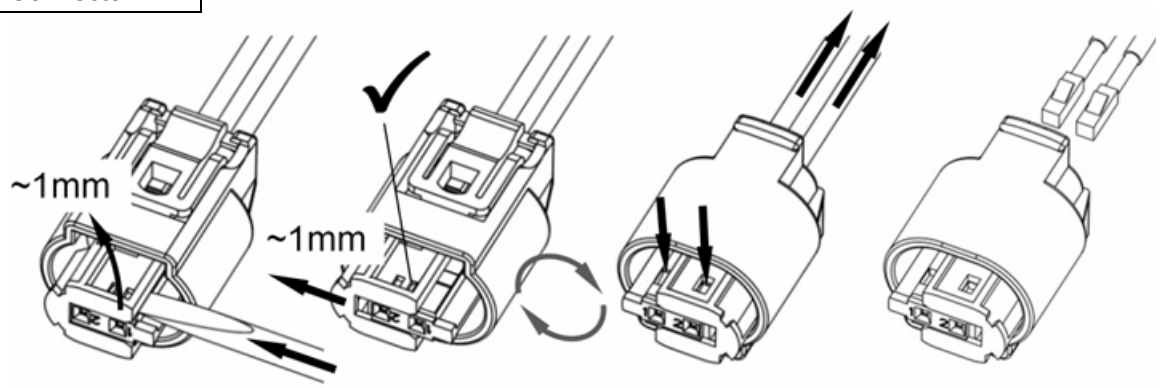
Catch any fuel running off with an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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

Dismantling connector of metering pump

Connector X7



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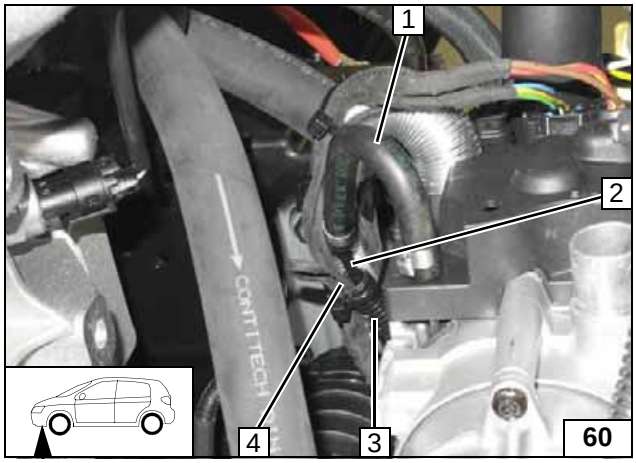
Connecting heater



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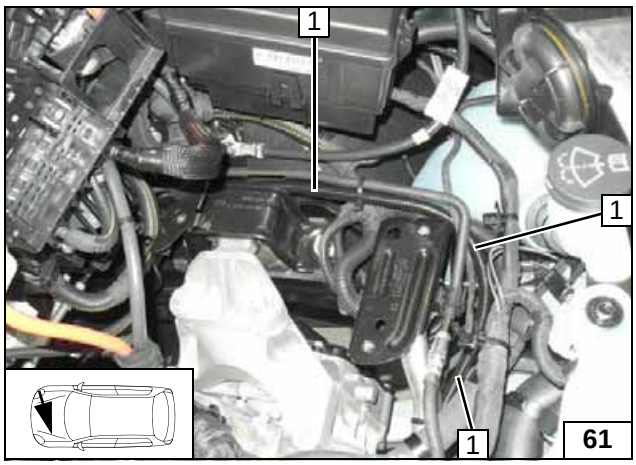
Pull fuel line **2** and wiring harness of metering pump **4** into 10mm dia. corrugated tube **3** and route it to the engine compartment.

1 180° moulded hose, 10 mm dia. clamp [2x]

Routing lines



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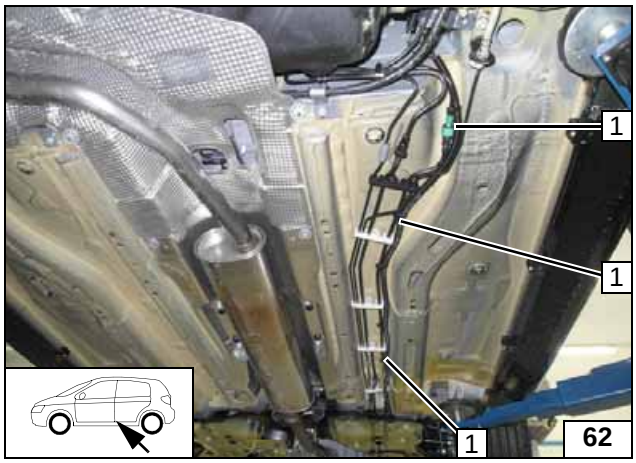
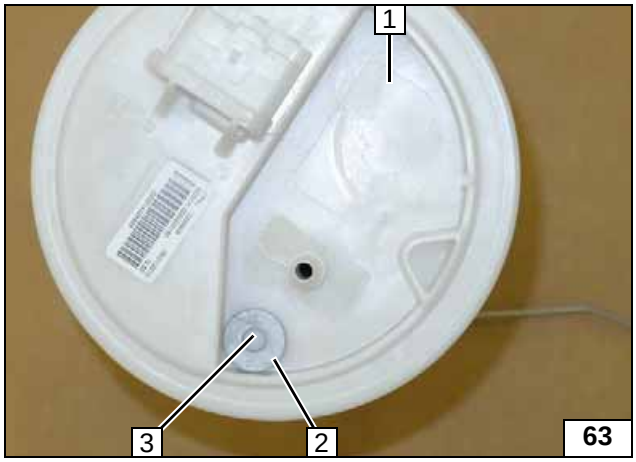
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** to the firewall, further upwards, to the right side of the vehicle and then to the underbody along original vehicle lines.



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle fuel lines to installation location of metering pump.

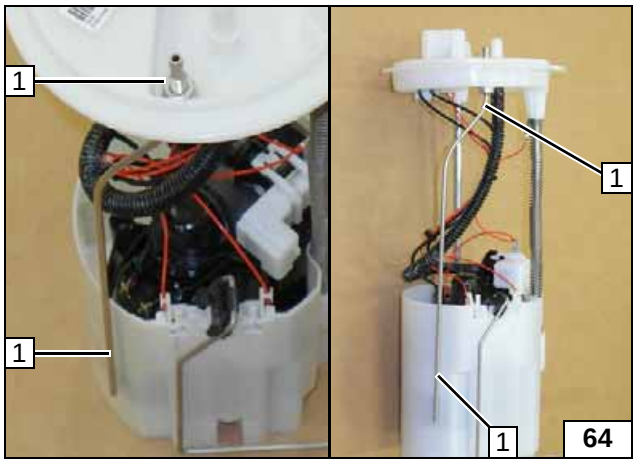
Routing lines



Remove fuel tank according to manufacturer's instructions. Remove fuel-tank sending unit **1** in accordance with manufacturer's instructions.

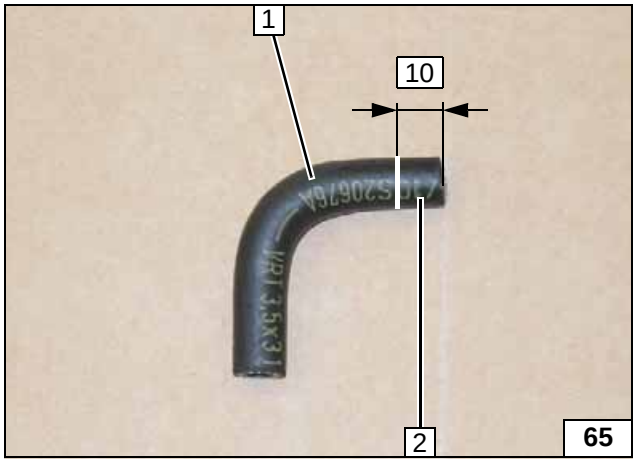
2 Washer with outer dia. d_a = 21.6mm
3 Copy hole pattern, 6 mm dia. hole

Fuel extraction



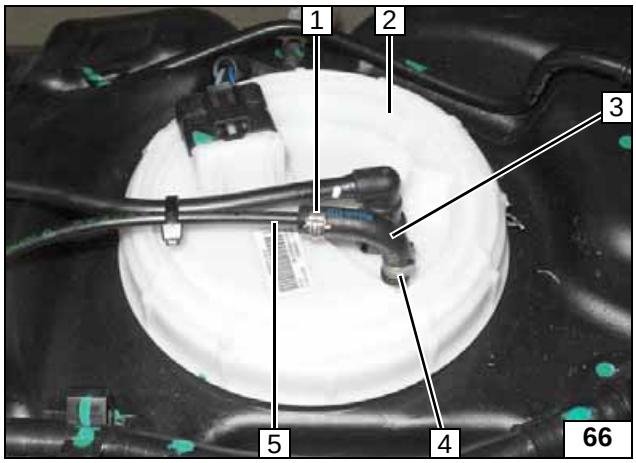
Shape fuel standpipe **1** according to template and cut to length.

Installing fuel standpipe



1 90° moulded hose with inner dia. di = 3.5x4.5mm (shorten side with inner dia. di = 3.5mm)
2 Discard section

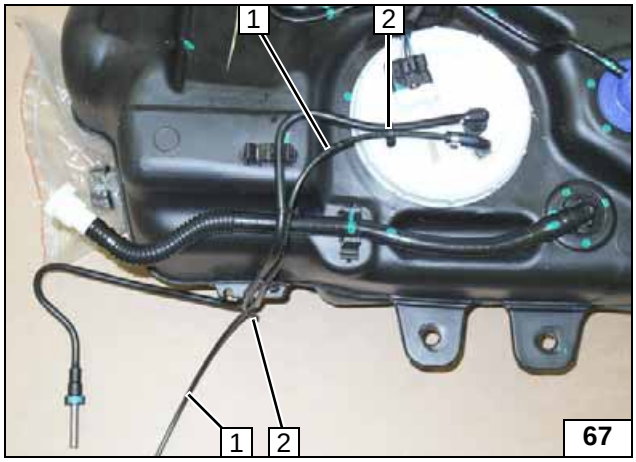
Cutting moulded hose to length



Install fuel-tank sending unit **2** in accordance with manufacturer's instructions.

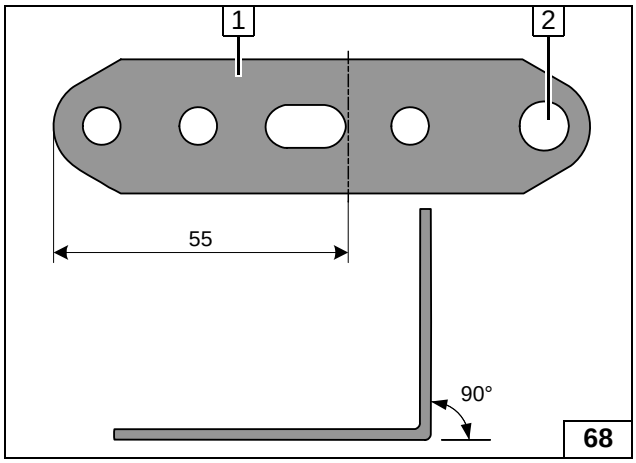
1 10mm dia. clamp
3 90° moulded hose with inner dia. di = 3.5x4.5mm (side with inner dia. di = 3.5mm on fuel standpipe)
4 9 mm dia. clamp
5 Fuel line

Connecting fuel line



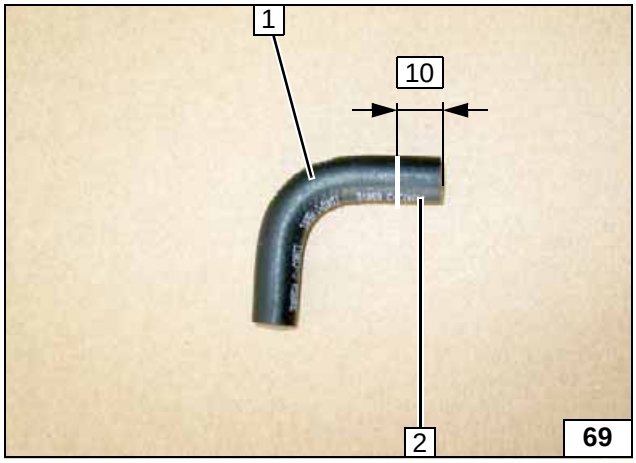
Fasten fuel line of fuel standpipe **1** with cable tie **2** to original vehicle fuel line. Install fuel-tank according to manufacturer's instructions.

Connecting fuel line



1 Perforated bracket
2 Drill out hole to 8.5 mm dia.

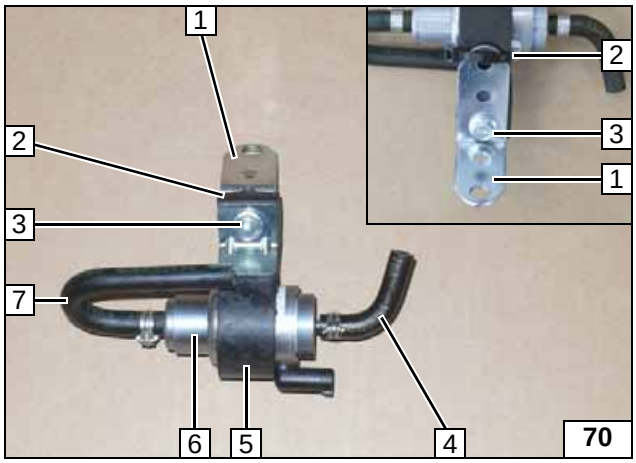
Preparing perforated bracket



1 90° moulded hose, with inner dia. di = 4.5x4.5mm
2 Discard section

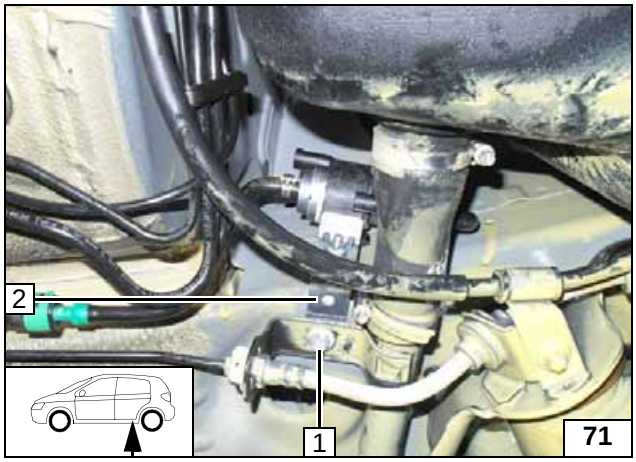
Cutting moulded hose to length

Premounting metering pump



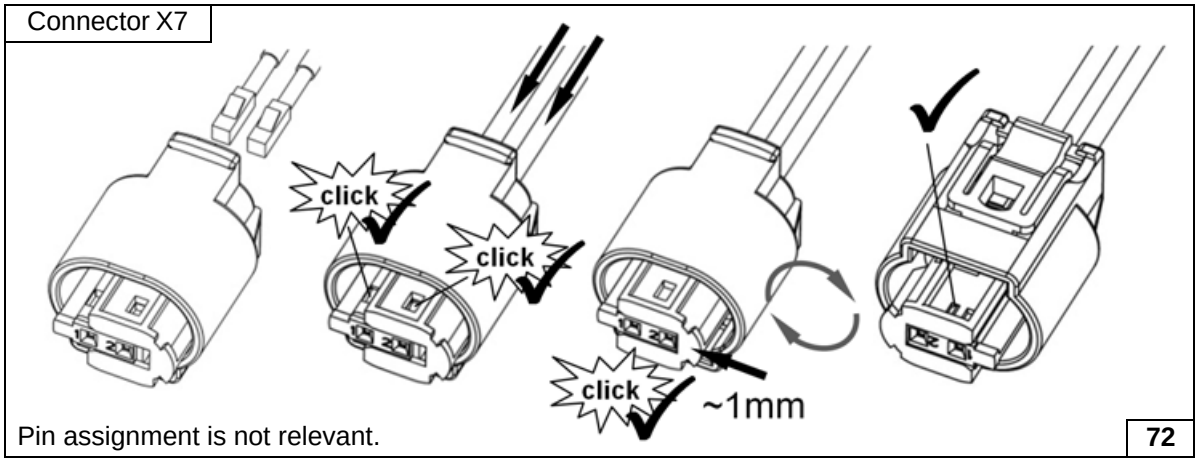
1 Perforated bracket
2 Cable tie
3 M6x25 bolt, support angle bracket, flanged nut
4 90° moulded hose, 10mm dia. clamp (with shortened side on metering pump)
5 Mounting of metering pump
6 Metering pump
7 180° moulded hose, 10 mm dia. clamp

Mounting metering pump

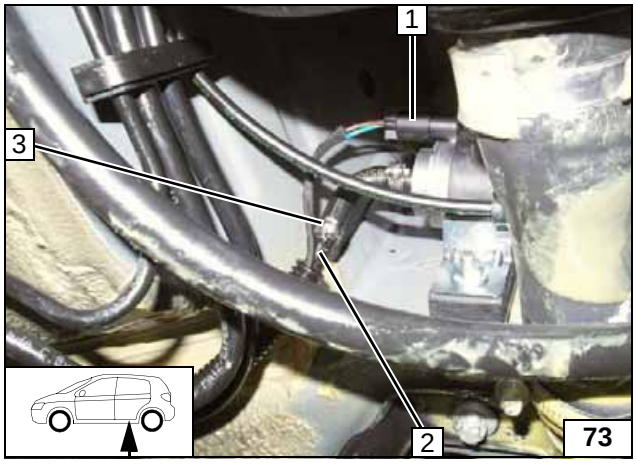


1 Original vehicle bolt
2 Perforated bracket

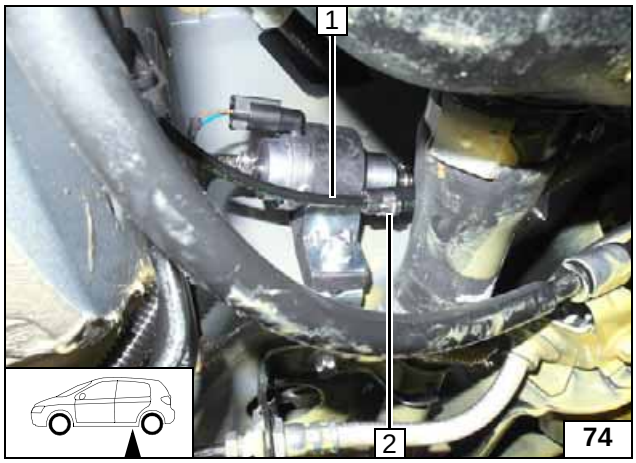
Completing metering pump connector



Connecting metering pump



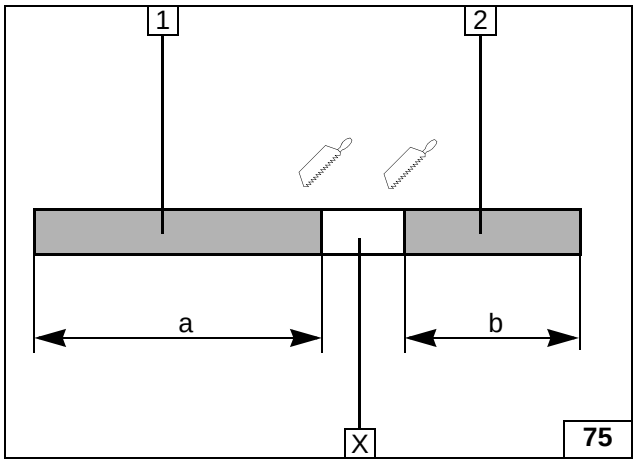
1 Wiring harness of metering pump, connector X7 mounted
2 Fuel line of heater
3 10 mm dia. clamp



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

1 Fuel line of fuel standpipe
2 10 mm dia. clamp

Connecting metering pump

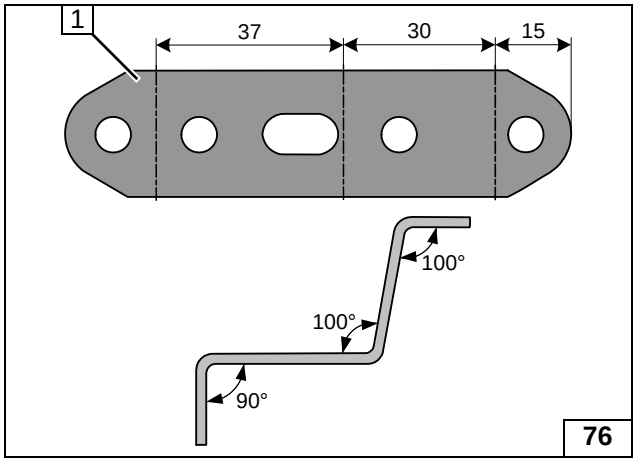


Exhaust Gas

Discard section **X**.

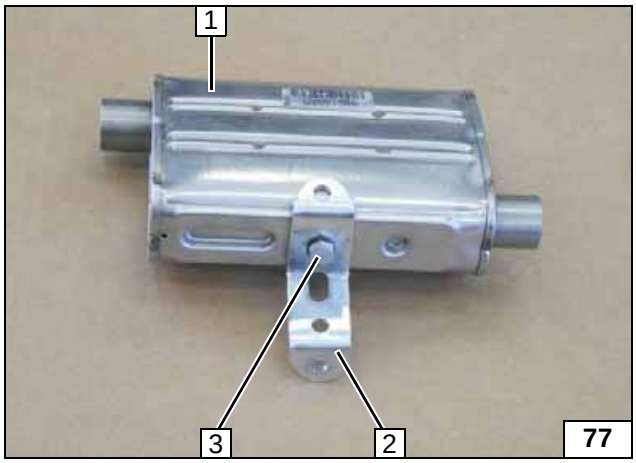
1 Exhaust pipe
a = 370
2 Exhaust pipe
b = 190

Preparing exhaust pipe



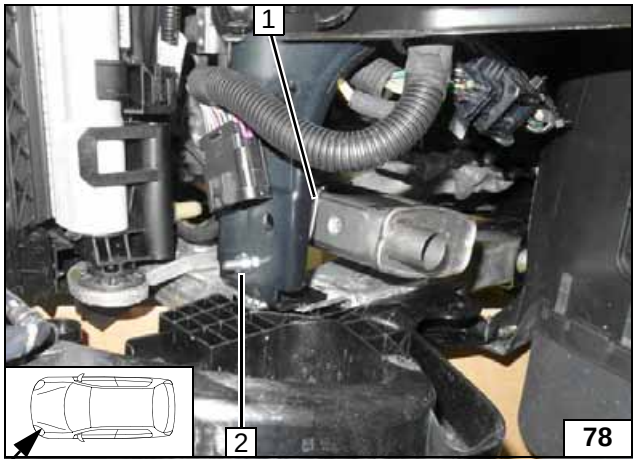
1 Perforated bracket

Preparing perforated bracket



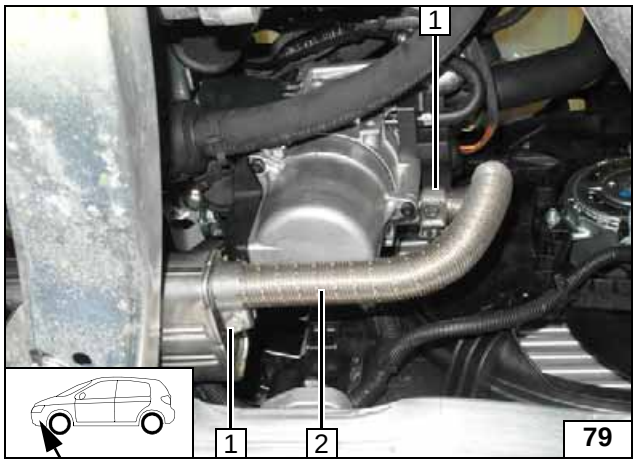
1 Silencer
2 Perforated bracket
3 M6x16 bolt, spring lockwasher

Premounting silencer



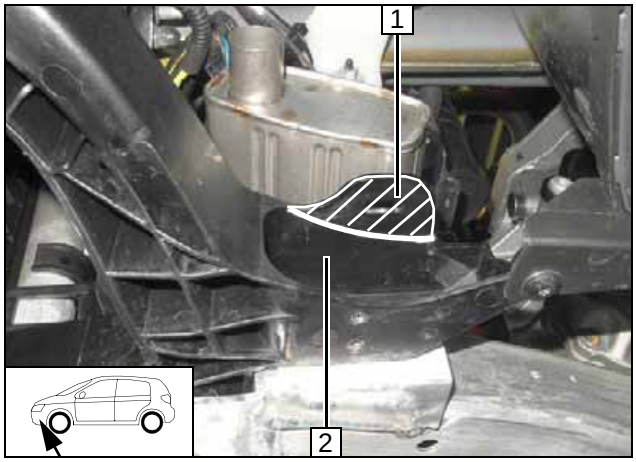
1 Perforated bracket
2 M6x20 bolt, flanged nut, existing hole

Installing silencer



1 Hose clamp [2x]
2 Exhaust pipe **a**

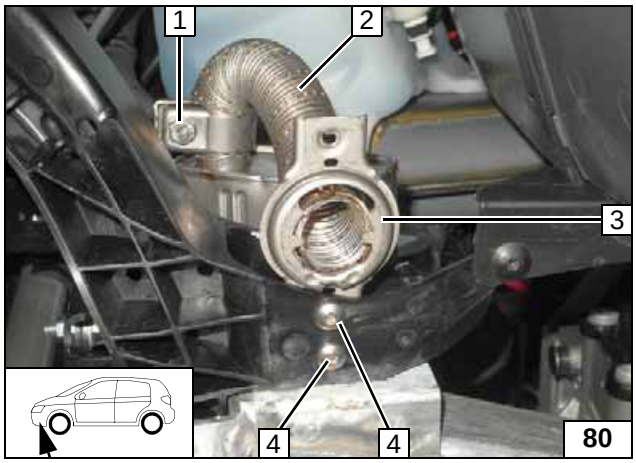
Installing exhaust pipe a



Cut out marked area of mounting lug **2**.

1 Discard section

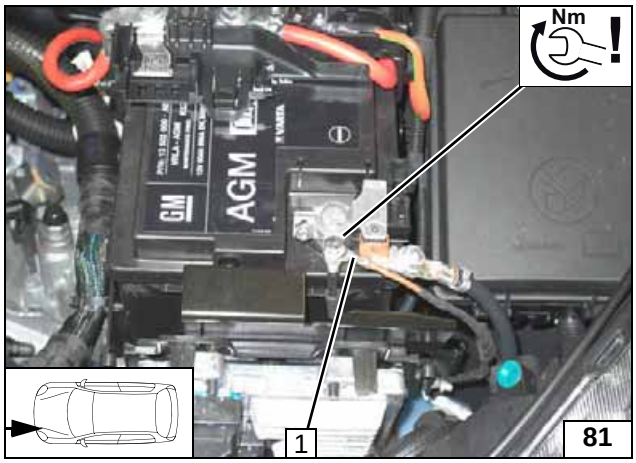
Preparing perforated bracket



Copy hole pattern of exhaust end fastener in position **4**, 5mm dia. hole in cross member. Attach exhaust end fastener **3** with provided bolts **4** [2x].

1 Hose clamp
2 Bend exhaust pipe **b** and mount onto exhaust end fastener

Installing exhaust pipe b



Final Work

1 Earth wire on original vehicle bolt of negative battery terminal

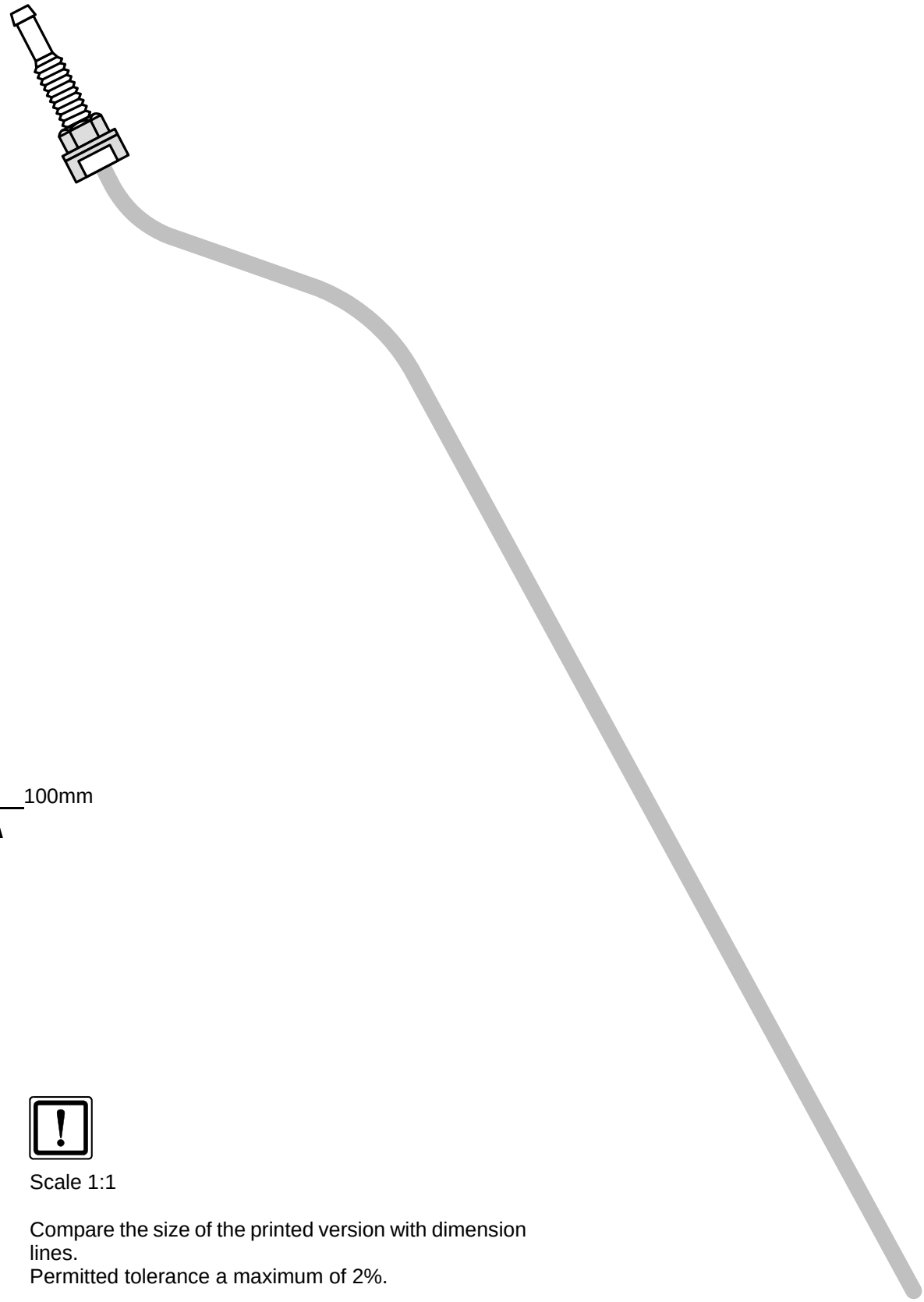
Connecting earth wire

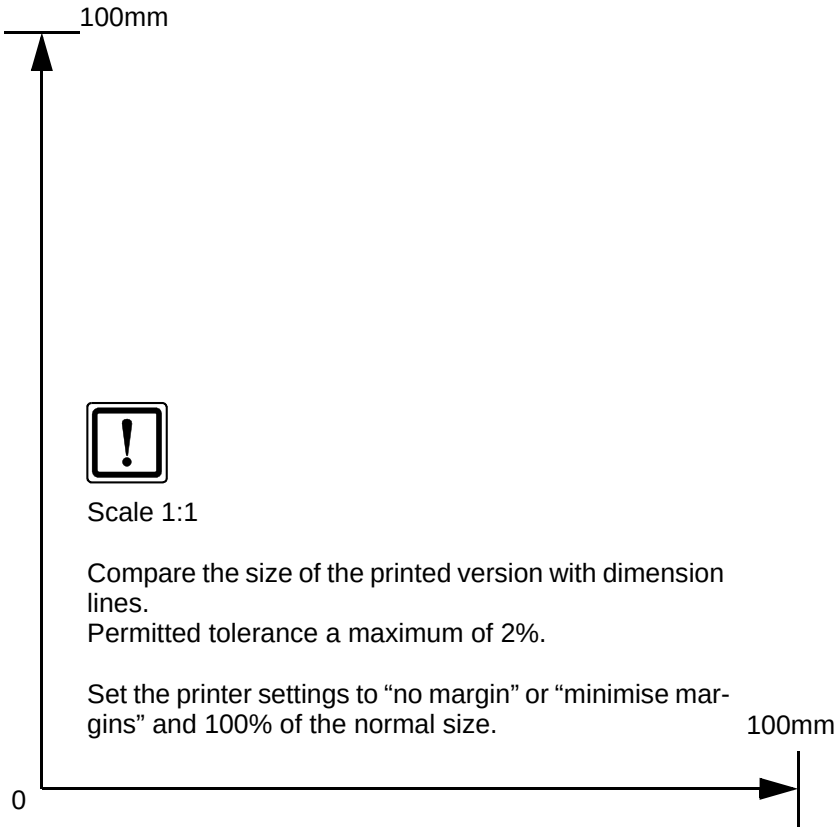
WARNING!
Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.
Only use manufacturer-approved coolant. Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Set the digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch off parking heater before refuelling" caution label in the area of the filler neck.**
- **For initial start-up and function check, see installation instructions**

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

Template for Fuel Standpipe





Scale 1:1

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

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

Webasto
Feel the Drive

Operating Instructions for Manual Air-Conditioning

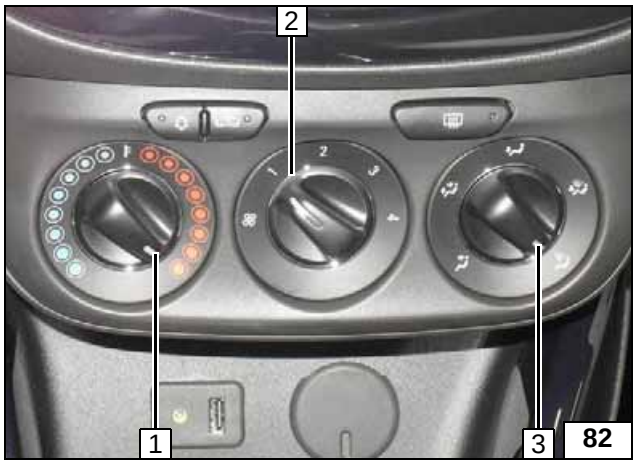
Please remove page and add to the vehicle operating instructions.

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 information on deactivation, please see the vehicle owner's manual.

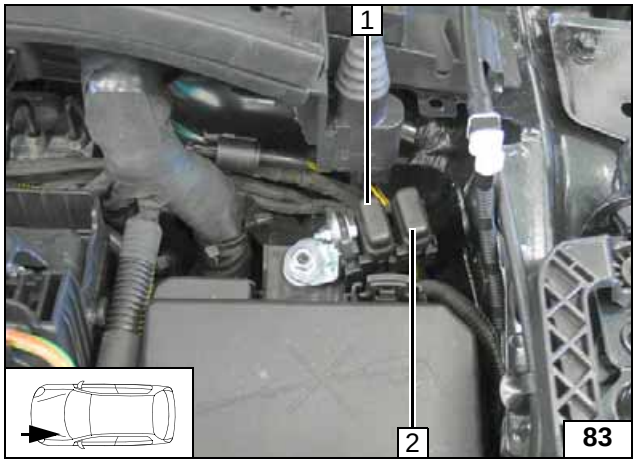
Before parking the vehicle, make the following settings:

A/C control panel



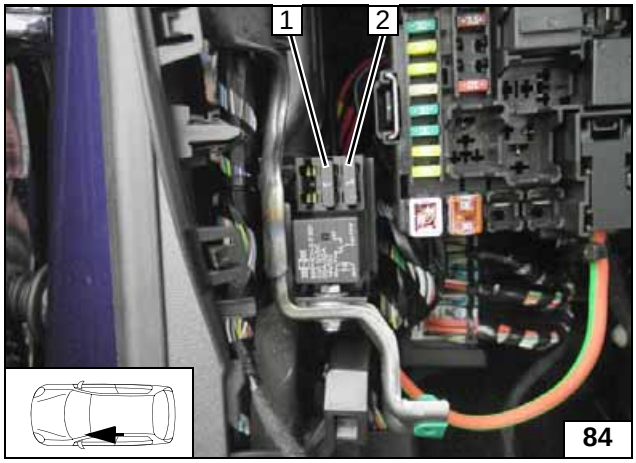
1 Set temperature to "max."
2 Set fan to level "1", or max. "2"
3 Air outlet to windscreen

Engine compartment fuses



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

Passenger compartment fuses



1 1A fuse F3 of heater control
2 1A fan fuse F4

Webasto
Feel the Drive

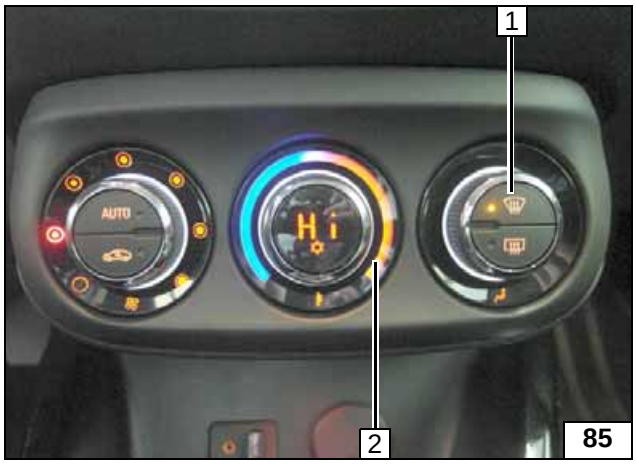
Operating Instructions for Automatic Air-Conditioning

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.

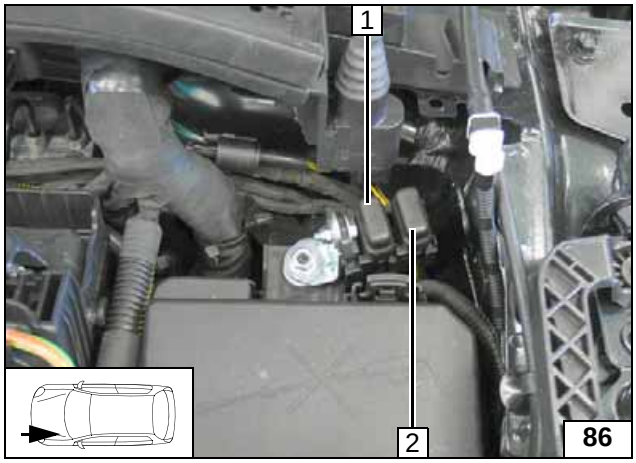
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For information on deactivation, please see the vehicle owner's manual.

Before parking the vehicle, make the following settings:



1 Air outlet to windscreen
2 Set temperature to "HI"

A/C control panel



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

Engine compartment fuses