



# Water Heater

## Thermo Top Evo Parking Heater



With FuelFix

# Installation Documentation Opel Meriva

### Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Opel	Meriva	S-D Monocab B	e4 * 2007 / 46 * 0165 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm <sup>3</sup>	Engine code
1.4T	Petrol	5-speed SG	88	1364	A14NEL (LUJ)
1.4T	Petrol	5-speed SG	88	1364	B14NEL (LUJ)
1.4T	Petrol	6-speed SG	103	1364	B14NET (LUJ)
1.4T	Petrol	6-speed AG	103	1364	B14NET (LUJ)

SG = Manual transmission  
AG = Automatic transmission

**From Model Year 2010**  
**Left-hand drive vehicle**

**Verified equipment variants:** Manual / automatic air-conditioning system  
Front fog light

**Not verified:** Passenger compartment monitoring

**Total installation time:** approx. 7 hours

# Opel Meriva

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## Necessary Components

- Basic delivery scope Thermo Top Evo based on price list
- Installation kit with FuelFix Opel Meriva 2010 Petrol: **1316513C**
- 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

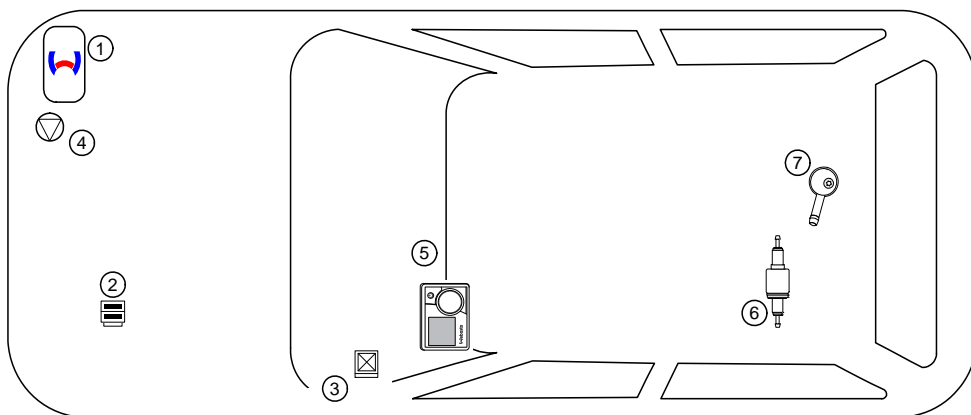
## Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about  $\frac{1}{4}$  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
4. Circulating pump
5. MultiControl CAR
6. Metering pump
7. FuelFix



## 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 Meriva

## Notes on Validity

This installation documentation applies to the Opel Meriva Petrol vehicles - for validity, see page 1 - from model year 2010 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 - 6mm<sup>2</sup>
- Crimping pliers for cable lug / tab connector 0.5 - 6mm<sup>2</sup>
- 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.

Special features are highlighted using the following symbols:

**Mechanical system**



**Electrical system**



**Coolant circuit**



**Combustion air**



**Fuel**



**Exhaust gas**



**Software**



**Specific risk of damage to components.**



**Specific risk due to electrical voltage**



**Specific risk of injury or fatal accidents.**



**Specific risk of fire or explosion**



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



**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**



## 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.



**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.

- Detach the wheel well trim on the left side, remove it on the right side.
- Remove the bumper.
- Remove the right underdrive protection under the engine.
- Remove the windscreen wiper.
- Remove the top coolant reservoir cap.
- Remove the coolant reservoir trim in the engine compartment.
- Remove the battery.
- Drain the coolant according to the manufacturer's instructions.
- Disconnect the coolant expansion tank and lay it aside.
- Remove the horn / horns.
- Remove the lower and lateral instrument panel trim on the driver's side.
- Remove the side trim of the centre console on the right (see dismantling instructions).



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

- Remove the fuel tank in accordance with the manufacturer's instructions.



### Heater

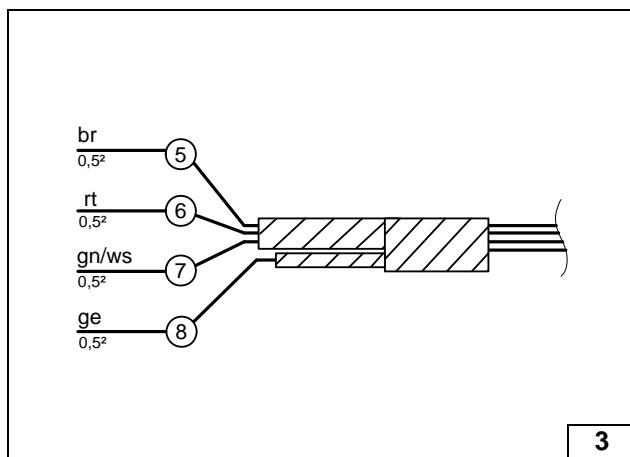
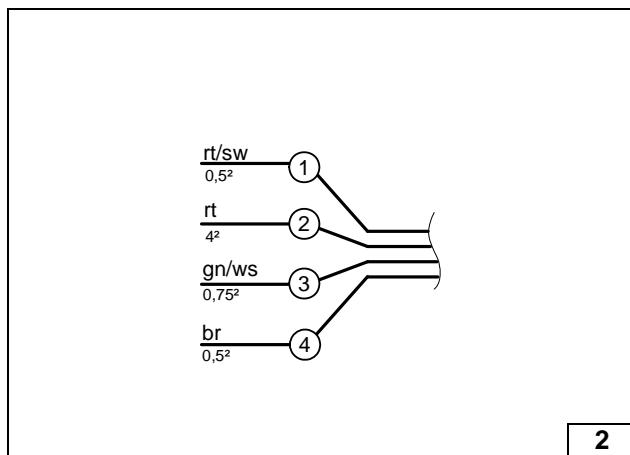
- Remove dates that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place inside the engine compartment



### Heater Installation Location

- 1 Heater

Installation location



## Preparing Electrical System

Wire sections retain their numbering in the entire document.

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

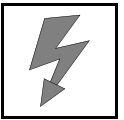
- ① Red/black (rt/sw) wire of heater wiring harness/ X10
- ② Red (rt) wire of heater wiring harness/ F2
- ③ Green/white (gn/ws) wire of heater wiring harness/ X1/5
- ④ Brown (br) wire of heater wiring harness/ earth 31
- ⑤ Brown (br) wire from CAN wiring harness/ 31
- ⑥ Red (rt) wire from CAN wiring harness/ 30
- ⑦ Green/white (gn/ws) wire of CAN wiring harness/ 15
- ⑧ Yellow (ge) wire of CAN wiring harness/DO+



**Assigning heater wiring harness**



**Assigning CAN wiring harness**



**Electrical System**



**Engine compartment fuse holder**

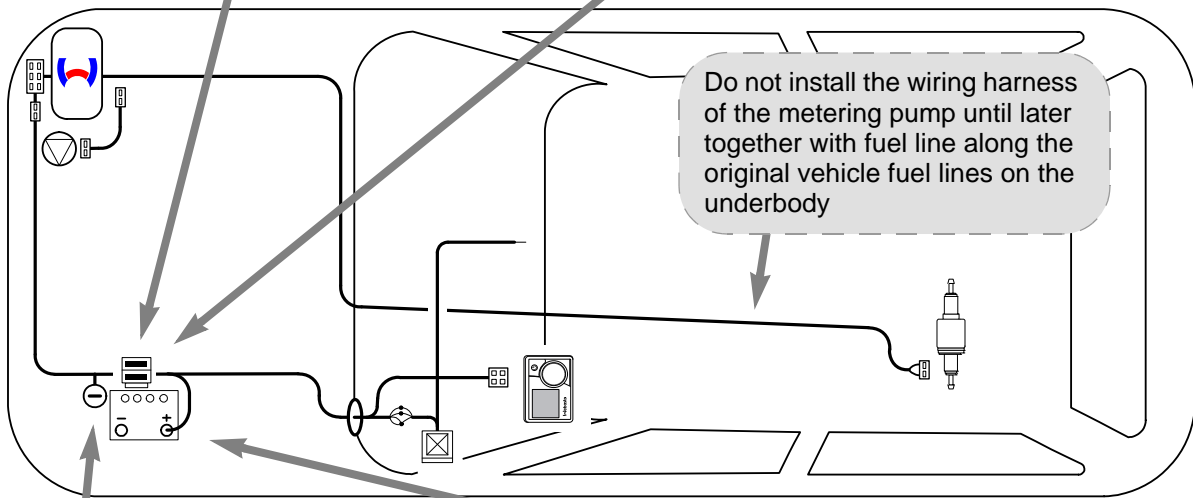
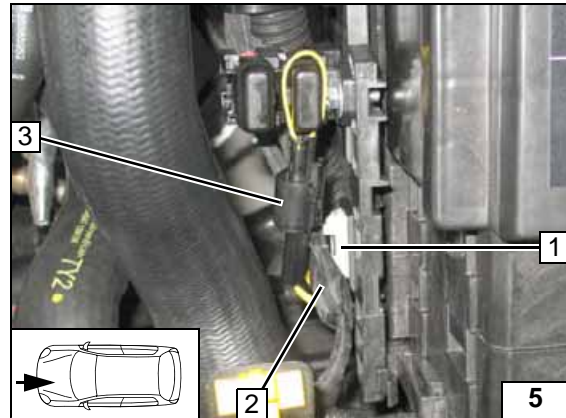
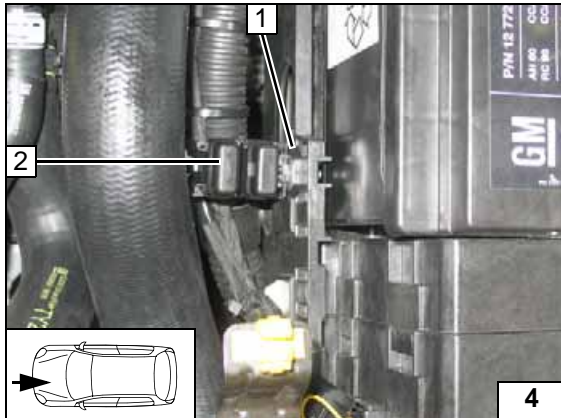
**Replace 30A fuse F2 with 1A fuse!**

Drill 5.5 mm dia. hole in battery carrier at position 1.

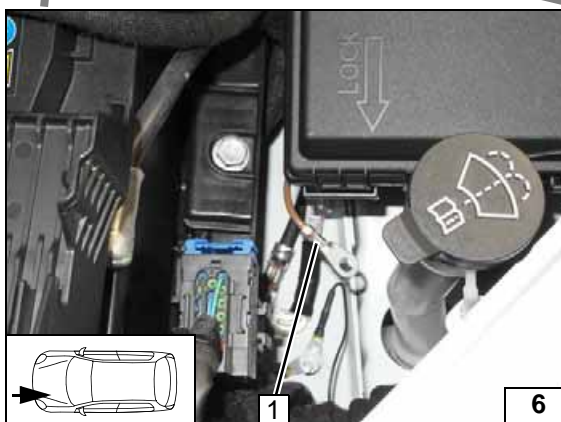
- 1 M5x16 bolt, large diameter washer [2x], fuse holder retaining plate, nut
- 2 F1-2 fuses

**Engine compartment fuse holder**

Paste adhesive base 1. Fasten wiring harness 2 and diagnostic connector 3 with a cable tie.

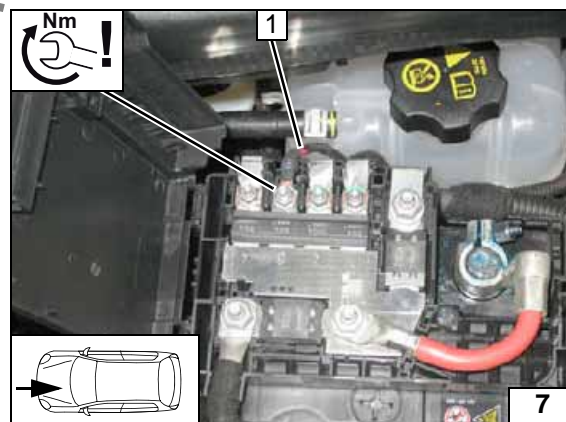


**Wiring harness routing diagram**



**Earth wire**

Route earth wire 1 to the earth support point. Connection is carried out in "Final Work".



**Positive wire**

1 Positive wire on positive battery distributor





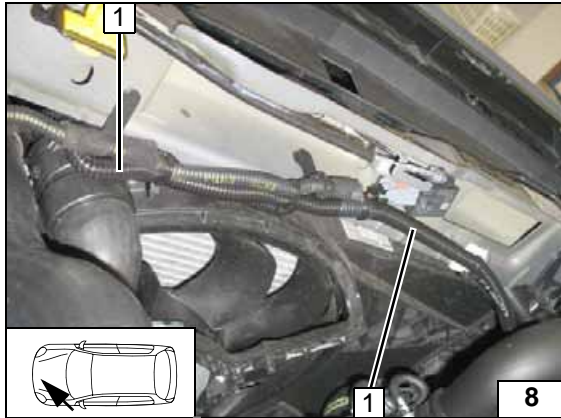
## Wiring Harness Routing



### 1. Routing wiring harness of heater

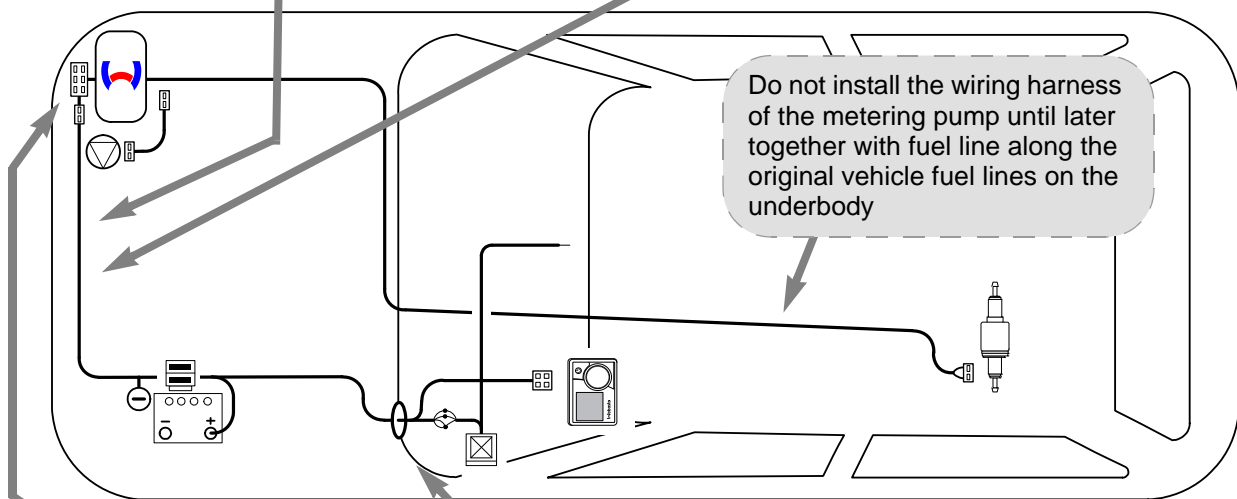
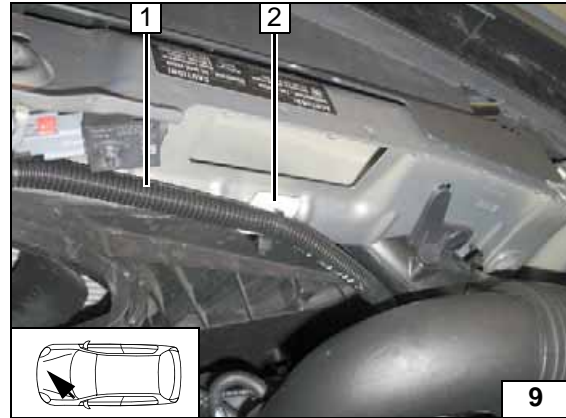
Slit open the 10mm dia. 1130mm long corrugated tube longitudinally.

- 1 Insert wiring harness of heater in the slit 10mm dia. corrugated tube

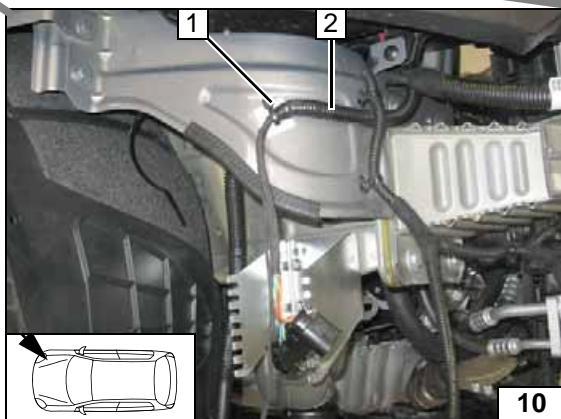


### 2. Routing wiring harness of heater

- 1 Insert wiring harness of heater in the slit 10mm dia. corrugated tube
- 2 Adhesive base, cable tie

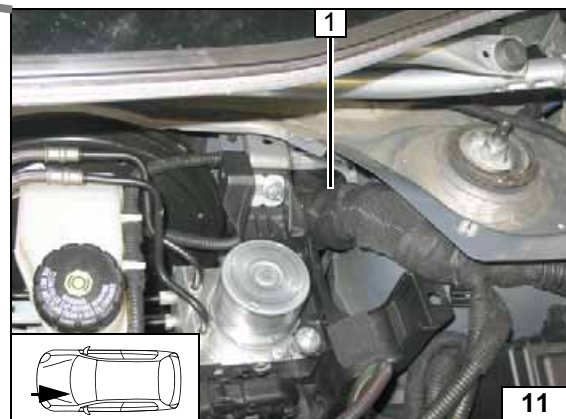


Wiring harness routing diagram



### 3. Routing wiring harness of heater

- 1 Adhesive base, cable tie
- 2 Insert wiring harness of heater in the slit 10mm dia. corrugated tube



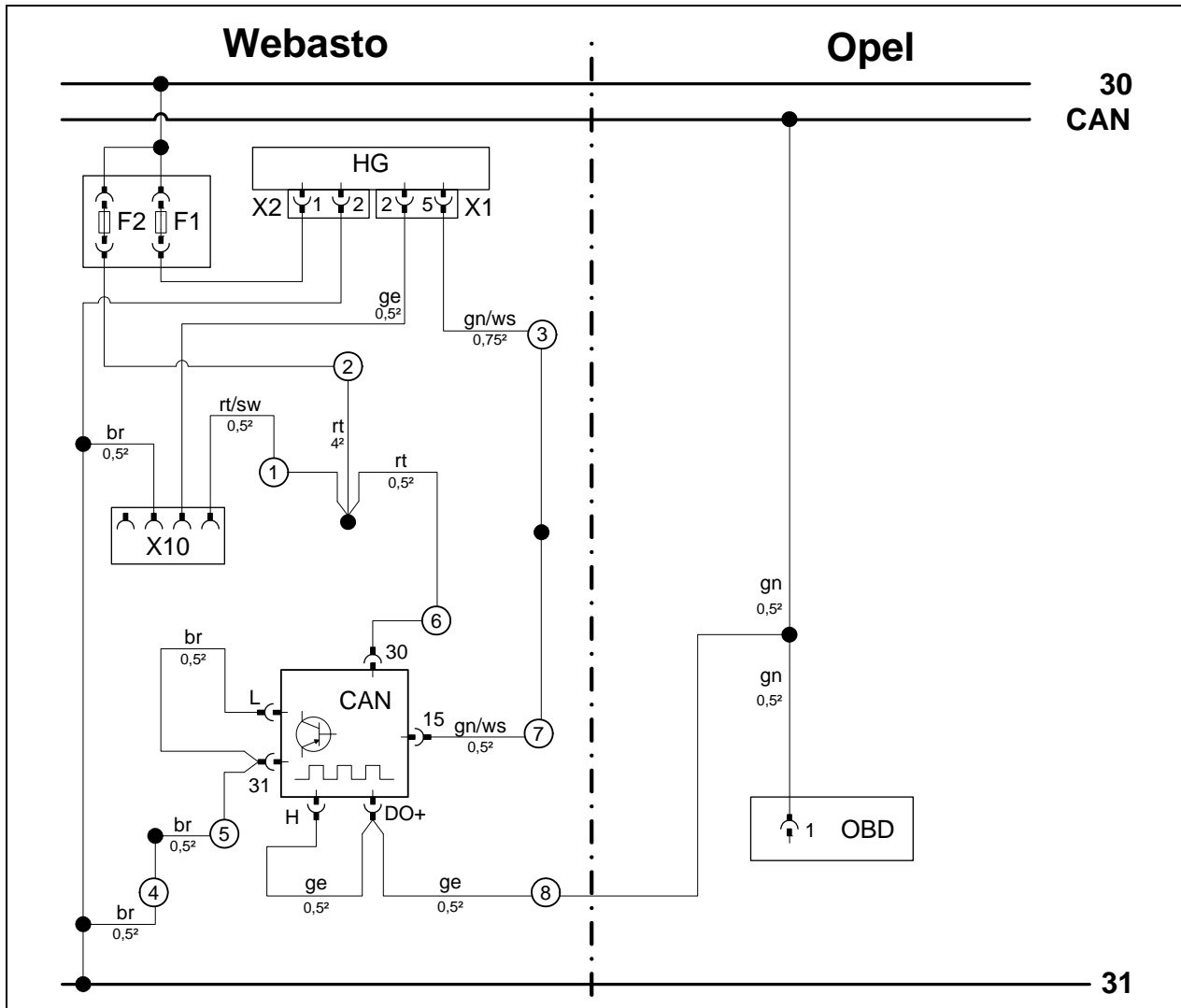
### 4. Wiring harness pass through

- 1 Original vehicle passenger compartment pass through for wiring harnesses of heater control and heater





Fan Controller

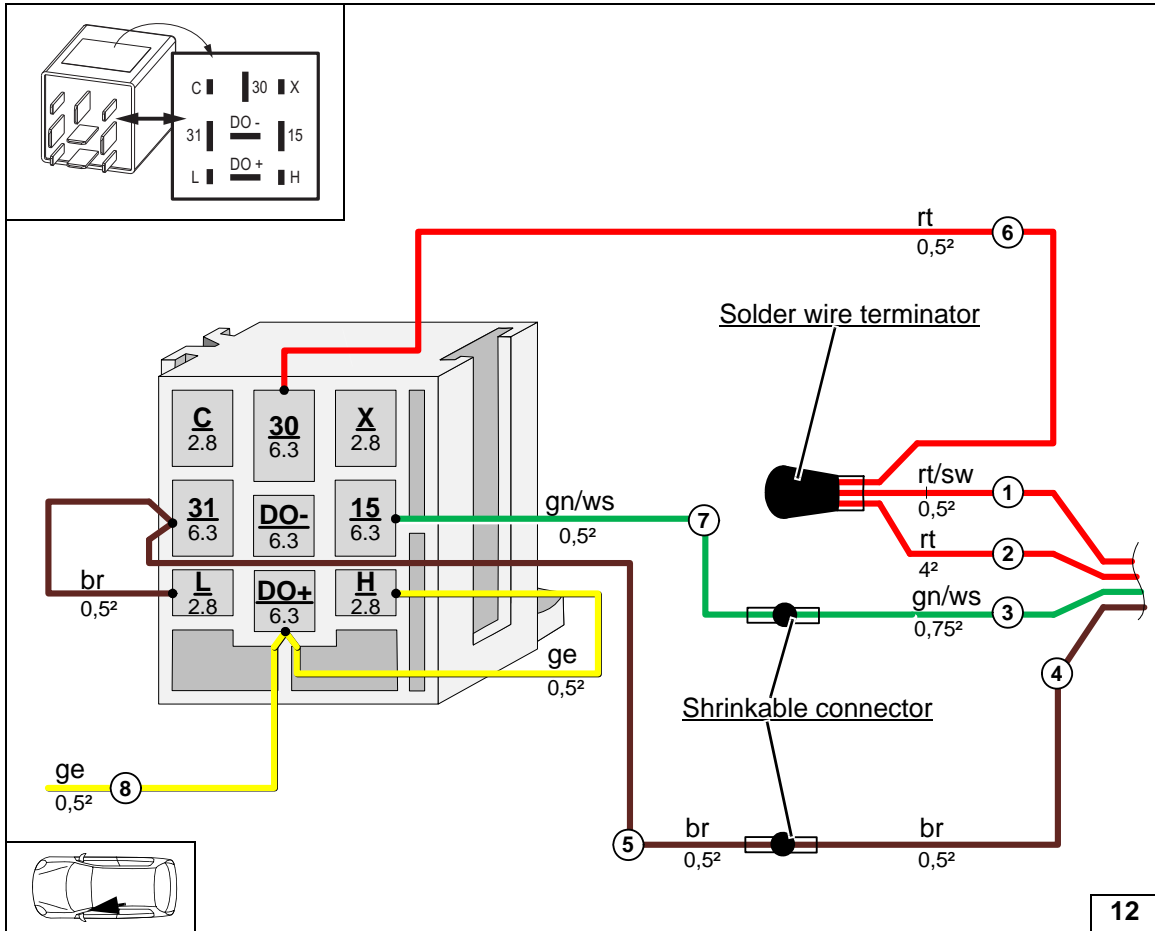


Wiring diagram

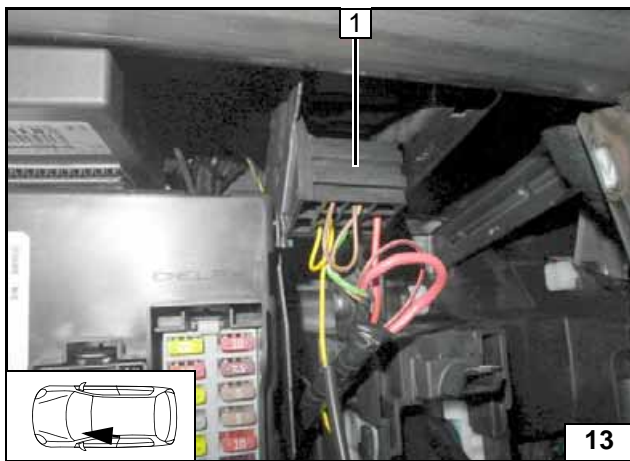


Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	OBD	16-pin OBD connector	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector			ge	yellow
F1	Fuse 20A			gn	green
F2	Replace 30A with 1A fuse			br	brown
X10	4-pin connector of heater control			ws	white
CAN	CAN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

Legend

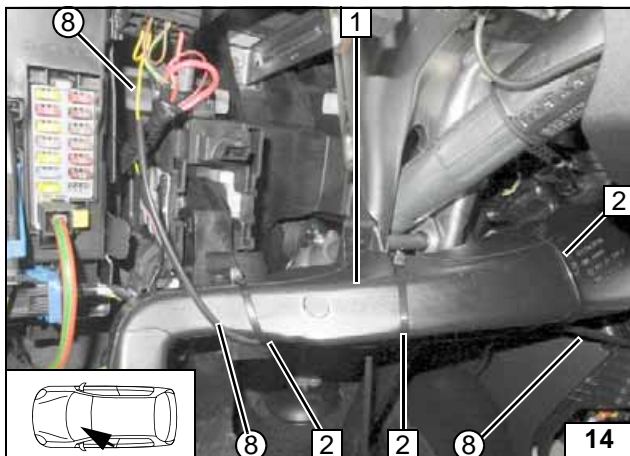


Connecting wires from heater wiring harness and CAN-module wiring harness in passenger compartment



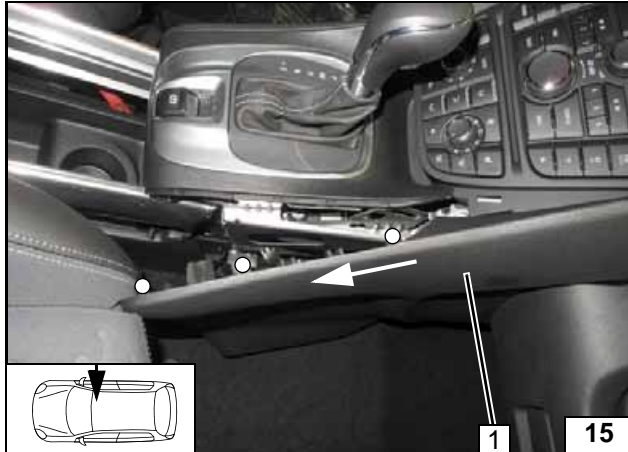
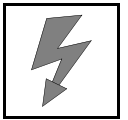
1 CAN module socket

Positioning CAN-module socket in installation location



- 1 Ventilation duct
- 2 Cable tie [3x]
- ⑧ Yellow (ge) wire of CAN module/DO+

Routing yellow (ge) wire ⑧ to OBD socket outlet

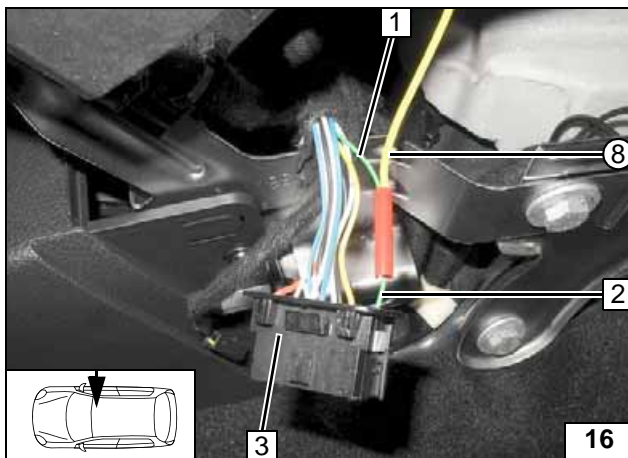


### Dismantling Instructions for the Side Trim

Unclip side trim of centre console **1** ○ [3x] on the right and remove in the direction of the arrow!



### Dismantling instructions for OBD-connector

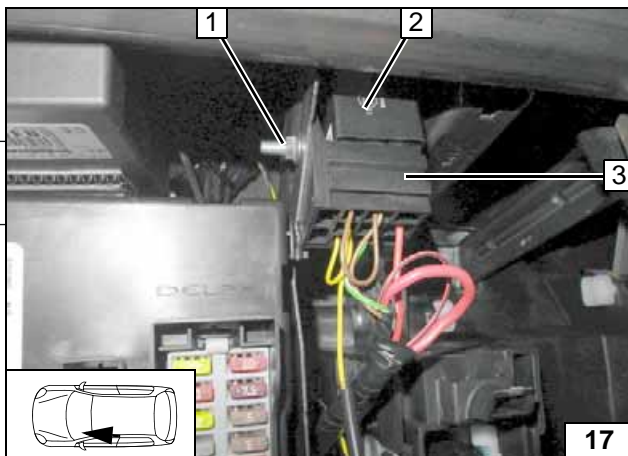


Remove insulation from OBD-connector wiring harness **3**.  
Produce connections by crimping and shrinking.



### Connecting OBD connector

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



Before installation see info on battery in section "Preliminary Work"!  
Insert M5x16 bolt **1** into CAN module socket **3**, install CAN module **2**!



### Installing CAN module socket

- 1** M5x16 bolt, large diameter washer, 5mm shim, flanged nut at existing hole

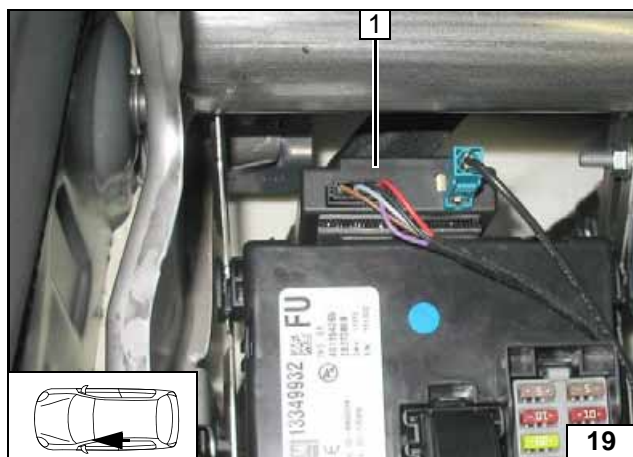


### MultiControl CAR Option

1 MultiControl CAR



**Mounting  
MultiControl  
CAR**

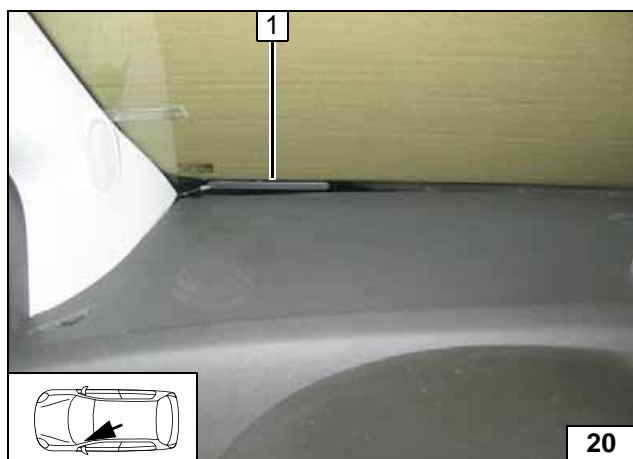


### Remote Option (Telestart)

Fasten receiver 1 with adhesive tape.



**Mounting  
receiver**

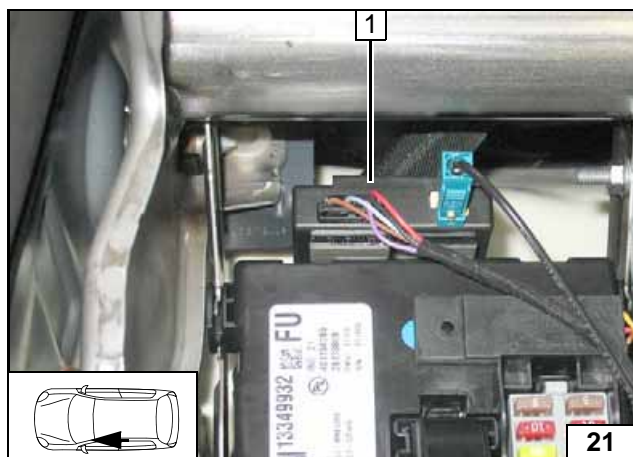


In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

1 Antenna



**Mounting  
antenna**

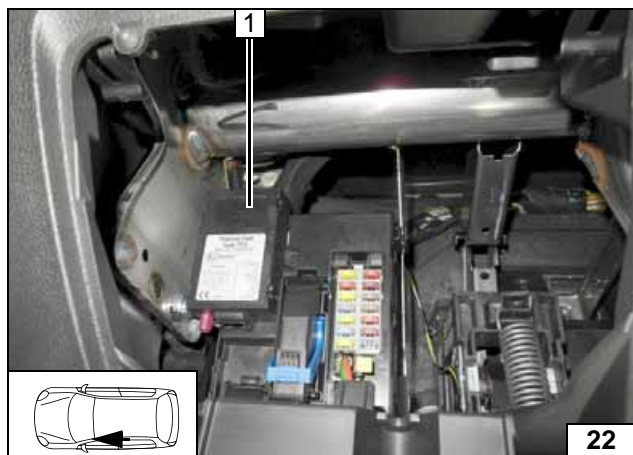


### Installing T100 HTM temperature sensor

Fasten temperature sensor 1 with adhesive tape.



**Installing  
temperature  
sensor**

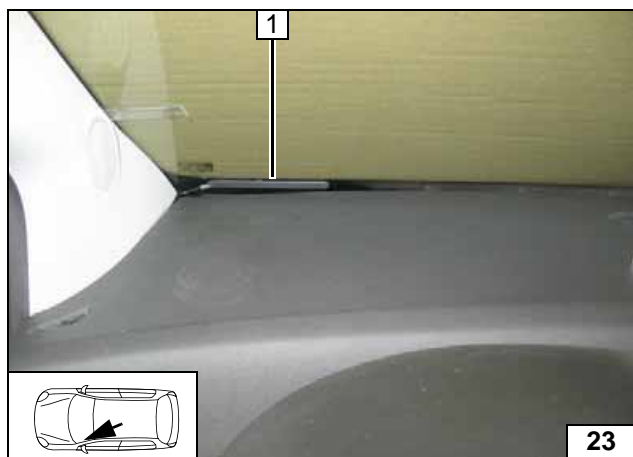


### Remote Option (Thermo Call)

Fasten receiver 1 with adhesive tape.



**Mounting receiver**

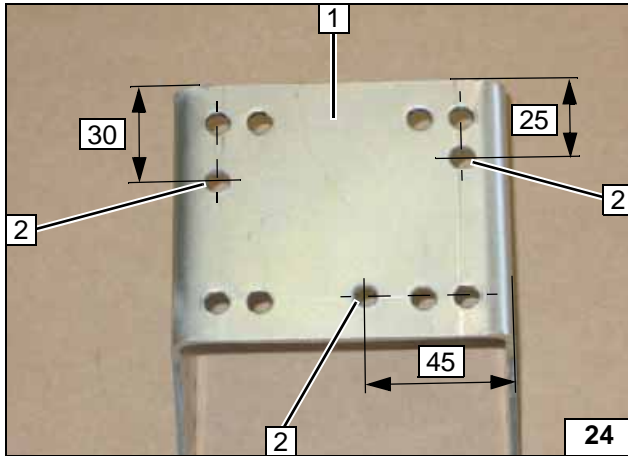
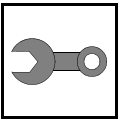


In case of tinted or heated windscreen, only use installation location foreseen by the manufacturer.

1 Antenna



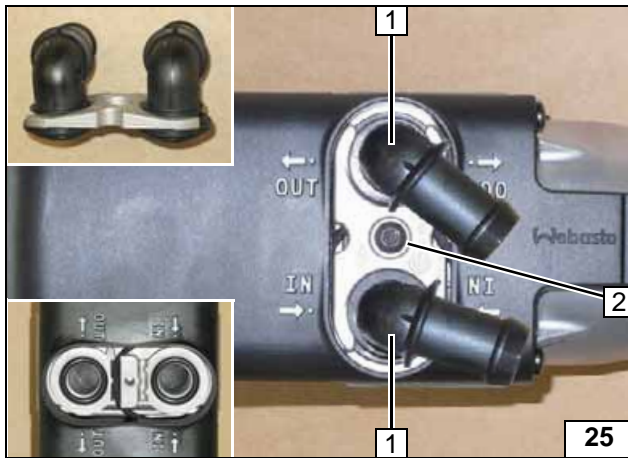
**Mounting antenna**



### Preparing Bracket

- 1 Bracket
- 2 7 mm dia. hole [3x]

Holes in bracket

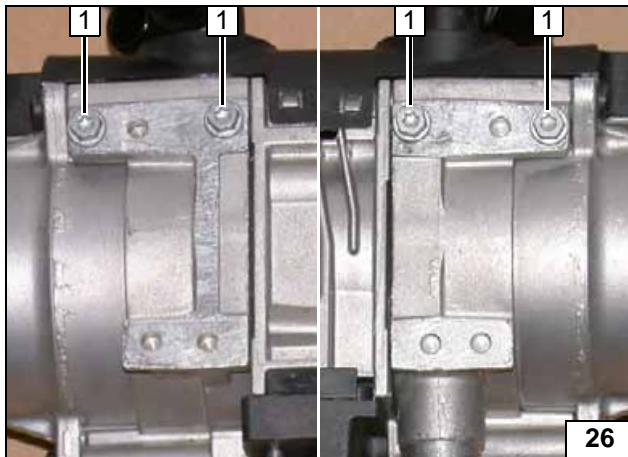


### Preparing Heater

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



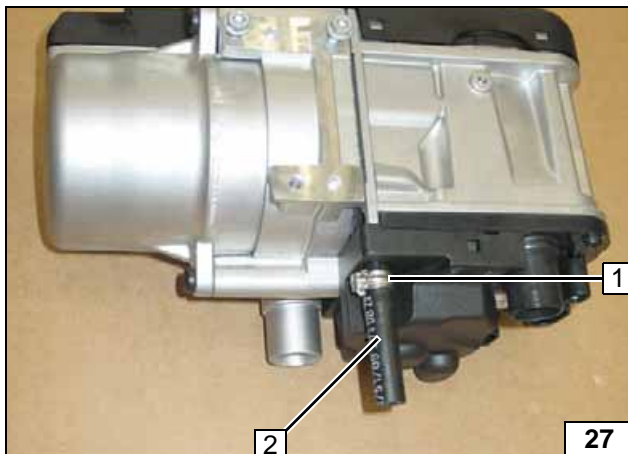
Installing water connection pieces



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

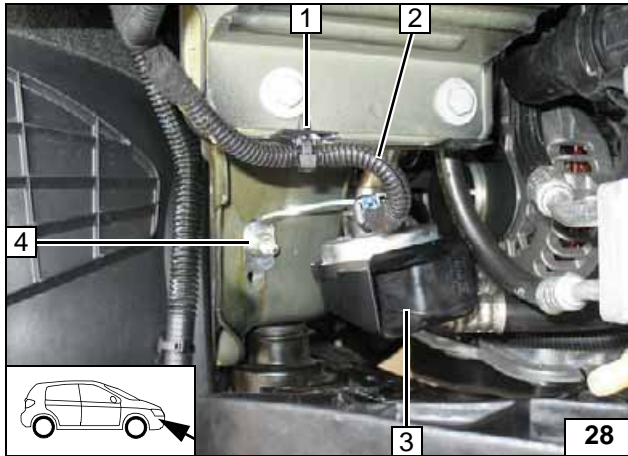
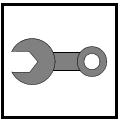


Premounting bolts loosely



- 1 10 mm dia. clamp
- 2 Hose section

Premounting hose section



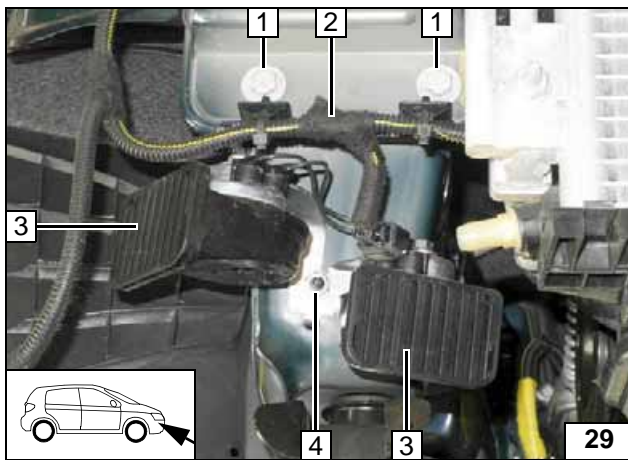
**Preparing Installation Location**



**Vehicle with one horn**

Detach original vehicle wiring harness 2 at position 1. Remove horn 3 with bracket, discard nut 4.

**Removing horn**

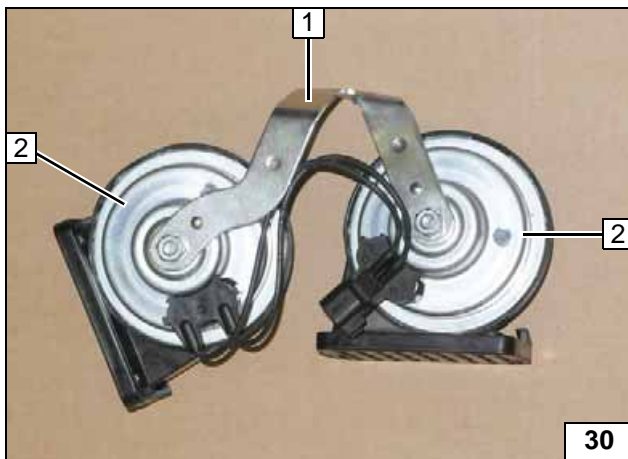


**Vehicle with two horns**

Detach original vehicle wiring harness 2 at position 1 [2x]. Remove horn 3 [2x] with bracket, discard nut 4.



**Removing horns**

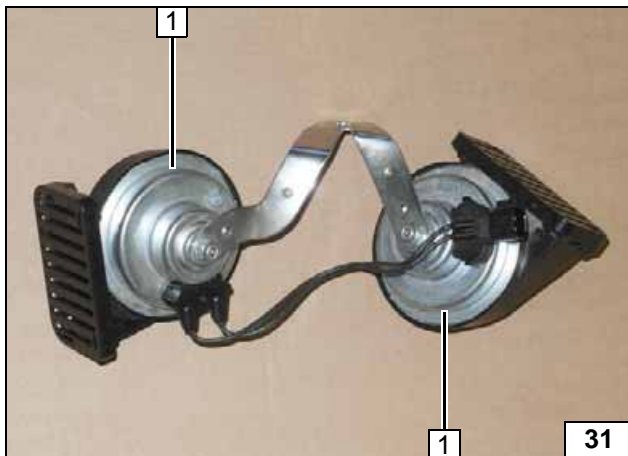


Twist horns 2 [2x] as shown in the following figure!



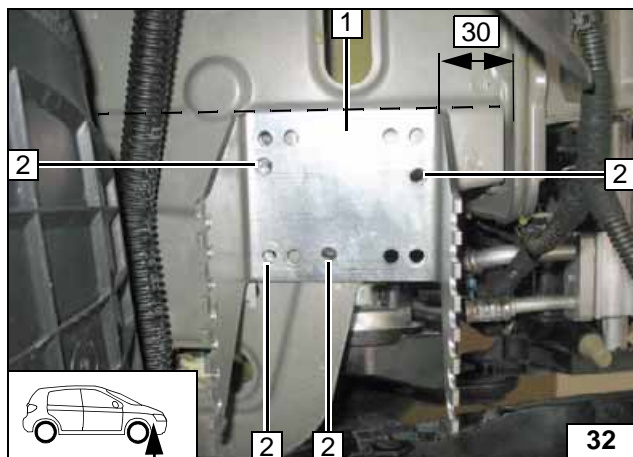
1 Horns bracket

**Twisting horns**



1 Horns

**View of twisted horns**



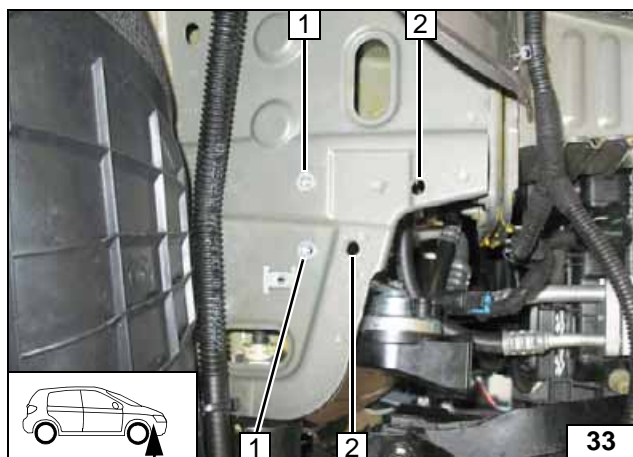
**All vehicles**

Hold bracket 1 and align.

- 2 Copy hole pattern [4x]



**Copying hole pattern**

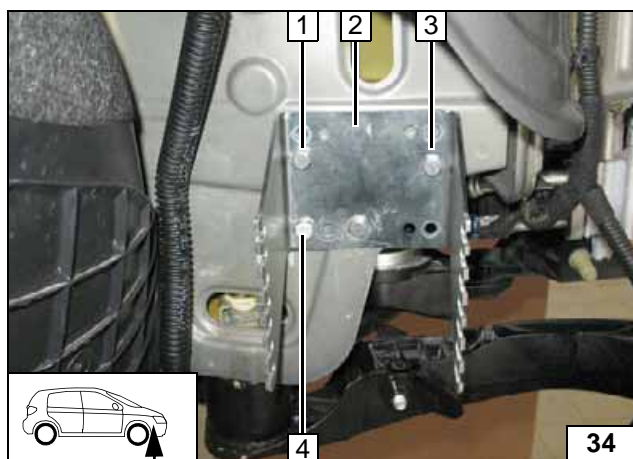


Take off bracket.

- 1 9.1 mm dia. hole; rivet nut [2x each]
- 2 7 mm dia. hole [2x]



**Installing rivet nuts**

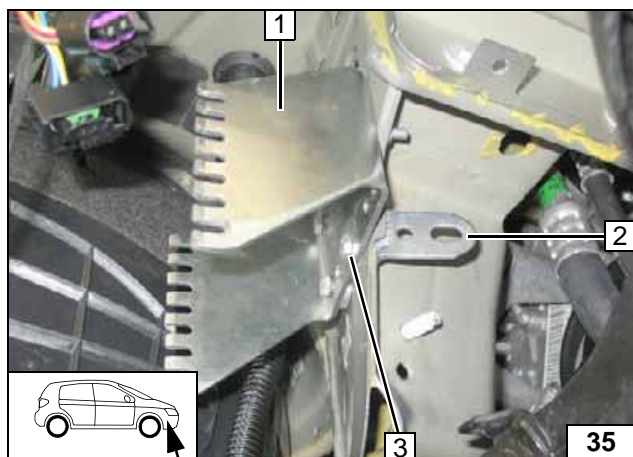


Insert a 5mm shim between bracket 2 and the frame side member at position 4.

- 1 M6x20 bolt, spring lockwasher
- 3 M6x20 bolt, flanged nut
- 4 M6x25 bolt, spring lock washer, 5mm shim



**Mounting bracket**



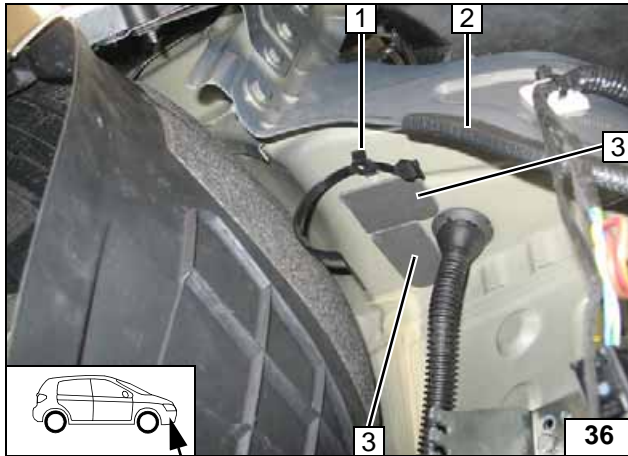
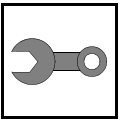
Insert a large diameter washer between bracket 1 and frame side member at position 3. Bend angle bracket 2 by approx. 20° after installation

- 3 M6x20 bolt, large diameter washer, angle bracket, flanged nut



**Mounting bracket**



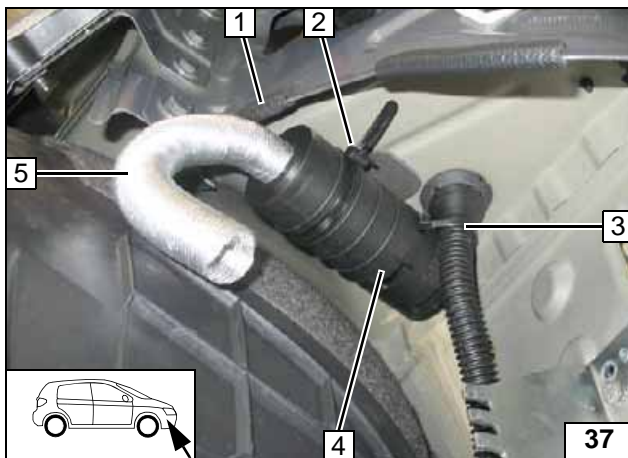


Divide insulation protection strips at the centre.

- 1 Clip-type cable tie in existing hole
- 2 100 mm edge protection
- 3 Insulation protection strips, one half each



**Preparing installation location**



- 1 50 mm edge protection
- 2 Close clip-type cable tie
- 3 Cable tie
- 4 Silencer
- 5 Combustion air pipe



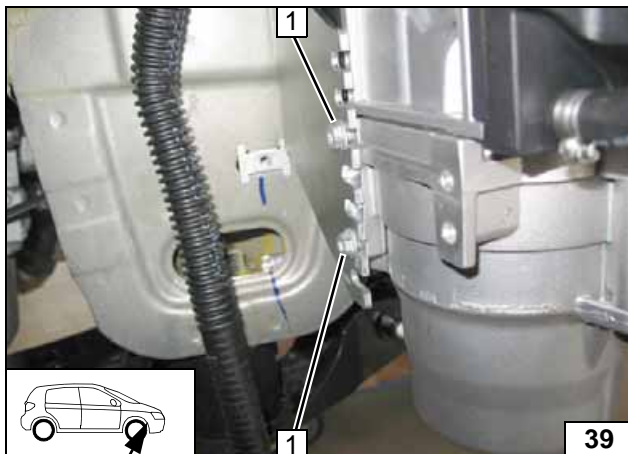
**Installing silencer**



### Installing Heater

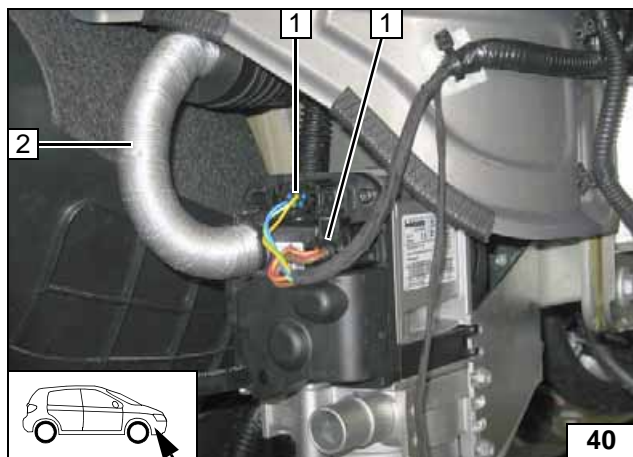
- 1 Tighten self-tapping bolts [2x]

**Mounting heater**



- 1 Tighten self-tapping bolts [2x]

**Mounting heater**



Check position of all components and adjust if necessary. Check that they have freedom of movement.



- 1 Install connector for wiring harness of heater [2x]
- 2 Combustion air pipe

**Mounting combustion air pipe**



Fuel



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

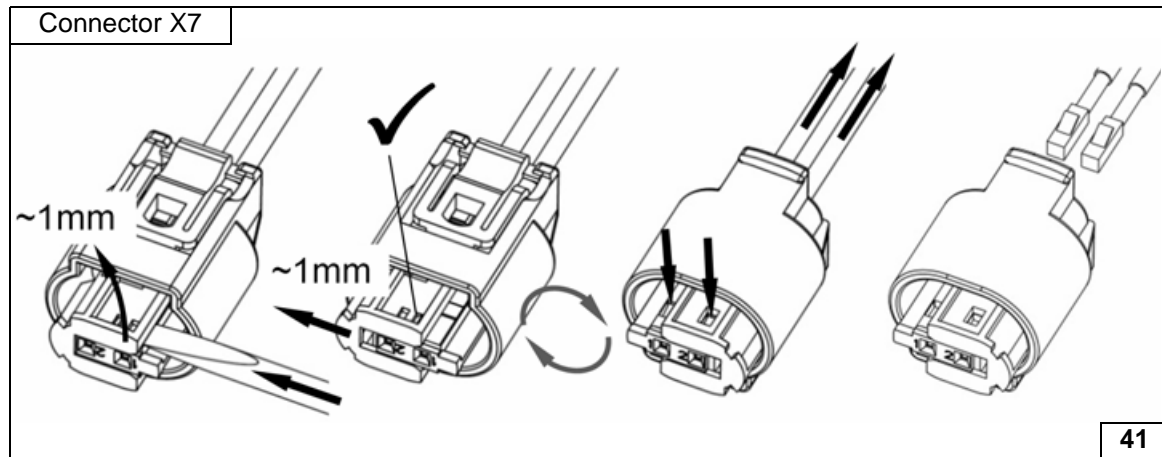
Catch any fuel running off with an appropriate container.



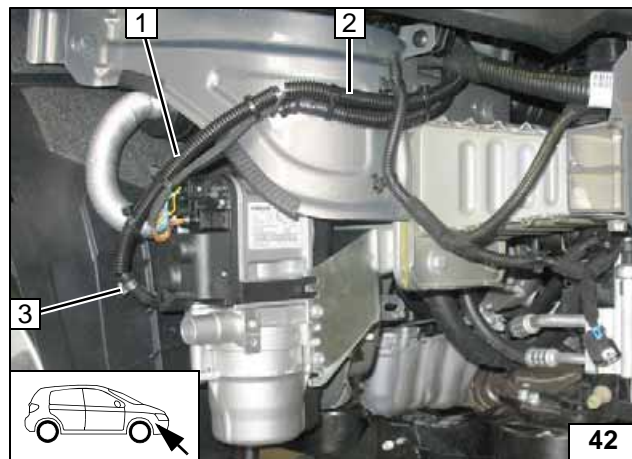
Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

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

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

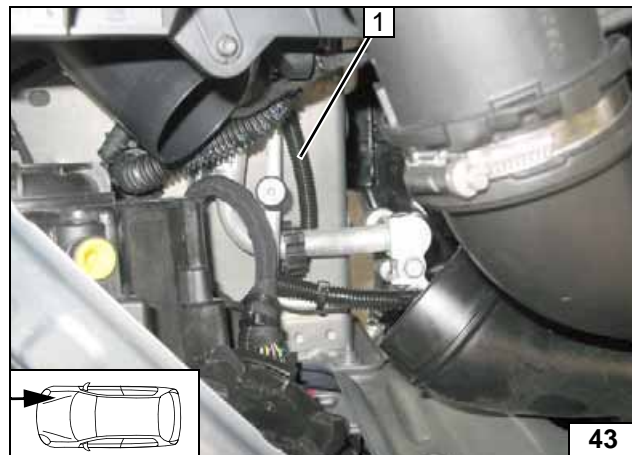


Dismantling connector of metering pump



- 1 Fuel line in 190 mm long corrugated tube
- 2 Fuel line and wiring harness of metering pump in 2100 mm long corrugated tube
- 3 Fuel line, 10 mm dia. Caillau clamp

Connecting heater



Route fuel line and wiring harness of metering pump in corrugated tube 1 on the frame side member to the firewall.



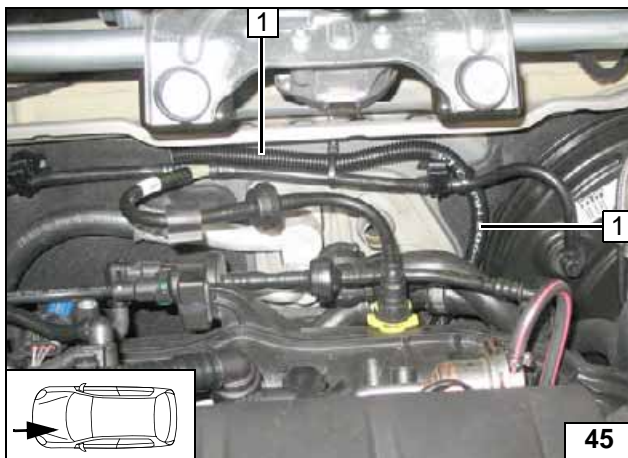
Routing lines



Route fuel line and wiring harness of metering pump in corrugated tube **1** on the firewall behind the insulation to the left side of the vehicle.



**Routing lines**



Route fuel line and wiring harness of metering pump in corrugated tube **1** to the underbody!



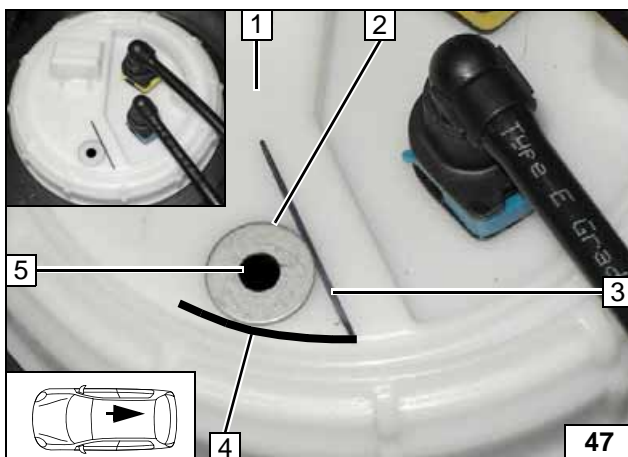
**Routing lines**



Route fuel line and wiring harness of metering pump in 2100mm corrugated tube **1** on the underbody to the installation location of the metering pump.



**Routing lines**



### Installing FuelFix

Remove fuel tank according to manufacturer's instructions.

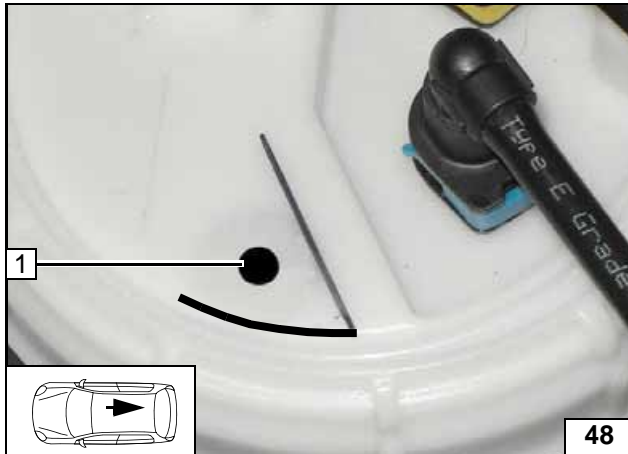
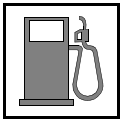


Work steps 1 and 2.



- 1 Fuel-tank sending unit
- 2 Washer with outer dia.  $d_a = 21.6\text{mm}$  as template
- 3 Installation position at the lower edge of the marked line
- 4 Installation position at the edge
- 5 Hole pattern

**Copying hole pattern**

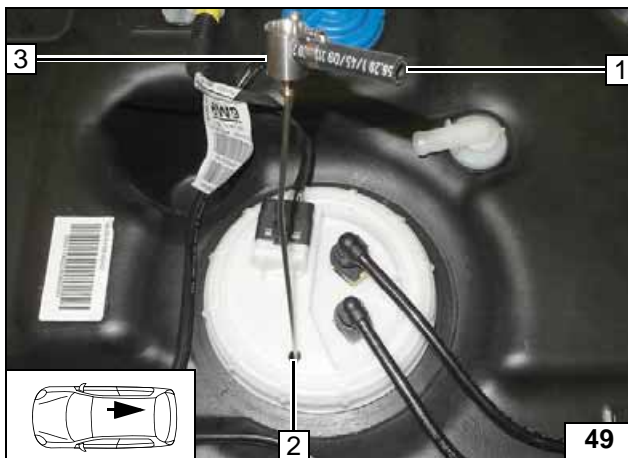


Work step 3.

- 1 Hole made with provided drill



Hole for FuelFix



Work steps 4, 5 and 6.1.

Bend FuelFix 3 according to template and cut to length. Insert in hole 2.

- 1 Hose section, 10mm dia. clamp



Inserting FuelFix



Work step 5.



Inserting FuelFix

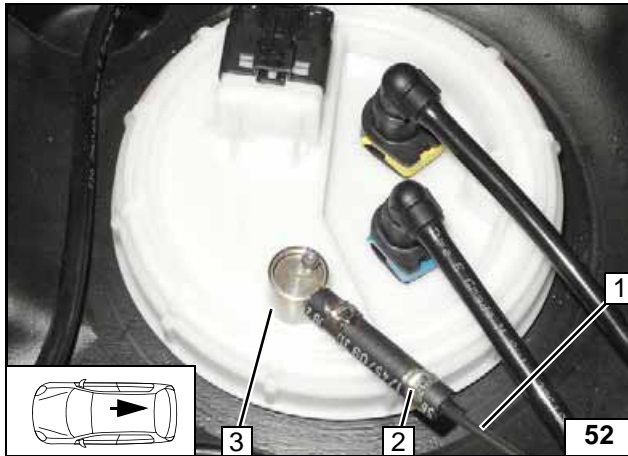
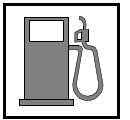


Work step 5.4.

Align FuelFix 1 as shown by turning.



Aligning FuelFix

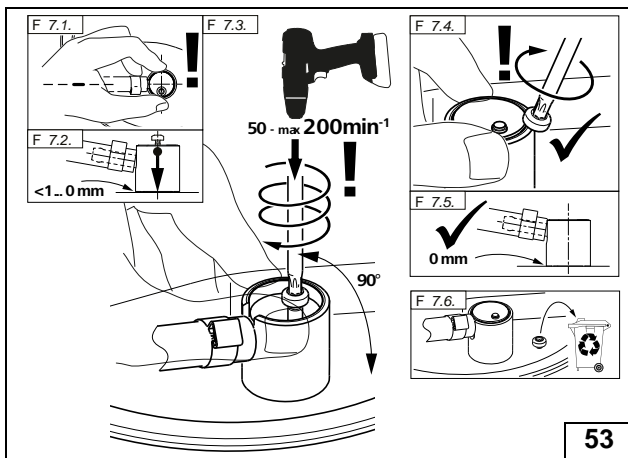


Work step 6.

- 1 Fuel line
- 2 10mm dia. clamp
- 3 FuelFix



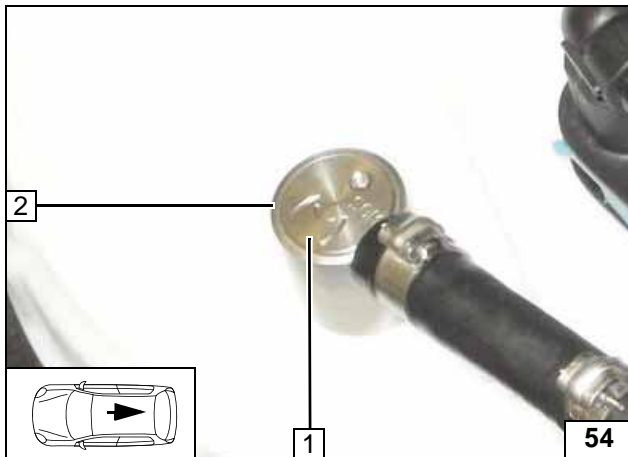
Connect-  
ing fuel line



Work step 7.



Installing  
FuelFix

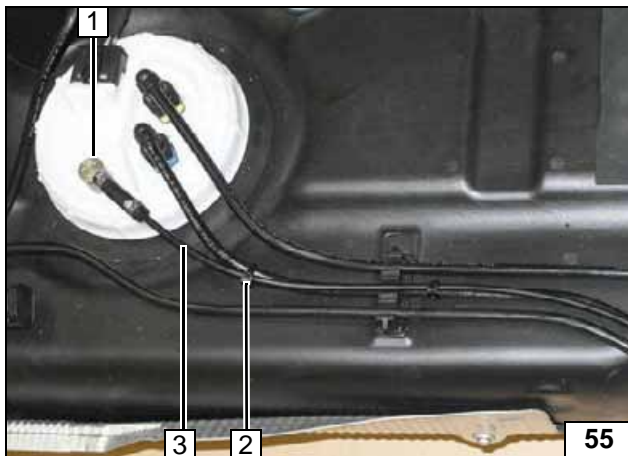


Work step 8.

Ensure firm seating of FuelFix and position-  
ing of clamping piece 1 with respect to  
upper edge 2 of the housing.



Checking  
final posi-  
tion



Work step 8.

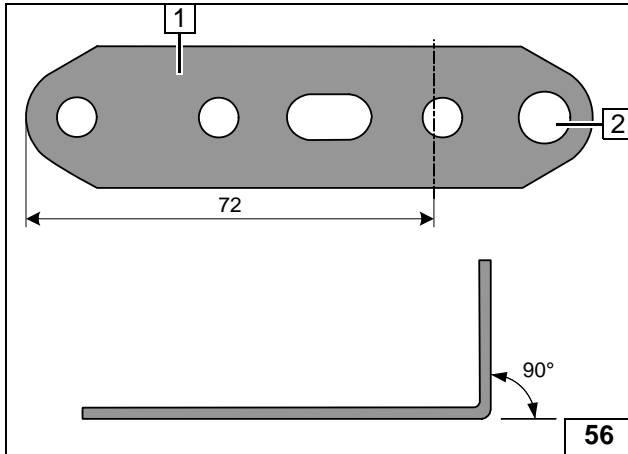
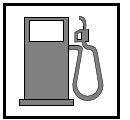
- 1 FuelFix installed
- 2 Cable tie as tension relief
- 3 Fuel line of FuelFix



Securing  
fuel line

Install fuel-tank according to manufactur-  
er's instructions.

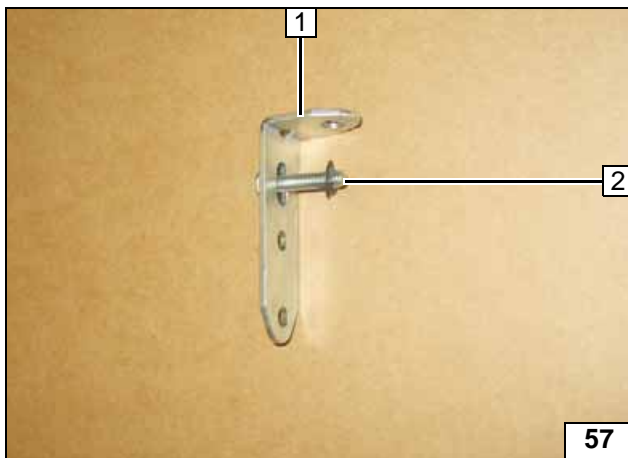




Angle down perforated bracket 1 and drill at position 2 to 8.5mm dia.

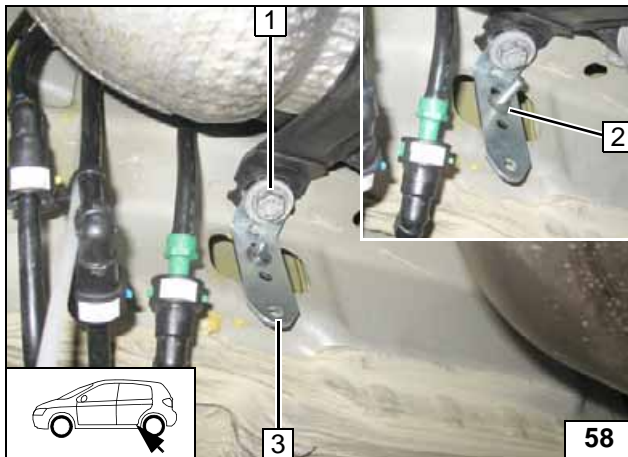


**Angling down perforated bracket**



- 1 Perforated bracket
- 2 M6x25 bolt, slide on 4-5mm pin lock

**Preparing perforated bracket**

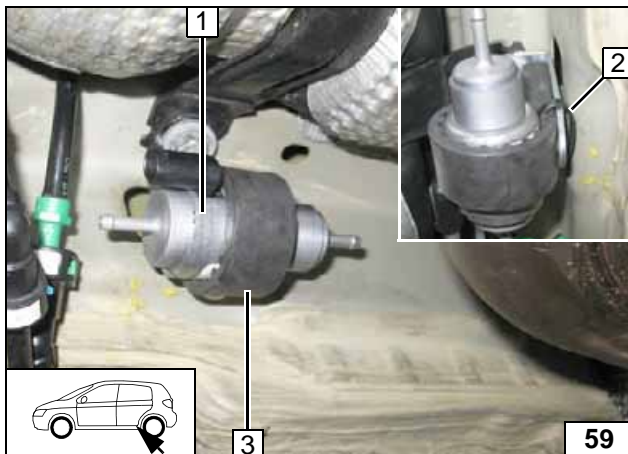


After installing perforated bracket 3, slide pin lock 2 fully on M6x25 bolt

- 1 Original vehicle bolt for fuel tank fastening



**Mounting perforated bracket**

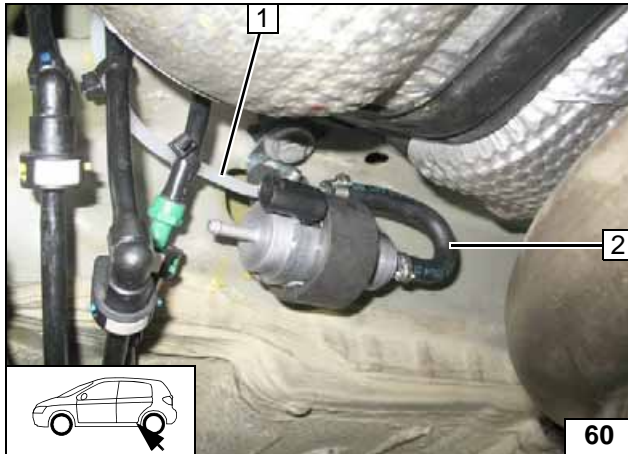
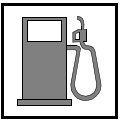


Fasten mounting of metering pump 3 using a large diameter washer, a support angle bracket and a flanged nut on the M6x25 bolt.

- 1 Metering pump
- 2 Cable tie



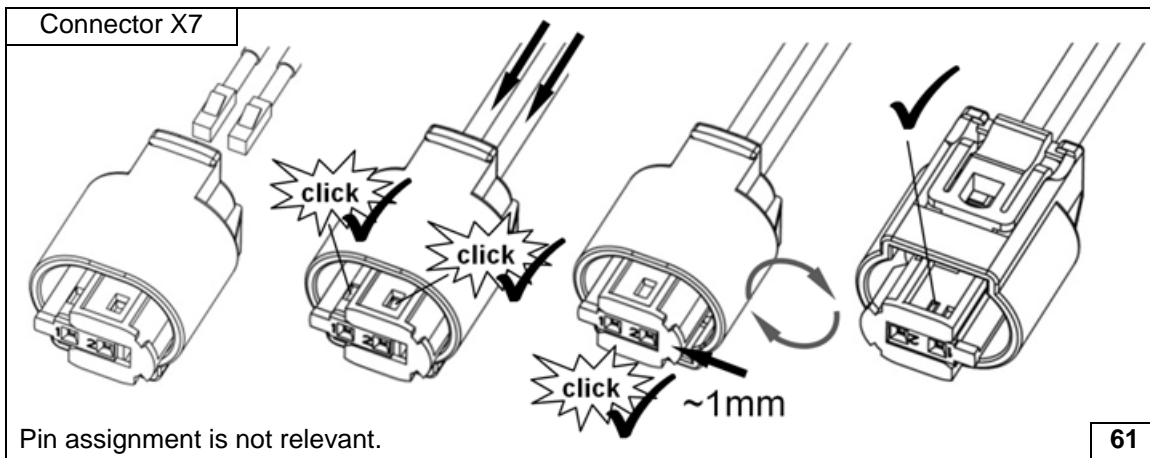
**Mounting metering pump**



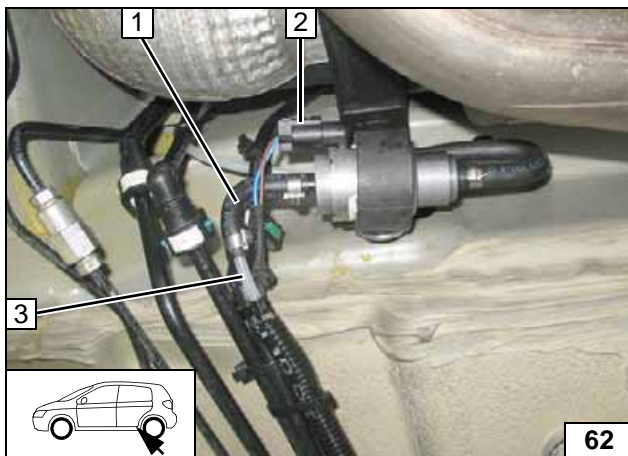
- 1 Fuel line of FuelFix
- 2 180° moulded hose, 10 mm dia. clamp [2x]



Connect-  
ing meter-  
ing pump



Comple-  
ing meter-  
ing pump  
connector



Check the position of the components; ad-  
just if necessary. Check that they have  
freedom of movement.

- 1 90° moulded hose, 10 mm dia. clamp [2x]
- 2 Wiring harness of metering pump,  
connector X7 mounted
- 3 Fuel line of heater



Connect-  
ing meter-  
ing pump



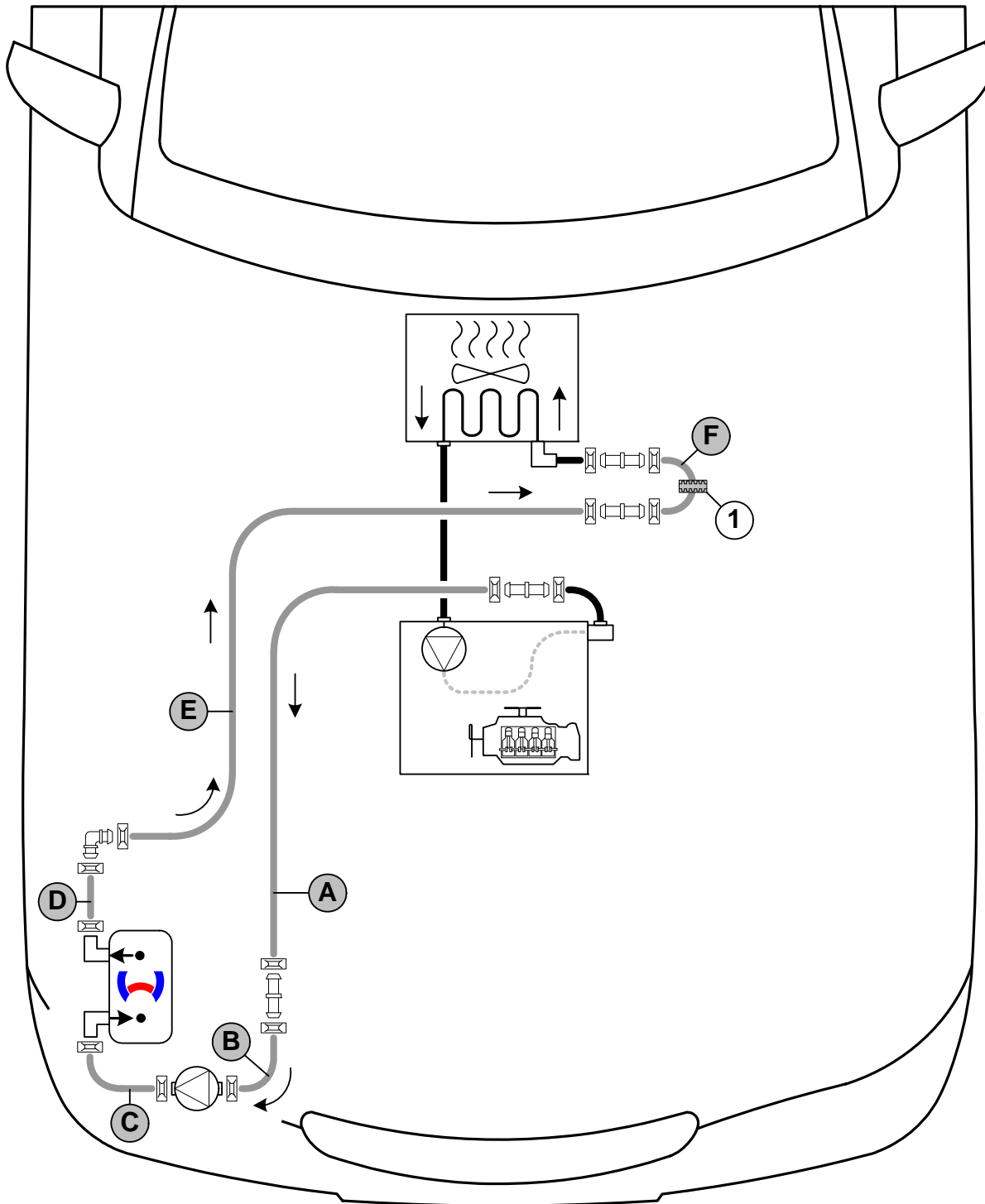


**Coolant Circuit**







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.

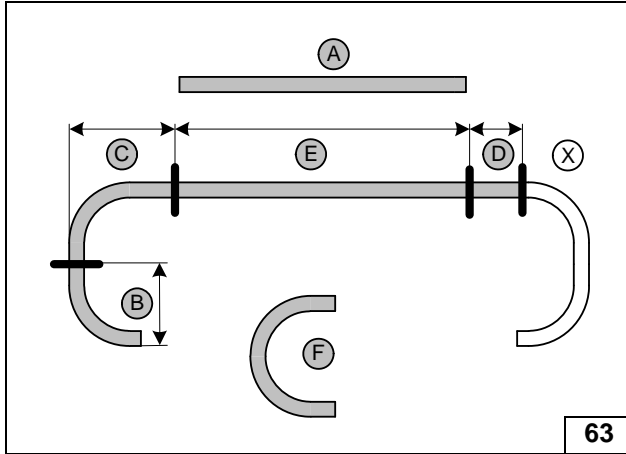
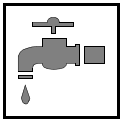
The connection should be modelled on an "inline" circuit and based on the following diagram:



Hose installation diagram

All spring clips  = 25 mm dia.  
 1 = Black (sw) rubber isolator .  
 All connecting pipes  and  = 18x18mm dia.



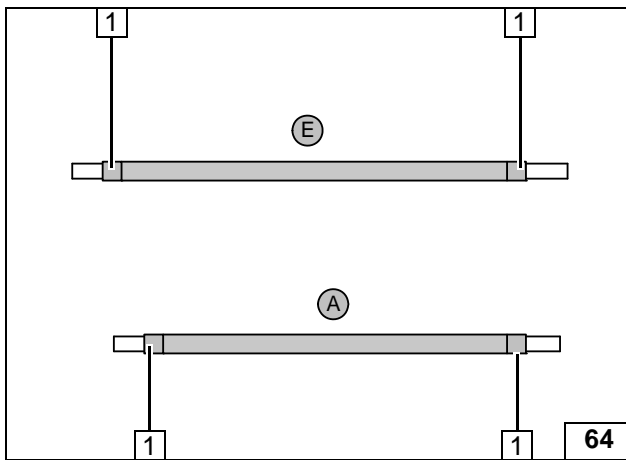


Discard section **X**.  
 Hose **A** = 18x18mm dia. straight hose  
 Hose **F** = 180°, 18x18mm dia. moulded hose

- A = 1200
- B = 70
- C = 100
- D = 55
- E = 1330



**Cutting hoses to length**

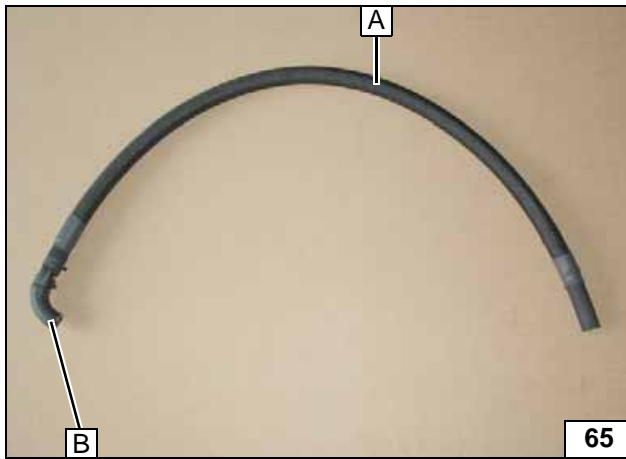


Push braided protection hoses onto hose **A** and **E** and cut to length.  
 Cut heat shrink plastic tubing to length.

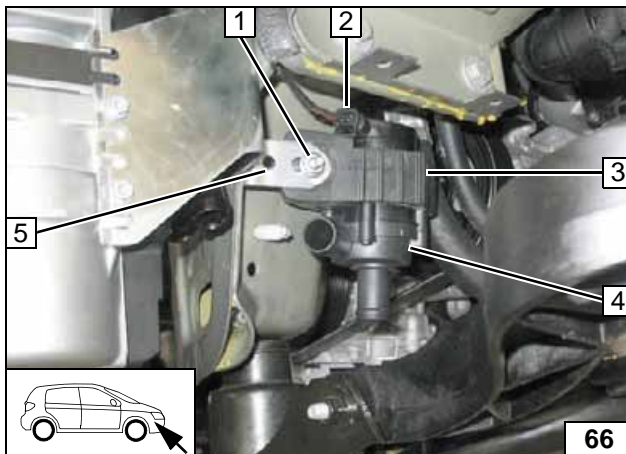
- 1 50 mm long heat shrink plastic tubing [4x]



**Preparing hoses**

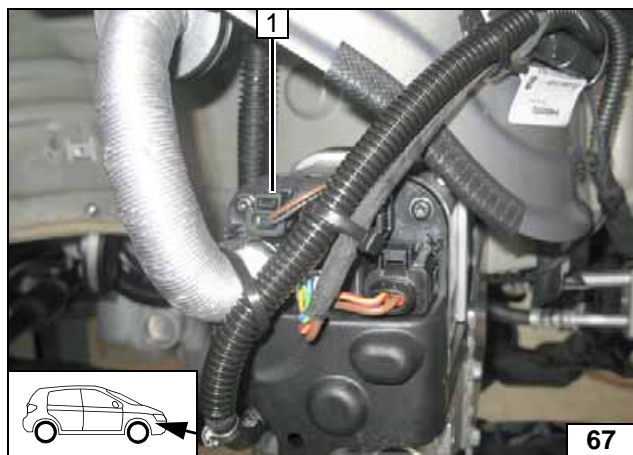


**Connecting hoses A and B**



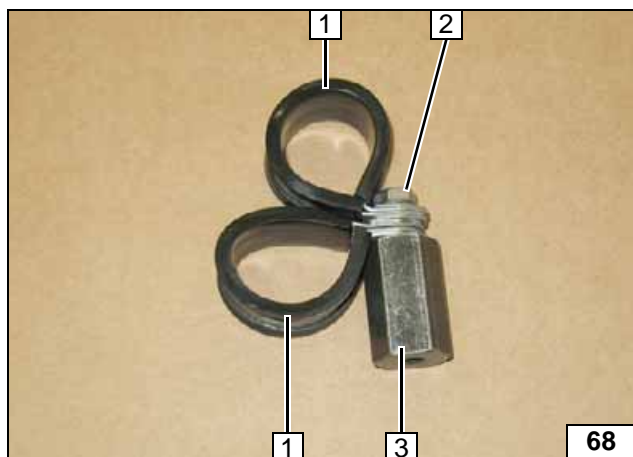
- 1 M6x25 bolt, flanged nut
- 2 Install connector for wiring harness of circulating pump
- 3 Mounting of circulating pump
- 4 Circulating pump
- 5 Angle bracket

**Installing circulating pump**



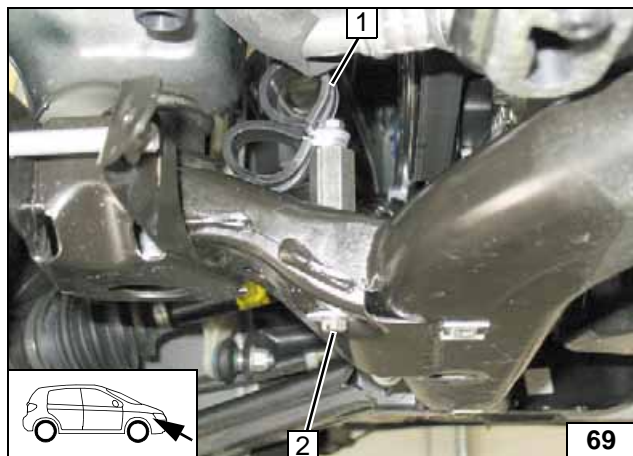
- 1 Connector for wiring harness of circulating pump

**Installing wiring harness**



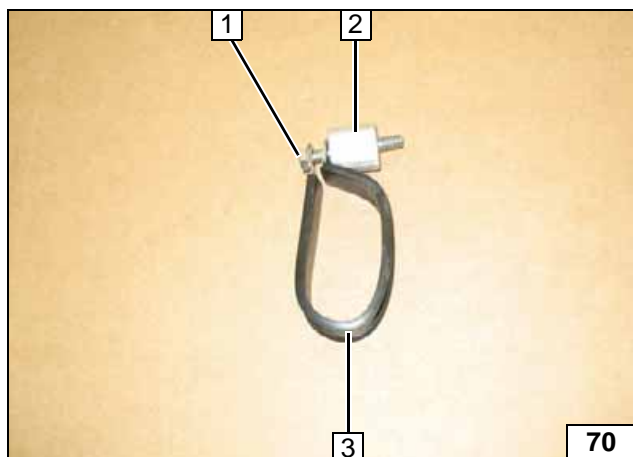
- 1 Rubber-coated pipe clamp, 29 mm dia. [2x]
- 2 Install loosely M6x20 bolt, spring lockwasher
- 3 M6x30 spacer nut

**Preparing clamps**



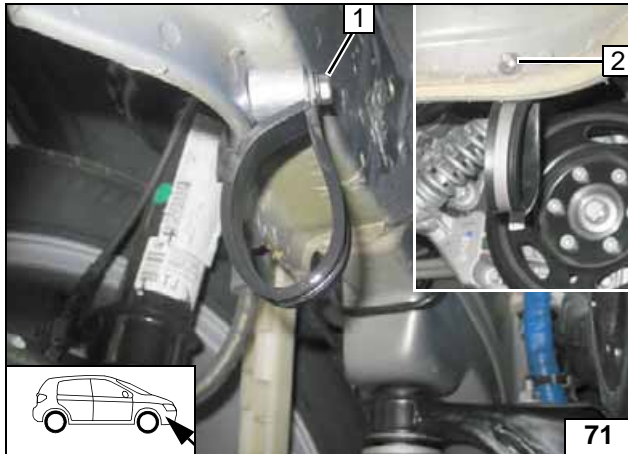
- 1 Preinstalled 29mm dia. clamps
- 2 M6x50 bolt, spring lockwasher, large diameter washer, existing hole

**Installing clamps**



- 1 M6x50 bolt
- 2 20 mm shim
- 3 Rubber-coated pipe clamp, 48mm dia.

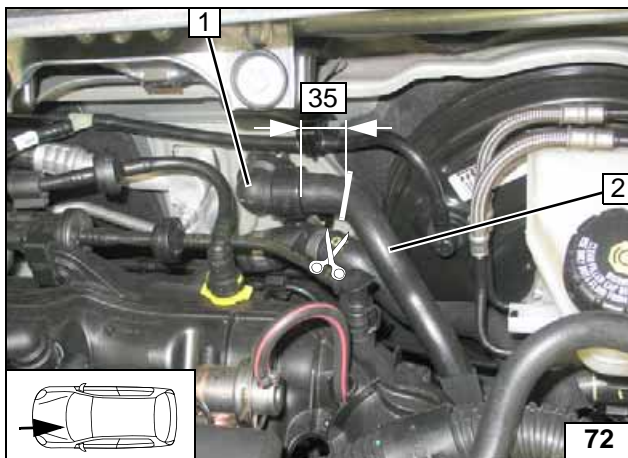
**Preparing clamp**



Insert M6x50 bolt 1 in existing hole and secure with pin lock 2.



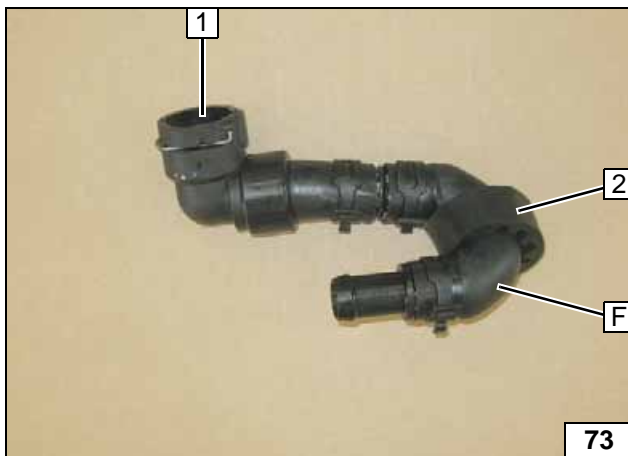
Installing clamp



Cut off hose on engine outlet/heat exchanger inlet 2 at the marking. Remove quick-release coupling of heat exchanger inlet 1.

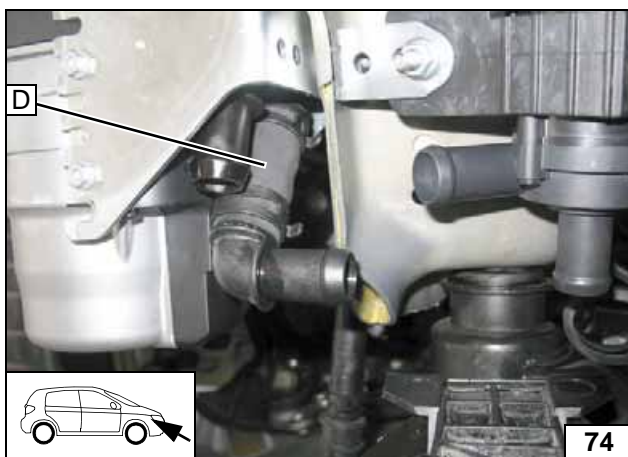


Cutting point

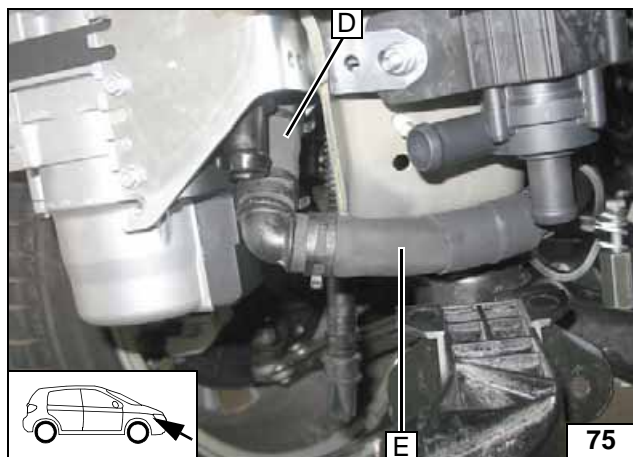


- 1 Quick-release coupling
- 2 Slide on black (sw) rubber isolator

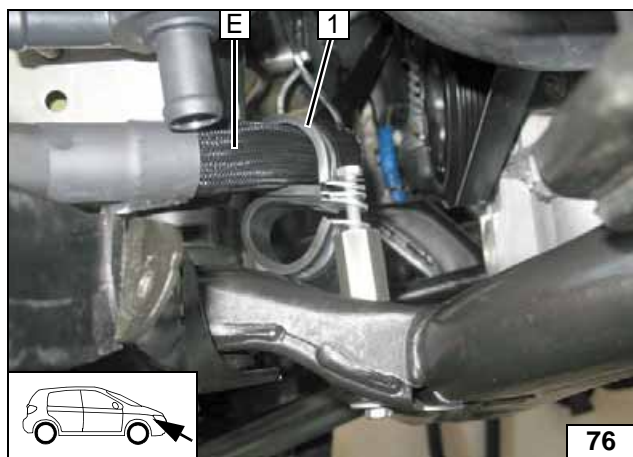
Preparing hose F



Connecting heater outlet



Routing in engine compartment



Route hose E through 29mm dia. upper pipe clamp 1.



Routing in engine compartment



Route hose E through 48mm dia. pipe clamp 1.



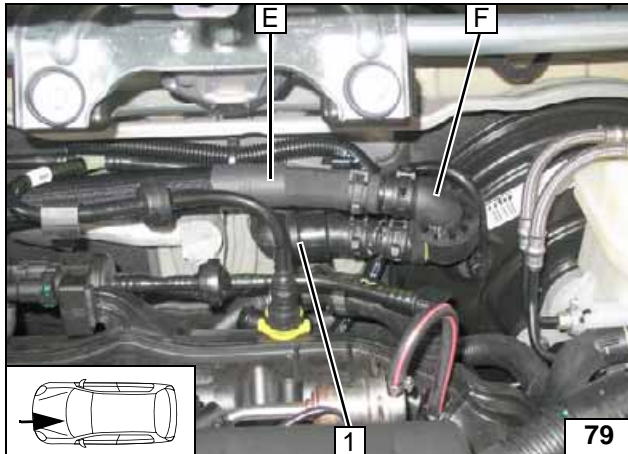
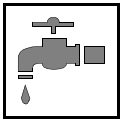
Routing in engine compartment



Route hose E to the connection of the heat exchanger inlet.



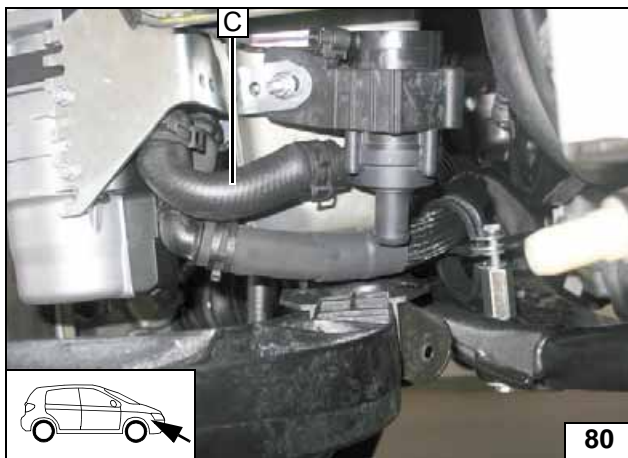
Routing in engine compartment



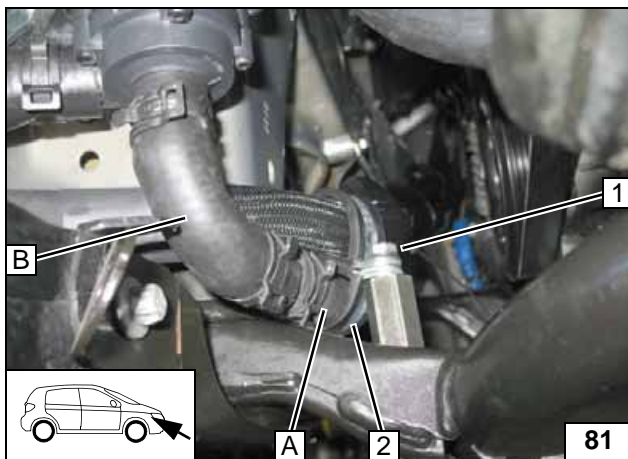
Mount quick-release coupling 1 on heat exchanger inlet.



Connect-  
ing heat ex-  
changer  
inlet



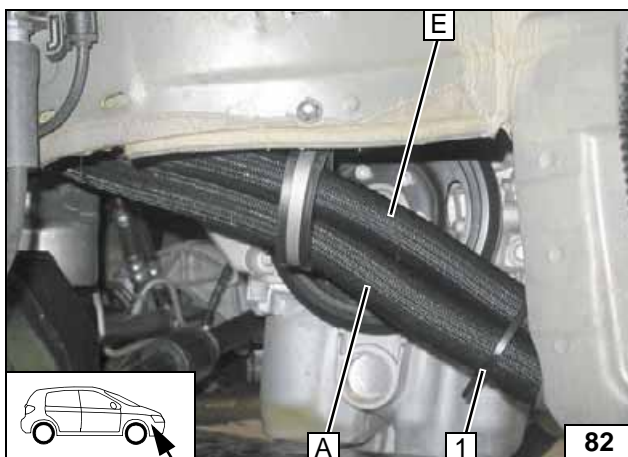
Connect-  
ing heater  
inlet



Route hose A through 29mm dia. lower pipe clamp 2. Connect hose B to circulating pump. Tighten M6x20 bolt 1.

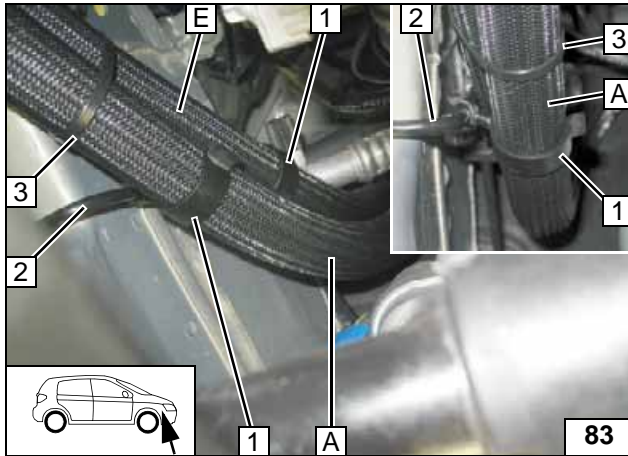


Routing in  
engine  
compart-  
ment



1 Cable tie

Routing in  
engine  
compart-  
ment

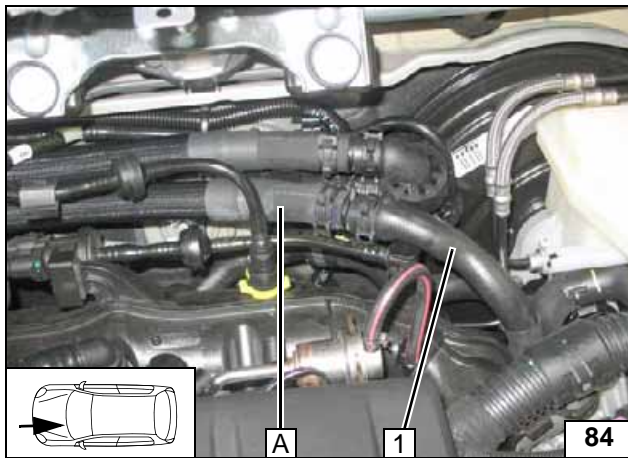


Route hose **A** to the connection of the engine outlet. Insert one 7.2x22 hose bracket **1** each between original vehicle wire **2** and hose **E** or hose **A**.



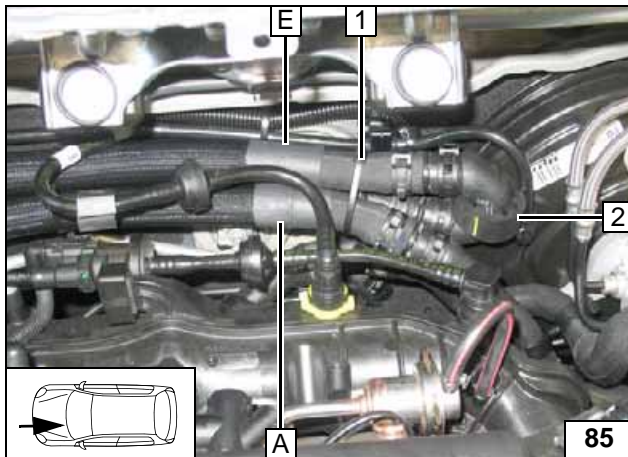
**3** Cable tie

**Routing in engine compartment**



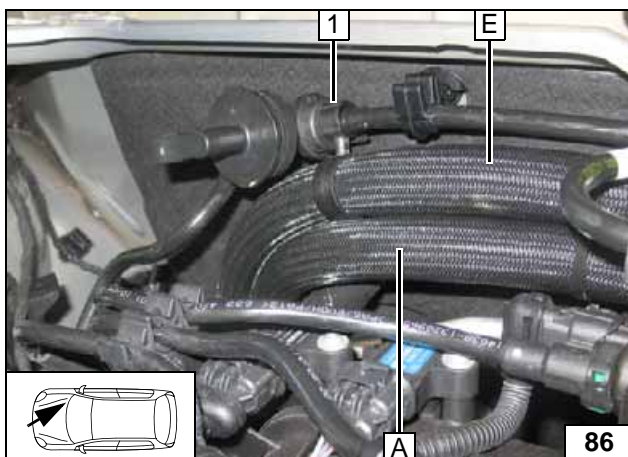
**1** Hose of engine outlet

**Connecting engine outlet**



**1** Cable tie  
**2** Align black (sw) rubber isolator

**Aligning hoses**

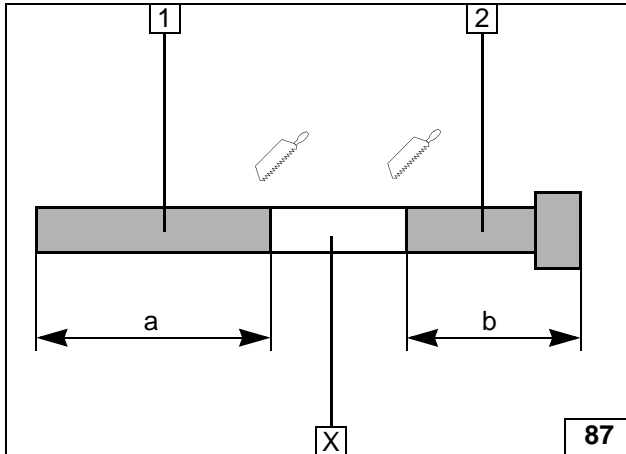
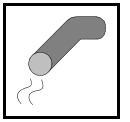


Ensure sufficient distance from neighbouring components.



**1** 13x22 hose bracket

**Installing hose bracket**



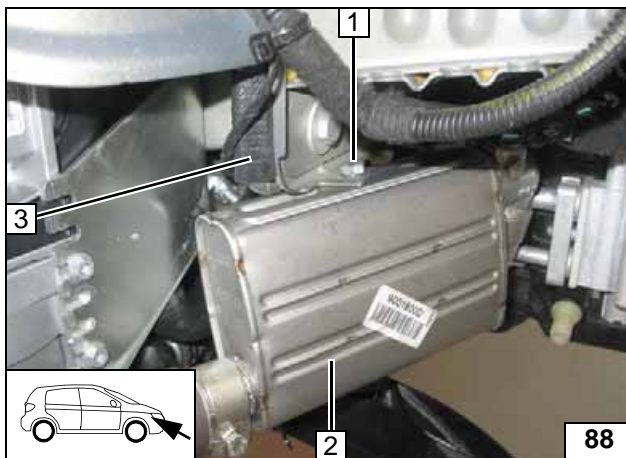
**Exhaust Gas**

Discard section X.

- 1 Exhaust pipe  
a =270
- 2 Exhaust end section  
b =220

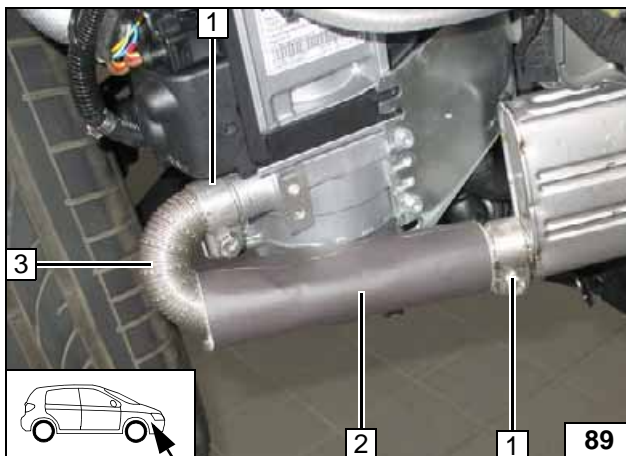


**Preparing exhaust pipe**



- 1 M6x16 bolt, spring lockwasher, existing hole
- 2 Silencer
- 3 50 mm edge protection

**Installing silencer**

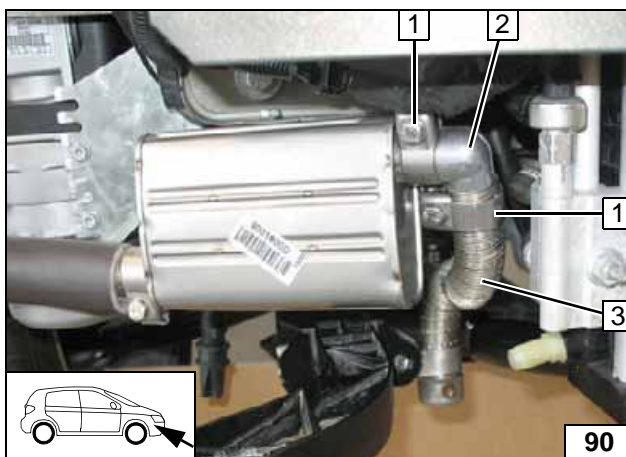


Cut 140mm from exhaust-gas insulation 2 and slide onto exhaust pipe 3.

- 1 Hose clamp [2x]



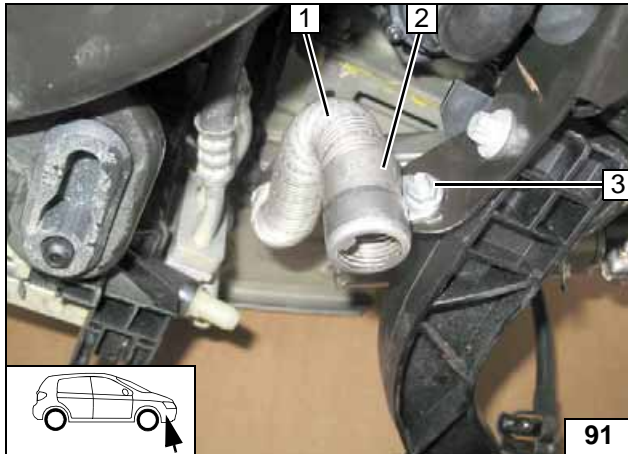
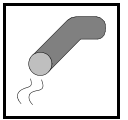
**Mounting exhaust pipe**



- 1 Hose clamp [2x]
- 2 Exhaust elbow
- 3 Exhaust end section

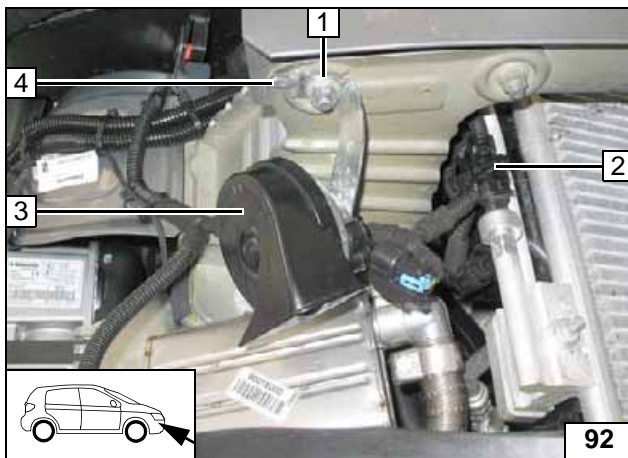
**Mounting exhaust end section**





- 1 Exhaust end section
- 2 P-clamp
- 3 M6x16 bolt, spring lockwasher, flanged nut, existing hole

**Fastening exhaust end section**

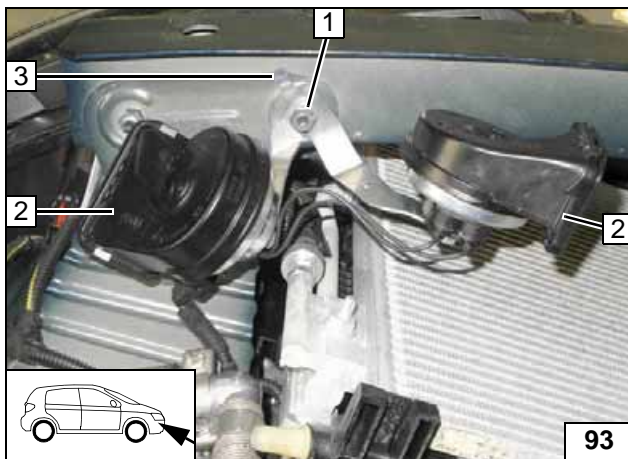


**Vehicle with one horn**

Angle down tab of horn bracket 4 straight. Install horn 3 with bracket on original vehicle bolt 1. Lock wiring harness of horn with cable tie 2.



**Installing horn**



**Vehicle with two horns**

Angle down tab of horn bracket 3 straight. Install horn 2 [2x] with bracket on original vehicle bolt 1, align with bonnet lock support.



**Mounting horns**

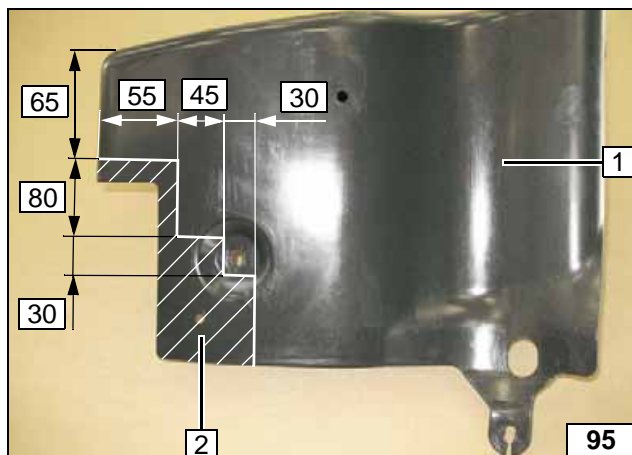
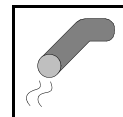


**All vehicles**

Ensure sufficient distance from neighbouring components. Secure all wiring harnesses with cable tie.



**Securing wiring harnesses**



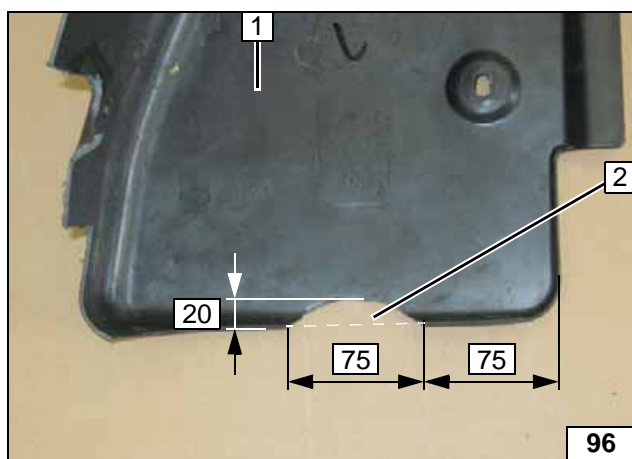
### Underbody trim

Cut out underbody trim piece 1 in area of heater.

- 2 Discard section



**Cutting out underbody trim**

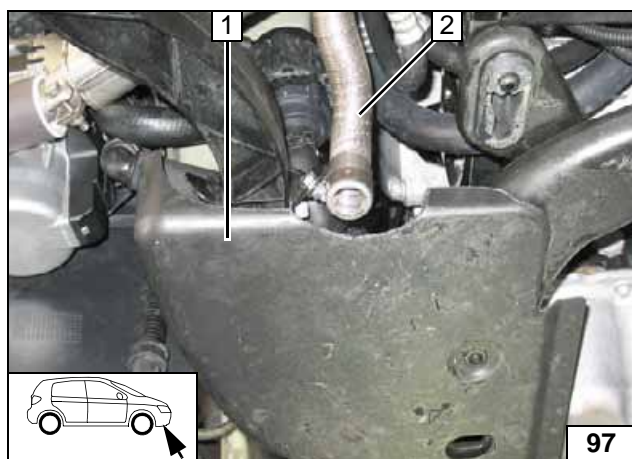


Cut out underbody trim 1 in area of exhaust end section.

- 2 Discard section

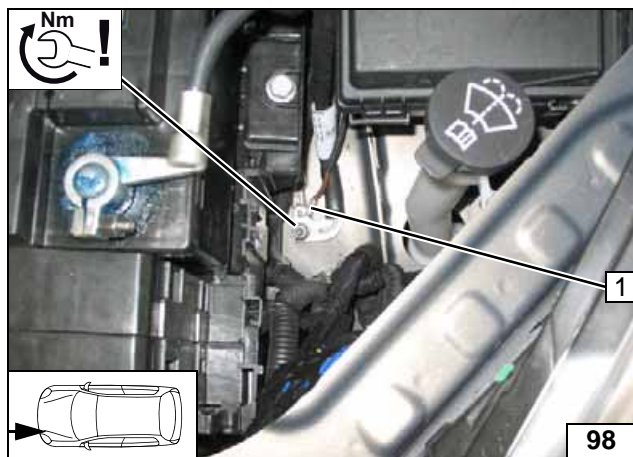


**Cutting out underbody trim**



- 1 Install underbody trim
- 2 Exhaust end section

**Aligning exhaust end section**



### Final Work

- 1 Earth wire at original vehicle earth support point



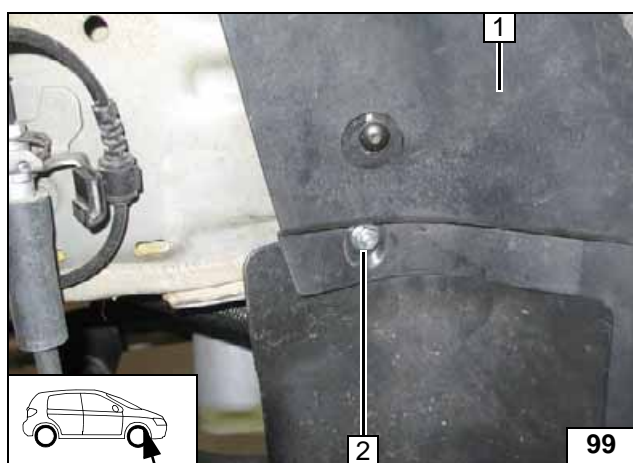
### Connecting earth wire



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

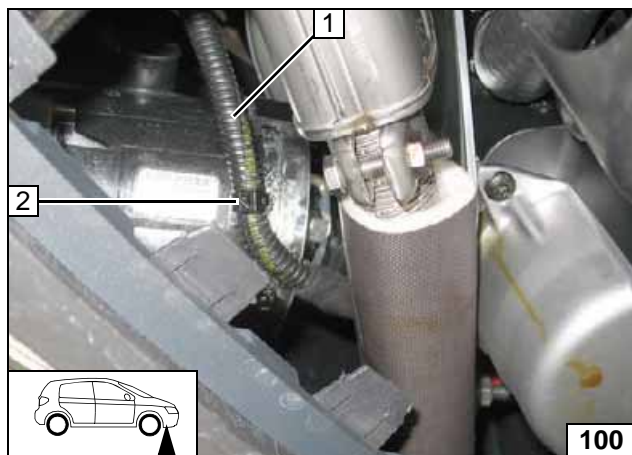
Only use manufacturer-approved coolant. Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, 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**



- 1 Wheel well trim
- 2 Flanged nut

### Fastening wheel well trim



Secure wiring harness of front fog light **1** with cable tie **2** on housing of front fog light. Ensure sufficient distance from heater and exhaust system (at least 20mm), correct if necessary.

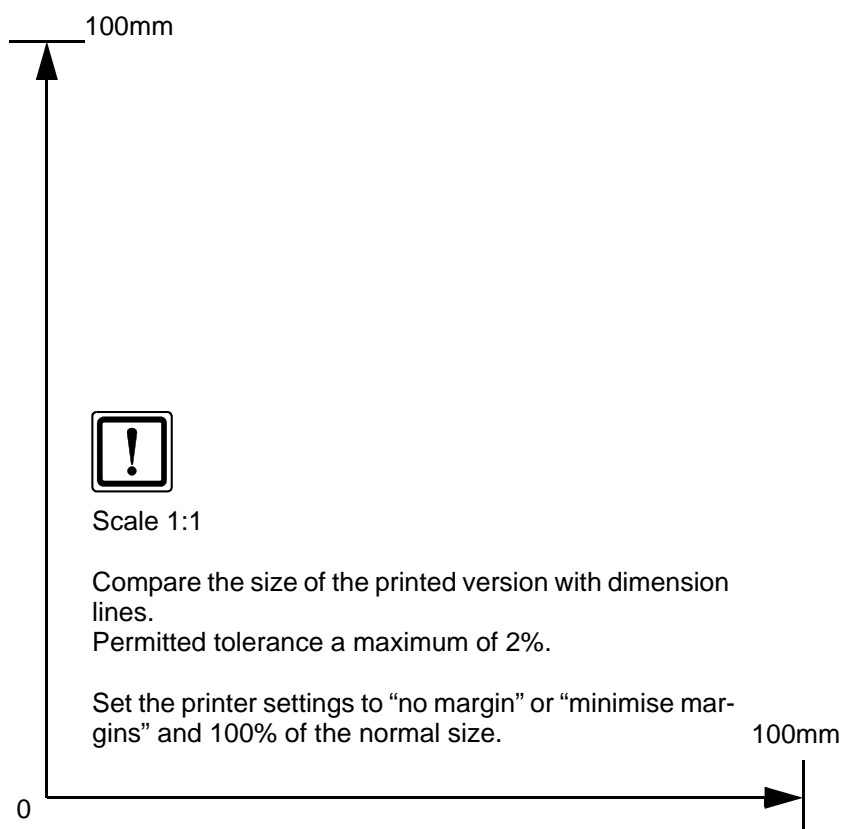
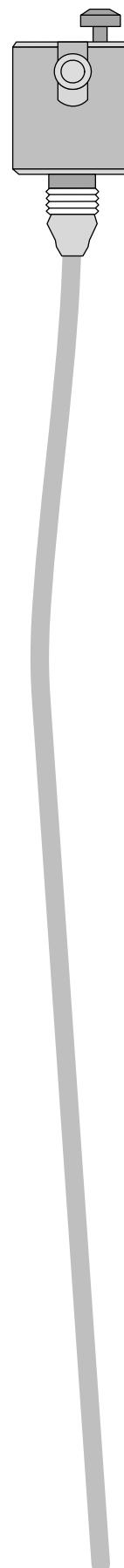


**Fastening wiring harness of front fog lights**

Webasto Thermo & Comfort SE  
Postfach 1410  
82199 Gilching  
Germany  
Internet: [www.webasto.com](http://www.webasto.com)  
Technical Extranet:  
<http://dealers.webasto.com>



FuelFix Template



## 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

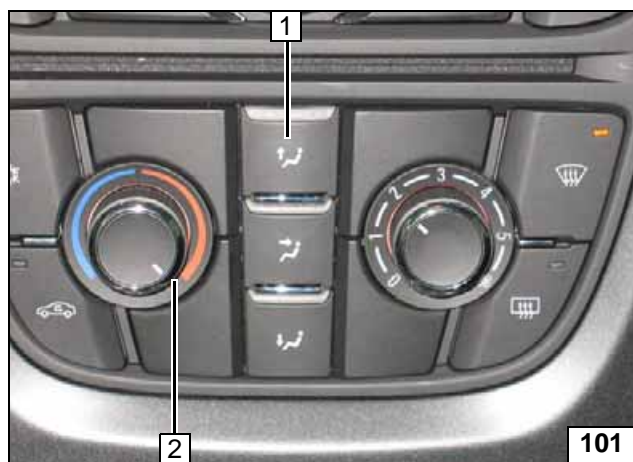
**Example:**

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

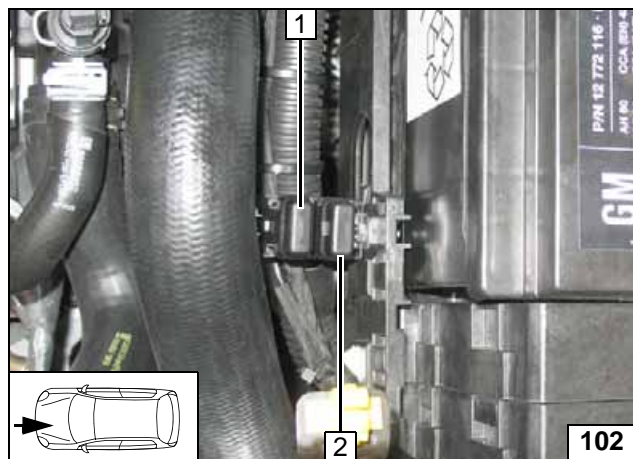
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

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

Before parking the vehicle, make the following settings:



- 1 Air outlet to windscreen
- 2 Set temperature to "max."



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



A/C control panel

Engine compartment fuses



## 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

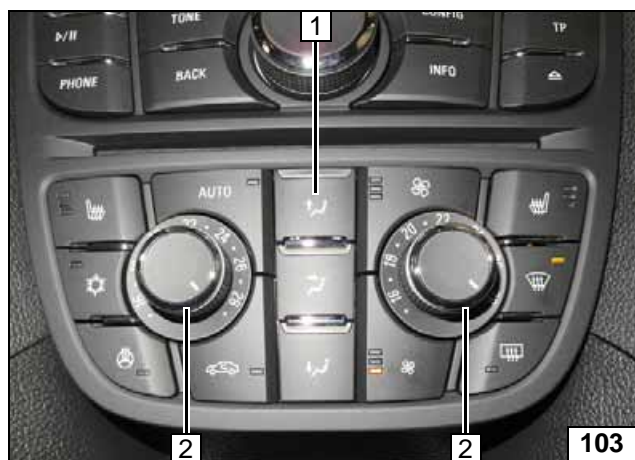
**Example:**

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

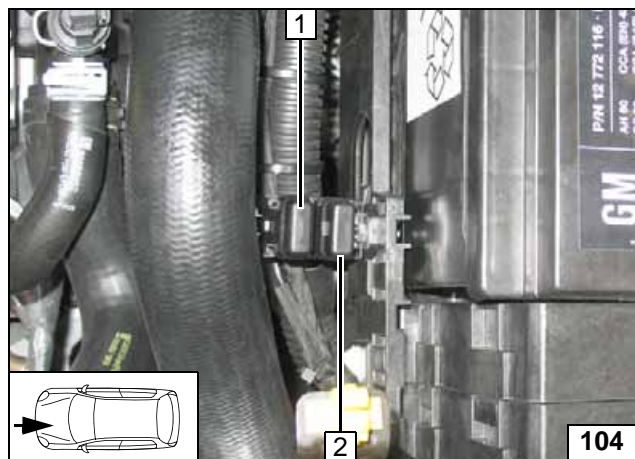
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

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 on both sides to "max".



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



A/C control panel

Engine compartment fuses

