

# Water Heater

## Thermo Top Evo Parking Heater



# Installation Documentation

## Citroen C4 Aircross

### Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Citroen C4	Aircross	AF	e2 * 2007 / 46 * 0117 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm <sup>3</sup>	Engine code
1.6 HDI	Diesel	6-speed SG	84	1560	9HL
1.8 HDI	Diesel	6-speed SG	110	1798	4N13

SG = Manual transmission

### From Model Year 2012 Left-hand drive vehicle

**Verified equipment variants:**

- Manual / automatic air-conditioning system
- Front fog lights
- Xenon / Headlight washer system
- Start-Stop
- 2WD / 4WD

**Not verified:** Passenger compartment monitoring

**Total installation time:** approx. 9 hours

# Citroen C4 Aircross

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## Necessary Components

- Basic delivery scope of *Thermo Top Evo* based on price list
- Installation kit for Citroen C4 Aircross 2012 Diesel: **1318689B**
- 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 in consultation with end customer

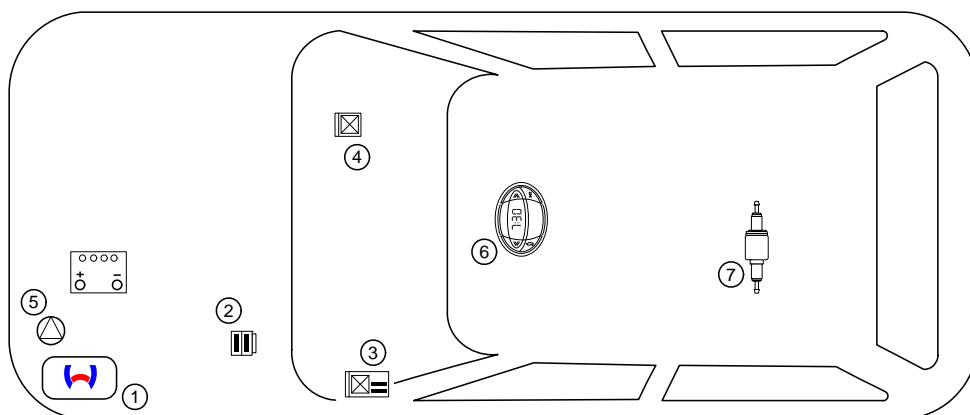
## Installation instructions:

- 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.
- When installing a parking heater, we recommend the use of a larger battery for the vehicle.

## Installation Overview

### Legend:

1. Heater
2. Fuse holder of engine compartment
3. Passenger compartment relay and fuse holder
4. IPCU
5. Circulating pump
6. Digital Timer
7. Metering pump



## Information on Total Installation Time

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

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

## Information on Operating and Installation Instructions

### 1 Important notes (not complete)

#### 1.1 Installation and repair



The improper installation or repairing 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 227).

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, wires and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wires and tie back. Connectors on electronic components have to audibly click into place during installation.**

**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 an IPCU, the corresponding settings must be checked or adjusted before the installation.**

### 2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 03 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

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

### 2.1 Excerpt from the directive 2001/56/EC Appendix VII 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.

# Citroen C4 Aircross

## Information on Validity

This installation documentation applies to Citroen C4 Aircross Diesel vehicles - for validity, see page 1 - from model year 2012 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 these "installation instructions".

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

## Technical Information

### Special Tools

- Hose clamp pliers for auto-tightening 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 in mm.

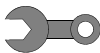












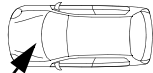
### Tightening torque values

- Tightening torque values of 5x13 heater bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 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:

<b>Mechanical system</b>		<b>Special risk of injury or fatal accidents.</b>	
<b>Electrical System</b>		<b>Specific risk of damage to components.</b>	
<b>Coolant Circuit</b>		<b>Specific risk of fire or explosion.</b>	
<b>Combustion Air</b>		<b>Reference to general installation instructions of the Webasto component or to vehicle specific documents of the manufacturer</b>	
<b>Fuel</b>		<b>Reference to a special technical feature.</b>	
<b>Exhaust gas</b>		<b>The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.</b>	
<b>Software</b>			

# Citroen C4 Aircross

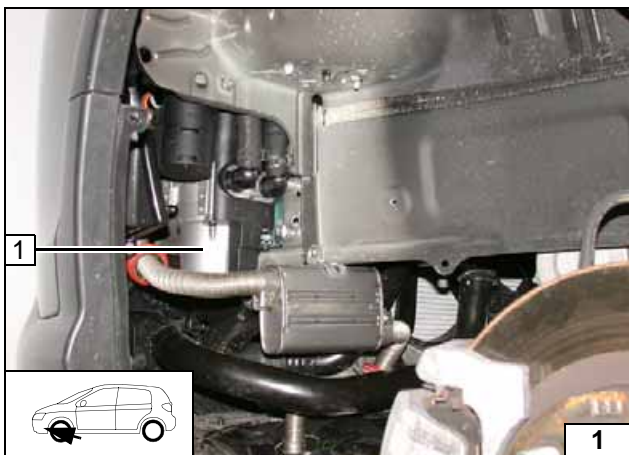
## Preliminary Work

### Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and completely remove the battery with carrier.
- Remove the left front wheel.
- Remove the left-hand wheel well trim.
- Remove the front underride protection.
- Remove the underride protection to the left of the fuel line.
- Remove the air filter together with the intake hose.
- Remove the side trim of the A-pillar on the driver's side.
- Remove the footwell trim on the front passenger's side.
- Remove the rear bench seat.
- Open the right-hand tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.

### Heater

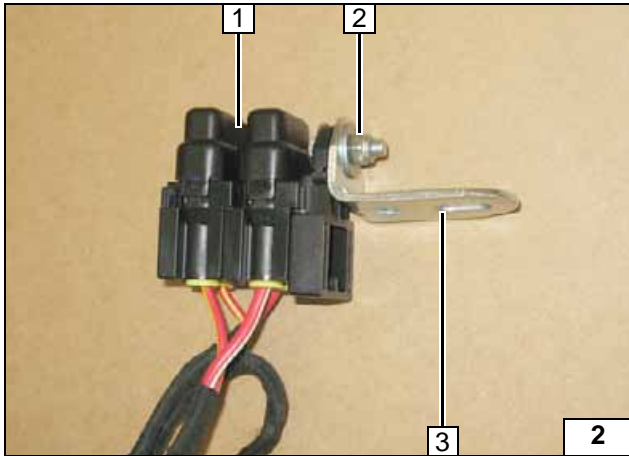
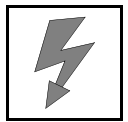
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



### Heater Installation Location

1 Heater

Installation  
location



### Preparing Electrical System

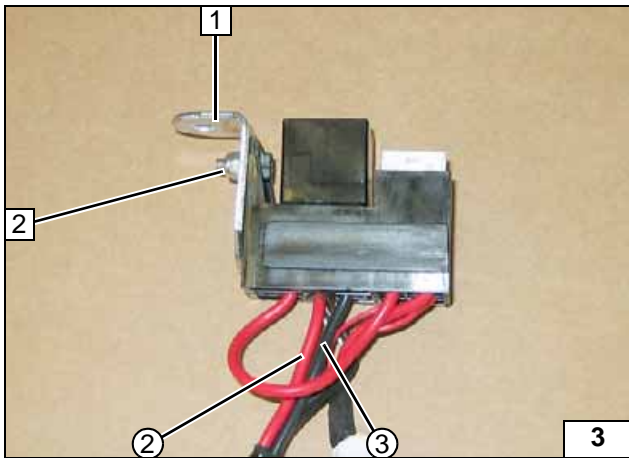
Wire sections retain their numbering throughout the entire document.



#### Fuse holder of engine compartment

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

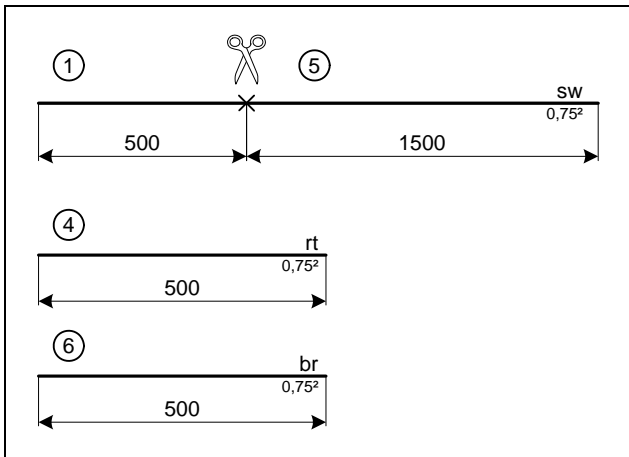
Premounting fuse holder of engine compartment



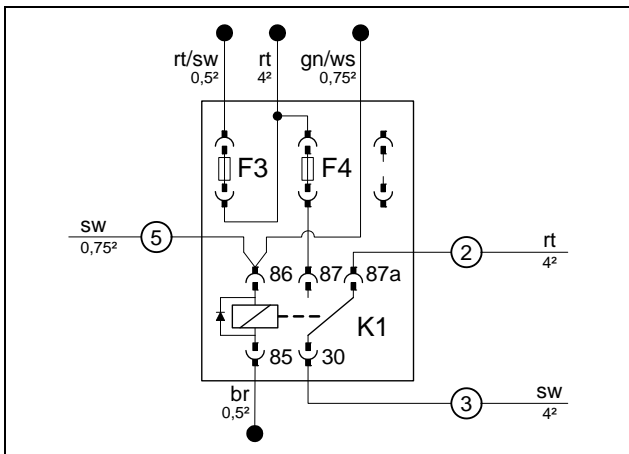
#### Passenger compartment relay and fuse holder

- 1 Angle bracket
- 2 M5x12 bolt, large diameter washer [2x], nut
- ② Red (rt) wire of K1/87a
- ③ Black (sw) wire from K1/30

Premounting passenger compartment relay and fuse holder



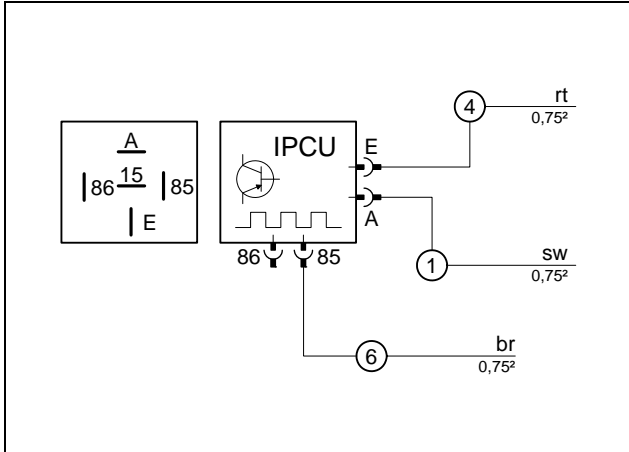
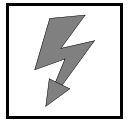
Cutting wires to length



Detach and remove contact of K1/86. Install wires with supplied contacts as shown in wiring diagram. Insert black (sw) additional wire in protective sleeving. Insert 25A fuse F4 and K1 relay.



Preparing passenger compartment relay and fuse holder

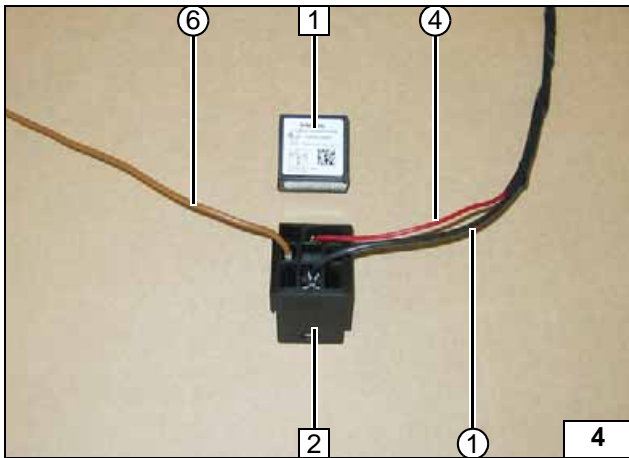


The preprogrammed data of the IPCU is based on averages that can deviate in some cases. This circumstance is design-related due to the fan module of the vehicle. In case of too high / too low fan power, the IPCU can be reprogrammed using the Webasto diagnosis. Change voltage in steps of 0.1V. Measure current consumption on the blue (bl) wire of the fan motor. Observe a value of < 6A.

- Duty cycle:** 100%
- Frequency:** 1kHz
- Voltage:** 4.2V
- Function:** High side



**Premounting IPCU, view on contact side**

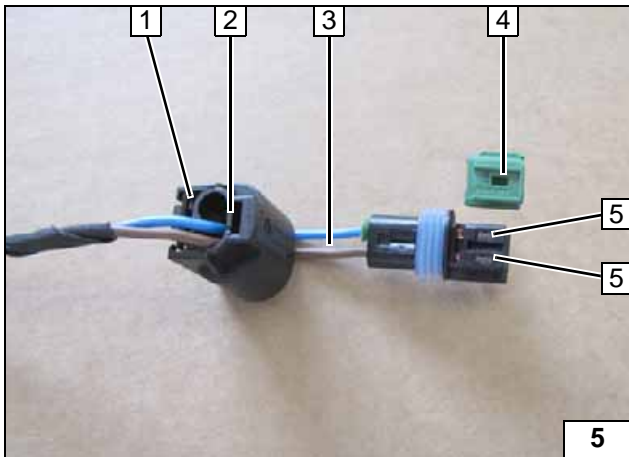


IPCU 1 will be inserted after assembly.

- 2 IPCU socket
- 1 Black (sw) wire of IPCU/A socket
- 4 Red (rt) wire of IPCU/E socket
- 6 Brown (br) wire of IPCU/85 socket



**Premounting IPCU**



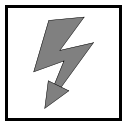
Complete connector of metering pump after routing. Pin assignment is not relevant.

- 1 Connector housing
- 2 Lock
- 3 Blue / brown (bl / br) wires
- 4 Coding
- 5 Timer lock



**Dismantling connector**





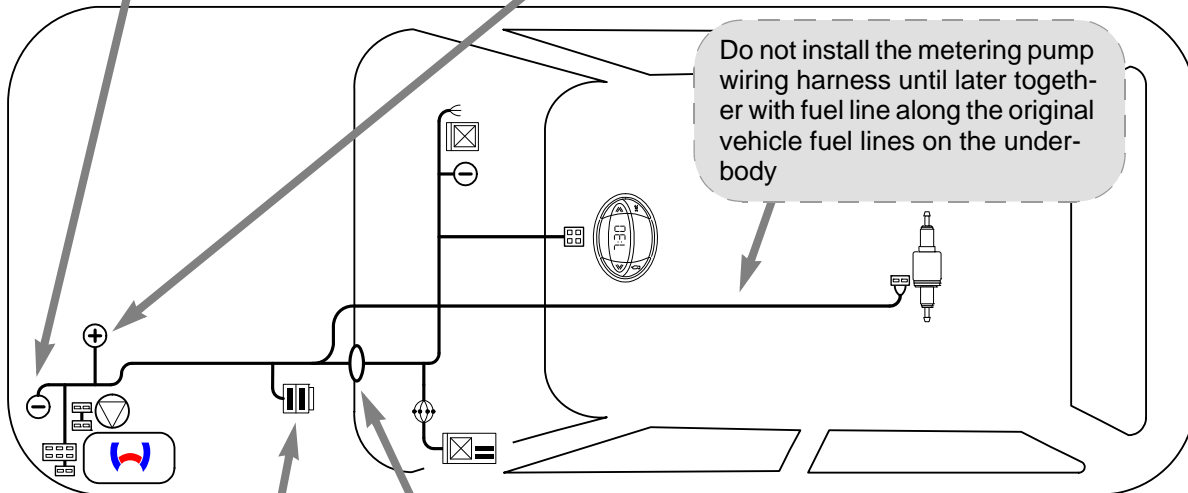
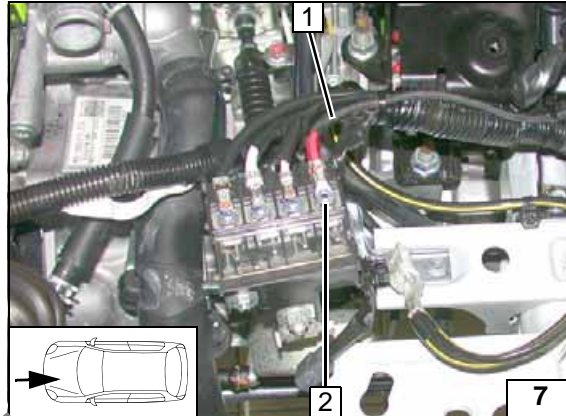
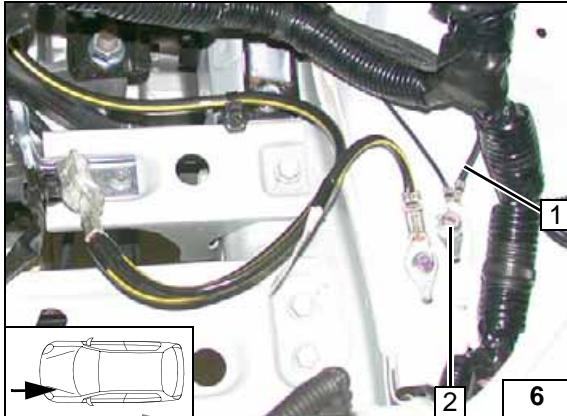
**Electrical System**

**Earth wire**

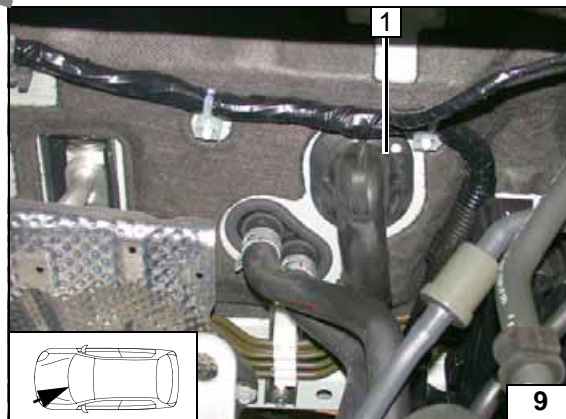
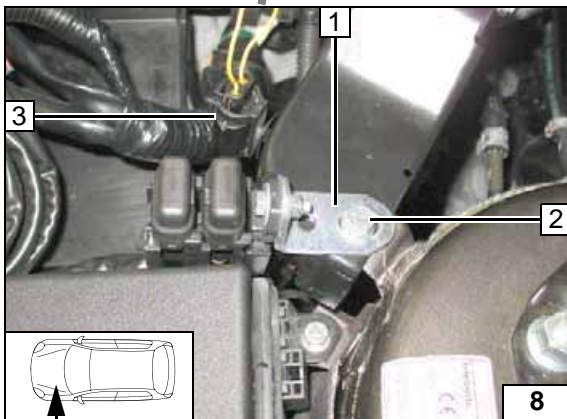
- 1 Brown (br) earth wire, 6mm dia. cable lug
- 2 Original vehicle earth point

**Positive wire**

- 1 Red (rt) positive wire, 6mm dia. cable lug
- 2 Positive distributor of battery



**Wiring harness routing diagram**



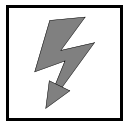
**Fuse holder of engine compartment**

- 1 Angle bracket
- 2 Original vehicle bolt
- 3 Heater diagnosis connection with clip in original vehicle hole

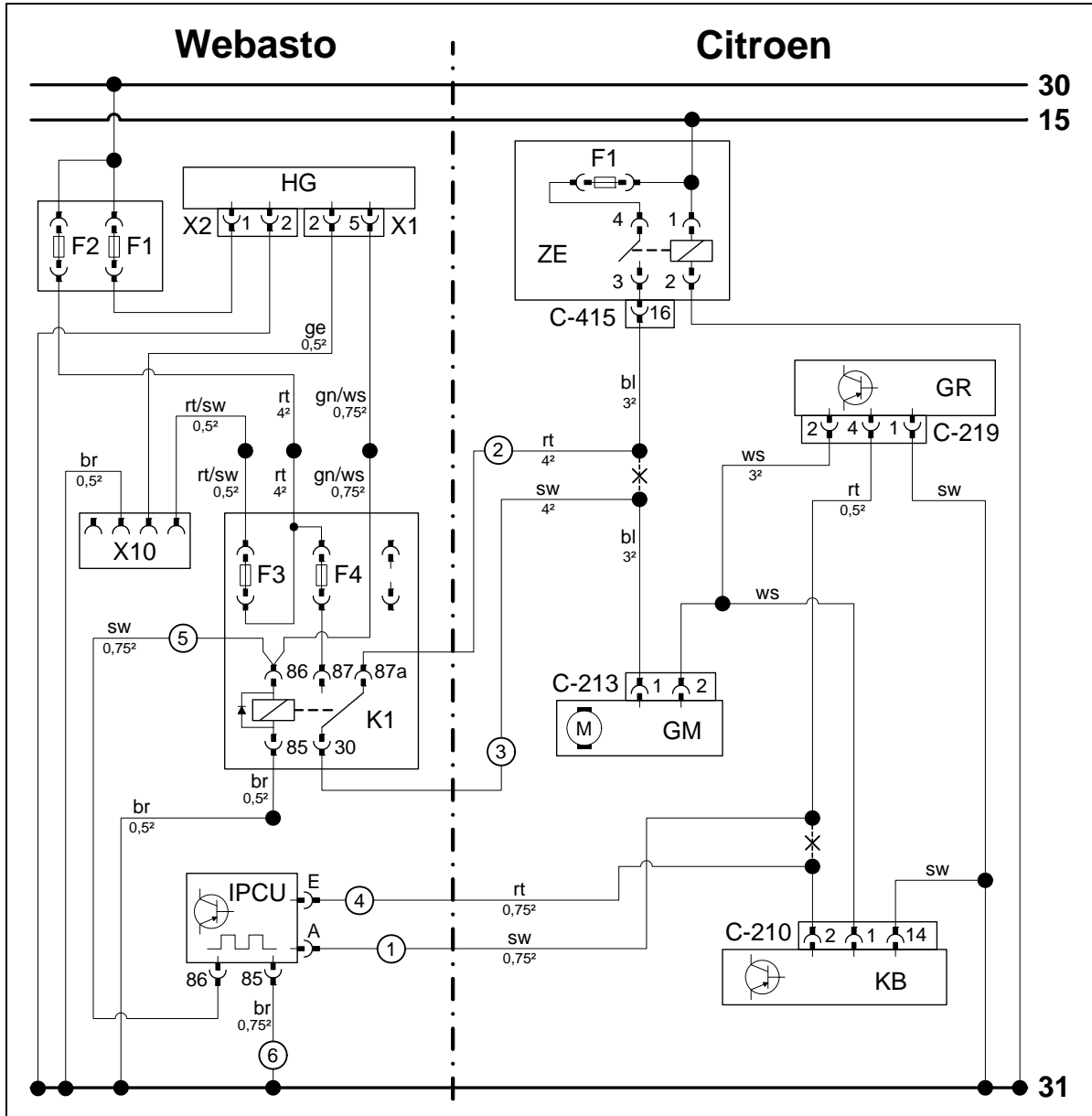
**Wiring harness pass through**

Route wiring harness of heater and heater control through original vehicle protective rubber plug 1 in the passenger compartment.





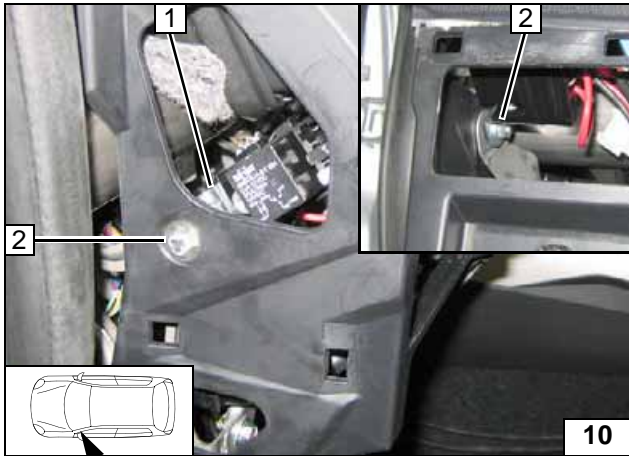
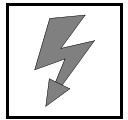
Fan Controller



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F1	10A fuse	rt	red
X1	6-pin heater connector	ZE	Central electrical box	ws	white
X2	2-pin heater connector	C-415	19-pin connector of central electrical box (ZE)	sw	black
X10	4-pin connector of heater control	GR	Fan controller	br	brown
K1	Fan relay	C-219	4-pin connector GR	gn	green
F1	20A fuse	C-213	2-pin connector GM	ge	yellow
F2	30A fuse	GM	Fan motor	bl	blue
F3	1A fuse	C-210	20-pin connector KB		
F4	25A fuse	KB	A/C control panel		
IPCU	Pulse width modulator				
<b>IPCU settings:</b>					
Duty cycle: 100%					
Frequency: 1kHz					
Voltage: 4.2V				X	Cutting point
Function: High side				Wiring colours may vary.	

Legend

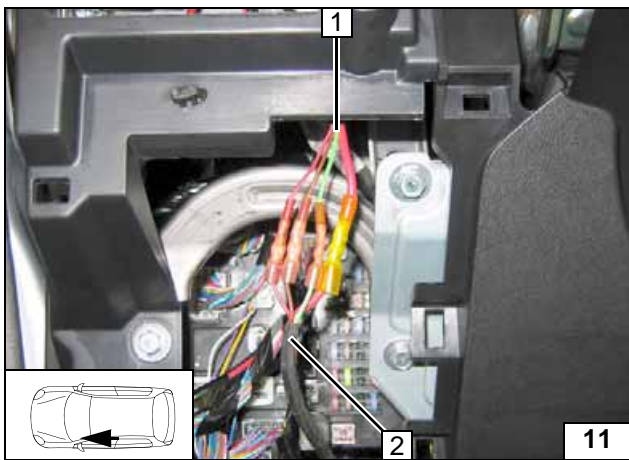


Replace original vehicle bolt at position 2 with M6x20 bolt, large diameter washer and flanged nut. Original vehicle bolt will be re-used for Telestart.



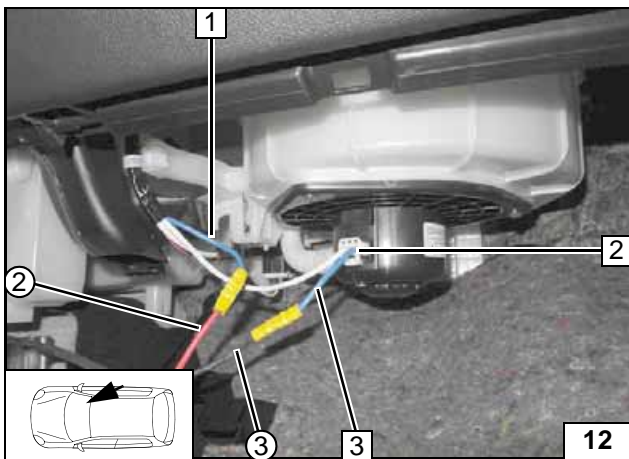
**Mounting passenger compartment relay and fuse holder**

- 1 Angle bracket



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

**Connecting wiring harnesses using same colour wires**

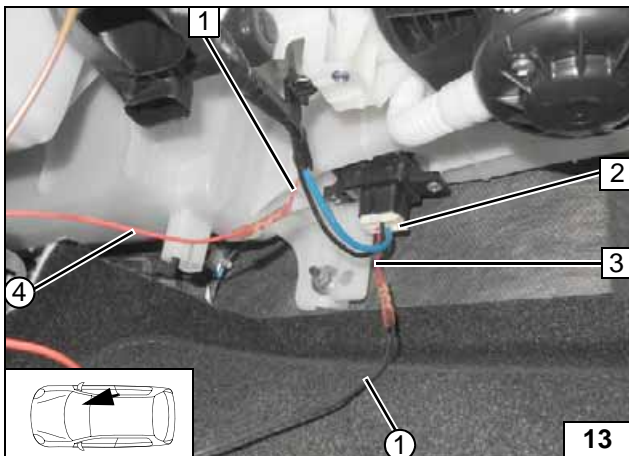


Connection to 2-pin connector C-213 2 from fan motor. Connect black (sw) additional wire K1/86 on IPCU/86. Produce connections as shown in wiring diagram.



**Connecting fan motor**

- 1 Blue (bl) wire from central electrical box of fan relay
- 3 Blue (bl) wire from connector C-213, pin 1
- 2 Red (rt) wire of K1/87a
- 3 Black (sw) wire from K1/30

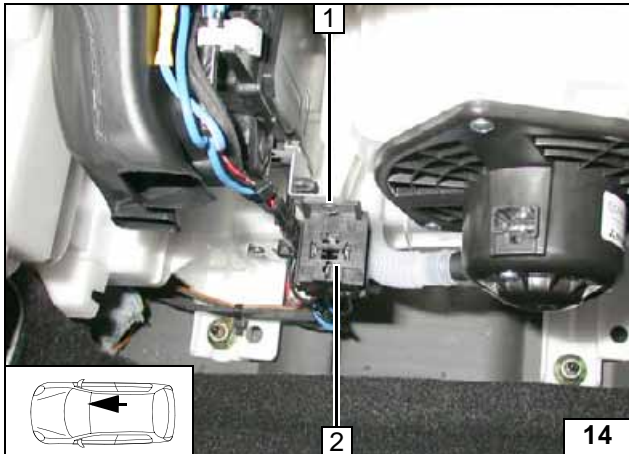


Connection on 4-pin connector 2 from fan controller. Produce connections as shown in wiring diagram.



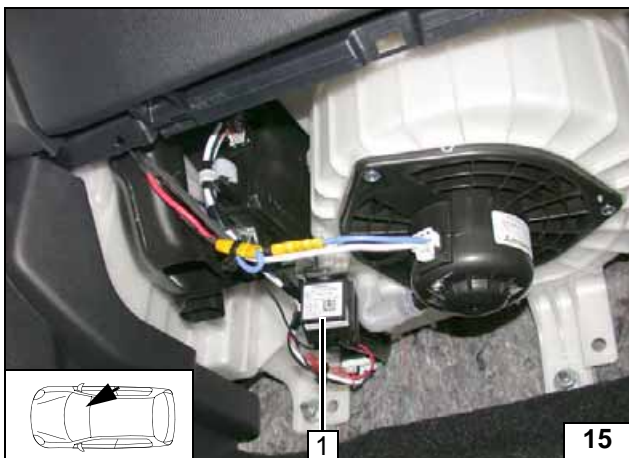
**Connecting fan controller**

- 1 Red (rt) wire of fan controller
- 3 Red (rt) wire of fan controller
- 1 Black (sw) wire from IPCU/A
- 4 Red (rt) wire from IPCU/E



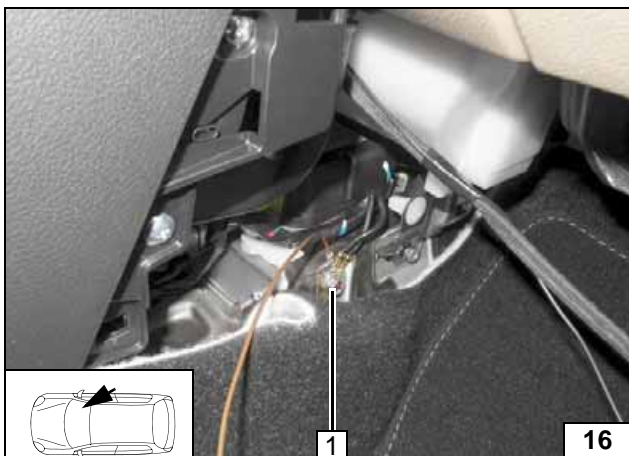
- 1 Original vehicle bolt
- 2 IPCU socket

**Installing IPCU**



- 1 IPCU mounted

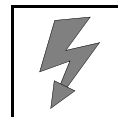
**Installing IPCU**



Produce connections as shown in wiring diagram.

- 1 Brown (br) wire of IPCU/85 on original vehicle earth point

**Connect-  
ing earth  
wire**

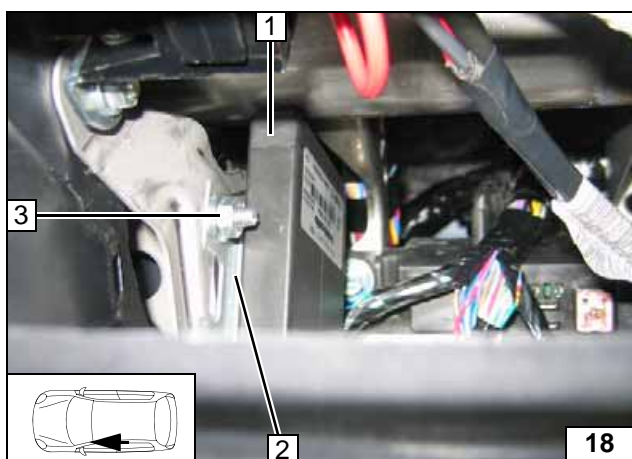


### Digital Timer

- 1 Digital timer



Installing digital timer

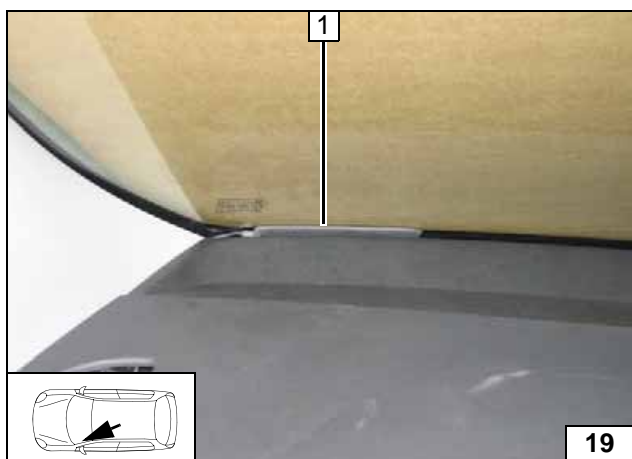


### Remote Option (Telestart)

- 1 Receiver
- 2 Bracket
- 3 Original vehicle bolt, flanged nut

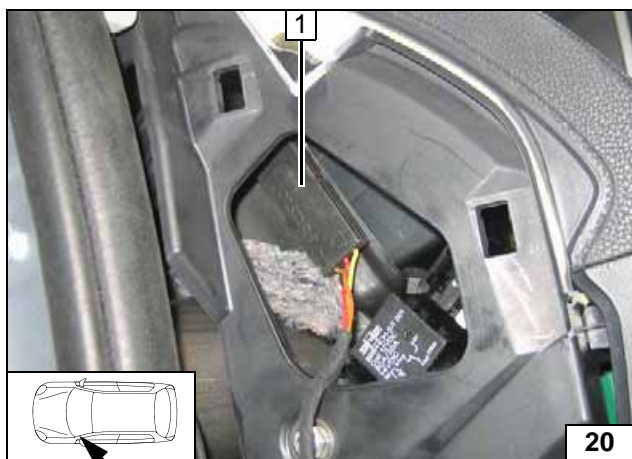


Installing receiver



- 1 Antenna

Installing antenna



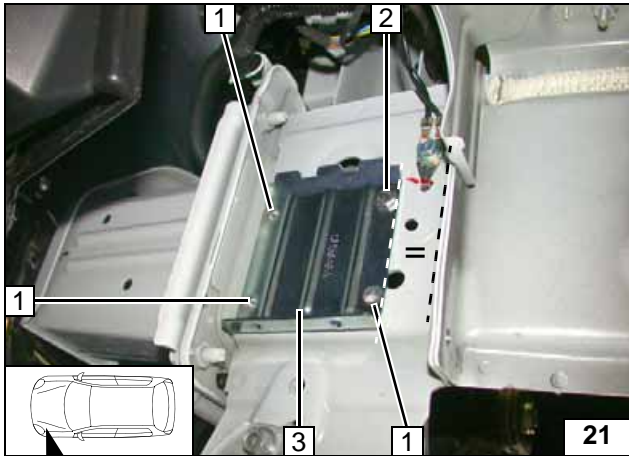
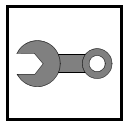
### Temperature sensor T100 HTM

Fasten temperature sensor 1 with adhesive tape.



Installing temperature sensor





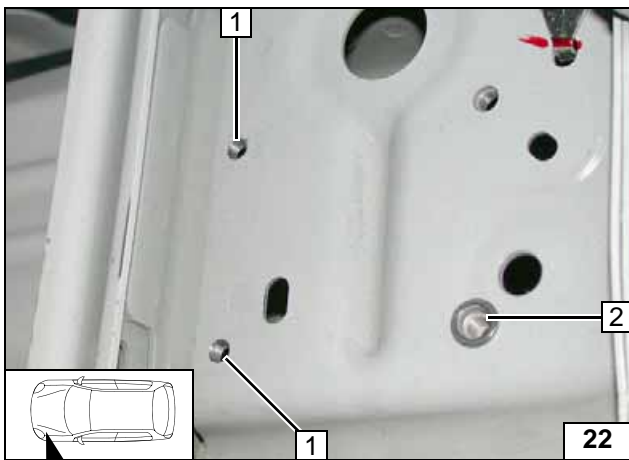
**Preparing Installation Location**



Align bracket section A 3 so that it is parallel to the edge.

- 1 Copy hole pattern [3x]
- 2 M6x30 bolt, original vehicle threaded hole

**Copying hole pattern**

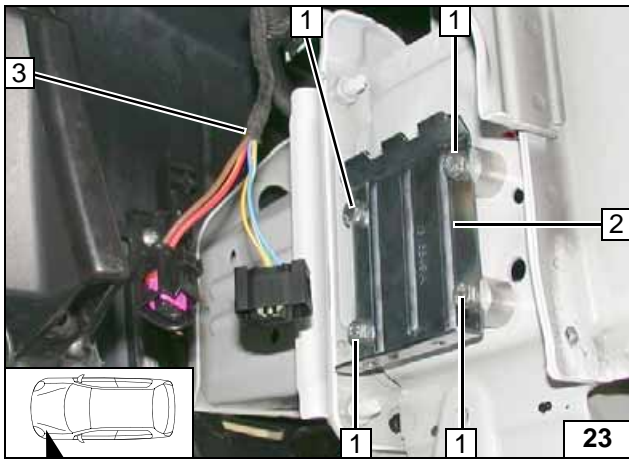


Remove bracket A.



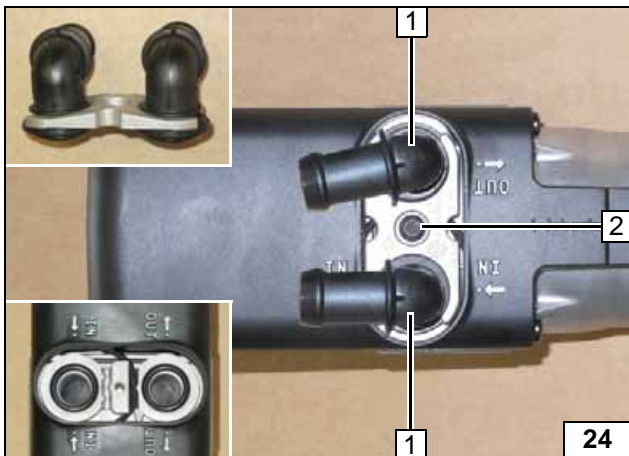
- 1 4.8mm dia. hole; Cut M6 thread [2x each]
- 2 9.1mm dia. hole; rivet nut

**Installing rivet nut**



- 1 M6x30 bolt, spring lockwasher, 15mm shim [4x each]
- 2 Bracket
- 3 Wiring harness of heater

**Installing bracket section A**

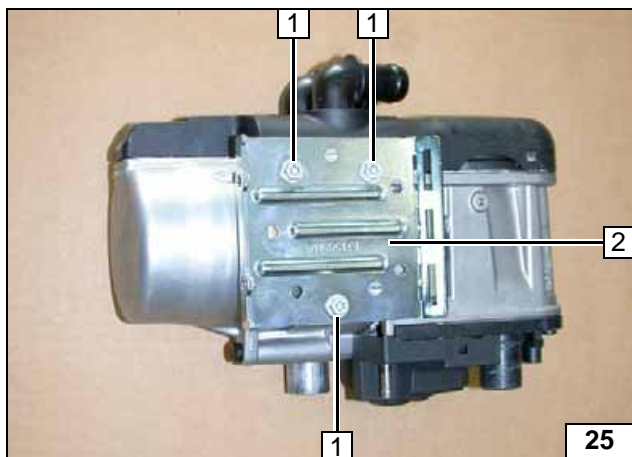


**Preparing Heater**



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

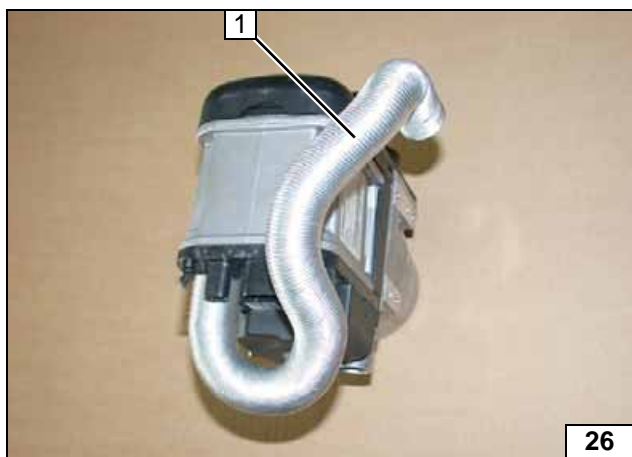
**Installing water connection pieces**



- 1 5x13 self-tapping bolt [3x]
- 2 Bracket

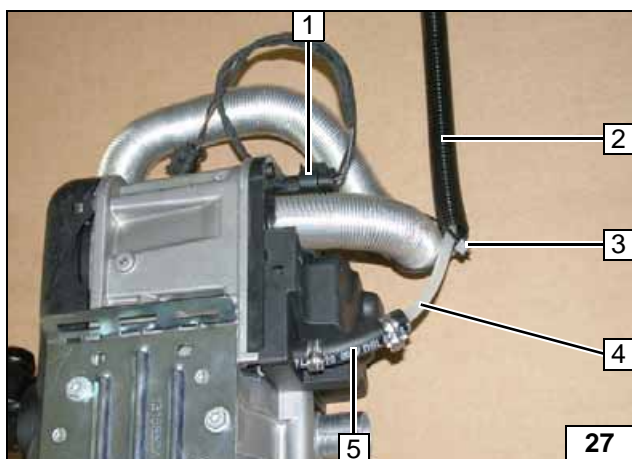


Installing bracket section B



- 1 Combustion air pipe

Premounting combustion air pipe

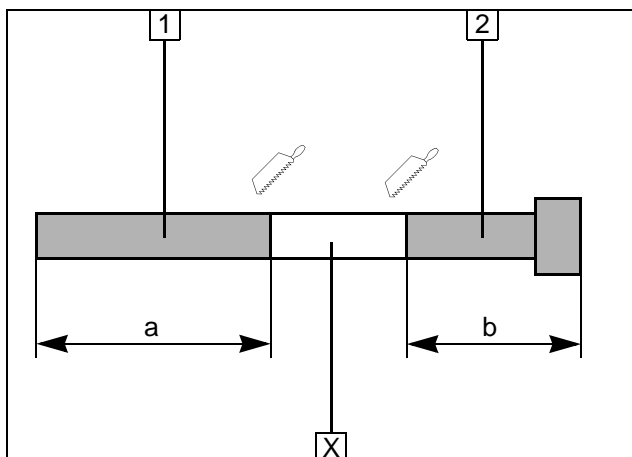


Pull fuel line 4 into 10mm dia. corrugated tube 2.

- 1 Mount wiring harness of circulating pump
- 3 Cable tie
- 5 Hose section, 10mm dia.clamp [2x]



Premounting fuel line

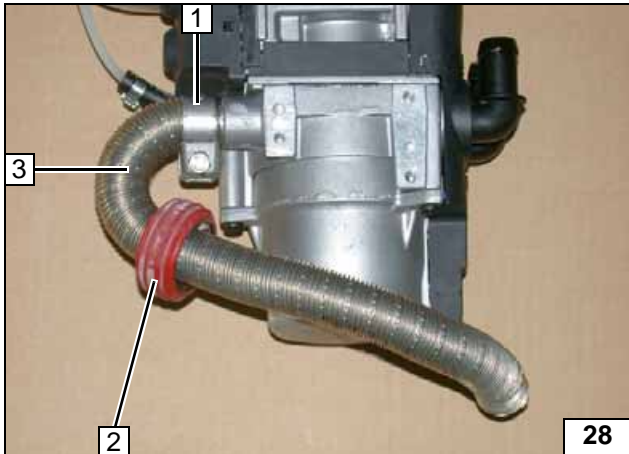


Discard section X.

- 1 Exhaust pipe  
a = 350
- 2 Exhaust end section  
b = 360

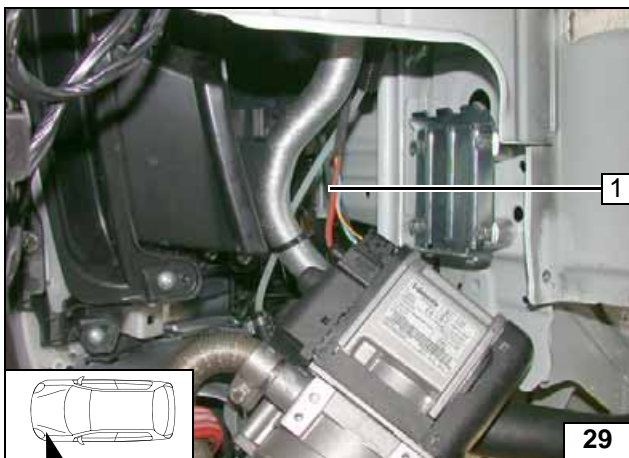


Preparing exhaust pipe



- 1 Hose clamp
- 2 Spacer bracket
- 3 Exhaust pipe

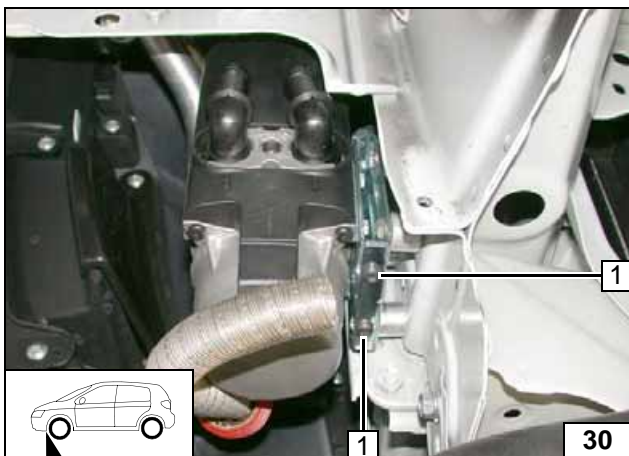
Premounting exhaust pipe



**Installing Heater**

- 1 Wiring harness of heater [2x]

Mounting wiring harness of heater



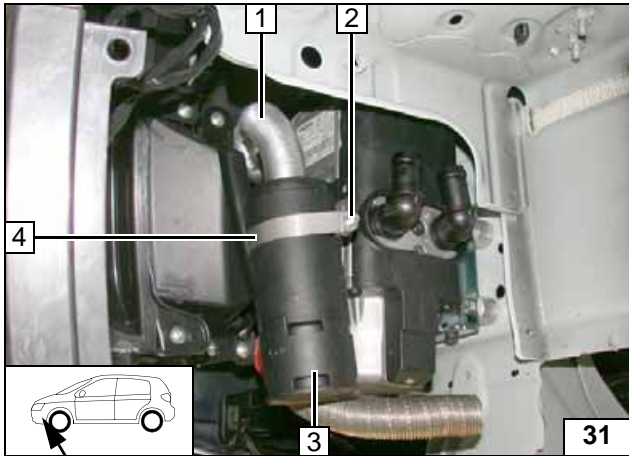
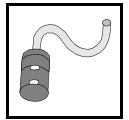
Mount heater with bracket section **B** on bracket section **A**.

- 1 Torx screw M5x12 [2x]



Installing heater



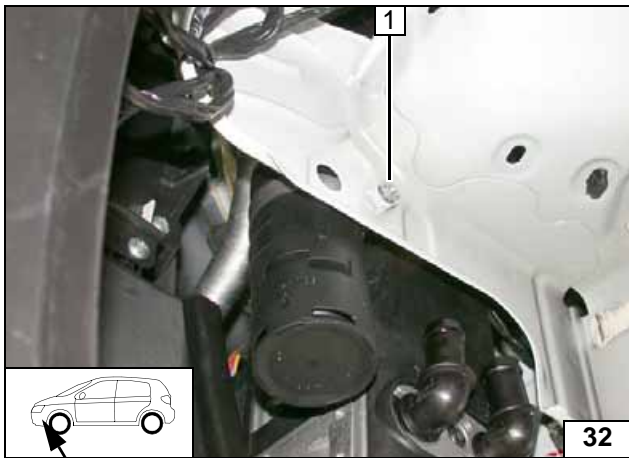


### Combustion Air

- 1 Combustion air pipe
- 2 M5x16 bolt
- 3 Silencer
- 4 51mm dia. clamp



**Installing  
silencer**

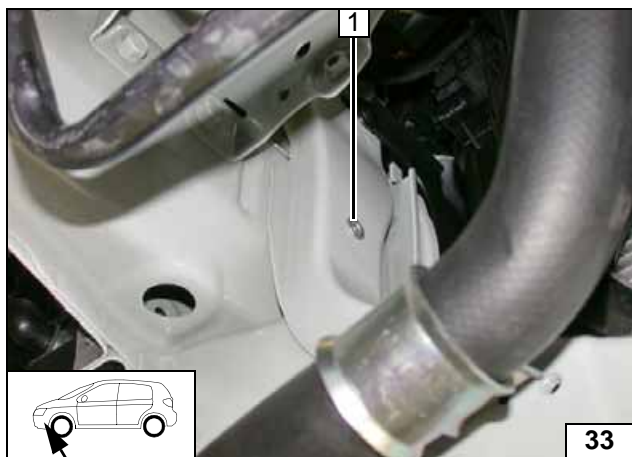


Lead M5x16 bolt through original vehicle hole.

- 1 Flanged nut M5



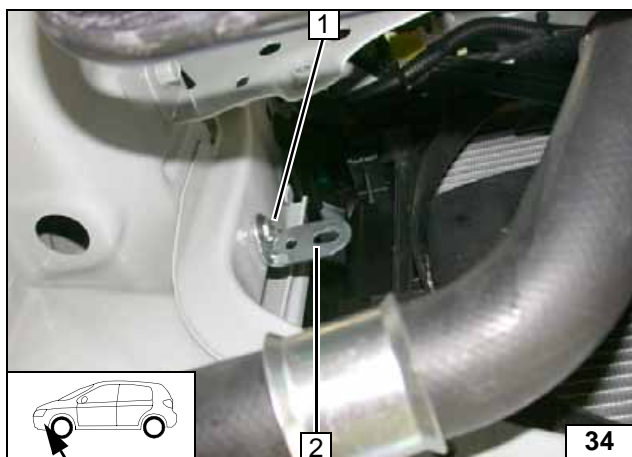
**Installing  
silencer**



### Preparing Coolant Circuit

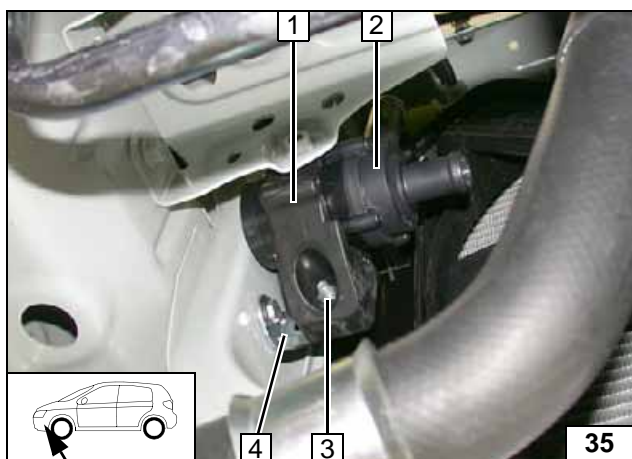
- 1 Drill out hole to 9.1mm dia.; rivet nut

Inserting rivet nut



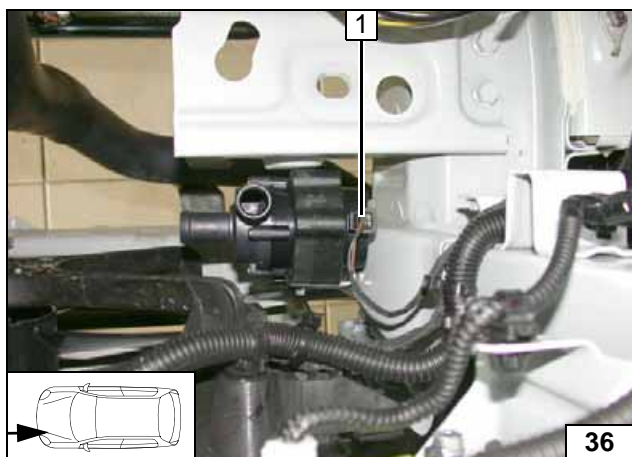
- 1 M6x20 bolt, spring lockwasher
- 2 Angle bracket

Installing angle bracket



- 1 Circulating pump mounting
- 2 Circulating pump
- 3 M6x25 bolt, flanged nut
- 4 Angle bracket

Mounting circulating pump



- 1 Wiring harness of circulating pump

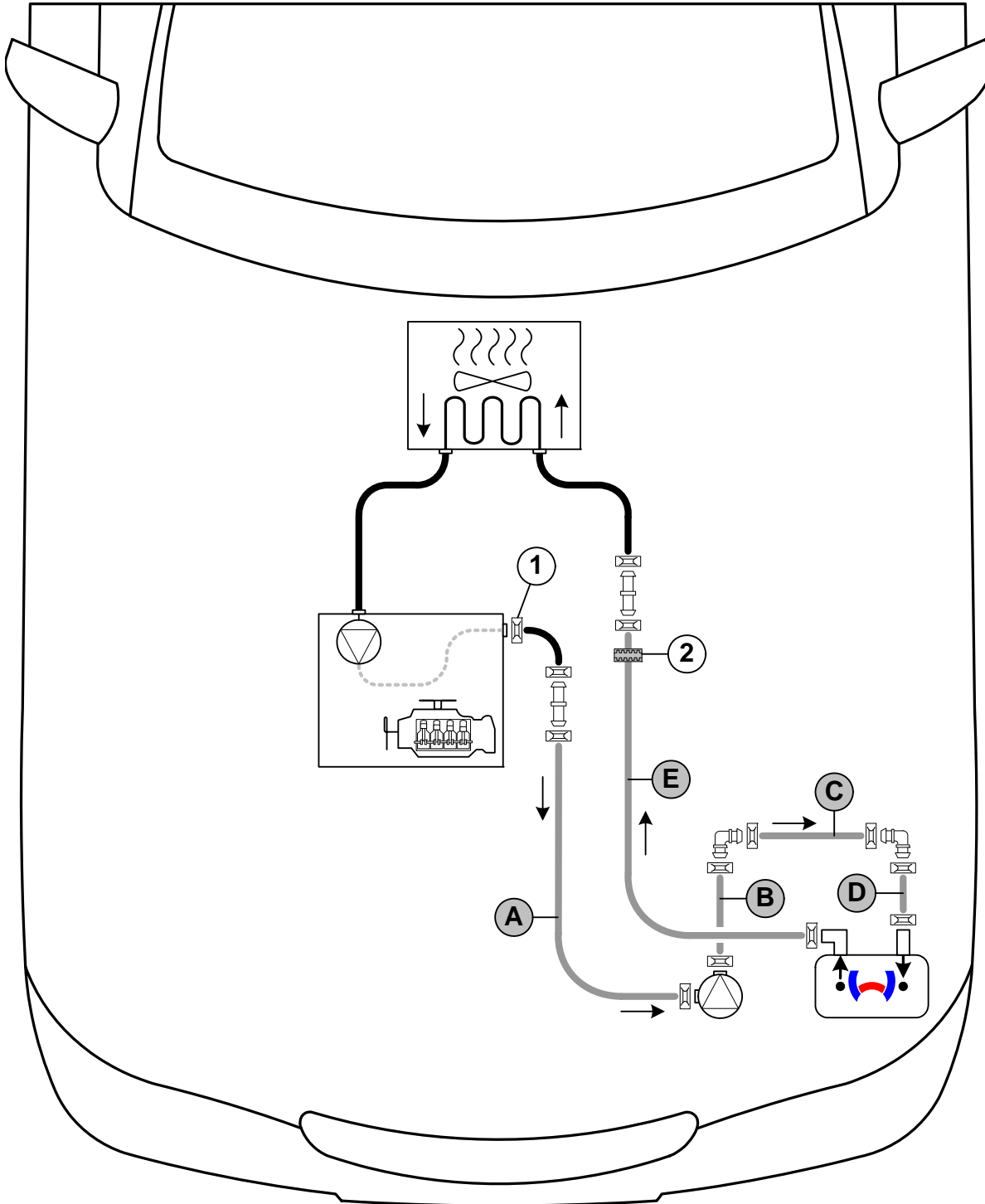
Mounting wiring harness








1.6HDI Coolant Circuit

**WARNING!**

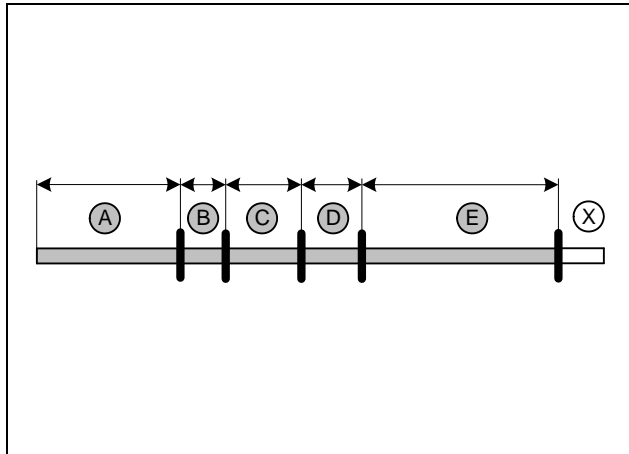
Any coolant running off should be collected in an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. When installing the hoses, the heater must be filled with coolant. The connection should be "inline" based on the following diagram:



Hose routing diagram

All connecting pipes without a specific designation  = 25mm dia.  
**1** = Original vehicle spring clip . **2** = Black (sw) rubber isolator  .  
 All connecting pipes  and  = 18x18 mm dia.



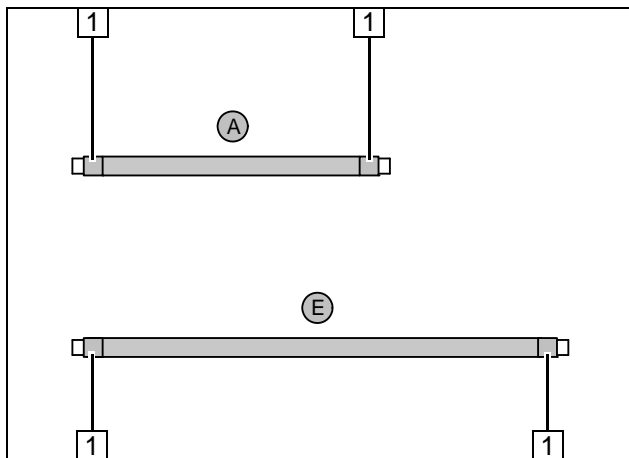


Discard section X.

- A = 420
- B = 60
- C = 240
- D = 150
- E = 770



Cutting hoses to length

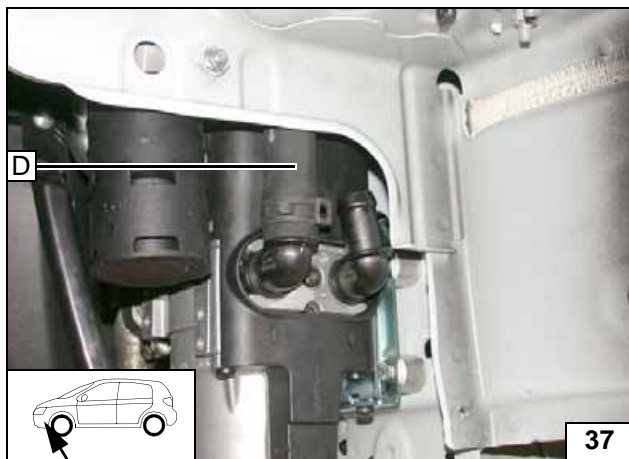


Push braided protection hoses onto hoses A and E and cut to length. Cut heat shrink plastic tubing to size.



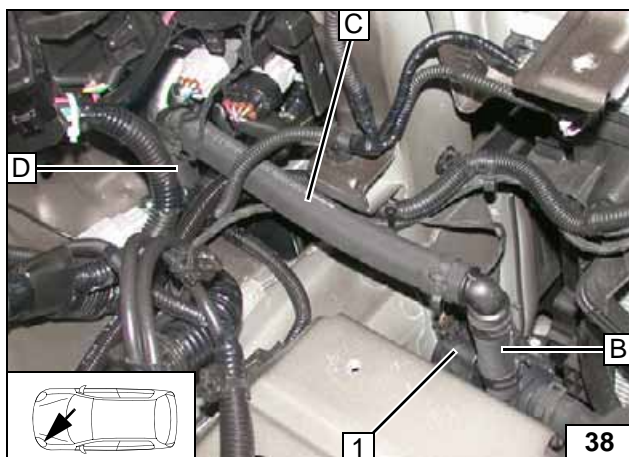
- 1 50 mm long heat shrink plastic tubing [4x]

Preparing hoses

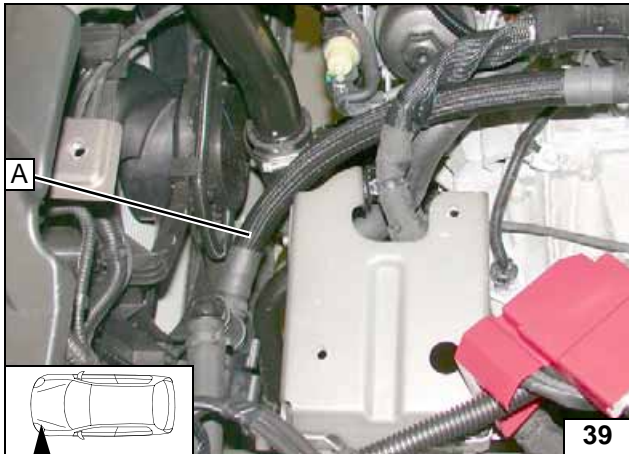


Connec-  
tion of  
heater inlet

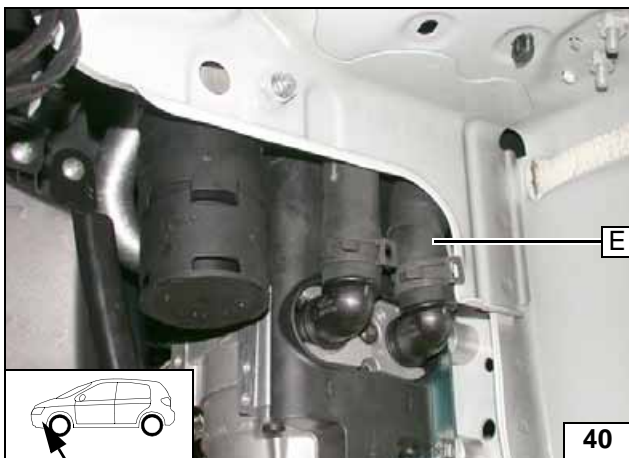
- 1 Circulating pump



Routing in  
engine  
compartment

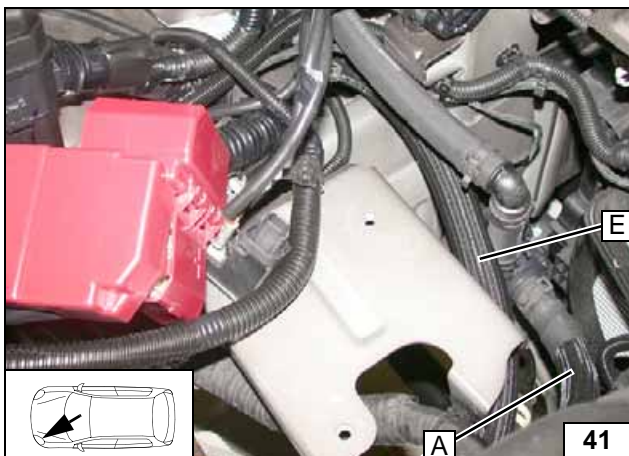


Connect-  
ing hose A

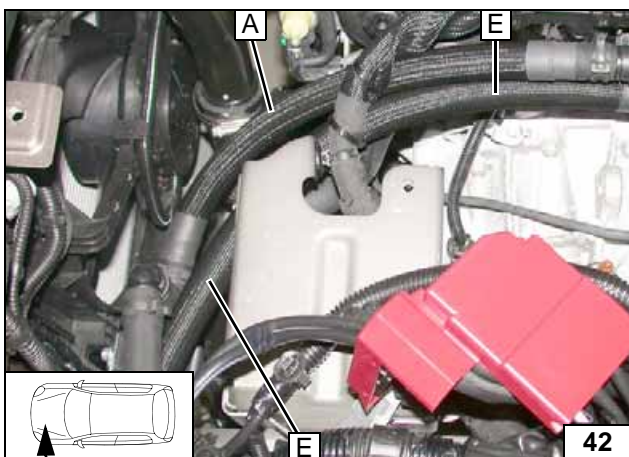


Connec-  
tion of  
heater out-  
let

Route hose E to the heater and along hose A to the cutting point.

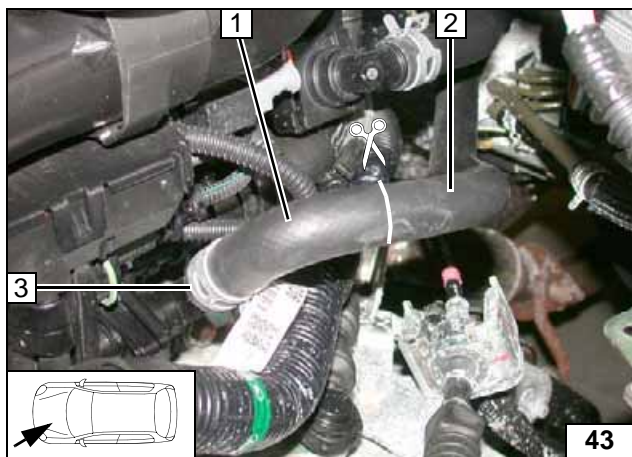


Routing in  
engine  
compart-  
ment



Routing in  
engine  
compart-  
ment



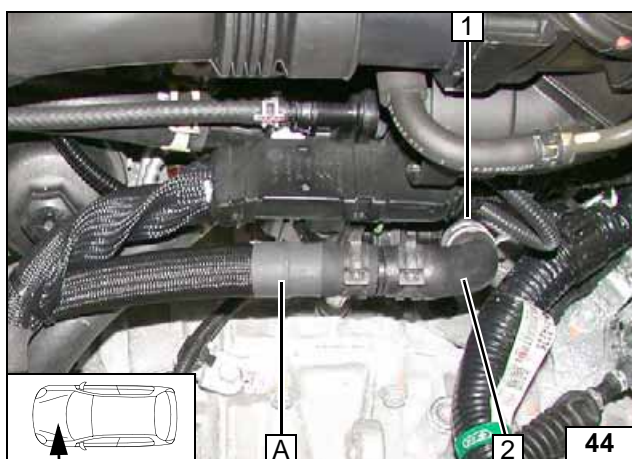


Cut off hose on engine outlet/heat exchanger inlet at marking. Remove hose section of engine outlet 1. Original vehicle spring clip 3 will be reused.



- 1 Black (sw) rubber isolator
- 2 Hose section of heat exchanger inlet

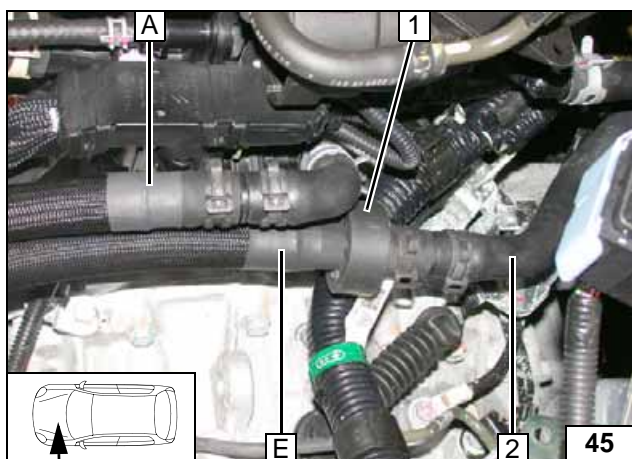
**Cutting point**



Install hose section of engine outlet 2 with the cutting point on connection piece of engine outlet 1 using original vehicle spring clip.



**Connecting engine outlet**



Align black (sw) rubber isolator 1 to original vehicle wiring harness. Align hoses. Ensure sufficient distance to neighbouring components; correct if necessary.



- 2 Hose of heat exchanger inlet

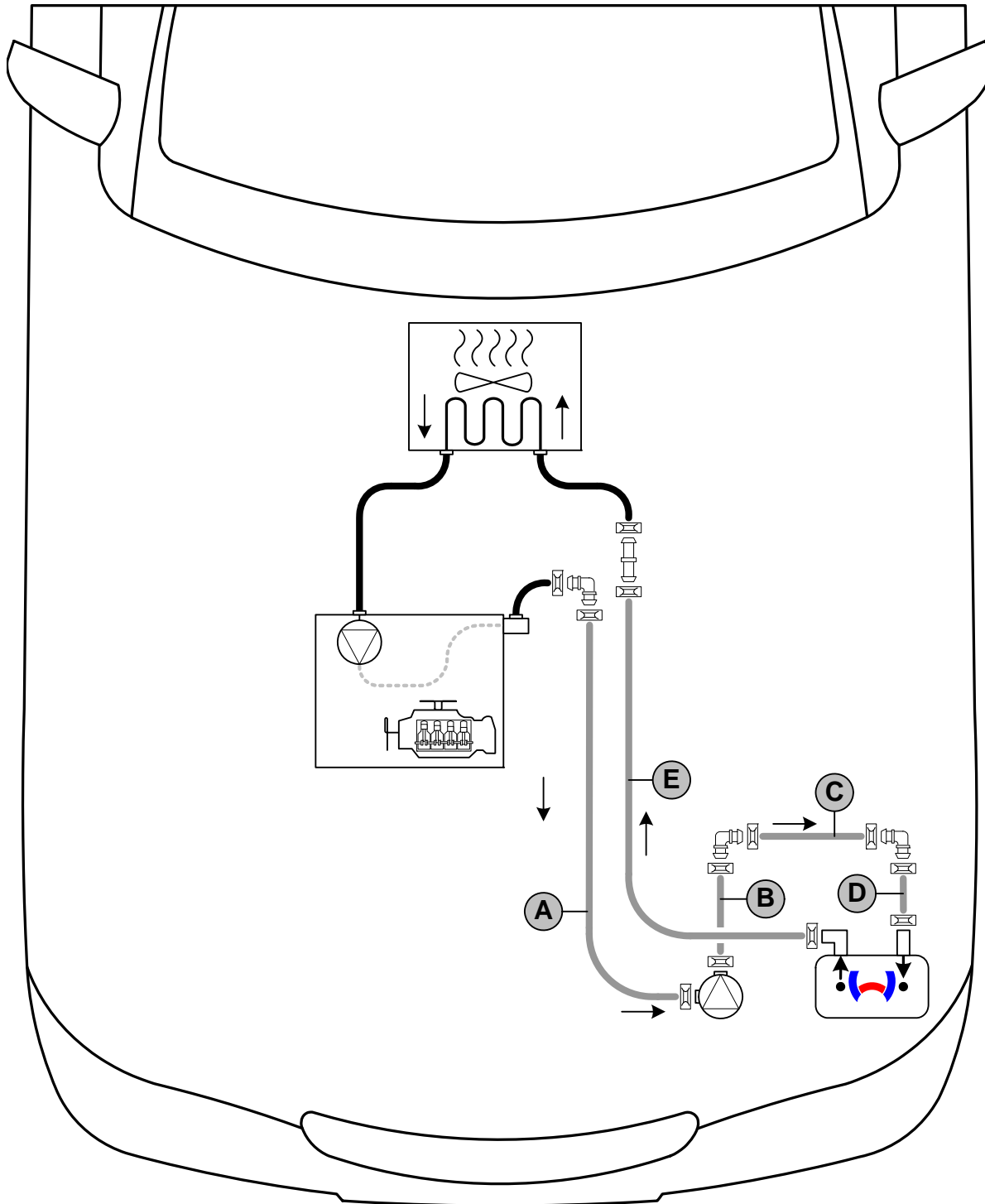
**Connecting heat exchanger inlet**






### 1.8HDI Coolant Circuit

**WARNING!**

Any coolant running off should be collected in an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. When installing the hoses, the heater must be filled with coolant. The connection should be "inline" based on the following diagram:

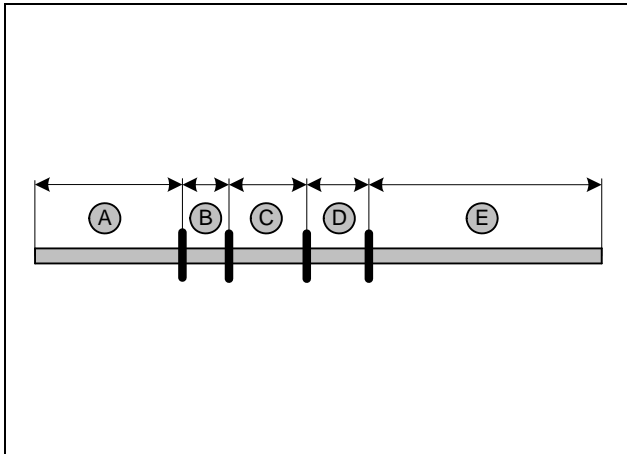


Hose routing diagram

All connecting pipes without a specific designation  = 25mm dia.  
 All connecting pipes  and  = 18x18 mm dia.



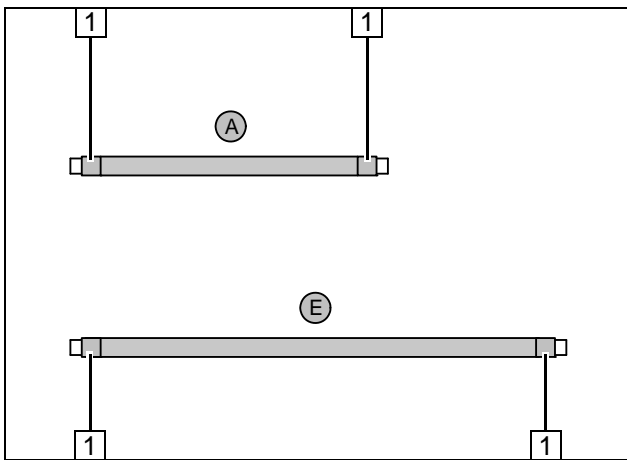




- A = 710
- B = 60
- C = 240
- D = 150
- E = 1040



**Cutting hoses to length**

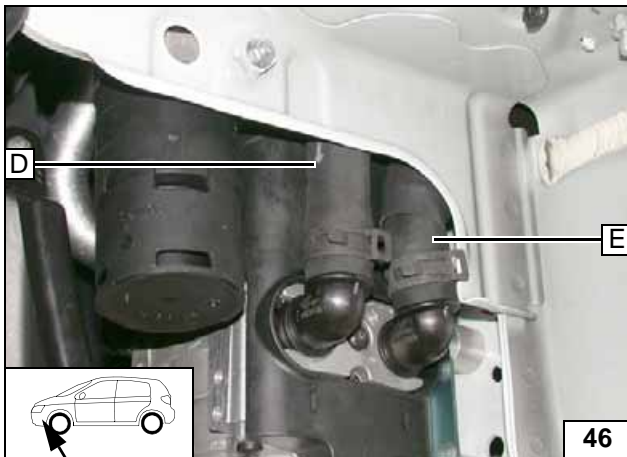


Push braided protection hoses onto hoses **A** and **E** and cut to length. Cut heat shrink plastic tubing to size.



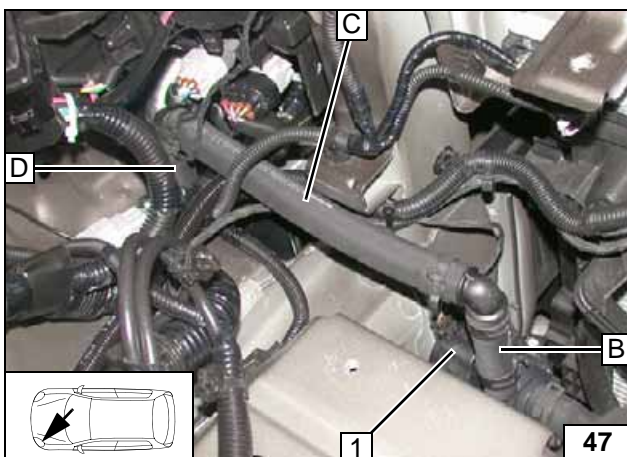
- 1 50 mm long heat shrink plastic tubing [4x]

**Preparing hoses**

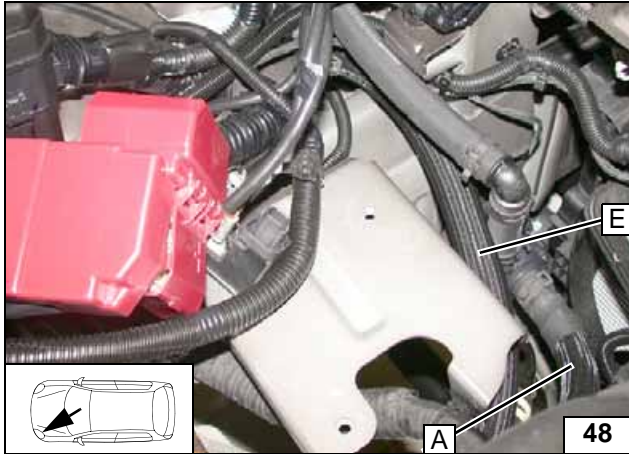


**Connect-  
ing heater**

- 1 Circulating pump



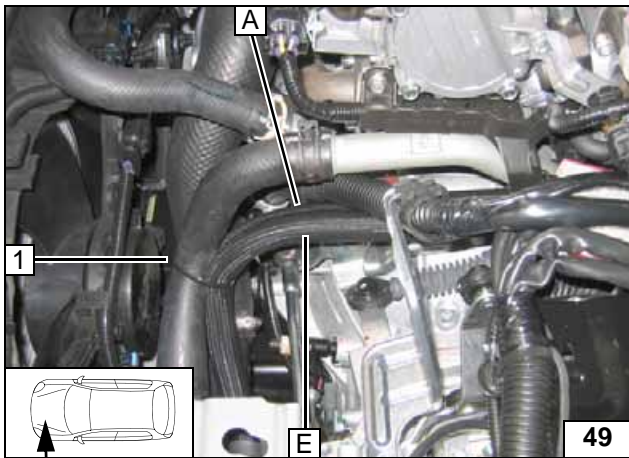
**Routing in  
engine  
compartment**



Route hose **E** to the heater and hose **A** to the cutting point.

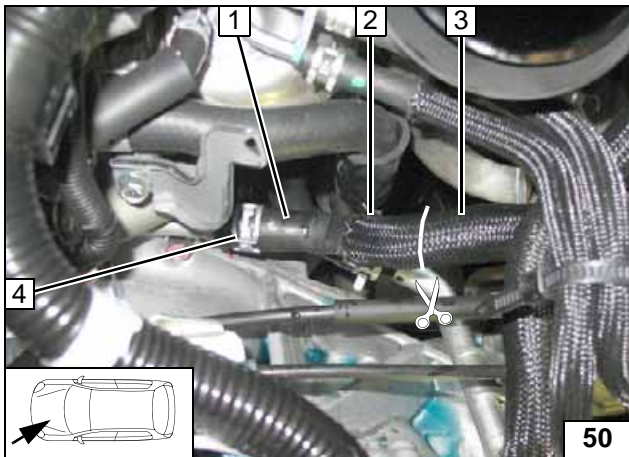


Routing in engine compartment



1 Cable tie

Routing in engine compartment

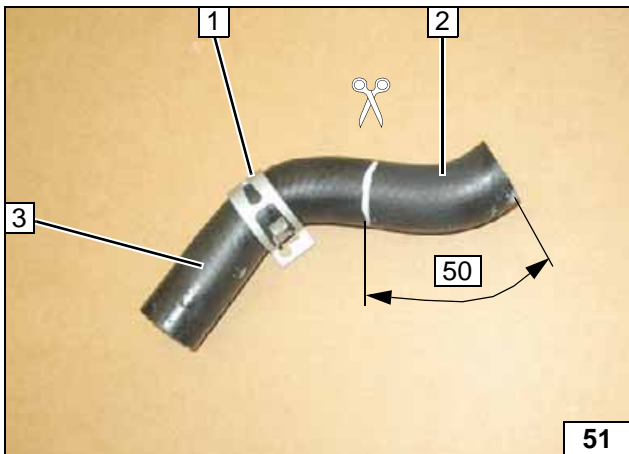


Remove braided protection hose in area of cutting point **2**. Remove hose section of engine outlet **1**. Original vehicle spring clip **4** will be reused.



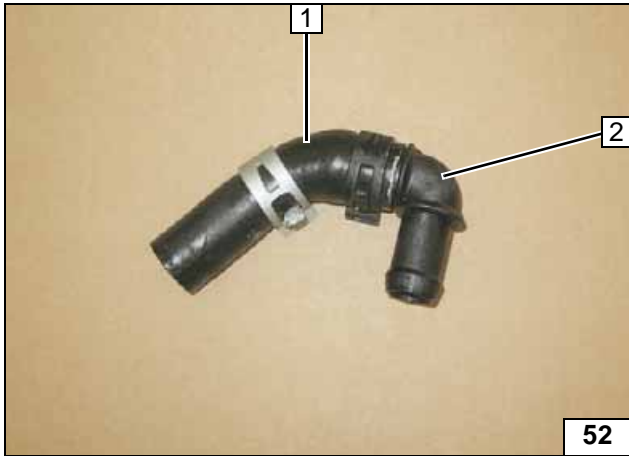
3 Hose section of heat exchanger inlet

Cutting point



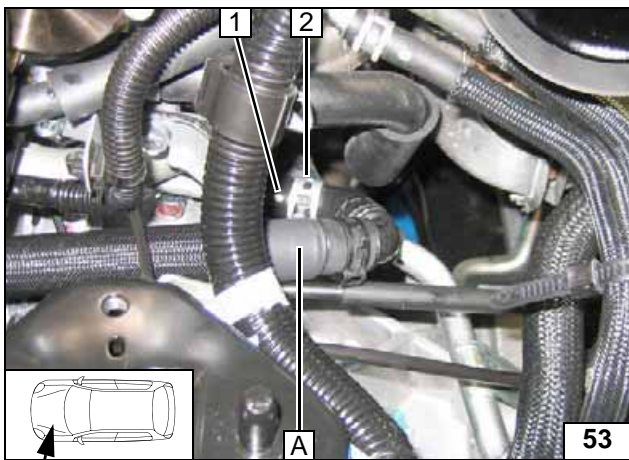
- 1 Original vehicle spring clip
- 2 Discard hose section of heat exchanger inlet
- 3 Hose section of engine outlet

Cutting hose section of engine outlet to size



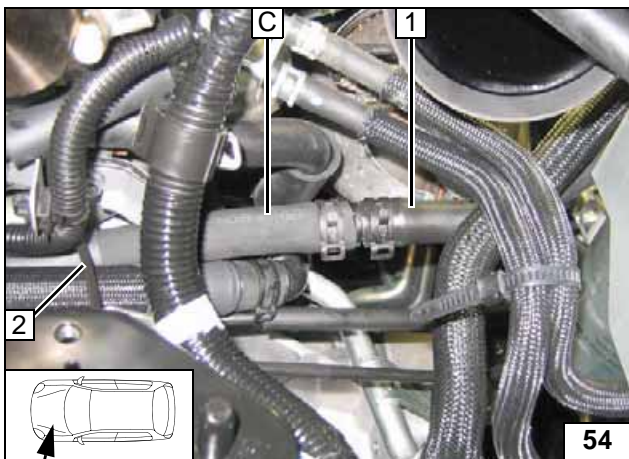
- 1 Hose section of engine outlet
- 2 90°, 18x18mm dia. connecting pipe, 25mm dia. spring clip

**Premounting hose section of engine outlet**



- 1 Connection piece of engine outlet
- 2 Original vehicle spring clip

**Connecting engine outlet**

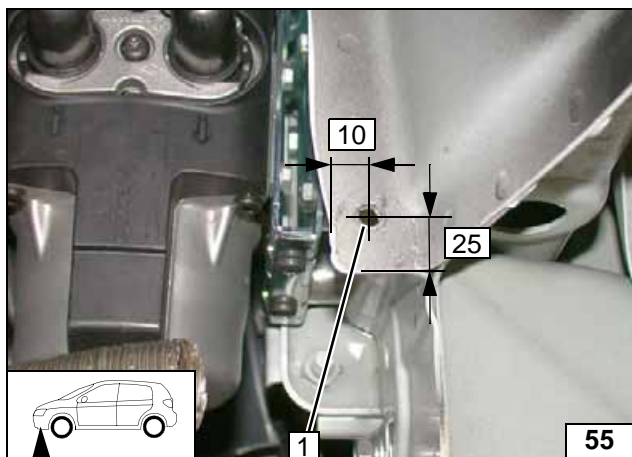
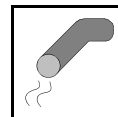


Ensure sufficient distance from neighbouring components.

- 1 Hose of heat exchanger inlet
- 2 Cable tie



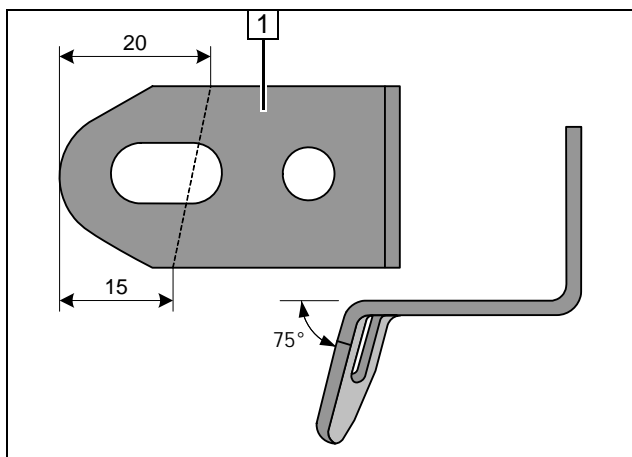
**Connecting heat exchanger inlet**



**Exhaust Gas**

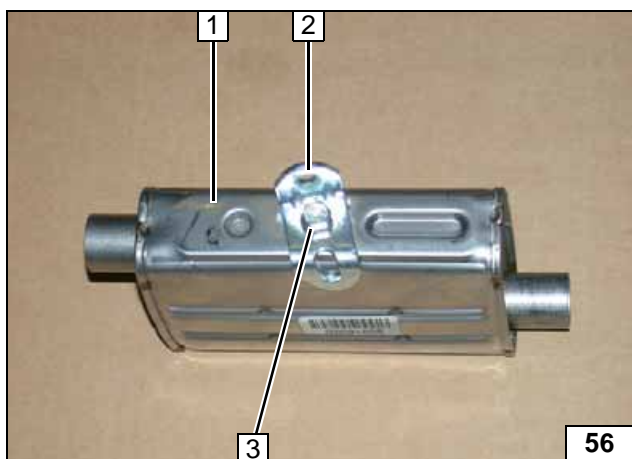
- 1 7 mm dia. hole

Hole in cross member



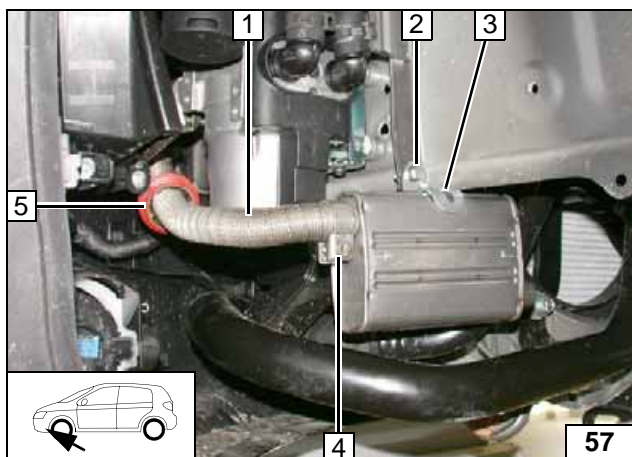
- 1 Angle bracket

Preparing angle bracket



- 1 Silencer
- 2 Angle bracket
- 3 M6x16 bolt, spring lockwasher

Premounting silencer

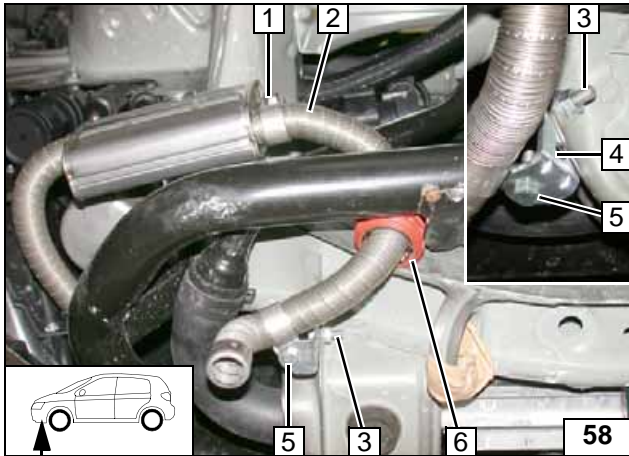
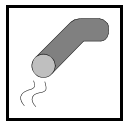


- 1 Exhaust pipe
- 2 M6x20 bolt, spring lockwasher, flanged nut
- 3 Angle bracket
- 4 Hose clamp
- 5 Align spacer bracket



Installing exhaust pipe and silencer



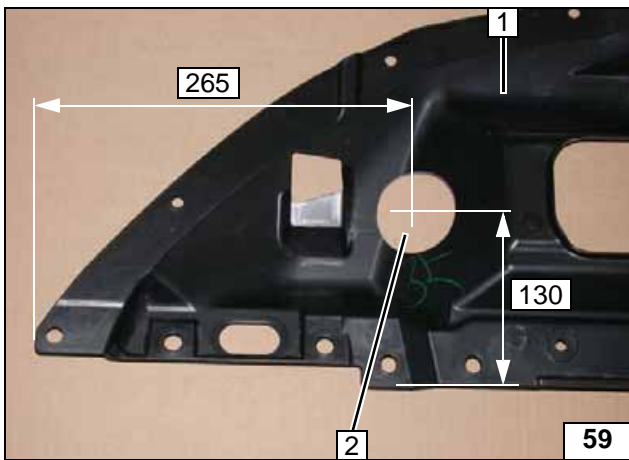


Push spacer bracket **6** onto exhaust end section **2** and position it relative to the pipe group.



- 1 Hose clamp
- 3 M6x20 bolt, large diameter washer, flanged nut, existing hole
- 4 Angle bracket
- 5 M6x20 bolt, p-clamp, flanged nut

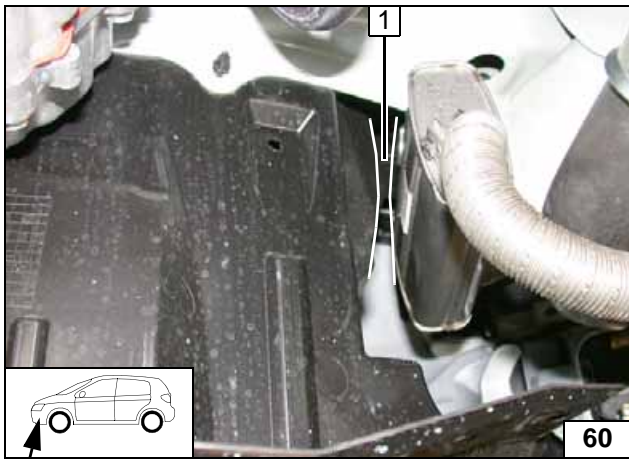
**Installing exhaust end section**



- 1 Underride protection on the left
- 2 60 mm dia. hole



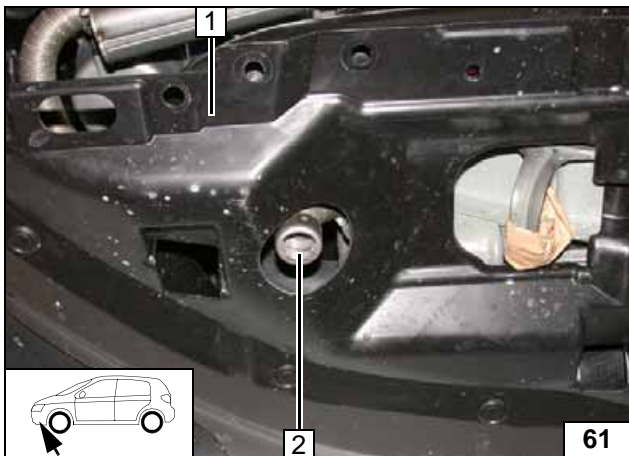
**Cutting out underride protection**



Ensure sufficient distance from adjacent components, especially with regard to the silencer at position **1**, correct if necessary.



**Aligning silencer**

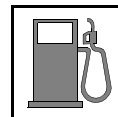


Align exhaust end section **2** centrally in the hole. Ensure sufficient distance to neighbouring components; correct if necessary.



- 1 Underride protection on the left

**Aligning exhaust end section**



**Fuel**

**CAUTION!**

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

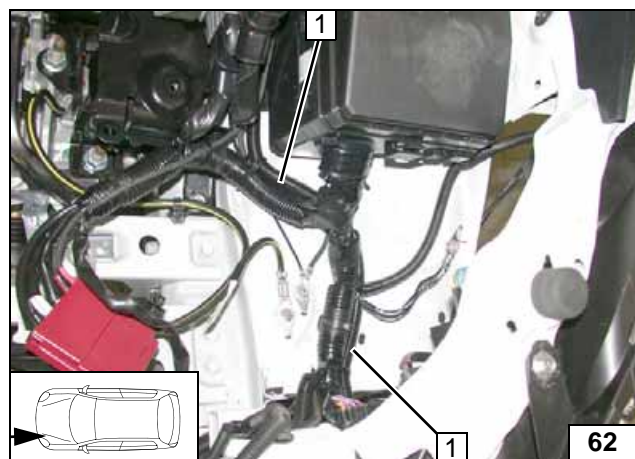
Catch any fuel running off in an appropriate container.

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

Mount the fuel line and wiring harness with rub protection on sharp edges.

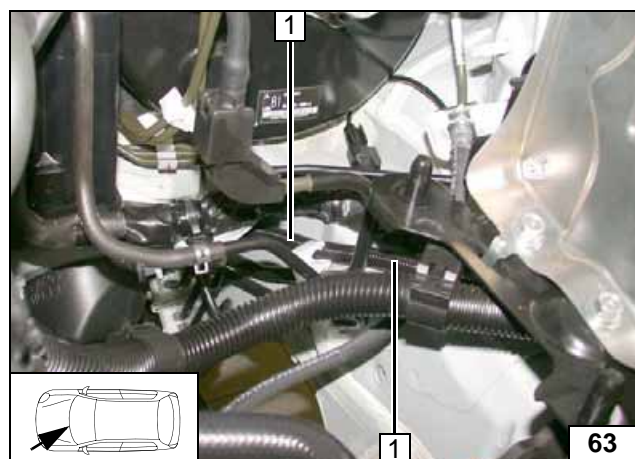
**WARNING!**

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



Route fuel line and wiring harness of metering pump into corrugated tube 1 to the fire-wall.

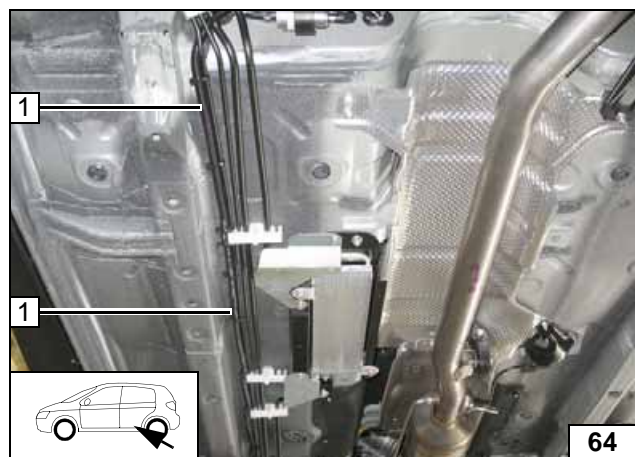
Routing lines



Route fuel line and wiring harness of metering pump in corrugated tube 1 along original vehicle fuel lines to underbody.



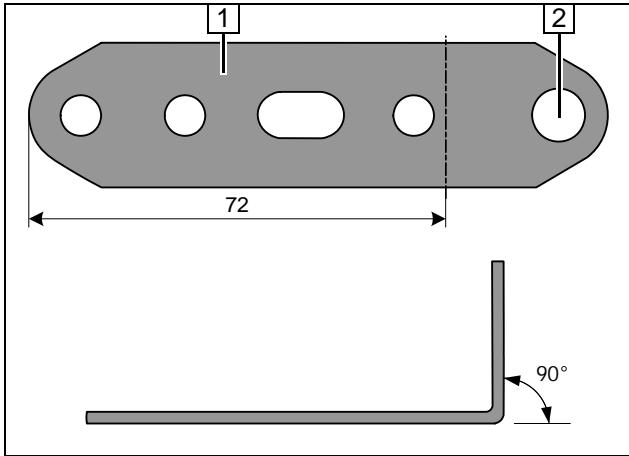
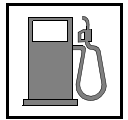
Routing lines



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

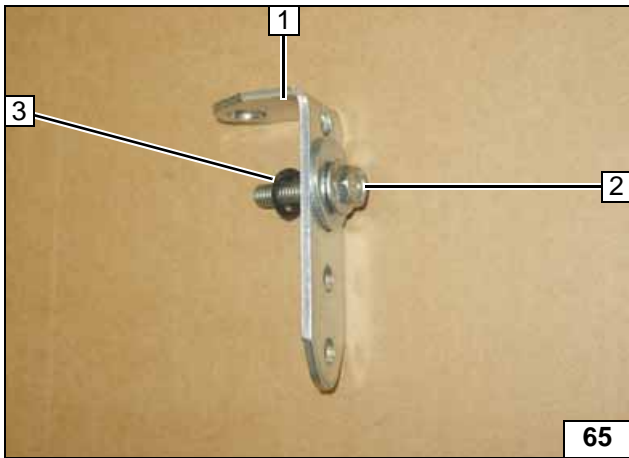


Routing lines



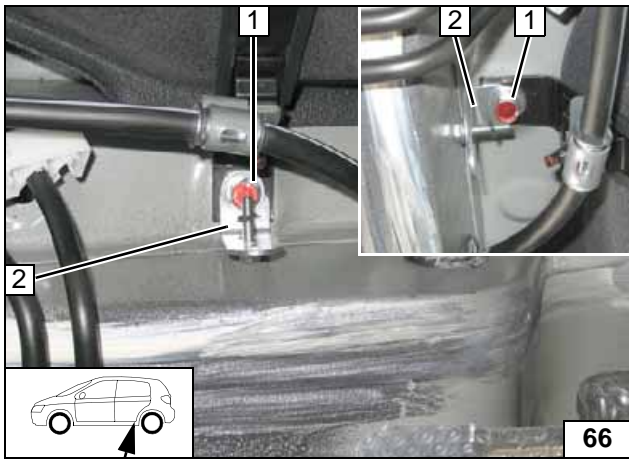
- 1 Perforated bracket
- 2 10.5 mm dia. hole

Preparing perforated bracket



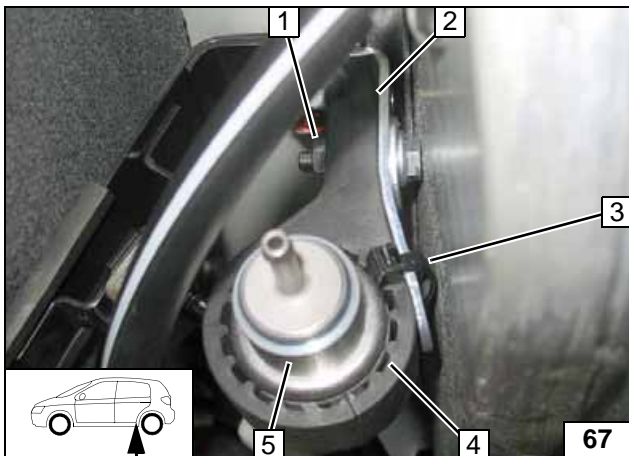
- 1 Perforated bracket
- 2 M6x25 bolt, large diameter washer
- 3 Pin lock (slide over 3 threads only)

Preparing perforated bracket



- 1 Original vehicle bolt of fuel-tank fastening
- 2 Perforated bracket

Installing perforated bracket



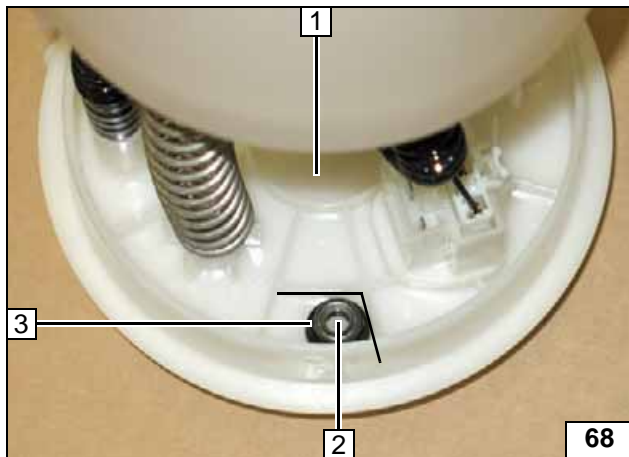
Align perforated bracket 2 after installation as shown.

- 1 Flanged nut
- 3 Cable tie
- 4 Mounting of metering pump
- 5 Metering pump



Mounting metering pump



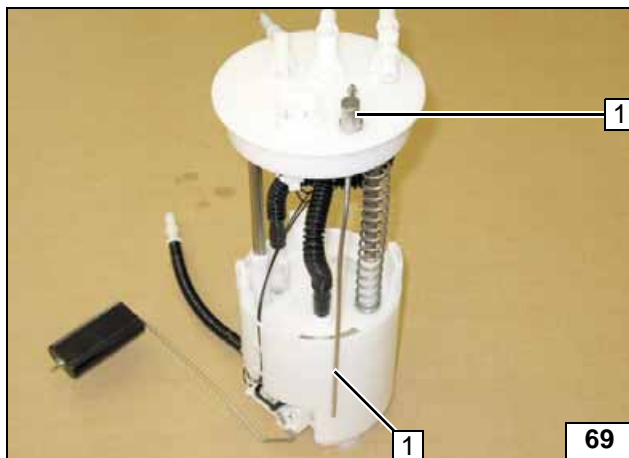


Remove fuel-tank sending unit **1** in accordance with the manufacturer's instructions. Place flanged nut of fuel standpipe **3** against the bars (see marking).

**2** Copy hole pattern, 6mm dia. hole



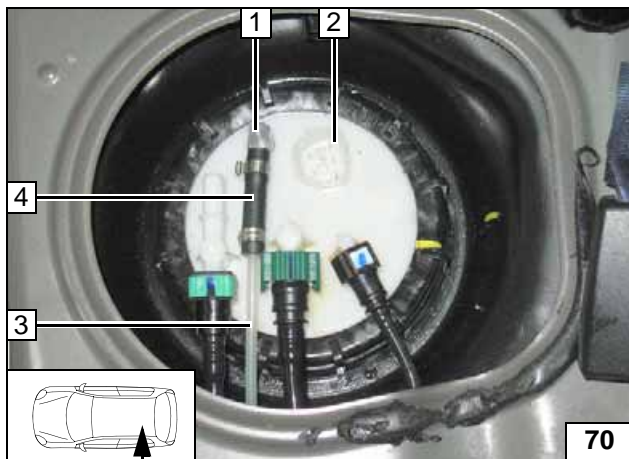
**Fuel extraction**



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



**Installing fuel standpipe**

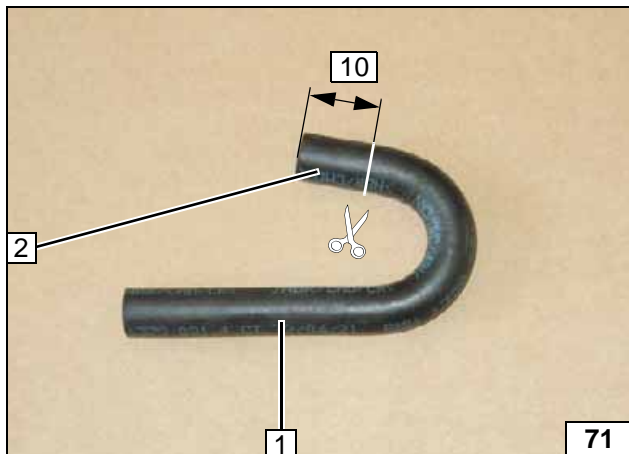


Install fuel-tank sending unit **2** in accordance with the manufacturer's instructions.

- 1** Fuel standpipe
- 3** Fuel line
- 4** Moulded hose, 10 mm dia. clamp [2x]

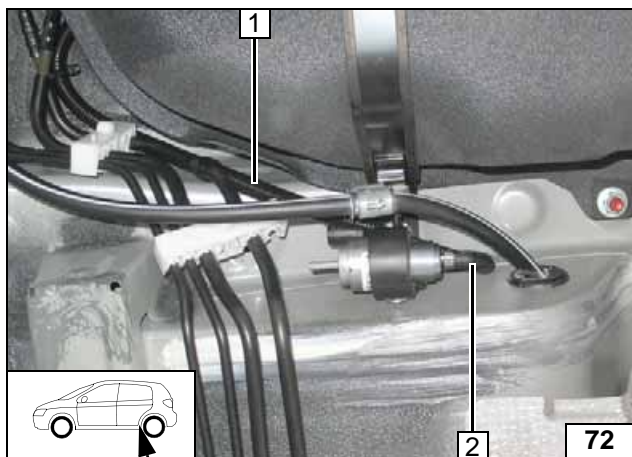
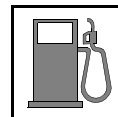


**Connecting fuel line**



- 1** 180° moulded hose
- 2** Discard section

**Shortening moulded hose**

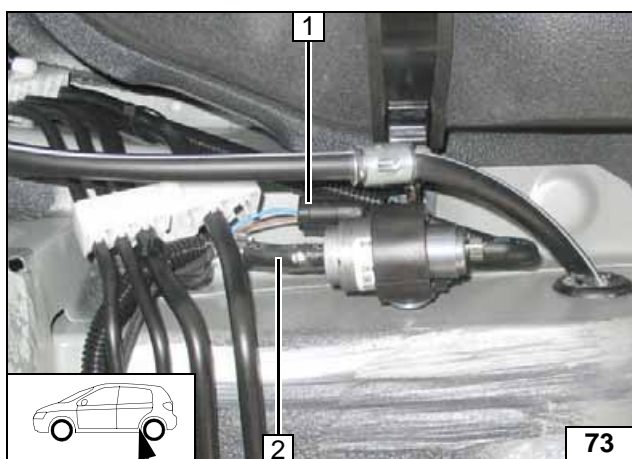


Push 10mm dia. corrugated tube 1 onto fuel line of fuel standpipe.

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



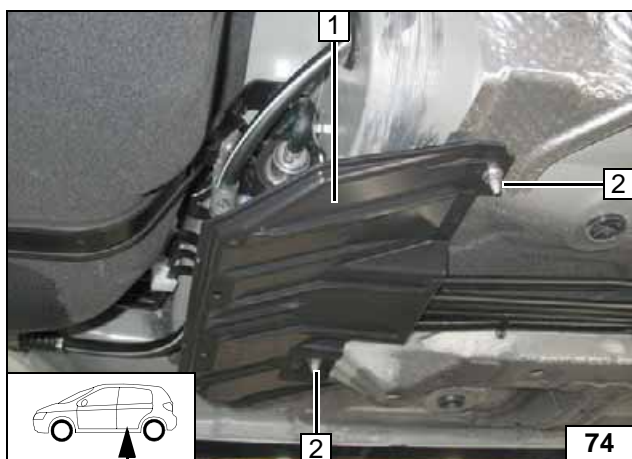
**Connect-  
ing meter-  
ing pump**



- 1 Wiring harness of metering pump, connector mounted
- 2 Fuel line of heater, hose section, 10mm dia. clamp [2x]



**Connect-  
ing meter-  
ing pump**

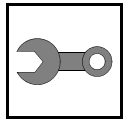


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

- 1 Stoneguard
- 2 Original vehicle nut [2x]



**Installing  
stoneguard**



### Final Work

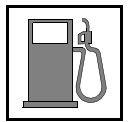
#### WARNING!

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

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

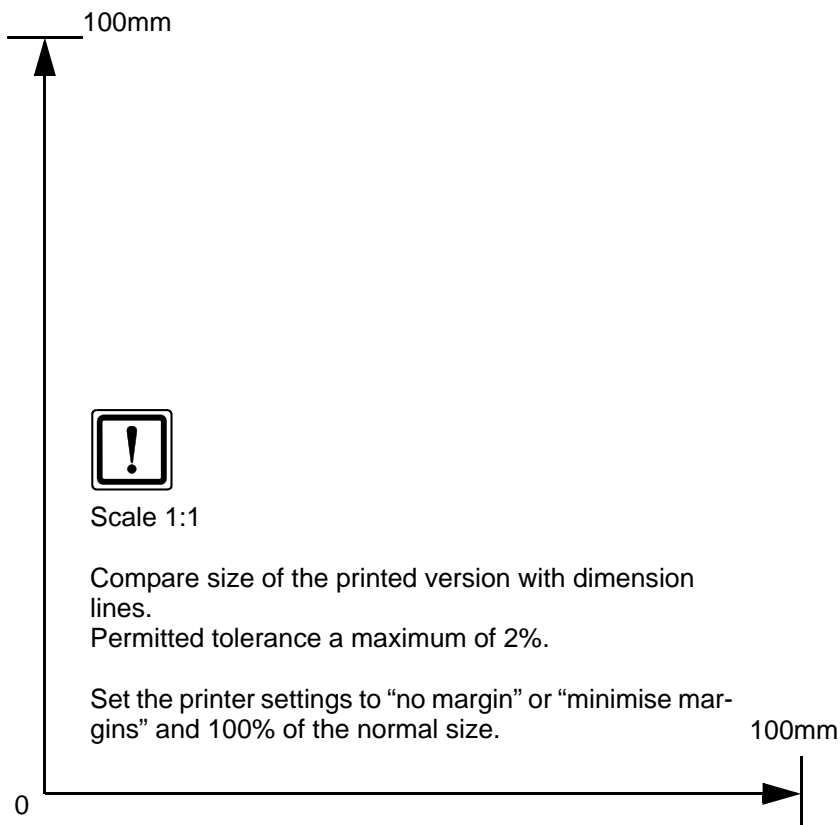
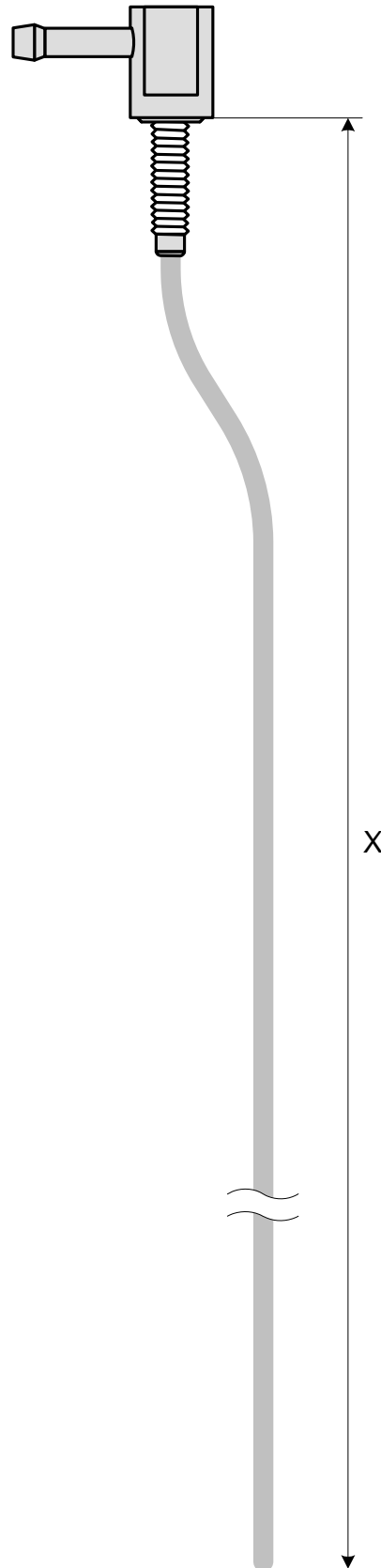


- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Adjust digital timer, teach telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch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



### Template for Fuel Standpipe

X = stretched length = 220mm!



## Operating Instructions for Manual Air-Conditioning

Please remove page and add to the vehicle operating instructions.

**Note:**

We recommend matching the heating time to the driving time.  
 Heating time = driving time

**Example:**

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

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

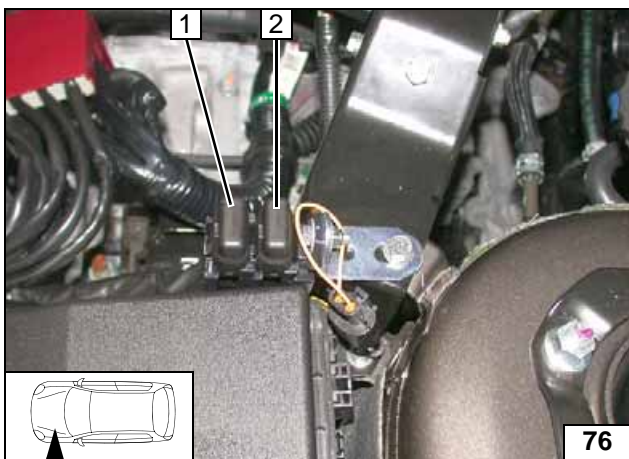
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

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

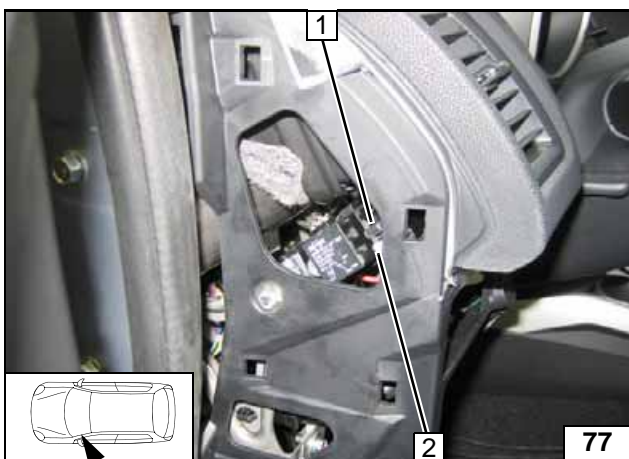


A/C control panel



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

Fuses of engine compartment



- 1 1A fuse F3 of controls
- 2 25A fan fuse F4

Fuses of passenger compartment



## Operating Instructions 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.

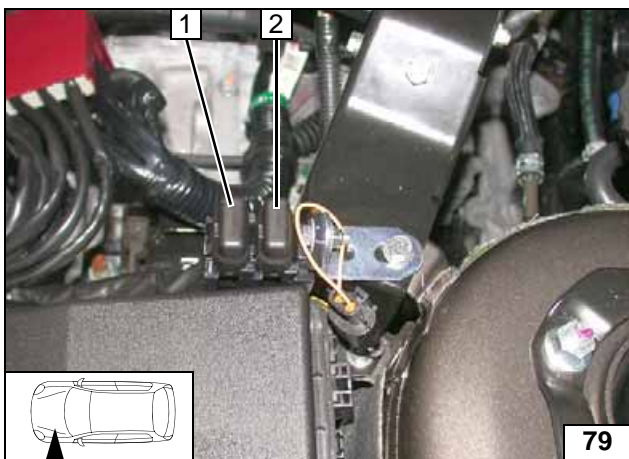
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

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

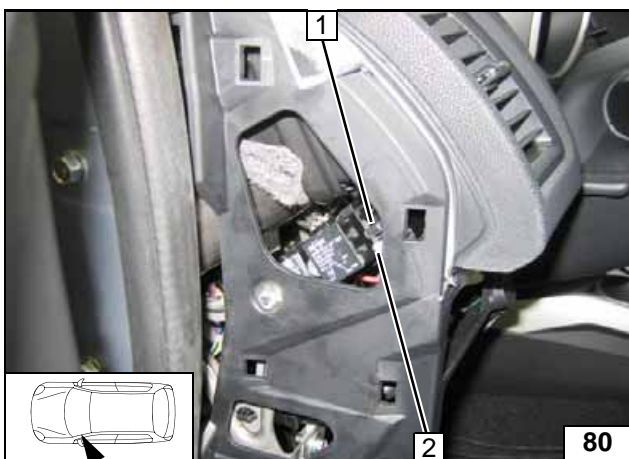


A/C control panel



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

Fuses of engine compartment



- 1 1A fuse F3 of controls
- 2 25A fan fuse F4

Fuses of passenger compartment

