

# Water Heater

## Thermo Top Evo Parking Heater



# Installation Documentation

## Dacia Duster

### Validity

Manufacturer	Model	Type	EG-BE No./ABE
Dacia	Duster	SD	e2 * 2001 / 116 * 0314 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm <sup>3</sup>	Engine code
1.5 D	Diesel	5-gear SG	66	1461	K9K
1.5 D	Diesel	5-gear SG	79	1461	K9K
1.5 D	Diesel	6-gear SG	81	1461	K9K

SG = Manual transmission

**From model year 2011**

**Left-hand drive vehicle**

**Verified equipment variants:** Without air-conditioning / Manual air-conditioning

Front fog light  
 LED daytime running lights  
 Euro 5 emission standard  
 2 WD / 4 WD

**Not verified:** Passenger compartment monitoring  
 Headlight washer system  
 Automatic air-conditioning

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

# Dacia Duster

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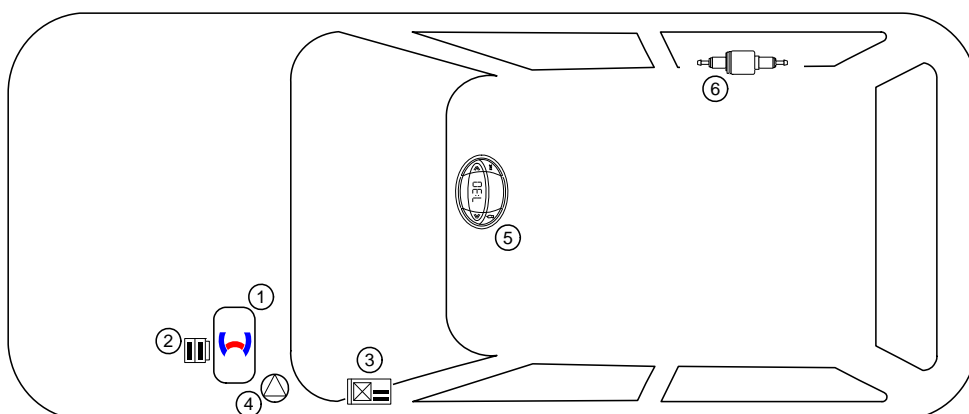
## Necessary Components

- Basic delivery scope *Thermo Top Evo* based on price list
- Installation kit for Dacia Duster 2011 Diesel: **1316906B**
- Heater control based on price list and upon consultation with end customer
- In case of Telestart, indicator lamp based on price list and upon consultation with end customer

## Installation Overview

### Legend:

1. Heater
2. Fuse holder of engine compartment
3. Relay and fuse holder of passenger compartment
4. Circulating pump
5. Digital timer
6. Metering pump



## Notes on Total Installation Time

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

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

## Information on Operating and Installation Instructions

### 1 Important Information (not complete)

#### 1.1 Installation and Repair



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



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



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

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

#### 1.2 Operation

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

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

Always switch off the heater before refuelling.

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

# Dacia Duster

## Notes on Validity

This installation documentation applies to Dacia Duster Diesel vehicles - for validity, see page 1 - from model year 2011 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 values of 5x15 retaining plate and water connection piece bolt = 7Nm.
- Tighten other screw 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



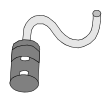
### Electrical system



### Coolant circuit



### Combustion air



### Fuel



### Exhaust gas



### Software



### Specific risk of injury or fatal accidents



### Specific risk of damage to components



### Specific risk of fire and explosion



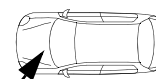
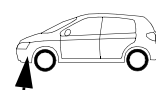
### Reference to general installation instructions of the Webasto components or to the manufacturer's vehicle-specific documents.



### Reference to a special technical feature



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



# Dacia Duster

## Preliminary Work

### Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Drain the coolant fluid.
- Remove the expansion tank.
- Remove the coolant reservoir cap.
- Remove the solenoid valve with bracket (if present).
- Remove the front underride protection.
- Remove the rear underride protection on the right.
- Remove the instrument panel trim on the driver's side.
- Remove the fan controls.

### Heater

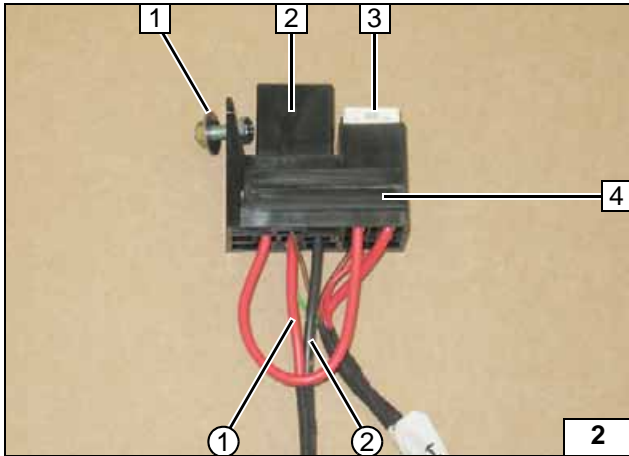
- Remove years that do not apply from the type- and duplicate label.
- Attach the duplicate label (type label) in the appropriate place inside the engine compartment.



### Heater Installation Location

- 1 Heater

Installation location

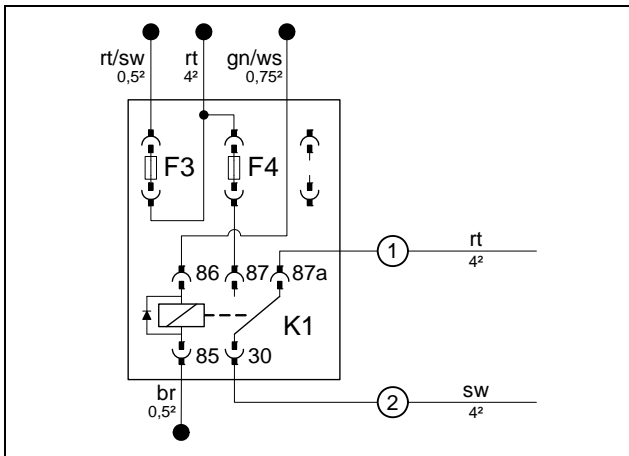


### Preparing Electrical System

Wire sections retain their numbering through the entire document.

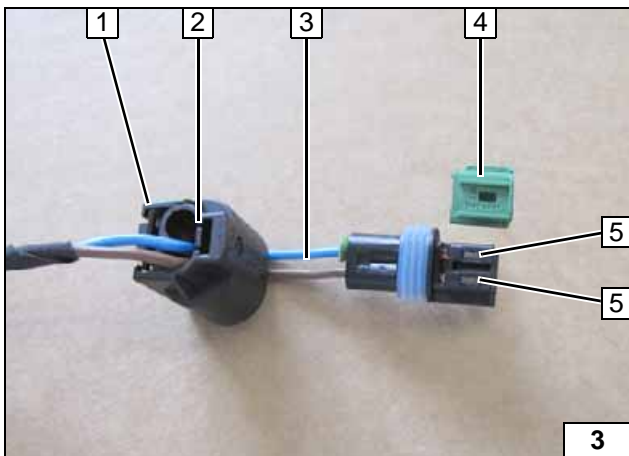
Produce connections as shown in the following image. Insert red (rt) wire 4<sup>2</sup> ① into socket K1/87a and insert black (sw) wire ② into socket of K1/30.

- 1 Premount M5x16 bolt, large diameter washer [2x], nut loosely
- 2 Insert K1 relay
- 3 Insert fuse F4 25A
- 4 Relay and fuse holder of passenger compartment



**Premounting passenger compartment relay and fuse holder**

**Premounting passenger compartment relay and fuse holder**



Complete connector of metering pump again 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

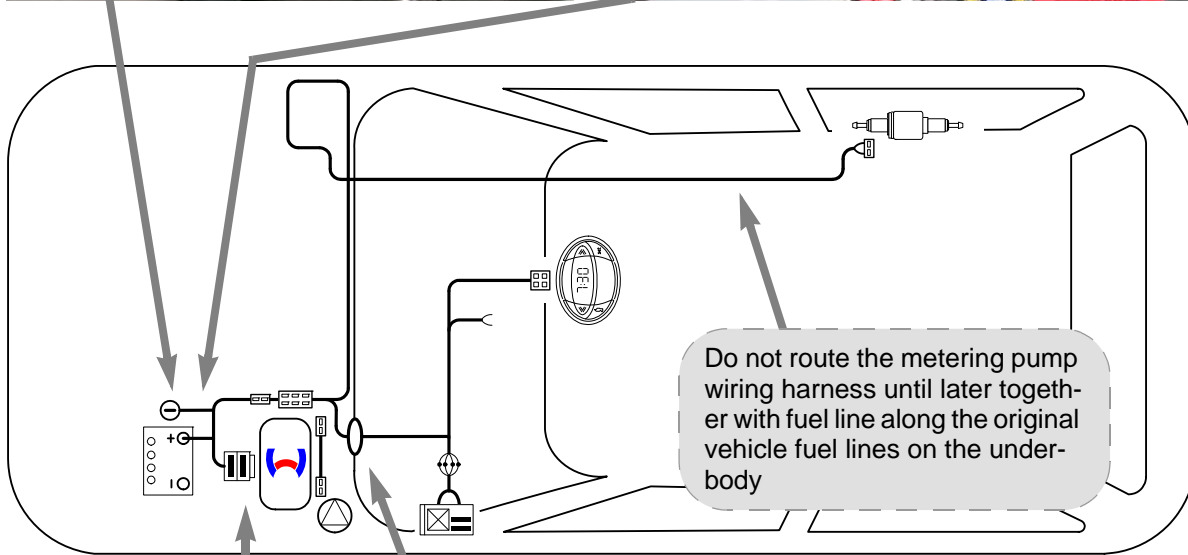
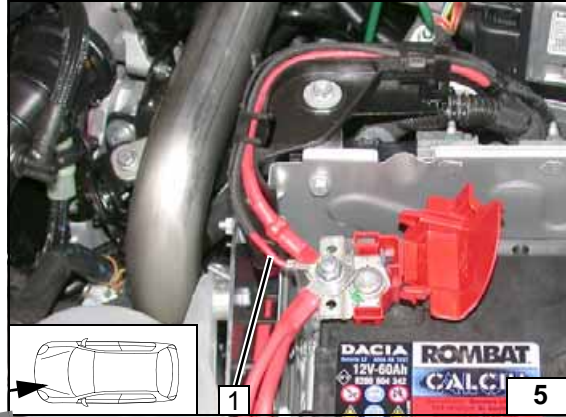
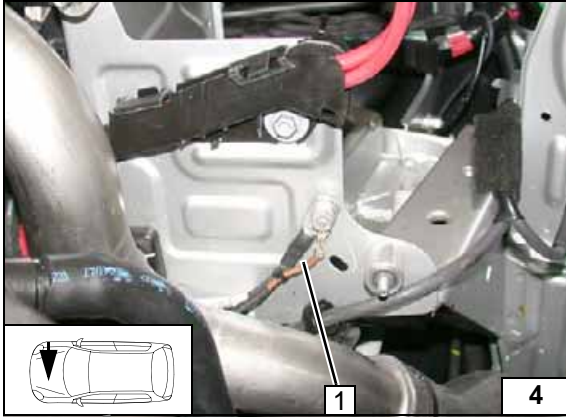


Earth wire

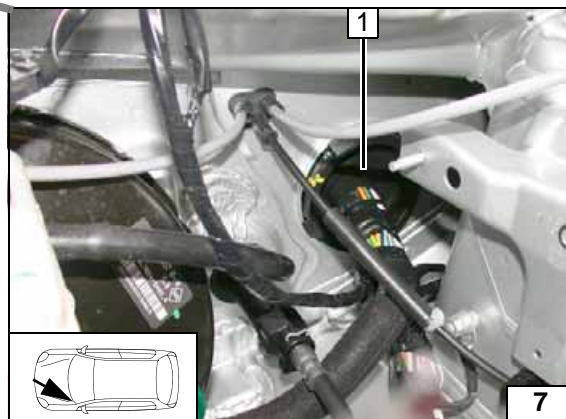
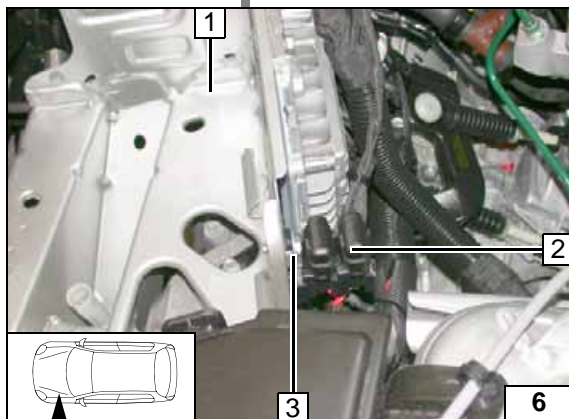
Positive wire

- 1 Earth wire on original vehicle earth support point

- 1 Positive wire on positive terminal of battery



Wiring harness routing diagram



Fuse holder of engine compartment

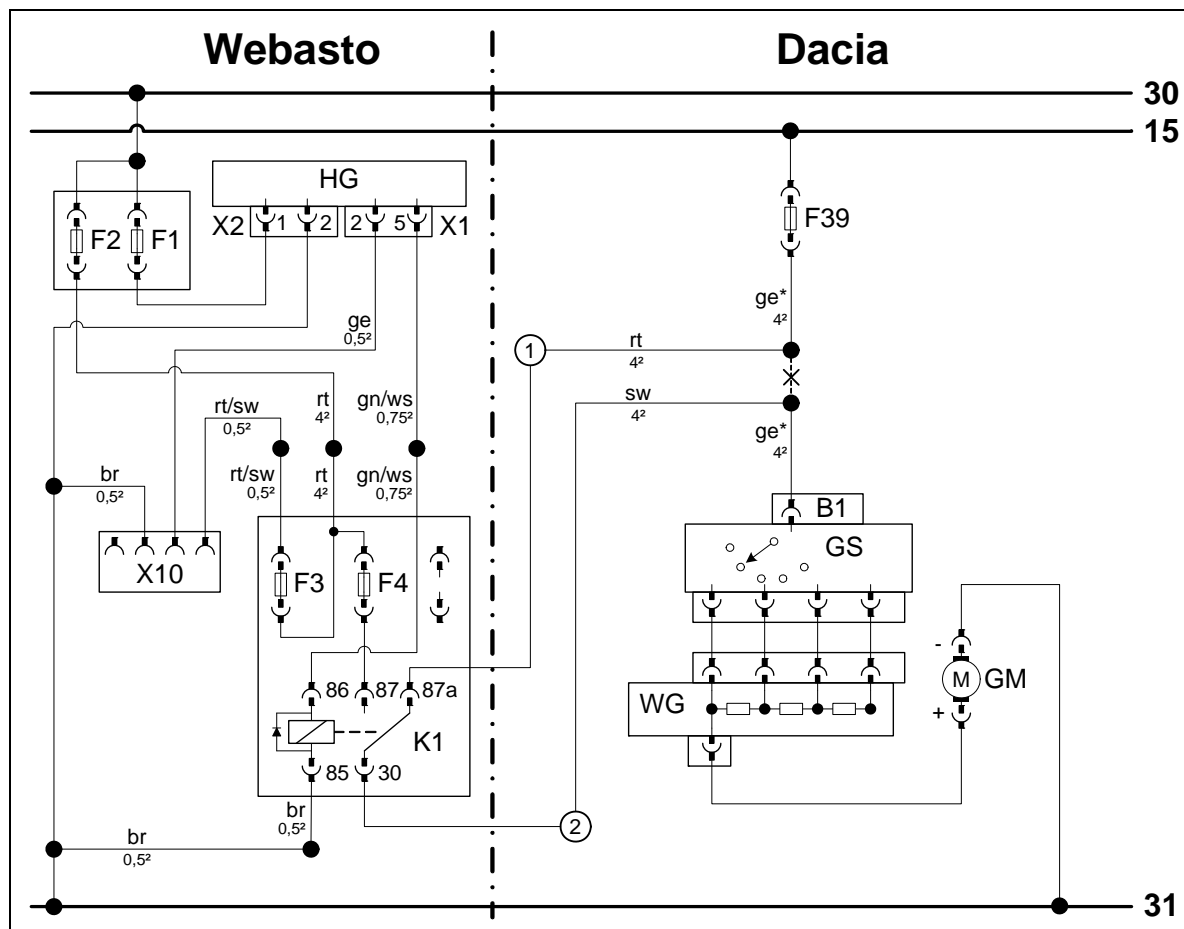
Wiring harness pass through

- 1 Battery carrier
- 2 Fuses F1-2
- 3 M5x16 bolt, washer [2x], retaining plate of fuse holder, nut, existing hole

- 1 Protective rubber plug



Fan Controller

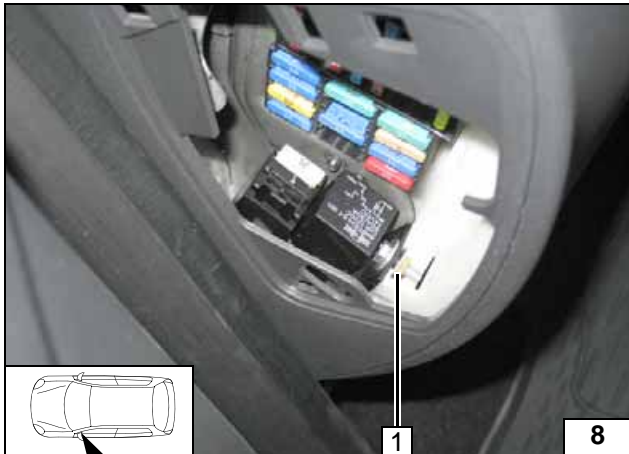


Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F39	30A fuse	rt	red
X1	6-pin heater connector	B1	Connector B Pin 1	sw	black
X2	2-pin heater connector	GS	Fan switch	ge	yellow
X10	4-pin connector Heater control	GM	Fan motor	gn	green
K1	Fan relay	WG	Resistor group	br	brown
F1	20A fuse			ws	white
F2	30A fuse			br	brown
F3	1A fuse				
F4	25A fuse				
				X	Cutting point
				Wiring colours may vary.	

Legend

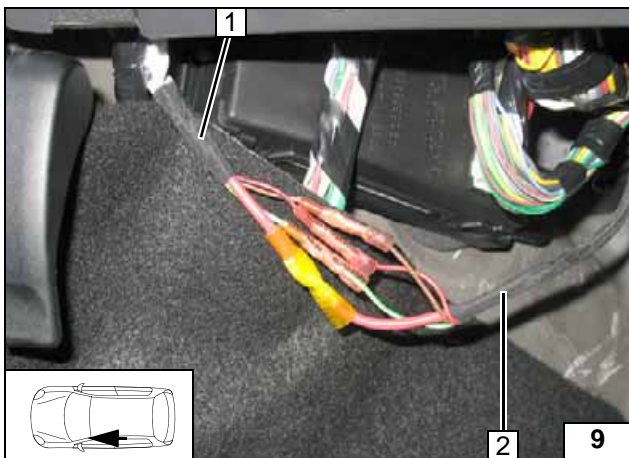




Insert relay and fuse holder of passenger compartment into the recess, tighten bolt 1.



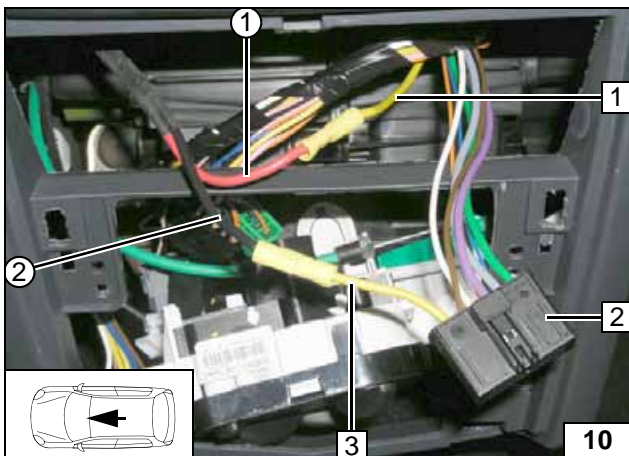
**Installing relay and fuse holder of the passenger compartment**



Connect same colour wires of the wiring harness of the passenger compartment relay and fuse holder 1 to those of the heater wiring harness 2 as shown in wiring diagram.



**Connecting wiring harnesses**

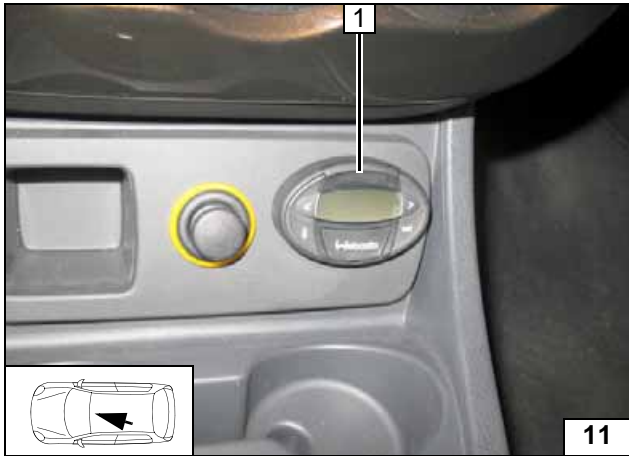


Connection to 6-pin connector B 2 from fan switch. Produce connections as shown in wiring diagram.



**Connecting fan motor**

- 1 Yellow (ge) wire from fuse 39
- 3 Yellow (ge) wire from connector B1
- ① Red (rt) wire of K1/87a
- ② Black (sw) wire of K1/30



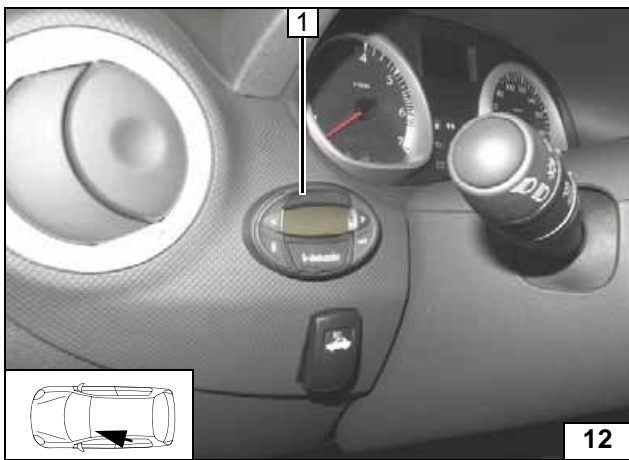
**Digital timer**

Variant 1

- 1 Digital timer



**Installing digital timer**



Variant 2

- 1 Digital timer



**Installing digital timer**

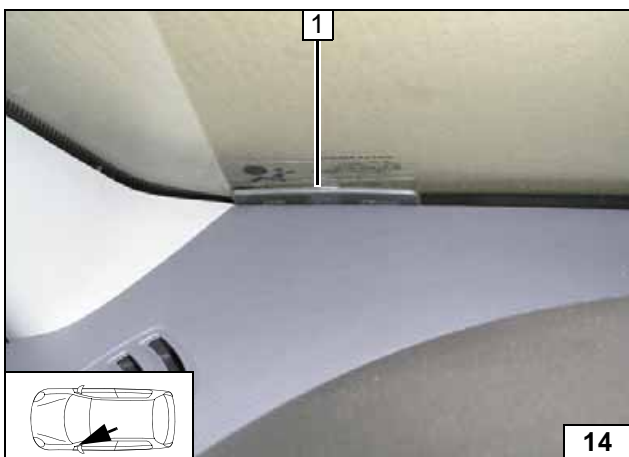


**Remote Option (Telestart)**

- 1 Telestart bracket
- 2 Telestart
- 3 Original vehicle bolt

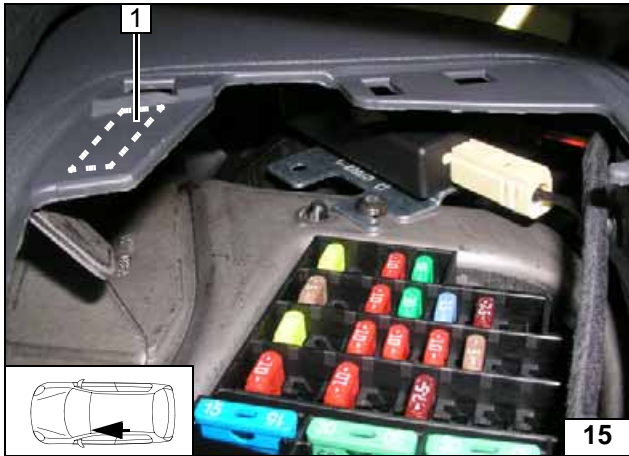


**Mounting receiver**



- 1 Antenna

**Mounting antenna**

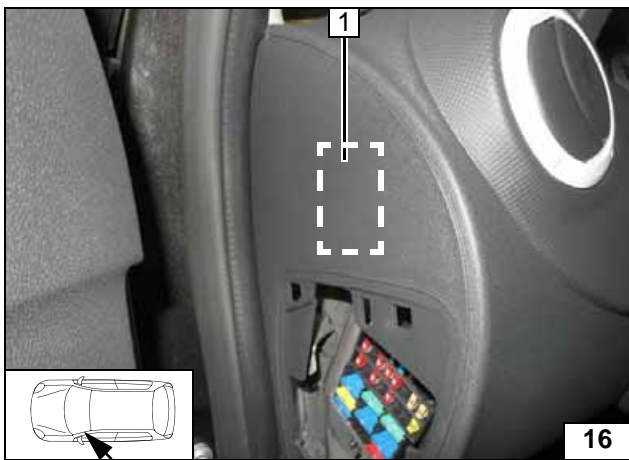


**T100 HTM temperature sensor**

Fasten temperature sensor 1 from the inside using adhesive tape.



**Installing temperature sensor**

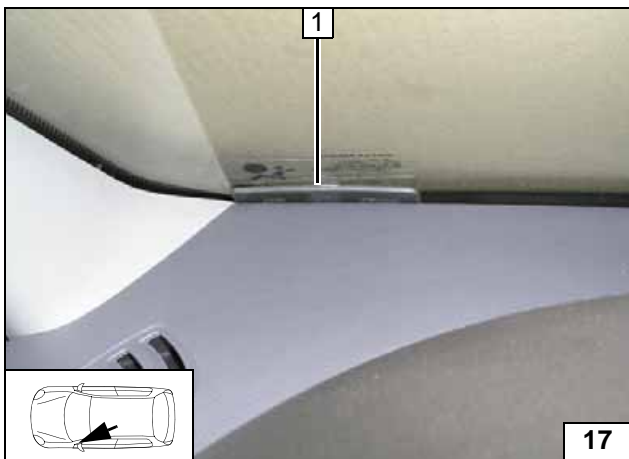


**Remote Option (Thermo Call TC3)**

1 Fasten receiver from the inside using double-sided adhesive tape

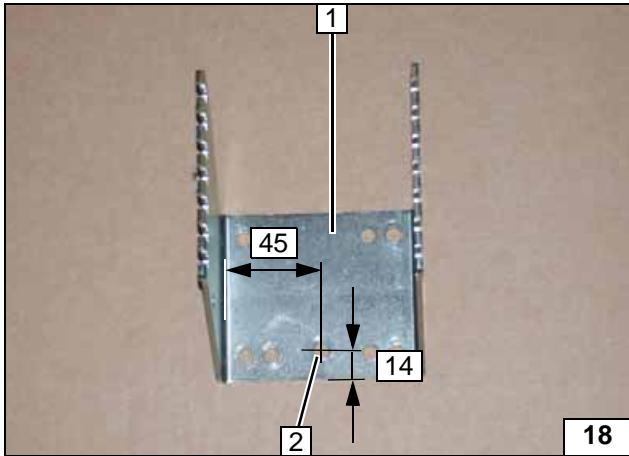


**Mounting receiver**



1 Antenna

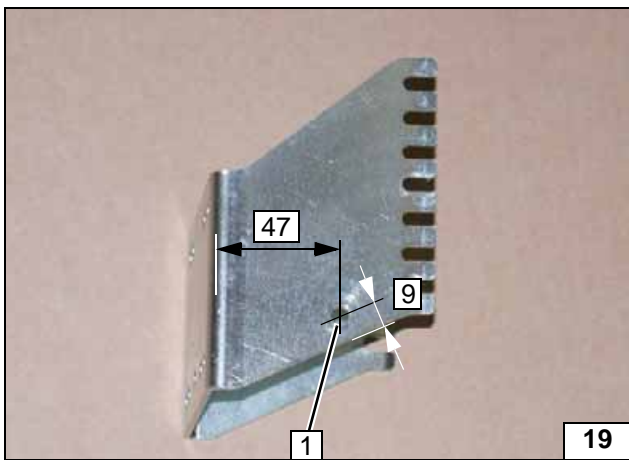
**Mounting antenna**



### Preparing Bracket

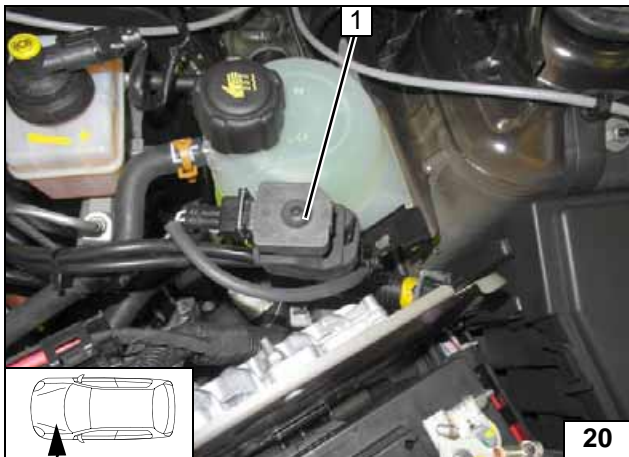
- 1 Bracket
- 2 7mm dia. hole

Preparing bracket



- 1 7mm dia. hole

Preparing bracket

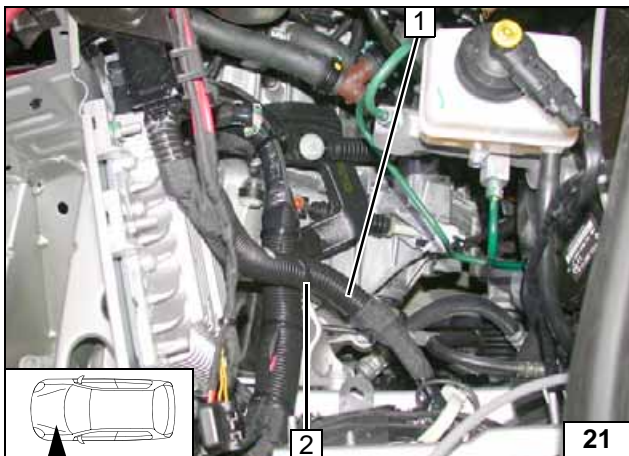


### Preparing Installation Location

Remove solenoid valve with bracket 1 (if present). Will be reassembled later.



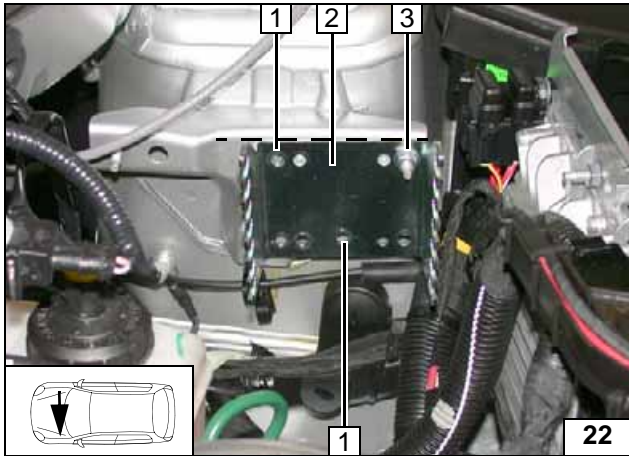
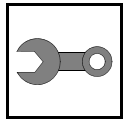
Removing solenoid valve



- 1 Original vehicle wiring harness
- 2 Cable tie

Fastening wiring harness



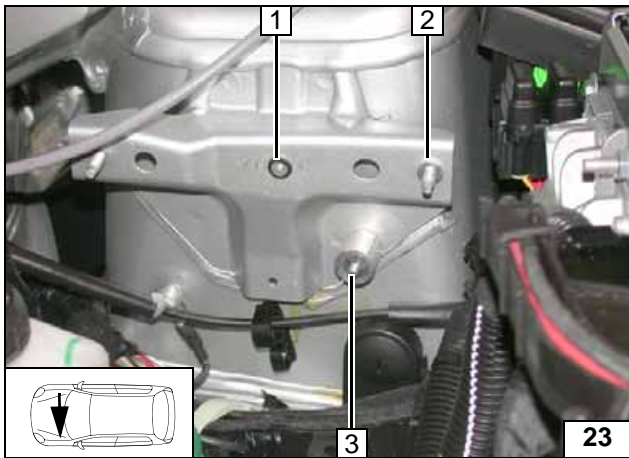


Mount bracket **2** loosely and align to upper edge.

- 1** Copy hole pattern [2x].
- 3** Original vehicle stud bolt, flanged nut



**Copying hole pattern**

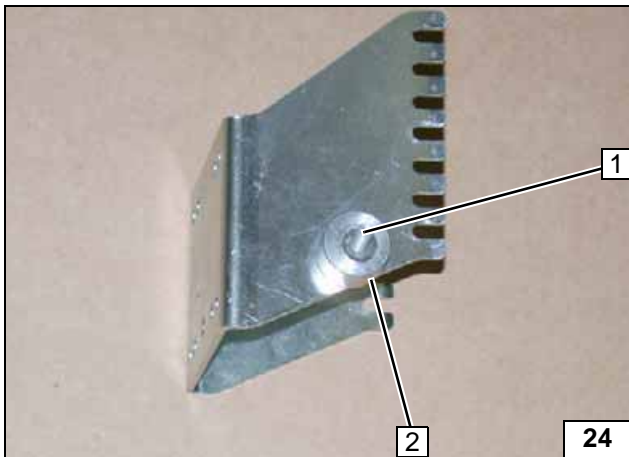


Remove bracket.

- 1** 9.1mm dia. hole, rivet nut
- 2** Washer outer dia.  $d_a = 11.6\text{mm}$ ; original vehicle stud bolt
- 3** 7mm dia. hole; M6x35 bolt (insert from wheel well), large diameter washer, 20mm shim, pin lock



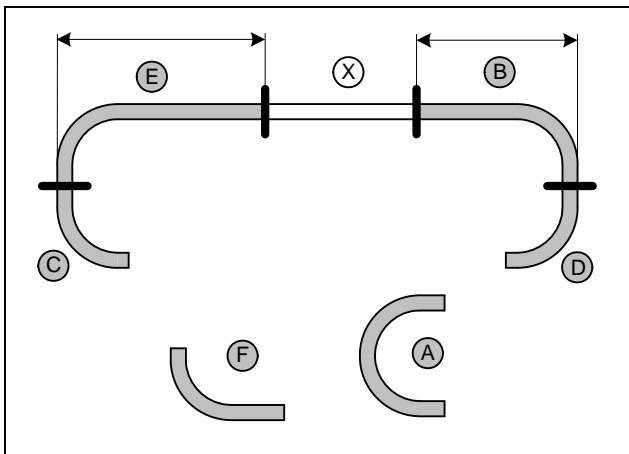
**Installing rivet nut**



**Premounting Circulating Pump**

- 1** M6x35 bolt, pin lock
- 2** 15mm shim

**Preparing bracket**



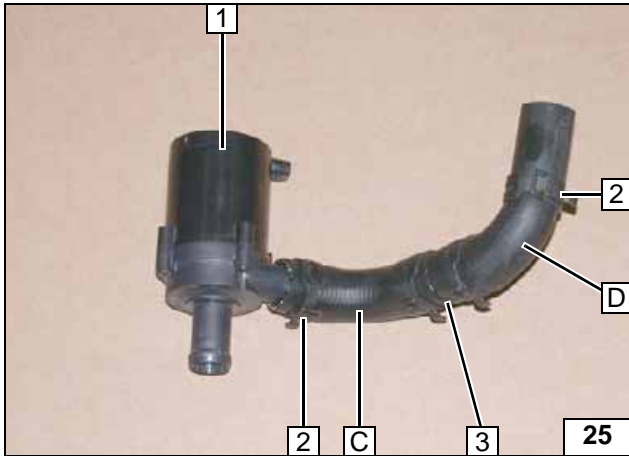
Discard section **X**.

Hose **A** = 180°, 18mm dia. moulded hose  
 Hose **F** = 90°, 20mm dia. moulded hose

- B** = 430
- E** = 510

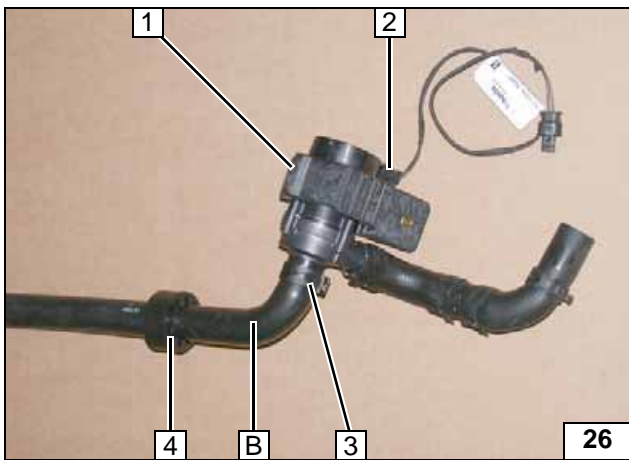


**Cutting hoses to length**



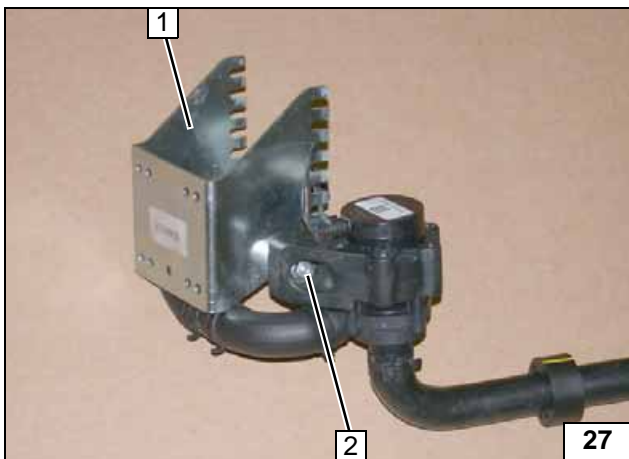
- 1 Circulating pump
- 2 25mm dia. spring clip [2x]
- 3 18x18mm connecting pipe, 25mm dia. spring clip [2x]

**Premounting circulating pump**



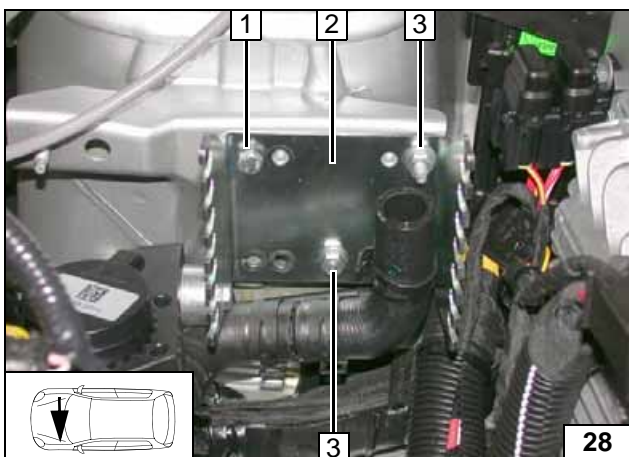
- 1 Mounting for circulating pump
- 2 Wiring harness of circulating pump mounted
- 3 25mm dia. spring clip
- 4 Slide on black (sw) rubber isolator

**Premounting circulating pump**



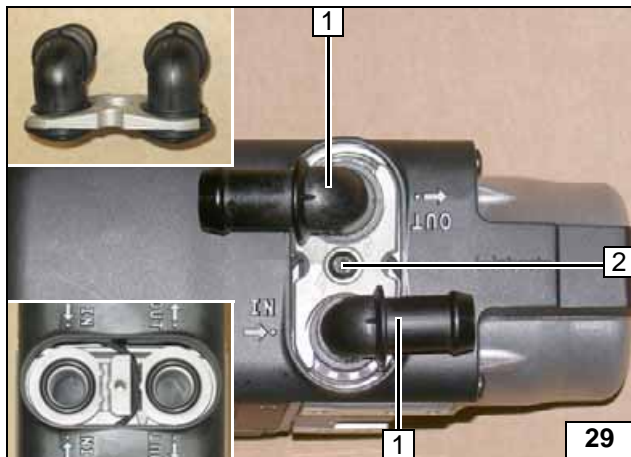
- 1 Bracket
- 2 Washer outer dia.  $d_a = 11.7\text{mm}$ ; flanged nut

**Installing circulating pump**



- 1 M6x20 bolt, spring lockwasher
- 2 Bracket
- 3 Flanged nut [2x]

**Mounting bracket**

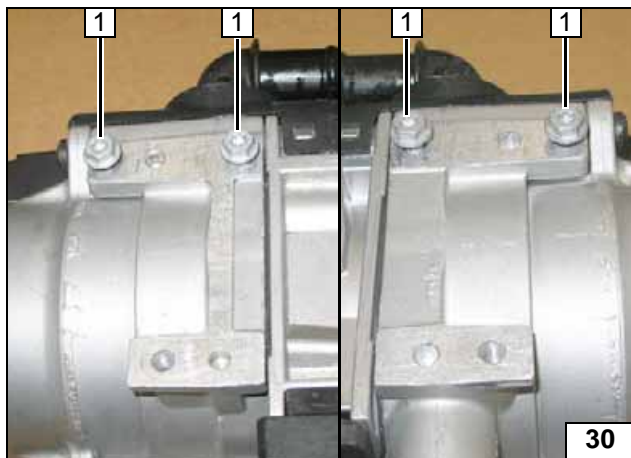


### Preparing Heater

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



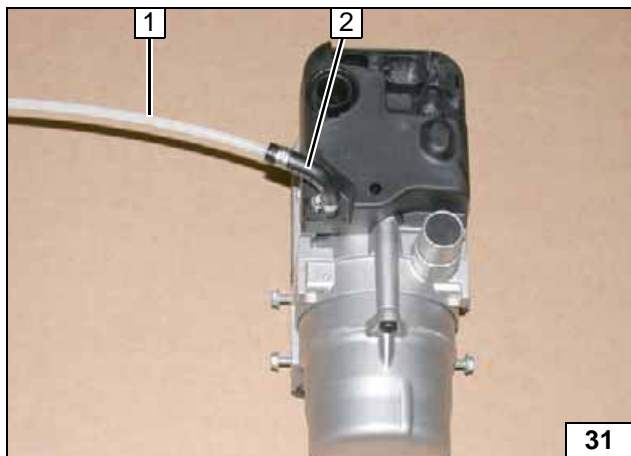
**Installing water connection pieces**



Tap thread with 5x13 self-tapping bolts 1 [4x] and mount loosely (max. 3 thread turns).

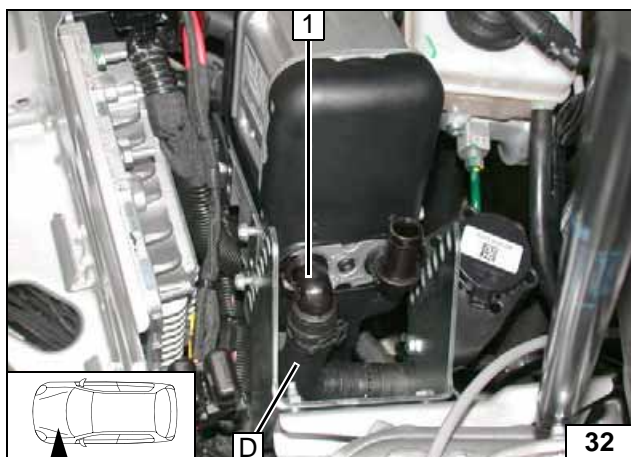


**Premounting bolts loosely**



- 1 Fuel line
- 2 Hose section, 10 mm dia. clamp [2x]

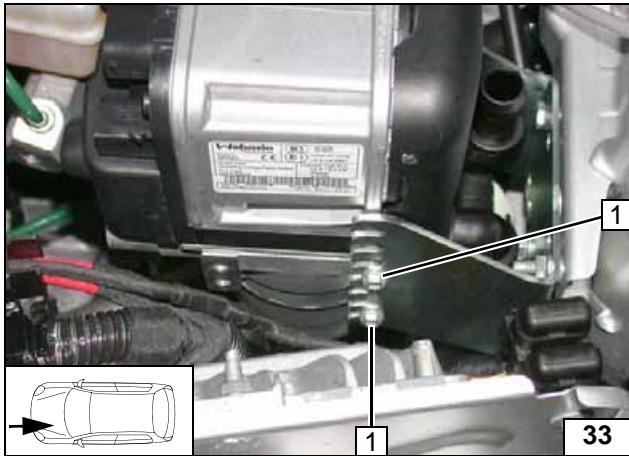
**Premounting fuel line**



### Installing Heater

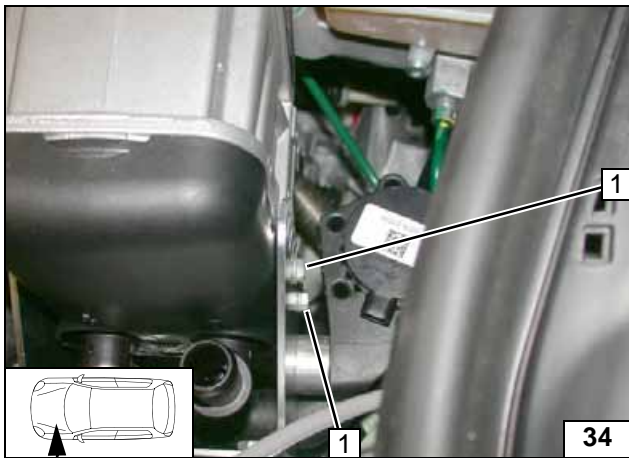
- 1 Connection pieces of heater inlet

**Connection of heater inlet**



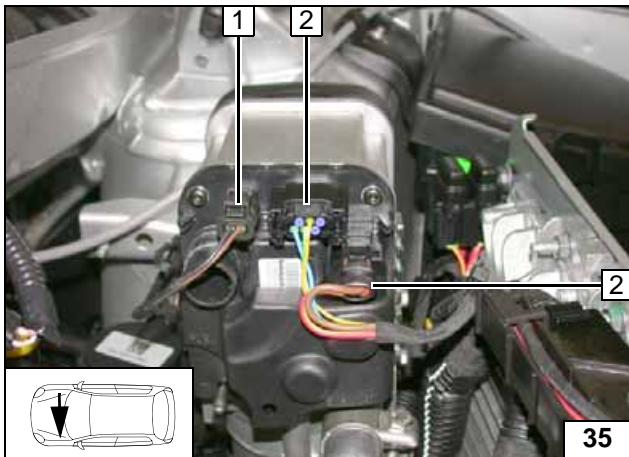
1 Tighten 5x13 self-tapping screws [2x]

Mounting heater



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

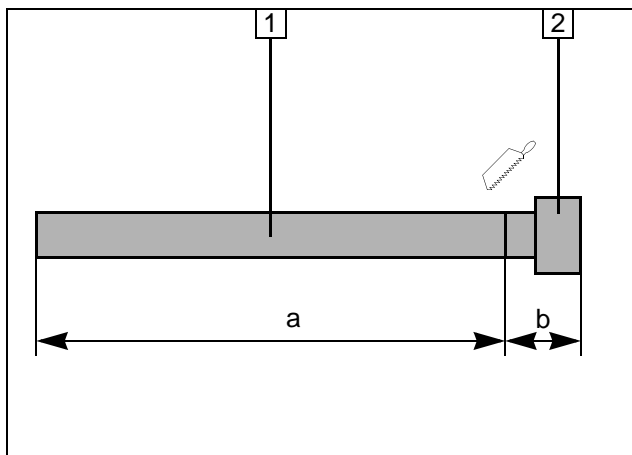
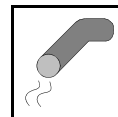
Mounting heater



1 Wiring harness of circulating pump  
2 Wiring harness of heater [2x]

Installing wiring harnesses

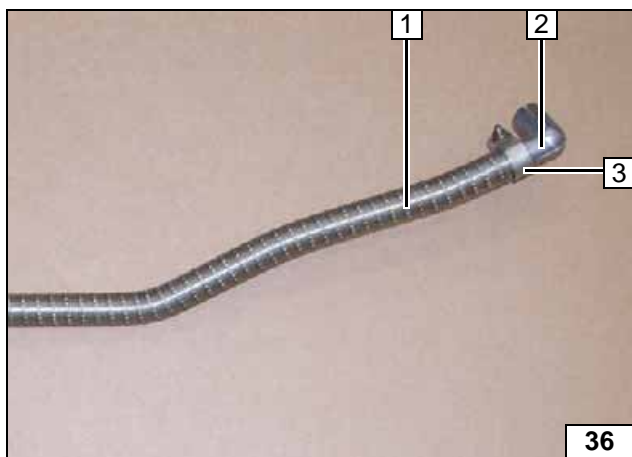




### Exhaust Gas

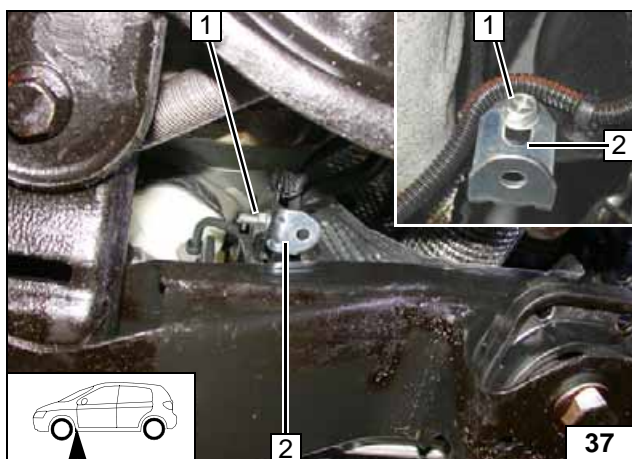
- 1 Exhaust pipe  
a = 930
- 2 Exhaust end section  
b = 70

Preparing exhaust pipe



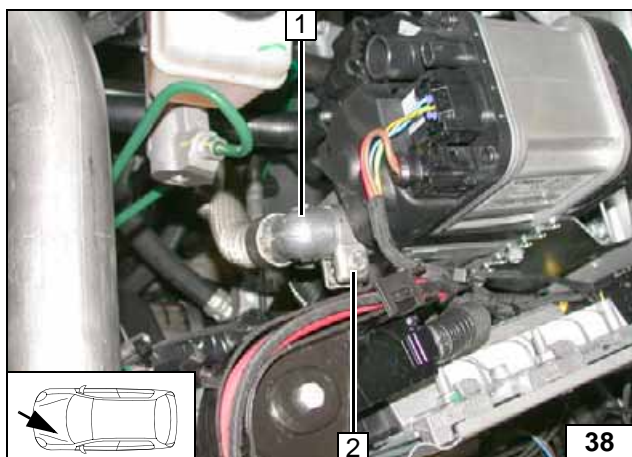
- 1 Exhaust pipe
- 2 Exhaust manifold
- 3 Hose clamp

Preparing exhaust pipe



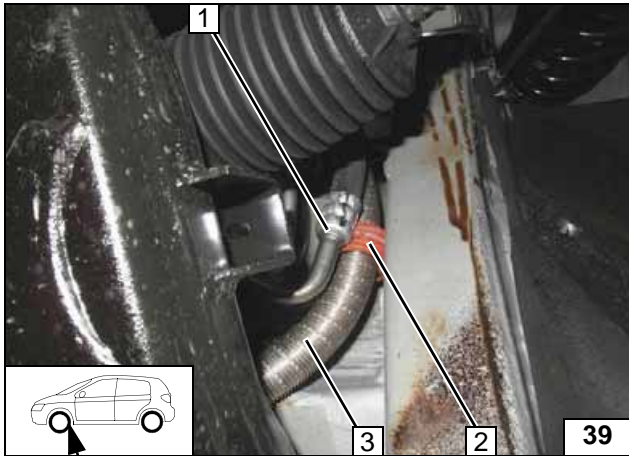
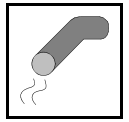
- 1 M6x20 bolt, flanged nut, existing hole
- 2 Angle bracket

Installing angle bracket



- 1 Exhaust manifold
- 2 Hose clamp

Mounting exhaust pipe

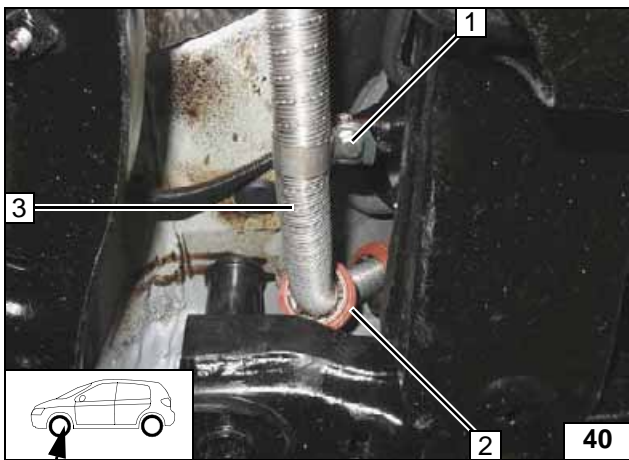


Ensure sufficient distance from body, at least 10mm, and from lines and plastic parts, at least 20mm.  
Align spacer bracket 2 with line 1 as shown.

- 3 Exhaust pipe



**Routing ex-  
haust pipe**

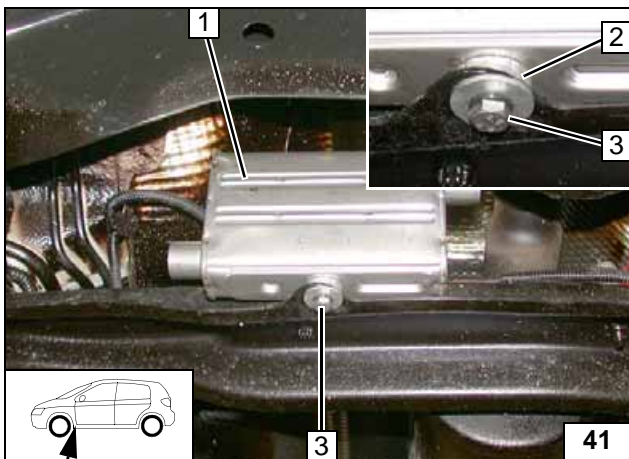


Ensure sufficient distance from body, at least 10mm, and from lines and plastic parts, at least 20mm.  
Position spacer bracket 2 as shown.

- 1 M6x20 bolt, p-clamp, flanged nut
- 3 Exhaust pipe



**Mounting  
exhaust  
pipe**

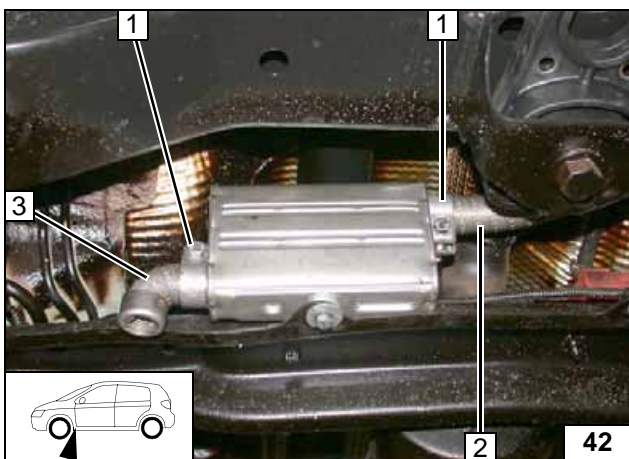


**Up to model year 2012**

- 1 Silencer
- 2 5mm shim
- 3 M6x20 bolt, spring lockwasher, large diameter washer, 5mm shim, existing hole

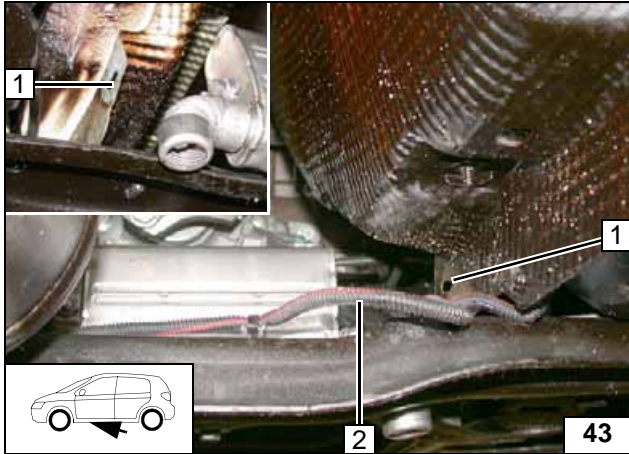
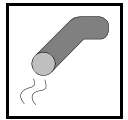


**Mounting  
silencer**



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

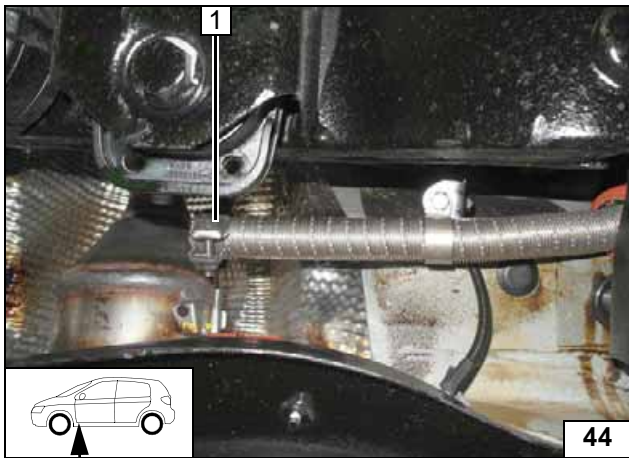
**Mounting  
exhaust  
pipe and  
exhaust  
end section**



Detach original vehicle wiring harness 2 at position 1 and tie back with cable tie. Ensure distance of at least 20mm from exhaust components.



**Routing wiring harness**



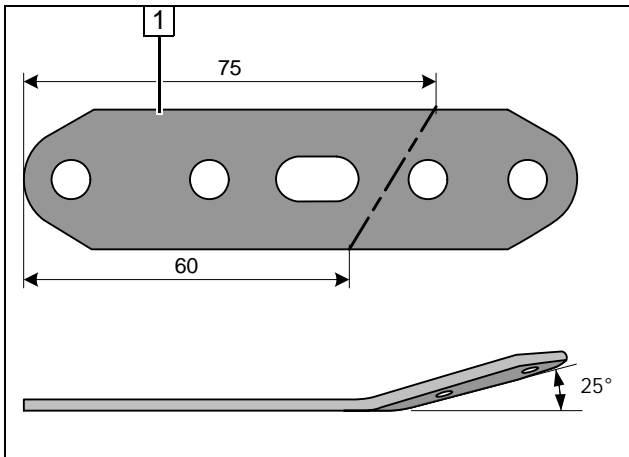
**From model year 2013**

Figure shows 2WD.  
Same procedure applies to 4WD.

Mount hose clamp 1 loosely

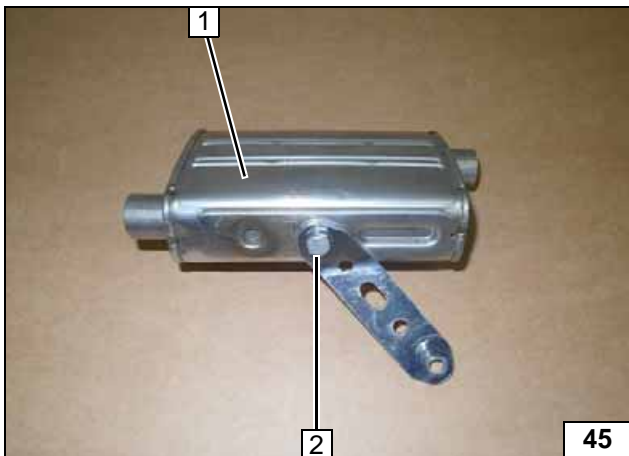


**Mounting exhaust pipe**



1 Perforated bracket

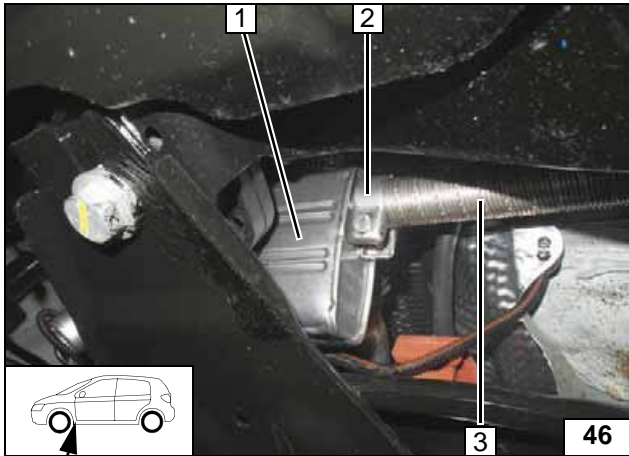
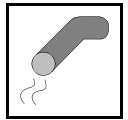
**Bending down perforated bracket**



- 1 Silencer
- 2 M6x16 bolt, spring lockwasher, perforated bracket

**Premounting silencer**





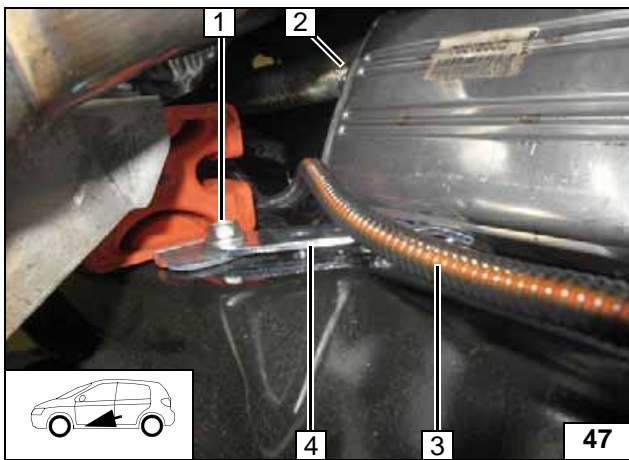
Mount exhaust pipe 3 loosely.

Figure and following figures show 4WD. Same procedure applies to 2WD.

- 1 Silencer
- 2 Hose clamp



**Inserting silencer**

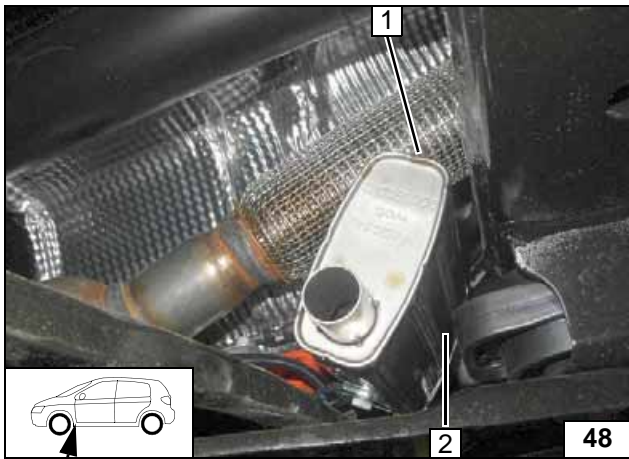


Fix original vehicle wiring harness 3 onto perforated bracket 4 using a cable tie. Ensure distance of at least 20mm from exhaust components.

- 1 Original vehicle bolt
- 2 Tighten hose clamp



**Mounting silencer**



Ensure distance of at least 15mm from original vehicle exhaust system in area 1 (hidden view) and engine mount in area 2.



**Aligning silencer**



- 1 Hose clamp
- 2 Exhaust end pipe

**Mounting exhaust end pipe**



**Fuel**

**CAUTION!**

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

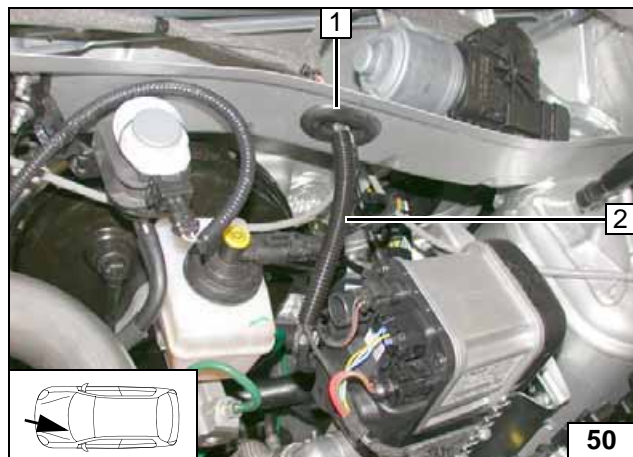
Catch any fuel running off in an appropriate container.

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!**

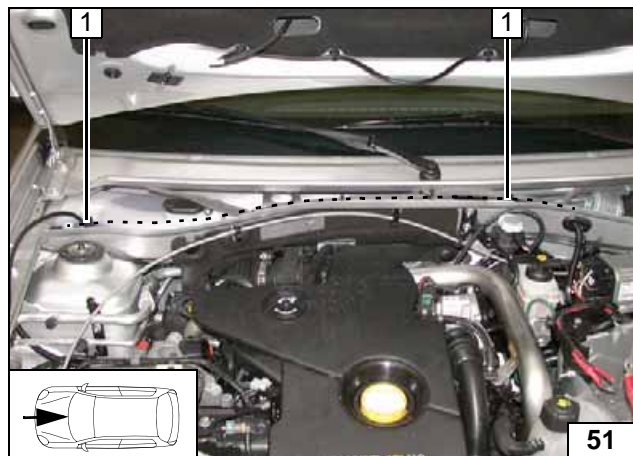
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Route fuel line and wiring harness of metering pump in corrugated tube **2** to the coolant reservoir.

- 1 Protective rubber plug

**Routing lines**

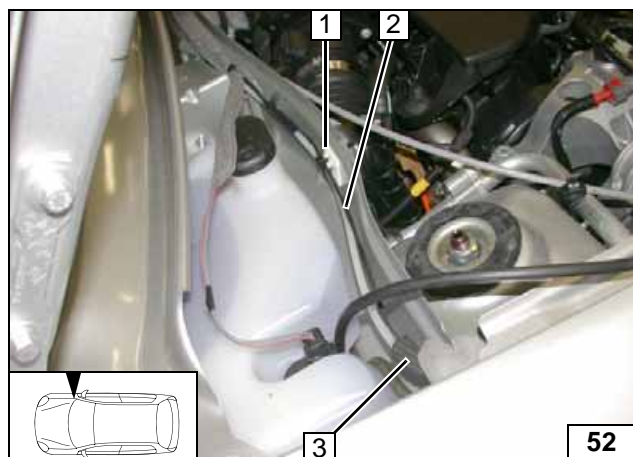


Route fuel line and wiring harness of metering pump to coolant reservoir on the right vehicle side.

- 1 Fuel line, metering pump wiring harness



**Routing lines**

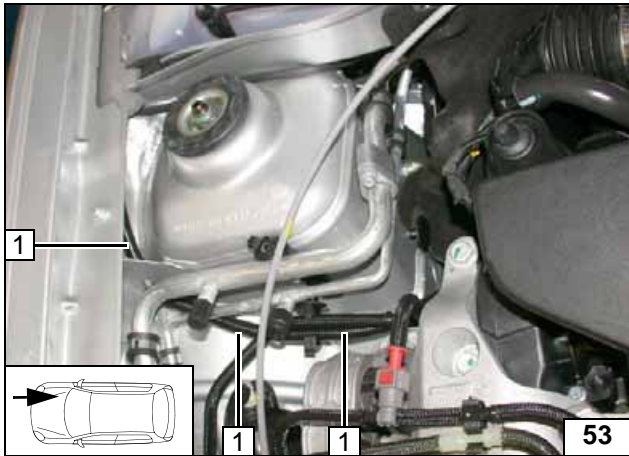
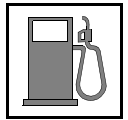


Slide on fabric protective hose **3** on fuel line and wiring harness of metering pump **2** and position in original vehicle pass through.

- 1 Remove adhesive surface, adhesive base, cable tie



**Routing lines**



1 Fuel line, metering pump wiring harness in corrugated tube

Routing lines



1 Fuel line, metering pump wiring harness in corrugated tube

Routing lines

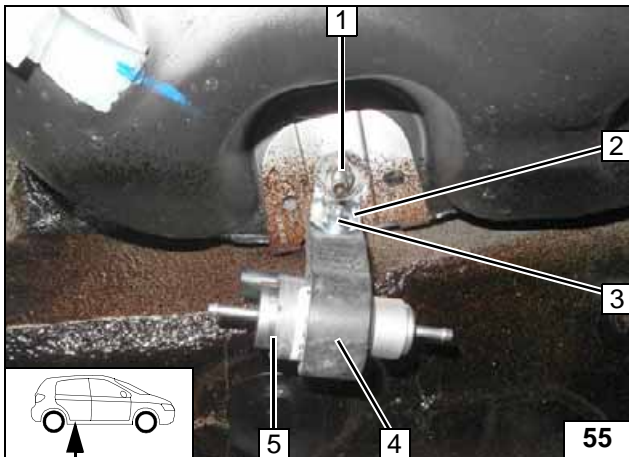
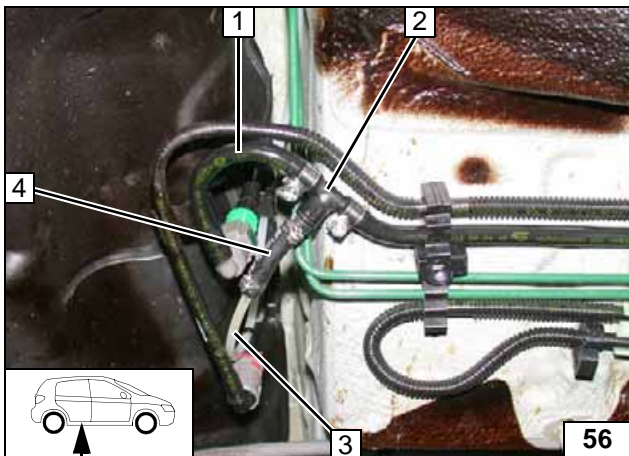


Figure shows 2WD.  
Same procedure applies to 4WD.

- 1 Original vehicle stud bolt and flanged nut
- 2 Angle bracket
- 3 M6x25 bolt, support angle, flanged nut
- 4 Metering pump mounting
- 5 Metering pump



Mounting metering pump



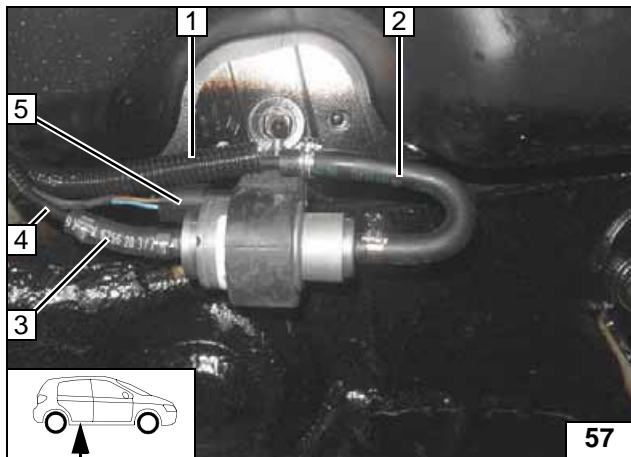
Cut off fuel supply line 1 as shown.

- 2 8x5x8 fuel standpipe; clamp 10mm dia [2x]
- 3 Fuel line
- 4 Hose section, 10 mm dia. clamp [2x]



Fuel extraction





- 1 Fuel line in corrugated tube of fuel stand-pipe
- 2 180° hose section, 10 mm dia. clamp [2x]
- 3 Hose section, 10 mm dia. clamp [2x]
- 4 Fuel line in corrugated tube of heater
- 5 Wiring harness of metering pump, connector installed



**Connect-  
ing meter-  
ing pump**

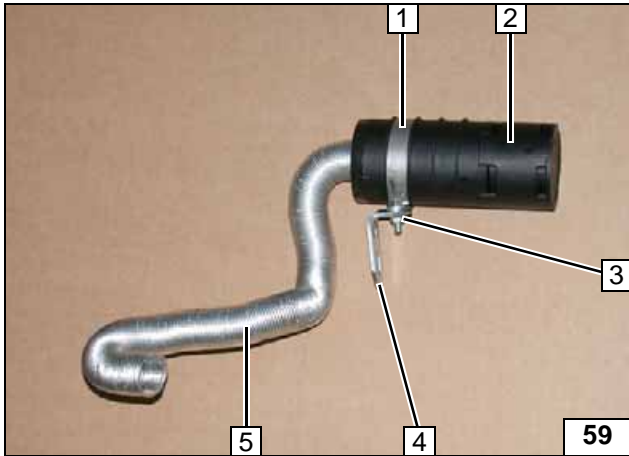
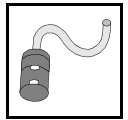


Fasten fuel lines in corrugated tube to brake lines at position 2 using cable ties. Check the position of the components; adjust if necessary. Check that they have freedom of movement.

- 1 Cable tie



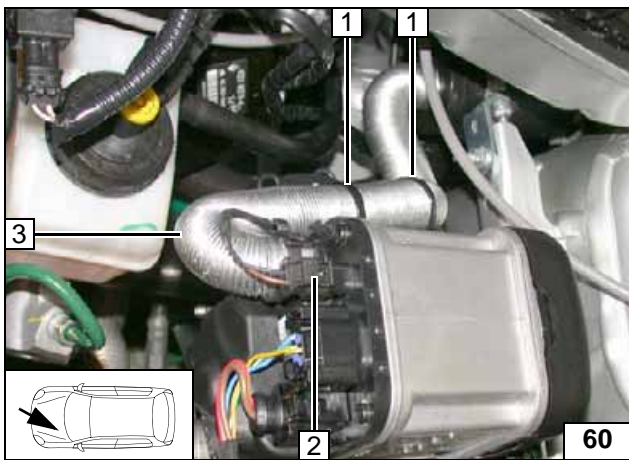
**Fastening  
fuel line**



**Combustion Air**

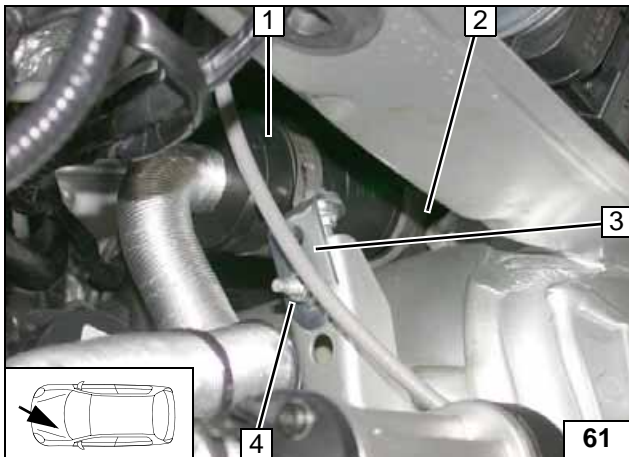
- 1 51mm dia. clamp
- 2 Silencer
- 3 M5x16 bolt, washer, flanged nut
- 4 Angle bracket
- 5 Mould combustion air pipe

**Premounting silencer**



- 1 Cable tie
- 2 Wiring harness of circulating pump mounted
- 3 Combustion air pipe

**Installing combustion air pipe**

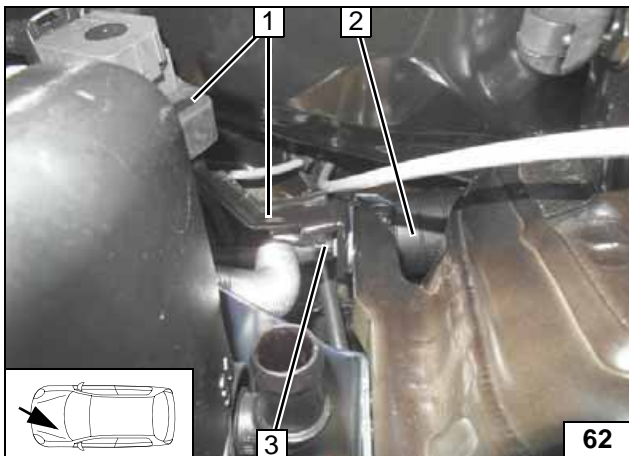


Paste insulation strip 2 as flap protection on silencer 1.

- 3 Angle bracket
- 4 **Vehicle without solenoid valve:** existing hole, M6x20 bolt, flanged nut
- 4 **Vehicle with solenoid valve:** existing hole, M6x20 bolt



**Mounting silencer**



**Vehicle with solenoid valve**

- 1 Solenoid valve with bracket
- 2 Silencer
- 3 M6x20 bolt (premounted, see previous figure), flanged nut



**Mounting silencer/solenoid valve**

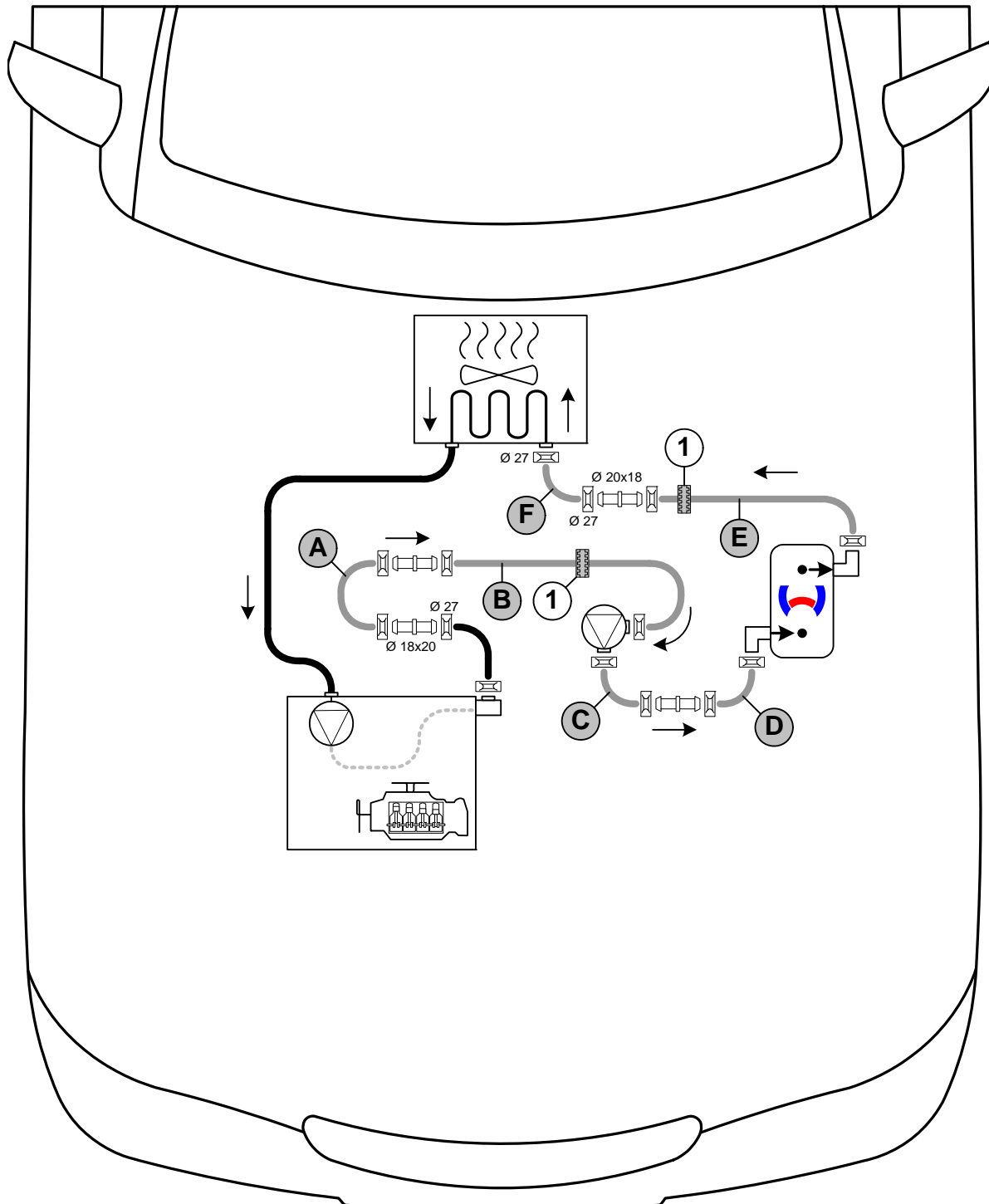







### Coolant Circuit

**WARNING!**

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



Hose routing diagram

All spring clips without a specific designation  = 25mm dia.  
 1 = Black (sw) rubber isolator  [2x].  
 All connecting pipes without specific designation  = 18x18mm dia.





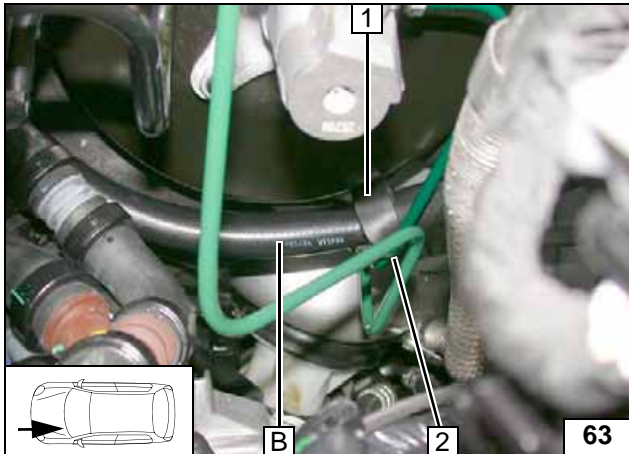
Routing in engine compartment



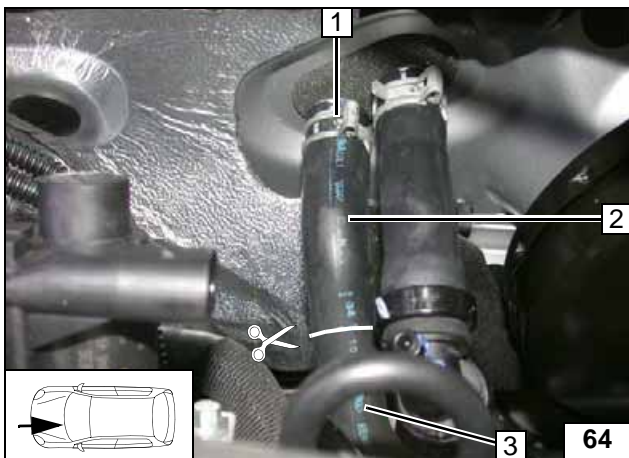
Cutting point

Connecting engine outlet

Connection of heat exchanger inlet



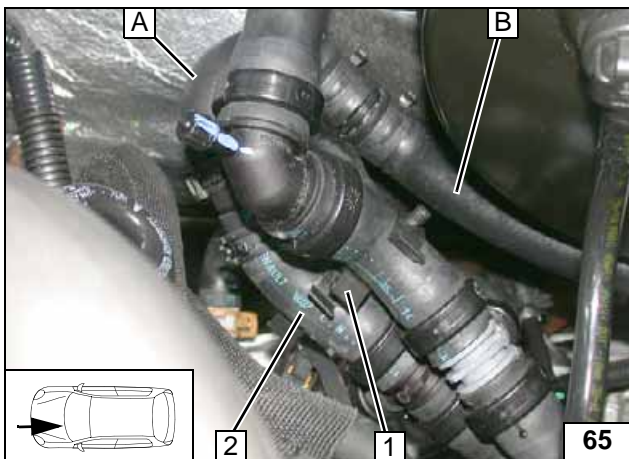
Route hose **B** to cutting point. Align black (sw) rubber isolator **1** and fasten with cable tie **2** to the original vehicle line.



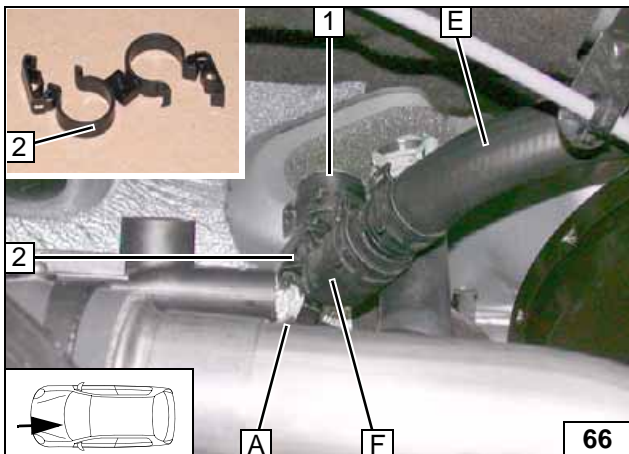
Up to model year 2012

Cut hose of engine outlet / heat exchanger inlet **3** at the marking.

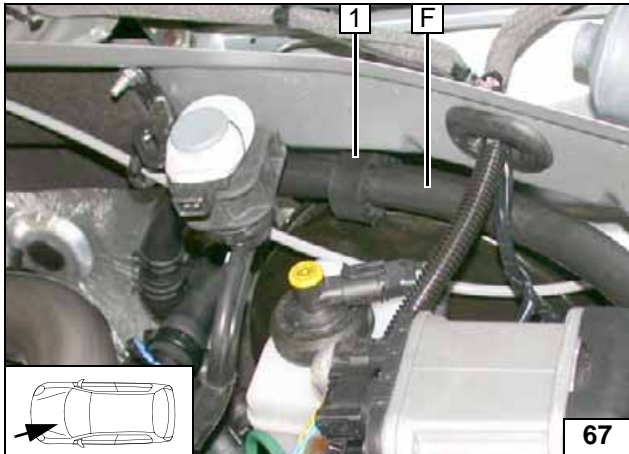
- 1 Remove and discard spring clip
- 2 Remove and discard hose section of heat exchanger inlet.



- 1 Install hose bracket 23x23
- 2 Hose on engine outlet



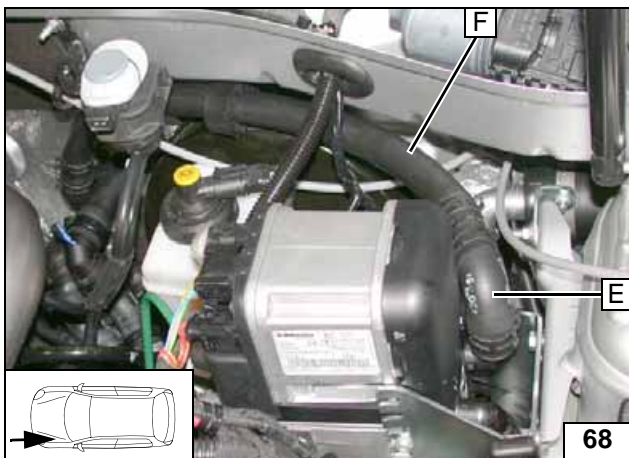
- 1 Connection piece of heat exchanger inlet
- 2 25x25 hose bracket from **A** (hidden view) to **F**



Slide black (sw) rubber isolator **1** on to hose **F** and align.



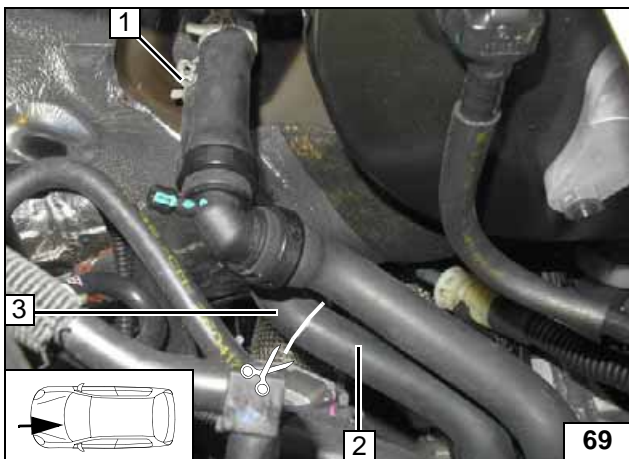
**Routing in engine compartment**



Align hoses. Ensure sufficient distance from neighbouring components.



**Connection of heater outlet**



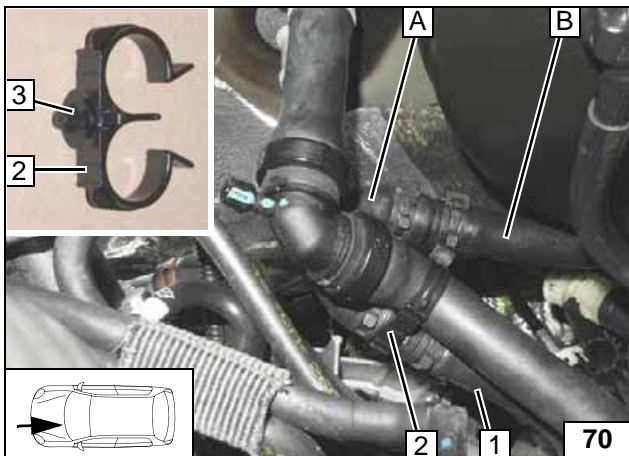
**From model year 2013**

Cut hose of engine outlet / heat exchanger inlet **2** at the marking.

- 1** Remove and discard spring clip
- 3** Remove and discard hose section of heat exchanger inlet.



**Cutting point**

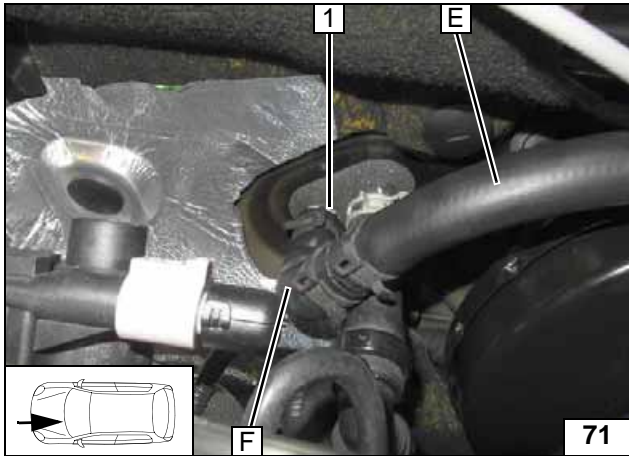


Remove retaining clip **3** from hose bracket **2**.

- 1** Hose on engine outlet
- 2** Install hose bracket (23x23)

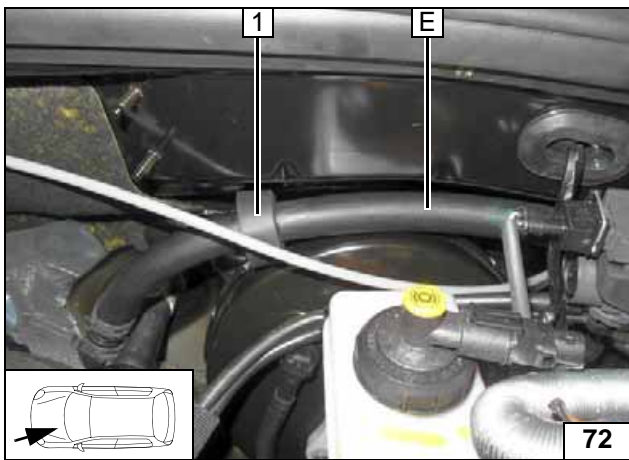


**Connecting engine outlet**



1 Connection piece of heat exchanger inlet

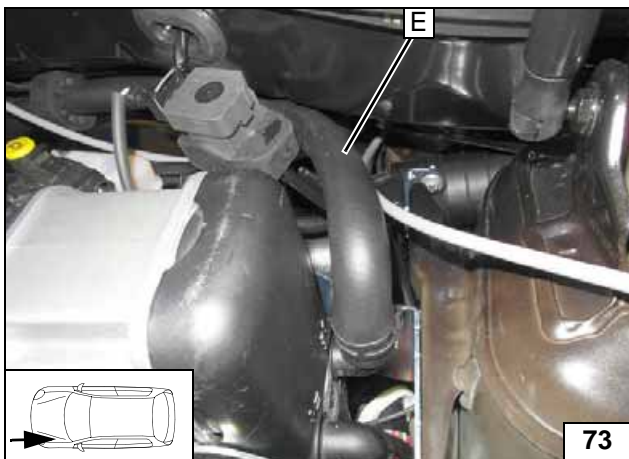
Conne-  
tion of heat  
exchanger  
inlet



Slide black (sw) rubber isolator 1 onto hose E and align.



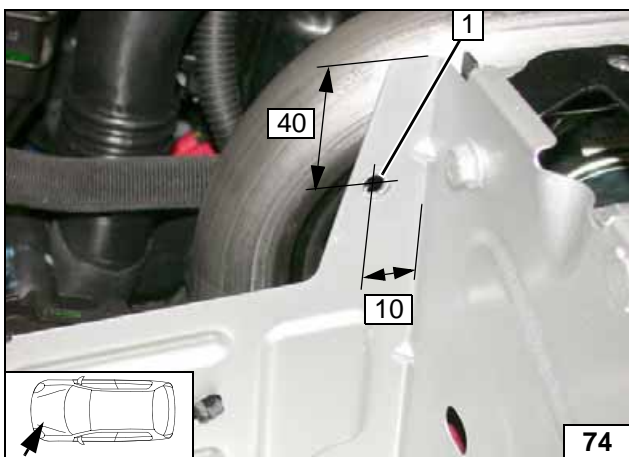
Routing in  
engine  
compart-  
ment



Align hoses. Ensure sufficient distance from neighbouring components.



Conne-  
tion of heat-  
er outlet



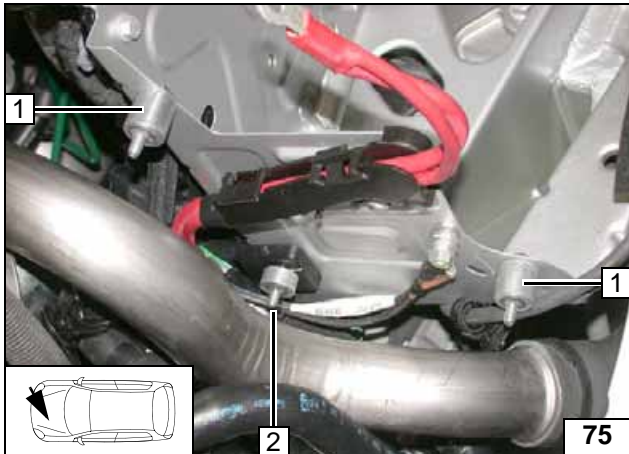
### Expansion Tank

All vehicles

- 1 7mm dia. hole

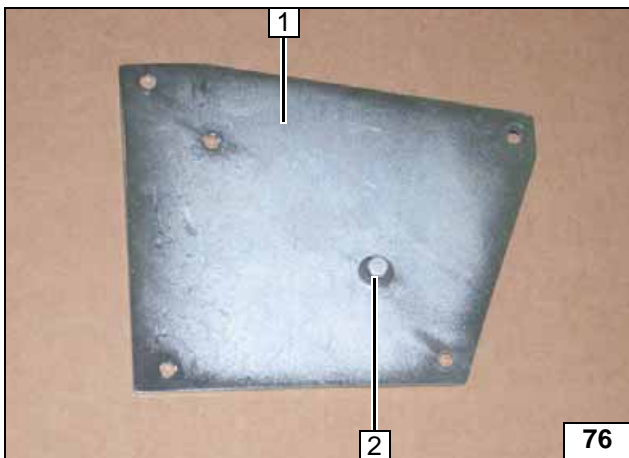
Hole in bat-  
tery carrier





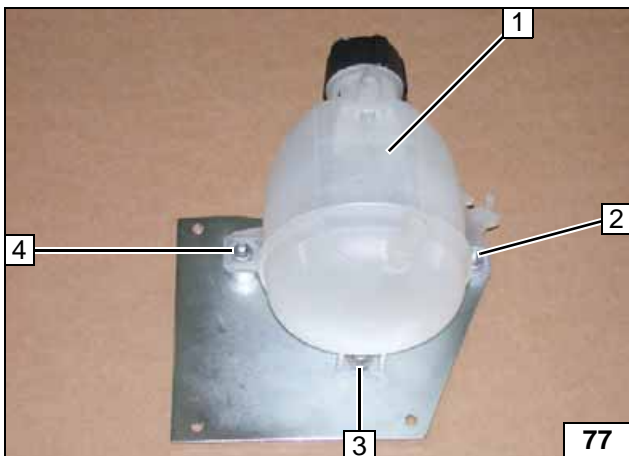
- 1 M6x30 bolt, large diameter washer, 20mm shim, pin lock [2x each]
- 2 M6x30 bolt, large diameter washer, 10mm shim, pin lock

Installing bolt



- 1 Bracket of expansion tank
- 2 Premount M6x16 bolt, large diameter washer, flanged nut loosely

Premounting bolt



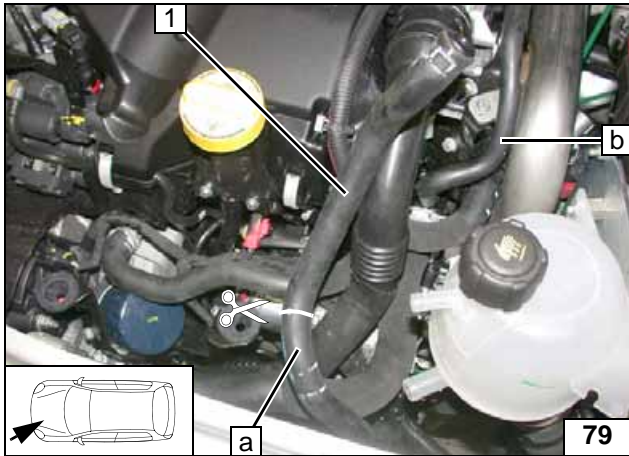
- 1 Expansion tank
- 2 M6x20 bolt, flanged nut
- 3 Tighten bolt
- 4 M6x25 bolt, 15mm shim, flanged nut

Premounting expansion tank



- 1 M6 Flanged nut [3x]

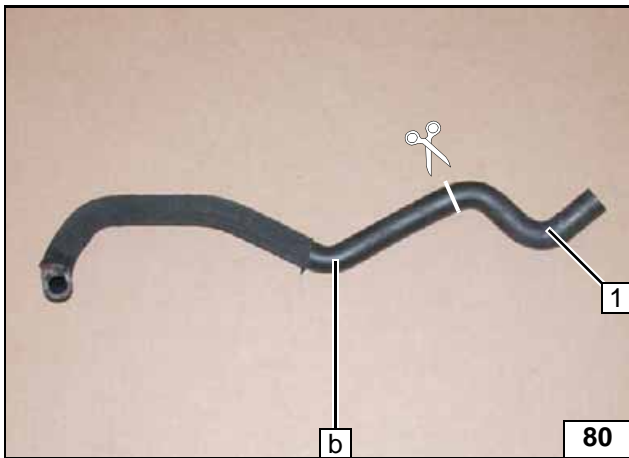
Installing expansion tank



Cut off hose of supply line to expansion tank **a** at the marking. Remove hose of expansion tank supply line **b**. Spring clips will be reused.

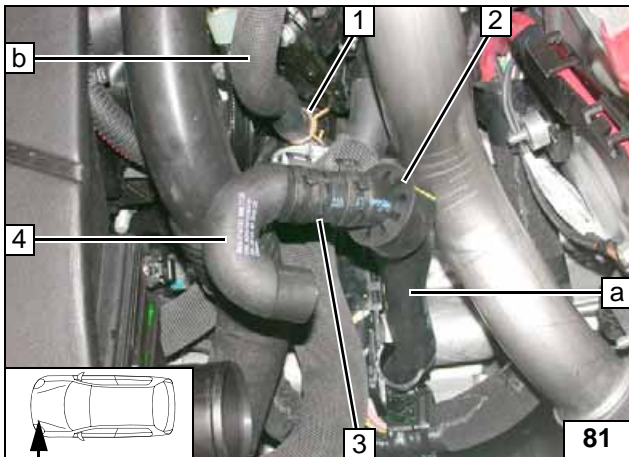
- 1 Discard section

**Cutting out hose**



- 1 Discard section
- b Hose of expansion tank supply line

**Cutting out hose**

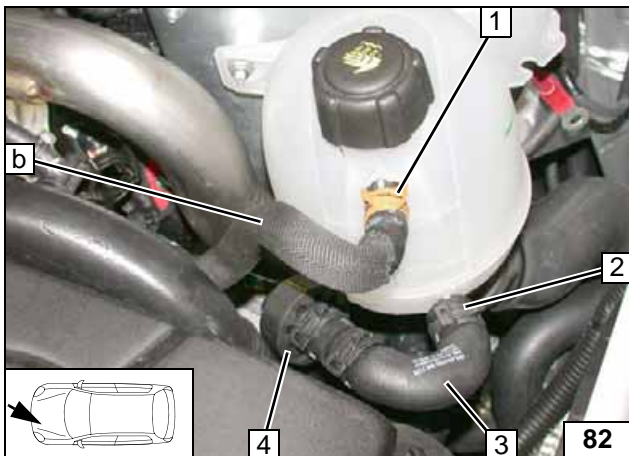


Expansion tank removed for better presentation.

Mount hose of expansion tank supply line **b** as shown. Slide black (sw) rubber isolator **2** onto hose of expansion tank supply line **a**.

- 1 Original vehicle spring clip
- 3 18x18mm connecting pipe, 25mm dia. spring clip [2x]
- 4 180°, 18mm dia. moulded hose

**Cutting out hose**



- 1 Original vehicle spring clip
- 2 25mm dia. spring clip
- 3 180° moulded hose
- 4 Position black (sw) rubber isolator

**Connect-  
ing expansion  
tank**



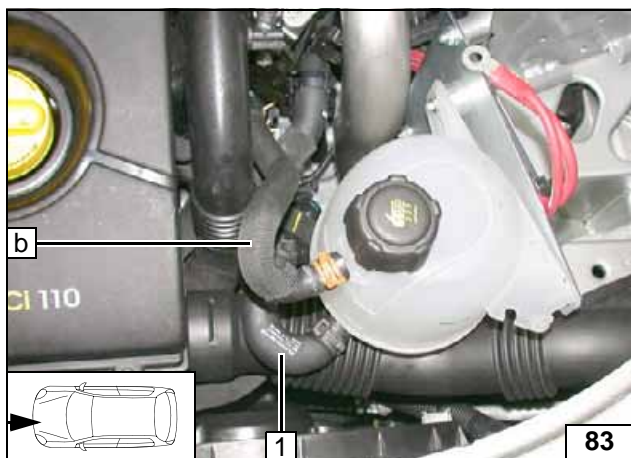
## Final Work

### WARNING!

Reassemble the disassembled components 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 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 signboard "Switch off parking heater before refuelling" in the area of the filler neck.**
- **For initial start-up and function checks, please see installation instructions**



Ensure sufficient distance from neighbouring components.

- 1** 180° moulded hose
- b** Hose of expansion tank supply line



### Aligning hoses

## Operating Instructions for End Customer

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

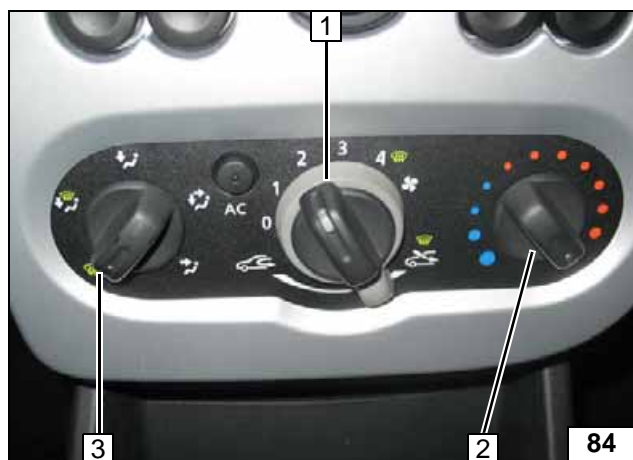
**Example:**

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

If the vehicle has passenger compartment monitoring this must be deactivated in addition to the vehicle settings for the heating operation.

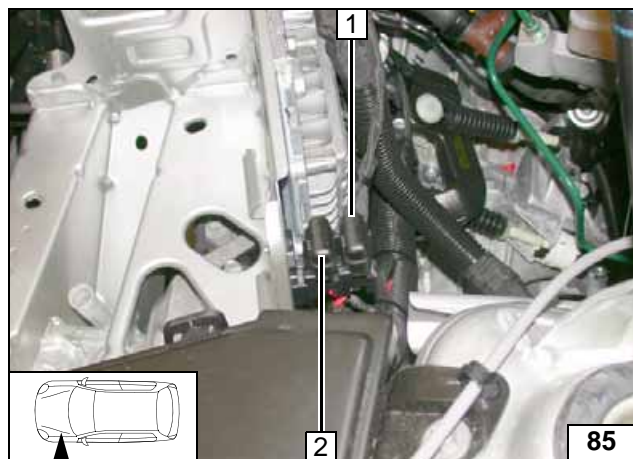
Instructions on deactivation can be taken from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



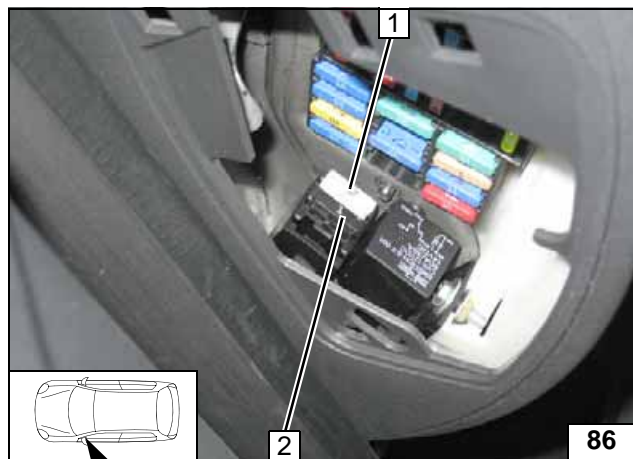
- 1 Set fan to level "1", or possibly "2"
- 2 Set temperature to "max."
- 3 Direct air outlet towards windscreen

A/C control panel



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

Fuses of engine compartment



- 1 25A fan fuse F4
- 2 1A fuse of heater control F3

Fuses of passenger compartment

