



Water Heater

Thermo Top Evo Parking Heater



Installation Documentation Volvo S90 / V90

Validity

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Volvo	S90 / V90	D4	From model year 2016	e4 * 2007 / 46 * 1067 * ...

Motorisation	Fuel	Emission standard	Transmission type	Output in kW	Displacement in cm ³	Engine code
2.0 D	Diesel	Euro 6	6-speed SG	140	1969	D4204 T14
2.0 D	Diesel	Euro 6	AG	140	1969	D4204 T14

SG = Manual transmission
AG = automatic transmission

Left-hand drive vehicle

Verified equipment variants: Two-zone automatic air-conditioning
LED main headlights
LED front fog lights
Headlight washer system
Automatic Start-Stop system

Not verified: Multi-zone - automatic air-conditioning

Total installation time: approx. 9 hours

Volvo S90 / V90

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Necessary Components

Description	Order No.:
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit for Volvo S90 / V90 2016 diesel	1325290B
Additionally, order from the vehicle manufacturer: fuel pump o-ring	Volvo ID.: 31380341
In case of Telestart, heater control, as well as indicator lamp in consultation with end customer	In accordance with price list
In case of installation of MultiControl CAR - MultiControl installation frame	9030077_

Webasto Individual Option

Description	Order No.:
Webasto Individual Auxiliary Heating additional kit	1320077_
Webasto Individual Quick additional kit	9030826_
Webasto Individual Select additional kit	9030828_

Installation Instructions

Arrange for the vehicle to be delivered with the tank only about ¼ full.

The installation location of the push button in case of Telestart or ThermoCall should be confirmed with the end customer.

Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

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 information (not complete)

1.1 Installation and repair



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



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



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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

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

The initial start-up is to be executed with the Webasto Thermo Test Diagnosis.

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

2 Statutory regulations governing installation

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

Note

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled.

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

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

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

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

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to Volvo S90 / V90 diesel vehicles - for validity, see page 1 - from model year 2016 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this 'installation documentation'.

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

Technical Information

Special Tools

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

Dimensions

- All dimensions are in mm.

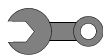
Tightening torque values

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

Explanatory Notes on Document

To provide you with a quick overview of the individual working steps, you will find an identification mark on the outside top right corner of the page in question.

Mechanics



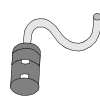
Electrics



Coolant Circuit



Combustion Air



Fuel



Exhaust Gas



Software



Special features are highlighted using the following symbols:

Specific risk of damage to components.



Specific risk due to electrical voltage.



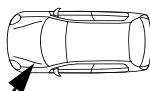
Specific risk of fire or explosion.



Reference to a special technical feature.



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



Reference to the manufacturer's vehicle-specific documents



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



Reference to general installation instructions of Webasto components.



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



Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.

Warning:



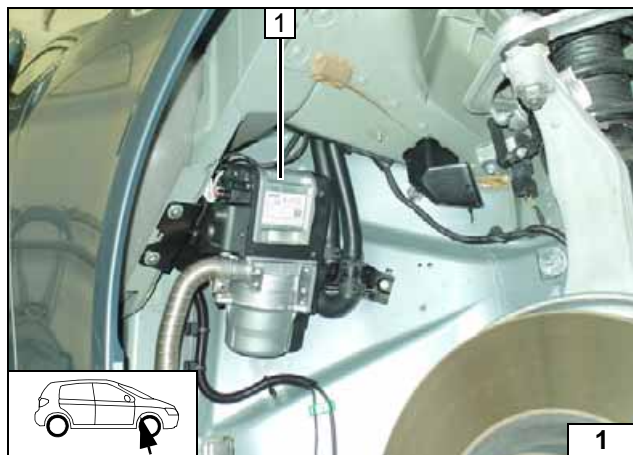
- **For the removal of the coolant reservoir cap, it is necessary to set the A/C control to recirculating air mode with the ignition switched on before disconnecting the battery.**

- Disconnect and completely remove the battery together with the carrier in the engine compartment.
- Remove the windscreen wipers.
- Remove the coolant reservoir cap.
- Remove the windscreen wiper motor.
- Remove the air intake duct.
- Remove the coolant expansion tank.
- Remove the front wheel on the right side.
- Remove the wheel well trim on the right side.
- Detach the underbody trim on the right side.
- Remove the fuel tank underbody trim on the right side (kick guard).
- Remove the rear bench seat (see installation instructions).
- Remove the instrument panel trim on the left and right side.
- Remove the centre A-pillar trim on the left and right side.
- Remove the footwell trim on the left and right side.
- Remove the right entrance trim.
- Remove the centre tunnel trim on the front right and left.
- Fold back the carpet on the right.
- 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) visibly in the appropriate place in the engine compartment.

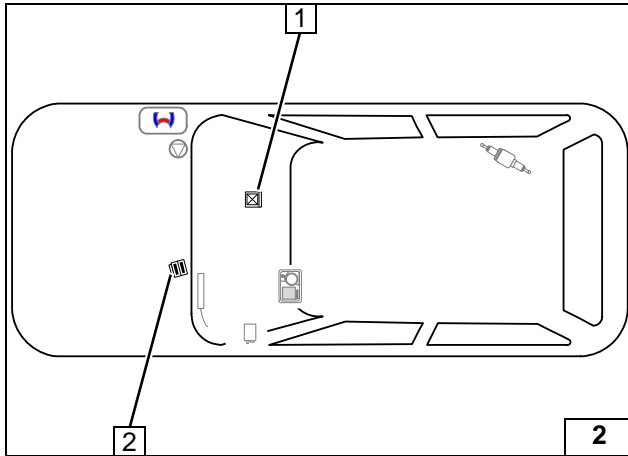
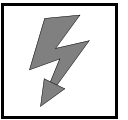


Heater Installation Location

- 1 Heater



Installation location

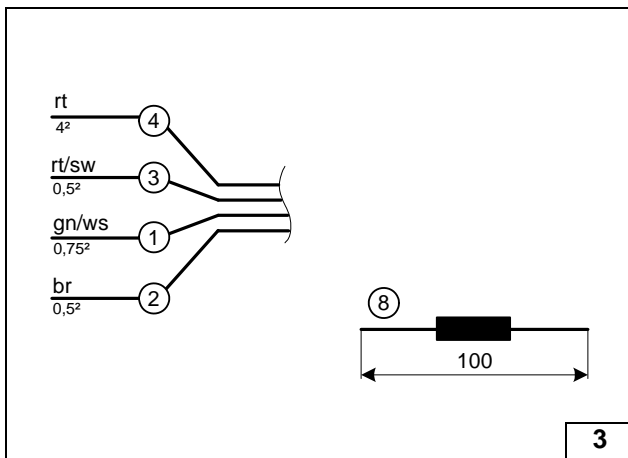


Preparing Electrical System

- 1 CCL-Gateway
- 2 Engine compartment fuse holder



Installation overview

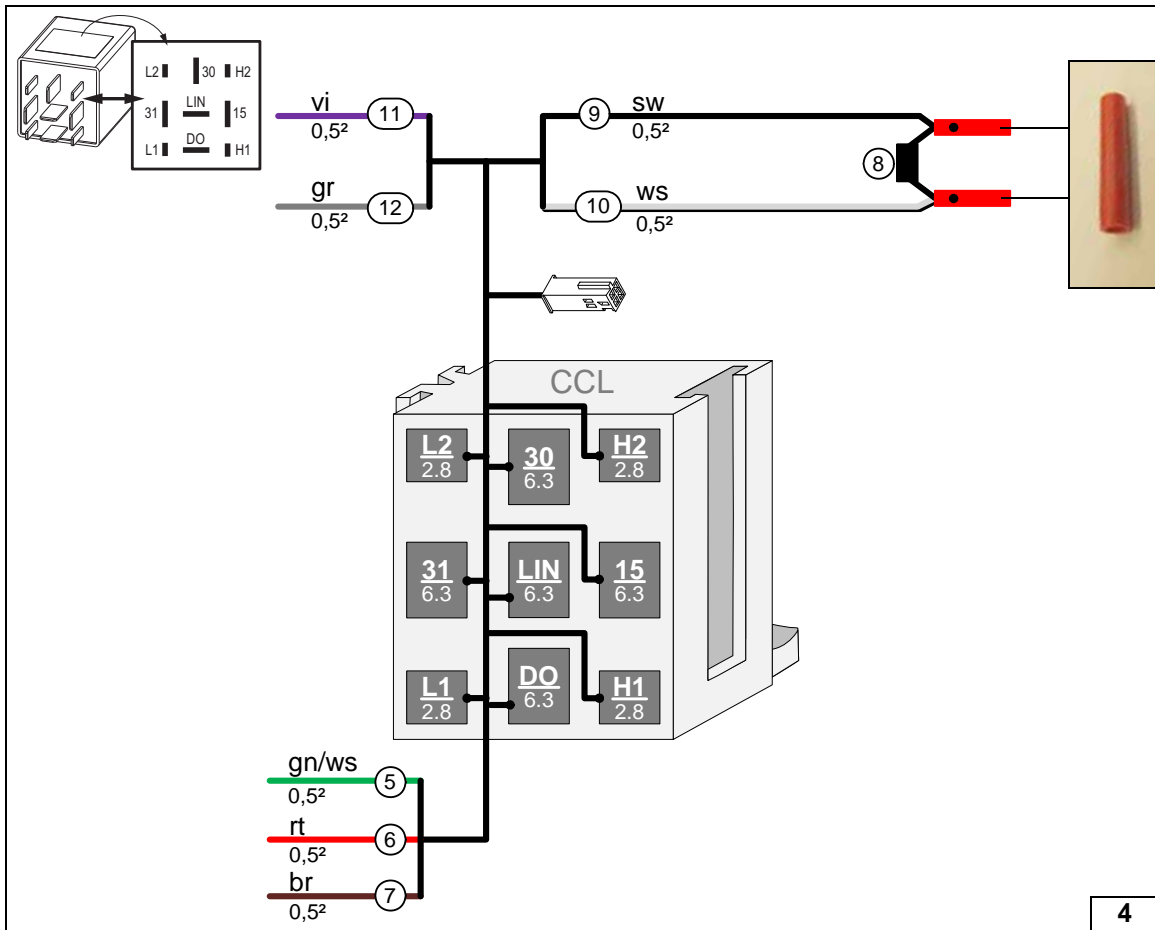


Wire sections retain their numbering in the entire document.

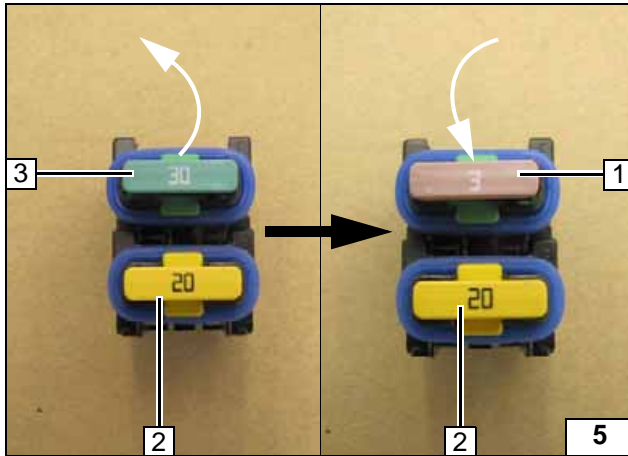
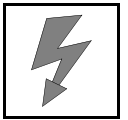
- ① Green/white (gn/ws) wire of heater wiring harness from X1/5
- ② Brown (br) earth wire of heater wiring harness from 31
- ③ Red/black (rt/sw) wire of heater wiring harness from X10
- ④ Red (rt) wire of heater wiring harness from F2
- ⑧ Resistor



Assigning wiring harness



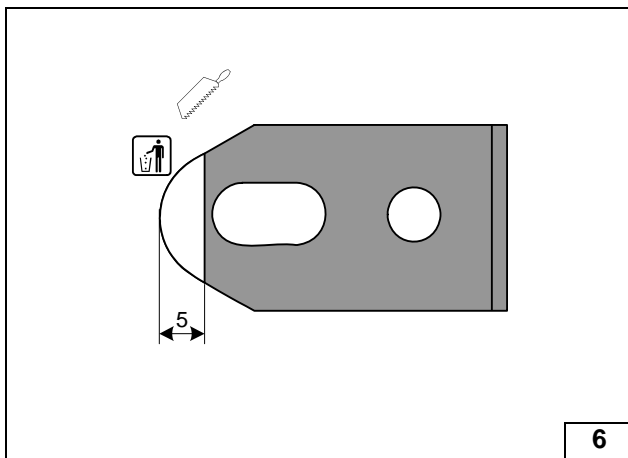
Connecting resistor ⑧ to CCL-Gateway wiring harness



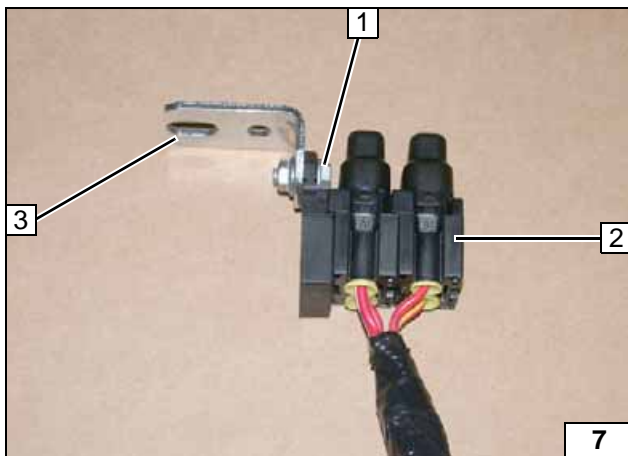
Replace passenger compartment 30A main fuse F2 **3** with 3A fuse **1**.

2 20A heater fuse F1

Preparing engine compartment fuses

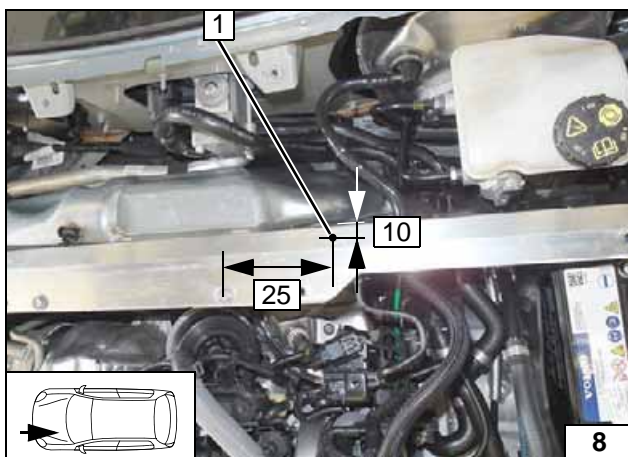


Shortening angle bracket



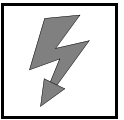
- 1** M5x16 bolt, large diameter washer [2x], nut
- 2** Engine compartment fuse holder
- 3** Angle bracket

Preparing engine compartment fuse holder



1 5mm dia. hole

Preparing engine compartment fuse holder installation

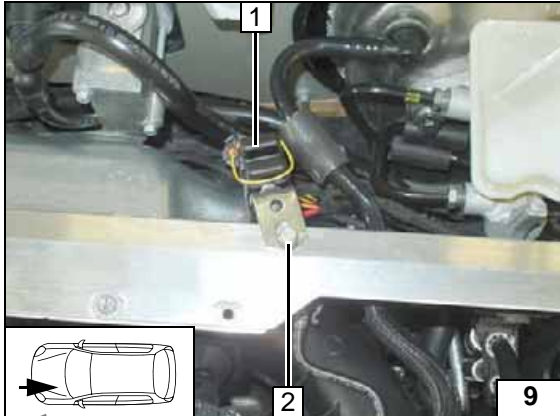


Electrical System



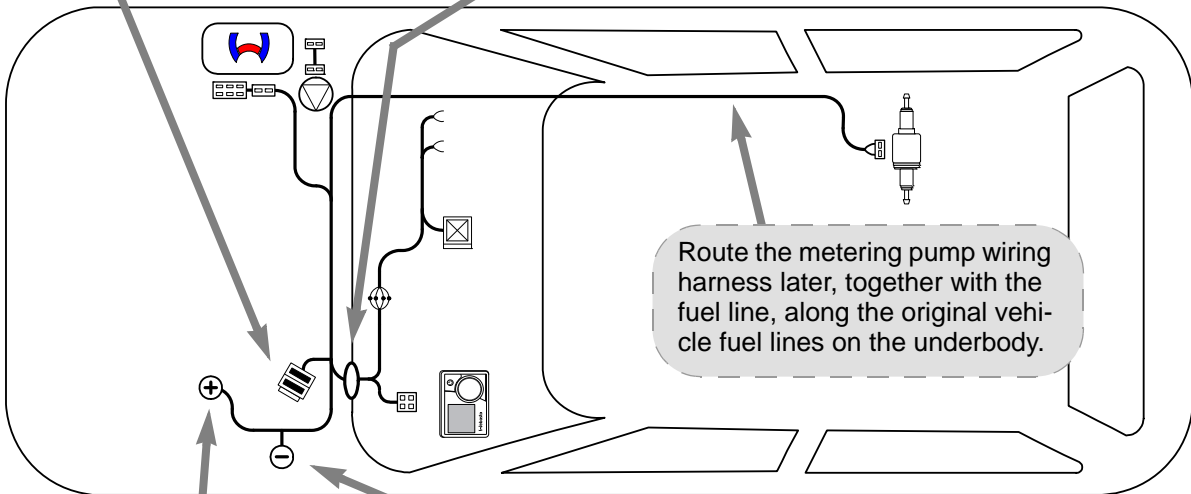
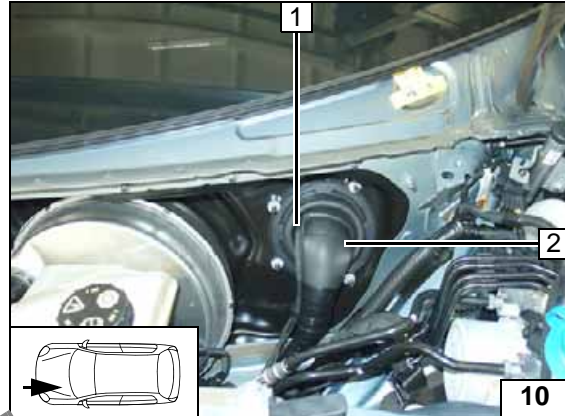
Engine compartment fuse holder

- 1 Fuses F1-2
- 2 5.5x13 self-tapping screw

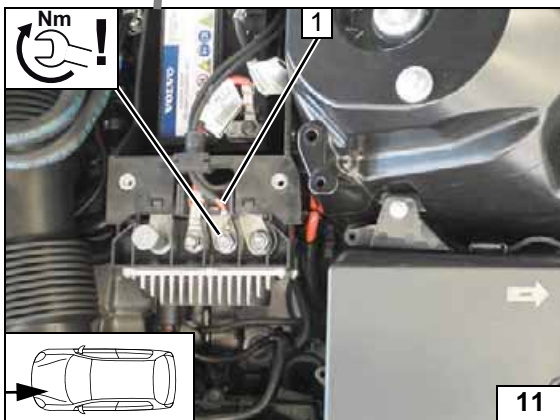


Wiring harness routing

- 1 Heater wiring harnesses, heater control
- 2 Protective rubber plug

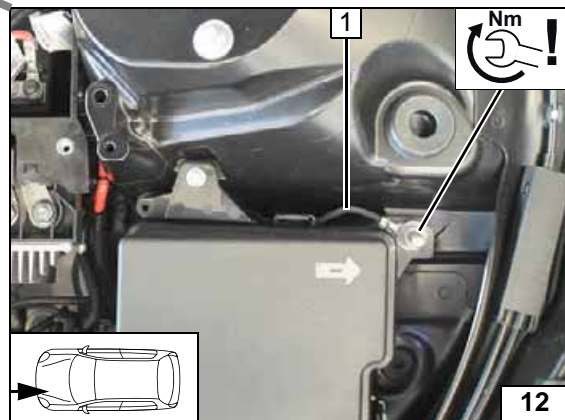


Wiring harness routing diagram



Positive wire

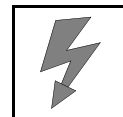
- 1 Positive wire on original vehicle positive distributor



Earth wire

- 1 Earth wire on original vehicle earth support point

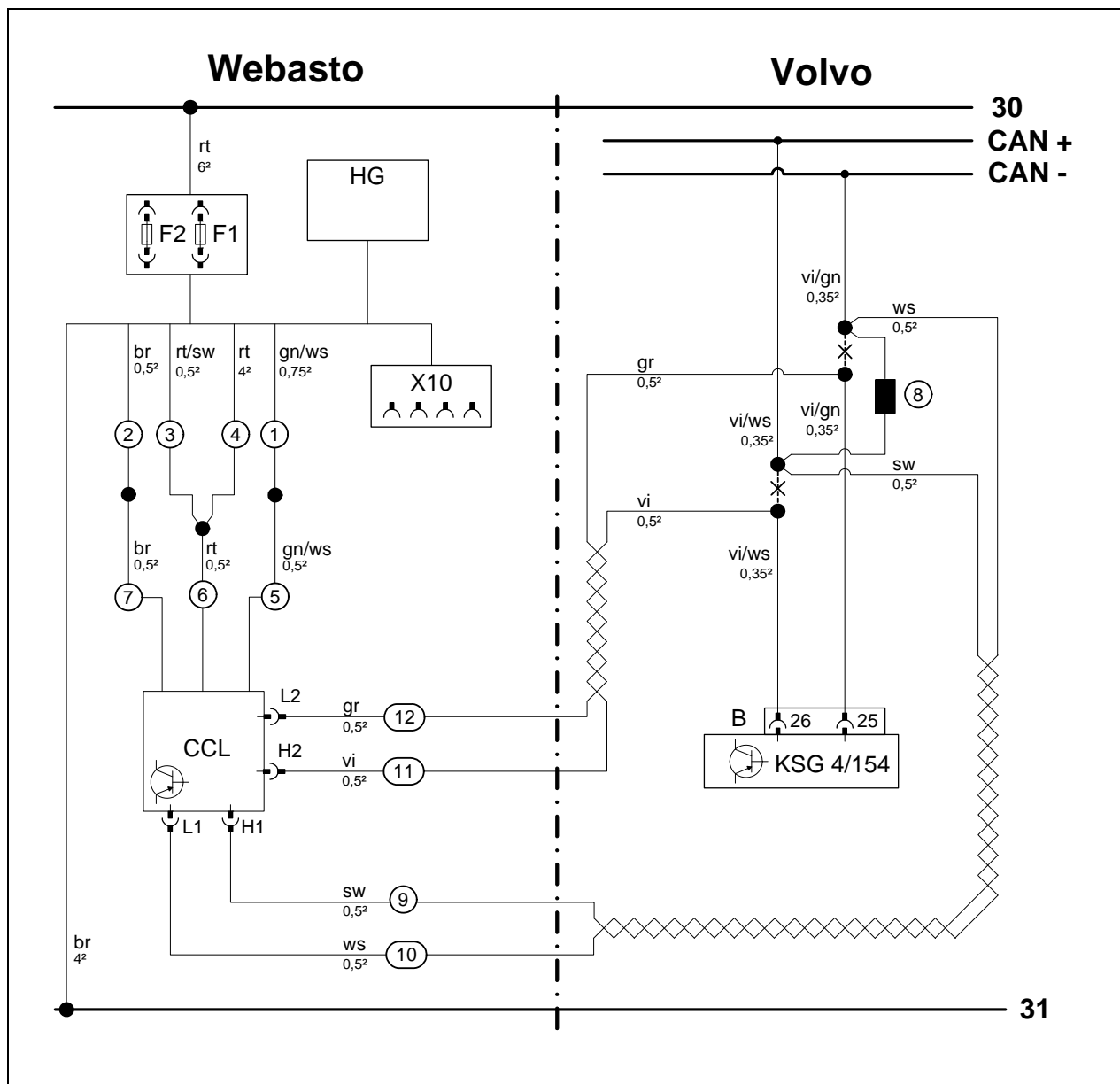




Fan Controller for Automatic Air-Conditioning

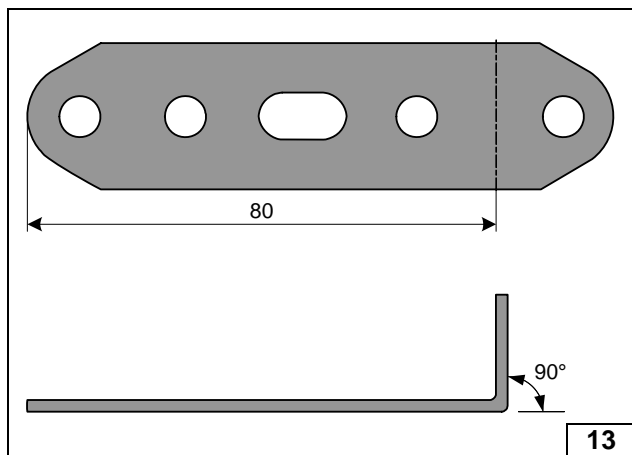
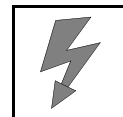


System wiring diagram

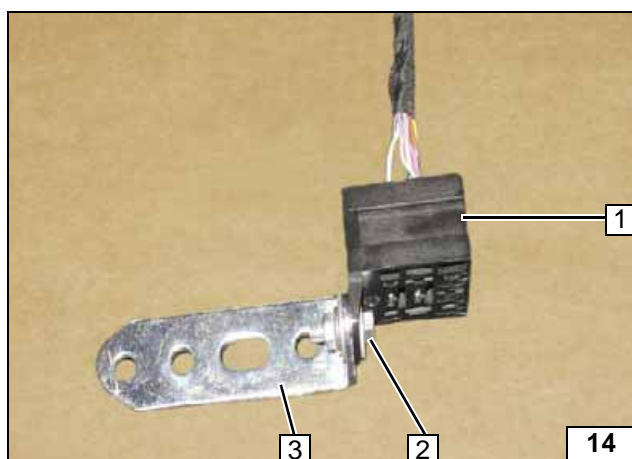


Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	KSG 4/154	A/C control unit	rt	red
F1	20A fuse	B	28-pin connector of KSG	sw	black
F2	3A fuse			gn	green
X10	4-pin socket of heater control			ws	white
CCL	CCL- Gateway			br	brown
				vi	violet
				gr	grey
				X	Cutting point
				Wiring colours may vary.	

Legend

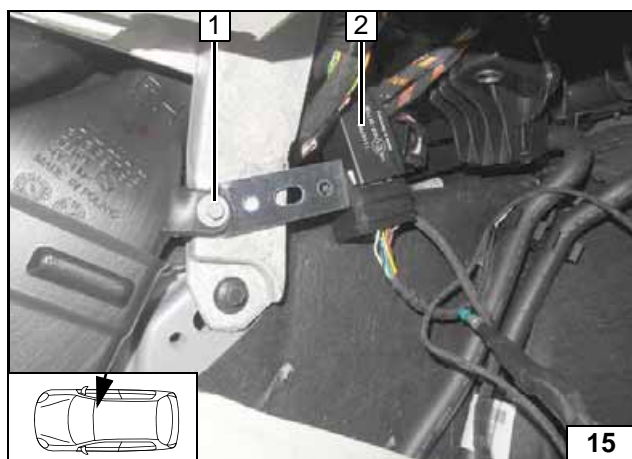


**Bending
perforated
bracket**



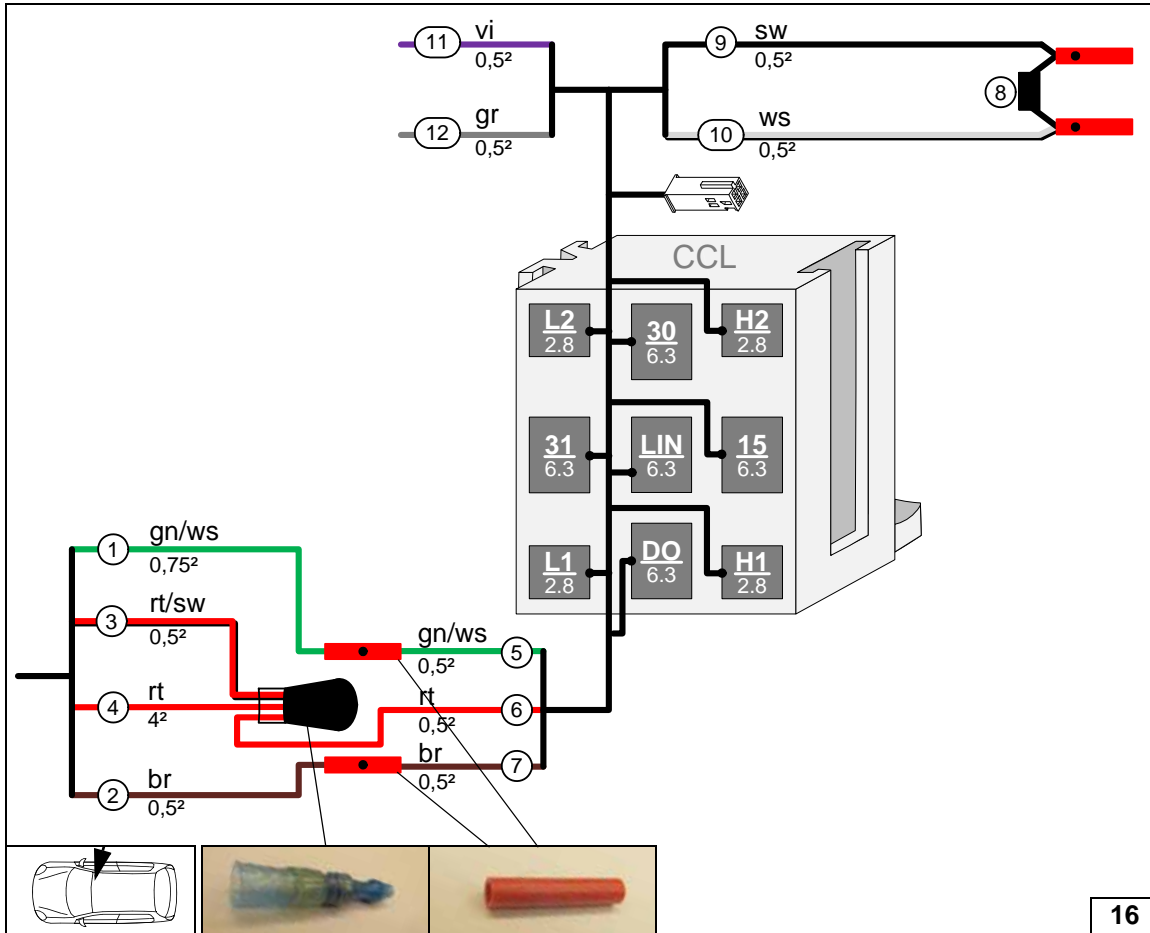
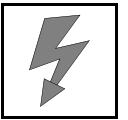
- 1 CCL-Gateway socket
- 2 M5x16 bolt, large diameter washer [2x], nut
- 3 Perforated bracket

**Installing
angle
bracket**



- 1 Original vehicle bolt
- 2 CCL-Gateway

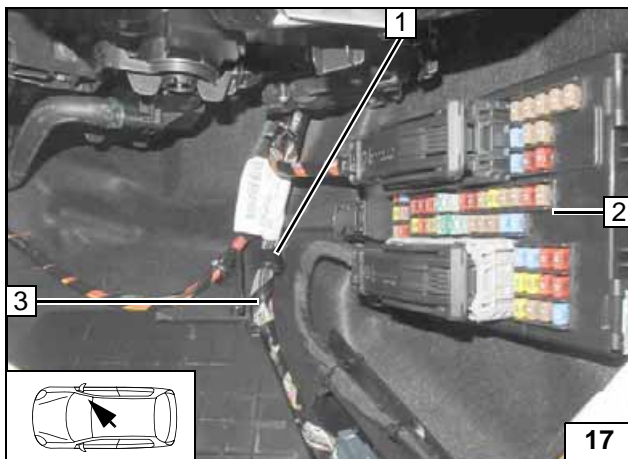
**Installing
CCL-Gateway**



Connecting heater wiring harness and CCL Gateway wires



16

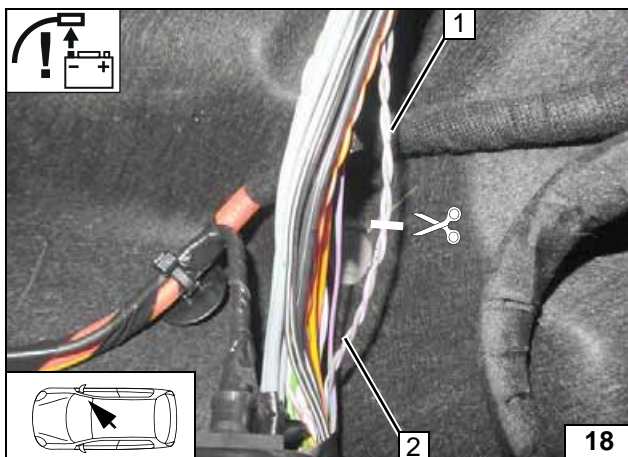


Remove insulating tape and wiring harness fastening 1 from wiring harness 3.

2 Fuse box without cover



Exposing CAN wire

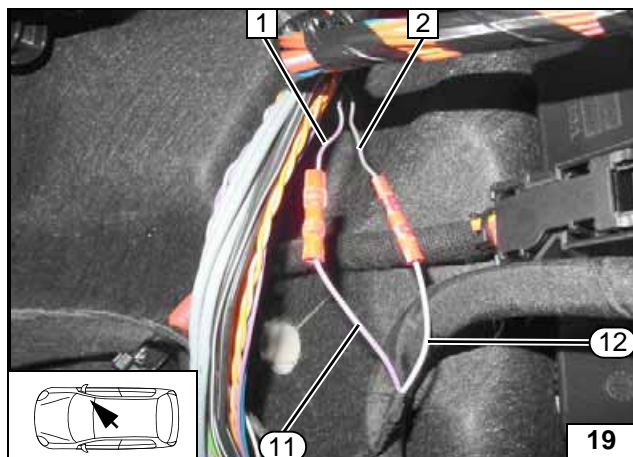
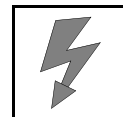


Free the twisted violet/white (vi/ws) and violet/green (vi/gn) CAN wires and cut as shown.

1 Towards A/C control unit
2 Towards vehicle CAN node

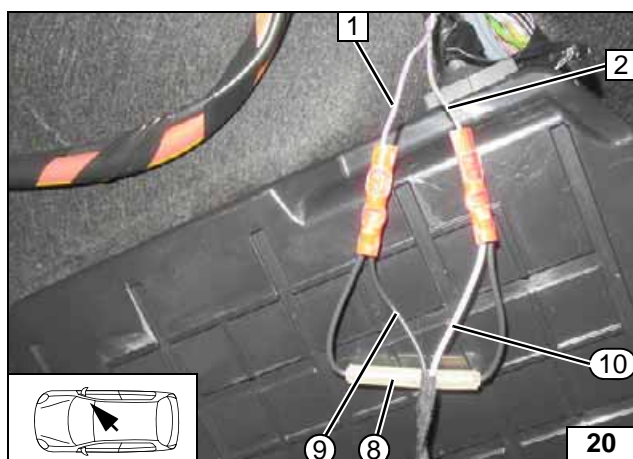


Cutting CAN wire



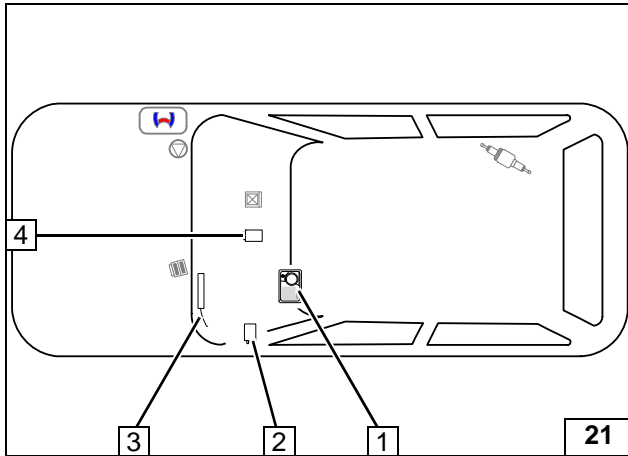
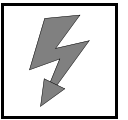
- 1 Violet/white (vi/ws) wire of connector B from KSG / pin 26
- 2 Violet/green (vi/gn) wire of connector B from KSG / pin 25
- ⑪ Violet (vi) wire of CCL Gateway/H2
- ⑫ Grey (gr) wire of CCL Gateway/L2

**Con-
nection to-
wards A/C
control unit**



- 1 Violet/white (vi/ws) wire of CAN+
- 2 Violet/green (vi/gn) wire of CAN-
- ⑧ Resistor
- ⑨ Black (sw) wire of CCL Gateway/H1
- ⑩ White (ws) wire of CCL Gateway/L1

**Con-
nection of vehi-
cle CAN
node**

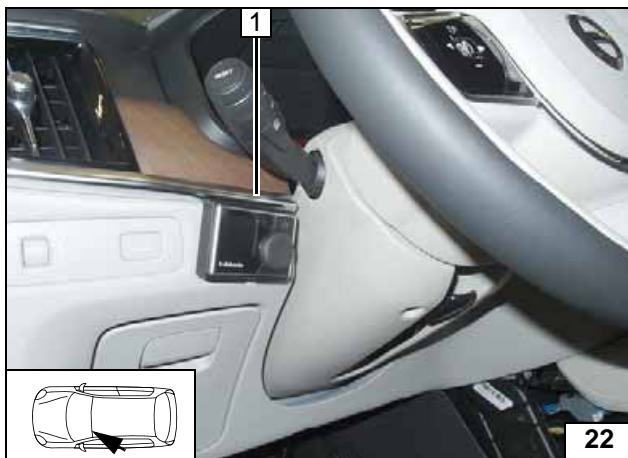


Heater Control Installation

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



Installation overview



MultiControl CAR Option

- 1 Installation frame



Installing MultiControl CAR

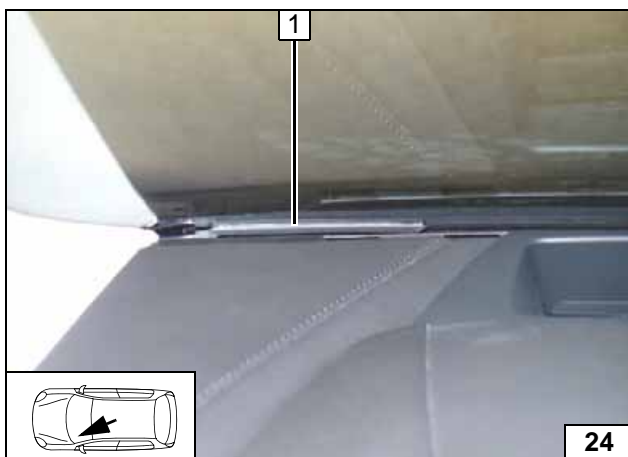


Remote Option (Telestart)

- 1 Receiver
- 2 5.5mm hole; M5x16 bolt, large diameter washer, flanged nut

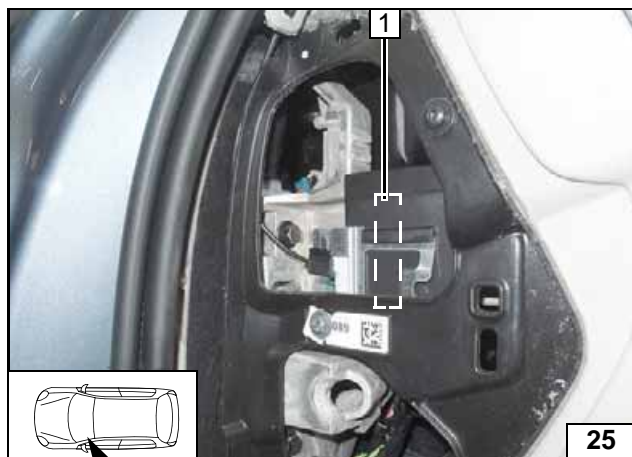
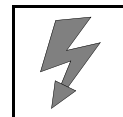


Installing receiver



- 1 Aerial

Installing aerial

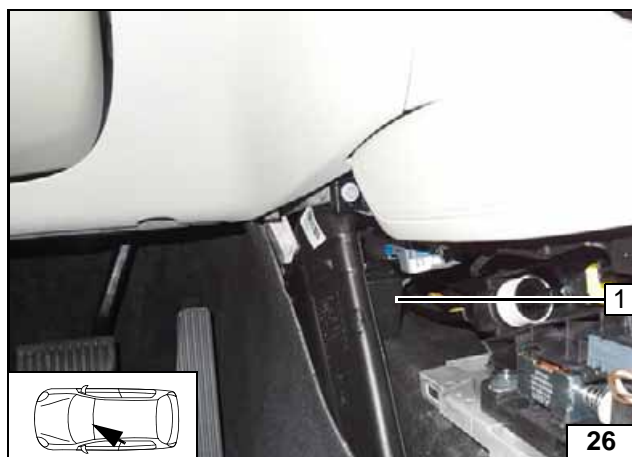


Temperature sensor T100 HTM

Fasten temperature sensor 1 on the back of the receiver using double-sided adhesive tape.



Installing temperature sensor

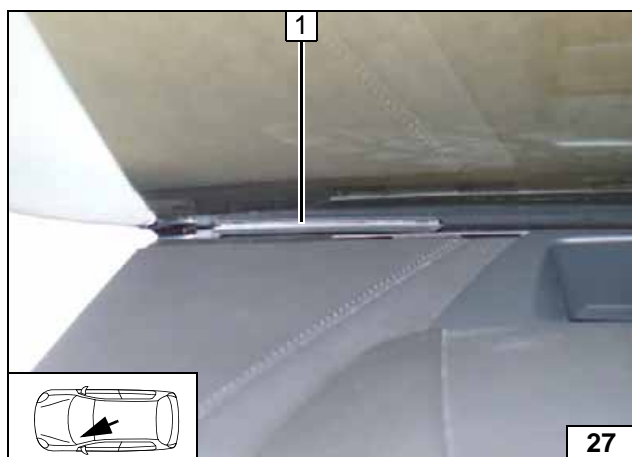


ThermoCall Option

Fasten receiver 1 with double-sided adhesive tape.

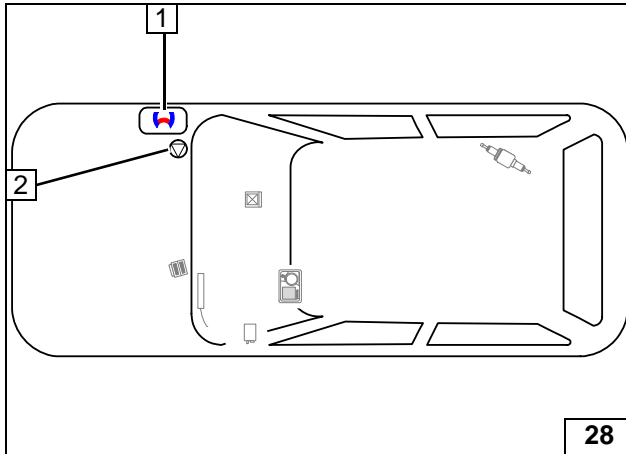
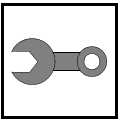


Installing receiver



1 Aerial (optional)

Installing aerial

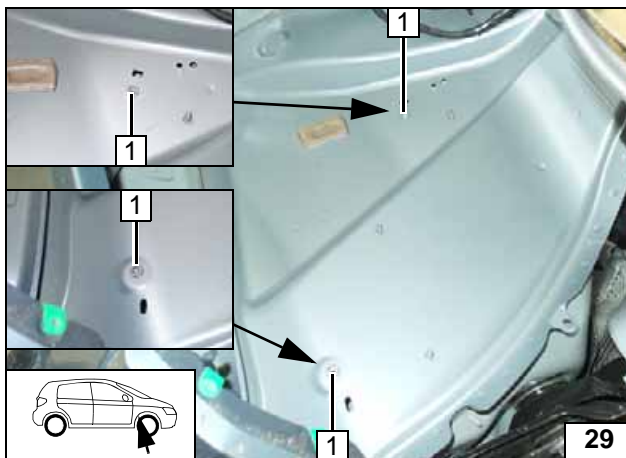


Preparing Installation Location

- 1 Heater
- 2 Circulating pump

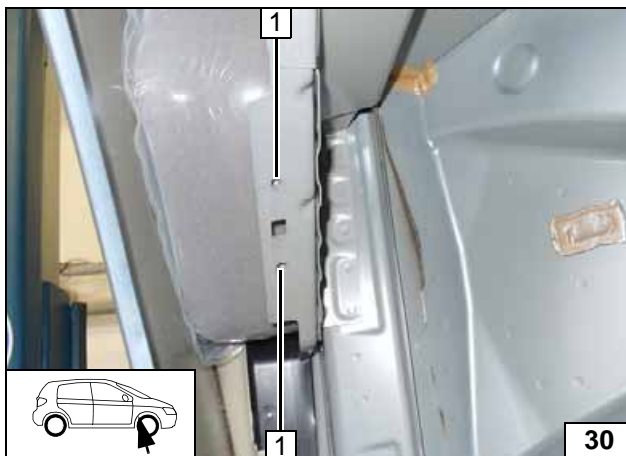


Installation overview



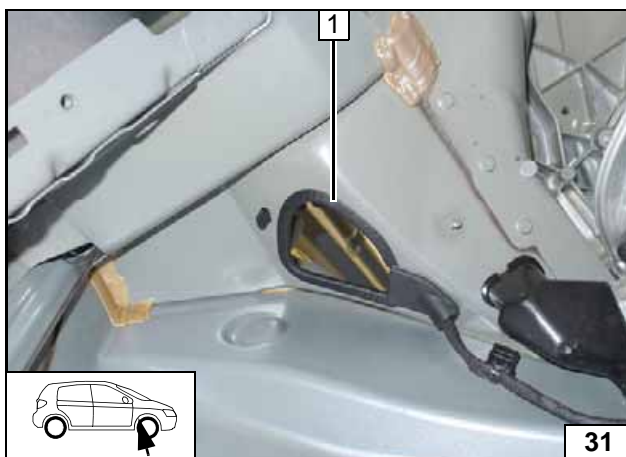
- 1 Rivet nuts [2x]

Inserting and tightening rivet nuts



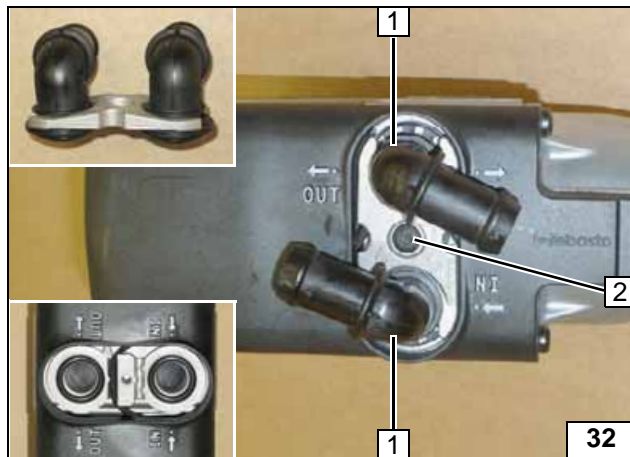
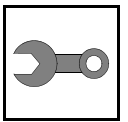
- 1 Original vehicle hole, M6 thread, [2x each]

Tapping thread



- 1 230mm narrow edge protection

Installing edge protection

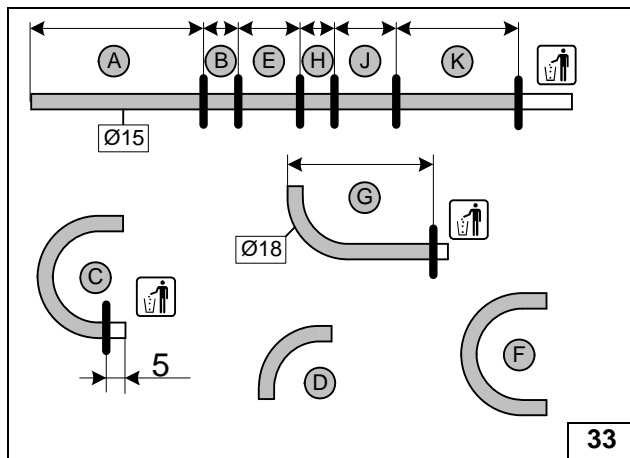


Preparing Heater

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

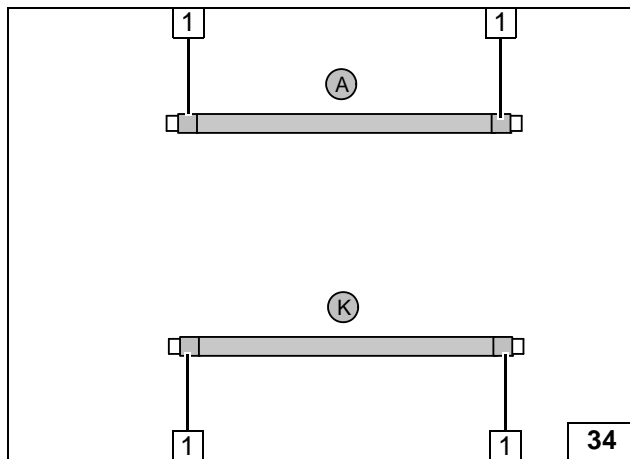


Installing water connection piece



- A = 920
- B = 70
- C = 180°, 18mm dia.
- D = 90°, 18mm dia.
- E = 200
- F = 180°, 18mm dia.
- G = 200
- H = 60
- J = 110
- K = 540

Cutting hoses to length



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

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



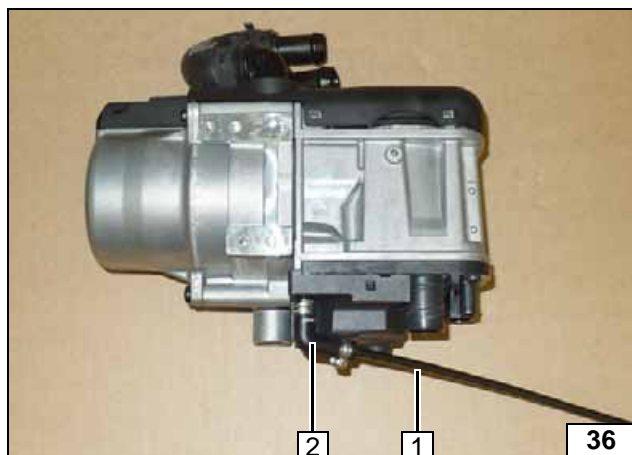
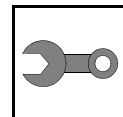
Preparing hoses



All 25mm dia. spring clips.

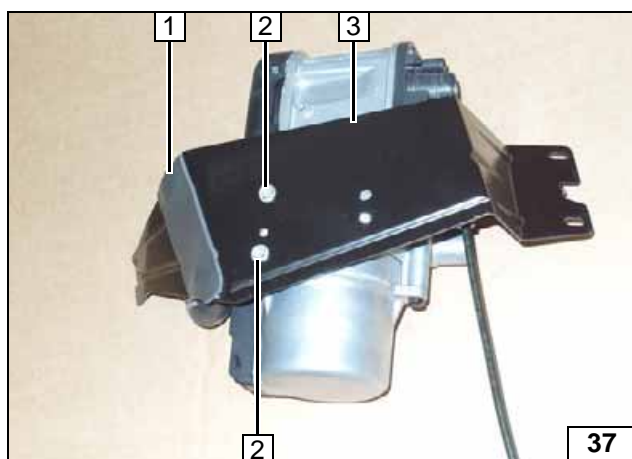


Premounting hose F



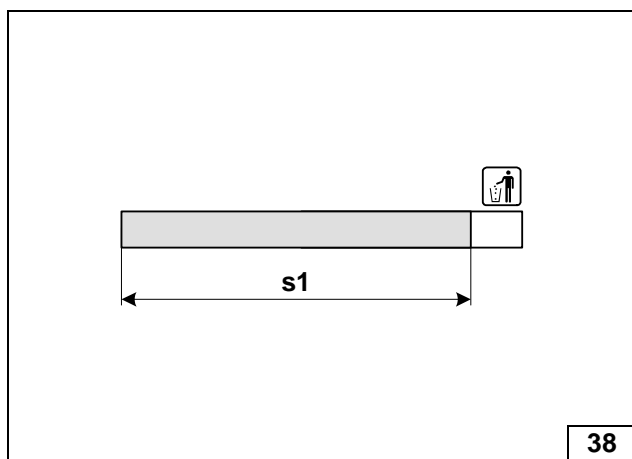
- 1 Fuel line
- 2 90° moulded hose, 10 mm dia. clamp [2x]

Premounting fuel line



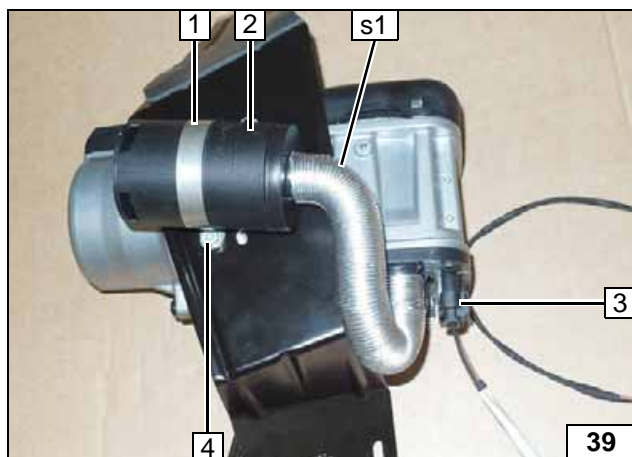
- 1 Self-adhesive foam
- 2 5x13 self-tapping bolt [2x]
- 3 Bracket

Installing bracket



s1 = 170

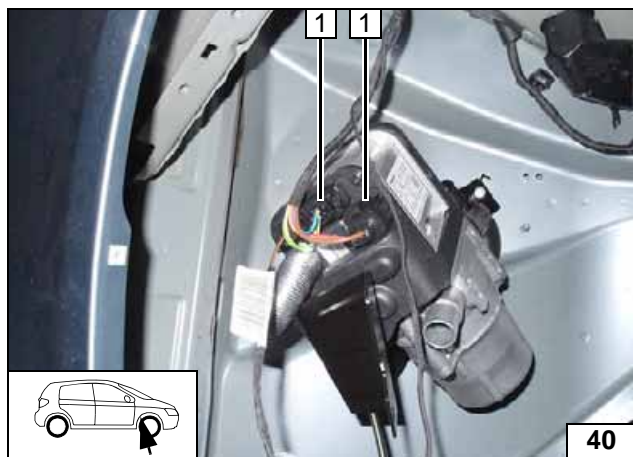
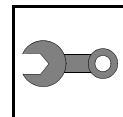
Cutting combustion air pipe to length



- 1 51 mm dia. clamp
- 2 Combustion air silencer
- 3 Connector of circulating pump wiring harness
- 4 5x13 self-tapping bolt

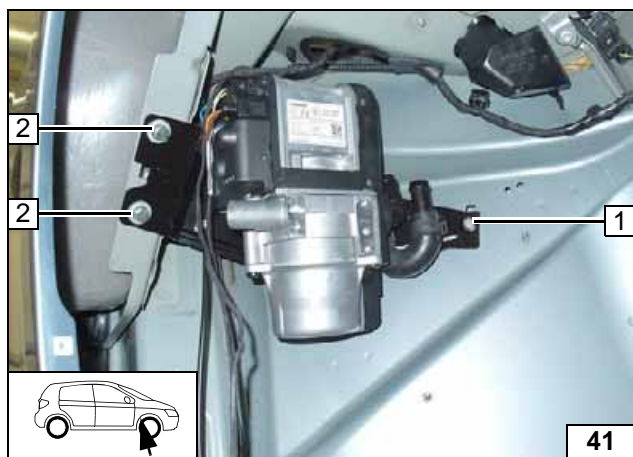


Premounting combustion air silencer and circulating pump wiring harness



- 1 Heater wiring harness connector [2x]

Installing wiring harness

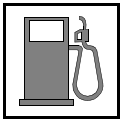


Installing Heater

- 1 M6x20 bolt, spring lockwasher
- 2 M6x20 bolt, spring lockwasher, large diameter washer [2x]



Installing heater



Fuel



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

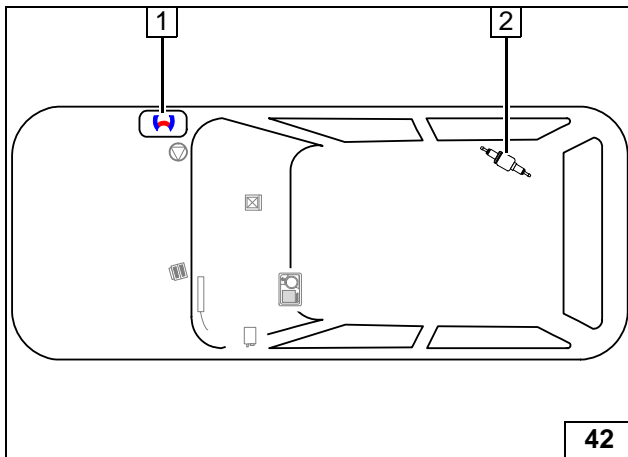
Catch any fuel running off in an appropriate container.

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



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

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

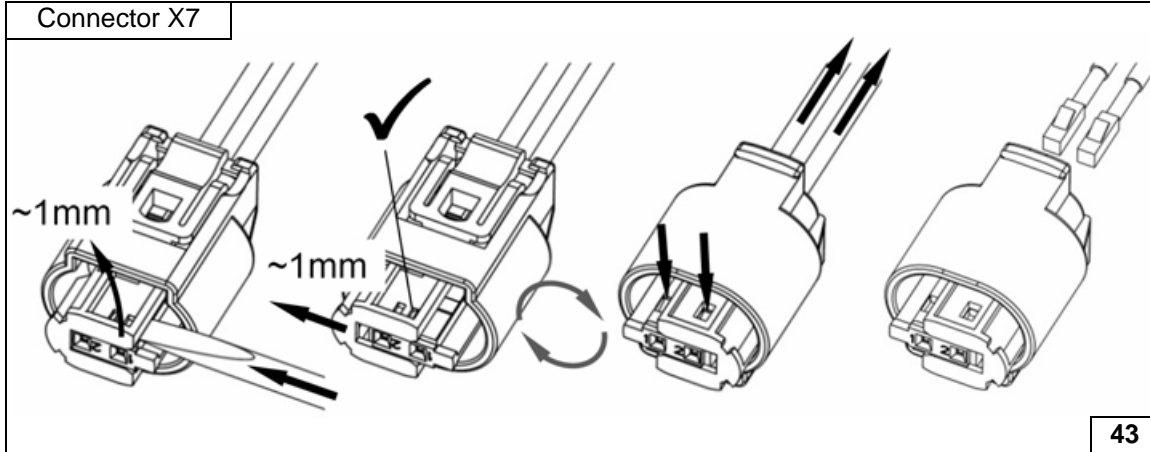


- 1 Heater
- 2 Metering pump

42

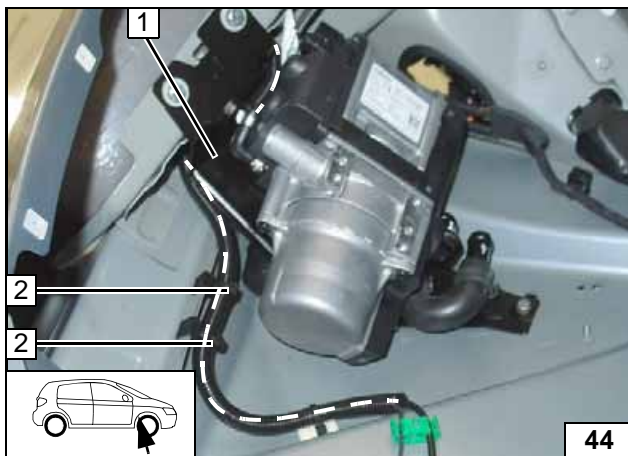


Installation overview



Dismantling metering pump connector

43



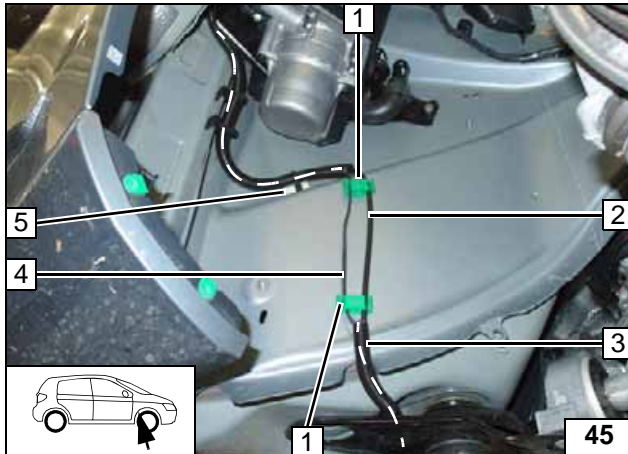
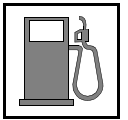
Pull fuel line and metering pump wiring harness into 450mm long corrugated tube 1 and route below the bracket as shown.

- 2 Edge clip cable tie [2x]



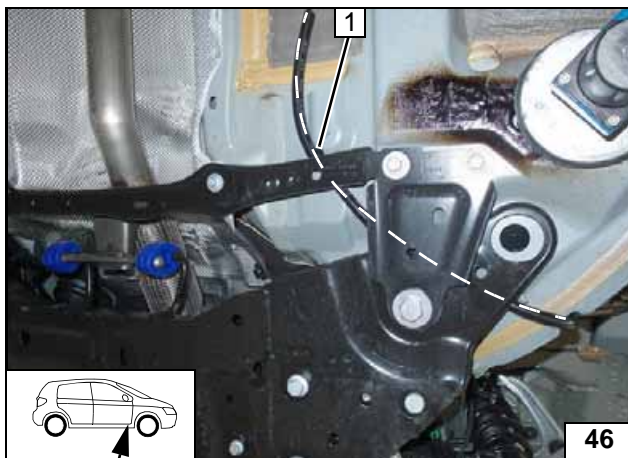
Connecting heater

44



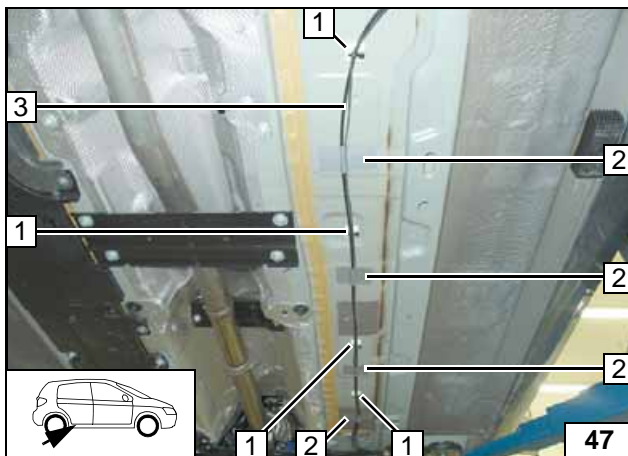
- 1 Fuel line clip [2x]
- 2 Fuel line
- 3 600mm long corrugated tube
- 4 Metering pump wiring harness
- 5 Self-adhesive socket with cable tie

Routing lines



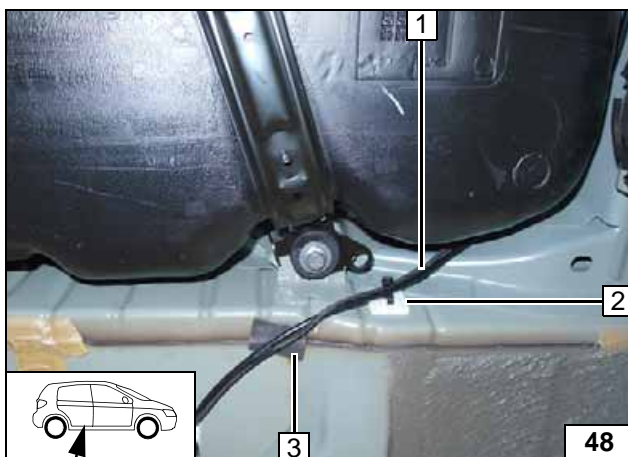
- 1 Cable tie

Routing lines



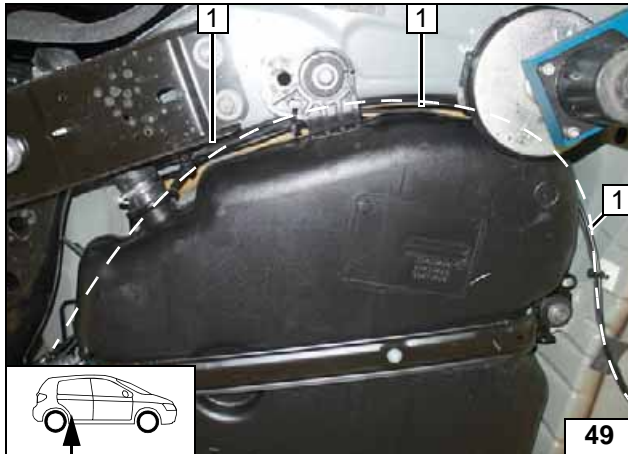
- 1 Self-adhesive socket with cable tie [4x]
- 2 Tape [4x]
- 3 Fuel line and metering pump wiring harness

Routing lines



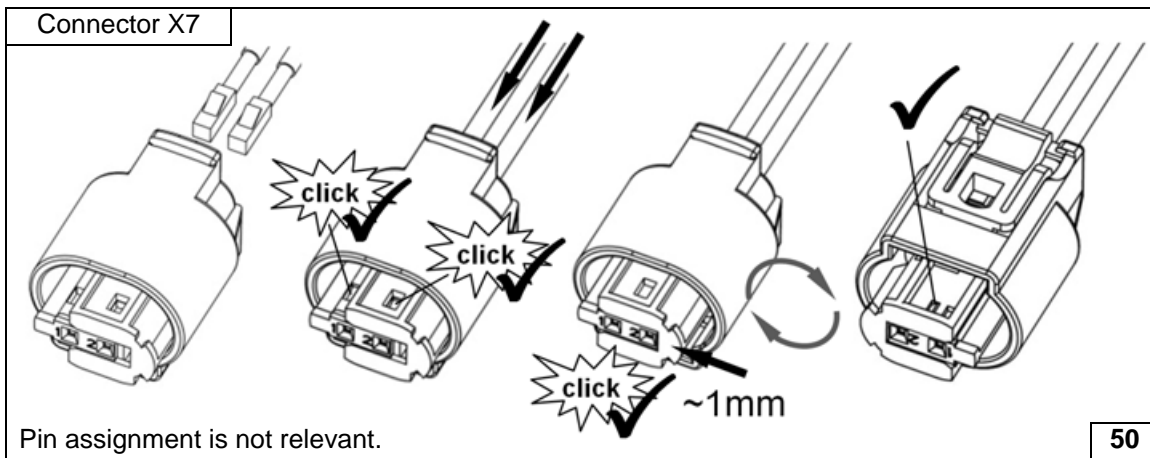
- 1 Fuel line and metering pump wiring harness
- 2 Self-adhesive socket with cable tie
- 3 Self-adhesive foam

Routing lines

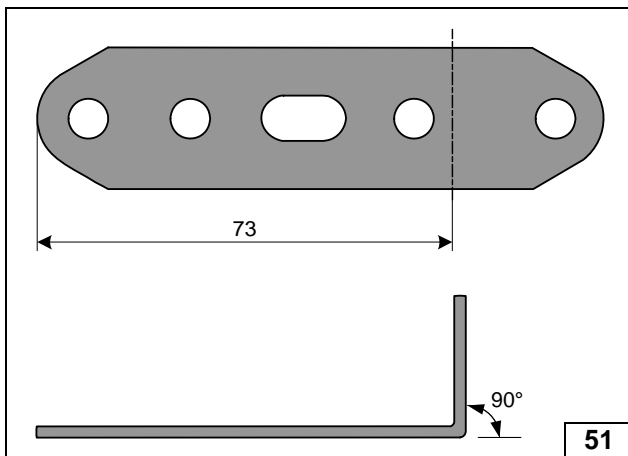


- 1 Fasten fuel line and metering pump wiring harness using cable ties

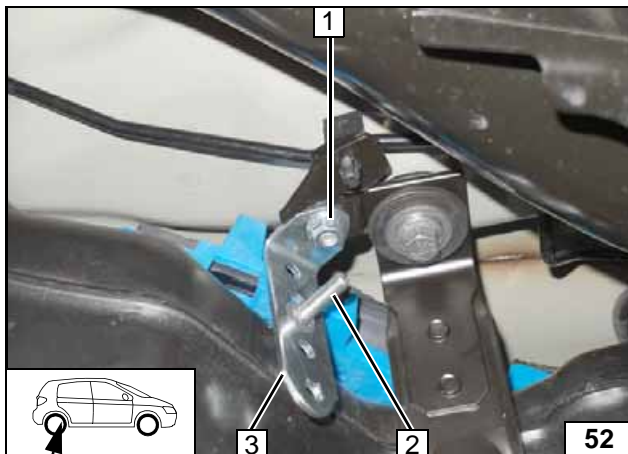
Routing lines



Completing metering pump connector

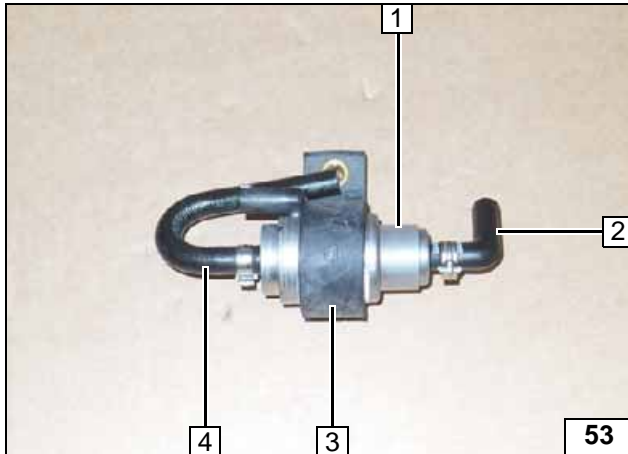
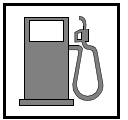


Bending perforated bracket



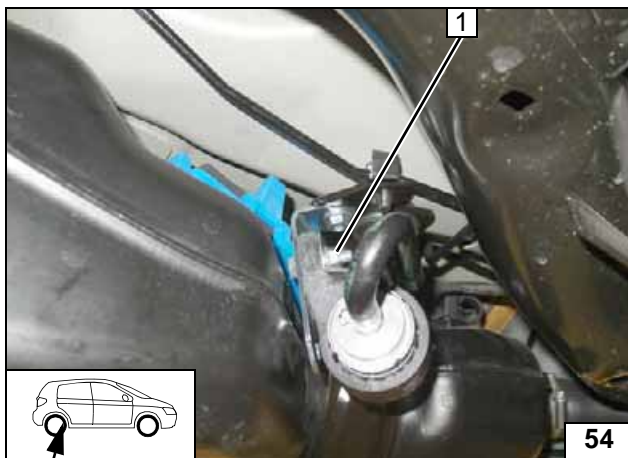
- 1 M6x16 bolt, large diameter washer, original vehicle hole, flanged nut
- 2 M6x25 bolt, lock washer
- 3 Perforated bracket

Installing perforated bracket



- 1 Metering pump
- 2 90° moulded hose, 10 mm dia. clamp
- 3 Metering pump mount
- 4 180° moulded hose, 10 mm dia. clamp

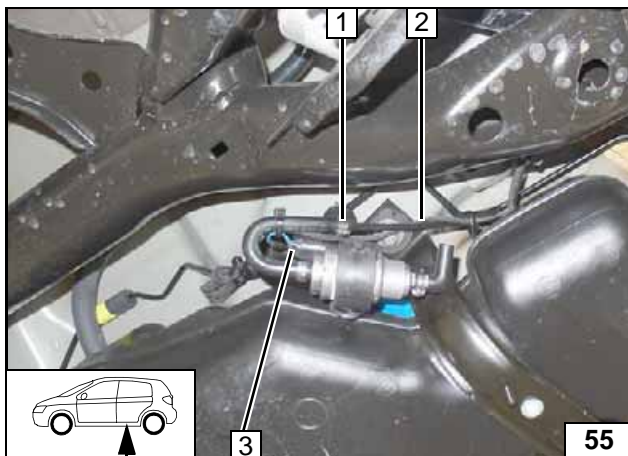
Premounting metering pump



- 1 Support angle bracket, flanged nut



Installing metering pump

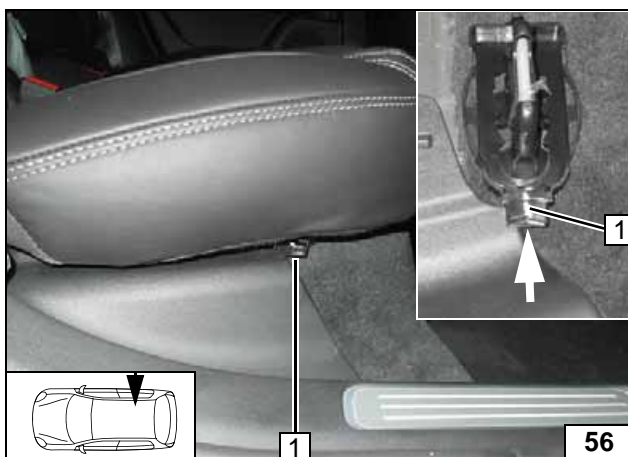


Ensure sufficient distance from neighbouring components, correct if necessary.

- 1 10 mm dia. clamp
- 2 Fuel line
- 3 Metering pump wiring harness, connector X7 mounted



Connection of metering pump

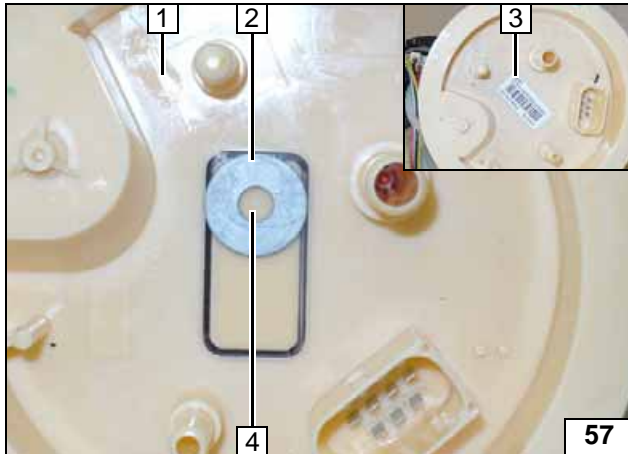
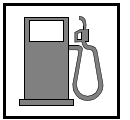


Rear bench seat installation instructions

Push in rear bench seat locking device 1 in the direction of the arrow using a suitable tool.



Detaching rear bench seat

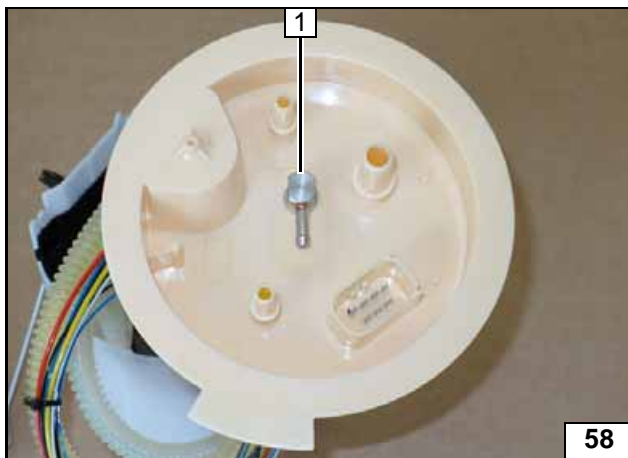


Remove fuel tank sending unit **1** according to manufacturer's instructions. Remove label **3**.

- 2** Washer with outer dia. $d_a = 21.6\text{mm}$
- 4** Copy hole pattern, 6mm dia. hole



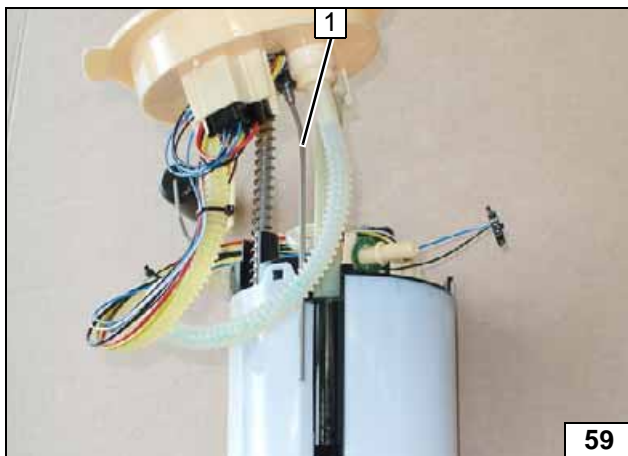
Fuel extraction



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

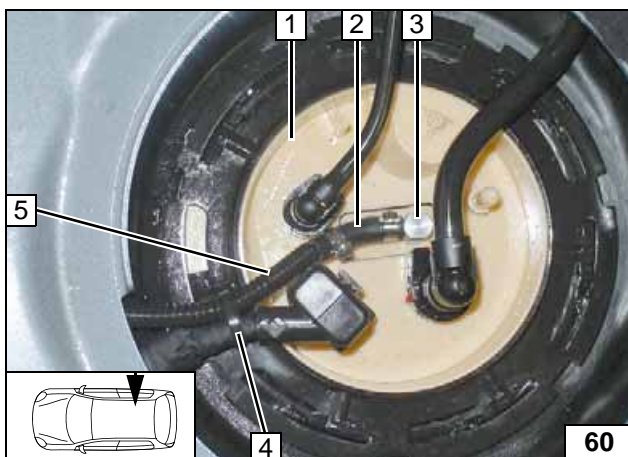


Installing fuel standpipe



- 1** Fuel standpipe

Installing fuel standpipe

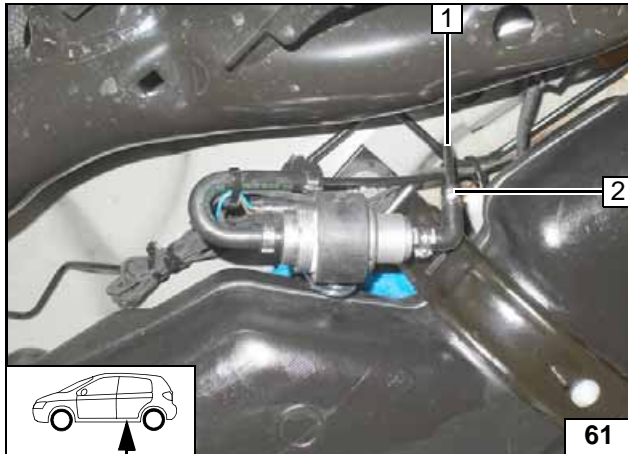
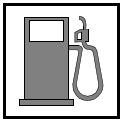


Install fuel tank sending unit **1** with new sealing ring according to manufacturer's instructions.

- 2** Hose section, 10 mm dia. clamp [2x]
- 3** Fuel standpipe
- 4** Cable tie
- 5** Fuel line in 6mm dia. corrugated tube



Connecting fuel line

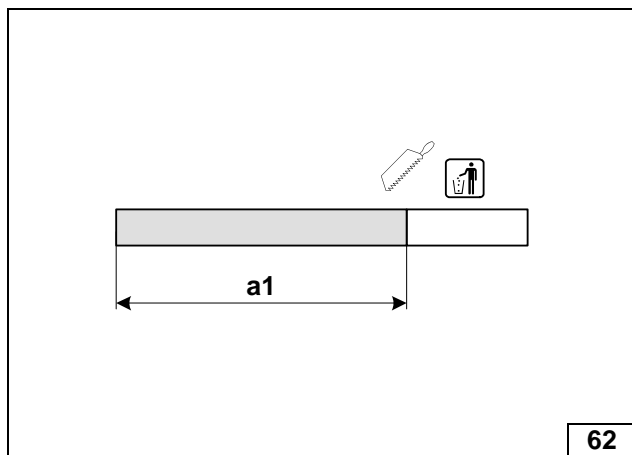
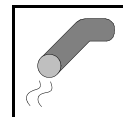


Ensure sufficient distance from neighbouring components, correct if necessary.

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



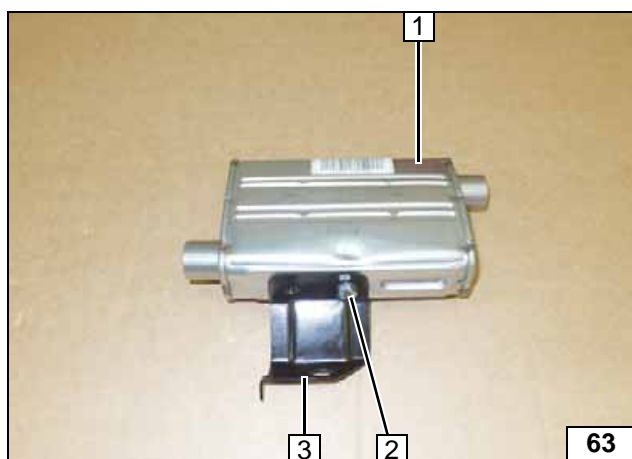
**Con-
nection of me-
tering
pump**



Exhaust Gas

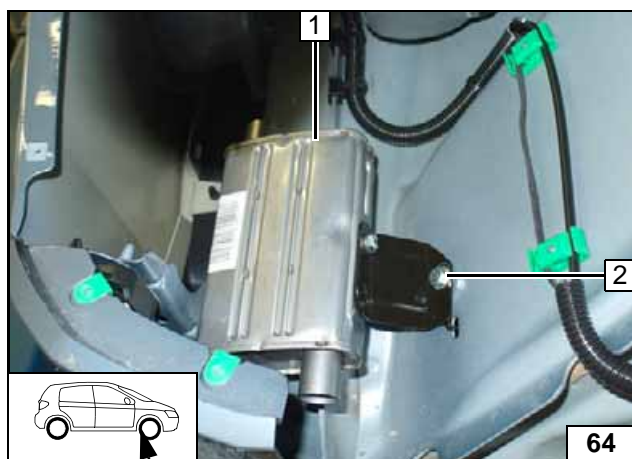
a1 = 260

**Preparing ex-
haust pipe**



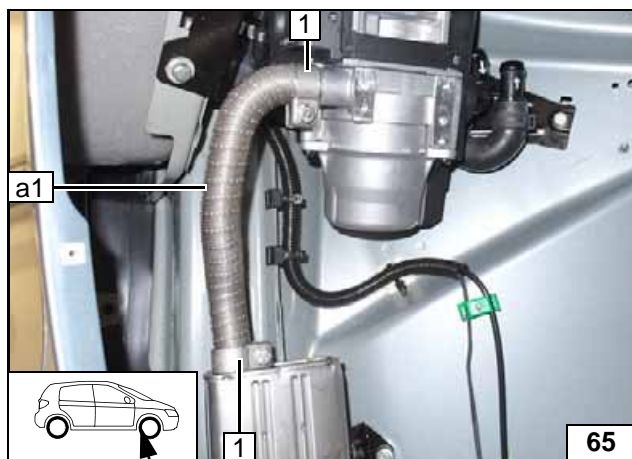
- 1 Silencer
- 2 M6x16 bolt, spring lockwasher
- 3 Silencer bracket

**Premount-
ing silencer**



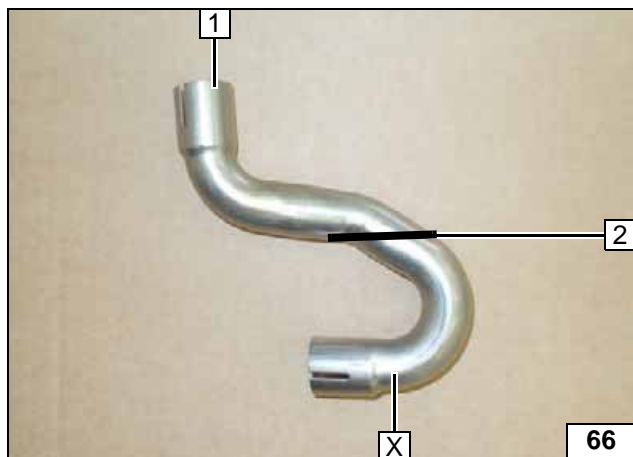
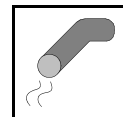
- 1 Silencer
- 2 M6x16 bolt with serrated flange

**Installing
silencer**




- 1 Hose clamp [2x]

**Installing
exhaust
pipe a1**

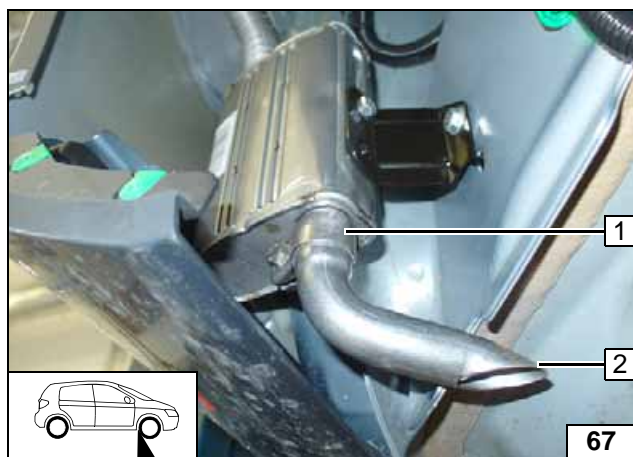


Shorten exhaust end section 1 at cutting line 2 as shown!



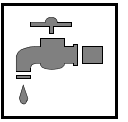
X = 

Shortening exhaust end section



- 1 Hose clamp
- 2 Exhaust end section

Installing exhaust end section



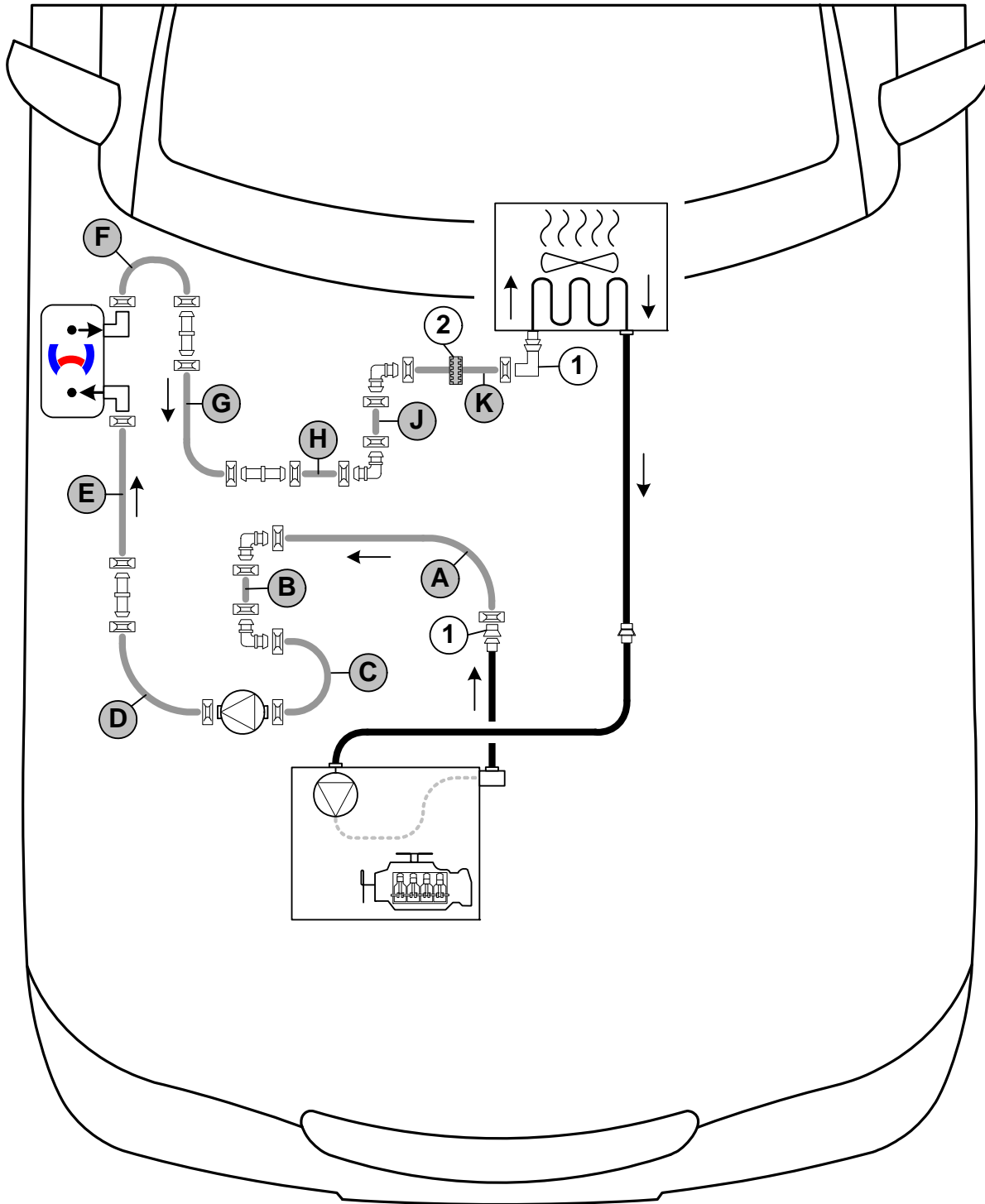
Coolant Circuit






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



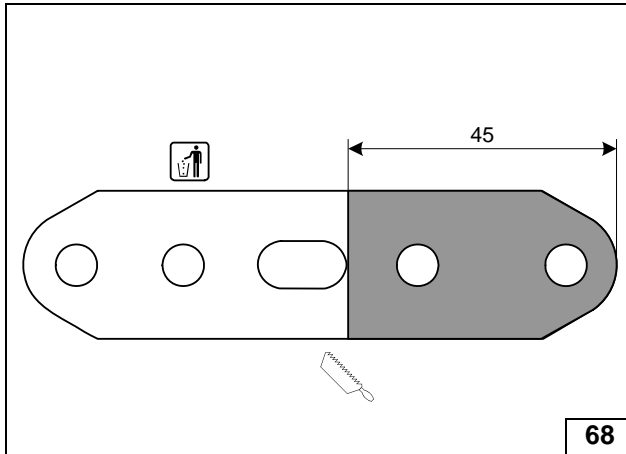
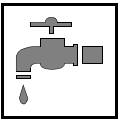
The connection should be modelled on an 'inline' circuit and based on the following diagram:



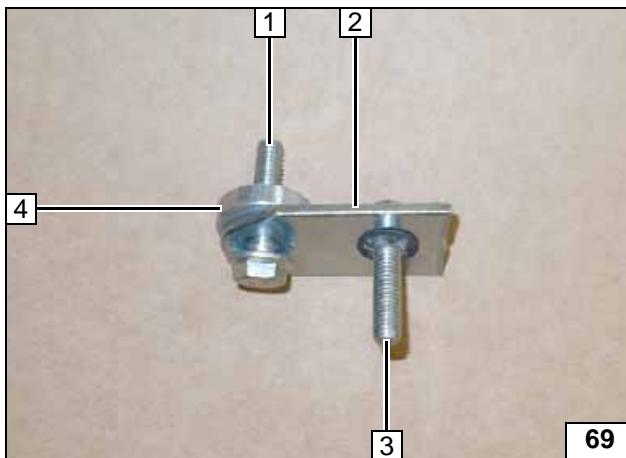
Hose routing diagram

All spring clips  = 25 mm dia. All connecting pipes  and  = 18x18 mm dia.
 1 = Original vehicle hose coupling.
 2 = Black (sw) rubber isolator.



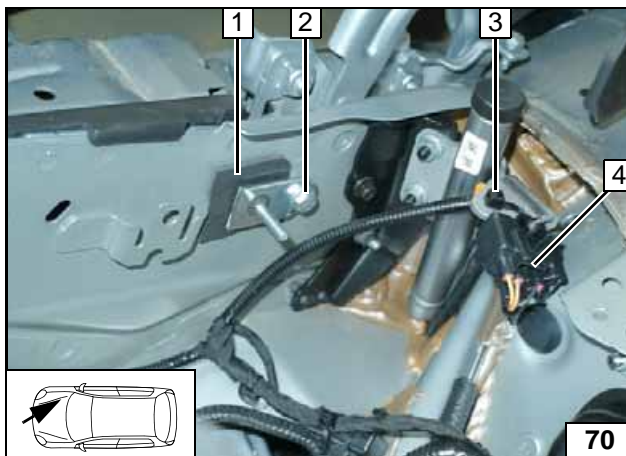


Shortening perforated bracket



- 1 M6x25 bolt with serrated flange
- 2 Perforated bracket
- 3 M6x25 bolt with serrated flange, lock washer
- 4 5mm spacer

Premounting perforated bracket

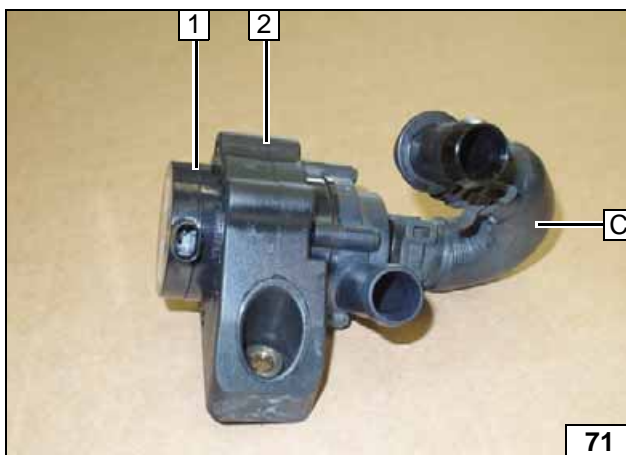


Reattach original vehicle connector 4 using cable tie 3 as shown.



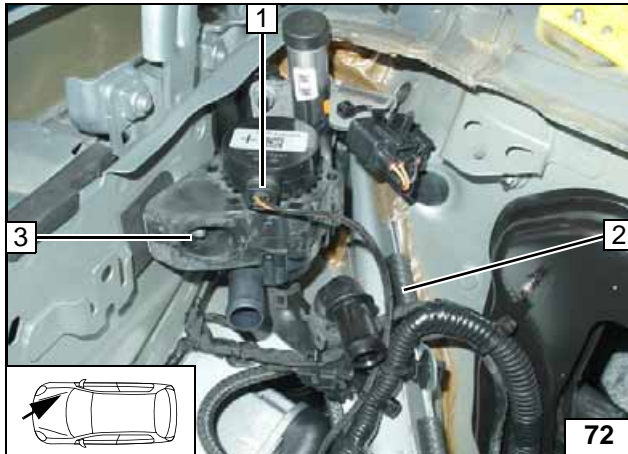
- 1 Self-adhesive foam
- 2 M6x25 bolt with serrated flange, 5mm spacer, original vehicle thread

Installing perforated bracket



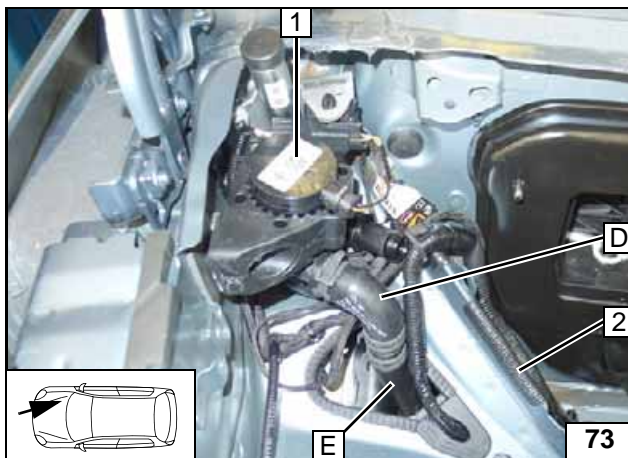
- 1 Circulating pump
- 2 Circulating pump mount

Premounting circulating pump



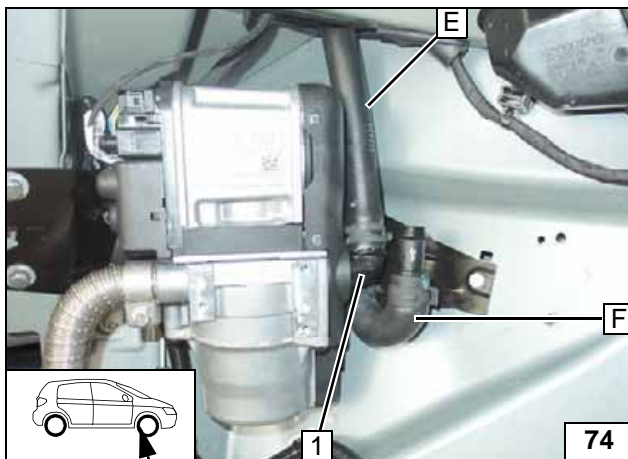
- 1 Connector of circulating pump wiring harness
- 2 100mm long wide edge protection
- 3 Flanged nut

Installing circulating pump



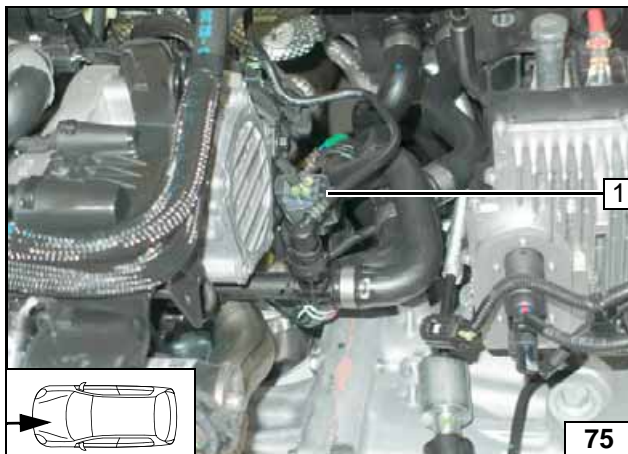
- 1 Circulating pump
- 2 100mm long wide edge protection

Installing hoses D and E



- 1 Heater inlet

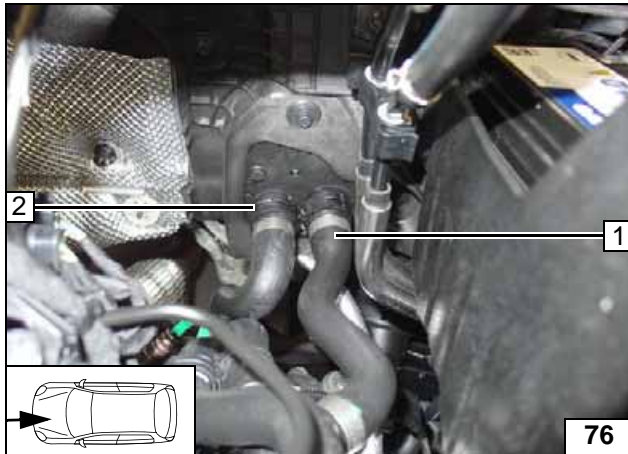
Connecting heater inlet



To prevent any damage, disassemble overflow line 1 (if present) at the connection piece.



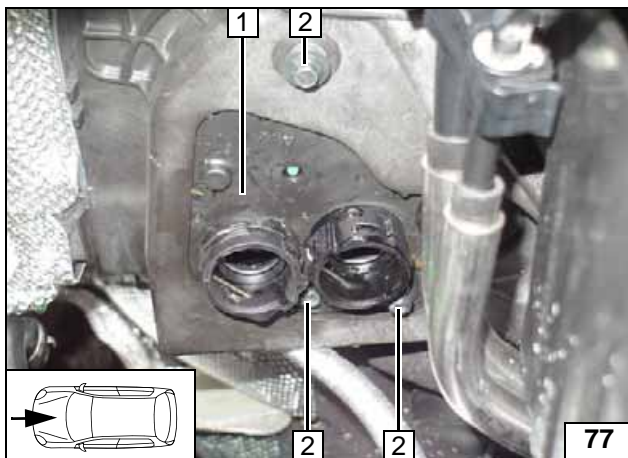
Disassembling overflow line



Pull off coupling of engine outlet hose 1 and engine inlet 2.



Cutting point

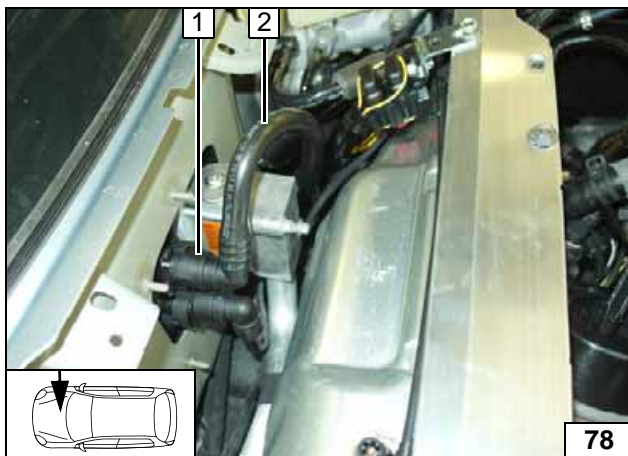


Remove bolts 2 [3x] and the retaining plate located behind.

1 Coupling piece



Detaching retaining plate



Remove coolant line 2 in direction of the engine compartment.

1 Remove coupling piece of heat exchanger inlet



Removing line

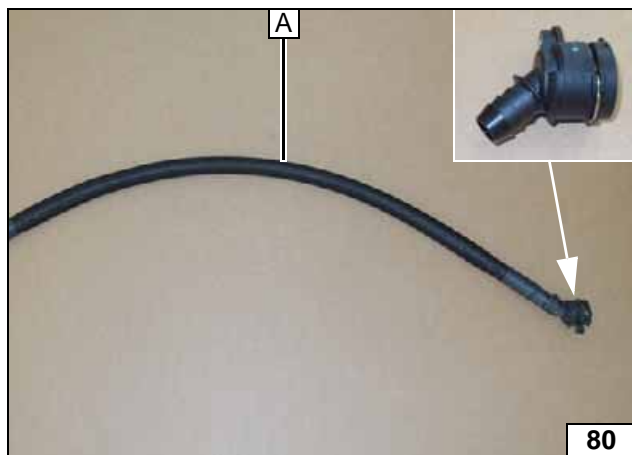
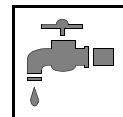


Cut out coupling piece 1.

X=

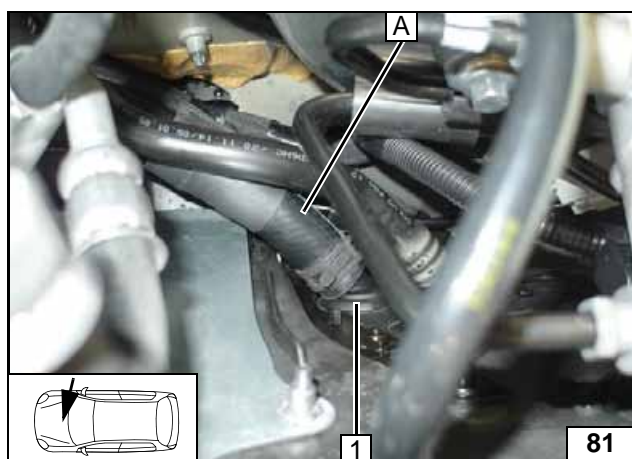


Disconnecting wire



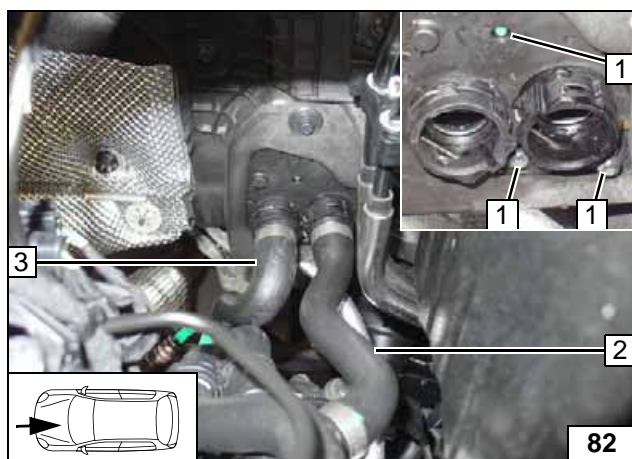
Premounting hose A

- 1 Coupling piece of engine outlet

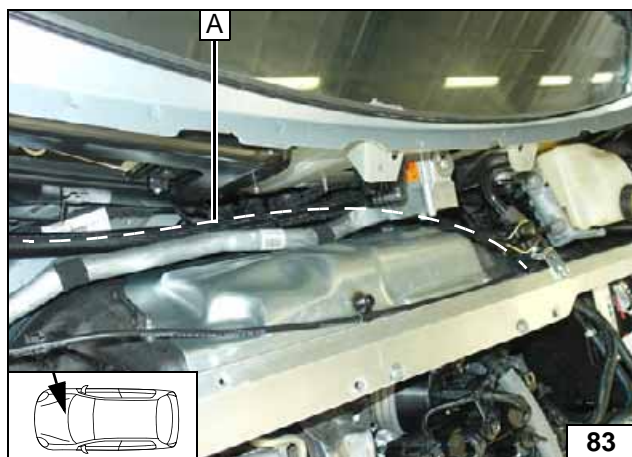


Connecting engine outlet

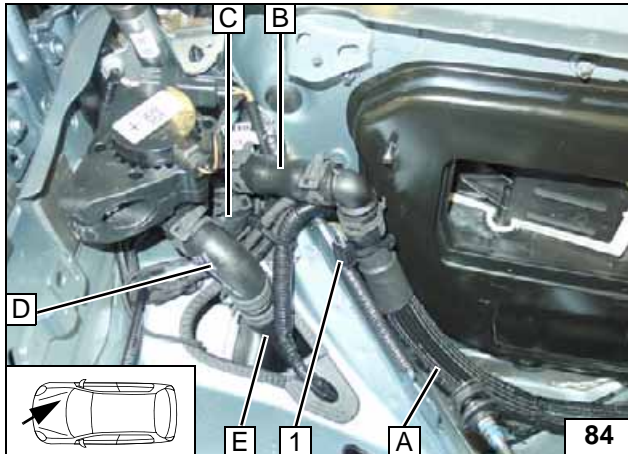
- 1 Mount retaining plate with original vehicle bolts [3x]
- 2 Engine inlet hose
- 3 Hose of engine outlet



Mounting engine outlet hose

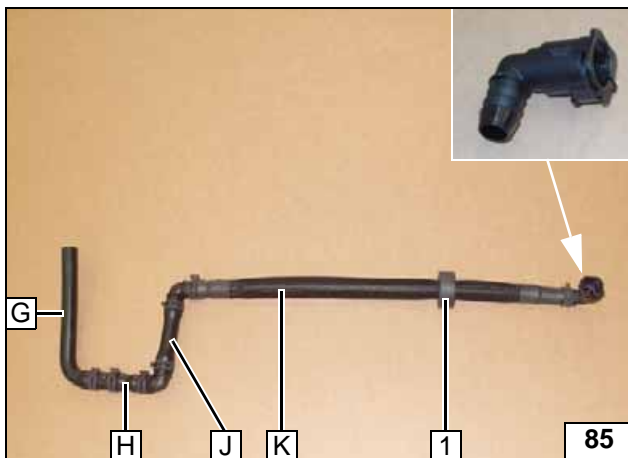


Routing hose A in coolant reservoir



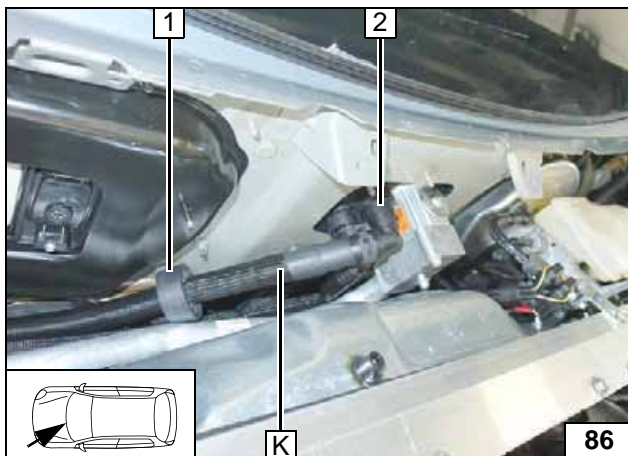
1 Edge clip cable tie

Connect-
ing hoses B
and C



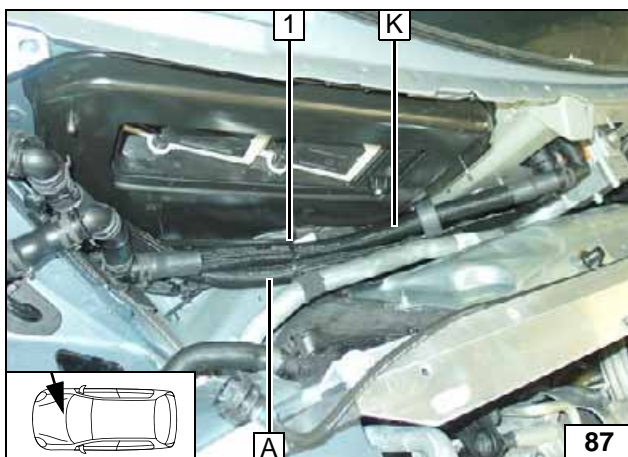
1 Black (sw) rubber isolator

Premount-
ing hoses G
to K



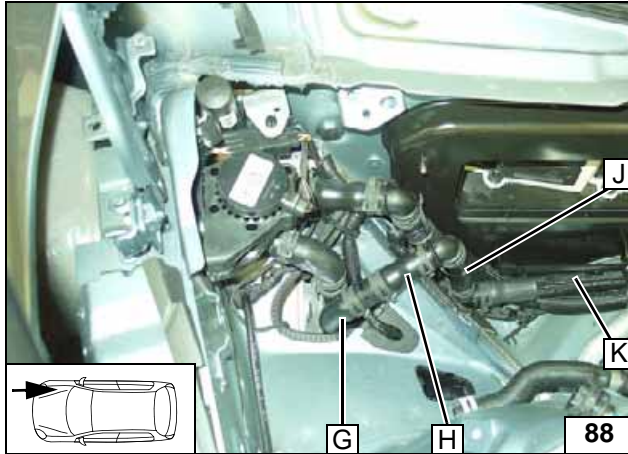
1 Black (sw) rubber isolator
2 Coupling piece of heat exchanger in-
let

Heat ex-
changer in-
let
connection

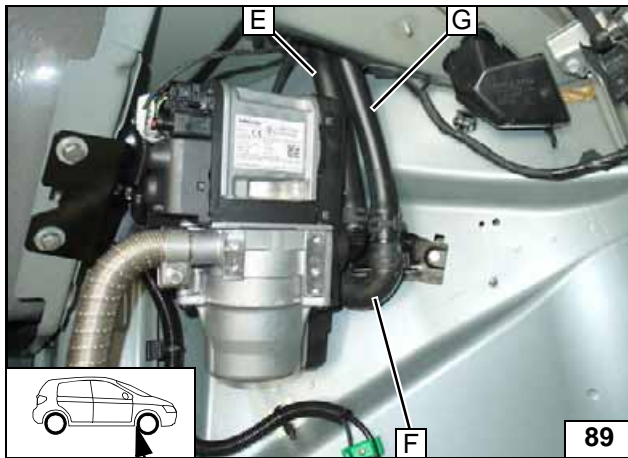


1 Cable tie

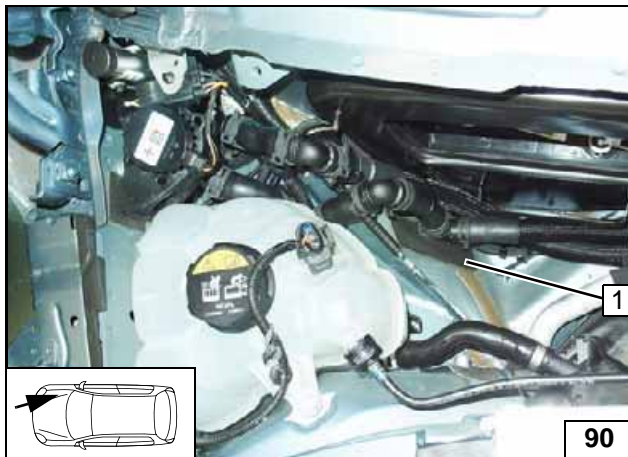
Routing
hose K in
coolant res-
ervoir



Hose routing in wheel well



Connect-
ing heater

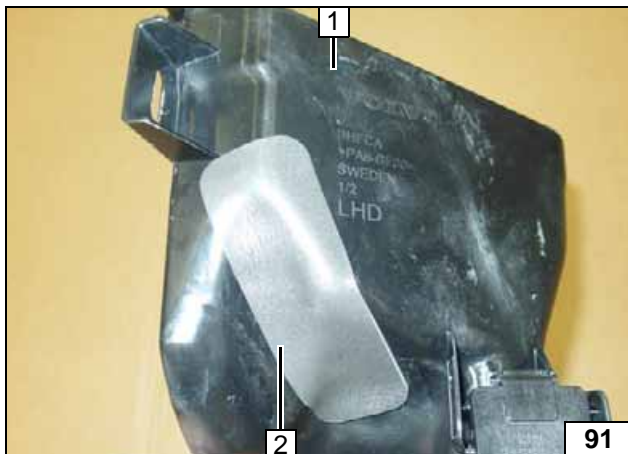


Align hoses.
Ensure sufficient distance from neighbouring components, correct if necessary.



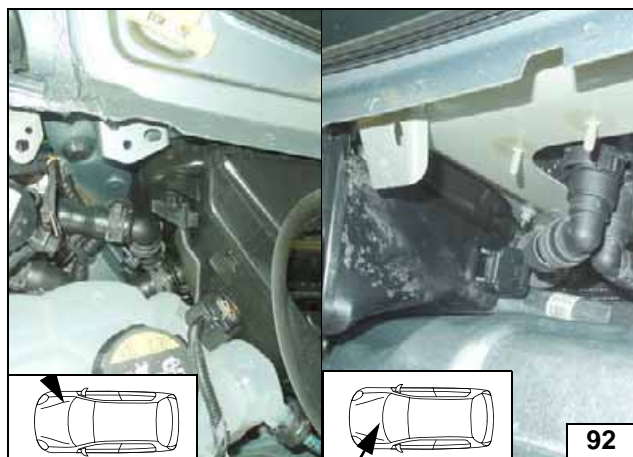
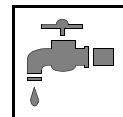
- 1 Self-adhesive foam rubber

Installing
expansion
tank



- 1 Air intake
- 2 Self-adhesive foam rubber

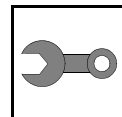
Sticking on
rub protec-
tion



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



**Mounting
air intake**

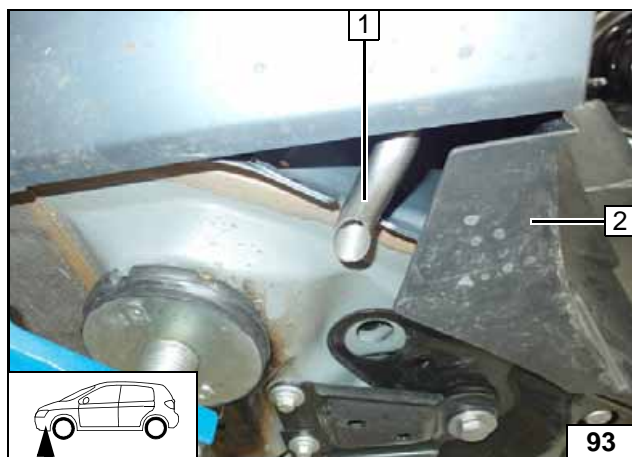


Final Work



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

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

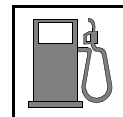


Installing wheel well trim **2** Ensure sufficient distance from neighbouring components, correct if necessary.

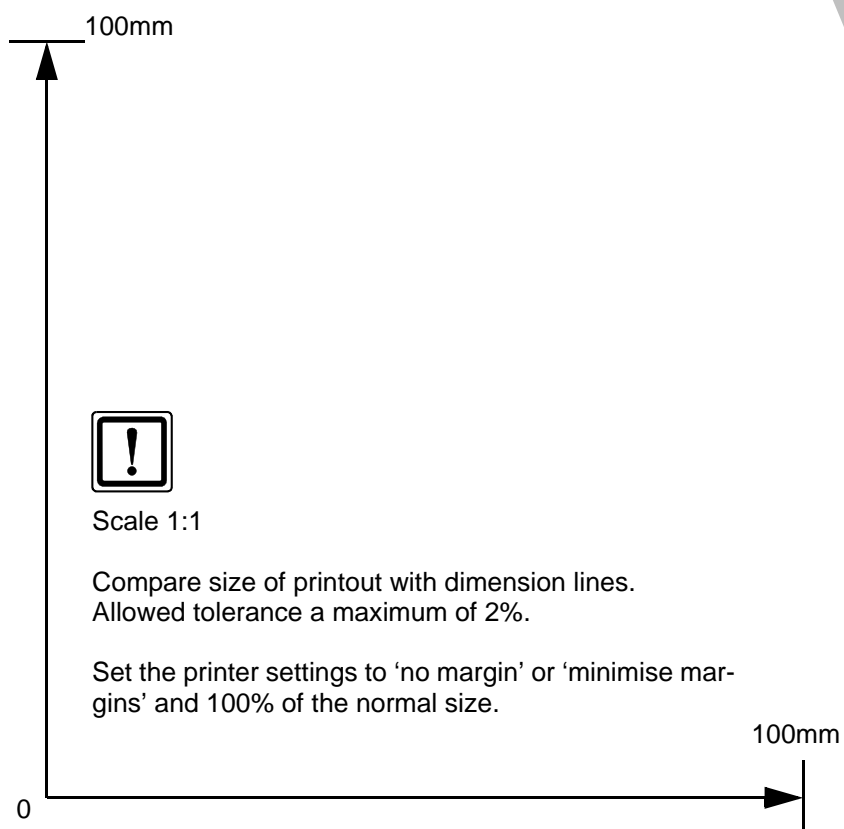
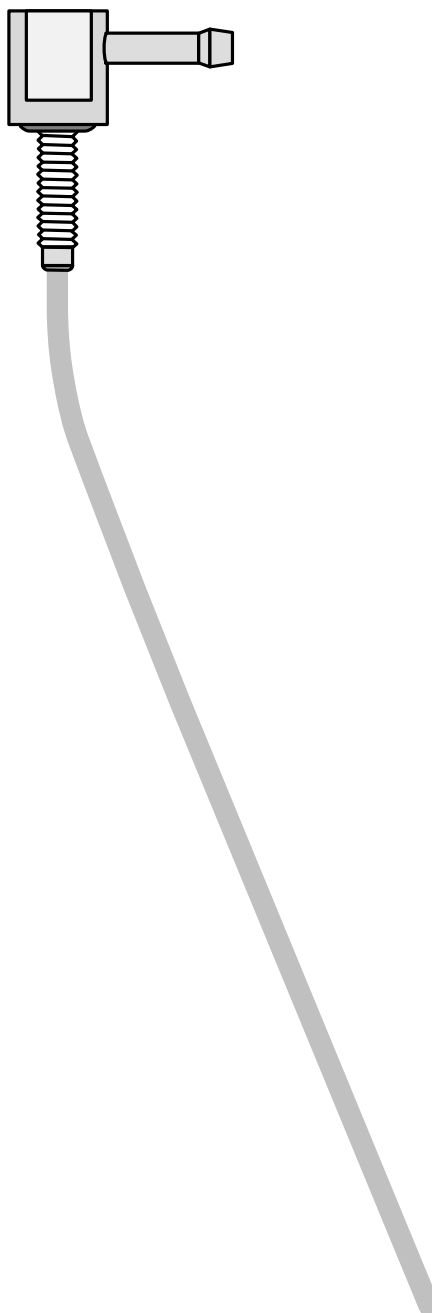
- 1** Exhaust end section



Aligning exhaust end section



Fuel Standpipe Template



Operating Instructions for Automatic A/C

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 for the heating operation.

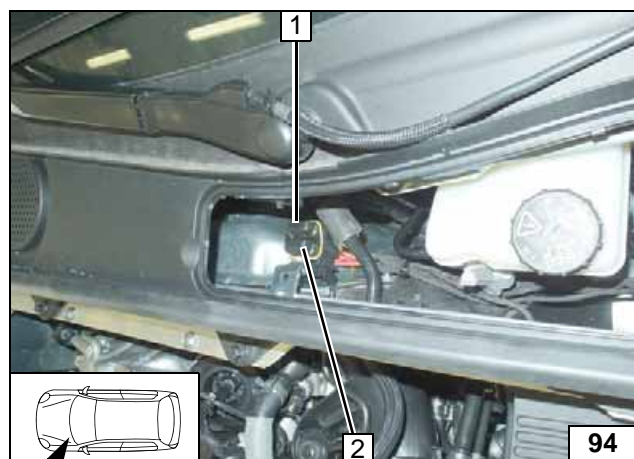
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Note:

Your vehicle is equipped with a Comfort air-conditioning control system.

No settings on the A/C control panel are therefore needed before parking the vehicle!

All required presets, such as fan speed, temperature and flap positions are automatically applied.



- 1 20A heater fuse F1
- 2 3A main fuse F2 of passenger compartment/
heater control

**Engine com-
partment fus-
es**