D	Einbauanleitung / nur Händlereinbau
GB	Installation instructions / Dealer installation only
F	Consignes de montage / Montage uniquement par le concessionnaire
NL	Montagehandleiding / Montage alleen door dealers
DK	Montagevejledning / Montage kun hos forhandleren
N	Monteringsinstruksjon / Montasje kun hos forhandleren
S	Installationsanvisning / Får endast monteras av återförsäljaren
FIN	Asennusohje / Asennus vain myyntiliikkeen toimesta
I	Istruzioni per il montaggio / Installazione solo presso la concessionaria
E	Instrucciones de montaje / Instalación exclusiva por el distribuidor
P	Instruções de montagem / Montagem só no concessionário
GR	Οδηγίες εγκατάστασης / Συναρμολόγηση μόνο από εμπο ρους
CZ	Návod k montáži / Montá pouze prodejcem
PL	Instrukcja montażu / Montaż tylko u dealera
TR	Montaj talimatı / Sadece satıcı tarafında monte edilir
H	Beépítési útmutató / Csak a kereskedő építheti be
HR	Upute o ugradnji / Ugradnja samo od strane trgovca
BUL	Инструкция за монтаж / Монтажът може да се извърши само от търговеца
RO	Instrucțiuni de montaj / Se va monta numai de către dealer
RUS	Инструкция по монтажу и установке / Устанавливать только у дилера
LT	Montavimo informacija / Montuoja tik prekybininkas
LV	Iemontēšanas pamācība / Tikai pārdevēja iebūve
EST	Paigaldusjuhend / Paigaldab ainult müüja
SLO	Navodilo za vgradnjo / Vgradnja le od trgovca
SK	Montážny návod / Montá iba obchodníkom
J	取り付け説明書 / 販売業者取り付けのみ
ROK	장치 지시사항 / 오직 전문상인이 장치
THA	คู่มือการติดตั้ง / ติดตั้งโดยตัวแทนจำหน่ายเท่านั้น
VR	安装说明书 / 仅供销售商安装用
VR	安裝說明書 / 僅供銷售商安裝用

13 472 873 01/16

Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

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Installation Documentation
Opel Astra

Validity

Manufacturer	Model	Type	EG BE No. / ABE
Opel	Astra	P-J	e1 * 2007 / 46 * 0141 *...
Opel	Astra	P-J	e4 * 2007 / 46 * 0204 *...
Opel	Astra	P-J	e4 * 2007 / 46 * 0308 *...
Opel	Astra	P-J	e4 * 2007 / 46 * 0309 *...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.6 P	Petrol	6-speed SG	125	1598	A16XHT (LVP)
1.6 P	Petrol	6-speed AG	125	1598	A16XHT (LVP)
1.6 P	Petrol	6-speed SG	147	1598	A16SHT [LWC]
1.6 D	Diesel	6-speed SG	81	1598	B16DT (LVM)
1.6 D	Diesel	6-speed SG	88	1598	B16DTJ (LVL)
1.6 D	Diesel	6-speed SG	100	1598	B16DTH (LVL)

SG = manual transmission
AG = automatic transmission

From model year 2014
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog lights
Start-Stop

Opel Astra

Table of Contents

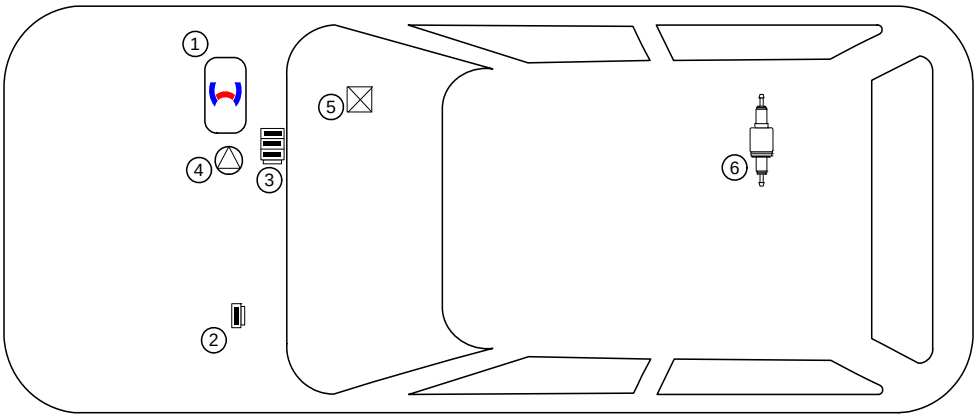
Necessary Components

- Specific delivery scope of *Thermo Top Evo* petrol or diesel:
  GM Part No. for petrol vehicles: 13 437 784
  GM Part No. for diesel vehicles: 13 437 785
- Installation kit for Opel Astra 2014 petrol and diesel transverse installation
  GM Part No.: 13 472 810

Note:
Heater control, Telestart T100 and push button are included in the installation kit.

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

Installation Overview



Legend:

1. Heater
2. Fuse F1
3. Fuses F2-4
4. Circulating pump
5. Temperature sensor/ Telestart / push button / SVM module
6. Metering pump

Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting 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 startup is to be executed with the Webasto Thermo Test Diagnosis.

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

2 Statutory regulations governing installation

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

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Opel Astra

Information on Validity

This installation documentation applies to Opel Astra petrol and diesel vehicles - for validity, see page 1 - from model year 2014 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
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

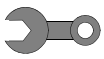
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts = 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

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

Mechanical System

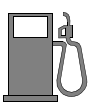


Electrical System

Coolant Circuit

Combustion Air

Fuel



Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

Specific risk due to electrical voltage.

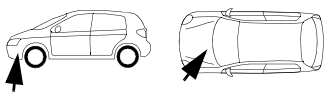
Specific risk of damage to components.

Specific risk of fire 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.



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

Opel Astra

Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Completely remove the air filter.
- Remove the windscreen wiper.
- Remove the coolant reservoir cap.
- Remove the coolant reservoir.
- Remove the windscreen wiper motor with linkage.
- Remove the upper engine cover (diesel only).
- Remove the insulation mat of the firewall on the right.
- Remove the right wheel.
- Loosen the right wheel-well inner panel.
- Remove the fuel-tank (petrol only).
- Remove the fuel tank sending unit in accordance with the manufacturer's instructions (petrol only).
- Remove the footwell trim on the front passenger's side.
- Remove the glove box.
- Remove the driver's side storage compartment.
- Remove the lateral instrument panel trim of the centre console on the driver's and front passenger's side.
- Remove the A-pillar trim on the front passenger's side.

Heater

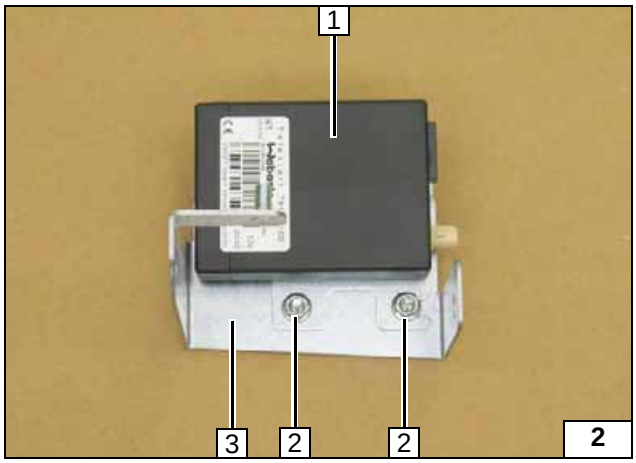
- Remove years that do not apply from the type and duplicate label.

Heater Installation Location

1 Heater

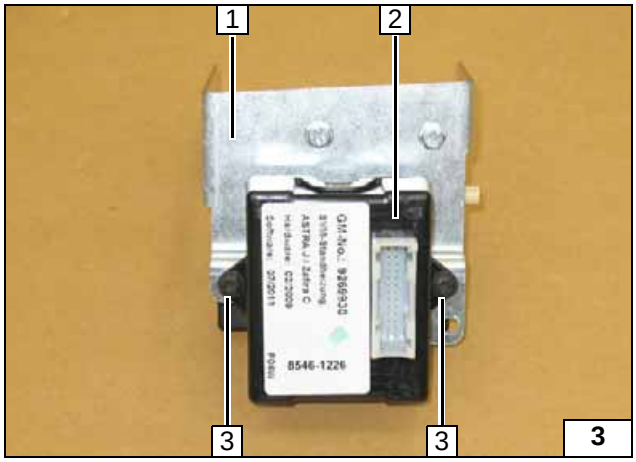
Installation location

Preparing Electrical System



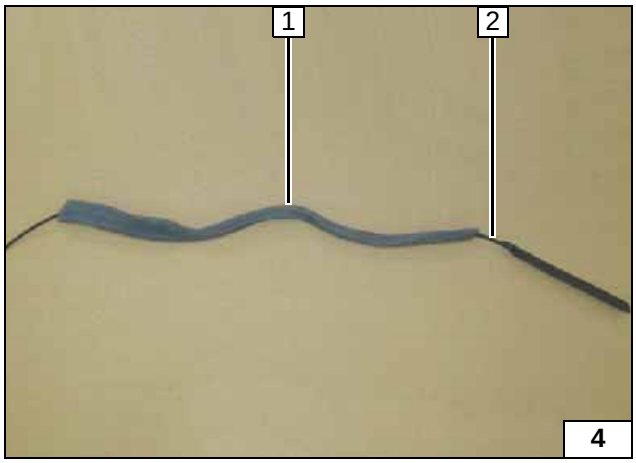
1 Receiver
2 M5x12 bolt, flanged nut [2x each]
3 SVM module bracket

Installing receiver



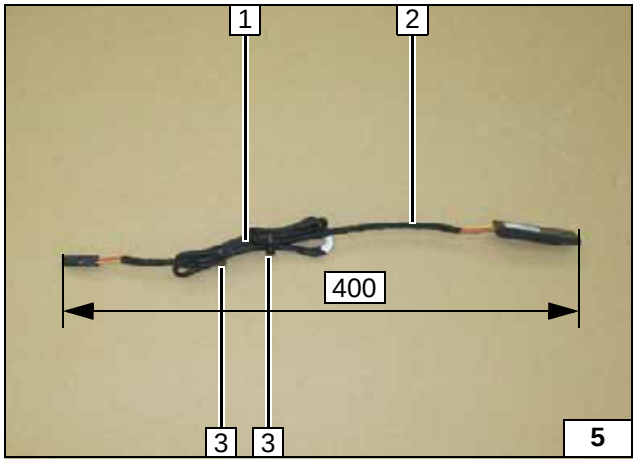
1 SVM module bracket
2 SVM module
3 3.5x13 self-tapping screw [2x]

Installing SVM module



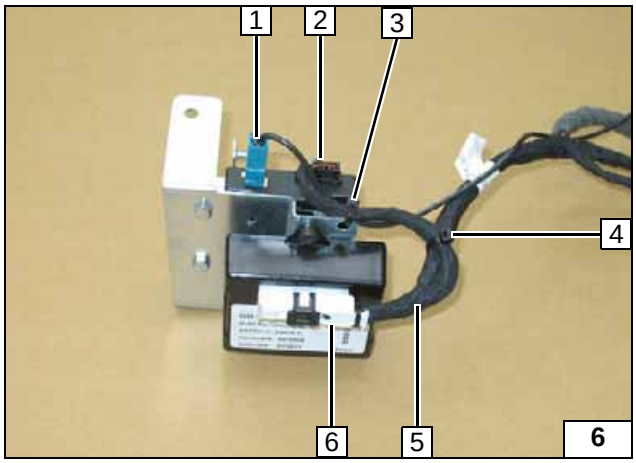
Stick 400mm foam **1** around aerial cable **2**.

Preparing aerial



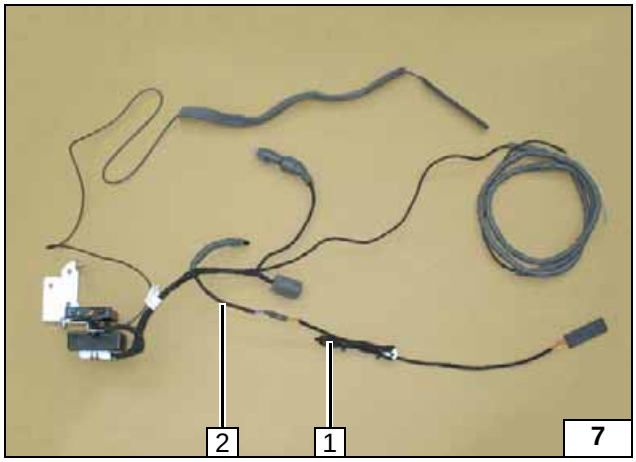
Roll temperature sensor wiring harness **2** at position **1** and fix with cable ties **3**.

Preparing temperature sensor



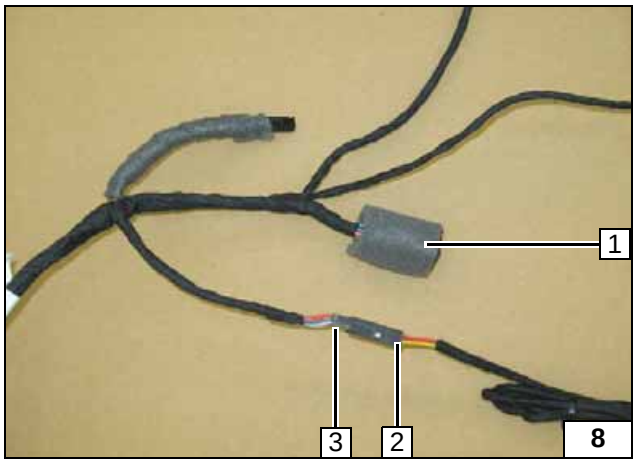
1 Aerial connector
2 Receiver connector
3 Cable tie through hole in bracket
4 Cable tie
5 Passenger compartment wiring harness
6 SVM module connector

Connecting passenger compartment wiring harness



Connect temperature sensor **1** to passenger compartment wiring harness **2** (see figure 8).

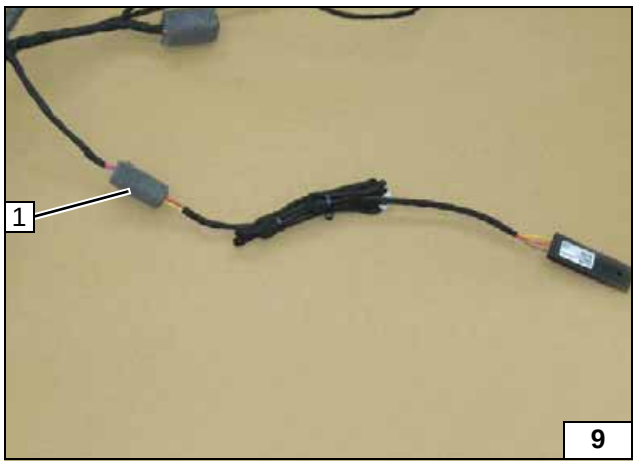
Connecting passenger compartment wiring harness



Stick 40mm foam **1** around connector between passenger compartment wiring harness and engine compartment wiring harness.

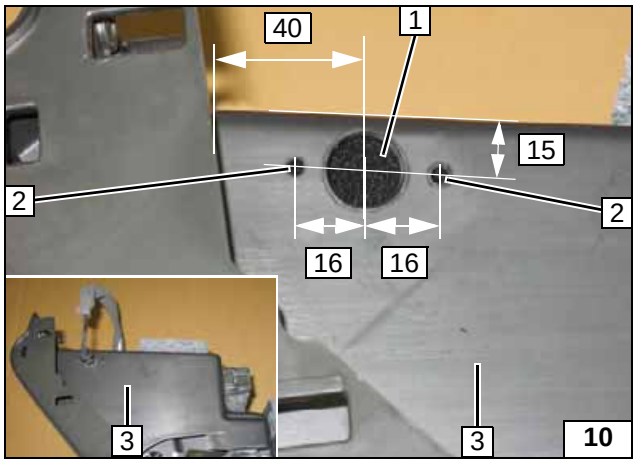
2 Temperature sensor connector
3 Wiring harness connector of passenger compartment (assigned 3x)

Connecting passenger compartment wiring harness



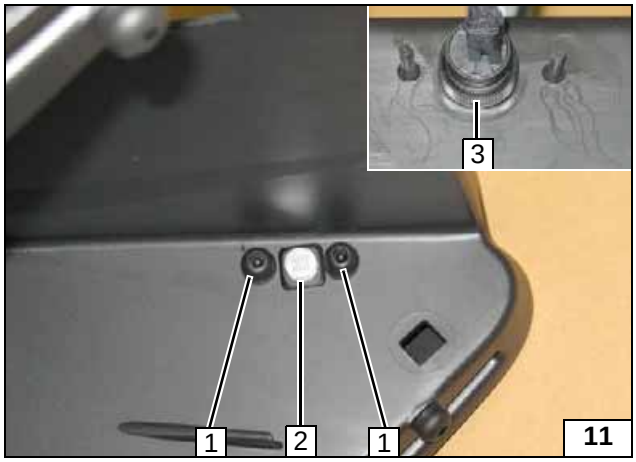
Stick 40mm foam **1** around temperature sensor connector.

Preparing passenger compartment wiring harness



1 16 mm dia. hole
2 4mm dia. hole [2x]
3 Glove box

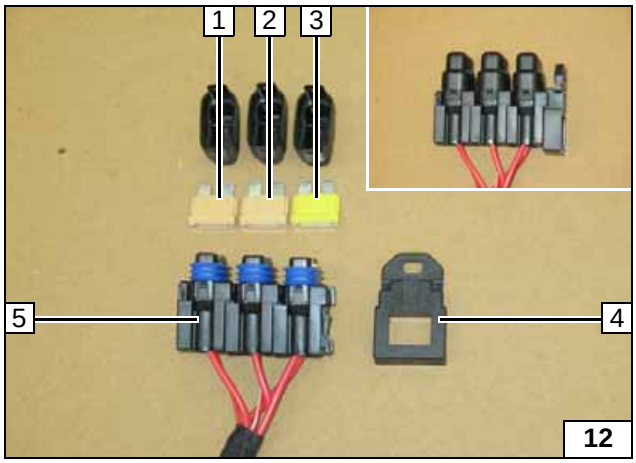
Preparing glove box



Stick foam around wiring harness of push button.

1 Rubber plug [2x]
2 Push button
3 Push button nut

Installing push button

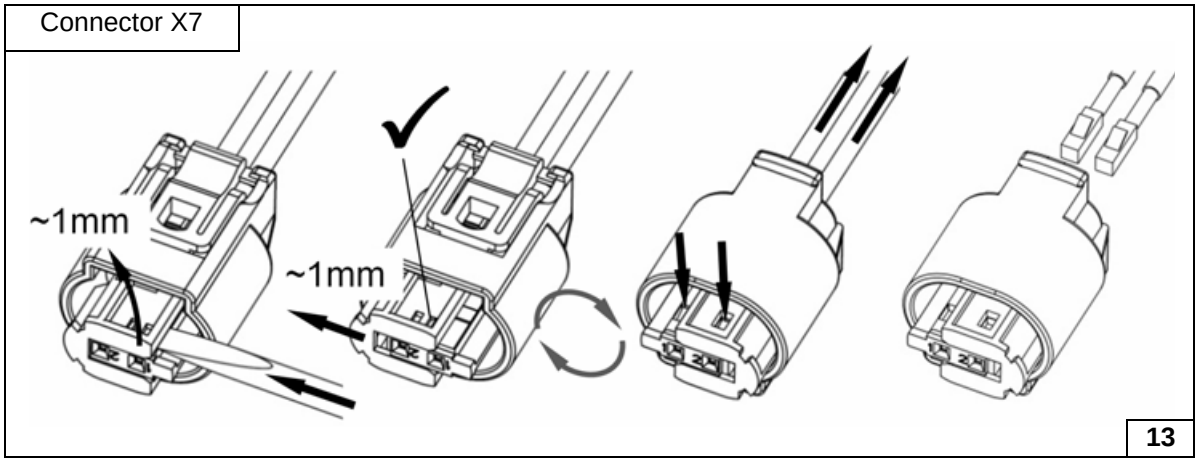


Remove fuses **1**; **2**; **3** from fuse holder.

1 Heater control 5A fuse F2
2 Fan controller 5A fuse F3
3 Heating 20A fuse F4
4 Retaining plate of fuse holder
5 Fuse holder

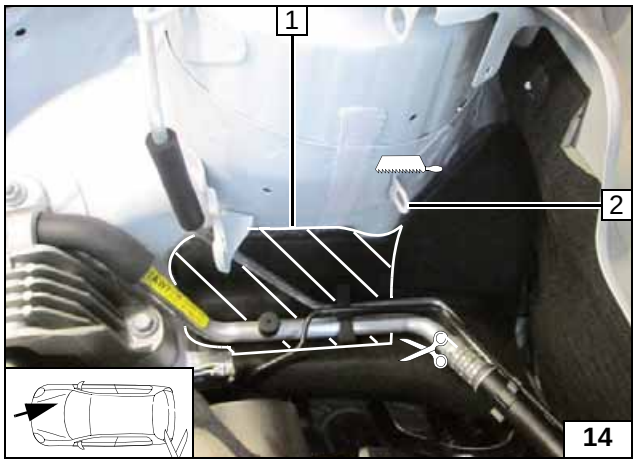
Preparing wiring harness of heater

Connector X7



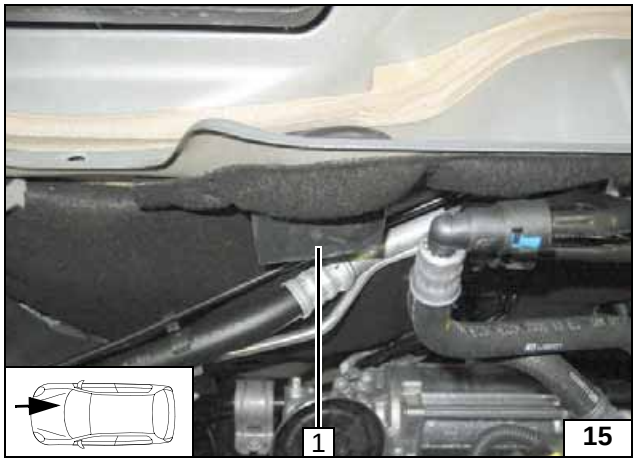
Dismantling metering pump connector

Preparing Installation Location



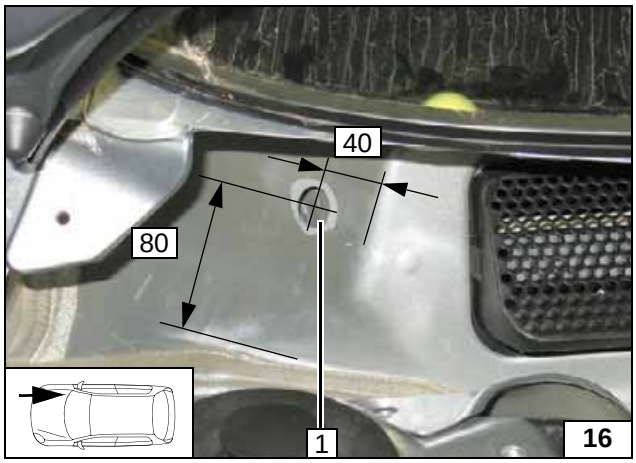
Remove insulation **1** at the marking, cut off tab **2** and discard.

Cutting out insulation



Replace plastic coolant reservoir drain with rubber coolant reservoir drain at position **1**.

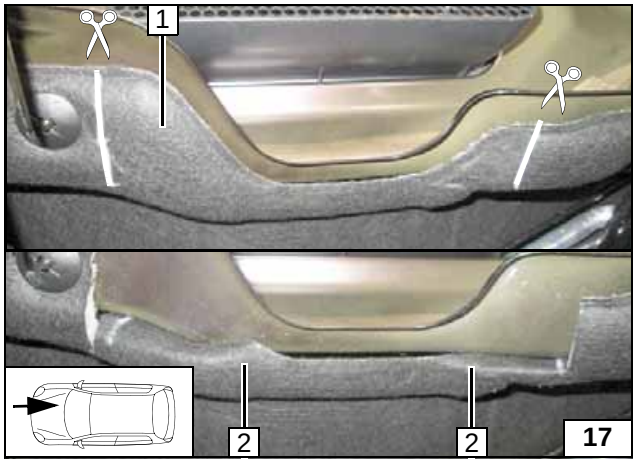
Preparing coolant reservoir



Be careful of components located behind!

1 20mm dia. hole

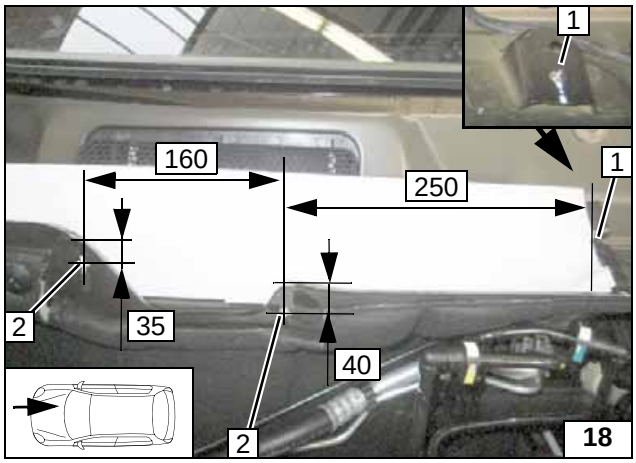
Hole in fire-wall



Cut insulation mat **1** as shown in figures and tuck inside.

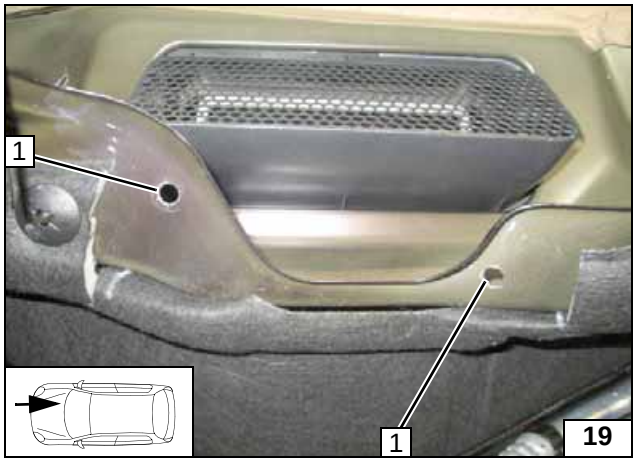
1 Position insulation mat before
2 Position insulation mat after

Preparing insulation mat



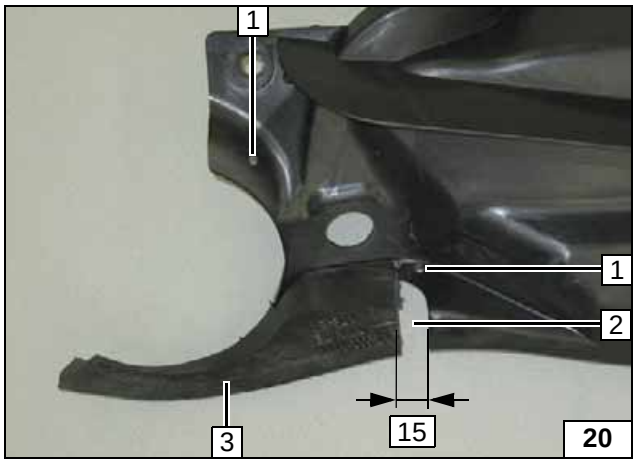
1 Position of measuring point, middle wiper linkage threaded hole
2 Make markings

Markings for coolant reservoir drill holes



1 9mm dia. hole

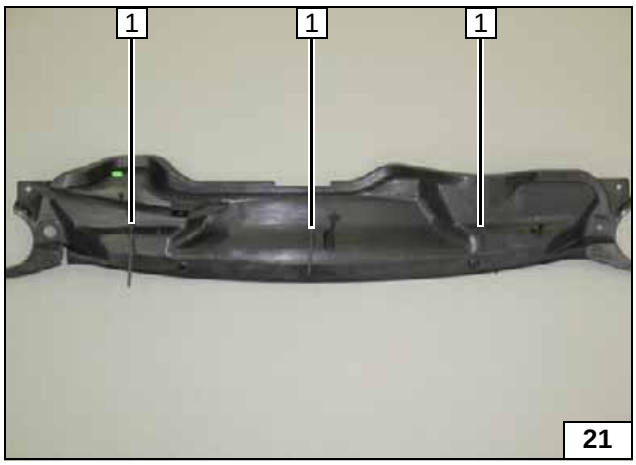
Hole in coolant reservoir



Cut out foam **3** of coolant reservoir cap at position **2**.

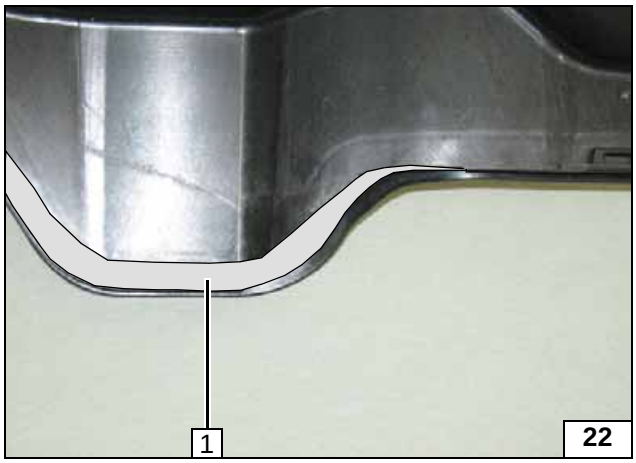
1 5mm dia. hole [2x]

Preparing coolant reservoir cap



1 6mm dia. hole, insert eyelet cable tie [3x]

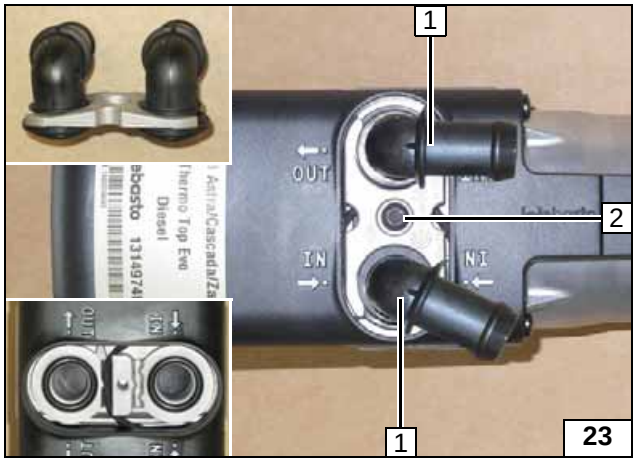
Preparing coolant reservoir cap



Cut out coolant reservoir cap **1** at the marking (insulation material located underneath remains unchanged!).

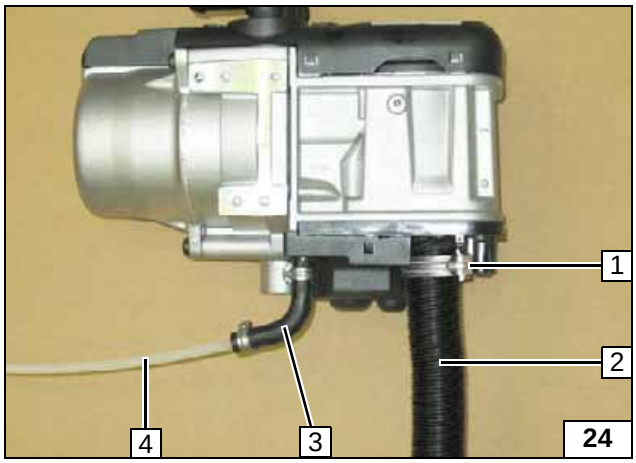
Preparing coolant reservoir cap

Preparing Heater



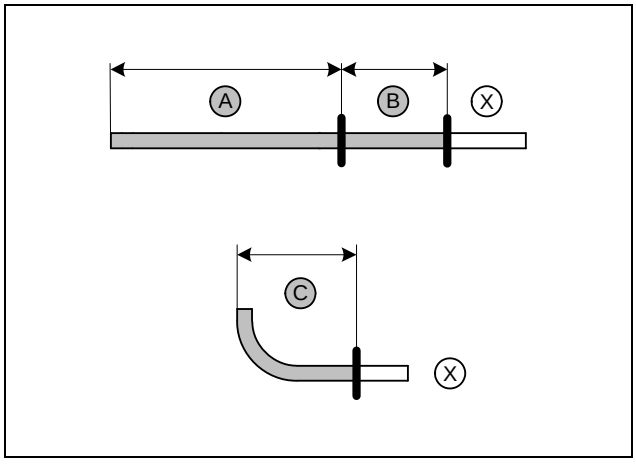
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



1 25mm dia. Caillau clamp
2 Combustion air pipe
3 90° moulded hose, clamp [2x]
4 Fuel line

Premounting heater

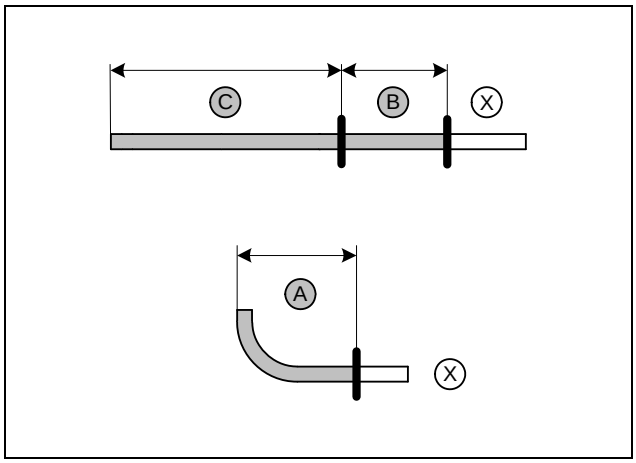


Only for petrol vehicles

Discard section **X**.
Hose **C** = 90° moulded hose

A = 350
B = 105
C = 410

Cutting hoses to length

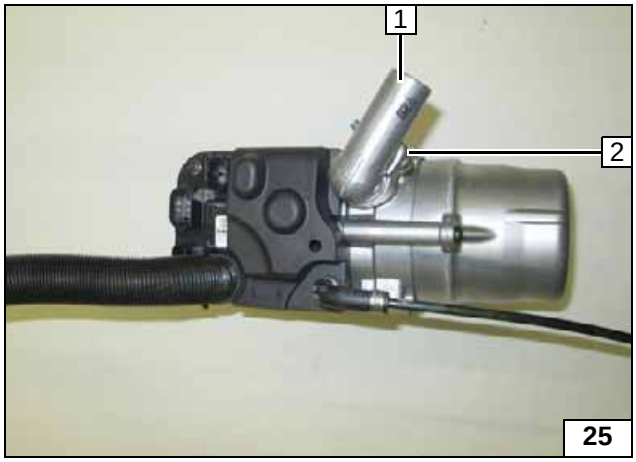


Only for diesel vehicles

Discard section **X**.
Hose **A** = 90° moulded hose

A = 210
B = 105
C = 500

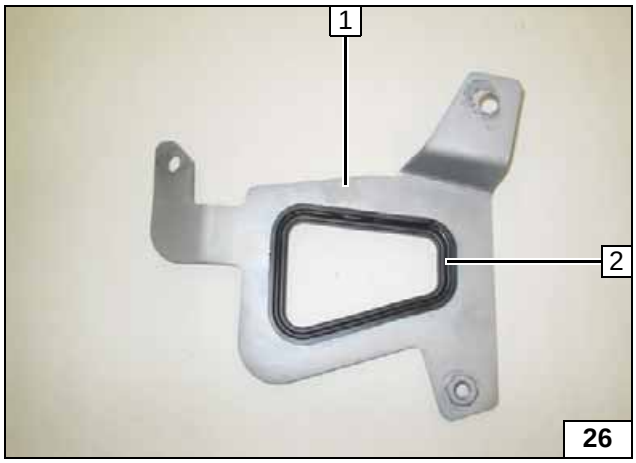
Cutting hoses to length



All vehicles

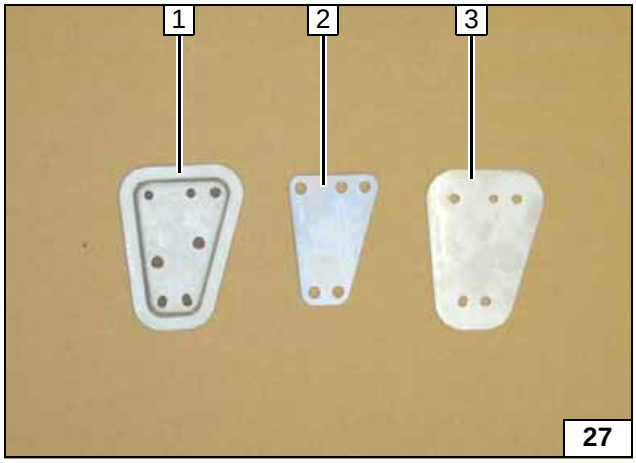
1 Exhaust elbow
2 Hose clamp

Installing exhaust elbow



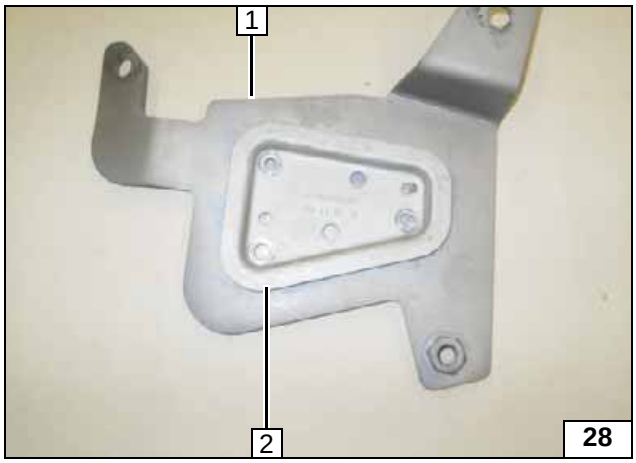
1 Bracket
2 Decoupling rubber

Preparing bracket



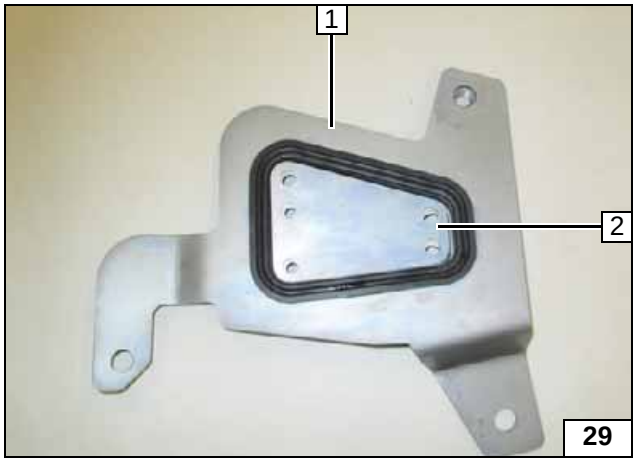
1 Clamping plate, part 1
2 Intermediate plate
3 Clamping plate, part 2

Preparing bracket



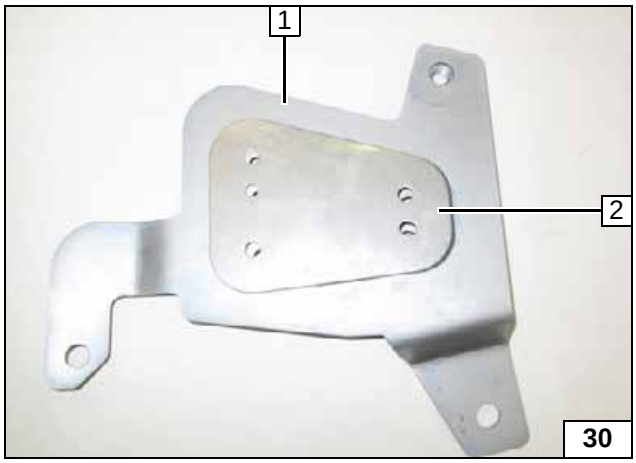
1 Bracket
2 Clamping plate, part 1

Preparing bracket



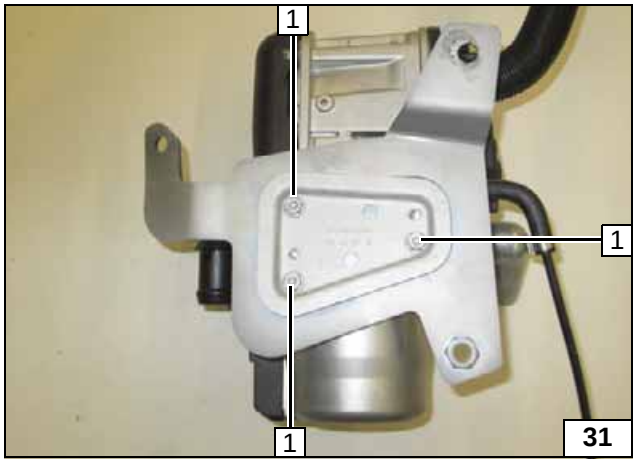
1 Bracket
2 Intermediate plate

Preparing bracket



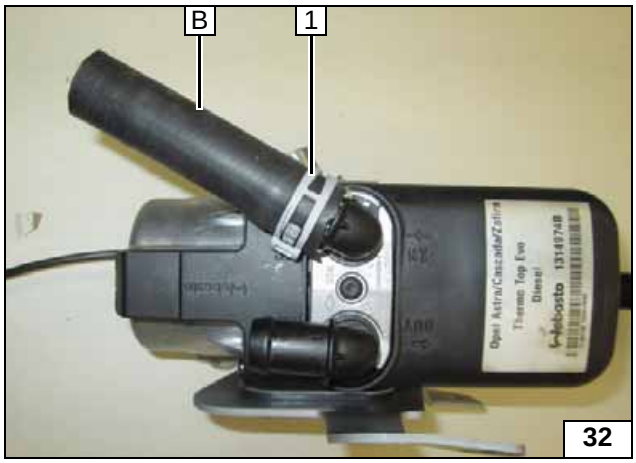
1 Bracket
2 Clamping plate, part 2

Preparing bracket



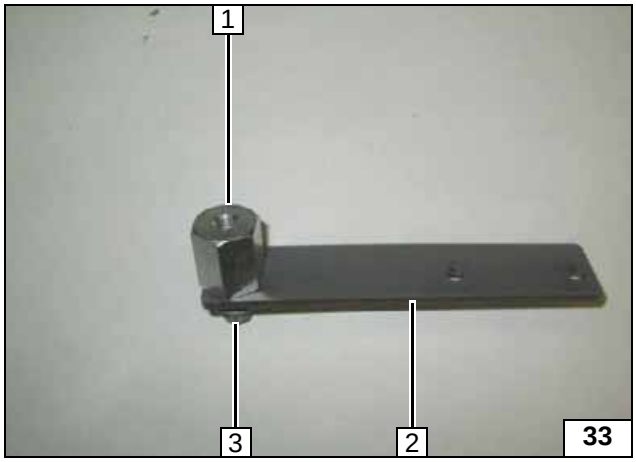
1 5x13 self-tapping bolt [3x]

Installing bracket



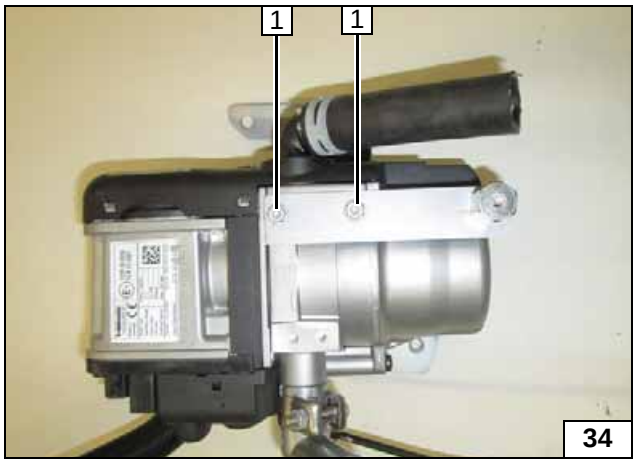
1 27 mm dia. spring clip

Installing hose B



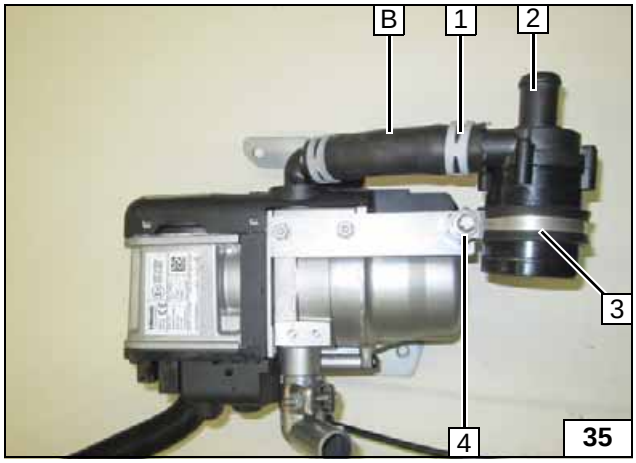
1 M6x20 spacer nut
2 Circulating pump bracket
3 M6x12 bolt, spring lockwasher

Premounting bracket of circulating pump



1 5x13 self-tapping bolt [2x]

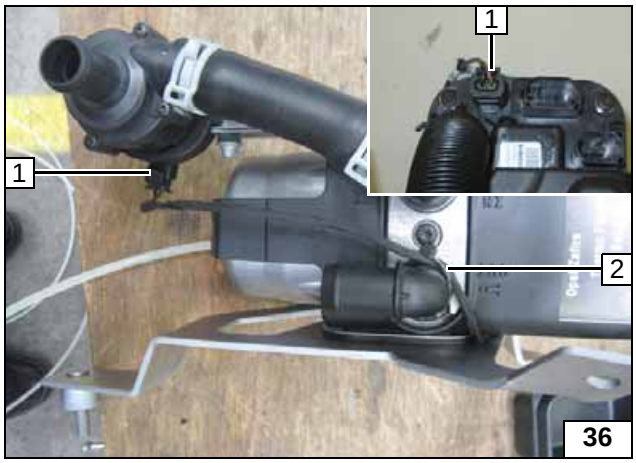
Premounting bracket of circulating pump



All spring clips = 27 mm dia.

1 27 mm dia. spring clip
2 Circulating pump
3 Rubber-coated pipe clamp, 48 mm dia.
4 M6x12 bolt, spring lockwasher

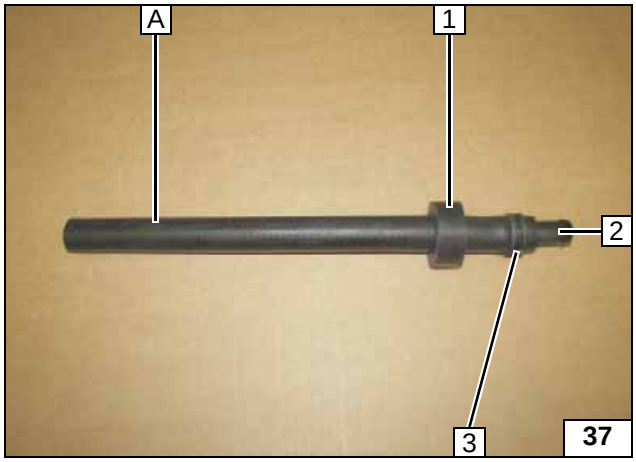
Installing circulating pump



Install circulating pump wiring harness **1**.

2 Cable tie

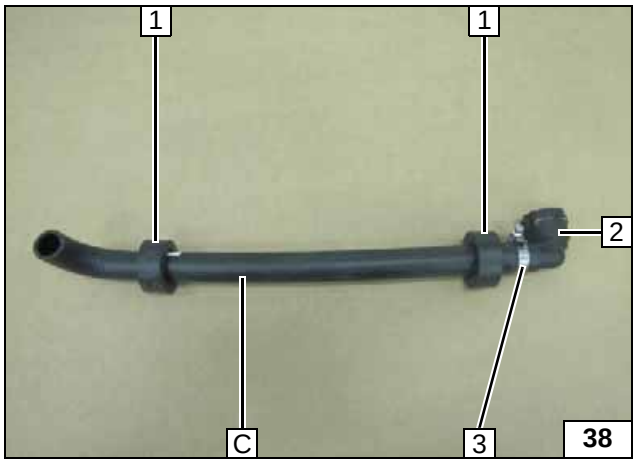
Installing wiring harness of circulating pump



Only for petrol vehicles

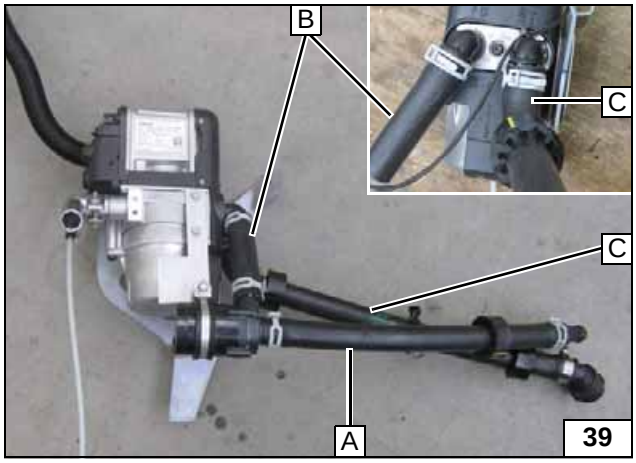
1 Black (sw) rubber isolator
2 18x20 connecting pipe
3 27 mm dia. spring clip

Preparing hose A



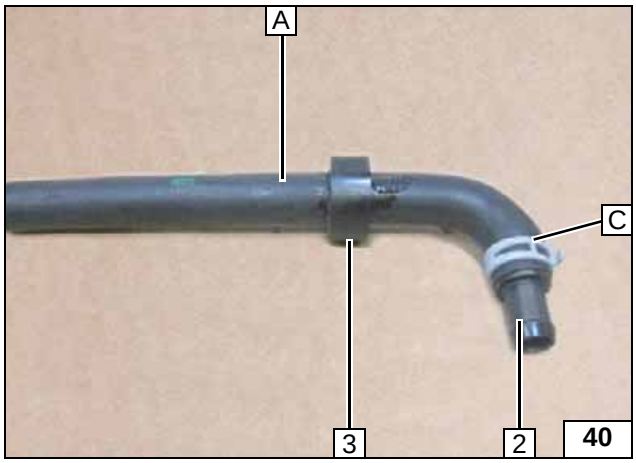
1 Black (sw) rubber isolator [2x]
2 18x20 coupling piece
3 Screw clamp

Preparing hose C



All spring clips = 27 mm dia.
Install hose **C** with 90° elbow onto heater outlet.

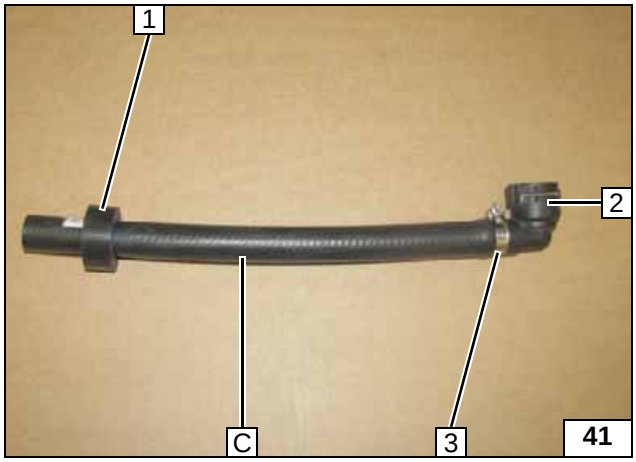
Mounting coolant hoses



Only for diesel vehicles

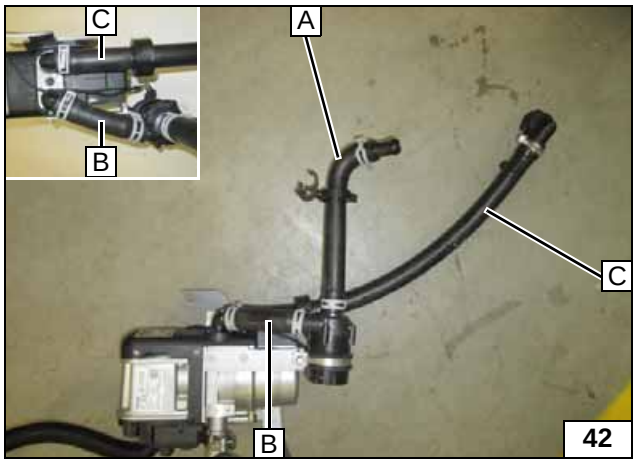
1 27 mm dia. spring clip
2 18x20 connecting pipe
3 Black (sw) rubber isolator

Preparing hose A



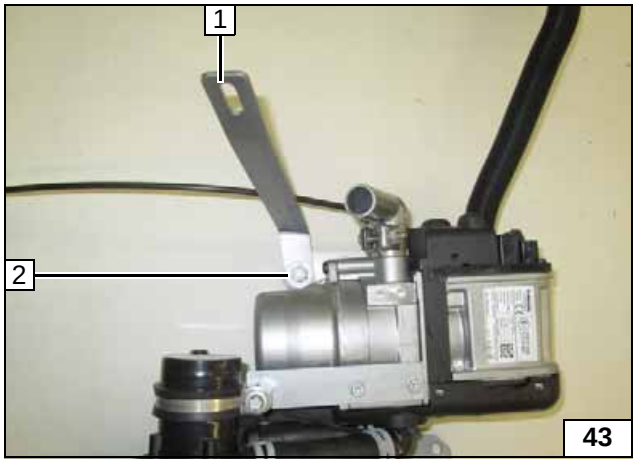
1 Black (sw) rubber isolator [2x]
2 18x20 coupling piece
3 Screw clamp

Preparing hose C



All spring clips = 27 mm dia.

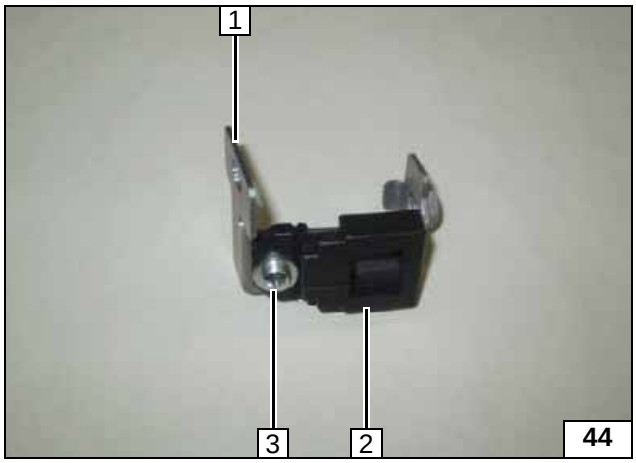
Mounting coolant hoses



All vehicles

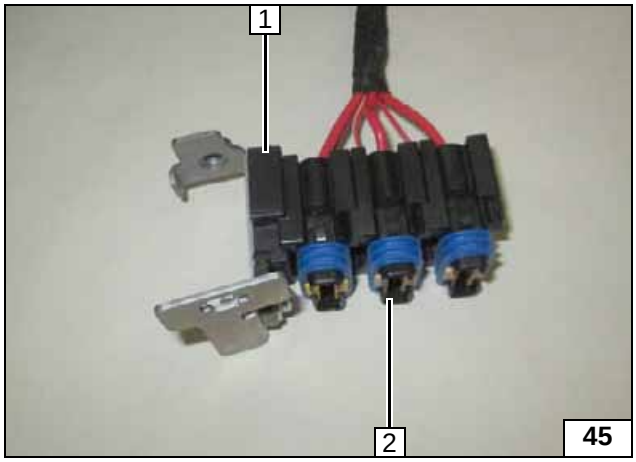
1 Strut
2 M8x20 bolt, spring lockwasher, large diameter washer, threaded hole of bracket

Installing strut



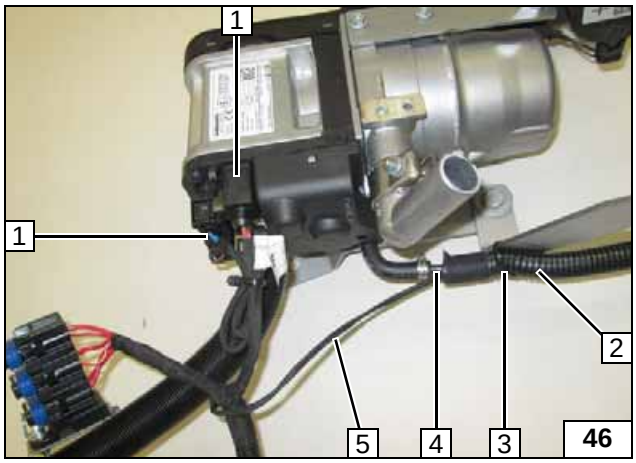
1 Fuse holder bracket
2 Retaining plate
3 M4x12, large diameter washer [2x], nut

Premounting fuse holder retaining plate



1 Retaining plate
2 Fuse holder

Installing retaining plate and fuse holder



Pull metering pump wiring harness **5** and fuel line **4** into corrugated tube **2**, attach to strut using cable tie **3**.

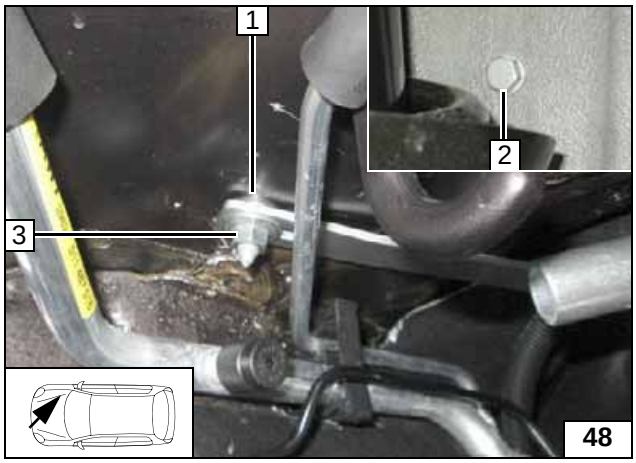
1 Connect heater wiring harness [2x]

Installing wiring harness

Installing Heater

Route corrugated tube **1** with fuel line and metering pump wiring harness behind the A/C lines to the underbody.

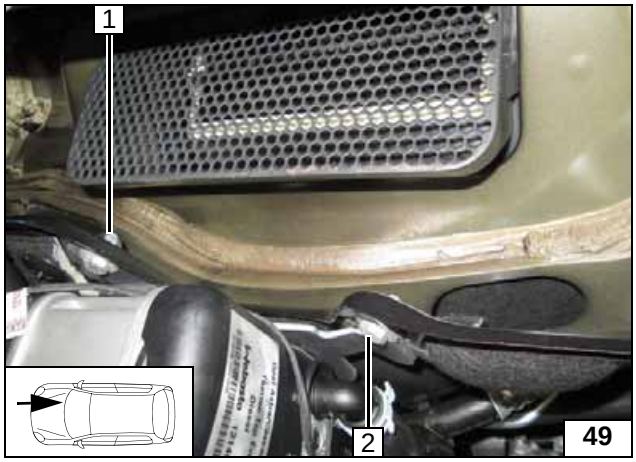
Installing heater



Insert one large diameter washer between bracket and body at position **1**.

2 M8x20 bolt, large diameter washer, existing hole
3 Large diameter washer, flanged nut

Installing heater



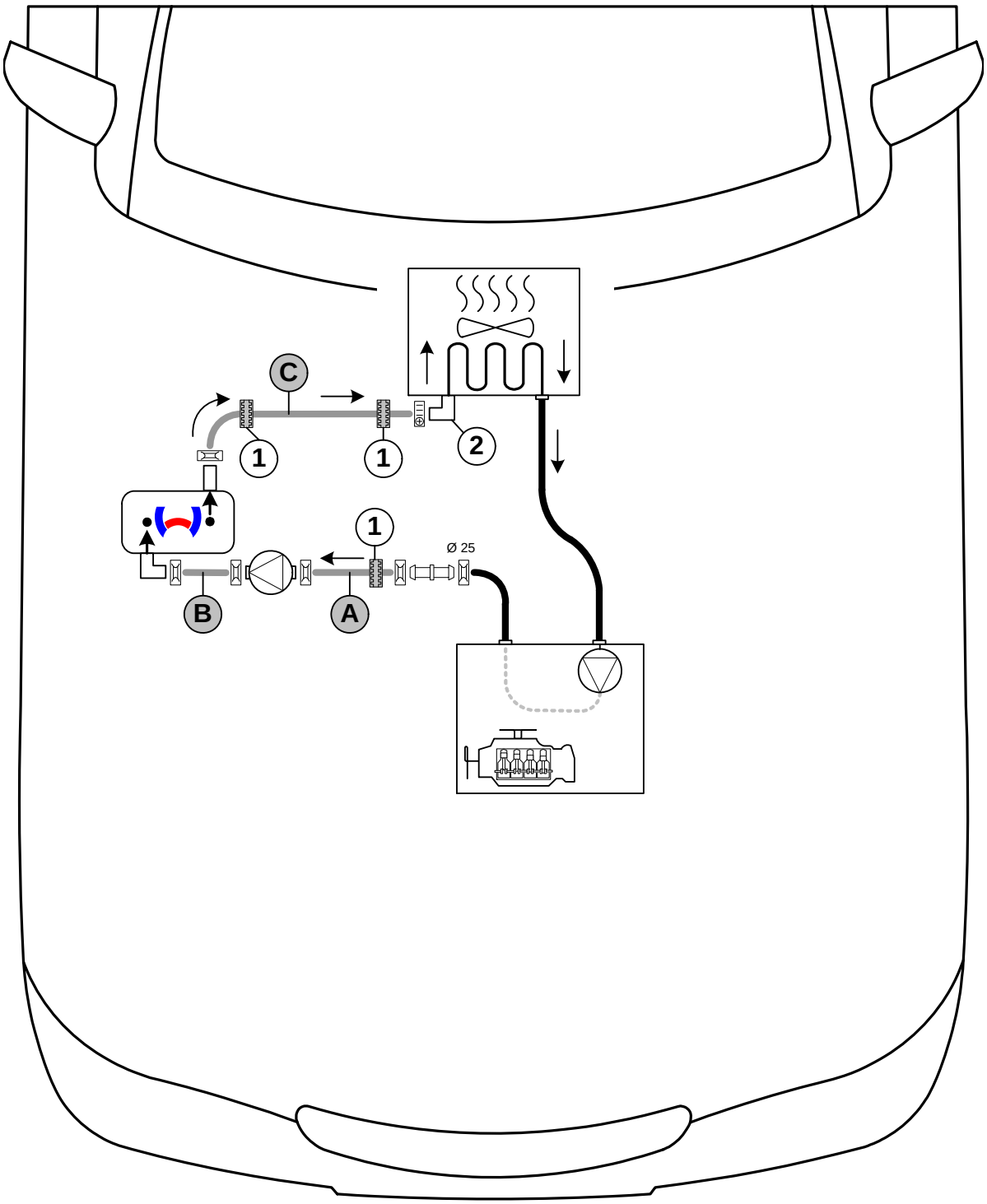
1 M8x20 bolt, large diameter washer [2x], flanged nut
2 M8x20 bolt, large diameter washer [2x], flanged nut

Installing heater

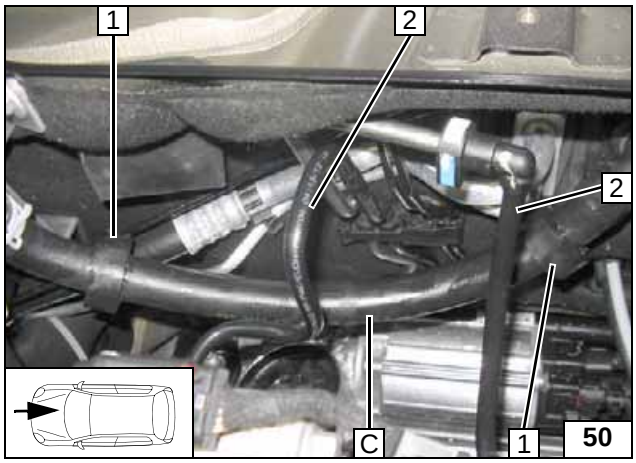
Coolant Circuit for Petrol Vehicles

WARNING!
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



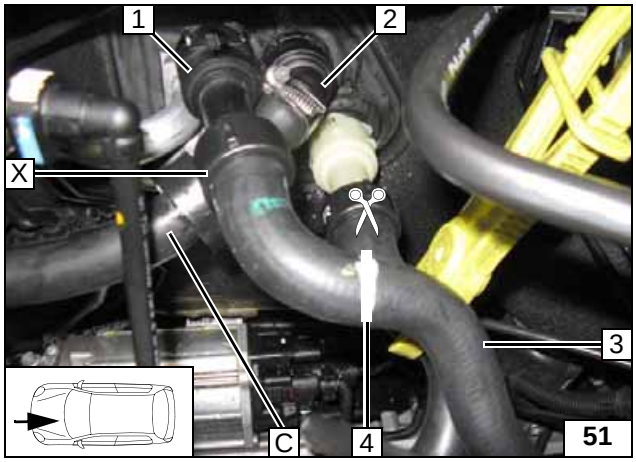
All spring clips without a specific designation = 27 mm dia. Hose clamp = 23-35mm dia.
Connecting pipe = 18x20 mm dia.
1 = Black (sw) rubber isolator. **2** = Coupling piece



Route hose **C** behind original vehicle fuel lines **2** to the heat exchanger inlet.

1 Position black (sw) rubber isolator [2x]

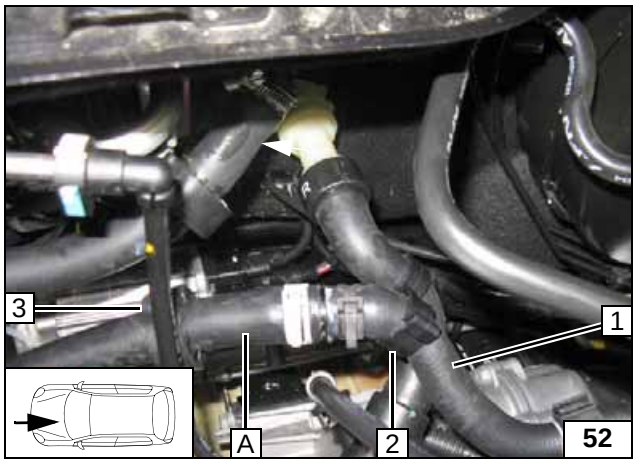
Routing of hose C in engine compartment



Remove original vehicle coupling **1** from heat exchanger inlet, detach hose at cutting point **4**. Attach coupling **2** of hose **C** to heat exchanger inlet. Discard section **X**.

3 Engine outlet hose section

Cutting point and Connecting heat exchanger inlet



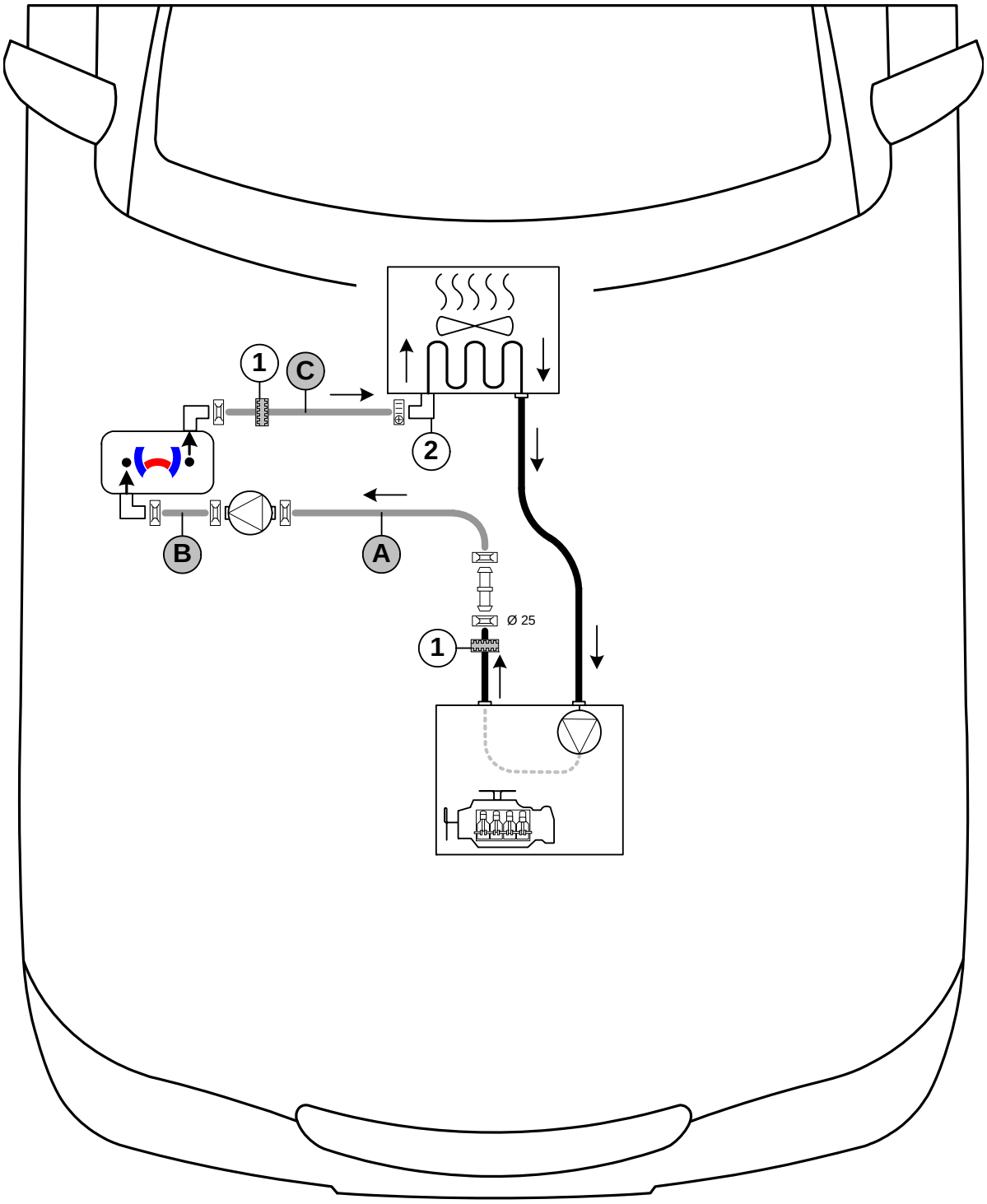
1 Engine outlet hose section
2 25x25 hose bracket
3 Position black (sw) rubber isolator

Connecting engine outlet

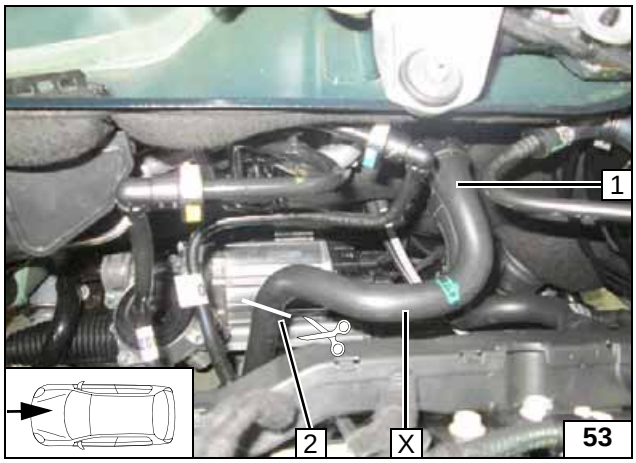
Coolant Circuit for Diesel Vehicles

WARNING!
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

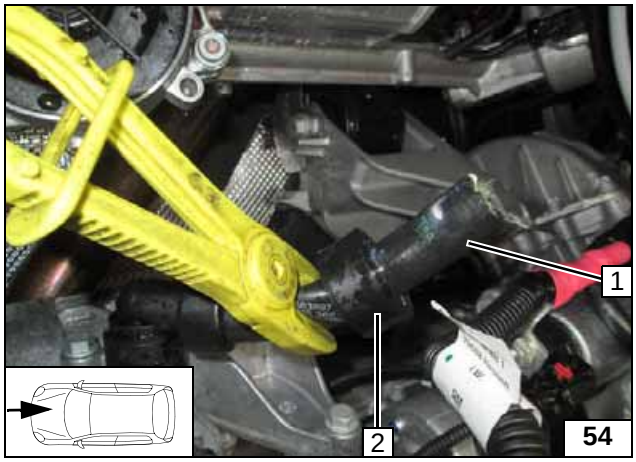


All spring clips without a specific designation = 27 mm dia. Hose clamp = 23-35mm dia.
Connecting pipe = 18x20 mm dia.
1 = Black (sw) rubber isolator. **2** = Coupling piece



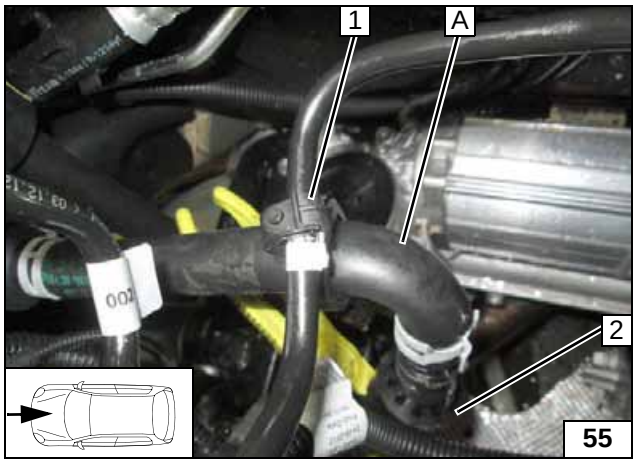
Cut off hose on engine outlet/heat exchanger inlet at marking **2**. Remove hose section of heat exchanger inlet **1** and discard.

Cutting point



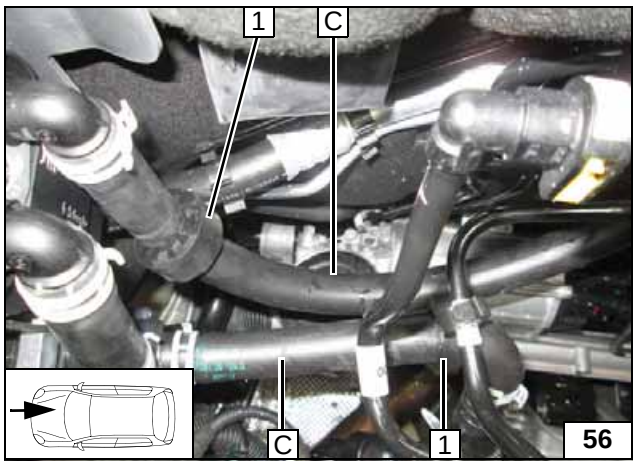
1 Engine outlet hose section
2 Black (sw) rubber isolator

Preparing connection of engine outlet



1 8x25 hose bracket
2 Position black (sw) rubber isolator

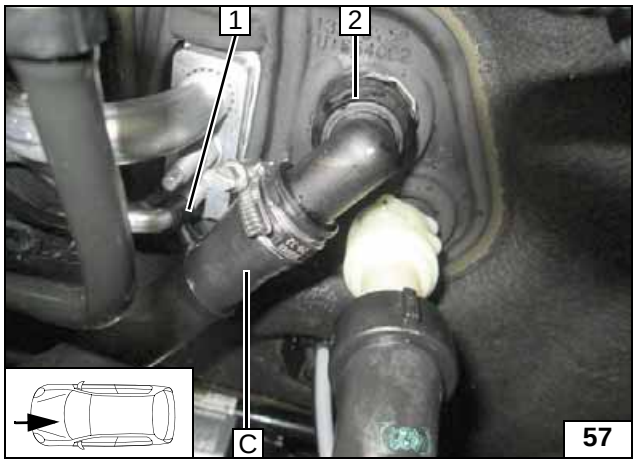
Connecting engine outlet



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

1 Position black (sw) rubber isolator [2x]

Routing in engine compartment



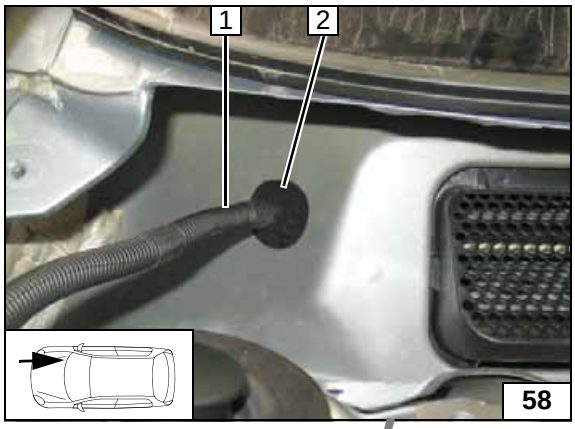
1 10x25 hose bracket
2 Coupling of heat exchanger inlet

Connecting heat exchanger inlet

Electrical System

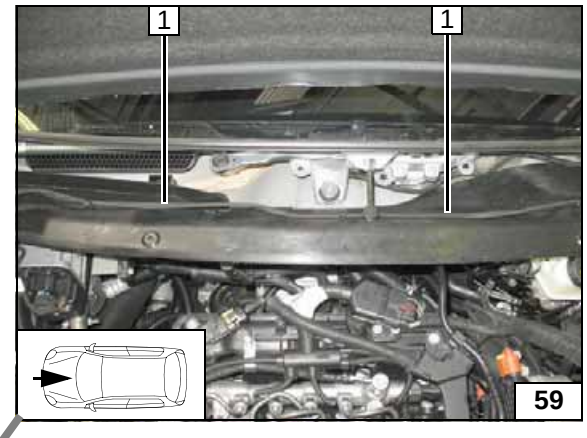
Wiring harness pass through

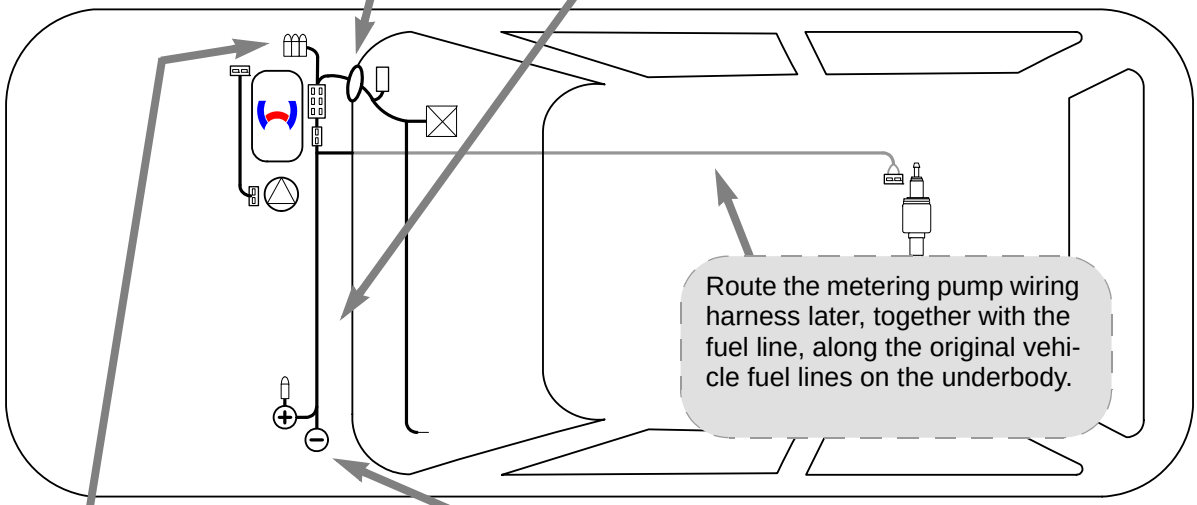
1 Telestart wiring harnesses, SVM module
2 Protective rubber plug



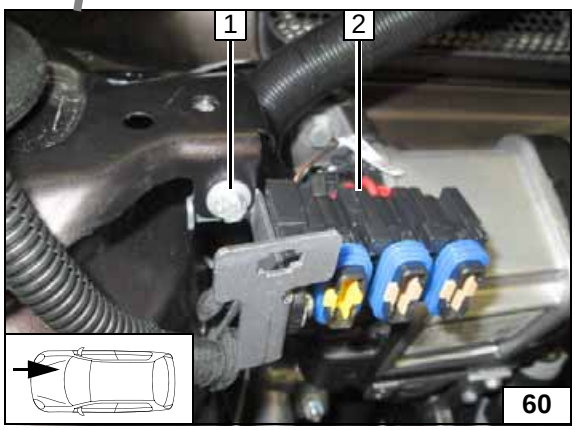
Wiring harness routing

1 Fasten heater wiring harness to coolant reservoir cap using eyelet cable tie



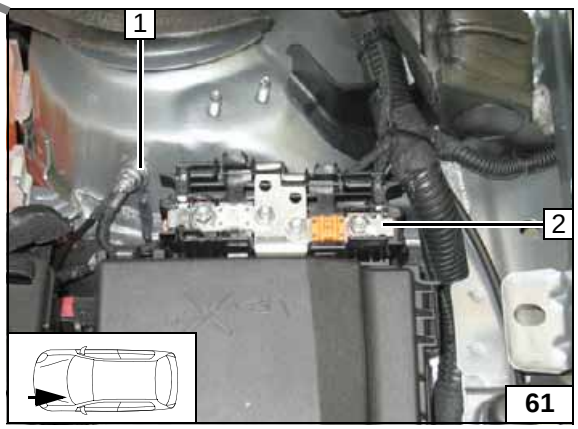


Wiring harness routing diagram



Engine compartment fuse holder

1 M6x12 bolt, large diameter washer, existing hole, bracket
2 Fuses F2-4 (will be inserted later)

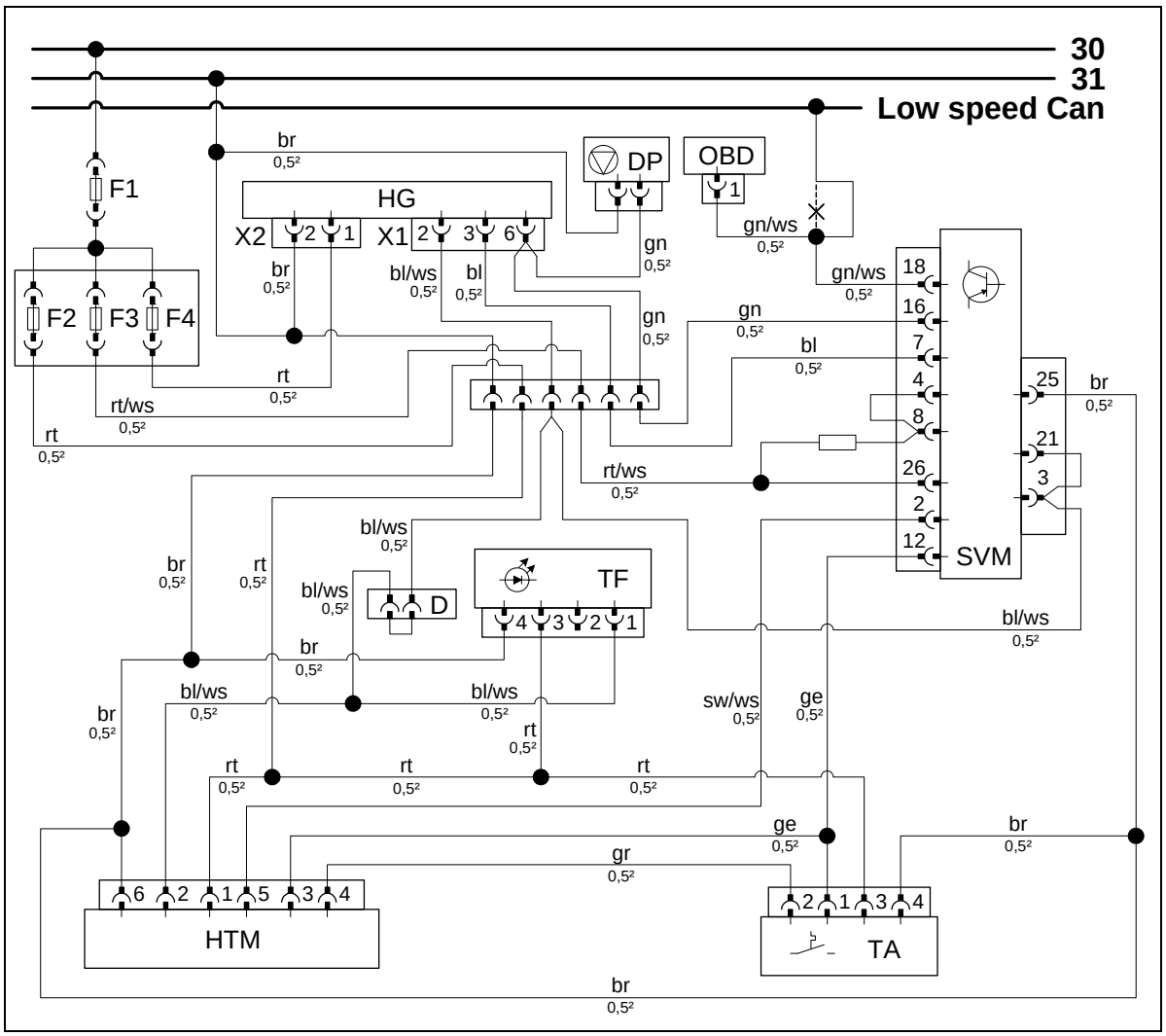


Positive and earth wire

1 Earth wire on original vehicle earth support point
2 Positive wire on positive support point

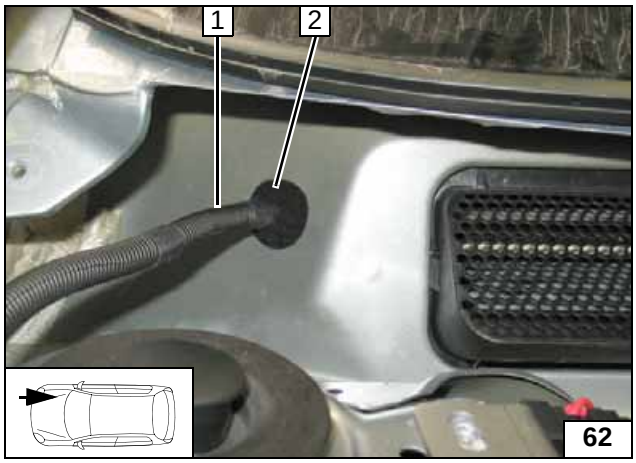
Vehicle-Specific Wiring Harness

Wiring diagram



Legend

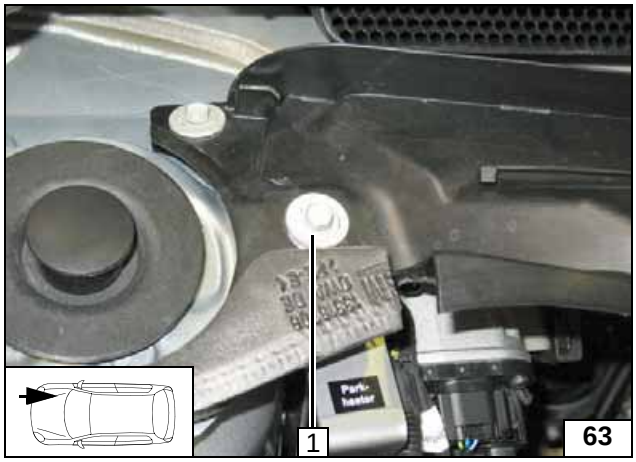
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	SVM	Special Vehicle Module	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector			ge	yellow
HTM	Telestart HTM 100			gn	green
TF	Temperature sensor			gr	grey
TA	Push button			ws	white
D	Diagnostic connector			bl	blue
F1	30A fuse			br	brown
F1	30A fuse				
F2	5A fuse				
F3	5A fuse			**X**	Cutting point
F4	20A fuse			Wiring colours may vary.	



Seal wiring harness pass through at position **2** with suitable means.

1 Passenger compartment wiring harness
2 Protective rubber plug

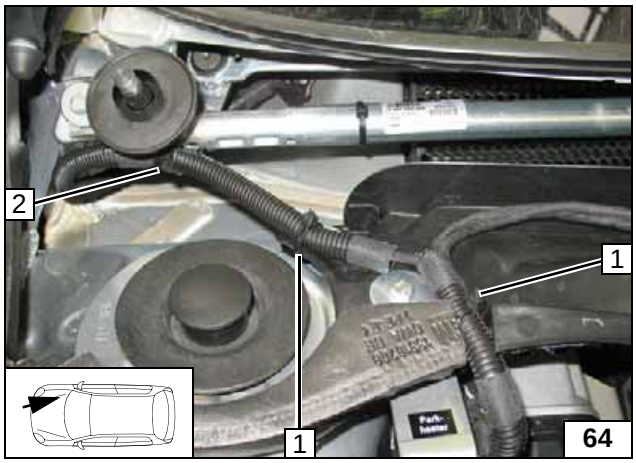
Wiring harness pass through



Prior to installation of coolant reservoir, install windscreen wiper motor.
Insert large diameter washer [3x] at position **1** to serve as a height adjustment.

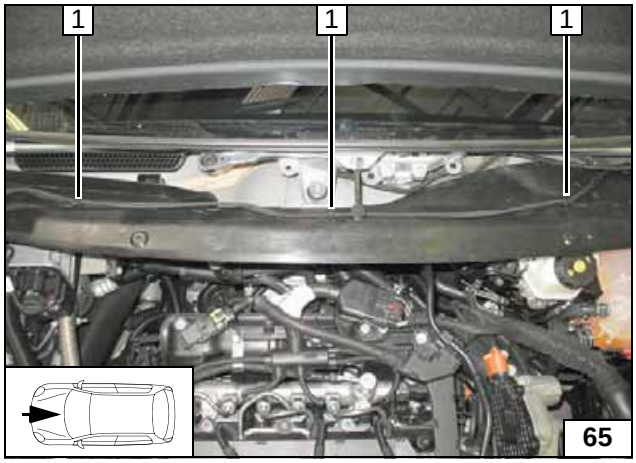
1 Original vehicle bolt, large diameter washer

Installing coolant reservoir cap



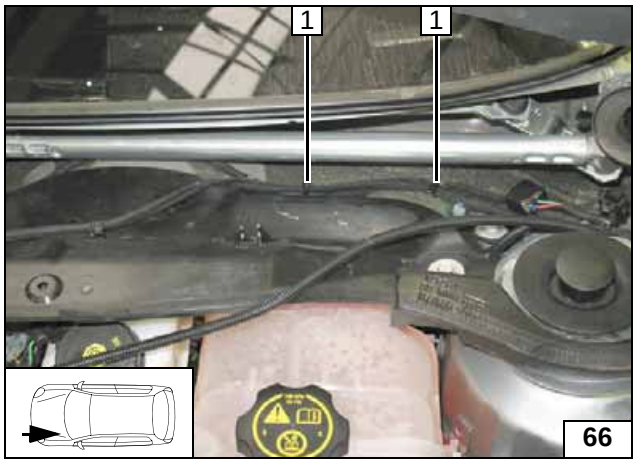
1 Cable tie on heater wiring harness and through 5mm dia. hole of coolant reservoir cap [2x]
2 Cable tie on heater wiring harness and windscreen wiper linkage

Wiring harness routing



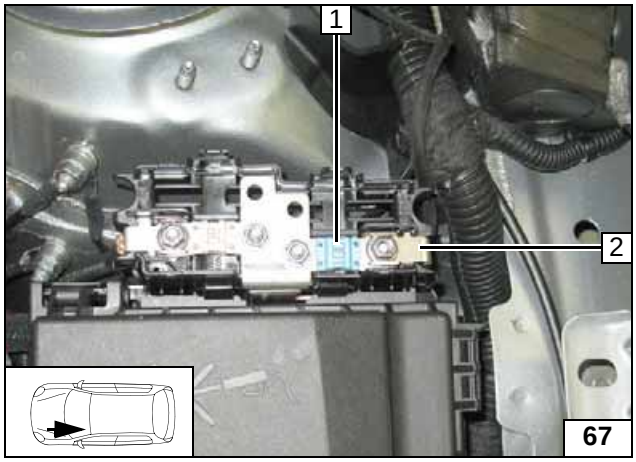
1 Heater wiring harness, eyelet cable tie [3x]

Wiring harness routing



Fasten heater wiring harness **1** to original vehicle wiring harness using cable ties.

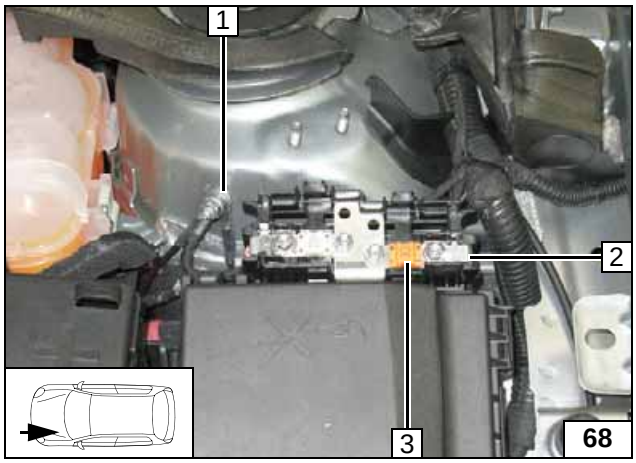
Wiring harness routing



Only in case of vehicles with electrical auxiliary heater

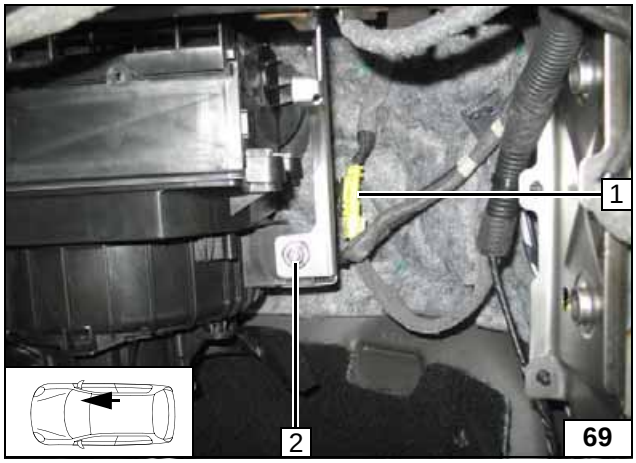
1 Remove 100A fuse
2 Remove wire of electrical auxiliary heater, insulate and tie back

Connection of positive support point



1 Earth wire on original vehicle earth support point
2 Positive wire on positive support point
3 F1 30A fuse

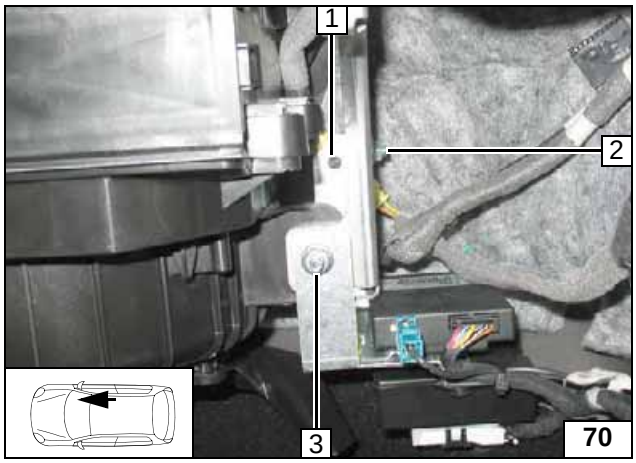
Positive and earth connection



Replace original vehicle bolt at position **2** with M6x25 bolt and large diameter washer.

1 Detach connector of airbag from bracket
2 M6x25 bolt, large diameter washer

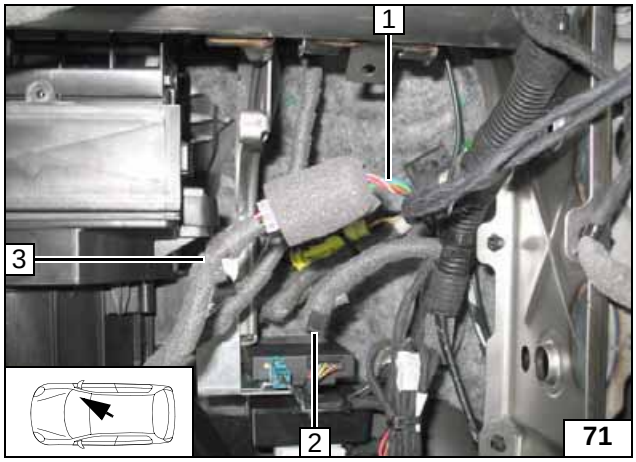
Preparing installation location of SVM module



Insert stud bolt of SVM module bracket through hole of airbag connector and fasten it using flanged nut **2**. Clip connector of airbag **1** onto bracket of SVM module.

3 Flanged nut

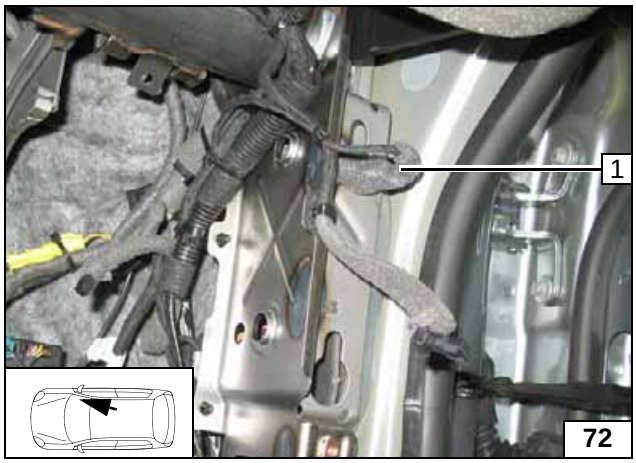
Installing SVM module



Connect heater wiring harness **1** to passenger compartment wiring harness **3** and fasten to original vehicle wiring harness using a cable tie.

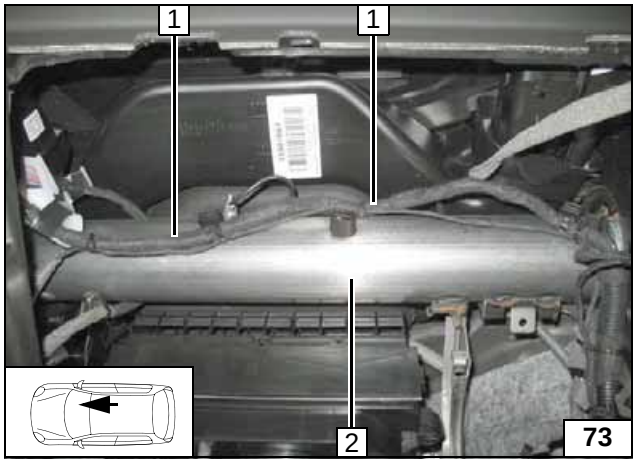
2 Push button connector

Connecting wiring harnesses



1 Diagnosis connector

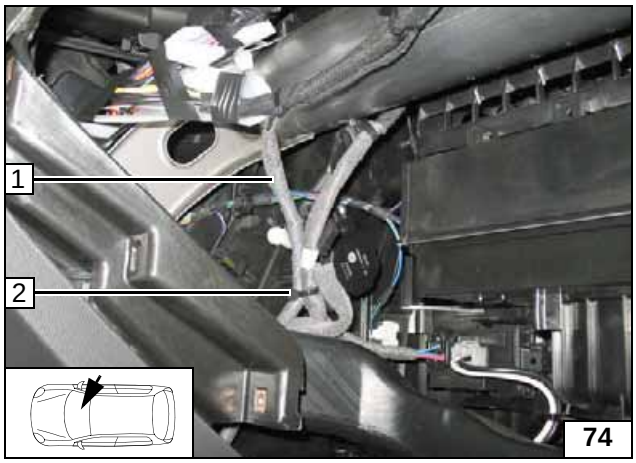
Wiring harness routing



Fasten green/white (gn/ws) wire of SVM module/OBD socket outlet **1** to original vehicle wiring harness using a cable ties.

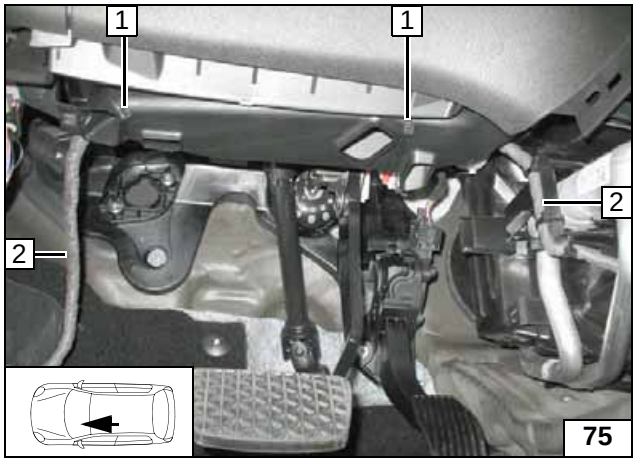
2 Instrument panel carrier

Wiring harness routing



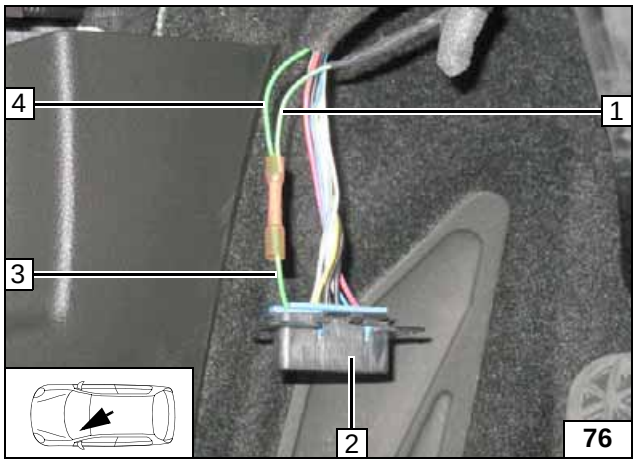
Fasten green/white (gn/ws) wire of SVM module/OBD socket outlet **1** to original vehicle wiring harness using cable tie **2** and route it to the left side of the vehicle.

Wiring harness routing



Fasten green/white (gn/ws) wire of SVM module/OBD socket outlet **2** to air duct using cable ties **1**.

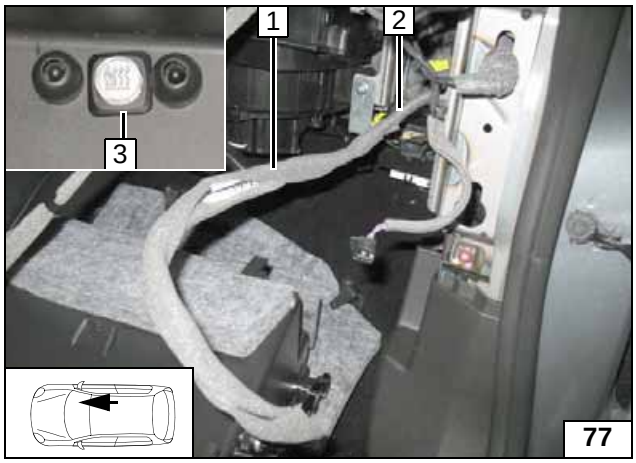
Wiring harness routing



Connection to OBD socket outlet connector **2**. Produce connections as shown in wiring diagram (crimp and shrink butt connectors).

1 Green/white (gn/ws) wire of SVM module
3 Green (gn) wire of OBD socket outlet, pin 1
4 Green (gn) wire of Low Speed Can

Connection of OBD socket outlet



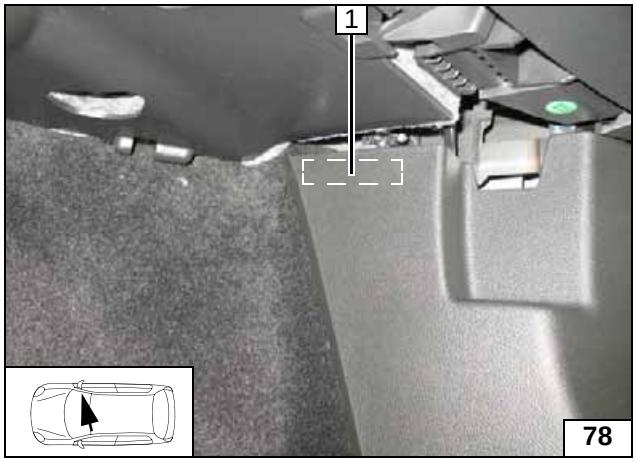
Telestart

Push button

Connect push button wiring harness **1** to passenger compartment wiring harness **2**.

3 Push button

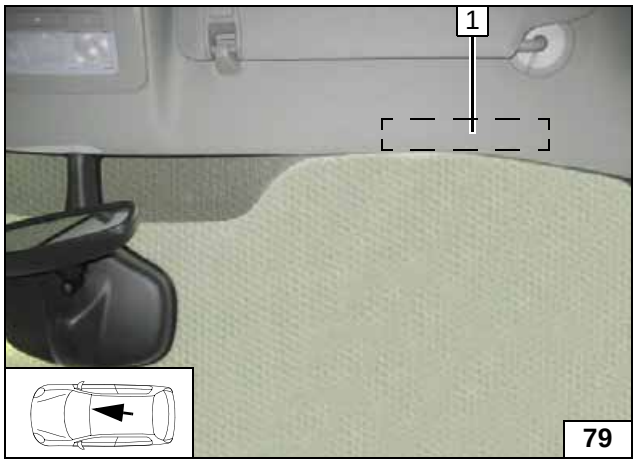
Installing push button



Temperature sensor T100 HTM

Fasten temperature sensor **1** (hidden) with adhesive tape.

Installing temperature sensor



1 Aerial (hidden)

Installing aerial

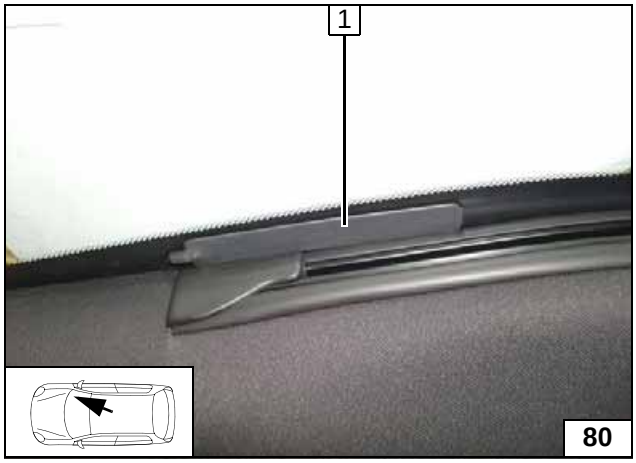


Figure shows vehicle with panorama window.

1 Aerial

Installing aerial

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.

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.

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

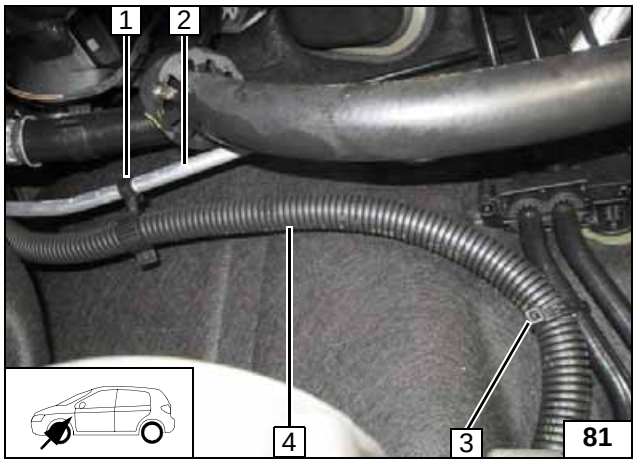
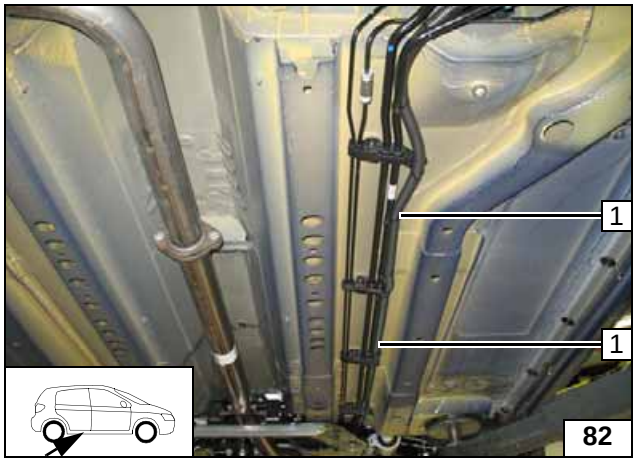


Figure shows 1.6 diesel vehicle!

Route fuel line and wiring harness of metering pump in corrugated tube **4** to the underbody.

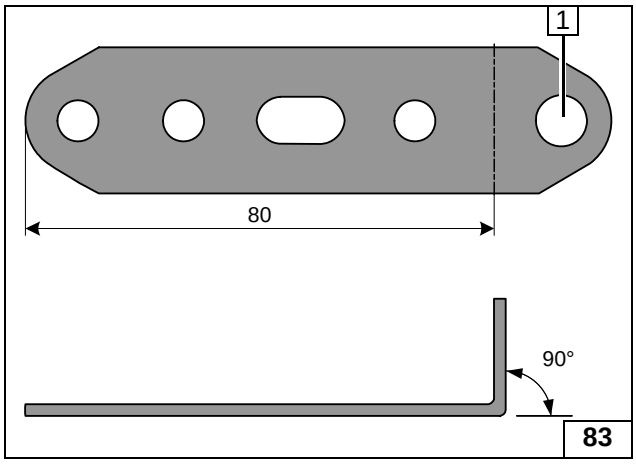
Routing lines

1 9x13 hose bracket
2 A/C line
3 Fasten corrugated tube to original vehicle fuel line using a cable tie



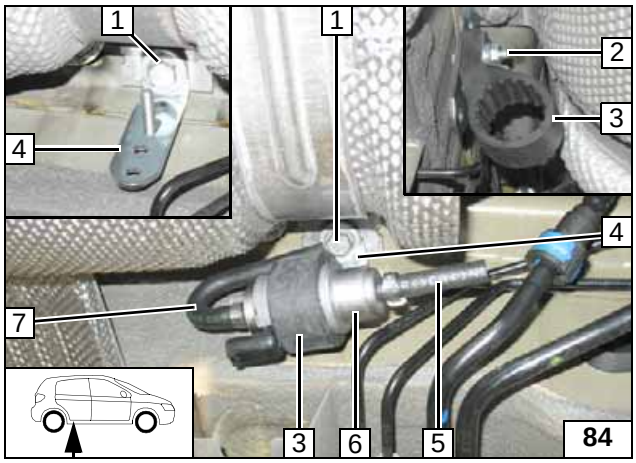
Attach fuel line and metering pump wiring harness in corrugated tube **1** to the original vehicle fuel lines using cable ties.

Routing lines



1 Drill 8.5 mm dia.hole

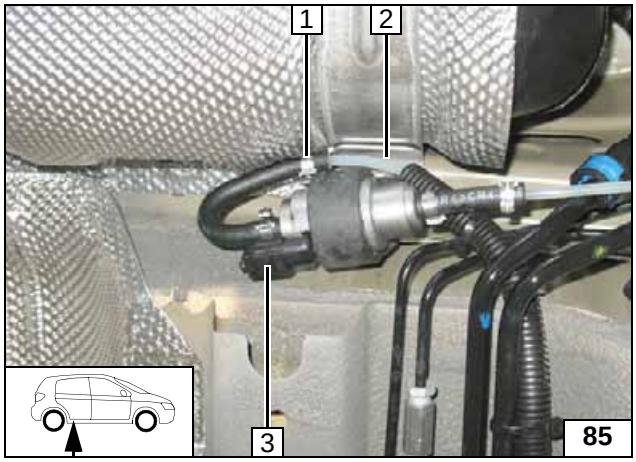
Preparing perforated bracket



Prior to installation, insert M6x25 bolt into perforated bracket **4** as shown.

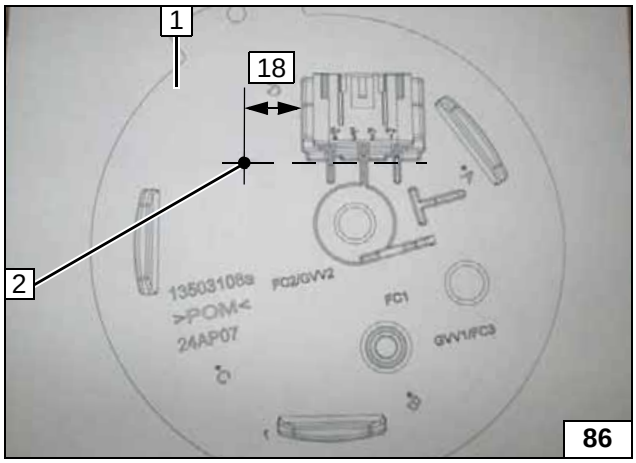
1 Original vehicle bolt for fuel tank fastening
2 M6x25 bolt, support angle bracket, flanged nut
3 Metering pump mount
5 Hose section, 10 mm dia. clamp
6 Metering pump
7 180° moulded hose, 10 mm dia. clamp

Installing metering pump



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

Fuel extraction

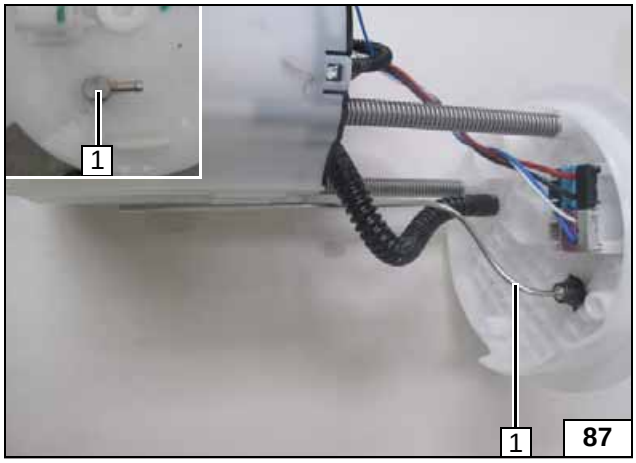


Petrol

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

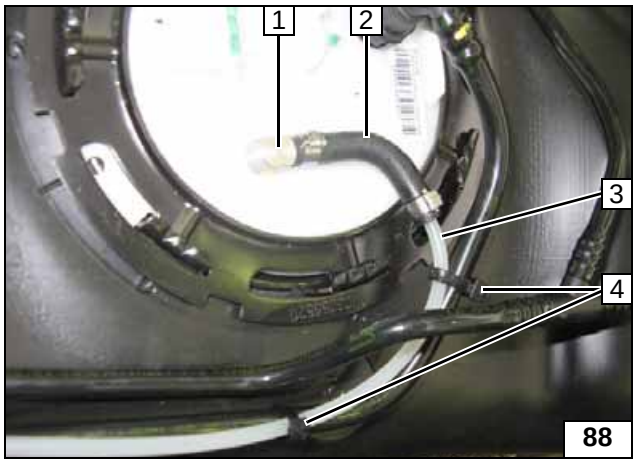
1 Fuel tank sending unit cover diagram
2 Copy hole pattern, 6 mm dia. hole

Preparing fuel tank sending unit



1 Fuel standpipe

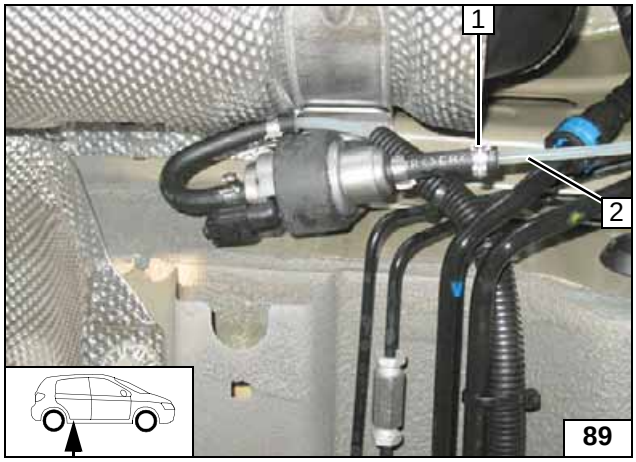
Installing fuel standpipe



Install fuel tank sending unit according to manufacturer's instructions.

1 Fuel standpipe
2 90° moulded hose, 10 mm dia. clamp [2x]
3 Fuel line
4 Cable tie [2x]

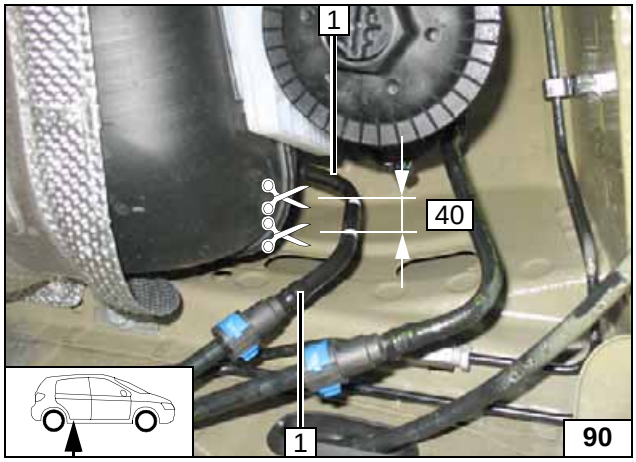
Installing fuel standpipe



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

1 10 mm dia. clamp
2 Fuel line

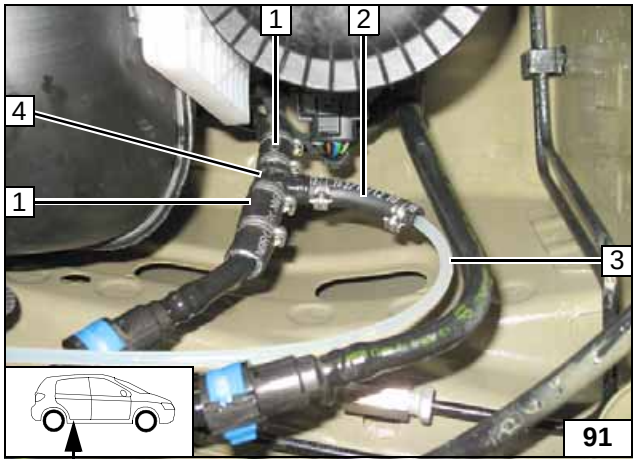
Connecting metering pump



Diesel

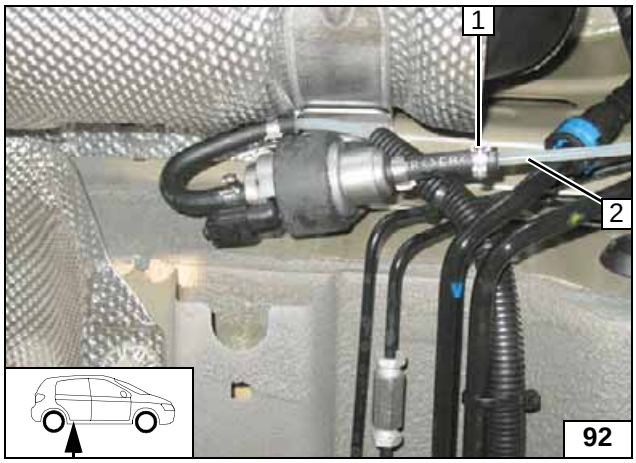
Cut fuel return line **1** at the markings [2x]. Discard section. Insert 8mm dia. support sleeve [2x] into both wire ends.

Fuel extraction



1 Hose section with inner dia. d_i = 9.5mm [2x]; support sleeve [2x], 15.5mm dia. clamp [4x]
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line
4 10x5x10 fuel standpipe

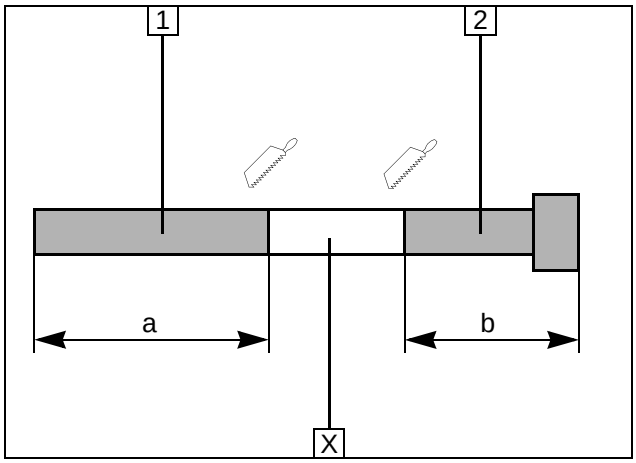
Inserting fuel standpipe



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

1 10 mm dia. clamp
2 Fuel line

Connecting metering pump

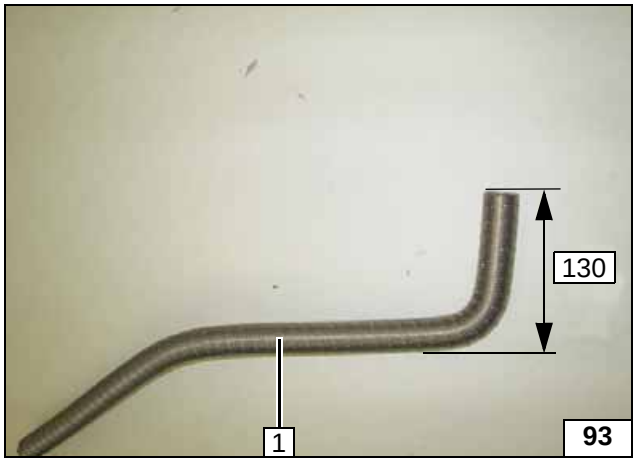


Exhaust Gas

Discard section **X**.

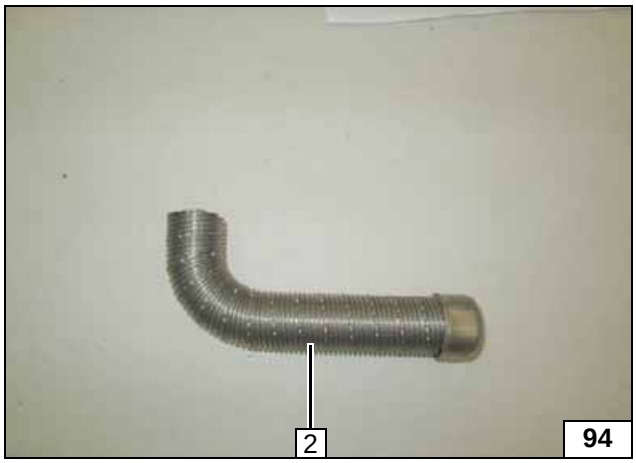
1 Exhaust pipe
a = 590
2 Exhaust end section
b = 160

Preparing exhaust pipe



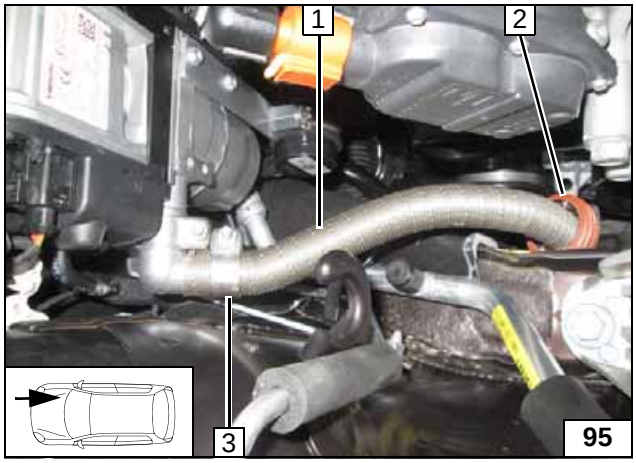
1 Exhaust pipe

Shaping exhaust pipe



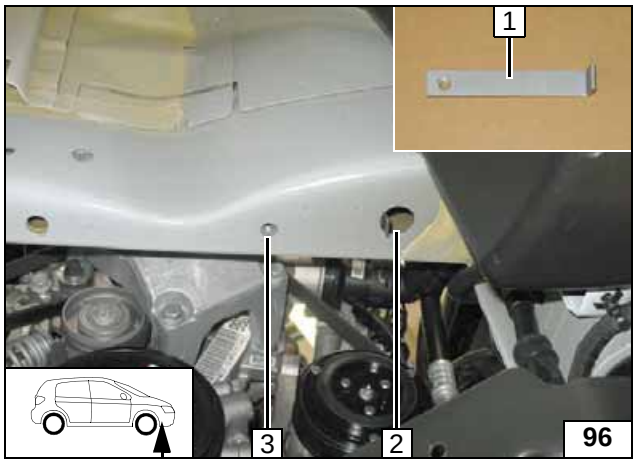
1 Exhaust end section

Shaping exhaust end section



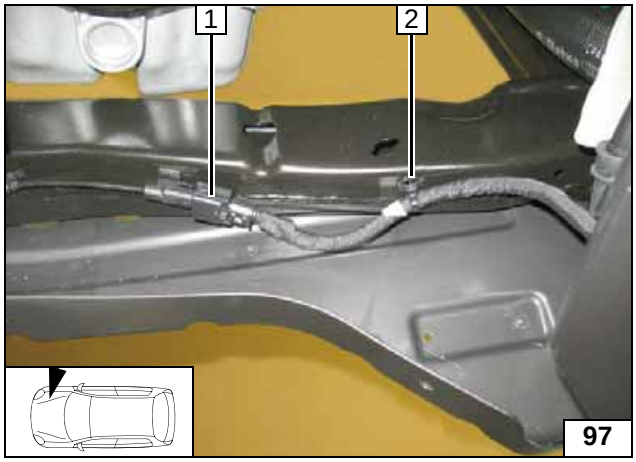
1 Exhaust pipe
2 Spacer bracket
3 Hose clamp

Installing exhaust pipe



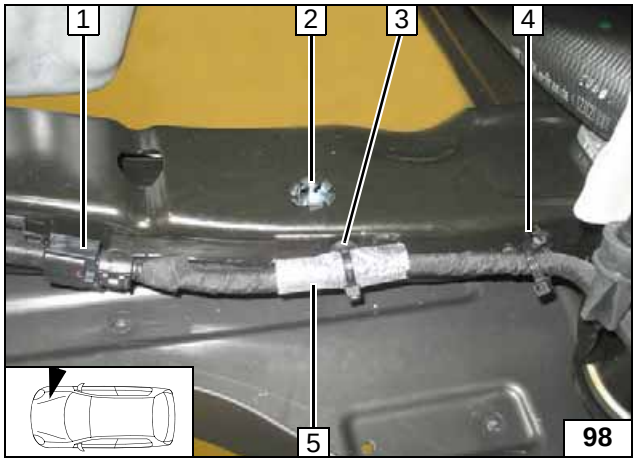
Insert bracket **1** into hole **2** and align with threaded hole at position **3**.

Installing exhaust end section



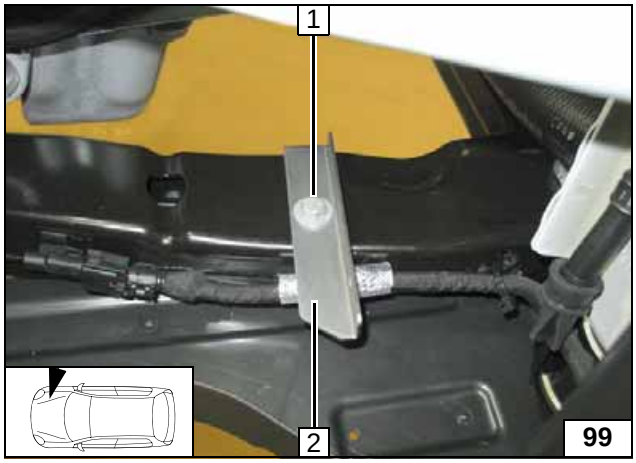
1 Disconnect ABS connector
2 Remove eyelet cable tie

Preparing ABS wire



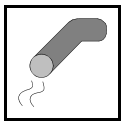
1 Connect ABS connector
2 Cage nut, existing hole
3 Eyelet cable tie
4 Tighten eyelet cable tie only slightly (serves as ducting)
5 Insulation on ABS line

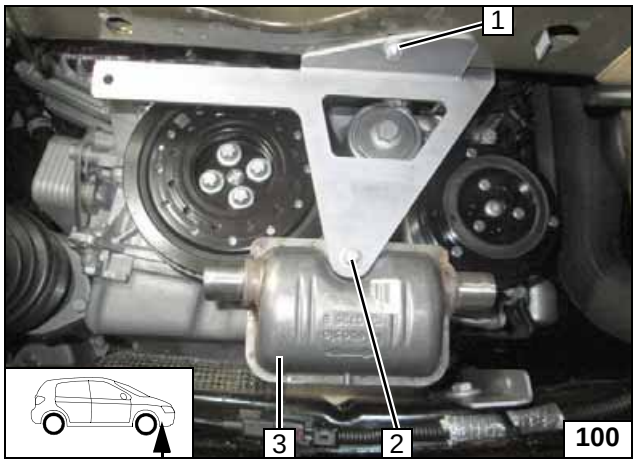
Insulating ABS wire



1 M8x20 bolt, spring lockwasher, washer in cage nut
2 Exhaust end section bracket

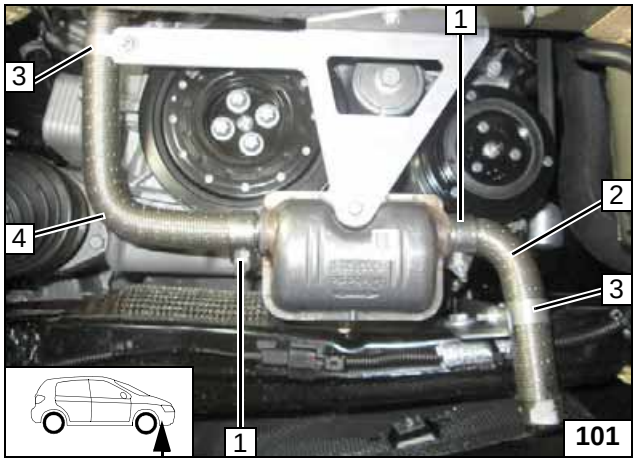
Installing bracket of exhaust end section





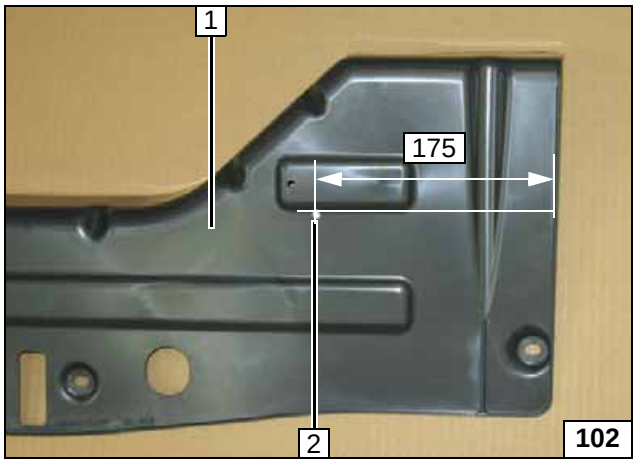
1 M6x25 bolt in threaded hole of bracket
2 M6x16 bolt, flanged nut
3 Silencer

Installing silencer



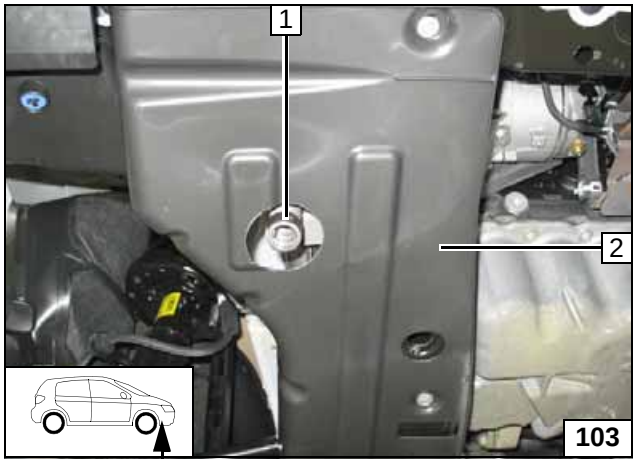
1 Hose clamp [2x]
2 Exhaust end section
3 M6x16 bolt, p-clamp, flanged nut [2x each]
4 Exhaust pipe

Installing exhaust pipe and exhaust end section



1 Underride protection
2 60 mm dia. hole

Hole in underride protection



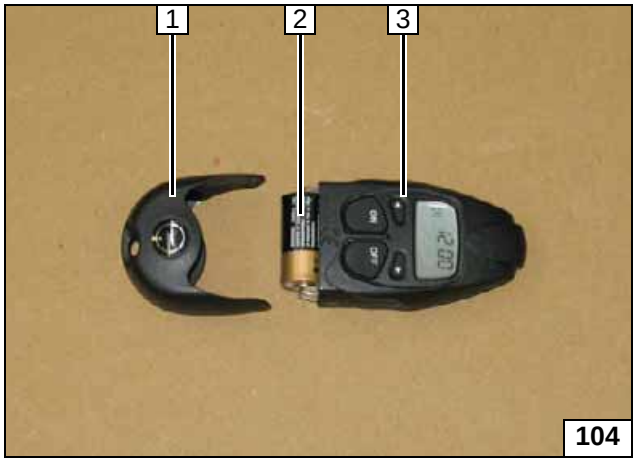
Align exhaust end section **1** with centre of hole and flush with underride protection **2**.

Aligning exhaust end section

Final Work

WARNING!
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, Order No. 111329).

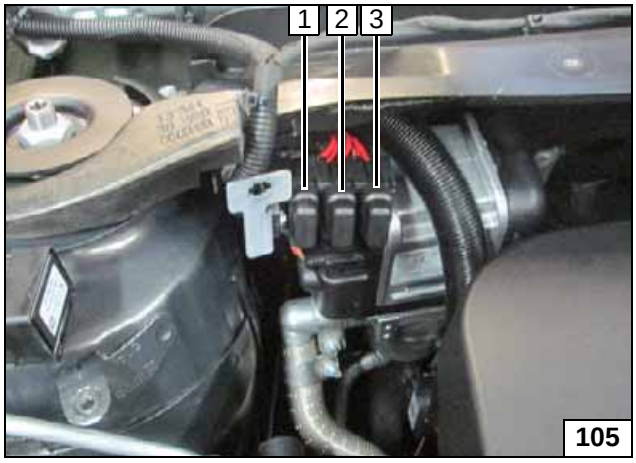
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Make settings on A/C control panel according to the 'Operating Instructions for End Customer'.**
- **Place the 'Switch off parking heater before refuelling' caution label near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



When inserting the battery **2**, ensure correct polarity!

1 Cover of battery compartment
2 Battery
3 Transmitter

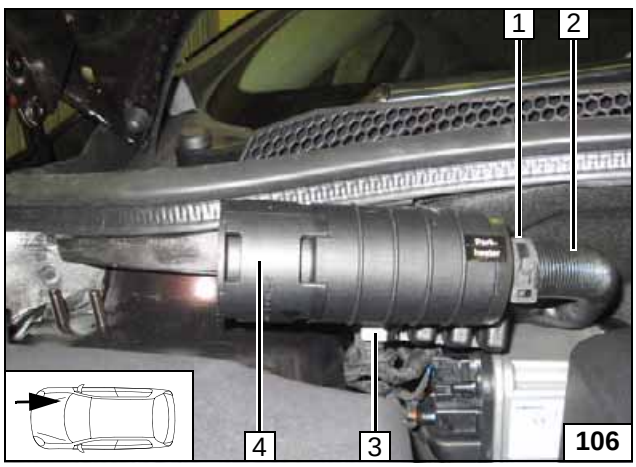
Preparing transmitter



Transmitter and push button are to be taught prior to insertion of fuse F2 **3**.

1 Heating 20A fuse F4
2 Fan controller 5A fuse F3
3 Heater control 5A fuse F2

Inserting fuses



Attach silencer **4** with retaining clip to fuse holder bracket **3**.

1 25mm dia. Caillau clamp
2 Combustion air pipe

Installing silencer

Fuel Standpipe Template for Petrol Vehicles

Top view