Water Heater

Webasto
Feel the Drive

***Thermo Top Evo 5+* Parking Heater** E1 00 0258

Installation Documentation
Mercedes Benz GLK (X204)

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Daimler AG	GLK Class	X204	e1 * 2001 / 116 * 0480 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
200 CDI	Diesel	SG / AT	105	2143	651.913
220 CDI	Diesel	SG / AT	120 / 125	2143	651.916
220 CDI 4-matic	Diesel	SG / AT	120 / 125	2143	651.912
250 CDI 4-matic	Diesel	SG / AT	150	2143	651.912

SG = Manual transmission
AT = Automatic transmission

From Model Year 2009
Left-hand drive vehicle

Verified equipment variants:	Automatic air-conditioning Front fog light Blue Efficiency
Not verified:	Passenger compartment monitoring
Total installation time:	approx. 11 hours

Mercedes Benz GLK (X204)

Table of Contents

Validity	1	Preparing Installation Location	14
Necessary Components	2	Preparing Heater	15
Installation Overview	2	Coolant Circuit	19
Information on Total Installation Time	2	Mounting Heater	25
Information on Operating and Installation Instructions	3	Fuel	27
Information on Validity	4	Underride Protection	32
Technical Information	4	Final Work	33
Explanatory Notes on Document	4		
Preliminary Work	5		
Heater Installation Location	5		
Preparing Electrical System	6		
Electrical System	7		
Fan Control	9		
Mounting Push Button	12		
Telestart	13		

Necessary Components

- Basic delivery scope of *Thermo Top Evo 5*+ Mercedes Benz GLK (X204) 2009 Diesel (incl. Telestart T91 and push button): **1316617C**
- Optional heater control in accordance with price list and upon consultation with end customer

Note:

The installation location of the push button should be confirmed with the end customer before installation.

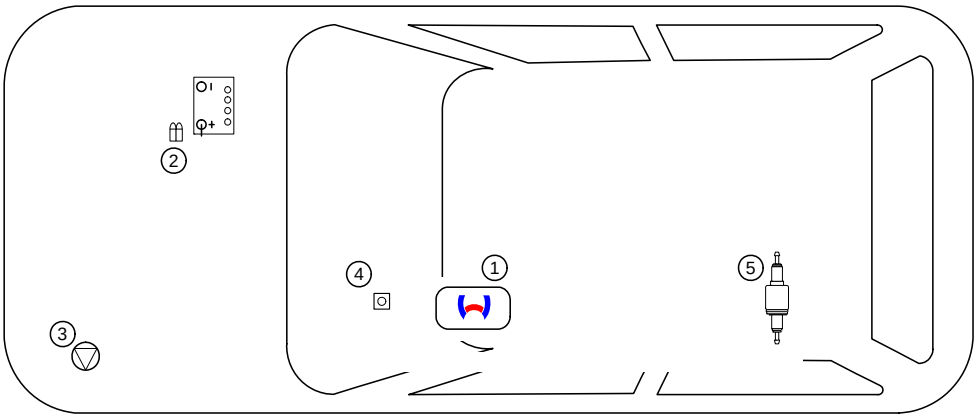
Note:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Circulating pump
4. Push button
5. Metering pump



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 227).

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

1.3 Please note

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

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

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

Important

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

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

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

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

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

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

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

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

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 03 5627

Note

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

Important

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

Note

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

2.1 Excerpt from the directive 2001/56/EC Appendix VII for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Mercedes Benz GLK (X204)

Information on Validity

This installation document applies to Mercedes Benz GLK (X204) Diesel vehicles - for validity, see page 1 - from model year 2009 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 self-clamping 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
- Webasto Thermo Test diagnosis with current software

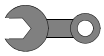
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values for 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 retaining plate of water connection piece 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

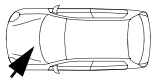
Specific risk of damage to components

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



Mercedes Benz GLK (X204)

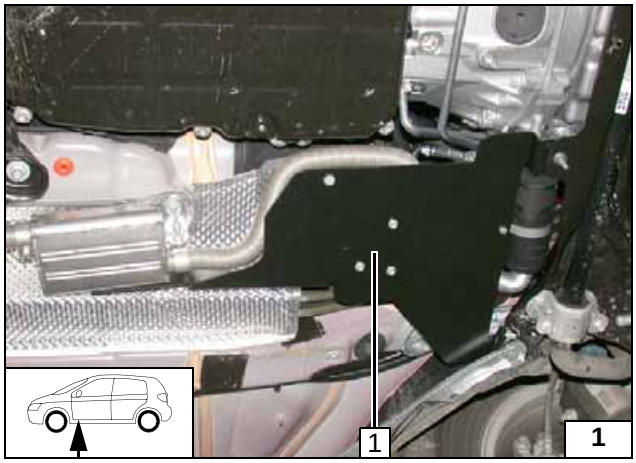
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery completely, together with the carrier.
- Remove the battery cover in the engine compartment on the right.
- Remove the trim of the passenger compartment fan air inlet.
- Remove the lower engine cover.
- Drain off the engine coolant according to the manufacturer's instructions.
- Remove the lower left vehicle trim.
- Detach the wheel well trim of the left front wheel.
- Remove the seat bench of the rear bench seat.
- Open the tank-fitting service lid on the right and on the left.
- Remove the fuel-tank sending unit on the right in accordance with the manufacturer's instructions.
- Remove the A/C control panel.
- Lift the shift lever cover.
- Remove the ashtray or storage compartment with the socket outlet below the A/C control panel.
- Remove the A-pillar trim in the footwell on the right.
- Remove the front right door sill cover.
- Remove the lower right instrument panel trim.
- Remove the lower left instrument panel trim.
- Remove the front right floor trim.
- Loosen the right footrest.

Heater

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



Heater Installation Location

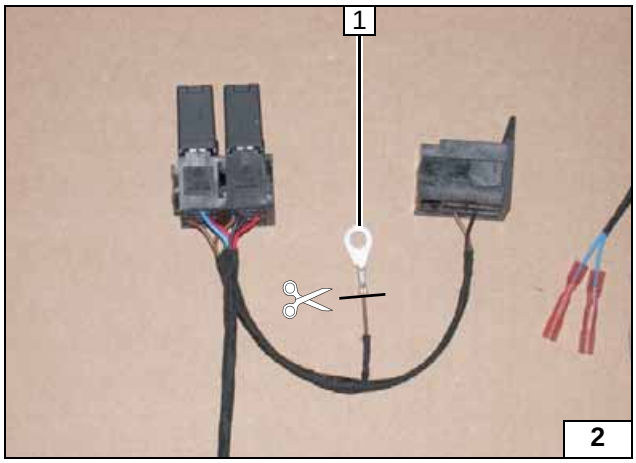
1 Heater (hidden)

Installation location

Preparing Electrical System

Wire sections retain their numbering in the entire document.

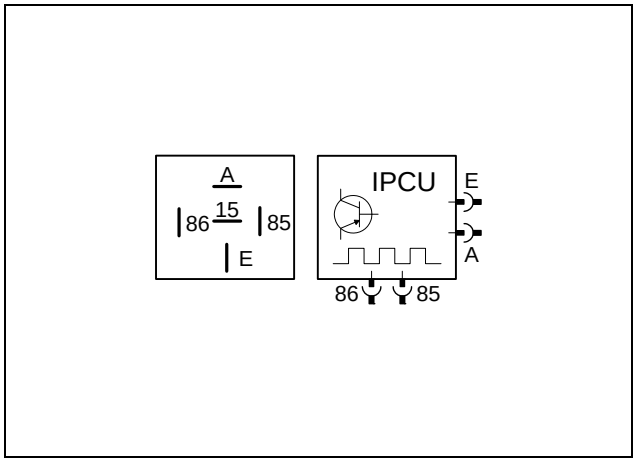
Detach 6mm dia. cable lug **1**.



Preparing wiring harness of fan control

IPCU view on contact side.
The pre-programmed settings are to be checked during the function control of the vehicle and adjusted if necessary.

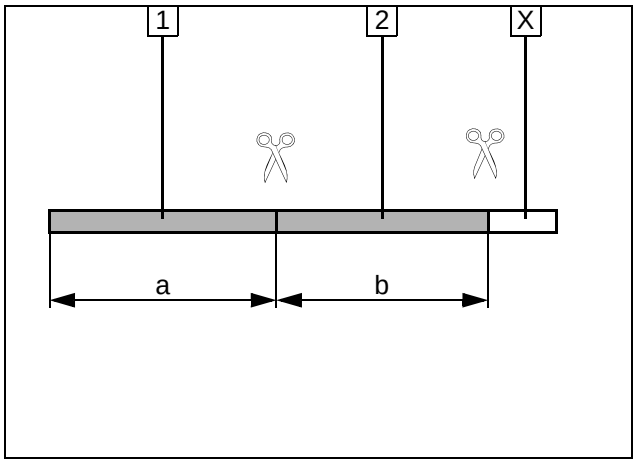
Duty cycle: 56-62%
Frequency: 400Hz
Voltage: 3.0V
Function: High-side



IPCU view

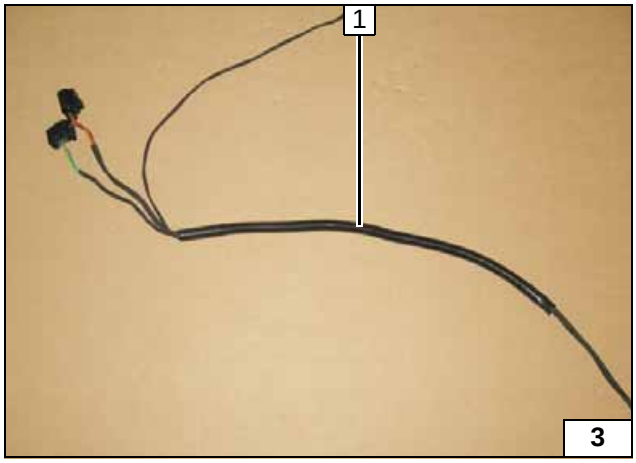
Discard section **X**.

1 10 mm dia. corrugated tube
a = 500
2 10 mm dia. corrugated tube
b = 320



Cutting corrugated tube to length

Slit 10mm dia. 500mm long corrugated tube **1** longitudinally and slide on wiring harness of heater.

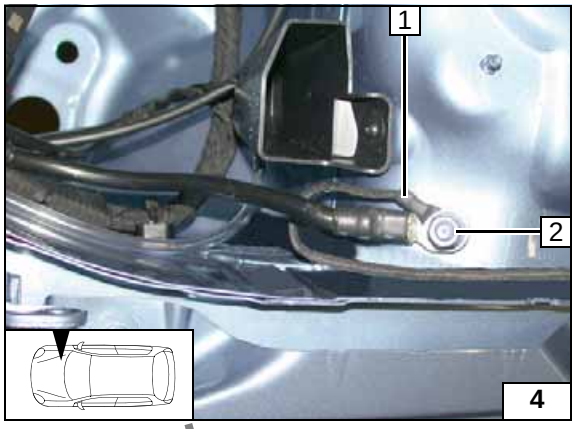


Preparing wiring harness of heater

Electrical System

Earth wire

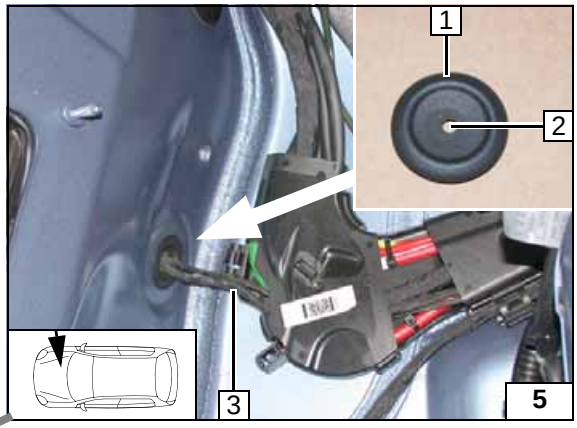
Connect earth wire **1** to the original vehicle earth support point **2** with 6mm dia. cable lug.

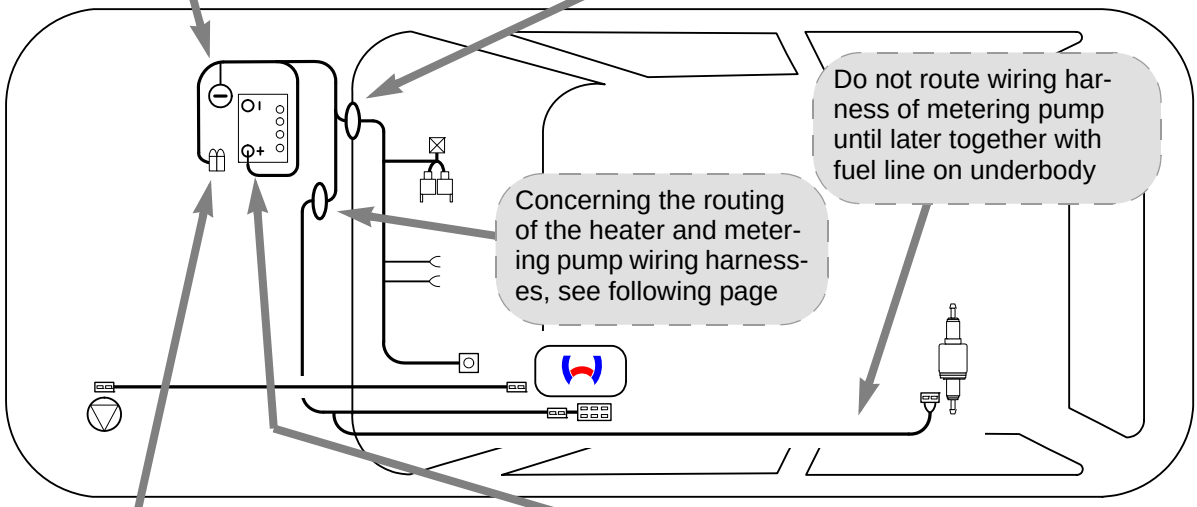


Wiring harness pass through of passenger compartment

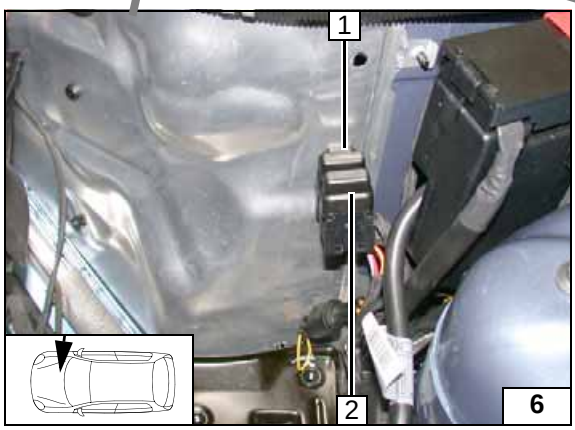
Drilling of 6mm dia. **2** hole at centre of protective rubber plug **1**.

3 Wiring harness of passenger compartment fuse holder





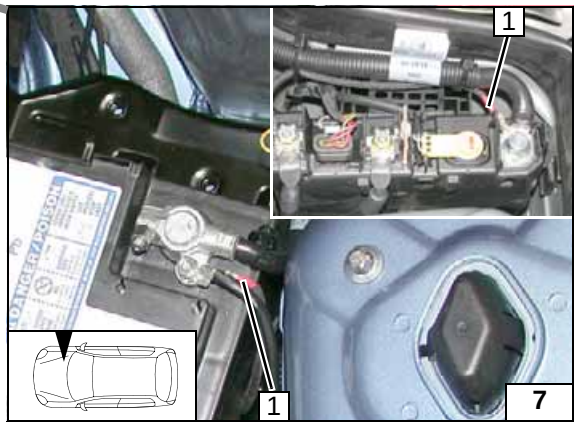
Wiring harness routing diagram



Fuse holder of engine compartment

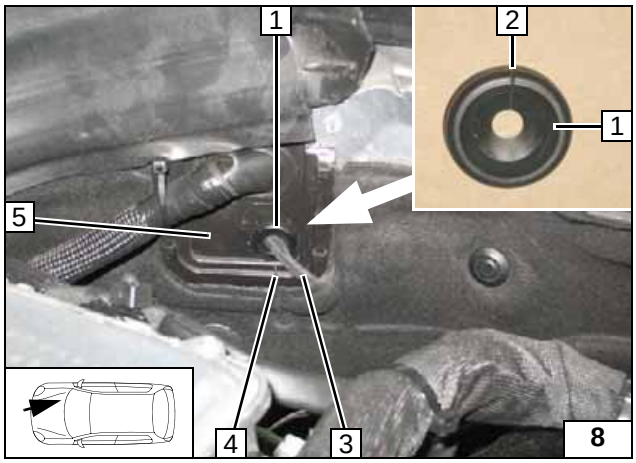
Replace fuse F2 (30A) with 1A fuse.

1 5mm dia. hole, M5x16 bolt, washers, retaining plate of fuse holder, washer, nut
2 F1+2 fuses mounted



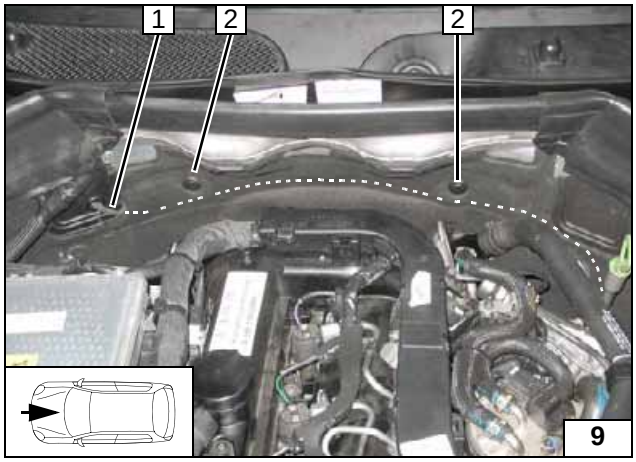
Positive wire

Manufacturer installs different positive support points. Connect power supply of heater **1** to positive terminal (battery or starter cable of positive support point).



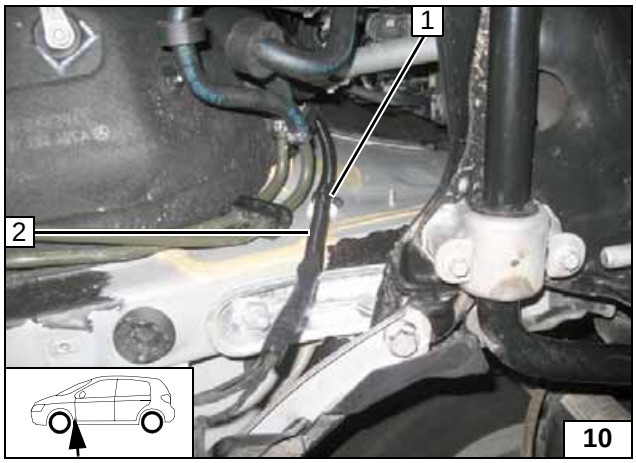
18mm hole at position **1** in plastic trim **5**. Slit open plastic trim **5** at position **4** from bottom up to 18mm dia. hole. Cut out protective rubber plug **1** up to centre at position **2**. Route wiring harness of heater and wiring harness of metering pump **3** through 18mm hole in the engine compartment. Insert protective rubber plug **1** in plastic trim **5**.

Routing wiring harness of heater



Detach retaining clip **2** [2x]. Route wiring harness of heater and wiring harness of metering pump **1** behind the insulation protection mat on left vehicle side and further to the underbody.

Routing wiring harness of heater

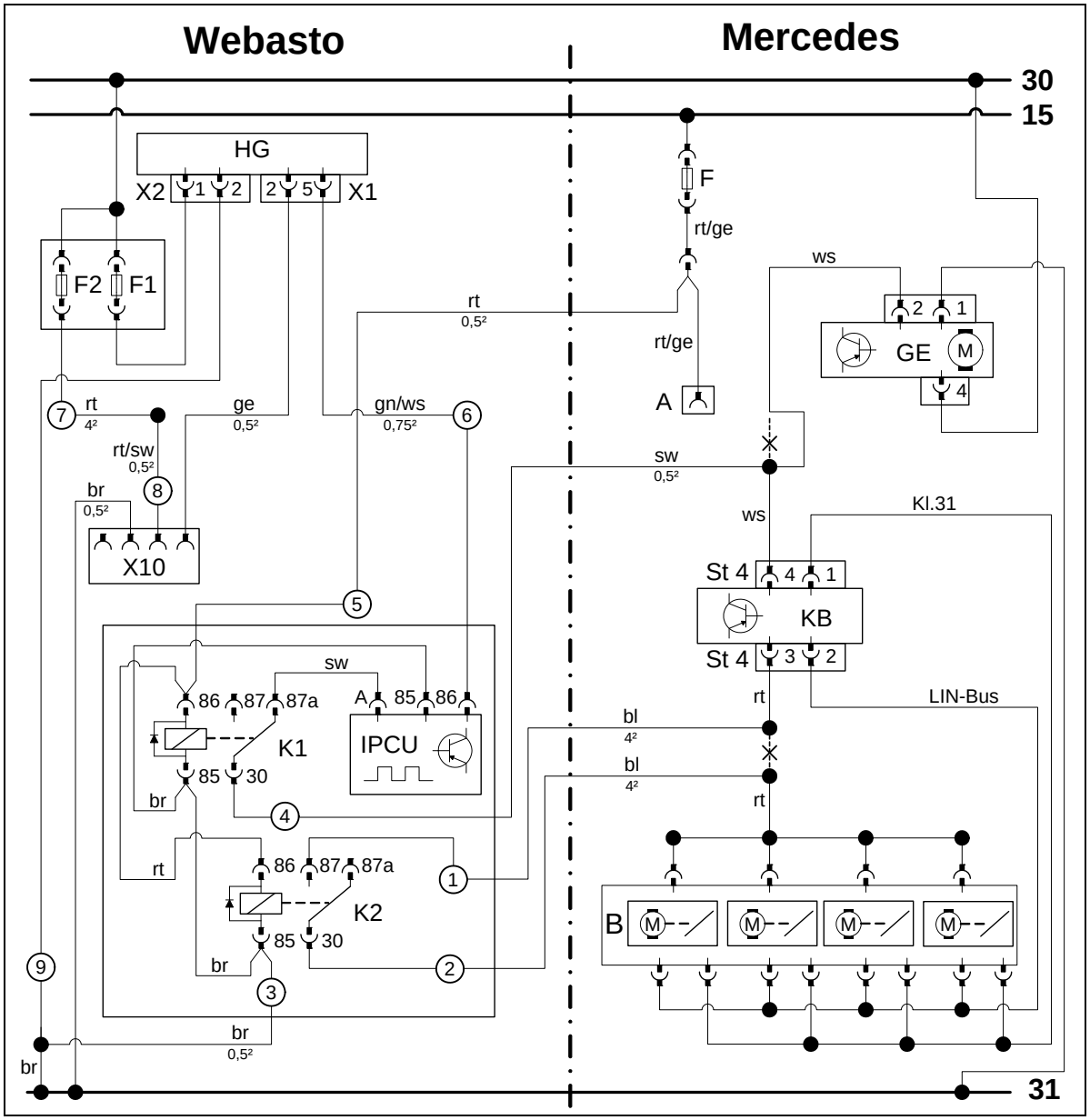


Route wiring harness of heater and wiring harness of metering pump **2** to underbody. Degrease adhesive surface for adhesive base.
Paste adhesive base at position **1**. Fasten wiring harness of heater in corrugated tube **1** with cable tie at position **1**.

Routing wiring harness of heater

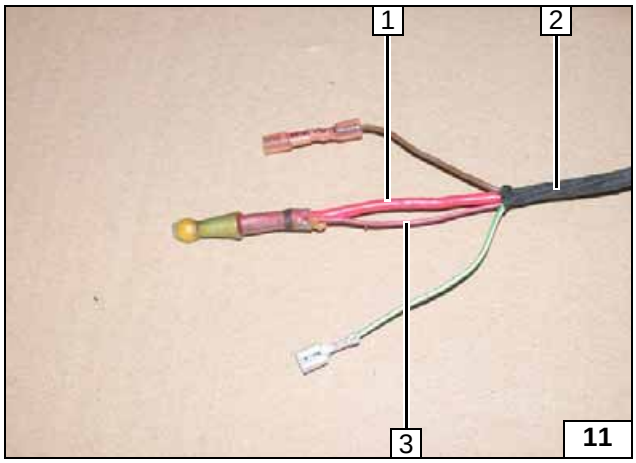
Fan Control

Wiring diagram



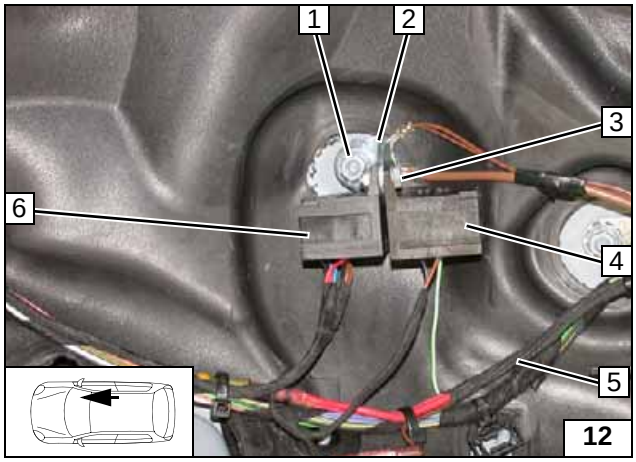
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F	fuse	rt	red
X1	6-pin heater connector	GE	Fan unit	ws	white
X2	2-pin heater connector	A	Socket outlet/lighter	sw	black
X10	4-pin connector Heater control	ST 4	Connector, 4-pin, KB	bl	blue
		KB	A/C control panel	ge	yellow
K1	Fan relay	B	Flap positioning module	br	brown
K2	Additional relay			gn	green
F1	Fuse, 20A				
F2	30A fuse replaced with 1A.				
IPCU	Pulse width modulator				
IPCU adjustment values:					
Duty cycle:	56%				
Frequency:	400Hz				
Voltage:	3.0V			**X**	Cutting point
Function:	High-side			Wiring colours may vary.	

Legend



Prepare wiring harness of engine compartment fuse holder **2** in the passenger compartment. Connect red (rt) 4² wire **1** and red/black (rt/sw) 0.5² wire **3** to soldering connector. Produce connections as shown in wiring diagram.

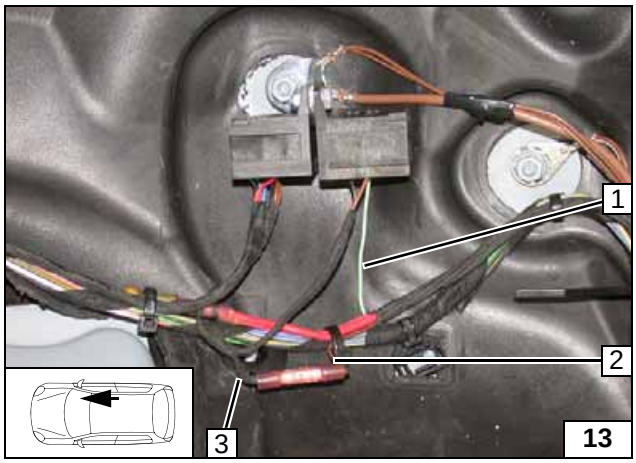
Preparing wiring harness of engine compartment fuse holder



Route wiring harness of engine compartment fuse holder **5** in the footwell on the front passenger's side, and secure with cable tie. Produce connections as shown in wiring diagram.

1 original vehicle stud bolt, original vehicle earth wires
2 Angle bracket
3 M5x16 bolt, washer, flanged nut
4 IPCU socket
6 Relay socket

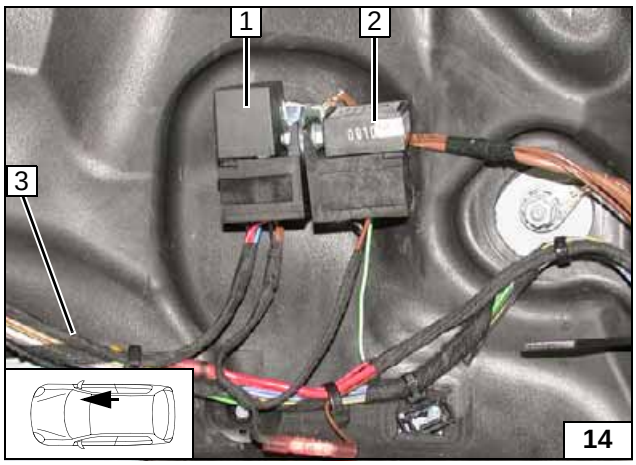
Installing relay socket and IPCU socket



Install green/white (gn/ws) wire ⑥ **1** in the IPCU/86 socket. Produce connections as shown in wiring diagram.

2 Brown (br) wire ③ of wiring harness of engine compartment fuse holder
3 Brown (br) wire ⑨ of fan control wiring harness

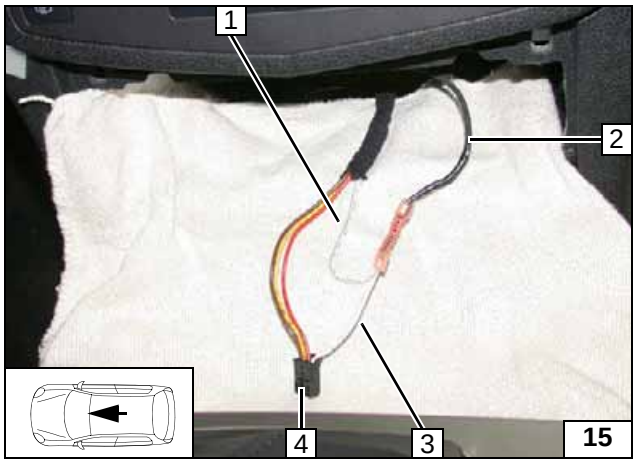
Connecting wiring harnesses



Route wiring harness of fan control **3** to centre console and secure with cable tie.

1 K1 and K2 relay mounted
2 IPCU installed

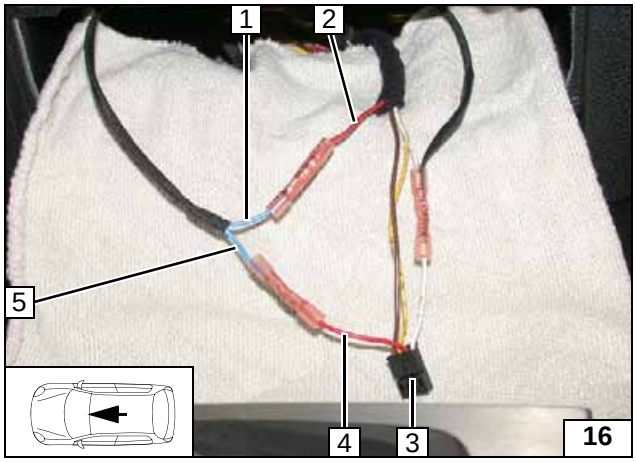
Mounting relay [2x] and IPCU



Connection to 4-pin connector **4** from A/C control panel. Produce connections as shown in wiring diagram.

1 White (ws) wire of fan unit
2 Black (sw) wire ④ K1/30
3 White (ws) wire of 4-pin KB connector

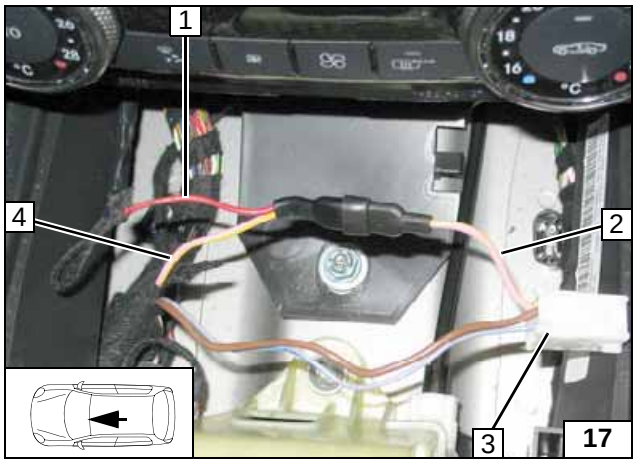
Connecting A/C control panel



Connection to 4-pin connector **3** from A/C control panel.
Produce connections as shown in wiring diagram.

1 Blue (bl) wire ② K2/30
2 Red (rt) wire of flap positioning module
4 Red (rt) wire of 4-pin KB connector
5 Blue (bl) wire ① K2/87

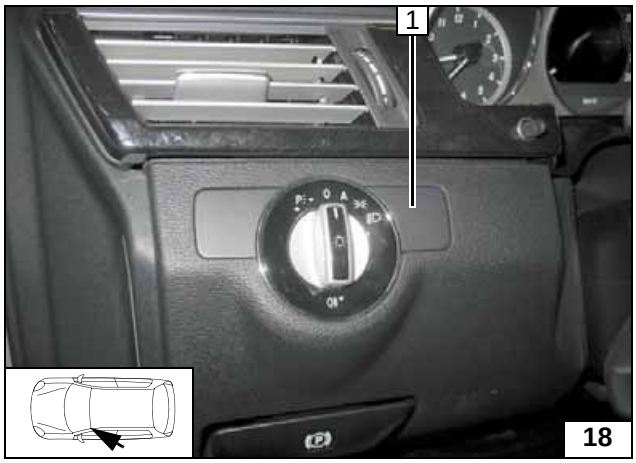
Connecting A/C control panel



Connection to plug-in connector **3** of socket outlet/lighter. Produce connections as shown in wiring diagram.

1 Red (rt) wire ⑤ K1/86
2 Pink/yellow (ro/ge) wire
4 Pink/yellow (ro/ge) wire

Connection to socket outlet/lighter



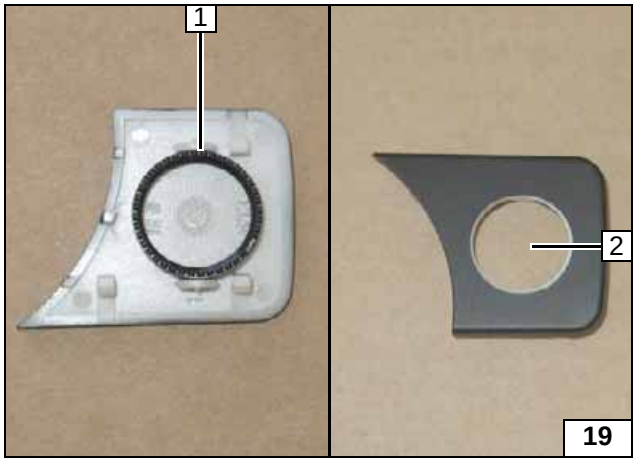
Mounting Push Button

Only in connection with Telestart. Use wiring harness extension.

WARNING:
If the push button cannot be installed in the trim piece due to parts lying behind it, the installation is done according to image 23.

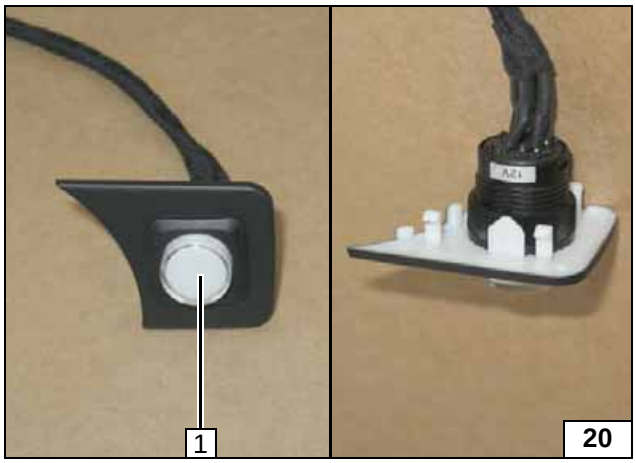
1 Cover

Removing cover



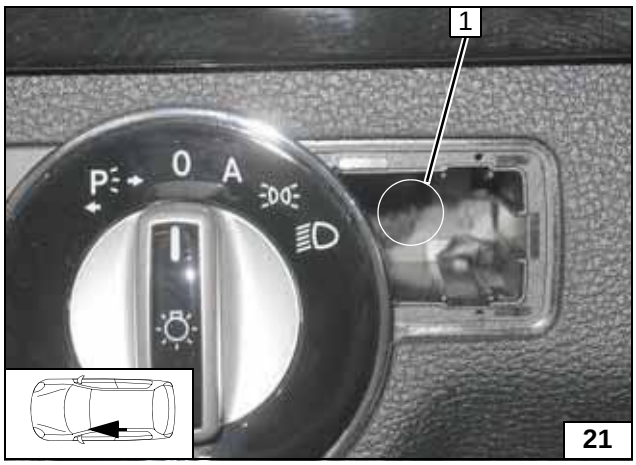
Mount union nut **1** of push button, align in centre and drill 16mm dia. hole **2** in the cover (stepped drill bit).

Hole in cover



Install push button **1**, align and secure it with union nut.

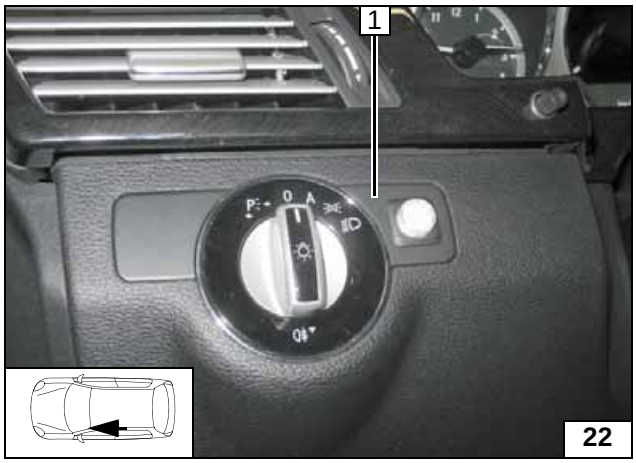
Mounting push button



When drilling, watch components located behind.

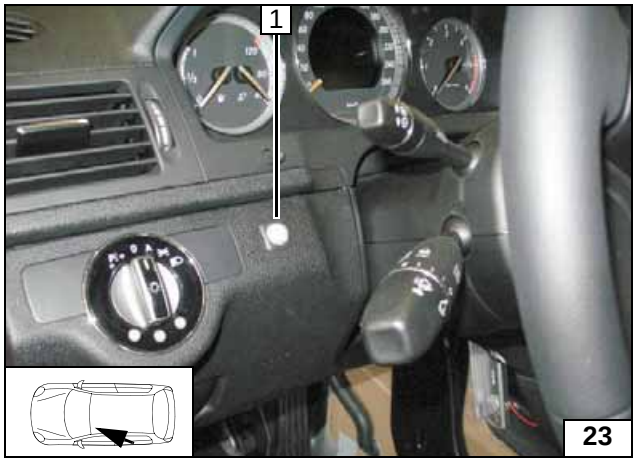
1 12mm dia. hole

Hole for wiring harness



1 Cover

Inserting cover



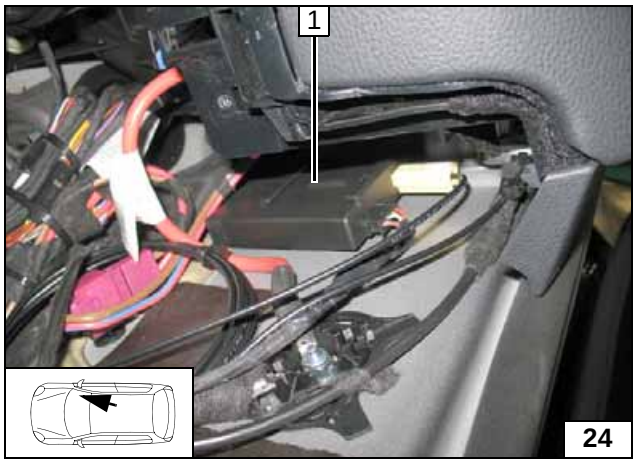
Alternative installation location

Only in connection with Telestart. Use wiring harness extension.

1 16mm dia. hole, push button

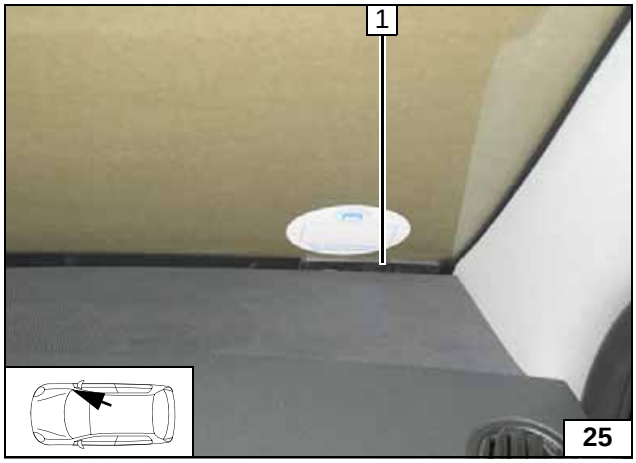
Mounting push button

Telestart



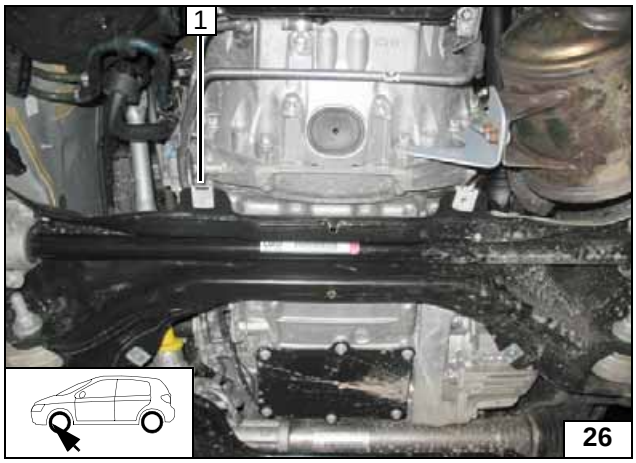
1 Receiver, adhesive tape

Mounting receiver



1 Antenna

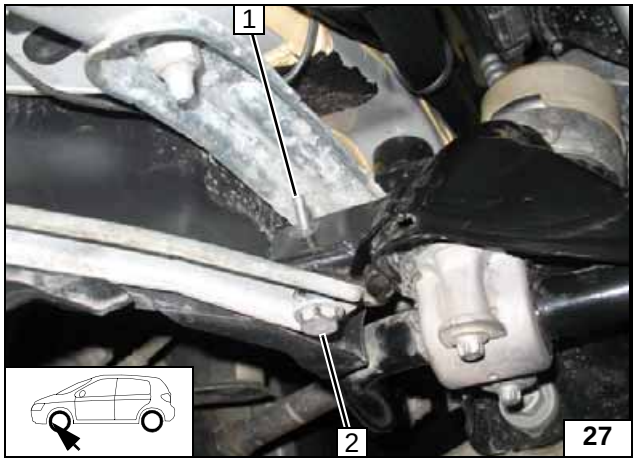
Mounting antenna



Preparing Installation Location

Remove threaded insert **1** and discard .

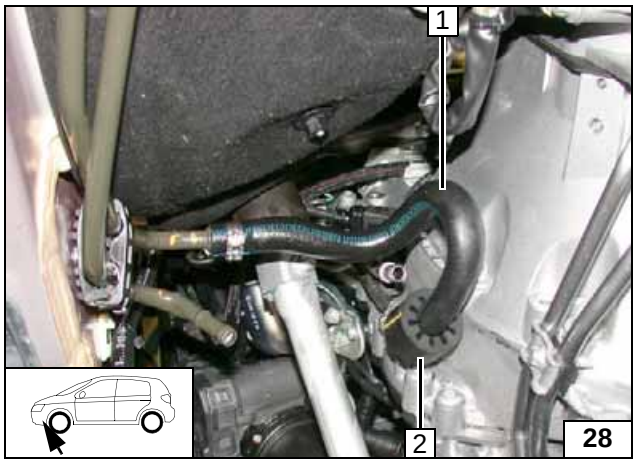
Detaching bracket



Insert M6x20 bolt and large diameter washer outer dia. d_a = 17.4mm **1** from wheel trim side in existing hole and secure with pin lock.

2 Detach original vehicle bolt

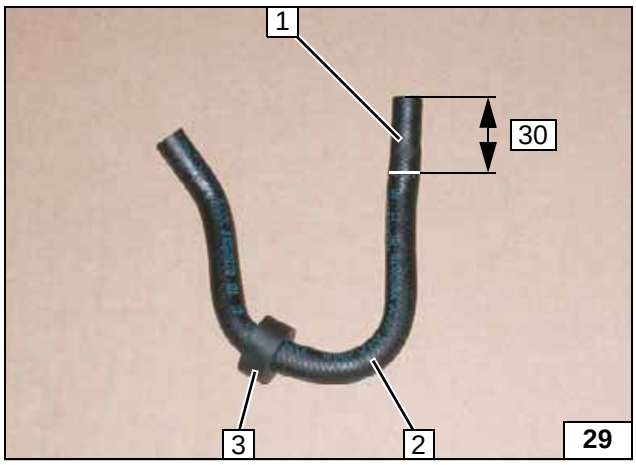
Inserting bolt



WARNING!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock. When opening the clamps and pulling out the fuel supply line, collect the leaking fuel in a suitable container.

Remove original vehicle fuel supply line **1**, slide on 18 mm dia. rubber isolator **2** and re-mount opposite.

Installing rubber isolator

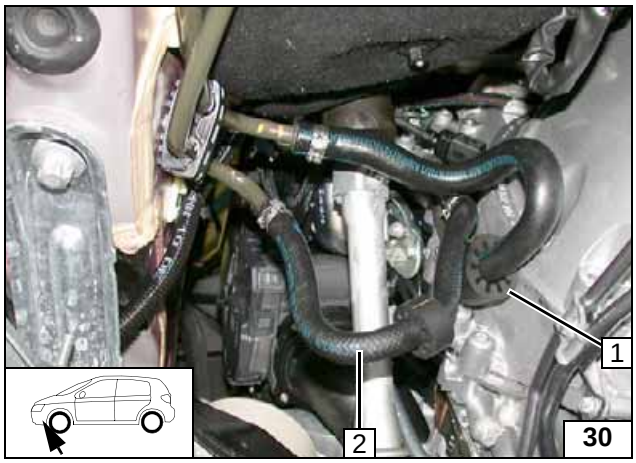


WARNING!
When opening the clamps and pulling out the fuel return line, collect the discharged fuel in a suitable container.

Remove original vehicle fuel return line **2**.

1 Discard section
3 Slide on 15mm dia. black (sw) rubber isolator

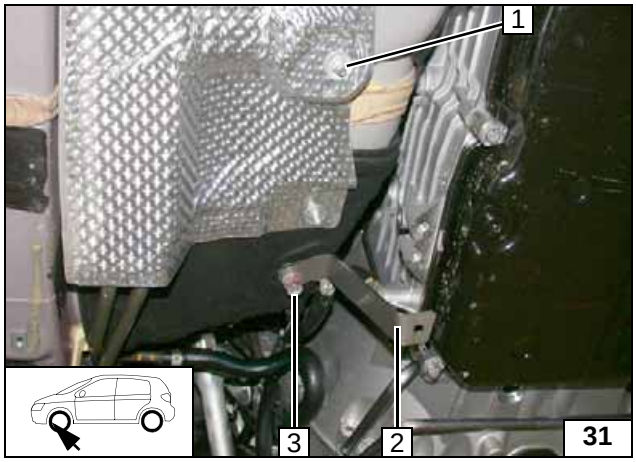
Installing rubber isolator



Reinstall original vehicle fuel return line **2** opposite.

1 Position black (sw) rubber isolator

Mounting fuel return line

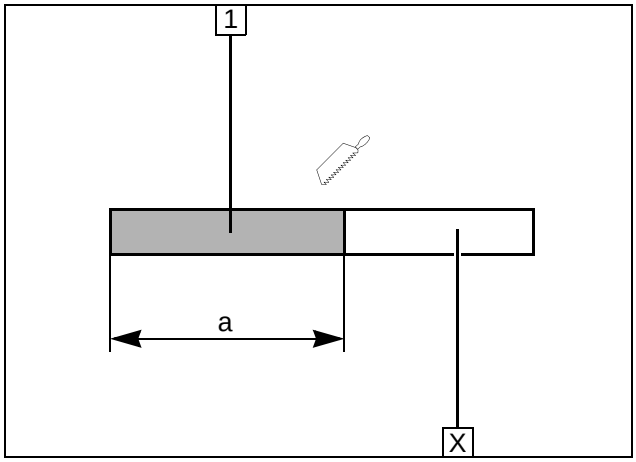


Remove original vehicle nut at position **1**, will be reused.

2 Mount strut and earth wire loosely
3 Original vehicle stud bolt, original vehicle nut

Premounting strut

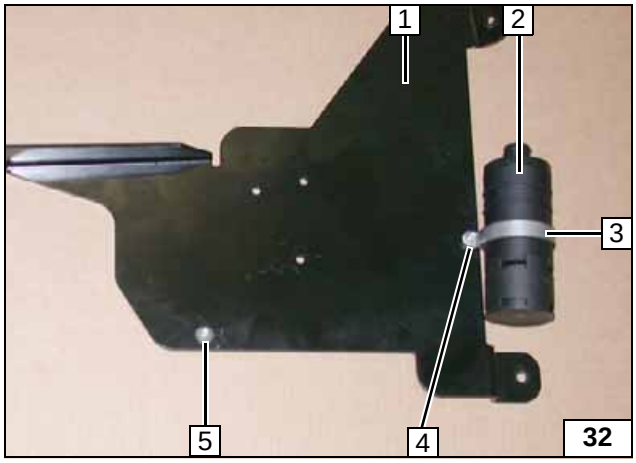
Preparing Heater



Discard section **X**.

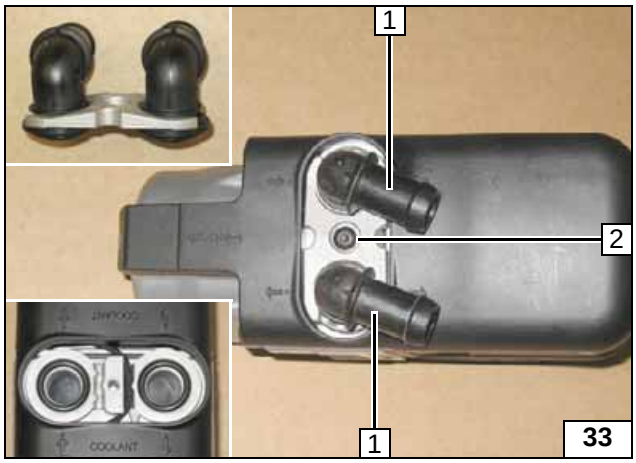
1 Combustion air pipe
a = 350

Cutting combustion air pipe to length



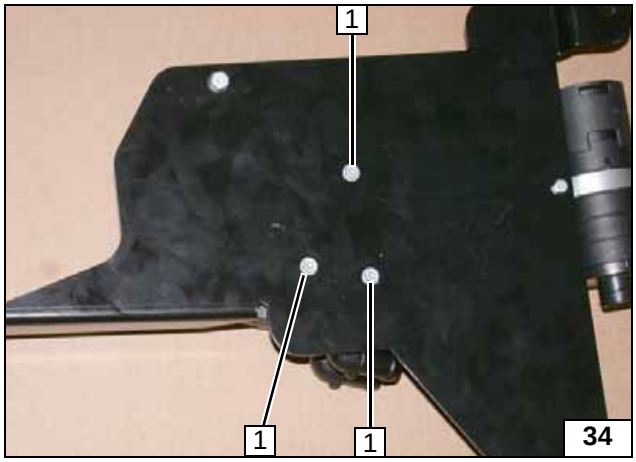
1 Bracket
2 Silencer
3 51 mm dia. clamp
4 M5x16 bolt, flanged nut
5 M6x12 bolt, pin lock

Mounting silencer



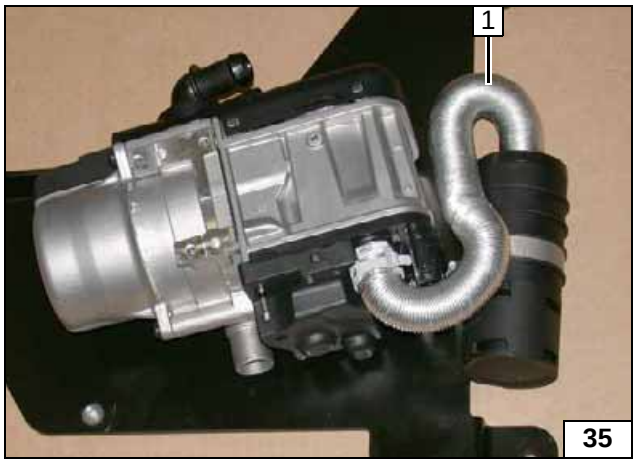
1 Water connection pieces, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Mounting water connection pieces



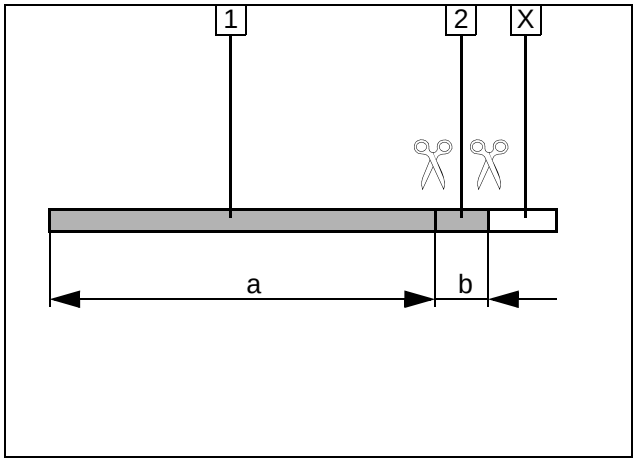
1 5x13 self-tapping bolt [3x]

Mounting heater



1 Combustion air pipe

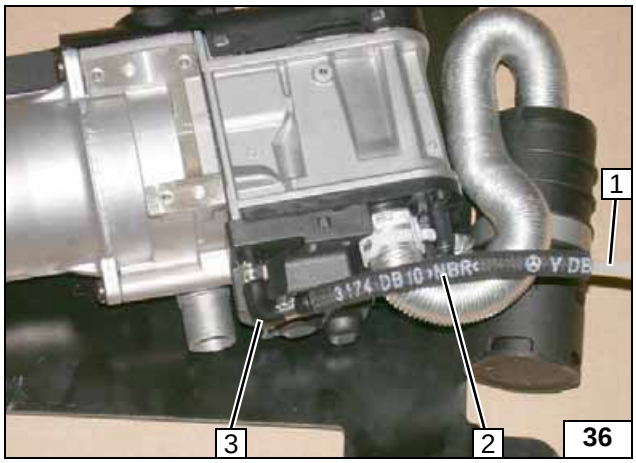
Mounting combustion air pipe



Discard section **X**.

1 6x11 protective hose
a = 1100
2 6x11 protective hose
b = 120

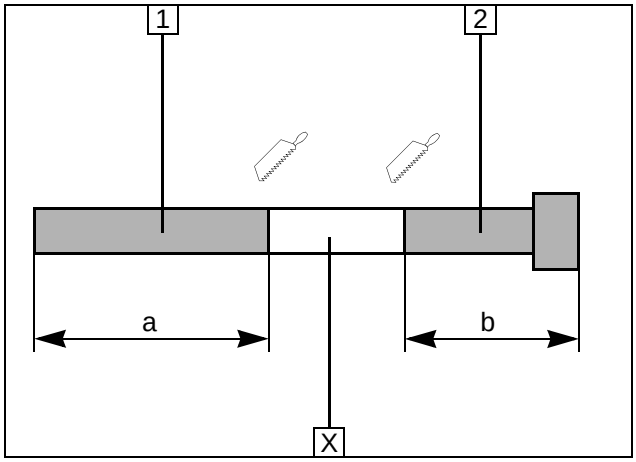
Cutting fabric protective hose to size



Slide on 6x11, 120mm long fabric protective hose **2** on to fuel line **1**.

3 90° moulded hose, 10 mm dia. clamp [2x]

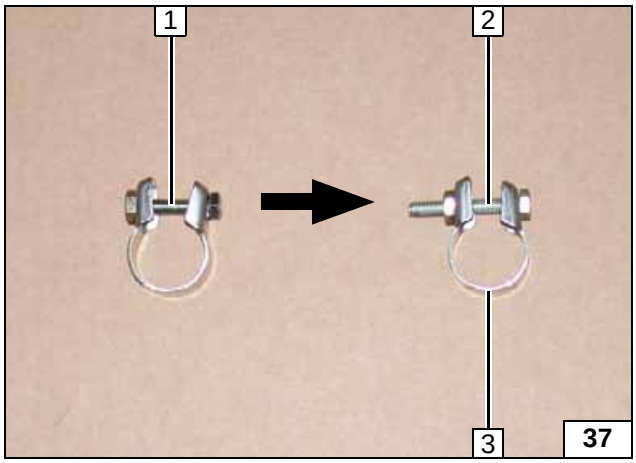
Premounting fuel line



Discard section **X**.

1 Exhaust pipe
a = 380
2 Exhaust end section
b = 110

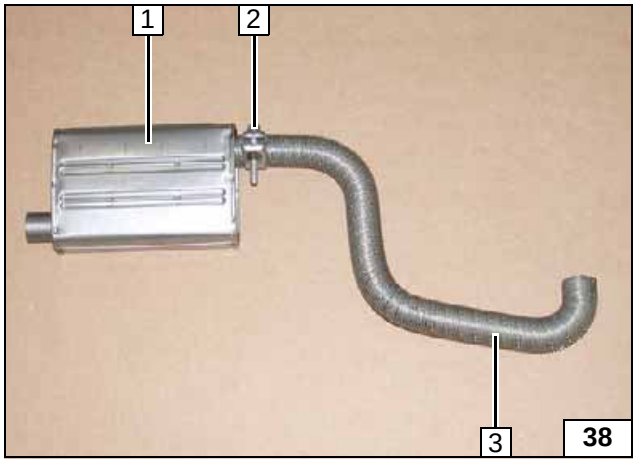
Preparing exhaust pipe



Replace bolt at position **1** with M6x40 bolt **2**.

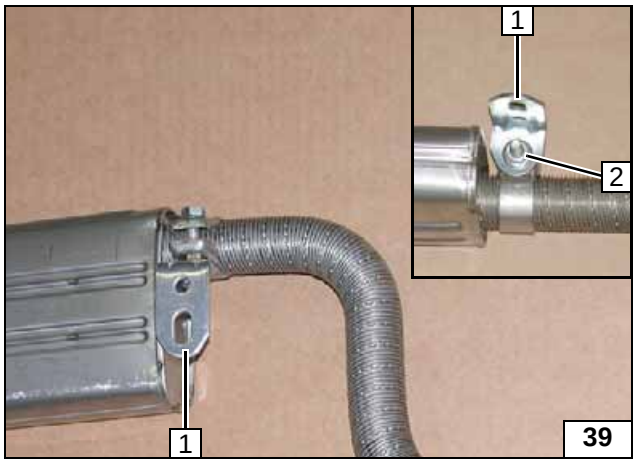
3 Hose clamp

Preparing hose clamp



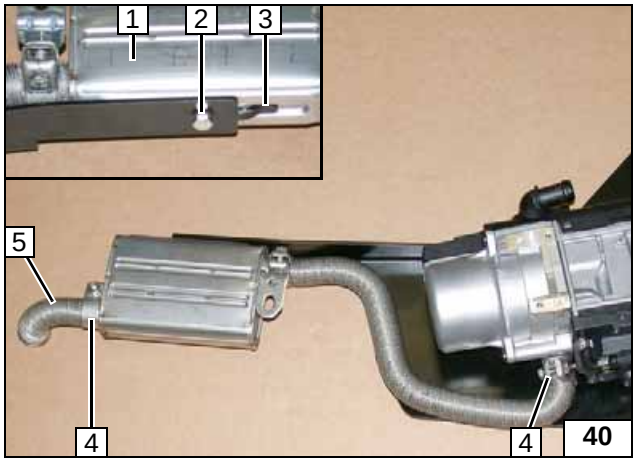
1 Silencer
2 Hose clamp
3 Shape exhaust pipe

Premounting exhaust system



1 Angle bracket
2 Flanged nut

Mounting angle bracket



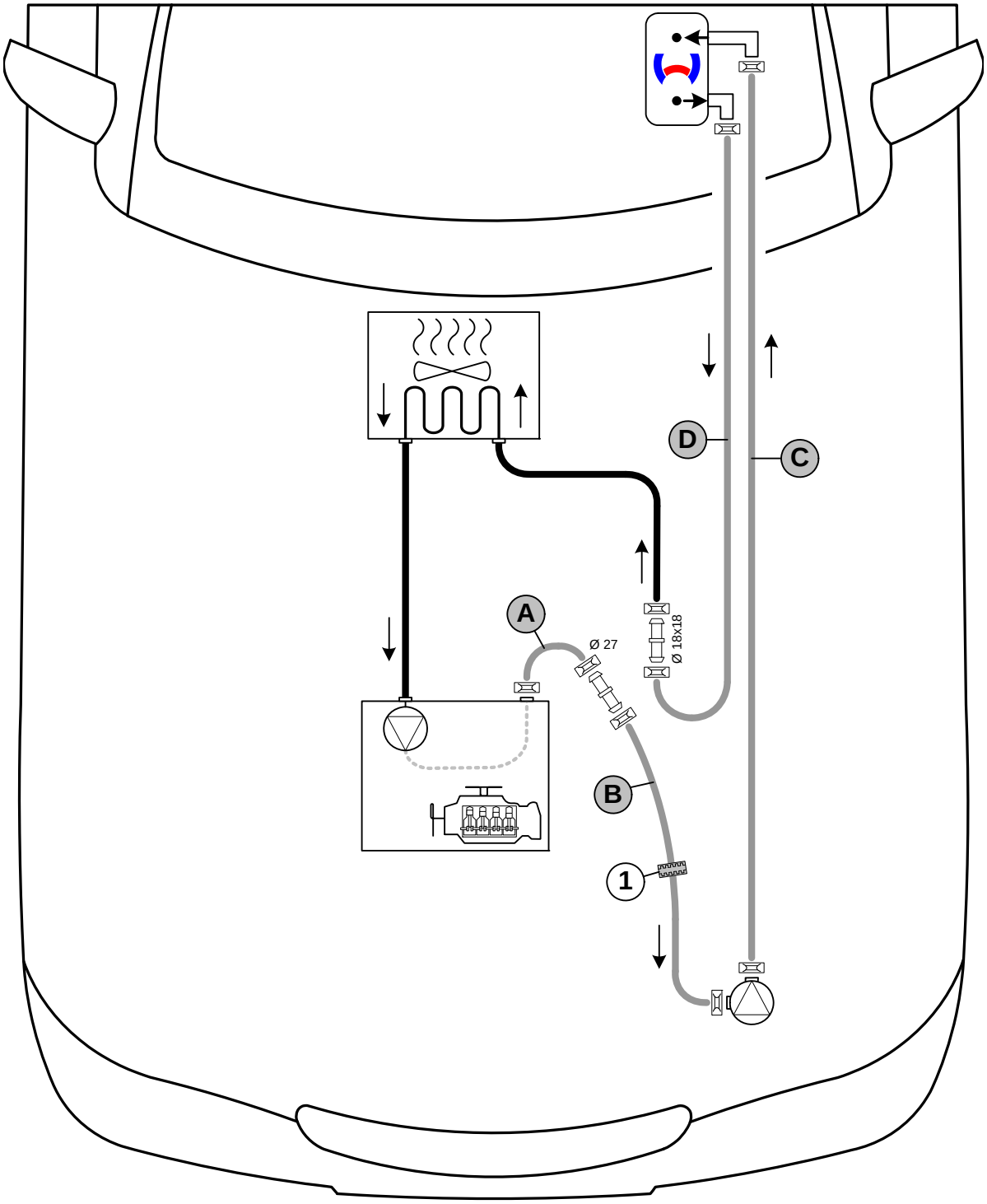
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Twist protection
4 Hose clamp [2x]
5 Shape exhaust end section

Installing exhaust system

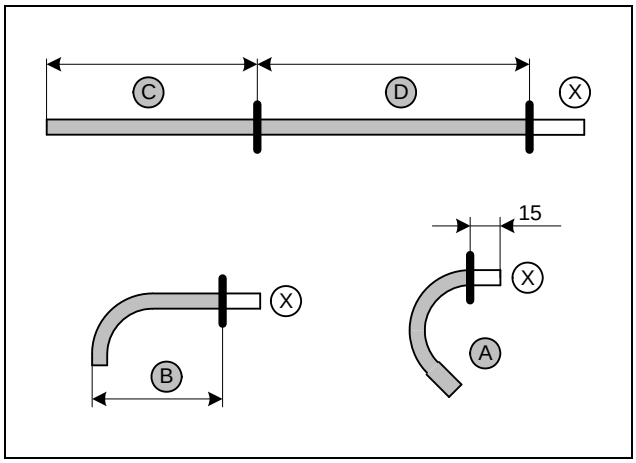
Coolant Circuit

WARNING!
Drain off the coolant and collect it in a suitable container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



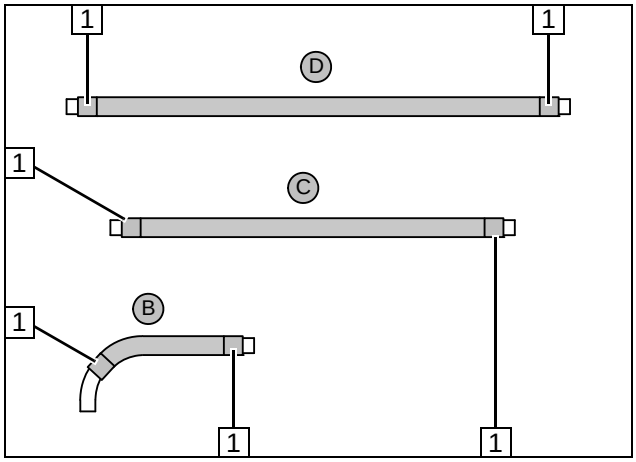
All spring clips without a specific designation = 25 mm dia. **1** = Black (sw) rubber isolator.
Non-designated connecting pipe = 18x20 dia.



Discard section **X**.
Hose **A** = 18x20mm moulded hose
Hose **B** = 90°, 18mm dia. moulded hose
Hose **C**/**D** = 18mm dia. hose

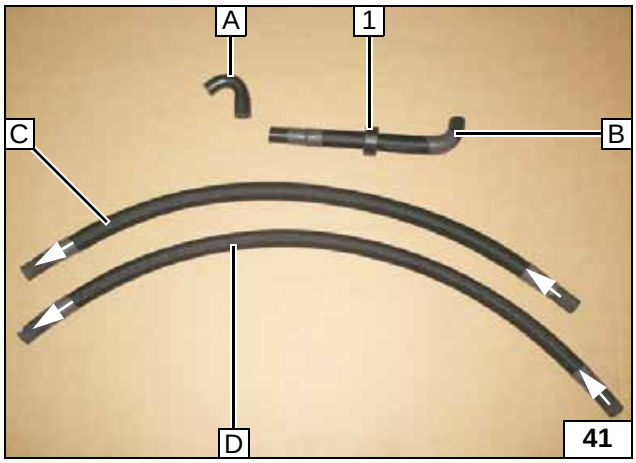
B = 295
C = 890
D = 1150

Cutting hoses to length



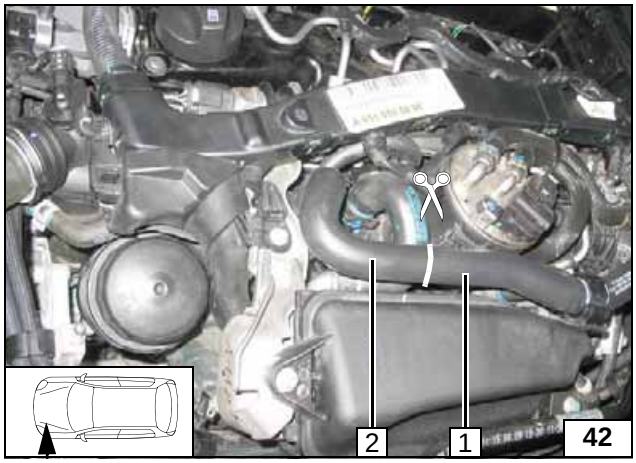
Slide on braided protective hose on hoses **B**, **C** and **D** .
Cut heat shrink plastic tubing **1** into 6 equal pieces, slide on and shrink.

Preparing hoses



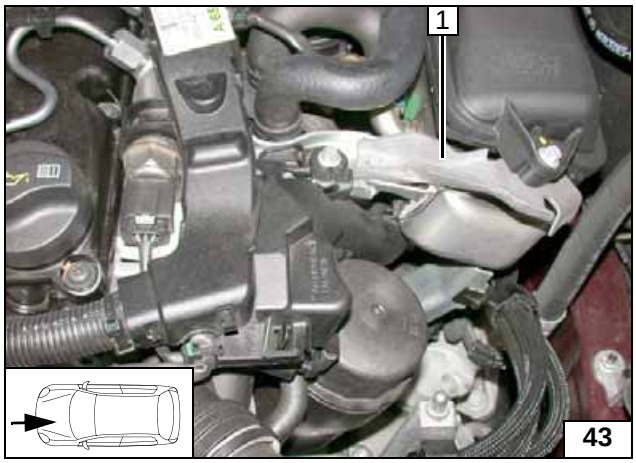
Slide black (sw) rubber isolator **1** onto hose **B**.
Mark the direction of flow on hoses **C** and **D**.

Preparing hoses



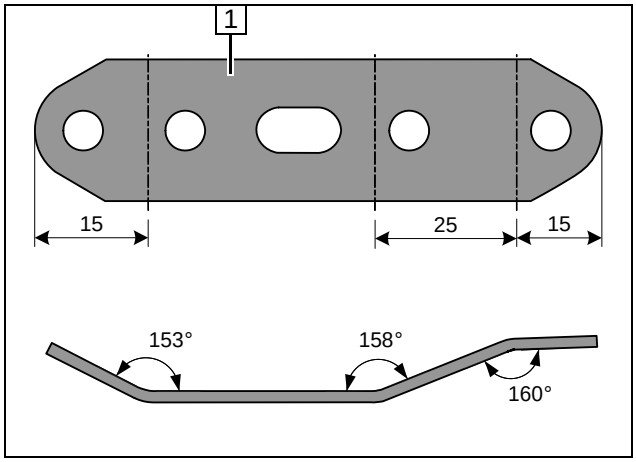
Drain off coolant. Cut the original vehicle hose **1** on engine outlet / heat exchanger inlet at the marking. Remove hose section of engine outlet **2** and spring clip and discard.

Cutting point



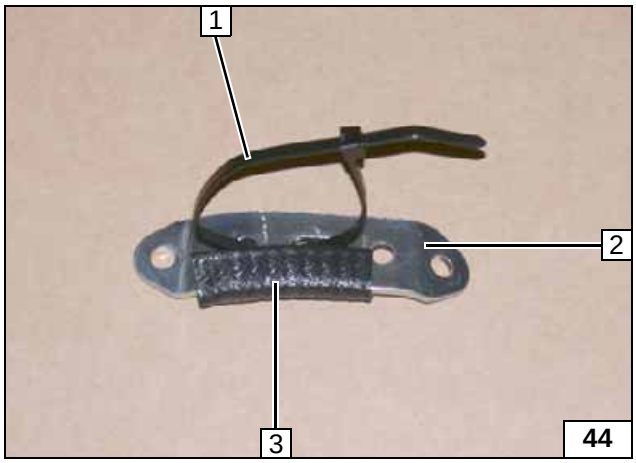
Remove **1** strut

Removing strut



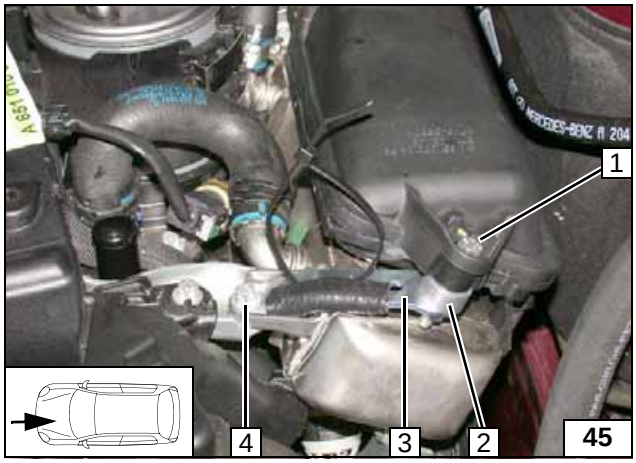
1 Perforated bracket

Angling down perforated bracket



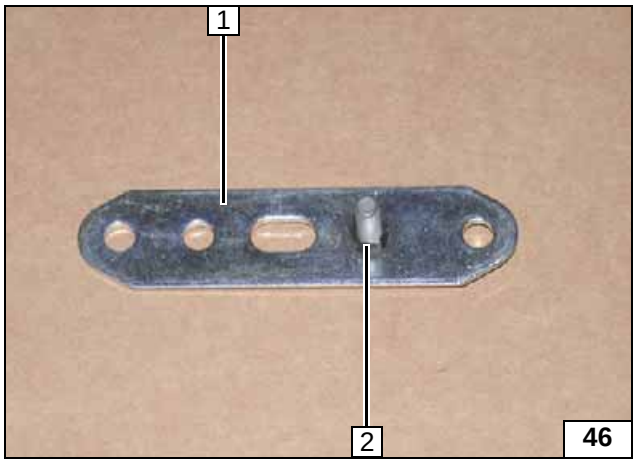
1 Cable tie
2 Perforated bracket
3 50mm edge protection

Preparing perforated bracket



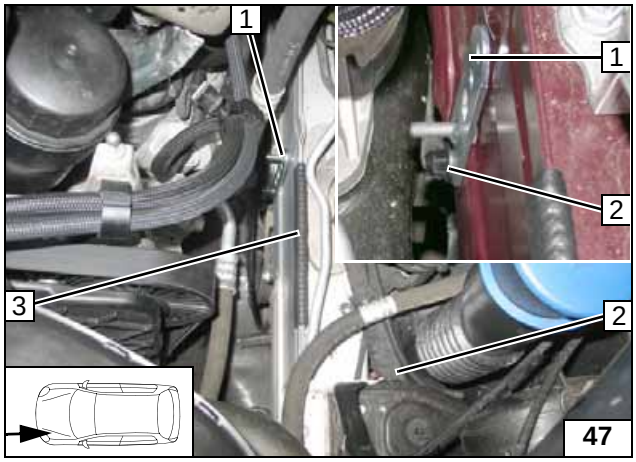
1 M6x40 bolt, flanged nut
2 10 mm shim
3 Perforated bracket
4 Original vehicle bolt

Mounting perforated bracket



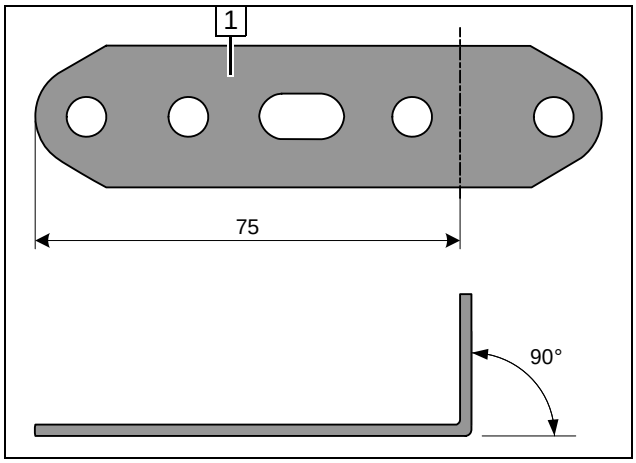
1 Perforated bracket
2 M6x20 bolt, pin lock

Preparing perforated bracket



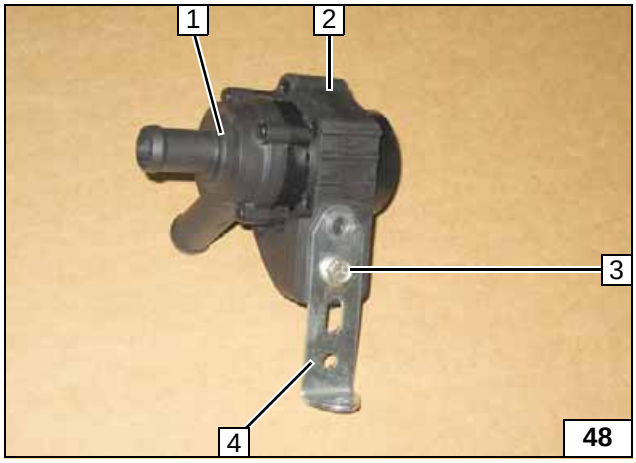
1 Perforated bracket
2 Original vehicle stud bolt, plastic nut
3 100mm edge protection

Mounting perforated bracket



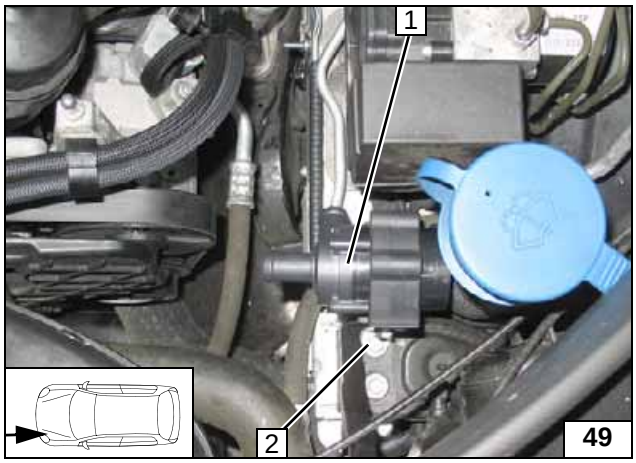
1 Perforated bracket

Angling down perforated bracket



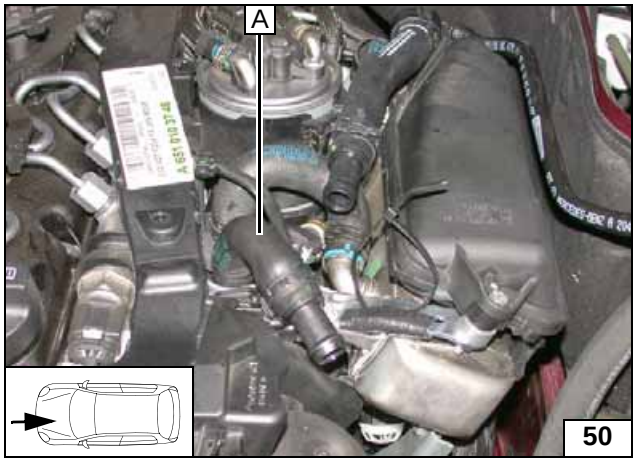
1 Circulating pump
2 Mounting of circulating pump
3 M6x25 bolt, flanged nut
4 Perforated bracket

Premounting circulating pump



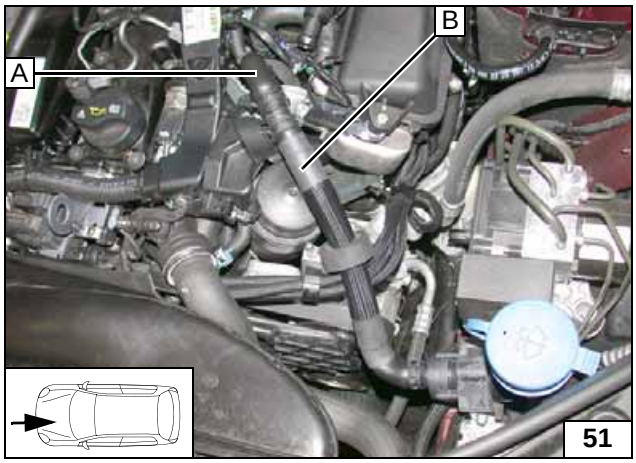
1 Circulating pump
2 Original vehicle bolt

Mounting circulating pump

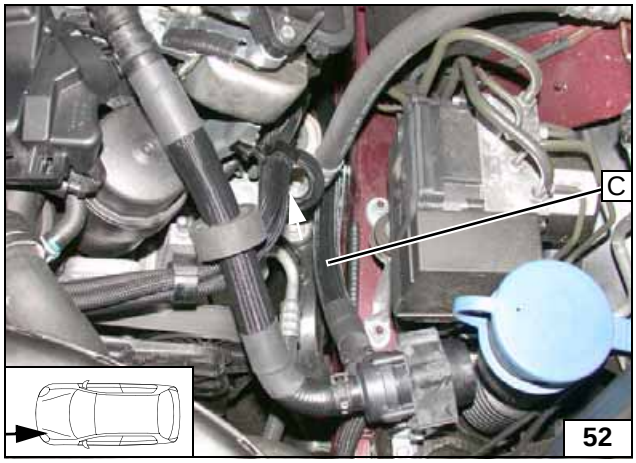


Mount hose **A** with the shortened end on the connection piece of the engine outlet.

Connecting engine outlet

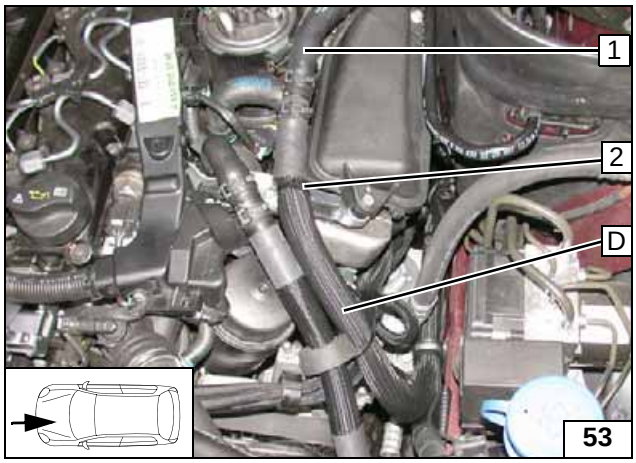


Mounting hose B



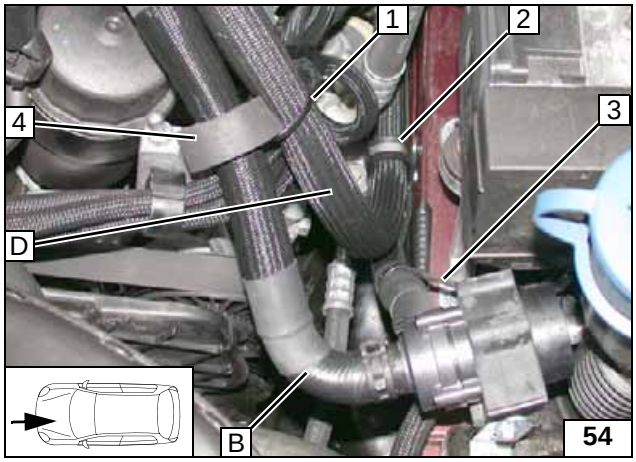
Route hose **C** to the connecting point.

Mounting hose C



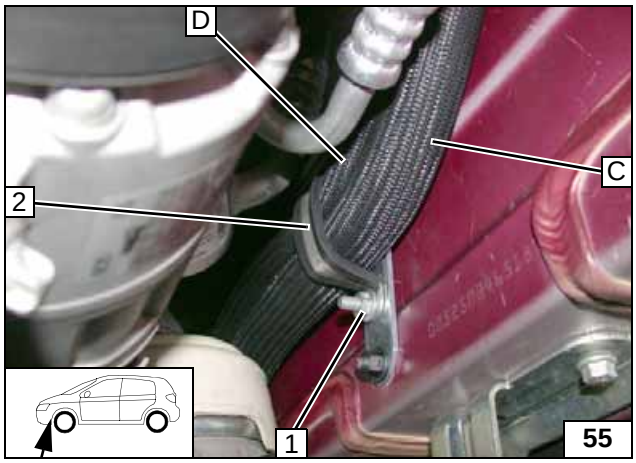
1 Hose of heat exchanger inlet
2 Close cable tie

Connecting heat exchanger inlet



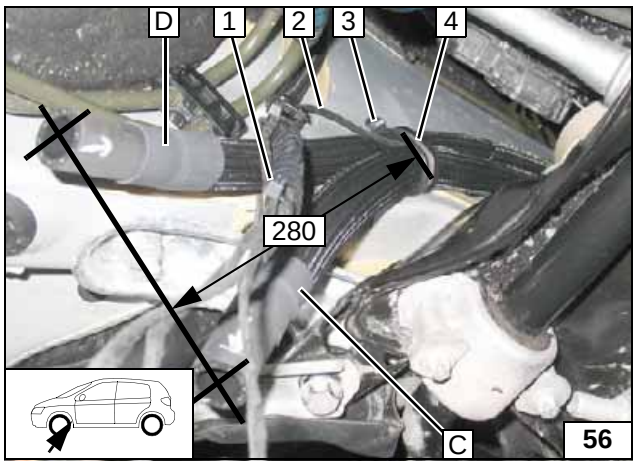
Fasten hose **D** with cable tie **1** to black (sw) rubber isolator **4**. Install wiring harness of circulating pump **3**. Route hose **C**, **D** and wiring harness of circulating pump **3** through 38 mm dia. rubber-coated p-clamp **2**.

Routing in engine compartment



1 Flanged nut
2 38 mm dia. rubber-coated p-clamp

Routing in engine compartment

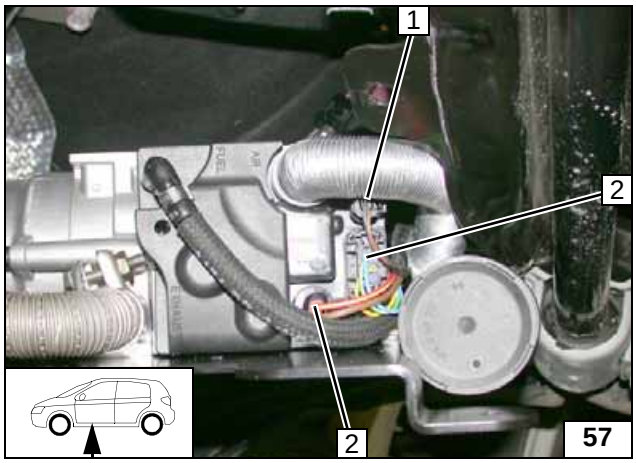


Route hose **C** and **D** so that 280mm is available for connection with the heater. Route hose **C**, **D** and wiring harness of circulating pump **2** through 38mm dia. rubberised p-clamp **4**.

1 Cable tie
3 Original vehicle stud bolt, plastic nut

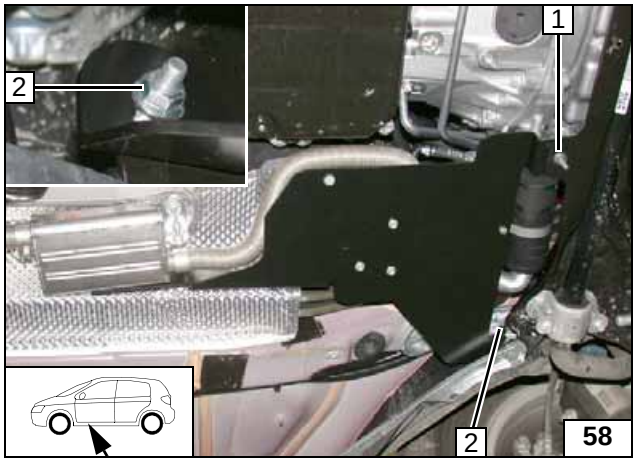
Routing in engine compartment

Mounting Heater



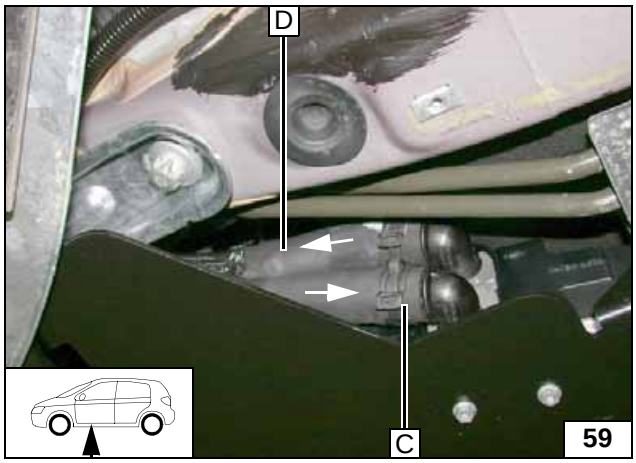
1 Wiring harness of circulating pump
2 Wiring harness of heater [2x]

Attaching wiring harnesses to heater



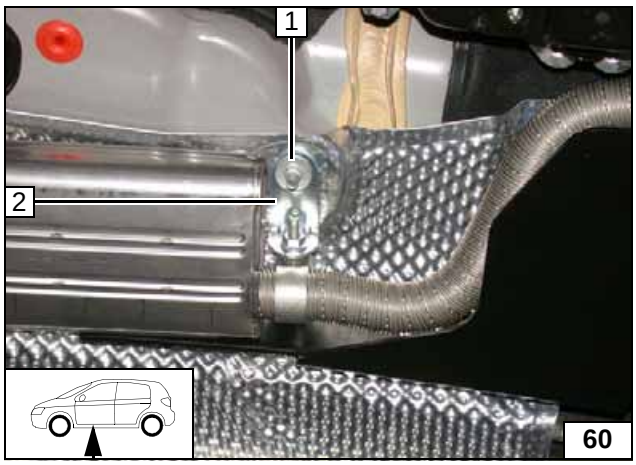
1 Mount M6x30 bolt, flanged nut, existing hole loosely
2 Mount flanged nut loosely

Loosely mounting heater



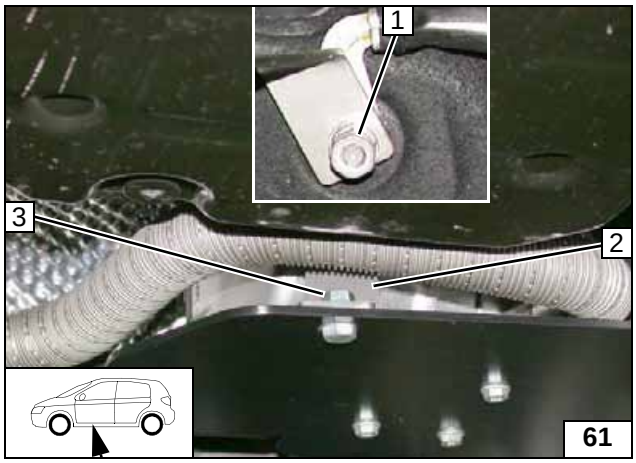
Observe direction of flow. Connect hose **D** to heater outlet and hose **C** to heater inlet.

Connecting heater



1 Original vehicle nut
2 Angle bracket

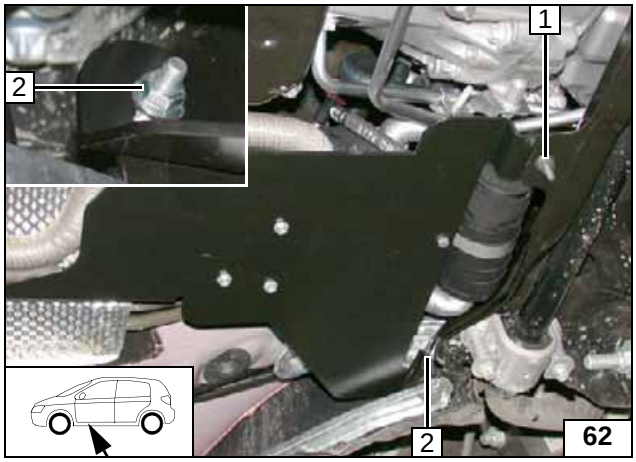
Mounting heater



Tighten original vehicle nut **1** at premounted strut to 25Nm!

2 Strut
3 Flanged nut

Fastening strut



Tighten screw joints at position **1** and **2**

Mounting heater

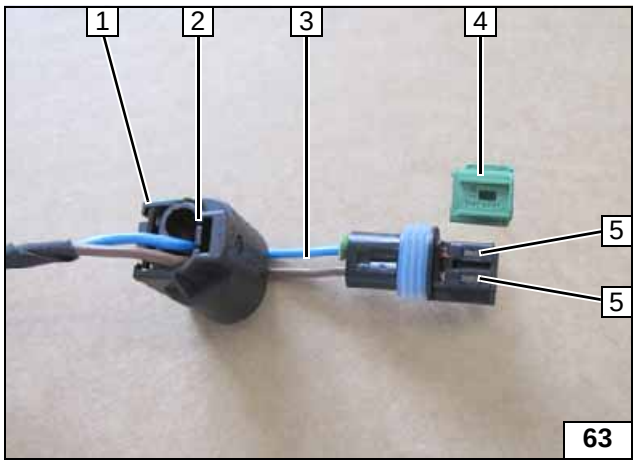
Fuel

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

Catch any fuel running off in an appropriate container.

Install fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

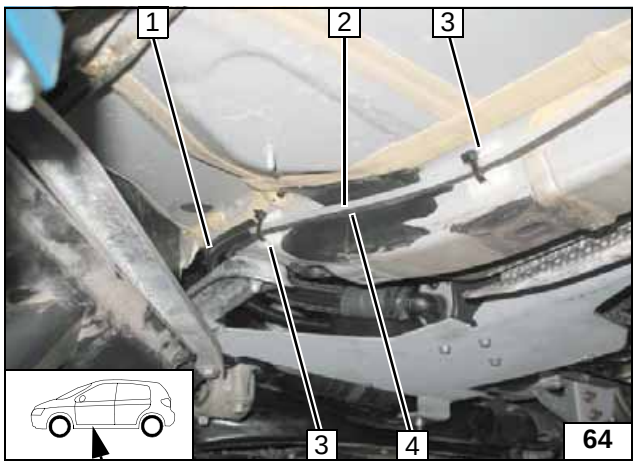
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Dismantling connector

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

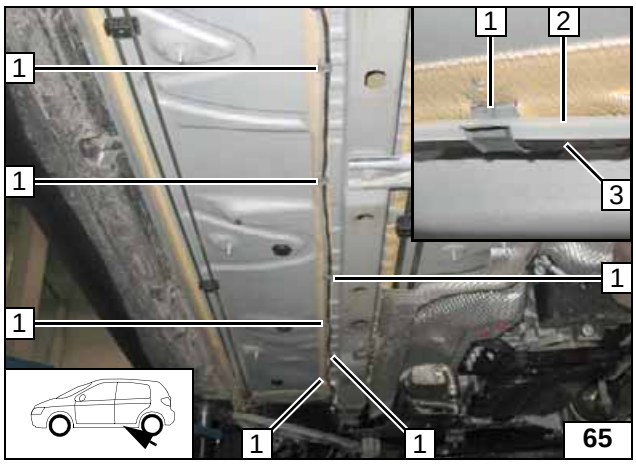
1 Connector housing
2 Lock
3 Blue/brown (bl/br) wires
4 Coding
5 Timer lock



Routing lines

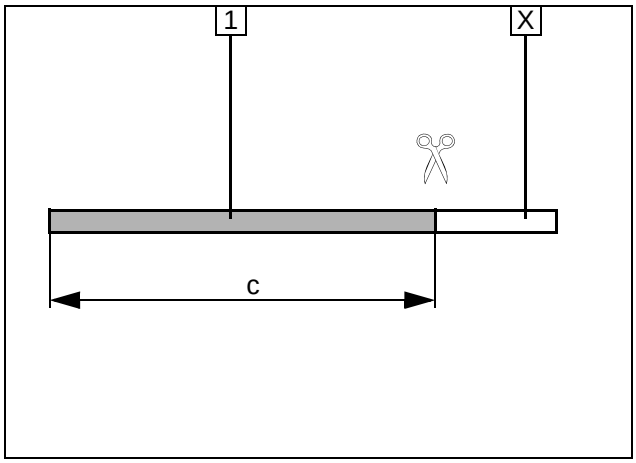
Slide on 10mm dia., 320mm long corrugated tube **1** onto fuel line **2**. Grease adhesive surfaces

3 Adhesive base , cable tie [2x each]
4 Metering pump wiring harness



Routing lines

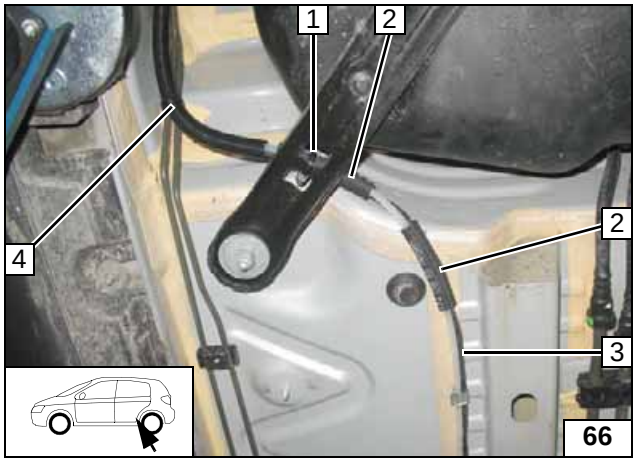
1 Insert retaining clips [6x]
2 Fuel line
3 Metering pump wiring harness



Discard section **X**.

1 10 mm dia. corrugated tube
c = 800

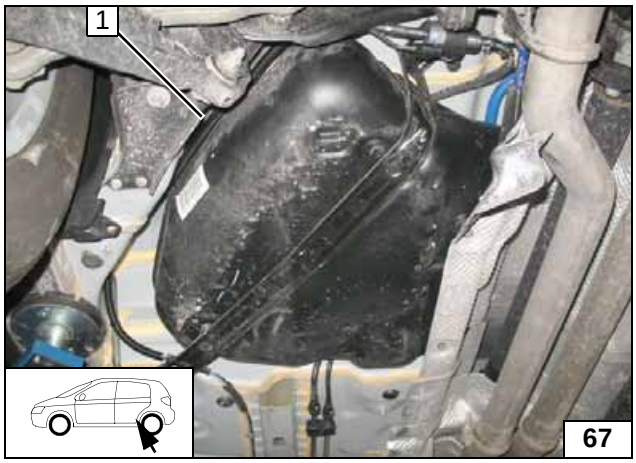
Cutting corrugated tube to length



Slide on 8x12 fabric protective hose **2** [2x] on fuel line and wiring harness of metering pump **3**. Slide on 10mm dia., 800mm long corrugated tube **4** onto fuel line and wiring harness of metering pump **3**.

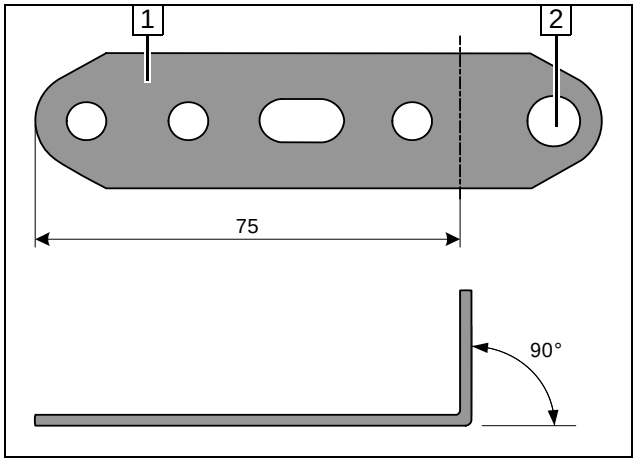
1 Cable tie

Routing lines



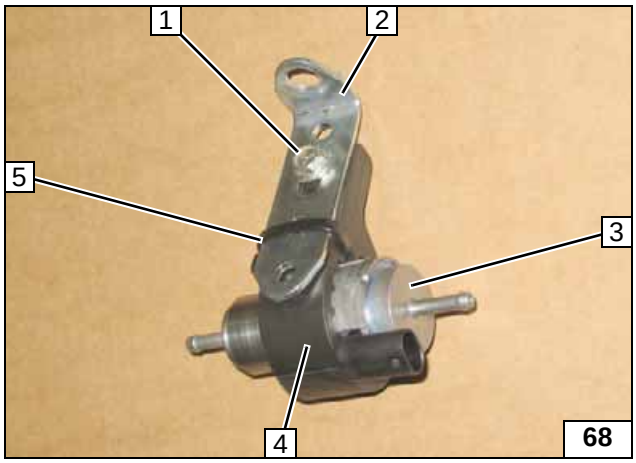
Route fuel line and wiring harness of metering pump in corrugated tube **1** to the installation location of the metering pump.

Routing lines



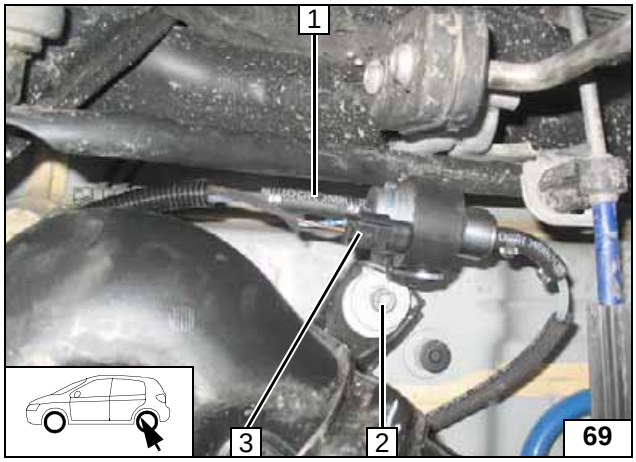
Angle down perforated bracket **1** and drill hole at position **2** to 11mm dia.

Preparing perforated bracket



1 M6x25 bolt, support angle, flanged nut
2 Perforated bracket
3 Metering pump
4 Mounting of metering pump
5 Cable tie

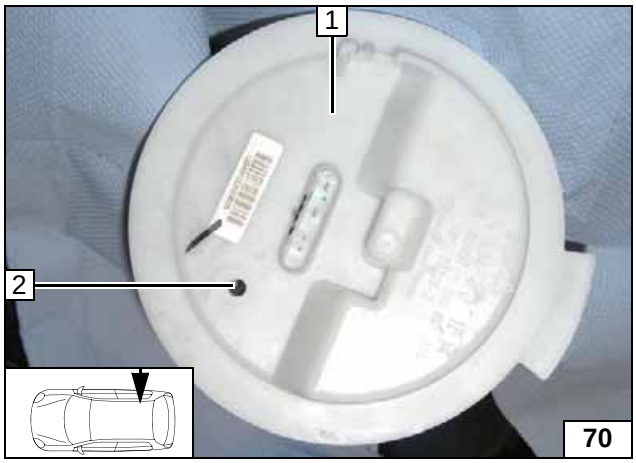
Premounting metering pump



Mount perforated bracket on original vehicle bolt of fuel tank fastening.

1 Fuel line of heater, hose section, 10mm dia. clamp [2x]
2 Original vehicle flanged nut
3 Wiring harness of metering pump, connector mounted

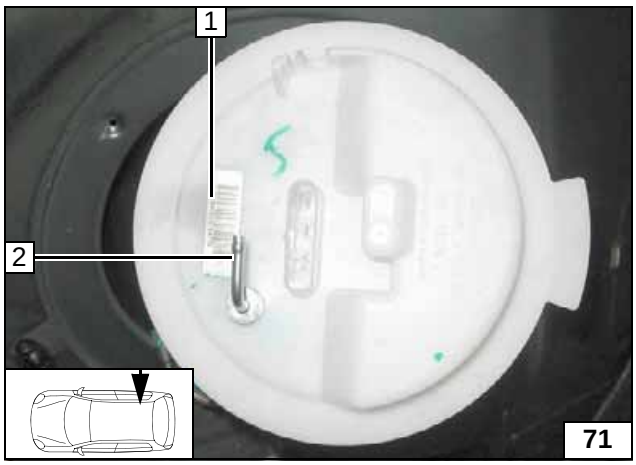
Mounting metering pump



Remove fuel-tank sending unit on right **1** according to manufacturer's instructions.
Watch drilling chips while drilling.

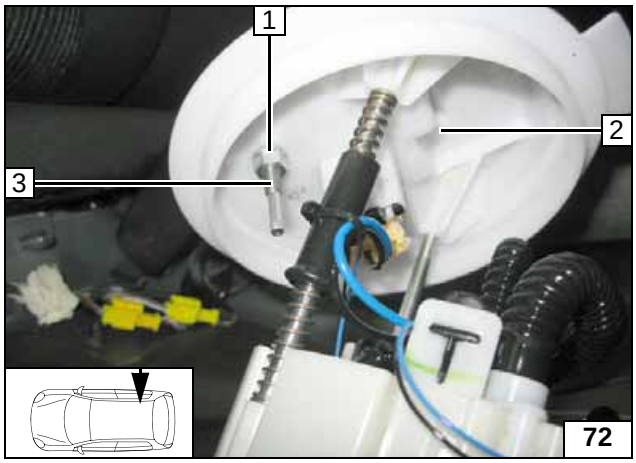
2 6 mm dia. hole

Fuel extraction



Insert fuel standpipe **2** into fuel-tank sending unit **1**.

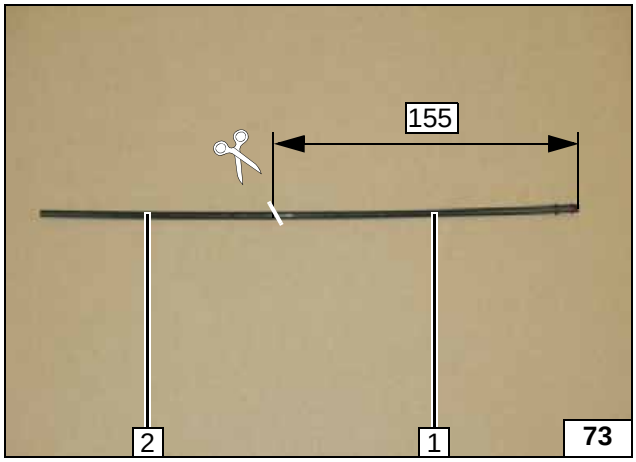
Fuel extraction



Observe tightening torque 5 Nm of flanged nut **1** on fuel standpipe **3**.

2 Fuel-tank sending unit

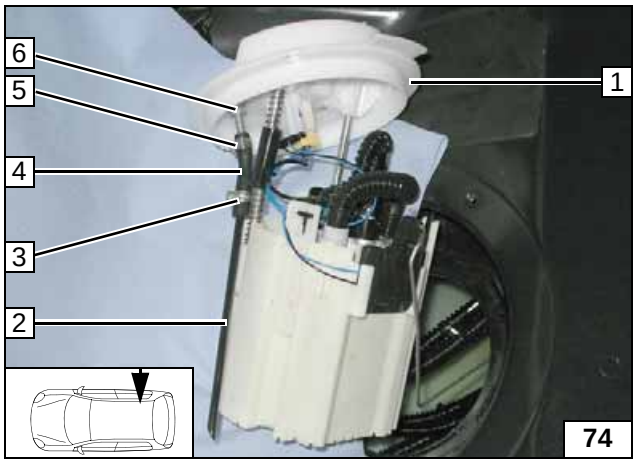
Fuel extraction



Cut standpipe **1** at an angle.

2 Discard section

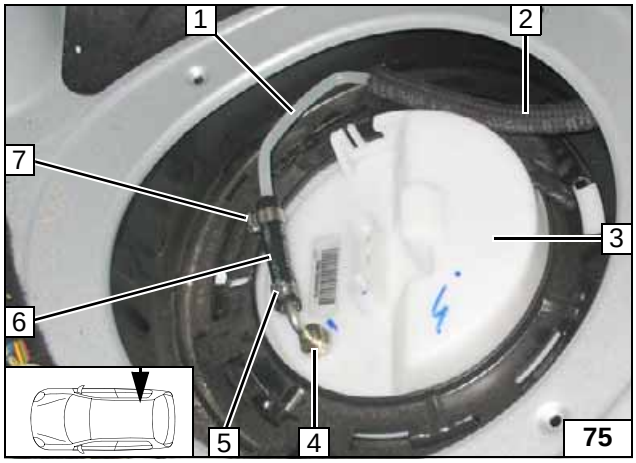
Cutting standpipe to size



Mount 3.5 mm dia. moulded hose **4** on fuel standpipe **6**.

1 Fuel-tank sending unit
2 Standpipe
3 10 mm dia. clamp
5 8 mm dia. clamp

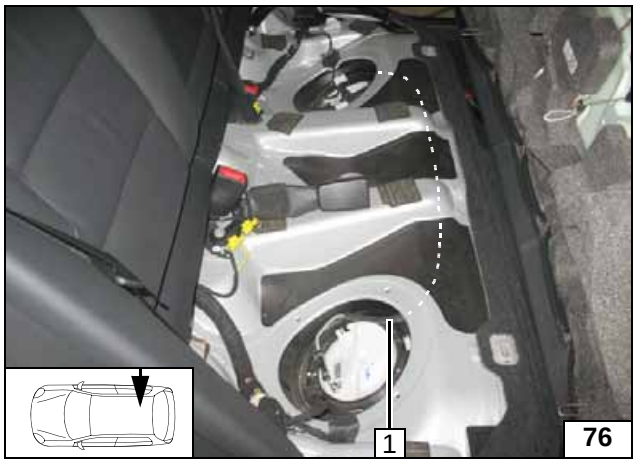
Mounting standpipe



Install right fuel-tank sending unit **3** in accordance with manufacturer's instructions. Mount 3.5mm dia. hose section **6** on fuel standpipe **4**. Slide on 6x11, 1100mm long fabric protective hose **2** on to fuel line **1**.

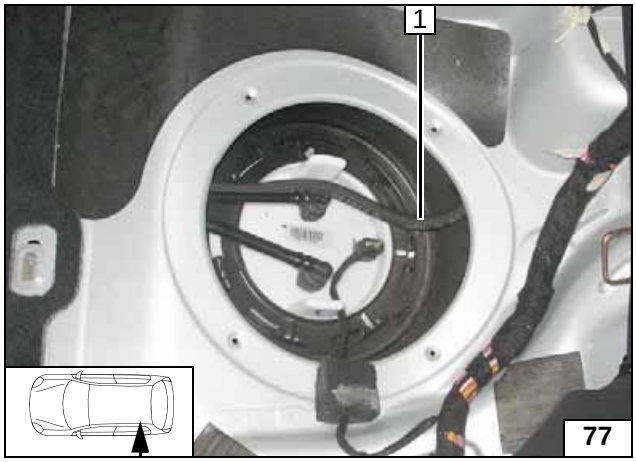
7 10 mm dia. clamp
5 8 mm dia. clamp

Mounting fuel line



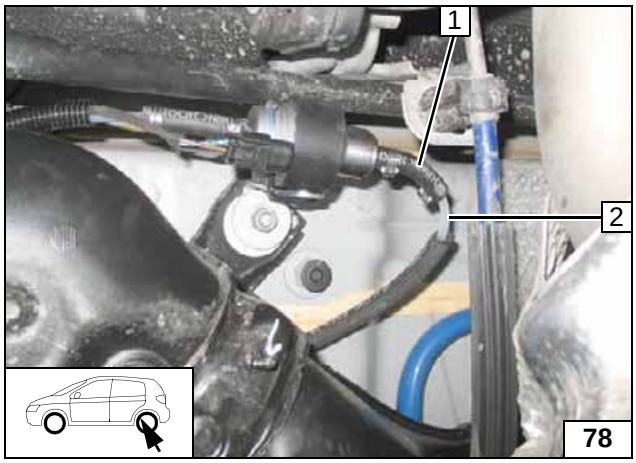
Route fuel line with fabric protective hose **1** to left of fuel-tank sending unit.

Routing fuel line



Route fuel line with fabric protective hose **1** to installation location of metering pump.

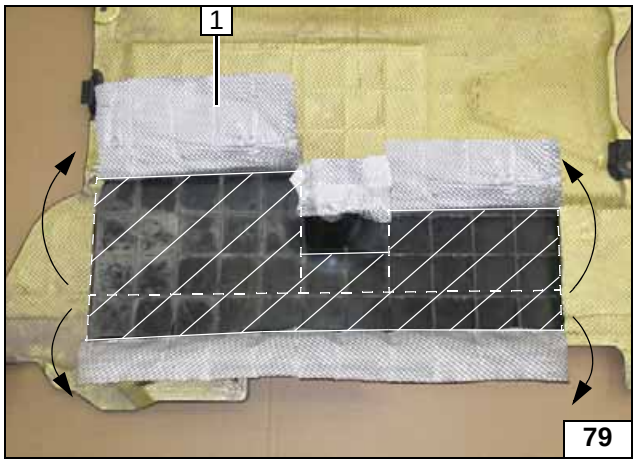
Routing fuel line



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

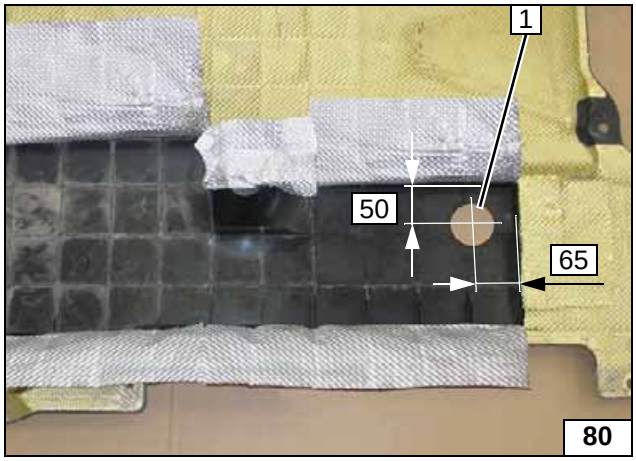
Connecting metering pump

Underride Protection



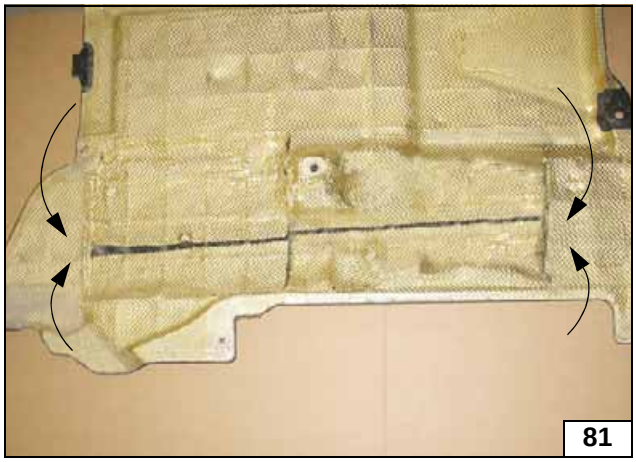
Cut out heat protection film **1** along the hatched lines and fold upward and downward. Remove the chamber profiles in the area of the marking (hatching).

Processing underride protection



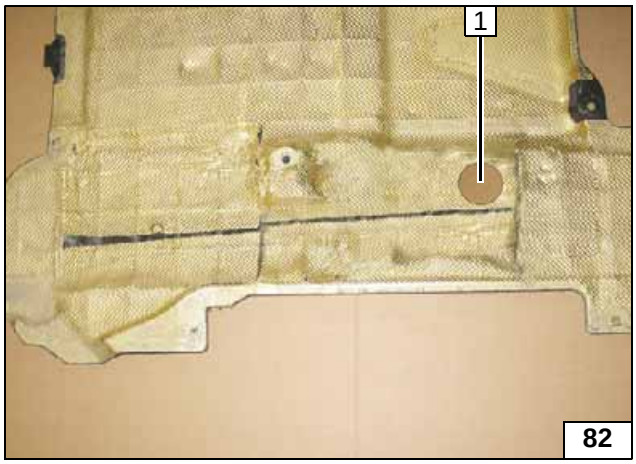
1 60 mm dia. hole

Hole in underride protection



Remove heat protection film **1** and fix with suitable temperature-resistant adhesive.

Processing underride protection



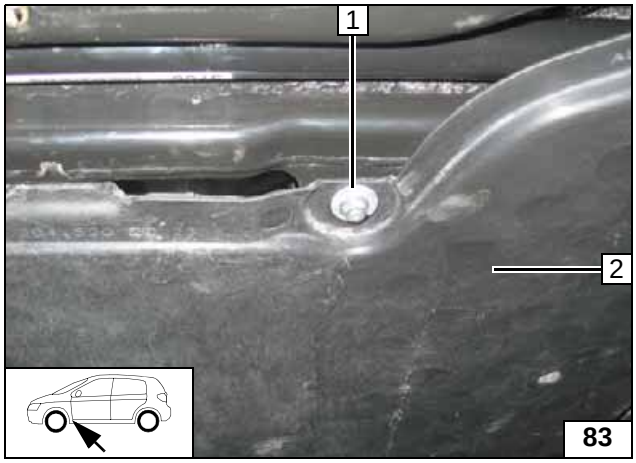
Copy 60mm hole pattern at position **1** on heat protection film and cut out.

Processing underride protection

Final Work

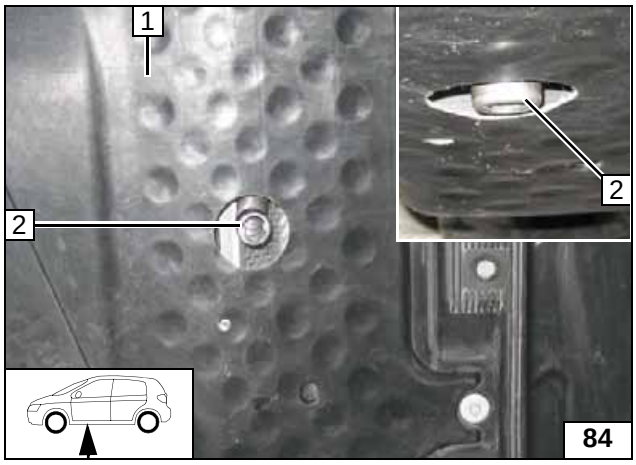
WARNING!
Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose wires and tie back.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Teach Telestart according to "Installation instructions T91 / T100 HTM", adjust digital timer if necessary**
- **Activate push button according to "Installation instructions T91 / T100 HTM" (Repositioning of switch input)**
- **Define settings of A/C control panel according to the "operating and maintenance instructions of TT-Evo"**
- **Mount signboard "Switch off parking heater before refueling" in area of filler neck.**
- **For initial startup and function check, please see installation instructions**



1 Large diameter washer outer dia. d_a = 21.5mm; flanged nut
2 Underride protection

Installing underride protection



Align exhaust end section **2** at the centre of the hole and justified to the underride protection **1**.

Aligning exhaust end section

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