Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Kia Sportage

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Kia	Sportage	SL	e11 * 2007 / 46 * 0136 * ...
Kia	Sportage	SLS	e11 * 2007 / 46 * 0136 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.7 CRDI	Diesel	SG	85	1685	D4FD
2.0 CRDI	Diesel	SG	100	1995	R
2.0 CRDI	Diesel	AT	100	1995	R
2.0 CRDI	Diesel	AT	135	1995	F5D14

SG = Manual transmission
AT = Automatic transmission

From Model Year 2010
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog light
2 WD / 4WD
Xenon / Headlight washer system
Alarm system

Total installation time: approx. 8 hours

Kia Sportage

Table of Contents

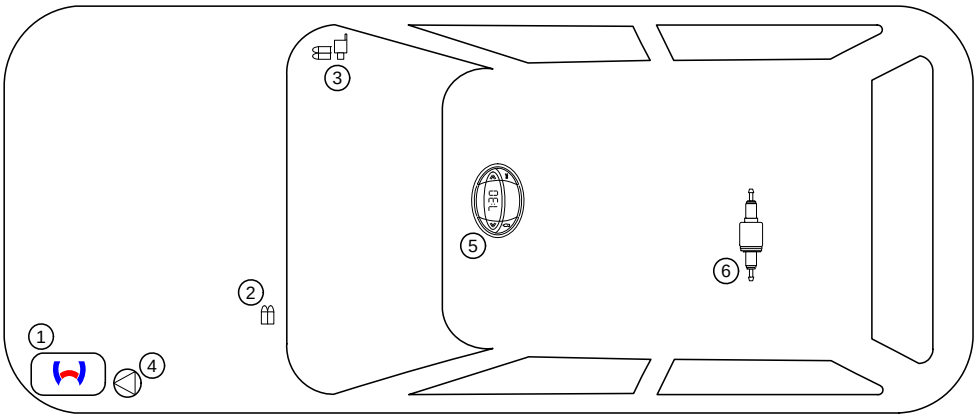
Necessary Components

- Basic delivery scope *Thermo Top Evo* in accordance with price list
- Installation kit for Kia Sportage 2010 Diesel: **1316589B**
- to be ordered additionally for automatic air-conditioning:
  Automatic air-conditioning kit: **1315911B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment fuse holder
4. Circulating pump
5. Digital timer
6. 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.

Sharp edges should be fitted with rub protection (split-open fuel hose)! 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.

Kia Sportage

Information on Validity

This installation documentation applies to Kia Sportage Diesel vehicles - for validity, see page 1 - from model year 2010 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

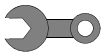
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts = 8Nm.
- Tightening torque values 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

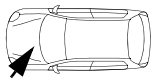
Specific risk of damage to components

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



Kia Sportage

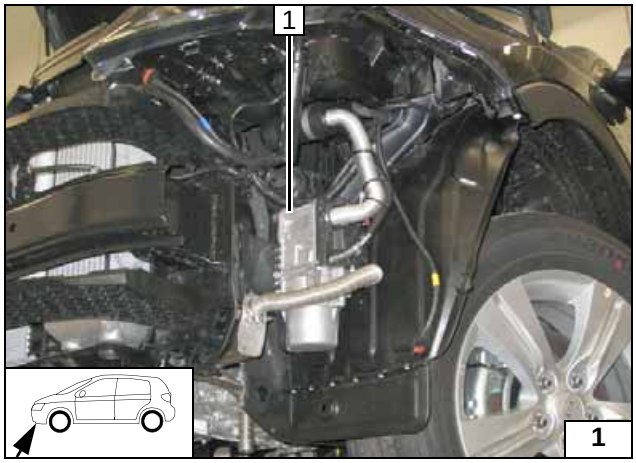
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery and remove it completely, including the carrier.
- Remove the air filter together with the intake hoses.
- Detach the engine control unit and put it aside.
- Remove the underride protection.
- Remove the underbody trim at the left before the fuel tank.
- Remove the lateral wheel well trim at the left.
- Detach the wheel well trim in the front area.
- Remove the bumper.
- Remove the seating surface of rear bench seat (a screw fitting is accessible from luggage compartment).
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the entrance strip on the front passenger's side.
- Remove the lower A-pillar trim in the front passenger's side footwell.
- Remove the trim of the shift lever (for digital timer only).

Heater

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



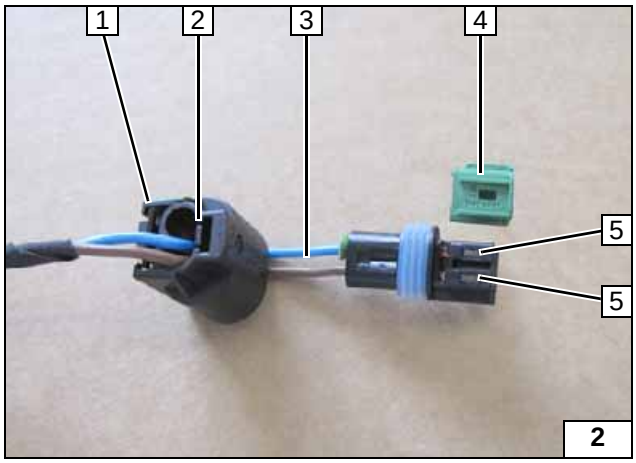
Heater Installation Location

1 Heater

Installation location

Preparing Electrical System

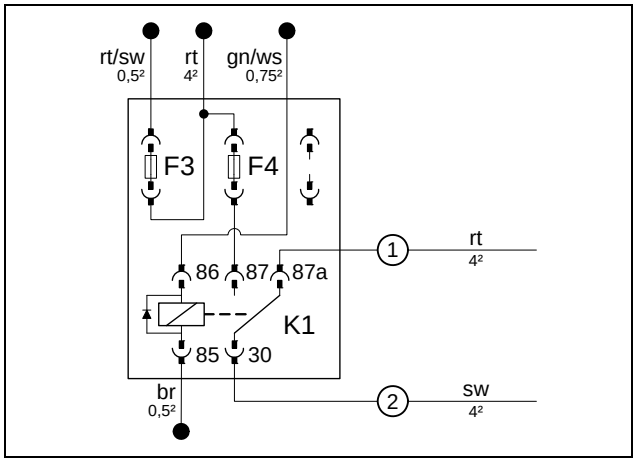
Dismantling connector



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

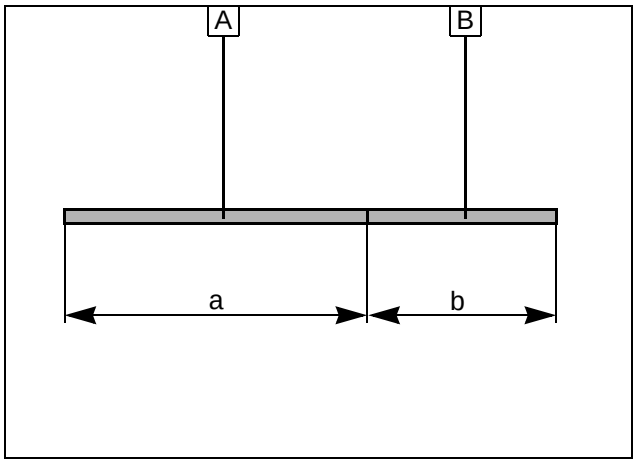
1 Connector housing
2 Lock
3 Blue/brown (bl / br) wires
4 Coding
5 Timer lock

Inserting F4, preparing K1 relay



Produce connections as shown in wiring diagram. Insert 25A fuse F4, K1 relay will be installed after assembly.

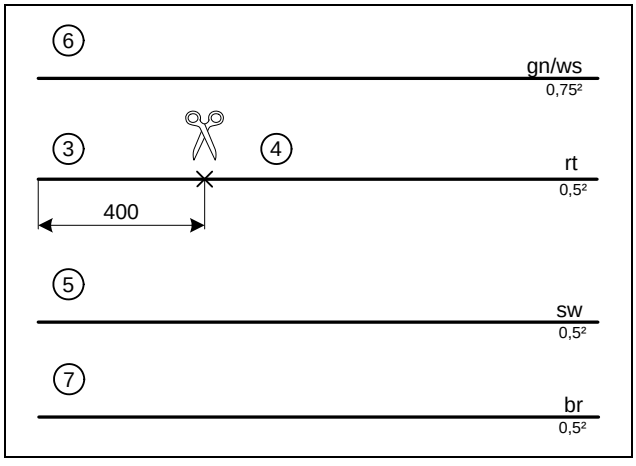
Cutting protective sleeving to length



Automatic air-conditioning

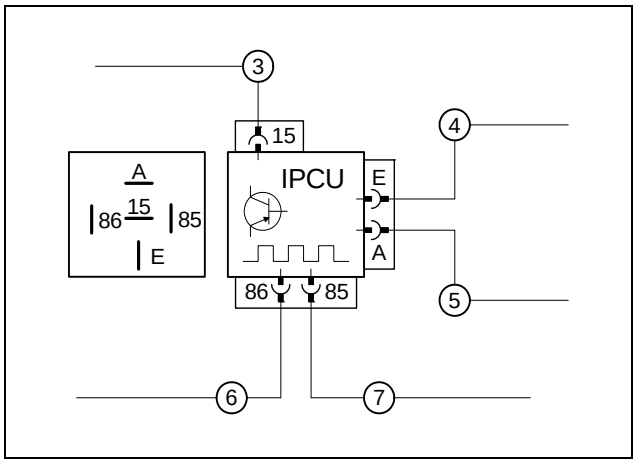
A = 600
B = 400

Preparing lines



Connect wires to IPCU socket (see following image).
Pull red (rt) wire ④ and black (sw) wire ⑤ into protective sleeving **A**. Pull green/white (gn/ws) wire ⑥ and red (rt) wire ③ into protective sleeving **B**.

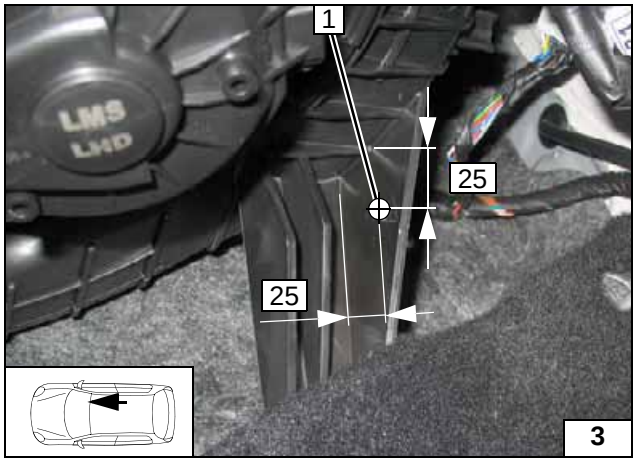
③ Red (rt) wire of IPCU/15 socket
④ Red (rt) wire of IPCU/E socket
⑤ Black (sw) wire of IPCU/A socket
⑥ Green/white (gn/ws) wire from IPCU/86 socket
⑦ Brown (br) wire of IPCU/85 socket



IPCU view on contact side.
The IPCU is preprogrammed with the adjustment values of model year 2011. The settings must be checked during the function check on the vehicle and adjusted if necessary.

Preparing IPCU

Model year:	2010	2011
Duty cycle:	100%	100%
Frequency:	14 kHz	1 kHz
Voltage:	4.4V	3.6V
Function:	High side	High side



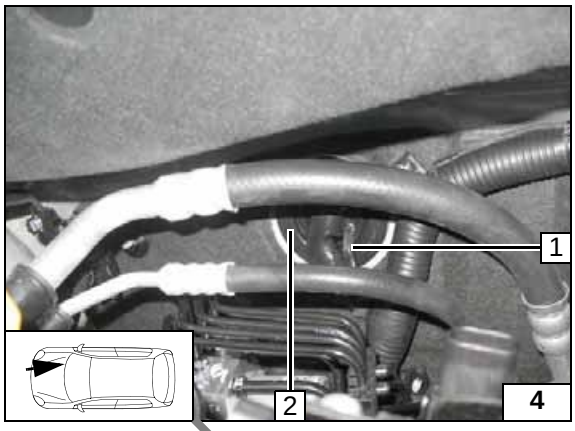
1 5.5 mm dia. hole (short drill)

Hole for fuse holder of passenger compartment

Electrical System

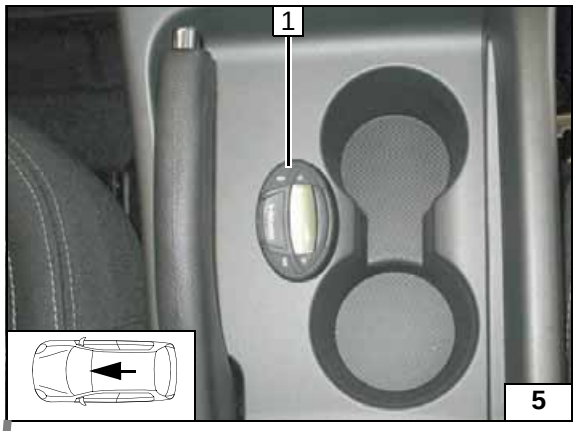
Wiring harness pass through

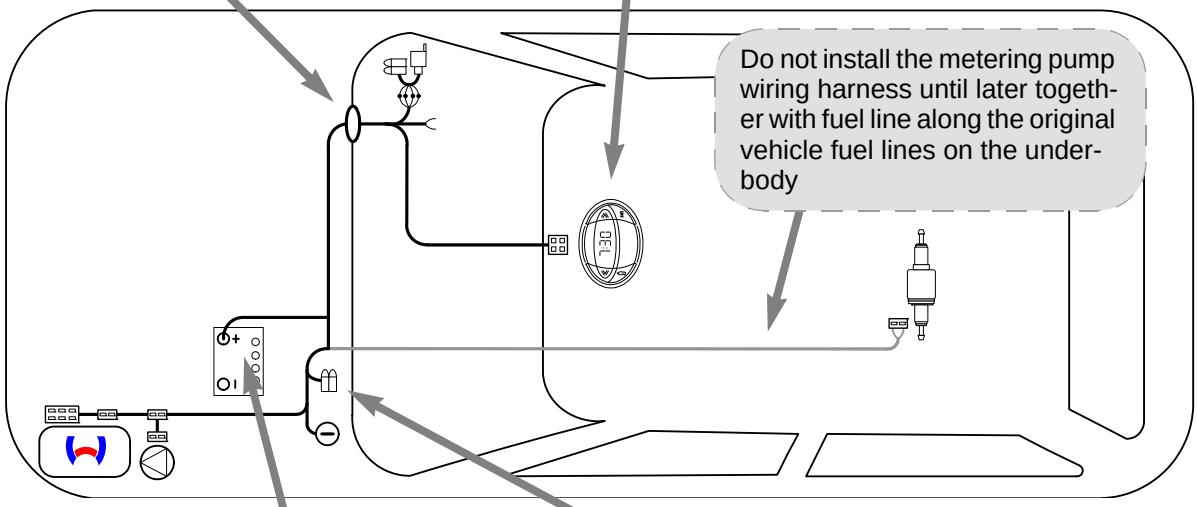
1 Wiring harnesses of heater and heater control
2 Protective rubber plug



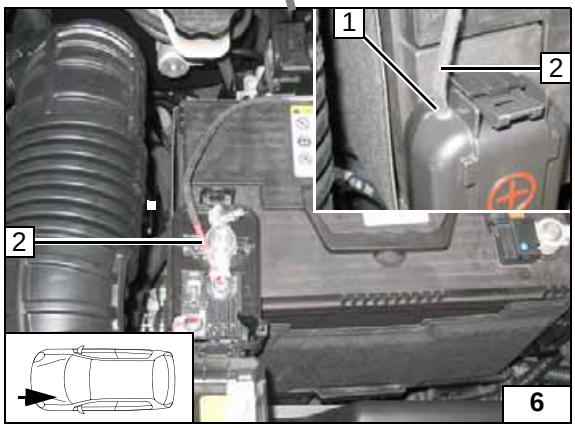
Digital timer

1 Digital timer



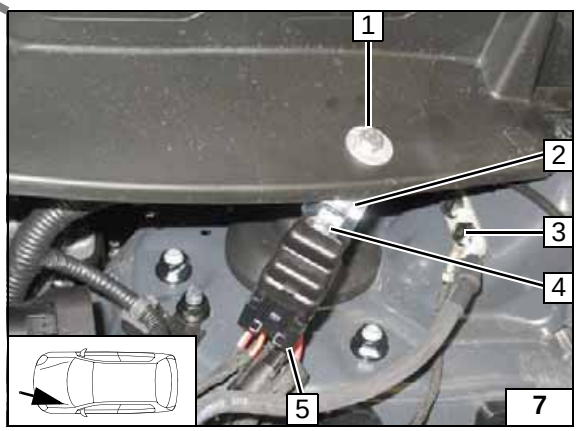


Wiring harness routing diagram



Positive wire

1 Nick positive wire cover
2 Positive wire on positive battery terminal

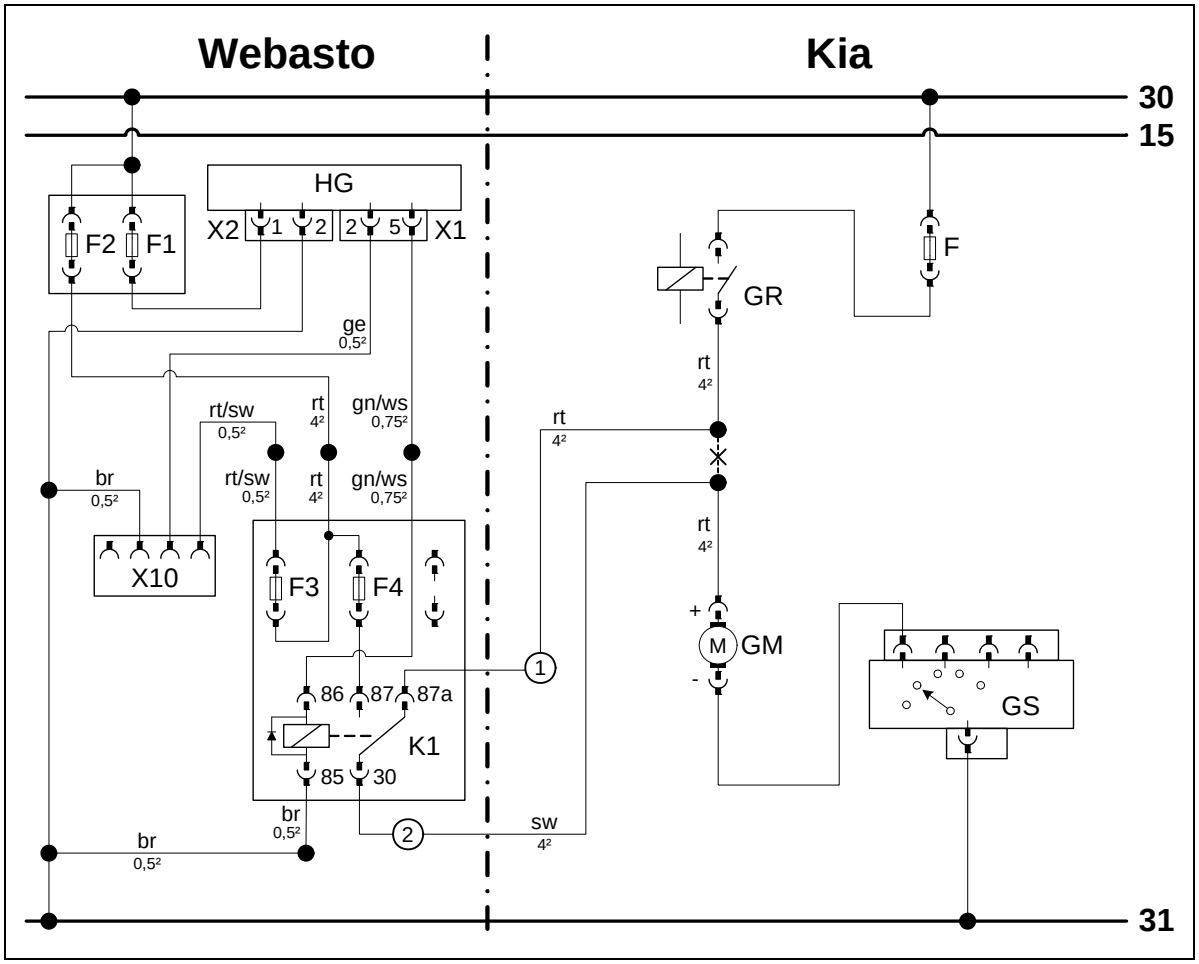


Engine compartment fuse holder, earth wire

Install angle bracket **2** loosely.

1 Remove clip, M6x20 bolt, large diameter washer, flanged nut
3 Earth wire on original vehicle earth point.
4 M5x16 bolt, washer [2x], retaining plate for fuse holder, nut
5 F1-2 fuses mounted

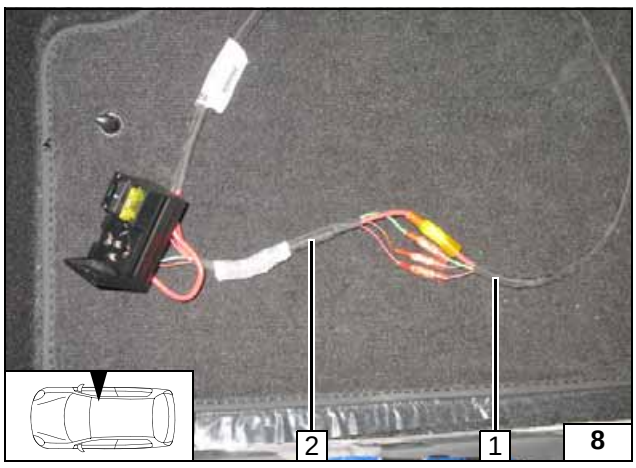
Fan Controller for Manual Air-Conditioning



Wiring diagram

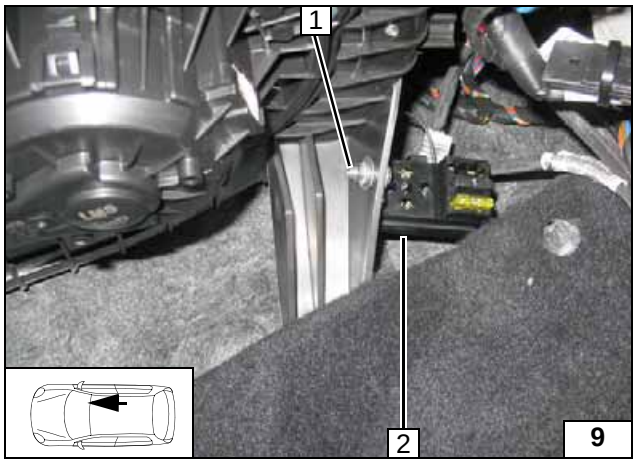
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	sw	black
X2	2-pin heater connector	GS	Fan switch	br	brown
X10	4-pin connector Heater control	F	Fuse	gn	green
				ws	white
K1	Fan relay			ge	yellow
F1	20A fuse				
F2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

Legend



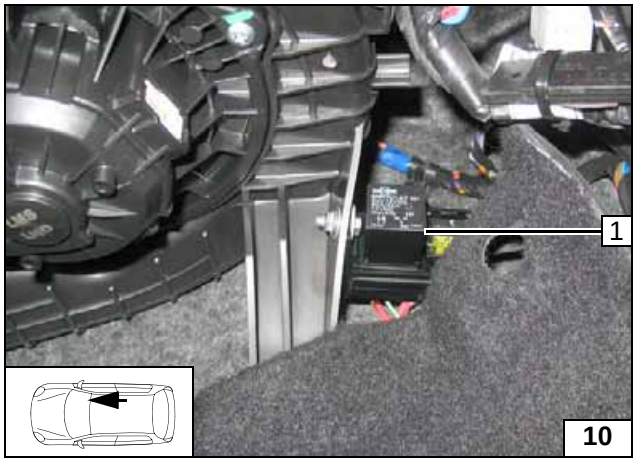
Connect the wiring harness of passenger compartment fuse holder **2** with the wiring harness of heater **1** according to the wiring diagram, in such a way that the wires of the same colour are connected.

Connecting wiring harnesses



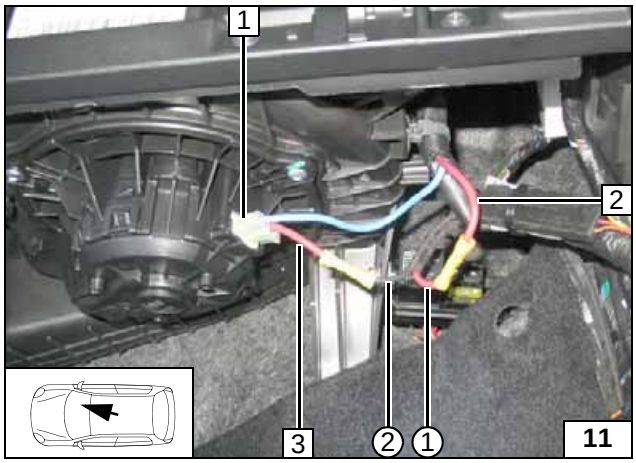
1 M5x16 bolt, large diameter washer [2x], nut
2 Passenger compartment fuse holder

Mounting passenger compartment fuse holder



1 K1 relay

Connecting K1 relay



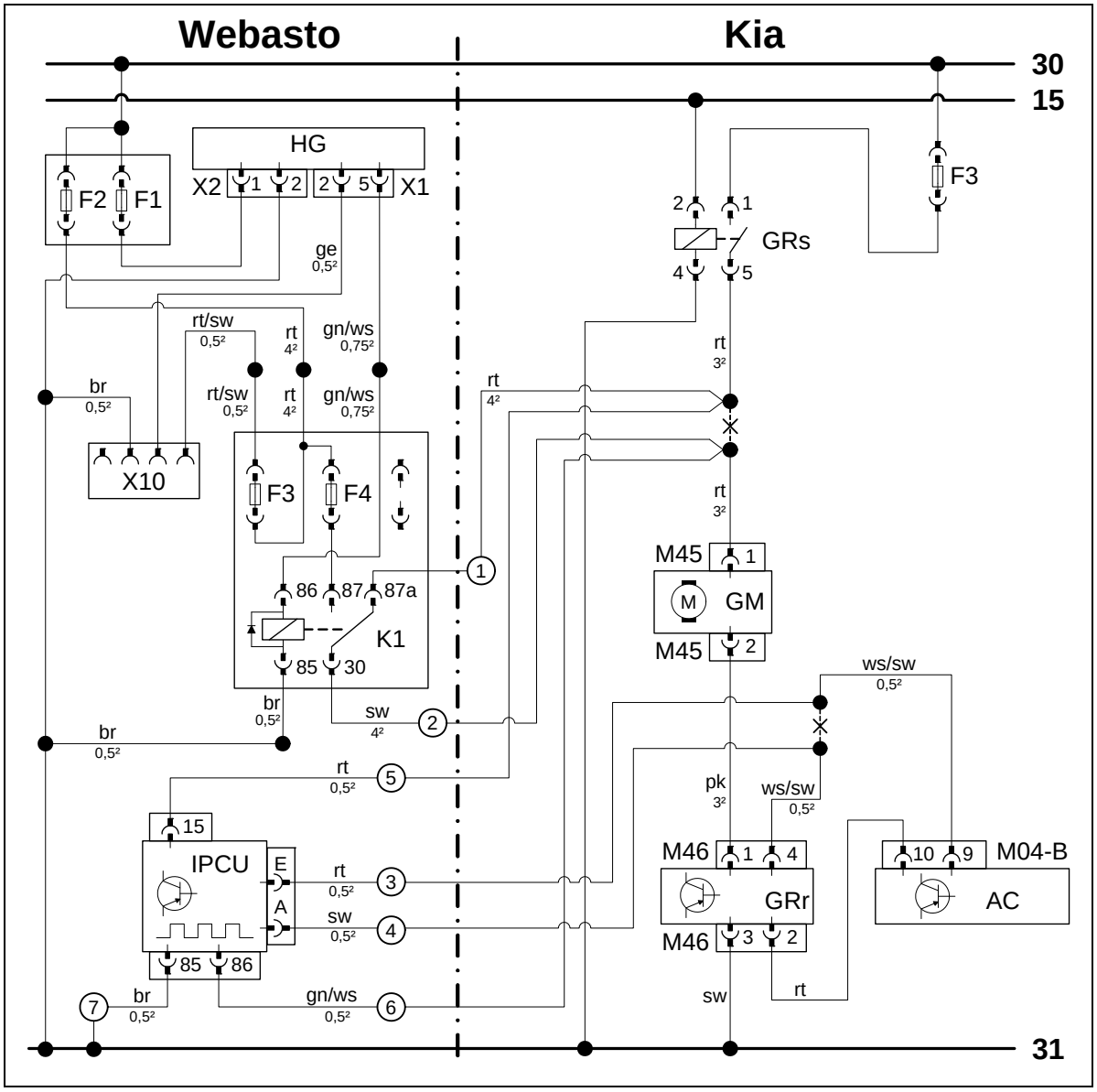
Connection to 2-pin connector **1** from fan motor.
Produce connections as shown in wiring diagram.

2 Red (rt) wire from fuse
3 Red (rt) wire, fan motor connector
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30

Connecting fan motor

Fan Controller for Automatic Air-Conditioning

Wiring diagram



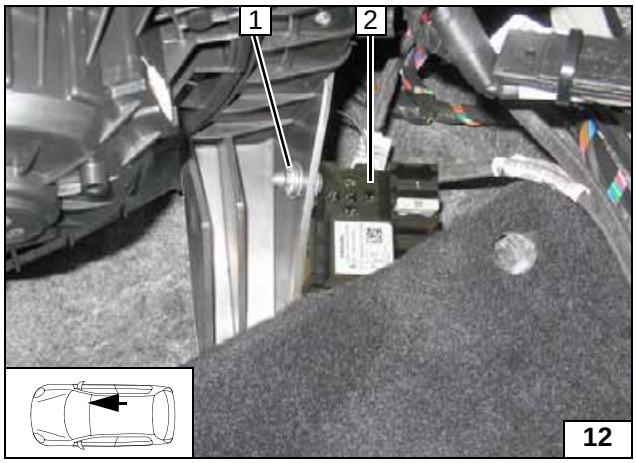
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	GM	Fan motor	rt	red
X1	6-pin heater connector	M45	2-pin connector GM	sw	black
X2	2-pin heater connector	GRs	Fan relay	br	brown
X10	4-pin connector Heater control	GRr	Fan controller	gn	green
		M46	4-pin connector, GRr	ws	white
K1	Fan relay	AC	A/C control unit	ge	yellow
F1	20A fuse	M04-B	AC connector	ro	pink
F2	30A fuse	F3	40A fuse		
F3	1A fuse				
F4	25A fuse				
IPCU	Pulse width modulator				

IPCU setting values		
Model year:	**2010**	**2011**
Duty cycle:	100%	100%
Frequency:	14 kHz	1 kHz
Voltage:	4.4V	3.6V
Function:	High side	High side

X Cutting point

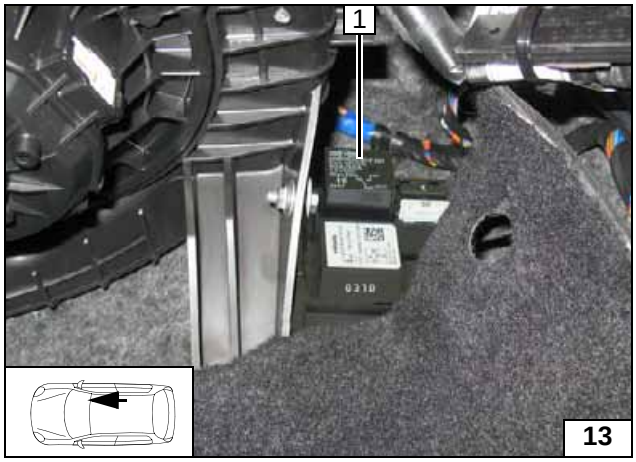
Wiring colours may vary.

Legend



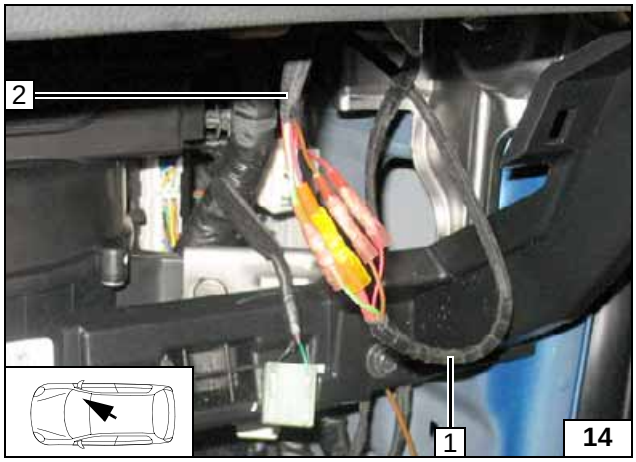
1 M5x16 bolt, large diameter washer [2x], nut
2 Passenger compartment fuse holder

Installing fuse holder, inner



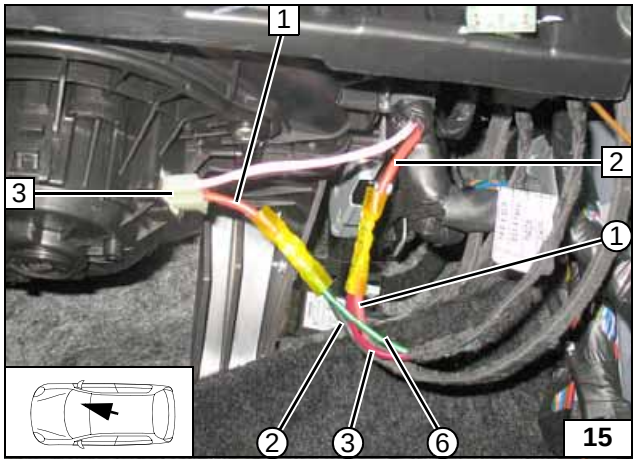
1 K1 relay

Connecting K1 relay



Connect the wiring harness of passenger compartment fuse holder **2** with the wiring harness of heater **1** according to the wiring diagram, in such a way that the wires of the same colour are connected.

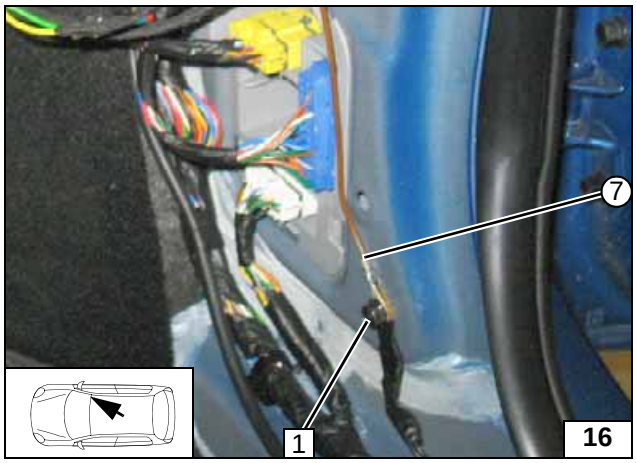
Connecting wiring harnesses



Connection to 2-pin connector M45 **3** from fan motor. Produce connections as shown in wiring diagram.

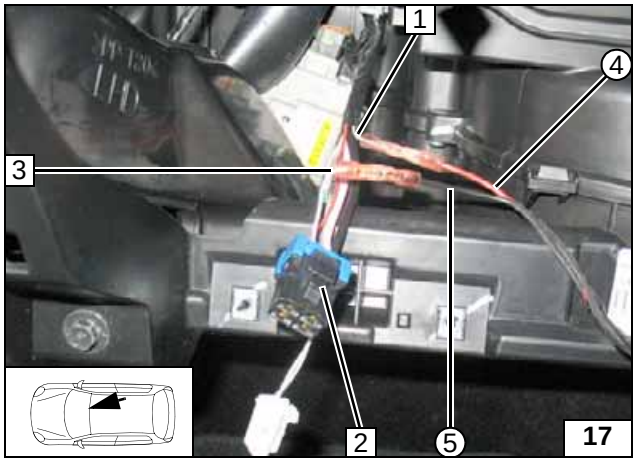
1 Red (rt) wire, M45 connector
2 Red (rt) wire from fan relay
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30
③ Red (rt) wire of IPCU/15
⑥ Green/white (gn/ws) wire from IPCU/86

Connecting fan motor



1 Original vehicle bolt
⑦ Brown (br) wire of IPCU/85

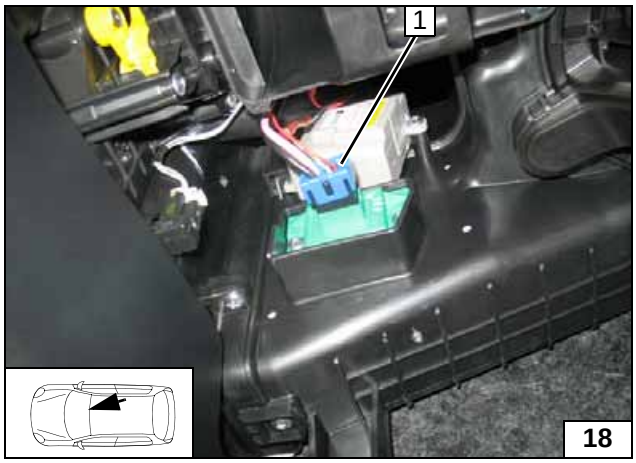
IPCU earth connection



Connection to 4-pin connector M46 **2** from fan controller. Produce connections as shown in wiring diagram.

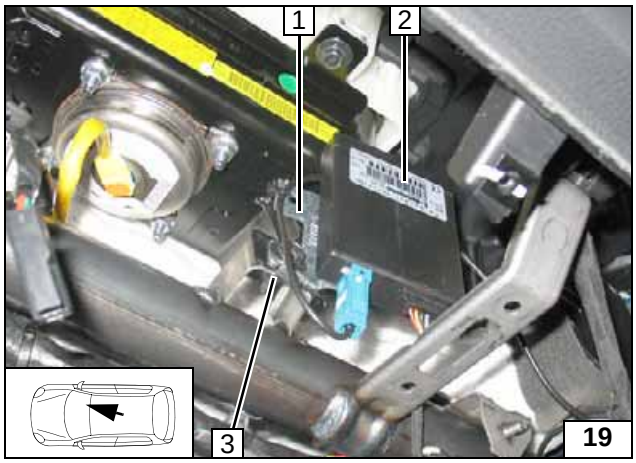
1 White/black (ws/sw) wire for A/C control unit pin 9
3 White/black (ws/sw) wire for connector M46 pin 4
④ Red (rt) wire of IPCU/E
⑤ Black (sw) wire of IPCU/A

Fan controller connection



1 Socket for connector M46

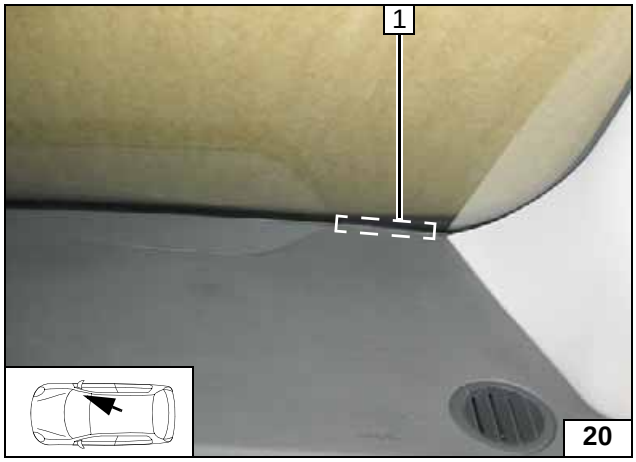
Installing connector



Remote Option (Telestart)

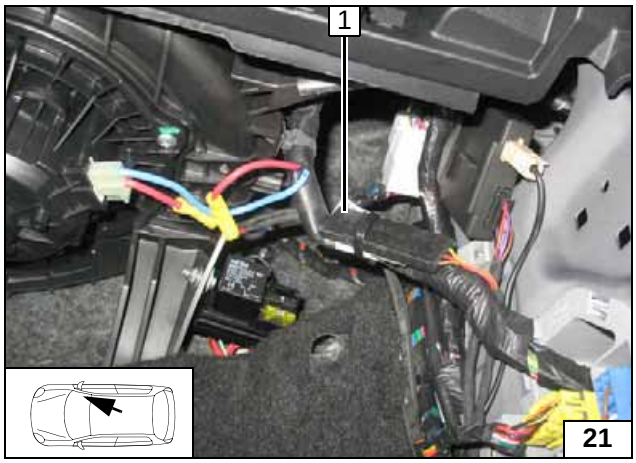
1 Bracket
2 Receiver
3 Original vehicle bolt

Mounting receiver



1 Antenna

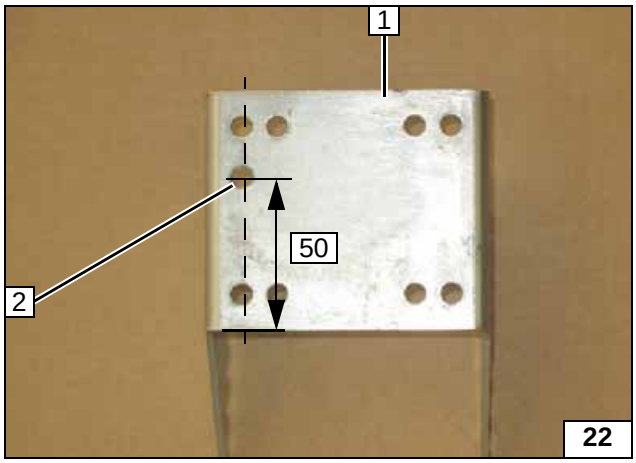
Mounting antenna



Only for Telestart T100 HTM

1 Temperature sensor

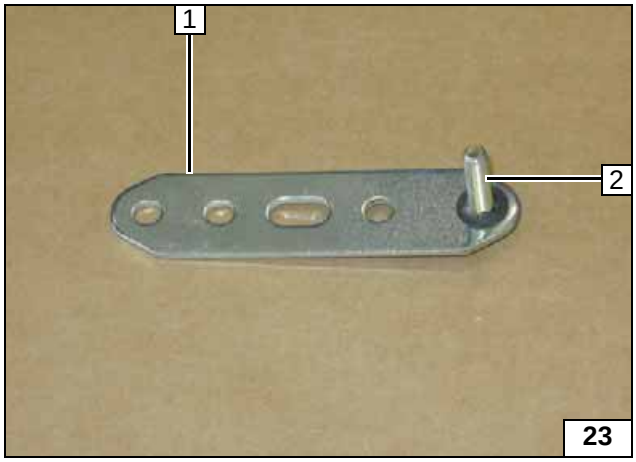
Installing temperature sensor



Preparing Bracket

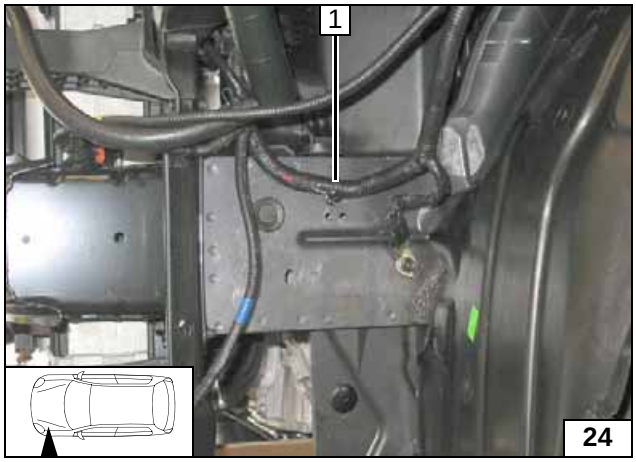
1 Bracket
2 7 mm dia. hole

Drilling bracket



1 Perforated bracket
2 M6x25 bolt, pin lock

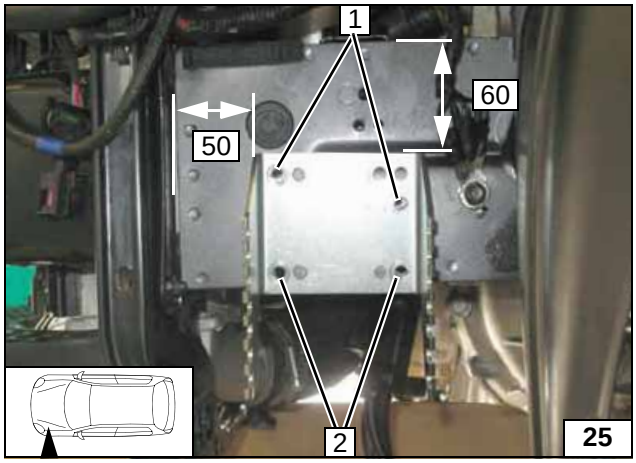
Premounting perforated bracket of circulating pump



Preparing Installation Location

1 Loosen retaining clip

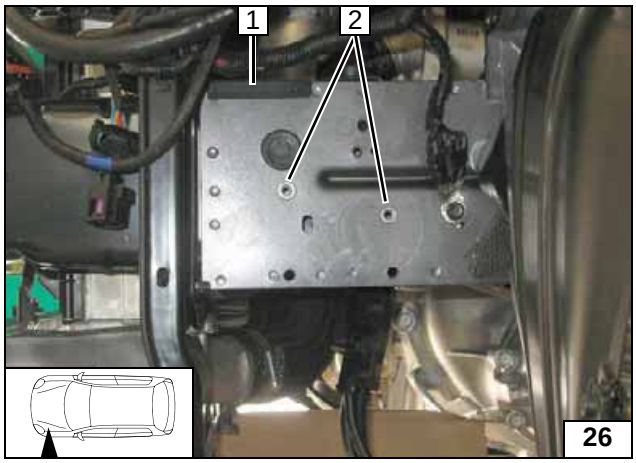
Detaching wiring harness



Align bracket as shown.

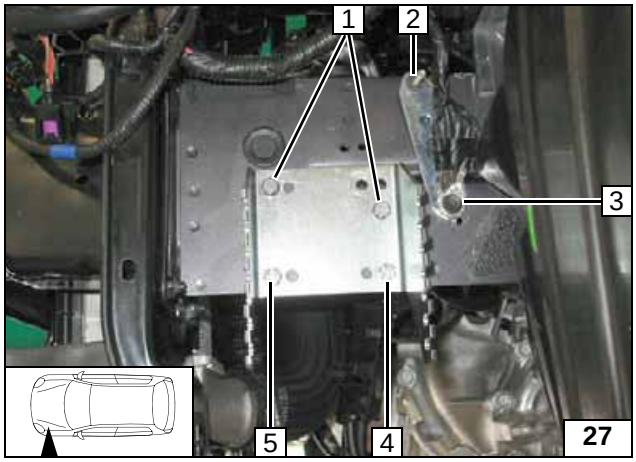
1 Copy hole pattern, 9.1 mm dia. hole [2x]
2 Copy hole pattern, 7 mm dia. hole [2x]

Copying hole pattern



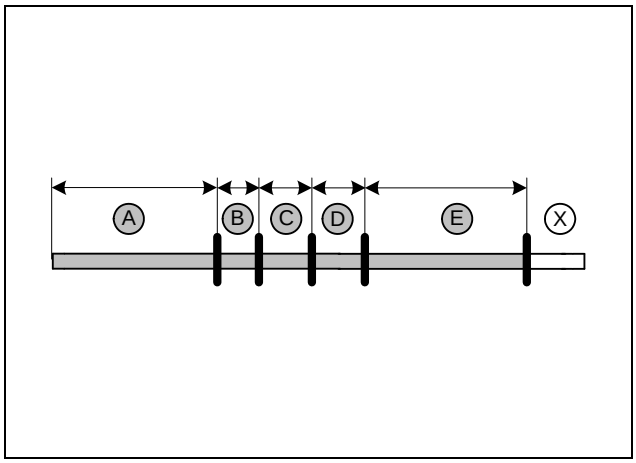
1 50 mm long edge protection
2 Mount rivet nut [2x]

Installing rivet nut



1 M6x20 bolt, spring lockwasher [2x each]
2 Preinstalled circulating pump perforated bracket
3 Original vehicle bolt, original vehicle earth wires
4 M6x20 bolt, flanged nut
5 M6x20 bolt, to be fastened later to exhaust silencer

Installing bracket

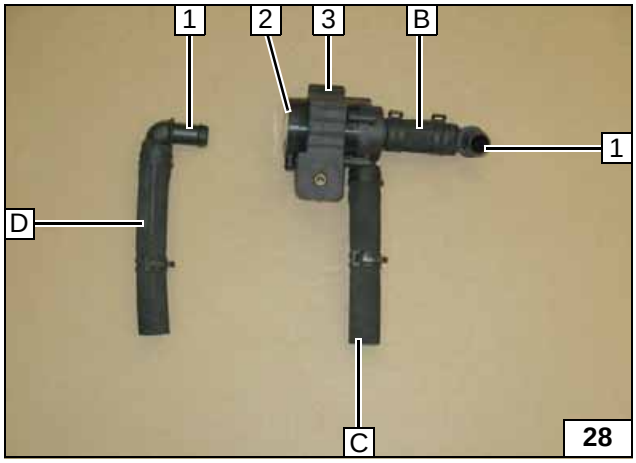


Preparing Heater

Discard section X.

	1.7 D	2.0 D
A =	880	700
B =	60	60
C =	150	150
D =	160	160
E =	820	800

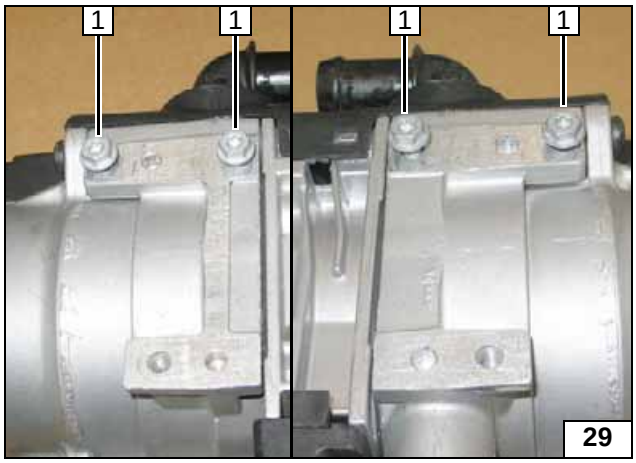
Cutting hoses to length



All spring clips = 25 mm dia.

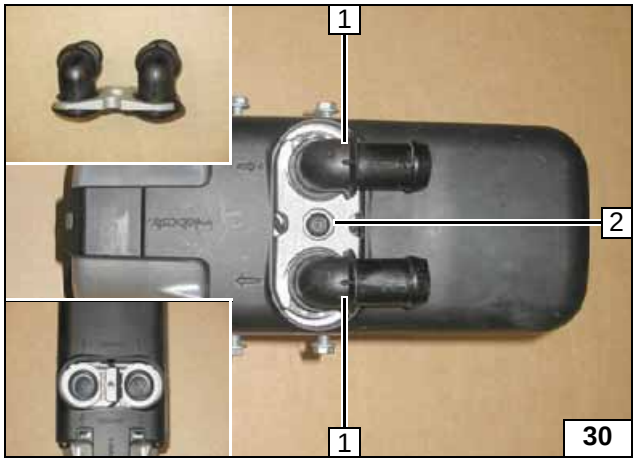
1 90°, 18x18 connecting pipe [2x]
2 Circulating pump
3 Mounting of circulating pump

Premounting hoses



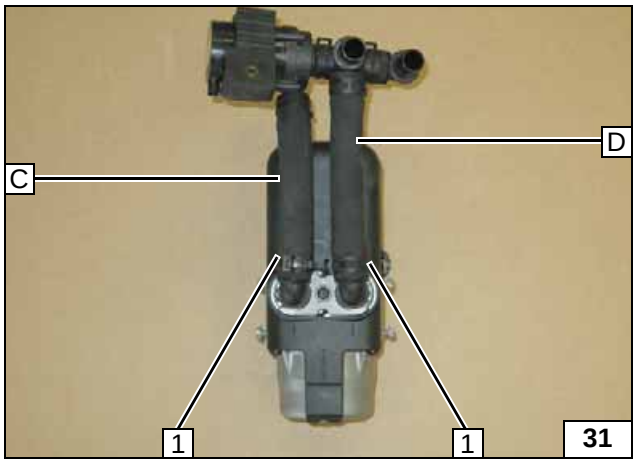
Precut thread of 5x13 self-tapping bolts **1** [4x] and install loosely (turn max. 3 threads).

Premounting bolts loosely



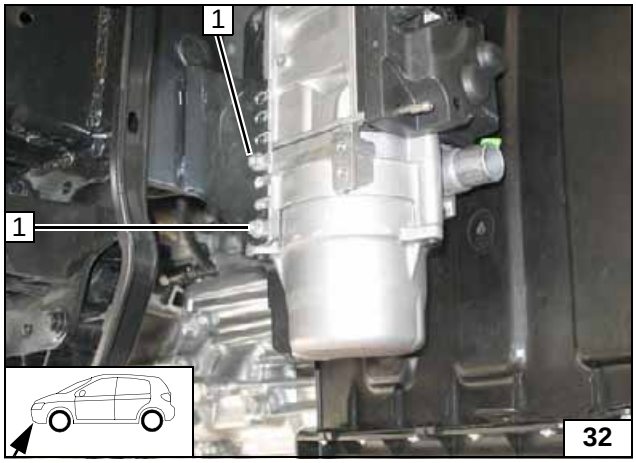
1 Water connection pieces, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Mounting water connection pieces



1 25 mm dia. spring clip [2x]

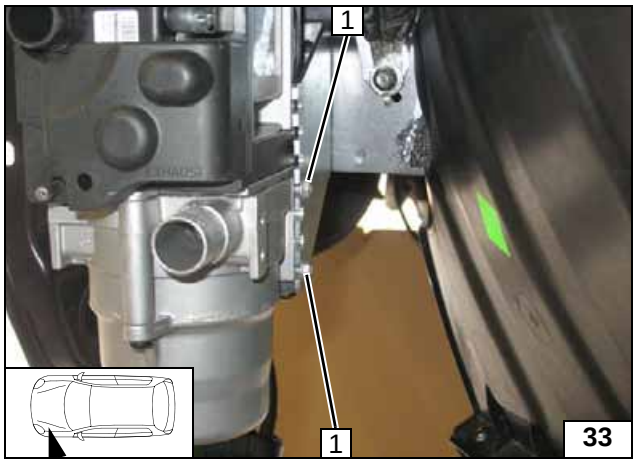
Installing hoses



Installing Heater

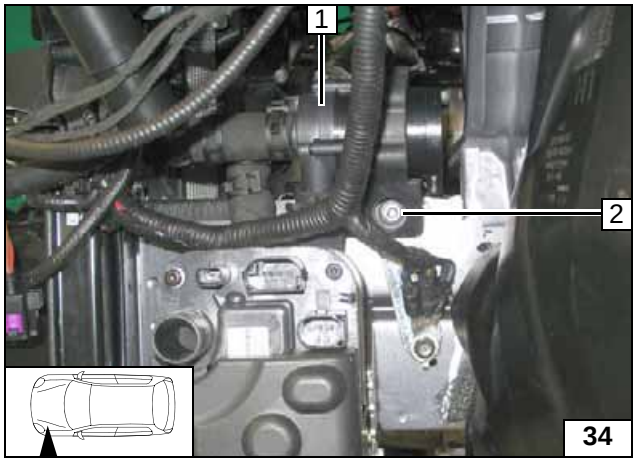
1 Tighten 5x13 self-tapping bolt [2x]

Mounting heater



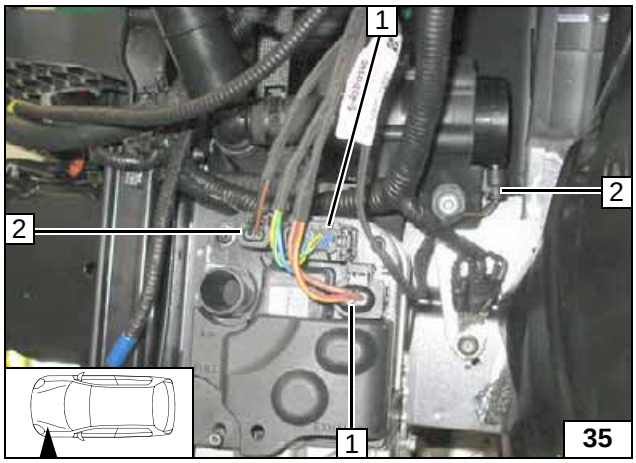
1 Tighten 5x13 self-tapping bolt [2x]

Mounting heater



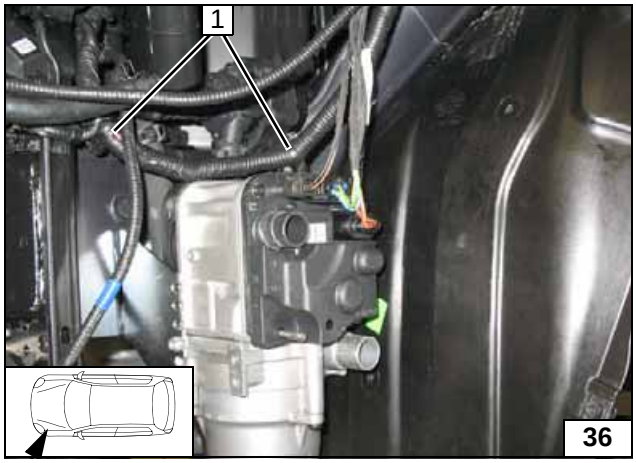
1 Circulating pump
2 Flanged nut

Mounting circulating pump



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

Mounting wiring harnesses



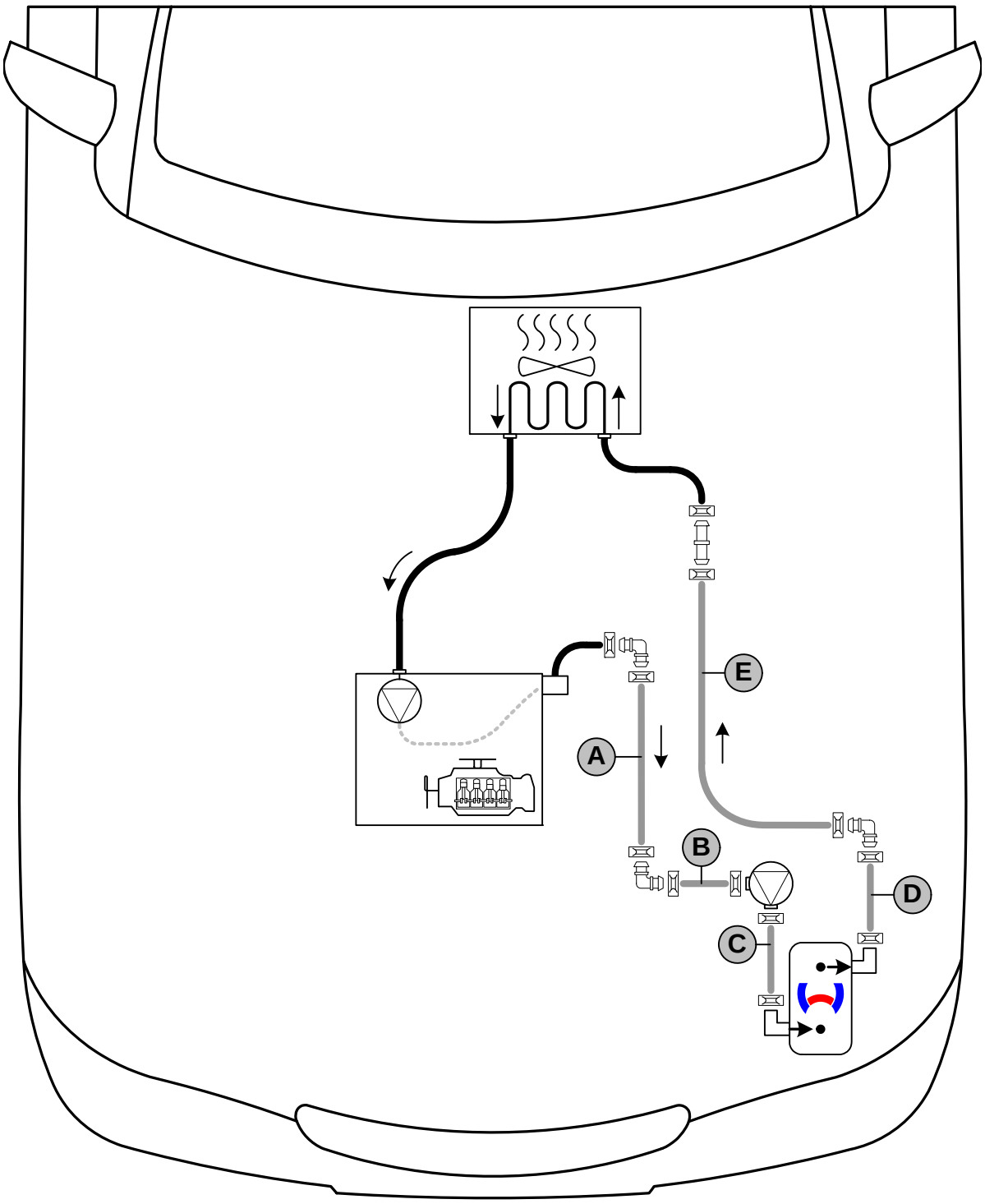
Fasten original vehicle wiring harness **1** with cable tie [2x].

Fastening wiring harness

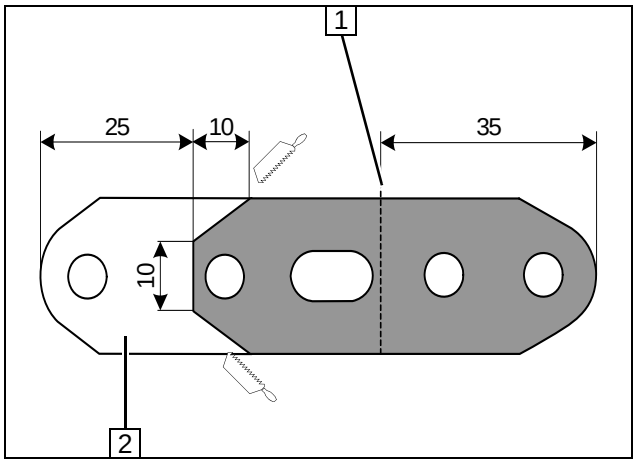
Coolant Circuit

WARNING!
Any coolant running off should be collected 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. The heater must be filled with coolant when installing the hoses.
The connection should be based on the following diagram:

Hose installation diagram



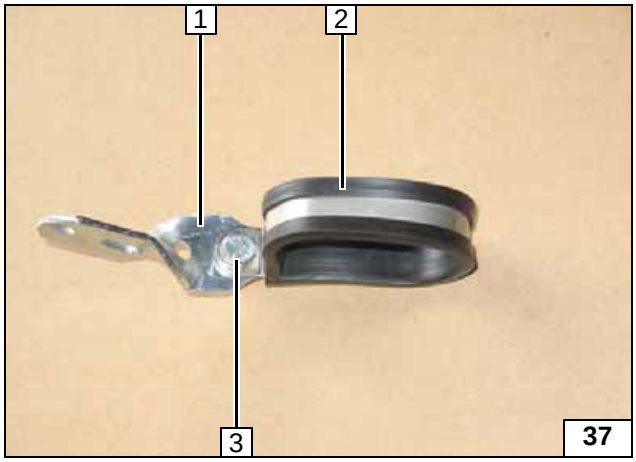
All spring clips without a specific designation = 25 mm dia.
All connecting pipes and = 18x18mm dia.



Twist perforated bracket **1** on bending line by 90° (see following image).

2 Discard section

Preparing perforated bracket



1 Perforated bracket
2 38mm dia. rubber-coated p-clamp
3 M6x20 bolt, flanged nut

Premounting perforated bracket

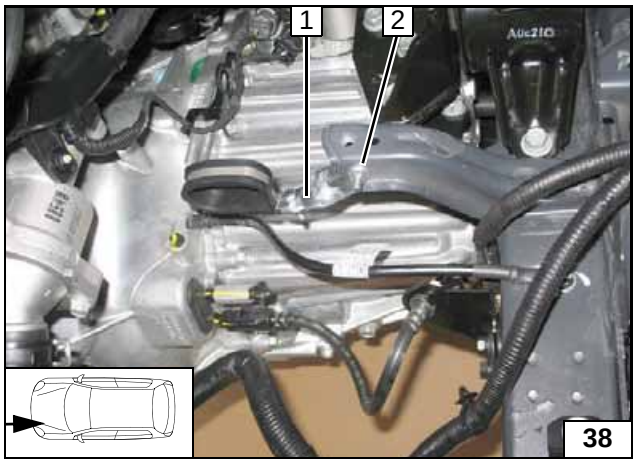


Image shows manual transmission.

1 Perforated bracket
2 M6x20 bolt, original vehicle hole, flanged nut

Installing perforated bracket

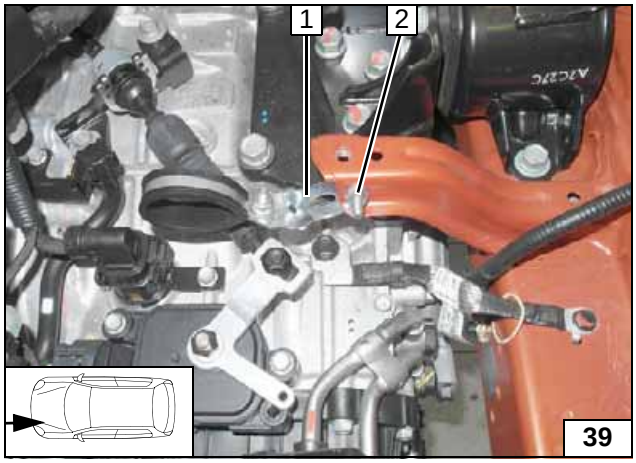


Image shows automatic transmission.

1 Perforated bracket
2 M6x20 bolt, original vehicle hole, flanged nut

Installing perforated bracket

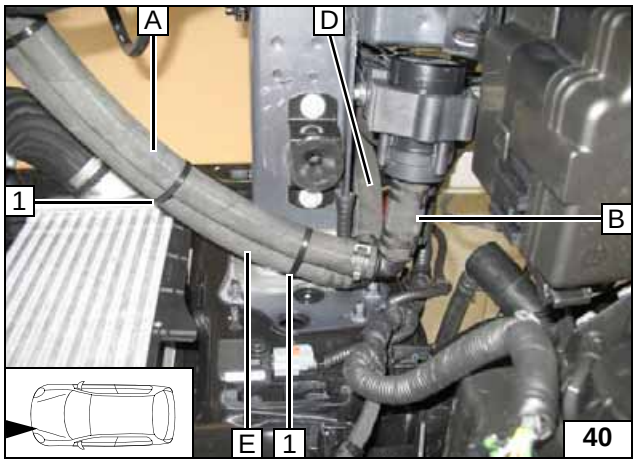
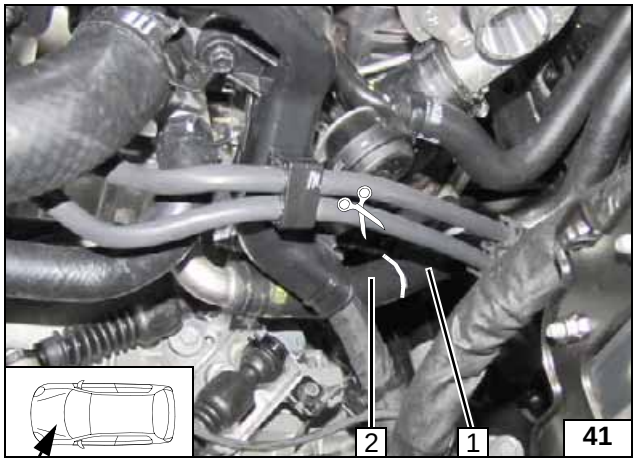


Image shows manual transmission!

1 Cable tie [2x]

Connecting heater

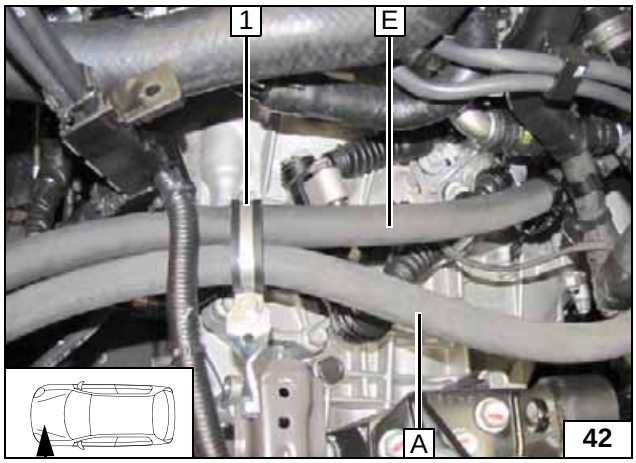


1.7 D

Separate hose of engine outlet / heat exchanger inlet at the marking.

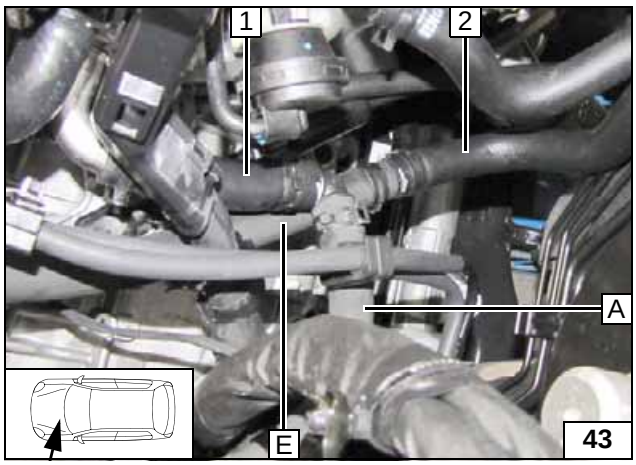
1 Hose section of heat exchanger inlet
2 Engine outlet hose section

Cutting point



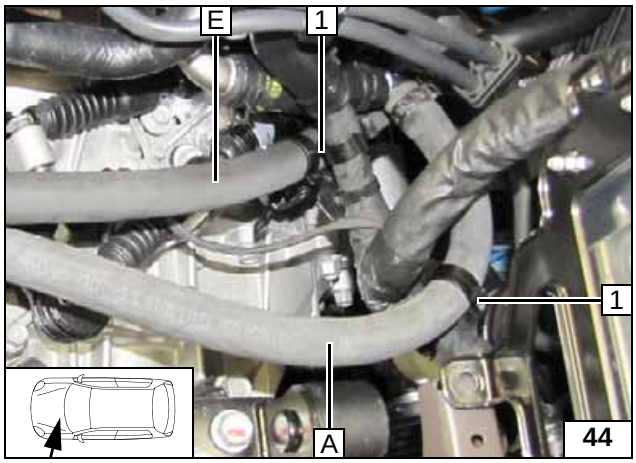
Route hose **A** and **E** through rubber-coated p-clamp **1**.

Routing in engine compartment



1 Hose of engine outlet
2 Hose on heat exchanger inlet

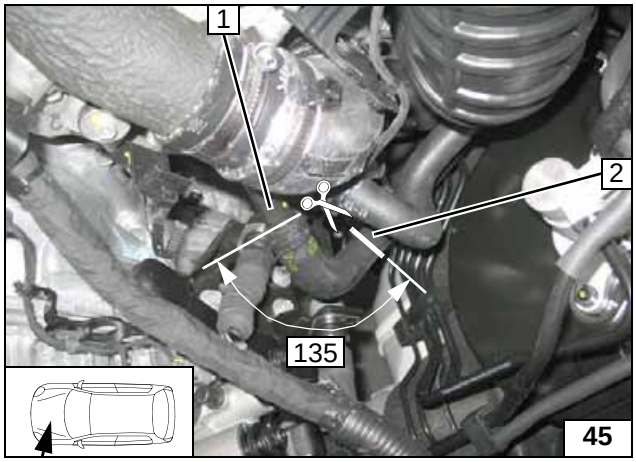
Connection on engine outlet and heat exchanger inlet



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

1 Hose bracket [2x]

Inserting hose bracket

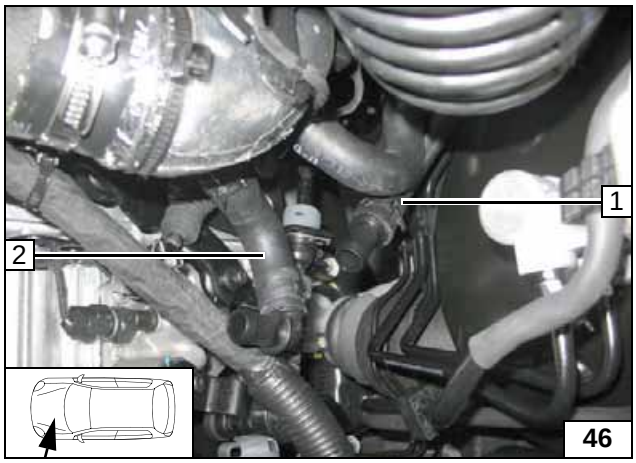


2.0 D

The hose routing was documented using manual transmission. Automatic transmission routing is analogous to manual transmission routing.
Separate hose of engine outlet / heat exchanger inlet at the marking.

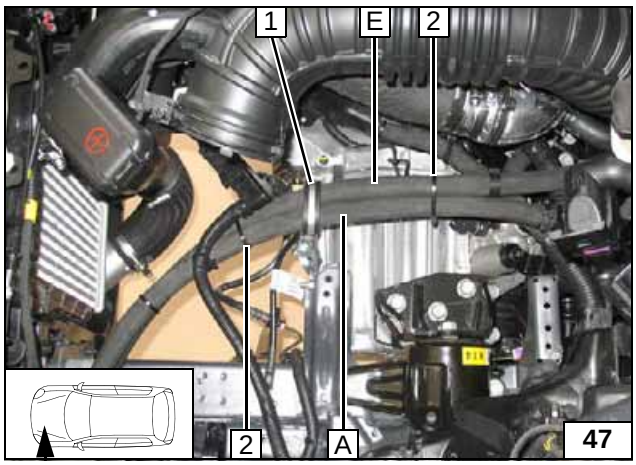
1 Engine outlet connection piece
2 Cutting point

Cutting point



1 Hose on heat exchanger inlet
2 Hose on engine outlet turned forward

Premounting hoses



Route hose **A** and **E** through rubber-coated p-clamp **1**.

2 Cable tie [2x]

Routing in engine compartment

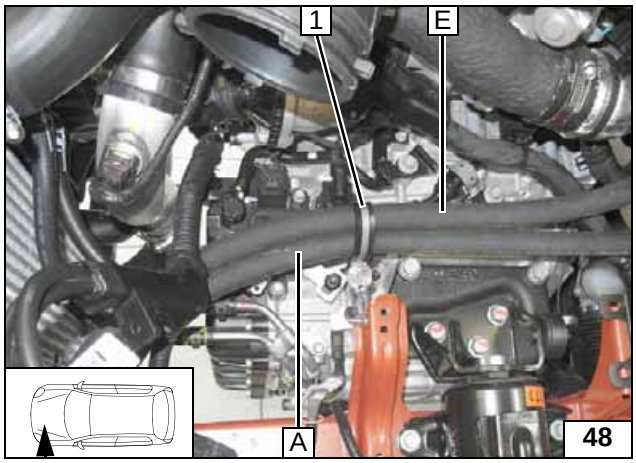


Image shows automatic transmission. Route hose A and E through rubber-coated p-clamp **1**.

Routing in engine compartment

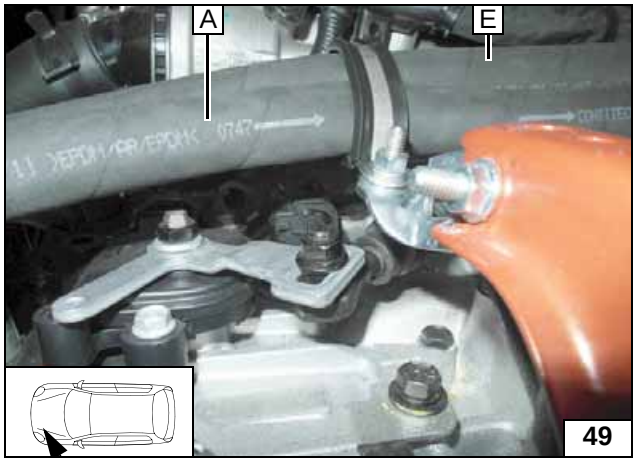


Image shows automatic transmission. Ensure sufficient distance to gear change linkage, correct if necessary.

Routing in engine compartment

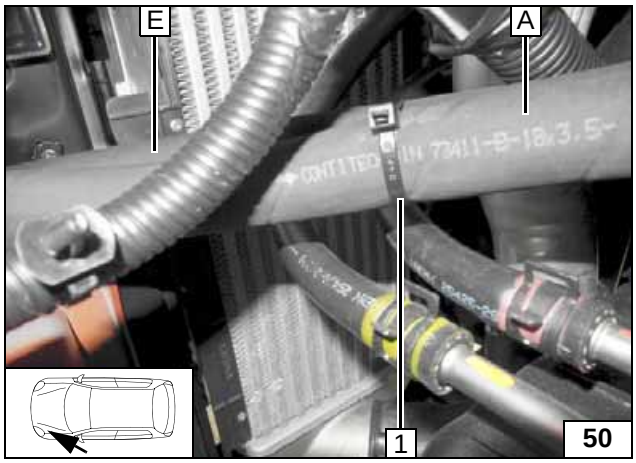
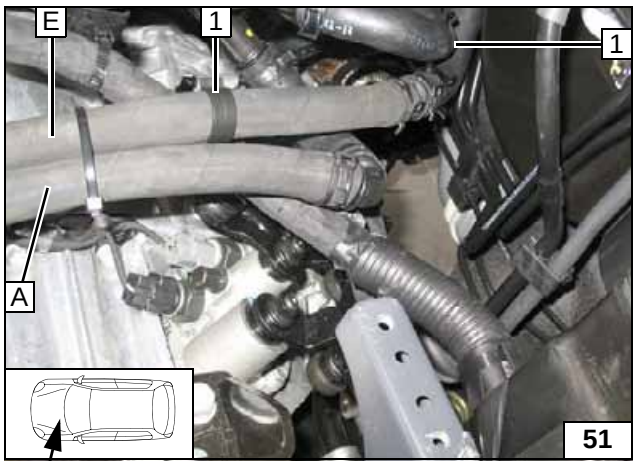


Image shows automatic transmission. Ensure sufficient distance to original vehicle lines, correct if necessary.

1 Cable tie

Routing in engine compartment



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

1 Hose bracket [2x]

Connection on engine outlet and heat exchanger inlet

Fuel

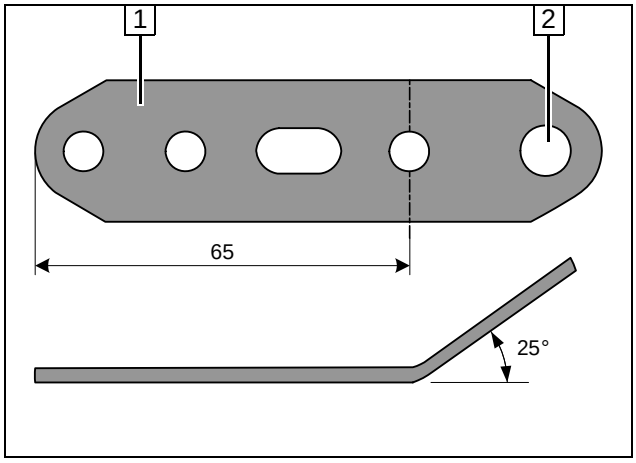
CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in a suitable 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.

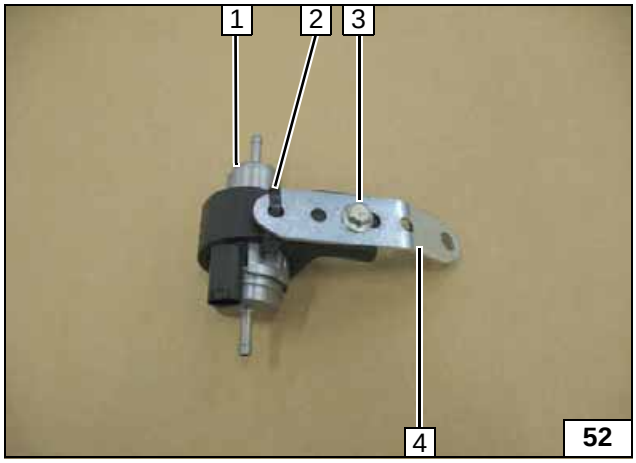
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Preparing perforated bracket



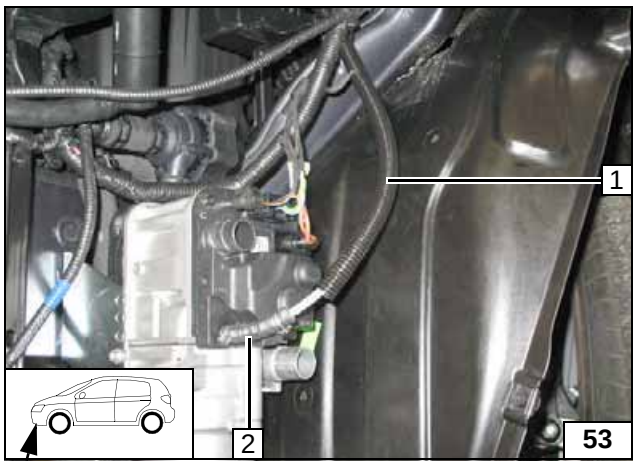
1 Perforated bracket
2 Drill out 8.5mm dia. hole

Premounting metering pump



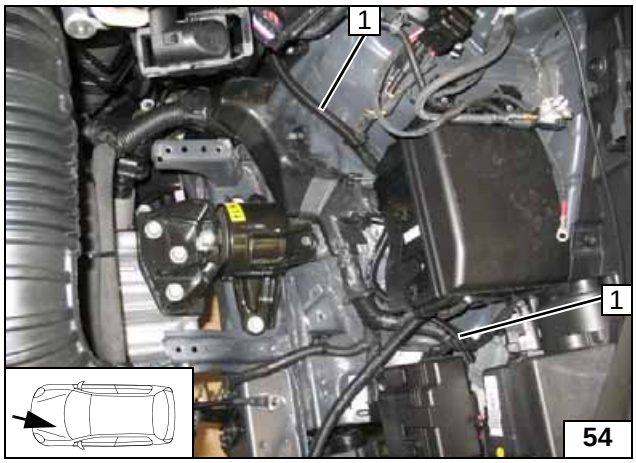
1 Metering pump
2 Cable tie
3 M6x25 bolt, support angle, flanged nut
4 Perforated bracket

Connecting heater



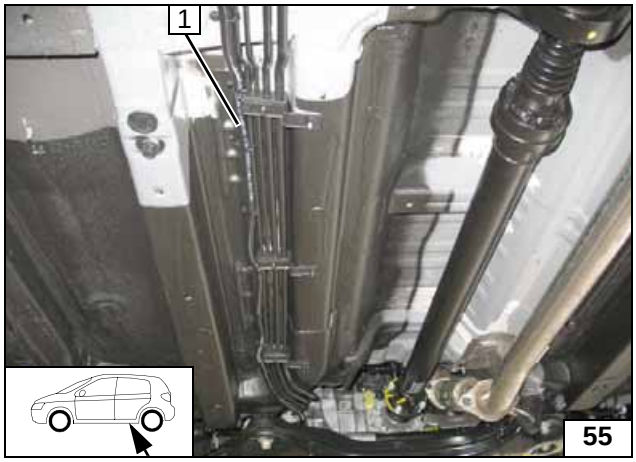
Route wiring harness of metering pump and fuel line in 2100mm long, 10mm dia. corrugated tube **1** to the engine compartment.

2 Fuel line, hose section, 10 mm dia. clamp [2x]



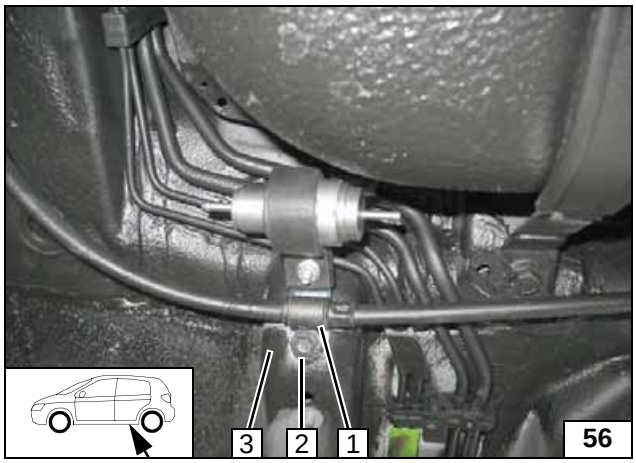
Draw fuel line and wiring harness of metering pump into corrugated tube **1** of firewall route to original vehicle fuel lines in the underbody.

Routing lines



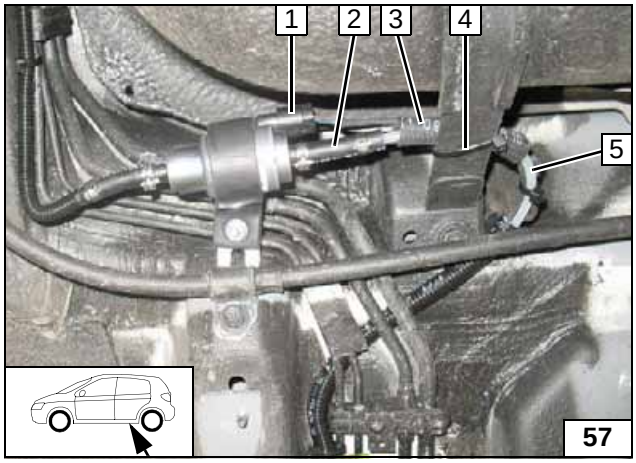
Route wiring harness of metering pump and fuel line in 10mm dia. corrugated tube **1** on underbody to the installation location of the metering pump.

Routing lines



Fasten premounted metering pump between handbrake cable clamp **1** and body **3** with original vehicle bolt **2**.

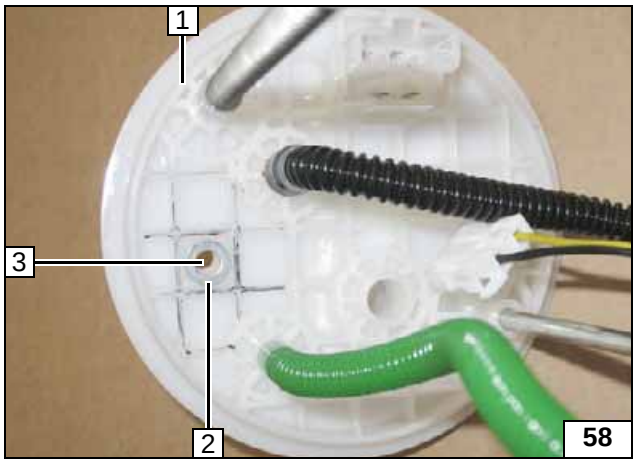
Mounting metering pump



Slide on fabric protective hose **3** on fuel line of heater **5** and fasten with cable tie **4**.

- **1** Wiring harness of metering pump, connector mounted
- **2** Hose section, 10 mm dia. clamp [2x]

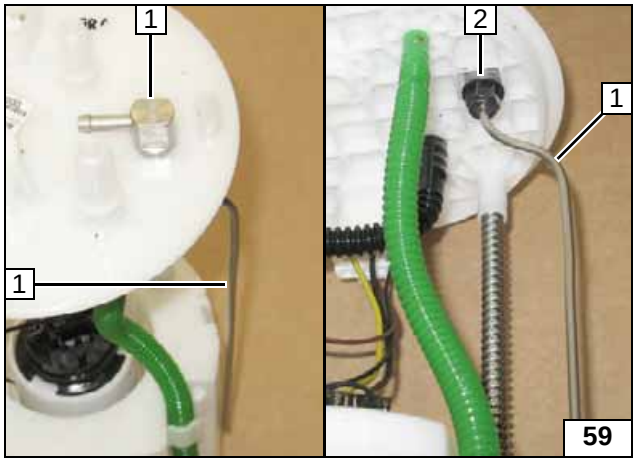
Connecting metering pump



Remove and detach fuel-tank sending unit **1** according to manufacturer's instructions. Washer **2** outer dia. = 11.7 mm, position centrally between the bars.

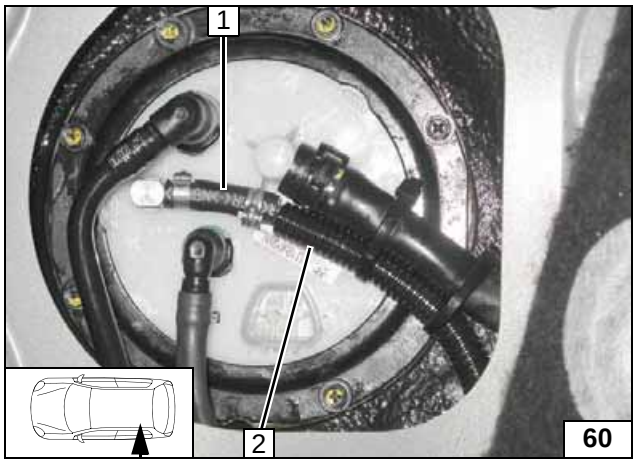
3 Copy hole pattern, 6 mm dia. hole

Fuel extraction



Mould fuel standpipe **1** according to template, cut to length and install. Insert five plain washers at position **2** of outer dia. = 12mm as height compensation.

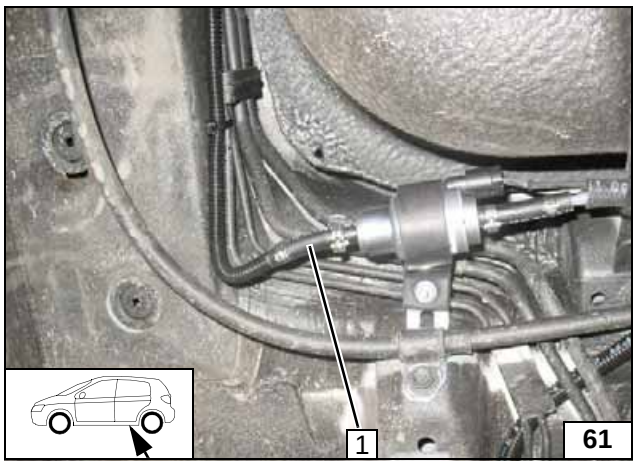
Installing fuel standpipe



Install fuel-tank sending unit in accordance with manufacturer's instructions. Route fuel line in 10mm dia. corrugated tube **2** to the metering pump.

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

Connecting fuel line



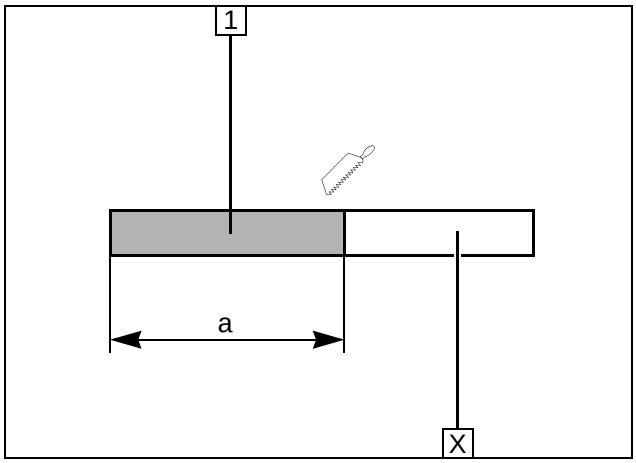
Check the position of the components; adjust if necessary. Check that they have freedom of movement.

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

Connecting metering pump

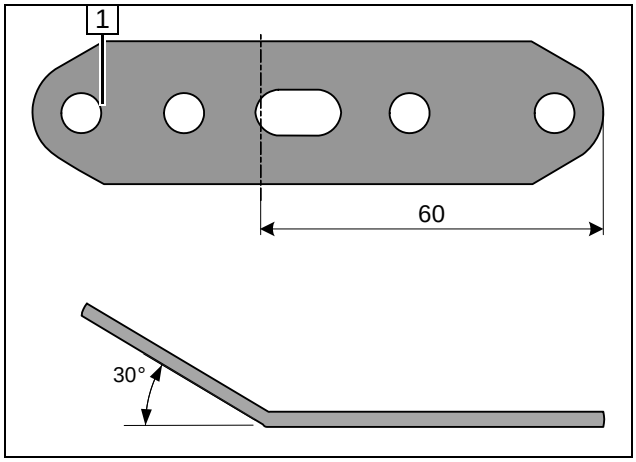
Combustion Air

Discard section **X**.



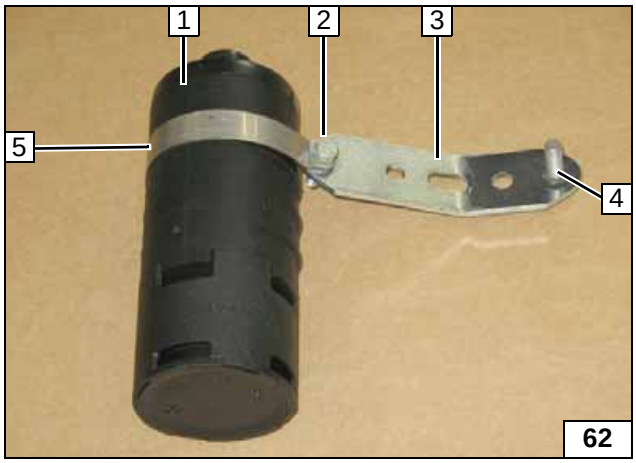
1 Combustion air pipe
a = 300

Cutting combustion air pipe to length



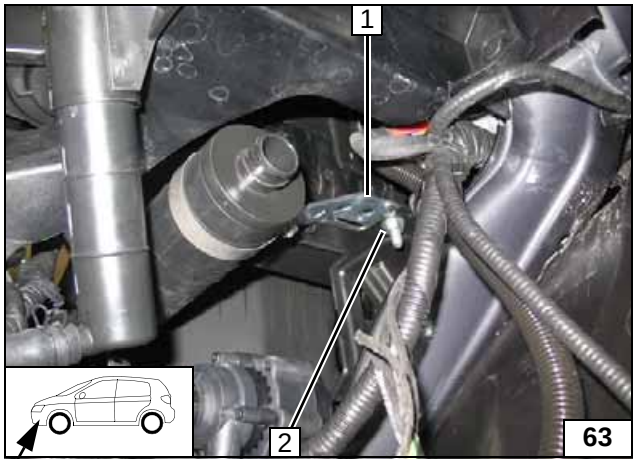
1 Perforated bracket

Preparing perforated bracket



1 Silencer
2 M5x16 bolt, flanged nut
3 Perforated bracket
4 M6x20 bolt, pin lock
5 51 mm dia. clamp

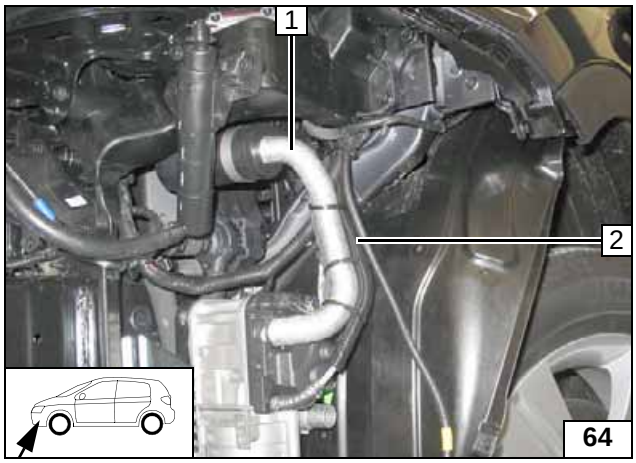
Premounting silencer



Align silencer. Ensure sufficient distance from neighbouring components.

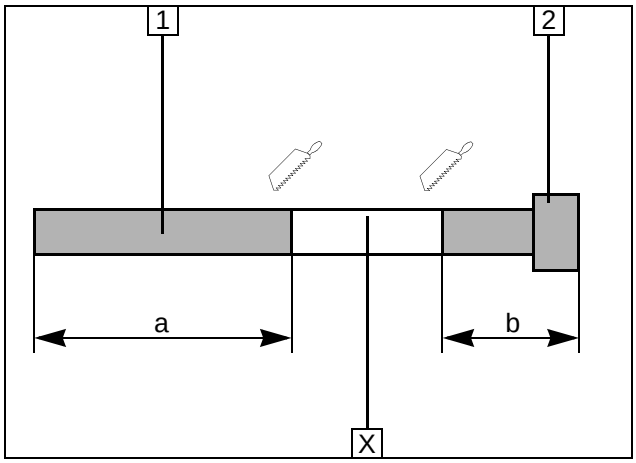
1 Perforated bracket
2 Original vehicle hole, flanged nut

Installing silencer



Fasten wiring harness of heater and corrugated tube **2** with cable tie to combustion air pipe **1**.

Installing combustion air pipe



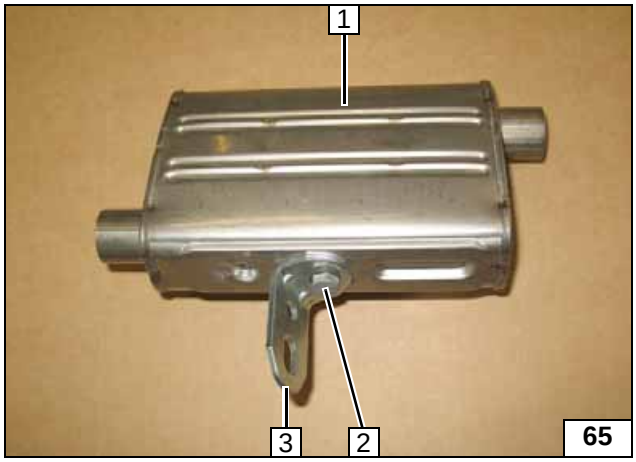
Exhaust Gas

Discard section X.

1 Exhaust pipe
2 Exhaust end section

	Manual transmission	Automatic transmission
a =	280	280
b =	290	610

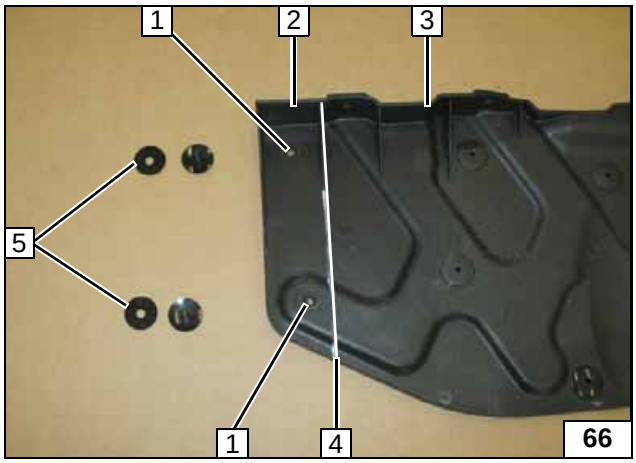
Preparing exhaust pipe



All equipment variants

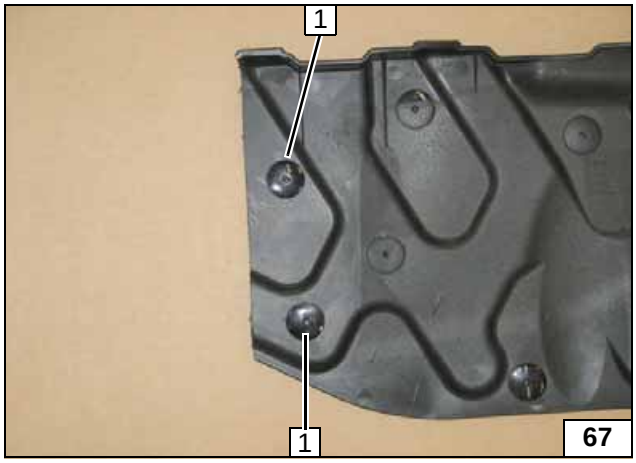
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Angle bracket

Premounting silencer



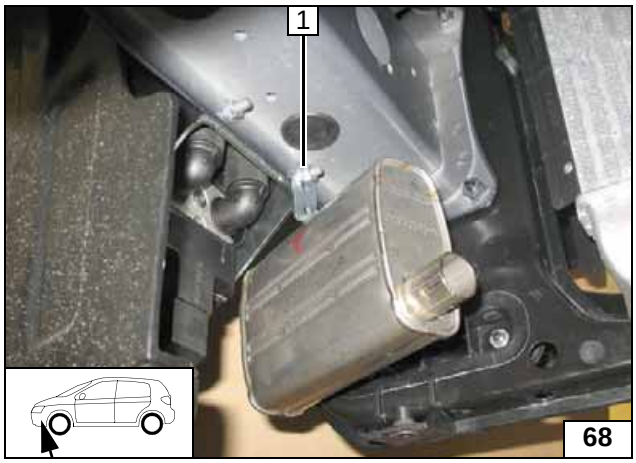
Cut out lateral wheel well trim **3** at the cutting line **4** and discard section **2**.
Dismantle 2-section dowel **5** [2x] at position **1** [2x]. They will be needed later.

Preparing lateral wheel well trim



1 Drill 6.5mm dial. hole, install dowel [2x each]

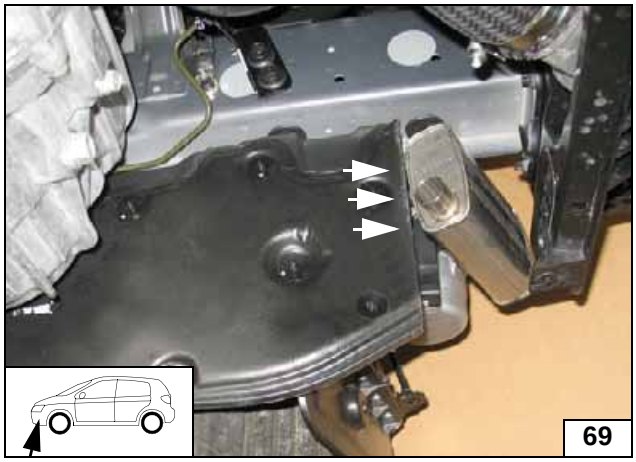
Preparing lateral wheel well trim



Align exhaust silencer. Ensure sufficient distance from neighbouring components.

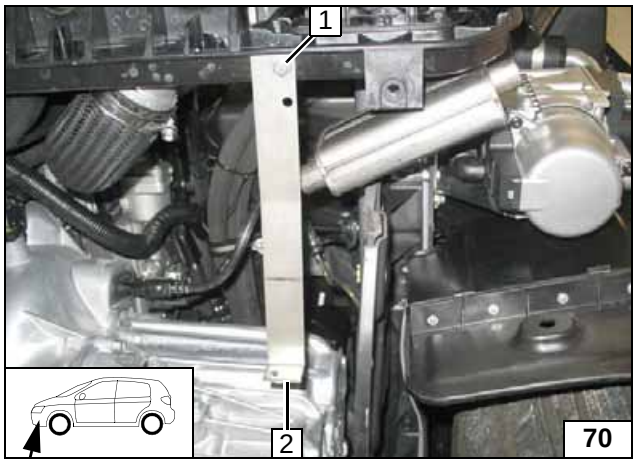
1 Flanged nut

Installing silencer



Ensure sufficient distance.

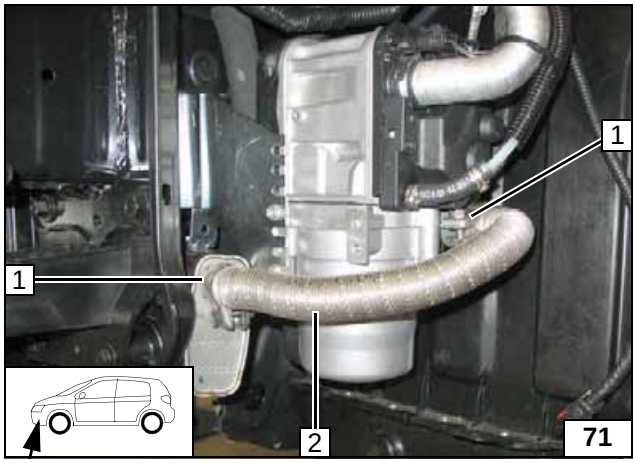
Installing lateral wheel well trim



Manual transmission

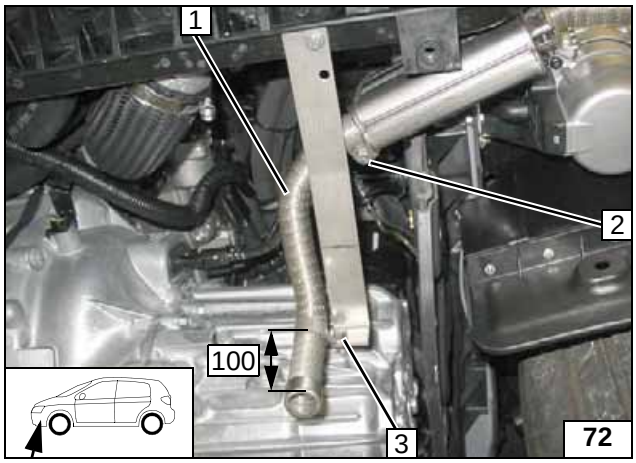
1 M6x20 bolt, existing hole, large diameter washer, flanged nut
2 Strut

Installing strut



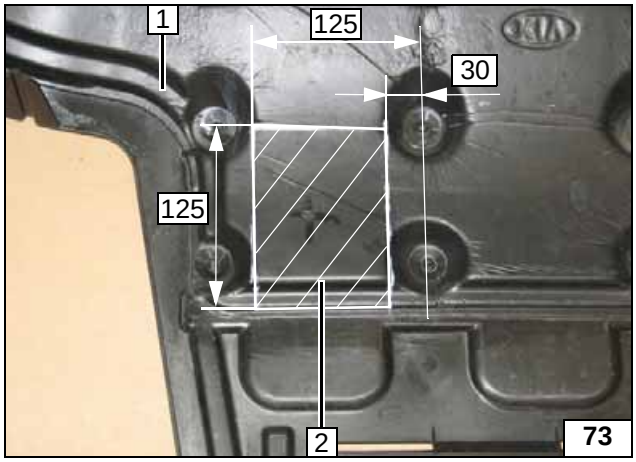
1 Hose clamp [2x]
2 Exhaust pipe

Installing exhaust pipe



1 Exhaust end section
2 Hose clamp
3 M6x20 bolt, clamp, flanged nut

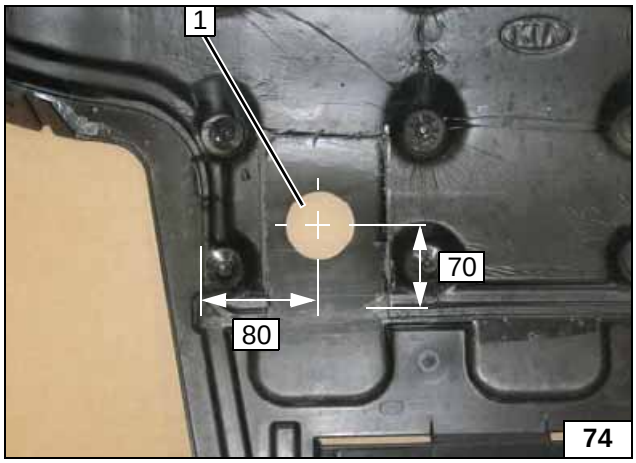
Installing exhaust end section



Cut out insulation at the marking.

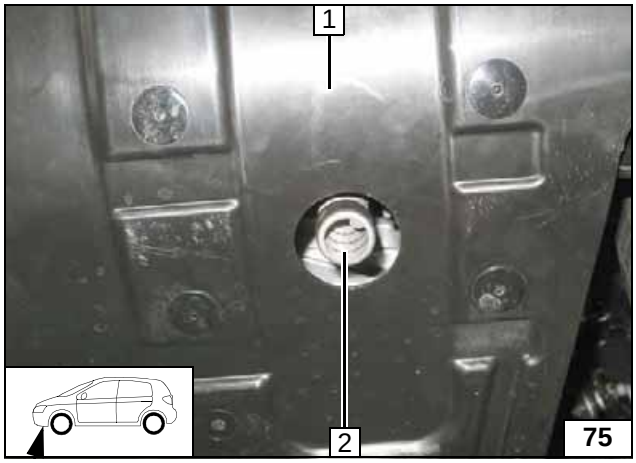
1 Underride protection
2 Discard section

Cutting out insulation



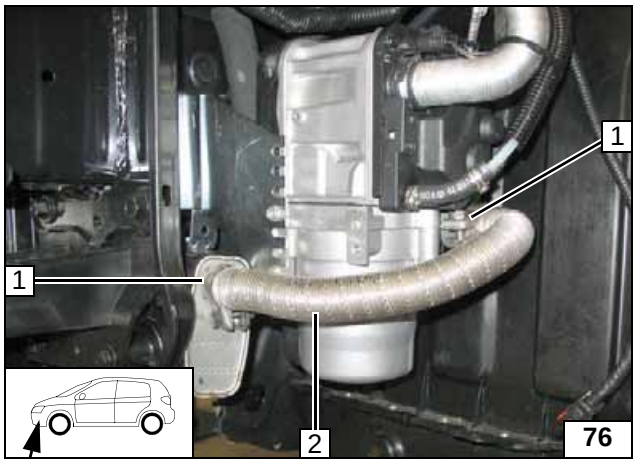
1 60 mm dia. hole

Preparing underride protection



Centrally align exhaust end section **2** in hole and so that it is flush with underride protection **1**. Ensure sufficient distance from neighbouring components, correct if necessary.

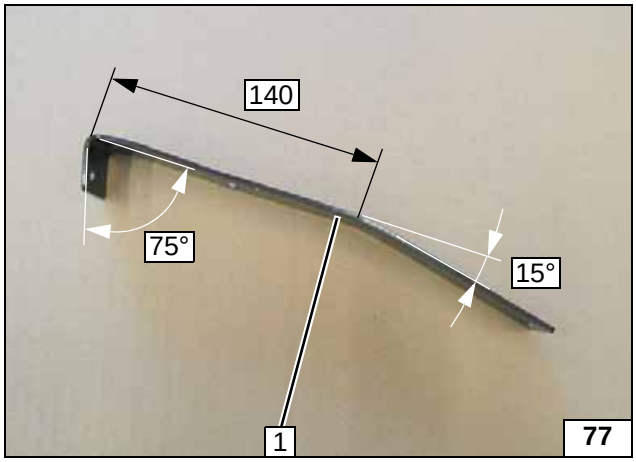
Aligning exhaust end section



Automatic transmission

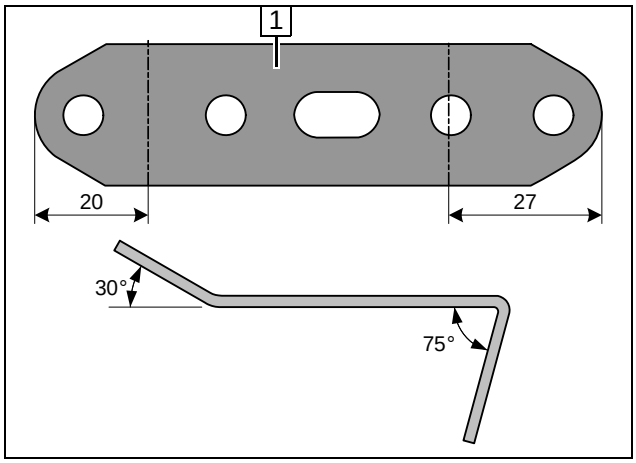
1 Hose clamp [2x]
2 Exhaust pipe

Installing exhaust pipe



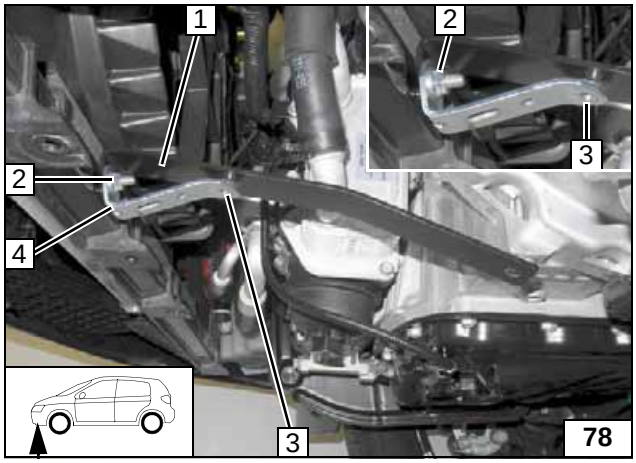
1 Strut

Preparing strut



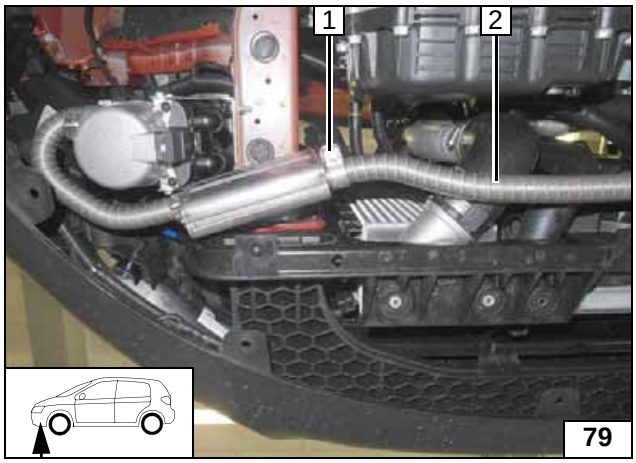
1 Perforated bracket

Preparing perforated bracket



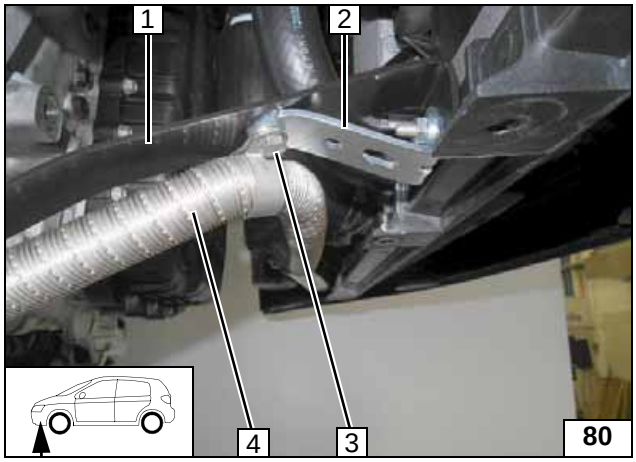
1 Strut
2 M6x20 bolt, large diameter washer, flanged nut, existing hole
3 Copy hole pattern, 7mm dia. hole in strut
4 Perforated bracket

Installing strut and perforated bracket



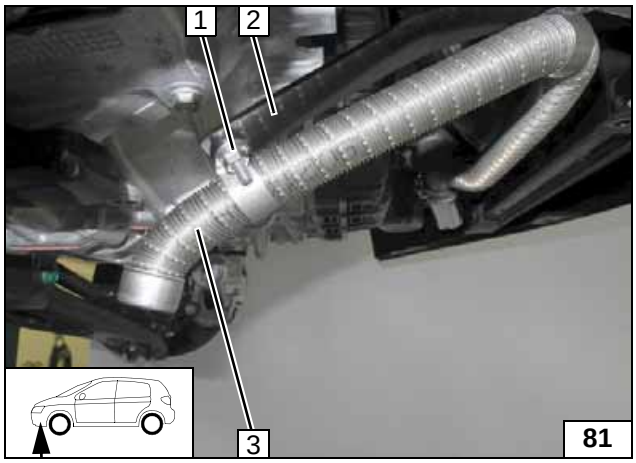
1 Hose clamp
2 Exhaust end section

Installing exhaust end section



1 Strut
2 Perforated bracket
3 M6x20 bolt, clamp, flanged nut
4 Exhaust end section

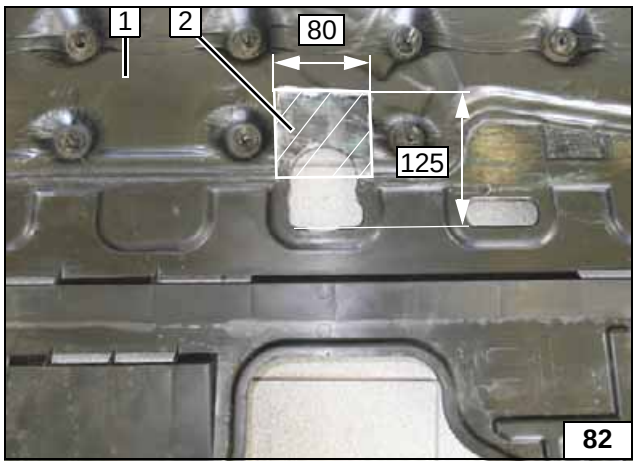
Installing exhaust end section



Ensure sufficient distance to transmission, correct if necessary.

1 M6x20 bolt, clamp, flanged nut
2 Strut
3 Exhaust end section

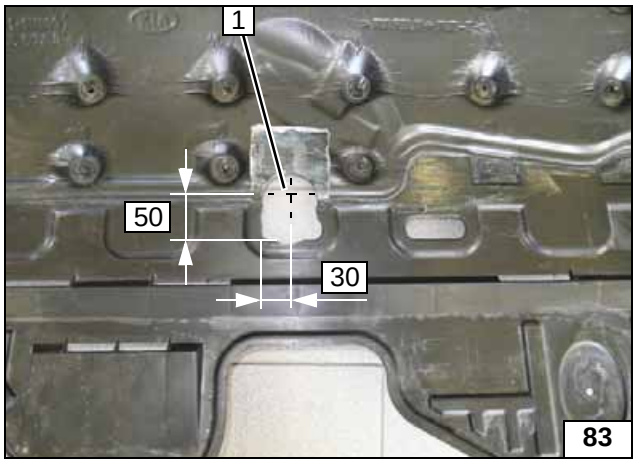
Installing exhaust end section



Cut out insulation at the marking.

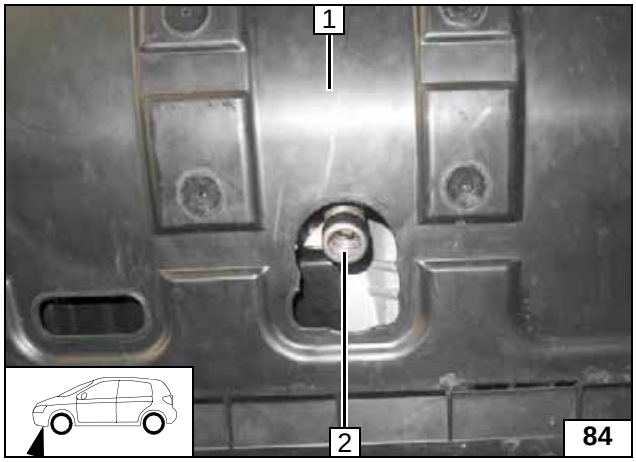
1 Underride protection
2 Discard section

Cutting out insulation



1 60 mm dia. hole

Preparing underride protection



Centrally align exhaust end section **2** in hole and so that it is flush with underride protection **1**. Ensure sufficient distance from neighbouring components, correct if necessary.

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

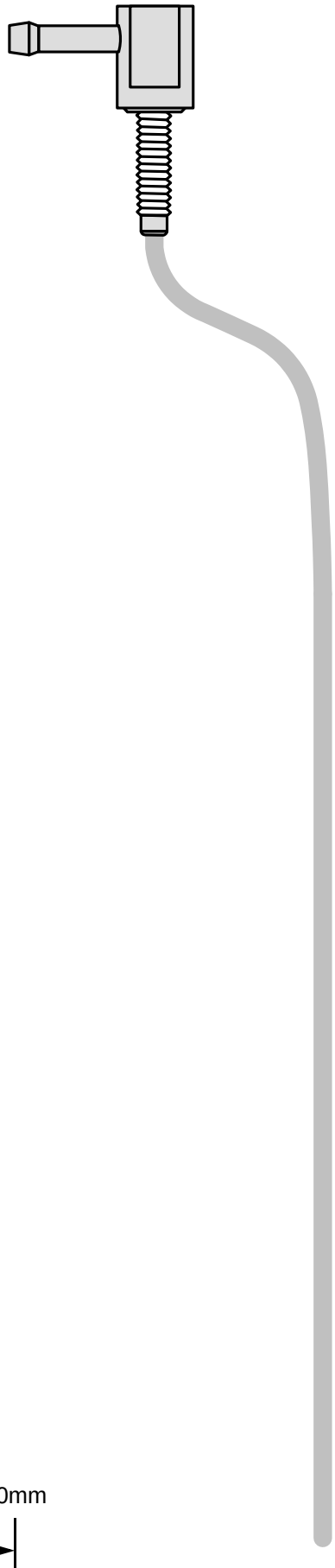
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set the digital timer, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place signboard "Switch off parking heater before refuelling" in the area of the filler neck.**
- **See installation instructions for initial start-up and function test.**

Before installation, paste rub protection **2** on air filter box **1**.

Pasting rub protection

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Template for Fuel Standpipe



100mm

Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimise margins” and 100% of the normal size.

100mm

0

Operating Instructions for Manual Air-Conditioning

Please remove this page in case of manual air-conditioning and add it to the vehicle operating instructions.

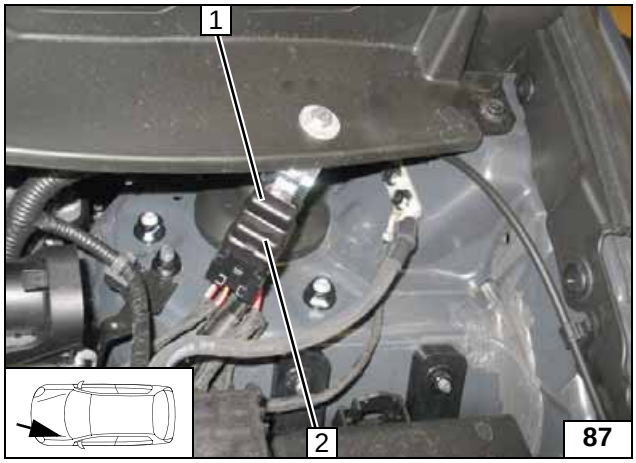
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Passenger compartment monitoring , if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for de-activation may be obtained from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

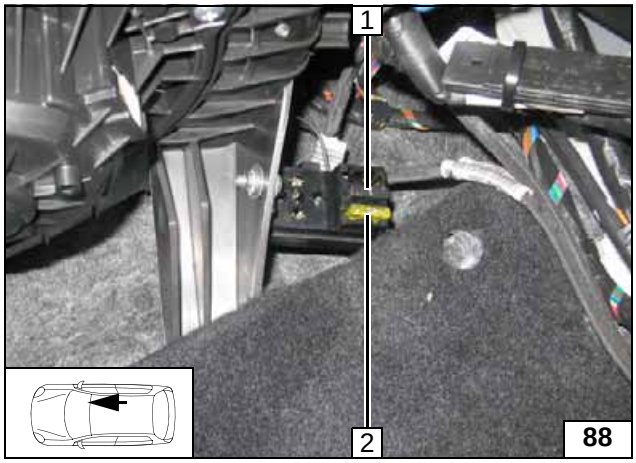
1 Set fan to level "1", or max. "2"
2 Air outlet to windscreen
3 Set temperature to "max."

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment

Operating Instructions for Automatic Air-Conditioning

Please remove this page in case of automatic air-conditioning and add it to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

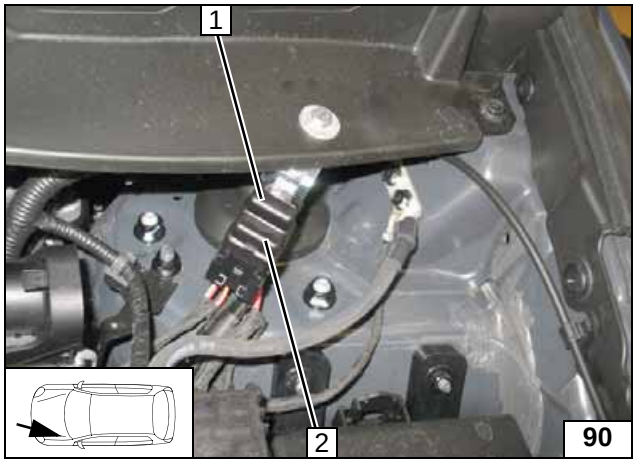
Passenger compartment monitoring , if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for de-activation may be obtained from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

The fan speed does not have to be preset.

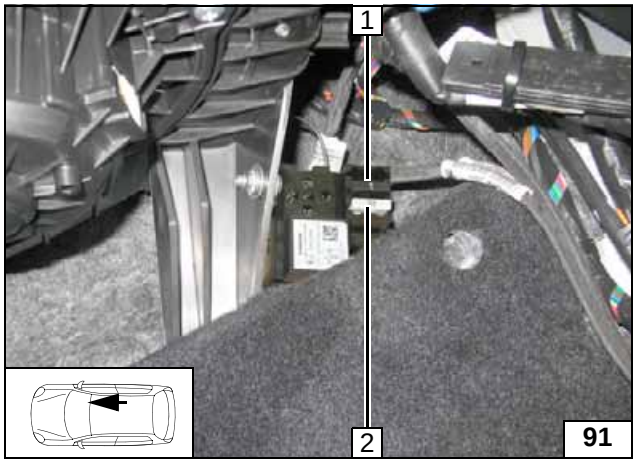
1 Air outlet faces "upward"
2 Set temperature on both sides to "HI“

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment