Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Kia Carens

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Kia	Carens		e4 * 2001 / 46 * 0633 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.7 D eco	Diesel	6-speed SG	100	1685	D4FD

SG = Manual transmission

From Model Year 2014
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog light
LED daytime running lights
Headlight washer system
Xenon

Total installation time: approx. 8.5 hours

Kia Carens

Table of Contents

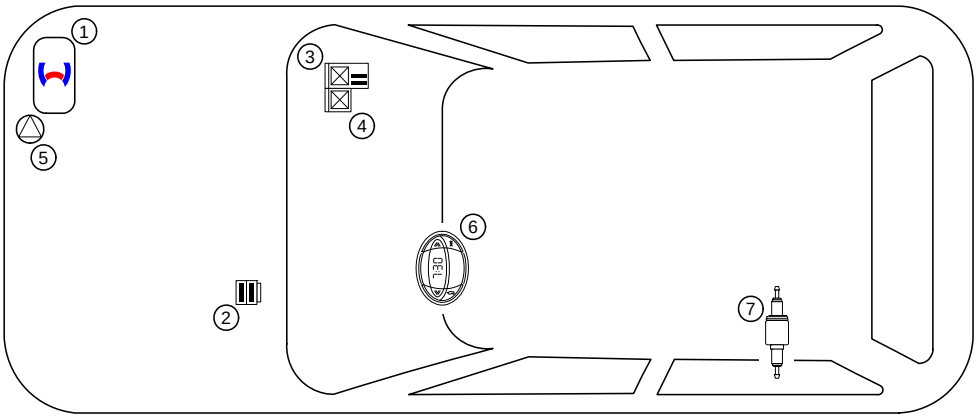
Necessary Components

- Basic delivery scope of *Thermo Top Evo* in accordance with price list
- Installation kit for Kia Carens 2014 Diesel: **1321142A**
- Additionally required in case of automatic air-conditioning:
  Automatic air-conditioning kit for Kia Carens: **1321248A**
- 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 relay and fuse holder
4. IPCU (only with automatic air-conditioning)
5. Circulating pump
6. Digital timer
7. 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.

Kia Carens

Information on Validity

This installation documentation applies to Kia Carens Diesel vehicles - for validity, see page 1 - from model year 2014 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

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

Technical Information

Special Tools
- Hose clamp pliers for 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

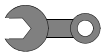
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud 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

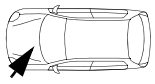
Specific risk of damage to components

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 Carens

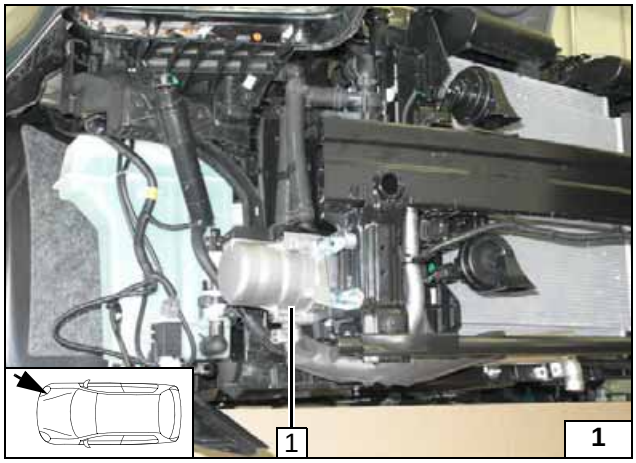
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the engine cover.
- Disconnect and completely remove the battery.
- Remove the battery carrier.
- Completely remove the air filter box.
- Remove the control unit.
- Remove the right headlight.
- Remove the bumper cover.
- Remove the underride protection of the engine.
- Detach the underride protection of the fuel lines on the left.
- Remove the left and middle seat of the second seat row.
- Open the tank-fitting service lid on the left.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the lateral instrument panel trim on the front passenger's side.
- Remove the glove compartment.
- Remove the glove compartment trim.
- Remove the lower A-pillar trim on the front passenger's side (only for Thermo Call).

Heater

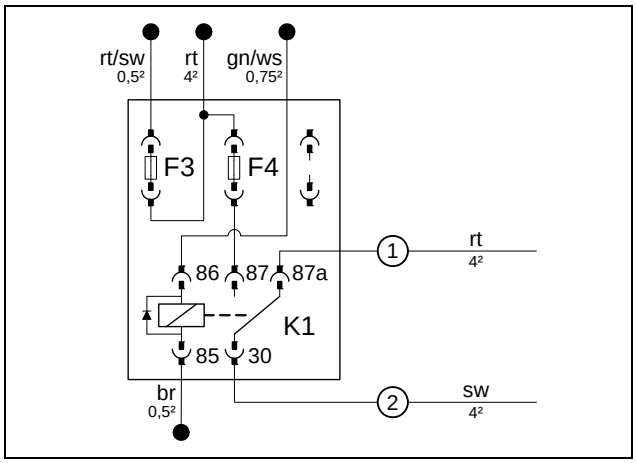
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



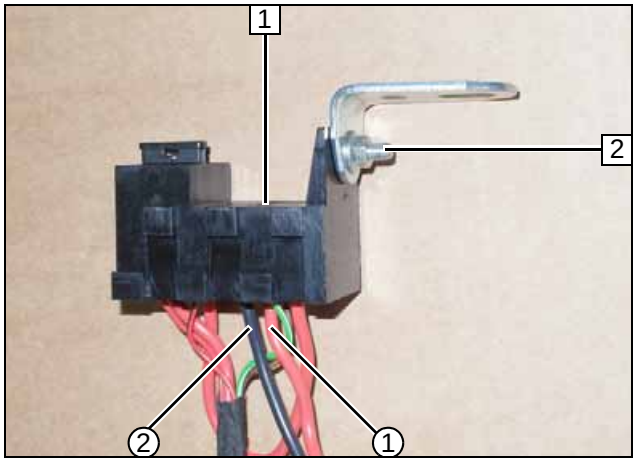
Preparing Electrical System

Wire sections retain their numbering in the entire document.

Premounting passenger compartment relay and fuse holder

Manual air-conditioning

Produce connections as shown in wiring diagram.

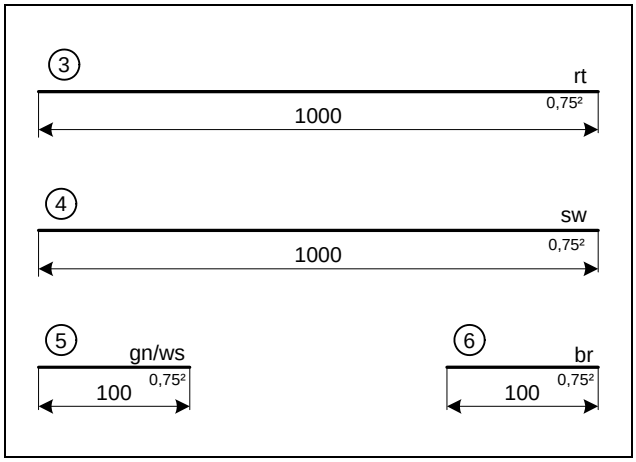


Connect wires in accordance with wiring diagram. 25A fuse F4 and K1 relay will only be inserted after installation of relay and fuse holder of passenger compartment.

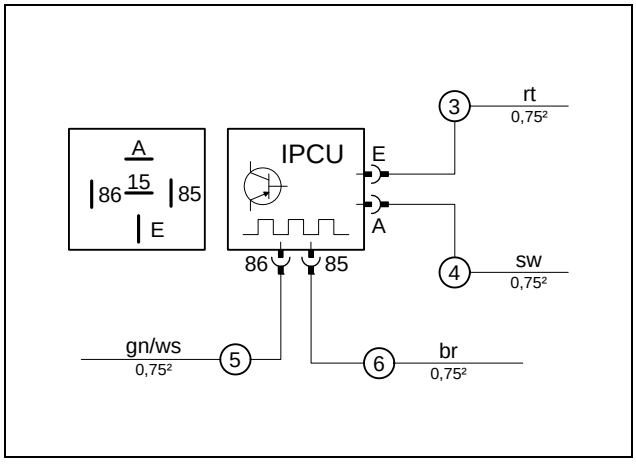
1 Passenger compartment relay and fuse holder
2 M5x16 bolt, angle bracket, flanged nut
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30

Premounting passenger compartment relay and fuse holder

Automatic air-conditioning



Preparing lines

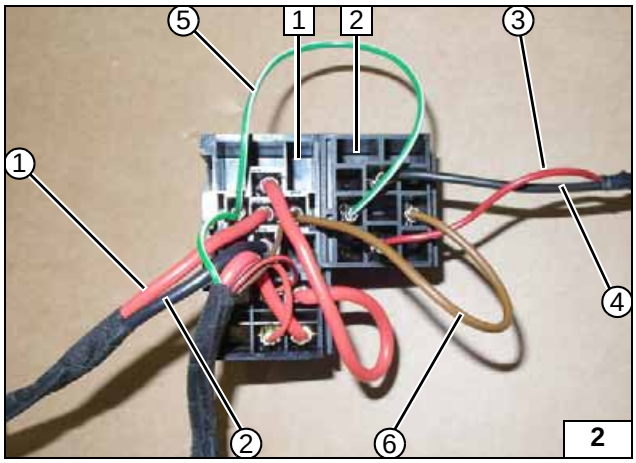


Connect wires to socket IPCU.
IPCU view on contact side.
The IPCU attached in the kit is pre-programmed with the following settings:

Duty cycle: 100% (DC)
Voltage: 3.6V
Function: High-side

The settings must be checked during the function check on the vehicle and adjusted if necessary.

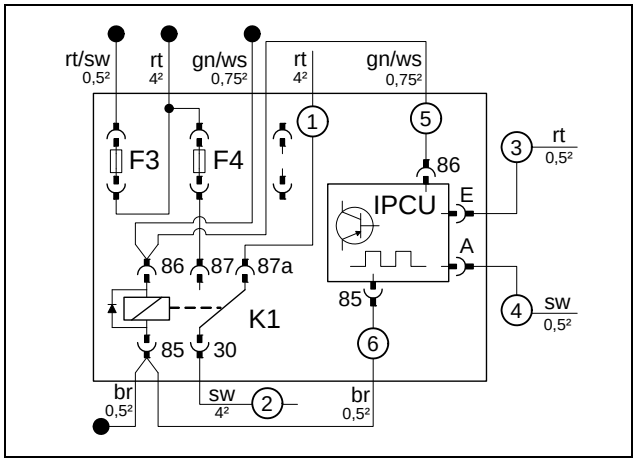
Premounting IPCU



Connect wires in accordance with wiring diagram. Interlock socket IPCU **2** and passenger compartment relay and fuse holder **1**.

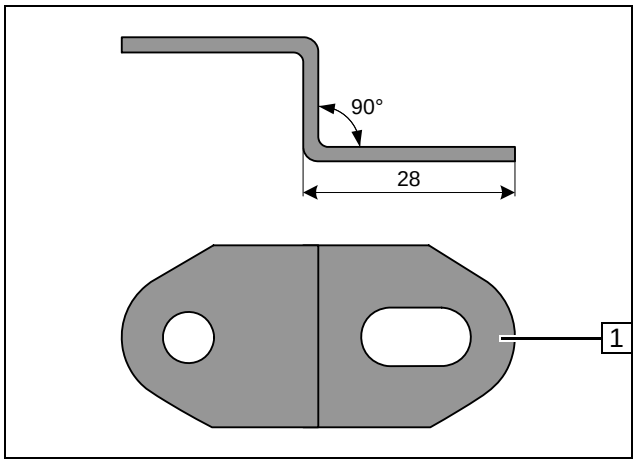
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30
③ Red (rt) wire of IPCU/E
④ Black (sw) wire of IPCU/A
⑤ Green/white (gn/ws) wire from IPCU/86 and K1/86
⑥ Brown (br) wire of IPCU/85 and K1/85

Connecting wires



Produce connections as shown in wiring diagram. Insert K1 relay and 25A fuse F4. IPCU will only be inserted after installation of relay and fuse holder. Pull wires ③ and ④ into protective sleeving.

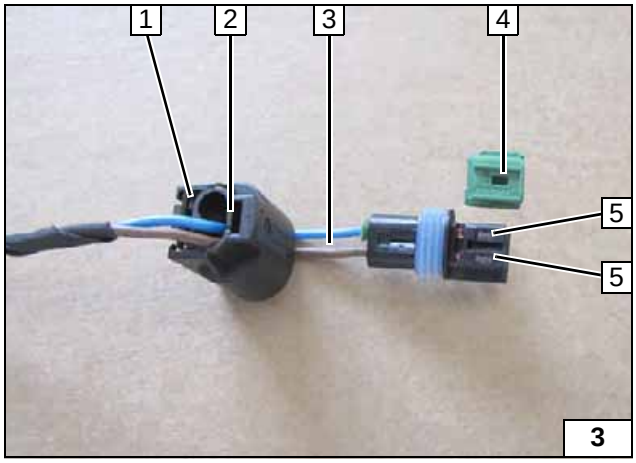
Preparing K1 relay, IPCU and F4



All vehicles

1 Angle bracket for engine compartment fuse holder

Preparing angle bracket



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

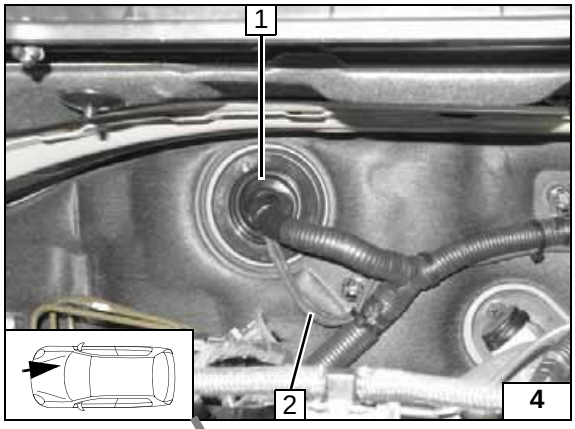
1 Connector housing
2 Lock
3 Blue/brown (bl / br) wires
4 Coding
5 Timer lock

Dismantling connector

Electrical System

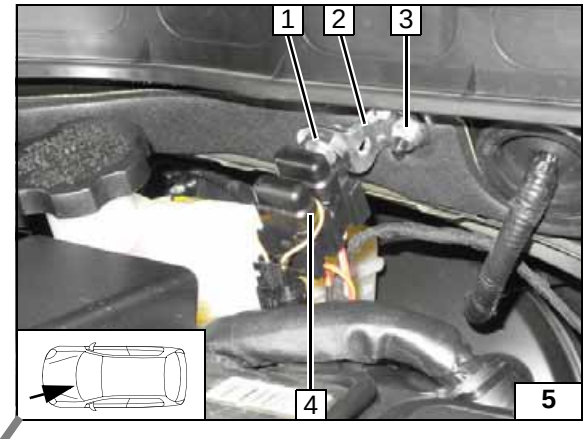
Wiring harness pass through

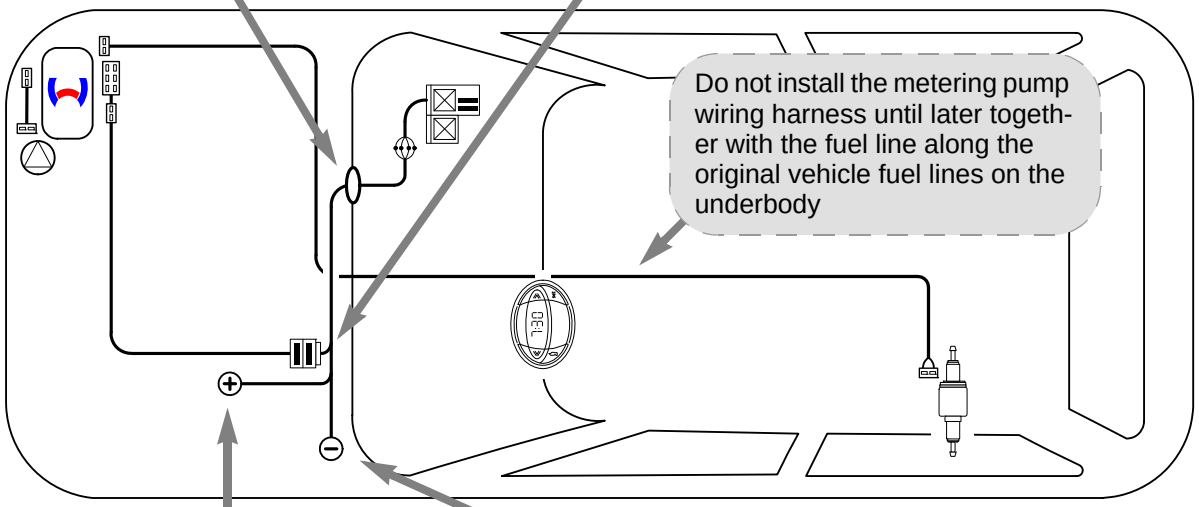
1 Protective rubber plug
2 Wiring harnesses of heater and heater control



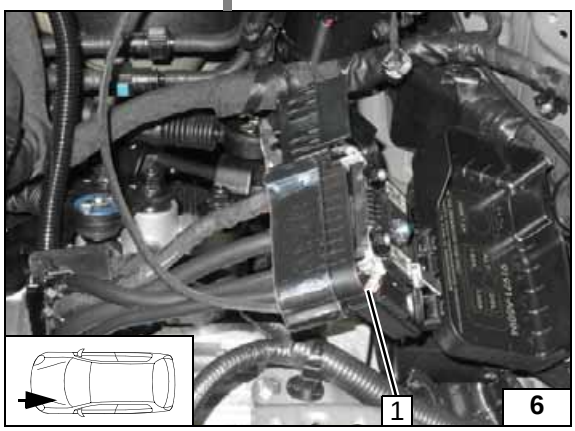
Fuse holder for engine compartment

1 M5x16 bolt, large diameter washer [2x], retaining plate for fuse holder, nut
2 Angle bracket
3 Original vehicle stud bolt, flanged nut
4 Fuses F1-2





Wiring harness routing diagram



Positive wire

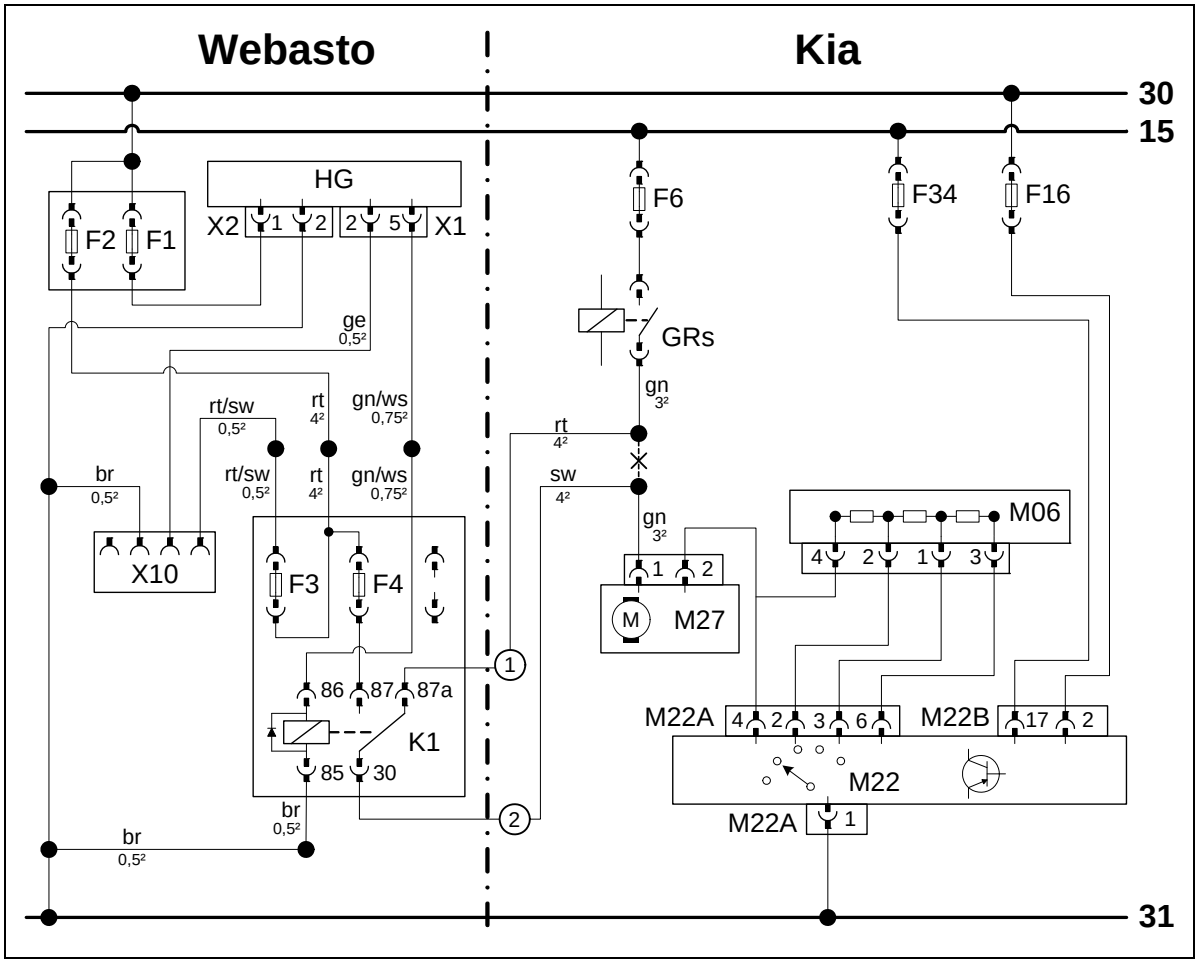
1 Positive wire on positive battery distributor

Earth wire

1 Earth wire on original vehicle earth support point

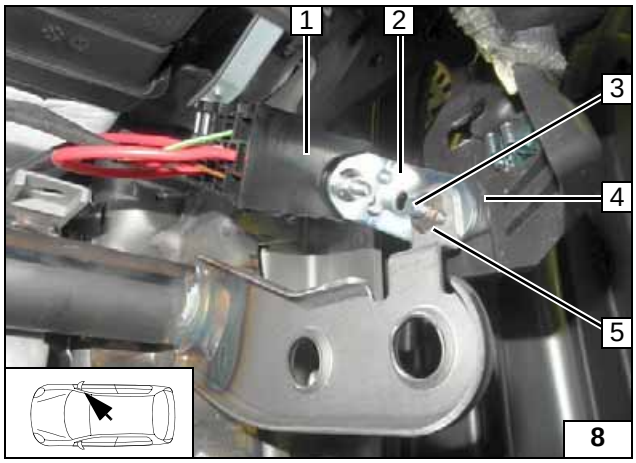
Fan Controller for Manual Air-Conditioning

Wiring diagram



Legend

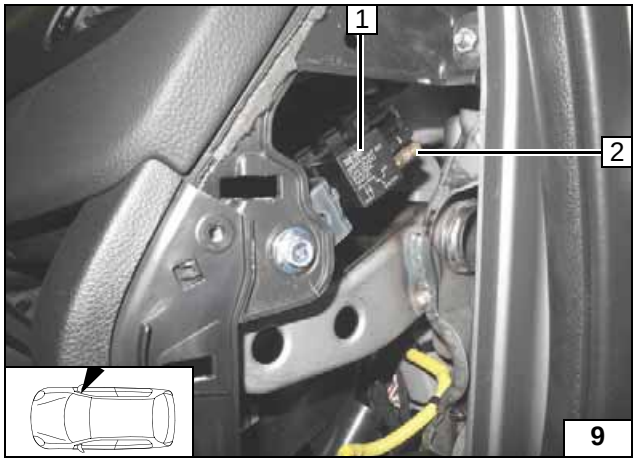
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	F6	40A fuse	rt	red
X1	6-pin heater connector	F34	7.5A fuse	sw	black
X2	2-pin heater connector	F16	10A fuse	ge	yellow
F1	20A fuse	GRs	Fan relay	gn	green
F2	30A fuse	M06	Fan resistor	bl	blue
X10	4-pin connector Heater control	M27	Fan motor	ws	white
		M22A	Connector M22	br	brown
F3	1A fuse	M22B	Connector M22	pk	pink
F4	25A fuse	M22	A/C control module		
K1	Fan relay				
				X	Cutting point
				Wiring colours may vary.	



Remove original vehicle bolt **3**. Insert pre-mounted angle bracket **2** between instrument panel carrier **5** and instrument panel **4** and align (see next figure). Mount original vehicle bolt **3** again.

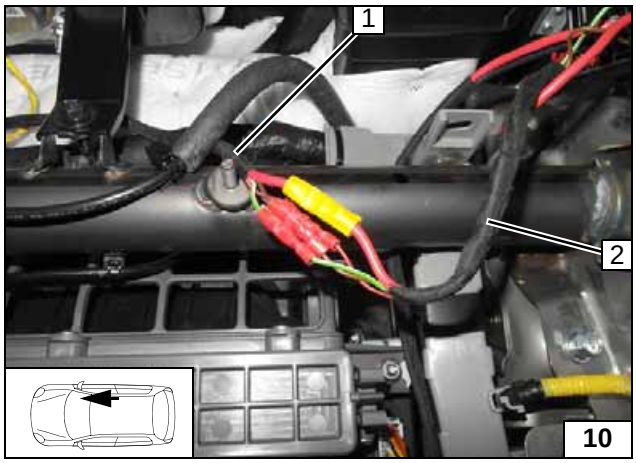
1 Passenger compartment relay and fuse holder

Mounting passenger compartment relay and fuse holder



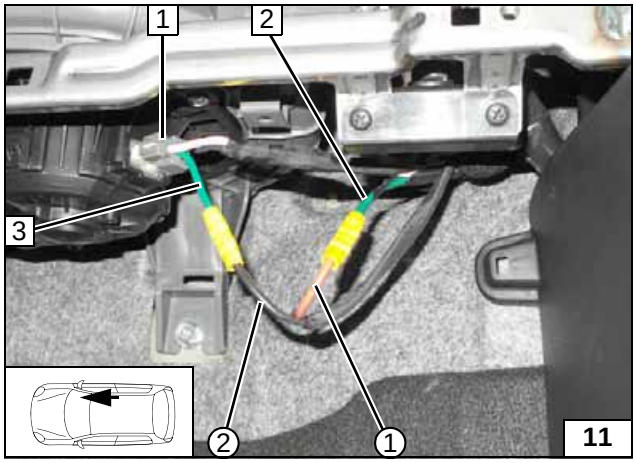
1 K1 relay
2 25A fuse F4

Mounting K1 and F4



1 Wiring harness on heater
2 Wiring harness of passenger compartment relay and fuse holder

Connecting same colour wires of wiring harnesses



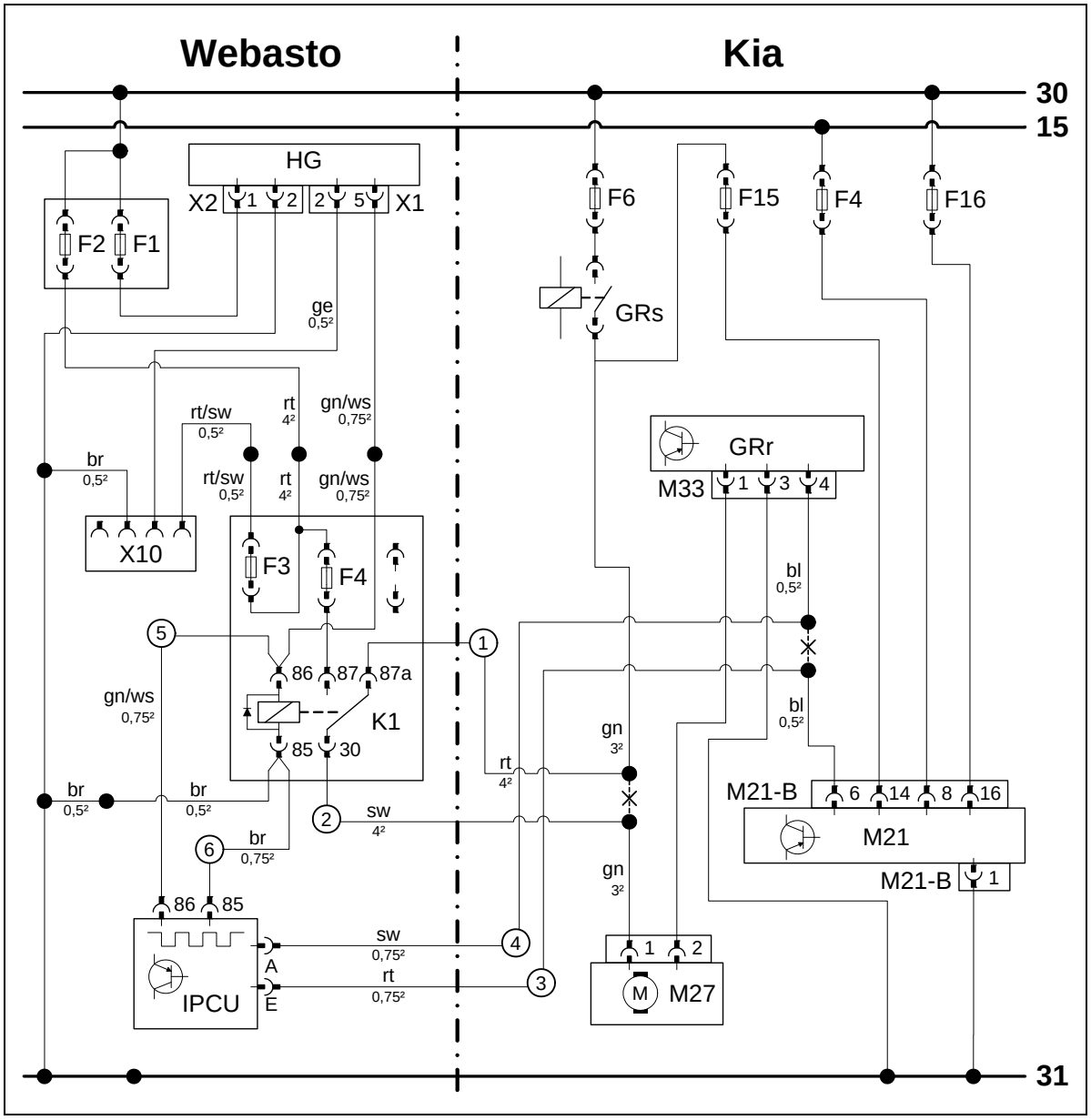
Connection to 2-pin connector **1** from fan motor M27. Produce connections as shown in wiring diagram.

2 Green (gn) wire from fan relay
3 Green (gn) wire of connector M27
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30

Connecting fan motor

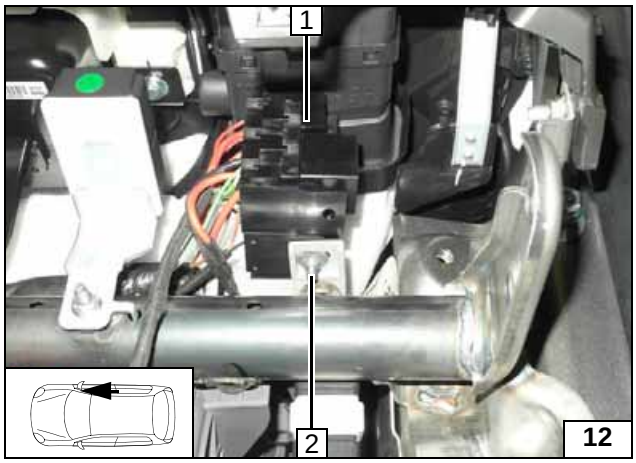
Fan Controller for Automatic Air-Conditioning

Wiring diagram



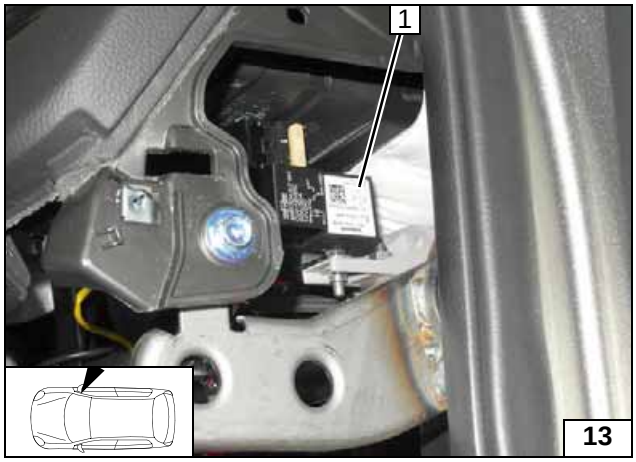
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	F6	40A fuse	rt	red
X1	6-pin heater connector	F15	7.5A fuse	sw	black
X2	2-pin heater connector	F4	7.5A fuse	ge	yellow
F1	20A fuse	F16	10A fuse	gn	green
F2	30A fuse	GRs	Fan relay	bl	blue
X10	4-pin connector Heater control	GRr	Fan controller	ws	white
		M33	Connector GRr	br	brown
F3	1A fuse	M21-B	Connector KB		
F4	25A fuse	M21	A/C control panel		
K1	Fan relay	M27	Fan motor		
IPCU	Pulse width modulator				
IPCU settings:					
Duty cycle:	100% (DC)				
Voltage:	3.6V				
Function:	High-side			**X**	Cutting point
				Wiring colours may vary.	



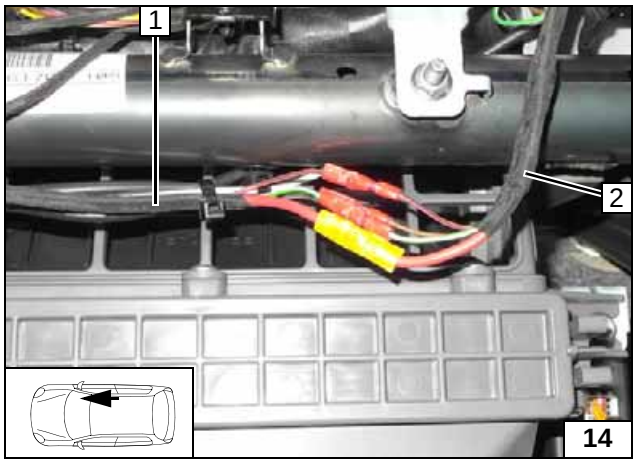
1 Passenger compartment relay and fuse holder
2 M5x16 bolt, large diameter washer [2x], nut, existing hole

Mounting passenger compartment relay and fuse holder



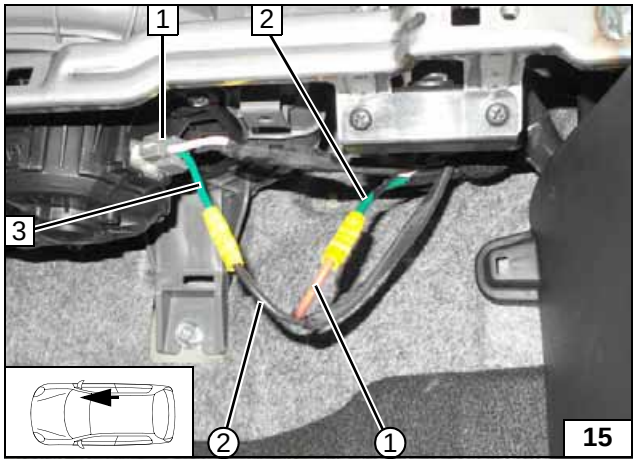
1 Mount IPCU

Mounting IPCU



1 Wiring harness on heater
2 Wiring harness of relay and fuse holder in passenger compartment

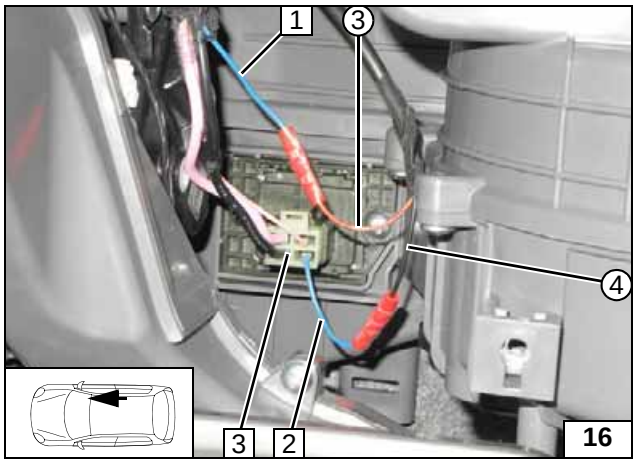
Connecting same colour wires of wiring harnesses



Connection to 2-pin connector **1** from fan motor M27. Produce connections as shown in wiring diagram.

2 Green (gn) wire from fan relay
3 Green (gn) wire of connector M27
① Red (rt) wire from K1/87a
② Black (sw) wire from K1/30

Connecting fan motor



Connection to 4-pin connector **3** from fan controller. Produce connections as shown in wiring diagram.

1 Blue (bl) wire from A/C control panel M21
2 Blue (bl) wire from connector GRr
③ Red (rt) wire of IPCU/E
④ Black (sw) wire of IPCU/A

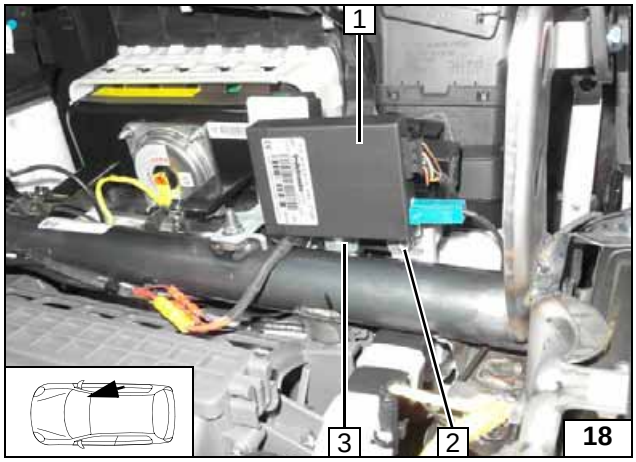
Fan controller connection

Digital Timer

Figure shows variant with start-stop button.

1 Digital timer

Mounting digital timer

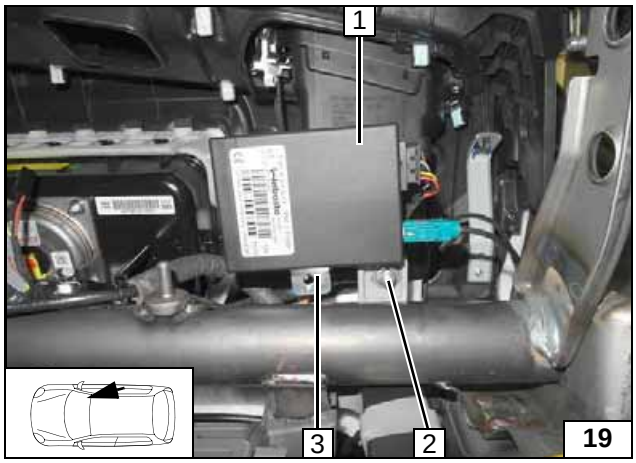


Remote Option (Telestart)

Vehicle with automatic air-conditioning

1 Receiver
2 M5x16 bolt, relay and fuse holder
3 Bracket

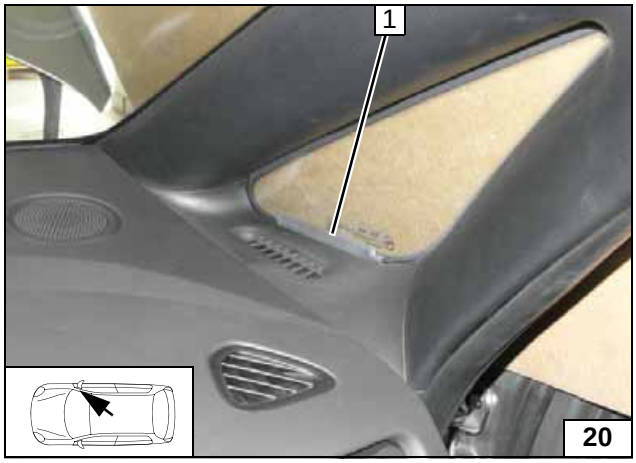
Mounting receiver



Vehicle with manual air-conditioning

1 Receiver
2 Original vehicle hole, M5x16 bolt, large diameter washer [2x], nut
3 Bracket

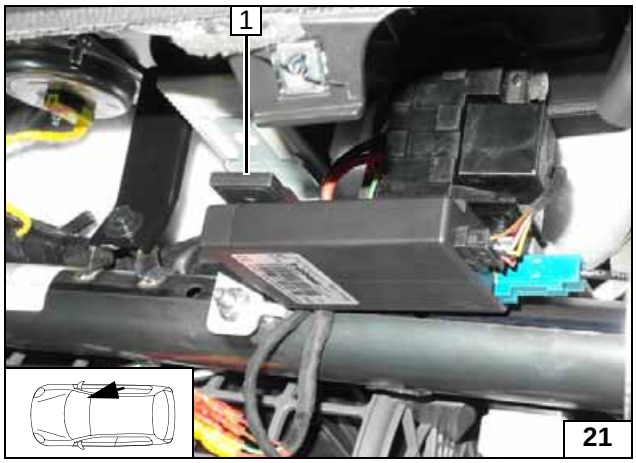
Mounting receiver



All vehicles

1 Antenna

Mounting antenna

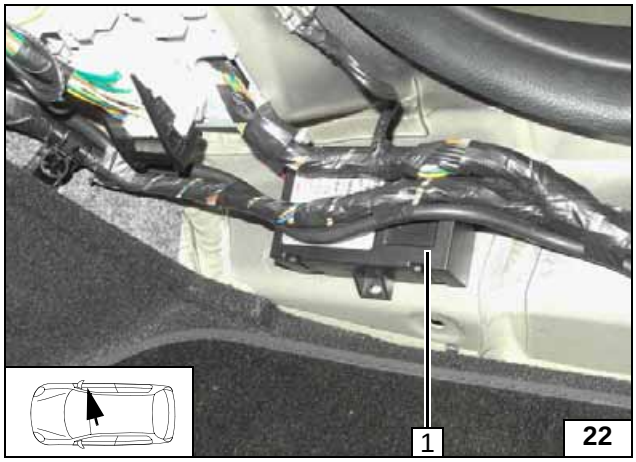


Temperature sensor T100 HTM

Figure shows vehicle with automatic air-conditioning.
Same procedure for manual air-conditioning.

Fasten temperature sensor **1** with adhesive tape.

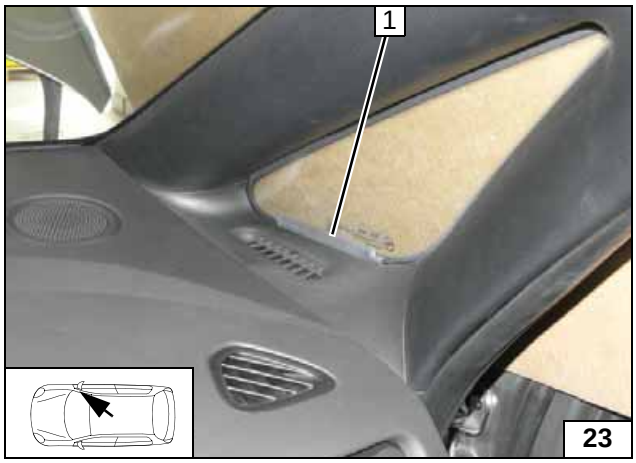
Installing temperature sensor



Remote Option (Thermo Call TC3)

Fasten receiver **1** with adhesive tape.

Mounting receiver



1 Antenna

Mounting antenna

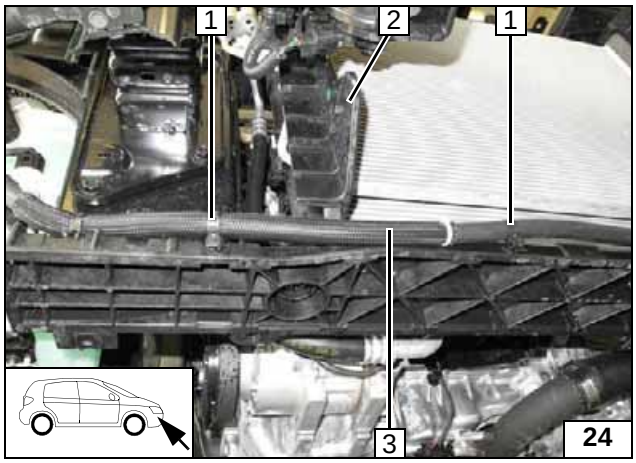
Preparing Installation Location

Vehicles with headlight washer system

Remove wind deflector plate **2**. Withdraw brackets **1** [2x] from holes.

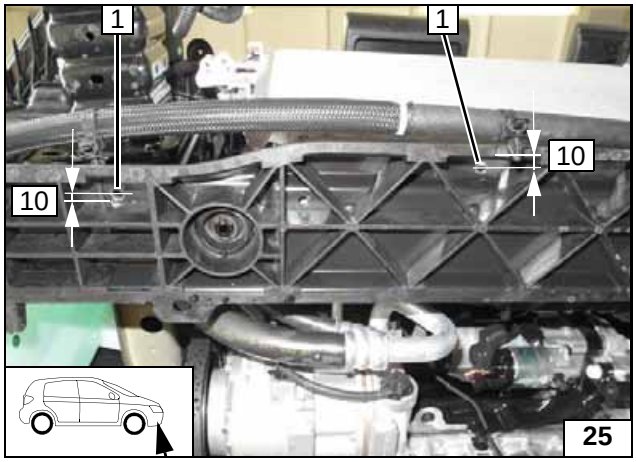
3 Hose of headlight washer system

Preparing installation location



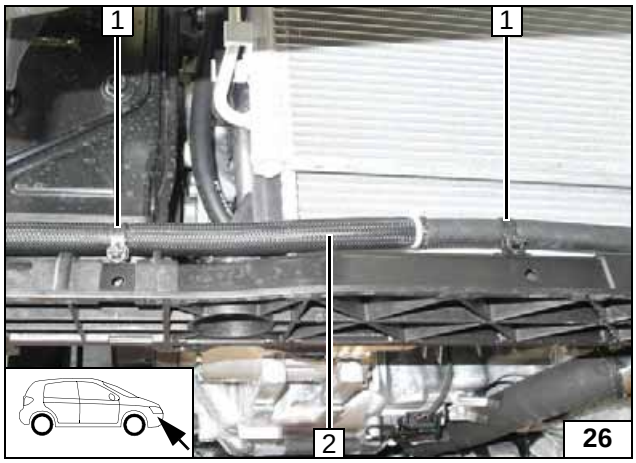
1 7 mm dia. hole [2x], centred between the bars

Holes in cross member



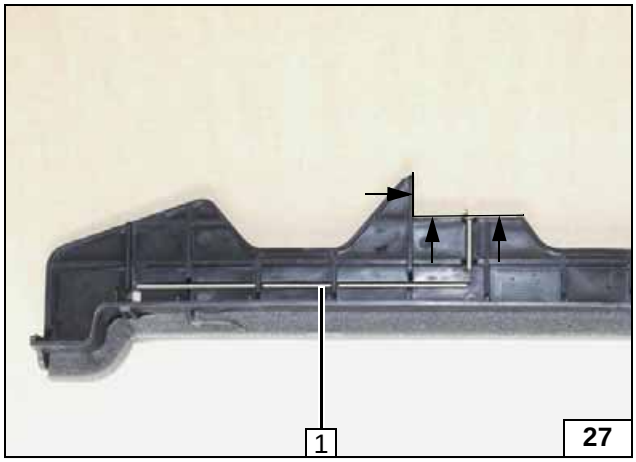
Mount headlight washer system hose **2** with brackets **1** [2x] in holes.

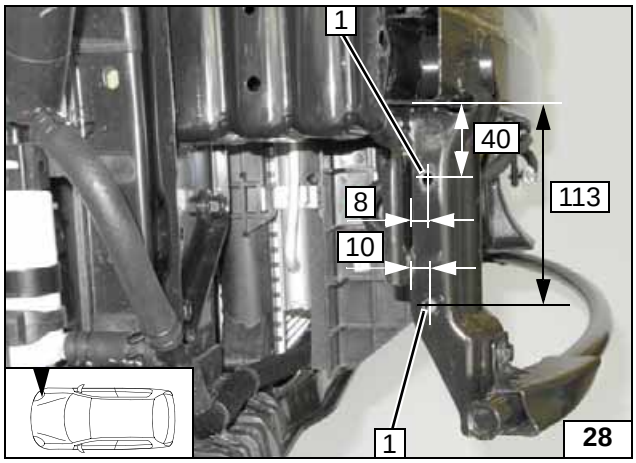
Installing hose



Cut wind deflector plate **1** at the markings and install again.

Cutting wind deflector plate

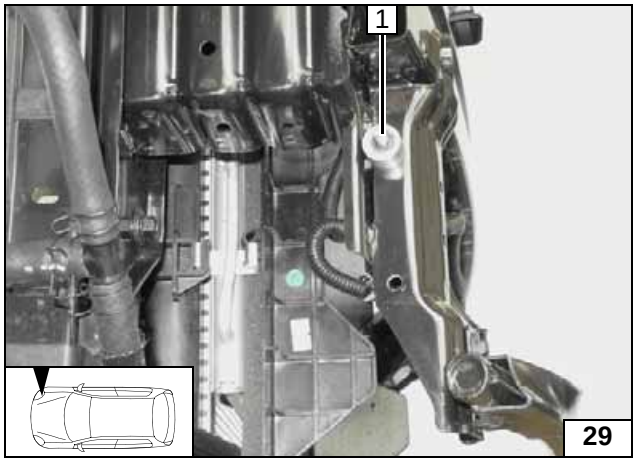




All vehicles

1 7 mm dia. hole [2x]

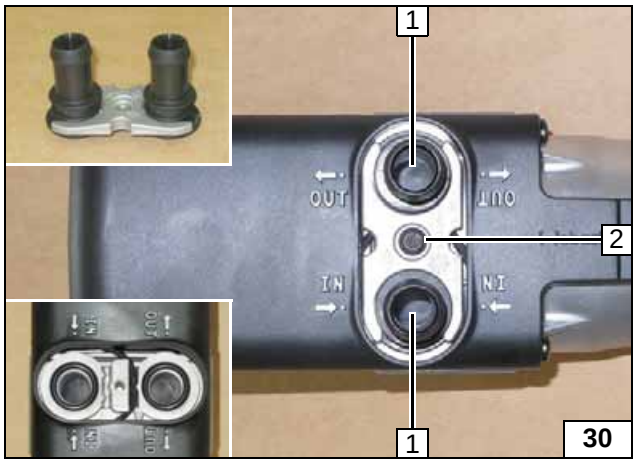
Holes in cross member



1 M6x30 bolt, 15 mm shim, pin lock

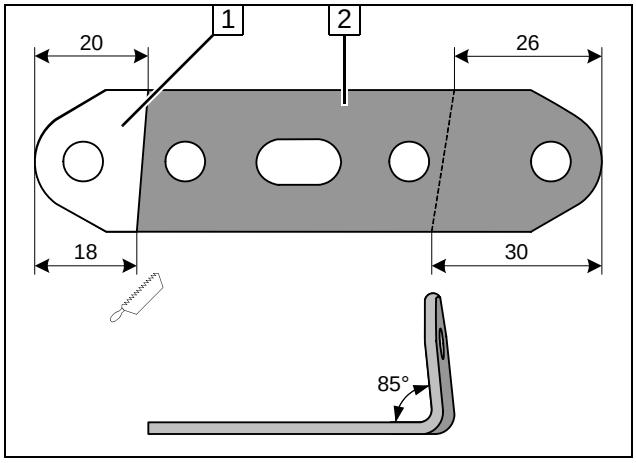
Inserting bolt

Preparing Heater



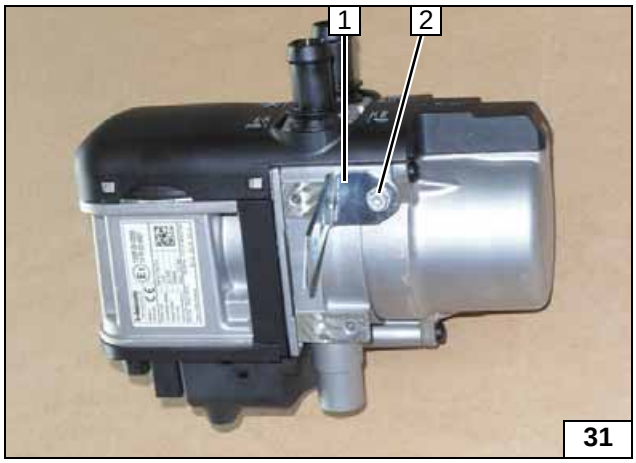
1 Water connection pieces, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Mounting water connection pieces



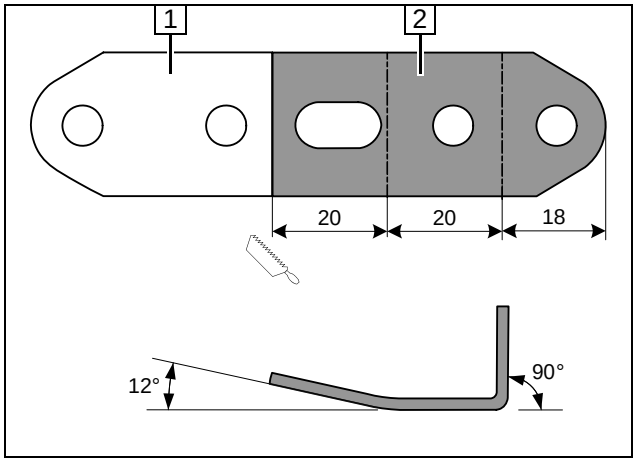
1 Discard section
2 Perforated bracket **a**

Preparing perforated bracket a



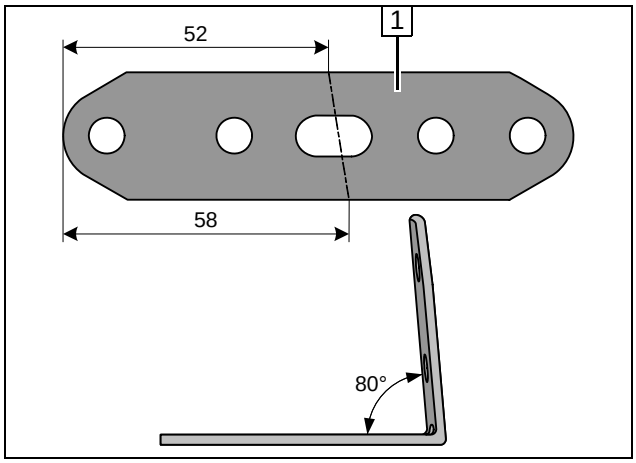
1 Perforated bracket **a**
2 5x13 self-tapping bolt

Mounting perforated bracket a



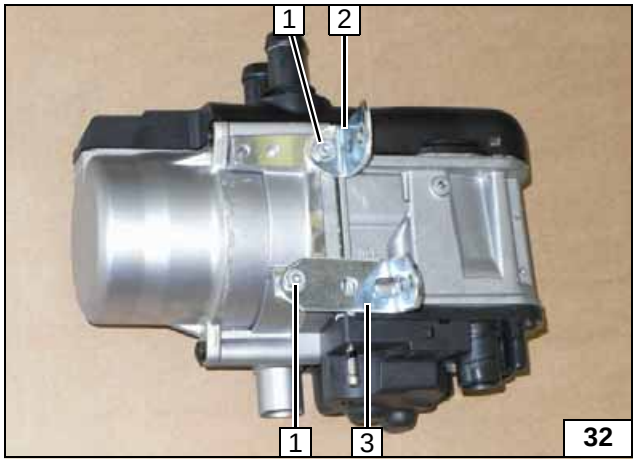
1 Discard section
2 Perforated bracket **b**

Preparing perforated bracket b



1 Perforated bracket **c**

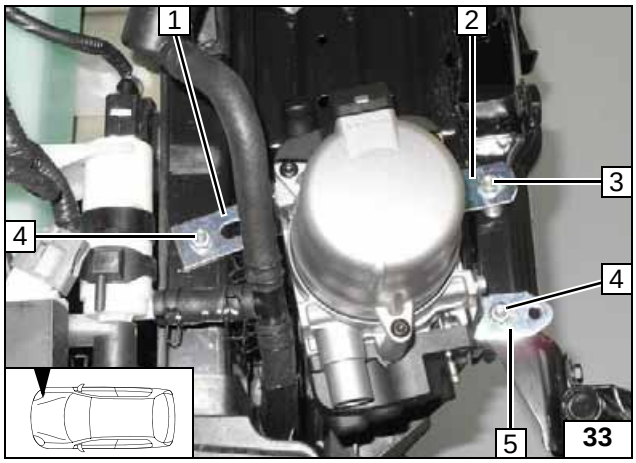
Preparing perforated bracket c



1 5x13 self-tapping bolt [2x]
2 Perforated bracket **b**
3 Perforated bracket **c**

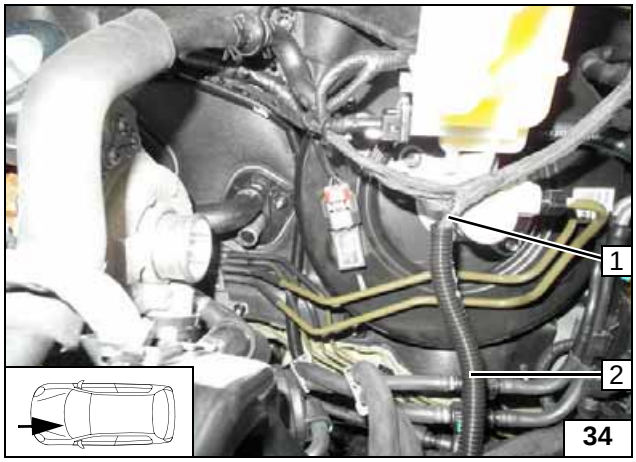
Mounting perforated brackets b and c

Installing Heater



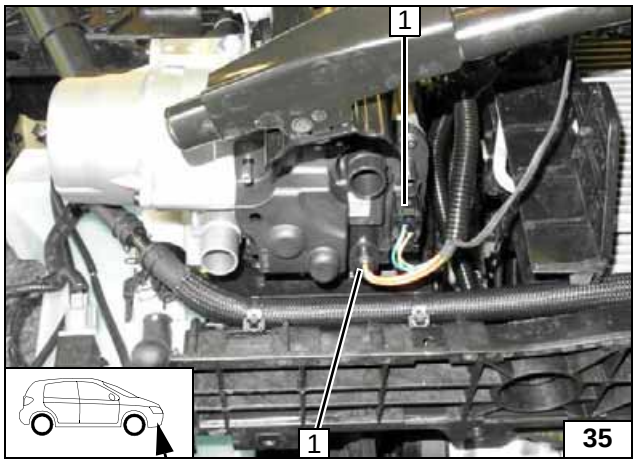
1 Perforated bracket **a**
2 Perforated bracket **b**
3 M6 flanged nut
4 M6x20 bolt, flanged nut [2x each]
5 Perforated bracket **c**

Mounting heater



Slit 10 mm dia. corrugated tube lengthwise. Route heater wiring harness **1** in 10 mm dia. corrugated tube **2** to heater.

Routing wiring harness of heater



1 Wiring harness of heater [2x]

Mounting wiring harness of heater

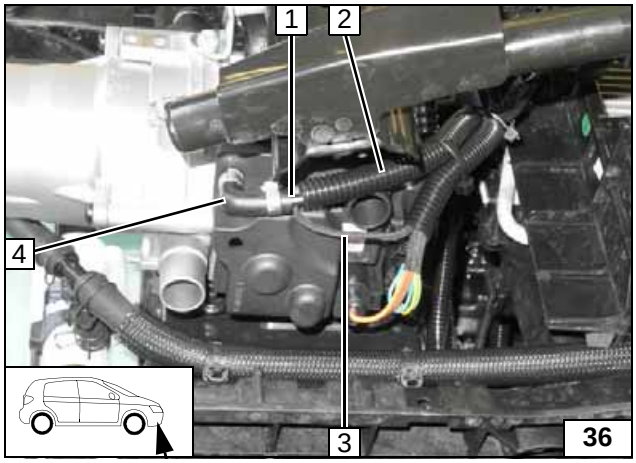
Fuel

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

Catch any fuel running off in 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.

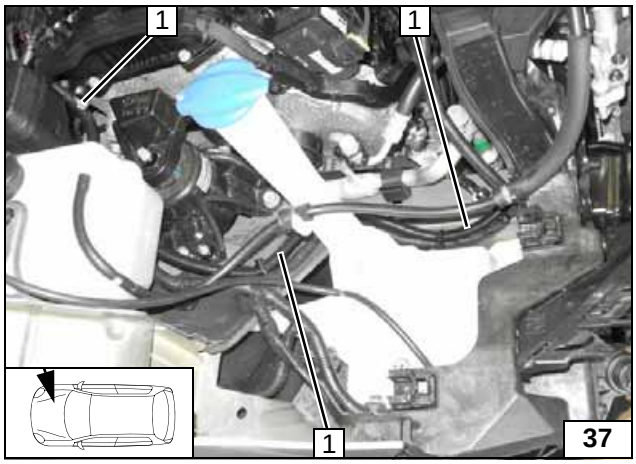
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Pull fuel line **1** and wiring harness of metering pump **3** into 10 mm dia. corrugated tube **2**.

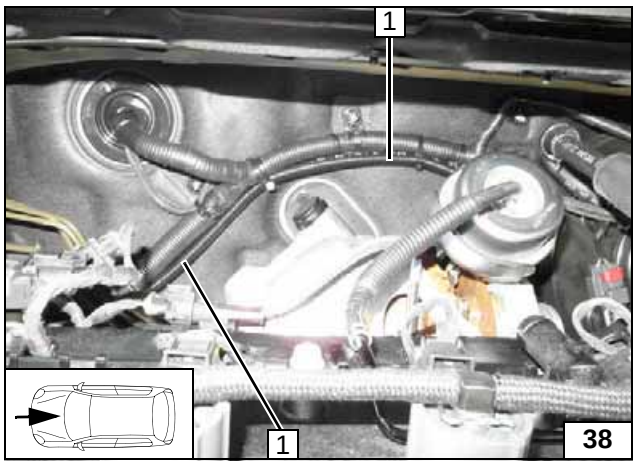
4 90° moulded hose, 10 mm dia. clamp [2x]

Connecting heater



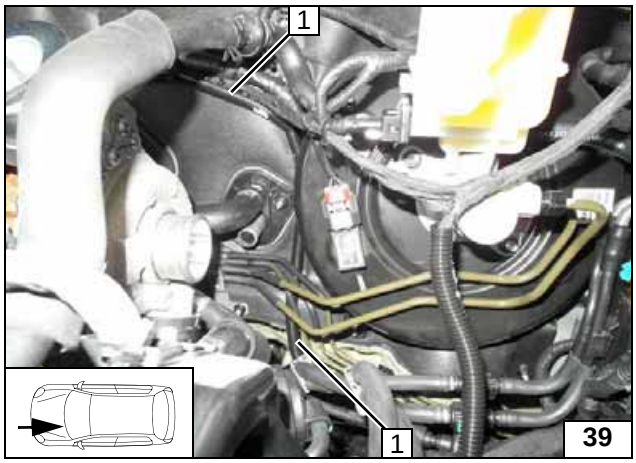
1 Fuel line and wiring harness of metering pump in corrugated tube

Routing lines



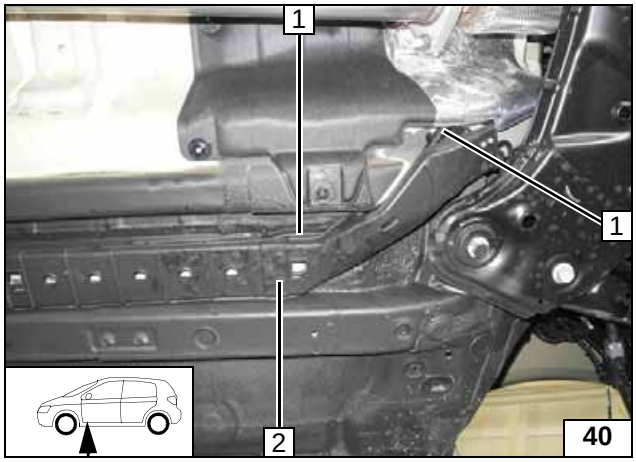
1 Fuel line and wiring harness of metering pump in corrugated tube

Routing lines



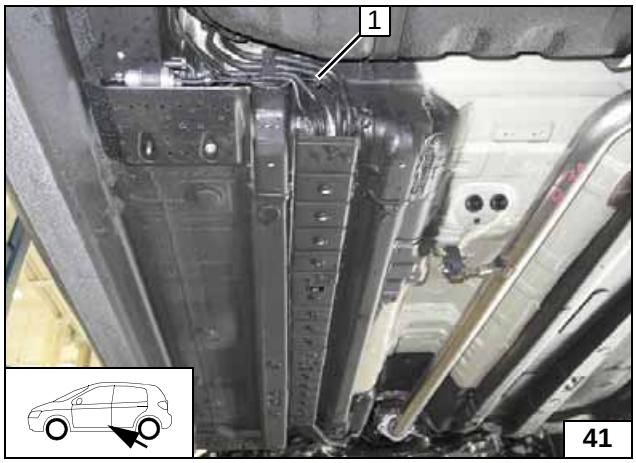
1 Fuel line and wiring harness of metering pump in corrugated tube

Routing lines



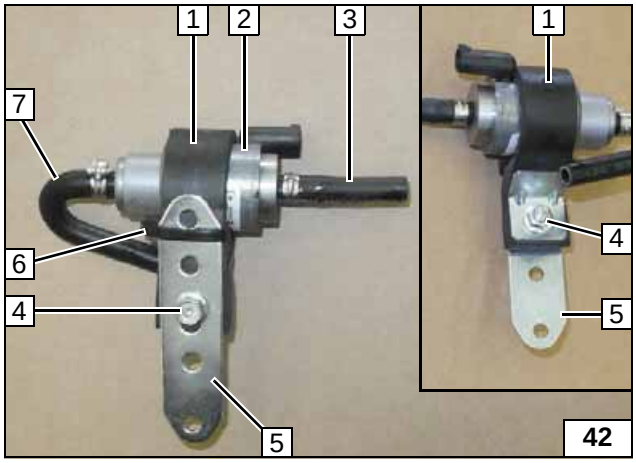
1 Route fuel line and wiring harness of metering pump in corrugated tube behind underride protection of fuel lines to the left.
2 Underride protection of fuel lines

Routing lines



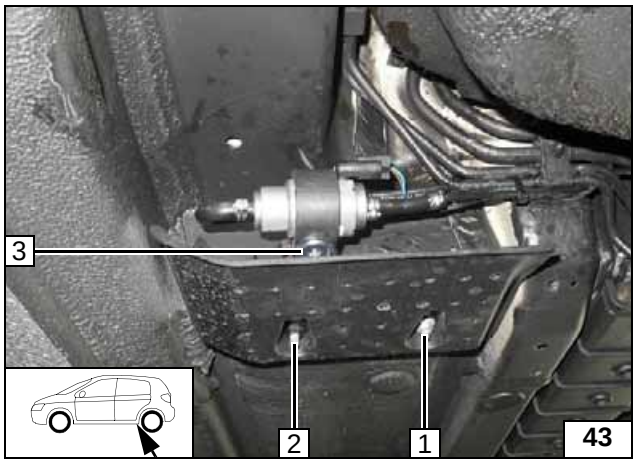
Route fuel line and wiring harness of metering pump **1** along original vehicle lines behind underride protection to installation location of metering pump.

Routing lines



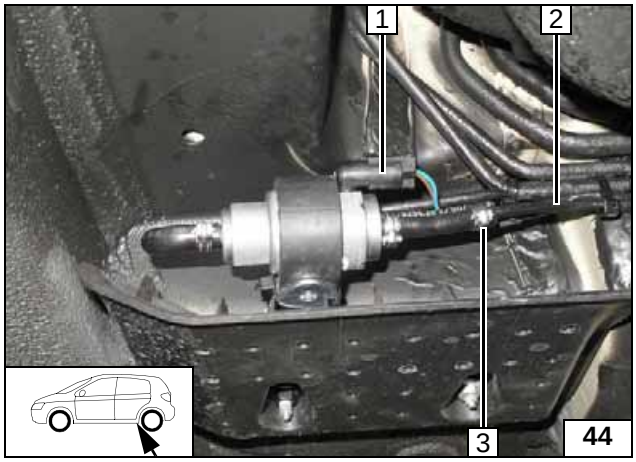
1 Mounting of metering pump
2 Metering pump
3 Hose section, 10 mm dia. clamp
4 M6x25 bolt, support angle bracket, flanged nut
5 Perforated bracket
6 Cable tie
7 180° moulded hose, 10 mm dia. clamp

Premounting metering pump



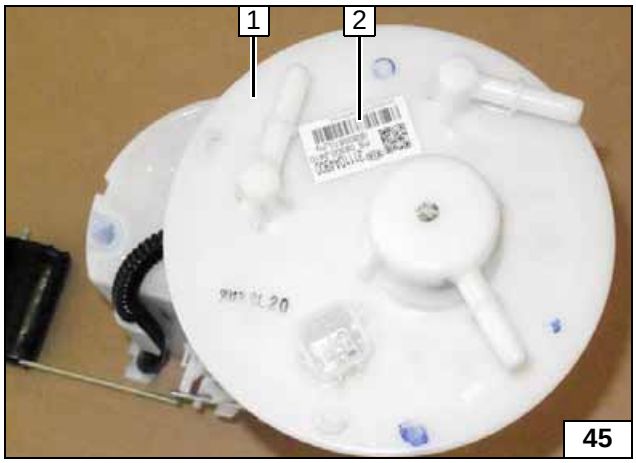
1 M6 flanged nut
2 Original vehicle stud bolt, original vehicle nut
3 Perforated bracket on original vehicle stud bolt

Mounting metering pump



1 Wiring harness of metering pump, connector mounted
2 Fuel line of heater
3 10 mm dia. clamp

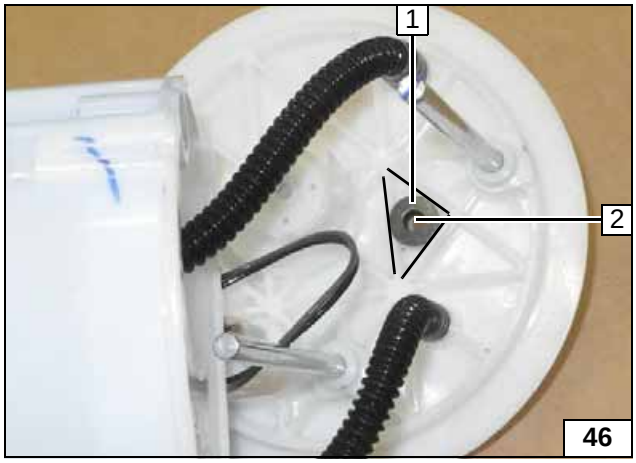
Connecting metering pump



Remove fuel-tank sending unit **1** in accordance with manufacturer's instructions.

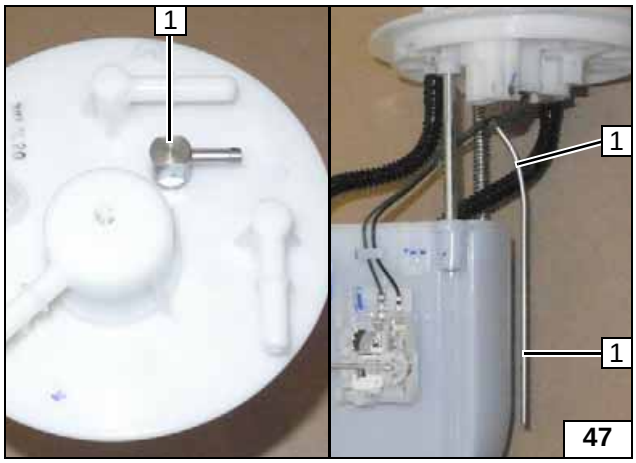
2 Remove sticker

Fuel extraction



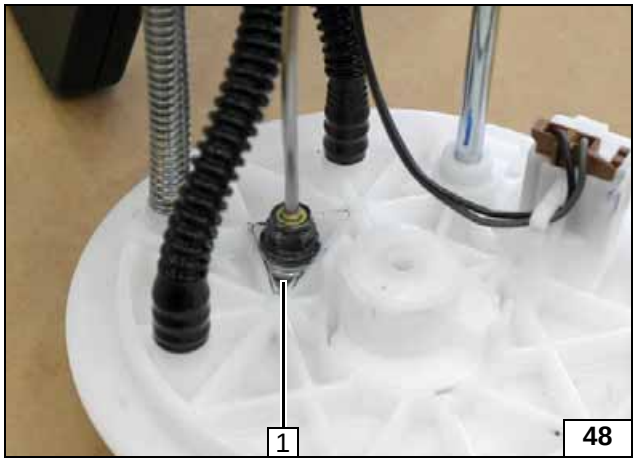
1 Position flanged nut of fuel standpipe **1** between the bars.
2 Copy hole pattern, 6 mm dia. hole

Fuel extraction



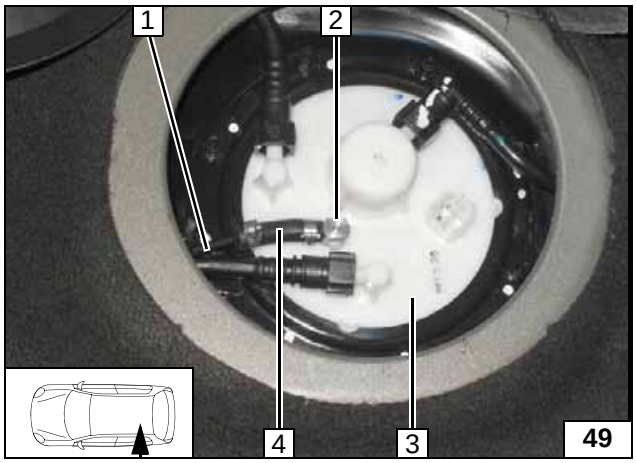
Shape fuel standpipe **1** according to template and cut to length (see following image).

Mounting fuel standpipe



1 6 mm dia. washer [5x]

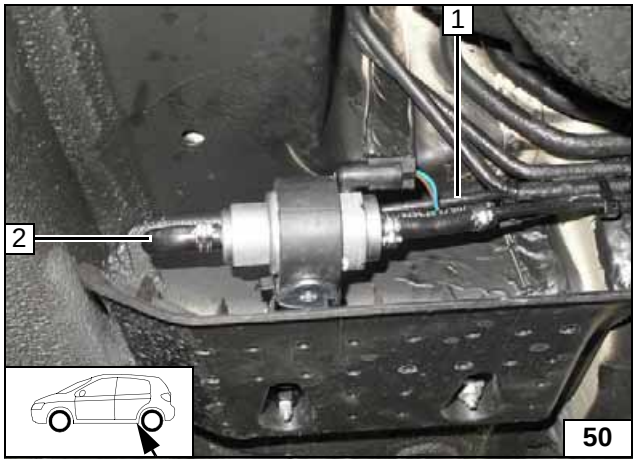
Mounting fuel standpipe



Install fuel-tank sending unit **3** in accordance with manufacturer's instructions.

1 Fuel line
2 Fuel standpipe
4 Moulded hose, 10 mm dia. clamp [2x]

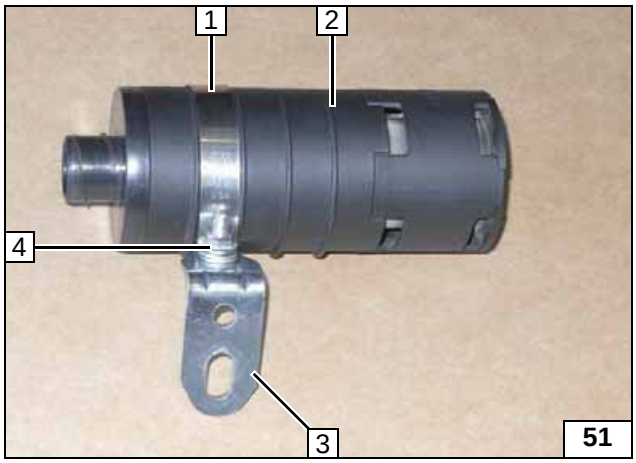
Connecting fuel line



Mount fuel line of fuel standpipe **1** with 10 mm dia. clamp on 180° moulded hose **2**. Check the position of the components; adjust if necessary. Check that they have freedom of movement.

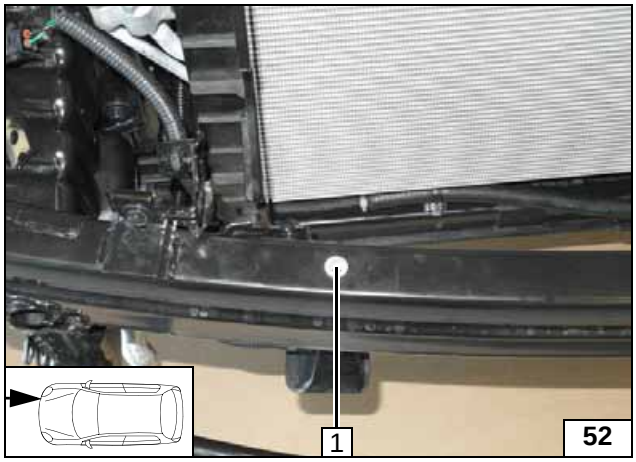
Connecting metering pump

Combustion Air



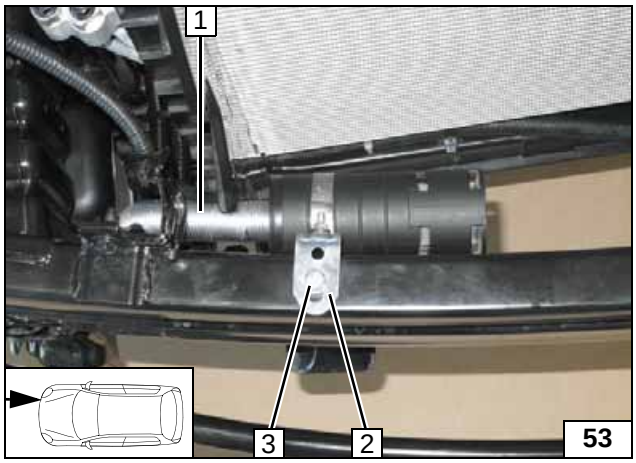
1 51 mm dia. clamp
2 Silencer
3 Angle bracket
4 M5x16 bolt, flanged nut

Premounting silencer



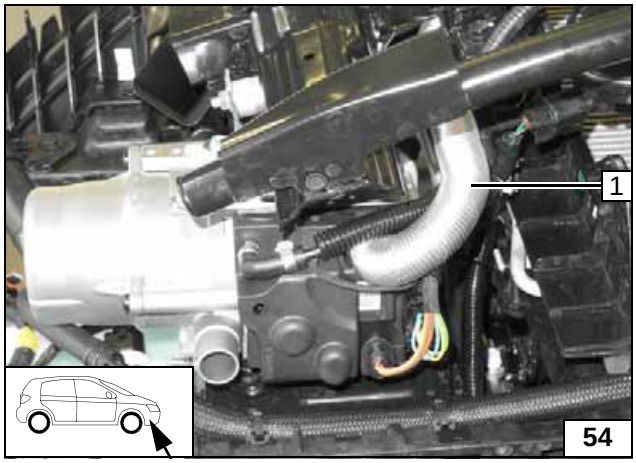
1 Drill out existing hole to 9.1 mm dia.; rivet nut

Installing rivet nut



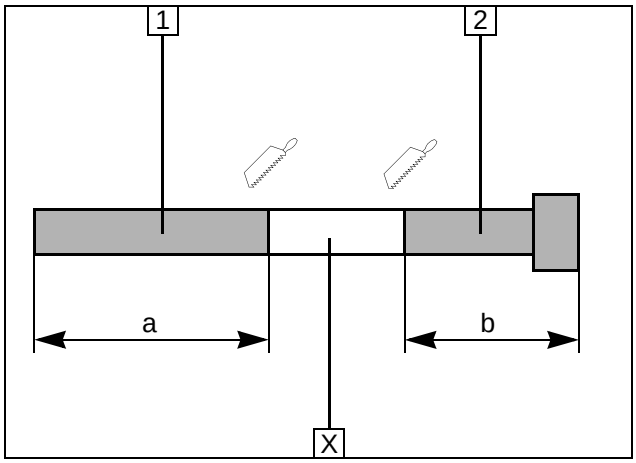
1 Combustion air pipe
2 Angle bracket
3 M6x20 bolt

Installing silencer



1 Combustion air pipe

Installing combustion air pipe

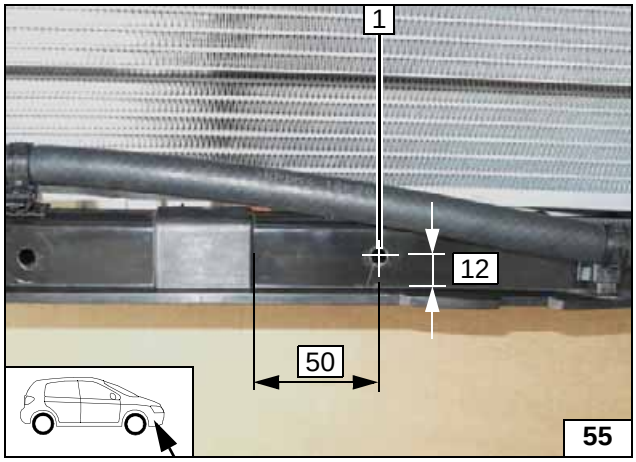


Exhaust Gas

Discard section **X**.

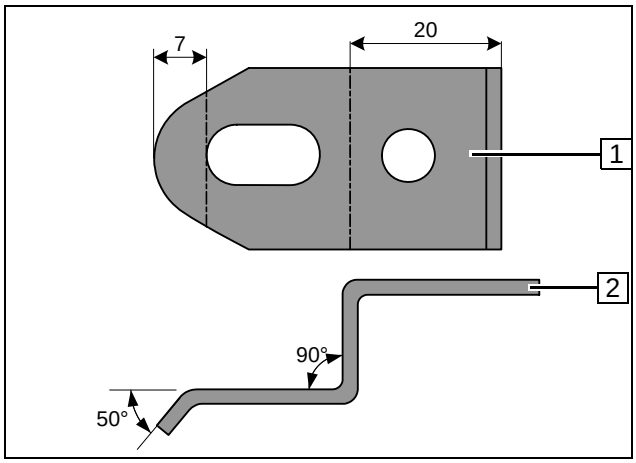
1 Exhaust pipe
a = 360
2 Exhaust end section
b = 110

Preparing exhaust pipe



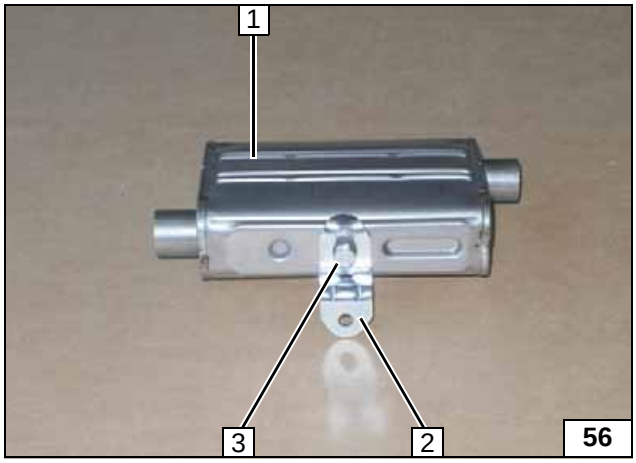
1 Drill out existing hole to 7 mm dia.

Hole for exhaust end section



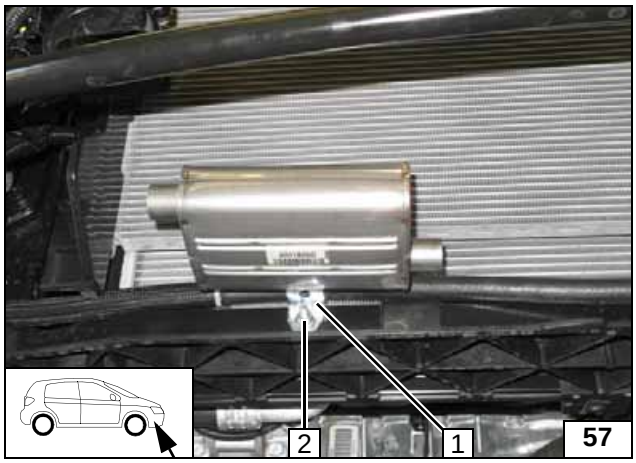
1 Original angle bracket
2 Adapted angle bracket

Preparing angle bracket



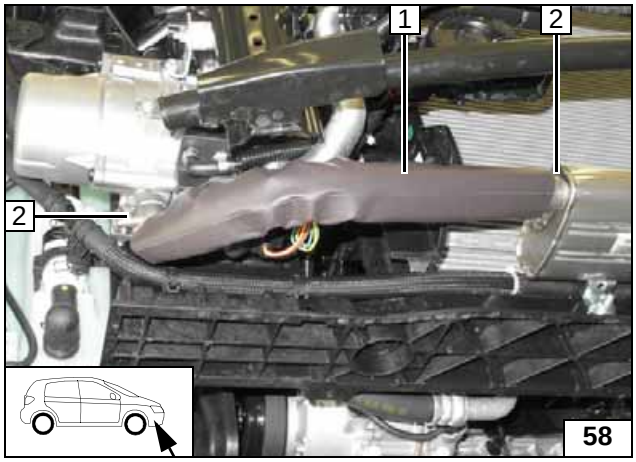
1 Silencer
2 Angle bracket
3 M6x16 bolt, spring lockwasher

Premounting silencer



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

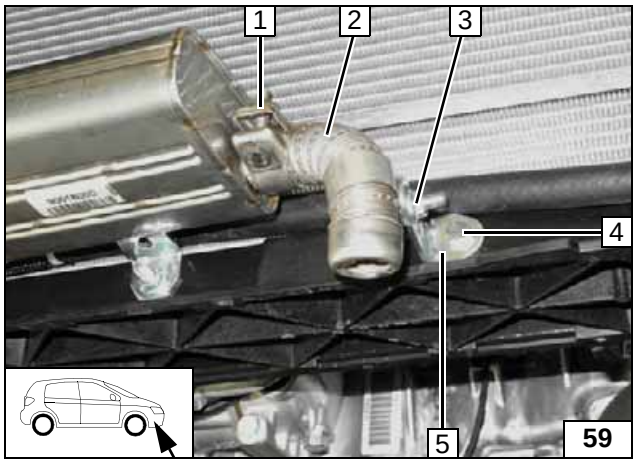
Installing silencer



Slide exhaust-gas insulation **1** (330 mm long) on exhaust pipe.

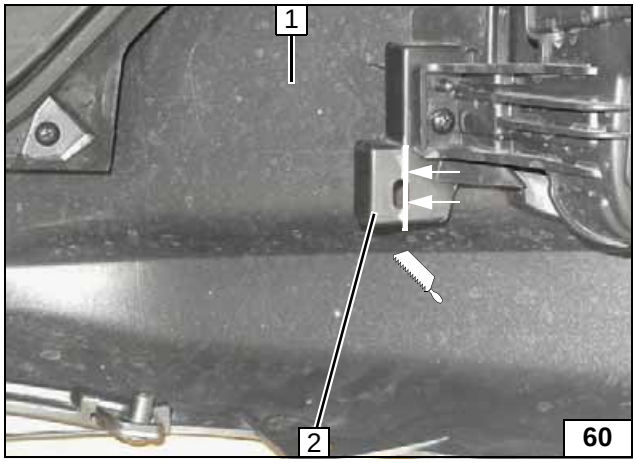
2 Hose clamp [2x]

Mounting exhaust pipe



1 Hose clamp
2 Exhaust end section
3 M6x20 bolt, pipe clamp, flanged nut
4 M6x20 bolt, flanged nut
5 Angle bracket

Mounting exhaust end section



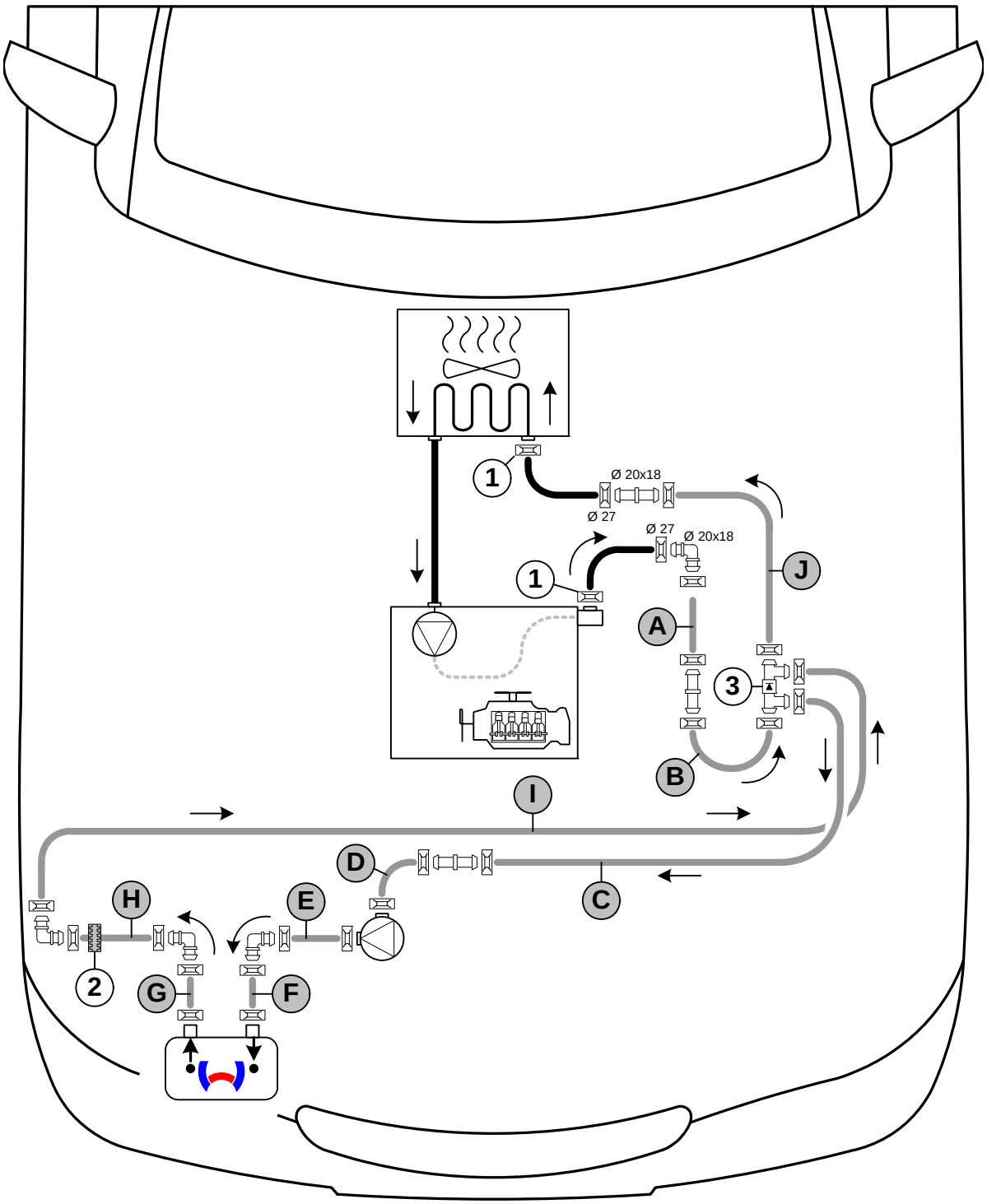
1 Bumper trim
2 Discard section

Adapting bumper trim

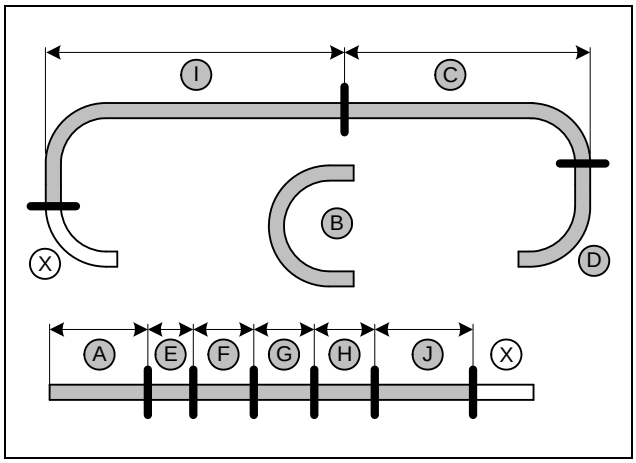
Coolant Circuit

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 "**parallel**" based on the following diagram:

Hose installation diagram



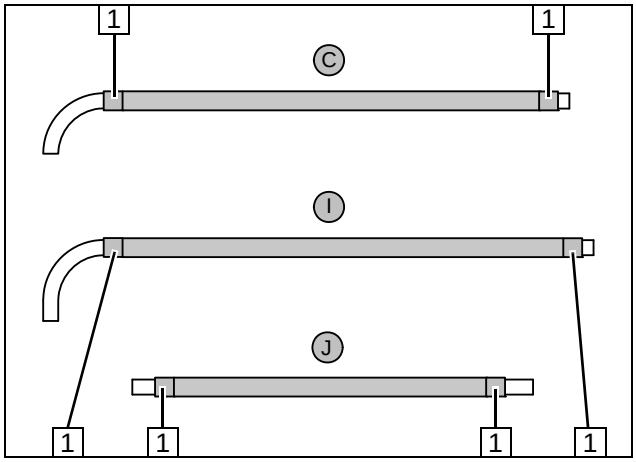
All spring clips without a specific designation = 25 mm dia. **1**= Original vehicle spring clip .
2 = Black (sw) rubber isolator . All connecting pipes without a specific designation and = 18x18 mm dia.
3 = check valve .



Discard section **X**.
Hose **B** = 180°, 18 mm dia. moulded hose
Hose **C** with short hose elbow.
Hose **D** with long hose elbow.
Hose **I** with long hose elbow.

A = 240
C = 1020
E = 70
F = 170
G = 190
H = 180
I = 1180
J = 390

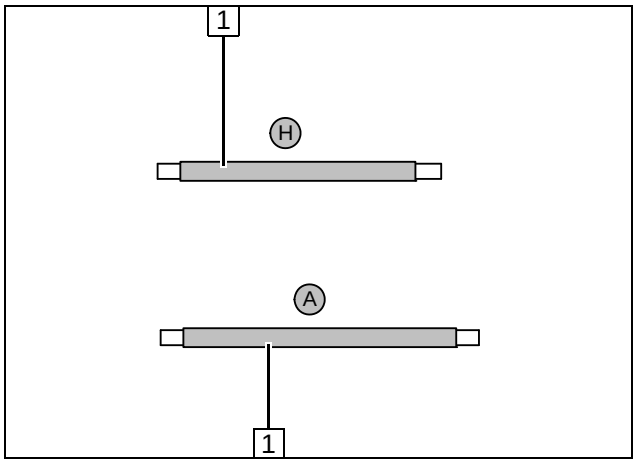
Cutting hoses to length



Slide braided protection hoses onto hoses **C**, **I** and **J** and cut to length. Cut heat shrink plastic tubing to length.

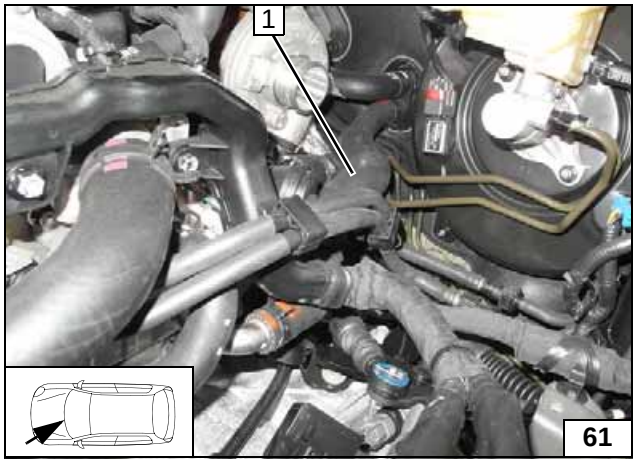
1 Heat shrink plastic tubing, 50 mm long [6x]

Preparing hoses



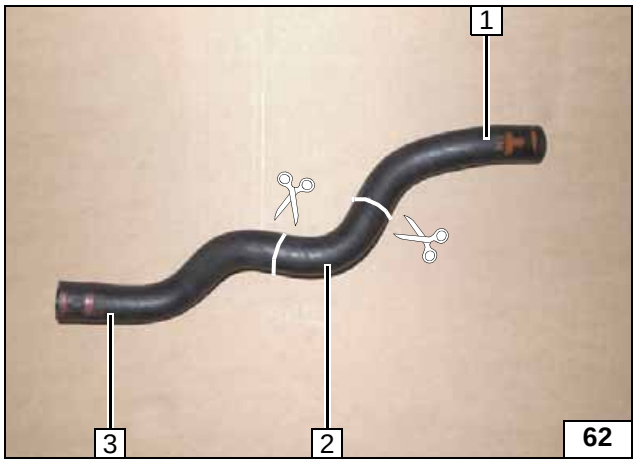
1 Heat shrink plastic tubing, 100 mm long [2x]

Preparing hoses



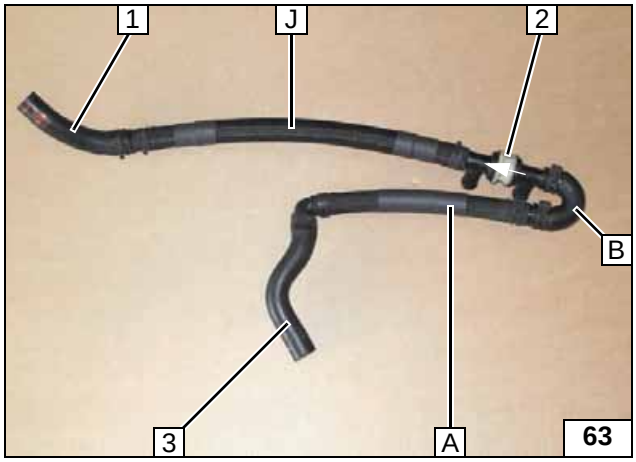
Remove hose of engine outlet / heat exchanger inlet **1**. Spring clip will be reused!

Cutting point



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

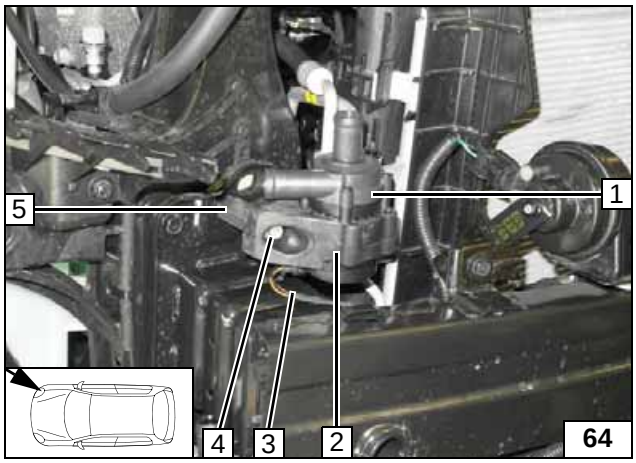
Premounting hoses



Watch direction of flow of check valve **2**.

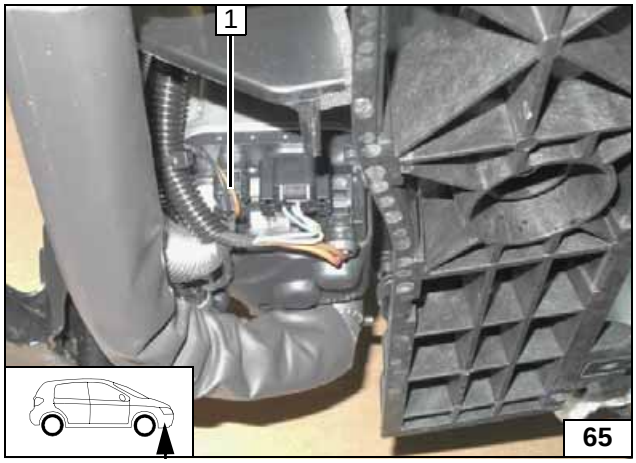
1 Hose on heat exchanger inlet
3 Hose of engine outlet

Premounting hoses



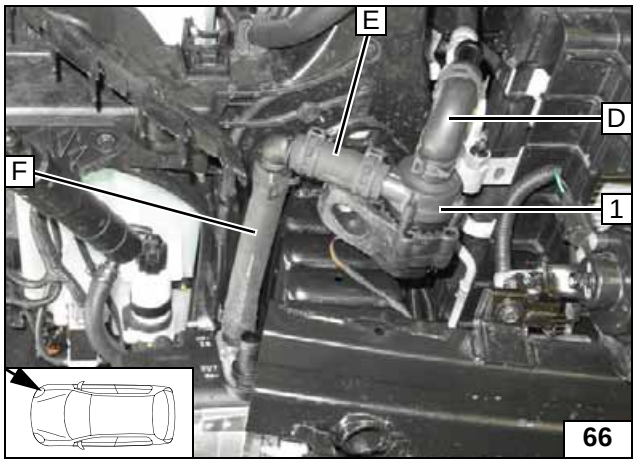
1 Circulating pump
2 Mounting of circulating pump
3 Wiring harness of circulating pump
4 M6x25 bolt
5 Original vehicle stud bolt, M6x40 spacer nut

Mounting circulating pump



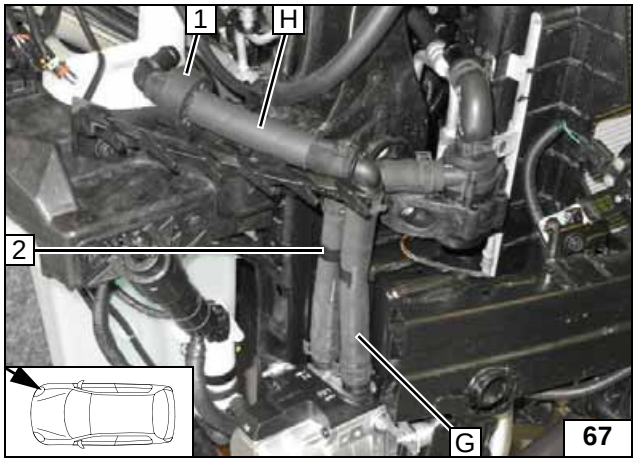
1 Wiring harness of circulating pump

Connection to heater



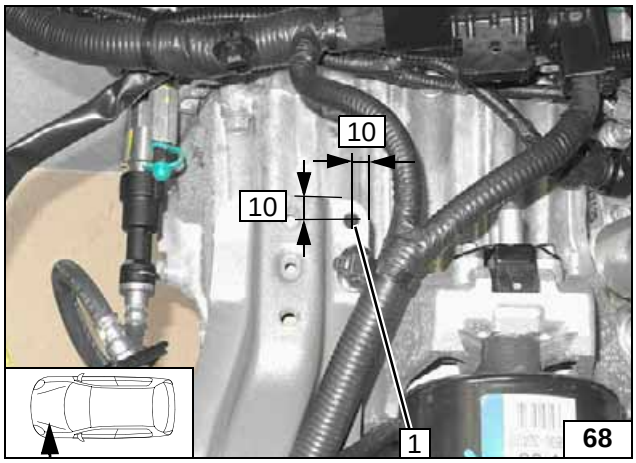
1 Circulating pump

Connection of heater inlet



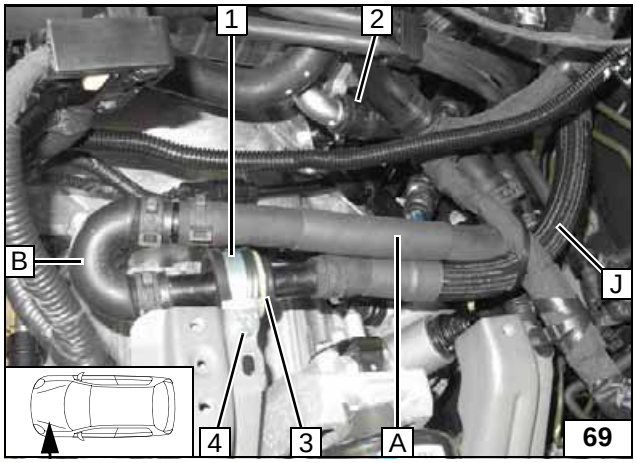
1 Slide black [sw] rubber isolator onto hose **H**
2 Hose bracket between hose **G** and **F**

Connection of heater outlet



1 7 mm dia. hole

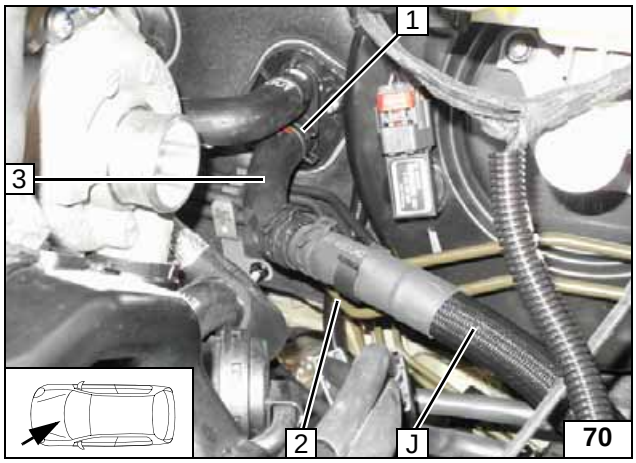
Hole for check valve



Mount hose **A** on engine outlet connection piece.

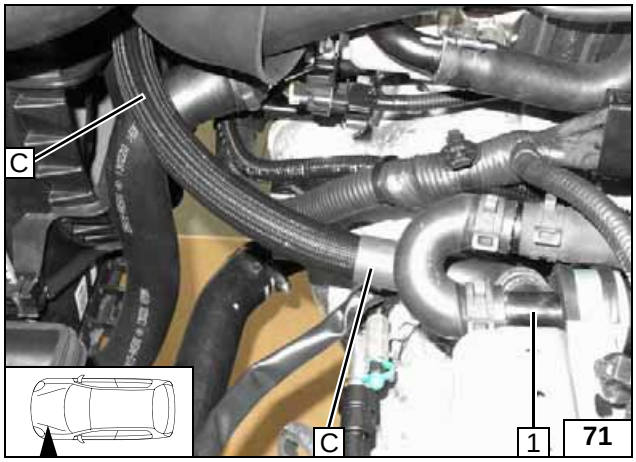
1 34 mm dia. rubber-coated p-clamp
2 Original vehicle spring clip
3 Check valve
4 M6x20 bolt, flanged nut

Connection of engine outlet



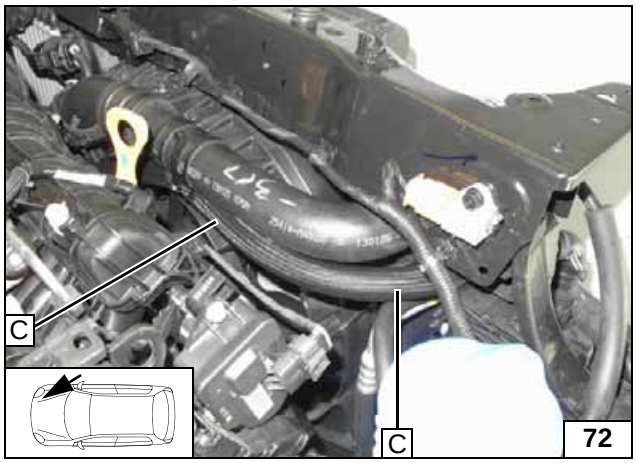
1 Original vehicle spring clip
2 Hose bracket between hose **J** and original vehicle brake line
3 Hose on heat exchanger inlet

Connection of heat exchanger inlet

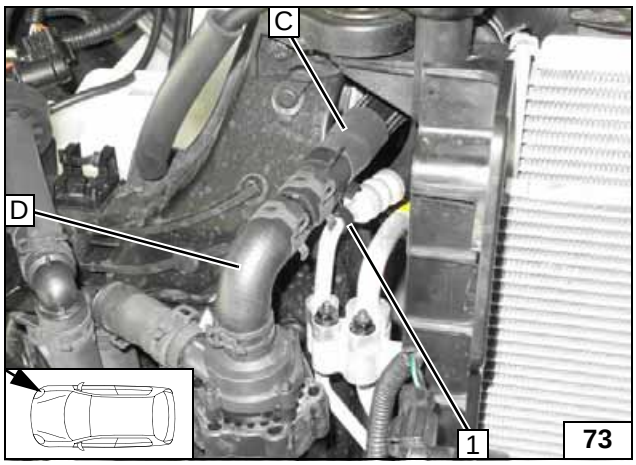


Mount hose **C** with 90° elbow on check valve.

Connecting hose C

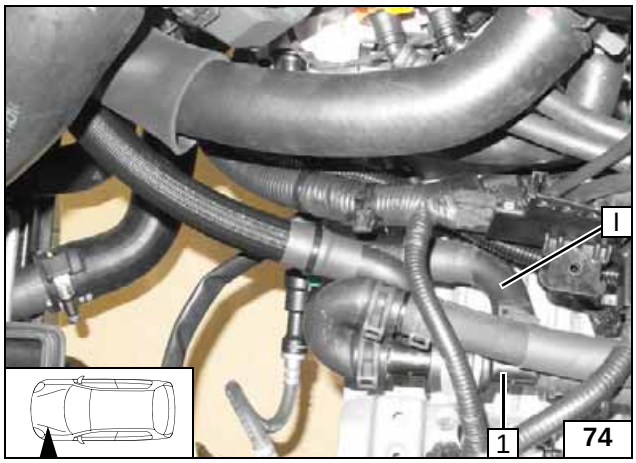


Routing in engine compartment



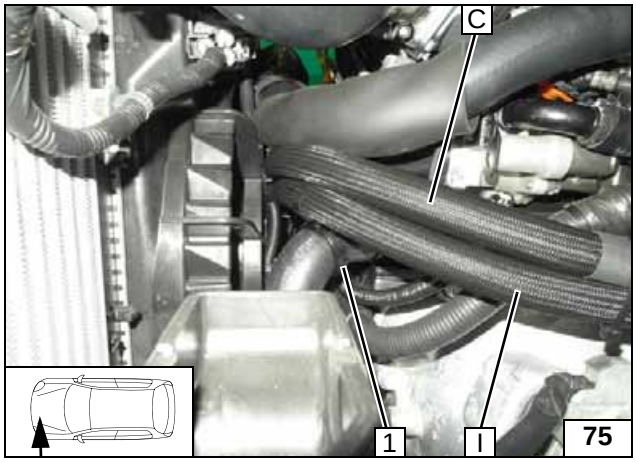
1 Hose bracket between hose **C** and A/C line

Connection of circulating pump



Mount hose **I** with 90° elbow on check valve.

Connection of hose I

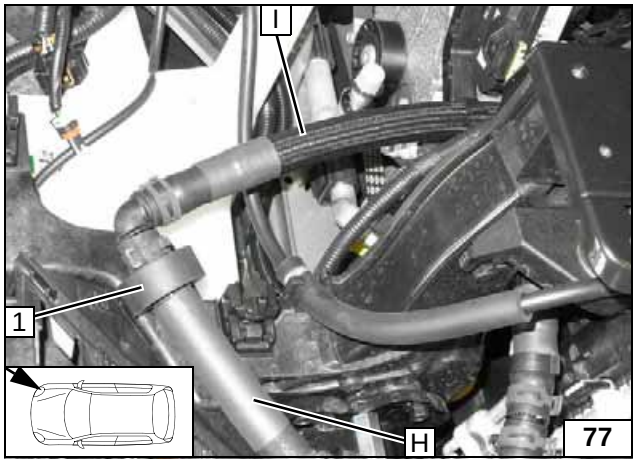


1 Hose bracket between hose **I** and radiator hose

Routing in engine compartment

1 Hose bracket between hose **I** and A/C line

Routing in engine compartment



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

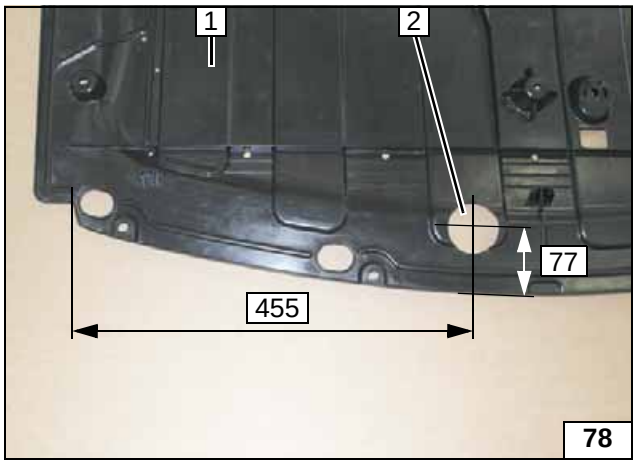
1 Position black (sw) rubber isolator

Routing in engine compartment

Final Work

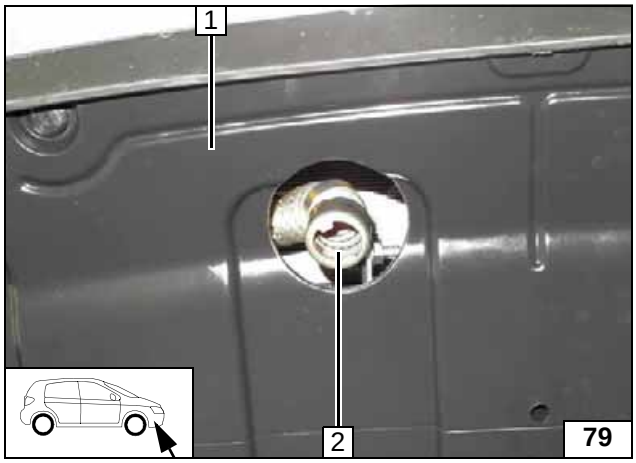
WARNING!
Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose lines and tie back.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- **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**



1 Underride protection
2 60 mm dia. hole

Cutting out underride protection

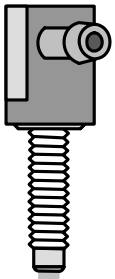


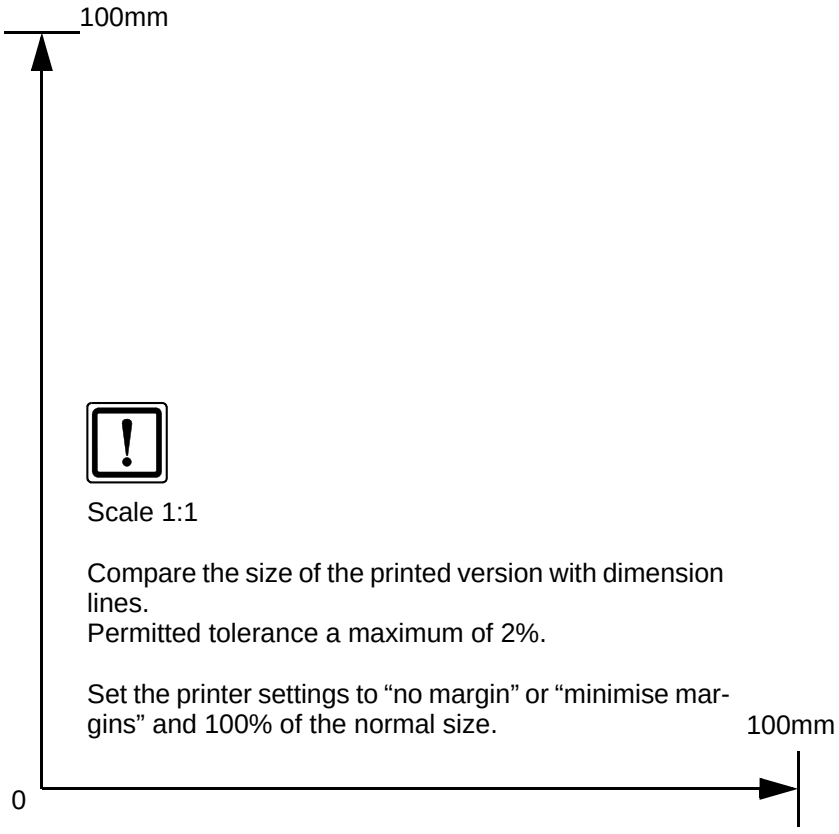
Centrally align exhaust end section **2** in hole and so that it is flush with underride protection **1**.

Aligning exhaust end section

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

Template for Fuel Standpipe





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.

Webasto
Feel the Drive

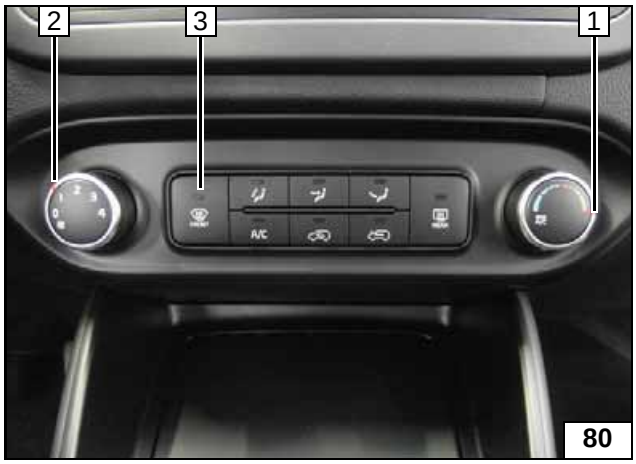
Operating Instructions for Manual Air-Conditioning

Please remove page and add to the vehicle operating instructions.

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

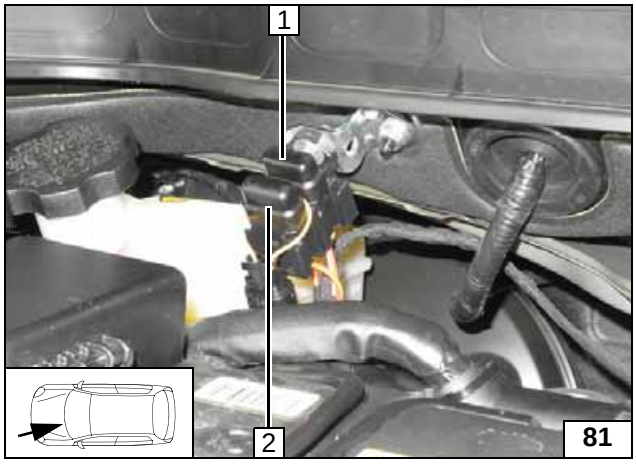
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for de-activation may be obtained from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



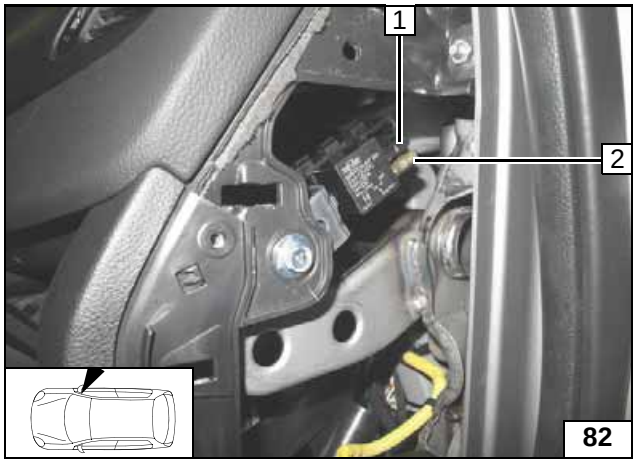
1 Set temperature to "max."
2 Set fan to level "1", or max. "2"
3 Air outlet to windscreen

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

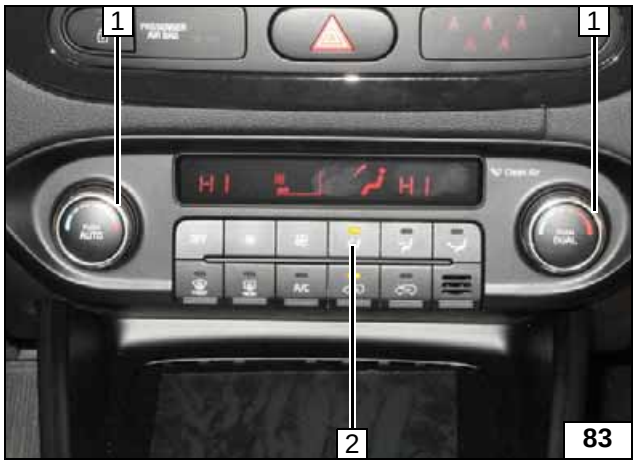
Operating Instructions for Automatic Air-Conditioning

Please remove page and add to the vehicle operating instructions.

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

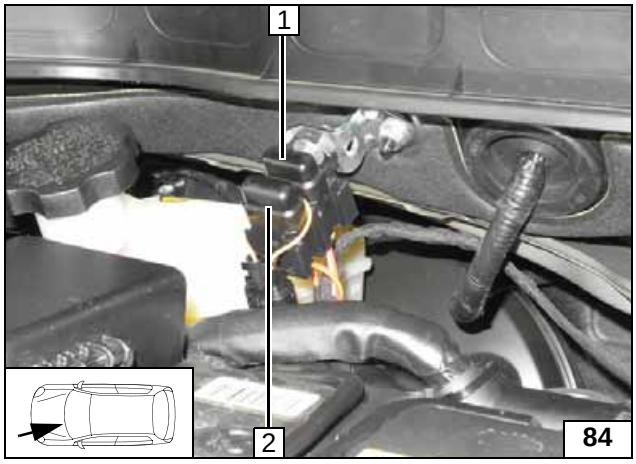
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for de-activation may be obtained from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



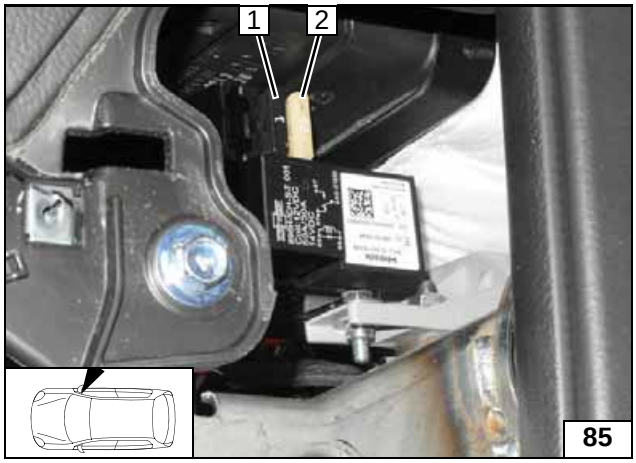
1 Set temperature on both sides to "HI"
2 Air outlet faces "upward"

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