

Water Heater Unit



Feel the drive

Thermo Top E Additional Heater  00 0003

Thermo Top C Additional Heater  00 0002

Thermo Top P Additional Heater  00 0104

Installation Instructions

Alfa Romeo 159

Gasoline and Diesel

from Model Year 2006

For left-hand drive vehicles only

Only with manual transmission!



WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialized tools and equipment are required to install and repair Webasto heating and cooling systems.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

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

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

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Validity

Manufacturer	Model	Type	EG-BE No./ABE
Alfa Romeo	939	159	e3 * 2001/116 * 0212

Engine type	Engine model	Output in kW	Displacement in cm ³
939A5000	Gasoline	136	2198
939A2000	Diesel	110	1910

Vehicle and engine types, equipment variants and national specifications not listed in these installation instructions have not been tested. However, installation according to these installation instructions may be possible.

The installation location of a digital timer and summer/winter switch should be confirmed with the end customer before installation.

Heater Unit/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories with desired heater control	See price list
1	Installation kit for Alfa Romeo 159 Gasoline and Diesel	1310979A

Also required with automatic air-conditioning:

Quantity	Description	Order No.:
1	Kit for IPCU	1311036A

Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C
Full-size car, van, offroader	Thermo Top P

The selection of the heater unit is based on the passenger compartment size of the vehicle and the level of comfort required by the customer!



Foreword

These installation instructions apply to Alfa Romeo 159 vehicles with a Gasoline and Diesel engine - for validity, see page 2 - from model year 2006 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 these installation instructions.

However, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/P/E* must always be observed.

The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

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.

Sharp edges should be fitted with edge protectors (split-open plastic hose).

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

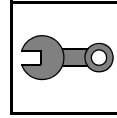
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit

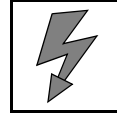
Explanatory Notes on Document

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

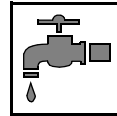
Mechanical system



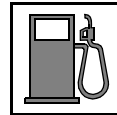
Electrical system



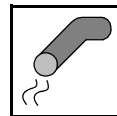
Coolant connection



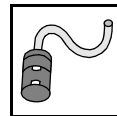
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



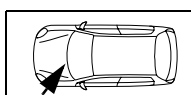
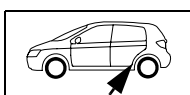
Specific risk of fire or explosion.



Reference to general installation instructions of Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature.

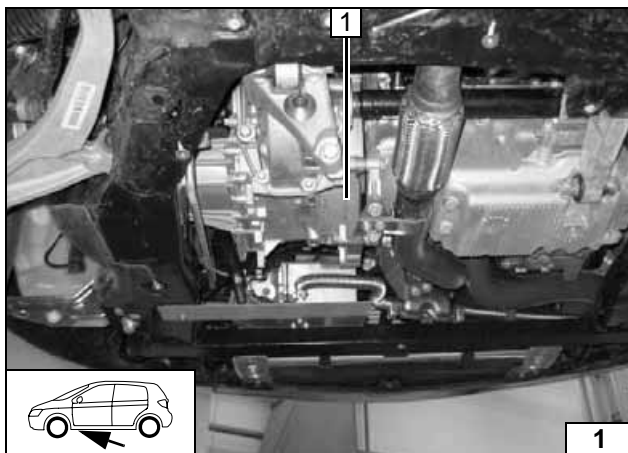


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary Work

WARNING!

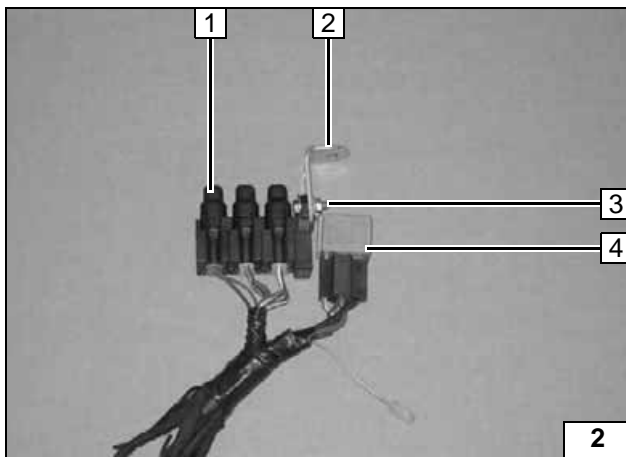
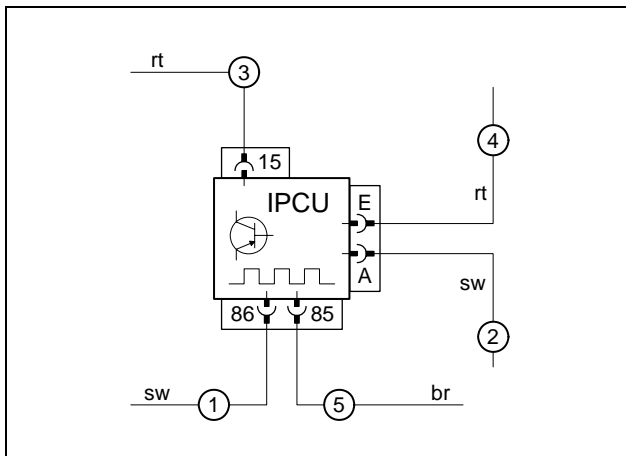
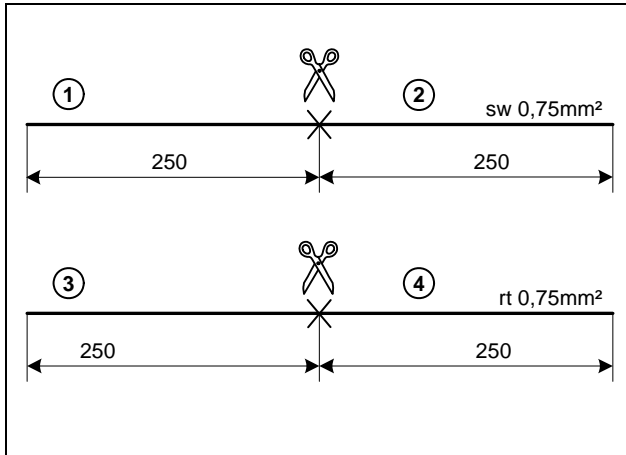
- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Completely remove the battery
- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- Remove the left-hand wheel well trim
- Remove the underride protection
- Remove the rear right underbody trim from the fuel tank
- Remove the rear bench seat according to the manufacturer's specifications
- Open the center fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the left and right-hand footwell cover
- Please remove page 28 of the "Operating instructions for the end customer" and add this to the vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

Installation
location



Preparing electrical system

Only with automatic air-conditioning

Wire sections 1, 2, 3 and 4 are required for connecting IPCU.

Prior to installation, set following values with Webasto PC diagnosis (from Version 2.07):

- Voltage: 10 V
- Frequency: 100 Hz
- Duty cycle: 46 %
- Function: Low-side

Produced included wire section 5 and prepared wire sections 1, 2, 3 and 4 according to wiring diagram.

For all vehicles

- 1 Fuse holder
- 2 Angle bracket
- 3 M5x16 bolt, washer, retaining plate for fuse holder, M5 flanged nut
- 4 K3 relay

Cutting wires to length



Preassembling IPCU

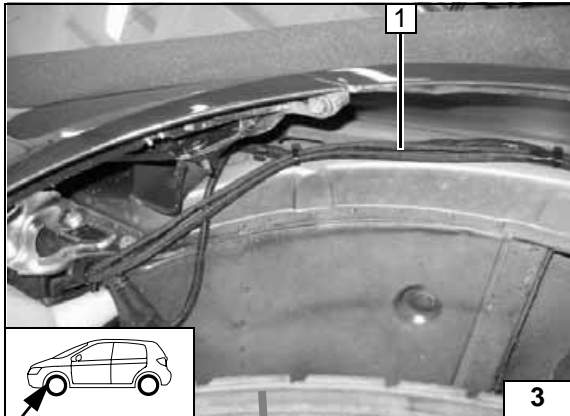
Preassembling fuse holder



Electrical Connections

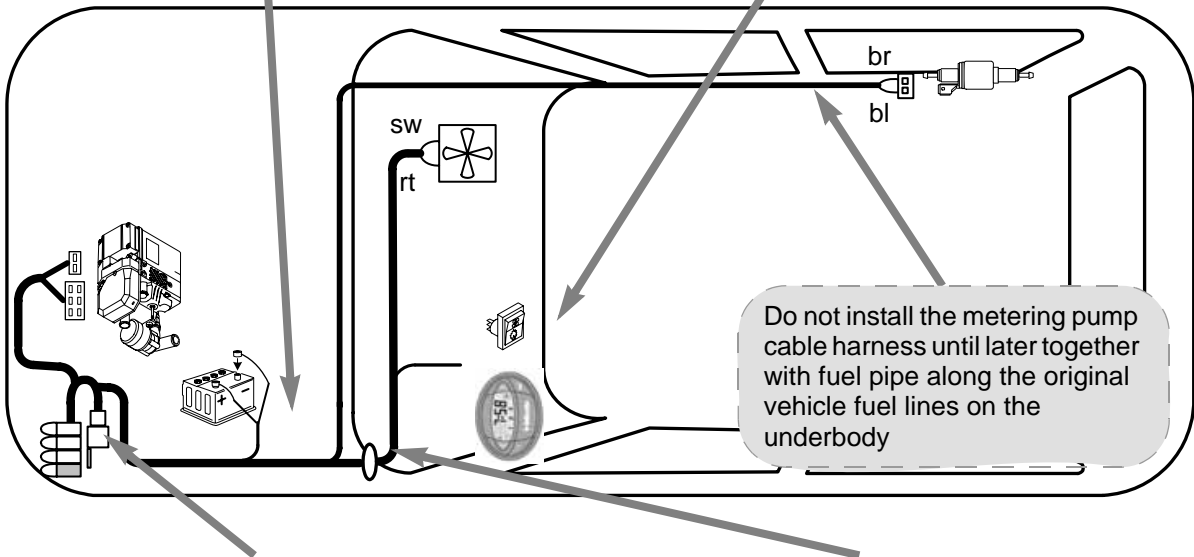
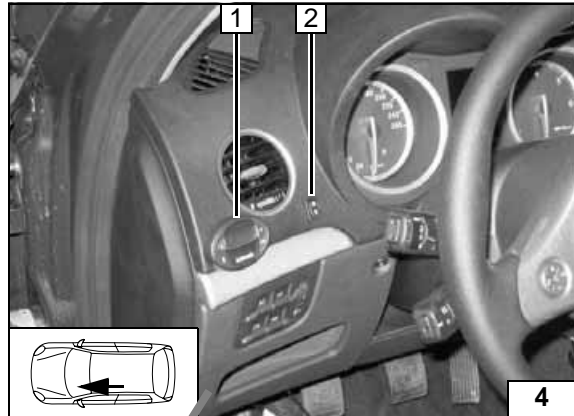
Routing wiring harness

- 1 Wiring harness of digital timer and fan controller in left-hand wheel well

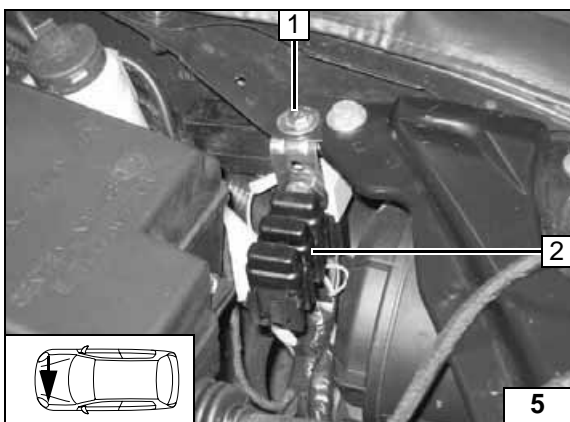


Digital timer and summer/winter switch option

- 1 Digital timer
- 2 Summer/winter switch option

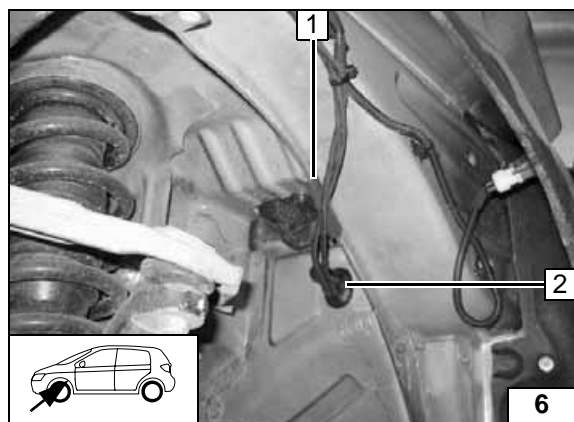


Wiring harness installation diagram



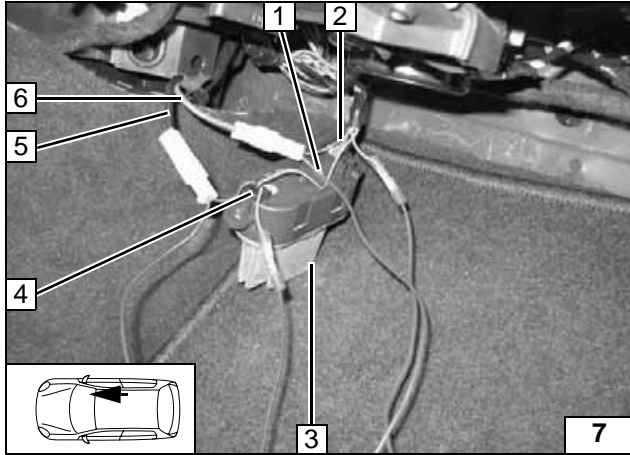
Fuse holder, relay K3

- 1 M6x20 bolt, washer, original vehicle hole, premounted angle bracket, M6 flanged nut
- 2 Premounted angle bracket with fuse holder and K3 relay



Wiring harness pass through

- 1 50 mm long edge protection
- 2 Protective rubber plug

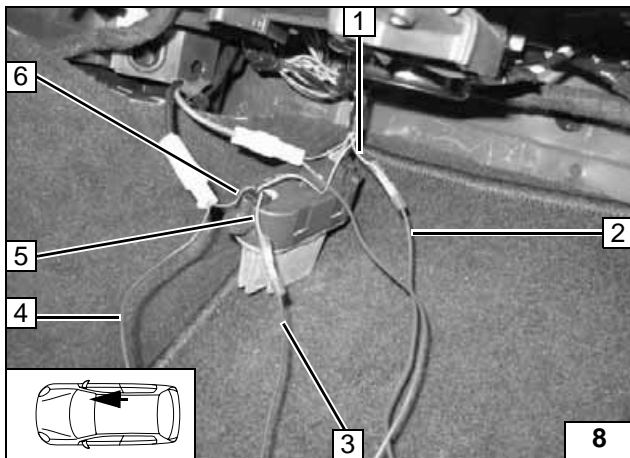


Automatic air-conditioning fan controller

Connection on 3-pin connector A 4 from fan controller. Fan controller 3 is removed for this purpose and must be completely installed prior to commissioning. Make connections as shown in wiring diagram with tab receptacles and connectors.

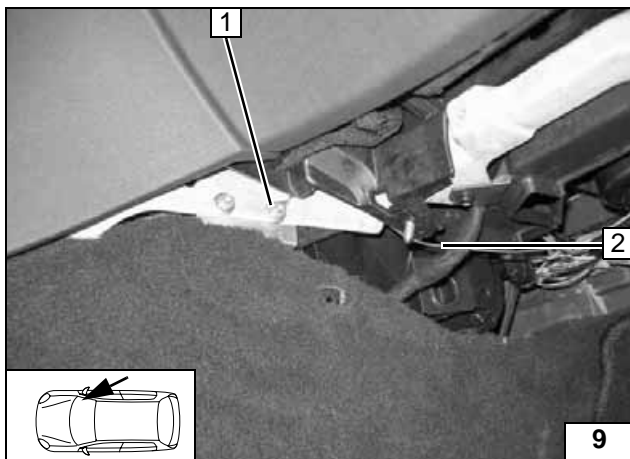
- 1 Red (rt) wire from IPCU/15
- 2 Yellow/black (ge/sw) wire from A/C control panel, Pin 4
- 5 Black (sw) wire from K3/30
- 6 Red (rt) wire to K3/87a

**Con-
nection to
fan
controller**



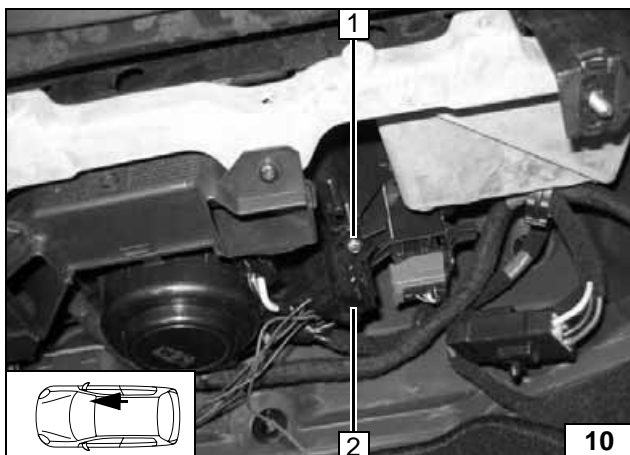
- 1 White/black (ws/sw) wire from A/C control panel, Pin 17
- 2 Red (rt) wire from IPCU/E
- 3 Black (sw) wire from IPCU/A
- 4 Black (sw) wire from IPCU/86
- 5 White/black (ws/sw) wire to connector A, Pin 3 of fan controller
- 6 Yellow/black (ge/sw) wire to connector A, Pin 1 of fan controller

**Con-
nection to
fan
controller**



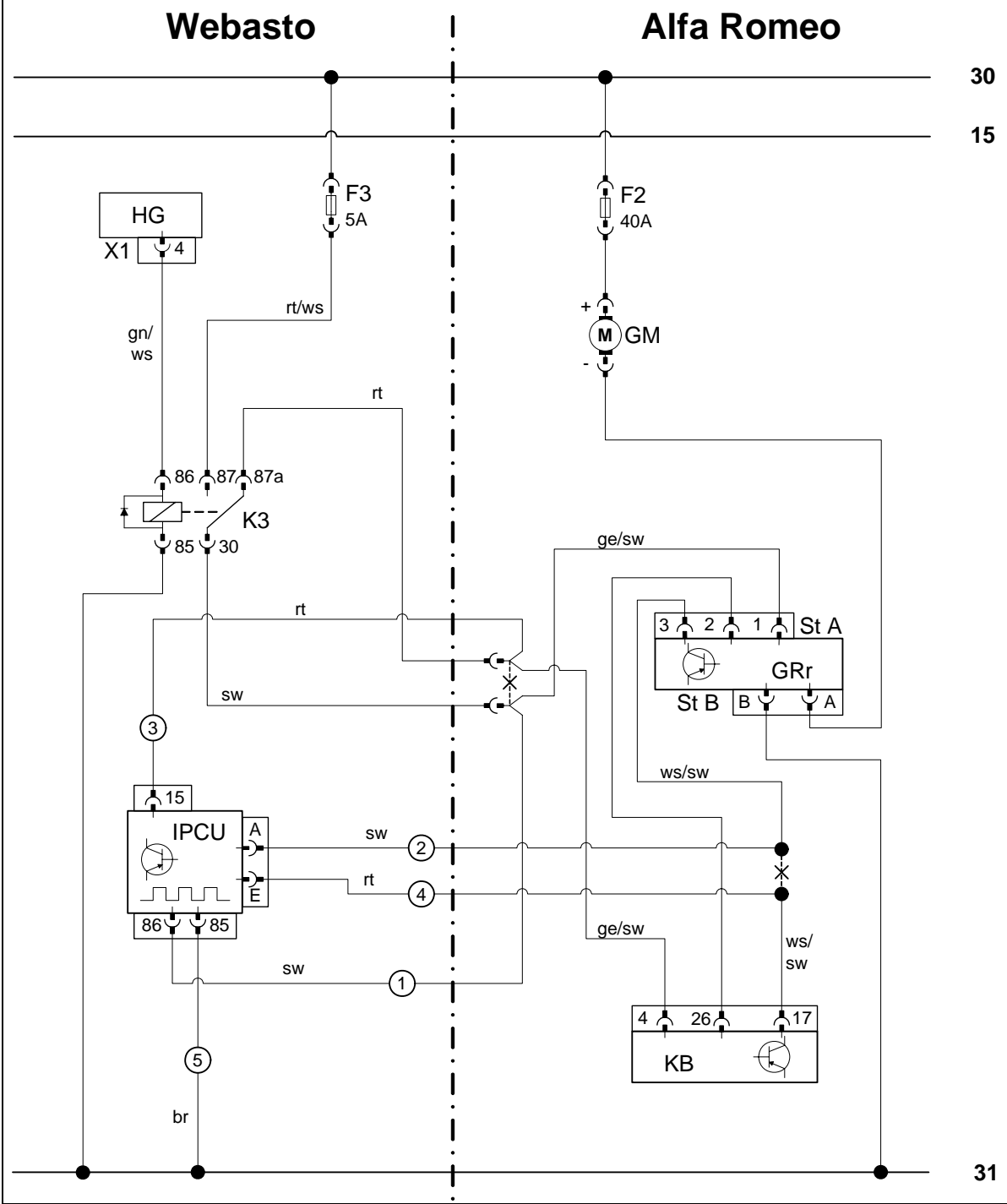
- 1 Cable lug on existing M6 bolt
- 2 Brown (br) wire from IPCU/85

**Con-
nection to
ground of
IPCU**



- 1 Original vehicle bolt
- 2 Relay socket for IPCU

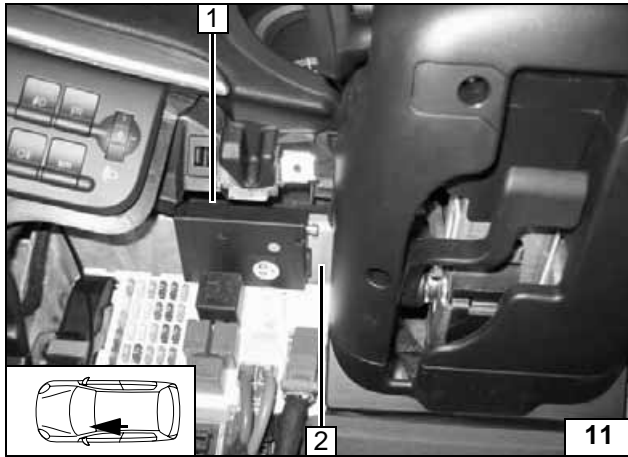
**Fastening
relay
socket**



Automatic air-conditioning circuit diagram

Webasto components		Components of Alfa Romeo 159		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin connector	GRr	Fan controller	ws	white
F3	Replace 25 A with 5 A fuse.	KB	Air-conditioning control element	sw	black
K3	Fan relay	KB	Air-conditioning control element	br	brown
IPCU	Pulse width modulator	St A	Connector A on GRr	gn	green
IPCU adjustment values		St B	Connector B on GRr	ge	yellow
Voltage: 10 V				X	Cutting point
Frequency: 100 Hz					
Duty cycle: 46 %					
Function: Low-side					
				Wiring colors may vary.	

Legend

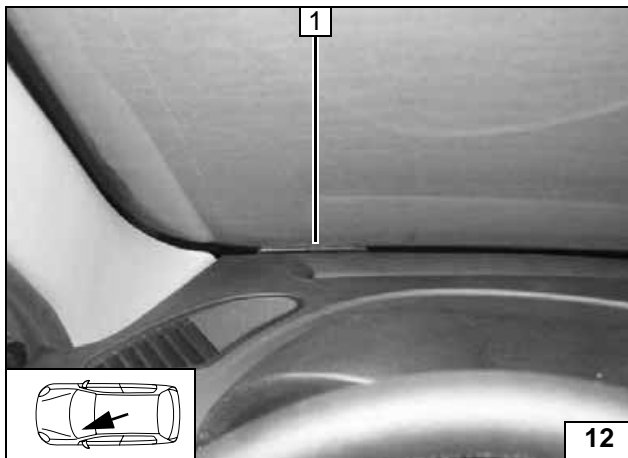


Remote option (Telestart)

- 1 Receiver, double-sided Velcro strip (self-adhesive)
- 2 Cross member below instrument panel at left

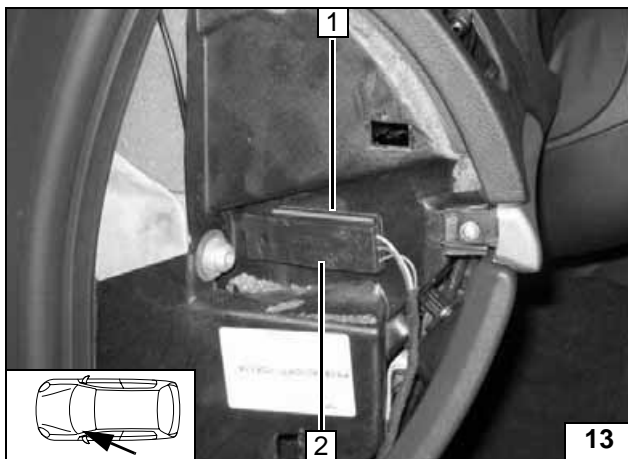


Installing receiver



- 1 Antenna

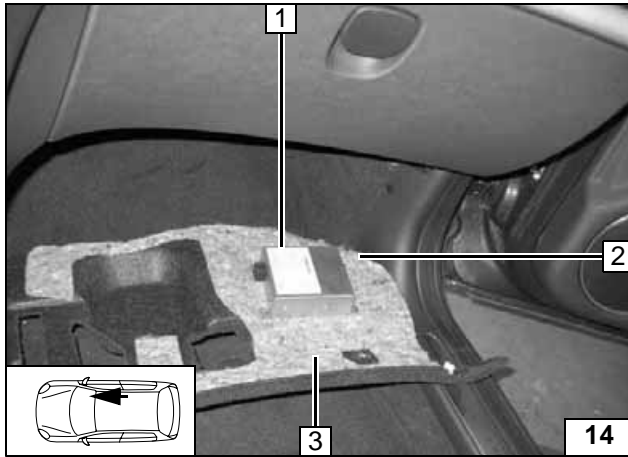
Installing antenna



Temperature sensor for HTM100 only

- 2 Temperature sensor
- 1 Double-sided Velcro strip (self-adhesive)

Installing temperature sensor

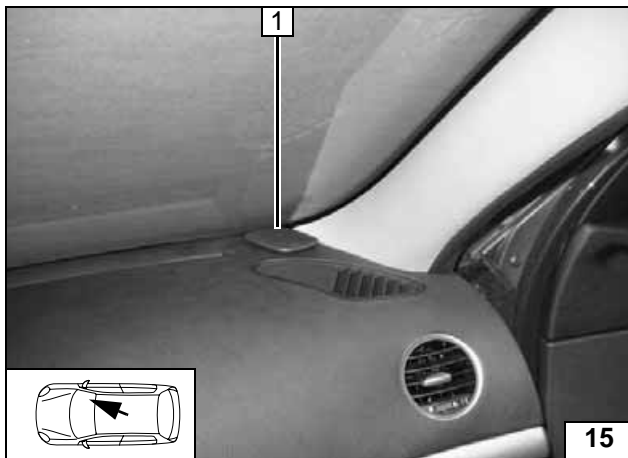


Remote option (Thermo Call)

Cut out insulation 2 in area of receiver 1

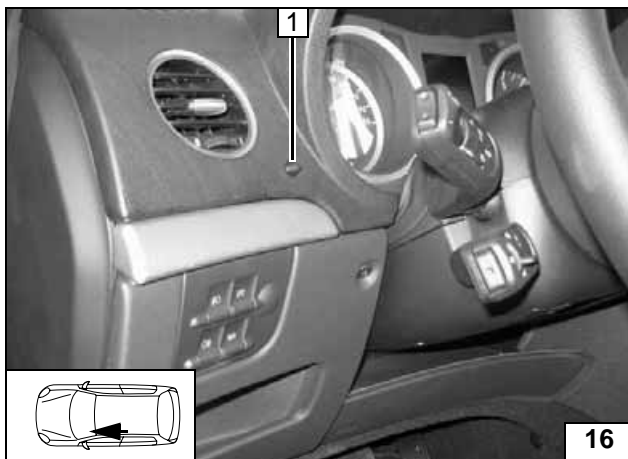
- 1 Receiver, double-sided Velcro strip (self-adhesive) [2x]
- 3 Right-hand footwell cover

Installing receiver



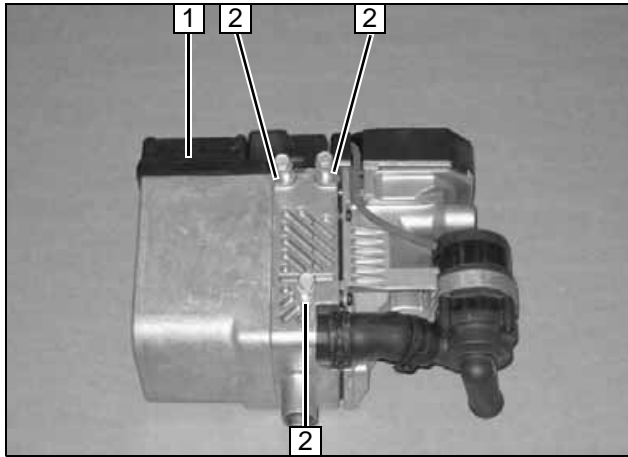
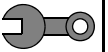
- 1 Antenna

Installing antenna



- 1 Pushbutton

Installing push button

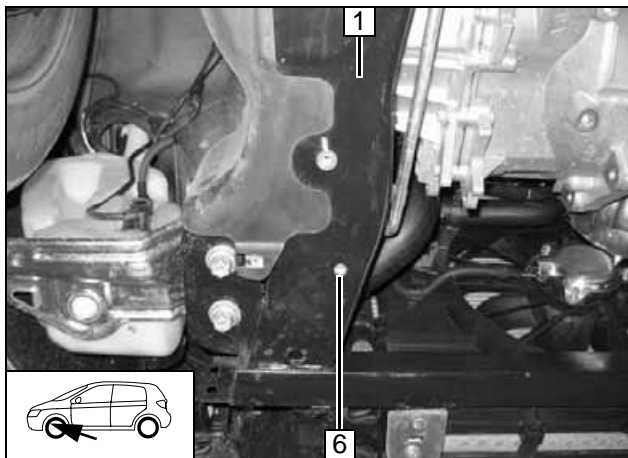


Preparing heater unit

Pre-cut thread 2 [3x] in heater unit 1 using self-tapping E-jot screws.



Pre-cutting thread

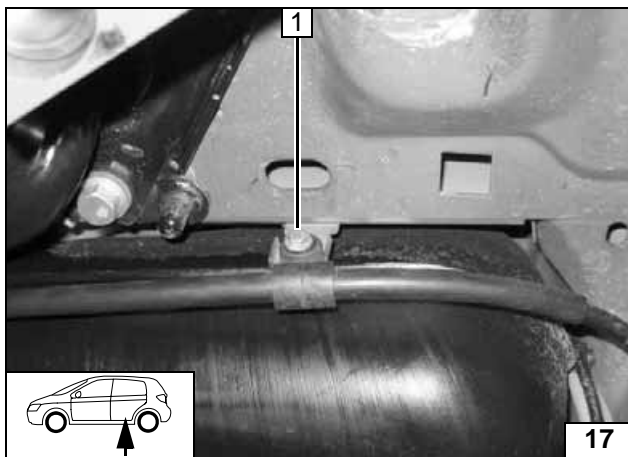


Preparing installation location

- 1 Original vehicle cross member
- 2 M6 rivet nut in existing hole



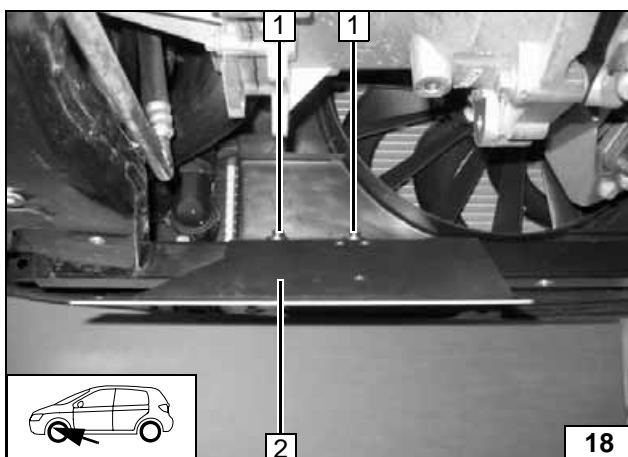
Installing rivet nut



Remove M6 bolt 1 of mounting for handbrake cable. This will be required for fastening bracket!



Removing screw

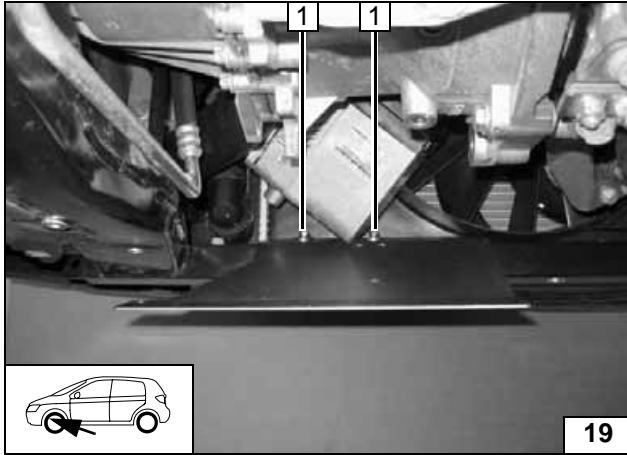
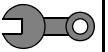


Installing heater unit

- 2 Bracket
- 1 Loosely mount M6x20 bolt [2x], spring lockwasher [2x], large diameter washer [2x] in existing thread [2x]



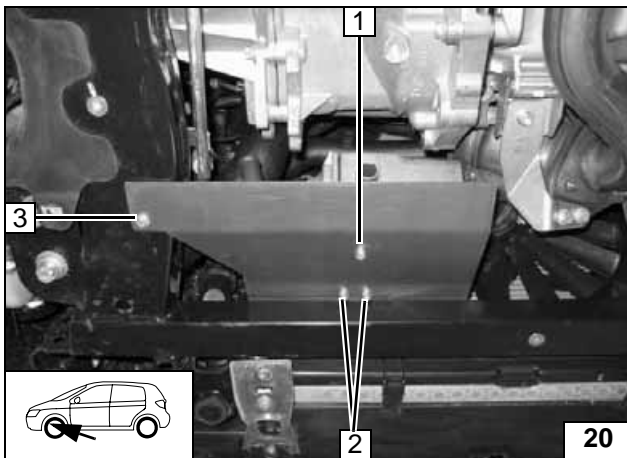
Installing bracket



Position heater unit prior to complete installation of bracket and tighten loosely pre-mounted bolts 1 [2x].



Installing bracket

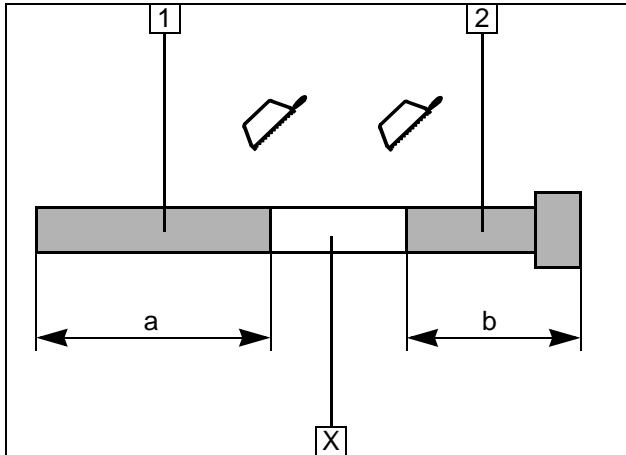
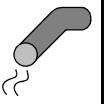


Tighten EJOT screws to 10 Nm!
Insert two washers between heater unit and bracket at position 1.



- 1 Ejut screw
- 2 Ejut screw, washer [2x]
- 3 M6 bolt removed from handbrake cable

Preassembling intake muffler

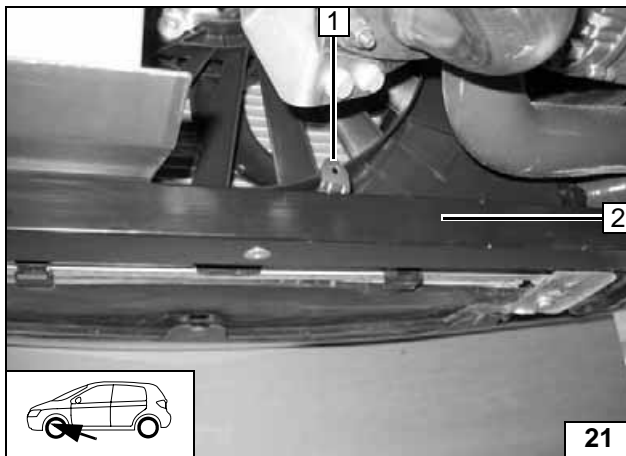


Exhaust system

- 1 Exhaust pipe
a = 340 mm
- 2 Exhaust end section
b = 660 mm

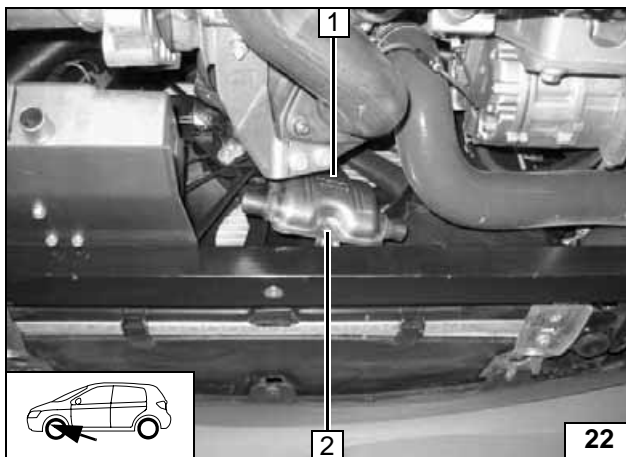
Discard section X

Preparing exhaust pipe



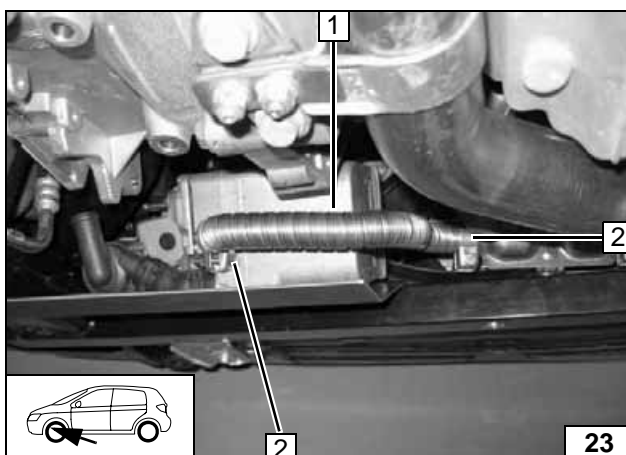
- 1 Angle bracket, M6x20 bolt, spring lockwasher, large diameter washer on existing thread
- 2 Radiator cross member

Installing angle bracket



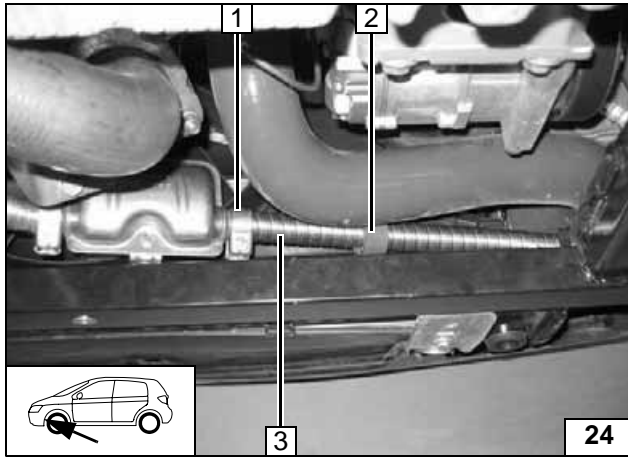
- 1 Exhaust muffler
- 2 M6x20 bolt, flanged nut M6

Installing exhaust muffler



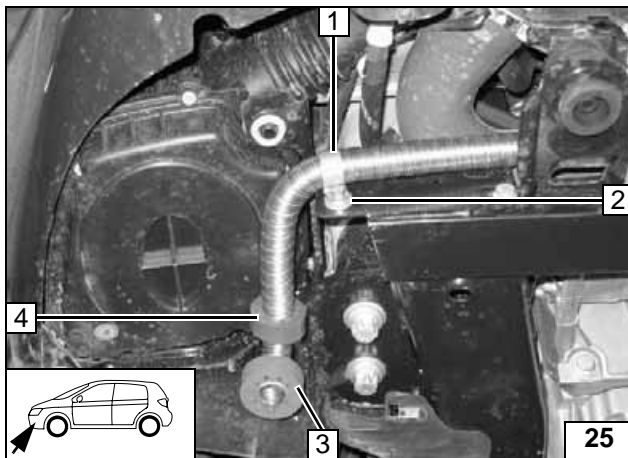
- 1 Exhaust pipe
- 2 Hose clamp [2x]

Installing exhaust pipe



- 3 Exhaust end section
- 1 Hose clamp
- 2 Position red (rt) rubber isolator

Installing exhaust end section

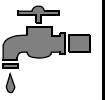


Ensure sufficient distance to neighboring components.

- 1 P-clamp
- 2 M6x20 bolt, 5 mm spacer, large diameter washer, M6 flanged nut
- 3 Red (rt) rubber isolator with groove
- 4 Red (rt) rubber isolator



Positioning rubber isolator



Coolant connection on gasoline engines

WARNING!

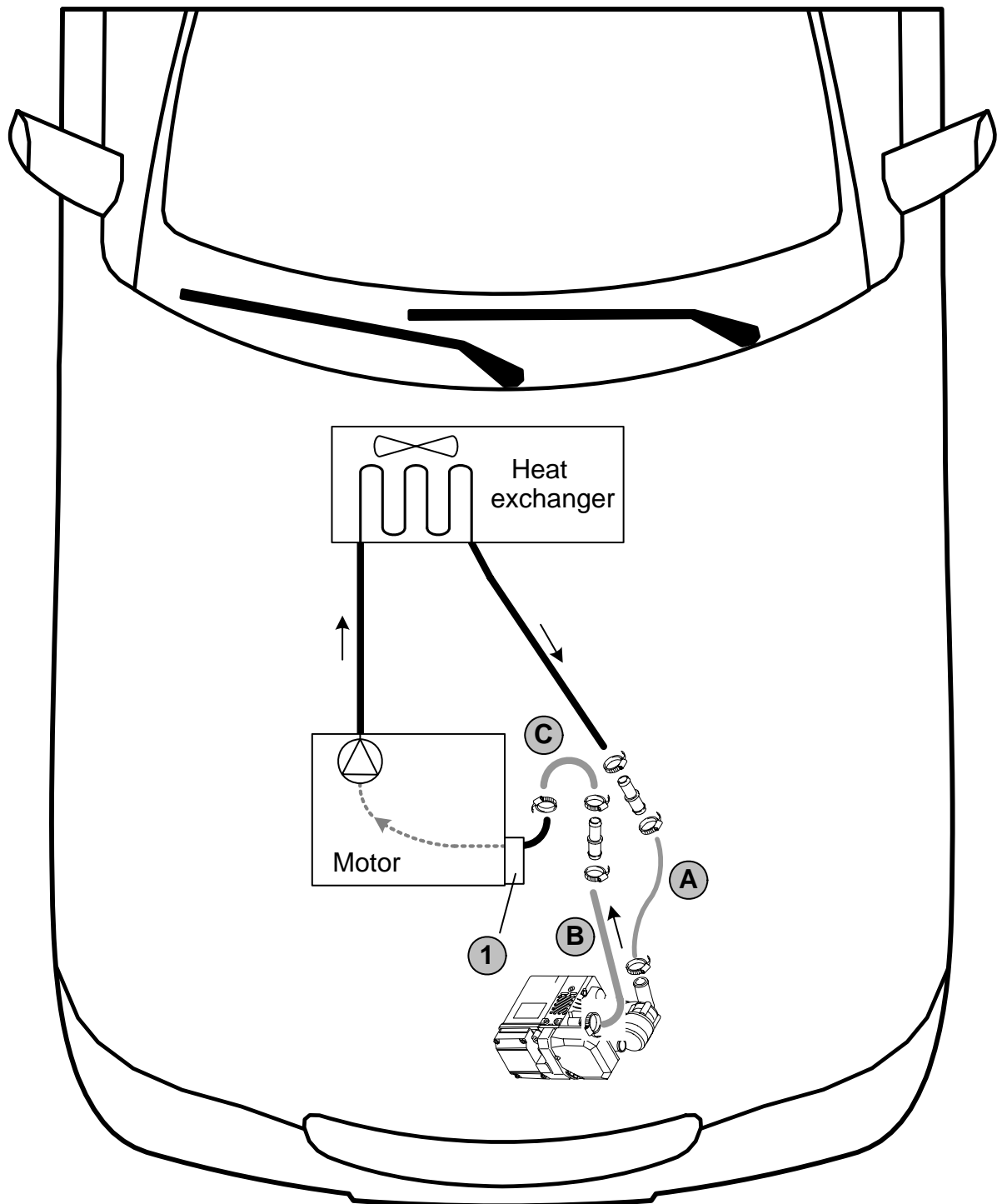
Tighten all hose clamps to $2.0 + 0.5$ Nm.

Any coolant running off should be collected using an appropriate container!

Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties.

Position hose clamps and spring band clamps so that no other hose can be damaged.

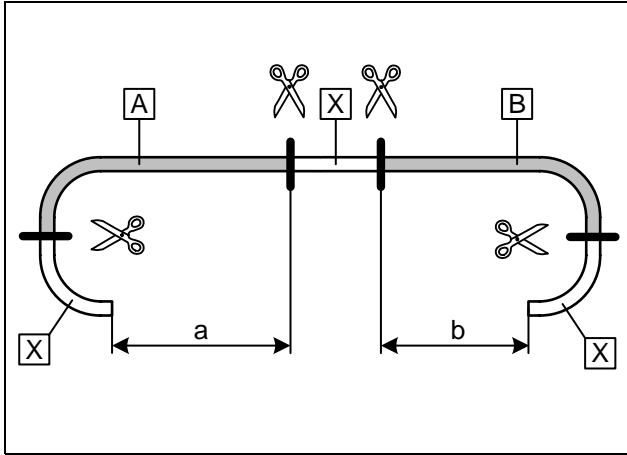
The connection should be "inline" based on the following diagram:



Coolant routing diagram

All clamps without a specific designation = 20-27 mm dia. hose clamps! Number 1 is the engine-oil heat exchanger. All connecting pipes = 18x20 dia..

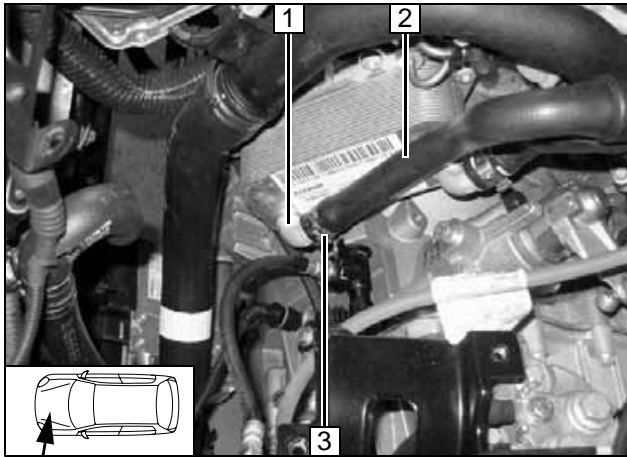




a = 260 mm
b = 290 mm

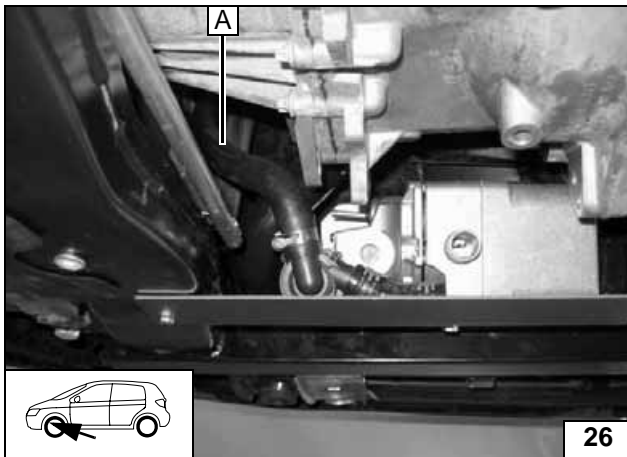
Discard section X

Cutting coolant hoses to length



- 1 Connection piece on engine inlet (engine-oil heat exchanger)
- 2 Pull hose off heat exchanger outlet (heater)
- 3 Discard clamp

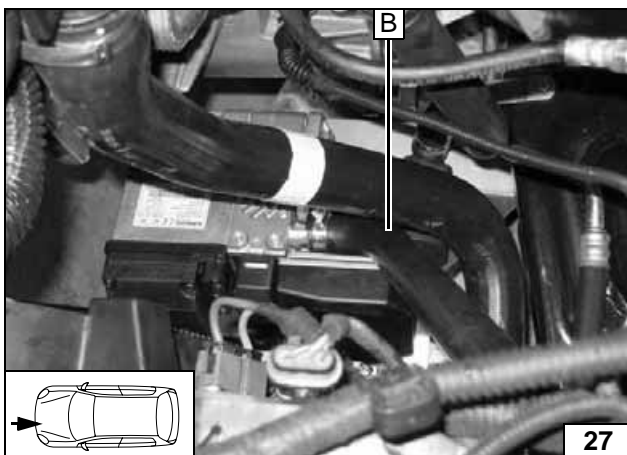
Cutting point



Connect hose **A** with 90° elbow to heater unit inlet.



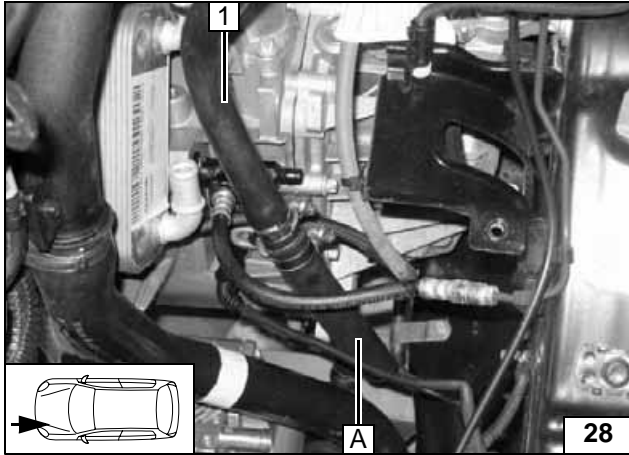
**Con-
nection on
heater unit**



Connect hose **B** with 90° elbow to heater unit outlet.

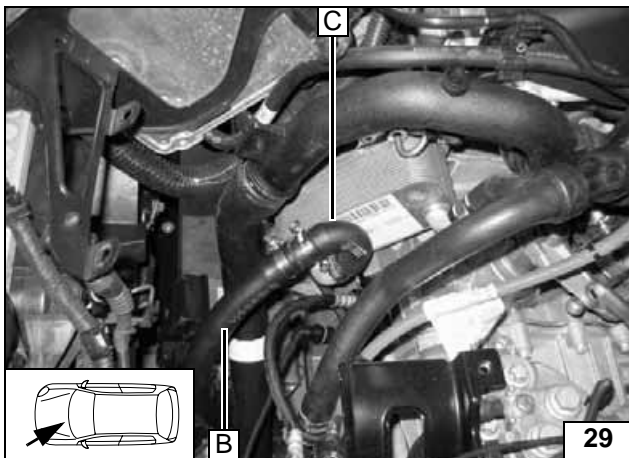


**Con-
nection on
heater unit**



1 Hose for heat exchanger outlet

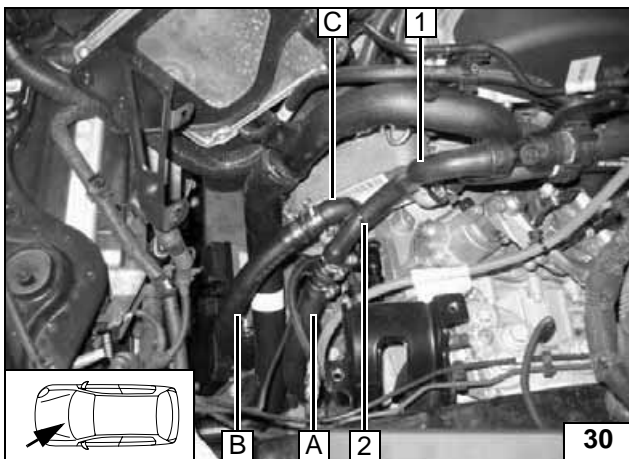
Con-
nection on
heat
exchanger
outlet



Before connecting, fill the coolant hoses with coolant.

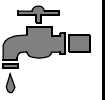


Con-
nection on
engine
inlet



1 Hose for heat exchanger outlet
2 Cable tie

Routing in
engine
compartment



Coolant connection on diesel engines

WARNING!

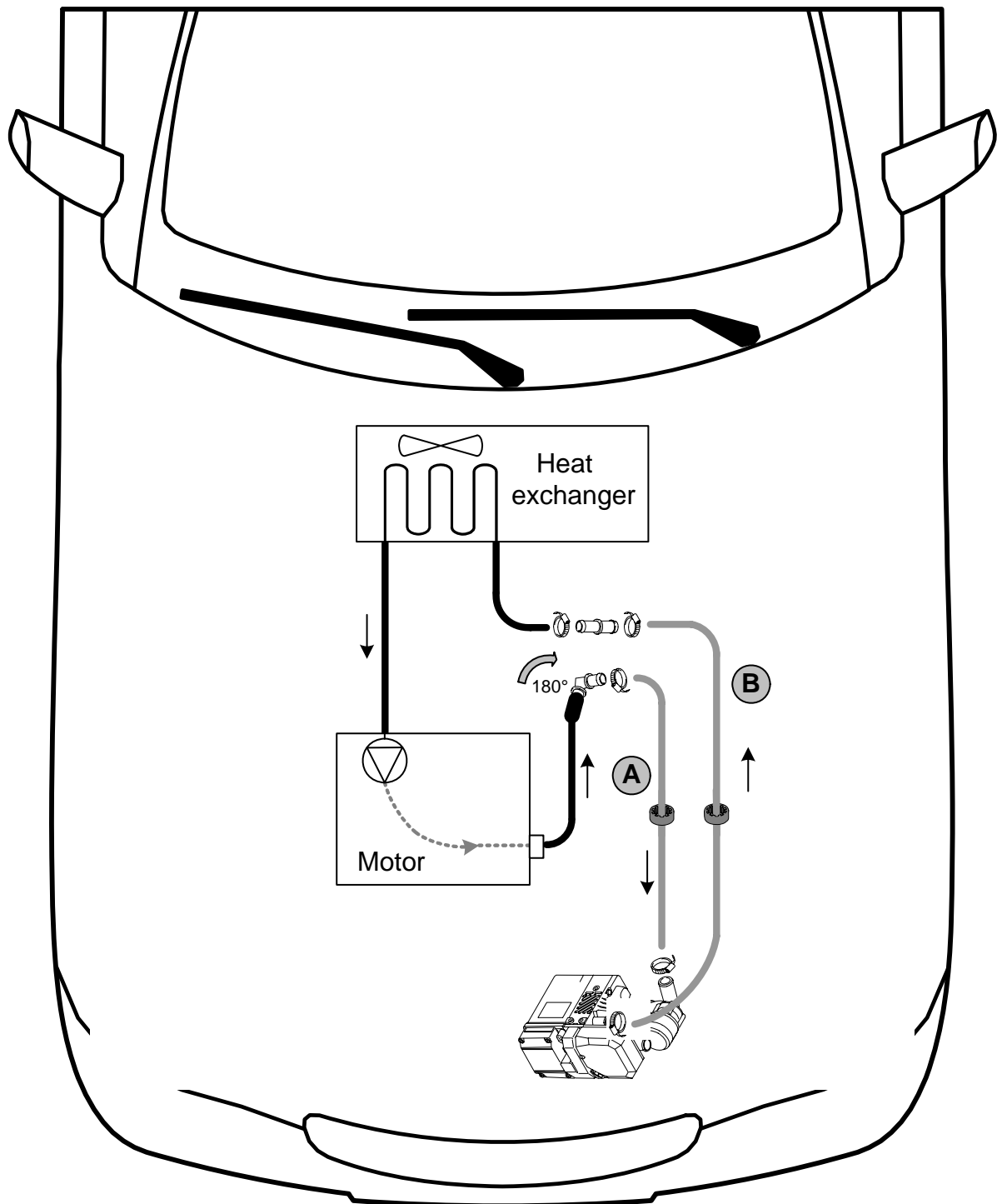
Tighten all hose clamps to $2.0 + 0.5$ Nm.

Any coolant running off should be collected using an appropriate container!

Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties.

Position hose clamps and spring band clamps so that no other hose can be damaged.

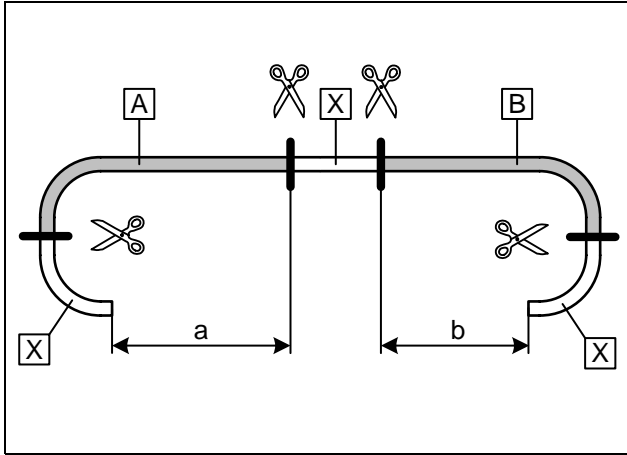
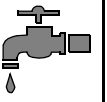
The connection should be "inline" based on the following diagram:



Coolant routing diagram

All clamps without a specific designation = 20-27 mm dia. hose clamps!
All connecting pipes = dia. 20x20.

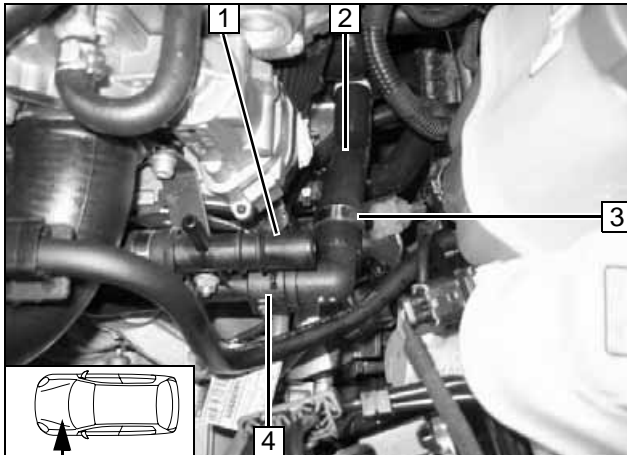




a = 650 mm
b = 720 mm

Discard section **X**

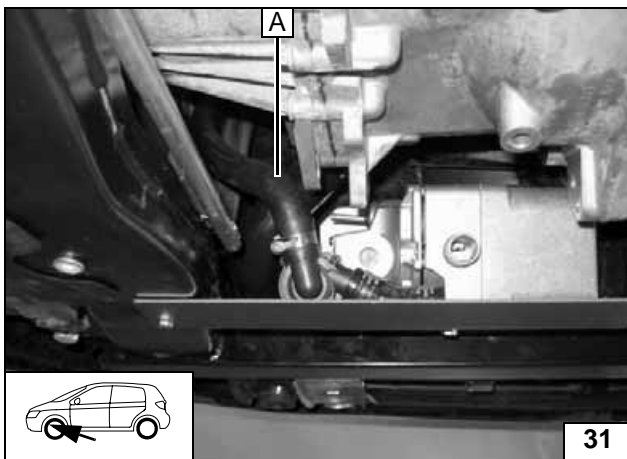
Cutting coolant hoses to length



For better illustration, hose coupling of heat exchanger outlet is pulled off connection piece **1**.

- 2** Disconnect original vehicle hose to heat exchanger inlet from connection piece
- 3** Discard clamp
- 4** Original vehicle connection piece from engine outlet is turned by 180°

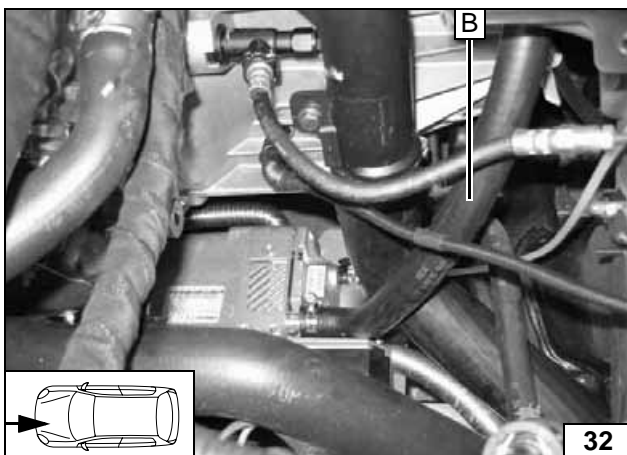
Cutting point



Connect hose **A** with straight end to heater unit inlet.



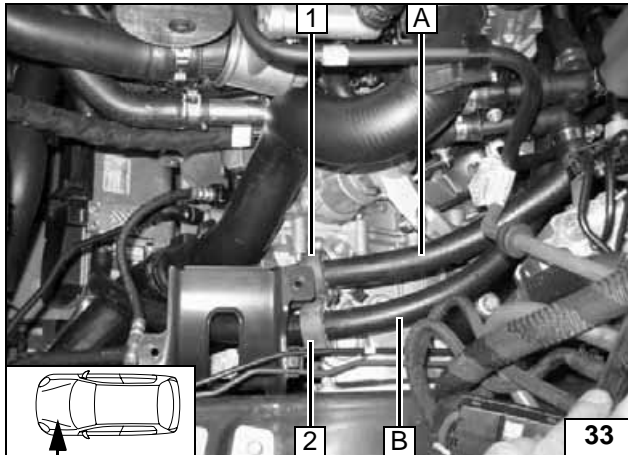
**Con-
nection on
heater unit**



Connect hose **B** with 90° elbow to heater unit outlet.



**Con-
nection on
heater unit**

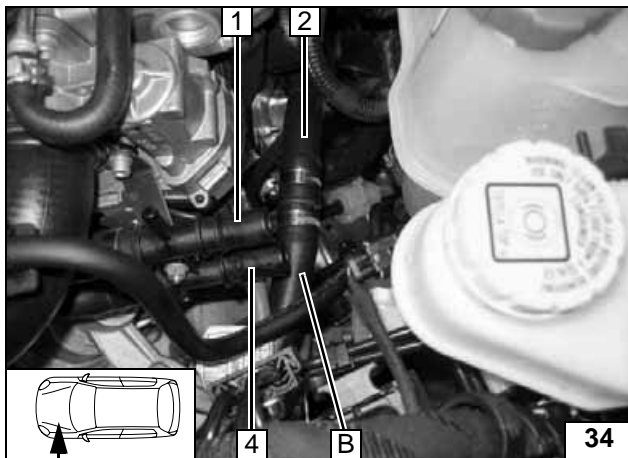


Position black (sw) rubber isolator **1** and **2** on hose **A** and **B** and fasten to ground point on transmission with cable tie.

1 27 mm dia. hose clamp



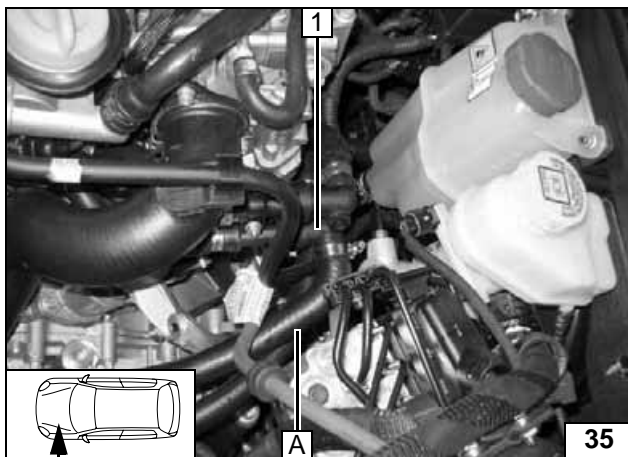
Routing in engine compartment



For better illustration, hose couplings are pulled off connection pieces **1** and **3**.

2 Hose on heat exchanger inlet

**Con-
nection on
heat
exchanger
inlet**

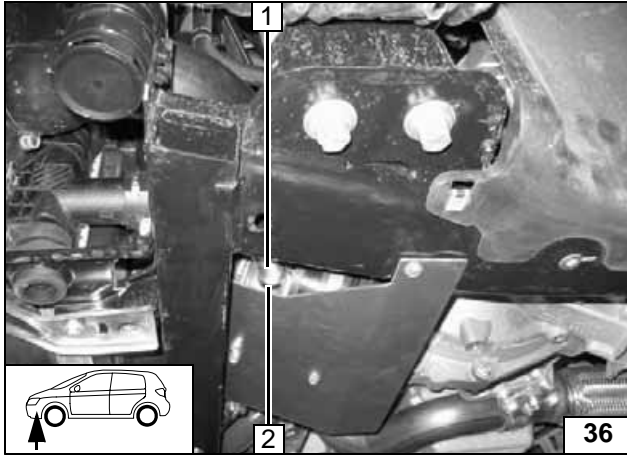
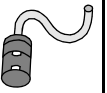


Before connecting, fill the coolant hoses with coolant.

1 Connection piece on engine outlet turned 180°



**Con-
nection to
engine
outlet**

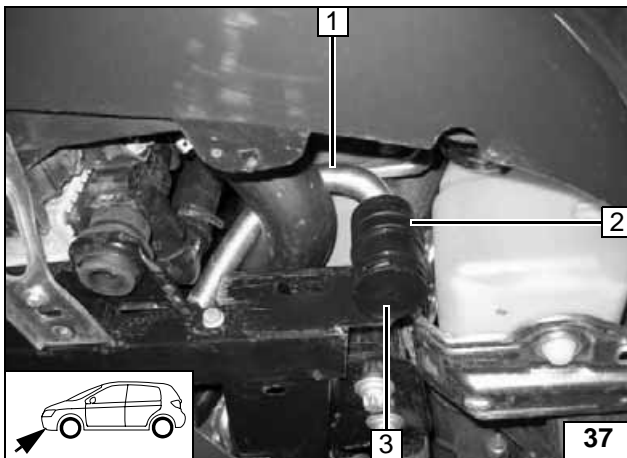


Combustion air

- 1 Combustion-air intake pipe
- 2 27 mm dia. hose clamp



**Installing
intake pipe**



- 1 Combustion-air intake pipe
- 2 Cable tie
- 3 Combustion-air intake muffler on existing hole

**Installing
muffler**



Fuel Connection

CAUTION!

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

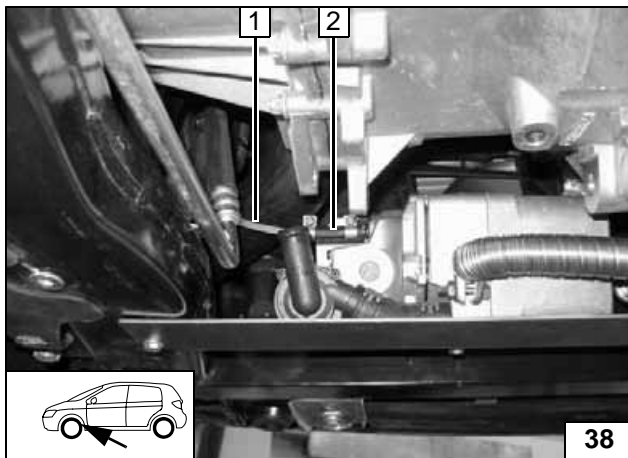
Catch any fuel running off with an appropriate container.

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

Mount the fuel line and wiring harness with rub protection on sharp edges.

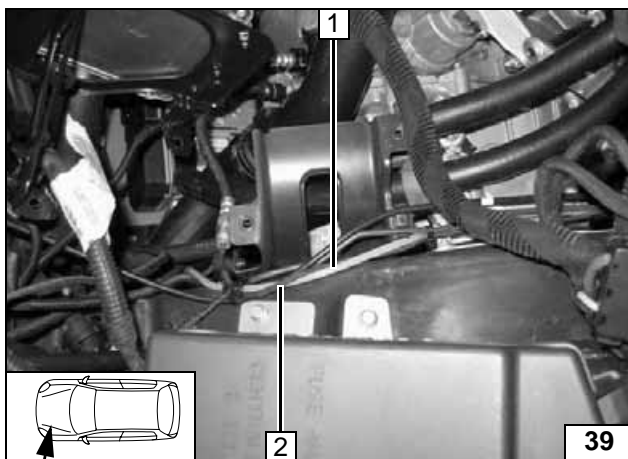
WARNING!

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

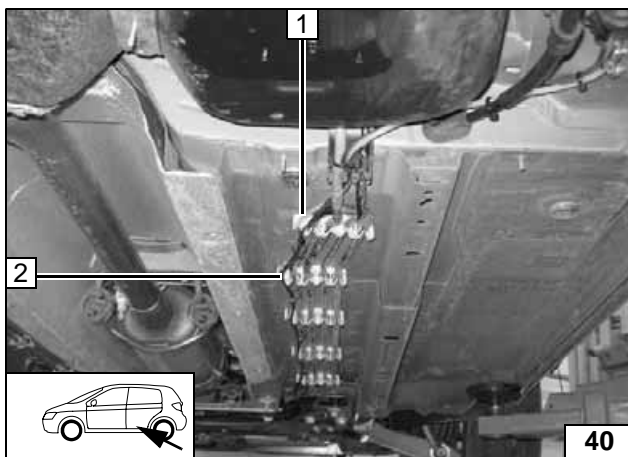


For all vehicles

- 1 Mecanyl fuel line
- 2 Hose section, 10 mm dia. hose clamps [2x]



Route Mecanyl fuel line **1** and wiring harness of metering pump **2** together on original vehicle brake line to right side of vehicle.



Route Mecanyl fuel line **1** and wiring harness of metering pump **2** together along original vehicle fuel lines to installation location of metering pump.



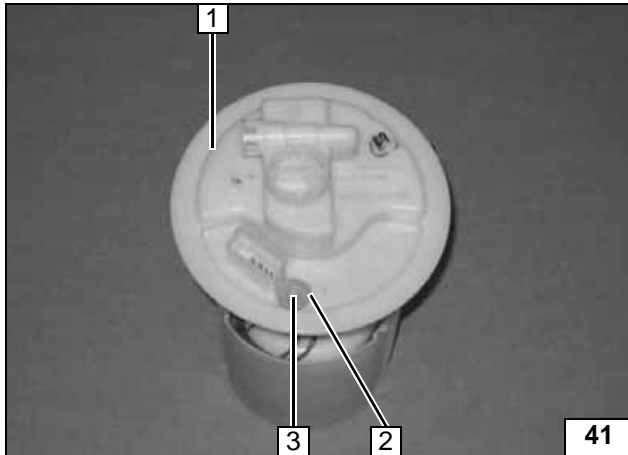
Con-
nection on
heater unit



Installing
lines



Installing
lines

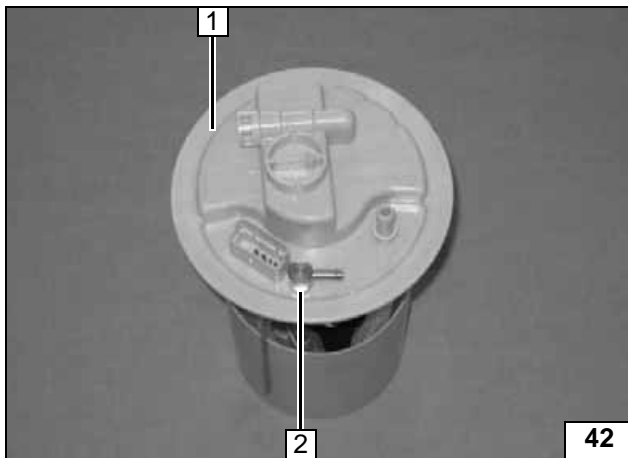


Only for gasoline vehicles

Remove fuel-tank sending unit according to manufacturer's specifications.

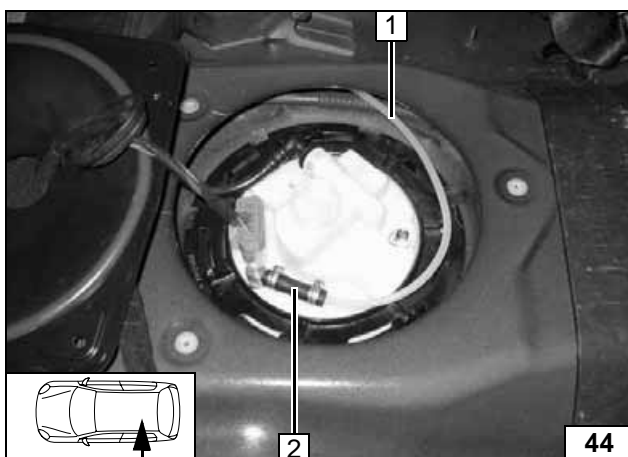
- 1 Fuel-tank sending unit
- 2 Washer, outside dia. = 17.6 mm
- 3 Copy hole pattern, 6 mm dia. hole

Catch resulting drilling chips.



Shape fuel standpipe according to template, cut to length and install, see "installation instructions".

- 1 Fuel-tank sending unit
- 2 Fuel standpipe



Install fuel-tank sending unit according to manufacturer's specifications.

- 1 Remaining end of Mecanyl fuel line
- 2 Hose section, 10 mm dia. hose clamp [2x]



Copying hole pattern

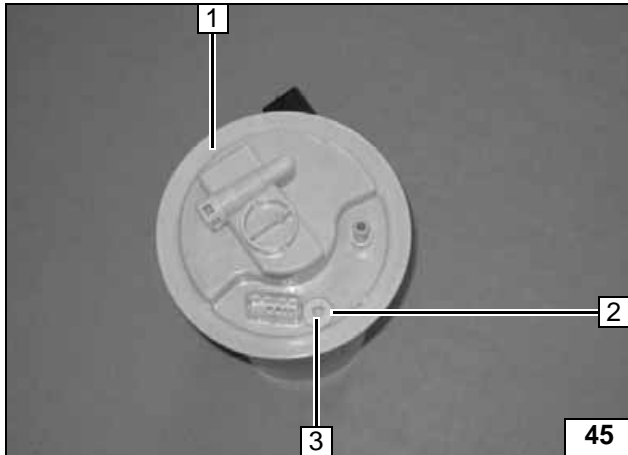


Installing fuel standpipe

Installing fuel standpipe



Connecting fuel line

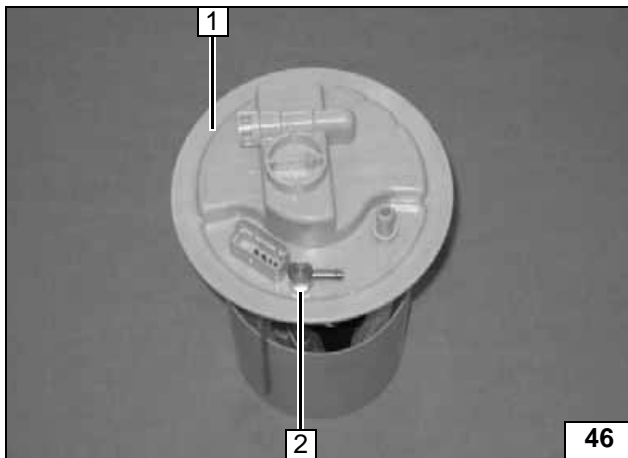


45

Only for diesel vehicles

Remove fuel-tank sending unit according to manufacturer's specifications.

- 1 Fuel-tank sending unit
- 2 Washer, outside dia. = 17.6 mm
- 3 Copy hole pattern, 6 mm dia. hole



46

Shape fuel standpipe according to template, cut to length and install, see "installation instructions".

- 1 Fuel-tank sending unit
- 2 Fuel standpipe



47

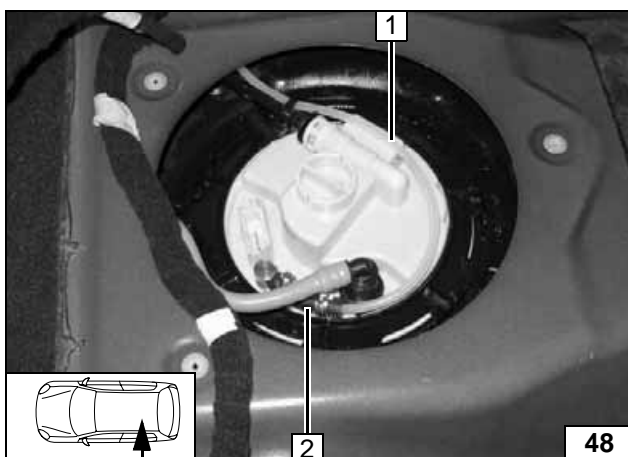


Copying hole pattern



Installing fuel standpipe

Installing fuel standpipe



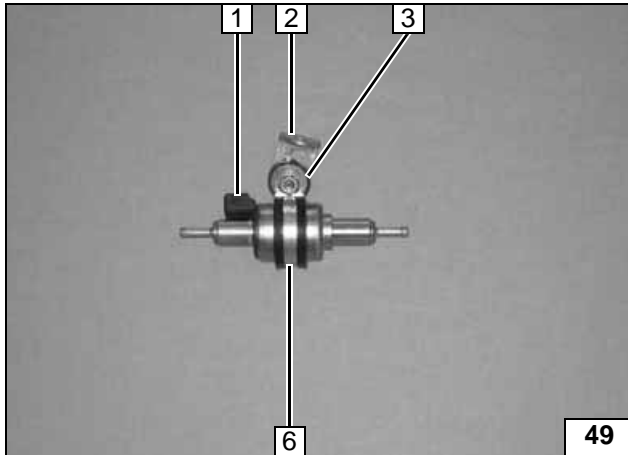
48

Install fuel-tank sending unit according to manufacturer's specifications.

- 1 Remaining end of Mecanyl fuel line
- 2 Hose section, 10 mm dia. hose clamp [2x]



Connecting fuel line

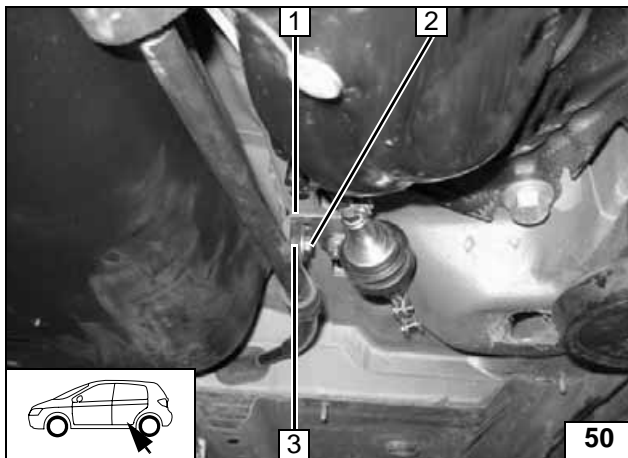


For all vehicles

- 1 Metering pump
- 2 Angle bracket
- 3 Silent block, flanged nut [2x]
- 4 Rubber-coated pipe clamp



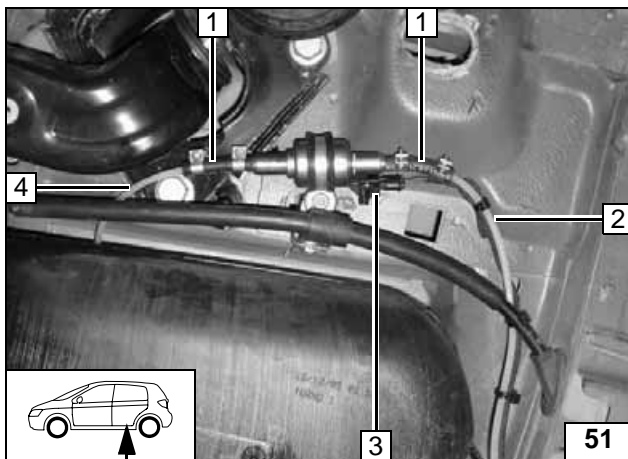
Preassembling metering pump



- 1 Angle bracket
- 3 Clamp of handbrake cable
- 2 M6x20 bolt, large diameter washer in existing thread



Installing metering pump

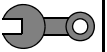


Fuel line from fuel standpipe on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Hose section [2x], 10 mm dia. hose clamp [4x]
- 2 Fuel line and cable of metering pump
- 3 Connector of wiring harness of metering pump
- 4 Remaining end of Mecanyl fuel line



Connection to metering pump

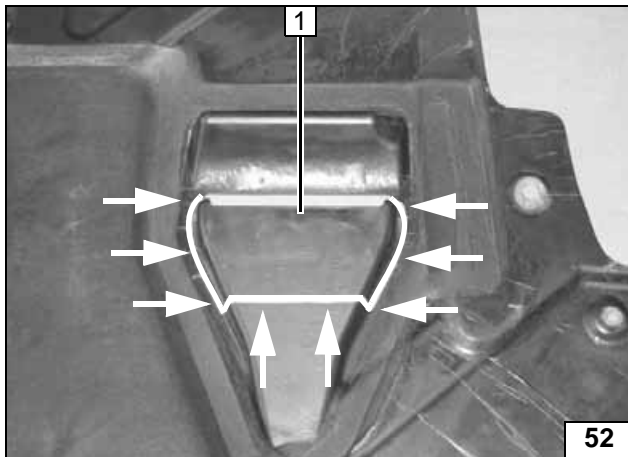


Final Work

WARNING!

Reassemble the disassembled components in reverse order.
 Check all hoses, hose clamps and all electrical connections for firm seating.
 Secure all loose cables using cable ties.
 Only use manufacturer-approved coolant.
 Spray the heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

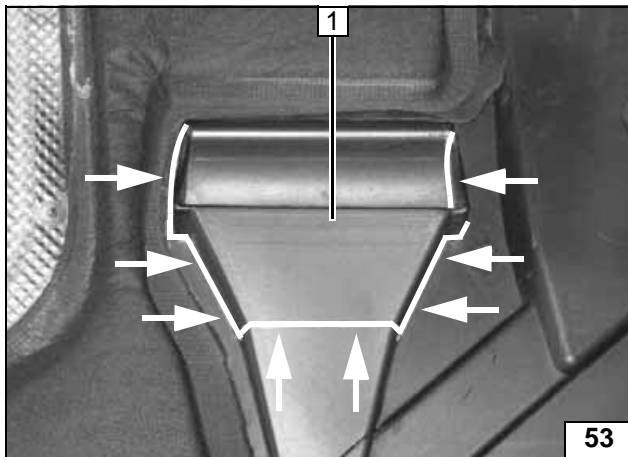
- Connect the battery
- Start the engine, bleed the coolant circuit according to the manufacturer's specifications and top up coolant
- Set the digital timer.
- Make settings according to the "Operating Instructions for End Customer"
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.



Only for gasoline vehicles

Cut out fresh-air opening along marked line and discard section 1!.

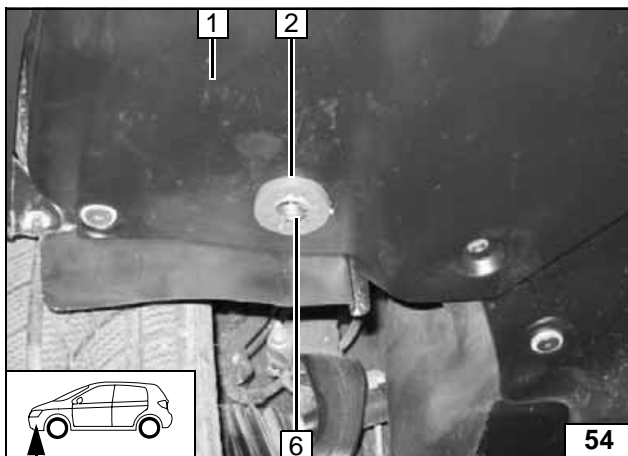
**Cutting out
underide
protection**



Only for diesel vehicles

Cut out fresh-air opening along marked line and discard section 1!.

**Cutting out
underide
protection**



For all vehicles

Insert red (rt) rubber isolator with groove 2 into underide protection 1. Align end cap of exhaust end section 3 flush on red (rt) rubber isolator 2 as shown.

**Mounting
rubber
isolator**

Operating Instructions for End Customer



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

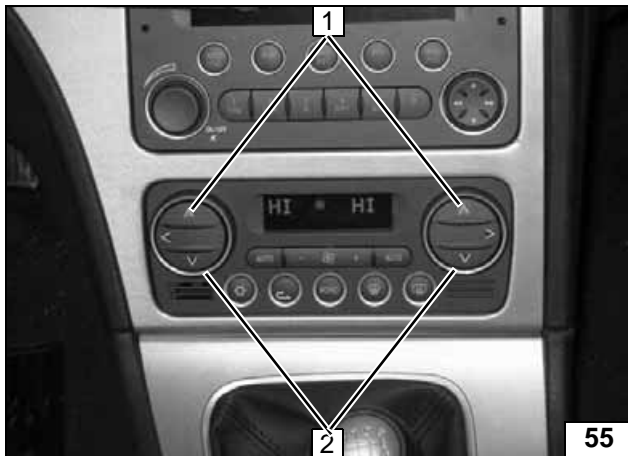
Example:

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

If the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater unit will then only switch on the vehicle fan to ventilate the vehicle interior in the position Winter  heat and in the position Summer .

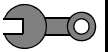
Before parking the vehicle, make the following settings:

On vehicles with anti-theft alarm, the passenger compartment monitoring system must be deactivated. For information on deactivation, please see the vehicle owner's manual.

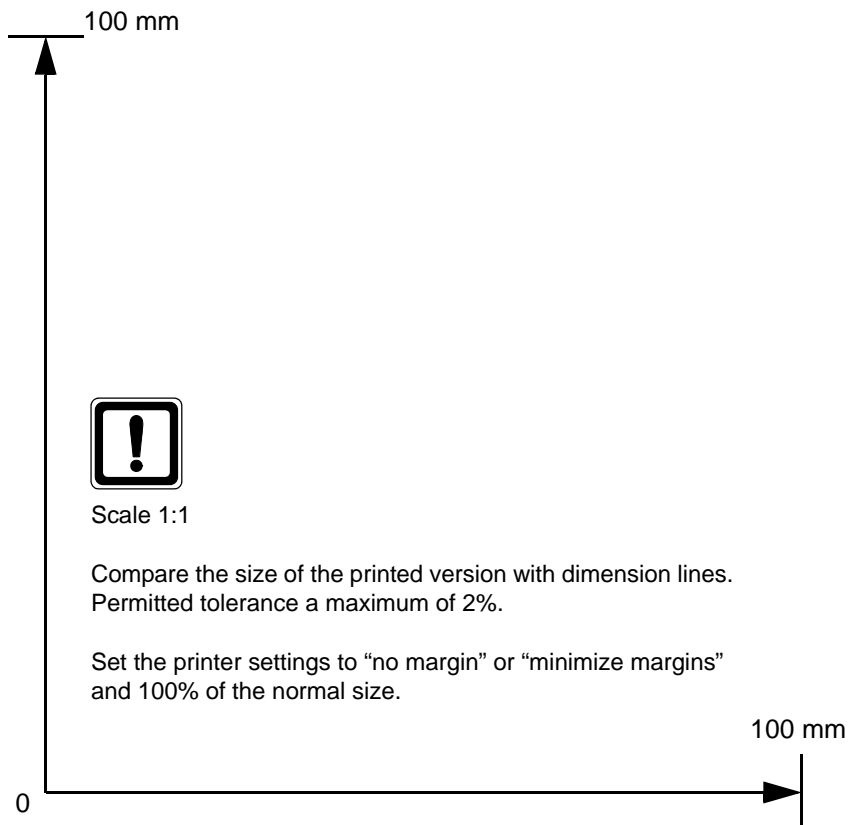
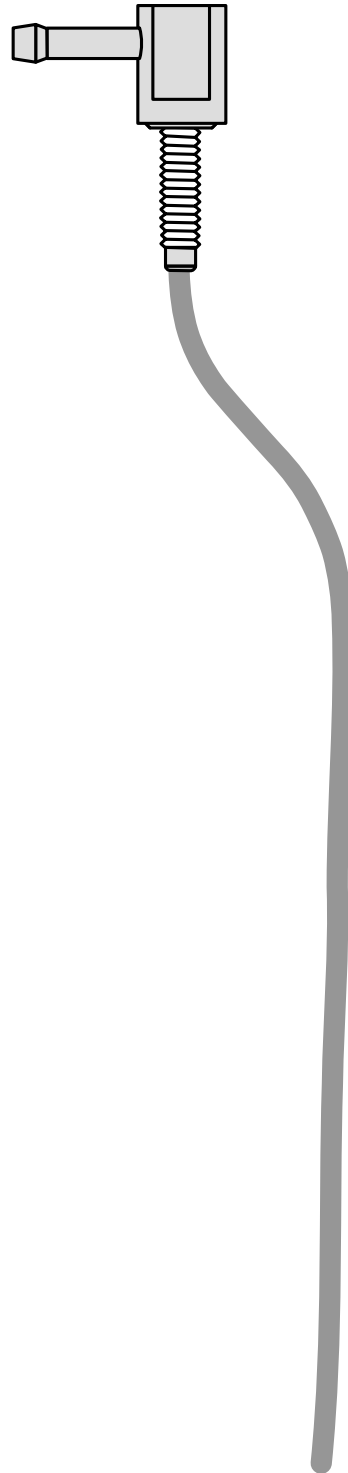


- 1 Air outlet to windshield
- 2 Set temperature to "HI"

For vehicles with automatic air conditioning



Template for Fuel Standpipe





Feel the drive

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Hotfax +49-(0)395-5592-353 - <http://www.webasto.de>