

Water Heater Unit



Thermo Top E Additional Heater e1 00 0003

Thermo Top C Additional Heater e1 00 0002

Thermo Top P Additional Heater e1 00 0104

Installation Instructions

Kia Carens

Gasoline

from Model Year 2006

Left-hand drive vehicle



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.

Table of Contents

Validity	2	Preparing installation location	12
Heater Unit/Installation Kit	3	Preparing heater unit	13
Foreword	3	Installing heater unit	14
General Instructions	3	Water	15
Special Tools	3	Combustion air	18
Explanatory Notes on Document	4	Fuel	19
Preliminary Work	5	Final Work	22
Heater unit installation location	5	Operating Instructions for End Customer	23
Electrical system	6	Template for Fuel Standpipe	24
Fan controller for manual air conditioning	7		
Automatic air-conditioning fan controller	9		
Remote option (Telestart)	11		

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Kia	Carens	FG	e4 * 2001 / 116 * 0114 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
G4KA	Gasoline	106	1998

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 Kia Carens Gasoline	1312217A

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 Kia Carens Gasoline vehicles - 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).

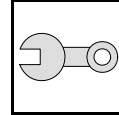
Special Tools

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

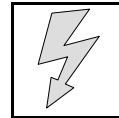
Explanatory Notes on Document

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.

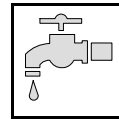
Mechanical system



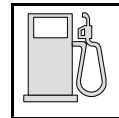
Electrical system



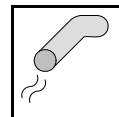
Water



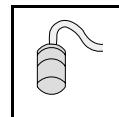
Fuel



Exhaust gas



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



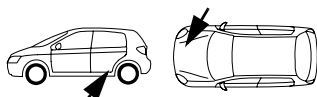
Specific risk of fire or explosion.



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



Reference to a special technical feature.



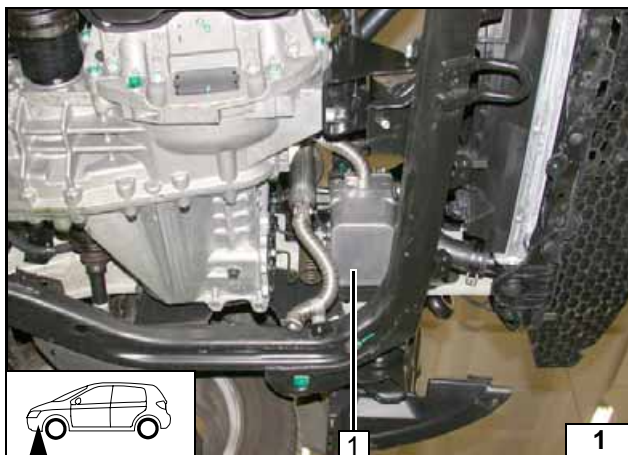
The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the tank cap again.
- 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.
- Remove the engine cover.
- Remove the cover of the wiring harness pass through on the right in the engine compartment behind the strut tower.
- Completely remove the battery
- Remove the air filter together with the intake hose.
- Remove the air ducting to the resonator.
- Remove the front underride protection.
- Take out the luggage compartment insert.
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the glove compartment (only with Telestart).
- Remove the A/C control panel in accordance with the manufacturers specifications.

Remove page 23 "Operating Instructions for End Customer" and insert with vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

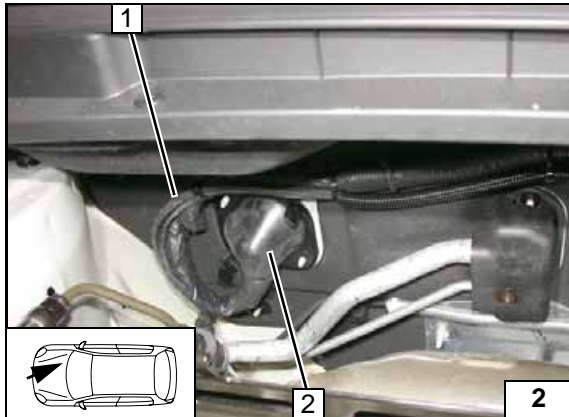
Installation
location



Electrical system

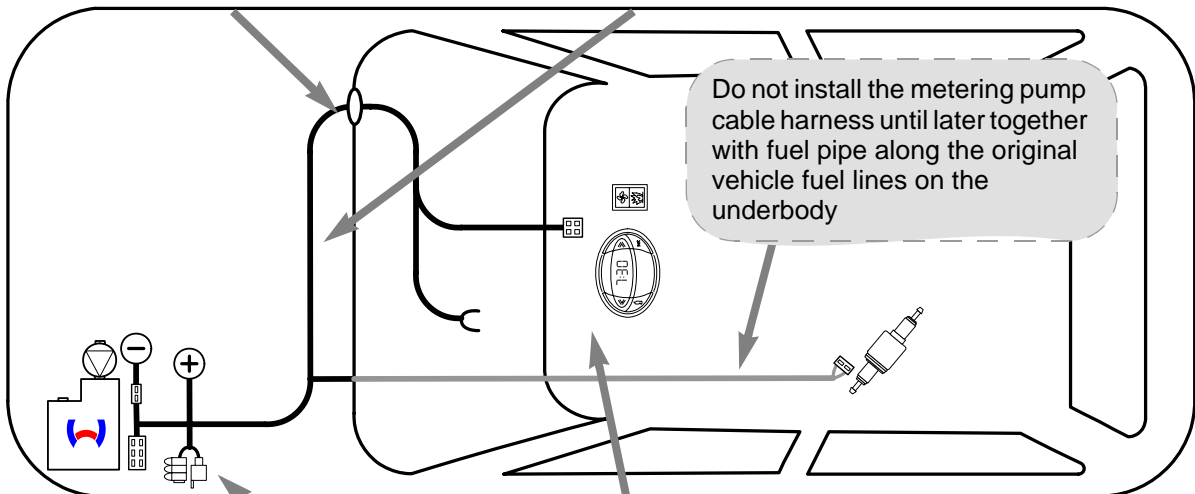
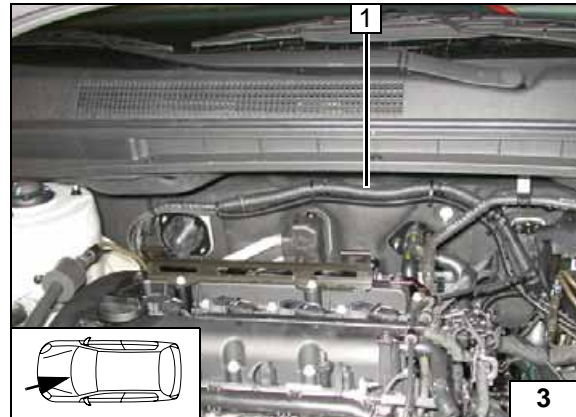
Wiring harness pass through

- 1 Wiring harness of fan controller and digital timer
- 2 Protective rubber plug

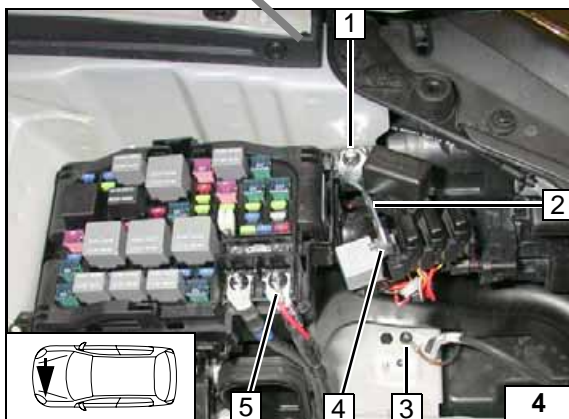


Wiring harness routing

- 1 Wiring harnesses of fan controller and digital timer in corrugated hose

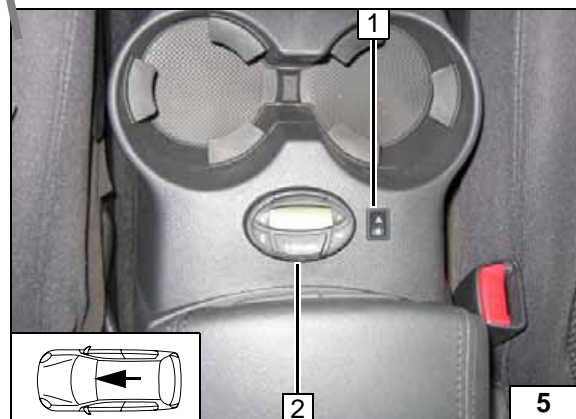


Wiring harness installation diagram



Fuse holder, relay K3

- 1 Original vehicle bolt
- 2 Perforated bracket, turned by 90° in lengthwise axis
- 3 Ground wire on original vehicle ground support point
- 4 M5x16 bolt, retaining plate for fuse holder, K3 relay, washer, flanged nut
- 5 Positive wire on original vehicle positive support point



Digital timer, summer/winter switch option

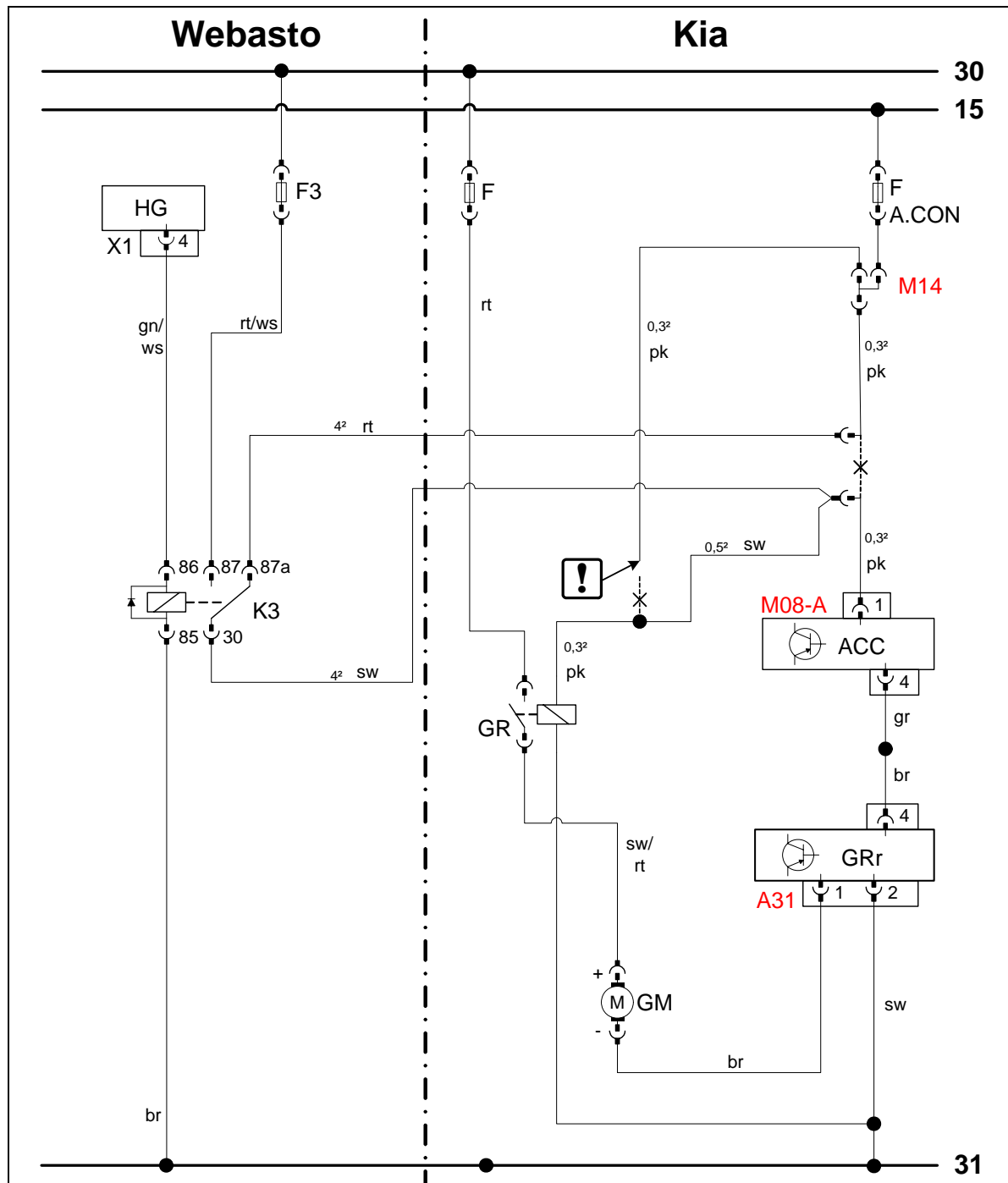
- 1 Summer/winter switch, drilled hole 12 mm dia.
- 2 Digital timer



Fan controller for manual air conditioning

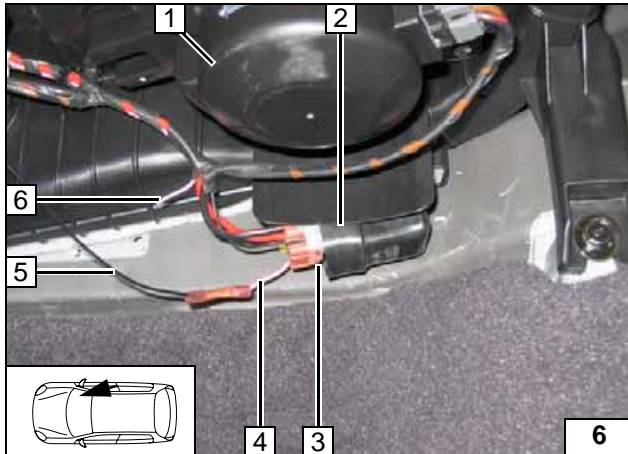
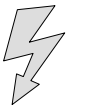


Wiring diagram



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	GR	Fan relay	sw	black
F3	25 A fuse replaced with 10 A fuse.	GRr	Fan controller	br	brown
K3	Fan relay	ACC	Air-conditioning control panel	gr	gray
		F A.CON	Air-conditioning fuse, 10 A	pk	pink
		A31	6-pin connector, GRr	!	Insulate wire ends and tie back
		M08-A	26-pin ACC connector		
		M 14	Plug-in distribution, +15		
		F	Fuse 40A	X	Cutting point
					Wiring colors may vary.

Legend

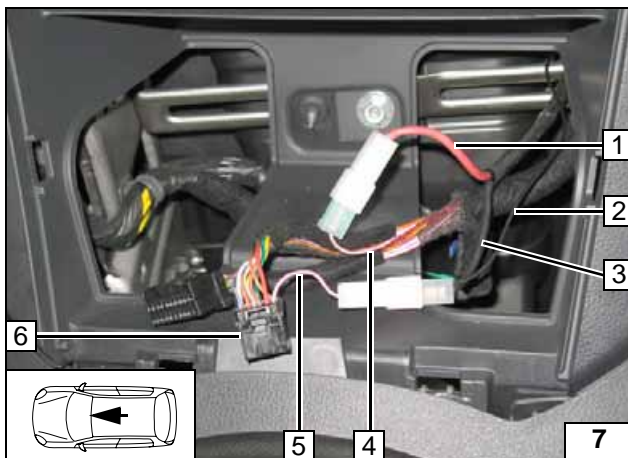


Connection to 4-pin connector **3** from fan relay **2**.
Produce connections as shown in wiring diagram.

- 1 Fan motor
- 4 Pink (pk) wire to fan relay
- 5 Black (sw) wire to A/C control panel
- 6 Insulate pink (pk) wire and tie back



Con-necting fan relay



Connection to 12-pin connector **6** from A/C control element.
Produce connections as shown in wiring diagram.

- 1 Red (rt) wire from K3/87a
- 2 Black (sw) wire from fan relay
- 3 Black (sw) wire from K3/30
- 4 Pink (pk) wire from +15
- 5 Pink (pk) wire to 12-pin connector pin1



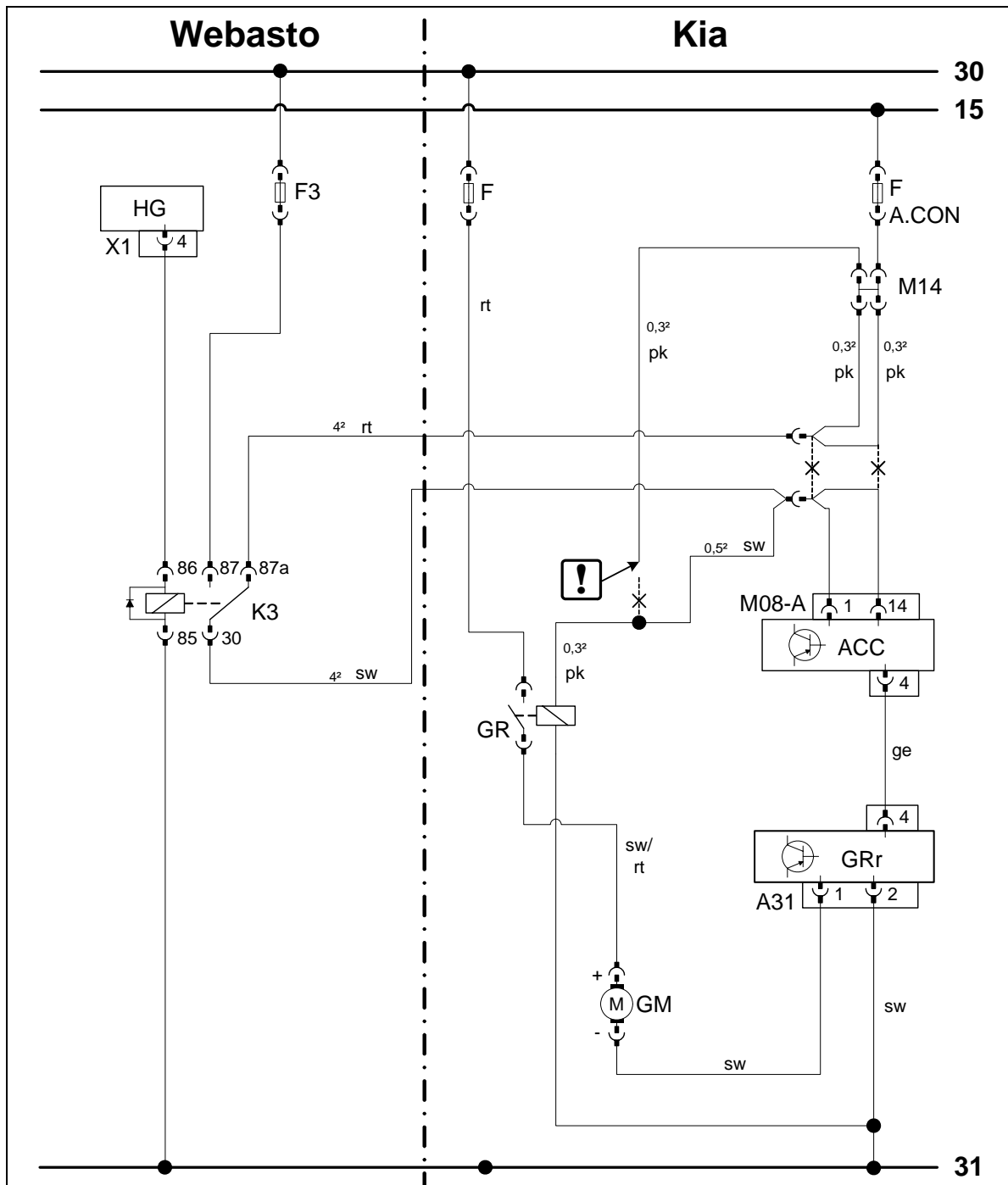
Con-necting A/C control panel



Automatic air-conditioning fan controller

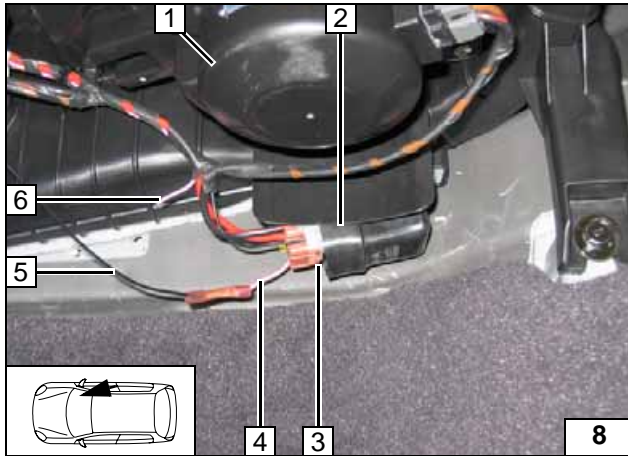


Wiring diagram



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	GR	Fan relay	sw	black
F3	25 A fuse replaced with 10 A fuse.	GRr	Fan controller	br	brown
K3	Fan relay	ACC	Air-conditioning control panel	ge	yellow
		F A.CON	Air-conditioning fuse, 10 A	pk	pink
		A31	6-pin connector, GRr	!	Insulate wire ends and tie back
		M08-A	26-pin ACC connector	X	Cutting point
		M 14	Plug-in distribution, +15		
		F	Fuse 40A		Wiring colors may vary.

Legend

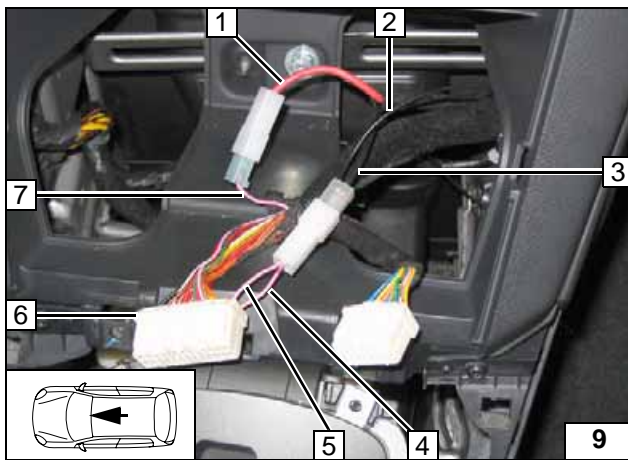


Connection to 4-pin connector 3 from fan relay 2.
Produce connections as shown in wiring diagram.

- 1 Fan motor
- 4 Pink (pk) wire to fan relay
- 5 Black (sw) wire to A/C control panel
- 6 Insulate pink (pk) wire and tie back



Con-necting fan relay

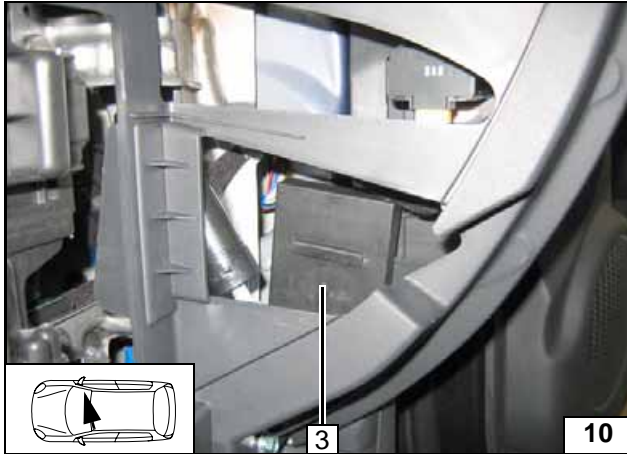


Connection to 26-pin connector 6 from A/C control element.
Produce connections as shown in wiring diagram.

- 1 Red (rt) wire from K3/87a
- 2 Black (sw) wire from fan relay
- 3 Black (sw) wire from K3/30
- 4 Pink (pk) wire to 26-pin connector pin 1
- 5 Pink (pk) wire to 26-pin connector pin 14
- 7 Pink (pk) wire from +15 [2x]



Con-necting A/C control panel

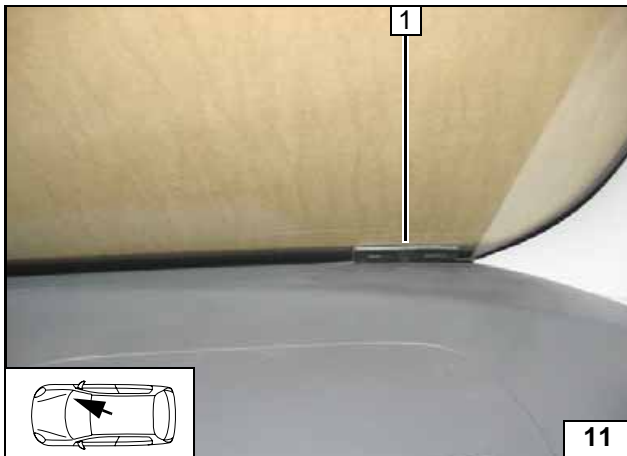


Remote option (Telestart)

- 1 Fasten receiver with double-sided Velcro strip (right-hand A-pillar trim)

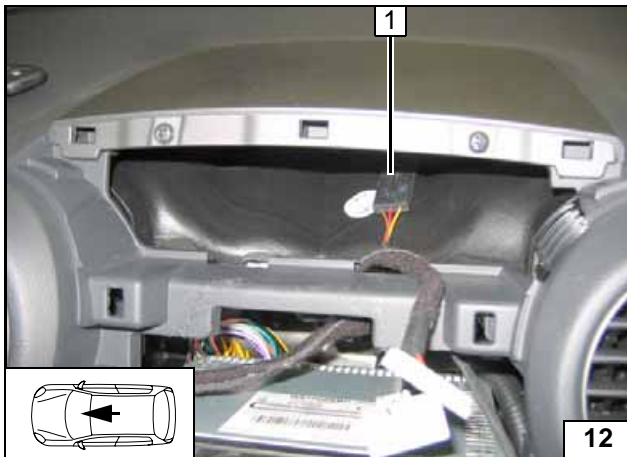


Installing receiver



- 1 Antenna

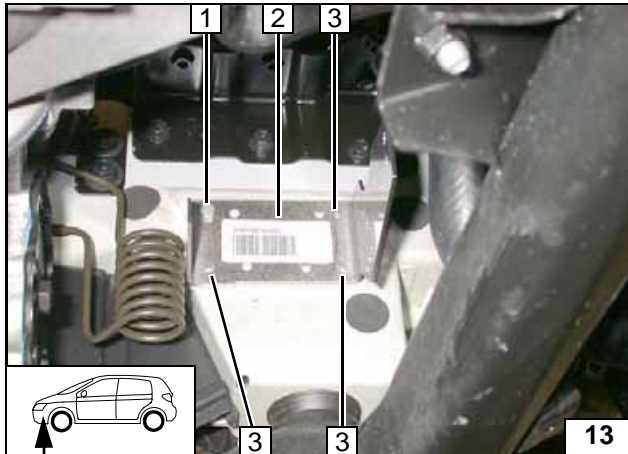
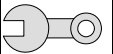
Installing antenna



Temperature sensor for HTM100 only

- 1 Fasten temperature sensor with double-sided Velcro strip

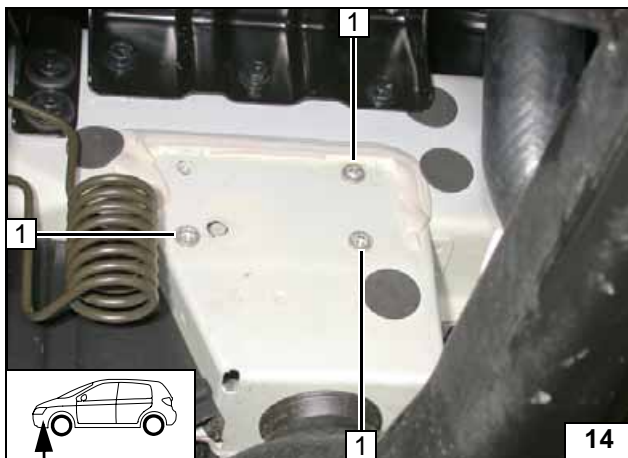
Installing temperature sensor



Preparing installation location

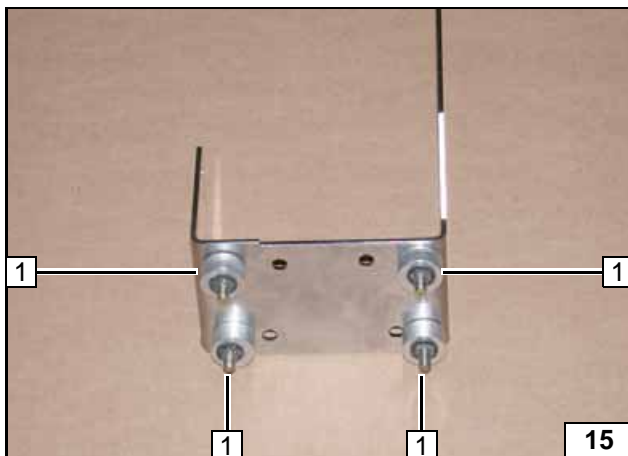
- 1 M6x20 bolt in existing threaded hole
- 2 Loosely mount bracket
- 3 Copy hole pattern

Copying hole pattern



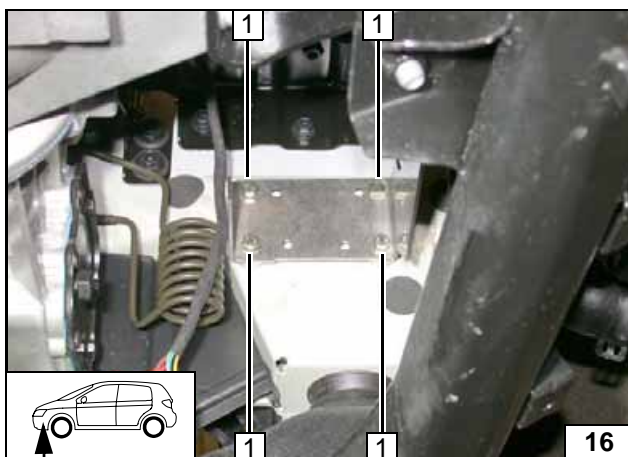
- 1 Drill 9.1 mm hole; install rivet nuts [3x each]

Installing rivet nut

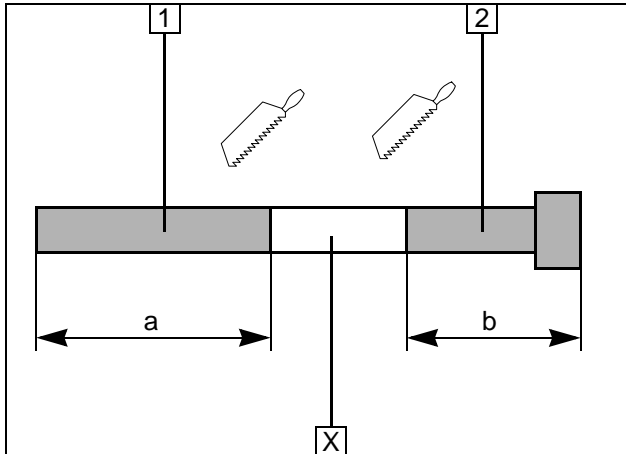
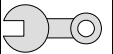


- 1 Mount M6x25 bolt, spring lockwasher, 10 mm shim, pin lock [4x each]

Preparing bracket



Installing bracket

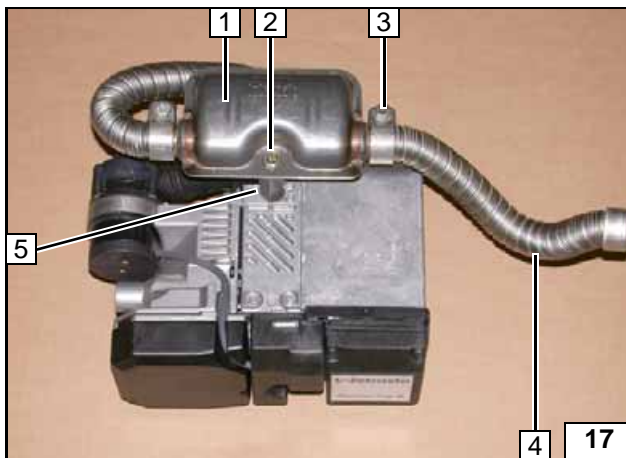


Preparing heater unit

- 1 Exhaust pipe
a = 280 mm
- 2 Exhaust end section
b = 230 mm

Discard section X

Preparing exhaust pipe

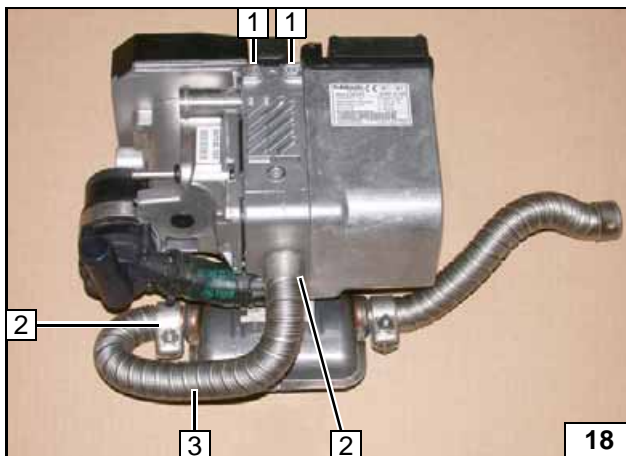


Eجت stud, tightening torque 10 Nm.

- 1 Exhaust muffler
- 2 M6x12 bolt, spring lockwasher
- 3 Hose clamp
- 4 Exhaust end section
- 5 Eجت stud, 30 mm spacer nut



Preassembling muffler

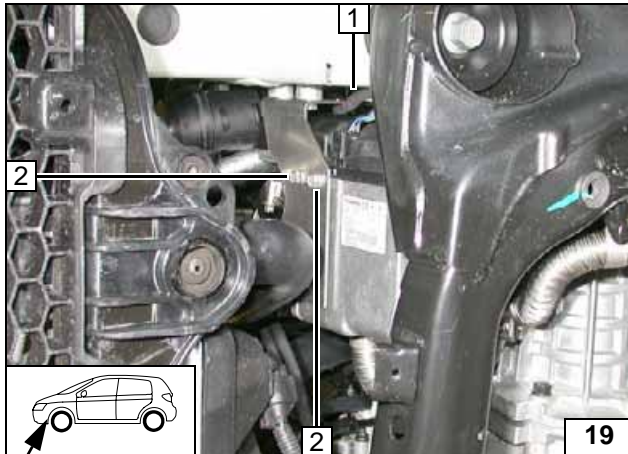
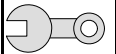


Pre-cut thread at position 1 [2x].

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



Preassembling exhaust pipe



Installing heater unit

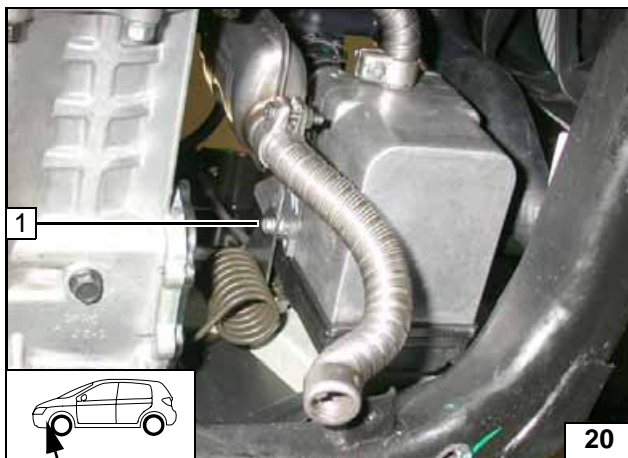
Connect wiring harness of heater unit 1 prior to installation.

Ejot screw, tightening torque 10 Nm!

2 Ejot screw [2x]



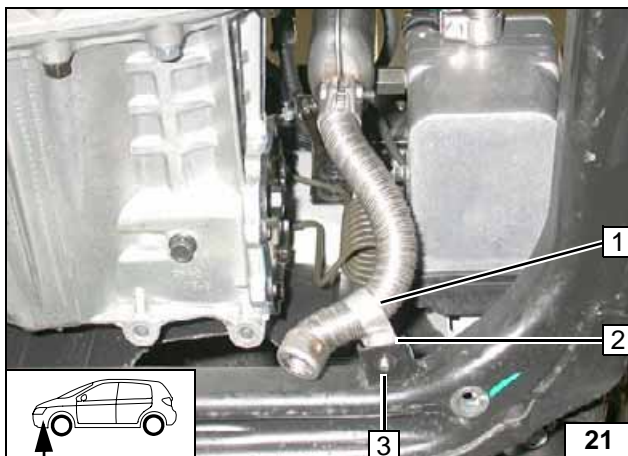
Installing bracket



1 Ejot screw

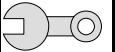


Installing heater unit



- 1 P-clamp
- 2 10 mm shim
- 3 M6x30 bolt on in existing threaded hole

Fastening exhaust end section



Water

WARNING!

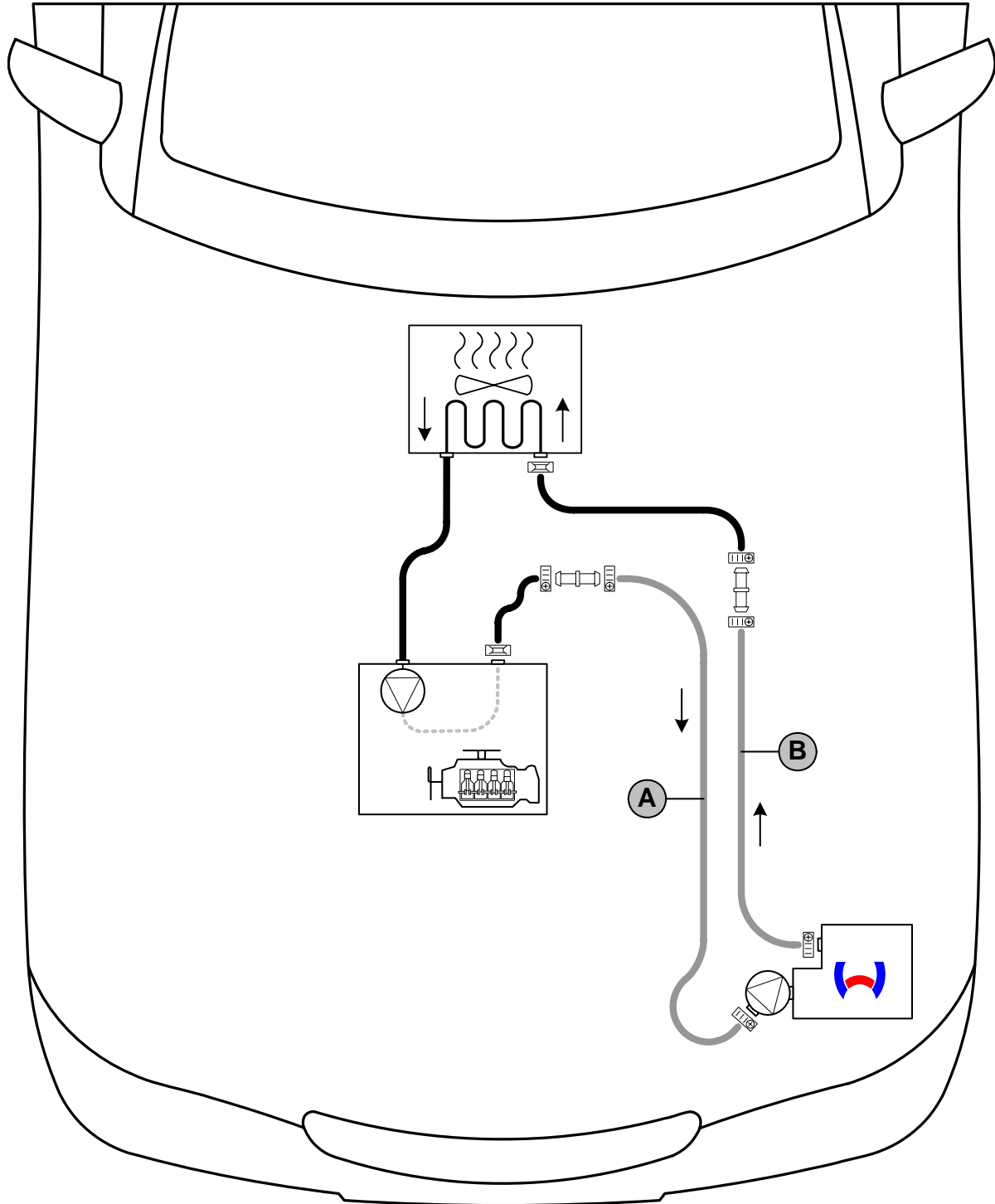
Tighten hose clamps to $2.0 + 0.5$ Nm.

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 clamps so that no other hose can be damaged!

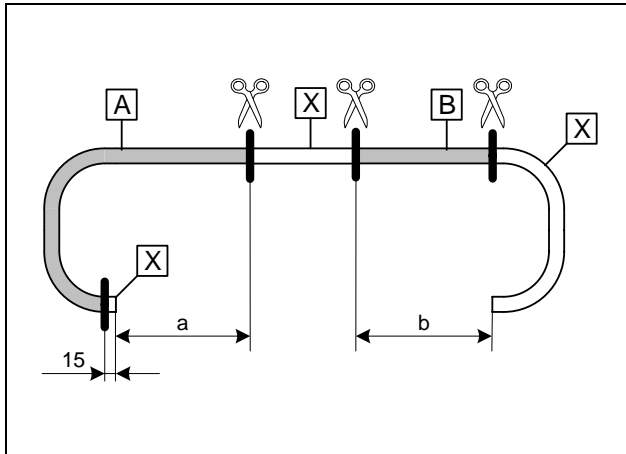
The connection should be "inline" based on the following diagram:



Coolant routing diagram

Original vehicle spring clips ! All connecting pipes = \varnothing 18x20.
All hose clamps without a specific designation = 20-27 mm dia

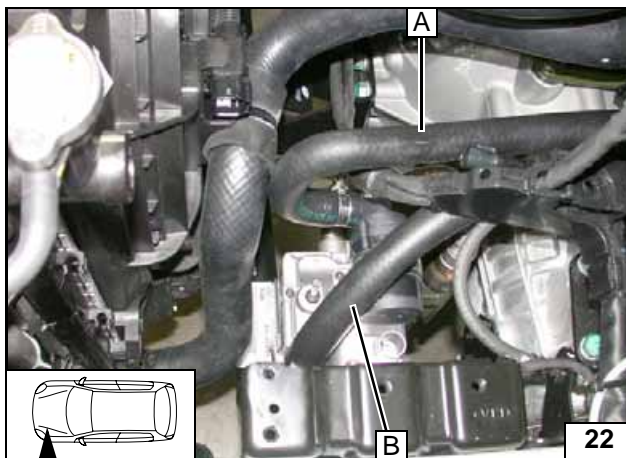




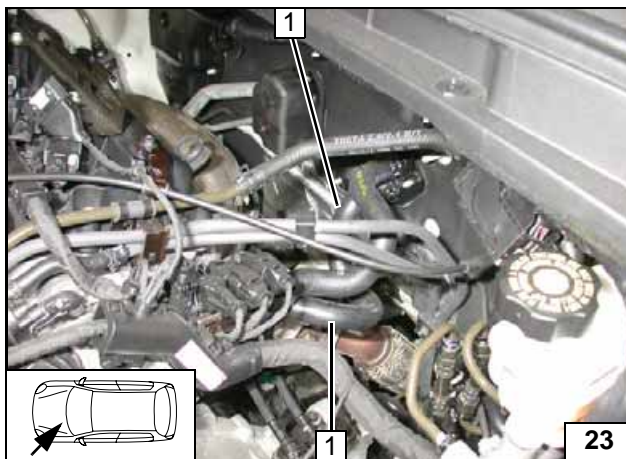
a = 620 mm
b = 820 mm

Discard section X

Cutting coolant hoses to length



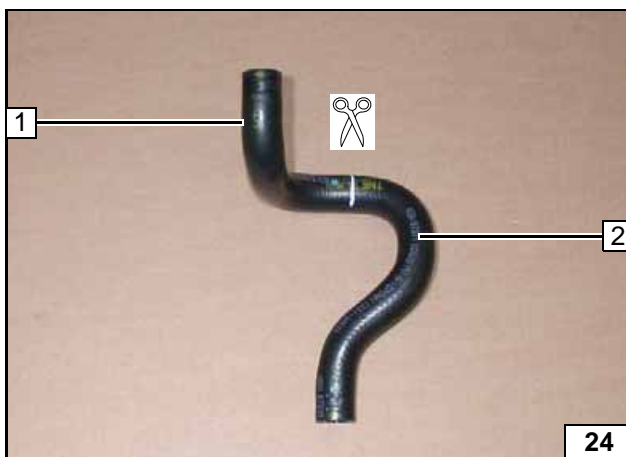
Connection to heater unit



Remove original vehicle hose between engine outlet and heat exchanger inlet. Spring clip will be reused!



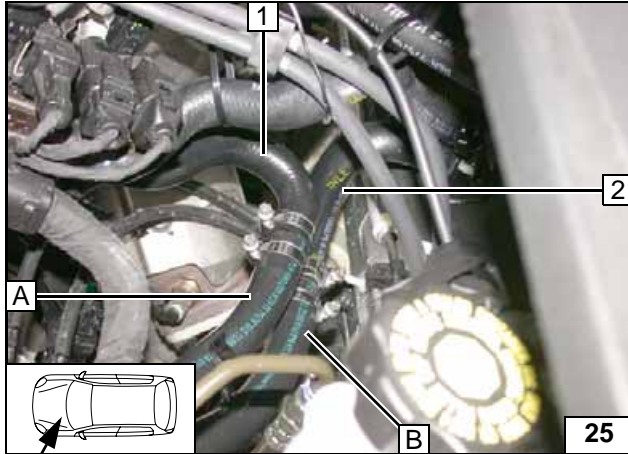
Removing hose



Reinstall hose sections following separation (turn hose section for engine outlet 2 by 180° on connection piece)

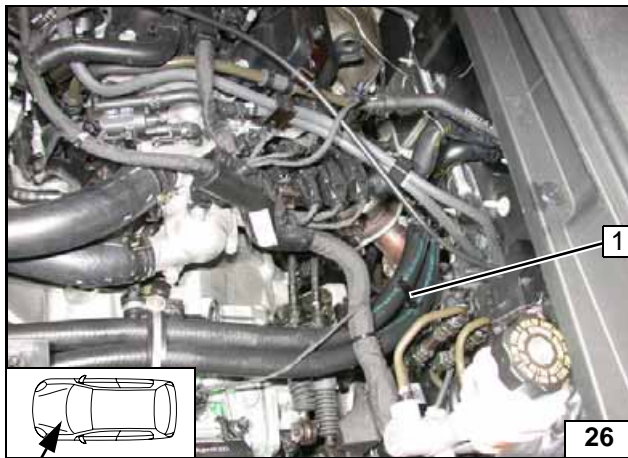
1 Hose section of heat exchanger inlet

Cutting point



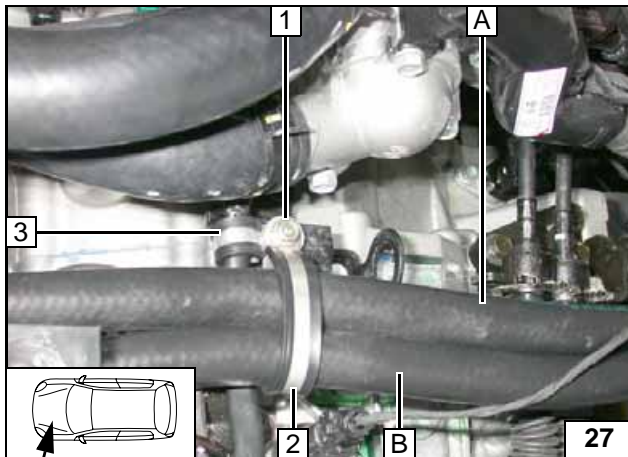
- 1 Engine-outlet hose section
- 2 Hose section of heat exchanger inlet

Con-
nection on
vehicle



- 1 Spacer bracket

Installing
spacer
bracket

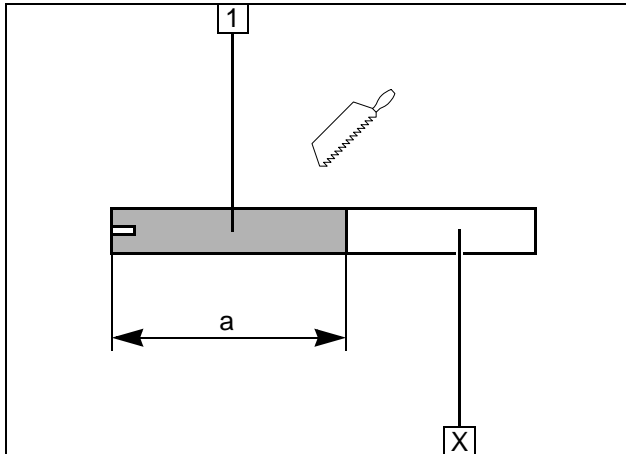


Remove retaining clip from original vehicle wiring harness at position 1 and discard.

- 1 M6x25 bolt, 5 mm shim, flanged nut
- 2 48 mm dia. p-clamp
- 3 15 mm dia. p-clamp



Installing
p-clamps

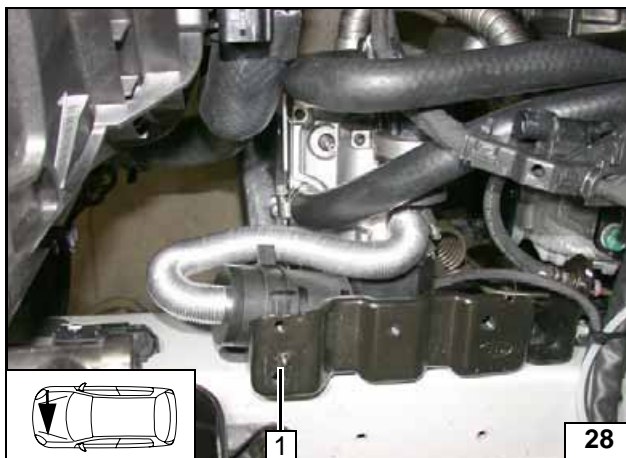


Combustion air

- 1 Combustion air pipe
a = 300 mm

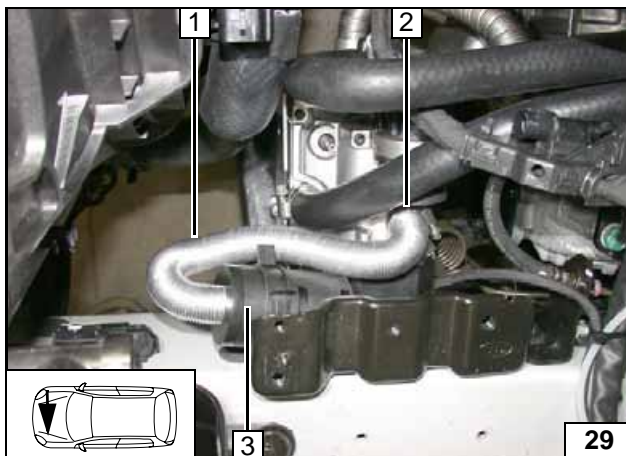
Discard section X

Cutting combustion air pipe to length



- 1 Retaining clip in existing hole

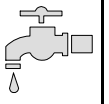
Installing retaining clip



- 1 Intake pipe
- 2 27 mm dia. hose clamp
- 3 Intake muffler in retaining clip



Installing muffler



Fuel

CAUTION!

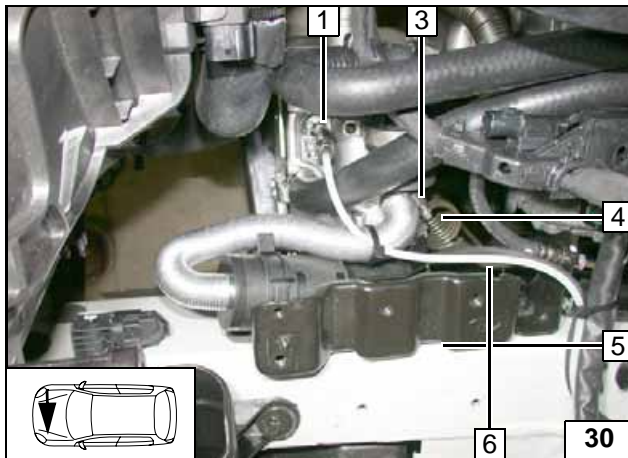
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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.

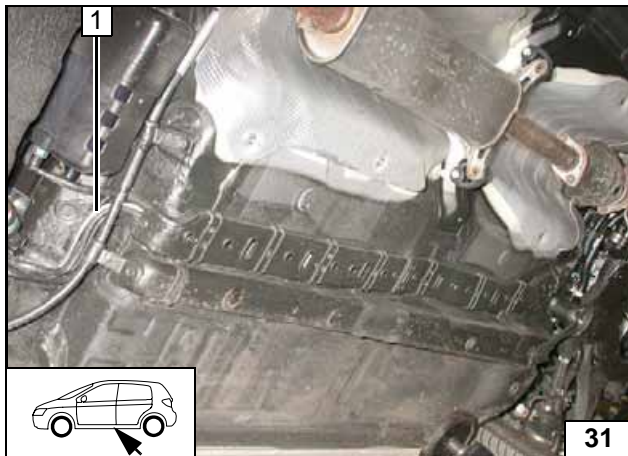
WARNING!

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



- 1 Hose section, 10 mm dia. hose clamp [2x]
- 2 10 mm dia. hose clamp

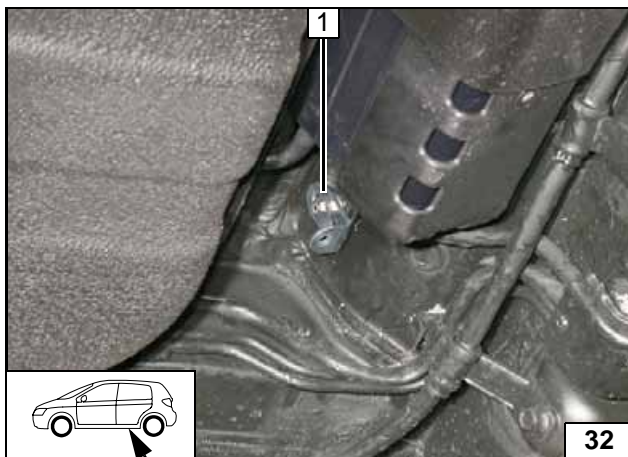
**Con-
nection to
heater unit**



Route mecanyl fuel line and wiring harness of metering pump 1 in original vehicle wiring duct to installation location of metering pump.



**Installing
lines**

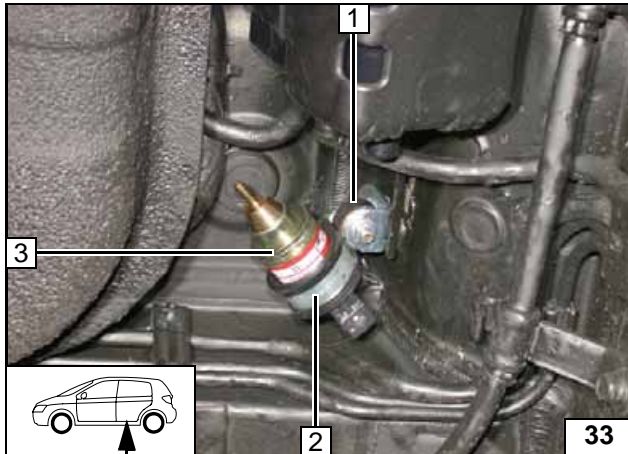


Remove original vehicle flanged nut at position 1.

- 1 Flanged nut, angle bracket, 5 mm shim on original vehicle stud bolt



**Installing
angle
bracket**

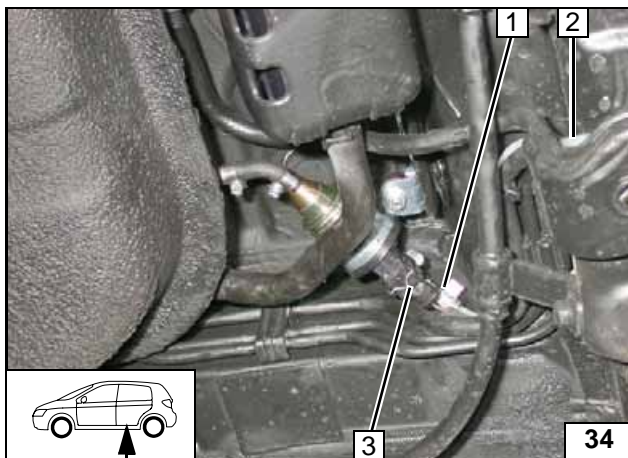


Ensure proper installation position of metering pump **3**, see "Installation Instructions".
Installation location on left in front of vehicle fuel tank!

- 1** Silent block, flanged nut [2x]
- 2** Rubber-coated pipe clamp



Installation location of metering pump

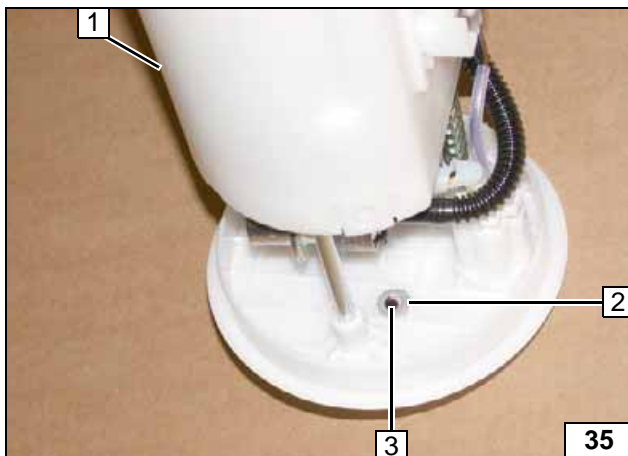


Connect fuel line **2** from heater unit to pressure side of metering pump [side with connector].

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



Installing metering pump

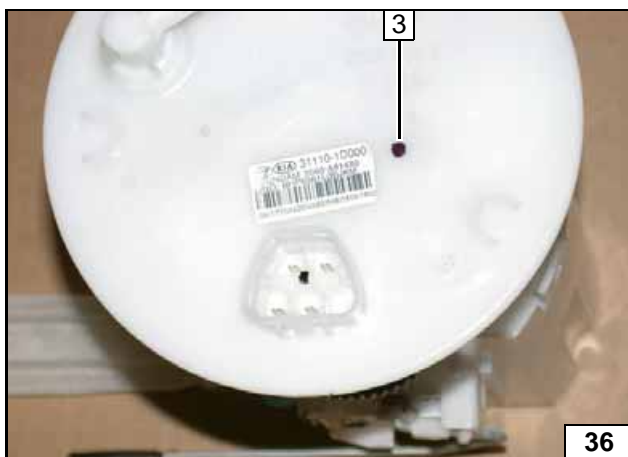


Remove fuel-tank sending unit **1** in accordance with manufacturer's specifications.

- 2** Washer
- 3** Copy hole pattern, 6 mm dia. hole



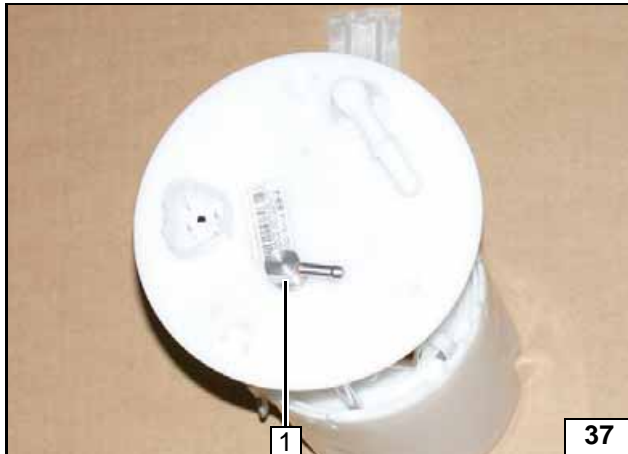
Removing fuel



Copy hole pattern **1** to upper side.



Copying hole pattern



Shape fuel standpipe 1 according to template, cut to length and install, see "installation instructions".



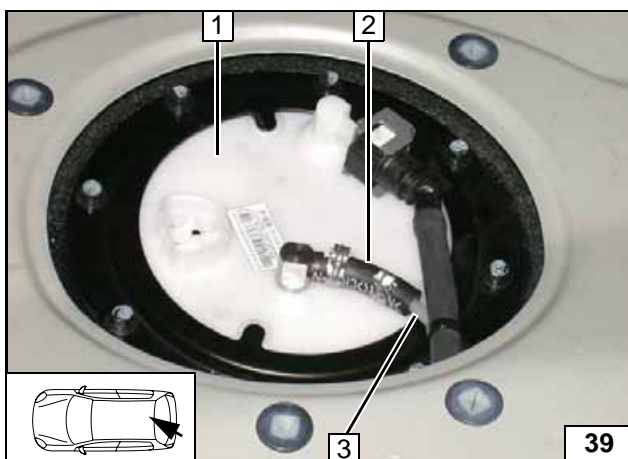
Installing fuel standpipe



When installing, mount two washers between nut and lid of fuel-tank sending unit at position 1.



Installing fuel standpipe

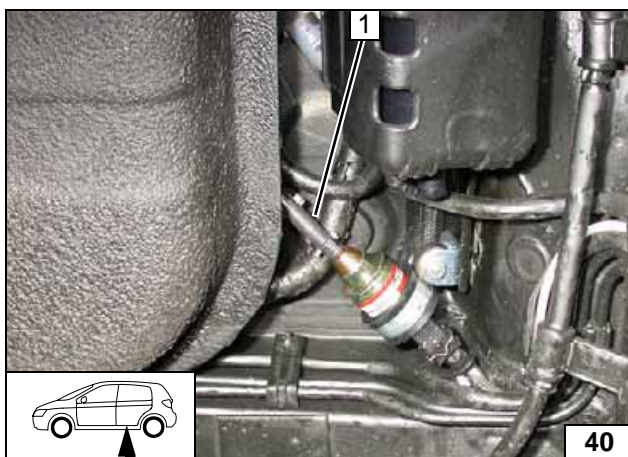


Install fuel-tank sending unit 1 in accordance with manufacturer's specifications.

- 2 Hose section, 10 mm dia. Caillau clamp [2x]
- 3 Mecanyl fuel line



Connecting fuel line

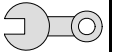


Fuel line from fuel standpipe on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have free clearance.



- 1 Hose section, 10 mm dia. hose clamp [2x]

Connecting to metering pump



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, 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).

- Fasten underdrive protection with large diameter washer and M6 flanged nut on premounted bolt
- Connect the battery
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Set the manual air conditioning or automatic air conditioning according to the "operating instructions for the 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.



Webasto AG
Postfach 80 - 82132 Stockdorf
Hotline 01805 / 932278 - Hotfax 0395 / 5592-353
<http://www.webasto.de>

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

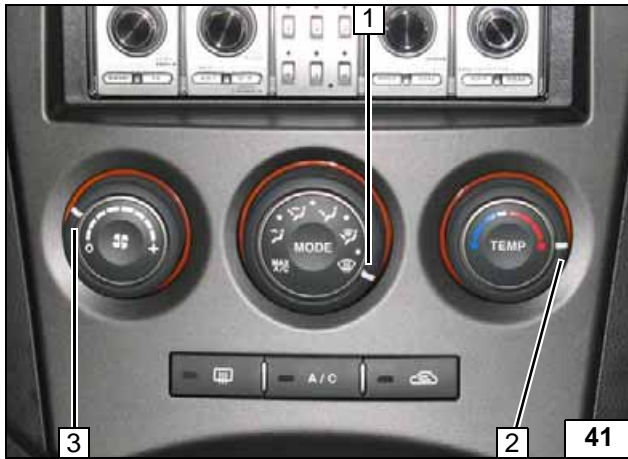
Example:

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:



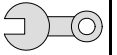
- 1 Air outlet to windshield
- 2 Set temperature to "max."
- 3 Set fan to level "1", or possibly "2"

Manual air conditioning



- 1 Air outlet to windshield
- 2 Set temperature to "max."
- 3 Set fan to level "1", or possibly "2"

Automatic air-conditioning



Template for Fuel Standpipe



100 mm



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 "minimize margins" and 100% of the normal size.

100 mm

0