

Water Heater



Thermo Top E Parking Heater

e1
00 0003

Thermo Top C Parking Heater

e1
00 0002

Installation instructions



Subaru Legacy / Outback 2.0 Boxer Diesel

from Model Year 2010

Left-hand drive vehicle

Automatic air-conditioning

Gear box



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, specialised tools and equipment are required to install and repair Webasto heating and cooling systems. Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

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.

Subaru Legacy / Outback 2.0 Boxer Diesel

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Validity

Manufacturer	Model	Type	EG-BE No./ABE
SUBARU	Legacy / Outback	BM /BR	e1 * 2007 / 46 * 0079 * ...
SUBARU	Legacy / Outback	BM /BRS	e13 * 2007 / 46 * 1074 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
EE20	Boxer Diesel	110	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.

Optional:

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

Subaru Legacy / Outback 2.0 Boxer Diesel

Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories <i>Thermo Top E / C</i>	See price list
1	Installation kit for Subaru Legacy / Outback 2.0 Boxer Diesel MY 2010	1315487A
1	Heater control	See price list

Heater recommended for the relevant vehicle class:

Vehicle	Heater
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C

The selection of the heater 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 vehicles Subaru Legacy / Outback 2.0 Boxer Diesel - for validity, see page 2 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, the stipulations in these "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/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).

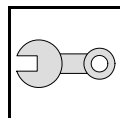
Special Tools

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

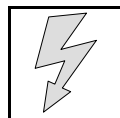
Explanatory Notes on Document

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.

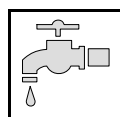
Mechanical system



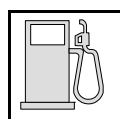
Electrical system



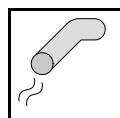
Coolant circuit



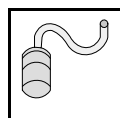
Fuel



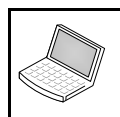
Exhaust gas



Combustion air



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 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.

All dimensions are in mm!

Tightening torque of hose clamps = 2.0 + 0.5 Nm!

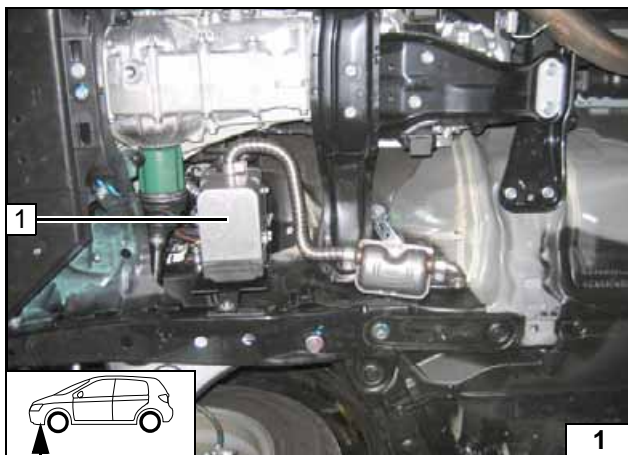
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- 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.
- Remove intercooler on engine
- Remove the engine cover
- Remove underride protection at the left in front of the tank
- Remove underride protection of gear
- Remove left underbody trim
- Remove rear bench seat
- Open the tank-fitting service lid on the right and left.
- Remove fuel-tank sending unit in accordance with manufacturer's instructions.
- Remove the instrument panel trim on the driver's side.
- Remove the instrument panel trim in the footwell on the front passenger side
- Remove the lateral trim of the instrument panel on the front passenger side (for Telestart only)

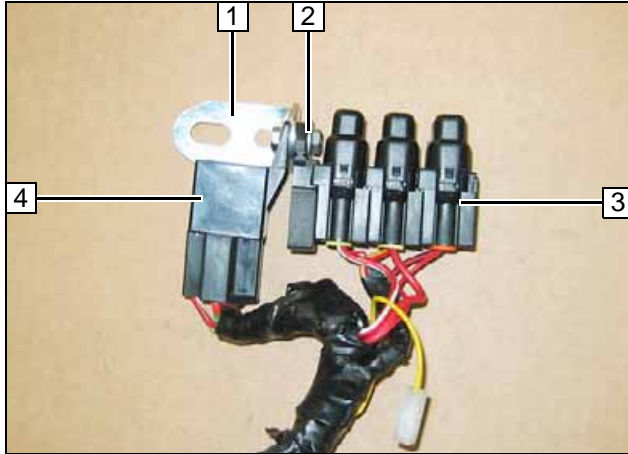
Remove page 24 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location



Preparing electrical system

Replace 25 A fuse F3 with 10A fuse.

- 1 Angle bracket
- 2 M6x16 bolt, large diameter washer [2x] retaining plate for fuse holder, flanged nut
- 3 F1-3 fuses mounted
- 4 K3 relay



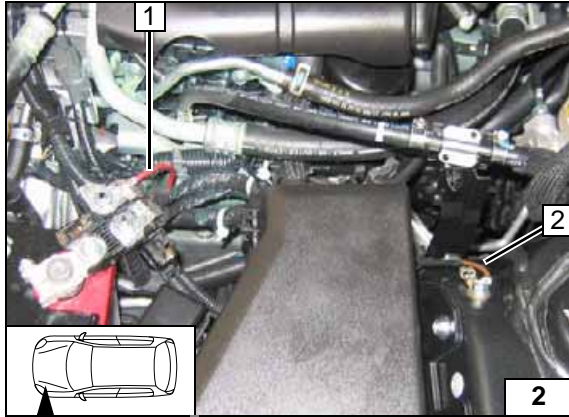
**Pre-install-
ing fuse
holder**



Electrical system

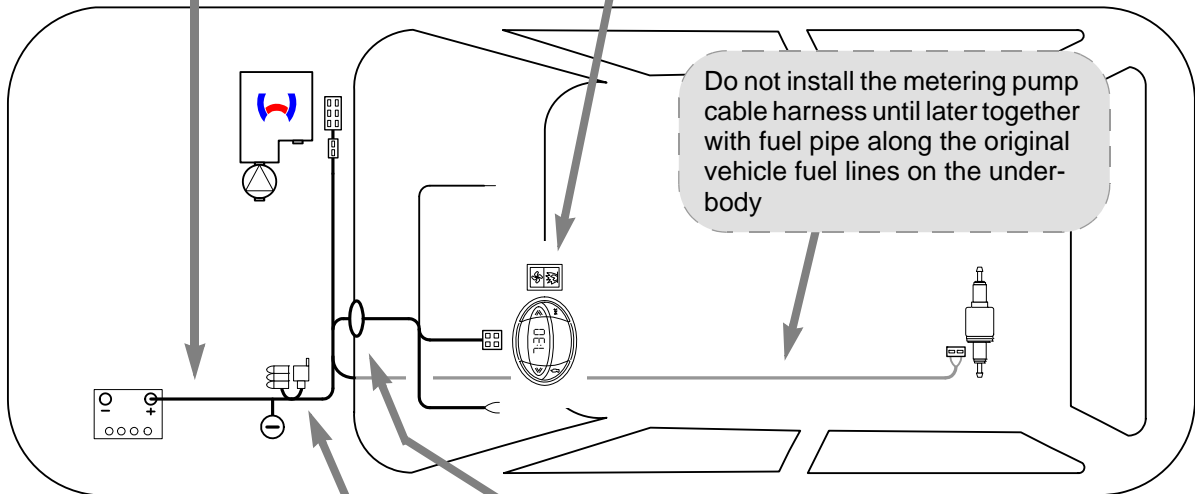
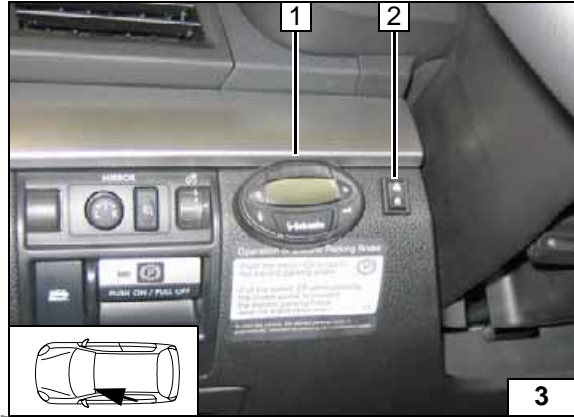
Positive and ground connection

- 1 Positive wire on positive battery terminal
- 2 Ground wire on ground support point

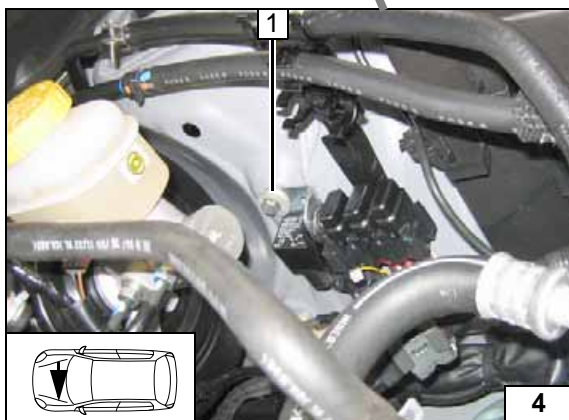


Digital timer and summer/winter switch option

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

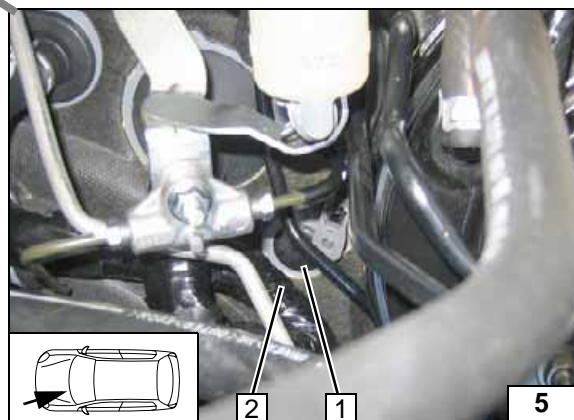


Wiring harness installation routing



Fuse holder, K3 relay

- 1 M6x20 bolt, spring lockwasher, large diameter washer in existing threaded hole



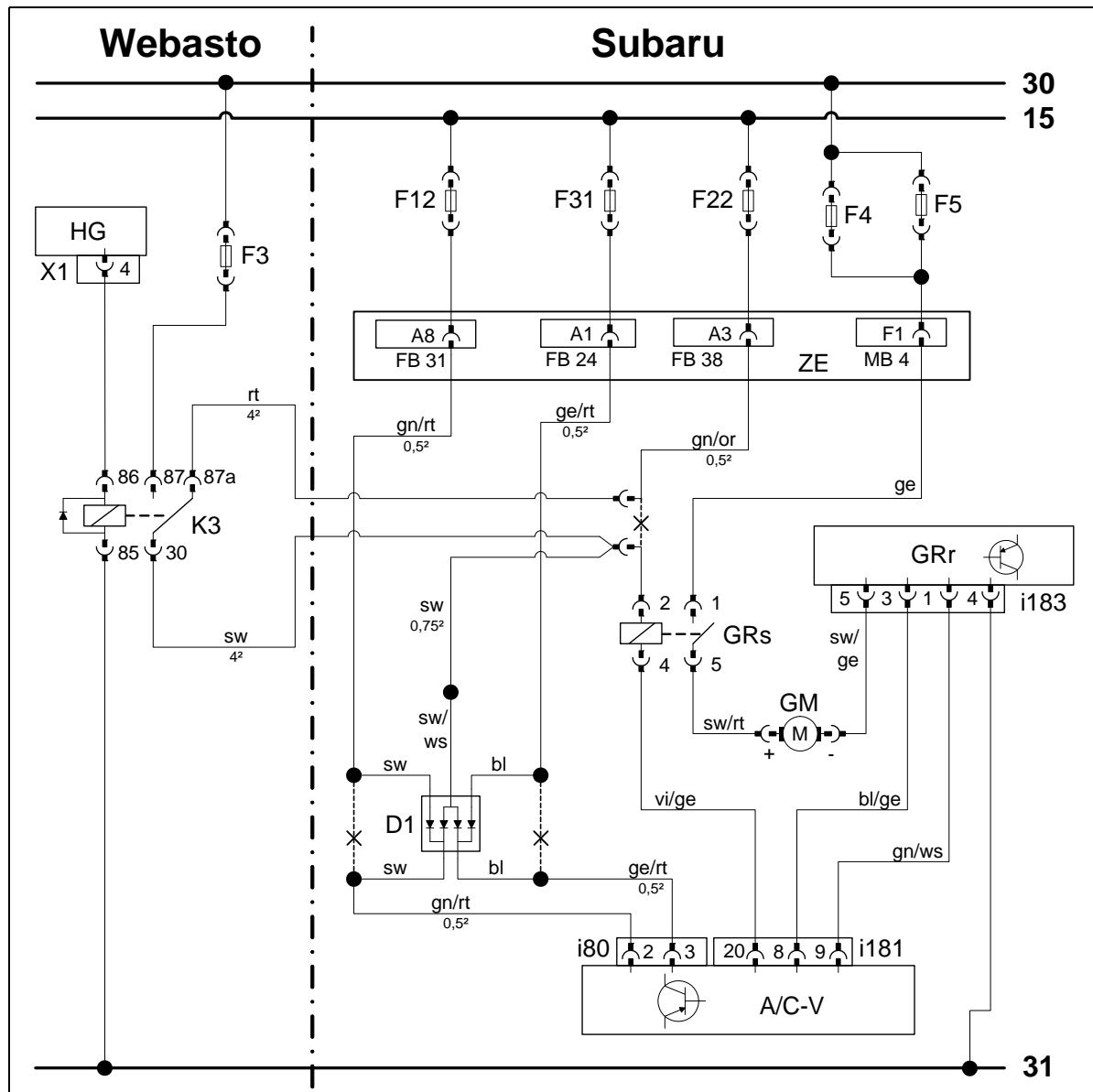
Wiring harness pass through

Detach original vehicle wiring harness 2 and put it away.

- 1 Protective rubber plug



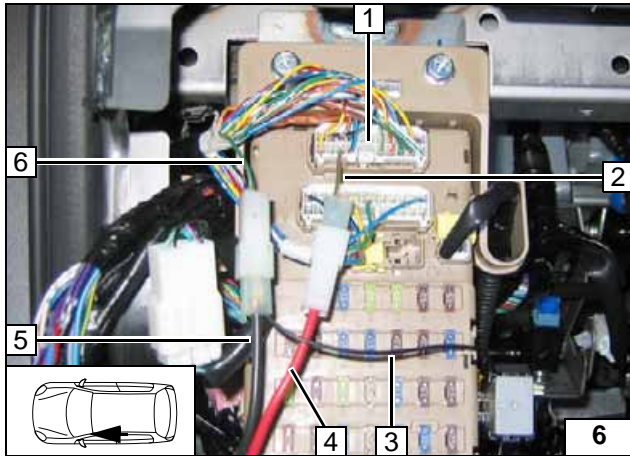
Fan controller



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	F31	Fuse, 7.5 A	rt	red
X1	6-pin heater connector	F22	Fuse, 15A	ws	white
F3	Replace 25 A fuse with 10A fuse	F12	Fuse, 15A	sw	black
K3	Fan relay	F4	Fan fuse	br	brown
D1	Diode group	F5	Fan fuse	gn	green
		ZE	Central electrical box	bl	blue
		A8	Connector A (i5) PIN 8 ZE	ge	yellow
		A1	Connector A (i5) PIN 1 ZE	vi	violet
		A3	Connector A (i5) PIN 3 ZE	or	orange
		GRs	Fan relay		
		GRr	Fan controller		
		i183	5-pin connector, GRr		
		GM	Fan motor	!	Insulate wire ends and tie back
		A/C-V	A/C booster		
		i80	26-pin connector A/C-V	X	Cutting point
		i181	24-pin connector A/C-V		Wiring colours may vary.

Legends

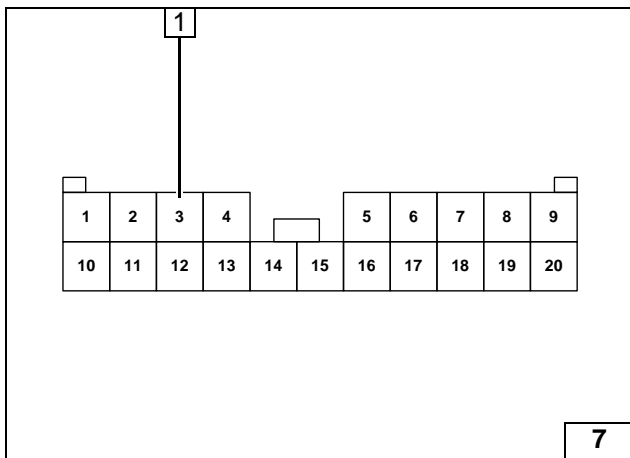


Connection on 20-pin connector A (i5) 1 of central electrical box.
Produce connections as shown in wiring diagram.

- 2 Green/orange (gn/or) wire of connector A(i5), Pin 3
- 3 Additional black (sw) wire of A/C booster
- 4 Red (rt) wire from K3/87a
- 5 Black (sw) wire from K3/30
- 6 Green/orange (gn/or) wire of fan relay Pin 2



**Connec-
tion to cen-
tral
electrical
box**

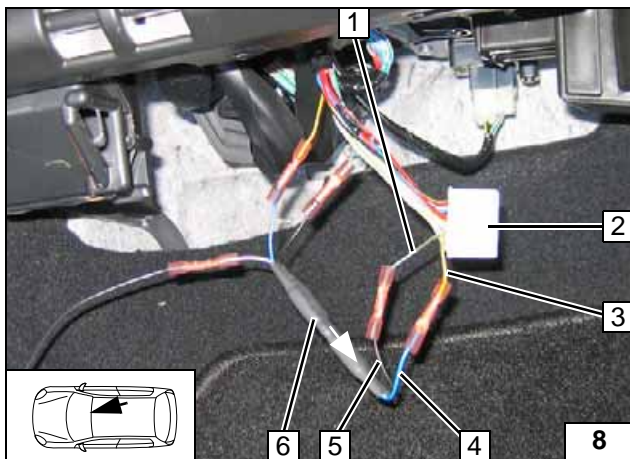


Connector A (i5) contact side

- 1 Green/orange (gn/or) wire of Pin 3



**Connector
A (i5)**

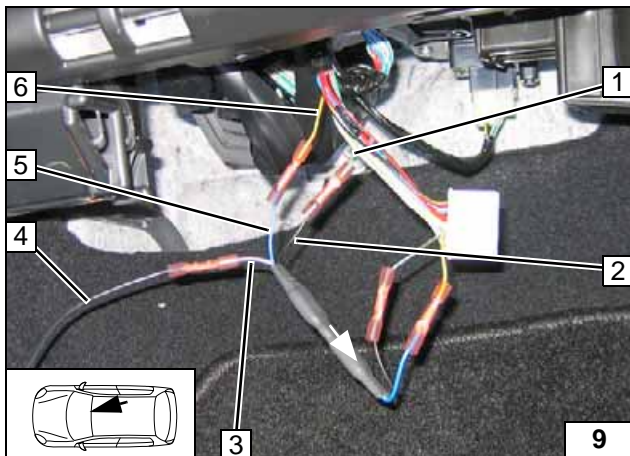


Connection on 26-pin connector A (i80) 2 from A/C booster. Watch direction of flow of diode group D1 6.
Produce connections as shown in wiring diagram.

- 1 Green/orange (gn/or) wire of connector A(i80), Pin 2
- 3 Green/red (gn/rt) wire of connector A(i80), Pin 3
- 4 Blue (bl) wire of diode group D1
- 5 Black (sw) wire of diode group D1



**Connect-
ing to A/C
booster**

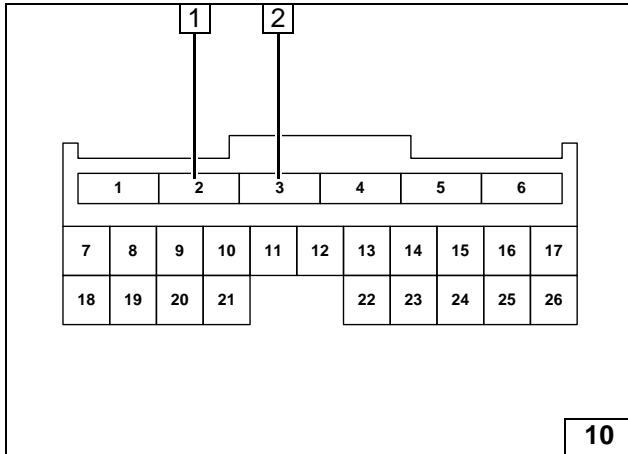


Produce connections as shown in wiring diagram.

- 1 Green/red (gn/rt) wire of fuse F12.
- 2 Black (sw) wire of diode group D1
- 3 White/black (ws/sw) wire of diode group D1
- 4 Additional black (sw) wire from K3/30
- 5 Blue (bl) wire of diode group D1
- 6 Yellow/red (ge/rt) wire of fuse F31.



**Connect-
ing to A/C
booster**

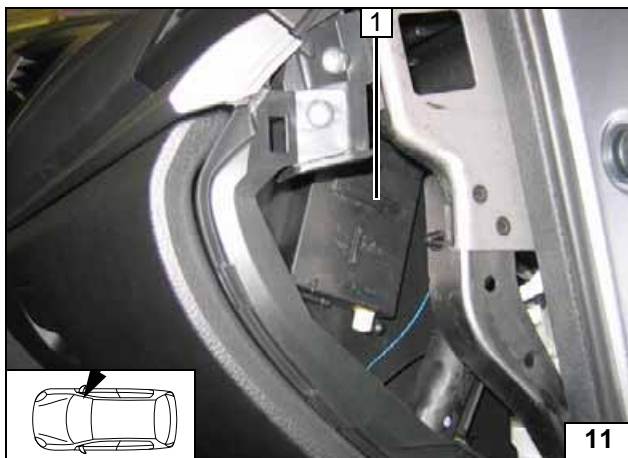


Connector A (i80) contact side

- 1 Green/red (gn/rt) wire of Pin 2
- 2 Yellow/red (ge/rt) wire of Pin 3



Connector A (i80)



Remote option (Telestart)

Fasten receiver 1 with adhesive tape.

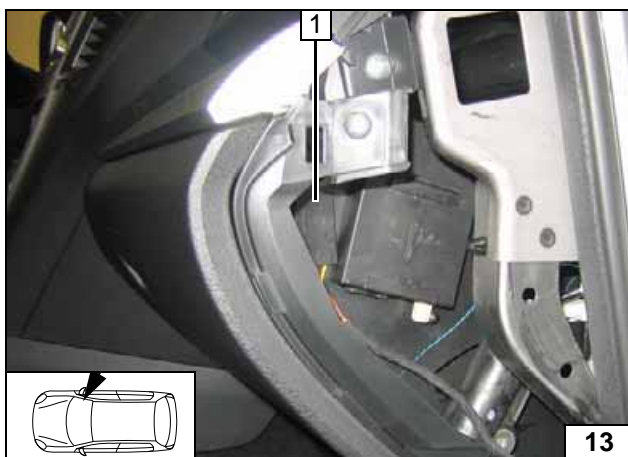


Installing receiver



1 Antenna

Installing antenna

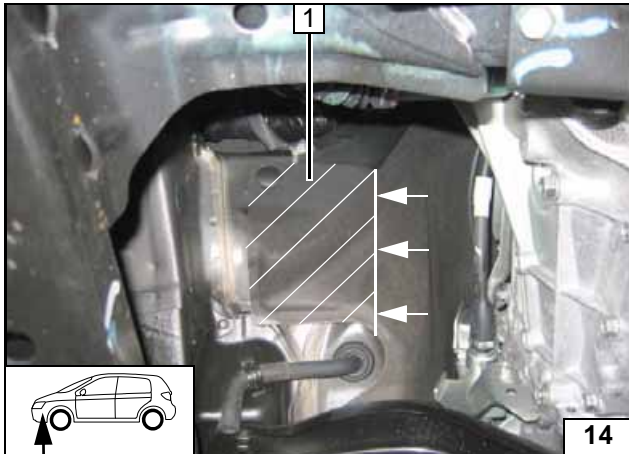
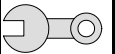


Temperature sensor HTM100

Fasten temperature sensor 1 with adhesive tape.



Installing temperature sensor

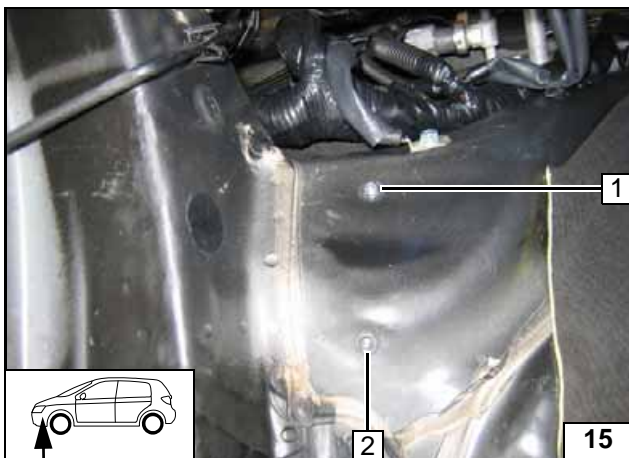


Preparing installation location

Cut out insulation mat **1**, remove and discard with clip.



Preparing installation location



Drill out existing hole at position **1** to 9.1 mm dia. and mount rivet nut.

2 Rivet nut, existing hole



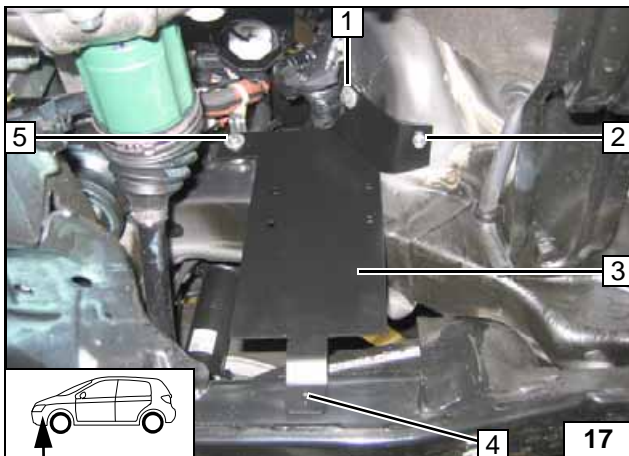
Installing rivet nut



Remove original vehicle bolt at position **1** and discard.



Removing bolt

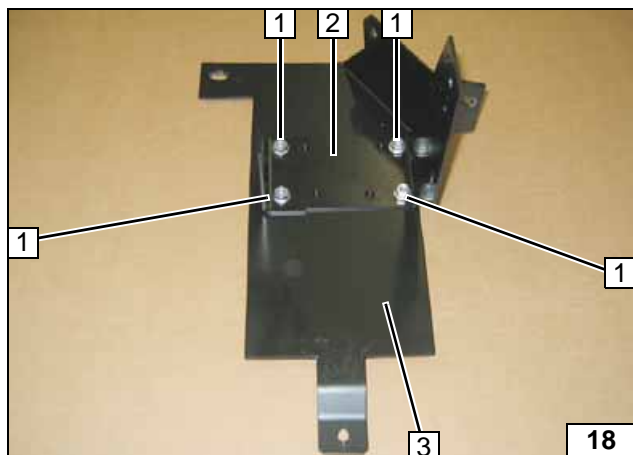
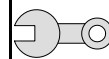


Install retaining plate **3** loosely. Place bolts at position **1**, **2** and **5**. Copy hole pattern to position **4**, dismantle retaining plate **3**, drill 9.1mm dia. hole and install rivet nut.

- 1** M6x30 bolt
- 2** M6x20 bolt
- 5** M6x40 bolt, existing threaded hole



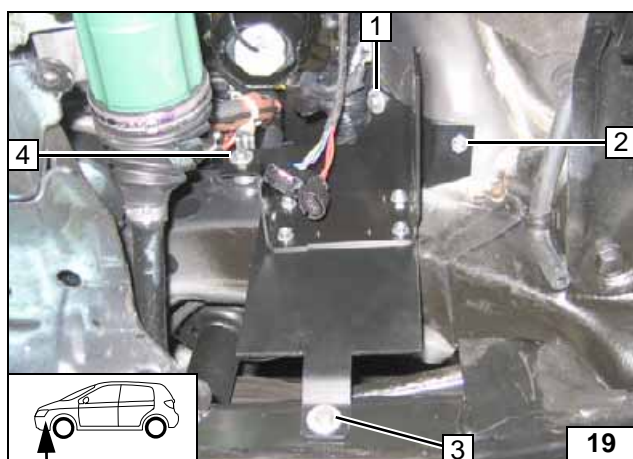
Installing rivet nut



Preparing bracket

- 1 M6x12 bolt, flanged nut [4x each]
- 2 Bracket
- 3 Retaining plate

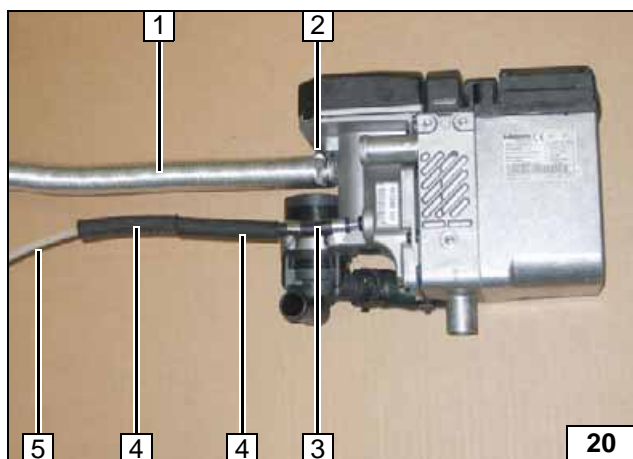
Preparing bracket



Insert 5 mm shim at position 1 and 20 mm shim at position 4 between retaining plate 3 and large diameter washer.

- 1 M6x30 bolt, spring lockwasher, large diameter washer, 5 mm shim
- 2 M6x20 bolt, spring lockwasher
- 3 M6x20 bolt, spring lockwasher, large diameter washer
- 4 M6x40 bolt, spring lockwasher, large diameter washer, 20 mm shim, existing threaded hole

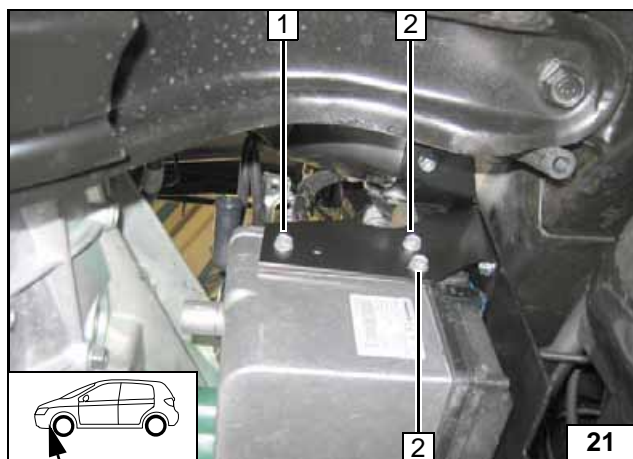
Installing bracket



Preparing heater

- 1 Combustion air pipe
- 2 27 mm dia. clamp
- 3 Hose section, 10 mm dia. clamp [2x]
- 4 Fabric fuel hose [2x]
- 5 Fuel line

Preassembling heater

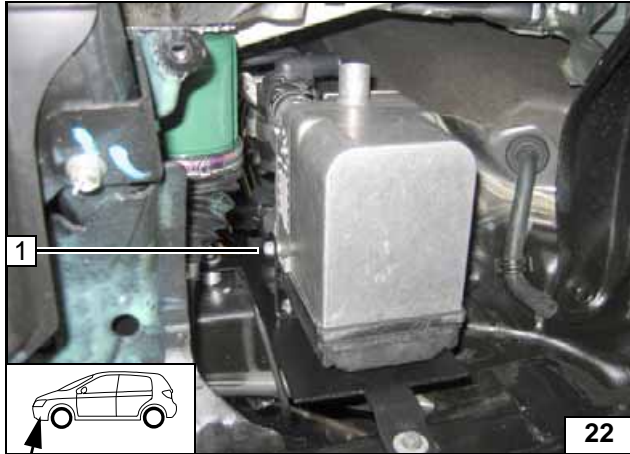
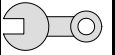


Installing heater

Mount the wiring harness on the heater before installation.

- 1 E-jot screw, washer [2x]
- 2 E-jot screw [2x]

Installing heater



1 E-jot screw

Installing
heater



Fuel

CAUTION!

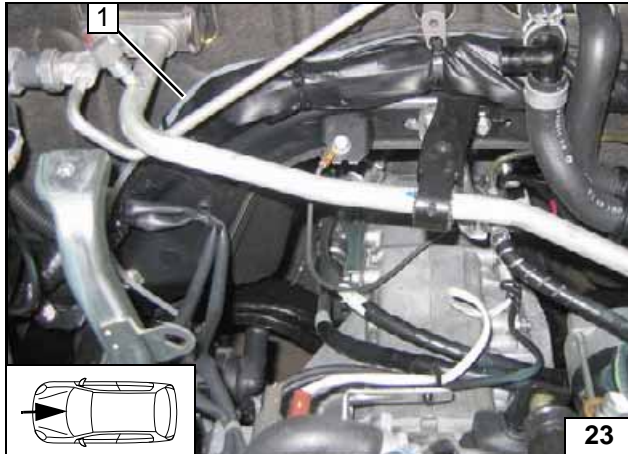
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off 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!

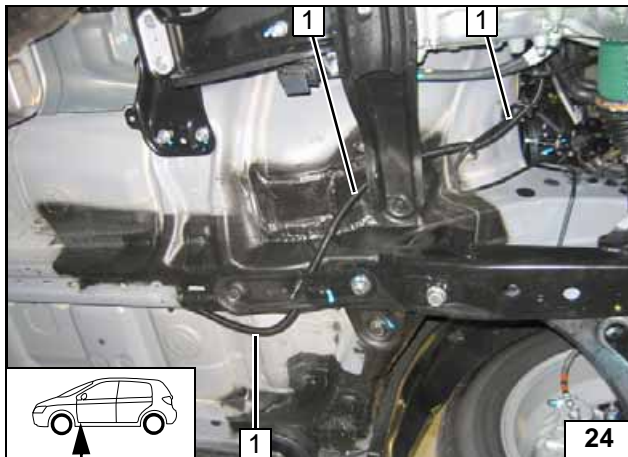
The fuel line and wiring harness are routed to the metering pump in as shown in the wiring harness routing diagram.



Route wiring harness of heater and fuel pipe **1** to original vehicle wiring harness on the left side of vehicle.



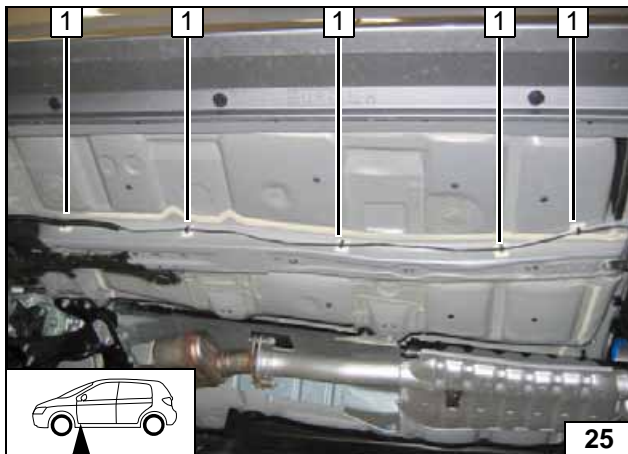
Installing lines



Divide corrugated tube at the centre. Route fuel line and wiring harness of metering pump in corrugated tube **1** of underbody



Installing lines

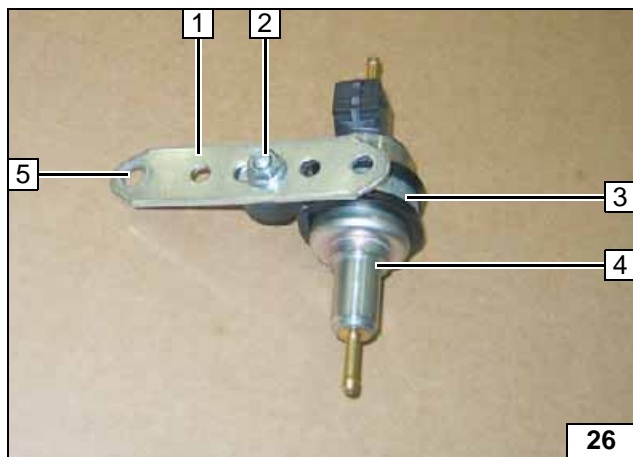
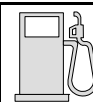


Route fuel line and wiring harness of metering pump to the installation location of metering pump

1 Pasting socket, cable tie [5x each]



Installing lines

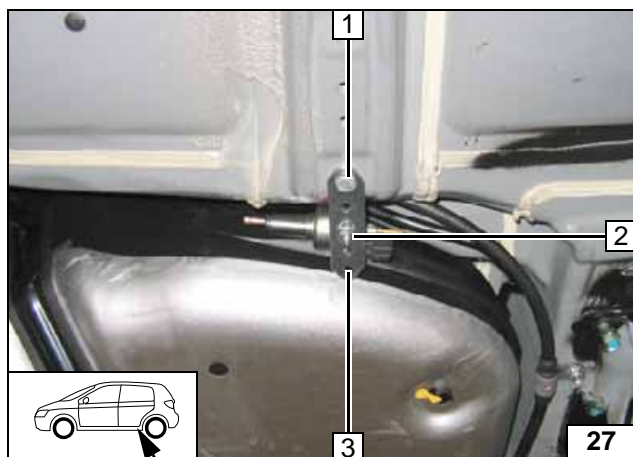


Drill out perforated bracket 1 at position 5 to 8.5 mm dia. and install loosely

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



Pre-installing metering pump

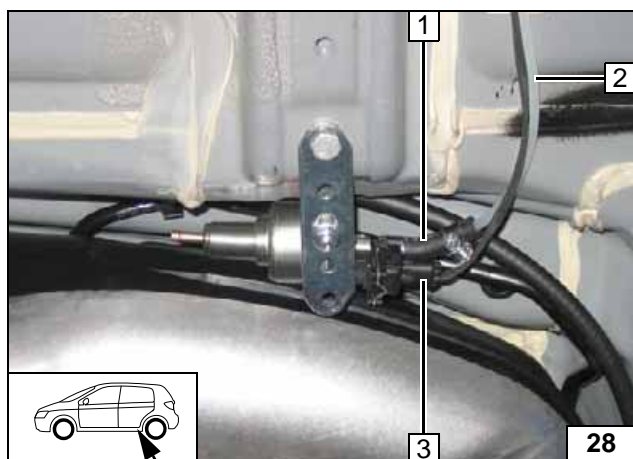


Align metering pump, tighten nut at position 2.

- 1 M8x20 bolt, spring lockwasher, existing threaded hole
- 3 Perforated bracket

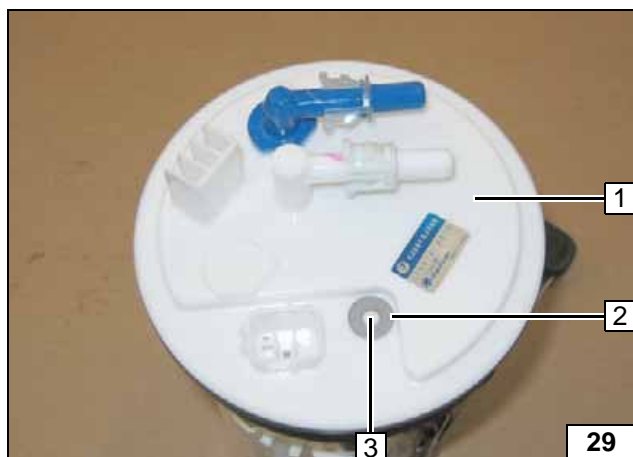


Installing metering pump



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

Connecting metering pump



Remove fuel-tank sending unit 1 in accordance with manufacturer's specifications. Lay out large diameter washer $d_a = 14.6$ mm 2.

- 3 Copy hole pattern, 6 mm dia. hole



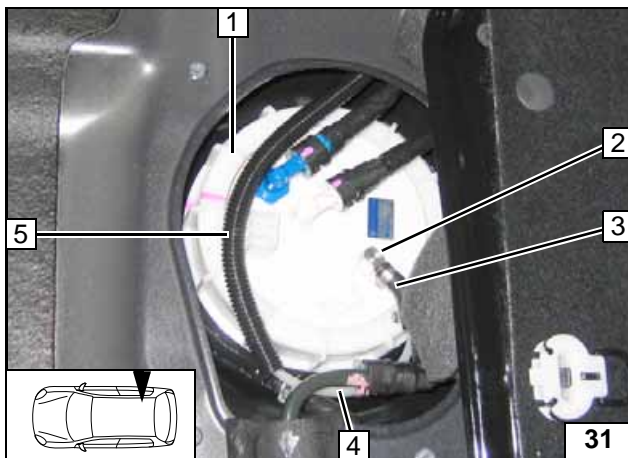
Removing fuel



Shape fuel standpipe 1 according to template, cut to length and install.



Installing fuel standpipe



Install fuel-tank sending unit 1 in accordance with manufacturer's instructions. Slide corrugated tube 5 onto fuel line 4 and route to the left vehicle side.



- 2 Fuel standpipe
- 3 Hose section, 10 mm dia. clamp [2x]

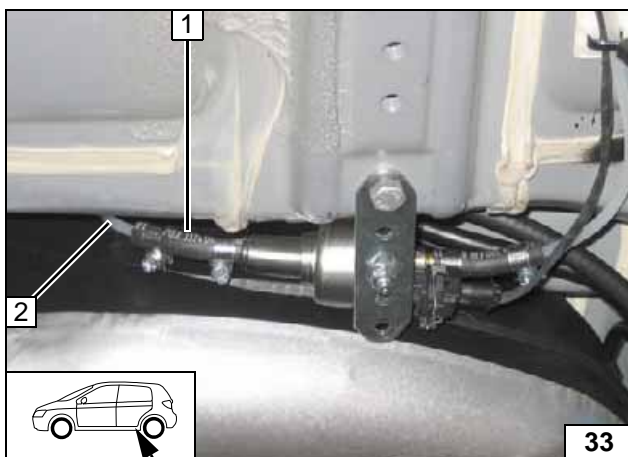
Connecting fuel line



Route fuel line in corrugated tube 1 to metering pump.



Installing fuel line

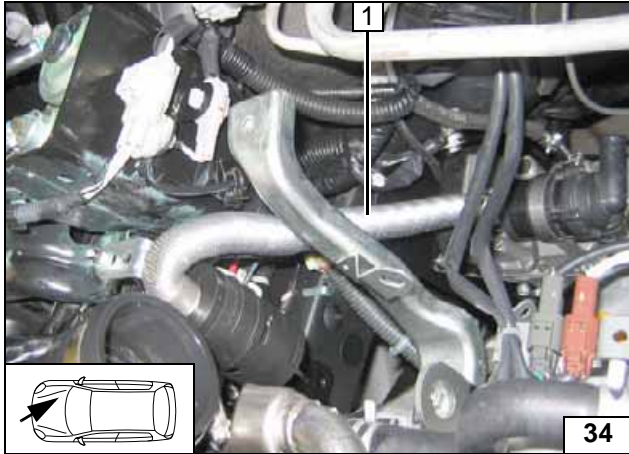
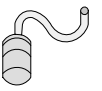


Check the position of the components; adjust if necessary. Check that they have free clearance.



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

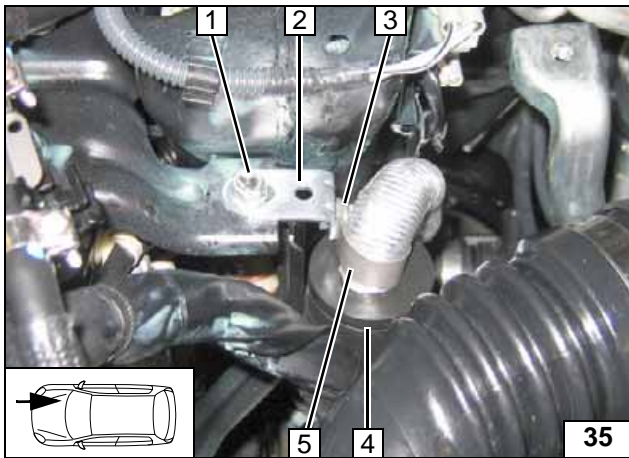
Connecting metering pump



Combustion air

- 1 Combustion air pipe

Installing combustion air pipe



- 1 Original vehicle nut
- 2 Angle bracket
- 3 M6x20 bolt, flanged nut
- 4 Muffler
- 5 P-clamp



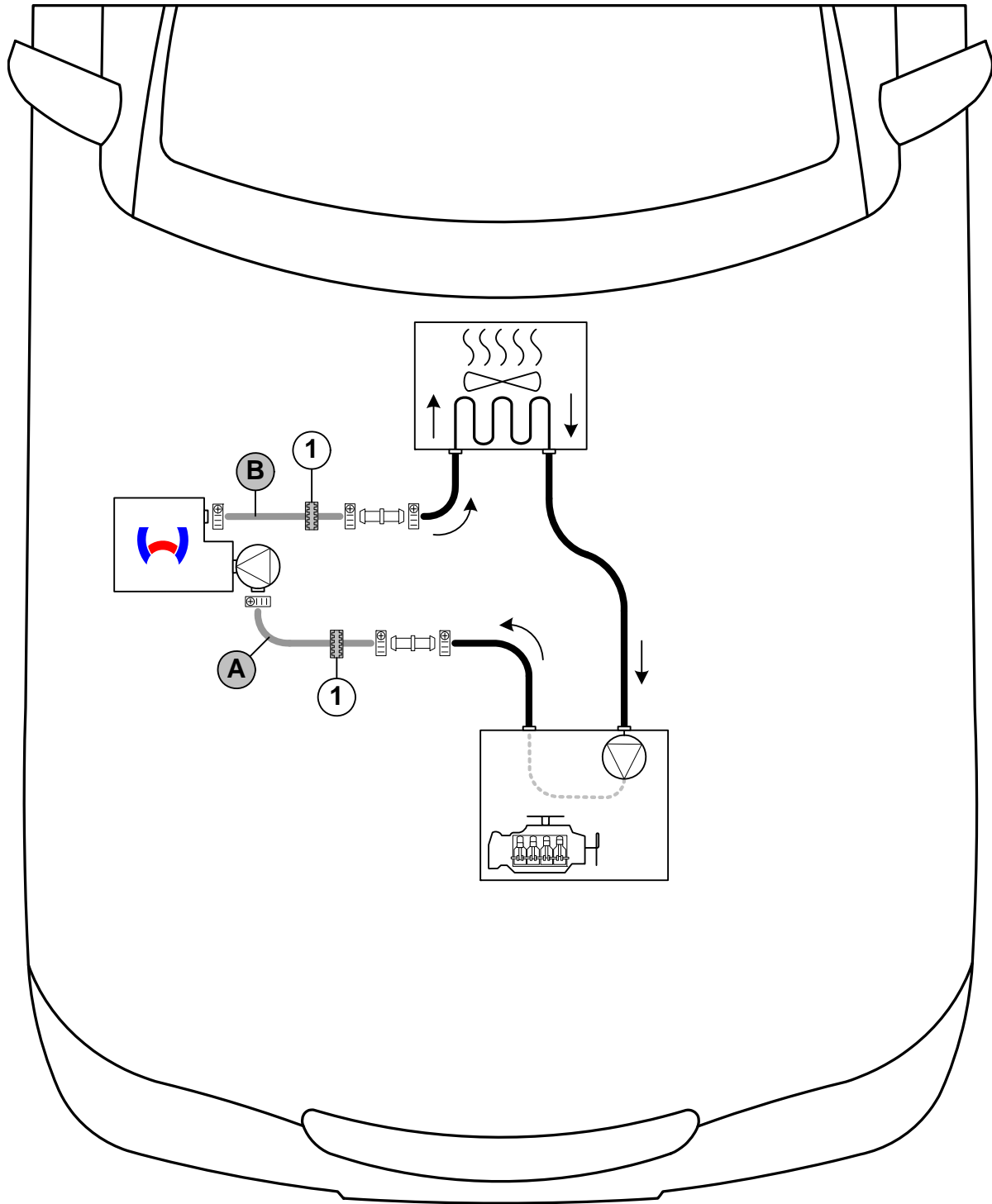
Installing muffler






Coolant circuit

WARNING!

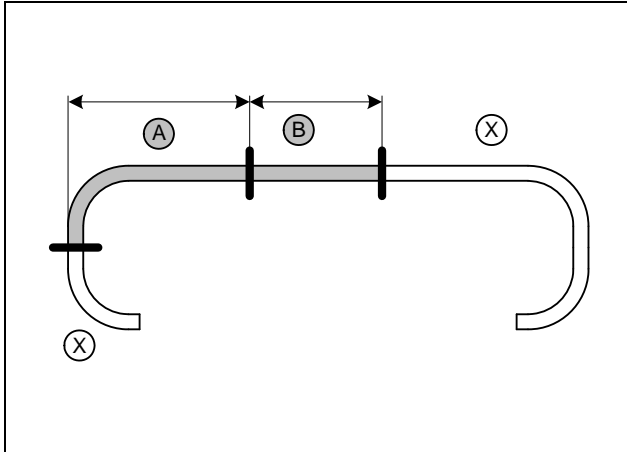
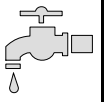
Any coolant running off should be collected using an appropriate container. Install coolant hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the hoses, the heater must be filled with coolant. The connection should be "inline" based on the following diagram:



Hose-rout-
ing dia-
gram

All hose clamps  = 20-27 mm dia.!
1 = Black (sw) rubber isolator .
 All connecting pipes  = 15x20 dia..





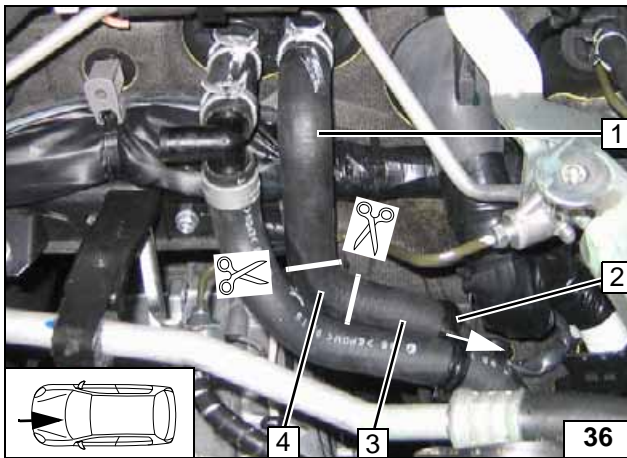
Discard section X

A = 360

B = 550



Cutting coolant hoses to length



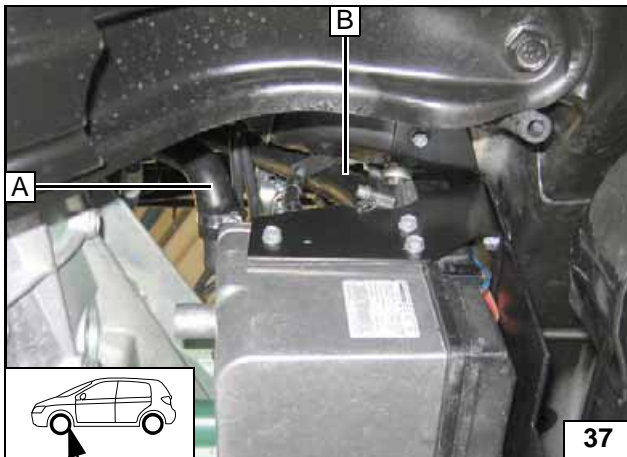
Remove hose section of heat exchanger inlet 1. Spring clip will be reused. If necessary, adjust original vehicle spacer bracket 2 as shown.

3 Engine outlet hose section

4 Discard hose section



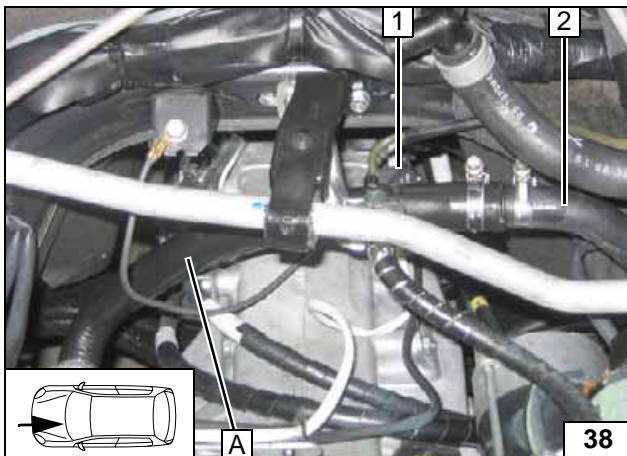
Cutting point



Hose A with 90° elbow on heater outlet!



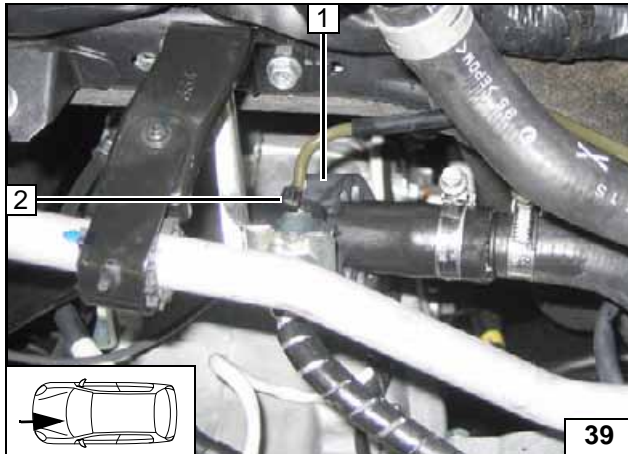
Connecting heater



1 Push on black (sw) rubber isolator

2 Hose of engine outlet

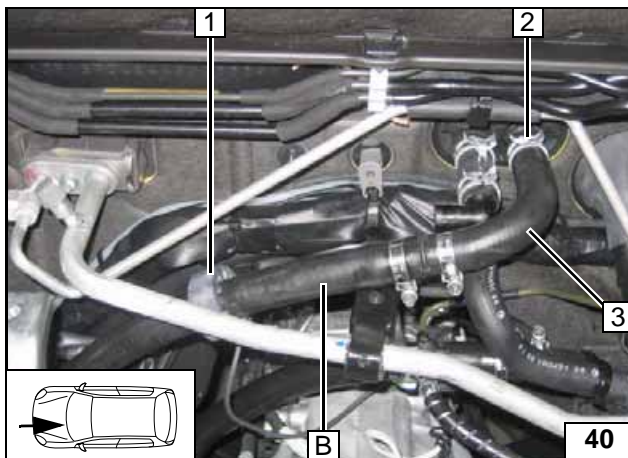
Connecting engine outlet



Fasten black (sw) rubber isolator **1** with cable tie **2** on bracket of brake line.



Routing in engine compartment

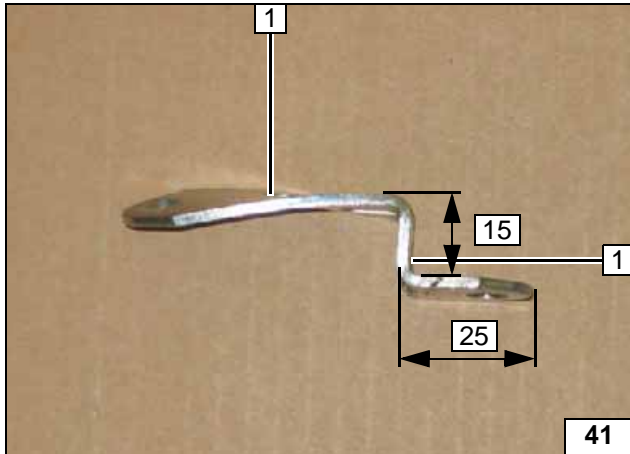
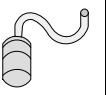


Slide black (sw) rubber isolator **1** onto hose **B** and position on A/C line. Install hose of heat exchanger inlet **3** with longer side on connecting piece of heat exchanger inlet. Ensure sufficient distance to neighbouring components.

2 Original vehicle spring clip



**Connect-
ing heat
exchanger
inlet**

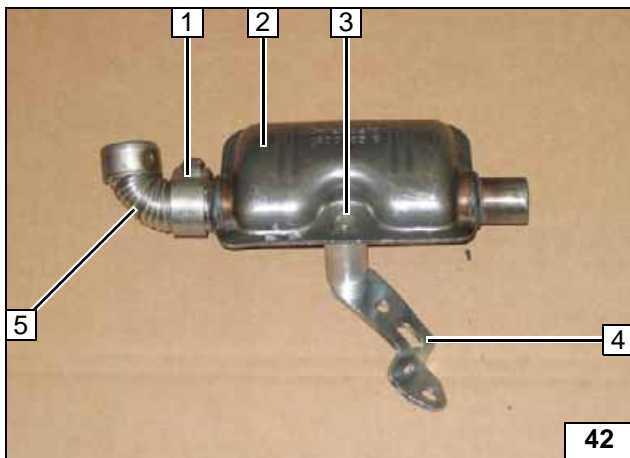


Exhaust gas

Angle down perforated bracket 1 and twist mildly as shown



Preparing perforated bracket

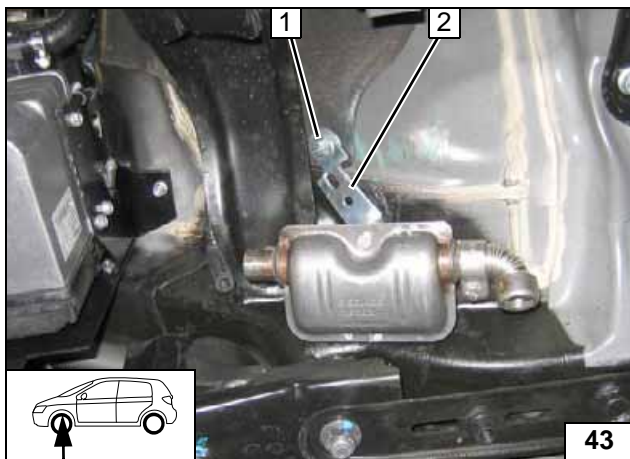


Insert 30 mm shim between silencer 2 and perforated bracket 4.

- 1 Hose clamp
- 2 Muffler
- 3 M6x40 bolt, 30 mm shim, flanged nut
- 5 Exhaust end section

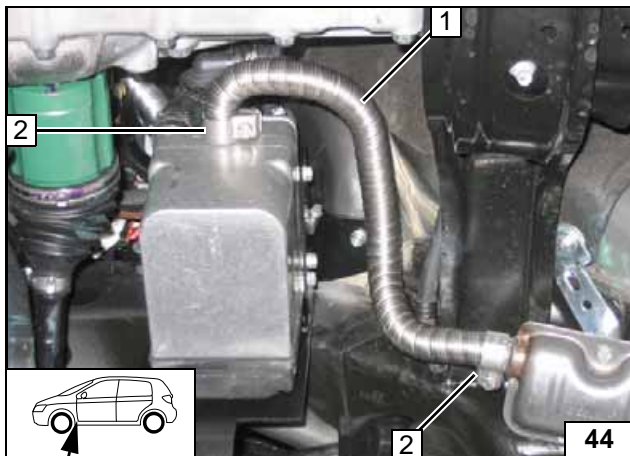


Pre-installing silencer



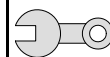
- 1 Original vehicle nut
- 2 Perforated bracket

Installing muffler



- 1 Combustion air pipe
- 2 Hose clamp

Installing exhaust pipe

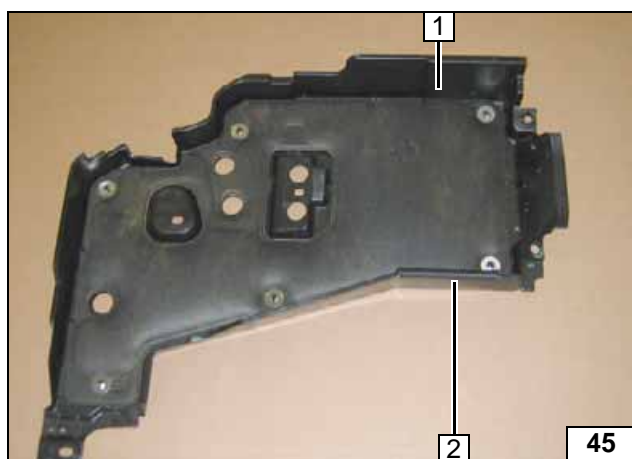


Final Work

WARNING!

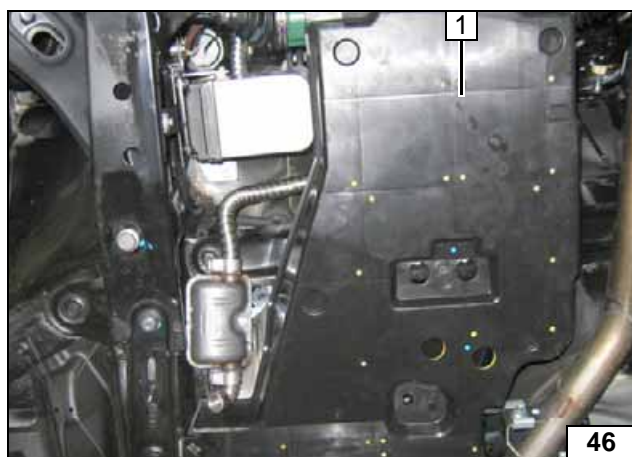
Reassemble the disassembled components in reverse order.
 Check all hoses, clamps and all electrical connections for firm seating.
 Secure all loose cables using cable ties.
 Only use manufacturer-approved coolant.
 Spray heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Adjust digital timer / remote control
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the parking heater, see the operating instructions/installation instructions.
- Place the instruction plate "Switch off parking heater before refuelling" in the area of the filling neck



- 1 Transmission cover
- 2 Insert edge protection

Preparing
transmission
cover



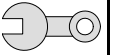
Install transmission cover 1. Ensure sufficient distance to adjacent components (especially to exhaust pipe); correct if necessary.



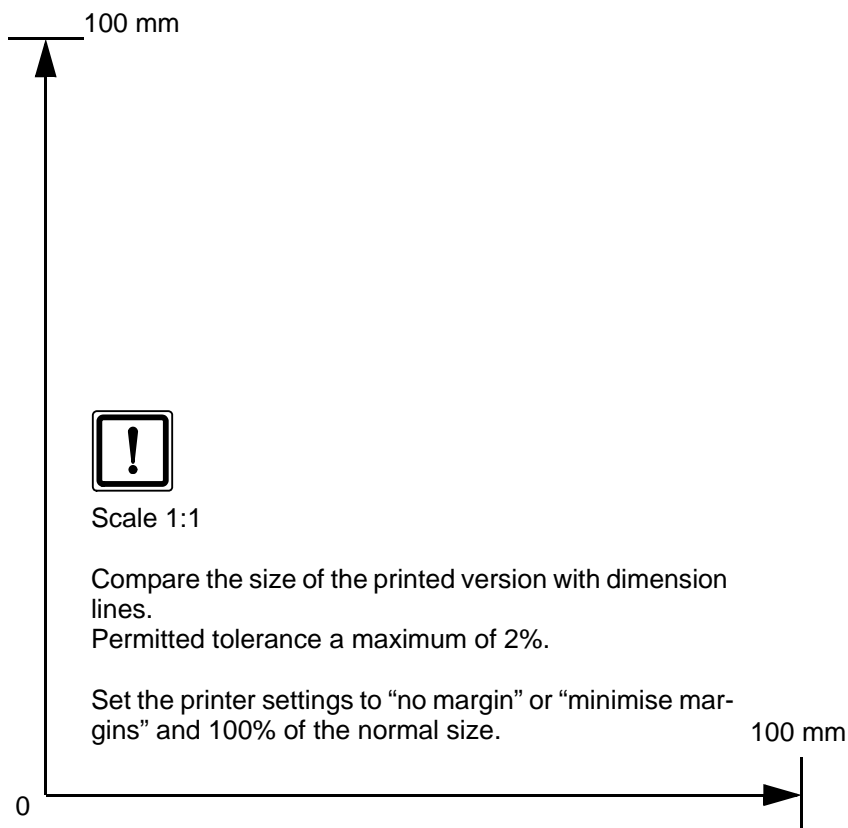
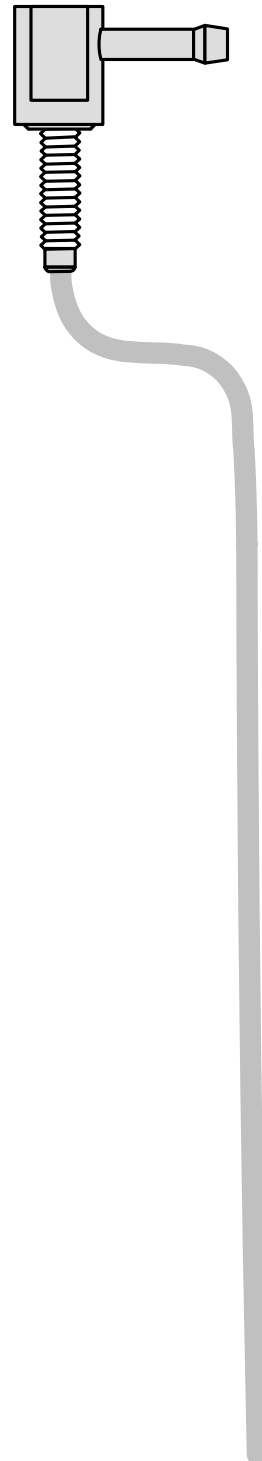
Installing
transmission
cover

Webasto
Feel the drive

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Template for Fuel Standpipe



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.

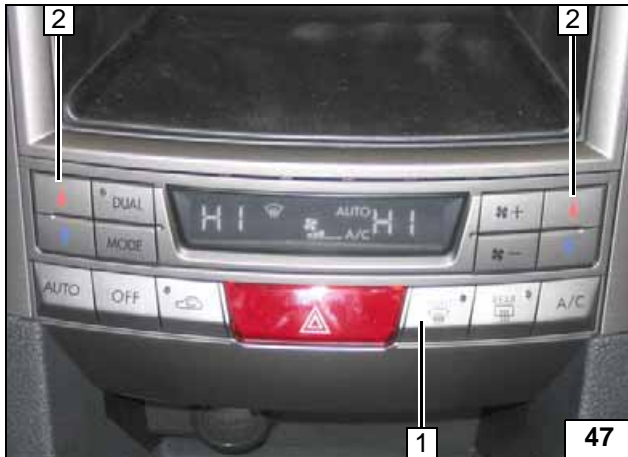
Heating time = driving time

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 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 on both sides to "HI"

Automatic
air-conditioning