

Water Heater Unit



Thermo Top E Additional Heater ^{e1} 00 0003

Installation Instructions

Chevrolet Aveo

Gasoline

Notchback from Model Year 2006

Hatchback from Model Year 2008

Left-hand drive vehicle

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.

Table of Contents

Validity	2	Preparing installation location	12
Heater Unit/Installation Kit	3	Premounting heater unit	13
Foreword	3	Installing heater unit	14
General Instructions	3	Coolant on 1.2 liter and 1.4 liter 69 kW gasoline engine	16
Special Tools	3	Coolant on 1.4 liter 74 kW gasoline engine	20
Explanatory Notes on Document	4	Combustion air	23
Preliminary Work	5	Fuel	24
Heater unit installation location	5	Exhaust gas	27
Preparing electrical system	6	Final Work	28
Electrical system	7	Template for Angle Bracket	29
Fan controller for manual air conditioning	8	Template for Fuel Standpipe	30
Automatic air-conditioning fan controller	9	Operating Instructions for End Customer	31
Remote option (Telestart)	11		

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Chevrolet	Aveo	KLAS	e4 * 2001/116 * 0063

Engine type	Engine model	Output in kW	Displacement in cm ³
B12D1	Gasoline/LPG	62	1206
F14D3	Gasoline/LPG	69	1399
F14D4	Gasoline	74	1399

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 Chevrolet Aveo Gasoline	1314431A

Heater unit recommended for the respective vehicle class:

Vehicle	Heater Unit
Compact car	Thermo Top E

Foreword

These installation instructions apply to Chevrolet Aveo vehicles with a Gasoline engine - for validity, see page 2 - in the notchback version from model year 2006 and in the hatchback version from model year 2008 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, where this is the case the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top E* should 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).

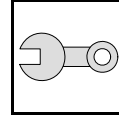
Special Tools

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

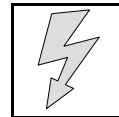
Explanatory Notes on Document

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.

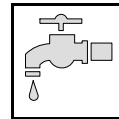
Mechanical system



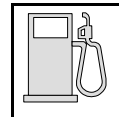
Electrical system



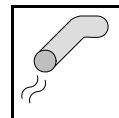
Coolant



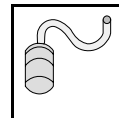
Fuel



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.

All dimensions are in mm!

Tightening torque of hose clamps = 2.0 + 0.5 Nm!

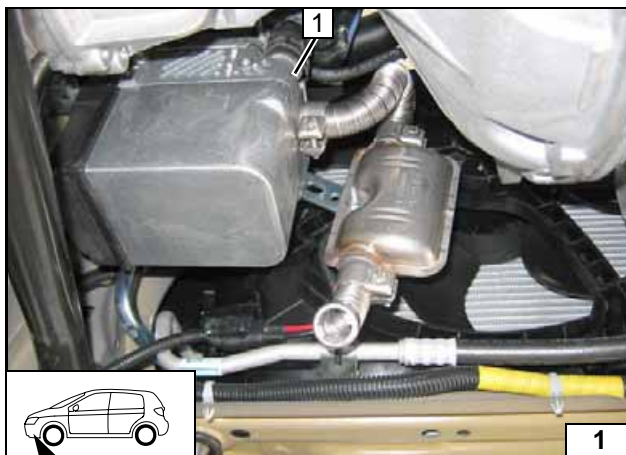
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

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 the left front wheel.
- Remove front left wheel well trim.
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the left-hand instrument panel trim.
- Remove the A/C control panel.

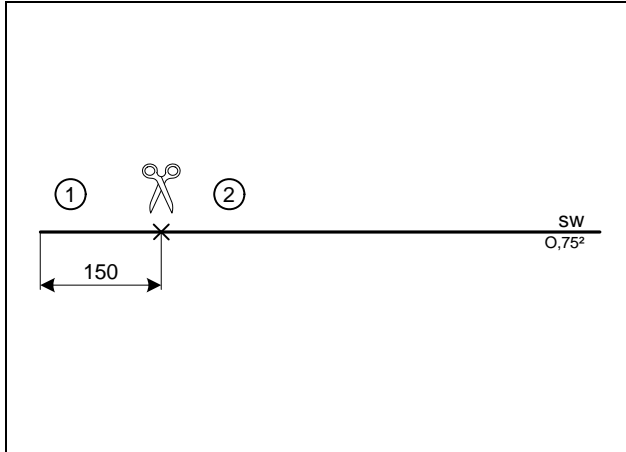
Remove page 31 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

Installation location



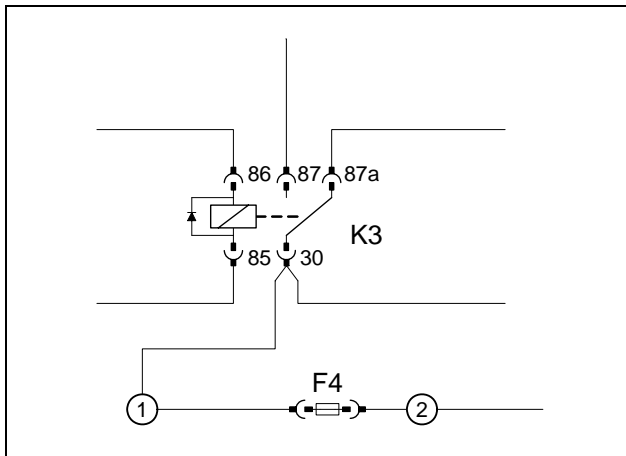
Preparing electrical system

Only with automatic air-conditioning

Wire section 2 will be required later for connection of A/C control panel.



Cutting wires to length



Produce connections as shown in wiring diagram. Install wire section 2 in the protective sleeving provided.



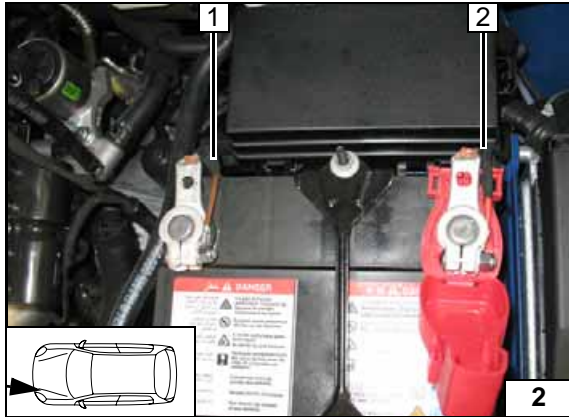
Preparing fuse F4



Electrical system

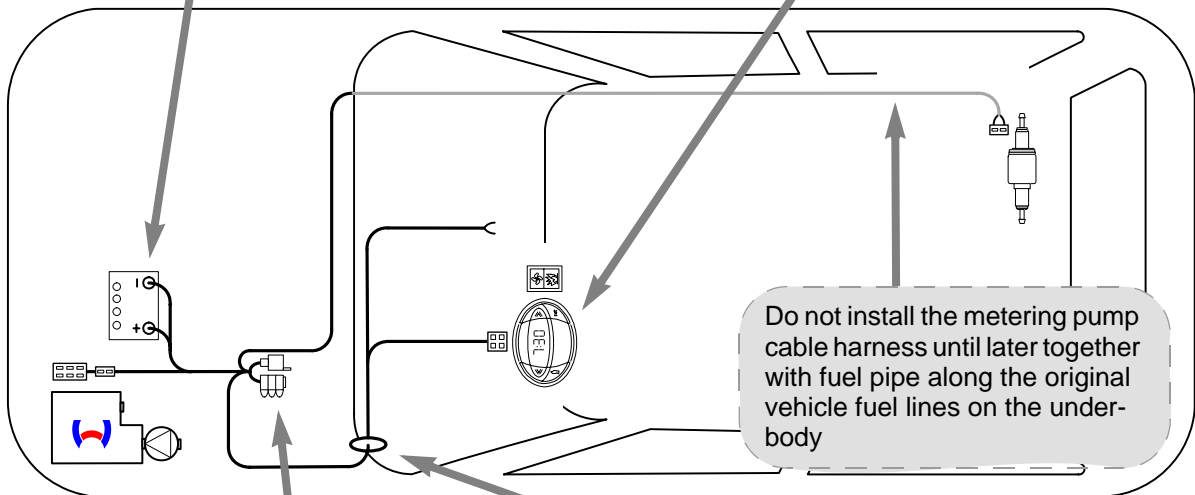
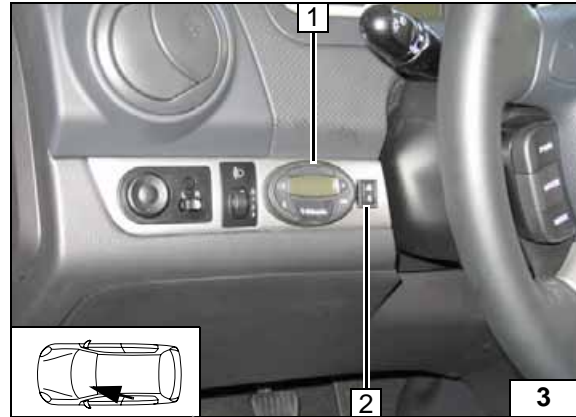
Positive and ground connection

- 1 Ground connection
- 2 Positive connection

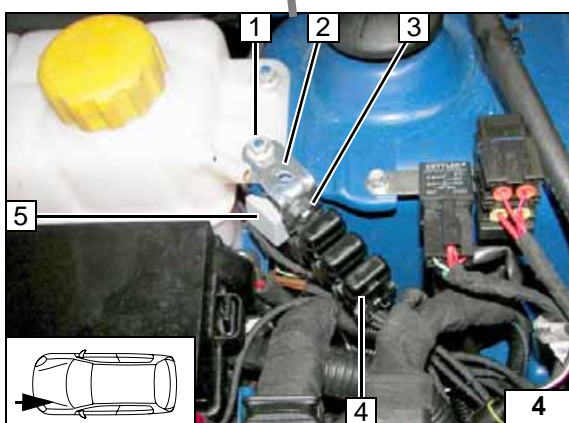


Digital timer/summer/winter switch option

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

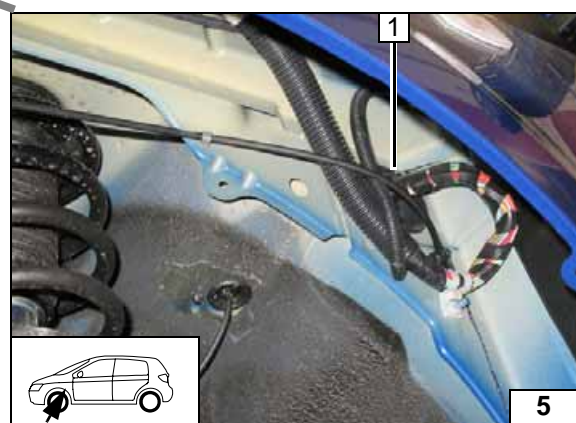


Wiring harness installation diagram



Fuse holder, relay K3

- 1 Original vehicle bolt, flanged nut
- 2 Angle bracket
- 3 M5x16 bolt, retaining plate of fuse holder, flanged nut
- 4 Fuse holder
- 5 K3 relay

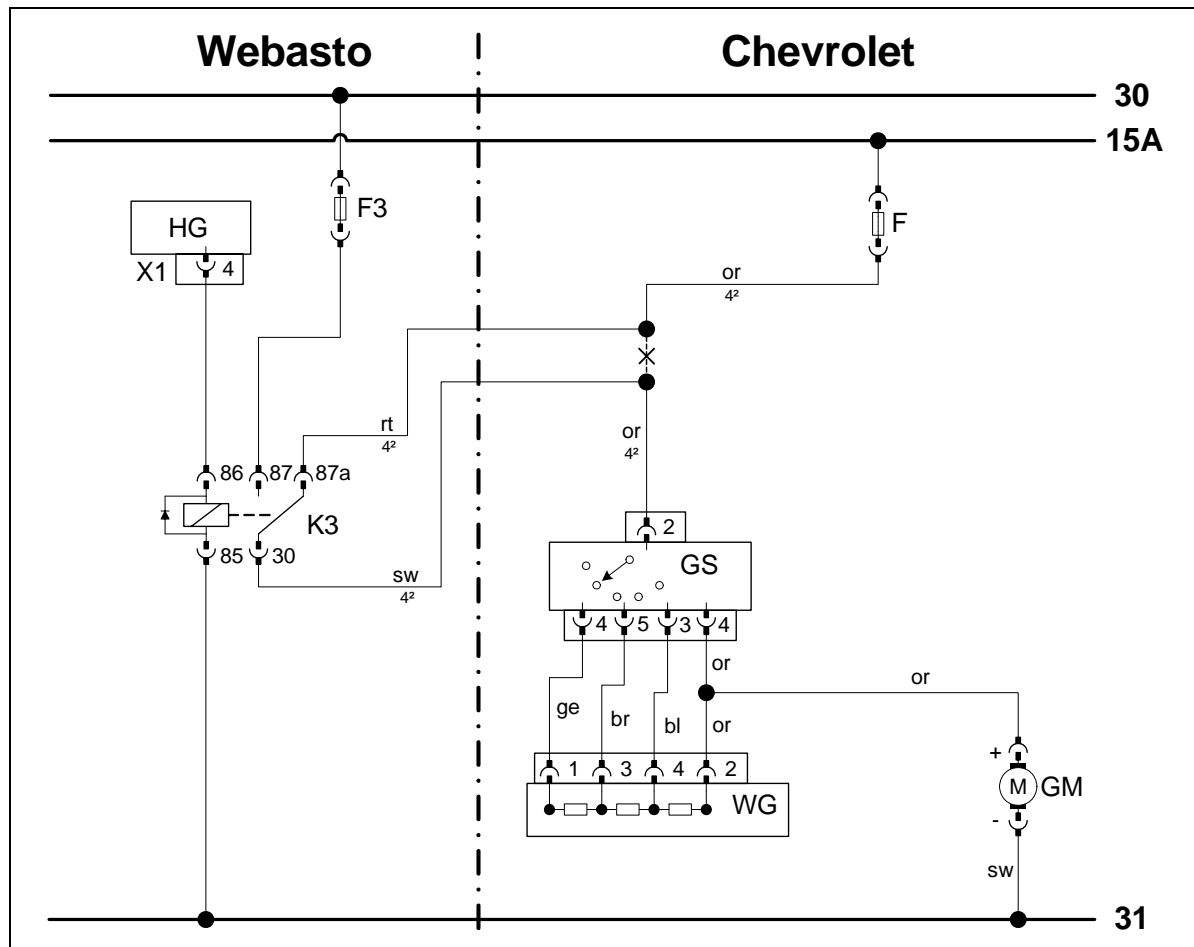


Wiring harness pass through

- 1 Protective rubber plug



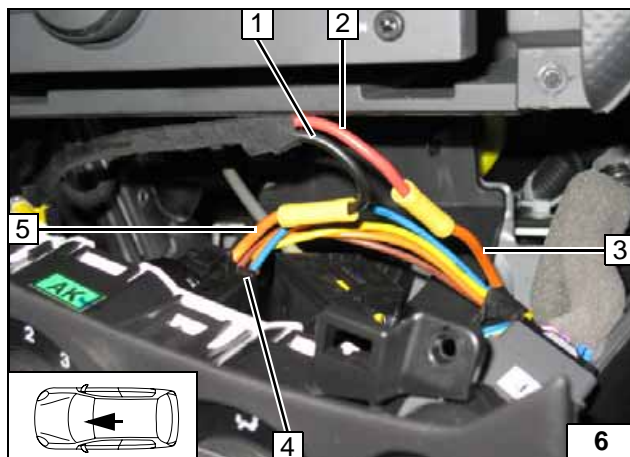
Fan controller for manual air conditioning



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	WG	Resistor group	or	orange
F3	25 A fuse	GS	Fan switch	sw	black
K3	Fan relay	F	Fuse		
				X	Cutting point
				Wiring colors may vary.	

Legend



Connection to 6-pin connector 4 from fan switch.
Produce connections as shown in wiring diagram.

- 1 Black (sw) wire from K3/30
- 2 Red (rt) wire from K3/87a
- 3 Orange (or) wire of fuse
- 5 Orange (or) wire of connector for fan switch



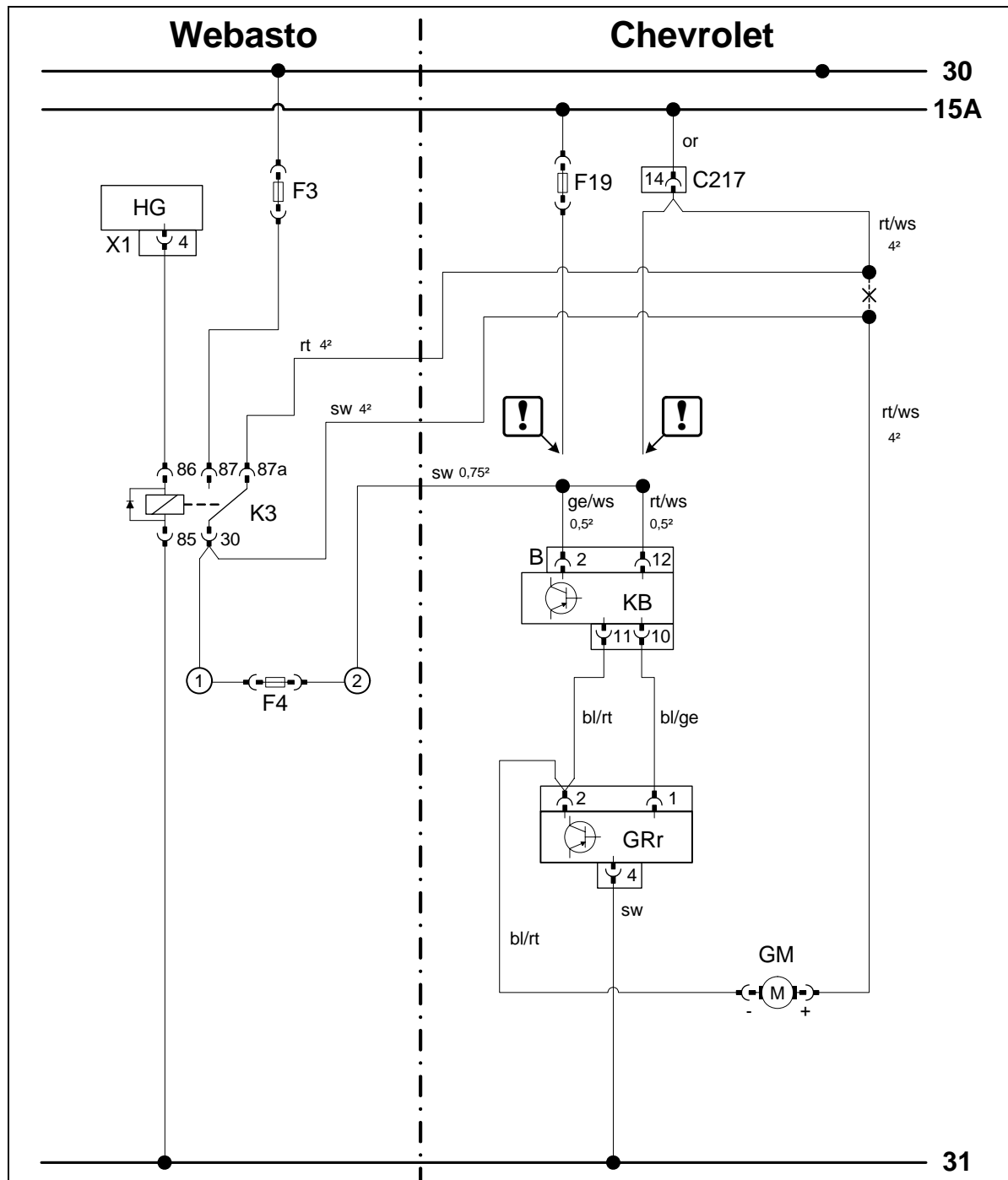
Connecting fan switch



Automatic air-conditioning fan controller

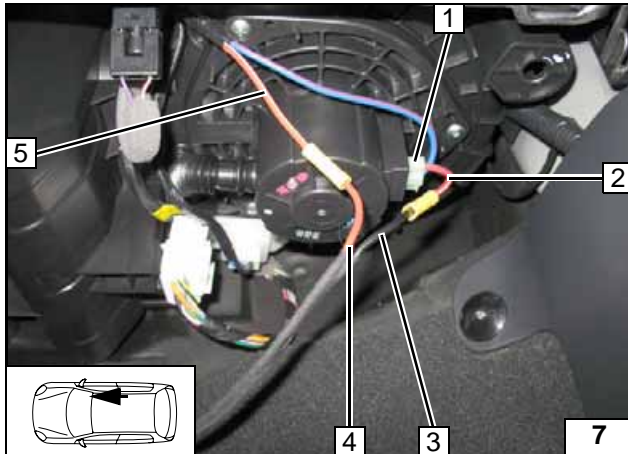


Wiring diagram



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	C217	16-pin white (ws) connector	ws	white
F3	25 A fuse	GRr	Fan controller	sw	black
K3	Fan relay	KB	Air-conditioning control panel	br	brown
F4	10 A additional fuse	F19	10 A fuse	or	orange
		b	16-pin connector	bl	blue
				ge	yellow
				!	Insulate wire ends and tie back
				X	Cutting point
					Wiring colors may vary.

Legend

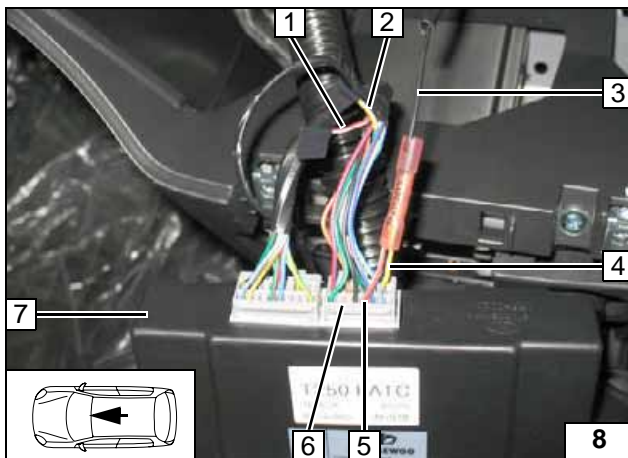


Connection to 2-pin connector **1** from the blower motor.
Produce connections as shown in wiring diagram.

- 2** Red/white (rt/ws) wire of connector
- 3** Black (sw) wire from K3/30
- 4** Red (rt) wire from K3/87a
- 5** Red/white (rt/ws) wire of Terminal 15A



**Connect-
ing fan-mo-
tor**

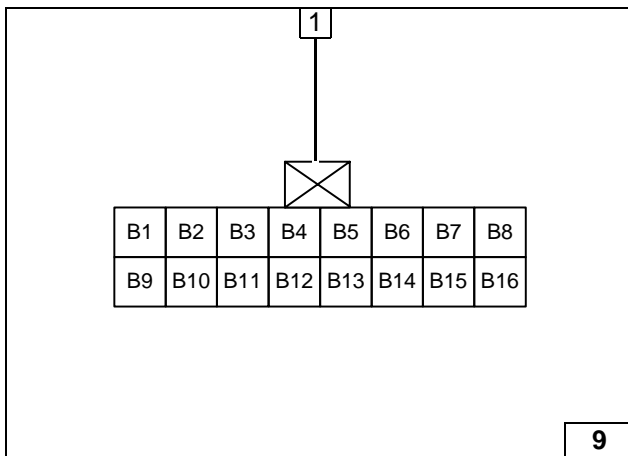


Connection to 16-pin connector **6** from A/C control element.
Produce connections as shown in wiring diagram. Insulate wires **1** and **2** and tie back.

- 3** Black (sw) wire from K3/30
- 4** Yellow/white (ge/ws) wire, Pin 2
- 5** Red/white (rt/ws) wire, Pin 12
- 7** A/C control panel

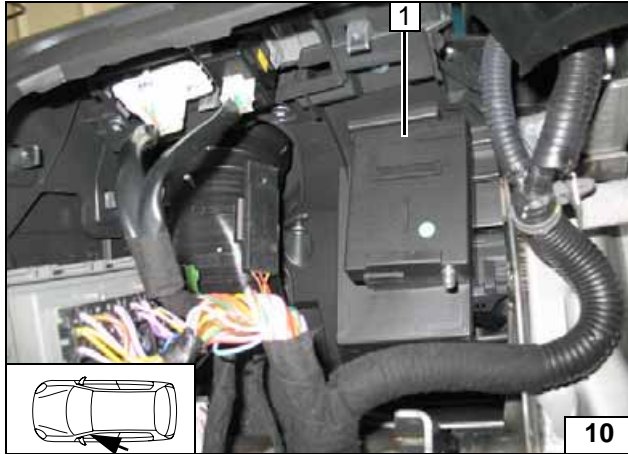


**Connect-
ing A/C
control
panel**



1 16-pin connector, on contact side

**View of 16-
pin con-
nector**

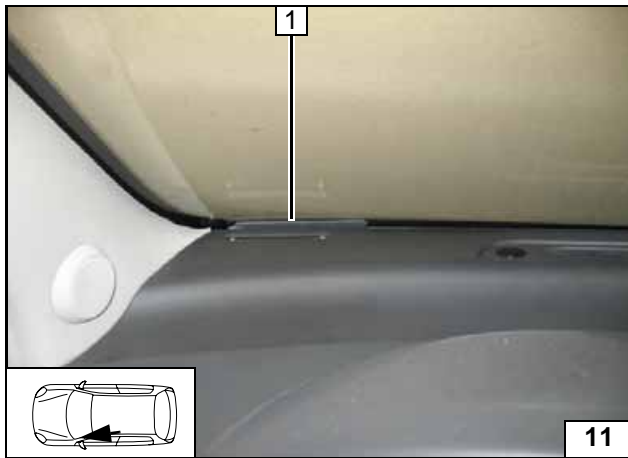


Remote option (Telestart)

Fasten Telestart 1 with adhesive tape.



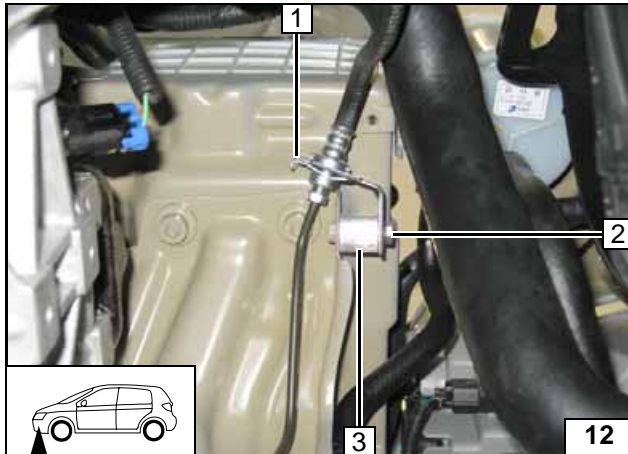
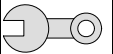
Installing receiver



Glue antenna 1 onto windshield in black area from inside.



Installing antenna



Preparing installation location

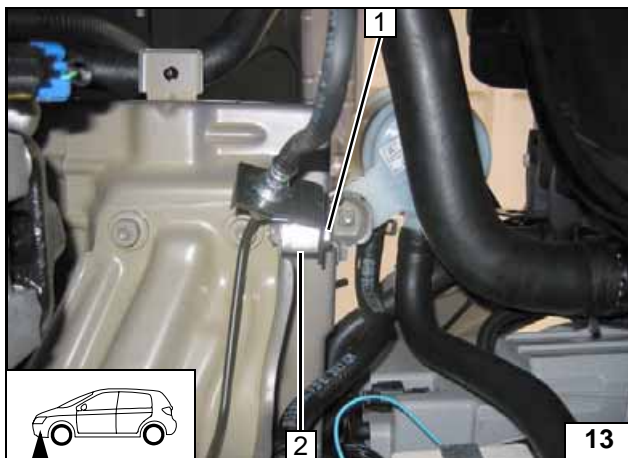
1.4 liter 69 kW gasoline engine

Remove original vehicle bolt at position 2 and discard. Turn angle bracket 1 upward as far as possible.

- 2 M6x30 bolt, spring lockwasher
- 3 20 mm shim



Repositioning hydraulic line



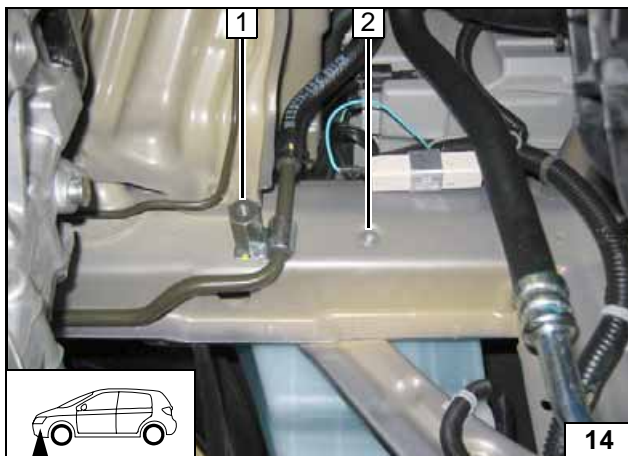
1.4 liter 74 kW gasoline engine

Remove original vehicle bolt at position 1 and discard.

- 1 M6x30 bolt, spring lockwasher
- 2 20 mm shim



Repositioning hydraulic line



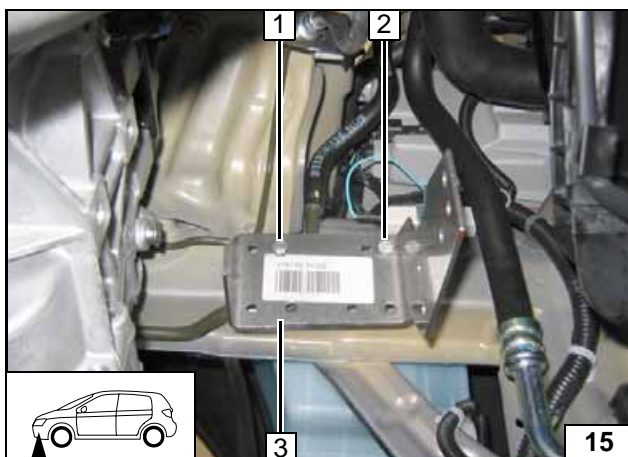
All vehicles

Remove original vehicle nut at position 1.

- 1 M6x30 spacer nut
- 2 Rivet nut, existing hole



Preparing installation location

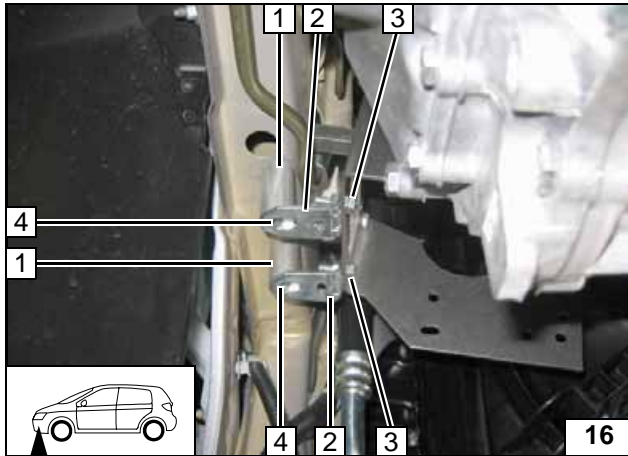


Install 30 mm shim and large diameter washer between bracket and frame side member at position 2.

- 1 M6x20 bolt, spring lockwasher
- 2 M6x50 bolt, spring lockwasher
- 3 Bracket



Installing bracket

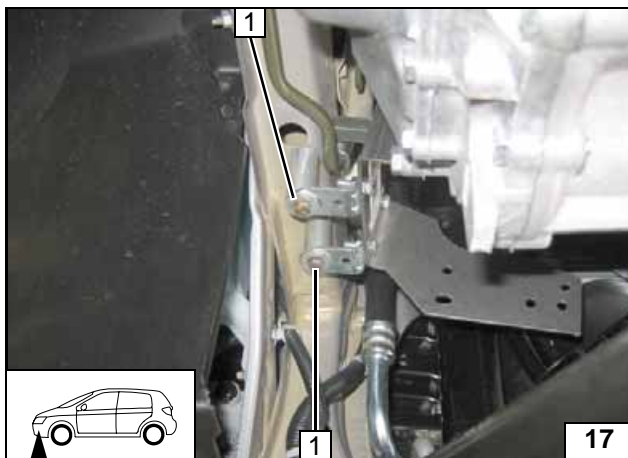


Bend up angle bracket 2 [2x] in accordance with template.

- 1 40 mm shim [2x]
- 3 M6x20 bolt, flanged nut [2x each]
- 4 Copy hole pattern, drill 9.1 mm dia. hole and mount rivet nut [2x each]



Copying hole pattern



- 1 M6x60 bolt, spring lockwasher, flanged nut [2x each]

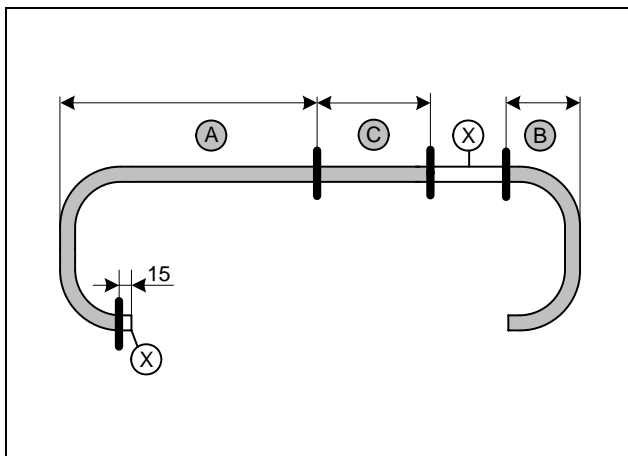
Installing angle bracket

Premounting heater unit

1.2 liter gasoline engine

- a = 330
- b = 70
- c = 420

Discard section X



Cutting coolant hoses to length

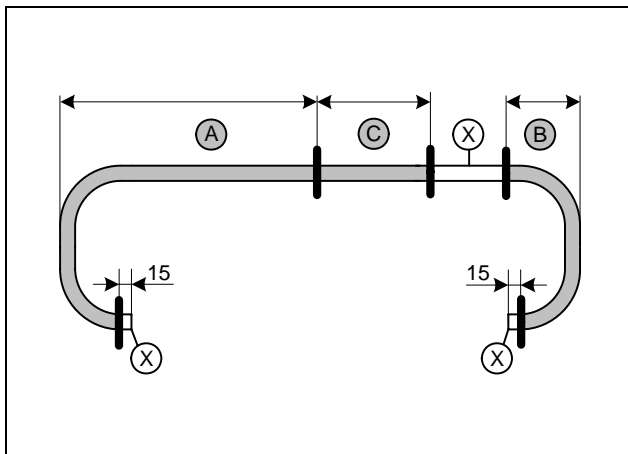
1.4 liter 69 kW gasoline engine

- a = 280
- b = 70
- c = 500

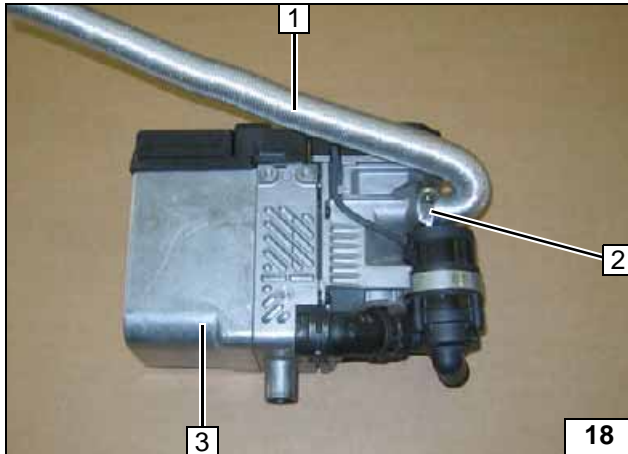
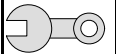
1.4 liter 74 kW gasoline engine

- a = 200
- b = 70
- c = 430

Discard section X

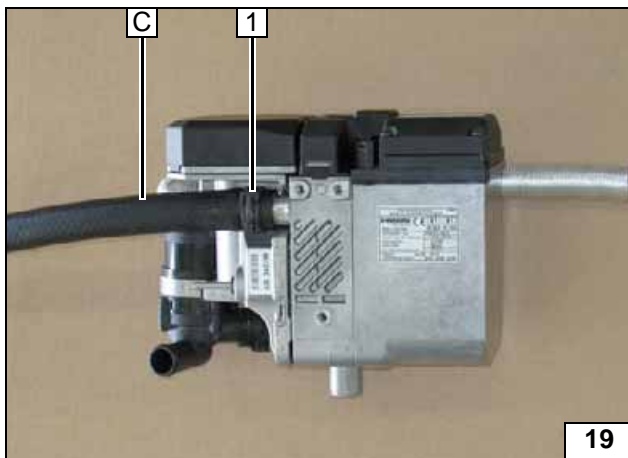


Cutting coolant hoses to length



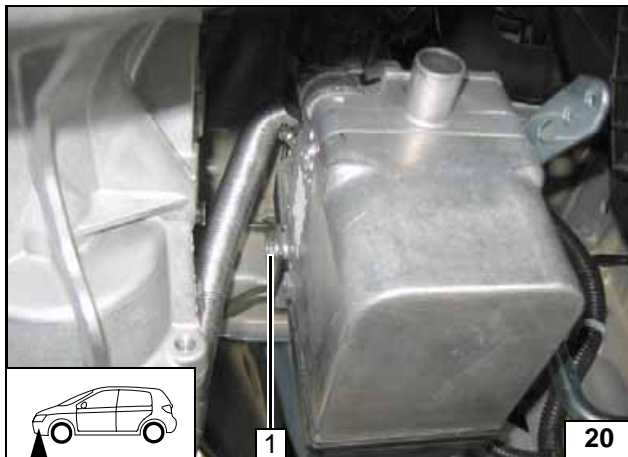
- 1 Combustion air pipe
- 2 Hose clamp
- 3 Heater unit

Preassembling heater unit



- 1 Spring clip

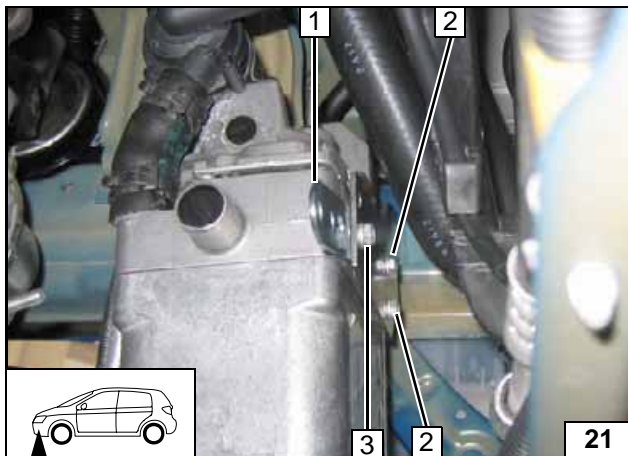
Preassembling heater unit



Installing heater unit

- 1 Eject screw

Installing heater unit

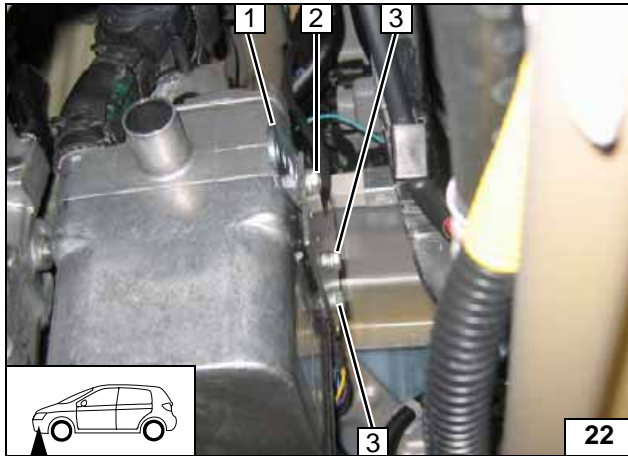
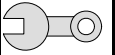


1.2 liter and 1.4 liter 69 kW gasoline engine

Install perforated bracket 1 between bracket and heater unit at position 3.

- 2 Eject screw [2x]
- 3 Eject screw

Installing heater unit



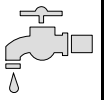
1.4 liter 74 kW gasoline engine

Install perforated bracket 1 between bracket and heater unit at position 2.

- 2 E-jot screw
- 3 E-jot screw [2x]



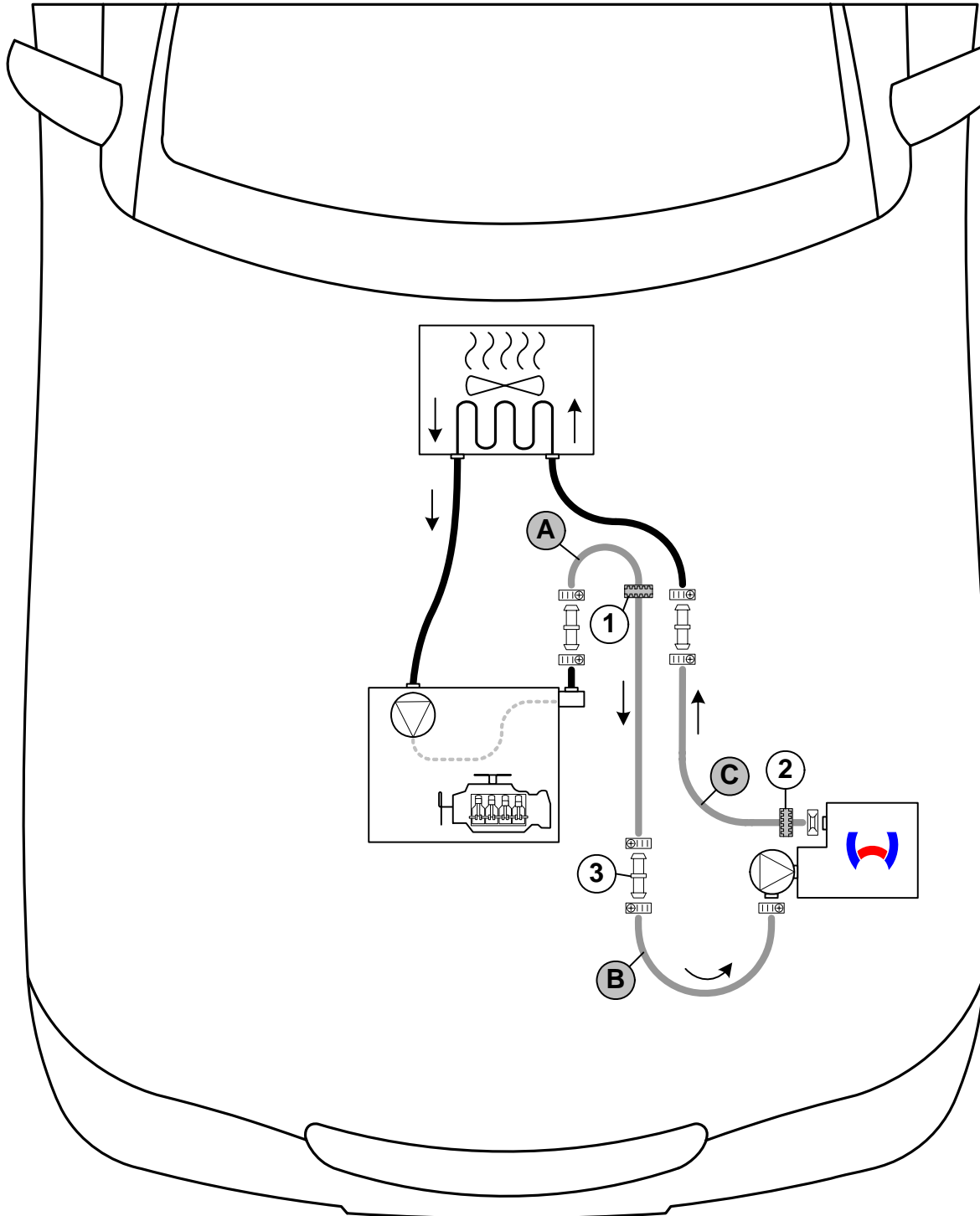
**Installing
heater unit**









Coolant on 1.2 liter and 1.4 liter 69 kW gasoline engine

WARNING!

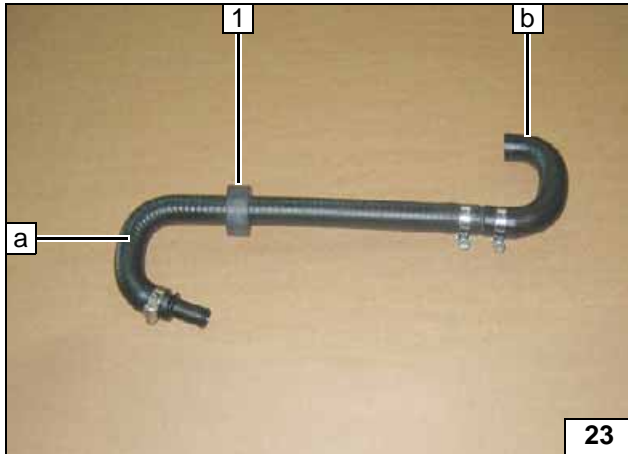
Any coolant running off should be collected using an appropriate container. Install coolant hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the coolant hose, the heater unit must be filled with coolant.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



Coolant routing diagram

All spring clips without a specific designation  = 27 mm dia. All connecting pipes without a specific designation  = dia. 18x20. All hose clamps without a specific designation  = 20-27 mm dia. **1** = Black (sw) rubber isolator  only on 1.2 liter gasoline engine! **2** = Black (sw) rubber isolator  only on 1.4 liter gasoline engine! **3** Connecting pipe  = 20x20 dia.!

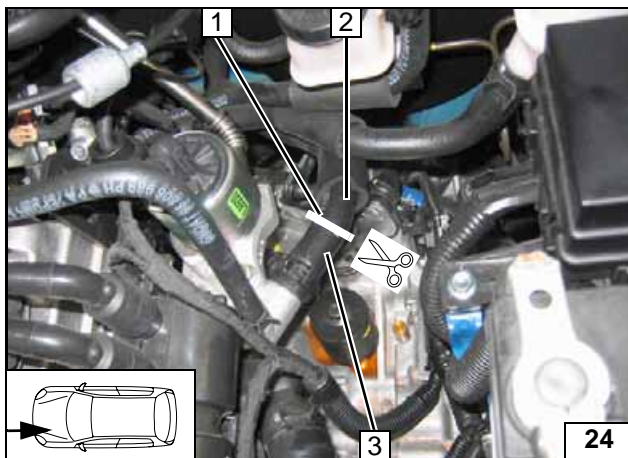




1.2 liter gasoline engine

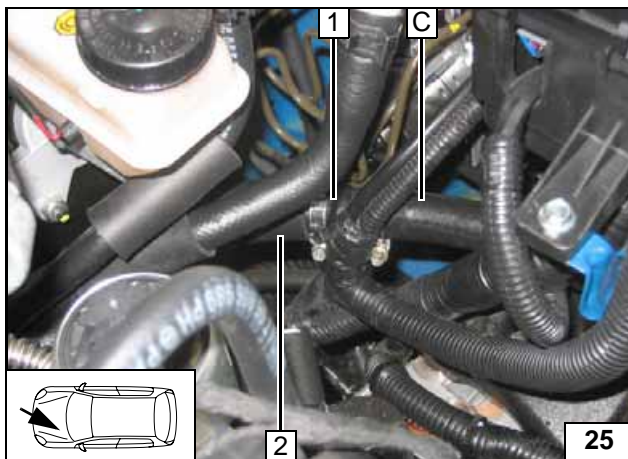
- 1 Black (sw) rubber isolator

Premounting hose



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

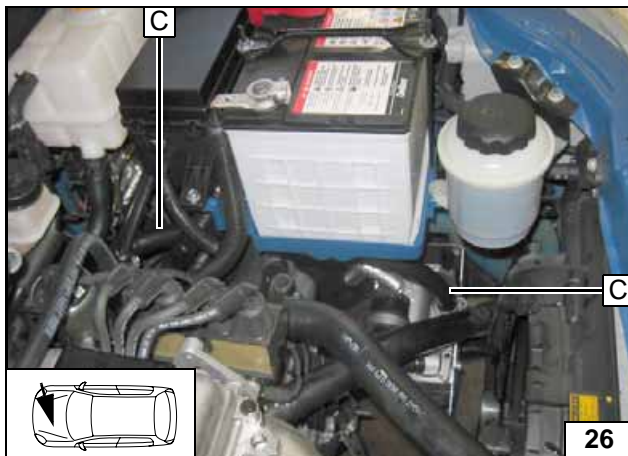
Cutting point



Ensure sufficient distance to neighboring components.

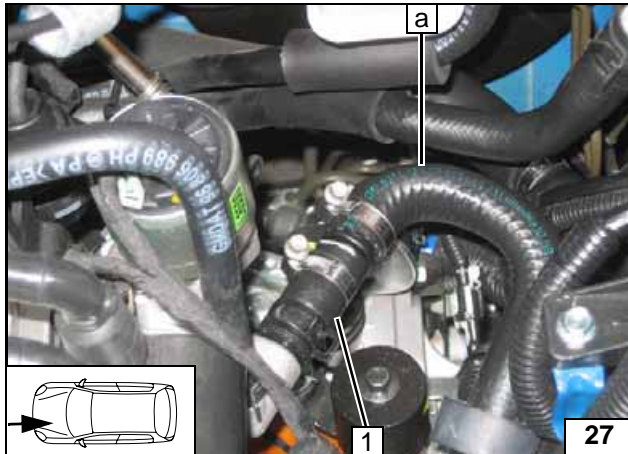
- 1 Cable tie
- 2 Hose on heat exchanger inlet

Connecting heat exchanger inlet



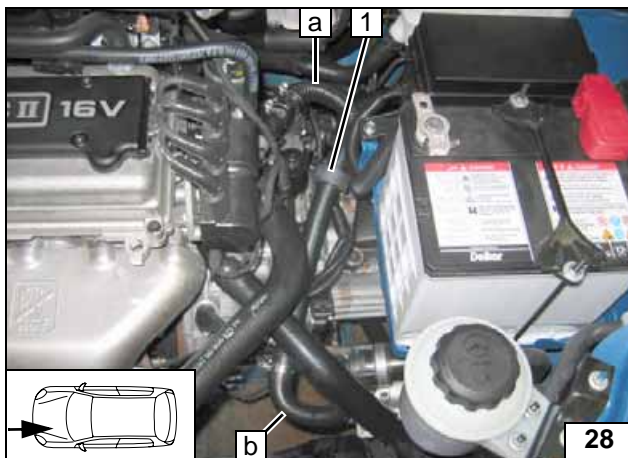
Ensure sufficient distance to adjacent components, especially to gearshift control!

Routing in engine compartment



1 Hose of engine outlet

Connect-
ing engine
outlet

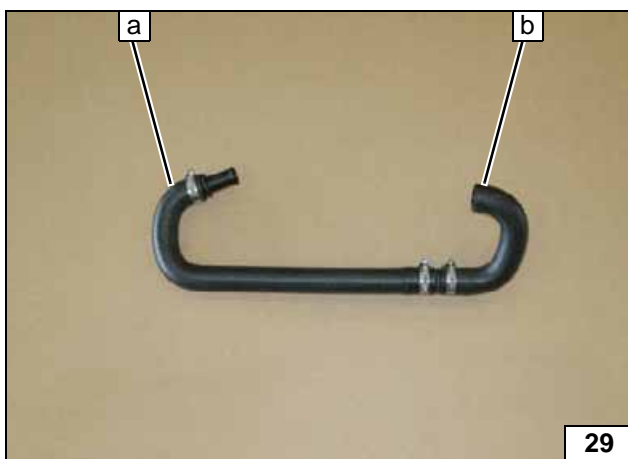


Install hose **B** on heater unit inlet (circulating pump).



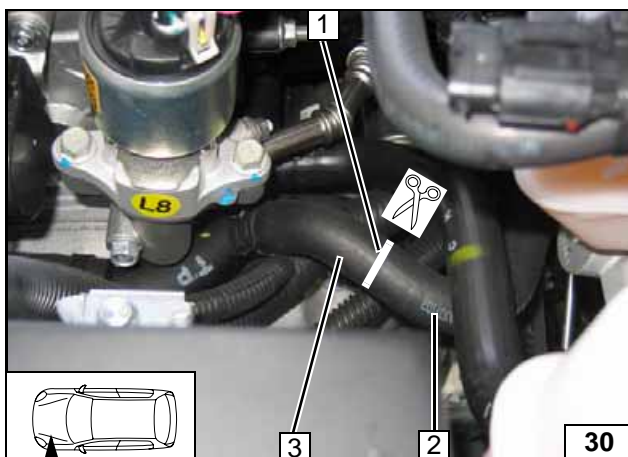
1 Position black (sw) rubber isolator

Routing
and con-
nection of
heater unit



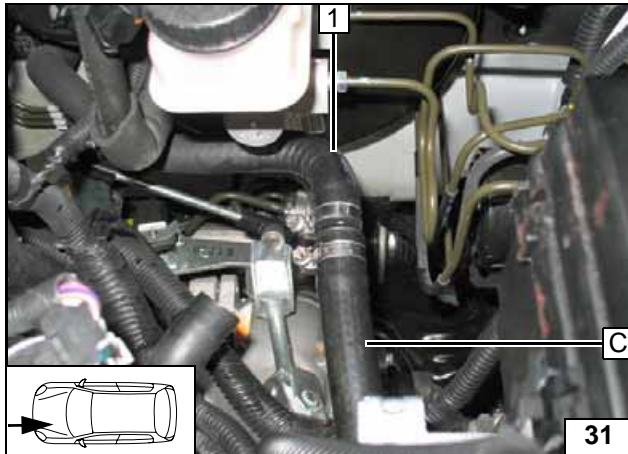
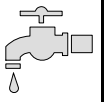
1.4 liter 69 kW gasoline engine

Premount-
ing hose



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

Cutting
point

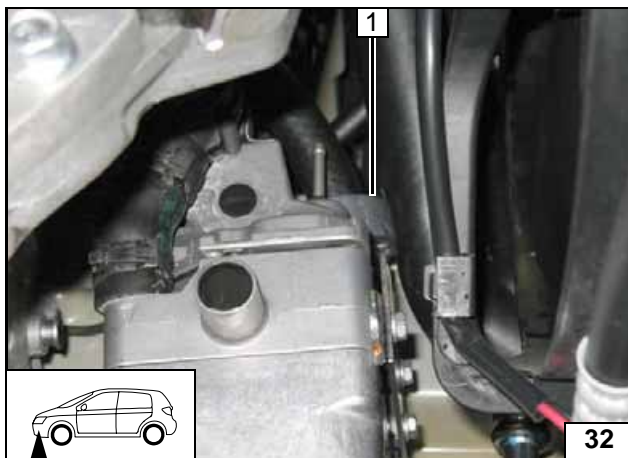


Ensure sufficient distance to neighboring components. Slide on black (sw) rubber isolator before installation.

1 Hose on heat exchanger inlet

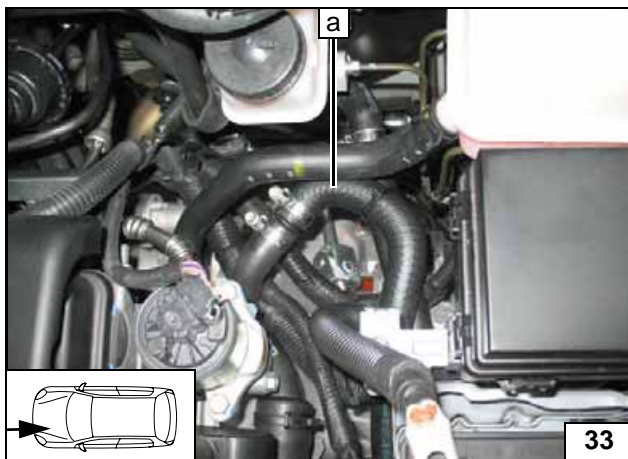


Connecting heat exchanger inlet

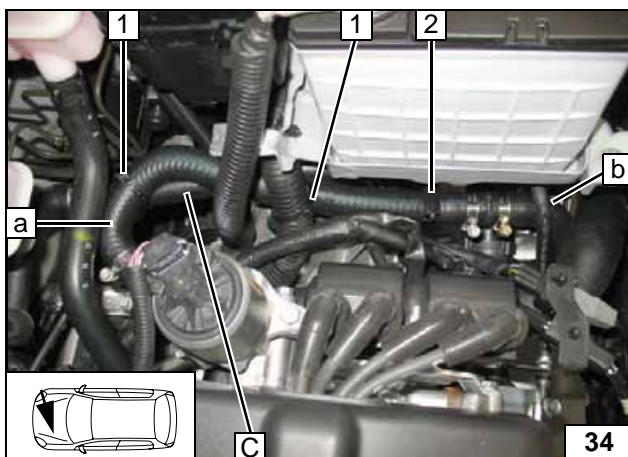


1 Black (sw) rubber isolator

Positioning rubber isolator



Connecting engine outlet



Install hose **B** on heater unit inlet (circulating pump).

- 1 Cable tie [2x]
- 2 Spacer bracket



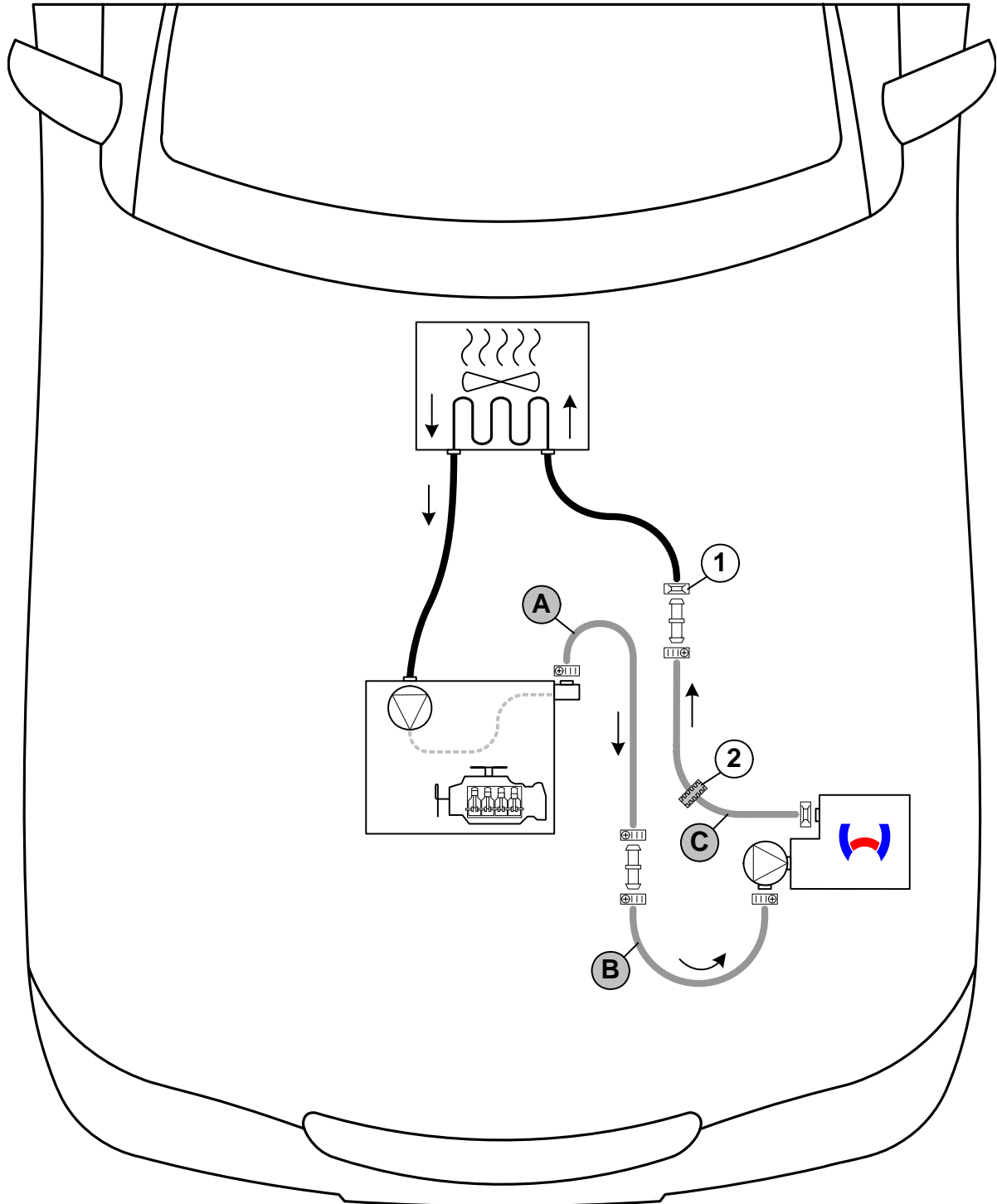
Routing and connection of heater unit







Coolant on 1.4 liter 74 kW gasoline engine

WARNING!

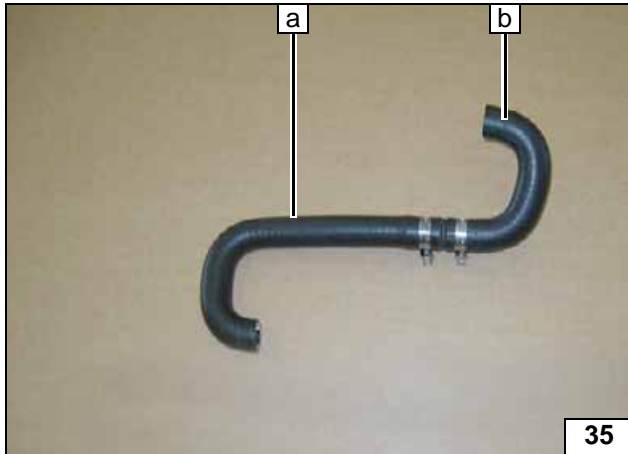
Any coolant running off should be collected using an appropriate container. Install coolant hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the coolant hose, the heater unit must be filled with coolant.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



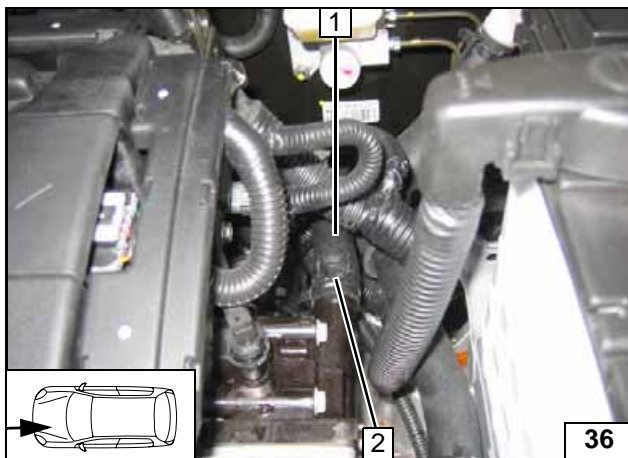
Coolant routing diagram

All spring clips without a specific designation  = 27 mm dia.
 All connecting pipes  = 20x20 mm dia. All hose clamps  = 20-27 mm dia.!
1= Original vehicle spring clip! **2** = Rubber isolator .





Premounting hose

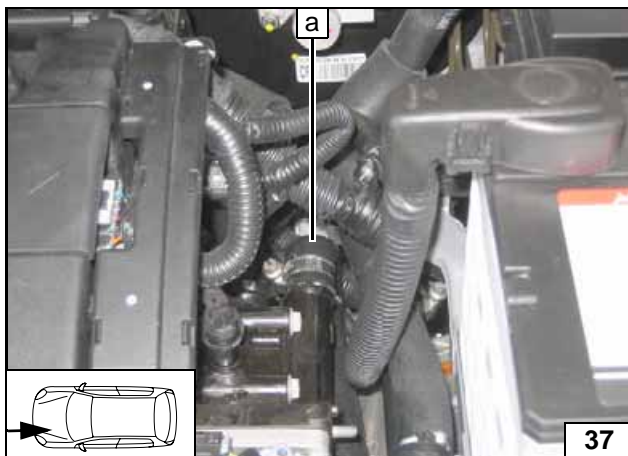


Original vehicle spring clip 2 will be reused!

1 Disconnect hose from engine outlet



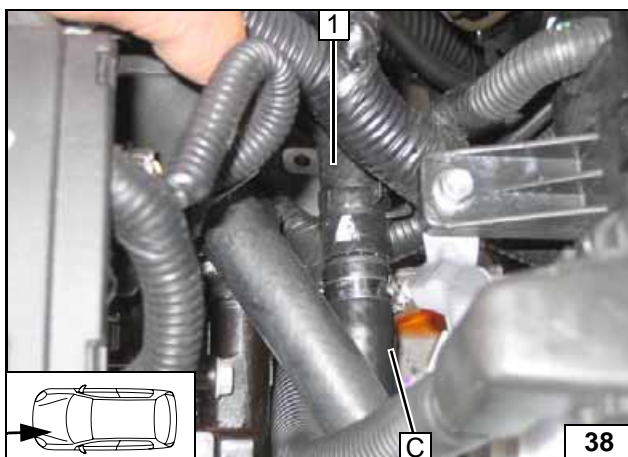
Cutting point



Ensure sufficient distance to neighboring components.

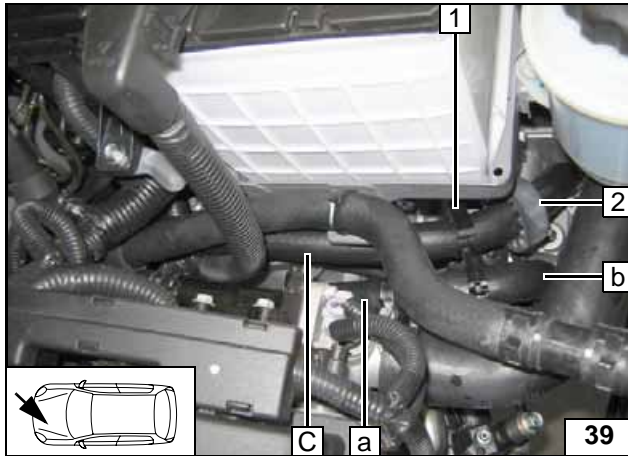


Connecting engine outlet



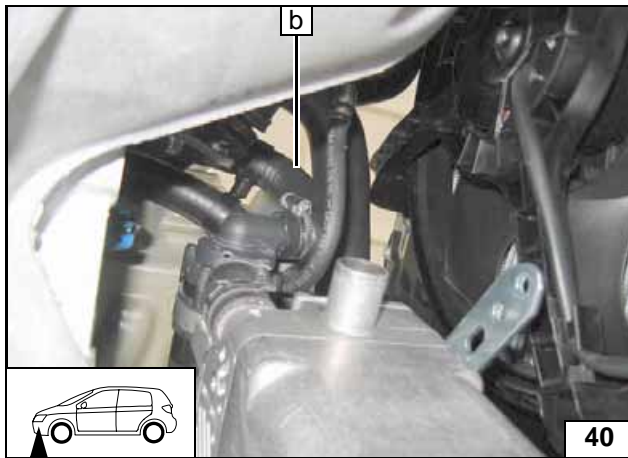
1 Hose on heat exchanger inlet

Connecting heat exchanger inlet

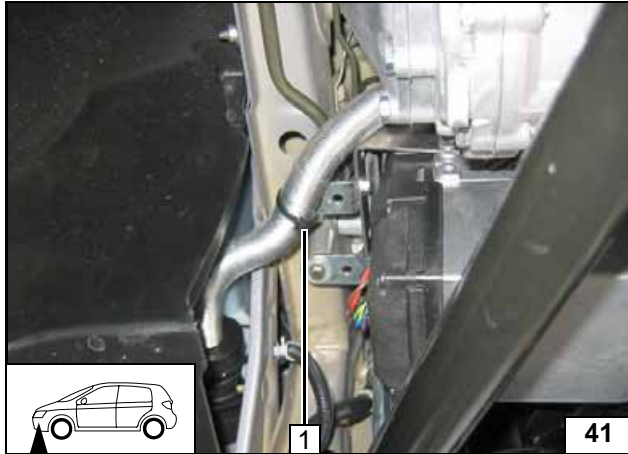
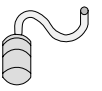


- 1 Hose bracket
- 2 Black (sw) rubber isolator

Routing in engine compartment



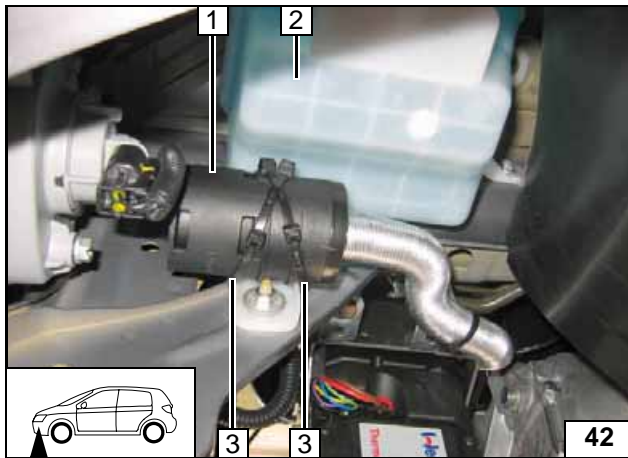
Connecting heater unit



Combustion air

Fasten combustion air pipe on angle bracket with cable tie 1.

Installing combustion air pipe



- 1 Muffler
- 2 Washer reservoir
- 3 Cable tie [2x]



Installing muffler



Fuel

CAUTION!

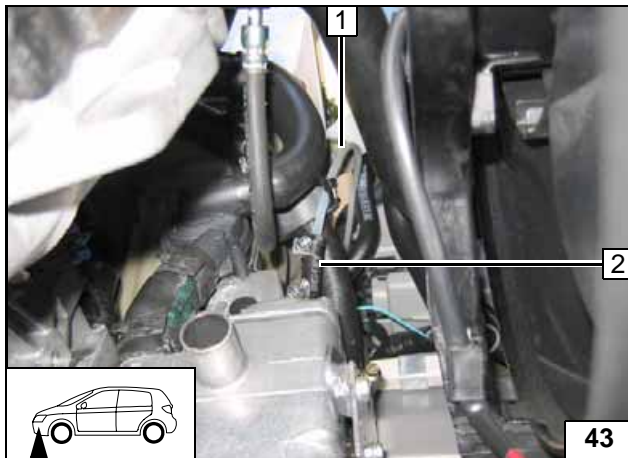
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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.

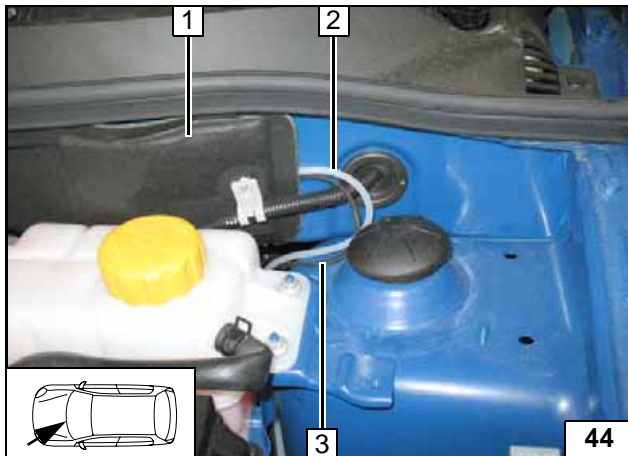
WARNING!

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



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

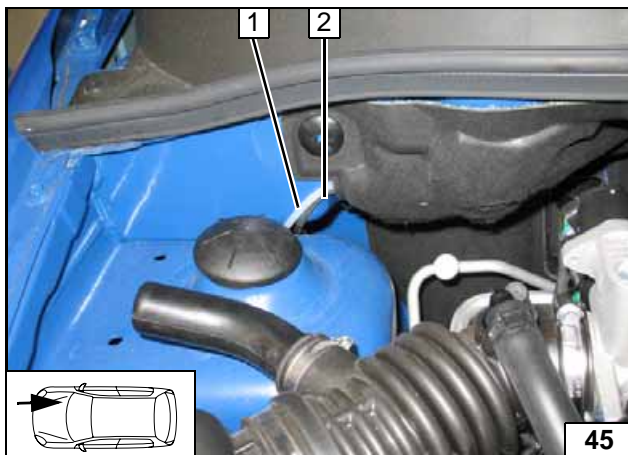
**Connect-
ing heater
unit**



Route fuel line **2** and wiring harness of metering pump **3** behind insulation mat **1** to right-hand side of vehicle.



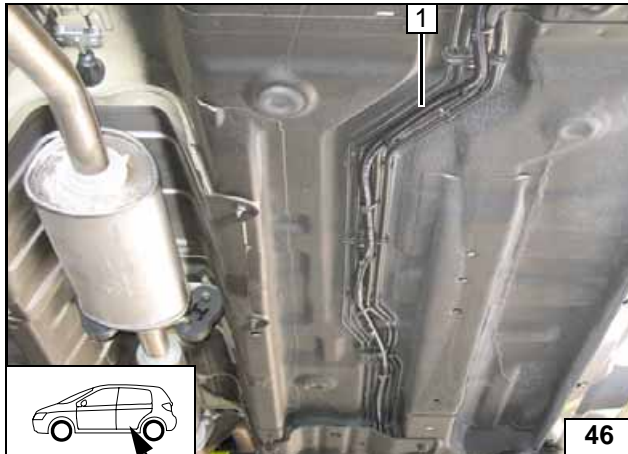
**Installing
lines**



Route fuel **1** and wiring harness of metering pump **2** to underbody.



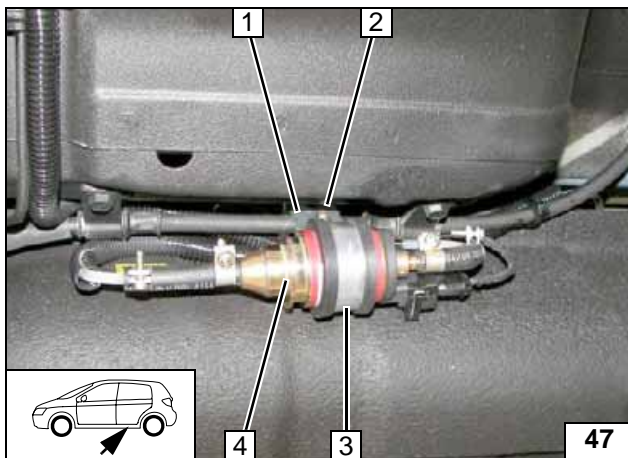
**Installing
lines**



Route wiring harness of metering pump and fuel line in corrugated tube **1** on underbody along original vehicle fuel lines to installation location of metering pump.



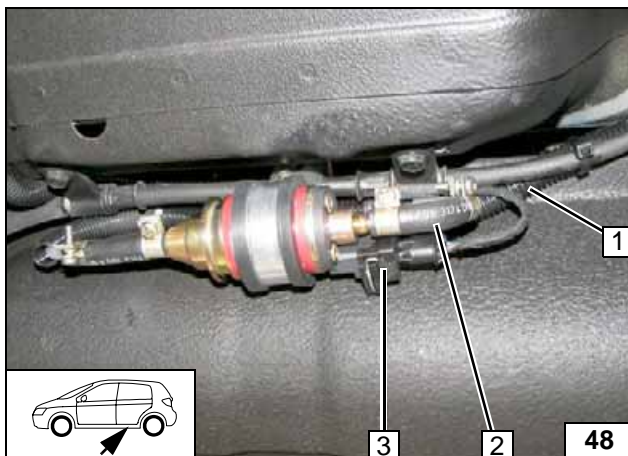
Installing lines



- 1 M6x20 bolt, angle bracket, flanged nut on existing hole of tank fastener
- 2 Silent block, flanged nut [2x]
- 3 Rubber-coated pipe clamp
- 4 Metering pump



Installing metering pump

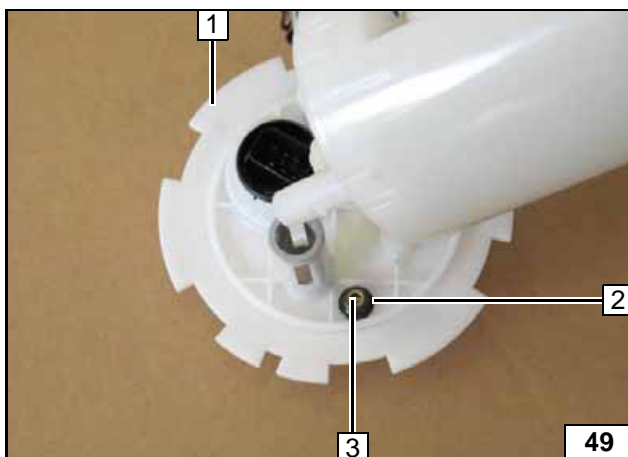


Check the position of the components; adjust if necessary. Check that they have free clearance.



Connecting metering pump

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

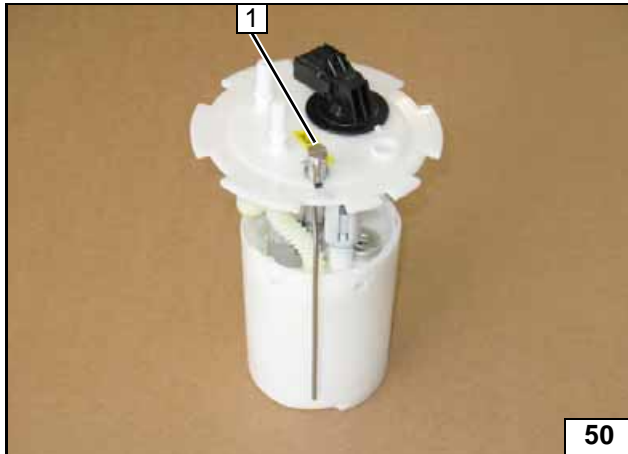


Remove and dismantle fuel-tank sending unit **1** according to manufacturer's instructions.

- 2 Flanged nut
- 3 Copy hole pattern, 6 mm dia. hole



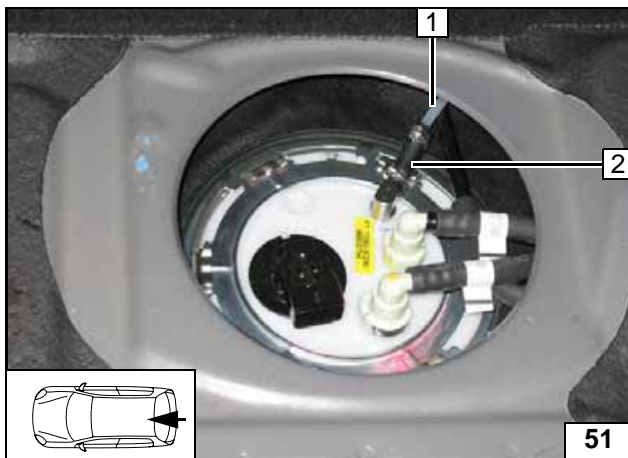
Removing fuel



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



Installing fuel standpipe

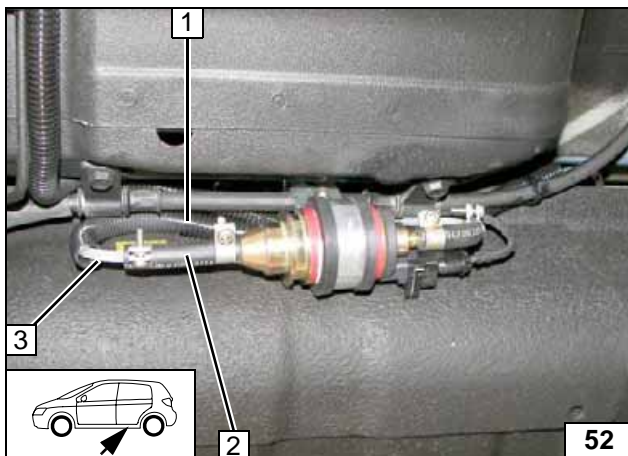


Install fuel-tank sending unit according to manufacturer's specifications.



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

Connecting fuel line

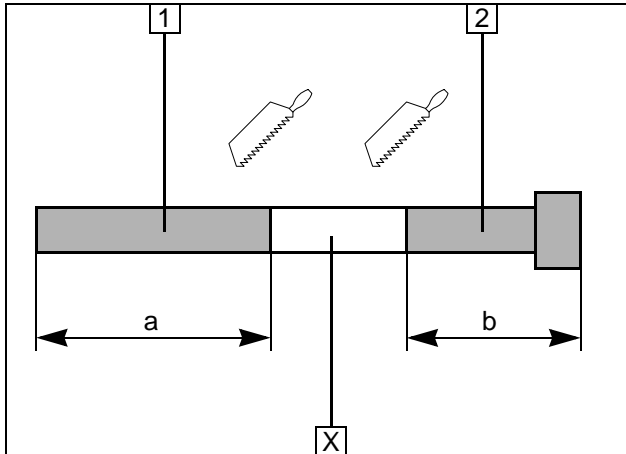
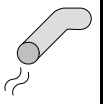


Slide corrugated tube 1 onto fuel line 3. Check the position of the components; adjust if necessary. Check that they have free clearance.



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

Connecting metering pump

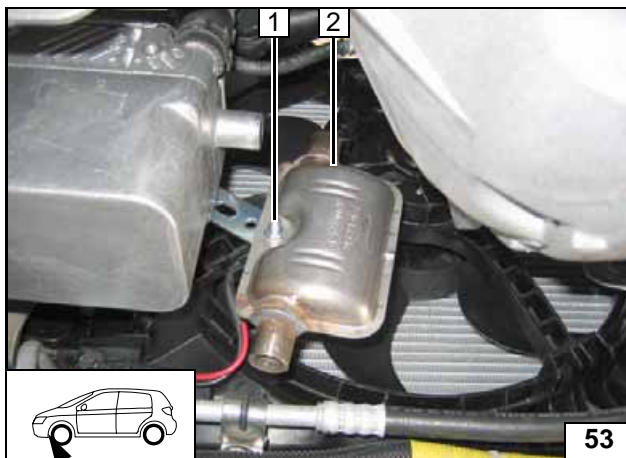


Exhaust gas

- 1 Exhaust pipe
a = 180
- 2 Exhaust end section
b = 80

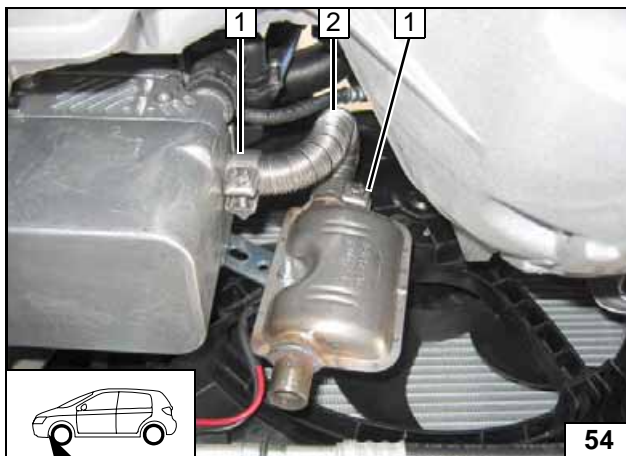
Discard section X

Preparing exhaust pipe



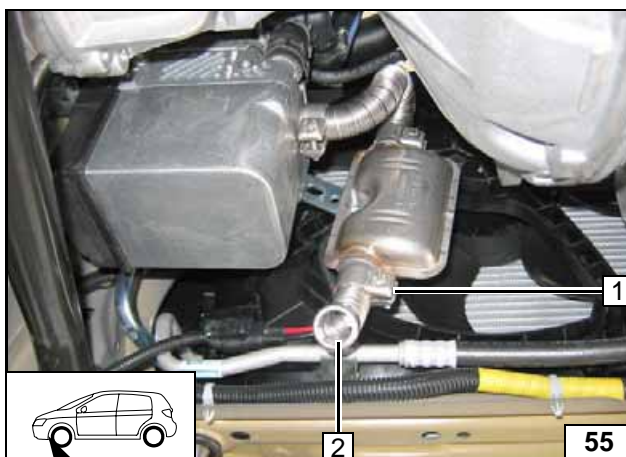
- 1 M6x20 bolt, flanged nut
- 2 Muffler

Installing muffler



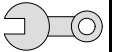
- 1 Hose clamp [2x]
- 2 Exhaust pipe

Installing exhaust pipe



- 1 Hose clamp
- 2 Exhaust end section

Installing exhaust pipe and end section



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.

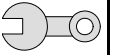
Only use manufacturer-approved coolant.

Spray heater unit components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

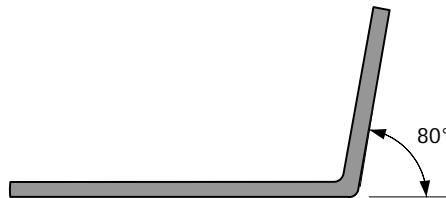
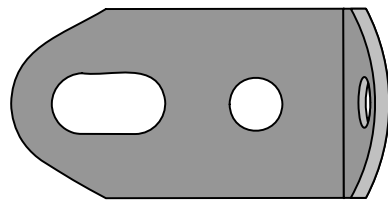
- Connect the battery.
- Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.
- Set the digital timer.
- Make settings on A/C control panel according to the "Operating Instructions for End Customer".
- Check the proper operation of the additional heater, see the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



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



Template for Angle Bracket



100 mm



Scale 1:1

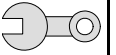
Compare the size of the printed version with dimension lines.

Permitted tolerance a maximum of 2%.

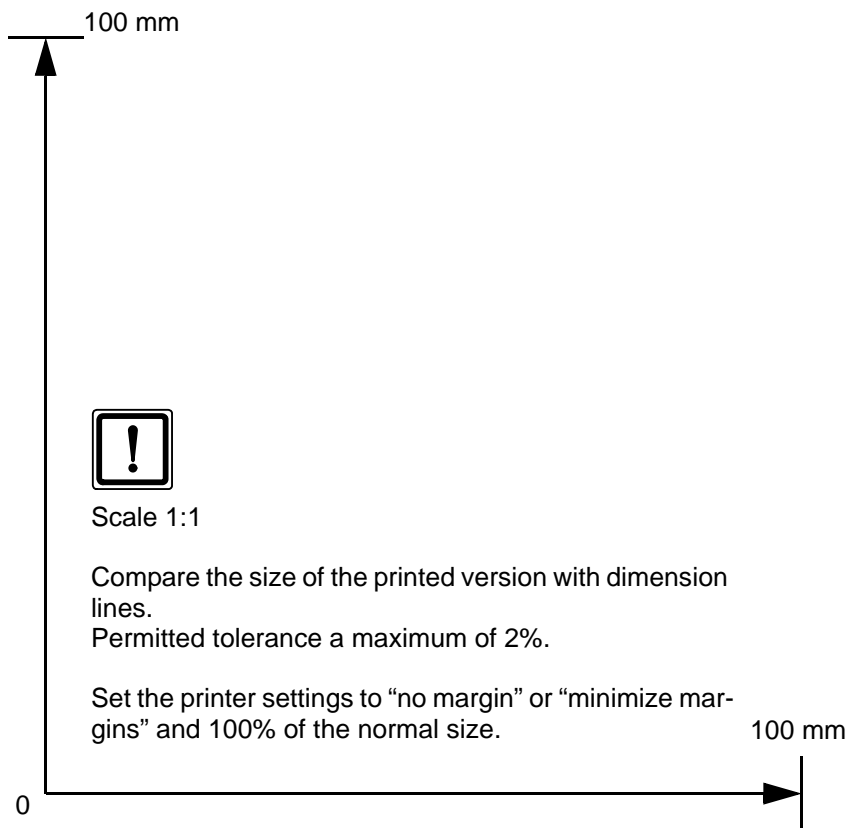
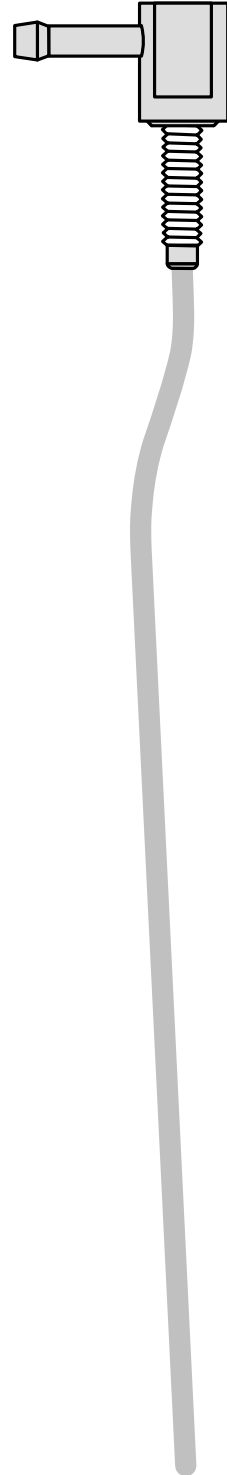
Set the printer settings to "no margin" or "minimize margins" and 100% of the normal size.

100 mm

0



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.

On vehicles with passenger compartment monitoring, this must be deactivated during heating!



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

Manual air conditioning



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

Automatic air-conditioning