Water Heater

***Thermo Top E* Parking heater** e1 00 0003

***Thermo Top C* Parking heater** e1 00 0002

***Thermo Top P* Parking heater** e1 00 0104

Installation instructions

Hyundai i20

Petrol
from Model Year 2009
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, 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.

Ident. No.: 1314869C_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	i20	P/C	e11 * 2001/116 * 0333 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
G4LA	Petrol	57	1248
G4FA	Petrol	74	1396

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/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories *Thermo Top E / C / P*	See price list
1	Installation kit for Hyundai i20 Petrol	1314868A
1	Heater control	See price list

To be ordered additionally for vehicles with automatic air-conditioning:

Quantity	Description	Order No.:
1	Additional Kit for Automatic Air Conditioning on Hyundai i20	1314875A

Heater recommended for the respective vehicle class:

Vehicle	Heater
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 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 Hyundai i20 Petrolvehicles - for validity, see page 2 - from model year 2009 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, the stipulations in the "installation instructions" and "operating and maintenance instructions" for the *Thermo Top C/P/E* must always be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with edge protectors (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

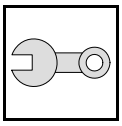
Special Tools

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

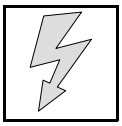
Explanatory Notes on Document

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

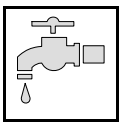
Mechanical system



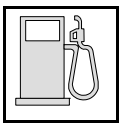
Electrical system



Coolant circuit

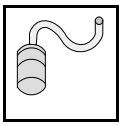


Fuel



Exhaust gas

Combustion air



Software

Special features are highlighted using the following symbols:

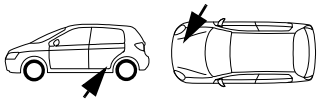
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of Webas-to 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.

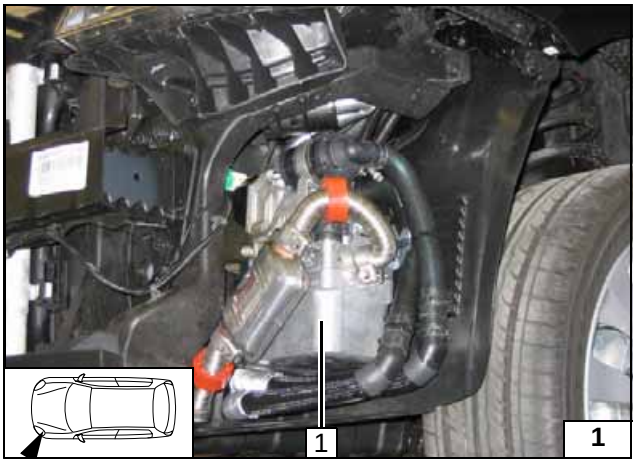
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the 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 battery.
- Remove the air filter together with the intake hose.
- Disconnect the fuse and relay box in the engine compartment and lay aside.
- Detach the wheel well trim on the left
- Remove the bumper
- Open the fuel sender service lid.
- Remove fuel-tank sending unit in accordance with manufacturer's instructions.
- Remove the A/C control panel (only with automatic air-conditioning).
- Remove the instrument panel trim on the driver's side (only with Telestart).

Remove page 30 "Operating Instructions for End Customer" and add to the vehicle operating instructions.

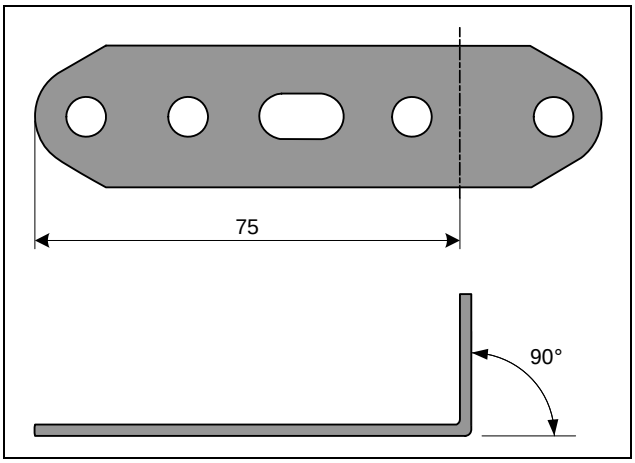


Heater installation location

1 Heater

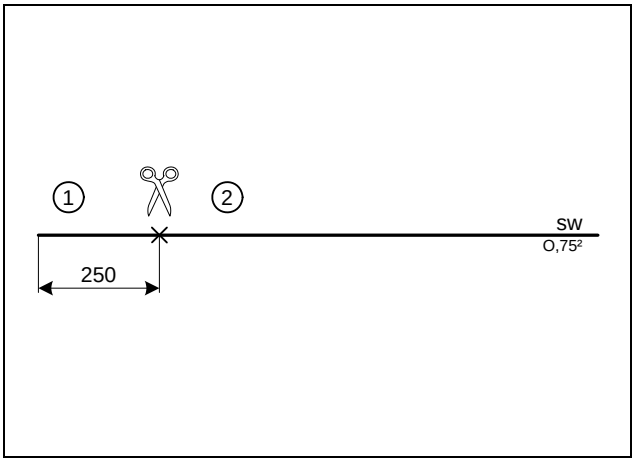
Installation location

Preparing electrical system



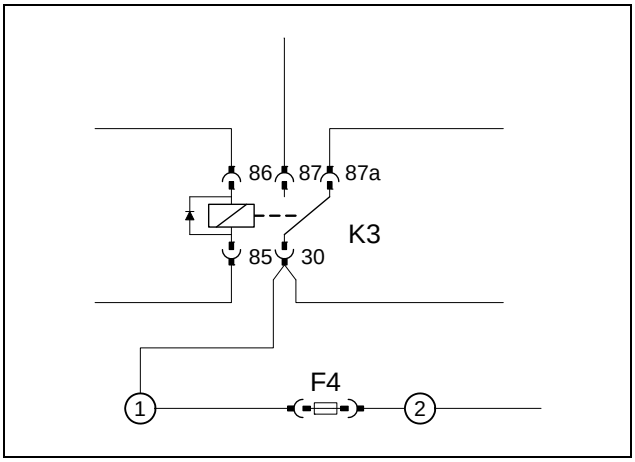
Bending perforated bracket

Only with automatic air-conditioning



Cutting wires to length

Install wire section **2** in protective sleeving provided.

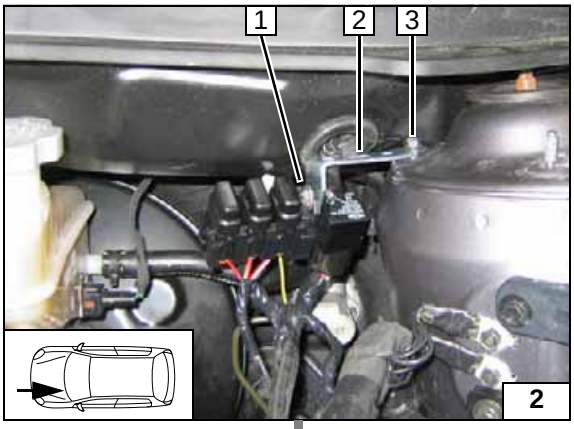


Premounting F4

Electrical system

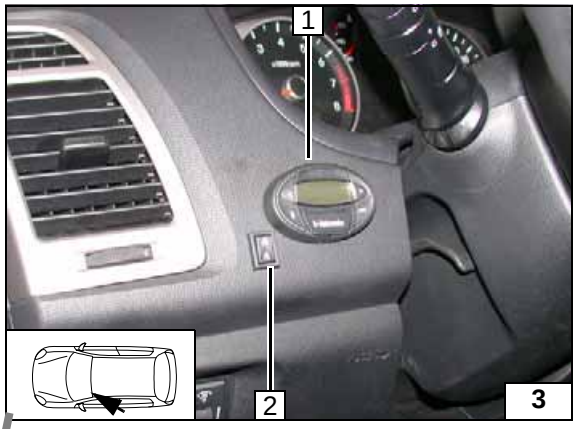
Fuse holder, relay K3

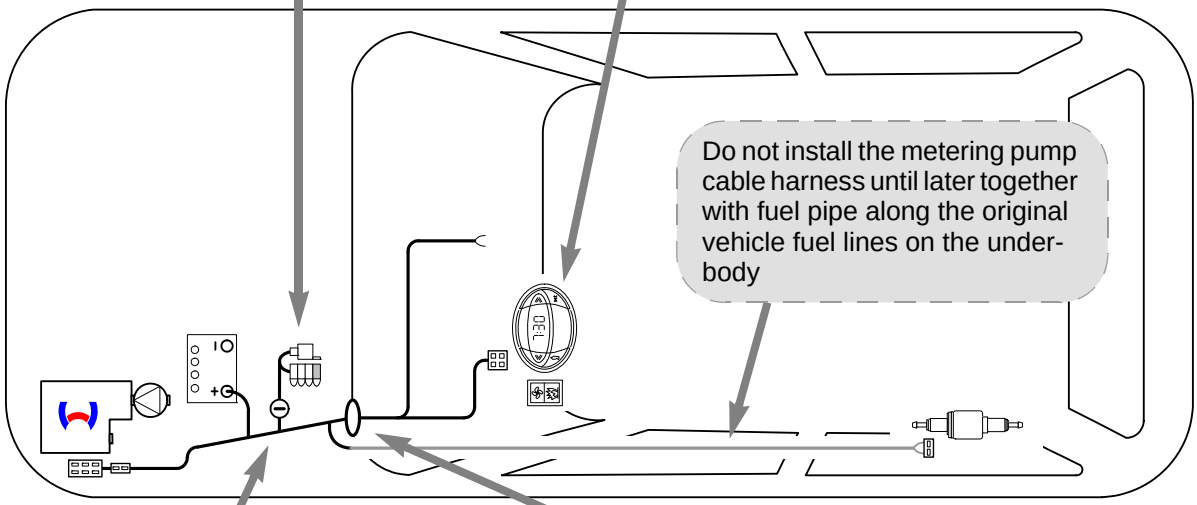
1 M5x16 bolt, washers, retaining plate for fuse holder, K3 relay, flanged nut
2 Perforated bracket
3 M6x20 bolt, spring lockwasher, existing threaded hole



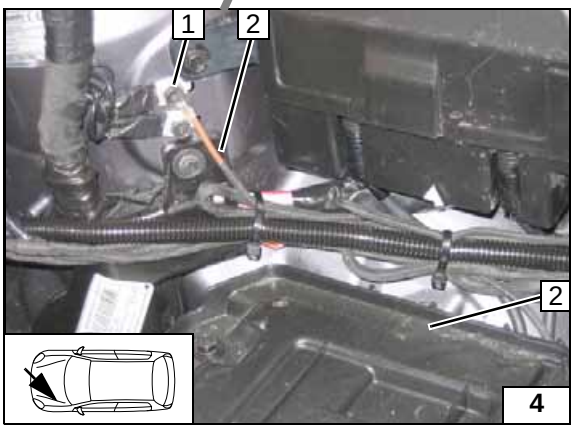
Digital timer and summer/winter switch option

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



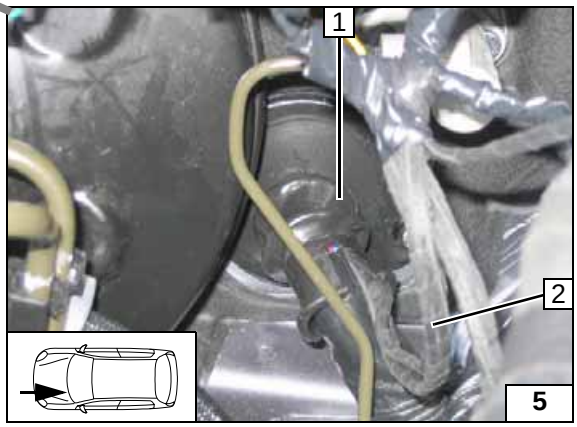


Wiring harness installation diagram



Earth connection

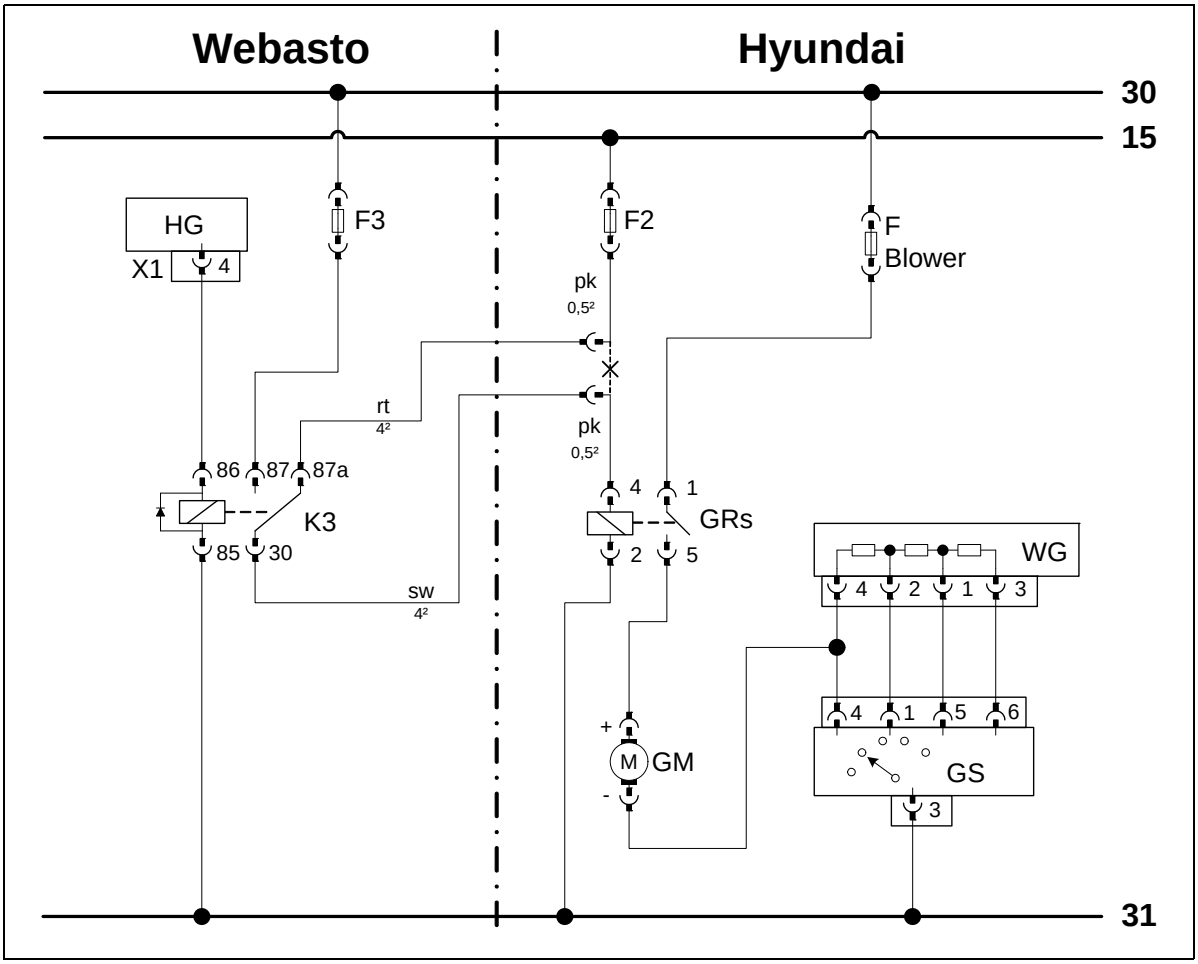
1 Original vehicle earth support point
2 Brown (br) earth wire



Wiring harness pass through

1 Protective rubber plug
2 Wiring harness of digital timer, wiring harness of fan controller (only with automatic A/C)

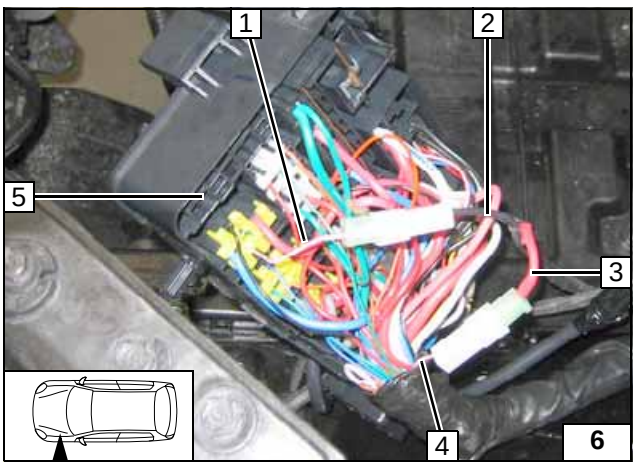
Fan controller for manual air conditioning



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay	pk	pink
F3	Replace 25 A with 5 A fuse.	WG	Resistor group	sw	black
		GS	Fan switch		
K3	Fan relay	F2 IGN	15A fuse		
		F Blower	40 A fan fuse		
				X	Cutting point
				Wiring colours may vary.	

Legend

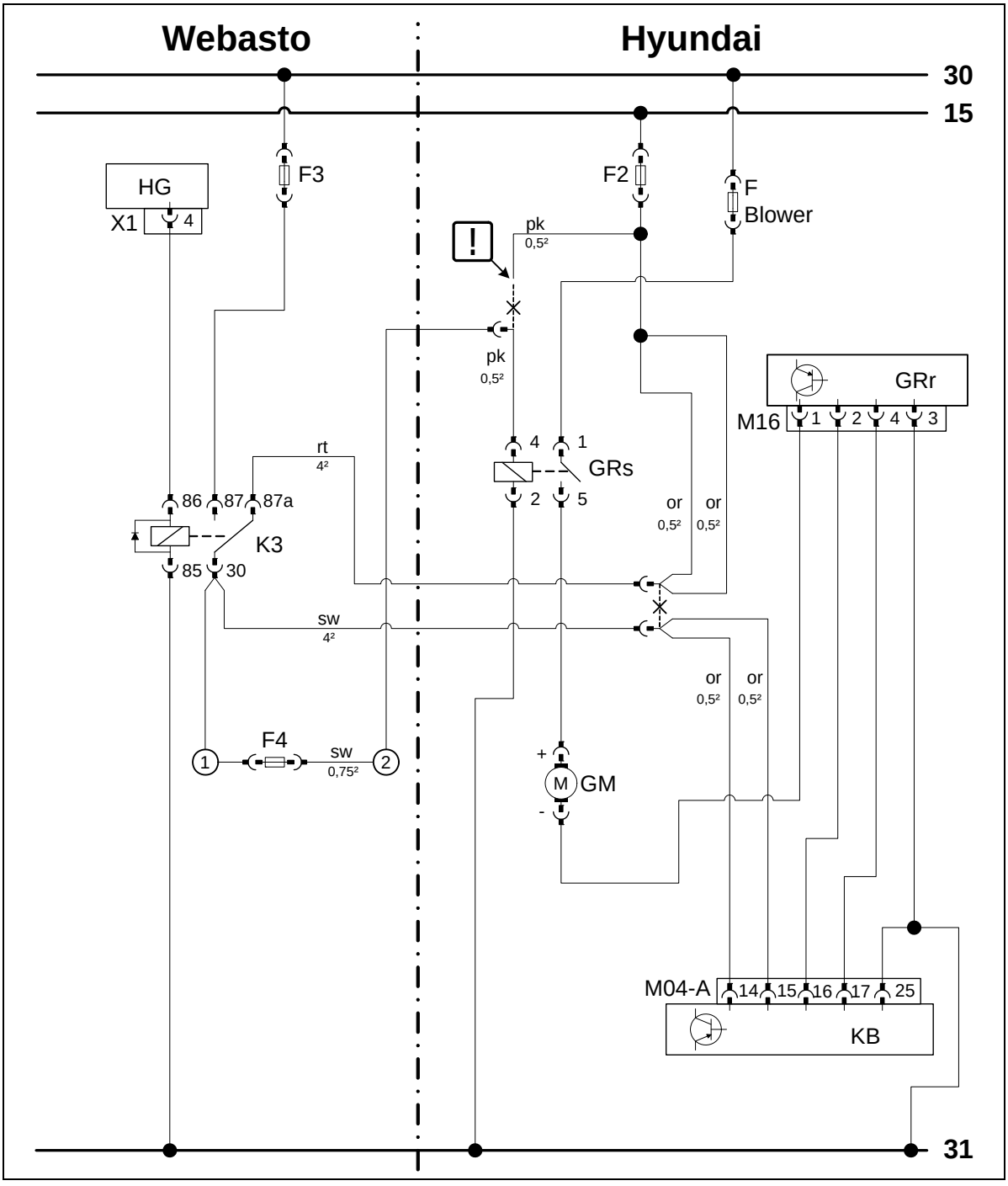


Connection to fuse and relay box **5** in engine compartment. Replace 25 A fuse F3 with 5 A fuse. Produce connections as shown in wiring diagram.

1 Pink (pk) wire of fan relay, Pin 4
2 Black (sw) wire from K3/30
3 Red (rt) wire from K3/87a
4 Pink (pk) wire of fuse F2

Connecting fan-motor

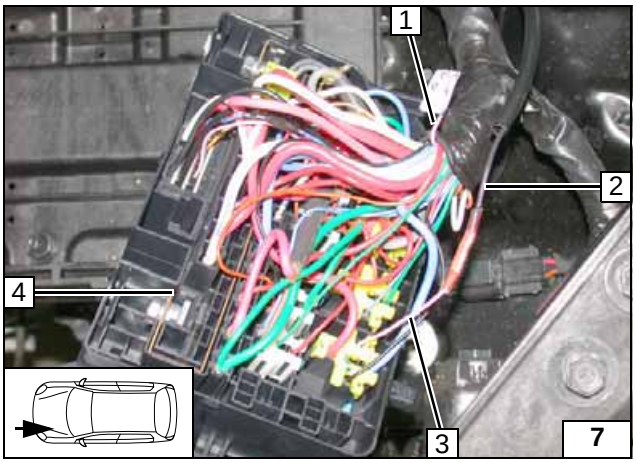
Automatic air-conditioning fan controller



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay	pk	pink
F4	5A fuse	GRr	Fan controller	sw	black
F3	Replace 25 A fuse with 15 A fuse	KB	A/C control panel	or	orange
		M04-A	26-pin connector KB		
K3	Fan relay	F2 IGN	15A fuse		
		F Blower	40 A fan fuse		
				!	Insulate wire ends and tie back
				X	Cutting point
				Wiring colours may vary.	

Wiring diagram

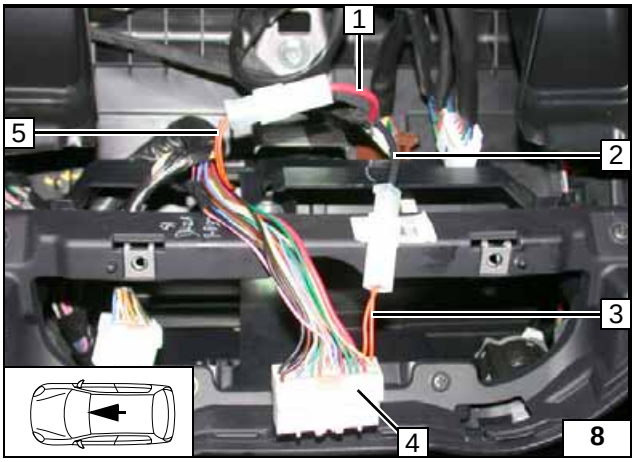
Legend



Connection to fuse and relay box **4** in engine compartment. Replace fuse F3 25 A with 15A fuse. Insulate pink (pk) wire **1** from fuse F2 IGN and tie back.
Produce connections as shown in wiring diagram.

2 Additional black (sw) wire of K3/30
3 Pink (pk) wire of fan relay, Pin 4

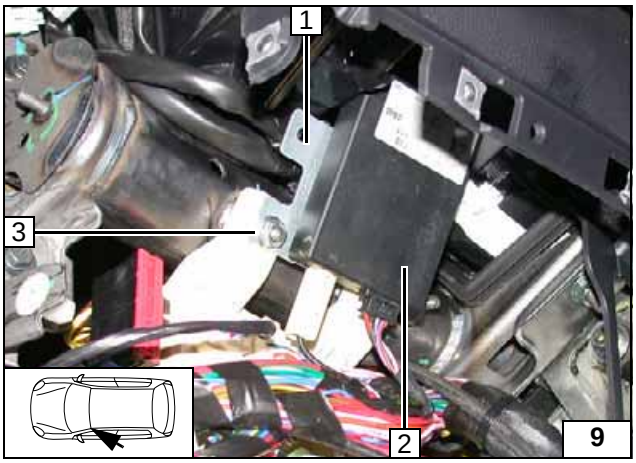
Connecting fan relay



Connection on 26-pin connector M04-A **4** of A/C control panel.
Produce connections as shown in wiring diagram.

1 Red (rt) wire from K3/87a
2 Black (sw) wire from K3/30
3 Orange (or) wire [2x] of connector M04-A, Pin 14 and 15
5 Orange (or) wire [2x] of fuse F2 IGN

Connecting A/C control panel

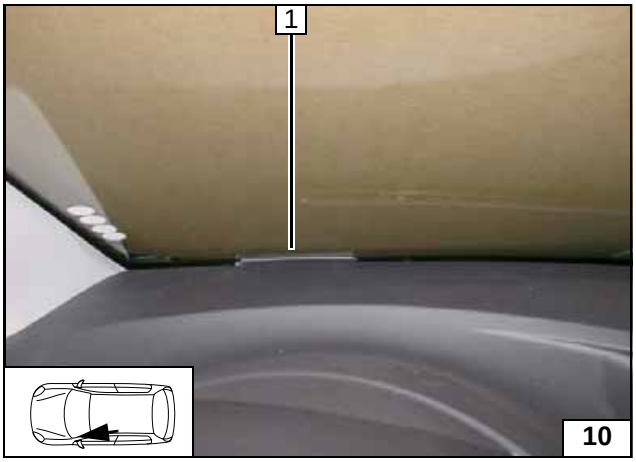


Remote option (Telestart)

Drill out bracket **1** to 6.5 mm dia. at position **3**.

2 Receiver
3 Original vehicle stud bolt, flanged nut

Installing receiver



1 Antenna

Installing antenna

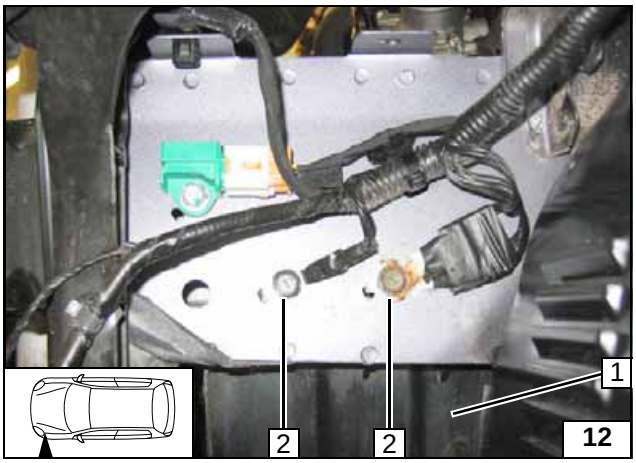
Temperature sensor HTM100

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

Installing temperature sensor

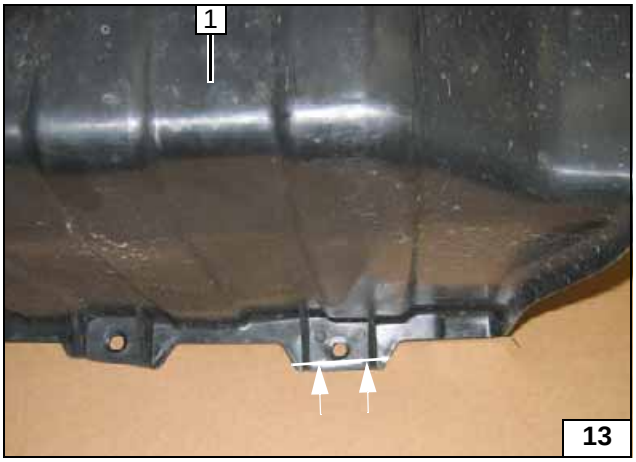
Preparing installation location

1 Remove side trim
2 Remove original vehicle bolts and discard



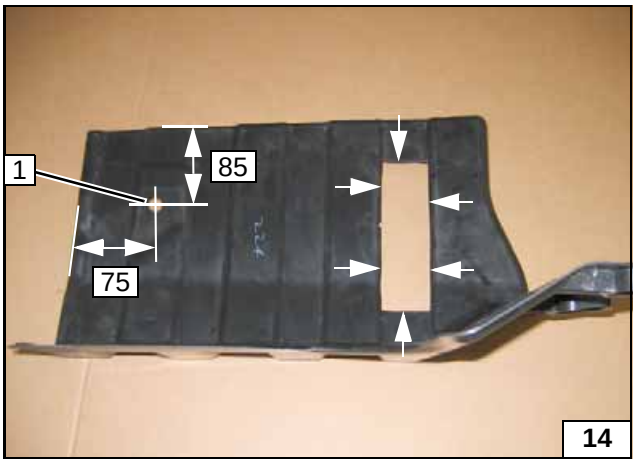
Preparing installation location

Cut out side trim **1** at marking.



Cutting out side trim

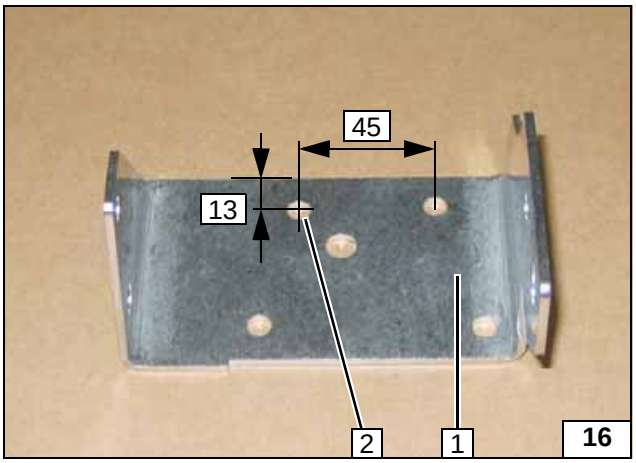
Cut out side trim at marking. 7 mm dia. hole at position **1**



Cutting out side trim

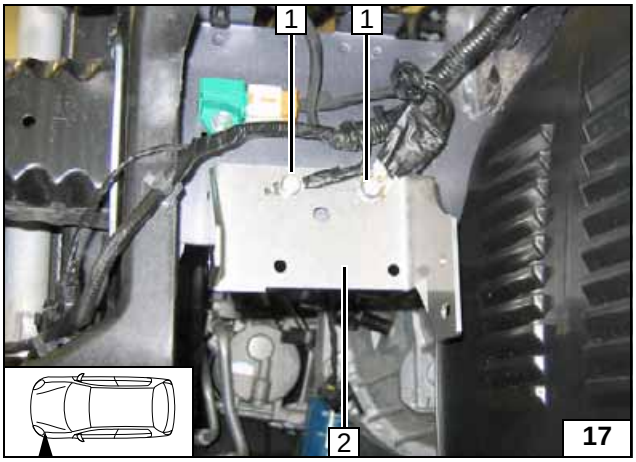
1 500 mm edge protection, circumferential

Installing edge protection



1 Bracket
2 7 mm dia. hole

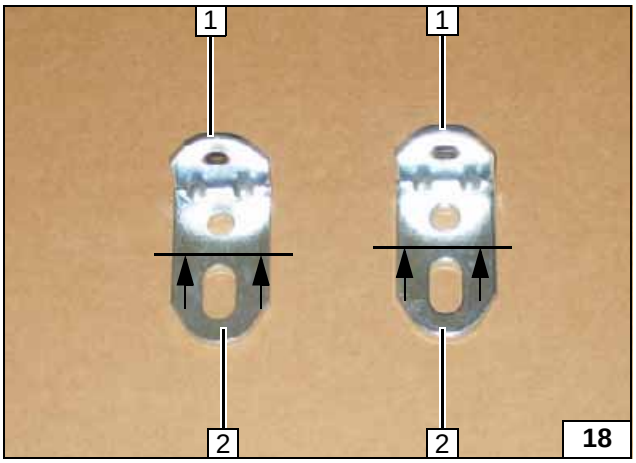
Preparing bracket



Insert one 10 mm shim each between bracket and frame side member at position **1**.

1 M6x25 bolt, spring lockwasher, 10 mm shim, original vehicle earth wire, existing threaded hole [2x each]
2 Bracket

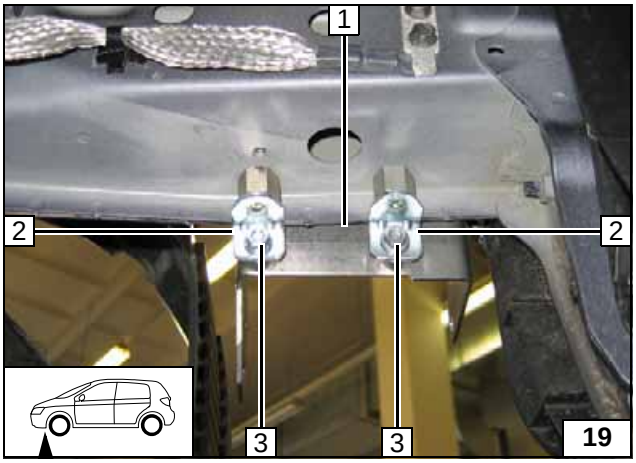
Installing bracket



Shorten angle bracket **1** [2x] by 22 mm.

2 Discard cut-off sections

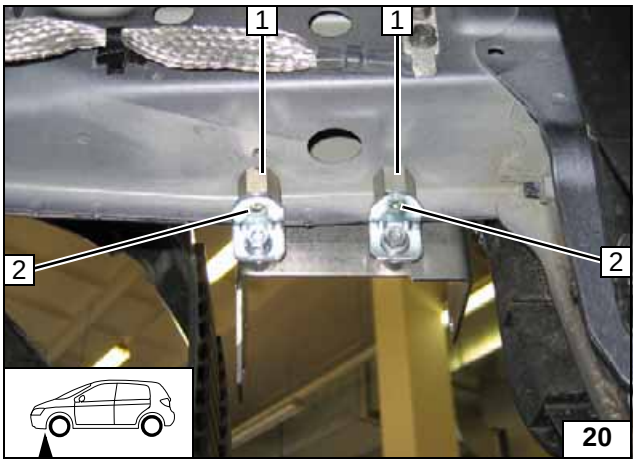
Shortening angle bracket



Insert one 10 mm shim each between bracket **1** and angle bracket **2**.

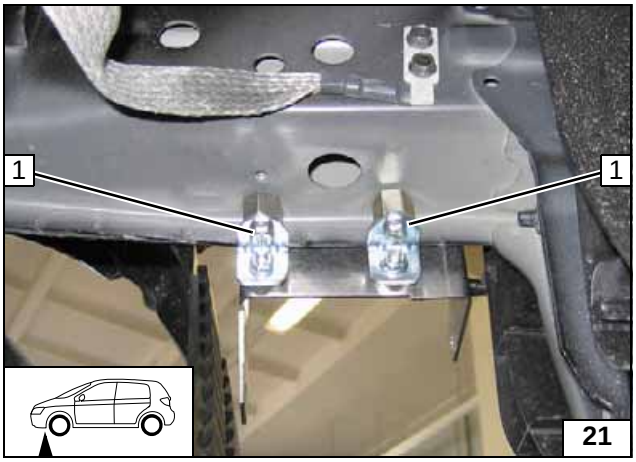
1 Bracket
2 Bolt
3 M6x25 bolt, spring lockwasher, 10 mm shim, existing threaded hole [2x each]

Loosely mounting angle bracket



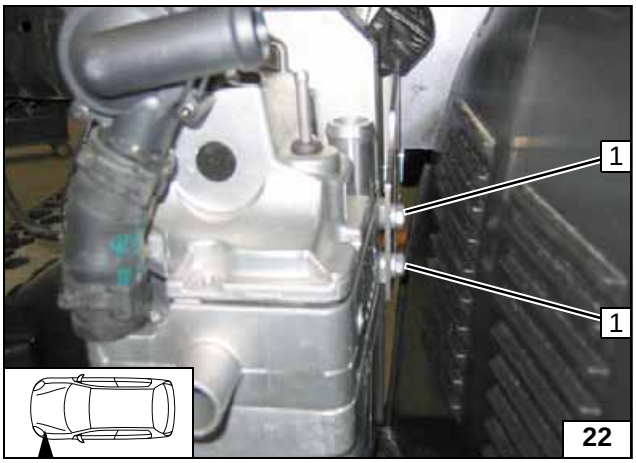
Insert one 15 mm spacer nut each between angle bracket and frame side member. Copy hole pattern to frame side member at position **2** [2x]. Remove angle bracket.
Drill 9.1 mm dia. hole in frame side member and mount rivet nut [2x each].

Copying hole pattern



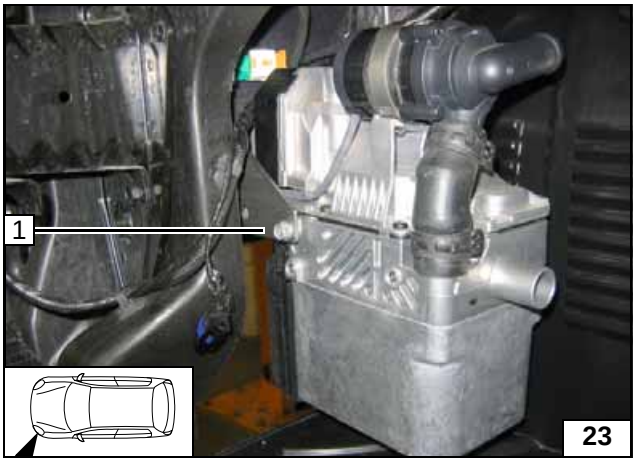
1 M6x30 bolt, spring lockwasher, 15 mm shim, rivet nut [2x each]

Installing bracket



Installing heater

1 Ejot screw [2x]



Connect wiring harness of heater prior to installation.

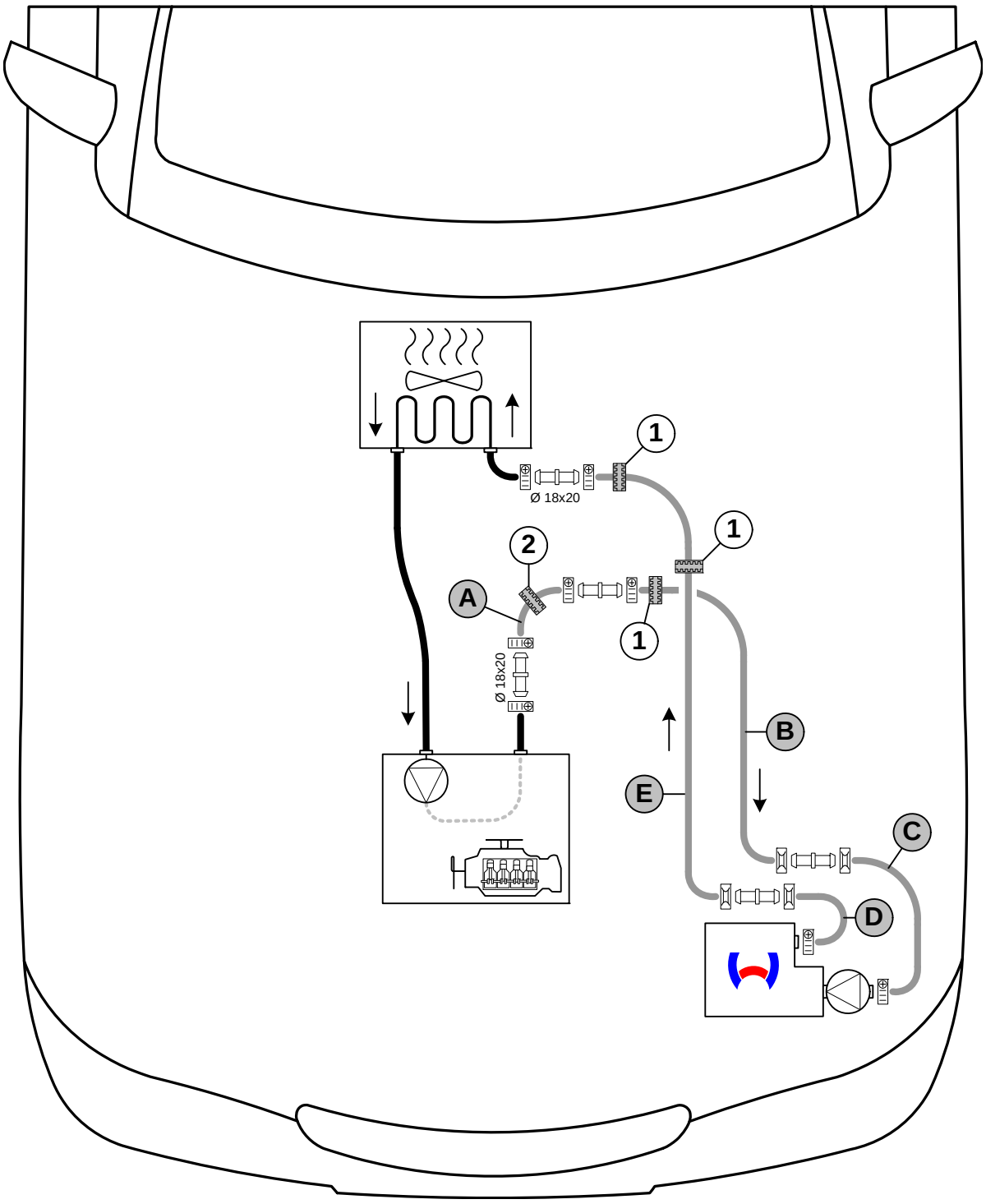
1 Ejot screw

Installing heater

Coolant circuit

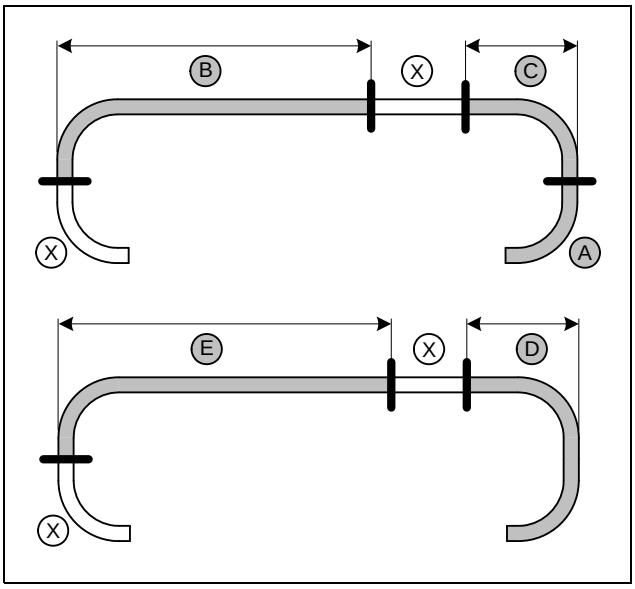
WARNING!
Any coolant running off should be collected using an appropriate container! Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged! When installing the hoses, the heater must be filled with coolant.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

Hose installation diagram



All spring clips = 27 mm dia.! All hose clamps = 20-27 mm dia.
All connecting pipes without a specific designation = dia. 20x20 mm.
1 = Black (sw) rubber isolator [3x]! **2** = Black (sw) rubber isolator only with 1.4 petrol engine!

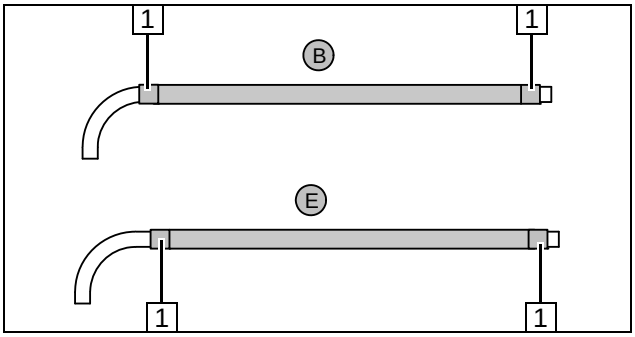
Cutting coolant hoses to length



Discard section **X**.

A = 90° elbow
B = 1150
C = 200
D = 200
E = 1250

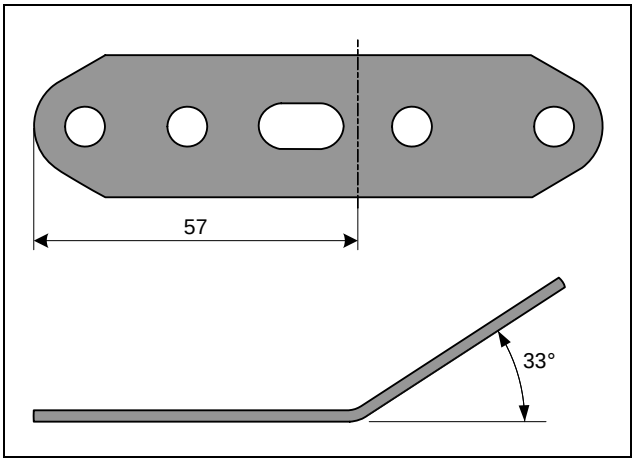
Preparing coolant hoses



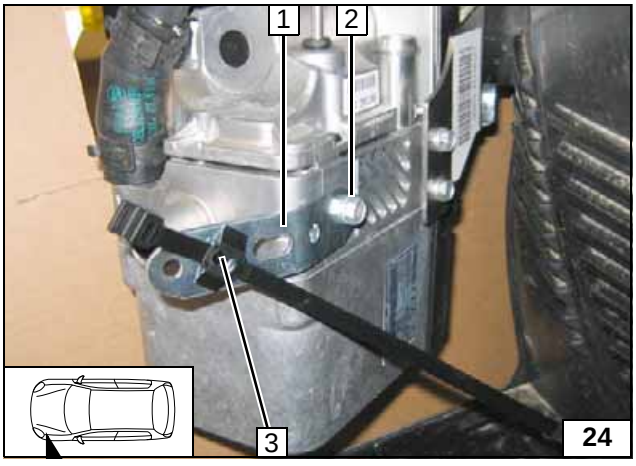
Push braided protection hoses onto hose **A** and **C** and cut to length.
Cut heat shrink plastic tubing to length.

1 25 mm long heat shrink plastic tubing [4x]

Bending perforated bracket

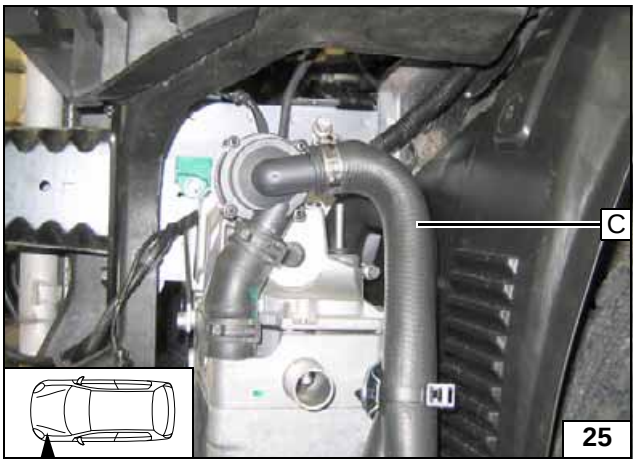


Installing perforated bracket

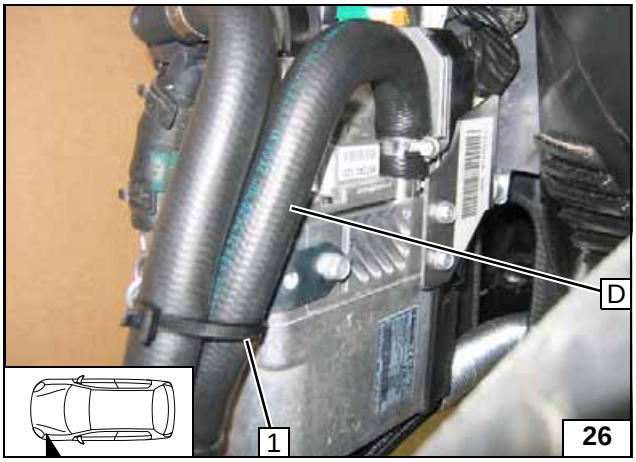


Insert clip-type cable tie **3** in existing hole.

1 Perforated bracket
2 Ejot screw

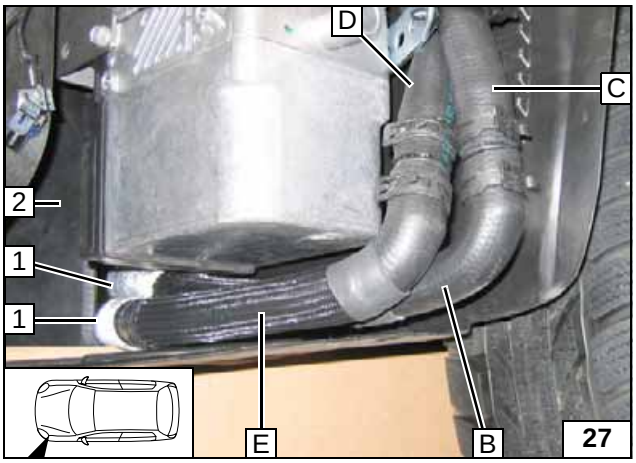


Connecting heater inlet



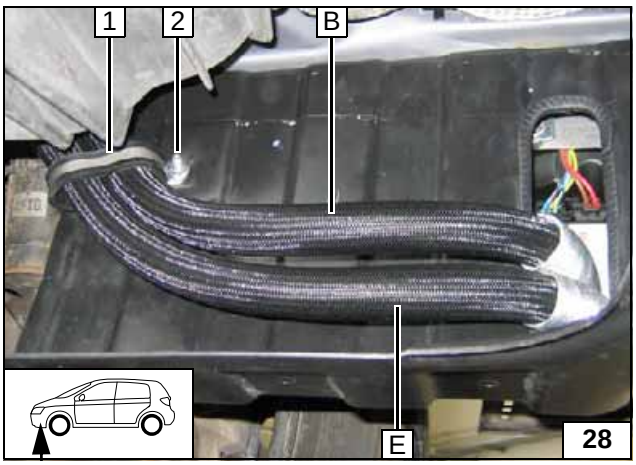
1 Close clip-type cable tie

Connecting heater outlet



Mount side trim **2**. Route hose **B** and **E** from engine compartment through cut-out in side trim to outside and connect to hose **C** and **D**. Slide one heat protection hose **1** each onto hose **B** and **E**.

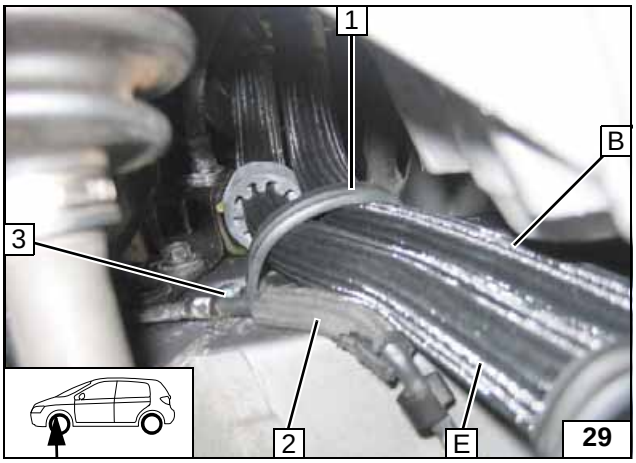
Routing in wheel well



Align heat protection hose on hose **B** and **E**.

1 48 mm dia. rubber-coated p-clamp
2 M6x20 bolt, large diameter washer [2x], flanged nut, prepared hole

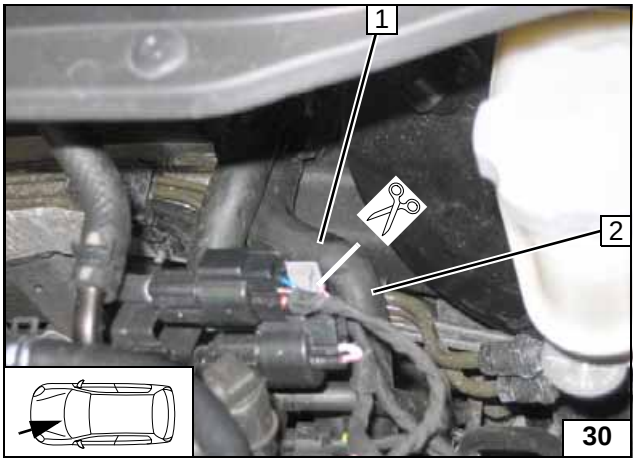
Routing in engine compartment



Slide black (sw) rubber isolator onto hose **B** and [2x] onto hose **E**. Cut open fabric protective hose **2** and slide onto brake line. Discard original vehicle bolt at position **3**. Route hose **B** and **E** to cutting point.

1 48 mm dia. rubber-coated p-clamp
3 M6x20 bolt, spring lockwasher, existing threaded hole

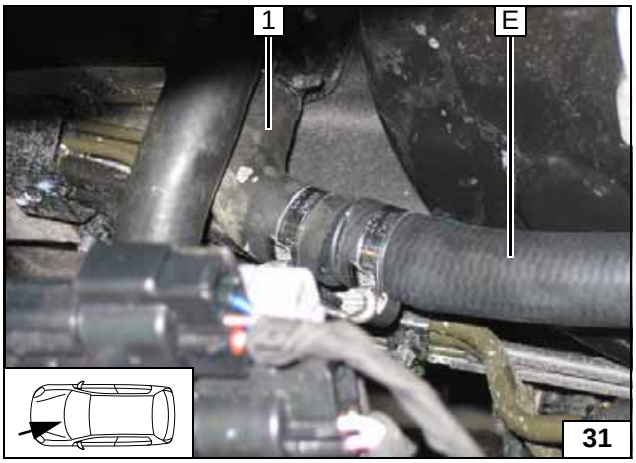
Routing in engine compartment



1.2 Petrol

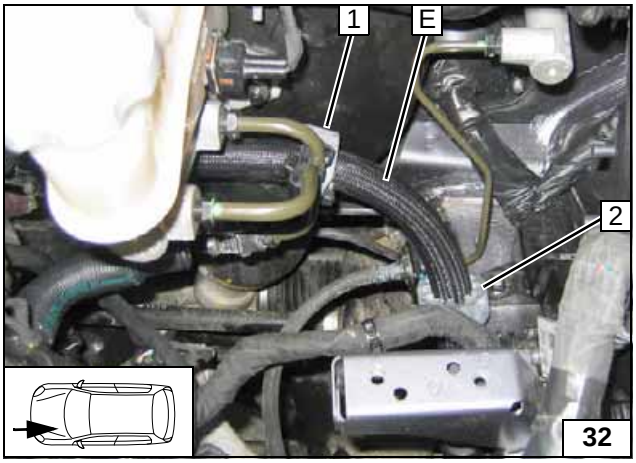
1 Hose section of heat exchanger inlet
2 Engine-outlet hose section

Cutting point of heat exchanger



1 Hose on heat exchanger inlet

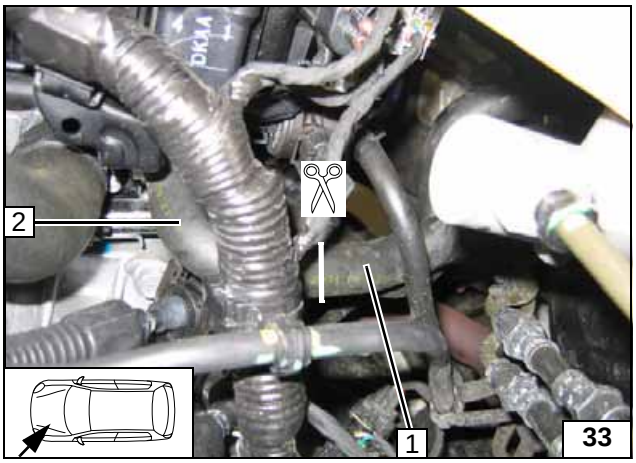
Connecting heat exchanger inlet



Position black (sw) rubber isolator **1** and fasten on brake line with cable tie.

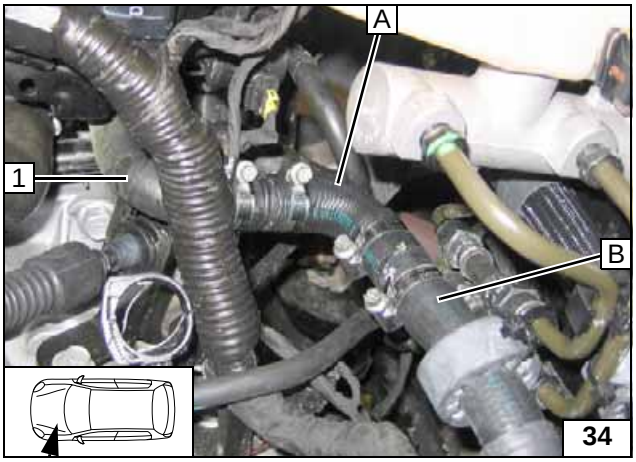
2 Position black (sw) rubber isolator

Routing in engine compartment



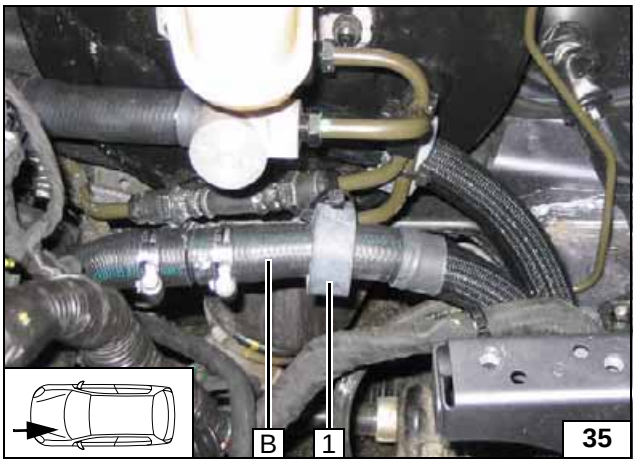
1 Discard hose section
2 Engine-outlet hose section

Cutting point of engine outlet



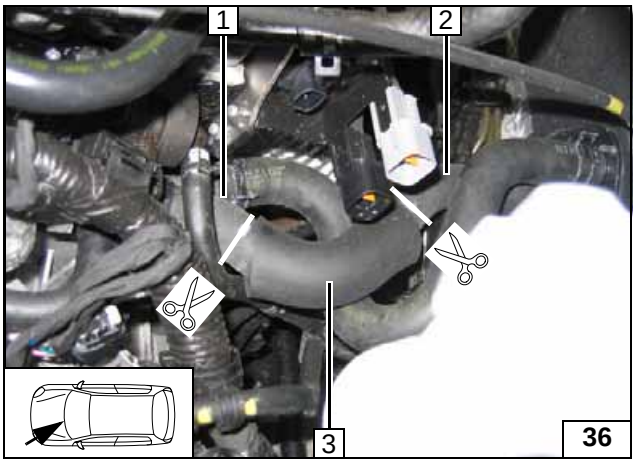
1 Hose of engine outlet

Connecting engine outlet



Position black (sw) rubber isolator **1** and fasten on brake line with cable tie.
Ensure sufficient distance to neighboring components.

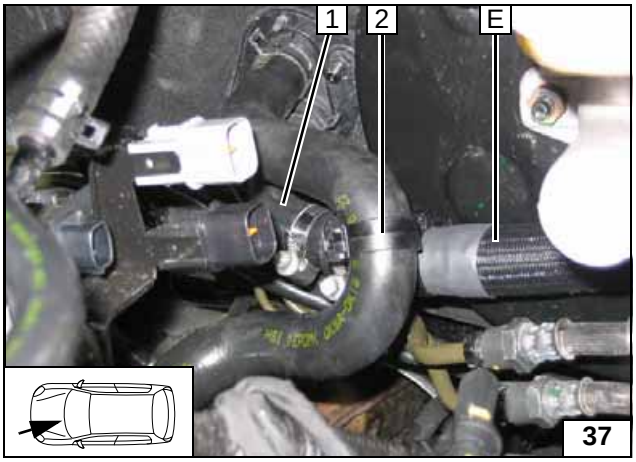
Routing in engine compartment



1.4 Petrol

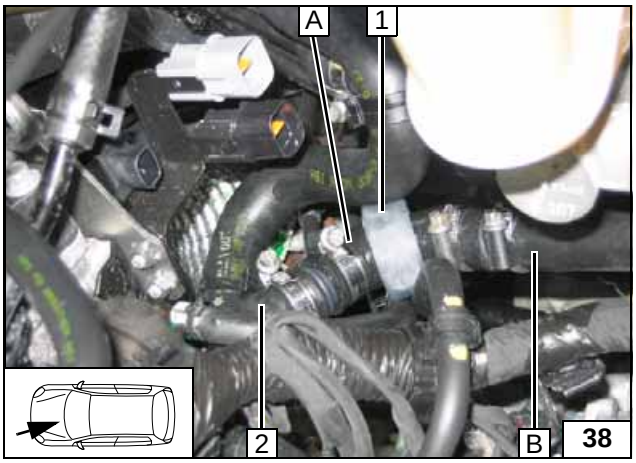
1 Engine-outlet hose section
2 Hose section of heat exchanger inlet
3 Discard hose section

Cutting point



1 Hose on heat exchanger inlet
2 Spacer bracket

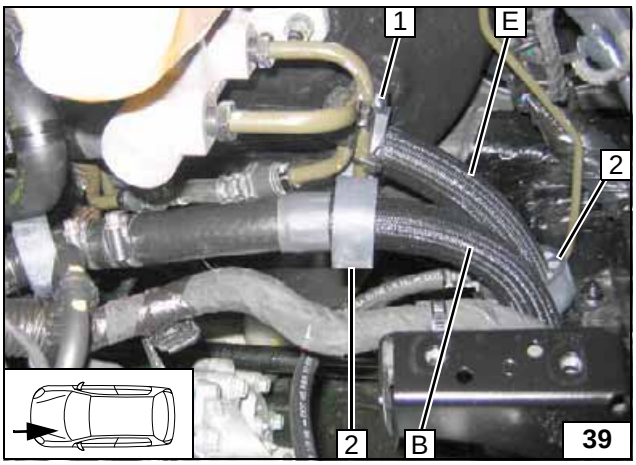
Connecting heat exchanger inlet



Slide black (sw) rubber isolator **1** onto hose **A**.

2 Hose of engine outlet

Connecting engine outlet



Position black (sw) rubber isolator **1** and fasten on brake line with cable tie.
Ensure sufficient distance to neighboring components.

2 Position black (sw) rubber isolator [2x]

Routing in engine compartment

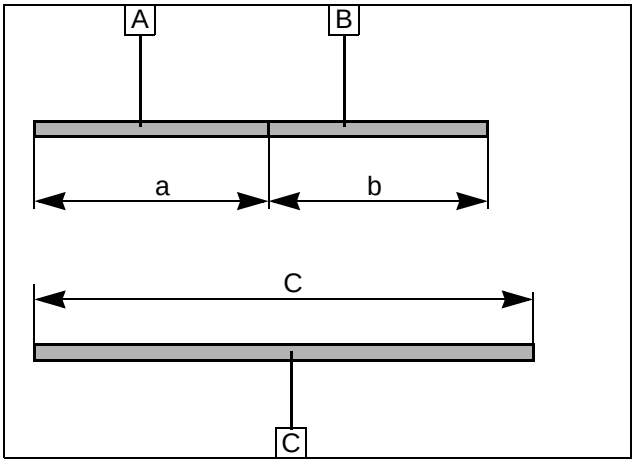
Fuel

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.

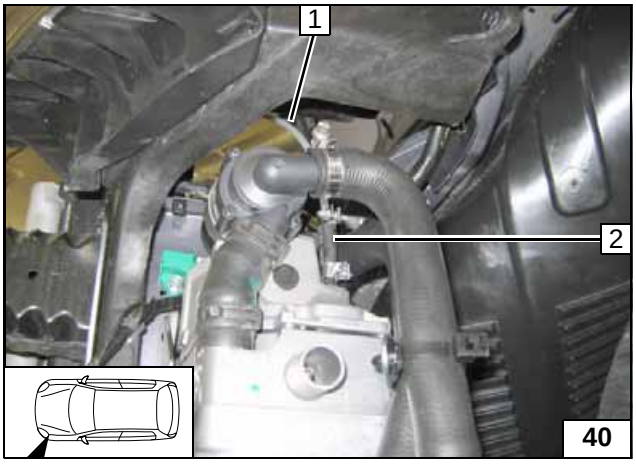
Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

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



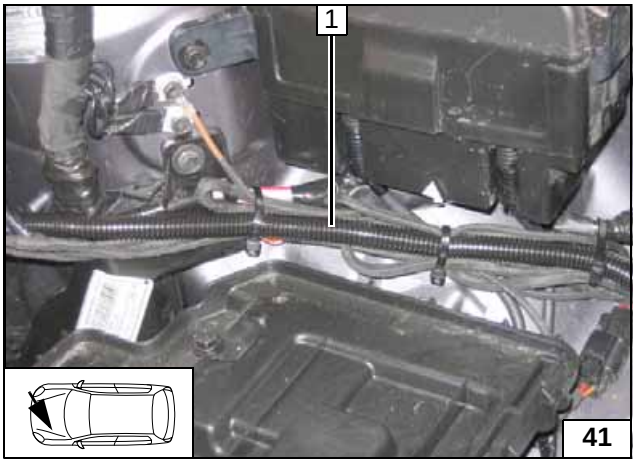
a = 600
b = 530
c = 2100

Preparing corrugated tube



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

Connecting heater

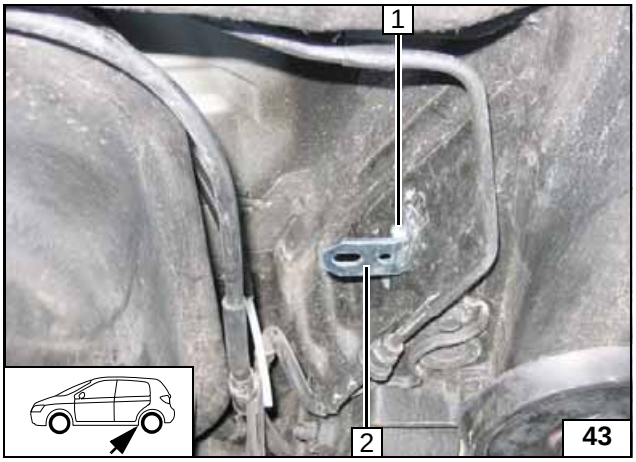


Slide corrugated tube **A** onto fuel line **1** and route to firewall.

Installing lines

Slide corrugated tube **C** onto fuel line and wiring harness of metering pump **1**, then route along original vehicle lines to installation location of metering pump.

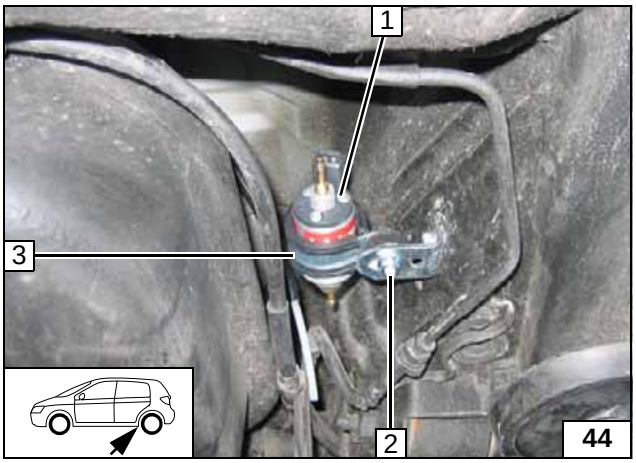
Installing lines



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

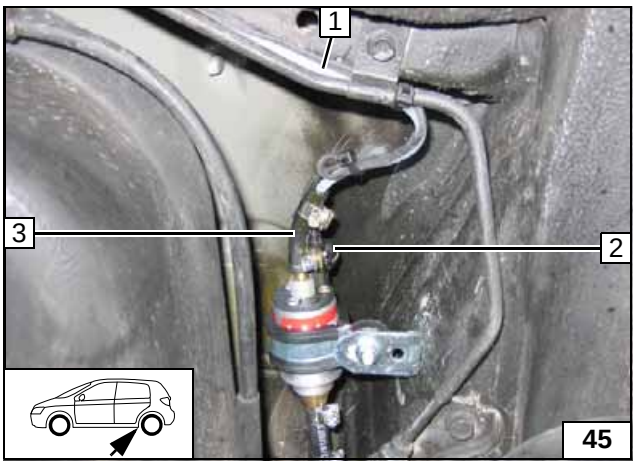
1 M6x20 bolt, spring lockwasher
2 Angle bracket

Installing angle bracket



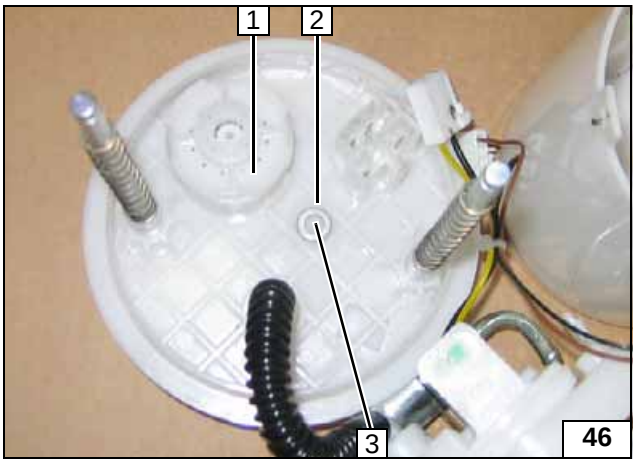
1 Metering pump
2 Silent block, flanged nut [2x]
3 Rubber-coated pipe clamp

Installing metering pump



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

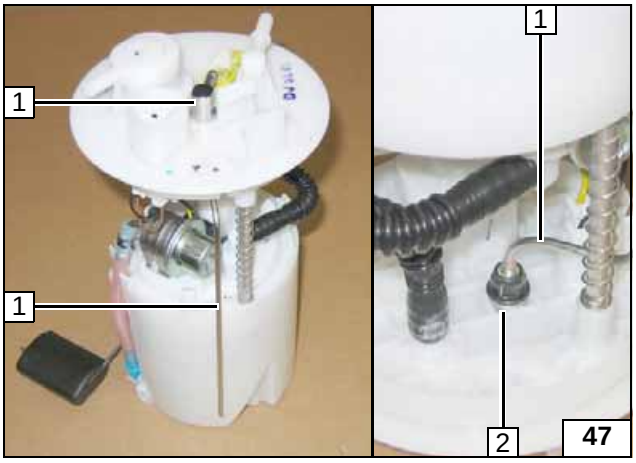
Connecting metering pump



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

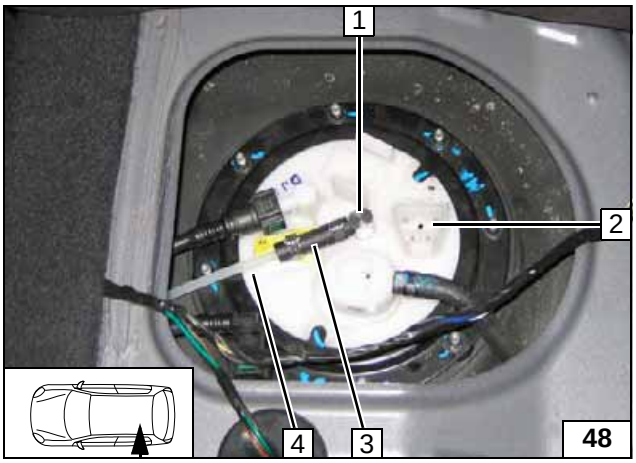
2 6 mm dia. washer
3 Copy hole pattern, 6 mm dia. hole

Removing fuel



Shape fuel standpipe **1** according to template, cut to length and install. Insert three 6 mm dia. washers as height compensation at position **2**.

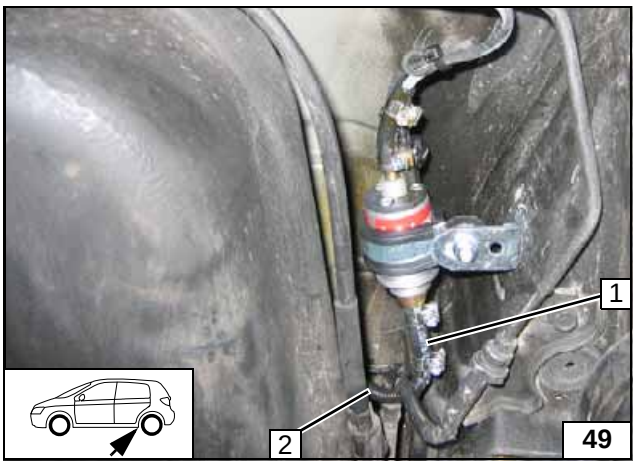
Installing fuel standpipe



Install fuel-tank sending unit **2** in accordance with manufacturer's instructions. Slide corrugated tube **B** onto fuel line **4**.

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

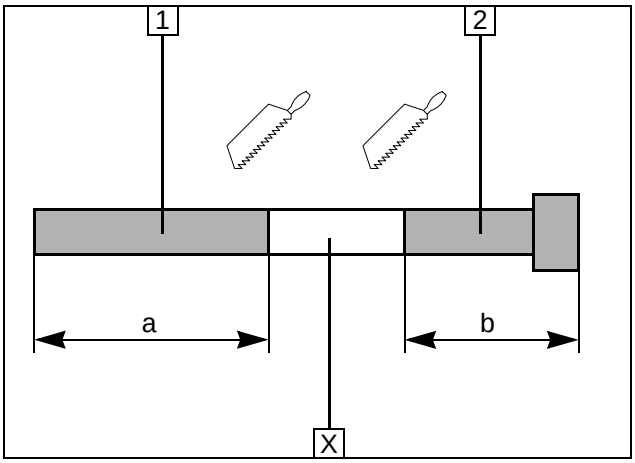
Connecting fuel line



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 in corrugated tube B

Connecting metering pump

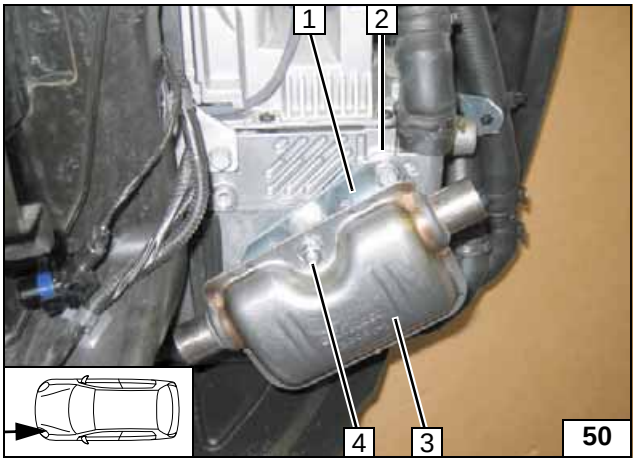


Exhaust gas

Discard section **X**.

1 Exhaust pipe
a = 180
2 Exhaust end section
b = 120

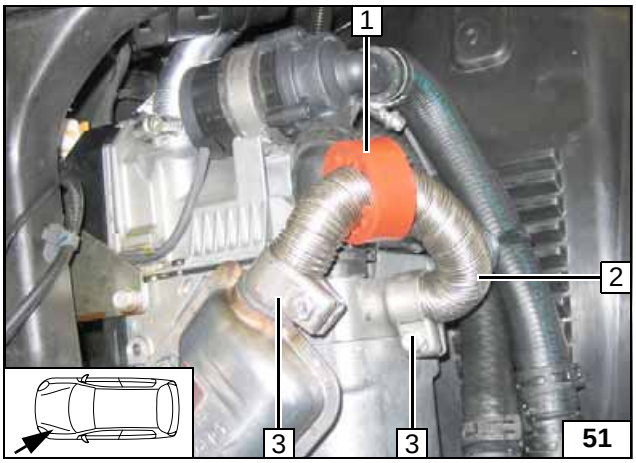
Preparing exhaust pipe



Insert 5 mm shim between perforated bracket **1** and heater and 20 mm shim between silencer **3** and perforated bracket **1**.

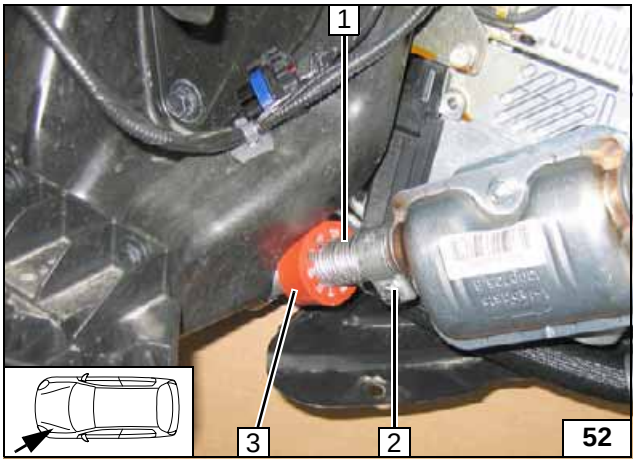
2 Ejot screw, 5 mm shim
4 M6x30 bolt, 20 mm shim, flanged nut

Installing silencer



1 Red (rt) rubber isolator
2 Exhaust pipe
3 Hose clamp [2x]

Installing exhaust pipe

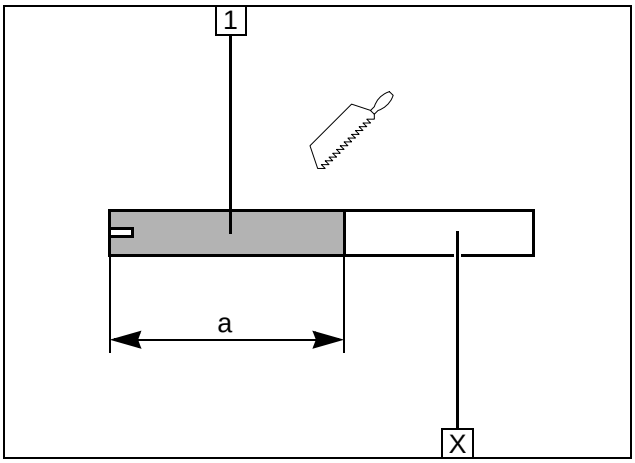


1 Exhaust end section
2 Hose clamp
3 Red (rt) rubber isolator

Installing end section

Combustion air

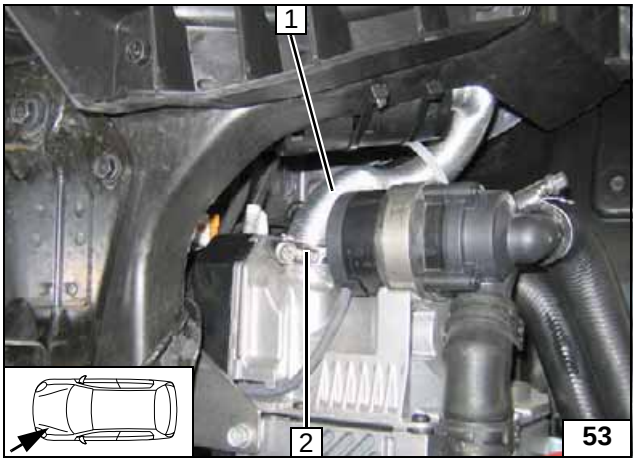
Cutting combustion air pipe to length



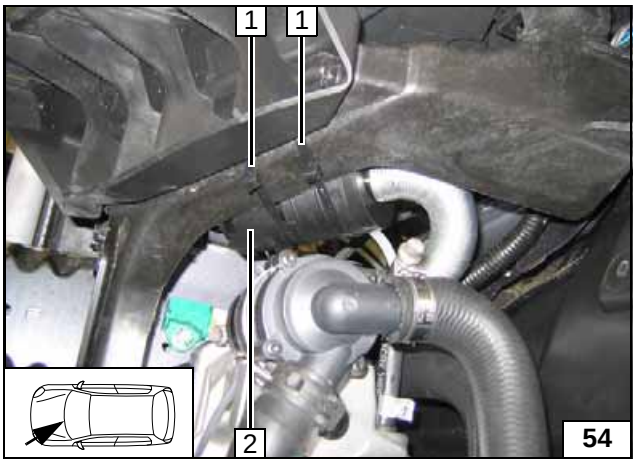
Discard section **X**.

1 Combustion air pipe
a = 250

Installing combustion air pipe



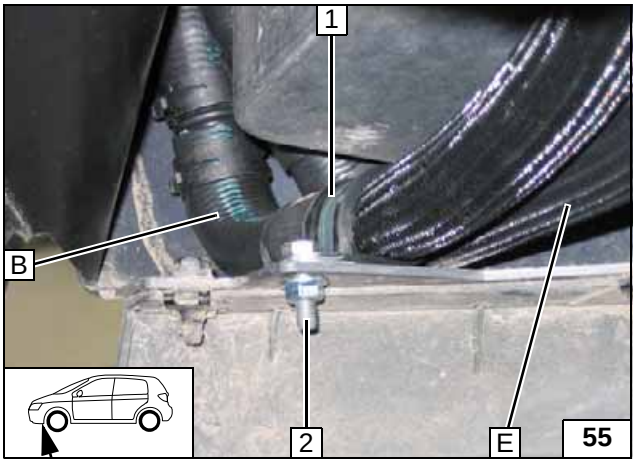
1 Combustion air pipe
2 27 mm dia. clamp



Secure silencer **2** with cable tie **1**.

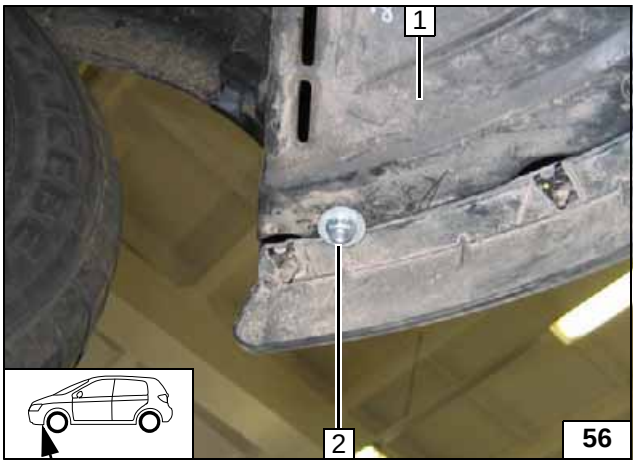
Installing silencer

Final Work



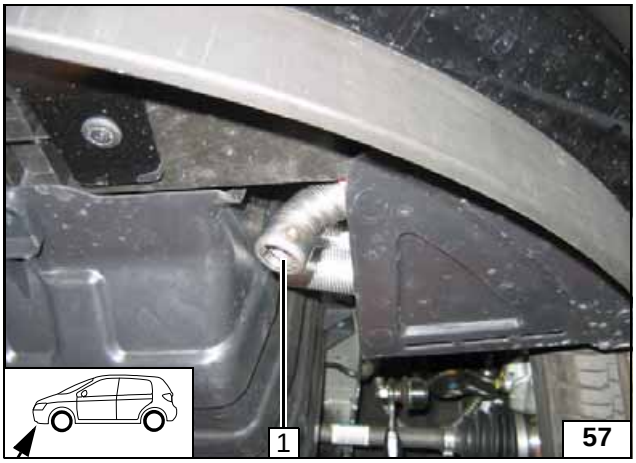
Fasten water hoses on wheel well trim with M6x20 bolt **2**, rubber-coated p-clamp **1** and flanged nut.

Fastening hoses



Install wheel well trim and underride protection **1**. Large diameter washer and flanged nut **2** on M6x20 bolt.

Fastening wheel well trim and underride protection



Ensure sufficient distance to neighboring components.

1 Align exhaust end section

Aligning exhaust end section

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 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 parking heater, see the operating instructions/installation instructions.
- Attaching information label "Switch off parking heater before refueling" in the area of the filler neck

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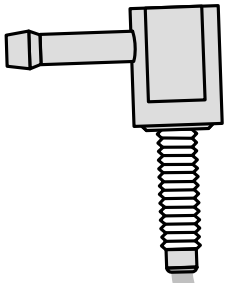
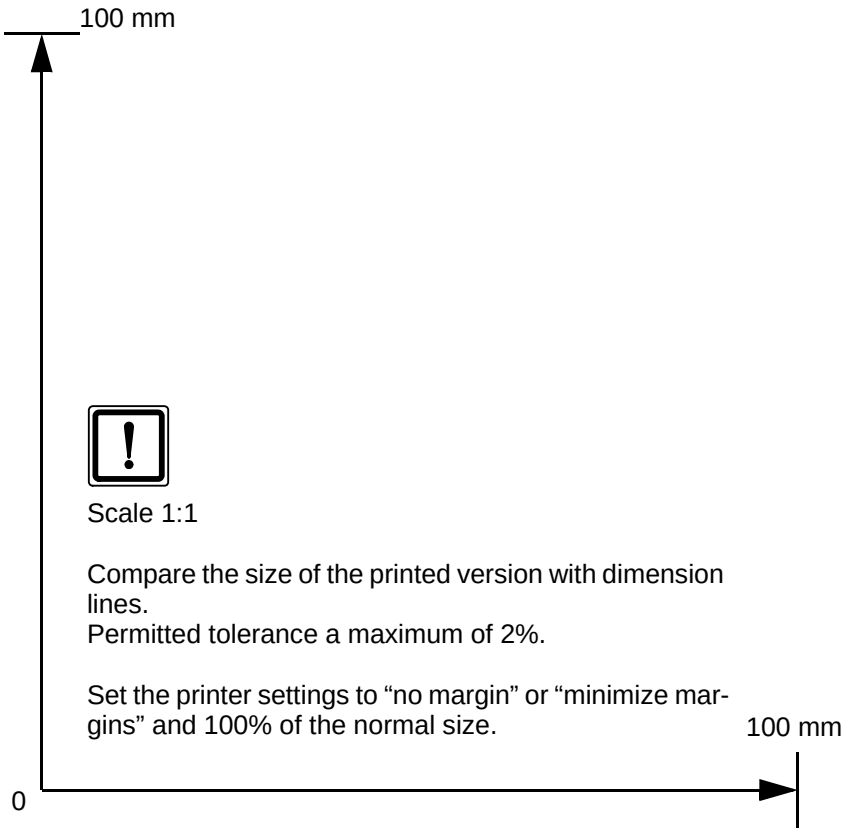
Template for Fuel Standpipe





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.

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

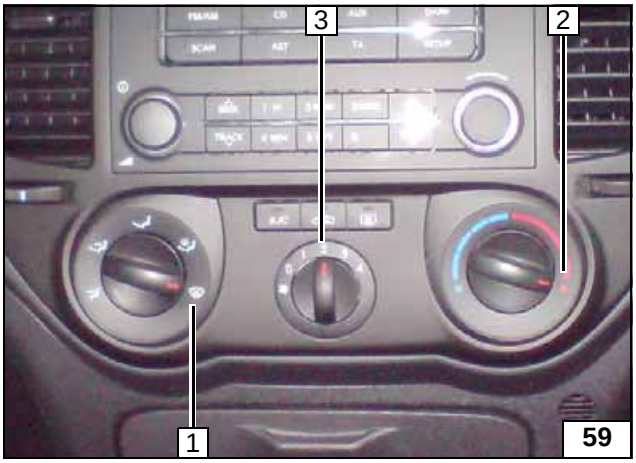
If the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater will then only switch on the vehicle fan to ventilate the vehicle interior in the position Winter heat and in the position Summer .

Before parking the vehicle, make the following settings:

Automatic air-conditioning

1 Air outlet to windscreen
2 Set temperature to "HI"
3 Set fan to level "2"

Manual air conditioning



1 Air outlet to windscreen
2 Set temperature to "HI"
3 Set fan to level "2"