

# Water Heater Unit



**Thermo Top E Additional Heater** e1 00 0003

**Thermo Top C Additional Heater** e1 00 0002

**Thermo Top P Additional Heater** e1 00 0104

## Installation Instructions

### Hyundai Grandeur

Diesel  
from Model Year 2007  
Left-hand drive vehicle  
Automatic air-conditioning



#### **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	Water	13
Heater Unit/Installation Kit	3	Combustion air	17
Foreword	3	Installing control unit	18
General Instructions	3	Fuel	19
Special Tools	3	Exhaust gas	22
Explanatory Notes on Document	4	Final Work	24
Preliminary Work	5	Operating Instructions for End Customer	25
Heater unit installation location	5	Template for Heater Unit Bracket	26
Preparing electrical system	6	Template for Perforated Fastening Strap	27
Electrical system	7	Template for Fuel Standpipe	28
Fan controller	8		
Remote option (Telestart)	10		
Preparing installation location	11		
Preparing heater unit	12		
Installing heater unit	12		

## Validity

Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	Grandeur	TG	e4 * 2001/116 * 0099 * ...

Engine type	Engine model	Output in kW	Displacement in cm <sup>3</sup>
D4EB	Diesel	114	2188

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 Hyundai Grandeur Diesel	1312880A

### Heater unit recommended for the respective vehicle class:

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

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



## Foreword

These installation instructions apply to Hyundai Grandeur Diesel vehicles - for validity, see page 2 - from model year 2007 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).

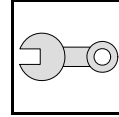
## Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers

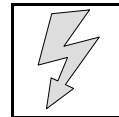
**Explanatory Notes on Document**

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

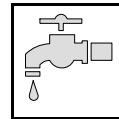
**Mechanical system**



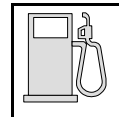
**Electrical system**



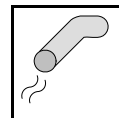
**Water**



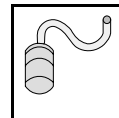
**Fuel**



**Exhaust gas**



**Combustion air**



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



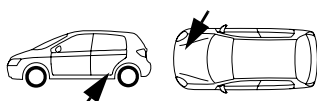
Specific risk of fire or explosion.



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



Reference to a special technical feature.



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

**All dimensions are in mm!**

**Tightening torque of hose clamps = 2.0 + 0.5 Nm!**

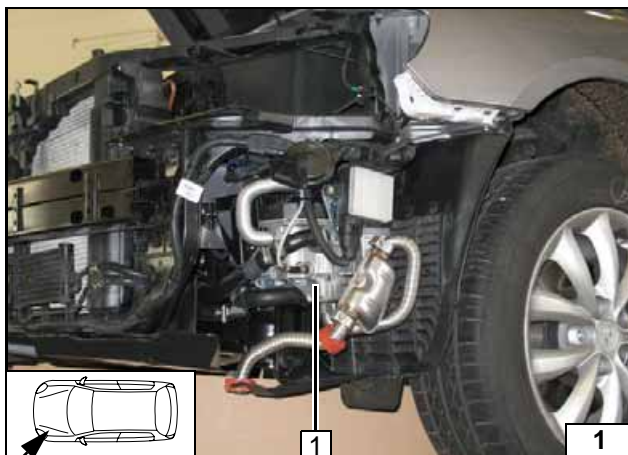
**Tightening torque of Ejoy screws, Ejoy studs = 10 Nm!**

## 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.
- Completely remove the battery together with the battery carrier.
- Remove the engine cover.
- Remove the air filter together with the intake hose.
- Detach the wheel well trim on the right and left.
- Remove the bumper trim.
- Remove the left-hand headlight.
- Remove the front underride protection.
- Take out the carpet in the luggage compartment.
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Remove the center console.
- Remove the lower instrument panel trim on the front passenger side.
- Remove the A/C control panel according to the manufacturer's specifications.

Remove page 25 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



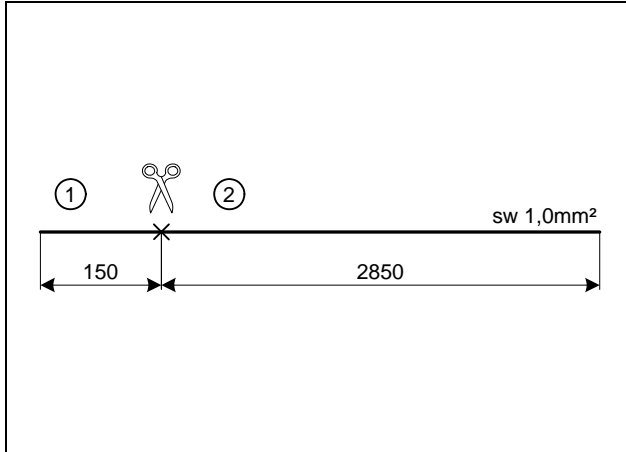
### Heater unit installation location

- 1 Heater unit

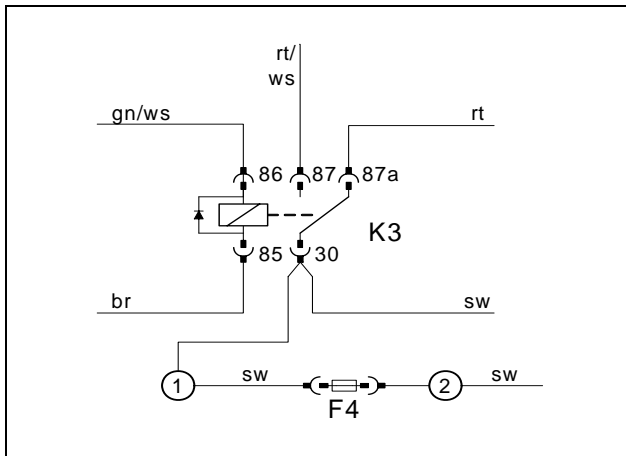
Installation  
location



Preparing electrical system



Cutting wires to length



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



Preparing fuse F4



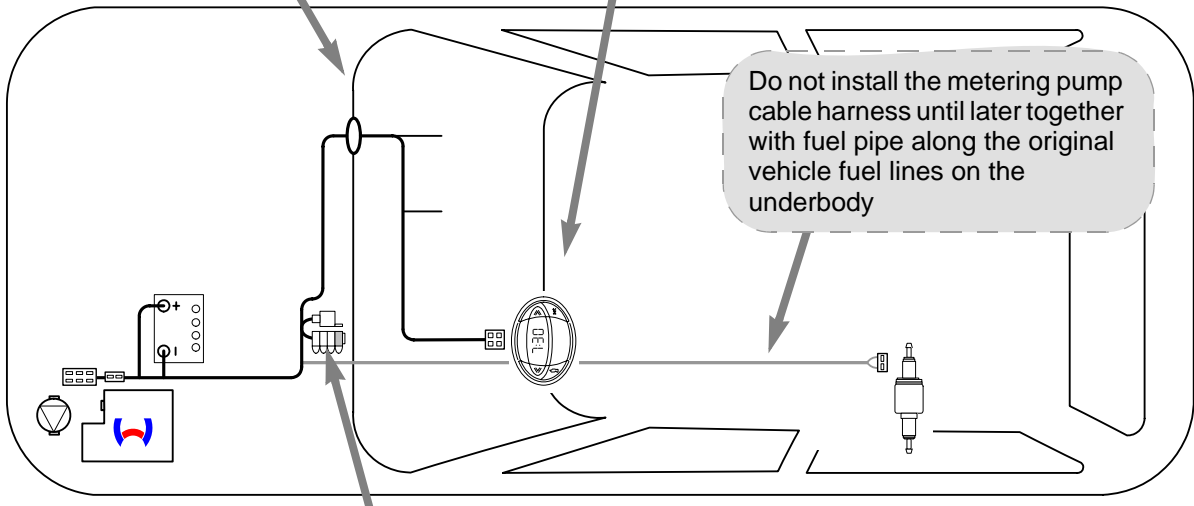
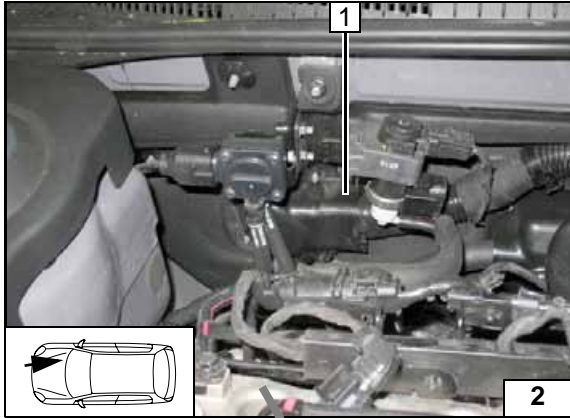
**Electrical system**

**Wiring harness pass through**

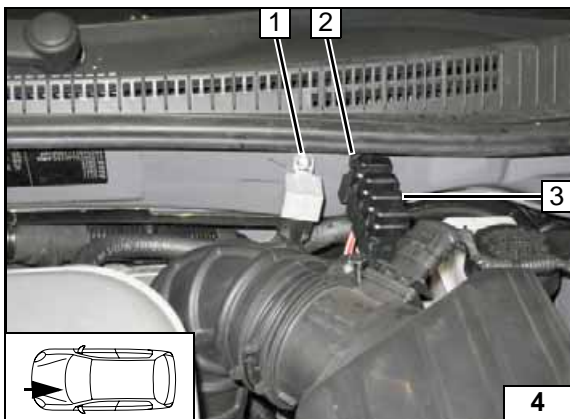
Route wiring harnesses of fan controller, digital timer and additional black (sw) wire through original vehicle pass through 1 into passenger compartment.

**Digital timer**

1 Digital timer



**Wiring harness installation diagram**



**Fuse holder, relay K3**

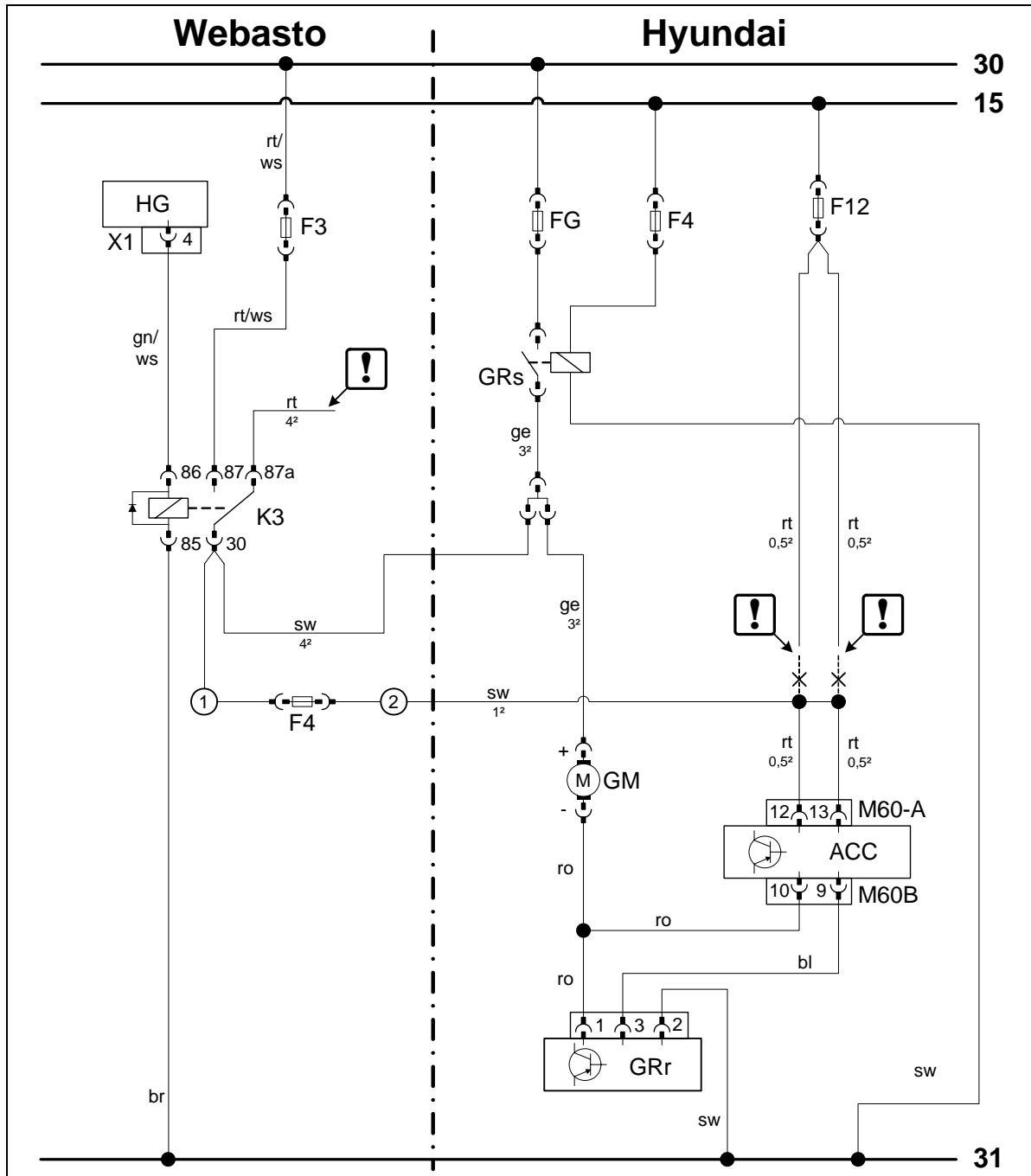
- 1 4 mm dia. hole, K3 relay, 5.5x13 self-tapping screw
- 2 4 mm dia. hole, retaining plate of fuse holder, 5.5x13 self-tapping screw
- 3 Fuse holder



Fan controller



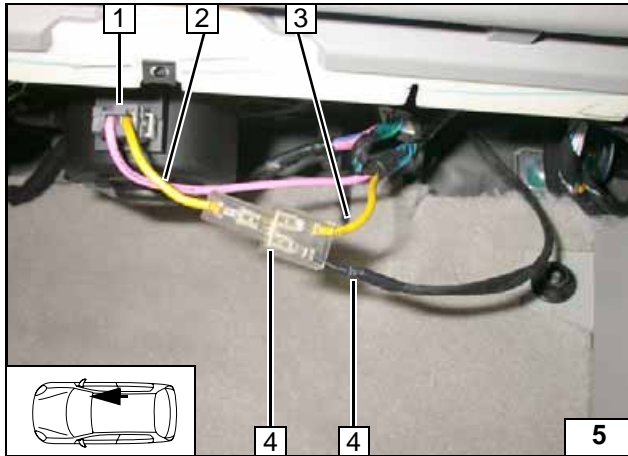
Wiring diagram



Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit	GM	Fan motor	rt	red
X1	6-pin heater unit connector	GRs	Fan relay	ws	white
F3	25 A fuse	GRr	Fan controller	sw	black
K3	Fan relay	ACC	Air-conditioning control panel	br	brown
F4	10 A fuse	M60-A	26-pin ACC connector	gn	green
		FG	40 A fan fuse	bl	blue
		F4	10 A fuse	ge	yellow
		F12	10 A fuse	ro	pink
				!	Insulate wire ends and tie back
				X	Cutting point
					Wiring colors may vary.

Legend



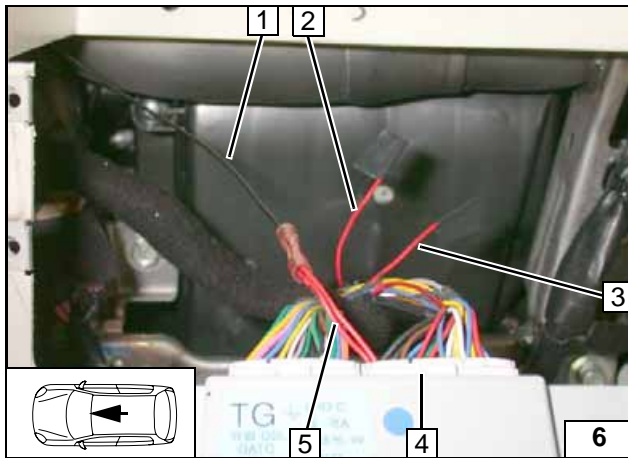


Connection to 2-pin connector 1 from the blower motor.  
Produce connections as shown in wiring diagram.  
Insulate red (rt) wire K3/87a and tie back.

- 2 Yellow (ge) wire
- 3 Yellow (ge) wire
- 4 Black (sw) wire from K3/30
- 5 Triple distributor



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

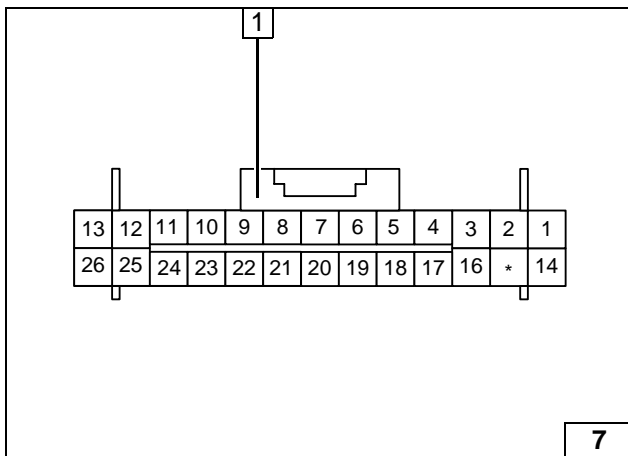


Connection on 26-pin connector M60-A 4 of A/C control panel.  
Produce connections as shown in wiring diagram.

- 1 Black (sw) wire ② F4
- 2 Insulate red (rt) wire F12 and tie back
- 3 Insulate red (rt) wire F12 and tie back
- 5 Red (rt) wire [2x] of connector M60-A, Pin 12 and 13



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

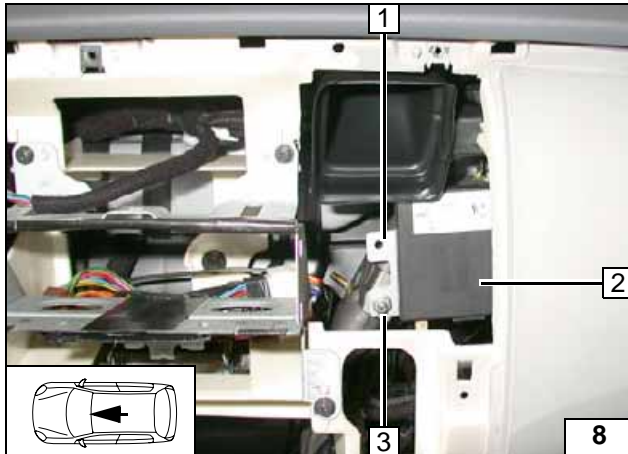


Pin assignment on connector may differ from original wiring diagram!

- 1 Connector M60-A on contact side



**Connector  
for A/C  
control  
panel**



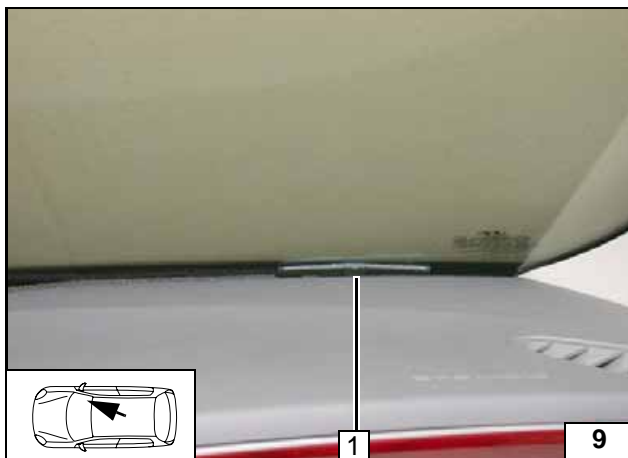
**Remote option (Telestart)**

6.5 mm dia. hole in bracket at position 3.

- 1 Bracket
- 2 Receiver
- 3 Flanged nut on existing stud bolt

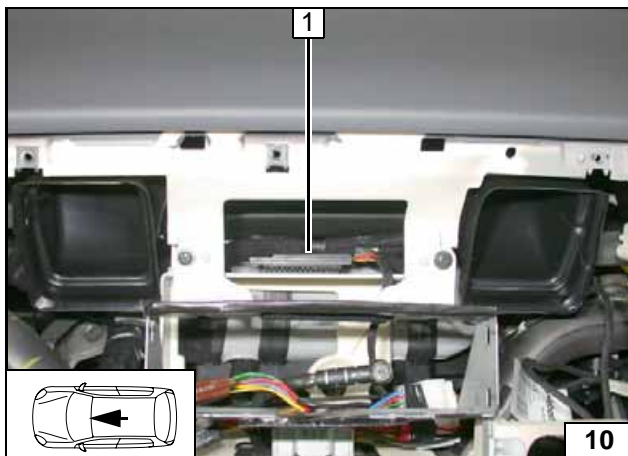


**Installing receiver**



- 1 Antenna

**Installing antenna**

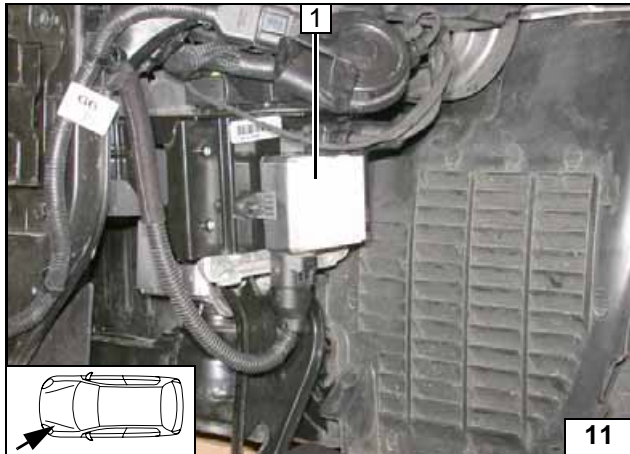
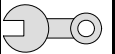


**Temperature sensor for HTM100 only**

- 1 Temperature sensor, Dual Lock



**Installing temperature sensor**

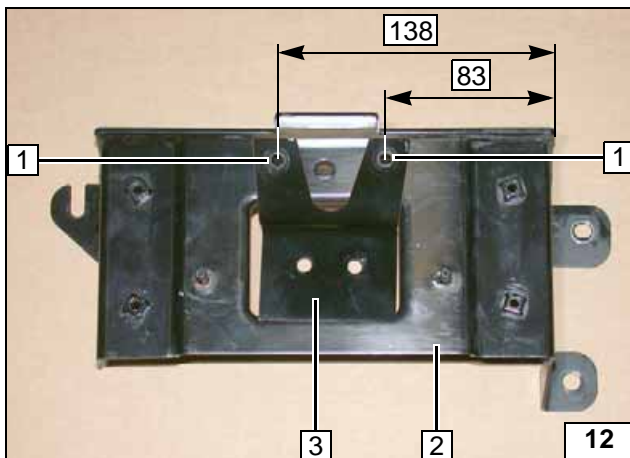


**Preparing installation location**

Remove control unit with bracket 1



**Removing control unit**

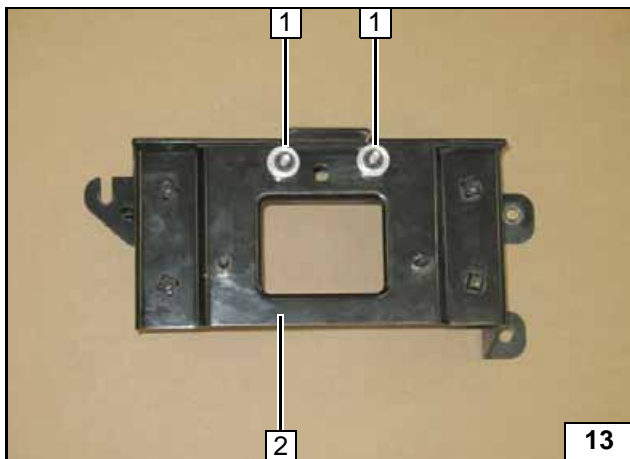


Cut bracket of heater unit 3 to length in accordance with template, drill and lay on at upper edge.

- 1 Copy hole pattern [2x], 7 mm dia. hole [2x]
- 2 Control unit bracket

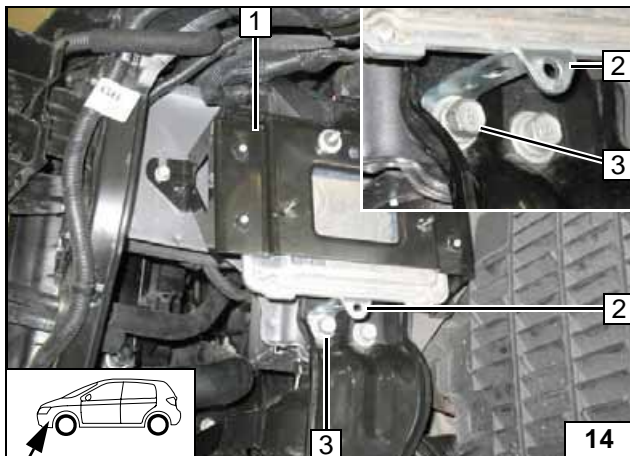


**Copying hole pattern**



- 1 M6x20 bolt, shim 5, pin lock [2x each]
- 2 Control unit bracket

**Preparing bracket**

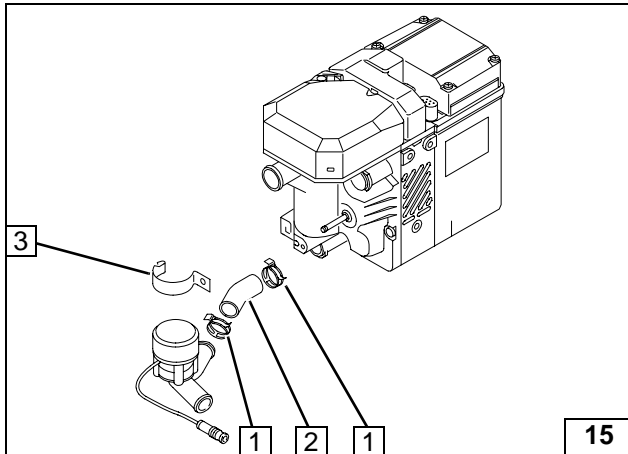
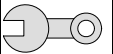


Reinstall bracket of control unit 1 with original vehicle bolts. Bend perforated bracket 2 in accordance with template and drill.

- 3 Original vehicle M8 bolt



**Installing bracket, perforated bracket**

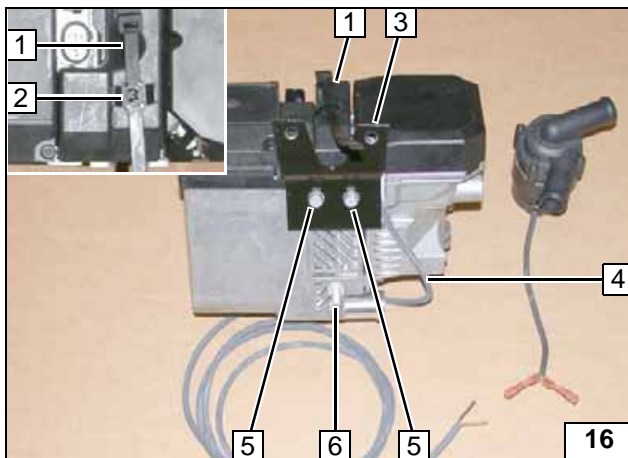


**Preparing heater unit**

Discard hose section 2 and clamp 3. Spring clips 1 [2x] will be required again later (hose C).



**Removing circulating pump**

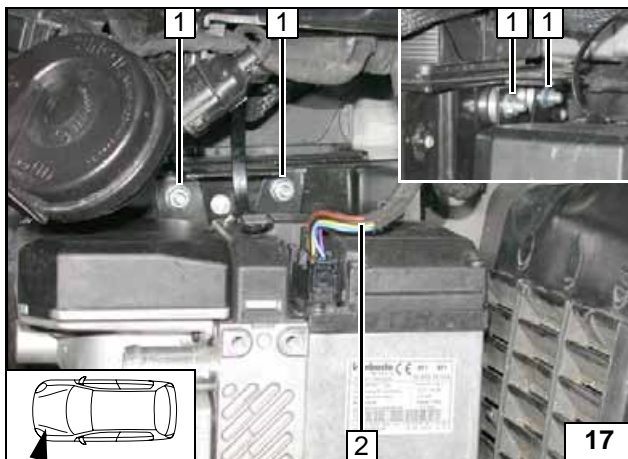


Punch through perforation in heater unit lid at position 2. Mount adapter wiring harness 4 on heater unit. Cut off connector on wiring harness of circulating pump and crimp on connector.



**Premounting heater unit**

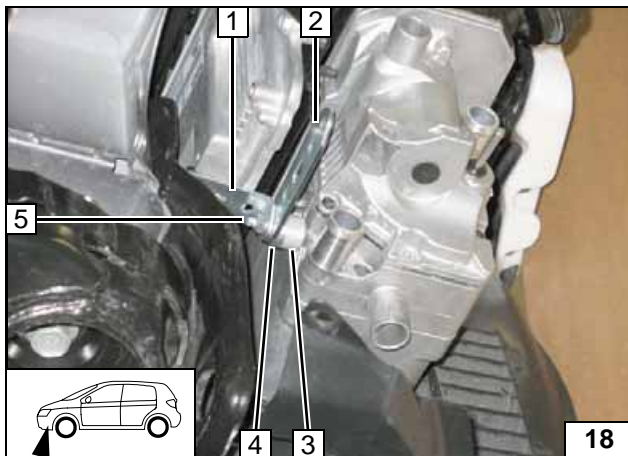
- 1 Clip-type cable tie in hole
- 3 Bracket
- 5 Eجت screw [2x]
- 6 Eجت stud



**Installing heater unit**

- 1 Flanged nut on prepared bolts
- 2 Mount wiring harness of heater unit

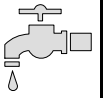
**Installing heater unit**



- 1 Premounted perforated bracket
- 2 Perforated bracket
- 3 Shim 10
- 4 Shim 5
- 5 Flanged nut on Eجت stud



**Installing bracket**

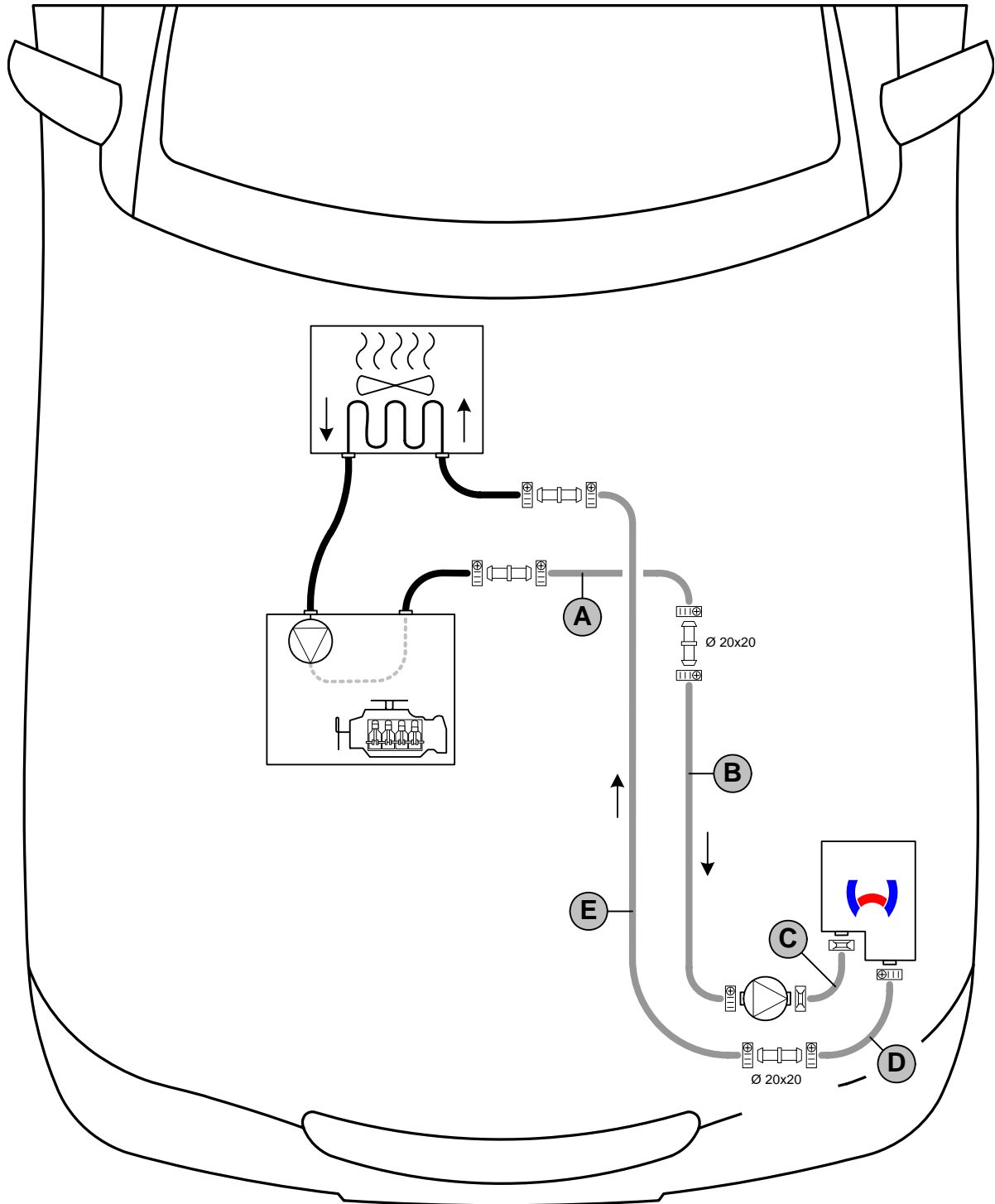


## Water


### 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 coolant hose, the heater unit must be filled with coolant.


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



Coolant routing diagram

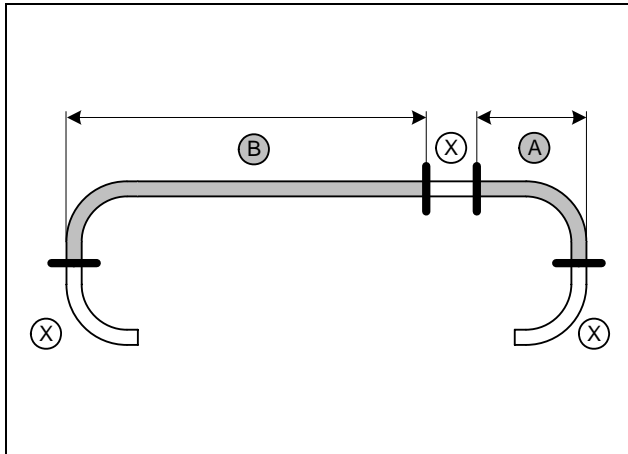
All spring clips  = 27 mm dia.!

All hose clamps  = 20-27 mm dia.!

All connecting pipes without a specific designation  = dia. 18x20.



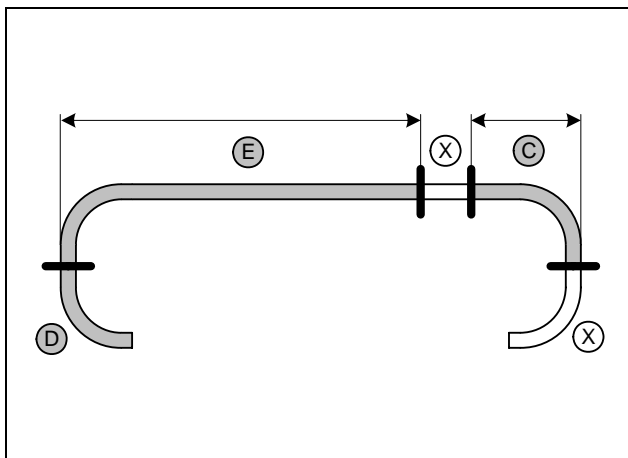




a = 225  
b = 1140

Discard section X

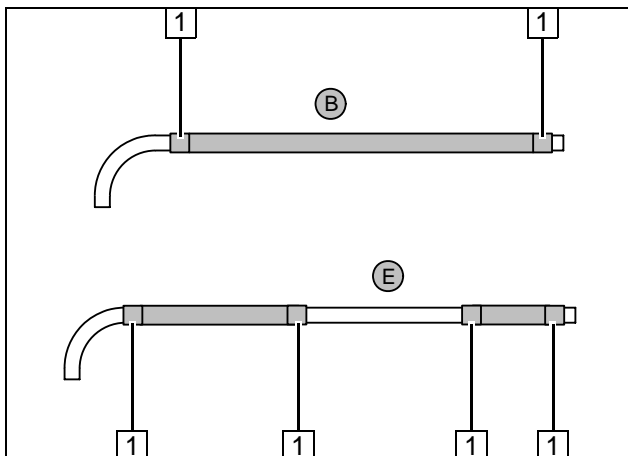
**Cutting coolant hoses to length**



c = 105  
e = 1310

Discard section X

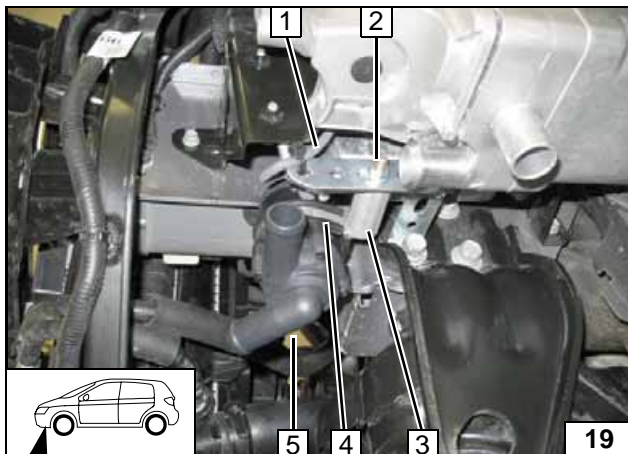
**Cutting coolant hoses to length**



Push braided protection hose onto hose **B**. Cut 400 mm off second braided protection hose and push both ends onto hose **B**. Cut heat shrink plastic tubing to length and shrink to size

1 25 mm long heat shrink plastic tubing [6x]

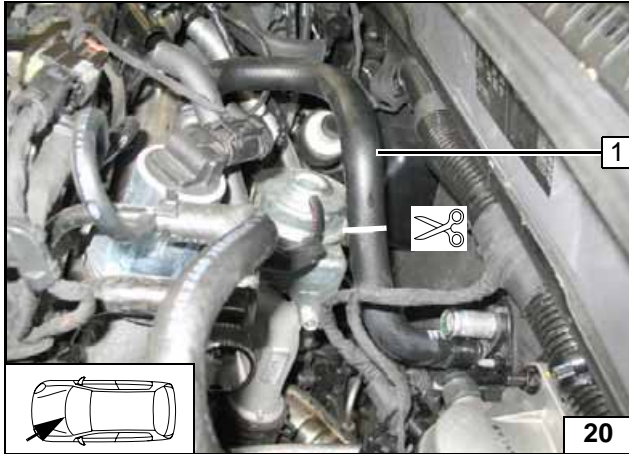
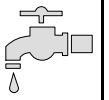
**Preparing coolant hoses**



Connect wiring harness of circulating pump 1 to matching colors of adapter wiring harness as shown in wiring diagram.

- 2 M6x60 bolt, flanged nut
- 3 Shim 40
- 4 48 mm dia. rubber-coated p-clamp
- 5 Circulating pump

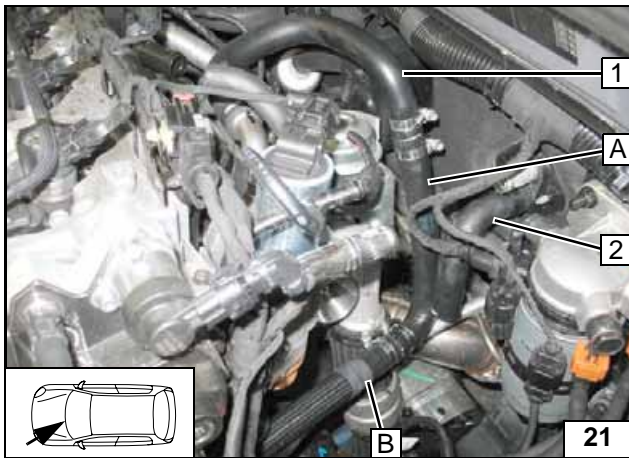
**Installing circulating pump**



Cut off hose on engine outlet/heat exchanger inlet **1** at marking.  
Hose on heat exchanger outlet pulled off for better illustration.

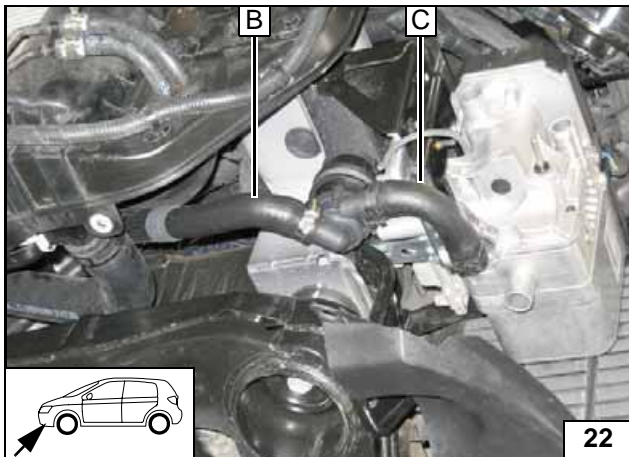


**Cutting point**

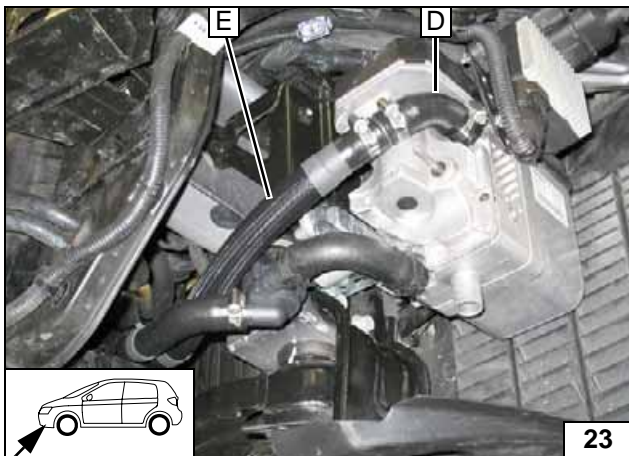


**1** Engine-outlet hose section  
**2** Hose section on heat exchanger inlet turned downward

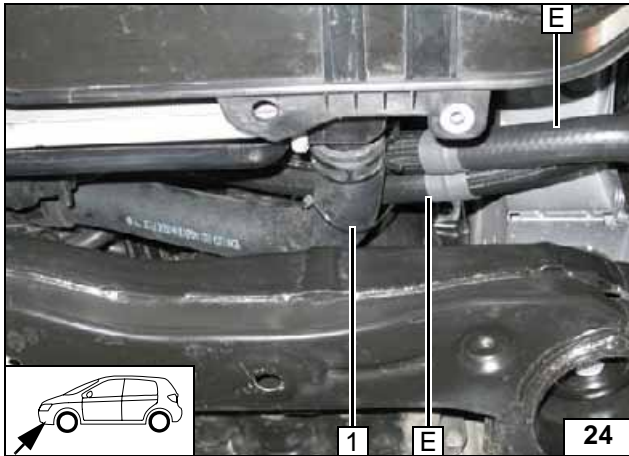
**Connect-  
ing engine  
outlet**



**Connect-  
ing heater  
unit inlet**

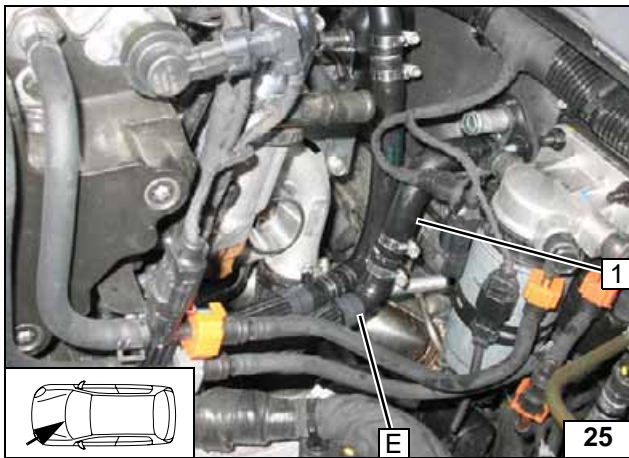


**Connect-  
ing heater  
unit outlet**



1 Cable tie

Routing into engine compartment

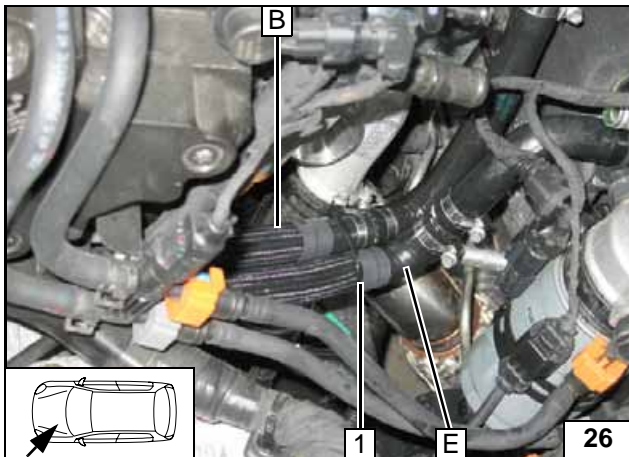


Ensure sufficient distance to neighboring components.



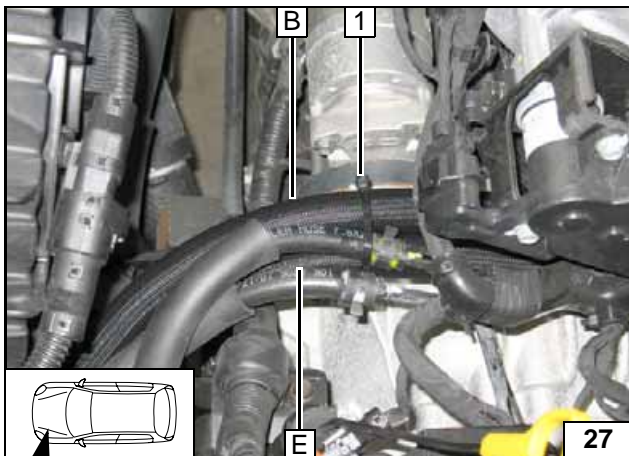
1 Hose on heat exchanger inlet

Connecting heat exchanger inlet



1 Cable tie

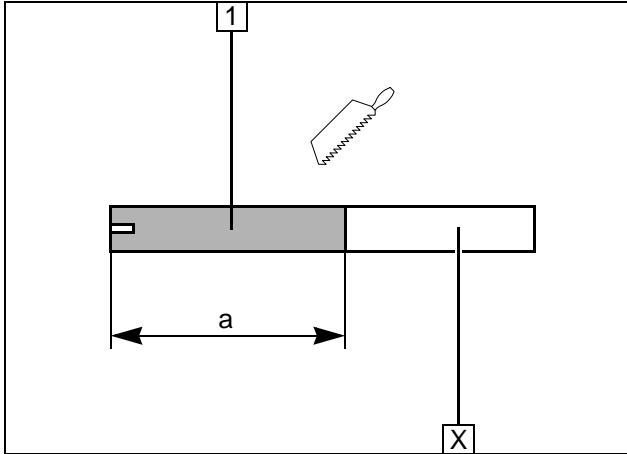
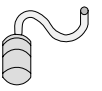
Routing in engine compartment



1 Cable tie

Routing in engine compartment



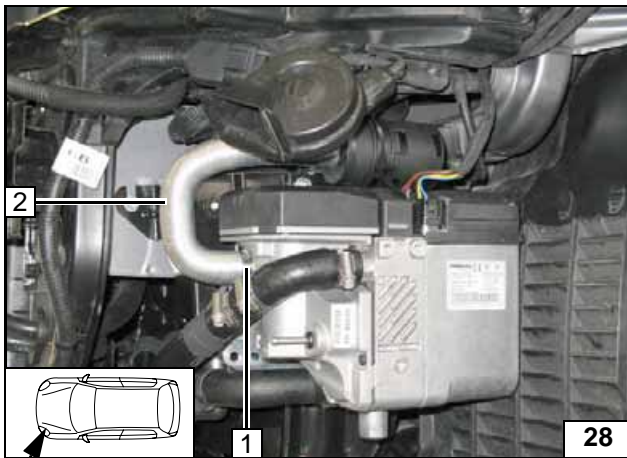


**Combustion air**

- 1 Combustion air pipe  
a = 240

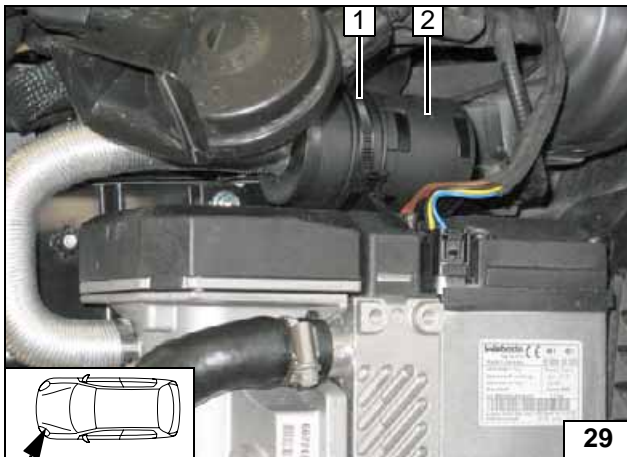
Discard section X

**Cutting combustion air pipe to length**



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

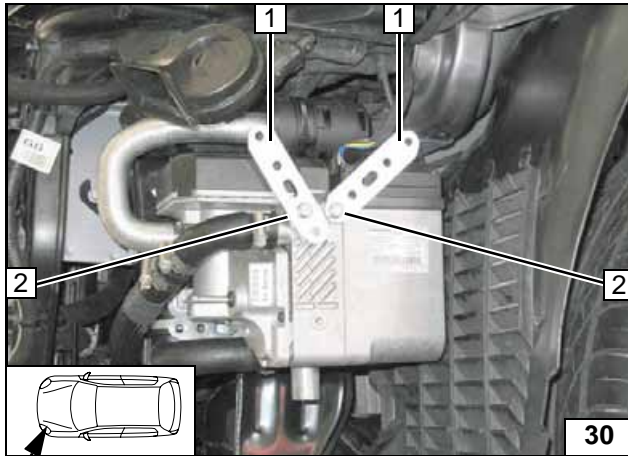
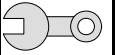
**Installing intake pipe**



- 1 Clip-type cable tie
- 2 Intake muffler



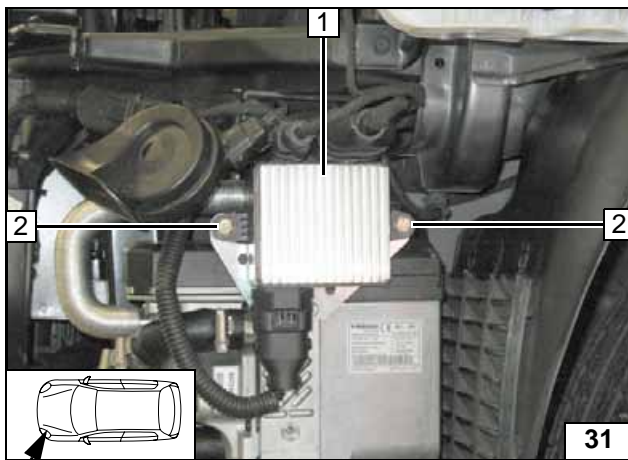
**Installing muffler**



**Installing control unit**

- 1 Perforated bracket [2x]
- 2 E-jot screw [2x]

Installing perforated brackets



- 1 Control unit
- 2 M6x20 bolt, flanged nut

Installing control unit



**Fuel**

**CAUTION!**

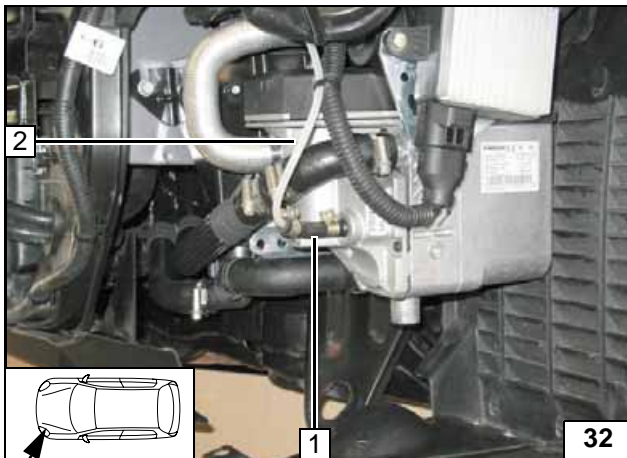
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

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

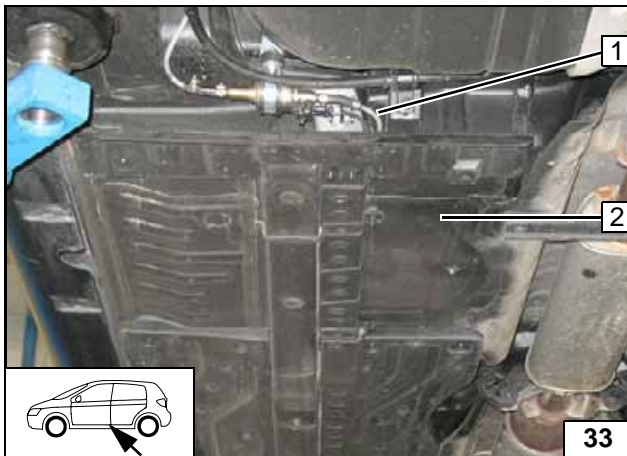
**WARNING!**

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



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

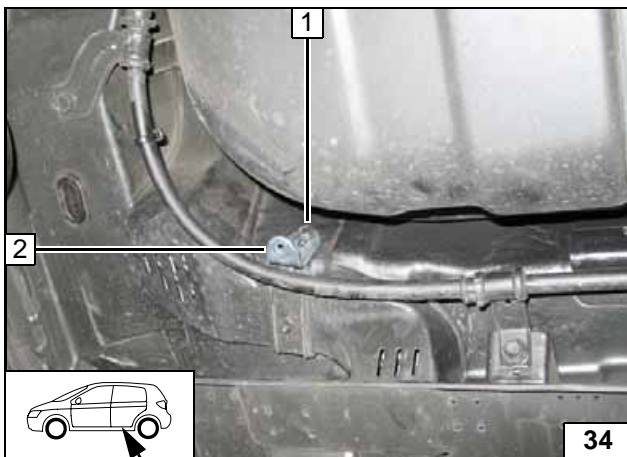
Conne-  
ction to  
heater unit



Route fuel line and wiring harness of metering pump 1 behind underdrive protection 2 to installation location of metering pump.

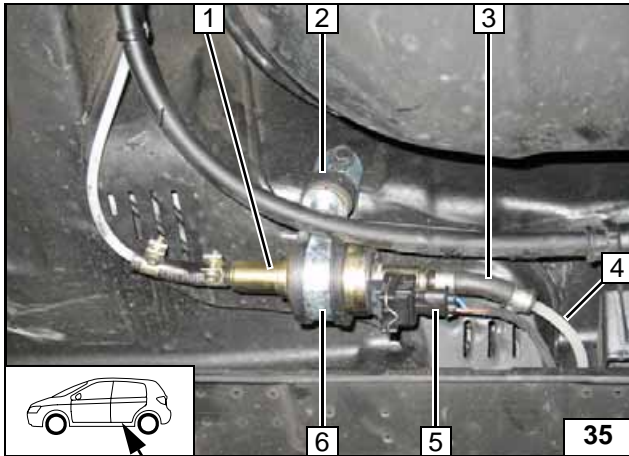
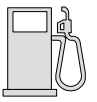


Installing  
lines



- 1 Original vehicle bolt
- 2 Angle bracket

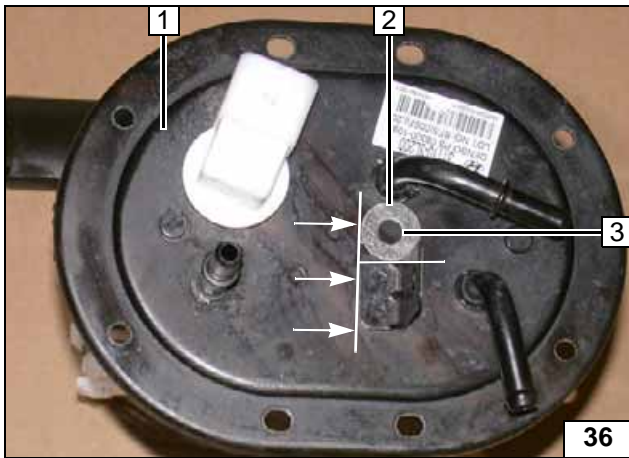
Installing  
angle  
bracket



- 1 Metering pump
- 2 Silent block, flanged nut [2x] on angle bracket
- 3 Hose section, 10 mm dia. clamp [2x]
- 4 Fuel line
- 5 Wiring harness of metering pump, connector mounted
- 6 Rubber-coated pipe clamp



## Installing metering pump

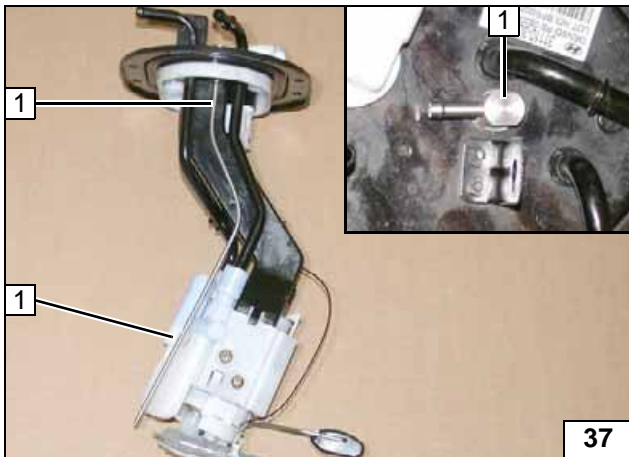


Remove fuel-tank sending unit 1 in accordance with manufacturer's specifications.

- 2 Washer, outside dia. = 17.6 mm
- 3 Copy hole pattern, 6 mm dia. hole



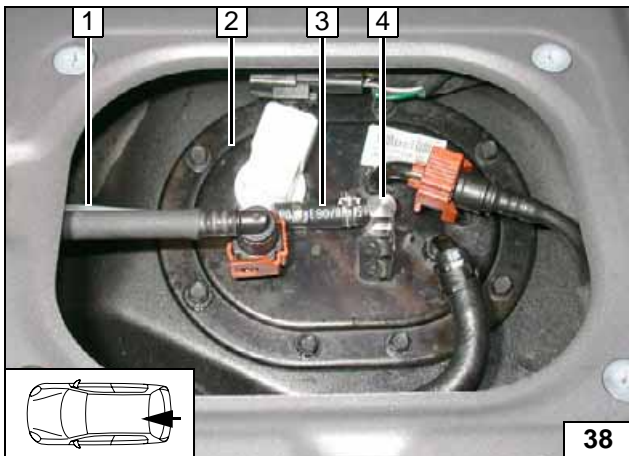
## Removing fuel



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



## Installing fuel standpipe

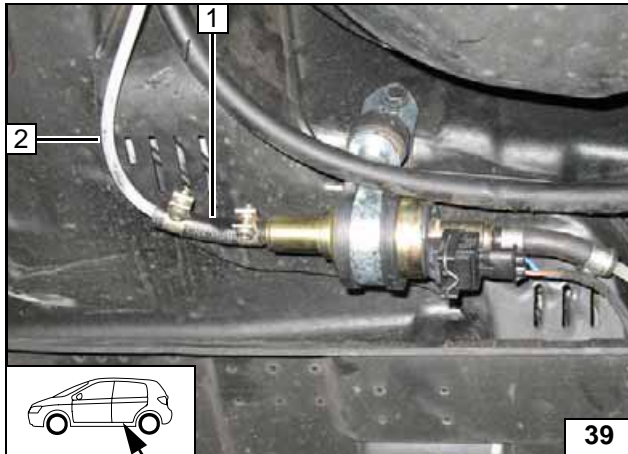


Install fuel-tank sending unit 2 in accordance with manufacturer's instructions.

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



## Connecting fuel line



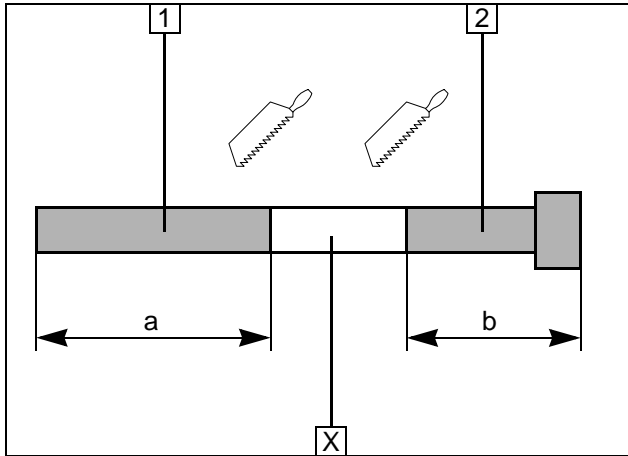
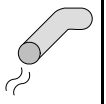
Check the position of the components; adjust if necessary. Check that they have free clearance.

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



**Connect-  
ing to me-  
tering  
pump**



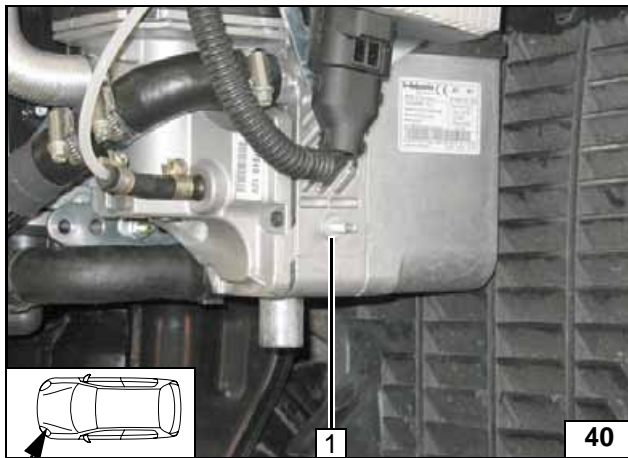


**Exhaust gas**

- 1 Exhaust pipe  
a = 350
- 2 Exhaust end section  
b = 310

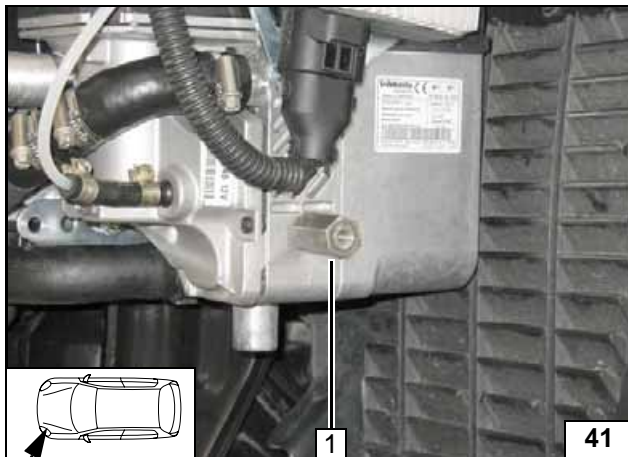
Discard section X

**Preparing exhaust pipe**



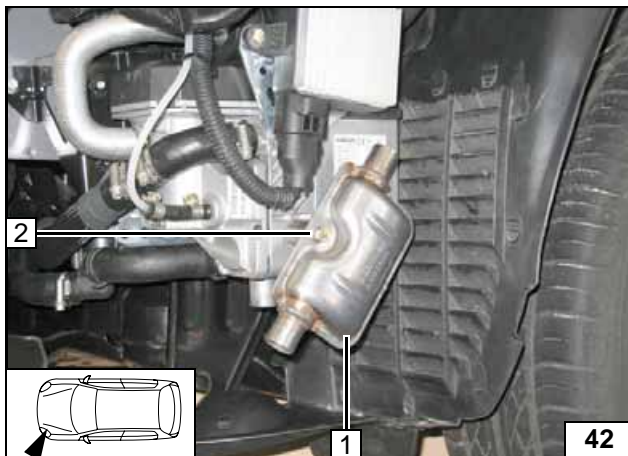
- 1 Stud bolt

**Installing stud bolt**



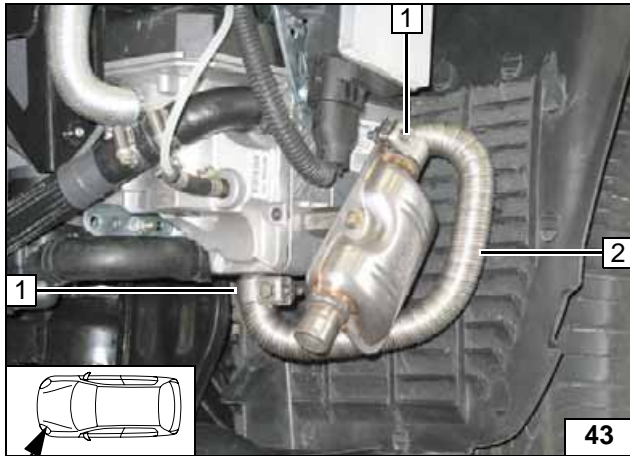
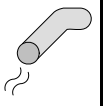
- 1 M6x30 spacer nut

**Installing spacer nut**



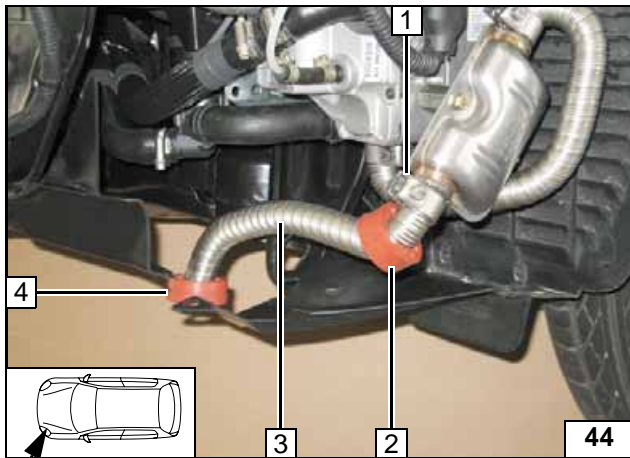
- 1 Muffler
- 2 M6x12 bolt, spring lockwasher

**Installing muffler**



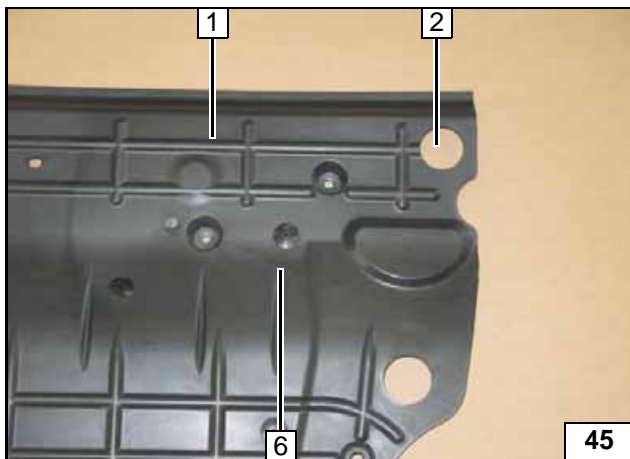
- 1 Hose clamp [2x]
- 2 Exhaust pipe

Installing exhaust pipe



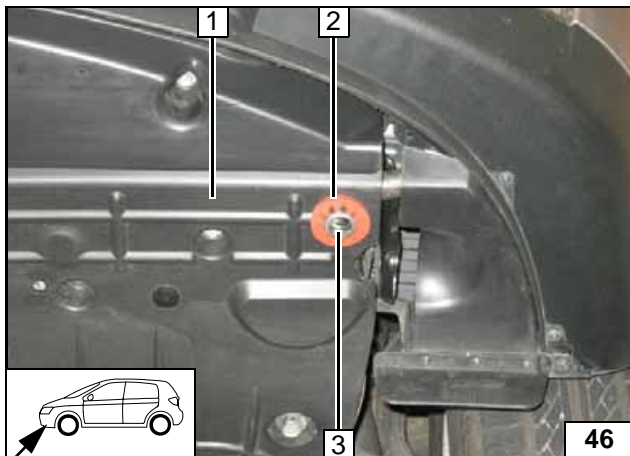
- 1 Hose clamp
- 2 Red (rt) rubber isolator
- 3 Exhaust pipe
- 4 Red (rt) rubber isolator with groove

Installing end section



- 1 Underdrive protection
- 2 42 mm dia. hole

Cutting out underdrive protection

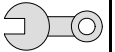


Align exhaust end section 3 flush on red rubber isolator 2.

- 1 Underdrive protection



Mounting rubber isolator



## Final Work

### WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, clamps and all electrical connections for firm seating.

Secure all loose cables using cable ties.

Only use manufacturer-approved coolant.

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

- 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>



## 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:**

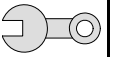
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Before parking the vehicle, make the following settings:

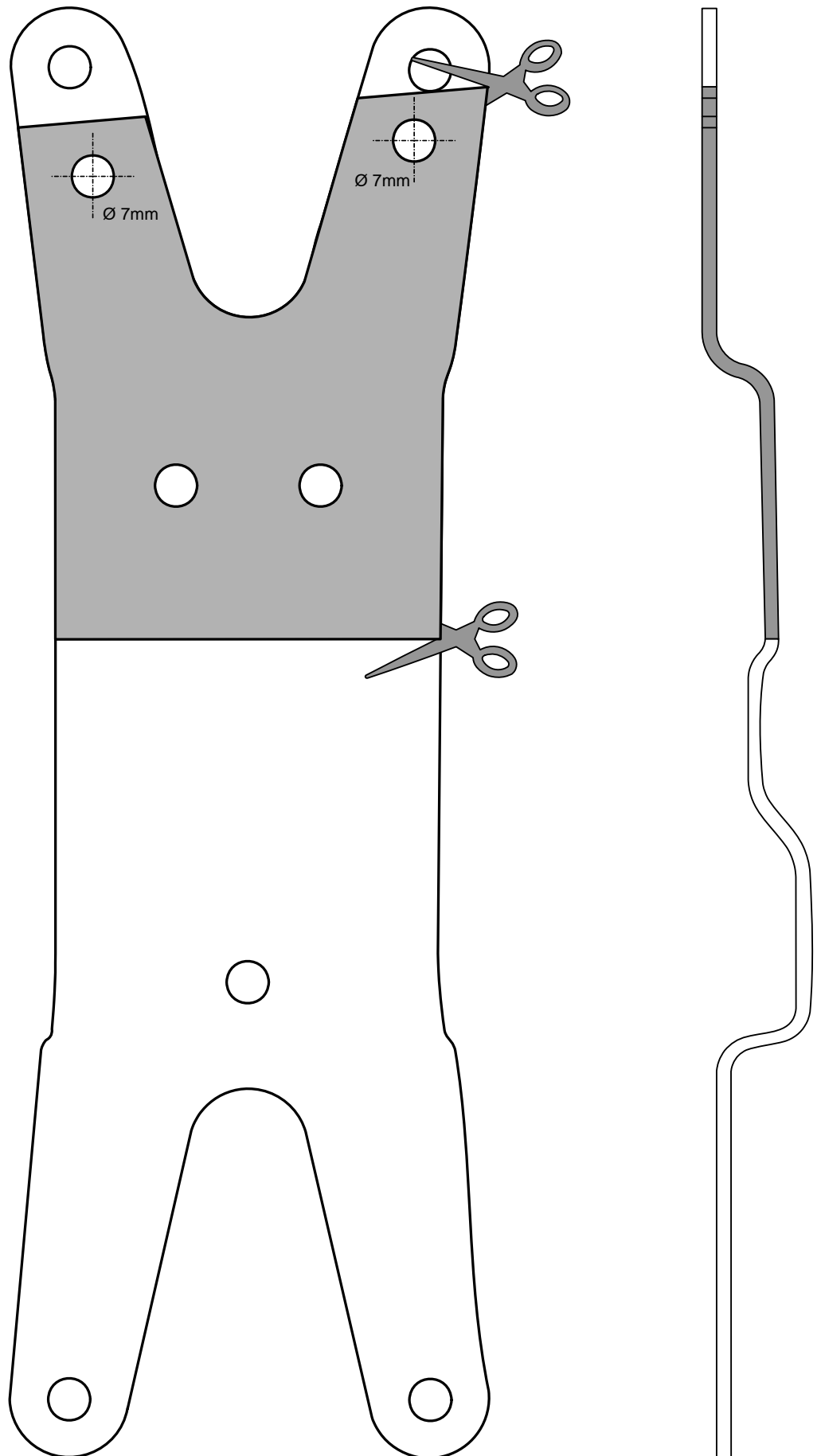


- 1 Air outlet to windshield
- 2 Set fan to level "1", or possibly "2"
- 3 Set temperature on both sides to "HI".

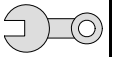
Automatic  
air-condi-  
tioning



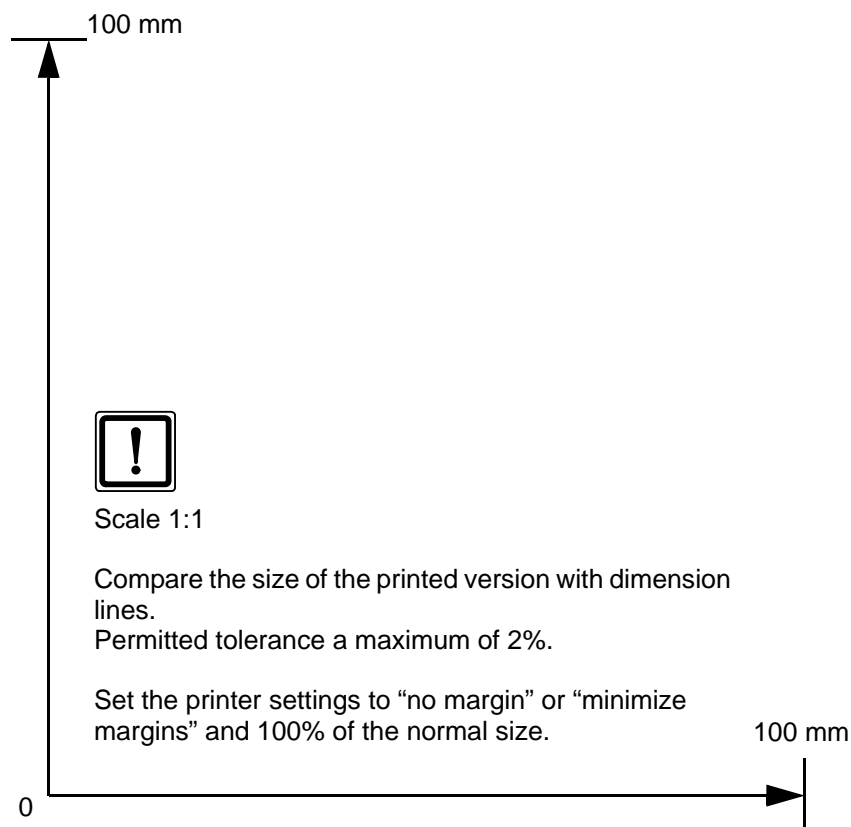
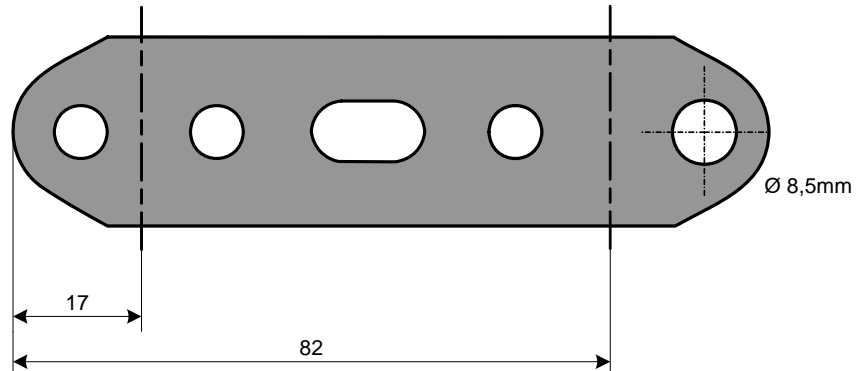
Template for Heater Unit Bracket

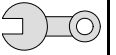


All edges are rounded off!

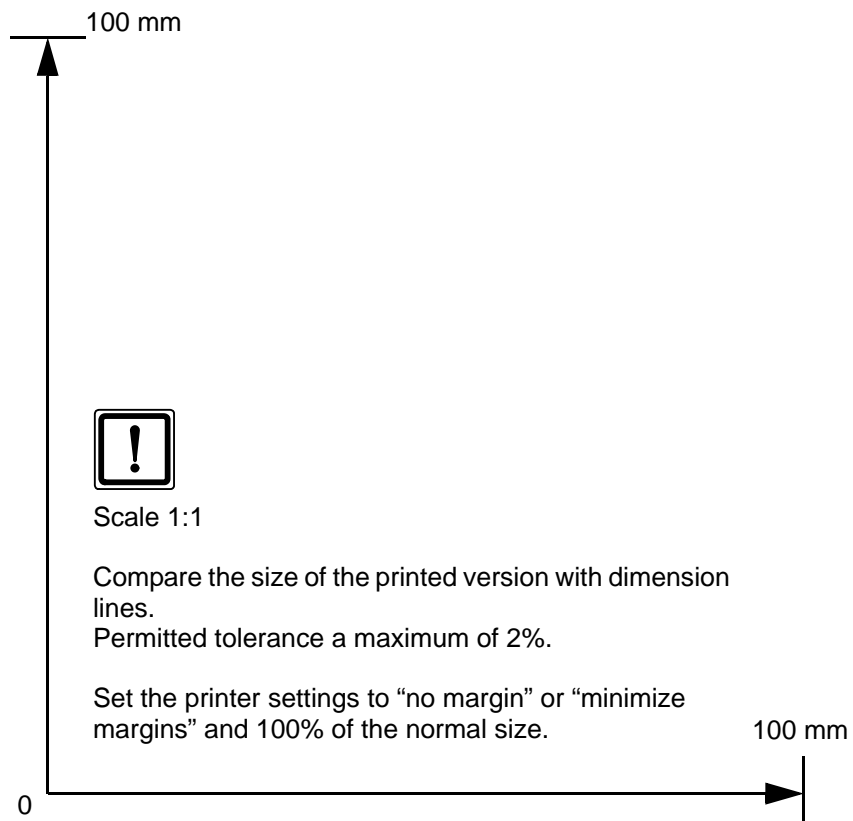
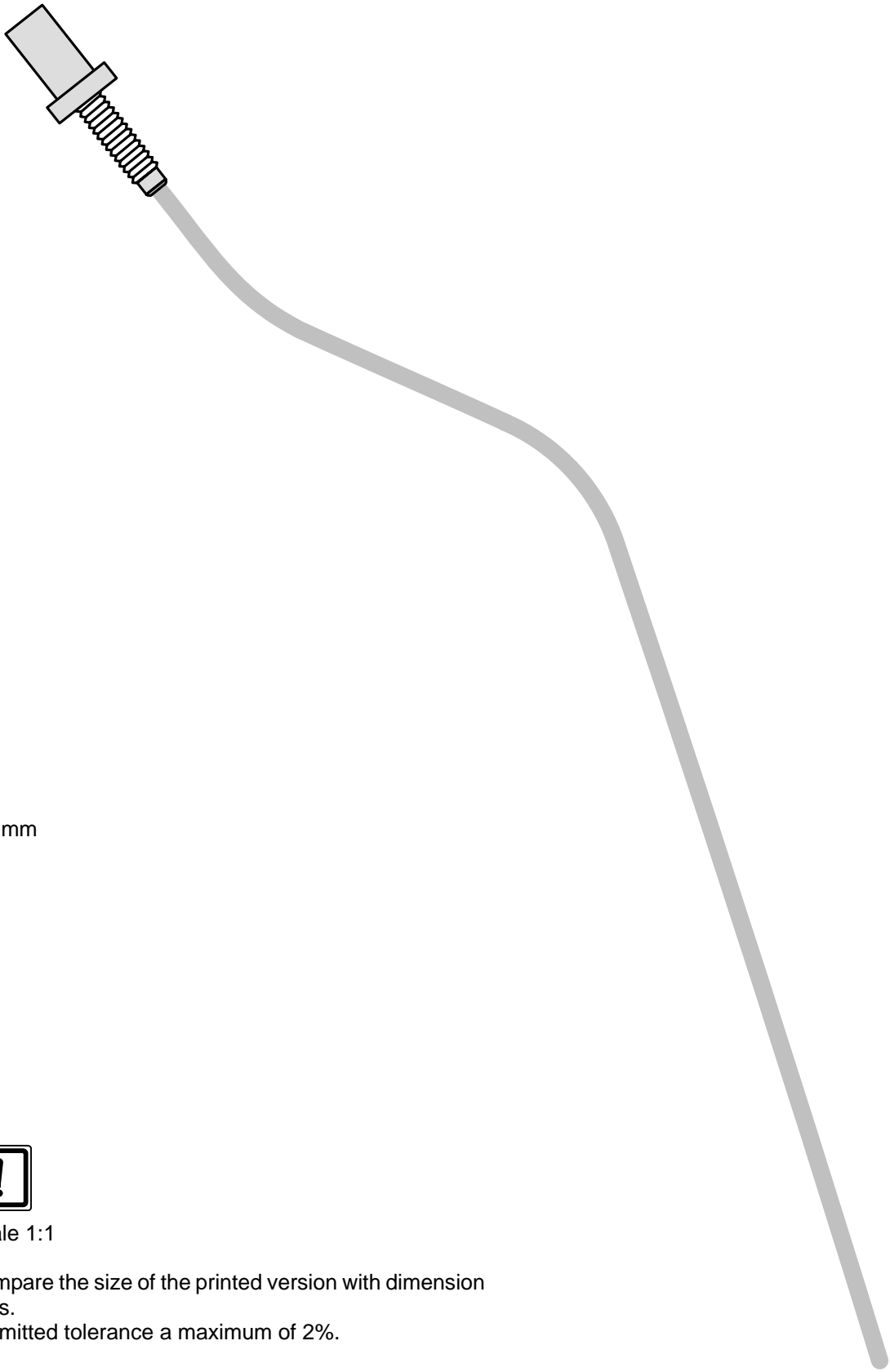


Template for Perforated Fastening Strap





### Template for Fuel Standpipe



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.