Water Heater

Feel the drive

***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 documentation

Lexus RX 400 h

Petrol
from Model Year 2005
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, 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.: 1310421E_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Lexus	RX 400 h	MUH 38	e6 * 2001/116 * 0098 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
3MZ-FE	Petrol V6	155	3311

Vehicle- and engine types, equipment variants and national specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.
The installation location of the digital timer should be confirmed with the end customer before installation.

Heater/Installation Kit

Quantity	Description	Order No.:
1	Retail accessories of *Thermo Top E / C / P*	See price list
1	Installation kit for Lexus RX 400 h Petrol	1310416D
1	Heater control	See price list

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

This installation documentation applies to the Lexus RX 400 h vehicles with Petrol engine - for validity, see page 2 - from model year 2005 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 this installation documentation.

However, the stipulations in the "installation documentation" 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 rub protection (split-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

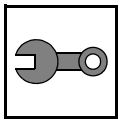
Special Tools

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

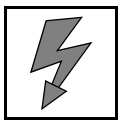
Explanatory Notes on Document

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

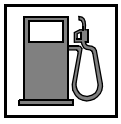


Electrical system

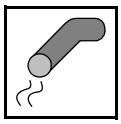


Coolant circuit

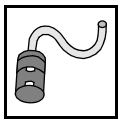
Fuel



Exhaust gas



Combustion air



Special features are highlighted using the following symbols:

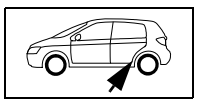
Specific risk of injury or fatal accidents.

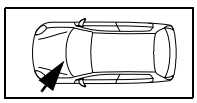
Specific risk of damage to components.

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.





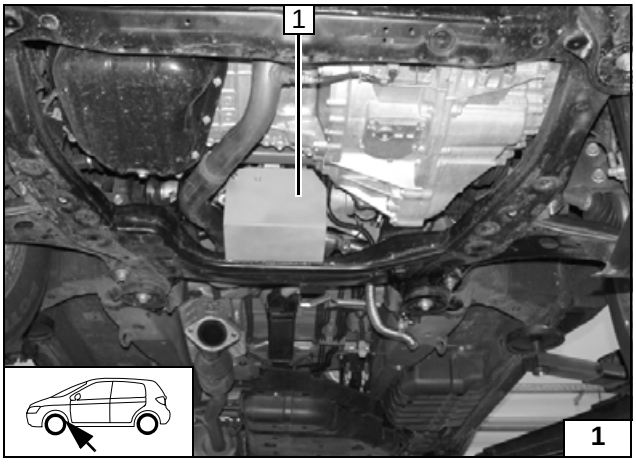
The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary Work

WARNING!

- Disconnect the battery "earth" or "ground" connection.
- Depressurise the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the engine cover.
- Remove the air resonator.
- Remove the windscreen wiper arms.
- Remove the coolant reservoir cap.
- Remove the windscreen wiper linkage with motor.
- Remove the coolant reservoir.
- Open the fuse and relay carrier in the engine compartment.
- Remove the front underride protection.
- Remove the vibration damper.
- Remove the glove compartment
- Remove the A-pillar trim in the footwell on the front passenger side
- Remove the lower instrument panel trim on the driver's side.
- Remove the driver's side door sill trim.
- Remove the driver's side air nozzle trim.
- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Remove the fuel tank.
- Remove fuel-tank sending unit.

Remove page 27 "Operating Instructions for End Customer" and add the operating instructions



Heater installation location

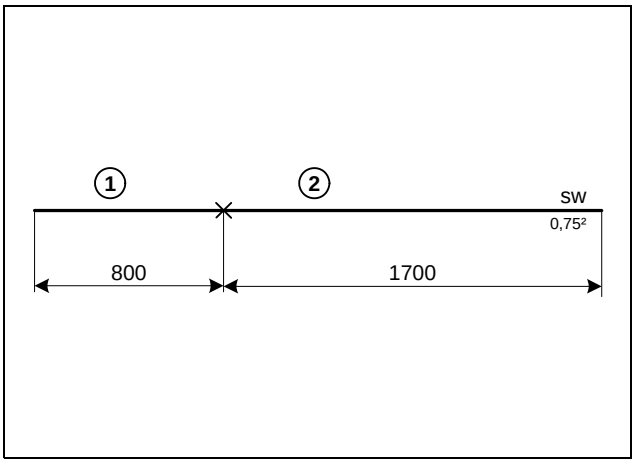
Part of the exhaust system is removed for better display.

1 Heater

Preparing electrical system

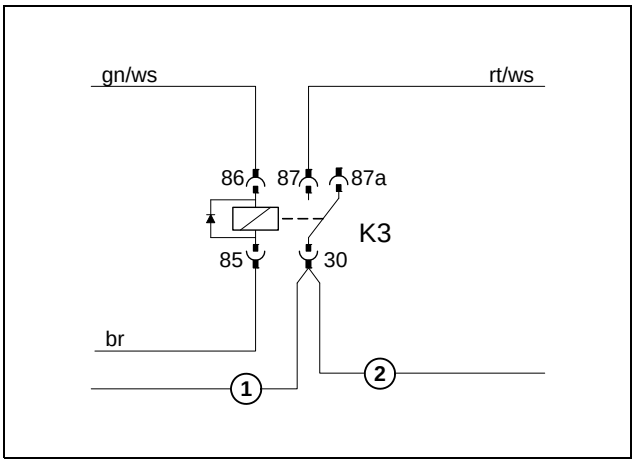
Wire sections **1** and **2** will be required later for connecting the diodes.

Cutting wires to length



Uncrimp red (rt) and black (sw) wire from K3 and discard. Produce connections as shown in wiring diagram. Install wire section **2** in protective sleeving provided.

Preparing K3 relay

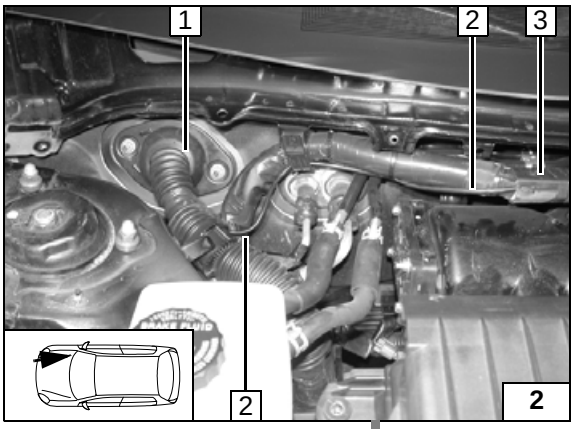


Electrical Connections

Pass through for additional line

Route black (sw) wire in protective sleeving **2** through wiring duct **3** to right vehicle side and through protective rubber plug **1** into the passenger compartment.

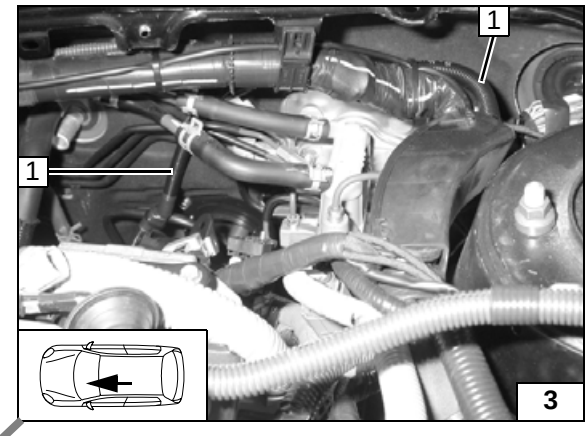
1 Original vehicle protective rubber plug

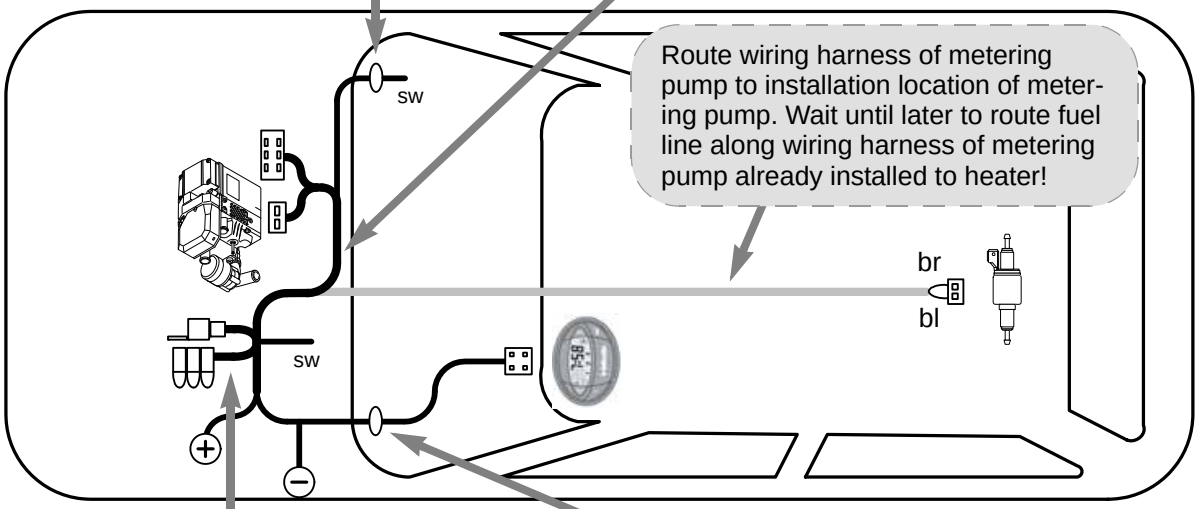


Routing wiring harness of heater

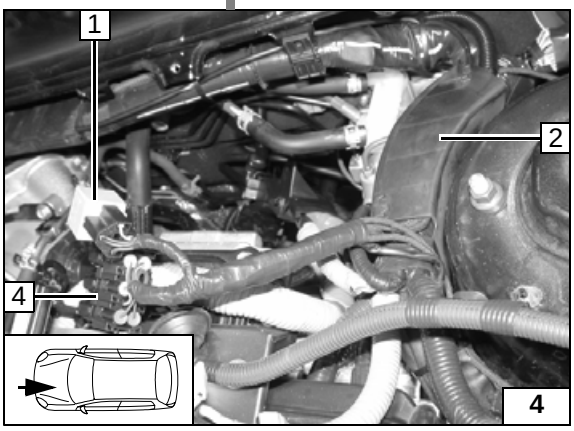
Encase wiring harness of heater with corrugated tube provided and route along original vehicle lines to installation location of heater.

1 Wiring harness of heater



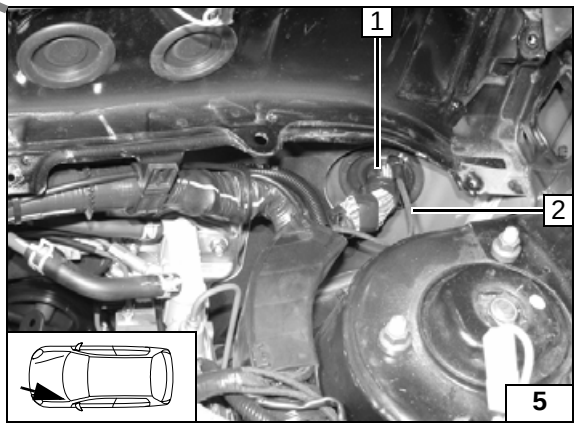


Wiring harness routing diagram



Fuse holder, K3 relay

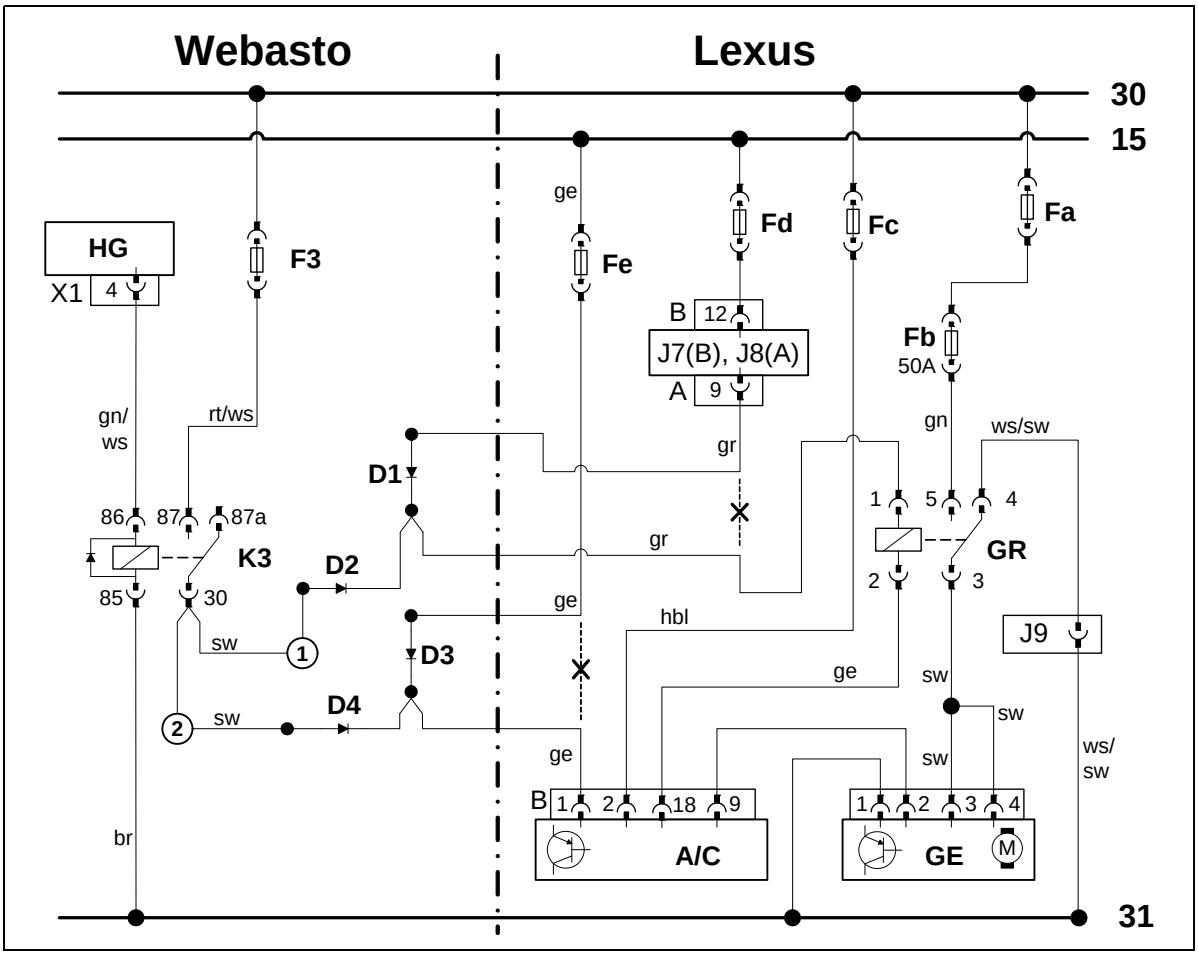
Position K3 relay **1** and fuse holder **4** in engine compartment. (will be installed later on coolant reservoir). Route wiring harnesses through wiring duct **2** to firewall. For positive and earth connection, see Page **9**.



Pass through for wiring harness of digital timer

1 Original vehicle protective rubber plug
2 Wiring harness of digital timer

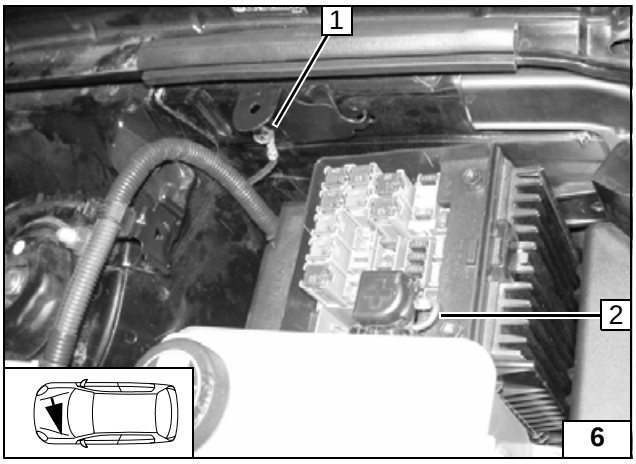
Fan control



Webasto components		Lexus components		Colours and symbols	
HG	Heater TT-C/E	J9	Connector	rt	red
F3	Replace 25 A fuse F3 with 7.5 A fuse.	J7/J8	Connector	ws	white
		GR	Fan relay	sw	black
X1	6-pin heater connector	GE	Fan unit	br	brown
K3	Fan relay	A/C	A/C control panel	gn	green
D1	3A diode	Fa	DC/DC 120 A fuse	hbl	sky blue
D2	3A diode	Fb	50A heater fuse	ge	yellow
D3	3A diode	Fc	ECU-B 7.5A fuse	ro	pink
D4	3A diode	FD	7.5 A heater fuse	gr	gray
		FE	ECU-IG 7.5A fuse		
				X	Cutting point

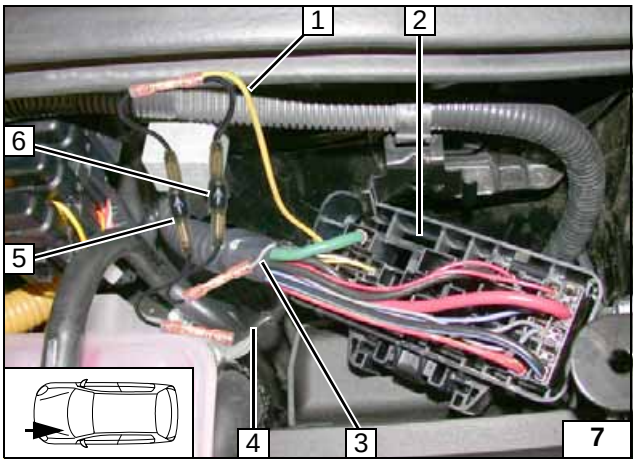
Automatic air-conditioning wiring diagram

Legend



1 Earth wire on original vehicle bolt
2 Positive wire on original vehicle positive support point

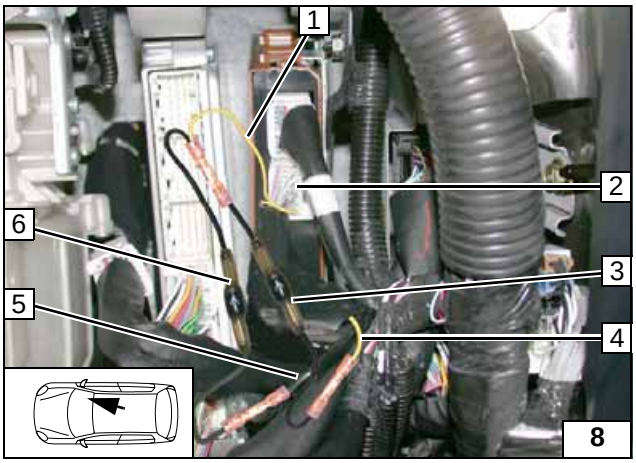
Positive and earth connection



Produce connections as shown in wiring diagram.
Watch direction of flow of diodes.

1 Gray (gr) wire from fan relay, Pin 1
2 Fuse and relay carrier in engine compartment
3 Gray (gr) wire of connector connection J7/J8
4 Black (sw) wire ① K3/30 800mm long
5 Diode D2
6 Diode D1

Connecting fan relay



Produce connections as shown in wiring diagram.
Watch direction of flow of diodes.

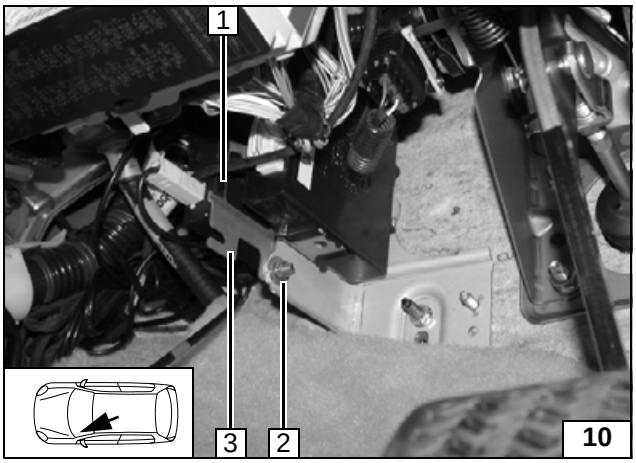
1 Yellow (ge) wire of connector B Pin 1
2 Connector B from A/C booster
3 Diode D3
4 Yellow (ge) wire of 7.5A fuse
5 Black (sw) wire ② from K3/30, 1700mm long
6 Diode D4

Connecting A/C booster

Digital timer

1 Digital timer

Installing receiver

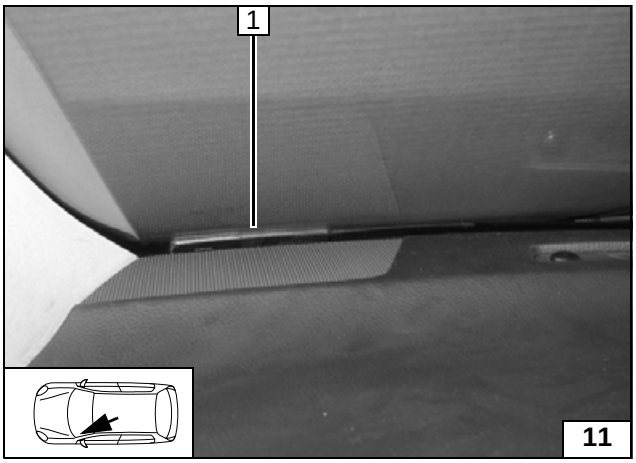


Remote option (Telestart)

Drill out bracket to 6.5 mm dia. at position **2**

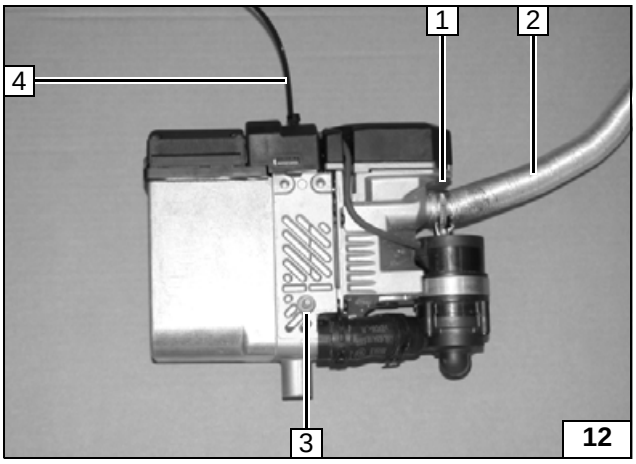
3 Bracket
2 M6x20 bolt, washer, flanged nut on existing hole
1 Receiver

Installing receiver



1 Antenna

Installing antenna

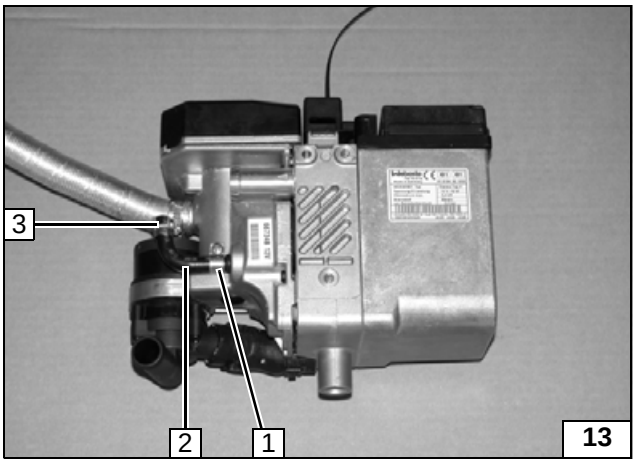


Preparing heater

Punch through perforation on heater cover and mount clip-type cable tie **3**.
Ejot stud, tightening torque 10 Nm.

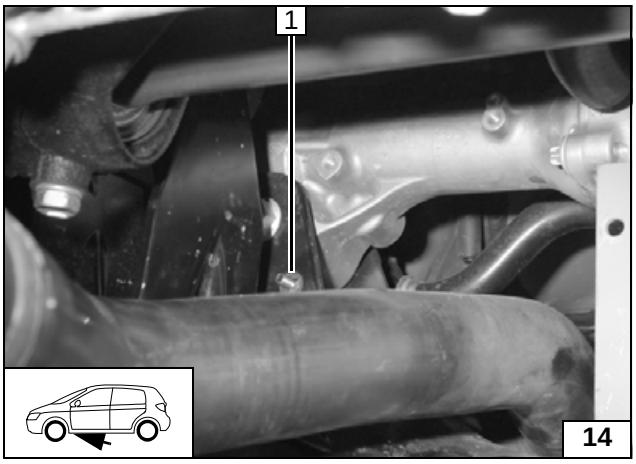
2 Combustion-air intake pipe
1 27 mm dia. hose clamp
3 Ejot stud
4 Clip-type cable tie

Installing intake pipe



2 90° moulded hose
1 10 mm dia. hose clamp
3 10 mm dia. hose clamp, loosely premount

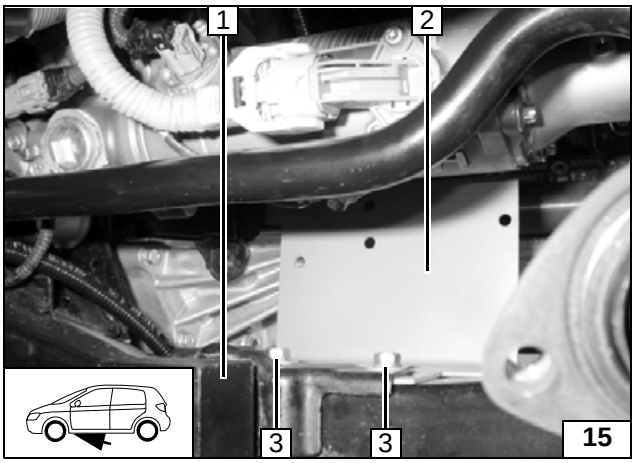
Premounting fuel hose on heater



Preparing installation location

1 Mount M6x20 bolt, pin lock in existing hole

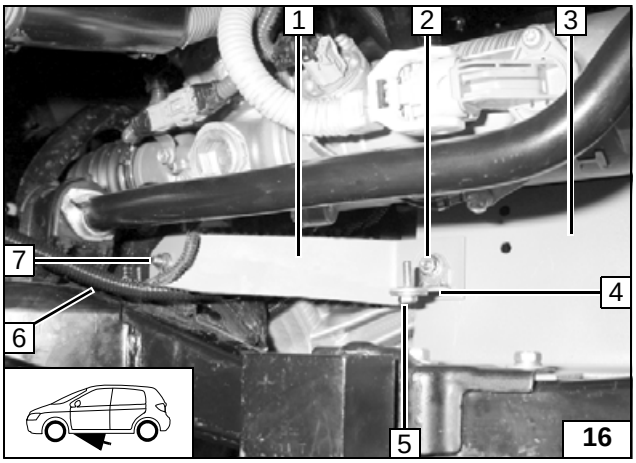
Mounting bolt



Install bracket together with absorber and original vehicle bolts.

1 Absorber
2 Bracket
3 Original vehicle bolts

Installing bracket



Route wiring harness of heater **6** to the installation location of heater.

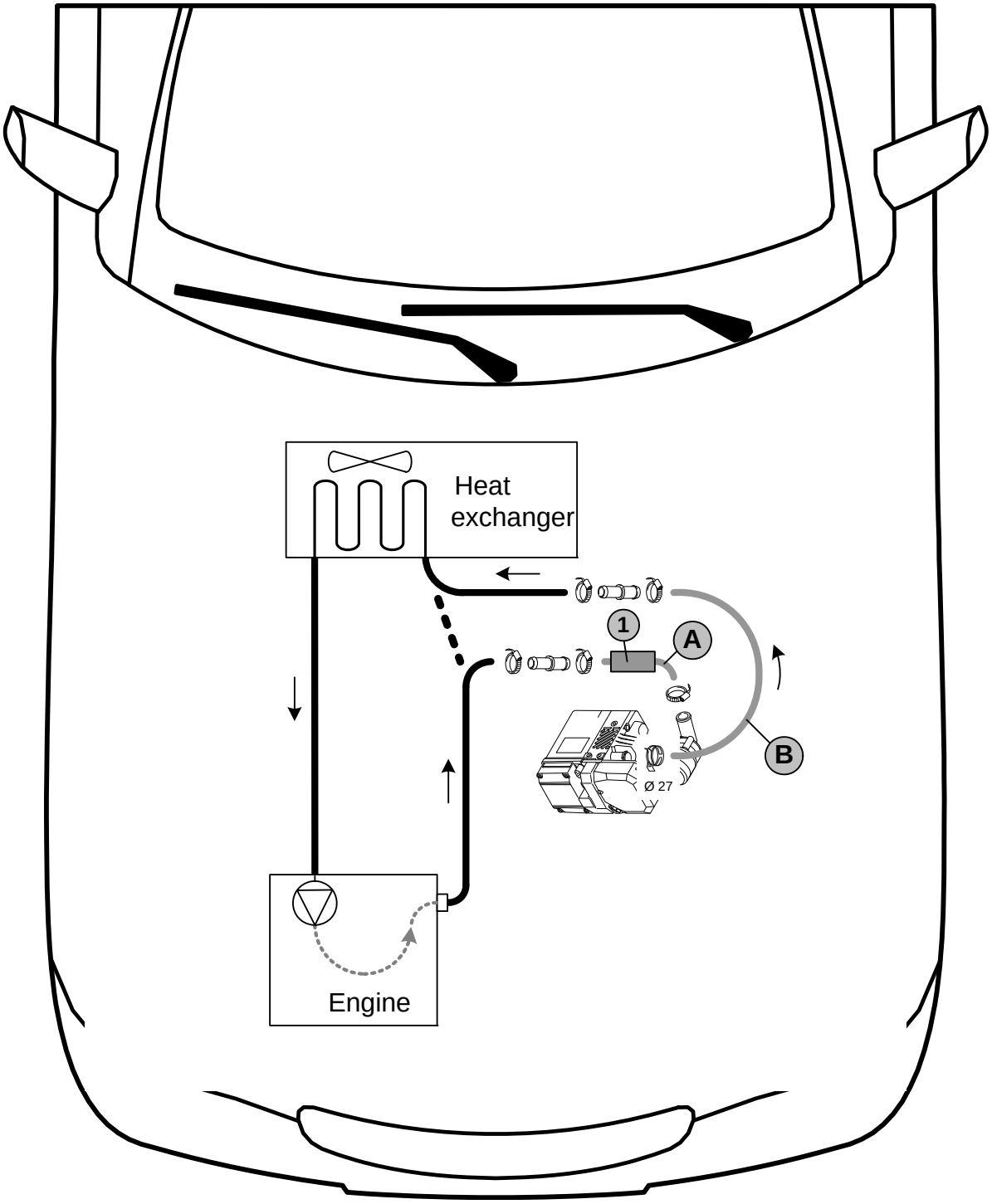
3 Bracket
1 Strut **A**
7 M6 flanged nut on premounted bolt
4 Angle bracket
2 M6x20 bolt, flanged nut M6
5 M6x20 bolt, pin lock

Installing strut A

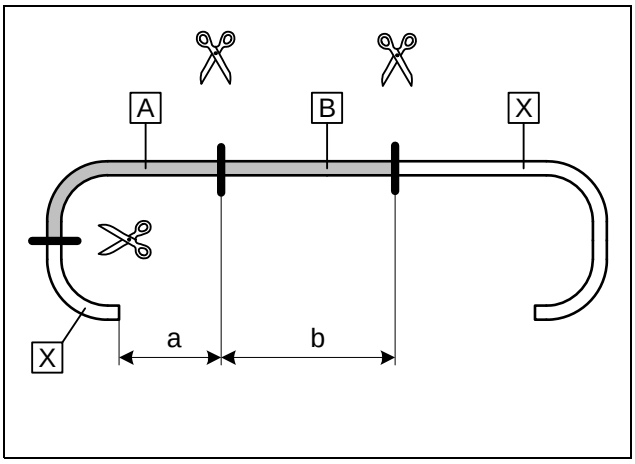
Coolant circuit

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 other hoses cannot be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



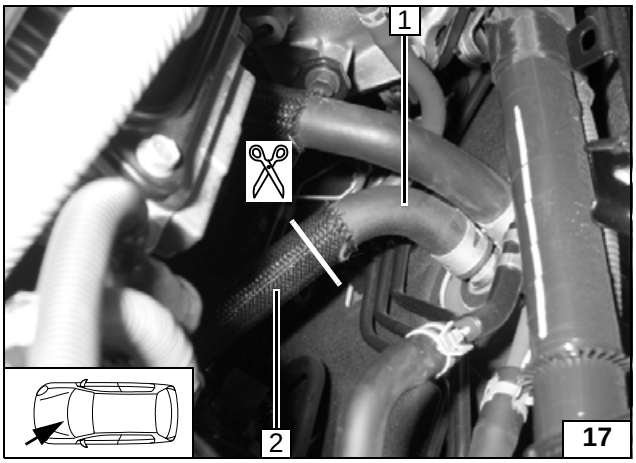
All clamps without a specific designation are 20-27 mm dia. hose clamps
All connecting pipes are 17x20 dia. **1** = Heat protection hose



Discard section **X**

a = 130mm
b = 530mm

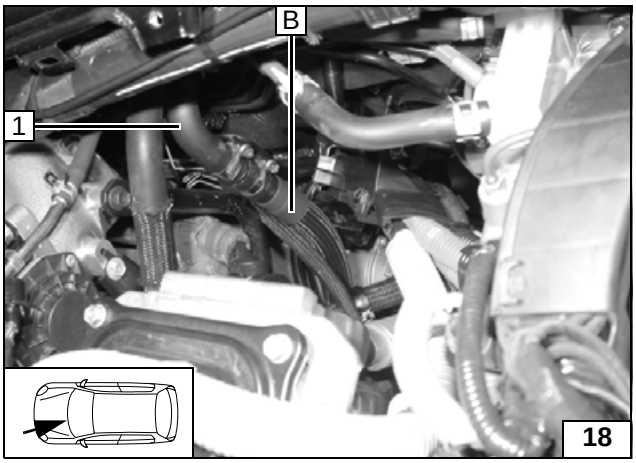
Cutting hoses to length



Cut away braided protection hose in area of cutting point.

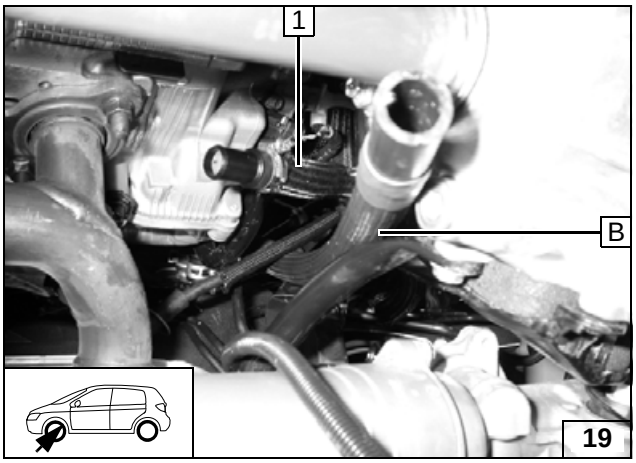
1 Hose section of heat exchanger inlet
2 Engine outlet hose section

Cutting point



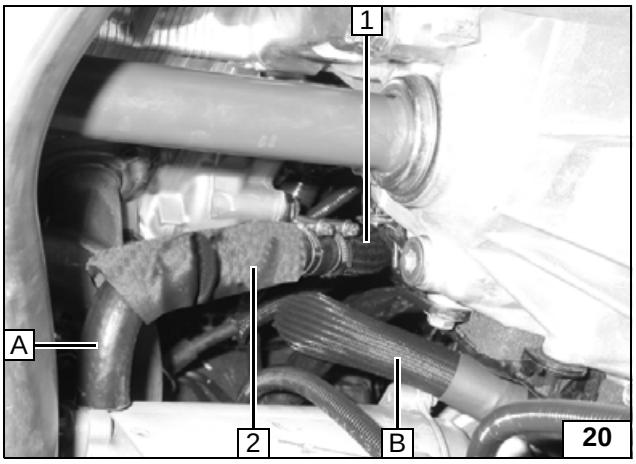
1 Hose section of heat exchanger inlet

Connection on heat exchanger inlet



Route hose section on engine outlet **1** and hose **B** on firewall downward.

Routing in engine compartment



1 Engine outlet hose section
2 Heat shield on hose **A**

Sliding on heat shield

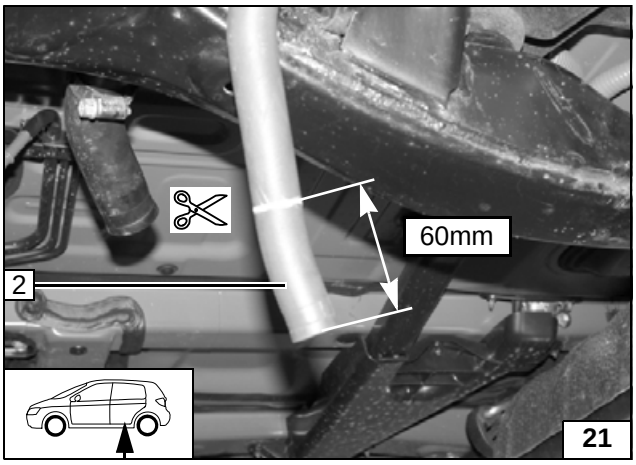
Fuel

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.

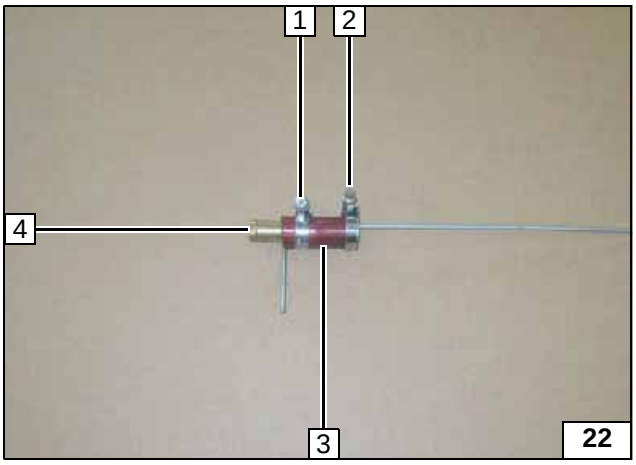
WARNING!
Route wiring harness of metering pump to installation location of metering pump. Wait until later to route fuel line along wiring harness of metering pump already installed to heater!



Pull fuel-tank vent line off fuel tank connection piece and disconnect.

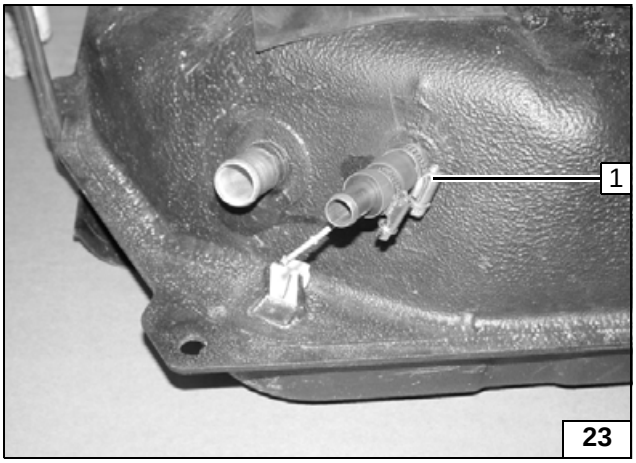
1 Ventilation line
2 Cut ventilation line to length

Cutting point



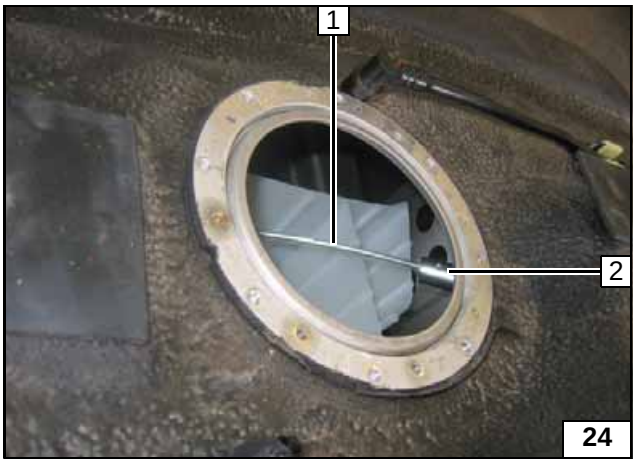
3 Ventilation line cut to length of 60 mm
1 27 mm dia. hose clamps
2 Slide on original vehicle hose clamp
4 Fuel standpipe

Preparing fuel standpipe



Mount entire fuel standpipe and fasten on fuel tank connection piece ventilation line with original vehicle hose clamp **1**.

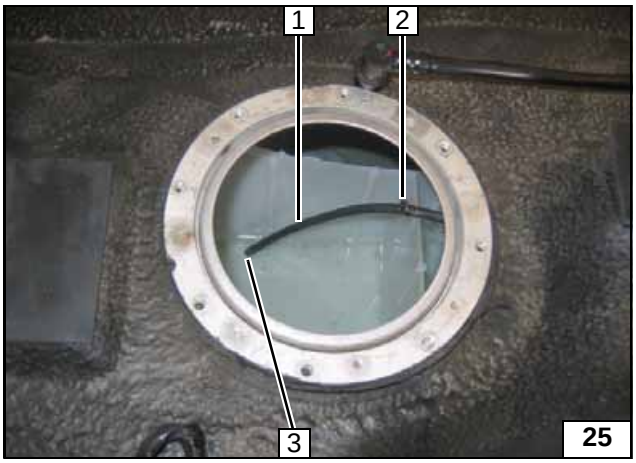
Installing fuel standpipe



There are 2 fuel tank versions (with and without pipe) Figure shows fuel tank with pipe **2**.

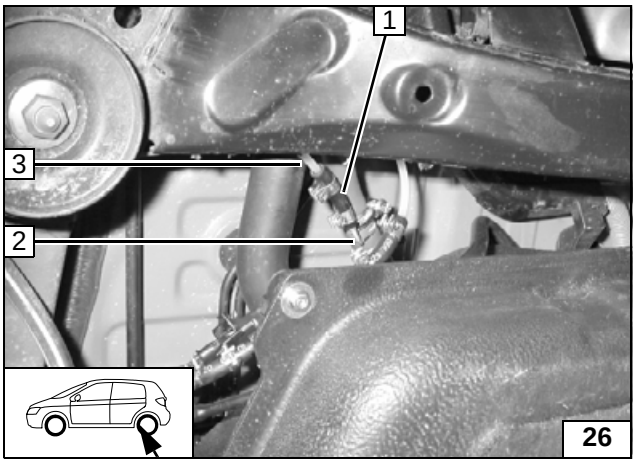
1 Fuel standpipe

Installing fuel standpipe



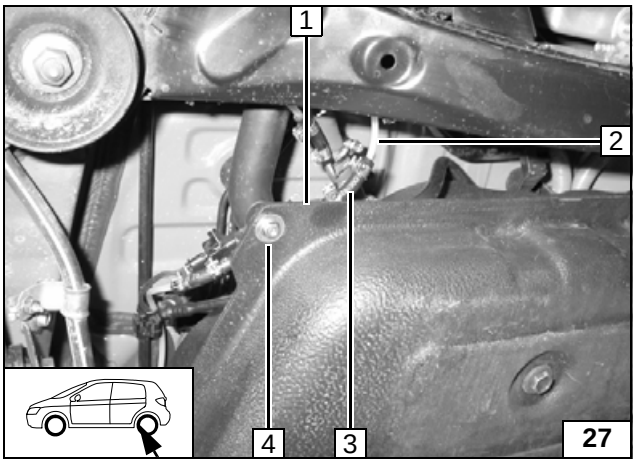
Slide on 4x1 protective hose **1** fully and fasten with 6.2mm dia. one-ear clamp **2**. Shape fuel standpipe. Ensure a distance to bottom of fuel tank of 5 mm at Position **3**. Reinstall fuel tank.

Preparing fuel standpipe



1 Hose section, 10 mm dia. hose clamp [2x]
2 Fuel standpipe
3 Mecanyl fuel line

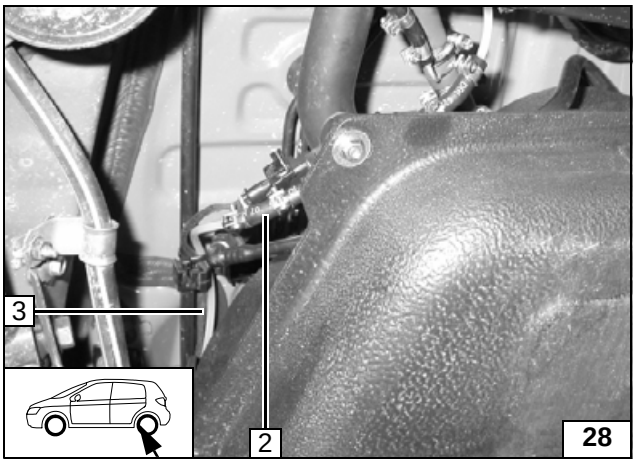
Connecting fuel line



Ensure correct installation position of metering pump, see "Installation Instructions". Fuel line from fuel standpipe on intake side and remaining end of fuel line on pressure side of metering pump.

1 Metering pump, rubber-coated p-clamp (covered by fuel tank)
4 Silent block, large diameter washer, flanged nut [2x] on original hole on vehicle fuel tank
2 Fuel line from fuel standpipe
3 Hose section, 10 mm dia. hose clamp [2x] on metering pump

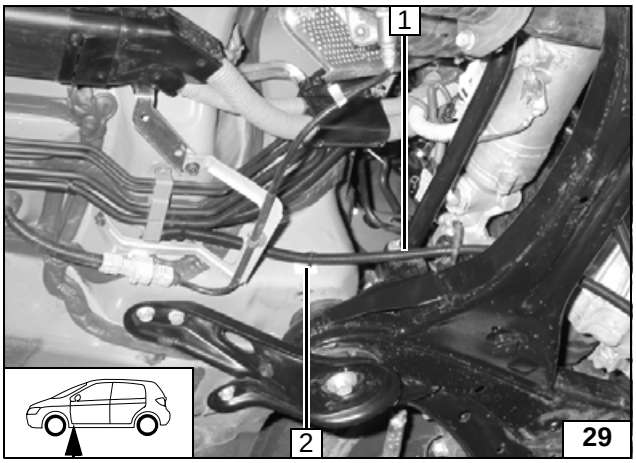
Installation location of metering pump



Route remaining end of fuel line along original vehicle fuel lines toward front to installation location of heater.
Check the position of the components; adjust if necessary. Check that they have freedom of movement.

Connecting metering pump

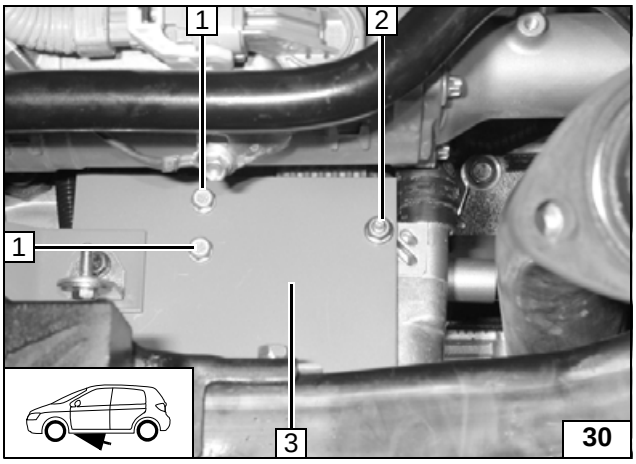
1 Wiring harness of metering pump, connector mounted
2 Hose section, 10 mm dia. hose clamp [2x] on metering pump
3 Mecanyl fuel line



Slide corrugated tube provided onto fuel line and fasten with adhesive base.

Installing fuel line

1 Mecanyl fuel line in corrugated tube
2 Adhesive base, cable tie

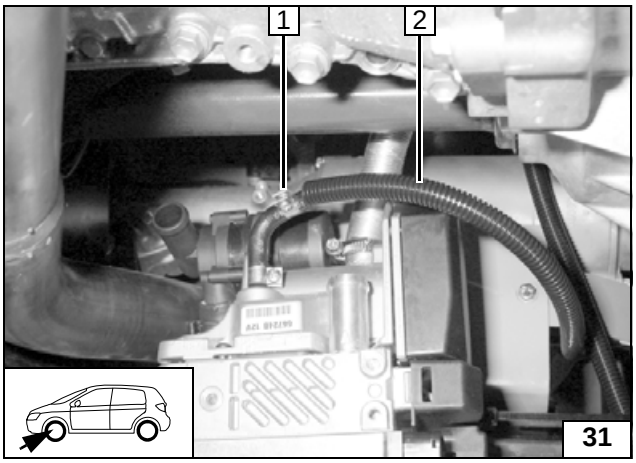


Installing heater

Ejot screws, tightening torque 10 Nm!
Insert two washers between heater and bracket at Position **2**.

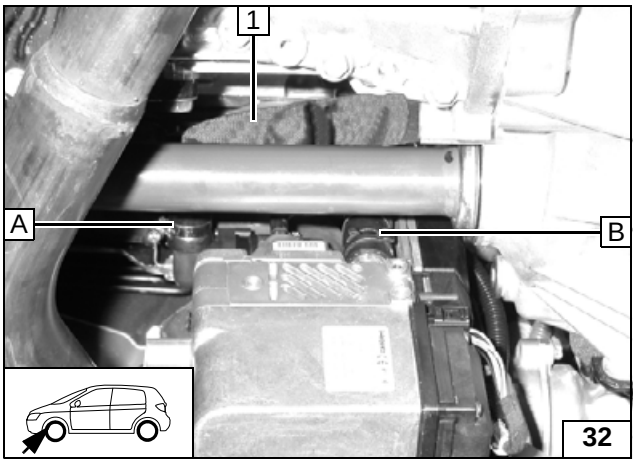
1 Ejot screw [2x]
2 Washer [2x], flanged nut on premounted Ejot stud
3 Bracket

Installing heater



2 Mecanyl fuel line from metering pump
1 Tighten hose clamp

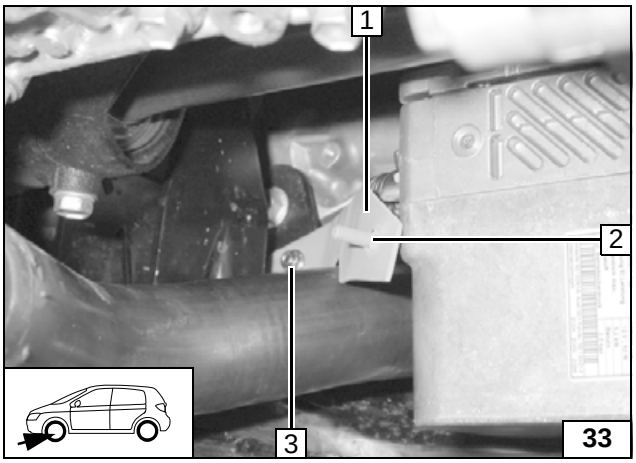
Connecting fuel line on heater



Fasten hose **A** with 27mm dia. hose clamp on heater inlet, hose **B** with 27mm dia. spring clip on heater outlet.
Ensure sufficient distance to adjacent components; correct if necessary.

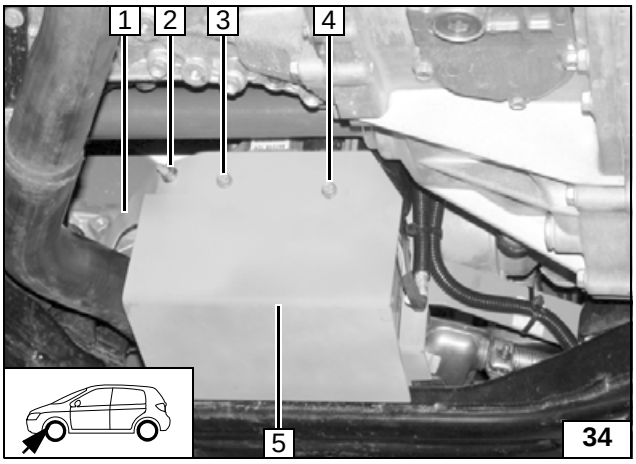
1 Protective hose on hose **A**

Coolant connection



1 Strut **B**
3 M6x20 bolt, flanged nut at existing hole
2 M6x20 bolt (insert through from behind), pin lock

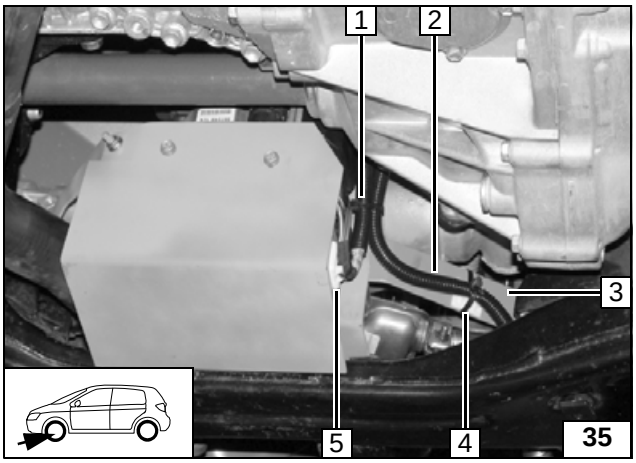
Installing strut B



Ejot screws, tightening torque 10 Nm!
Insert two washers between heater and wind deflector plate at Position **3**.

5 Wind deflector plate
1 Strut **B**
2 Flanged nut on prepared bolt
3 Ejot screw, washer [2x]
4 Ejot screw

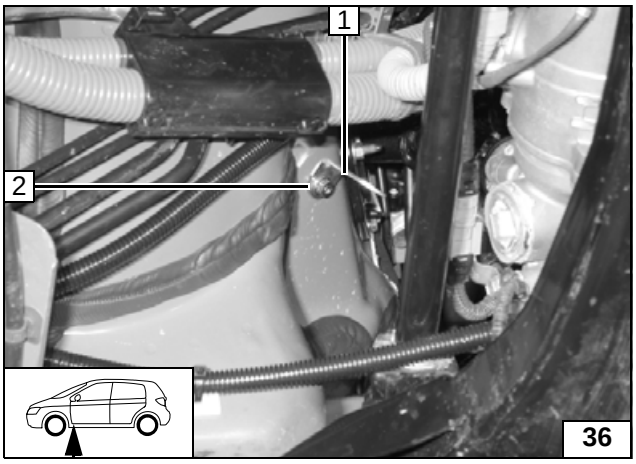
Installing wind deflector plate



Fasten fuel line in corrugated tube on strut **A** with adhesive base.
Fasten wiring harness of heater in corrugated tube on heater with adhesive base.

3 Strut **A**
2 Mecanyl fuel line in corrugated tube
4 Adhesive base, cable tie
1 Wiring harness of heater in corrugated tube
5 Adhesive base, cable tie

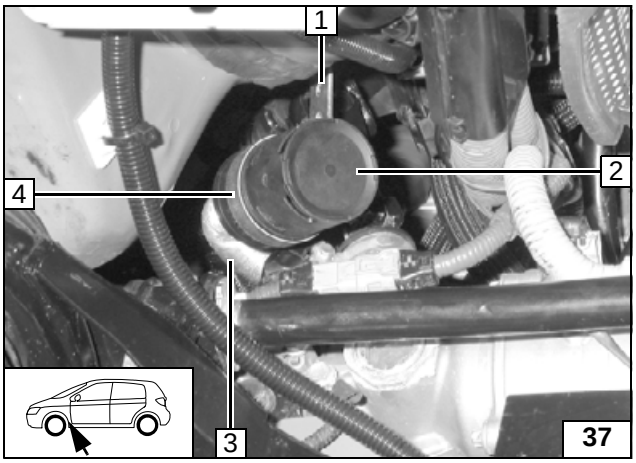
Fastening wiring harnesses



Combustion air

1 Angle bracket
2 Flanged nut on original vehicle stud bolt

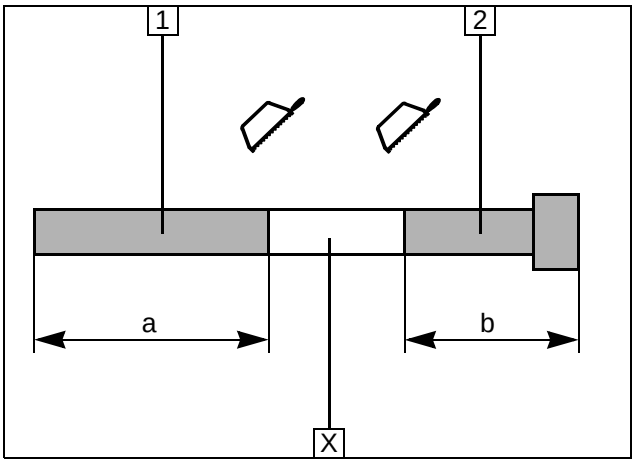
Installing angle bracket



Remove rubber coating from 48mm dia. p-clamp.

1 Premounted angle bracket
3 Combustion air pipe
2 Silencer
4 48 mm dia. p-clamp, M6x20 bolt, large diameter washer, flanged nut

Installing silencer

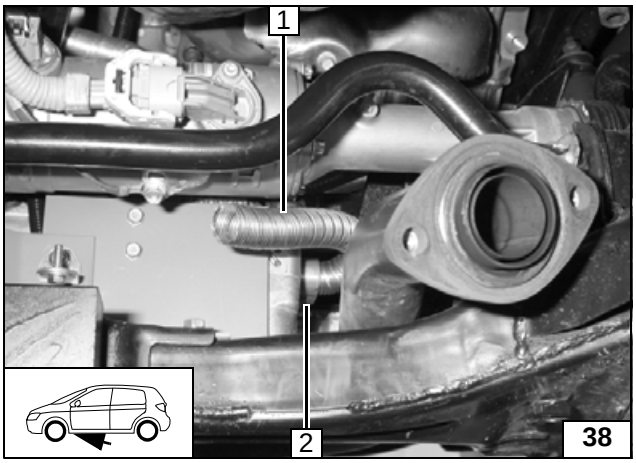


Exhaust

Discard section **X**

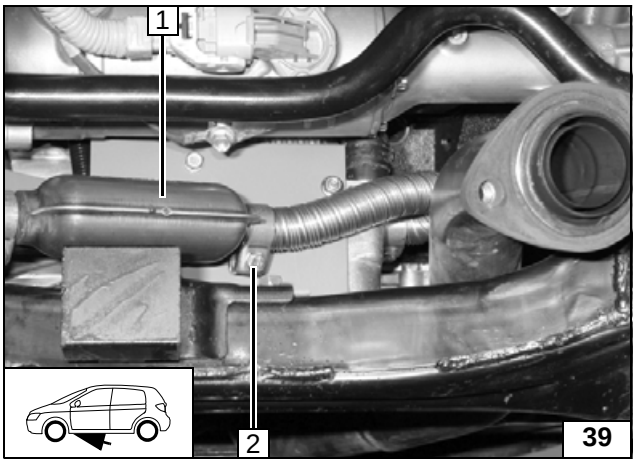
1 Exhaust pipe
a = 220mm
2 Exhaust end section
b = 450mm

Preparing exhaust pipe



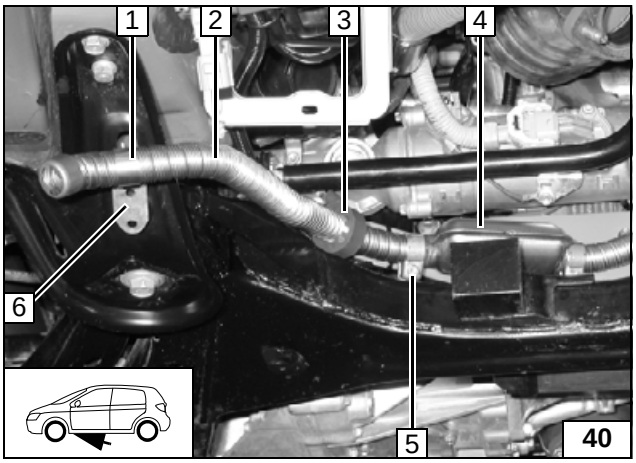
1 Exhaust pipe
2 Hose clamp

Installing exhaust pipe



1 Exhaust silencer, flanged nut on prepared M6x20 bolt
2 Hose clamp

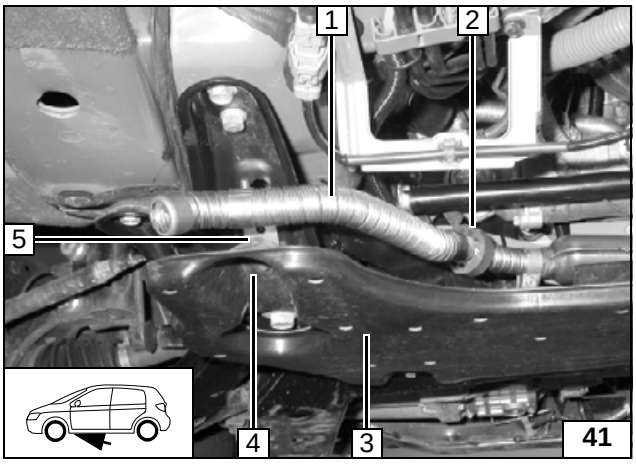
Installing silencer



Bend perforated bracket in accordance with template and angle down (will be installed later with underride protection).
Slide rubber isolator onto exhaust end section.

4 Exhaust silencer
3 Red (rt) rubber isolator
2 Exhaust end section
5 Hose clamp
6 Prepared perforated bracket
1 Pipe clamp, M6x20 bolt, flanged nut

Installing exhaust end section



Install underride protection **3** together with perforated bracket **5** and original vehicle bolt **4** on existing threaded hole.
Ensure sufficient distance to adjacent components; correct if necessary.

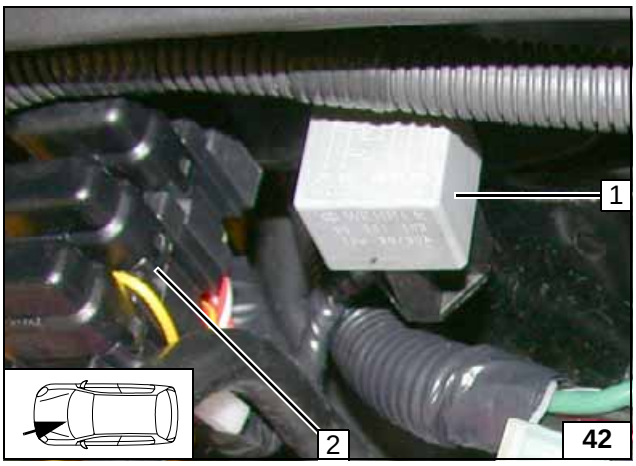
1 Exhaust end section
2 Position red (rt) rubber isolator

Mounting underride protection

Final Work

WARNING!
Mount removed parts in reverse order.
Check all hoses, hose, spring and Caillau clamps, as well as all electrical connections for firm seating.
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.
- Adjust digital timer, teach Telestart option
- 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.
- Apply the sticker "Switch off parking heater before refilling" in the area of the filler neck.



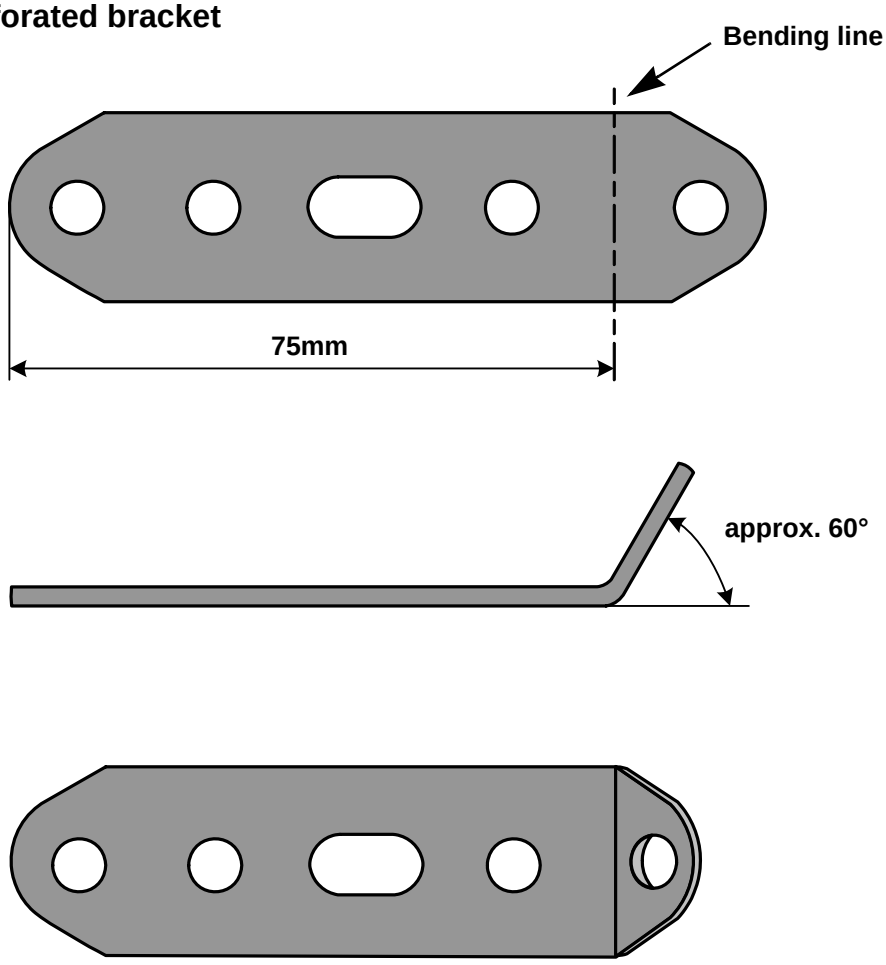
Reinstall coolant reservoir.
Drill 4mm dia. hole [2x] in coolant reservoir. Fasten K3 relay and retaining plate of fuse holder on coolant reservoir with 5.5x13 self-tapping screw [2x]. Screw plastic nuts [2x] onto self-tapping screws from behind. Replace 25 A fuse F3 with 7.5 A fuse.

1 K3 relay
2 Fuses F1-3 mounted on retaining plate

Installing K3 relay and fuse holder

Webasto AG
Postfach 80
D-82132 Stockdorf / Germany
National Hotline: 01805 93 22 78
(14 Cent aus dem deutschen Festnetz)
Hotfax: 0395 5592 353
Hotmail: hotline@webasto.de
http://www.webasto.de

Template for perforated bracket



100mm

Scale 1:1

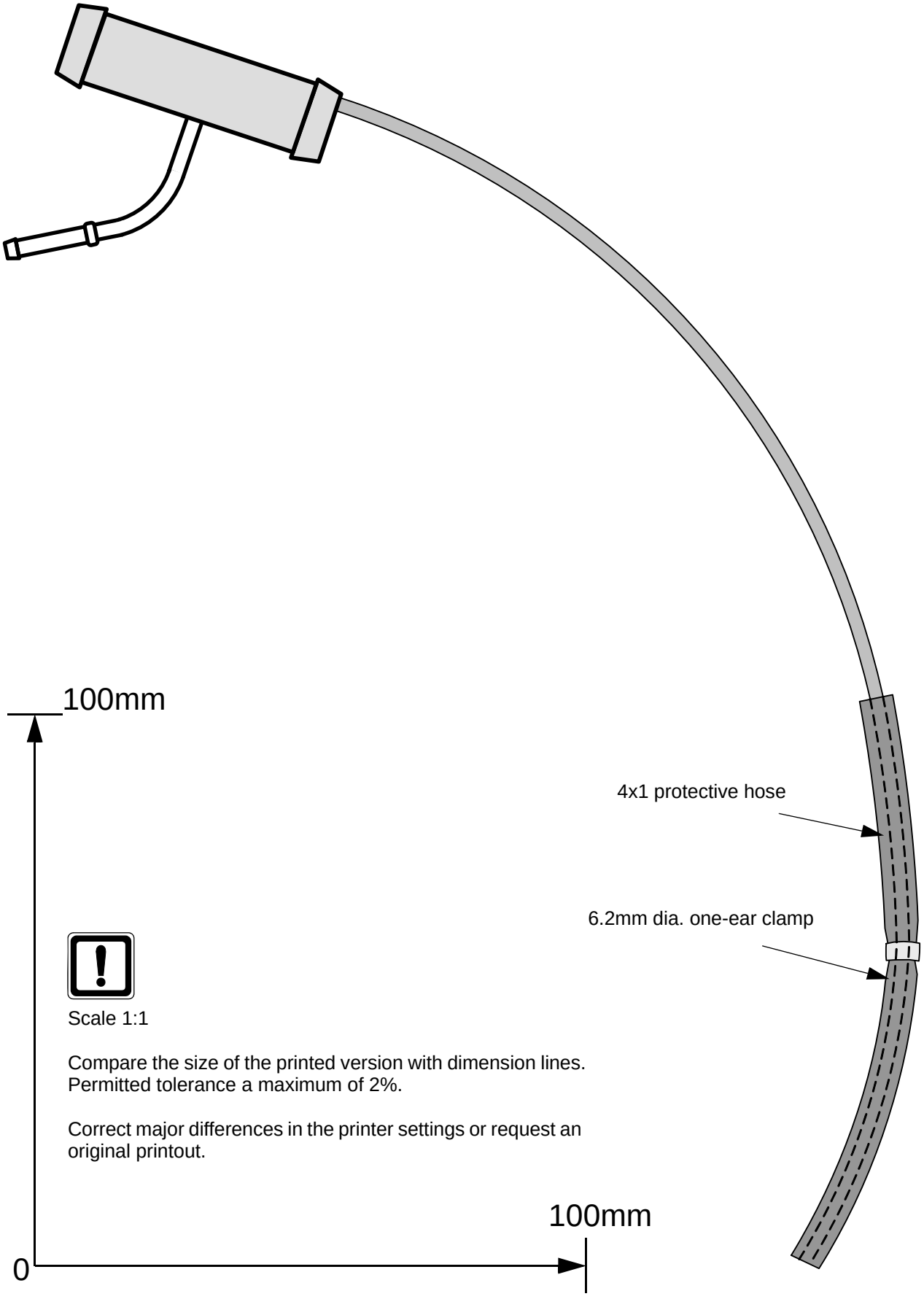
Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Correct major differences in the printer settings or request an original printout.

100mm

0

Template for Fuel Standpipe



Operating Instructions for End Customer

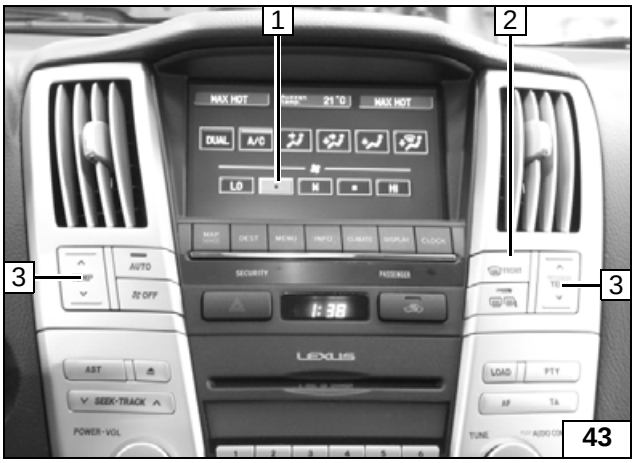
Please remove page and add to the vehicle operating instructions.

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.

For vehicles with passenger compartment monitoring this must be deactivated in addition to defining the vehicle settings for the heating operation.
Instructions on deactivation can be taken from the operating instructions of the vehicle.

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

Before parking the vehicle, make the following settings:



2 Air outlet to windscreen
1 Fan speed set to "low"
3 Temperature set to "MAX HOT" on both sides