

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 H1

2.5 CRDi

from Model Year 2008

Left-hand drive vehicle

Manual 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	Preparing installation location	10
Heater Unit/Installation Kit	3	Preparing heater unit	11
Foreword	3	Installing heater unit	11
General Instructions	3	Combustion air	12
Special Tools	3	Coolant	13
Explanatory Notes on Document	4	Fuel	16
Preliminary Work	5	Exhaust gas	18
Heater unit installation location	5	Final Work	20
Electrical system	6	Operating Instructions for End Customer	21
Fan controller for manual air conditioning	7		
Remote option (Telestart)	9		

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	H1	TQ	N213

Engine type	Engine model	Output in kW	Displacement in cm ³
D4CB	Diesel	125	2476

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 H1 2.5 CRDi	1313695A

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 H1 2.5 CRDi vehicles - for validity, see page 2 - from model year 2008 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to these installation instructions.

However, 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).

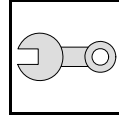
Special Tools

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

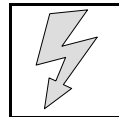
Explanatory Notes on Document

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.

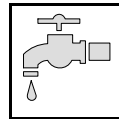
Mechanical system



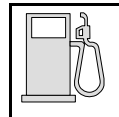
Electrical system



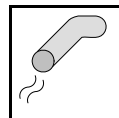
Coolant



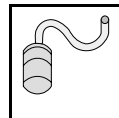
Fuel



Exhaust gas



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire or explosion.



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



Reference to a special technical feature.



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

All dimensions are in mm!

Tightening torque of hose clamps = 2.0 + 0.5 Nm!

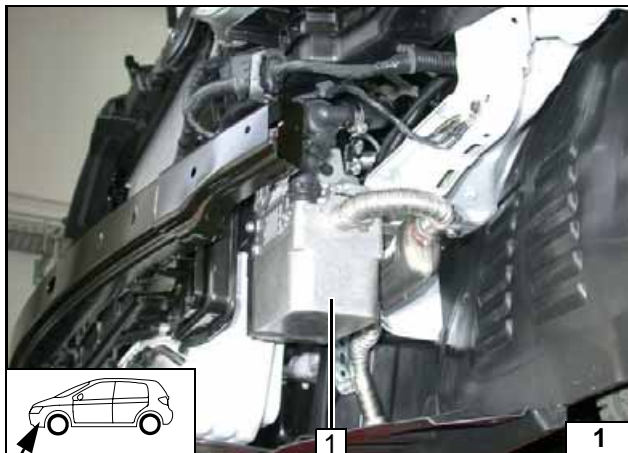
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Completely remove the battery together with the battery carrier.
- Detach the wheel well trim on the right and left.
- Remove the bumper.
- Remove the underride protection
- Open the left tank mounting service lid.
- Remove the footwell trim on the front passenger side.

Remove page 21 "Operating Instructions for End Customer" and insert with vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

Installation
location



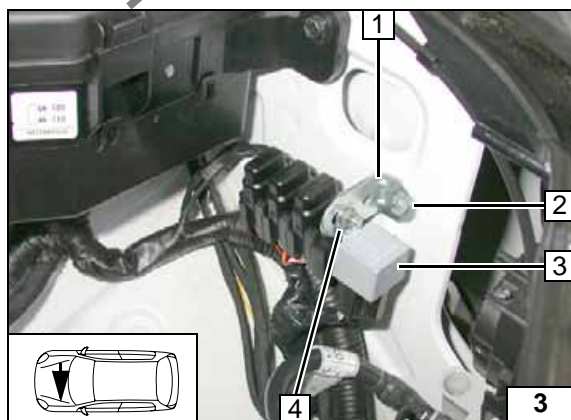
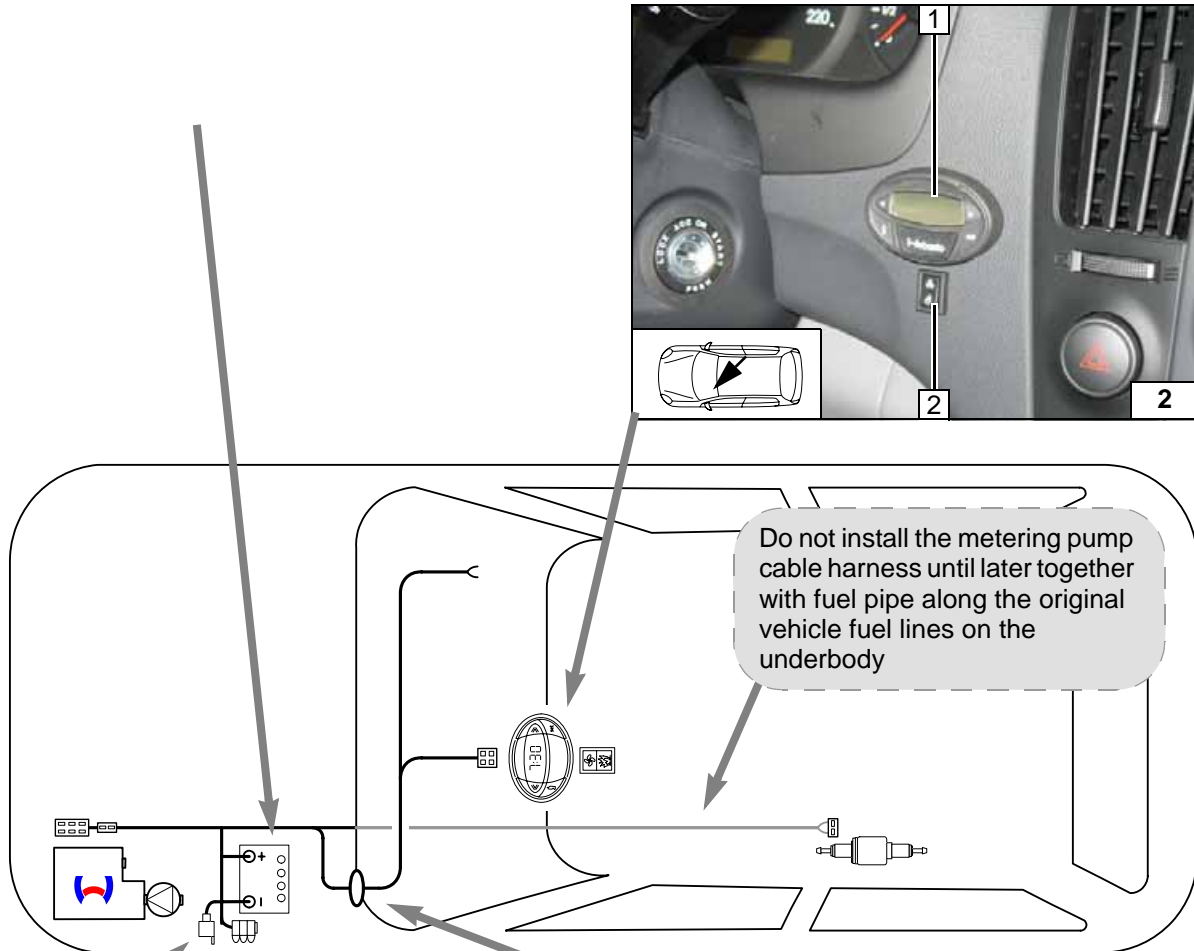
Electrical system

Positive and ground connection

Positive wire on positive battery terminal.
Ground wire on negative battery terminal

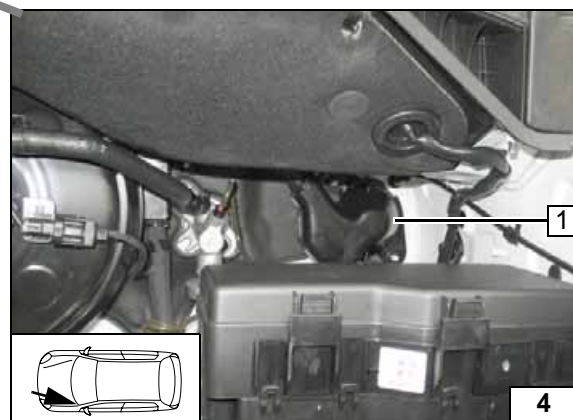
Digital timer

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



Fuse holder, relay K3

- 1 Angle bracket
- 2 Existing threaded hole, M6x20 bolt
- 3 K3 relay
- 4 M5x16 bolt, retaining plate of fuse holder, flanged nut



Wiring harness pass through

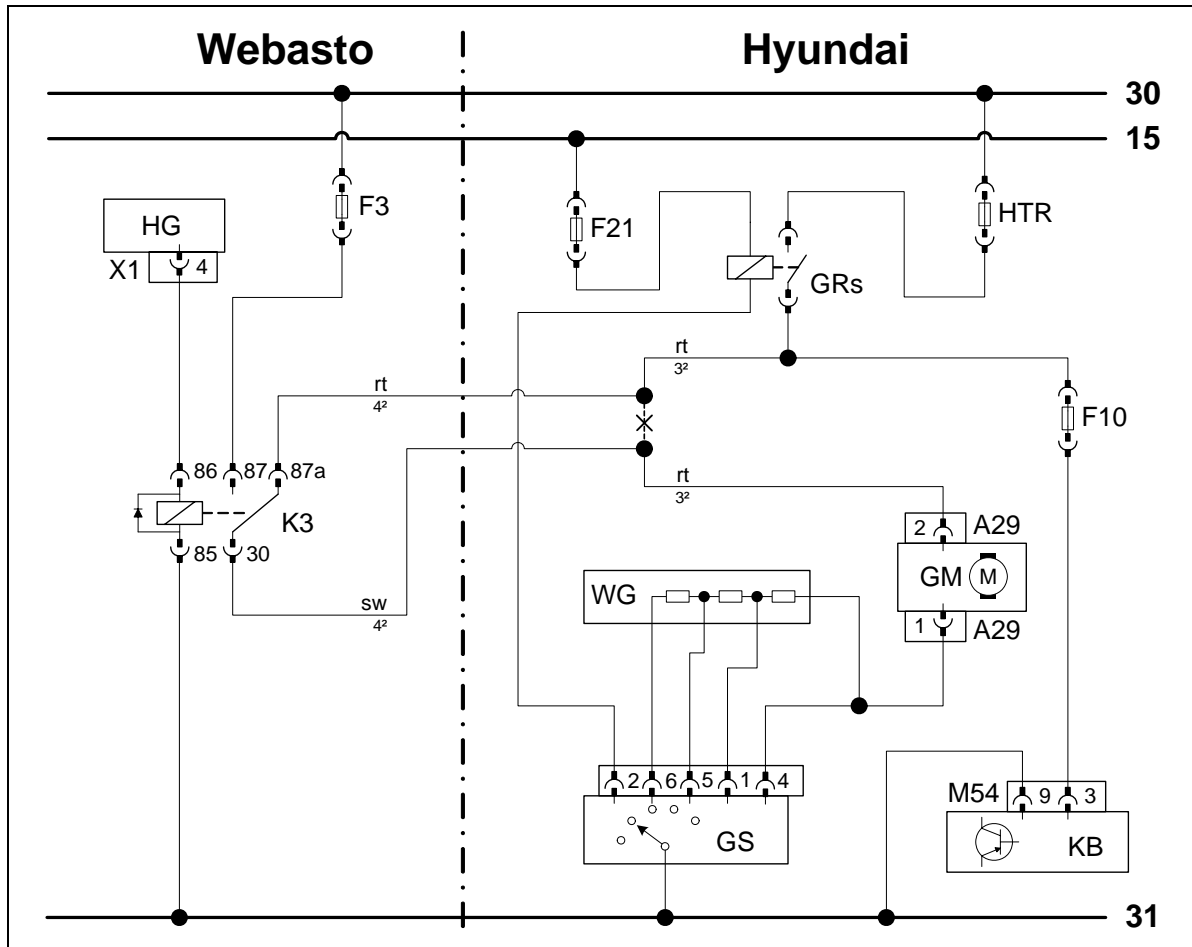
- 1 Protective rubber plug



Wiring harness installation diagram



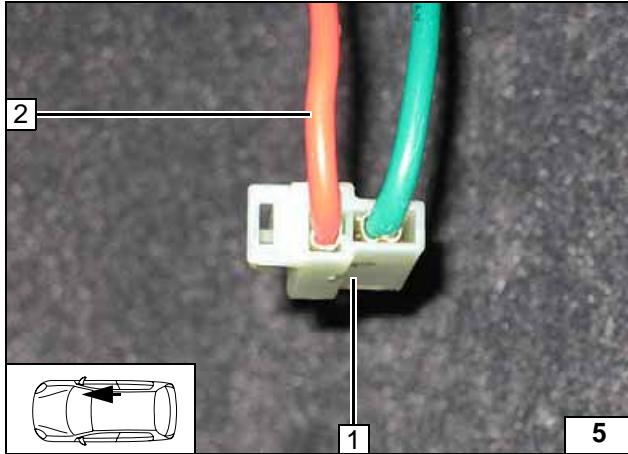
Fan controller for manual air conditioning



Wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater unit connector	A29	2-pin connector GM	ws	white
F3	25 A fuse	GRs	Fan relay	sw	black
K3	Fan relay	WG	Resistor group	br	brown
		KB	Air-conditioning control panel	gn	green
		F21	10 A fuse	bl	blue
		F10	10 A fuse	ge	yellow
		HTR	Fuse 40A		
				X	Cutting point
				Wiring colors may vary.	

Legend

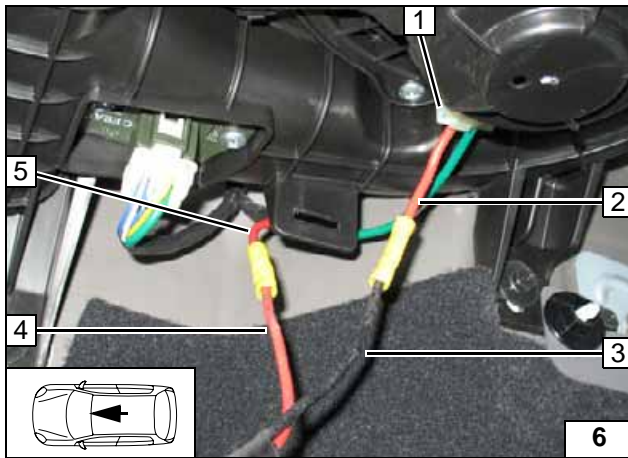


Connection to 2-pin connector 1 from the blower motor.
Wiring colors may vary.

- 1 2-pin connector disconnected
- 2 Red (rt) wire of connector, Pin 2



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

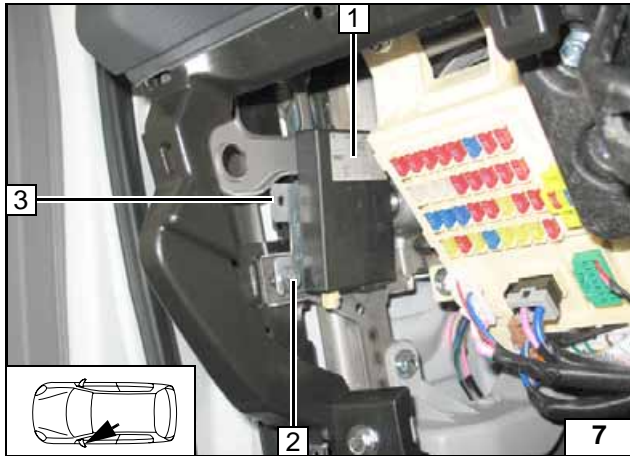


Produce connections as shown in wiring diagram.

- 1 2-pin connector of GM
- 2 Red (rt) wire of connector, Pin 2
- 3 Black (sw) wire from K3/30
- 4 Red (rt) wire from K3/87a
- 5 Red (rt) wire of fan relay



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

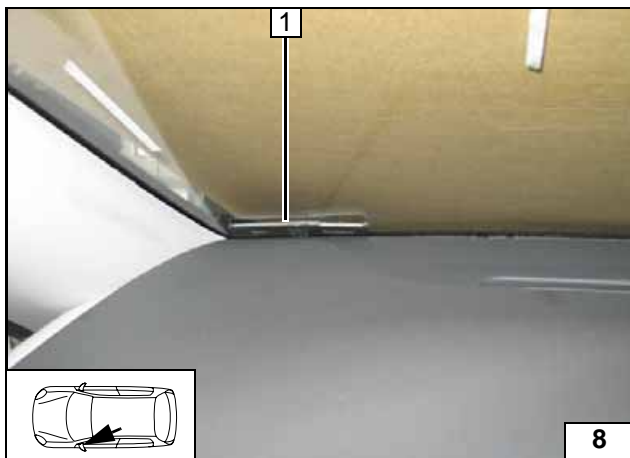


Remote option (Telestart)

- 1 Receiver
- 2 Existing bolt, flanged nut
- 3 Bracket

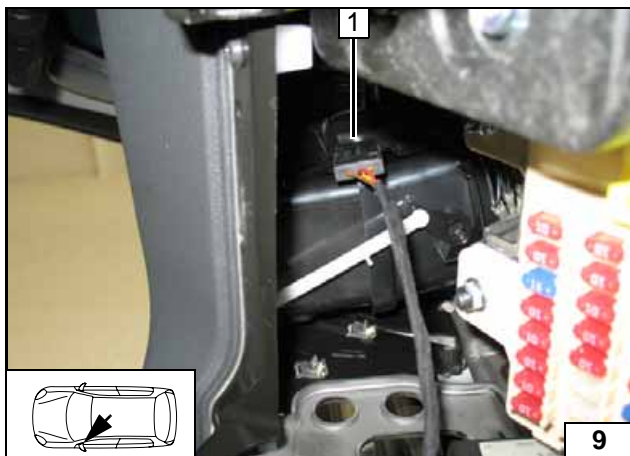


Installing receiver



- 1 Antenna

Installing antenna

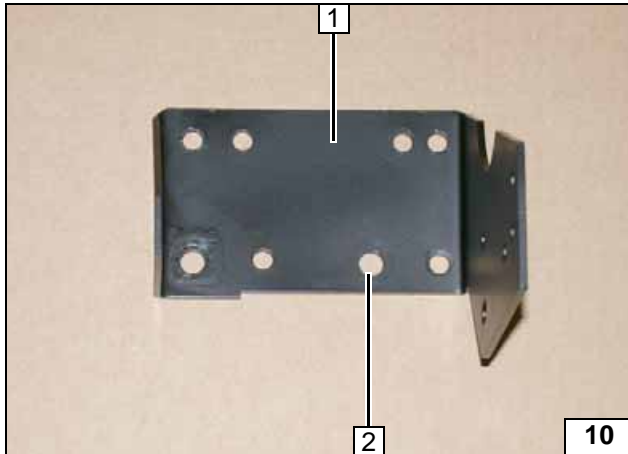
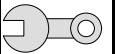


Temperature sensor HTM100

- 1 Fasten temperature sensor with adhesive tape



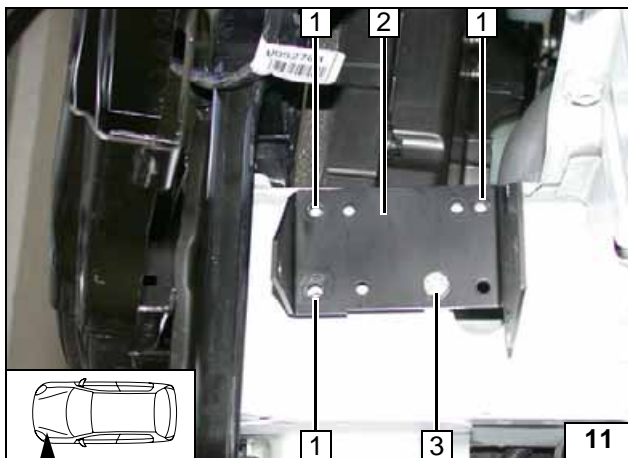
Installing temperature sensor



Preparing installation location

- 1 Bracket
- 2 Drill out 8.5 mm dia. hole

Drilling out bracket

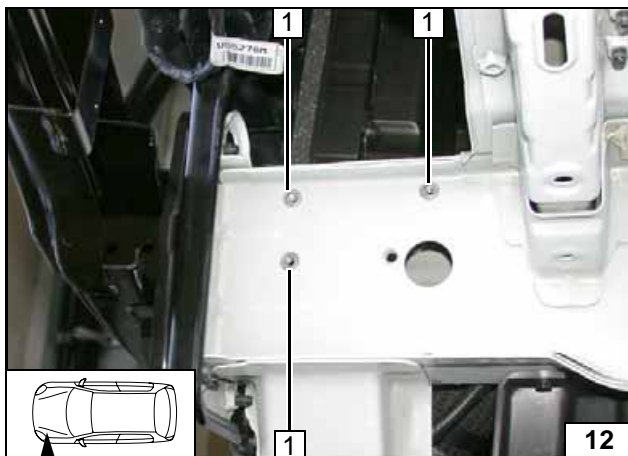


Loosely mount bracket **2**. Insert 20 mm shim between bracket and body.



- 1 Copy hole pattern [3x]
- 3 Existing threaded hole, M8x40 bolt, 20 mm shim

Copying hole pattern

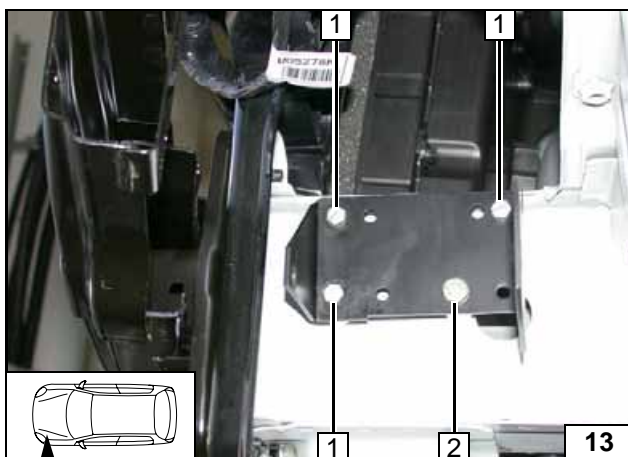


Remove bracket.



- 1 9.1 mm dia. hole; mount rivet nut [3x each]

Installing rivet nut

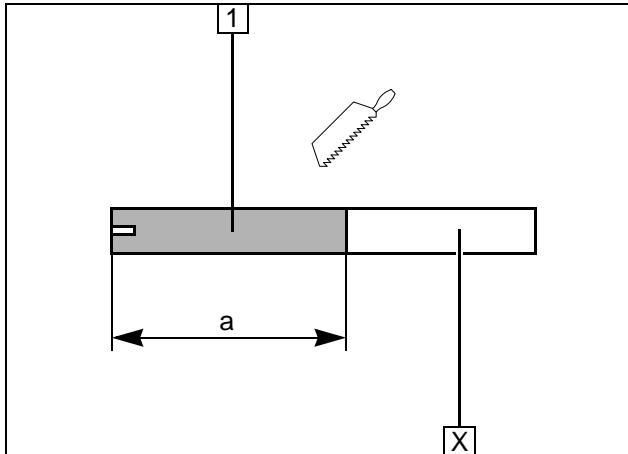
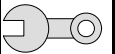


Insert one 20 mm shim each between bracket and body.



- 1 M6x40 bolt, spring lockwasher, 20 mm shim [3x each]
- 2 Existing threaded hole, M8x40 bolt, spring lockwasher, 20 mm shim

Installing bracket

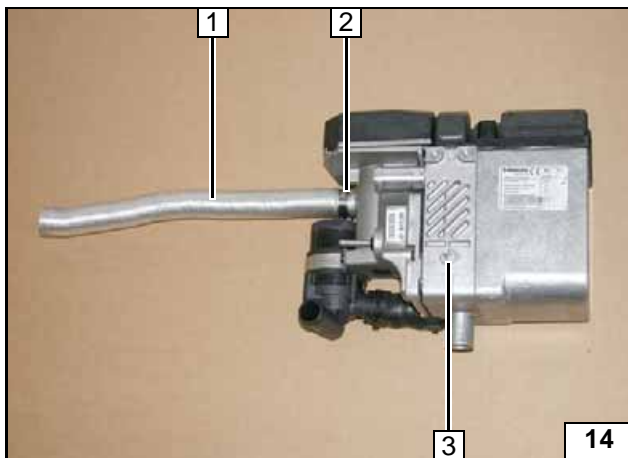


Preparing heater unit

- 1 Combustion air pipe
a = 300

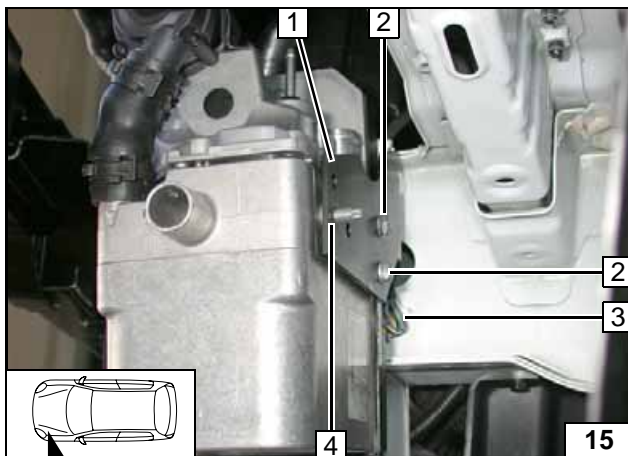
Discard section X

Cutting combustion air pipe to length



- 1 Combustion air pipe
- 2 27 mm dia. clamp
- 3 E-jot stud

Premounting combustion air pipe



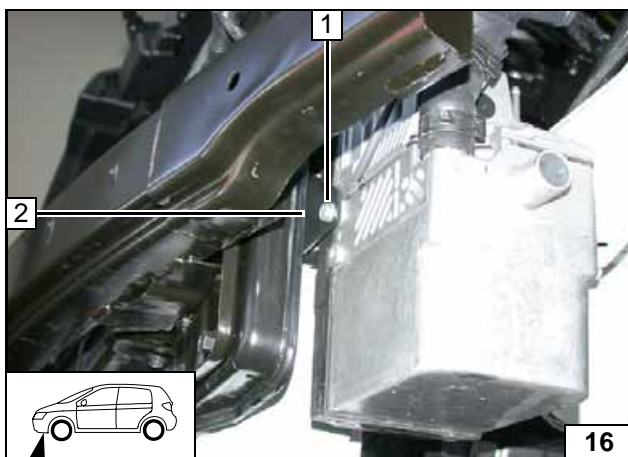
Installing heater unit

Mount before installing wiring harness 3.
Insert one washers between heater unit and bracket 1 at Position 4.

- 2 E-jot screw [2x]

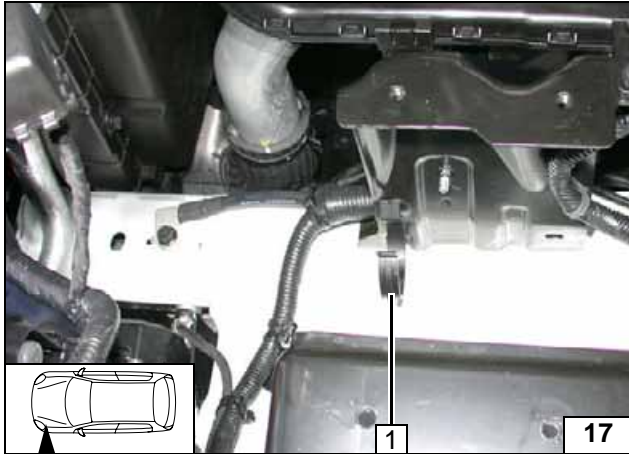
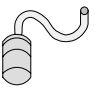


Installing heater unit



- 1 E-jot screw
- 2 Bracket

Installing heater unit

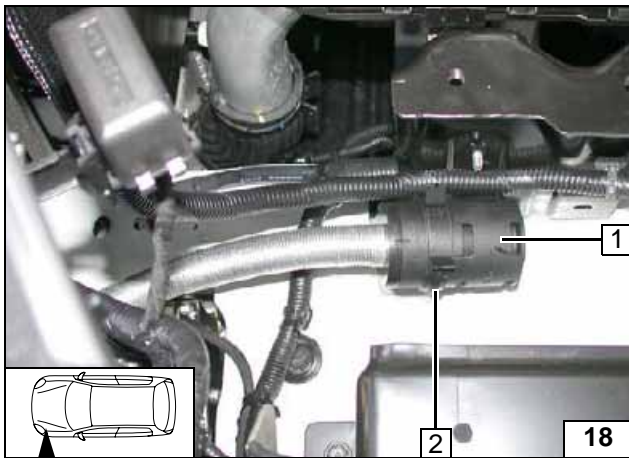


Combustion air

Mount retaining clip 1 in existing hole and fix in place with pin lock.



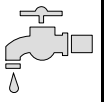
Inserting retaining clip



- 1 Muffler
- 2 Retaining clip in hole



Installing muffler

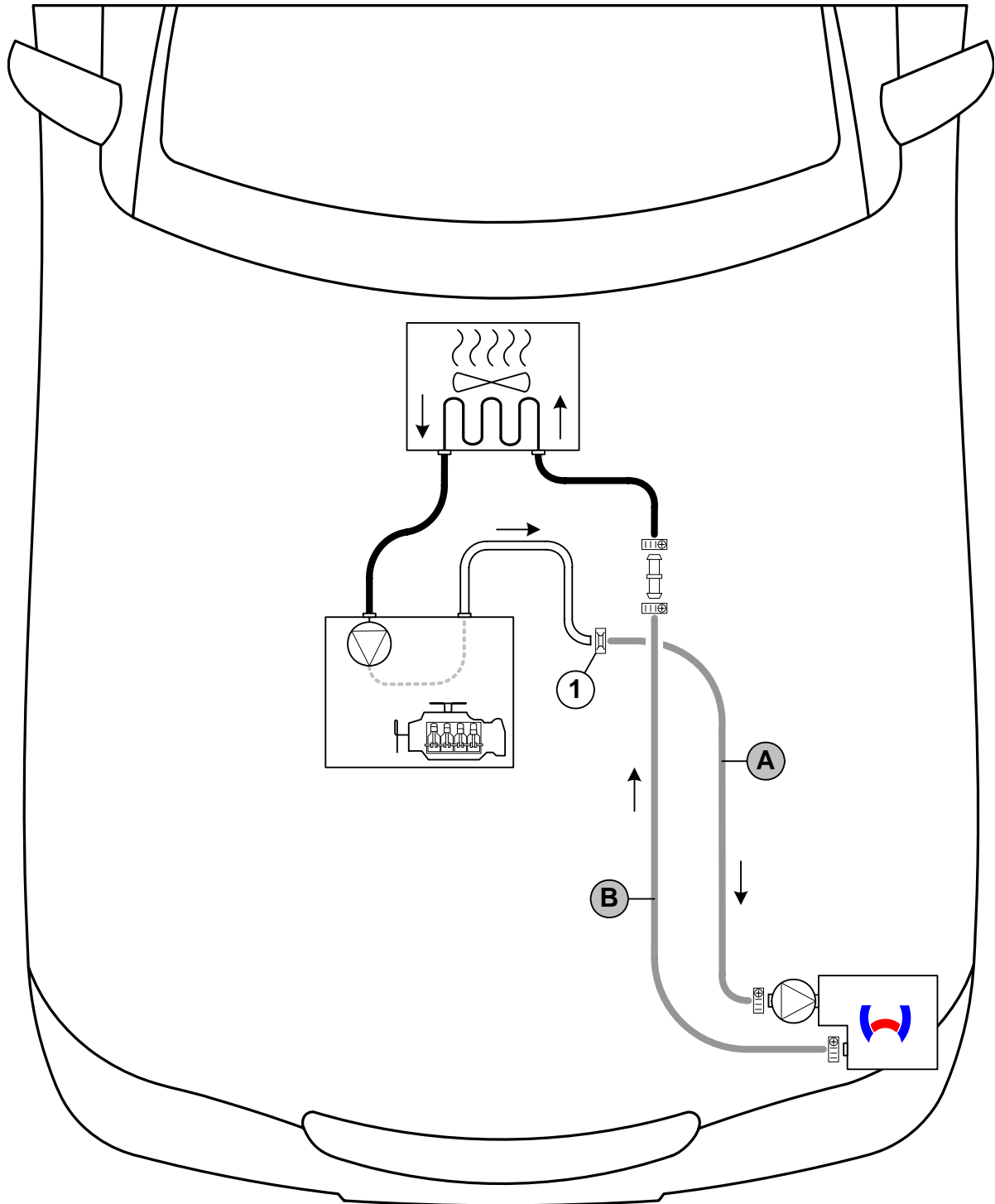


Coolant




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.

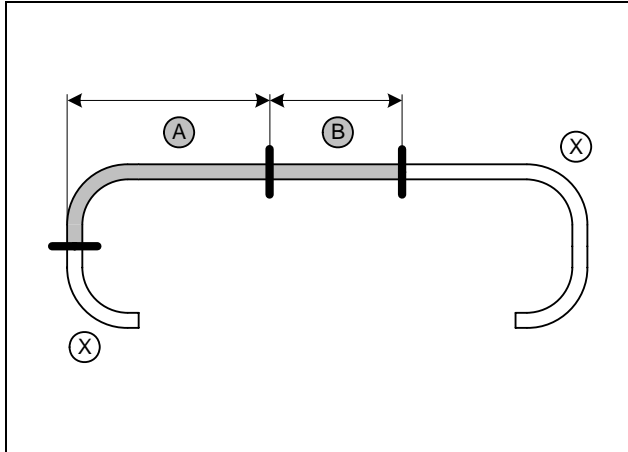
The connection should be "inline" based on the following diagram:



Coolant routing diagram

Connecting pipe  = 18x20 dia. All hose clamps  = 20-27 mm dia.!
 1 = Original vehicle spring clip .

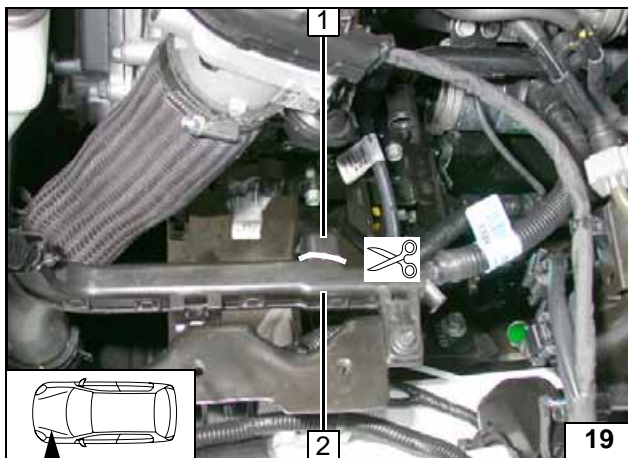




a = 660
b = 545

Discard section X

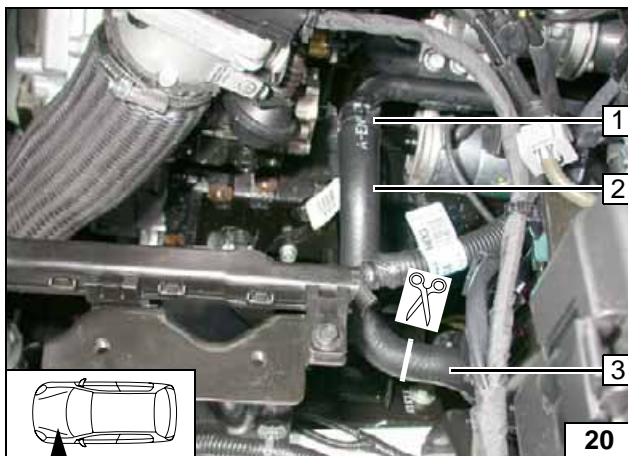
Cutting coolant hoses to length



1 Discard section
2 Cable duct



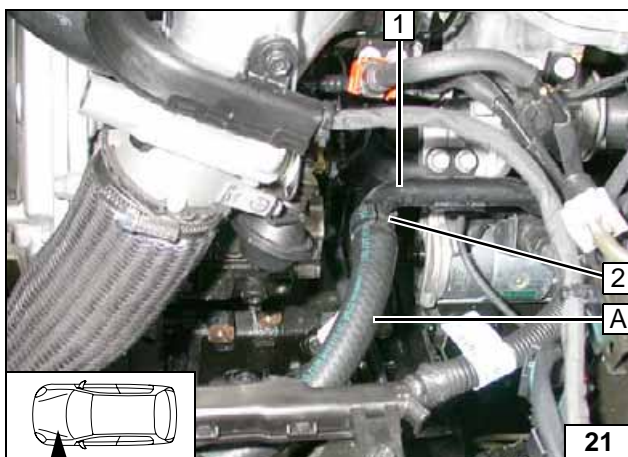
Cutting off cable duct



Cut off hose on engine outlet/heat exchanger inlet at marking.
Remove hose section on engine outlet 2 and discard. Spring clip 1 will be reused.

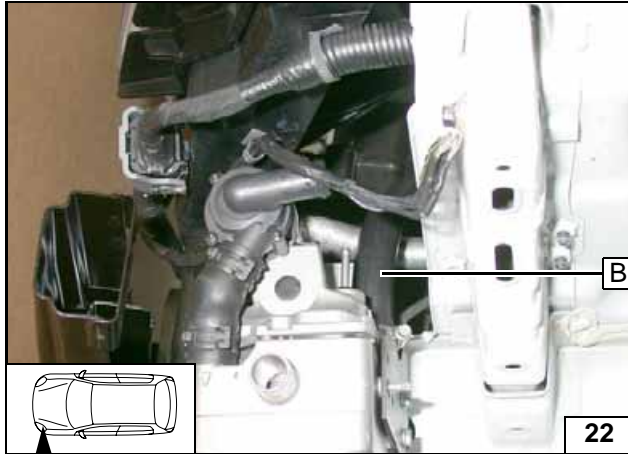
3 Hose section of heat exchanger inlet

Cutting point

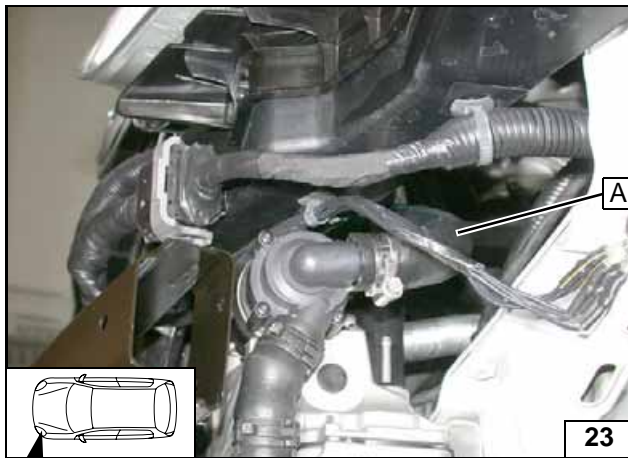


1 Pipe socket on engine outlet
2 Original vehicle spring clip

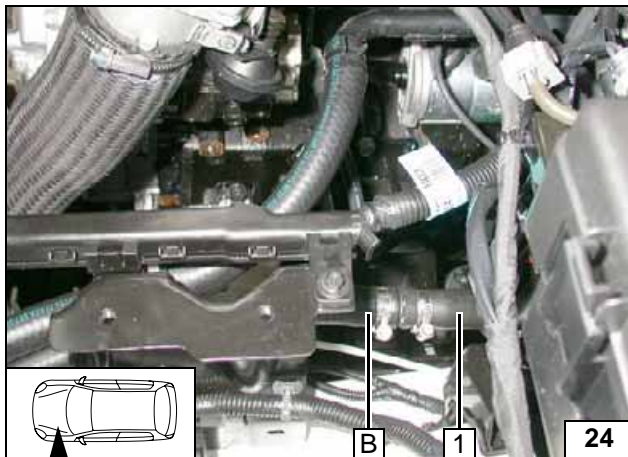
Connect-
ing engine
outlet



Connect-
ing heater
unit outlet

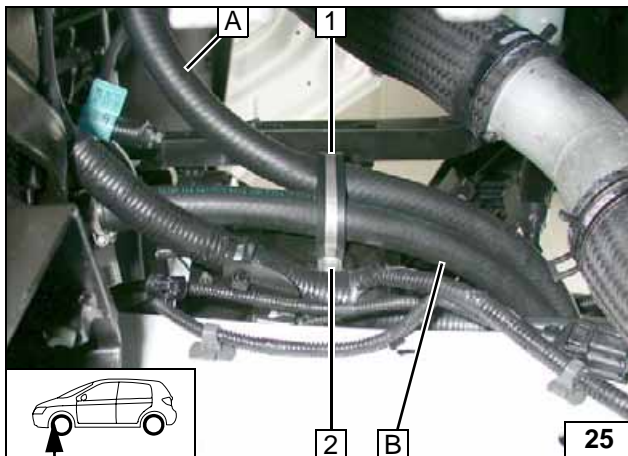


Connect-
ing heater
unit inlet



Connect-
ing heat
exchanger
inlet

1 Hose on heat exchanger inlet



Aligning hoses. Ensure sufficient distance to neighboring components.

- 1 48 mm dia. rubber-coated p-clamp
- 2 Existing threaded hole, M6x20 bolt



Fastening
hoses



Fuel

CAUTION!

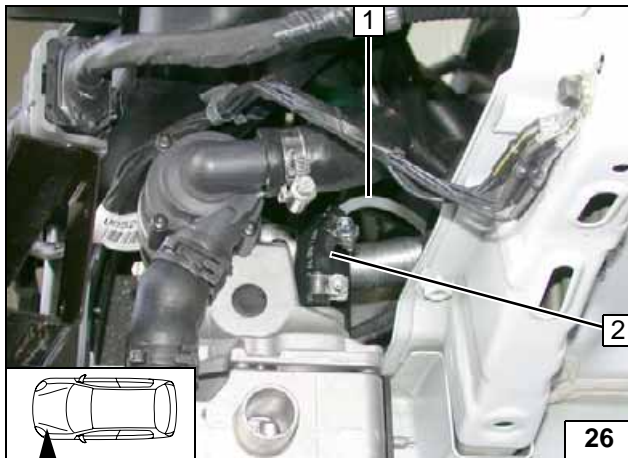
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off with an appropriate container.

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

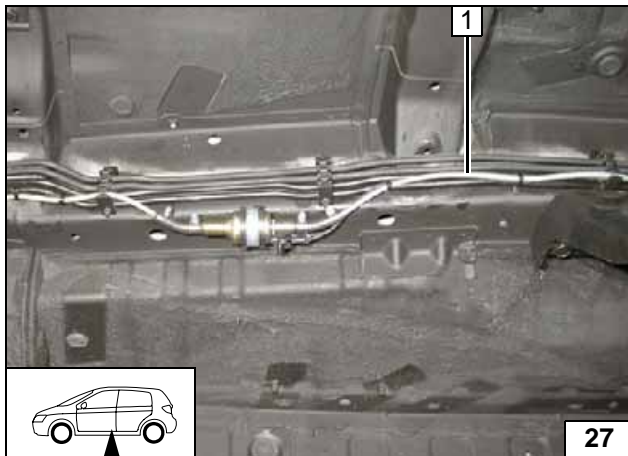
WARNING!

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



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

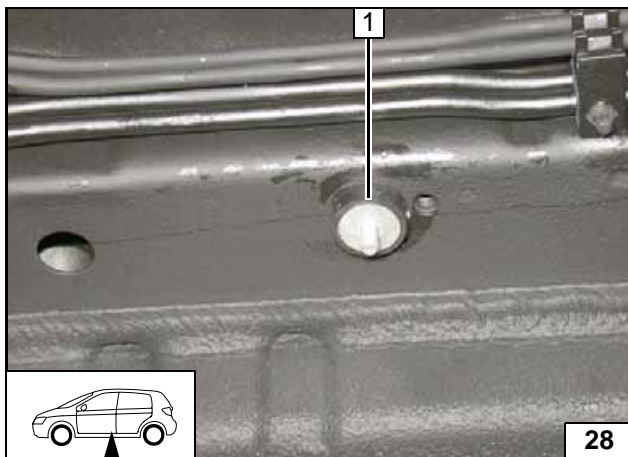
Connect-
ing heater
unit



Route fuel line and wiring harness of metering pump 1 along original vehicle fuel lines.

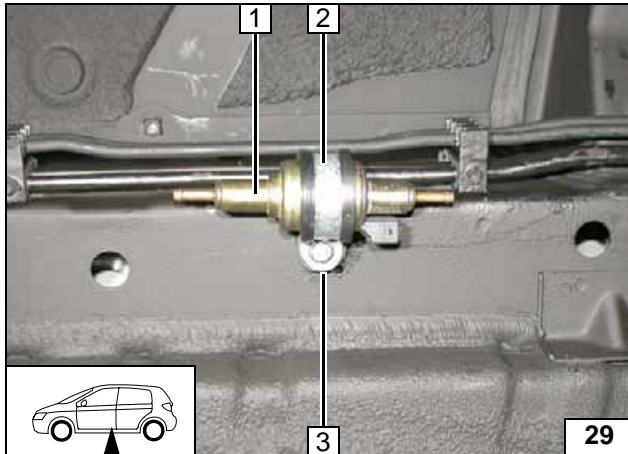


Installing
lines



- 1 Existing threaded hole, silent block.

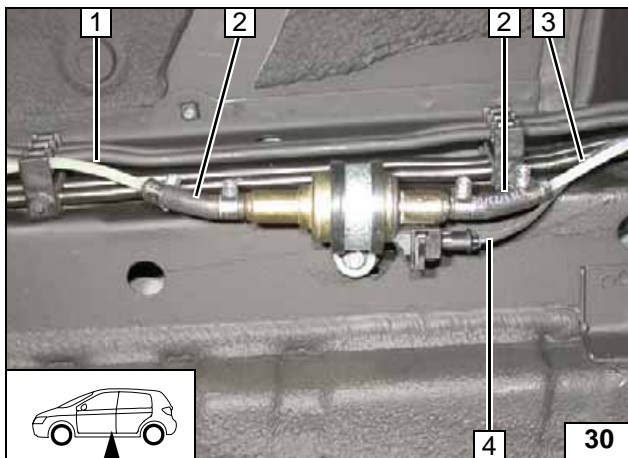
Installation
location of
metering
pump



- 1 Metering pump
- 2 Rubber-coated pipe clamp
- 3 Flanged nut



Installation location of metering pump

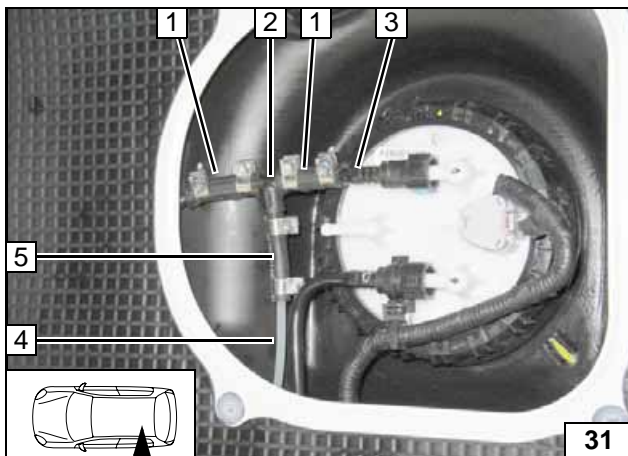


Check the position of the components; adjust if necessary. Check that they have free clearance.



- 1 Fuel line to fuel-tank sending unit
- 2 Hose section [2x], 10 mm dia. clamp [4x]
- 3 Fuel line from heater unit
- 4 Wiring harness of metering pump, connector mounted

Connecting metering pump

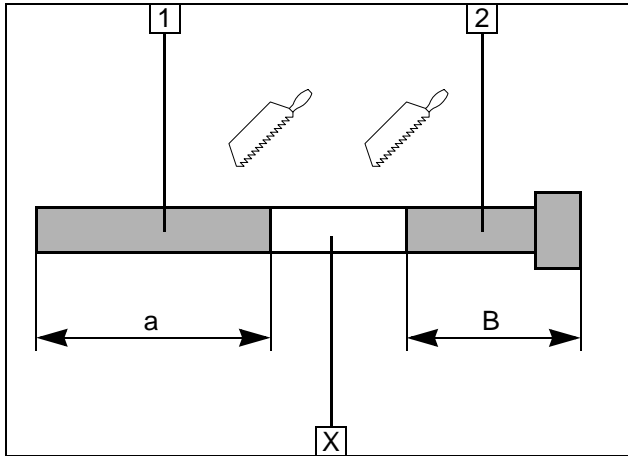
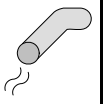


Separate fuel return line 3 approx. 70 mm before coupling.

- 1 Hose section [2x], 12 mm dia. clamp [4x]
- 2 8x5x8 mm fuel standpipe
- 4 Fuel line
- 5 Hose section, 10 mm dia. clamp [2x]



Removing fuel

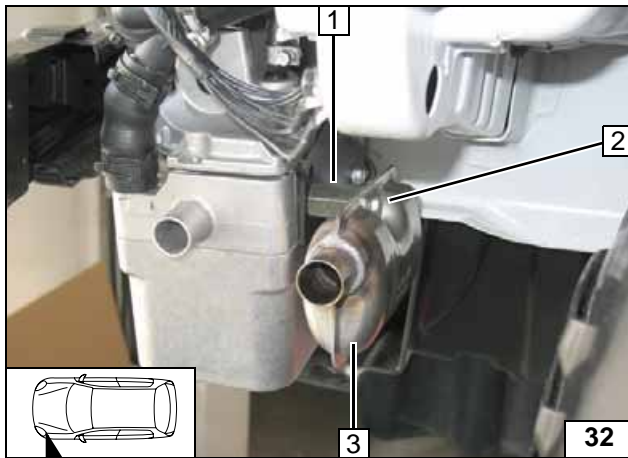


Exhaust gas

- 1 Exhaust pipe
a = 170
- 2 Exhaust end section
b = 250

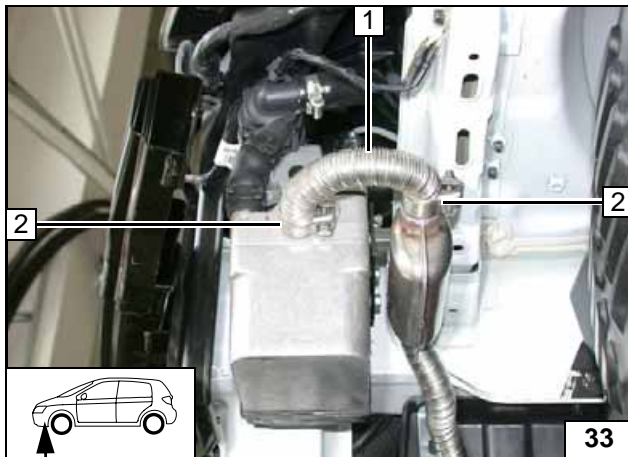
Discard section X

Preparing exhaust pipe



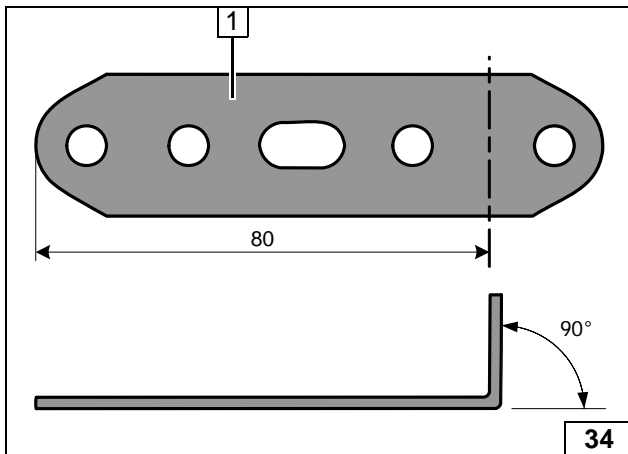
- 1 M6x30 spacer nut
- 2 M6x12 bolt, spring lockwasher
- 3 Muffler

Installing muffler



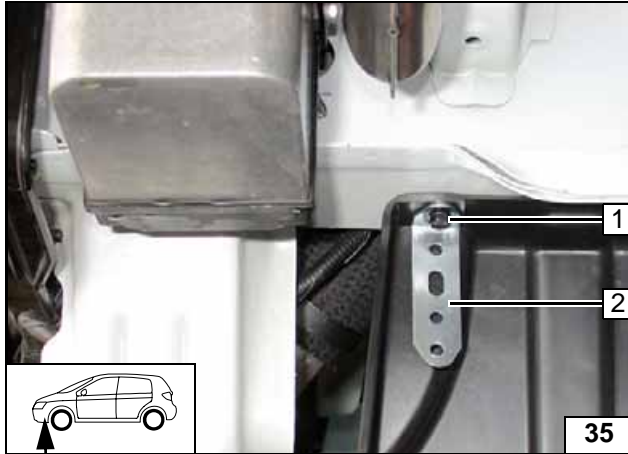
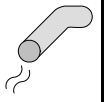
- 1 Exhaust pipe
- 2 Hose clamp [2x]

Installing exhaust pipe



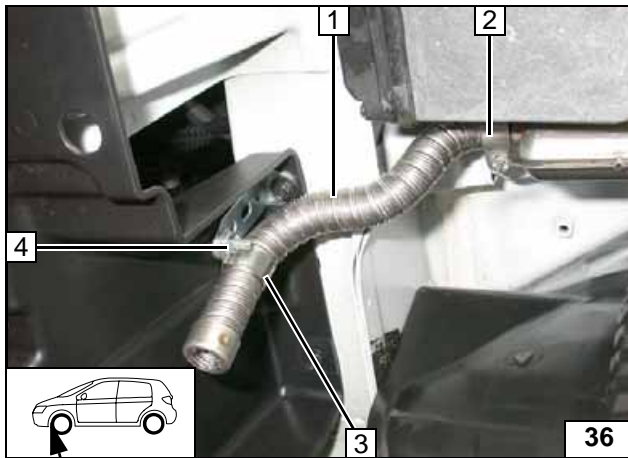
- 1 Perforated bracket

Bending perforated bracket



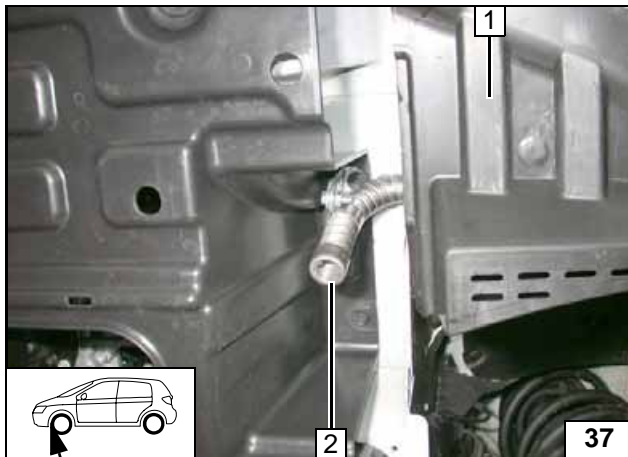
- 1 Original vehicle bolt
- 2 Perforated bracket

Installing perforated bracket



- 1 Exhaust end section
- 2 Hose clamp
- 3 P-clamp
- 4 M6x20 bolt, M6 flanged nut

Installing exhaust end section

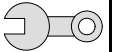


Ensure sufficient distance to neighboring components.

- 1 Underride protection installed
- 2 Align exhaust end section



Aligning exhaust end section



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

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

Secure all loose cables using cable ties.

Only use manufacturer-approved coolant.

Spray 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.



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Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.



Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

Example:

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

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

Before parking the vehicle, make the following settings:



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

Manual air conditioning