

Water Heater Unit



Thermo Top C Additional Heater ^{e1} 00 0002

Installation Instructions

Jeep Patriot

Diesel
from Model Year 2007
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.

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Validity

Manufacturer	Model	Type	EG-BE No./ABE
DaimlerChrysler (USA)/Chrysler (USA)	JeepPatriot	pk	e11 * 2001/116 * 0142 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
BYL	Diesel	103	1968
BSY	Diesel	103	1968
BWD	Diesel	103	1968

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 Jeep Patriot Diesel	1313558A

Foreword

These installation instructions apply to Jeep Patriot 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).

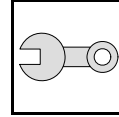
Special Tools

- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Chrysler Special Tool No.: 9340 (Installing/Removing Fuel-Tank Sending Unit)

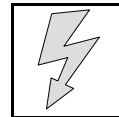
Explanatory Notes on Document

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.

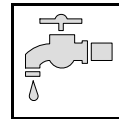
Mechanical system



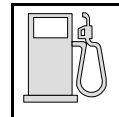
Electrical system



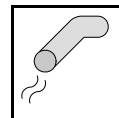
Coolant



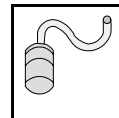
Fuel



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.



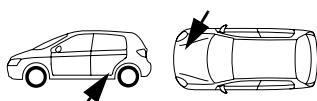
Specific risk of fire or explosion.



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!

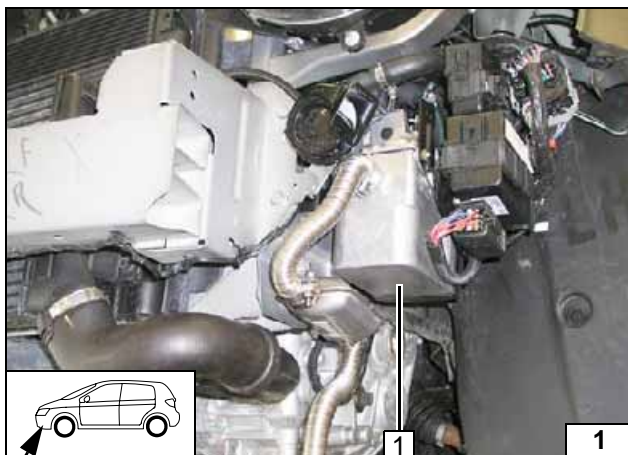
Tightening torque of Ejet screws, Ejet studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Disconnect and remove the battery.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the entire air filter.
- Remove engine cover (if present).
- Remove the left wheel well trim.
- Remove the bumper.
- Remove and dismantle the bracket with the electrical box, relay and connector before the left wheel well trim.
- Remove the rear left underride protection (if present).
- Remove the seat bench of the rear bench seat.
- Open the left tank mounting service lid.
- Remove the left fuel-tank sending unit according to the manufacturer's specifications.
- Remove the lower left instrument panel trim.
- Remove the lower steering column trim.
- Remove the trim above the pedals.
- Remove the trim below the glove compartment.

Remove page 29 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

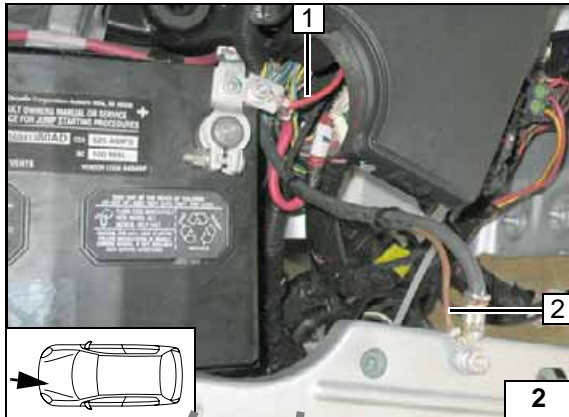
Installation location



Electrical system

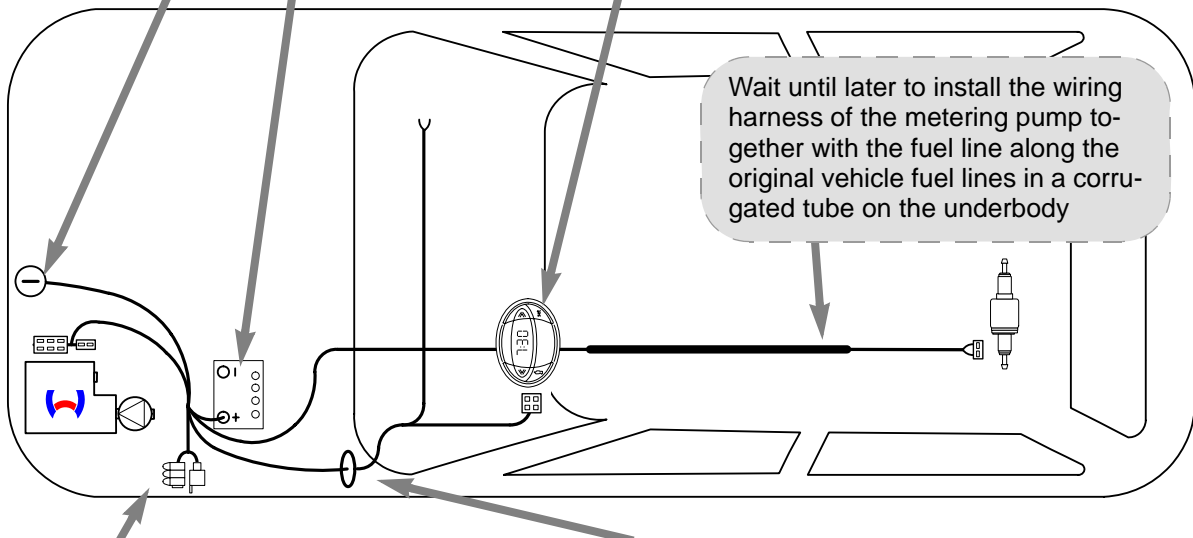
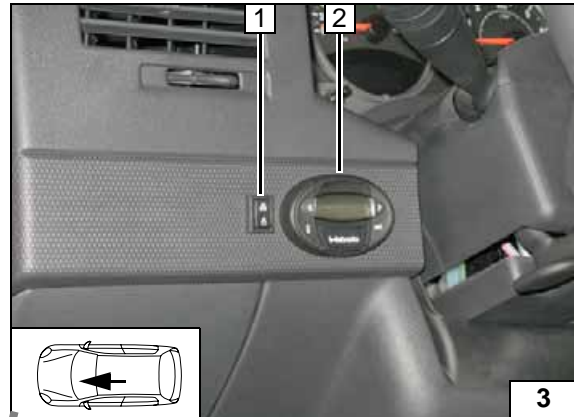
Power supply

- 1 Positive wire on positive battery terminal
- 2 Ground wire on ground support point

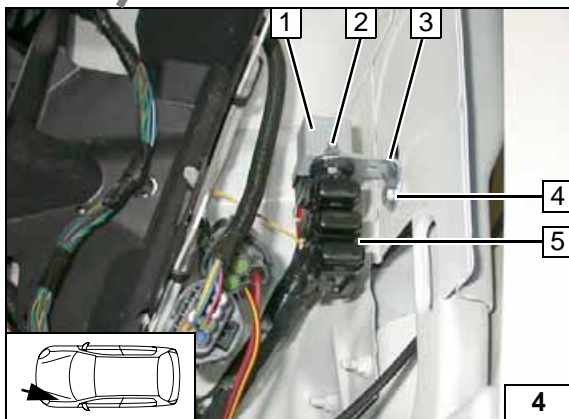


Digital timer

- 1 Summer/winter switch option
- 2 Digital timer

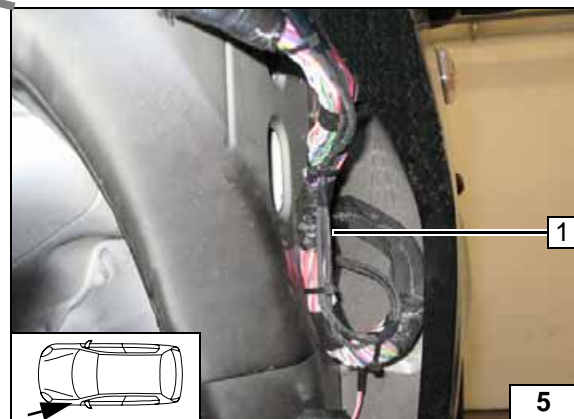


Wiring harness installation diagram



Fuse holder, relay K3

- 1 K3 relay
- 2 M5x16 bolt, washer, retaining plate for fuse holder, flanged nut
- 3 Angle bracket
- 4 6.5 mm dia. hole, M6x20 bolt, flanged nut
- 5 Fuse holder mounted

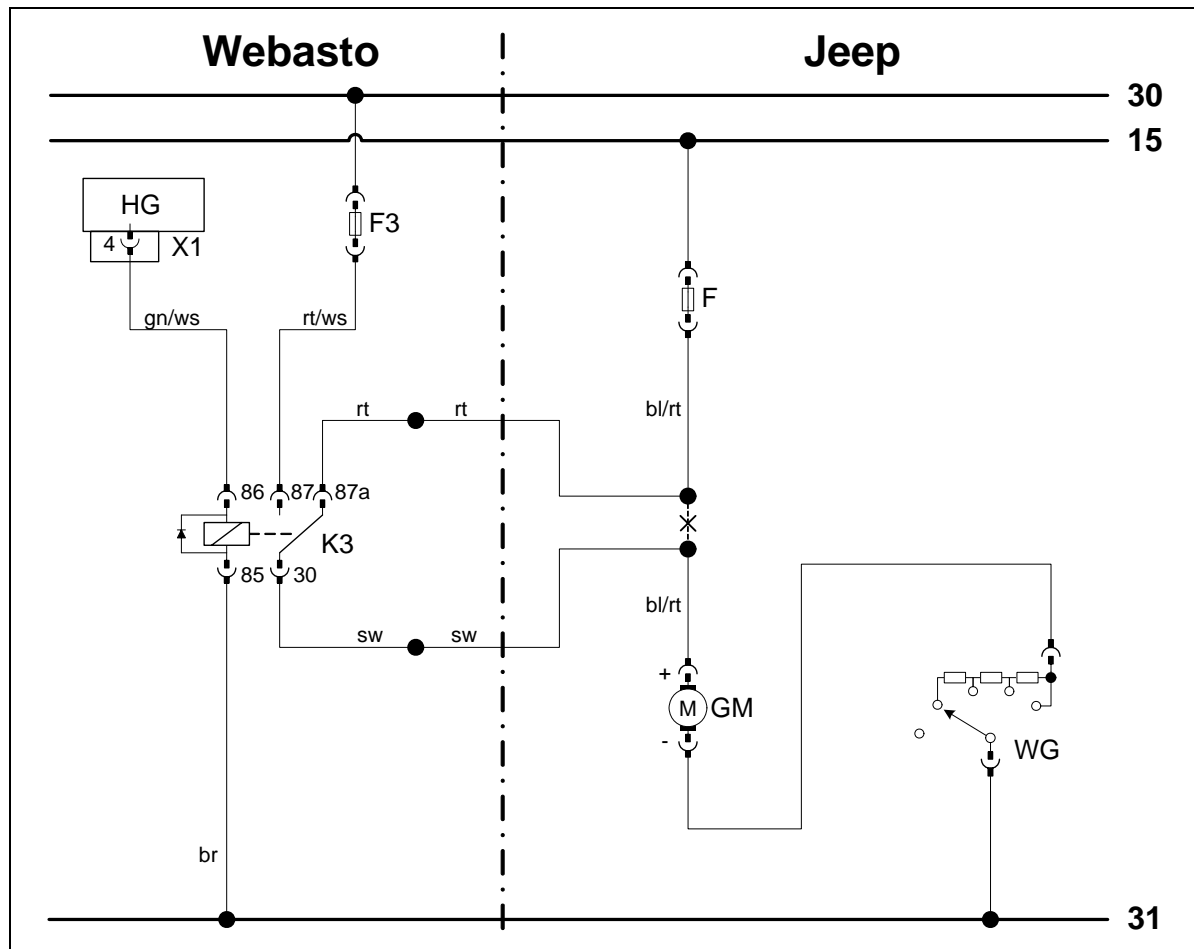


Wiring harness pass through

- 1 Protective rubber plug



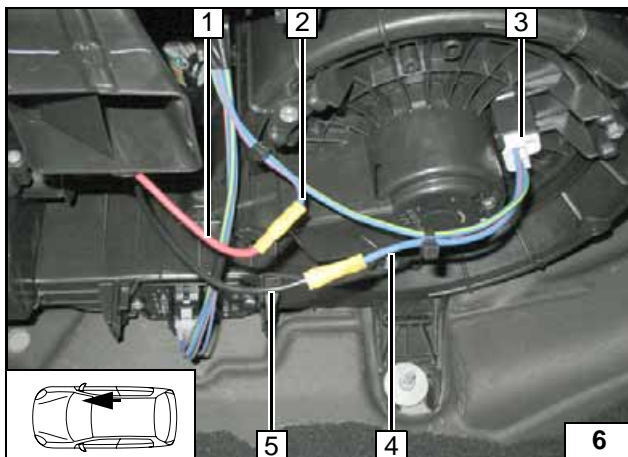
Fan controller



Wiring diagram

Webasto components		Vehicle components		Colors and symbols	
HG	Heater unit TT-C	GM	Fan motor	rt	red
X1	6-pin heater unit connector	WG	Resistor group	ws	white
F3	25 A fuse	F	Fan fuse	sw	black
K3	Fan relay			br	brown
				gn	green
				bl	blue
				X	Cutting point
				Wiring colors may vary.	

Legend

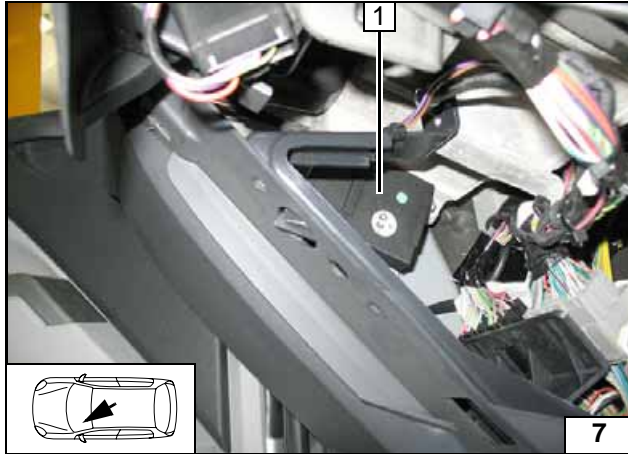


Connection to 2-pin connector 3 from the blower motor.
Produce connections as shown in wiring diagram.

- 1 Red (rt) wire from K3/87a
- 2 Blue/red (bl/rt) wire of fan fuse
- 4 Blue/red (bl/rt) wire of fan motor
- 5 Black (sw) wire from K3/30



Connecting fan-motor

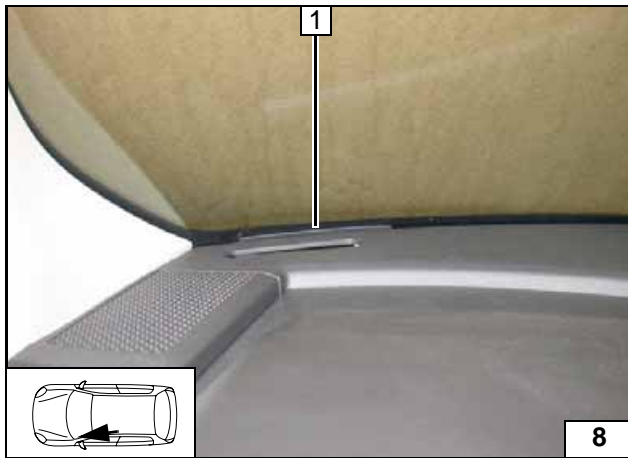


Remote option (Telestart)

1 Fasten receiver with adhesive tape

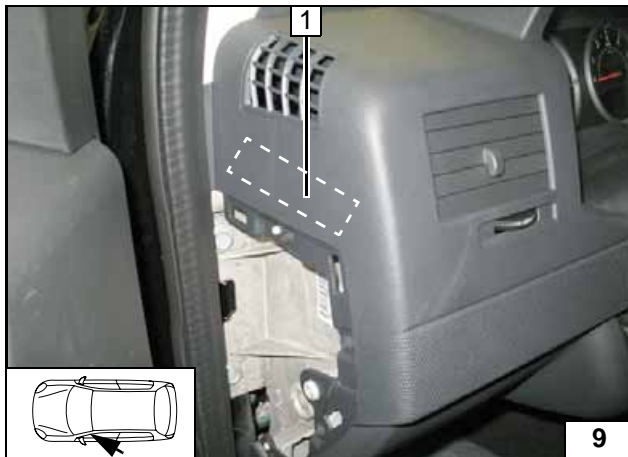


Installing receiver



1 Antenna

Installing antenna

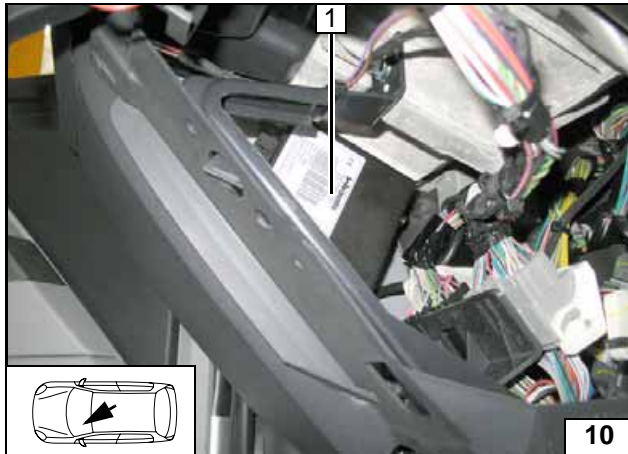


Temperature sensor for HTM100 only

Fasten temperature sensor 1 with adhesive tape on air duct behind instrument panel trim (see marking).



Installing temperature sensor

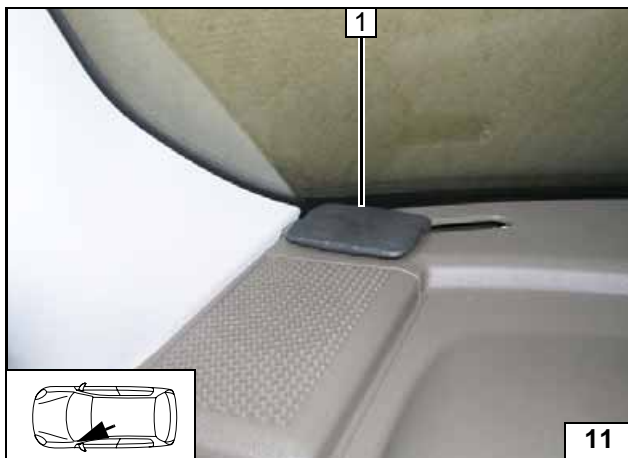


Remote option (Thermo Call)

1 Fasten receiver with adhesive tape

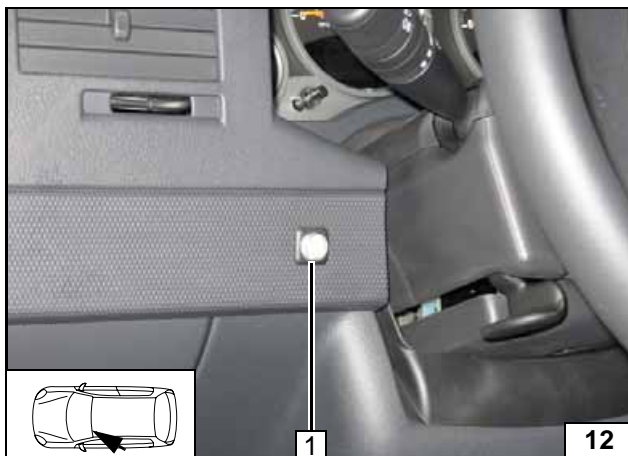


Installing receiver



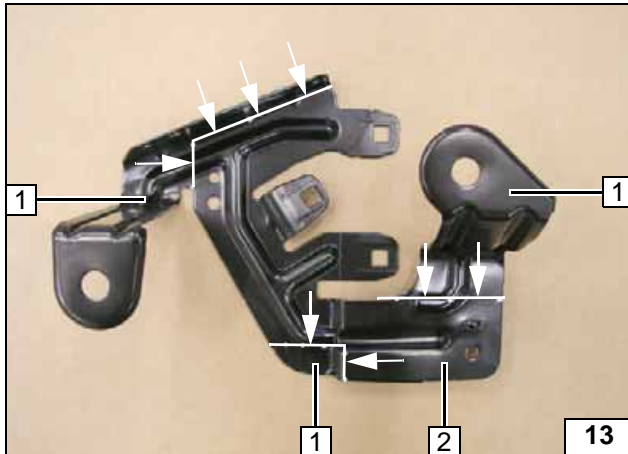
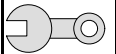
1 Antenna

Installing antenna



1 Pushbutton

Installing push button



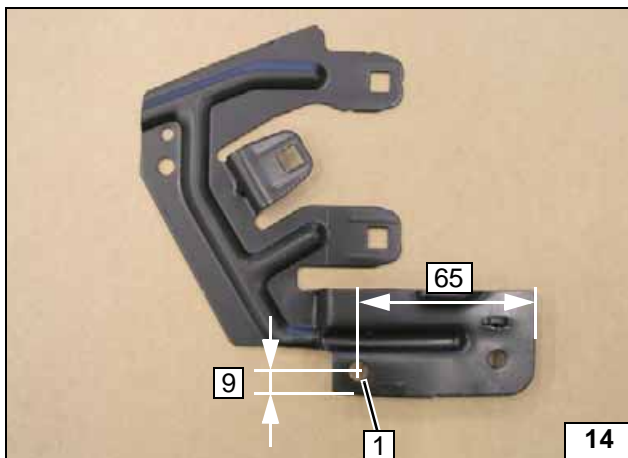
Preparing installation location

Disconnect bracket from electrical box **2** at markings.

- 1 Discard cut-off section [3x]

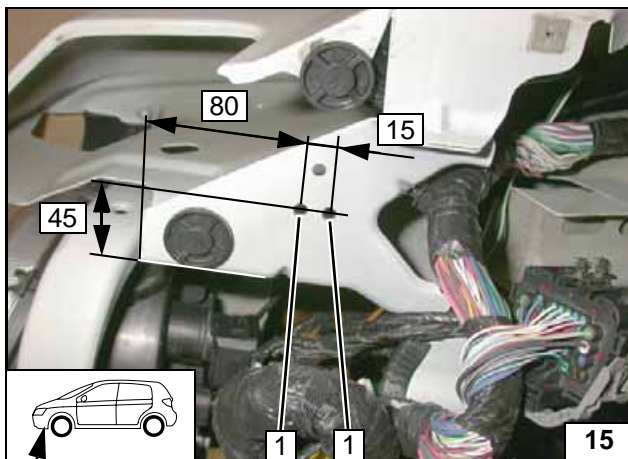


Preparing bracket



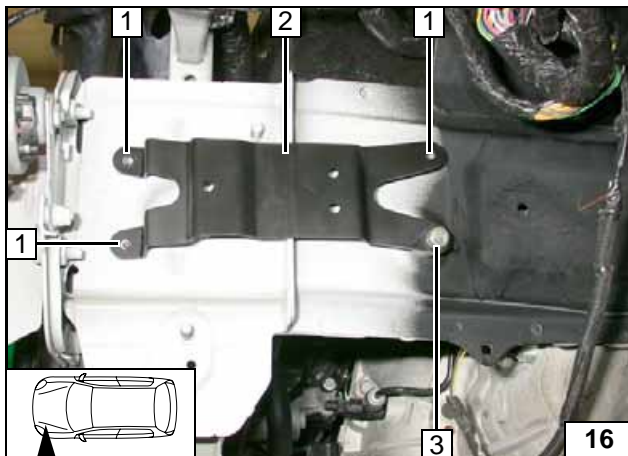
- 1 7 mm dia. hole

Preparing bracket



- 1 6.5 mm dia. hole [2x]

Holes in cross member

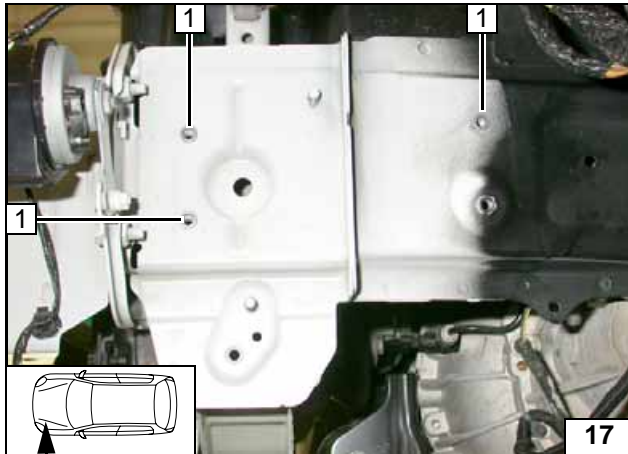
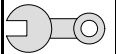


Drill bracket **2** in accordance with template, bend and loosely install.

- 1 Copy hole pattern [3x]
- 3 M8x30 bolt, 20 mm shim on existing threaded hole



Copying hole pattern

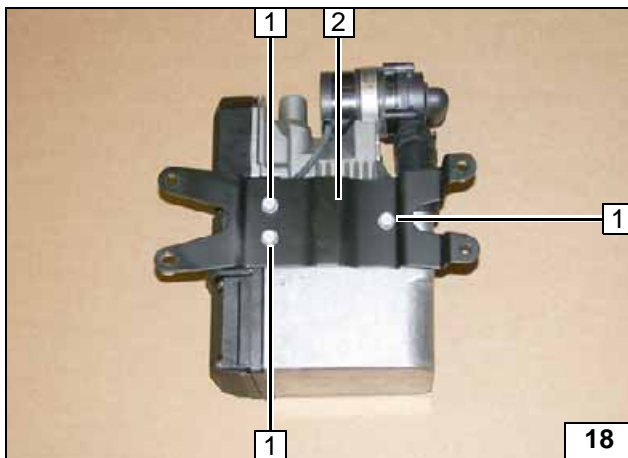


Remove bracket.

- 1 Drill 9.1 mm hole; install steel rivet nuts [3x each]



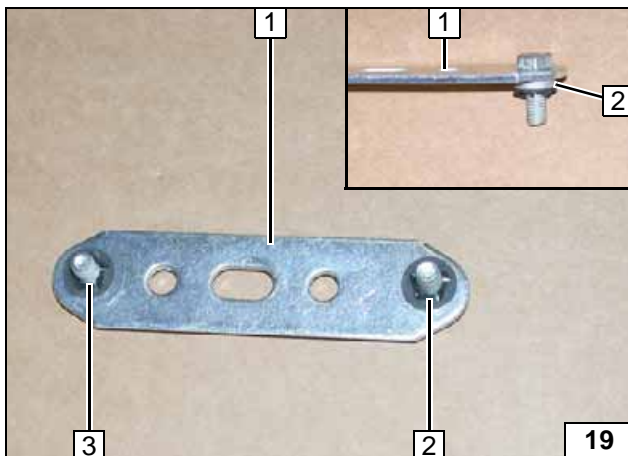
Installing rivet nut



Preparing heater unit

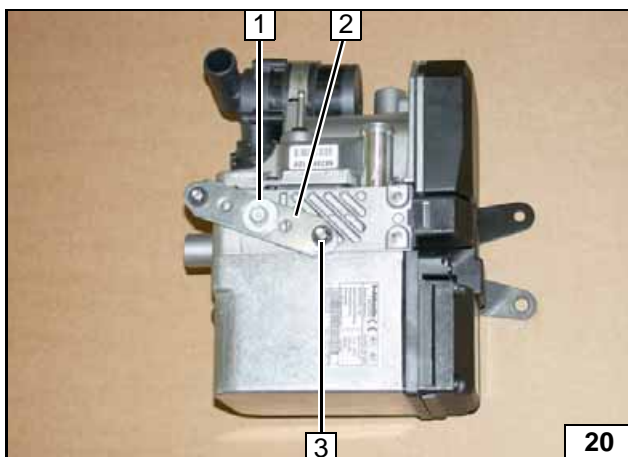
- 1 E-jot screw [2x]
- 2 Prepared bracket

Installing bracket



- 1 Perforated bracket
- 2 M6x16 bolt, washer [2x], pin lock
- 3 M6x12 bolt, pin lock

Preparing perforated bracket

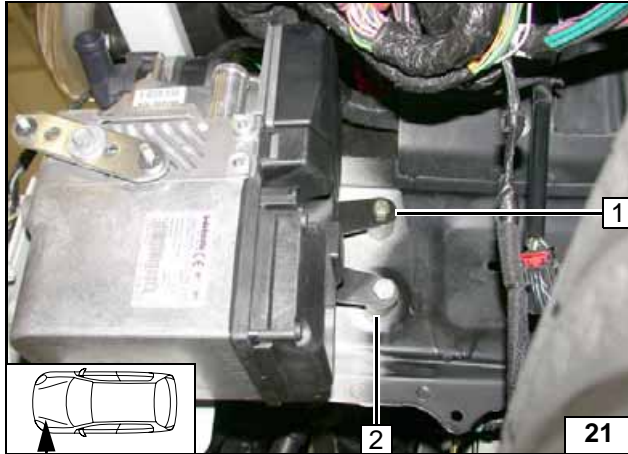
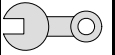


Insert 5 mm shim between heater unit and perforated bracket 2 at position 1.

- 1 E-jot screw, large diameter washer, 5 mm shim
- 3 Bolt with pre-mounted washers



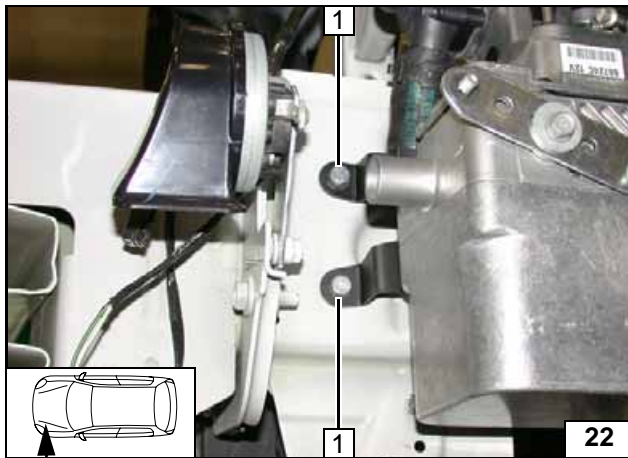
Premounting perforated bracket



Installing heater unit

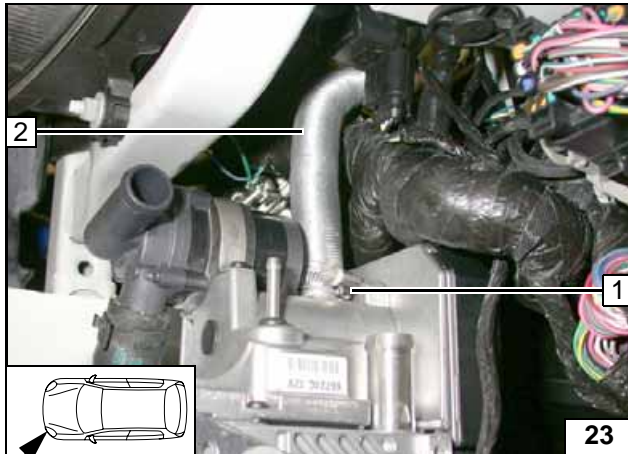
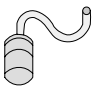
- 1 M6x35 bolt, spring lockwasher, 20 mm shim on rivet nut
- 2 M8x30 bolt, spring lockwasher, 20 mm shim on existing threaded hole

Installing heater unit



- 1 M6x20 bolt, spring lockwasher [2x each] on rivet nut

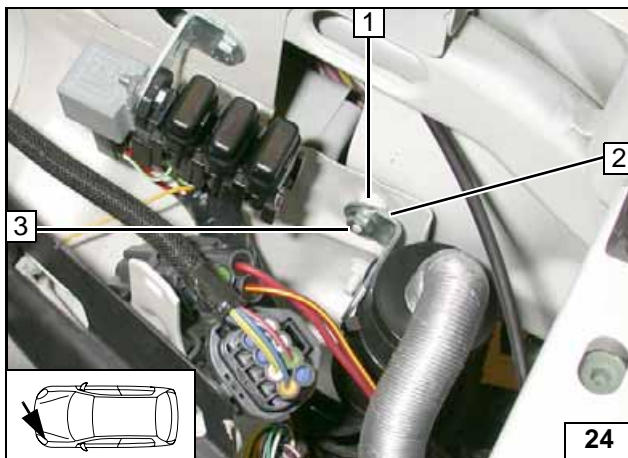
Installing heater unit



Combustion air

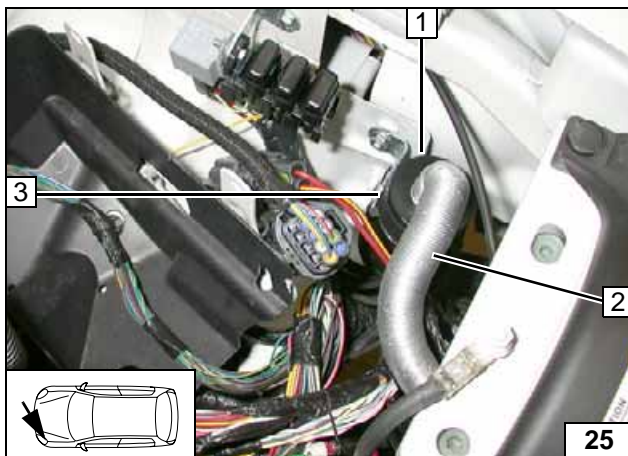
- 1 27 mm dia. clamp
- 2 Combustion air pipe

Installing combustion air pipe



- 1 Original vehicle stud bolt
- 2 Angle bracket
- 3 Flanged nut

Installing angle bracket

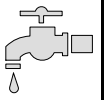


Fasten muffler 1 on angle bracket with cable tie 3.

- 2 Combustion air pipe



Installing muffler

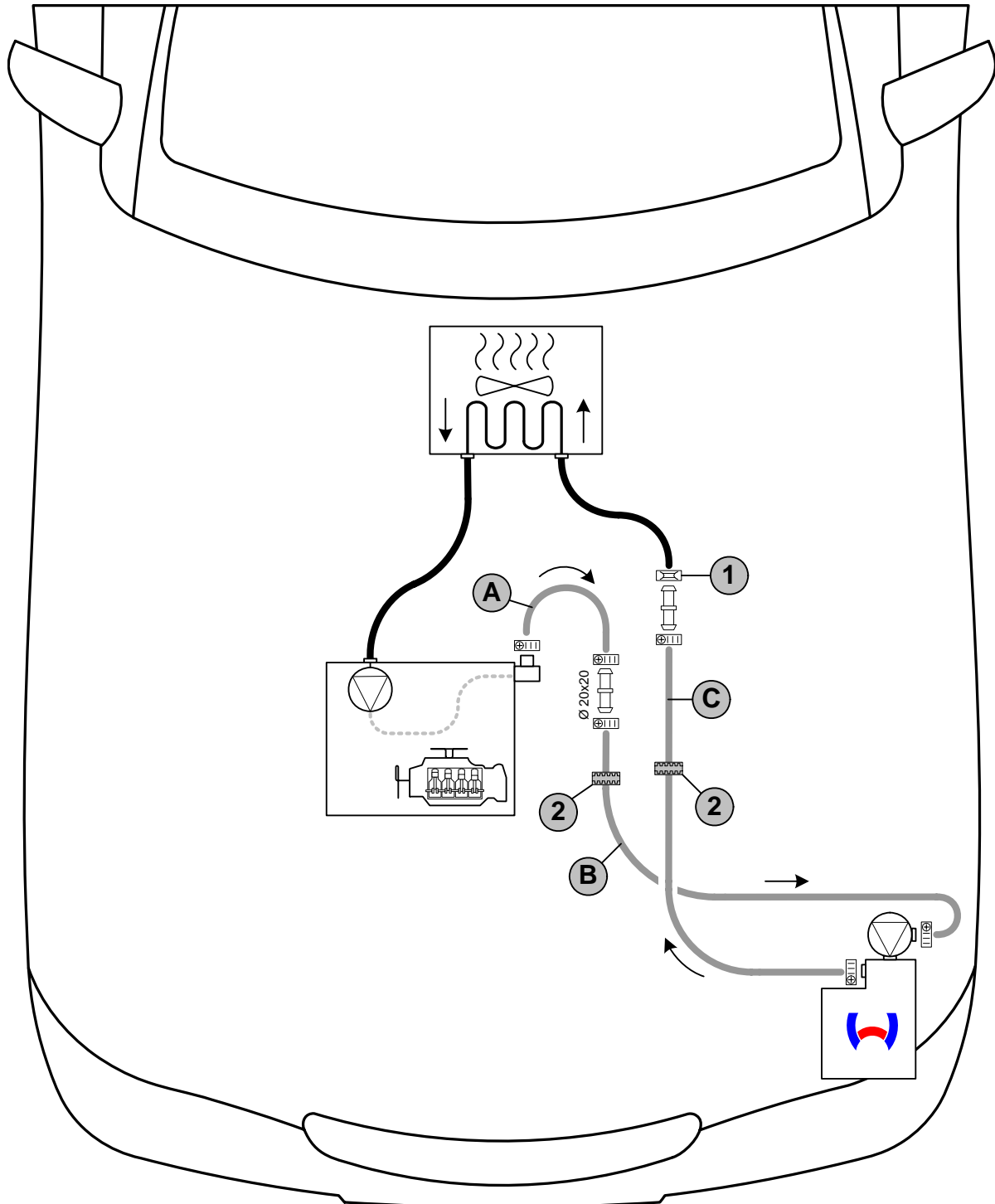


Coolant

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.

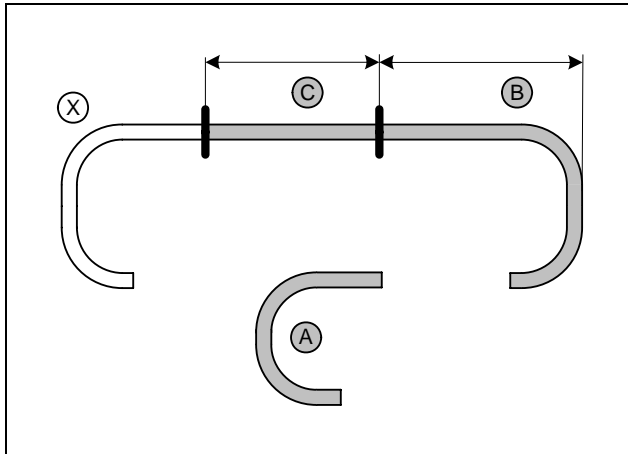
The connection should be "inline" based on the following diagram:



Coolant routing diagram

1 = Original vehicle spring clip . 2 = Red (rt) rubber isolator .
 All hose clamps = 20-27 mm dia.!
 All connecting pipes without a specific designation = dia. 20x22.

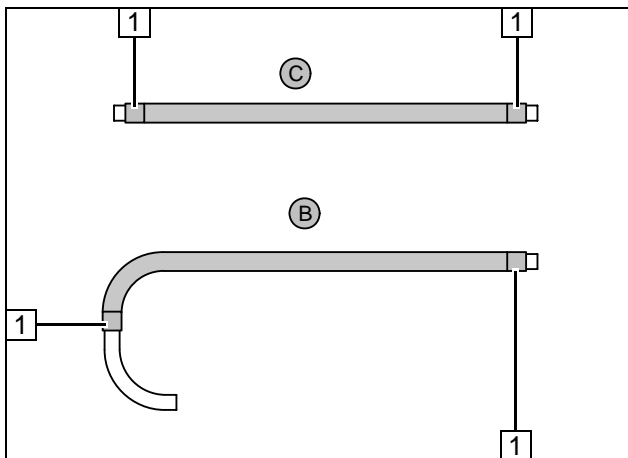




A = Molded hose
 b = 990
 c = 1080

Discard section X

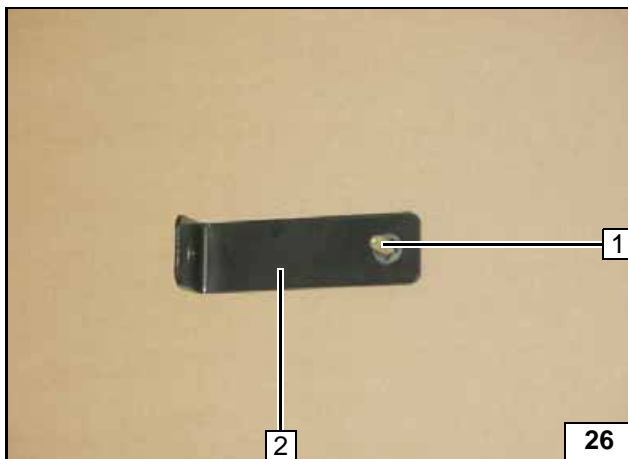
Cutting coolant hoses to length



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

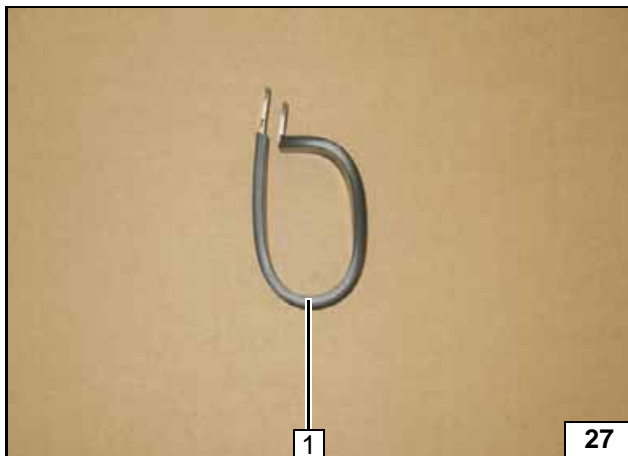
1 25 mm long heat shrink plastic tubing [4x]

Preparing coolant hoses



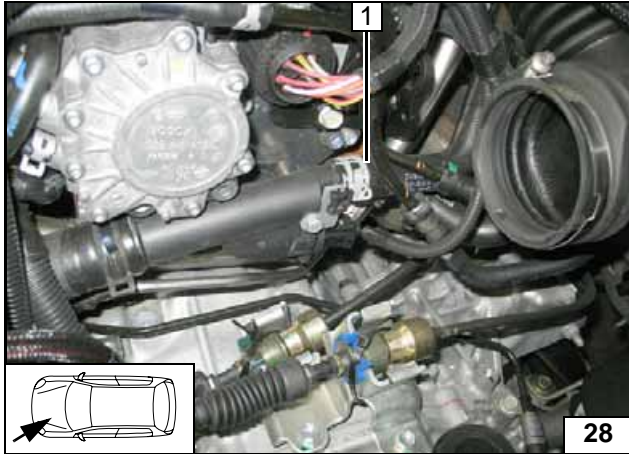
1 M6x20 bolt, pin lock
 2 Bracket

Preparing bracket for coolant hoses



Shape 48 mm dia. rubber-coated p-clamps 1 [2x] provided as shown.

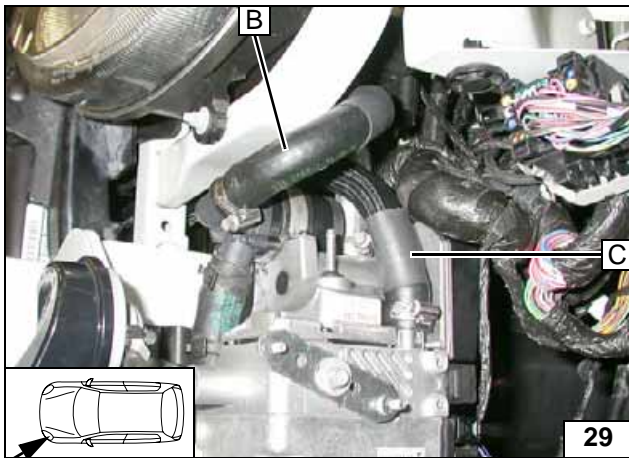
Preparing rubber-coated p-clamps



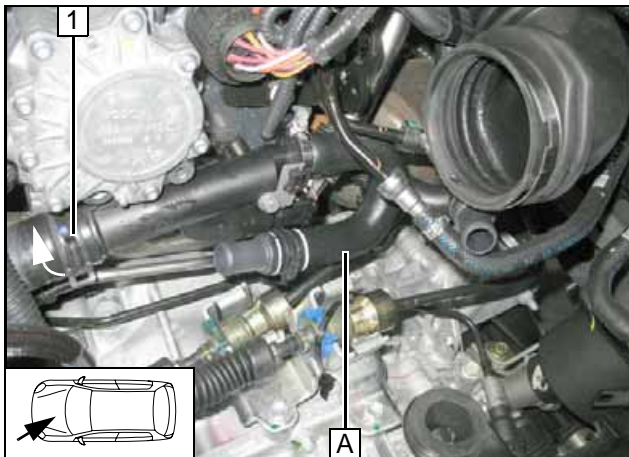
Pull hose off engine outlet 1; original vehicle clamp will not be reused.



Cutting point



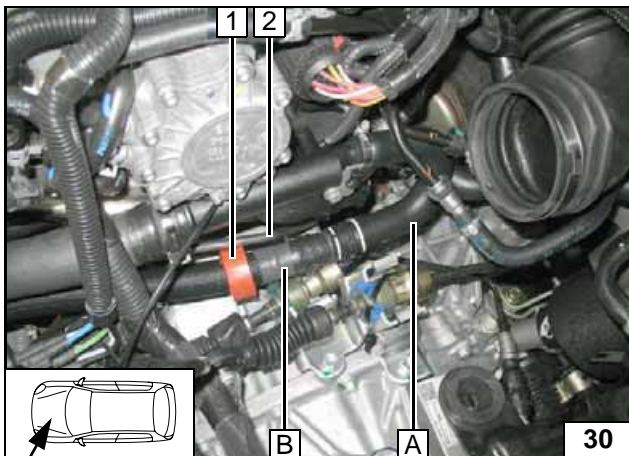
Connecting heater unit



Turn original vehicle clamp 1.



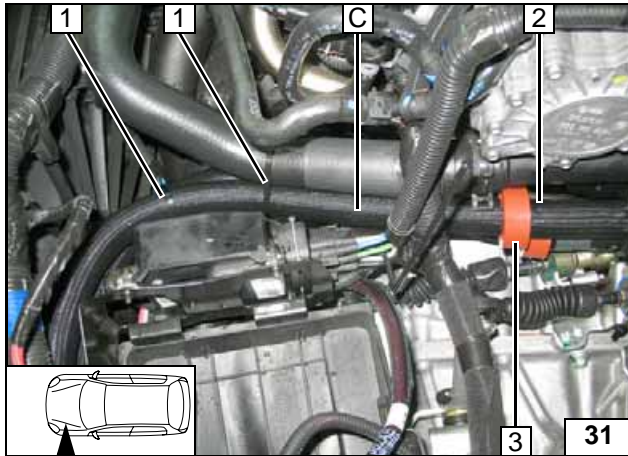
Connecting engine outlet



Align red (rt) rubber isolator 1 relative to oil pressure line 2.



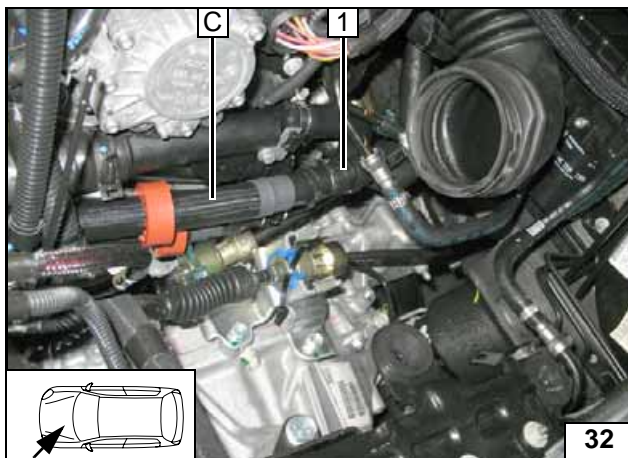
Connecting engine outlet



Align red (rt) rubber isolator 3 relative to oil pressure line 2.

1 Cable tie

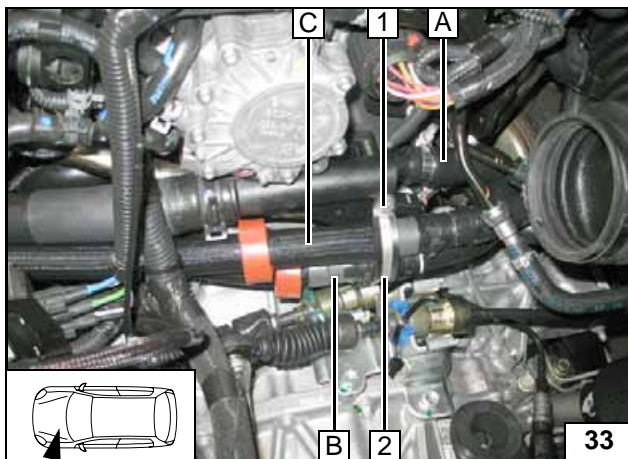
Routing in engine compartment



1 Hose on heat exchanger inlet

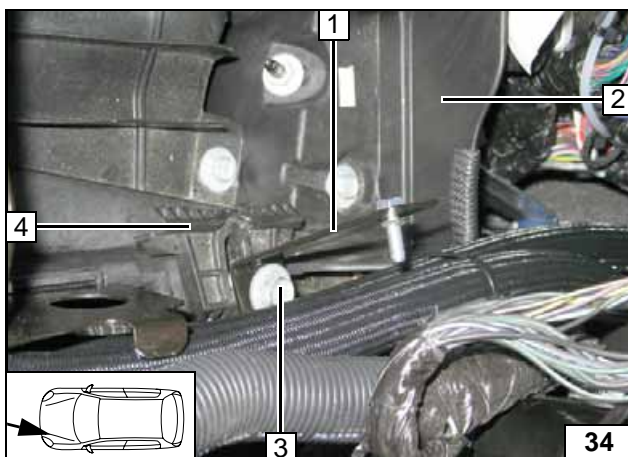


Connecting heat exchanger inlet



1 Original vehicle bolt
2 48 mm dia. rubber-coated p-clamp

Installing p-clamp

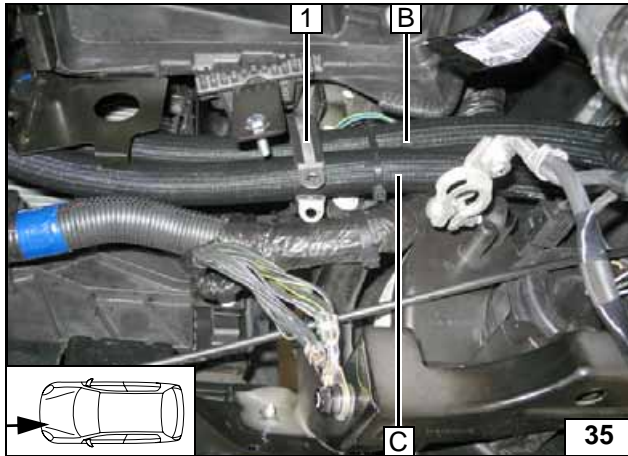


Loosely mount bracket 1 so that battery can be installed later.

2 Battery carrier
3 Original vehicle bolt
4 Battery clamping piece



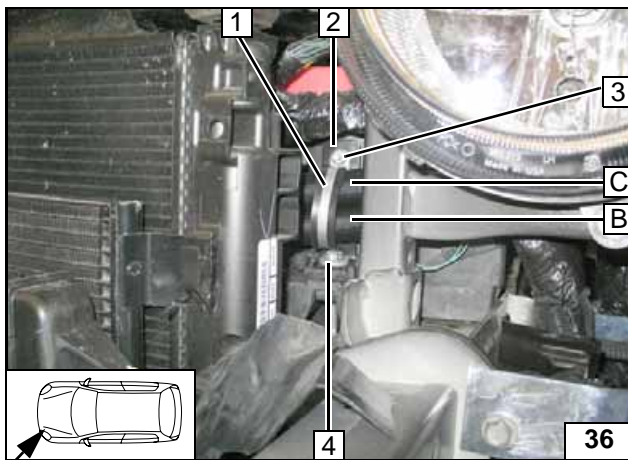
Loosely mount bracket



Position 48 mm dia. rubber-coated p-clamp 1.
Install vehicle battery.

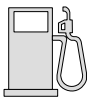


**Premount-
ing p-
clamp**



- 1 48 mm dia. rubber-coated p-clamp
- 2 Prepared bracket
- 3 Flanged nut, M6x20 bolt premounted
- 4 Original vehicle bolt of battery bracket

**Installing
p-clamp**



Fuel

CAUTION!

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

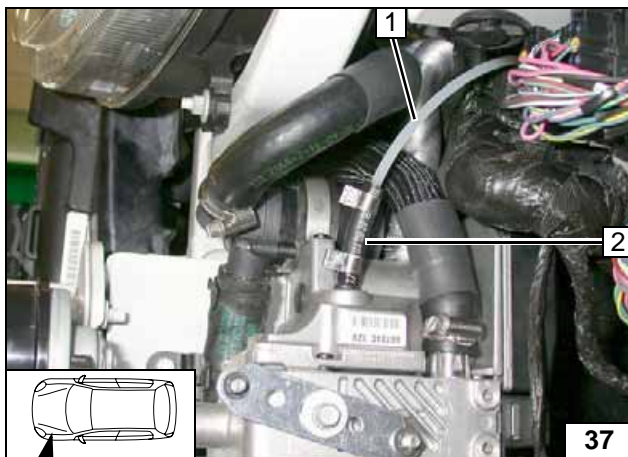
Catch any fuel running off with an appropriate container.

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.

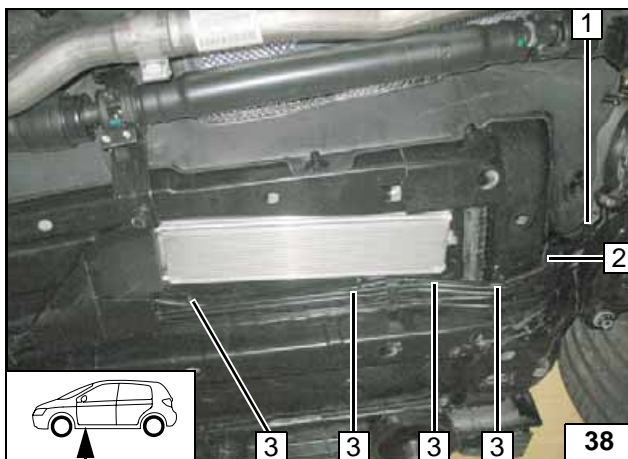
WARNING!

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

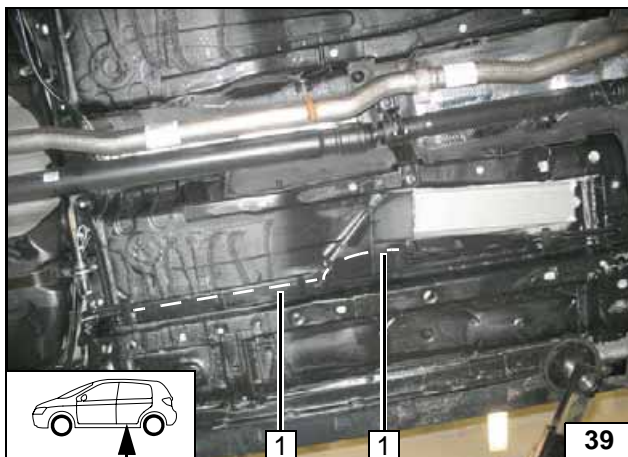


Route fuel line and wiring harness of metering pump 1 in corrugated tube 2 above original vehicle fuel line.

- 3 Cable tie



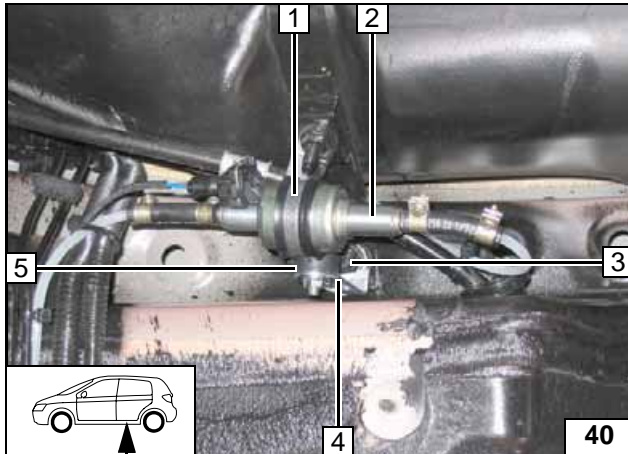
Installing
lines



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



Installing
lines

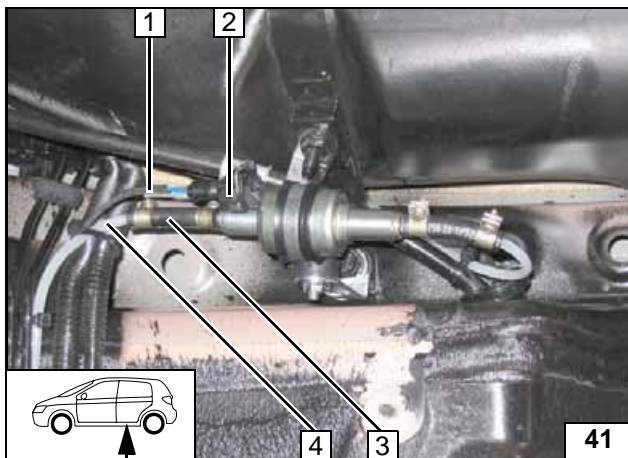


Bend and drill perforated bracket 4 in accordance with template.

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



Installing metering pump

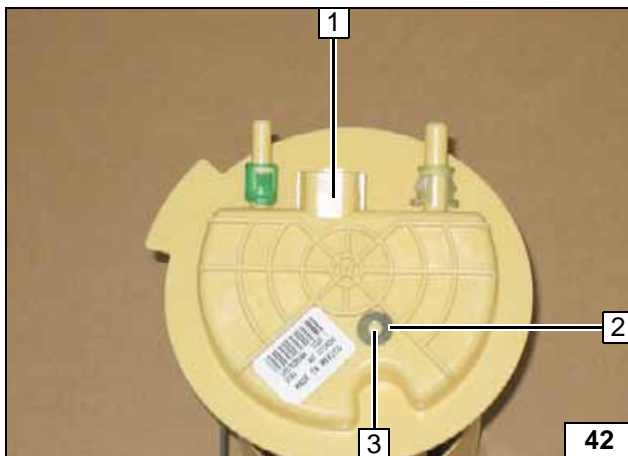


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Metering pump wiring harness
- 2 Metering pump connector
- 3 Hose section, 10 mm dia. clamp [2x]
- 4 Fuel line from heater unit



Connecting metering pump

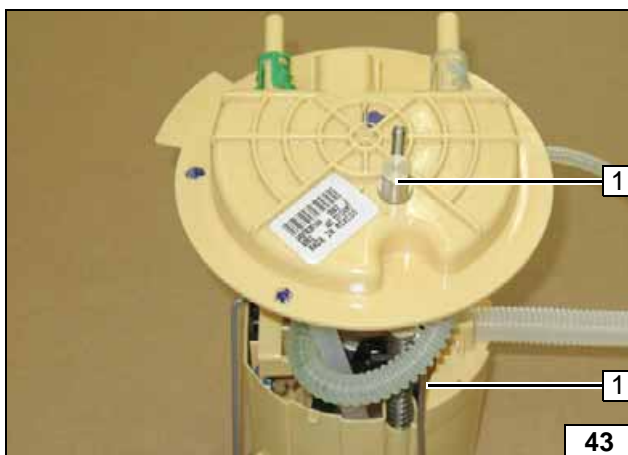


Remove fuel-tank sending unit 1 in accordance with manufacturer's specifications.

- 2 Lay washer with outside dia. = 17.6 mm on bars
- 3 Copy 6 mm dia. hole pattern



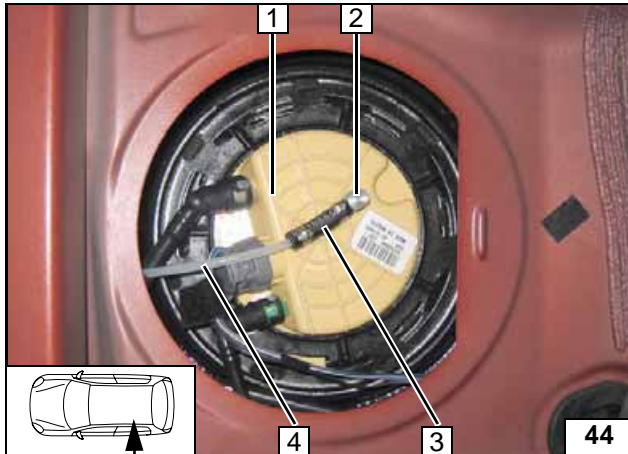
Removing fuel



Cut fuel standpipe 1 to length, shape and install, see installation instructions.



Removing fuel

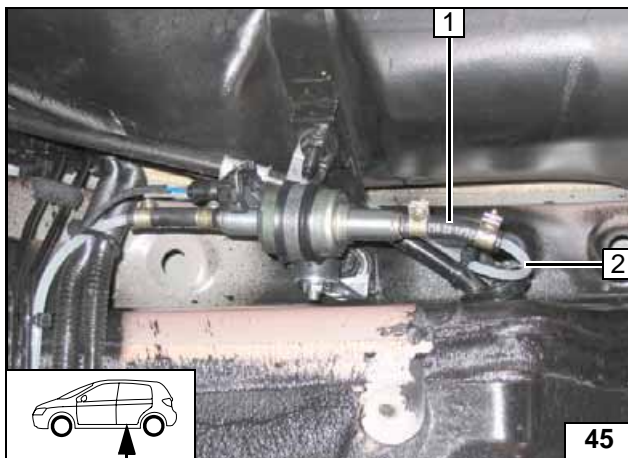


Install fuel-tank sending unit **1** in accordance with manufacturer's specifications.

- 2** Fuel standpipe
- 3** Molded hose, 10 mm dia.clamp
- 4** Fuel line



**Connect-
ing fuel
line**

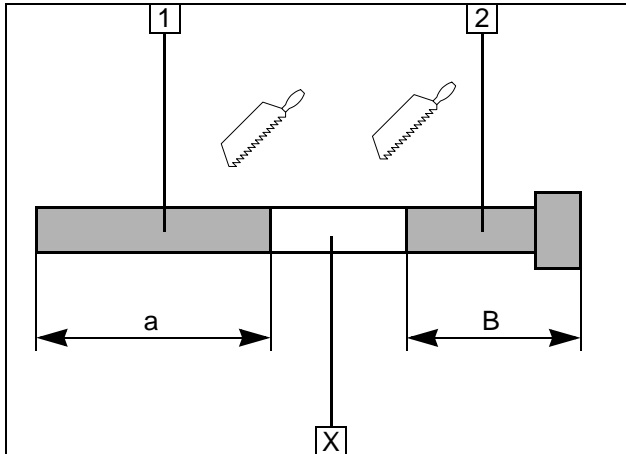
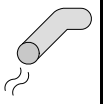


Check the position of the components; adjust if necessary. Check that they have free clearance.

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



**Connect-
ing meter-
ing pump**

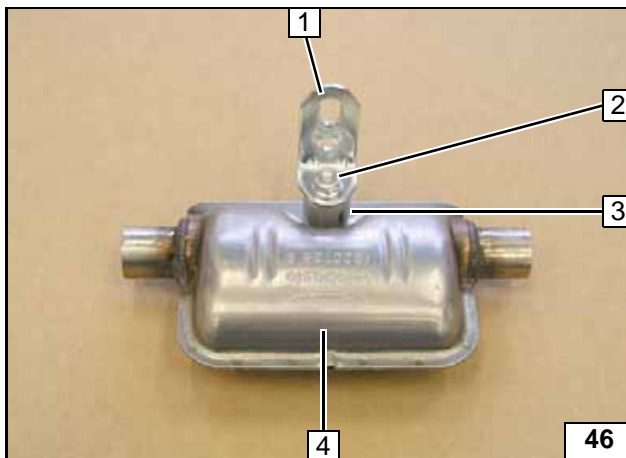


Exhaust gas

- 1 Exhaust pipe
a = 230
- 2 Exhaust end section
b = 250

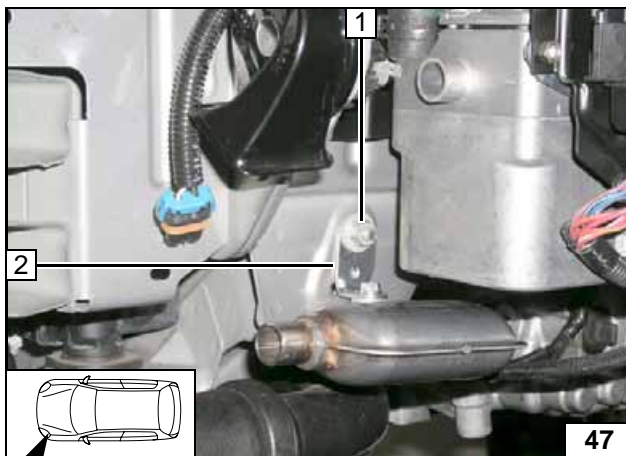
Discard section X

Preparing exhaust pipe



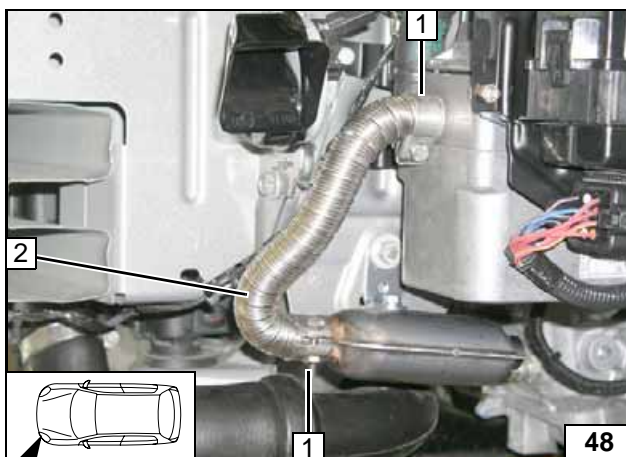
- 1 Angle bracket
- 2 M6x40 bolt, flanged nut
- 3 30 mm shim
- 4 Muffler

Preparing muffler



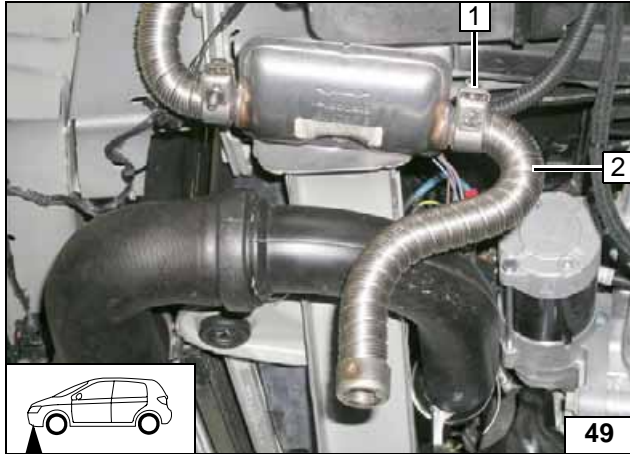
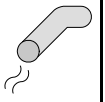
- 1 Original vehicle M8 flanged nut on original vehicle stud bolt
- 2 Angle bracket

Installing muffler



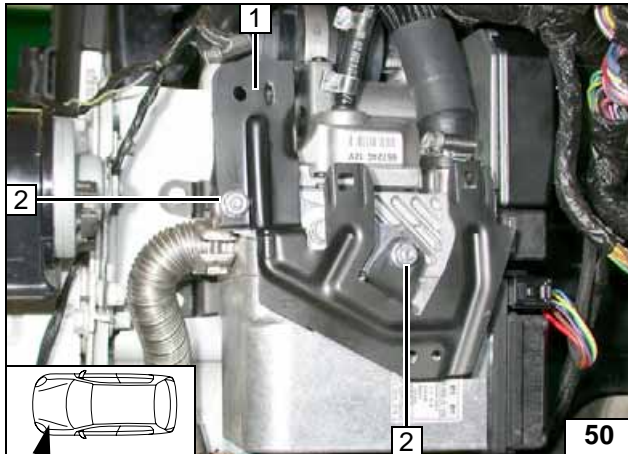
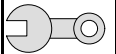
- 1 Hose clamp [2x]
- 2 Exhaust pipe

Installing exhaust pipe



- 1 Hose clamp
- 2 Exhaust end section

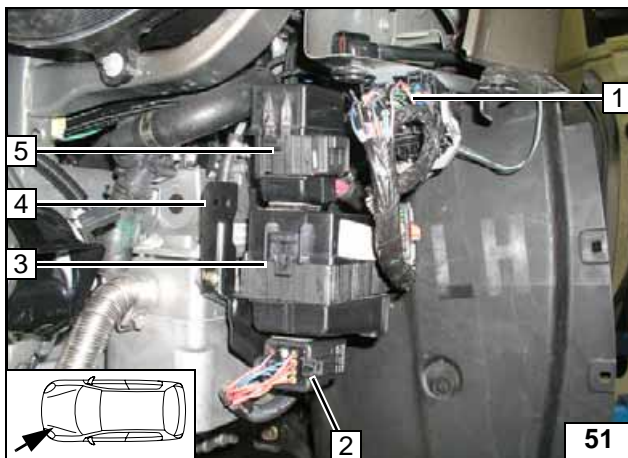
**Installing
exhaust
end sec-
tion**



Installing electrical box, connector

- 1 Bracket
- 2 Flanged nut [2x] on premounted M6 bolts

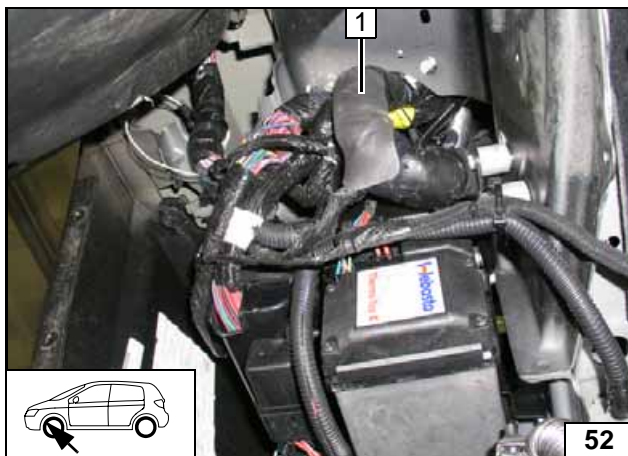
Installing bracket



Mount electrical box **3** in holes of bracket **4**. Glue electrical box **4** and relay **2** with dual-lock onto electrical box **3**. Mount connector **1** in prepared holes and secure at top with pin lock.



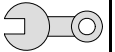
Fastening electrical box, relay and connector



Align wiring harnesses. Glue on rub protection **1**.



Fastening electrical box, relay and connector



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

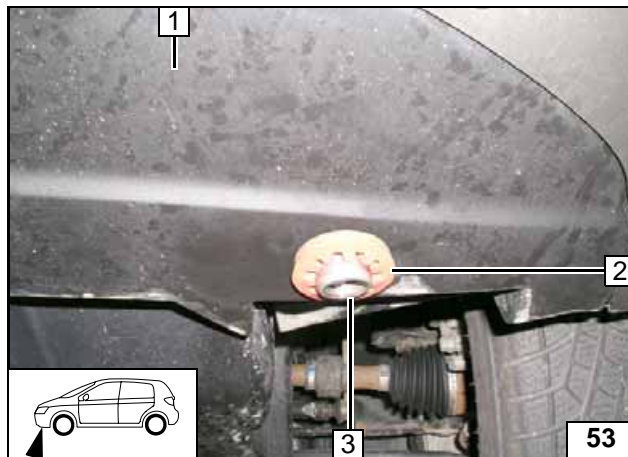
Check all hoses, clamps and all electrical connections for firm seating.

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.



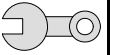
Mount underbody protection **1**. Align 42 mm dia. hole in underbody protection **1** at position **3**. Align exhaust end section **3** flush on red (rt) rubber isolator **2**.



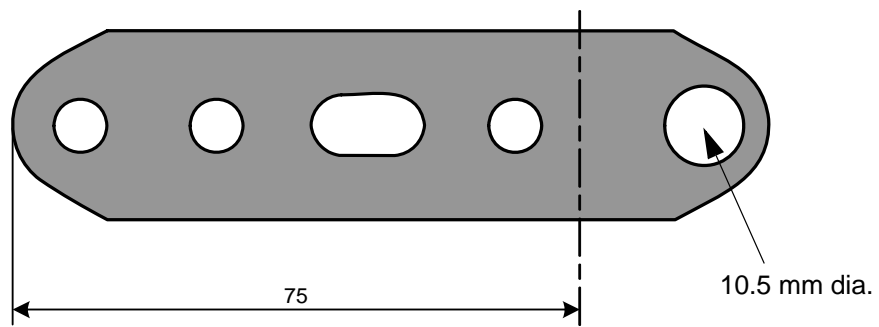
**Aligning
exhaust
end section**

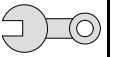
Webasto
Feel the drive

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

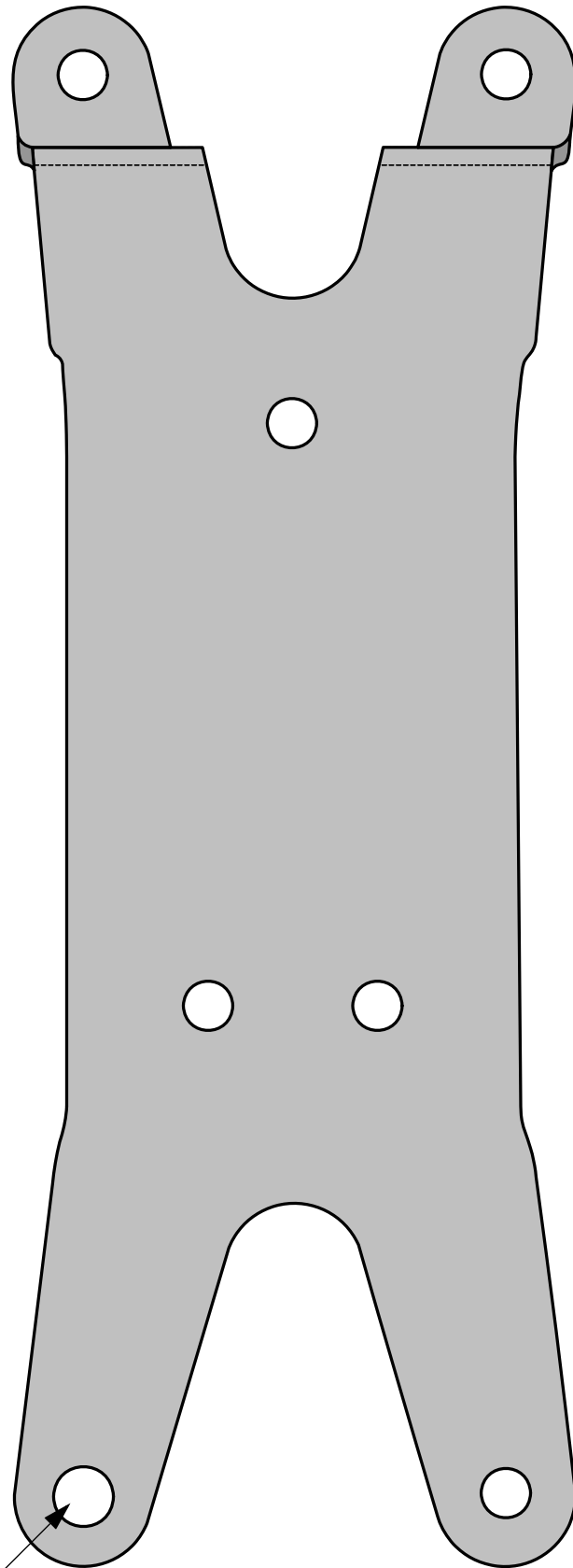
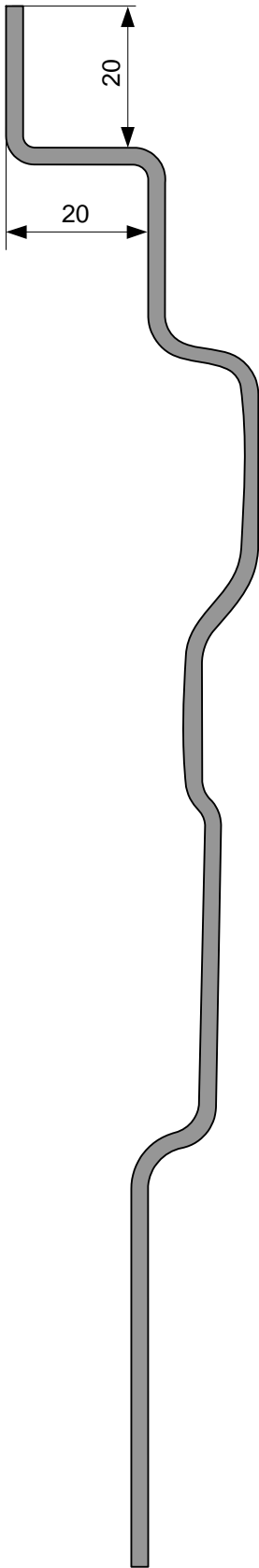


Template for Perforated Fastening Strap



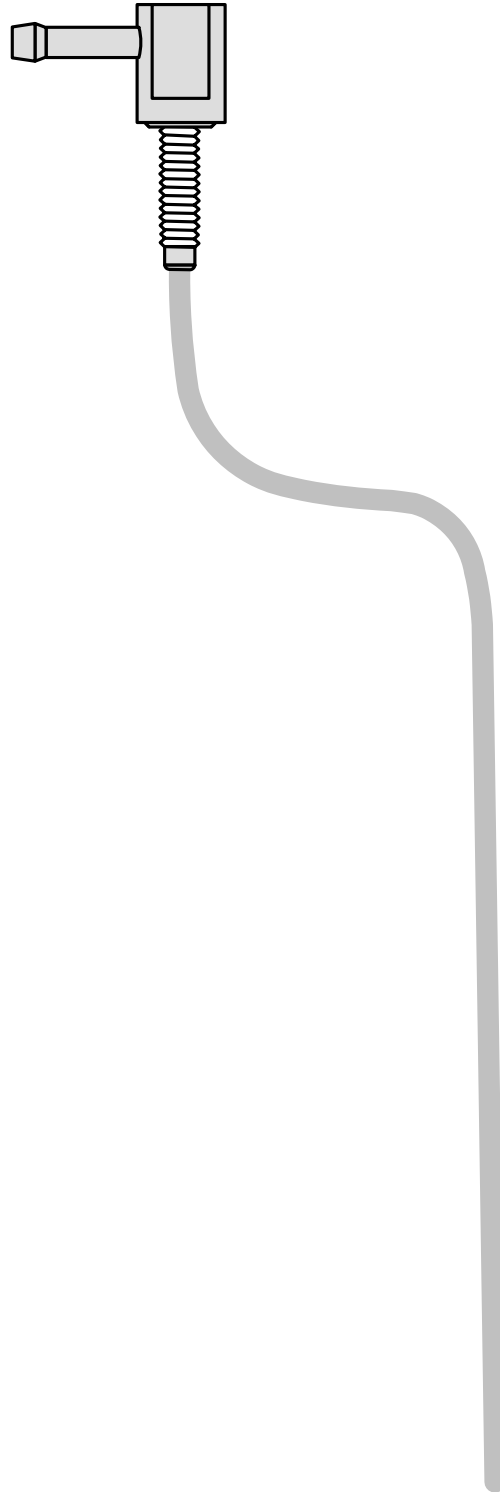


Template for Bracket



8.5 mm dia.

Template for Fuel Standpipe



100 mm



Scale 1:1

Compare the size of the printed version with dimension lines.

Permitted tolerance a maximum of 2%.

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

100 mm

0

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:

Note:

On vehicle with a factory-installed alarm system, the passenger compartment monitoring must be deactivated. Please see the vehicle owner's manual for instructions.



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

Manual air conditioning