

Water Heater Unit



Feel the drive

Thermo Top E Additional Heater

e1

00 0003

Thermo Top C Additional Heater

e1

00 0002

Installation Instructions



SUBARU

SUBARU Forester 2.0X

Gasoline

from Model Year 2006

For left-hand drive vehicles only



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
SUBARU	Forester	SGS	e1 * 2001/116 * 0209 * ...
SUBARU	Forester	SG	e13 * 98/14 * 0087* ...

Engine type	Engine model	Output in kW	Displacement in cm ³
EJ20	Gasoline	116	1994

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 SUBARU Forester 2.0X Gasoline	1310445B

Heater unit recommended for the respective vehicle class:

Vehicle	Heater unit
Compact car	Thermo Top E
Mid-size car, station wagon	Thermo Top C

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

The installation instructions apply to the SUBARU Forester 2.0X vehicles with a gasoline engine - For the validity, see page 2 - from model year 2006 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).

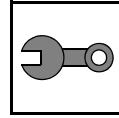
Special Tools

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

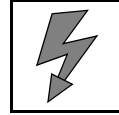
Explanatory Notes on Document

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.

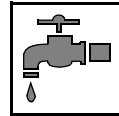
Mechanical system



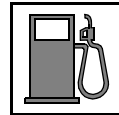
Electrical system



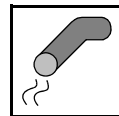
Coolant connection



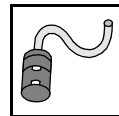
Fuel connection



Exhaust system



Combustion air



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



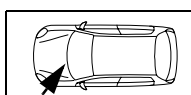
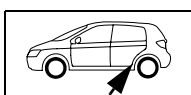
Specific risk of fire or explosion.



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



Reference to a special technical feature.

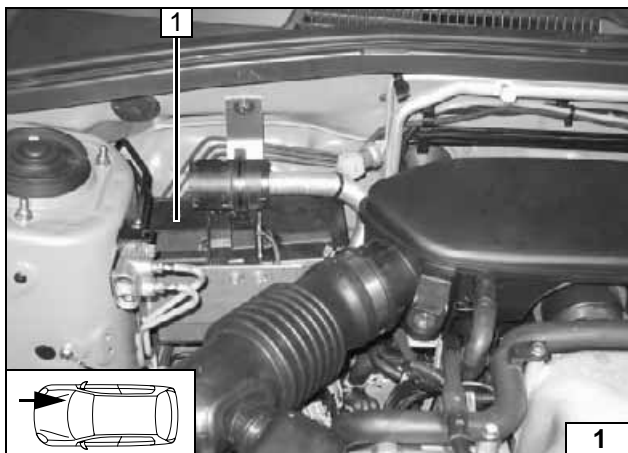


The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.

Preliminary Work

WARNING!

- Disconnect the battery "earth" or "ground" connection.
- Depressurize the cooling system.
- Copy the factory number from the original type label to the duplicate type label.
- Remove years that do not apply from the duplicate label.
- Attach the duplicate label (type label) in the appropriate place.
- Remove the entire intake hose together with the engine intake housing
- Remove the coolant reservoir cap.
- Open fuel tank cap, ventilate tank.
- Close the tank cap again.
- Remove the A-pillar trim in the driver's side footwell
- Remove the left front and rear door sill cover
- Remove the rear seat bench
- Remove the lower luggage compartment trim
- Open the right-hand fuel sender service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturers specifications.
- Please remove page 25 of the "Operating instructions for the end customer" and add this to the vehicle operating instructions.



Heater unit installation location

- 1 Heater unit

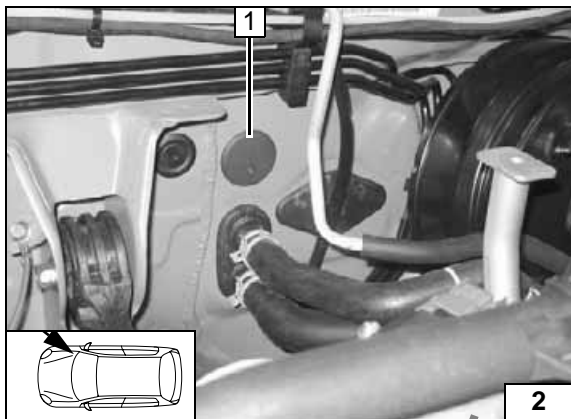
Installation location



Electrical Connections

Wiring harness pass through

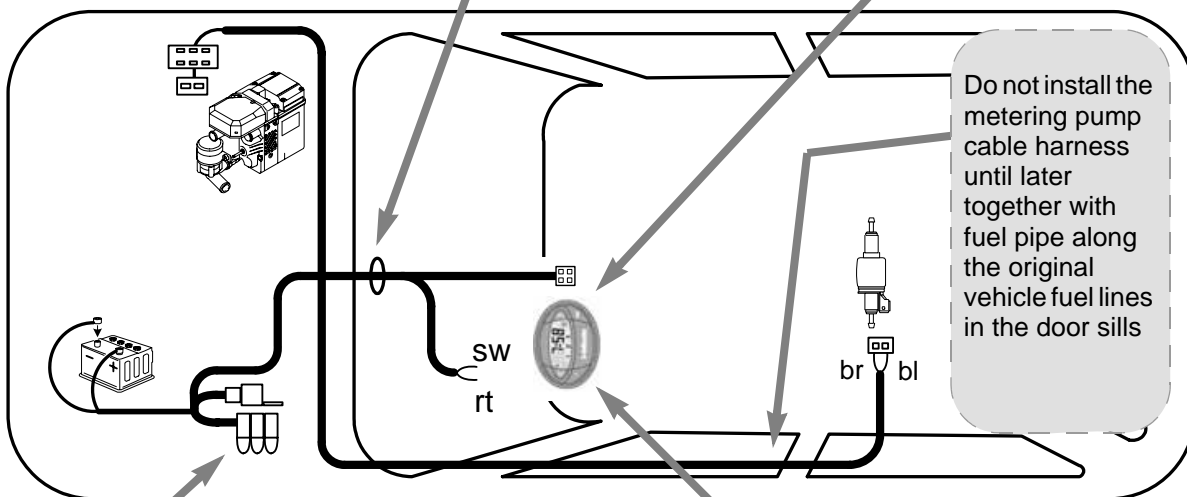
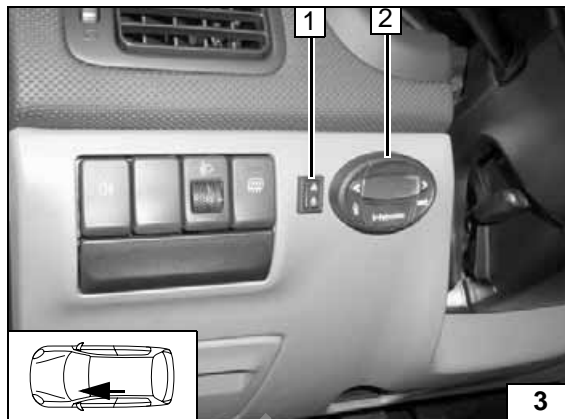
- 1 Protective rubber plug



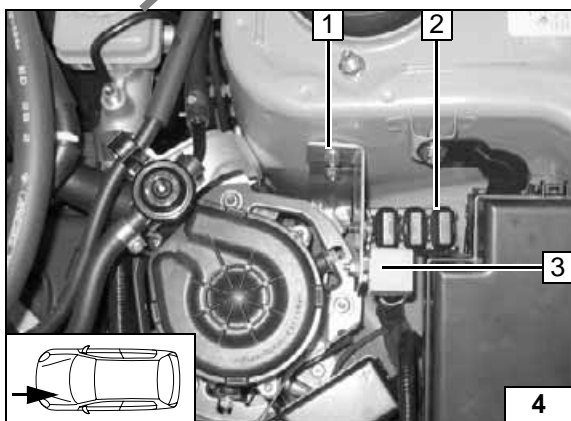
Digital timer/summer/winter switch option with manual transmission

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

The installation location must be coordinated with the customer!

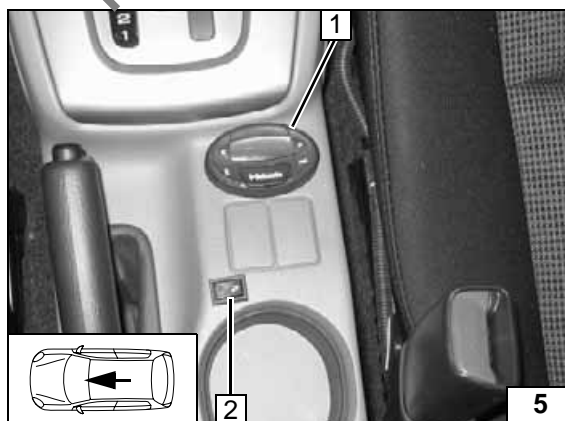


Wiring harness installation diagram



Fuse holder, relay K3

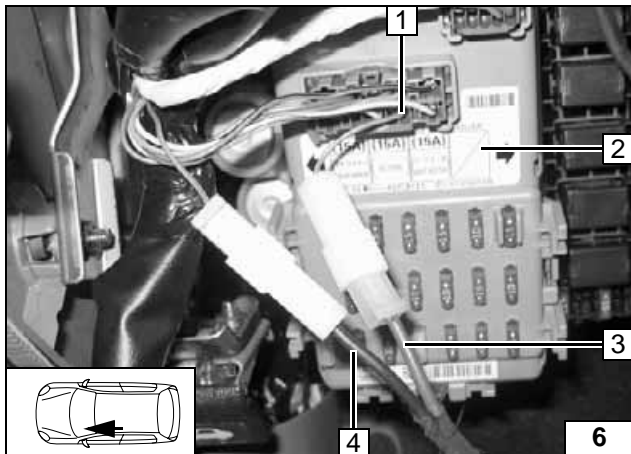
- 1 Fuse holder, original vehicle bolt
- 2 Fuse holder retaining plate, M4x12 bolt, washers, M4 nut
- 3 Relay K3, M5x12 bolt, washer, M5 flanged nut



Digital timer/summer/winter switch option with automatic transmission

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

The installation location must be coordinated with the customer!



Automatic air-conditioning fan controller

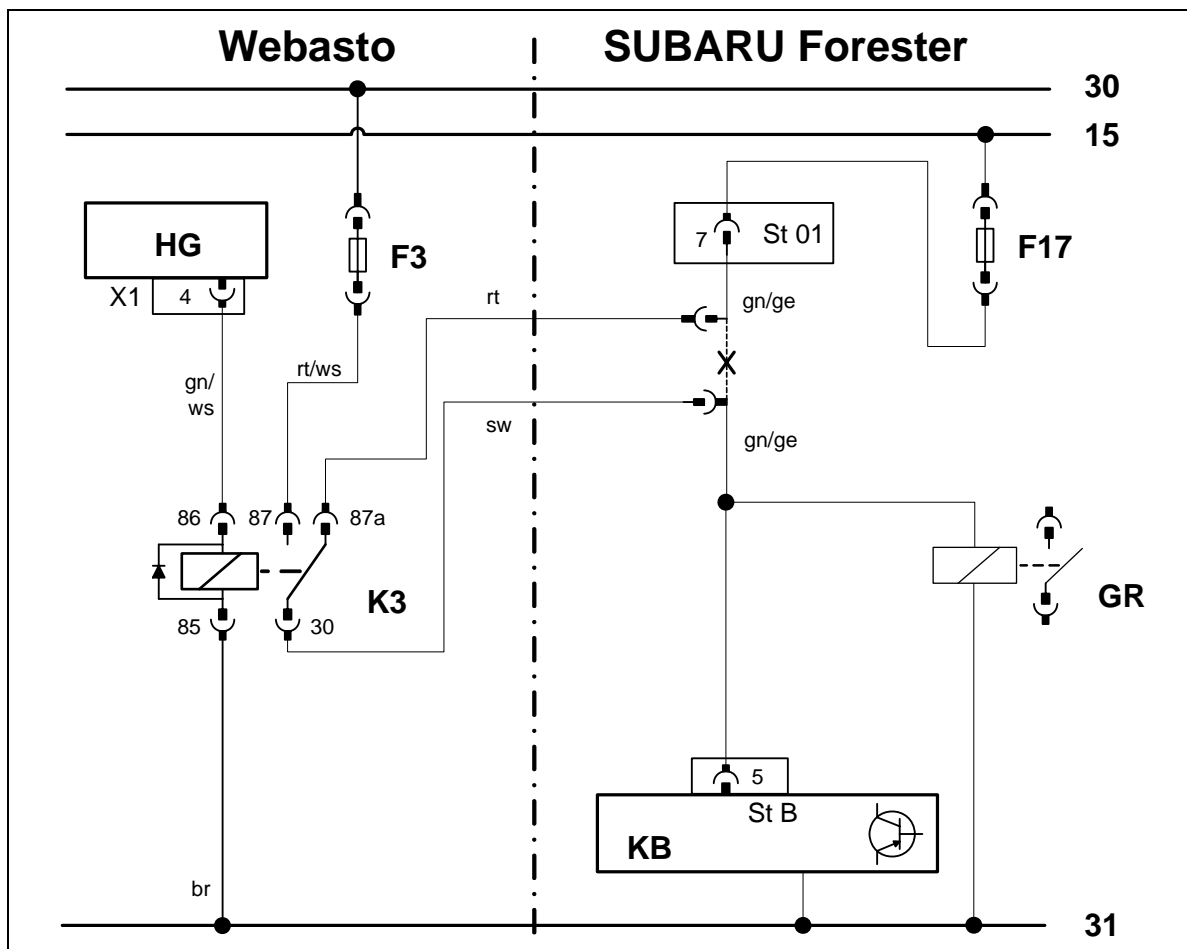
Replace F3 25A fuse with 15 A fuse!
Integrate on blue connector, Pin 7, in central electrical box
Produce connections as shown in wiring diagram.

- 2 Central electrical box
- 1 Blue connector, Pin 7
- 3 Red (rt) wire to K3/87a
- 4 Black (sw) wire to K3/30

Note:
Green/yellow (gn/ge) wire color is shown as green/orange (gn/or) in the workshop manual!



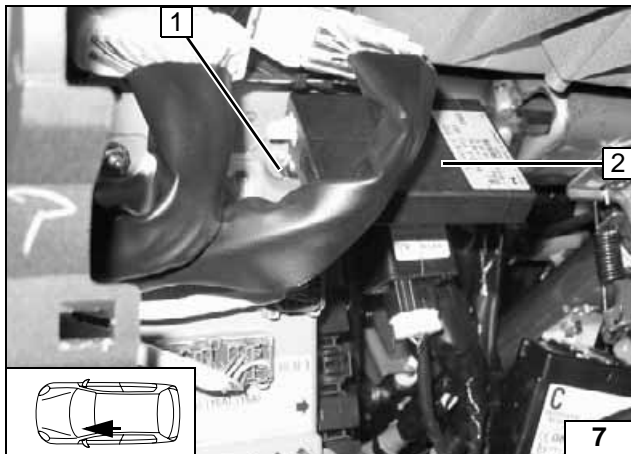
Connection to central electrical box



Automatic air-conditioning circuit diagram

Webasto components		SUBARU components		Colors and symbols	
HG	Heater unit TT-C/E	GR	Fan relay	rt	red
F3	15 A fuse	St 01	Blue connector of central electrical box	ws	white
K3	Fan relay	St B	Connector B of A/C control unit	sw	black
		KB	Air-conditioning control unit	br	brown
		F17	15 A fuse	gn	green
				bl	blue
				gn	green
				ge	yellow
				X	Cutting point

Legend

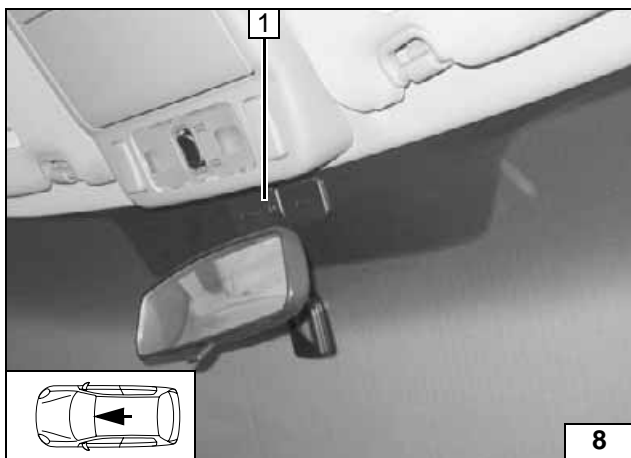


Telestart T90, T100HTM option

- 1 Original vehicle bolt, receiver bracket (curved by approx.90°)
- 2 Receiver

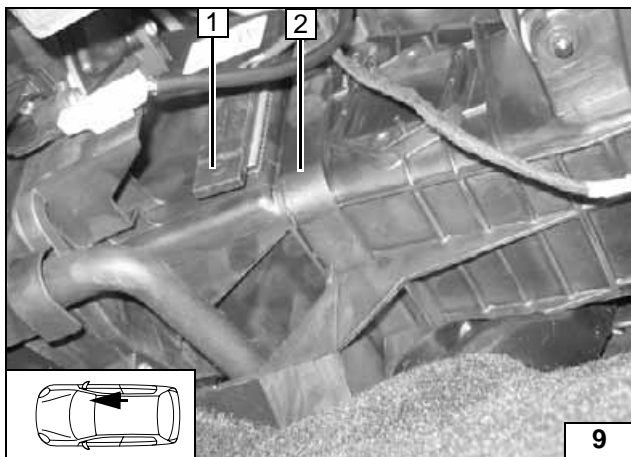


Installing receiver



- 1 Antenna

Installing antenna

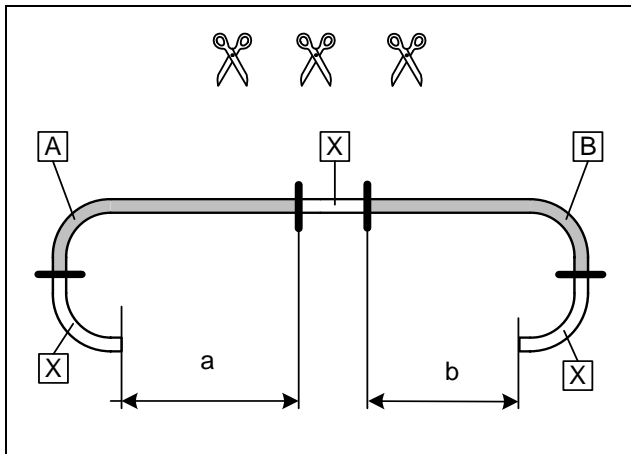


Temperature sensor only T100 HTM

- 1 Temperature sensor, Dual Lock, self-adhesive
- 2 Air duct for passenger compartment fan



Installing temperature sensor



Preparing heater unit

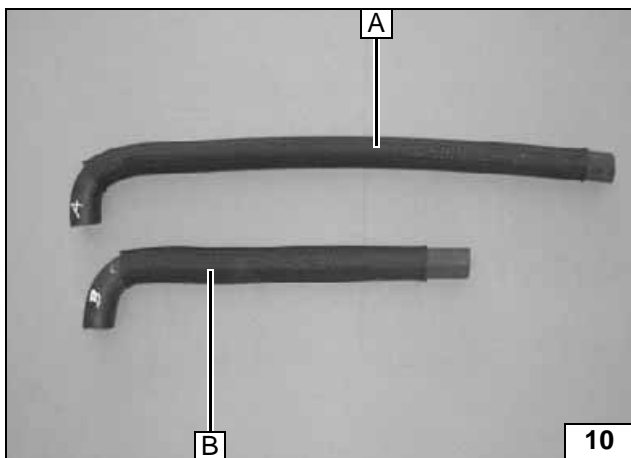
a = 420 mm
b = 330 mm

Discard section X

Cut braided protection hoses to length and push onto hose A and B.



Cutting coolant hoses to length

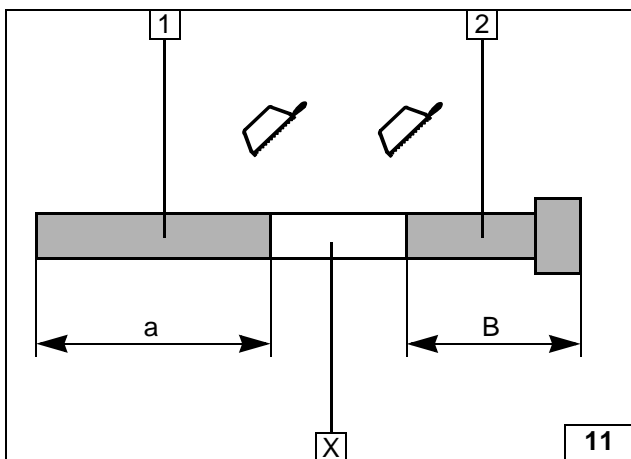


Disconnect braided protection hose.

Push braided protection hoses onto hose A and B.



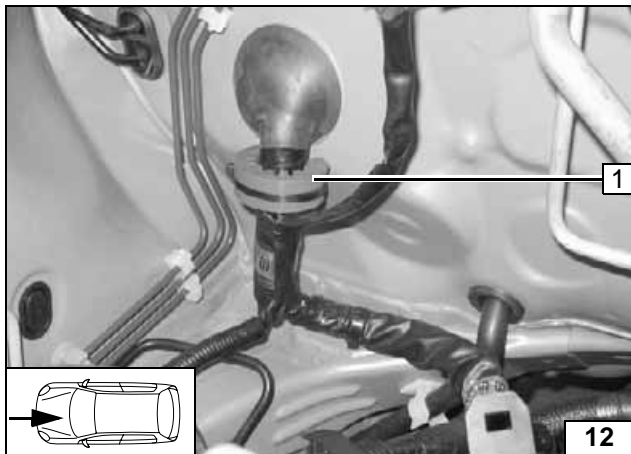
Preparing coolant hoses



- 1 Exhaust pipe
a = 500 mm
- 2 Exhaust end section
b = 120 mm

Discard section X

Preparing exhaust pipe



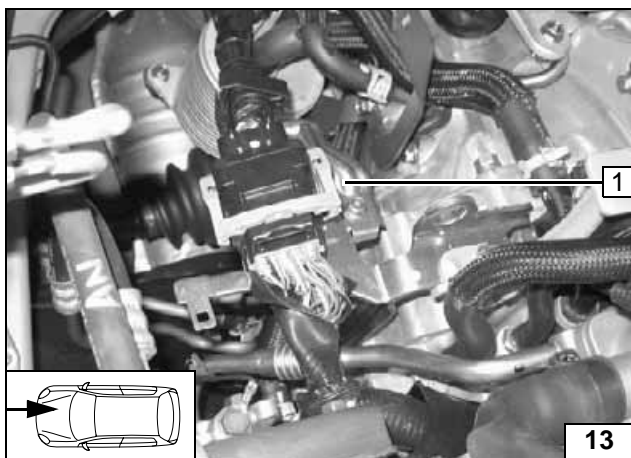
Preparing installation location

Cut open red (rt) rubber isolator and position as shown.

- 1 Red (rt) rubber isolator with groove, cable tie



**Mounting
rubber
isolator**

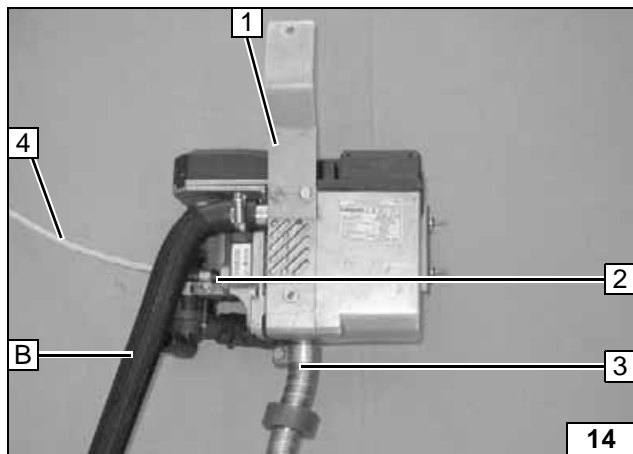
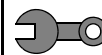


Bend wiring harness bracket slightly downward.

- 1 Bracket for wiring harness



**Mounting
rubber
isolator**



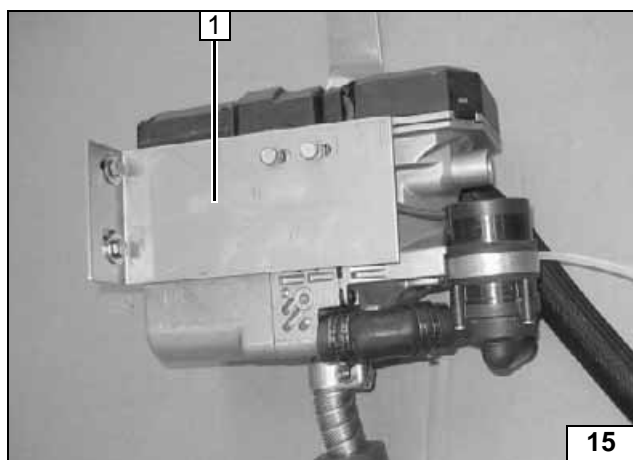
Preassembling heater unit

Tighten EJOT screws to 10 Nm!

- 1 Strut, Eject screw [2x]
- 2 Hose section, 10 mm dia. hose clamps [2x].
- 4 Mecanyl fuel line
- 3 Exhaust pipe, 480 mm, red (rt) rubber isolator, hose clamp



Premounting heater unit



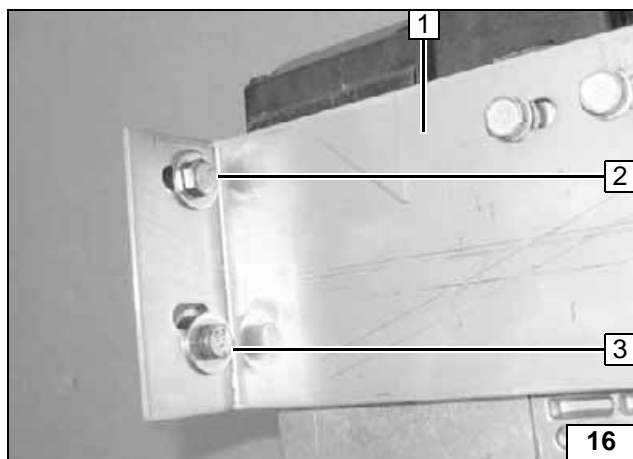
Tighten EJOT screws to 10 Nm!

Align bracket as shown.

- 1 Bracket, Eject screws [2x]



Premounting heater unit

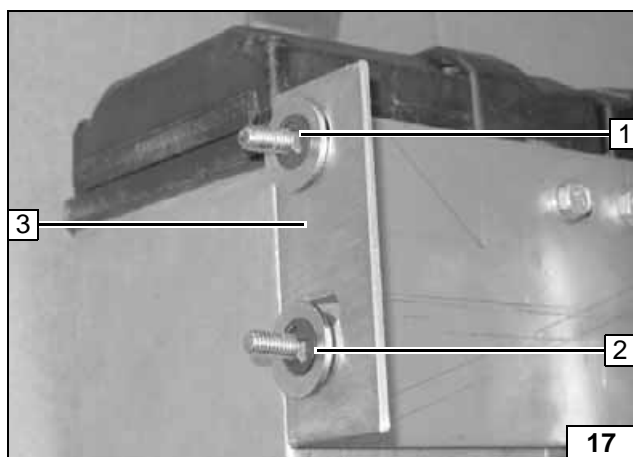


Align bolts as shown.

- 1 Bracket
- 2 M6x20 screw, spring lock washer, washer
- 3 M6x20 screw, spring lock washer, washer



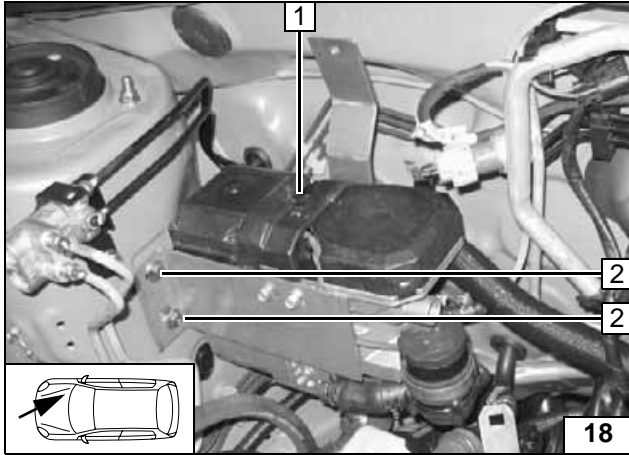
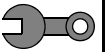
Premounting heater unit



Align bolts as shown.

- 3 Bracket
- 1 M6x20 bolt, large diameter washer, pin lock
- 2 M6x20 bolt, large diameter washer, pin lock

Premounting heater unit



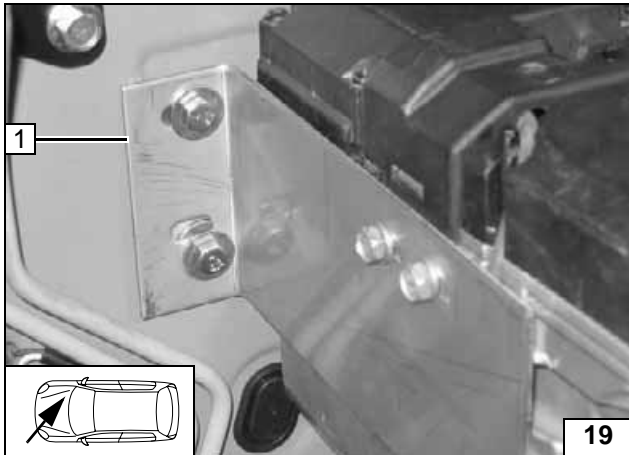
Installing heater unit

Premounted heater unit 1 as shown.

- 2 Premounted bolt on original vehicle threaded insert [2x]



Copying hole pattern

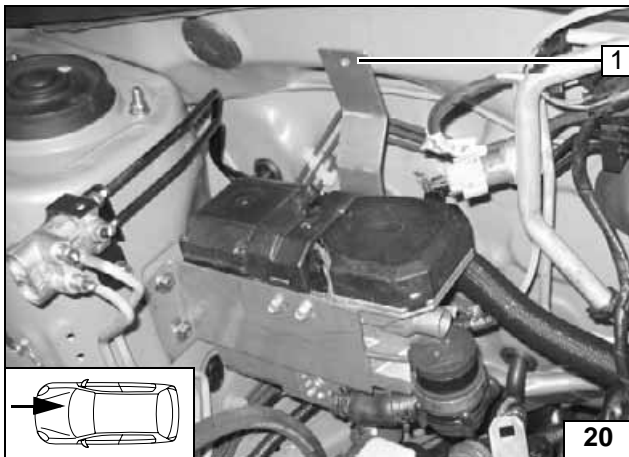


Align preassembled heater unit as shown.

- 1 Bracket



Copying hole pattern

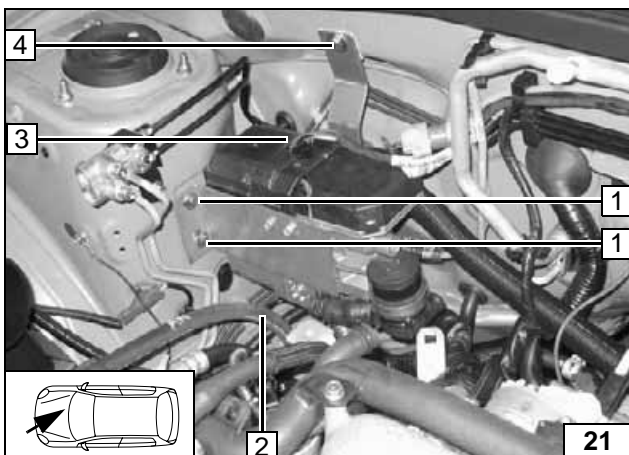


Align preassembled heater unit. Spray hole with anti-corrosion wax (see Final Work)

- 1 Copy hole pattern, 7 mm dia. drilled hole



Copying hole pattern



Connector 3 connected on heater unit. Check line routing and correct if necessary. Ensure sufficient spacing (at least 20 mm) between heater unit and steering line 2.

- 1 M6x20 bolt, spring lockwasher, washer [2x each] on original vehicle threaded insert
- 4 Strut, large diameter washer, M6x20 bolt, M6 flanged nut



Installing heater unit



Coolant connection

WARNING!

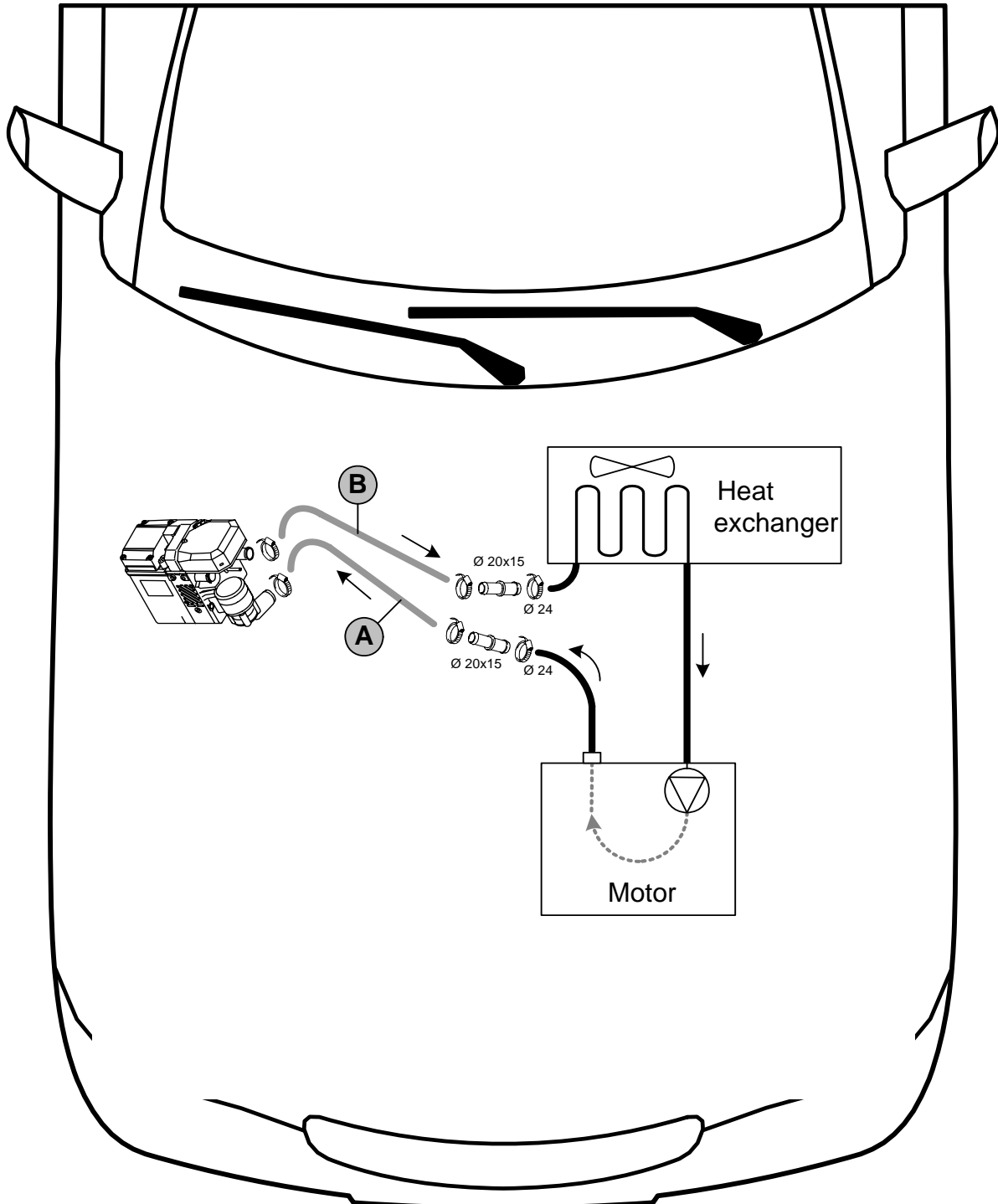
Tighten all hose clamps to 2.0 + 0.5 Nm.

Any cold water 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 hose clamps and spring band clamps so that no other hose can be damaged.

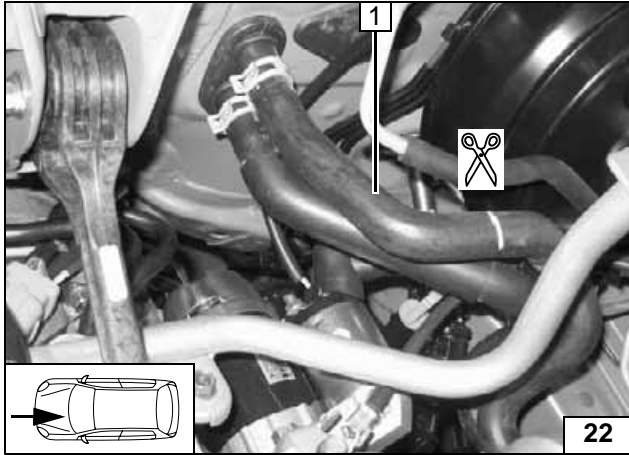
The connection should be "inline" based on the following diagram:



Coolant routing diagram

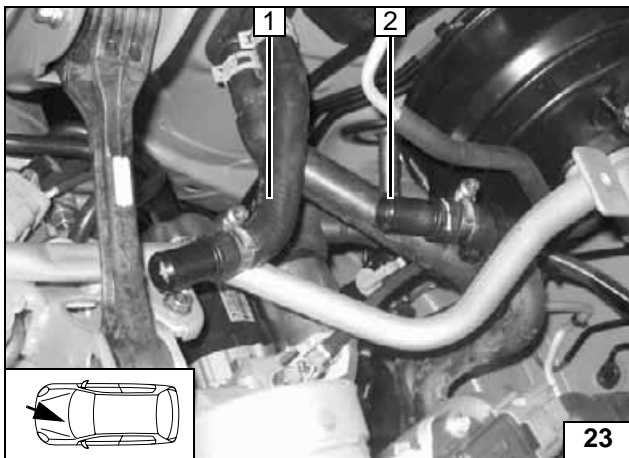
All clamps without a specific designation are 20-27 mm dia. hose clamps





1 Hose on heat exchanger inlet

Cutting point

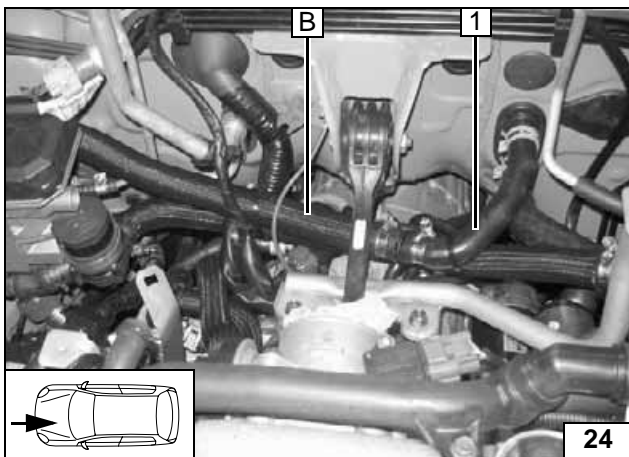


Turn hose section on heat exchanger inlet as shown.

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

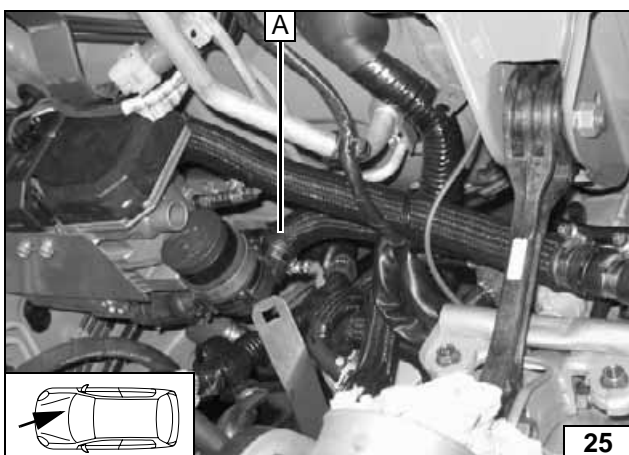


Routing in engine compartment

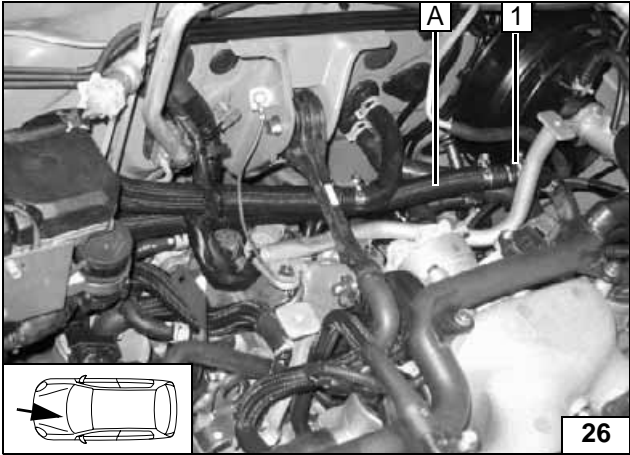


1 Hose section of heat exchanger inlet

Connection on heat exchanger inlet

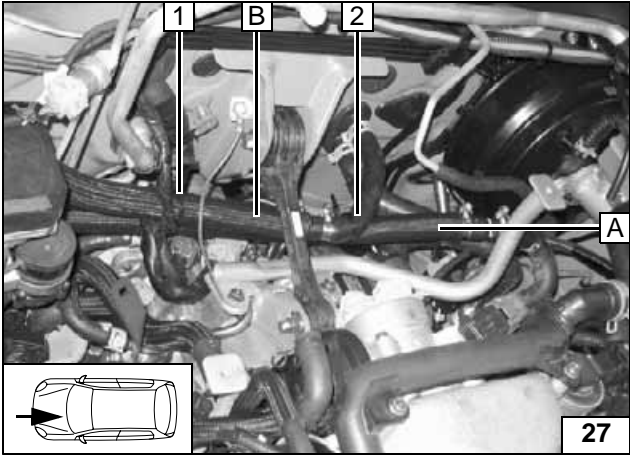


Connection on heater unit



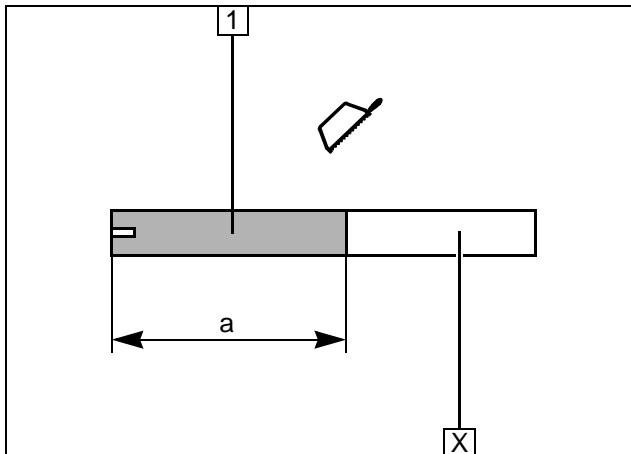
1 Engine-outlet hose section

Conne-
tion to en-
gine outlet



1 Cable tie
2 Cable tie

Routing in
engine
compart-
ment

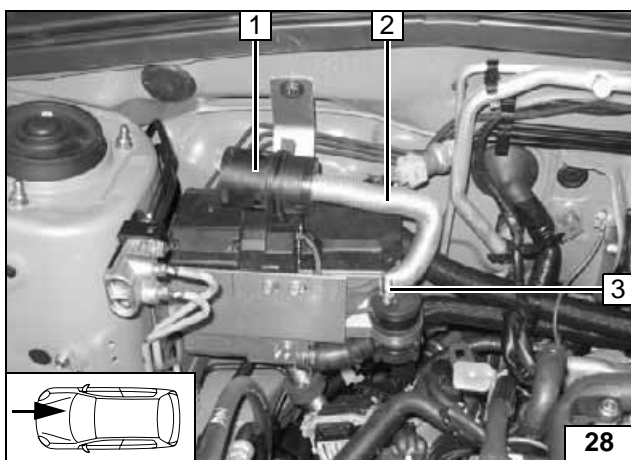


Combustion air

- 1 Combustion air pipe
a = 240 mm

Discard section X

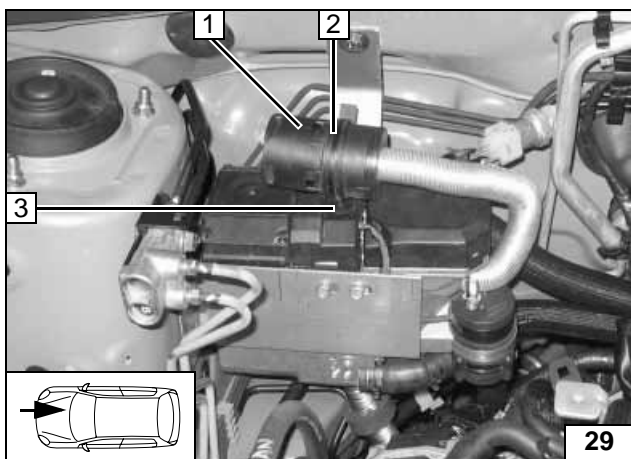
Cutting combustion air pipe to length



- 2 Combustion-air intake pipe
- 3 27 mm dia. hose clamp
- 1 Combustion-air intake muffler



Installing intake pipe



Punch through pre-punched hole in cover.

- 1 Combustion-air intake muffler
- 2 Retaining clip
- 3 Hole



Installing muffler



Fuel Connection

CAUTION!

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

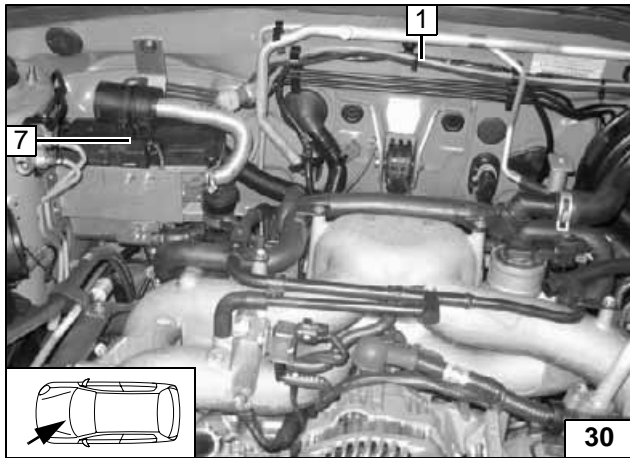
Catch any fuel running off with an appropriate container.

Install fuel line and metering-pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

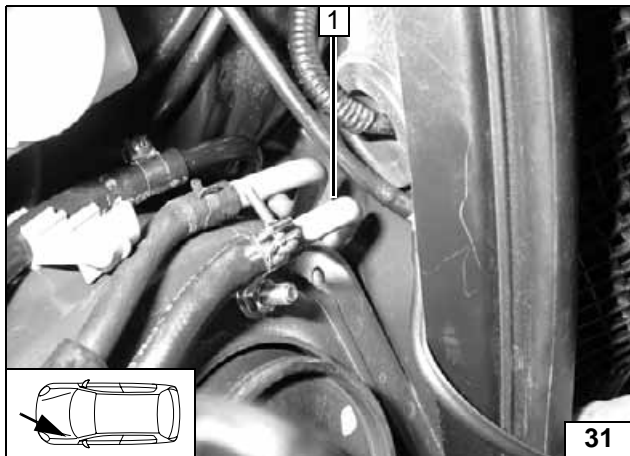
Mount the fuel line and wiring harness with rub protection on sharp edges.

WARNING!

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

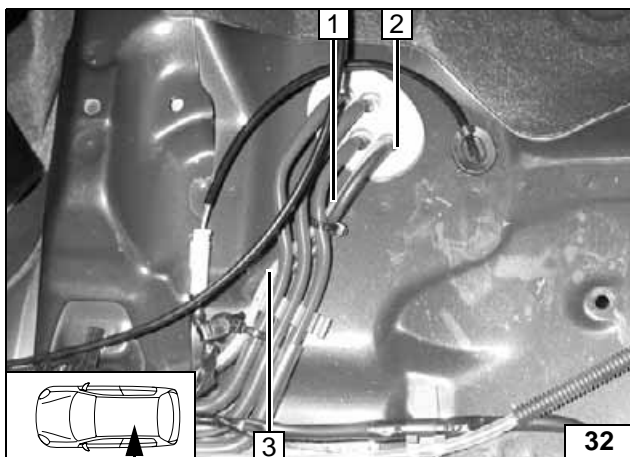


1 Mecanyl fuel line



Route Mecanyl fuel line together with wiring harness of metering pump with lubricant through original vehicle fuel pass through into passenger compartment, and downward along original vehicle lines into door sills.

1 Pass through



Route Mecanyl fuel line and metering pump wiring harness through original vehicle pass through with lubricant to outside.

- 1 Wiring harness of metering pump, Mecanyl fuel line, cable tie
- 3 Wiring harness of metering pump, Mecanyl fuel line, cable tie
- 2 Pass through

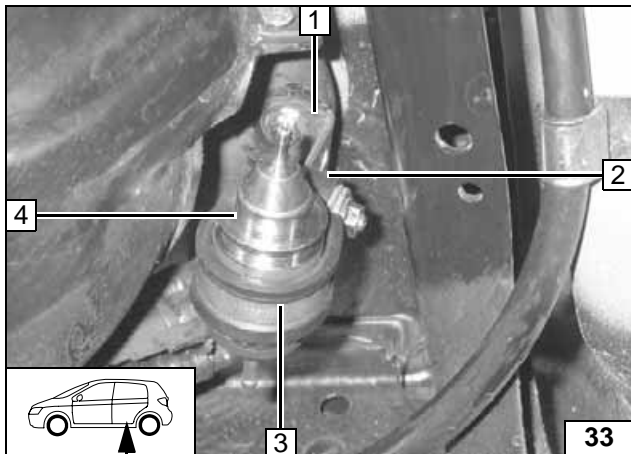
Installing lines



Installing lines



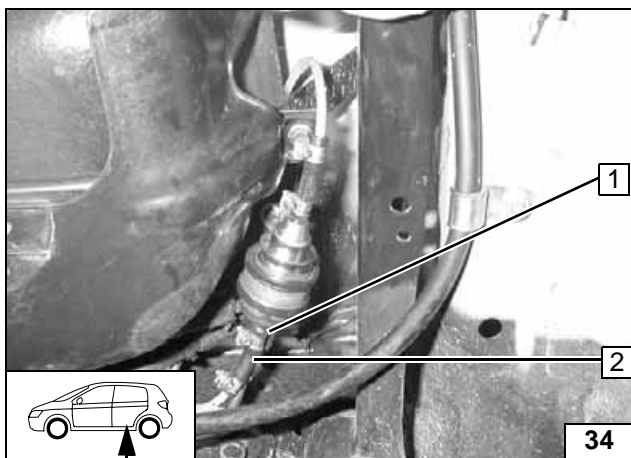
Installing lines



- 1 Angle bracket, M6x20 bolt, large diameter washer, flanged nut, existing hole
- 4 Metering pump
- 3 Rubber-coated pipe clamp
- 2 Silentblock



Installing metering pump

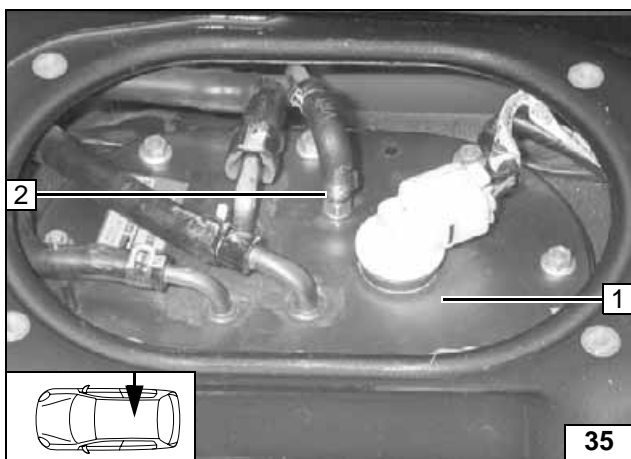


Fuel line from heater unit on pressure side of metering pump [side with connector].

- 1 Metering pump wiring harness
- 2 Fuel line, hose section, 10 mm dia. hose clamps [2x]



Connection to metering pump

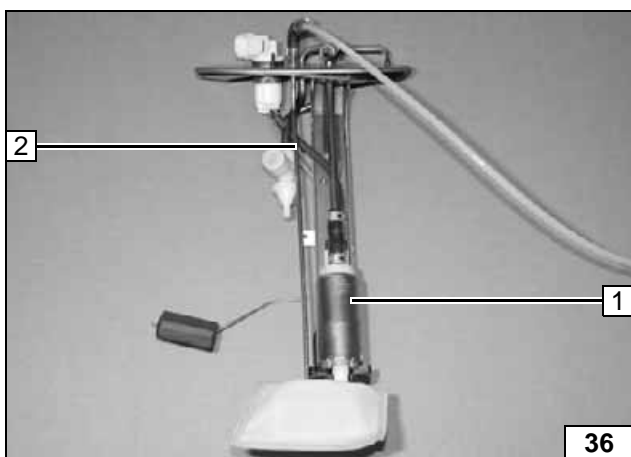


Watch chips when drilling and remove chips!

- 1 Right-hand fuel-tank sending unit
- 2 Copy hole pattern for 6.0 mm dia. hole



Removing fuel

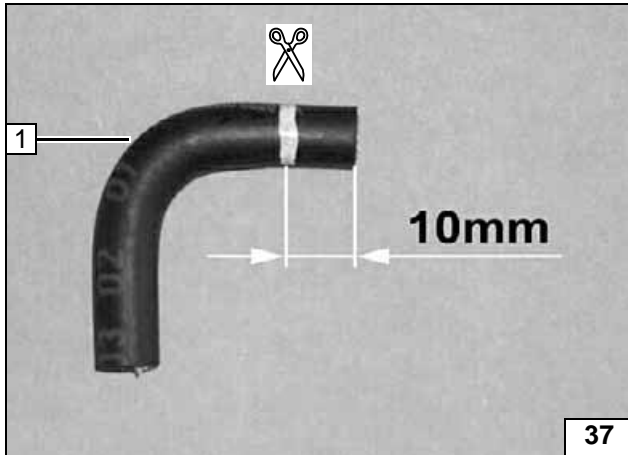


Shape fuel standpipe as shown and cut to length [5-7 mm above bottom of fuel tank]

- 1 Fuel sender
- 2 Fuel standpipe



Removing fuel

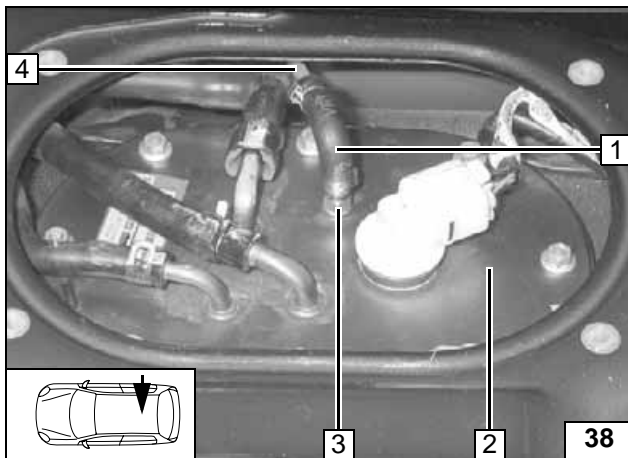


Shorten molded hose by 10 mm on side inside dia. 3.5 mm.

- 1 Molded hose



**Connect-
ing fuel
line**

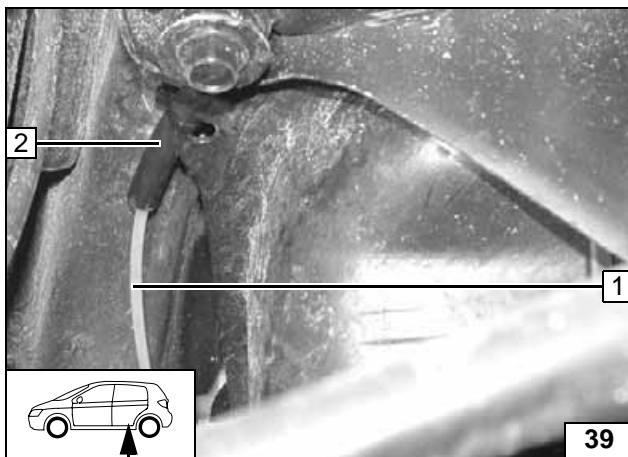


Connect fuel line and route to metering pump.

- 2 Fuel-tank sending unit
- 3 Fuel standpipe
- 4 Fuel line
- 1 Molded hose, 8 mm dia. Caillau clamp, 10 mm dia. Caillau clamp



**Connect-
ing fuel
line**

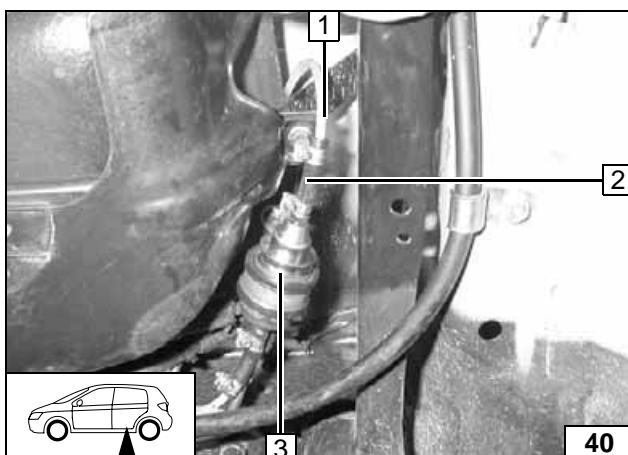


Use included fabric-reinforced hose as rub protection.

- 1 Mecanyl fuel line
- 2 Fabric-reinforced hose, cable tie



**Installing
fuel line**

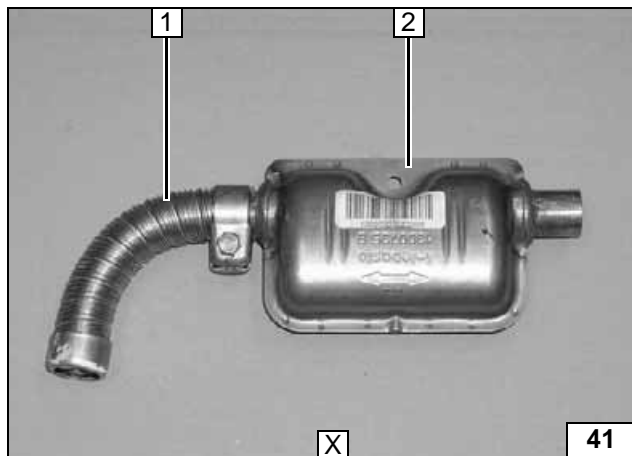
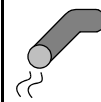


Fuel line from fuel standpipe on intake side of metering pump [side without connector]. Check the position of the components; adjust if necessary. Check that they have free clearance.

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



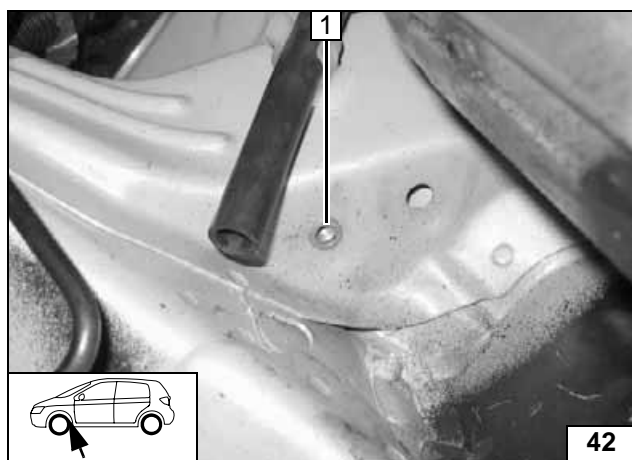
**Connec-
tion to me-
tering
pump**



Exhaust system with manual transmission

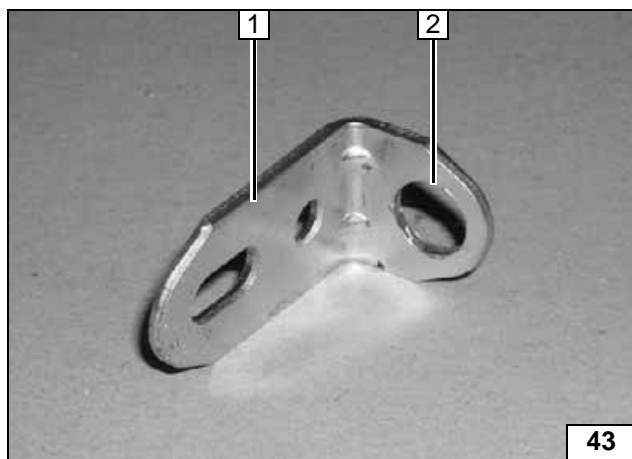
- 1 Exhaust end section, hose clamp
- 2 Exhaust muffler

Preassembling exhaust muffler



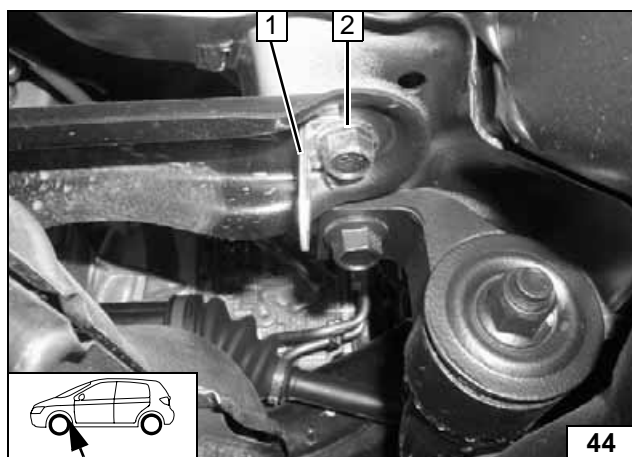
- 1 Rivet nut, original vehicle hole

Installing rivet nut



- 1 Angle bracket
- 2 Hole drilled out to 12 mm dia.

Drilling out angle bracket

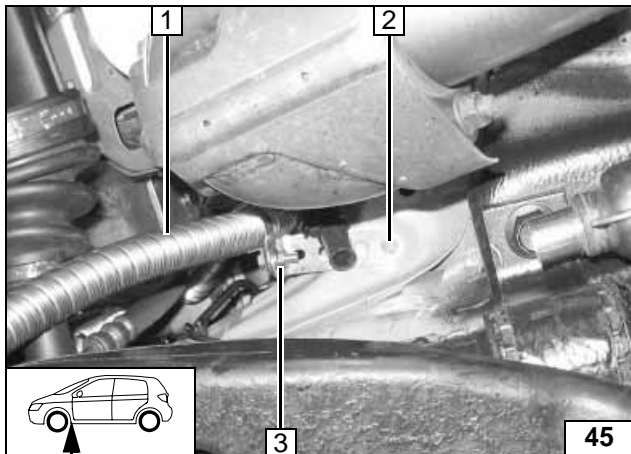
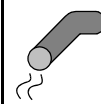


Fasten angle bracket with original vehicle bolt, tightening torque 140 Nm.

- 1 Angle bracket
- 2 Original M12 vehicle bolt

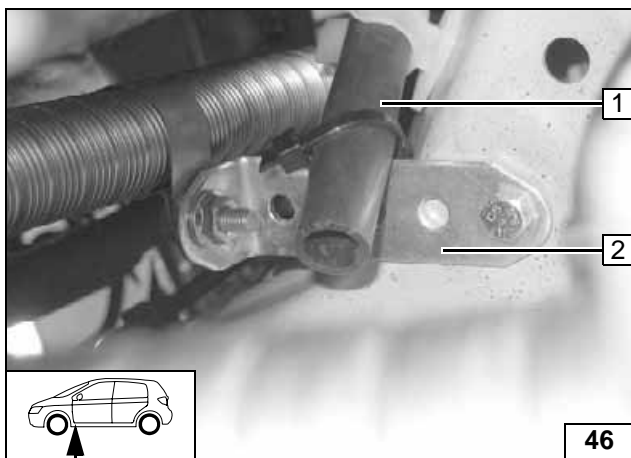
Installing angle bracket





- 1 Exhaust pipe
- 2 Perforated bracket, M6x20 bolt, spring lockwasher, M6 rivet nut
- 3 Pipe clamp, M6x20 bolt, M6 flanged nut

Routing exhaust pipe

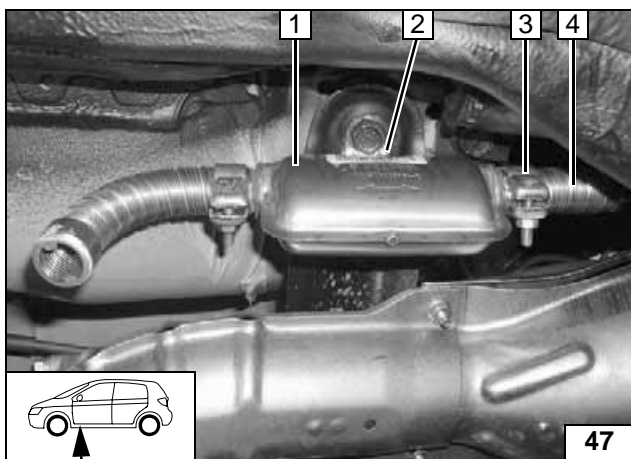


Secure original vehicle condensed-water drain hose on perforated bracket with cable tie.
Make sure that drain hose remains clear.

- 1 Drain hose, cable tie
- 2 Perforated bracket



Securing drain hose

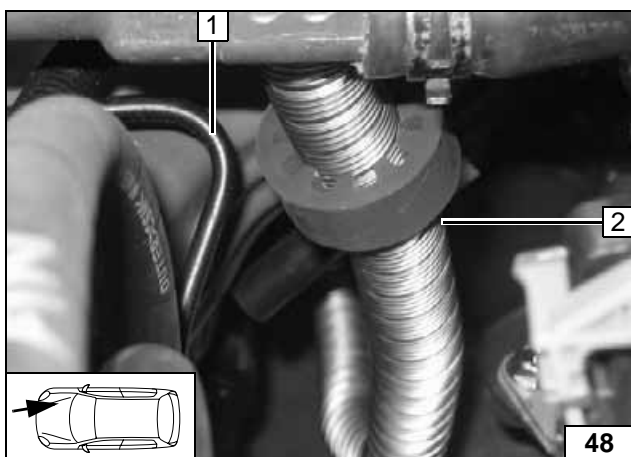


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Exhaust muffer, M6x20 bolt, large diameter washer, flanged nut
- 2 Angle bracket
- 3 Hose clamp
- 4 Exhaust pipe



Installing exhaust muffer

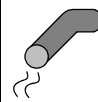


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Brake line
- 2 Red (rt) rubber isolator, exhaust pipe



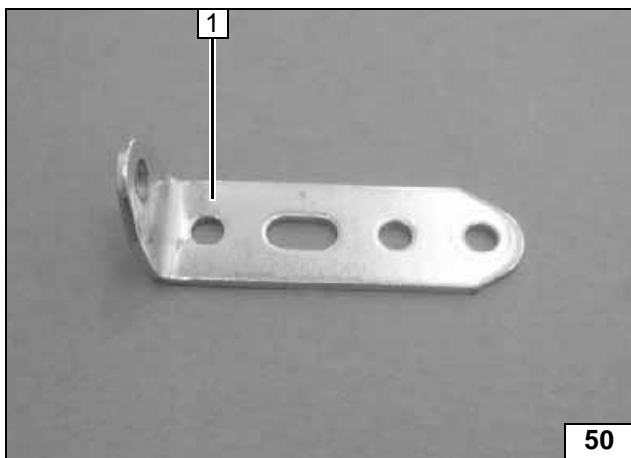
Aligning rubber isolator



Exhaust system with automatic transmission

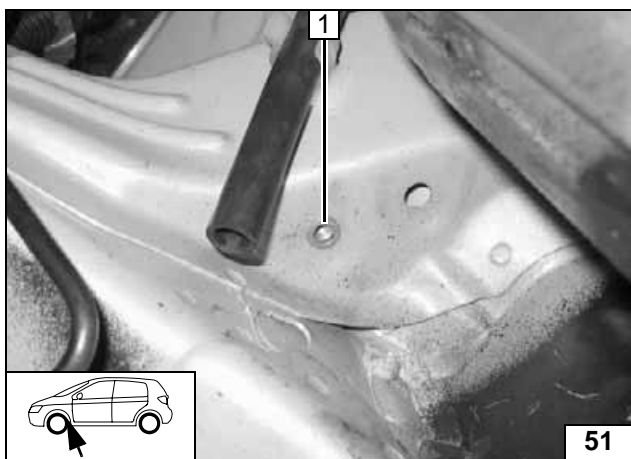
- 1 Angle bracket, large diameter washer, M6x20 bolt, M6 flanged nut
- 2 Exhaust muffler
- 3 Exhaust end section, hose clamp

Preassembling exhaust muffler



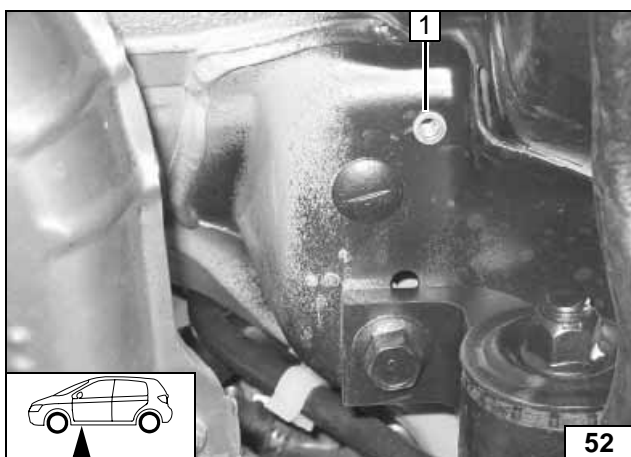
Bend perforated bracket as shown!

- 1 Perforated bracket



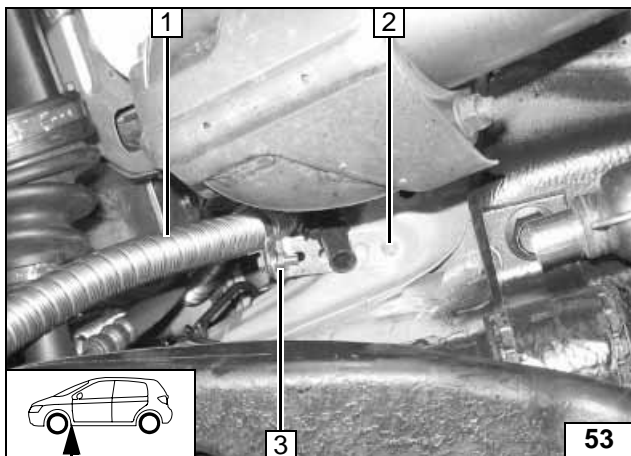
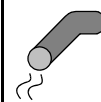
- 1 Rivet nut, original vehicle hole

Installing rivet nut



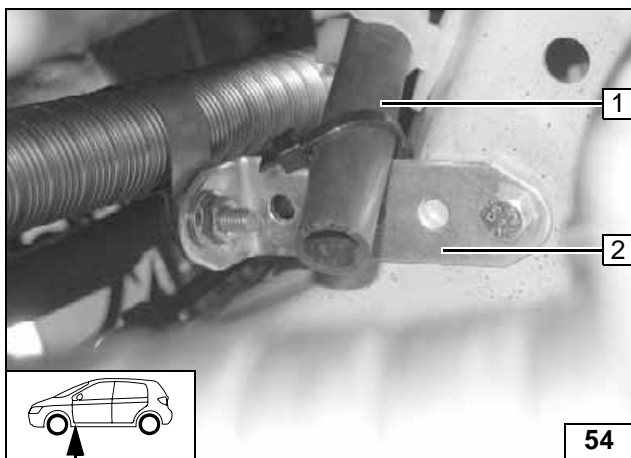
- 1 Rivet nut, original vehicle hole

Installing rivet nut



- 1 Exhaust pipe
- 2 Perforated bracket, M6x20 bolt, spring lockwasher, M6 rivet nut
- 3 Pipe clamp, M6x20 bolt, M6 flanged nut

Routing exhaust pipe

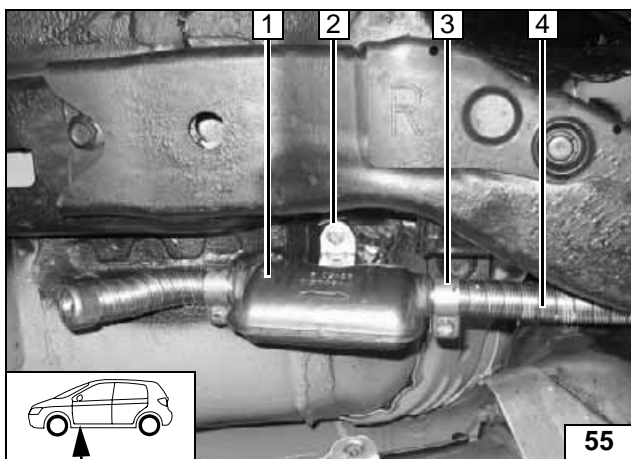


Secure original vehicle condensed-water drain hose on perforated bracket with cable tie.
Make sure that drain hose remains clear.

- 1 Drain hose, cable tie
- 2 Perforated bracket



Securing drain hose

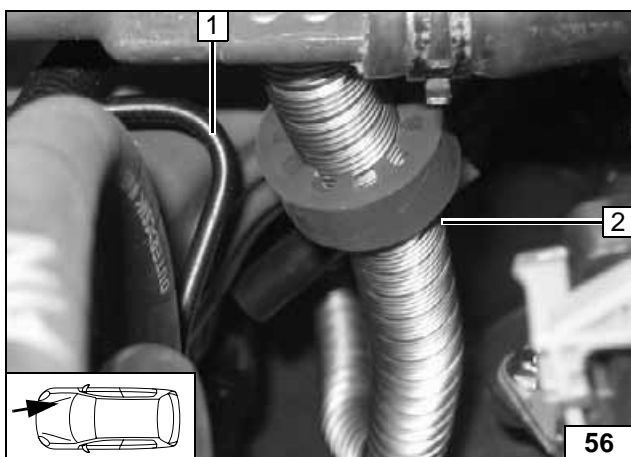


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Exhaust muffer
- 2 Angle bracket, M6x20 bolt, spring lock washer, rivet nut
- 3 Hose clamp
- 4 Exhaust pipe



Installing exhaust muffer

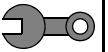


Check the position of the components; adjust if necessary. Check that they have free clearance.

- 1 Brake line
- 2 Red (rt) rubber isolator, exhaust pipe



Aligning rubber isolator



Final Work

WARNING!

Reassemble the disassembled components in reverse order.

Check all hoses, hose, spring and Caillau clamps, as well as all electrical connections for firm seating. Secure all loose cables using cable ties.

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

- Connect the battery
- Start the engine, bleed the coolant circuit according to the instructions of the vehicle manufacturer and add coolant
- Set the digital timer.
- Adjust vehicle heater in accordance with "Operating Instructions for End Customer"
- Check the proper operation of the additional heater, see the operating instructions/installation instructions.
- Attach the "Switch off additional heater before refueling" sticker to the left-hand B-pillar.



Webasto

Feel the drive

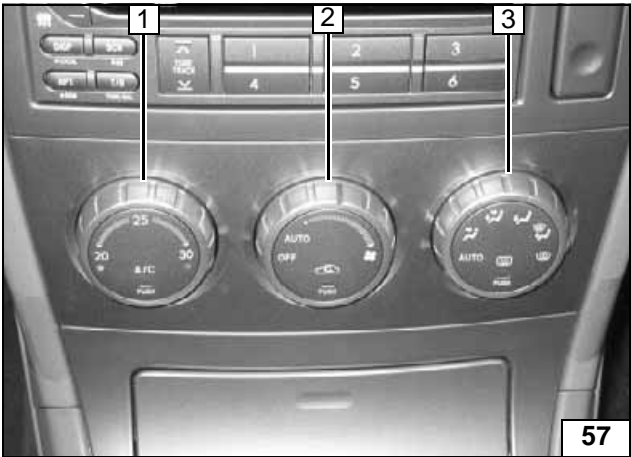
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(0)1805-932278
Hotfax +49-(0)395-5592-353 - <http://www.webasto.de>

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.



Before parking the vehicle, make the following settings:



- 1 Set temperature to 30°
- 2 Set fan to approx. 1/3 fan output
- 3 Direct air outlet toward windshield

For vehicles with automatic air conditioning