Water Heater

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

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

Installation documentation

Nissan Cube

1.6 Petrol
from Model Year 2010
Left-hand drive vehicle
Automatic air-conditioning
Manual and automatic transmission

WARNING!

Hazard warning:

Incorrect installation or repair of Webasto heating systems may cause a fire or result in the emission of carbon monoxide, which can be fatal. Serious or fatal injuries can be caused as a result.

Specialist company training, technical documentation, specialised tools and equipment are required to install and repair Webasto heating and cooling systems.
Only original Webasto parts must be used. For this, also see the catalog of air and water heater accessories from Webasto.

NEVER attempt to install or repair Webasto heating or cooling systems if you have not successfully completed the company training and thereby acquired the required technical skills, or if you do not have access to the required technical documentation, tools and equipment needed to carry out correct installation and repairs.

ALWAYS follow all Webasto installation and repair instructions and observe all warnings.

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

Webasto does not accept any liability for defects and damage that are attributable to installation by untrained staff.

Ident. No.: 1315640C_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Nissan	Cube	Z12	e13 * 2007 / 46 * 1059 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
HR16	Petrol	81	1598

Vehicle and engine types, equipment variants and national specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

The installation location of the digital timer is to be coordinated with the end customer before the installation.

Heater/Installation Kit

Quantity	Description	Order No.:
1	Delivery scope of *Thermo Top E / C*	See Nissan Price list
1	Installation kit for Nissan Cube 2010 1.6 Petrol	1315639B
1	Heater control	See Nissan Price list

Heater recommended for the respective vehicle class:

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

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

Foreword

This installation documentation applies to automatic Nissan Cube 1.6 Petrol vehicles - for validity, see page 2 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

However, the stipulations in this "installation documentation", the "operating instructions and "Installation instructions" for the *Thermo Top E / C* should be observed under all circumstances.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with rub protection (cut-open plastic hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).
When installing an IPCU, check or adjust the corresponding settings before installation.

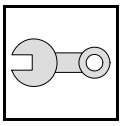
Special Tools

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

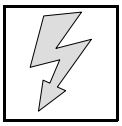
Explanatory Notes on Document

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

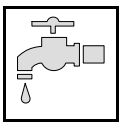
Mechanical system



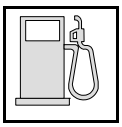
Electrical system



Coolant circuit

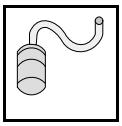


Fuel



Exhaust gas

Combustion air



Software

Special features are highlighted using the following symbols:

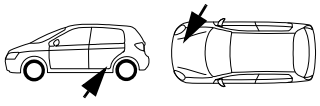
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

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

Reference to a special technical feature.



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

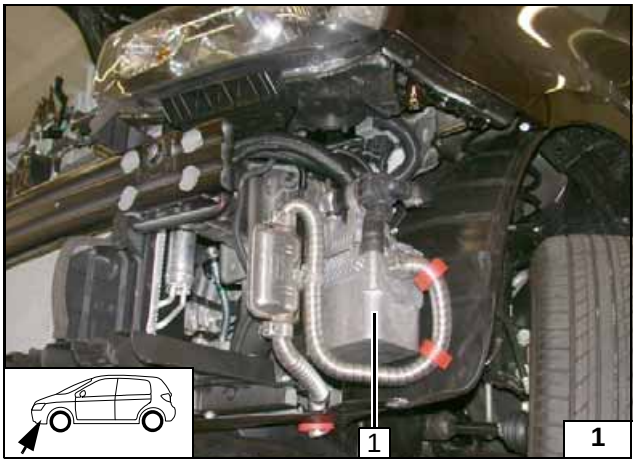
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open fuel tank cap, ventilate tank.
- Close the fuel tank cap again.
- Disconnect 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 battery completely.
- Remove the entire air filter box together with the intake hose.
- Remove the control unit with the bracket
- Detach and remove the right and left-hand wheel well trim
- Remove bumper trim
- Remove the rear bench seat.
- Open the right-hand tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the lower instrument panel trim on the driver's side
- Remove footwell trim on driver's side

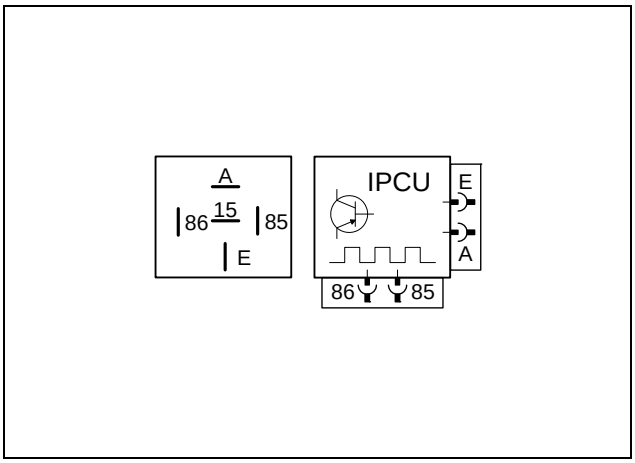
Remove page 26 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location

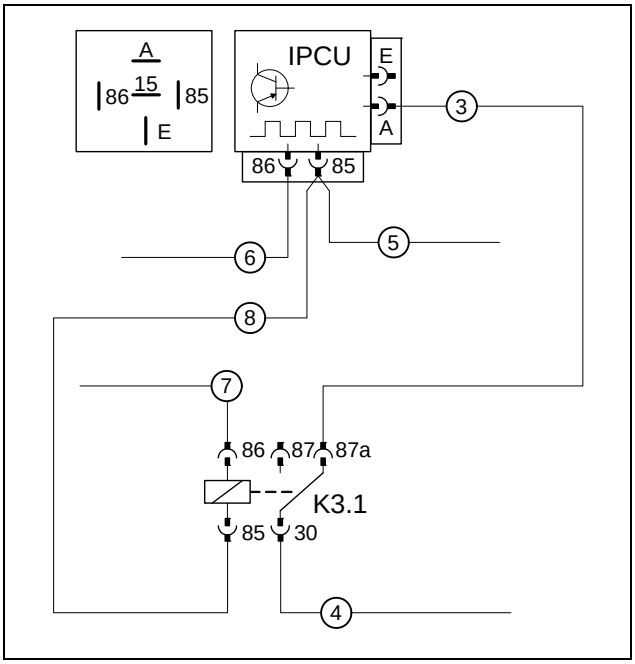


Preparing electrical system

The wire sections retain their numbering in the entire document.

IPCU view on contact side.
The pre-programmed settings are to be checked on the vehicle during function control and adjusted if necessary.

Premounting IPCU



Connect wires to IPCU socket and K3.1 relay socket. Interlock IPCU socket and K3.1 relay socket. IPCU and K3.1 relay will be mounted only after installation. Install wire section ④ in provided protective sleeving.

③ Red (rt) wire 0.5² 100mm long.
④ Black (sw) wire 0.5² 1000mm long.
⑤ Brown (br) wire 0.5² 300mm long.
⑥ Green/white (gn/ws) wire 0.75² 300mm long
⑦ Red (rt) wire 0.5² 300mm long.
⑤ Brown (br) wire 0.5² 100mm long.

Premounting IPCU and K3.1 relay

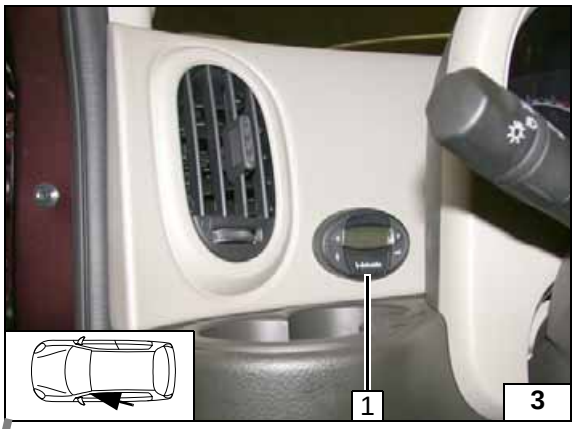
Electrical system

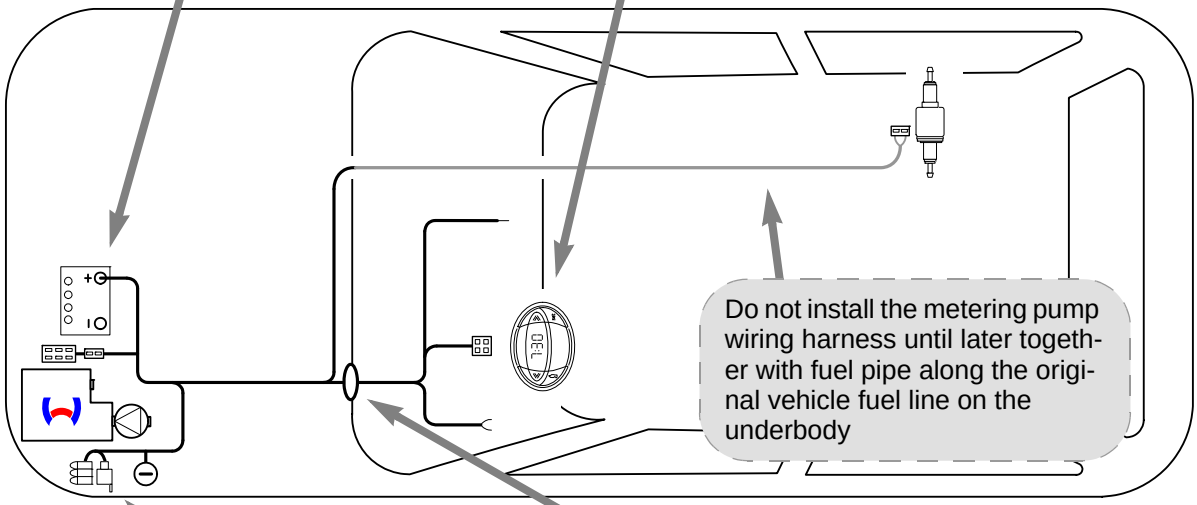
Positive wire

1 Positive wire to positive battery terminal

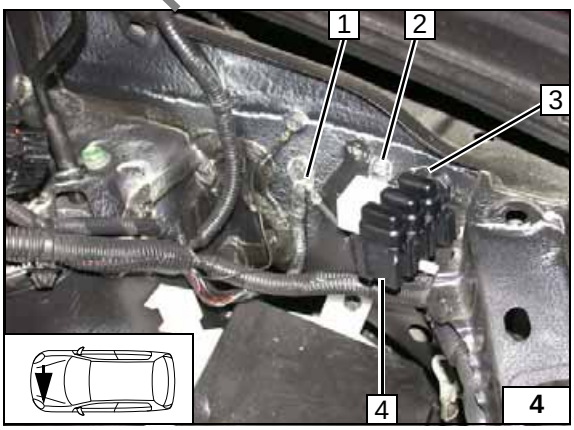
Digital timer

1 Digital timer





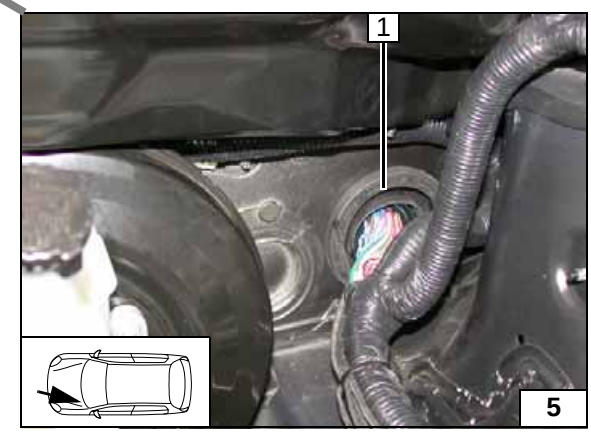
Wiring harness routing installation diagram



Fuse holder, K3 relay

Earth wire and original vehicle earth support point **1** in original vehicle threaded hole.

2 4.5 mm dia. hole; 5.5x13 self-tapping screw; K3 relay
3 4.5 mm dia. hole; 5.5x13 self-tapping screw; retaining plate of fuse holder
4 F1-3 fuses mounted

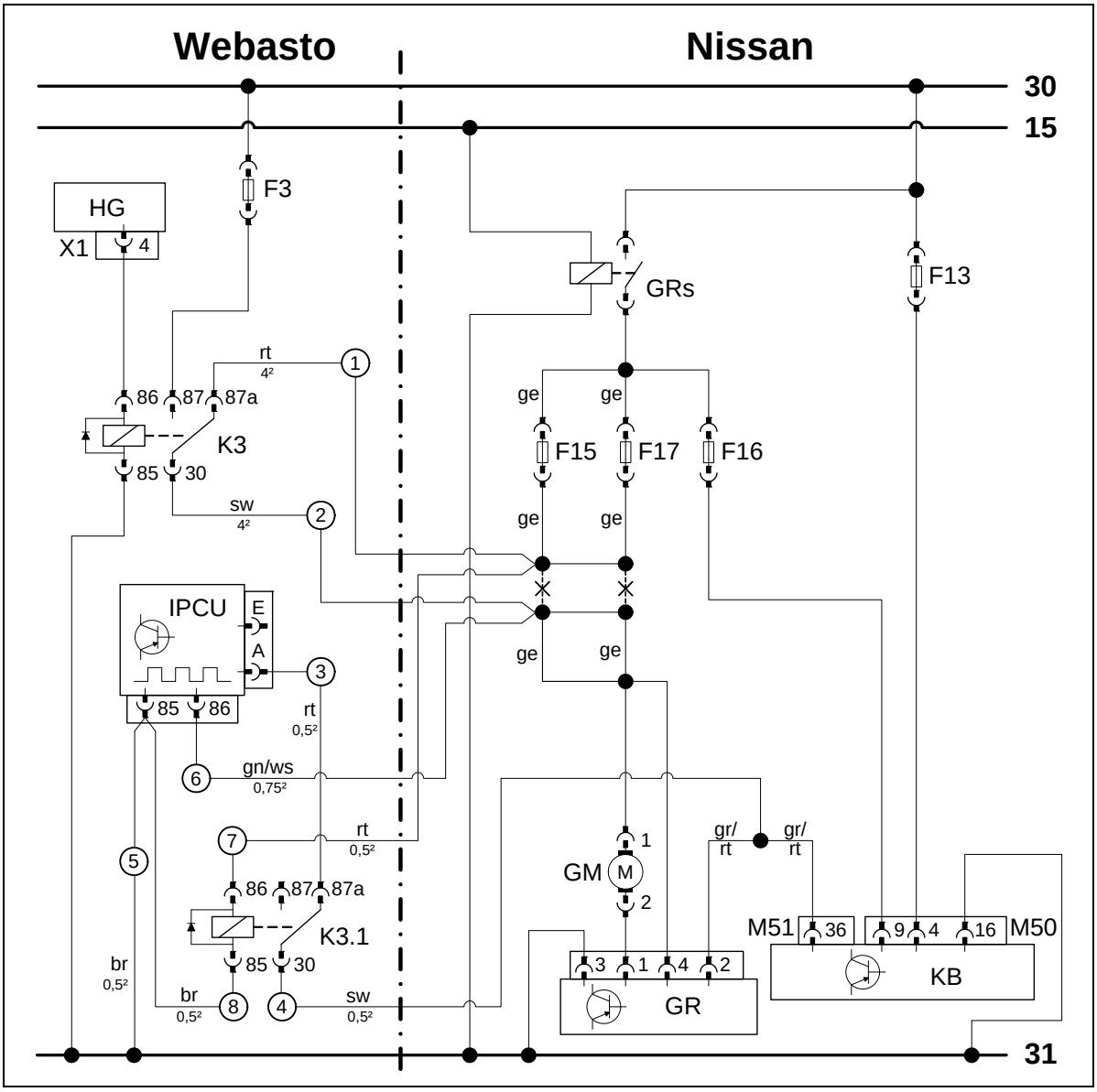


Wiring harness pass through

1 Protective rubber plug

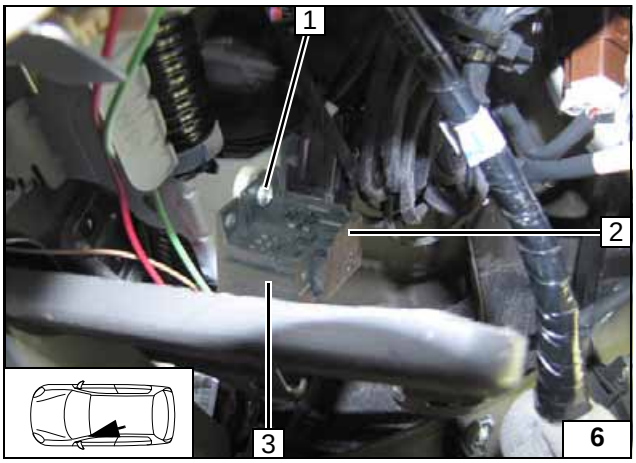
Fan control

Wiring diagram



Legend

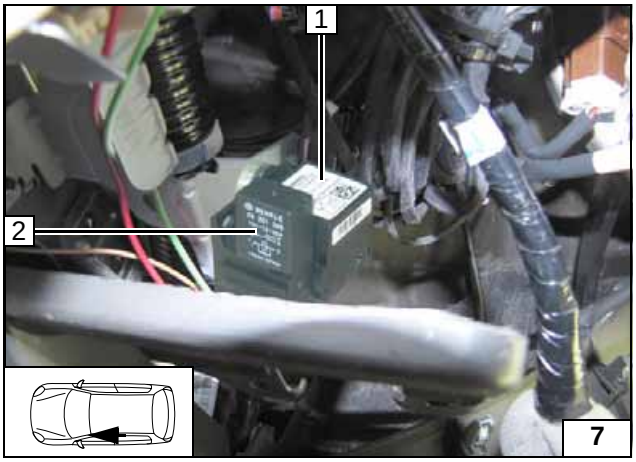
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	M39 fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay	ws	white
F3	25 A fuse	GR	M82 fan controller	sw	black
K3	Fan relay	KB	A/C control panel	ge	yellow
IK3.1	Additional relay	M50	20-pin connector KB	gn	green
IPCU	Pulse-width modulator	M51	16-pin connector KB	br	brown
		F13	10A fuse	gr	gray
IPCU adjustment values:		F15	15A fuse		
Duty cycle:	65%	F16	10A fuse		
Frequency:	2000 Hz	F17	15A fuse		
Voltage:	10V			**X**	Cutting point
Function:	low-side			Wiring colours may vary.	



3.5mm dia. hole at position **1**. Pay attention to the components at the rear when drilling.

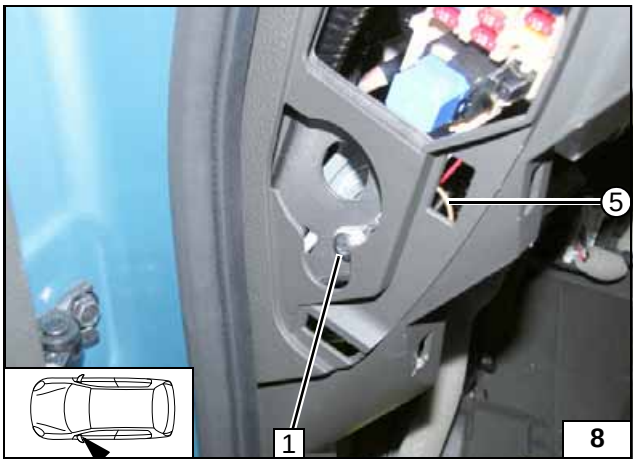
1 5.5x9.5mm self-tapping screw; 5mm shim
2 IPCU socket
3 Socket of K3.1 relay

Installing socket of IPCU and K3.1



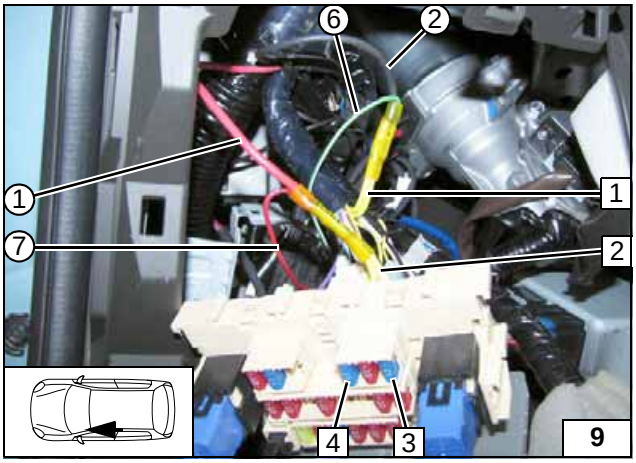
1 IPCU
2 K3.1 relay

Mounting IPCU and K3.1 relay



1 Original vehicle self-tapping screw
⑤Brown (br) wire 0.5² IPCU/85.

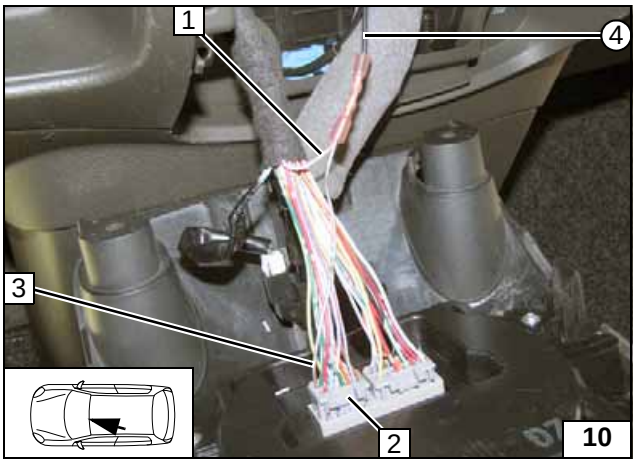
Connecting earth wire



Exposing the fuse and relay carrier. Produce connections as shown in wiring diagram.

1 Yellow (ge) wire [2x] GM Pin 1 and GR Pin 4
2 Yellow (ge) wire [2x] for fuse F15 and F17
3 Fuse F17
4 Fuse F15
①Red (rt) wire from K3/87a
②Black (sw) wire from K3/30
⑥Green/white (gn/ws) wire from IPCU/86
⑦Red (rt) wire from K3.1/86

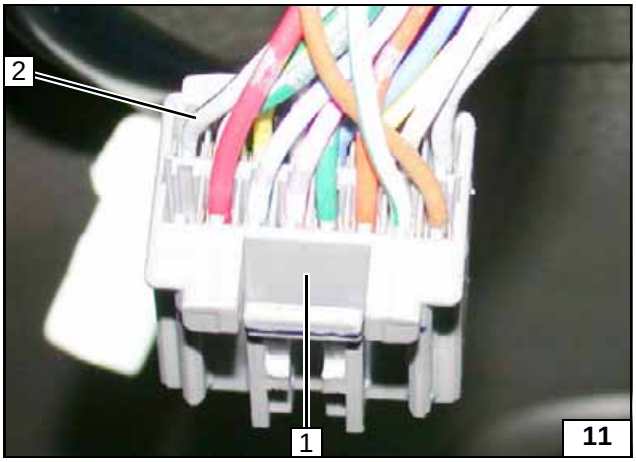
Connecting fan relay



Connection to 16-pin connector M51 **2** from A/C control panel. Produce connections as shown in wiring diagram.

1 Gray/red (gr/rt) wire from fan controller, Pin 2
3 Gray/red (gr/rt) wire of 16-pin connector M51, Pin 36
④ Black (sw) wire from K3.1/30

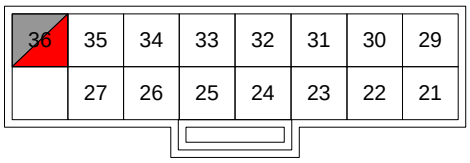
Connecting A/C control panel



1 16-pin connector M51
2 Gray/red (gr/rt) wire, Pin 36

Connector M51

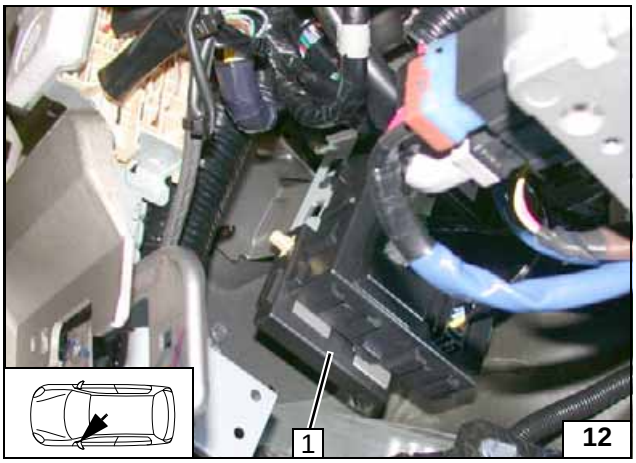
Wire-side view



Remote option (Telestart)

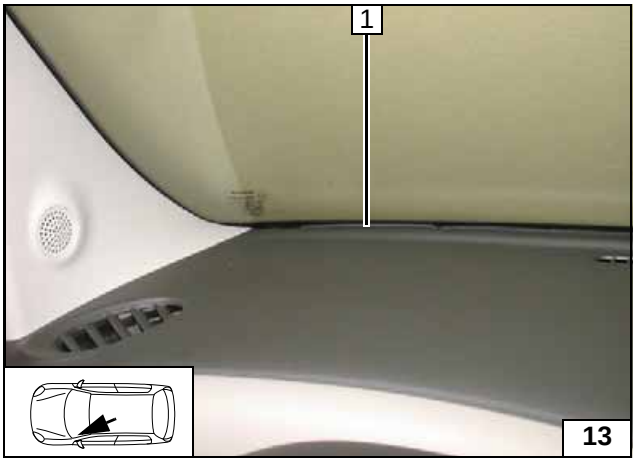
Installing receiver

Fasten receiver **1** with adhesive tape.



1 Antenna

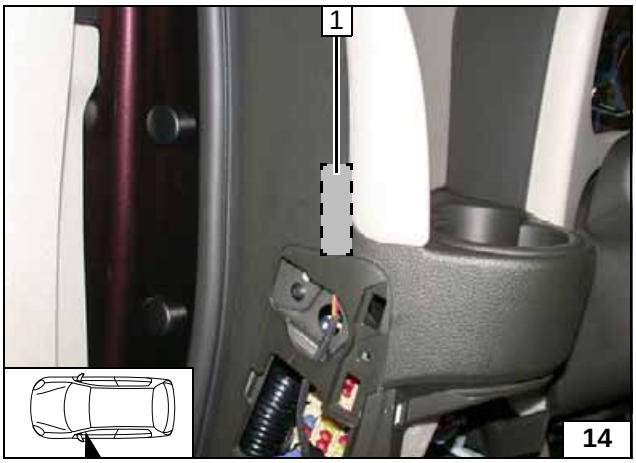
Installing antenna



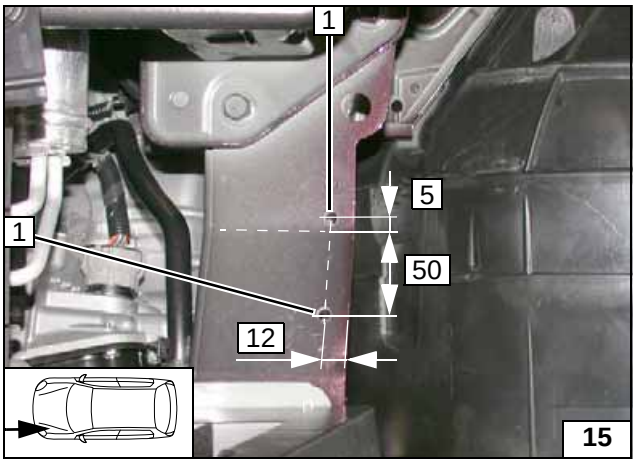
Temperature sensor T100 HTM

Installing temperature sensor

Fasten temperature sensor **1** with adhesive tape behind the instrument panel trim.

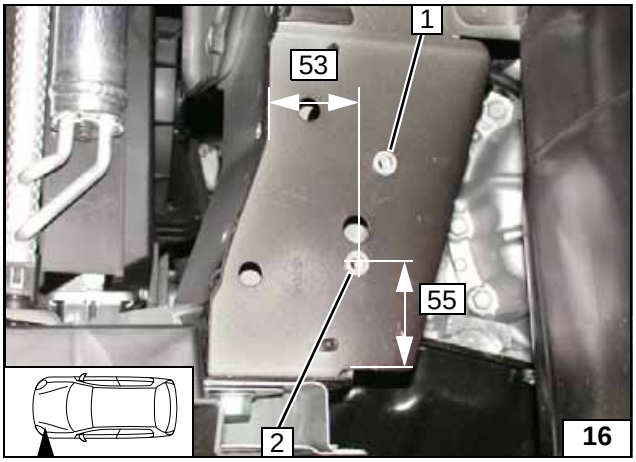


Preparing installation location



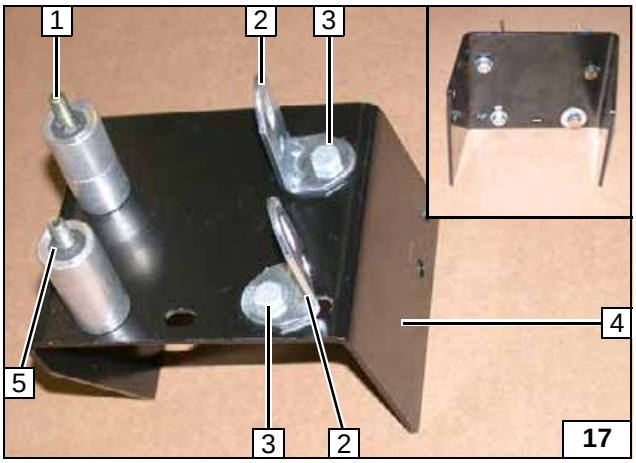
Drilling holes in cross member

1 Drill 7 mm dia. hole [2x]



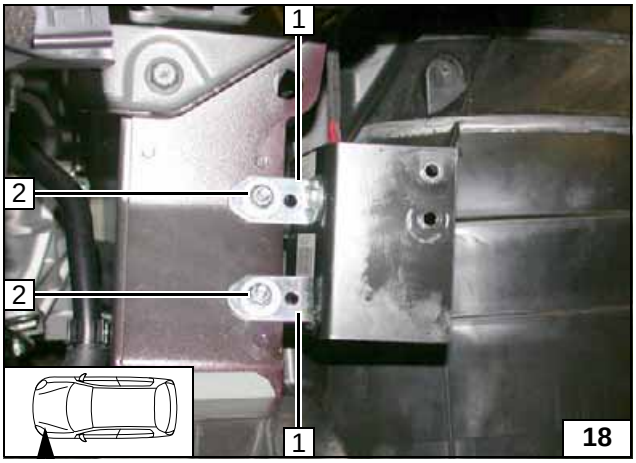
Installing rivet nut

1 Drill out hole to 9.1mm dia, rivet nut
2 9.1mm dia hole, rivet nut



Premounting bracket

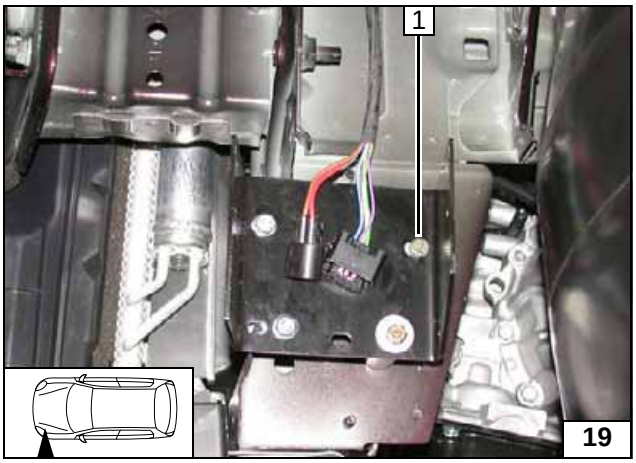
1 M6x60 bolt, spring lockwasher, 40 mm shim, pin lock
2 Mount angle bracket loosely [2x]
3 M6x20 bolt, flanged nut [2x each]
4 Bracket
5 M6x60 bolt, spring lockwasher, large diameter washer, 40 mm shim, pin lock



Loosely mounting the bracket

Align angle bracket **1** to cross member.

2 Mount M6x20 bolt, large diameter washer, flanged nut [2x each] loosely



Install the bracket at position **1** loosely. Align bracket vertically and tighten all loose screw joints.

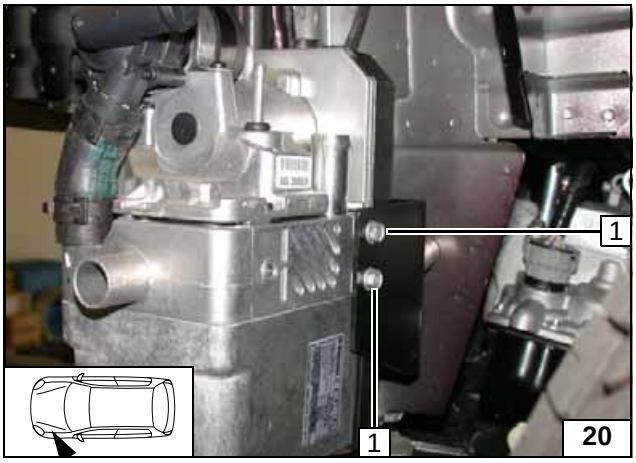
Installing bracket

Installing heater

Mount wiring harness of heater before installation.

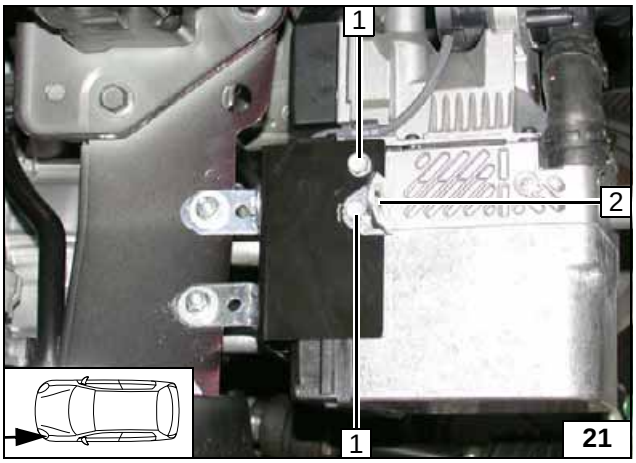
1 Ejot screw [2x]

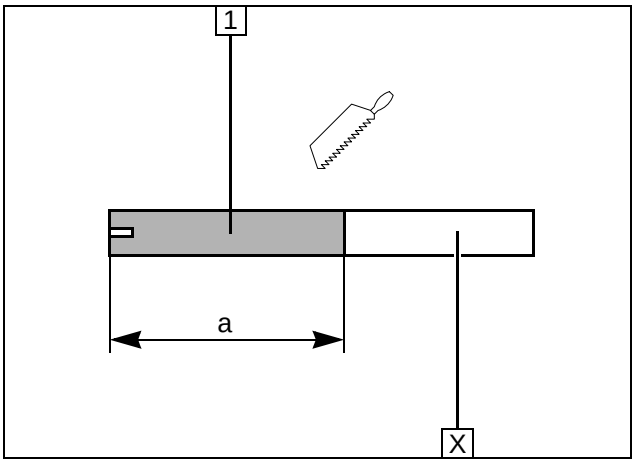
Installing heater



1 Ejot screw [2x]
2 Angle bracket

Installing heater



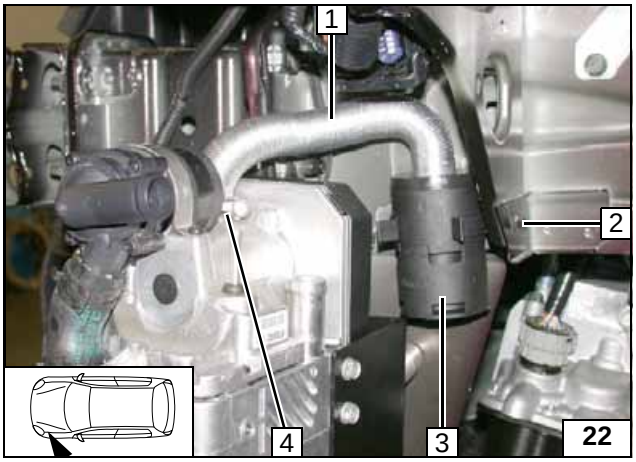


Combustion air

Discard section **X**

1 Combustion air pipe
a = 250

Cutting combustion air pipe to length



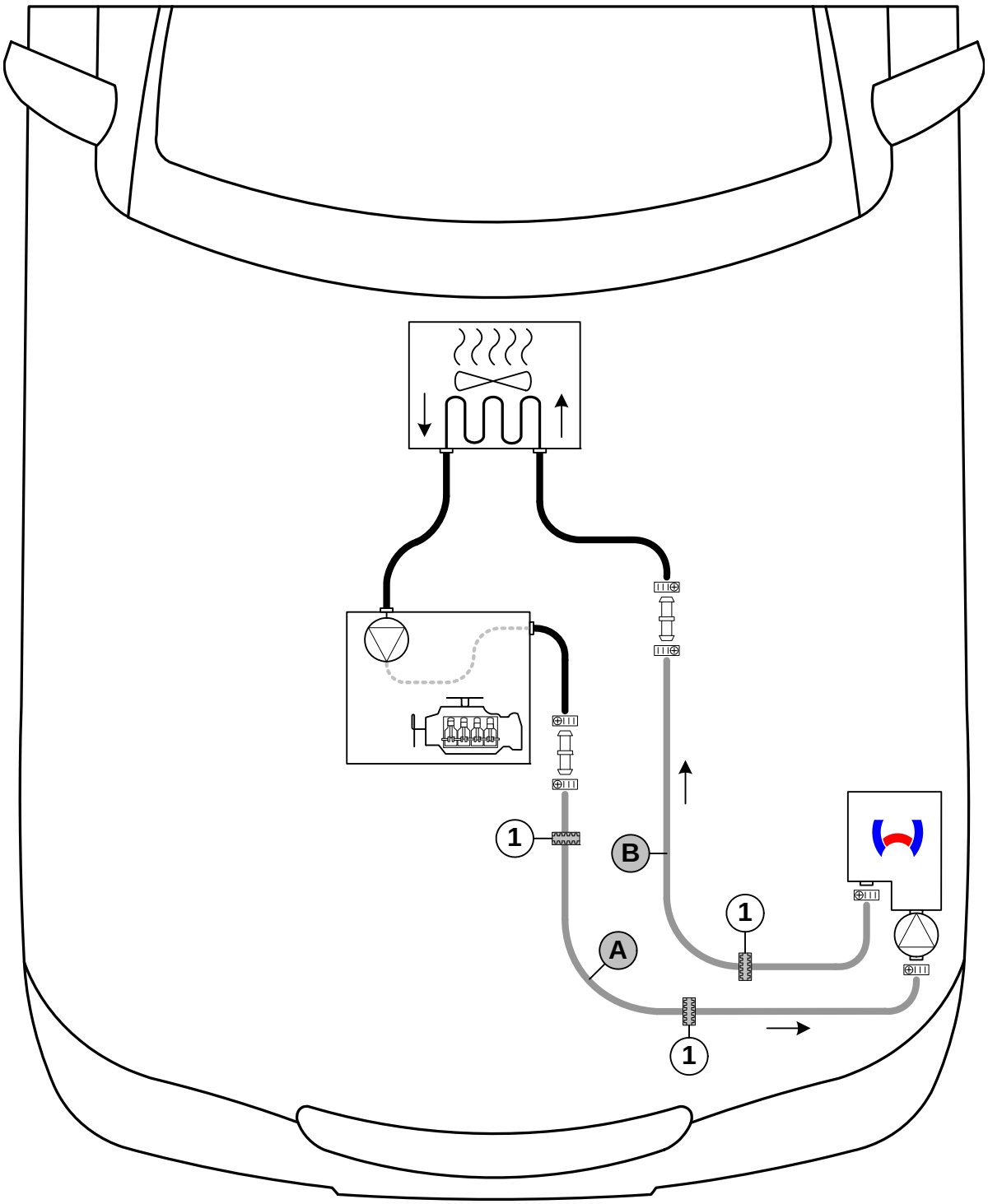
1 Combustion air pipe
2 Retaining clip, existing hole, pin lock
3 Silencer
4 27 mm dia. clamp

Installing silencer

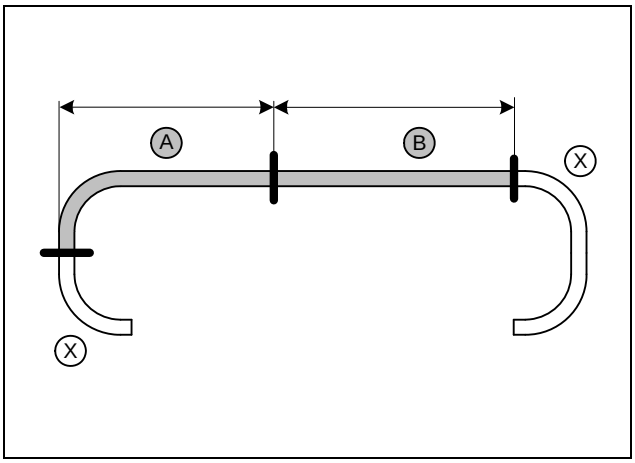
Coolant circuit

WARNING!
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the coolant hose.
The connection should be "inline" based on the following diagram:

Hose routing diagram



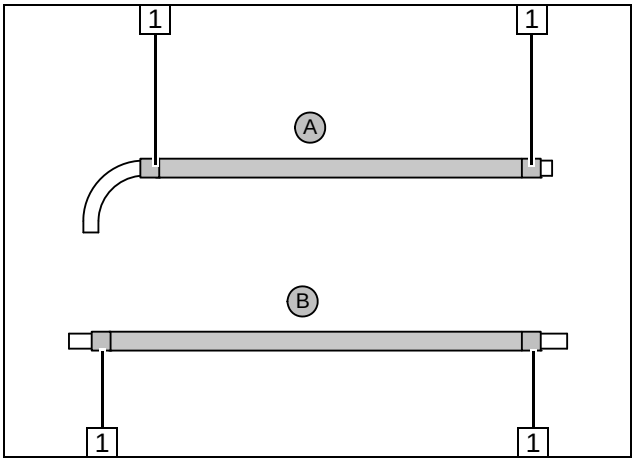
All hose clamps = 20-27 mm dia. **1** = Black (sw) rubber isolator
All connecting pipes and = 18x20 mm dia.



Discard section **X**

A = 820
B = 1150

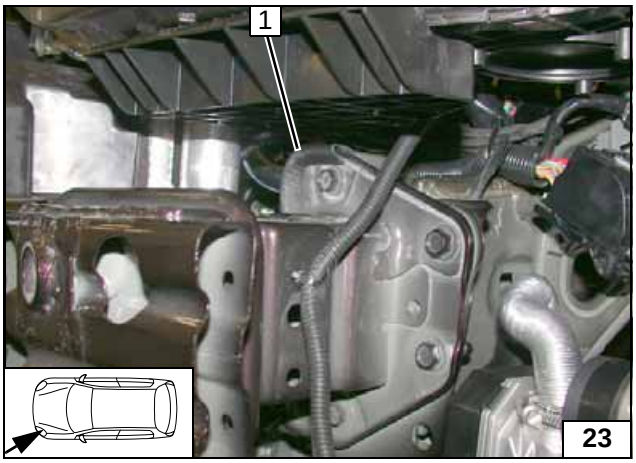
Cutting coolant hoses to length



Push braided protection hoses onto hose **A** and **B** and cut to length.

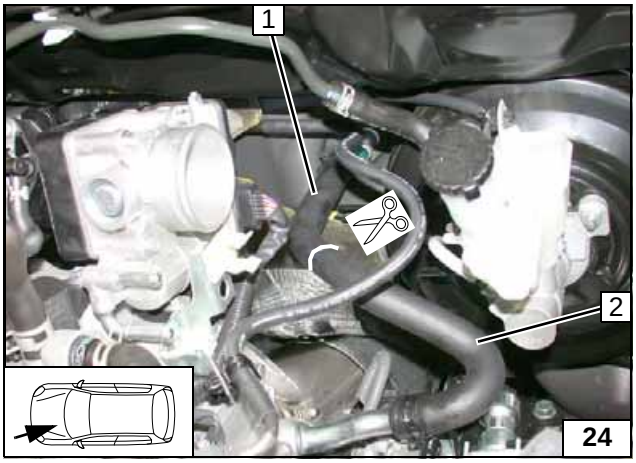
1 25 mm long heat shrink plastic tubing [4x]

Preparing coolant hoses



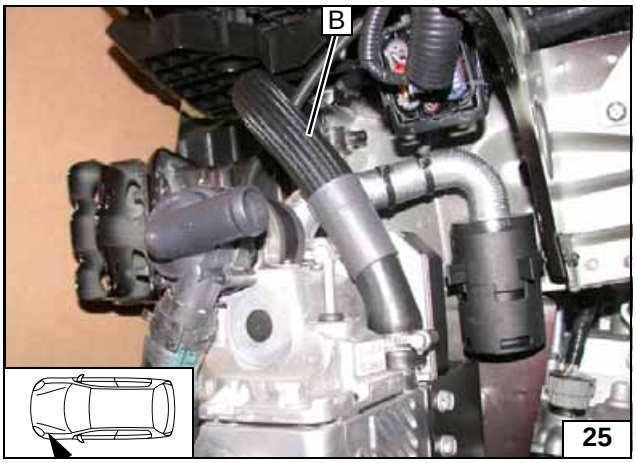
1 50mm edge protection

Installing edge protection

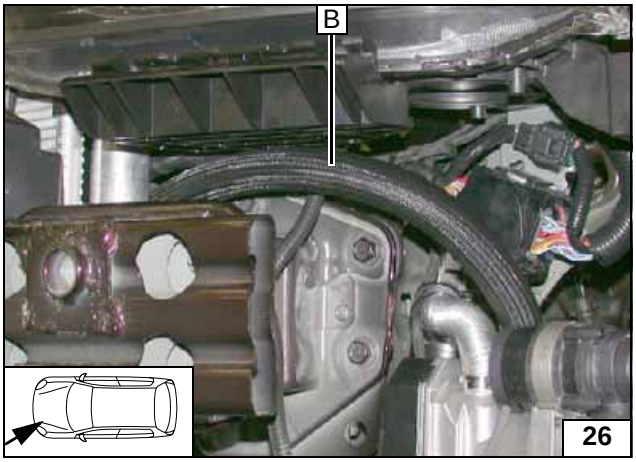


Heat exchanger outlet hose removed only for demonstration purposes.
Remove original vehicle spacer bracket, will be reused.
Turn hose section of heat exchanger inlet **1** on connection piece by approx. 90° downwards.
Turn hose section of engine outlet **2** on connection piece by approx. 180° forward.

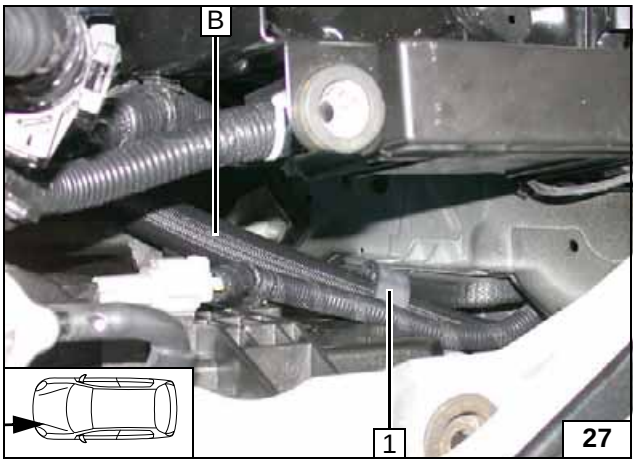
Cutting point



Connecting heater outlet

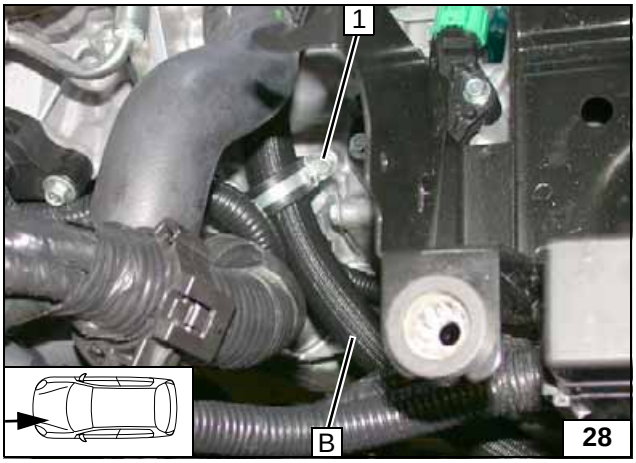


Routing in engine compartment



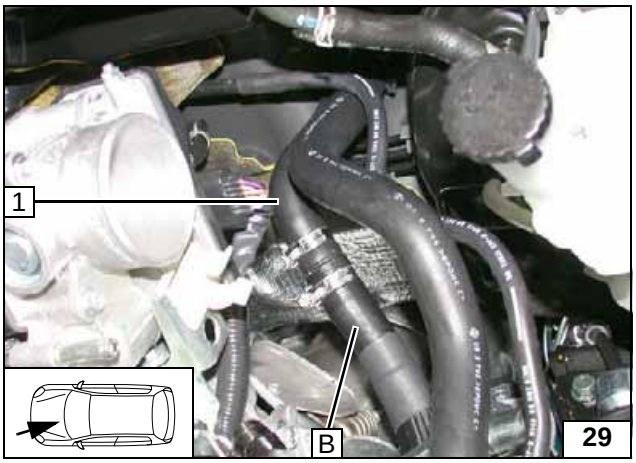
Slide black (sw) rubber isolator **1** onto hose **B** and align to radiator housing.

Routing in engine compartment



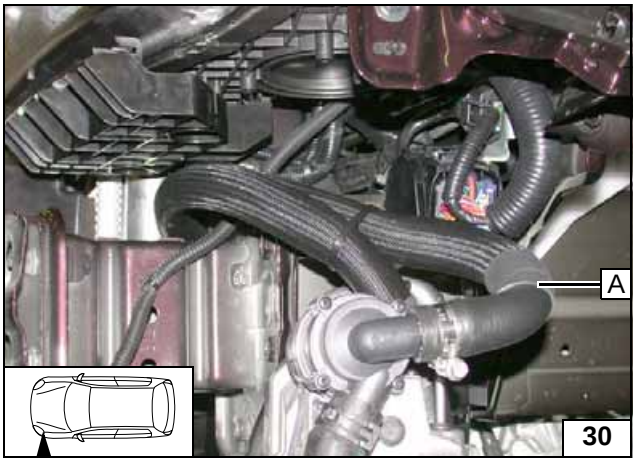
1 M6x16 bolt, 29mm dia.rubber-coated pipe clamp, existing threaded hole

Routing in engine compartment

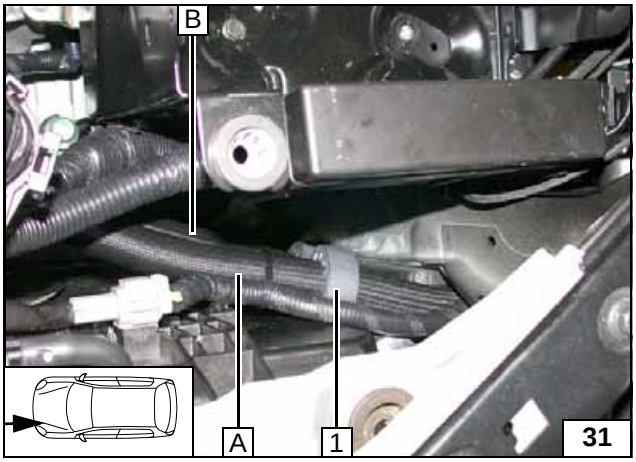


1 Hose to heat exchanger inlet turned

Connecting heat exchanger inlet

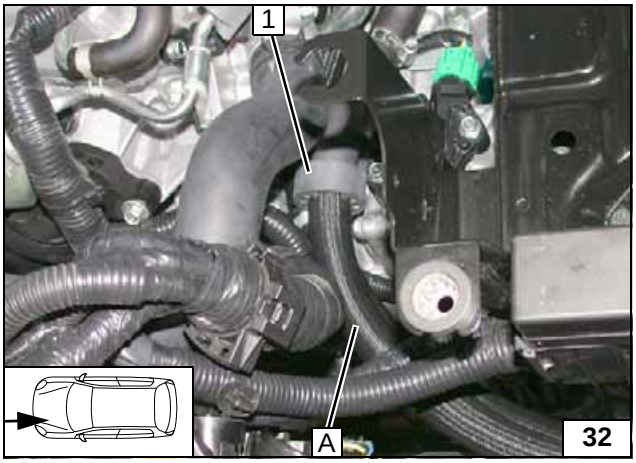


Connecting heater inlet



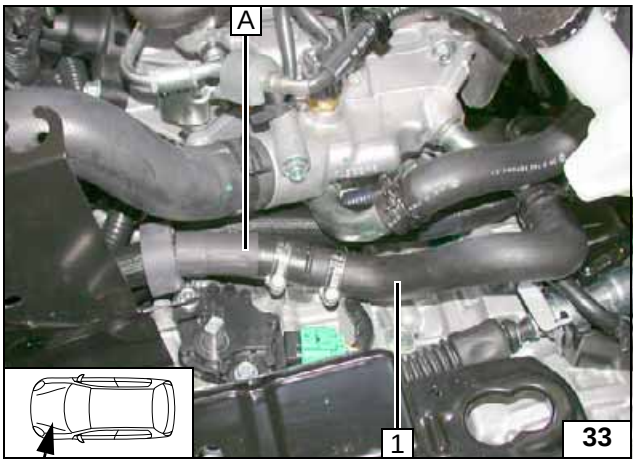
Slide black (sw) rubber isolator **1** onto hose **A** and align to radiator housing.

Routing in engine compartment



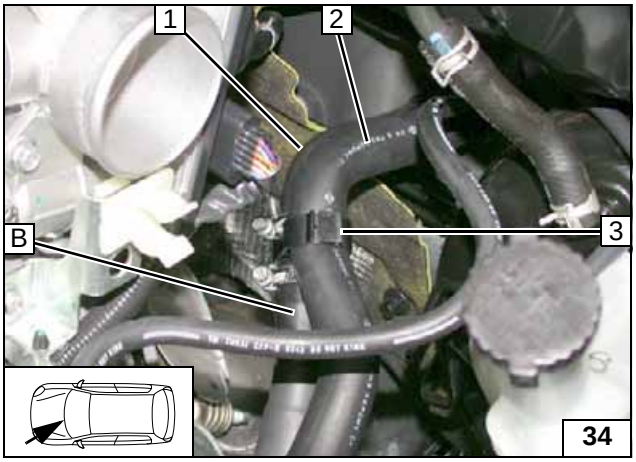
Slide black (sw) rubber isolator **1** onto hose **A** and align to rubber-coated pipe clamp.

Routing in engine compartment



1 Hose on engine outlet turned

Connecting engine outlet



Ensure sufficient distance from neighbouring components.

1 Hose on heat exchanger inlet
2 Hose on heat exchanger outlet
3 Original vehicle spacer bracket

Installing spacer bracket

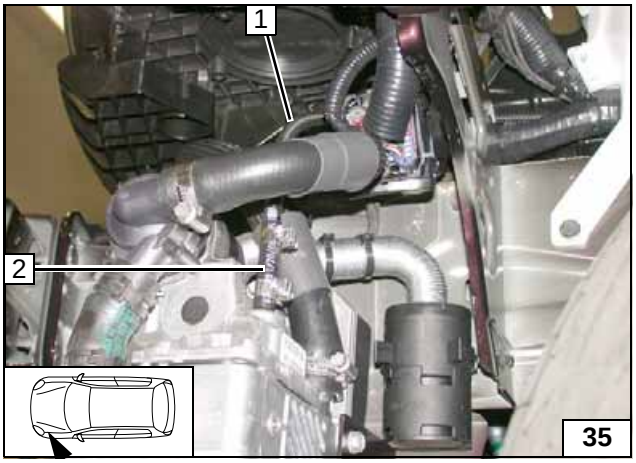
Fuel

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

Catch any fuel running off in 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.

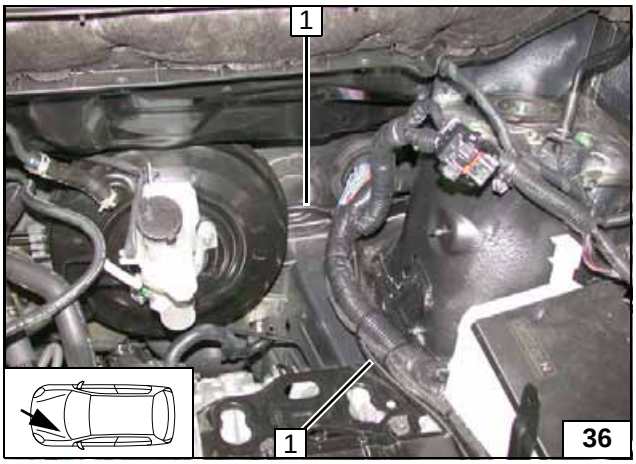
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Route fuel line and wiring harness of metering pump in corrugated tube **1** to firewall.

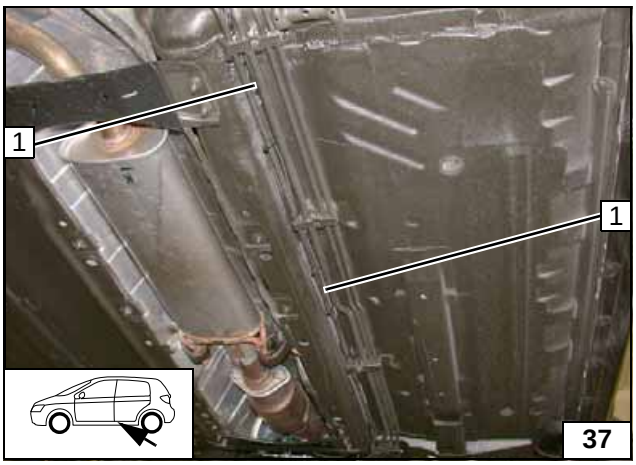
2 Hose section, 10 mm dia. clamp [2x]

Connecting heater



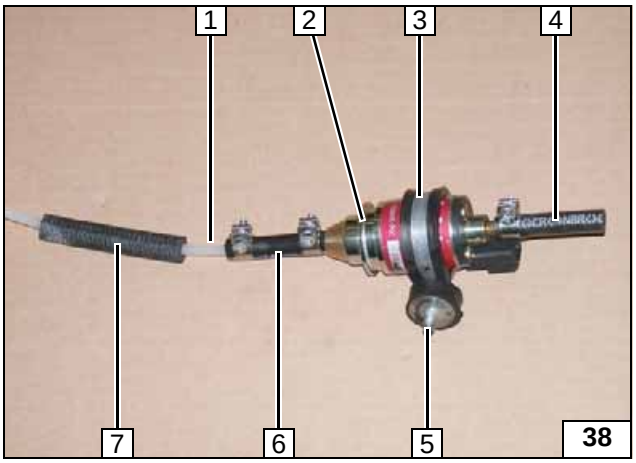
Route fuel line and wiring harness of metering pump in corrugated tube **1** to right vehicle side.

Installing lines



Route fuel line and wiring harness of metering pump in corrugated tube **1** to installation location of metering pump.

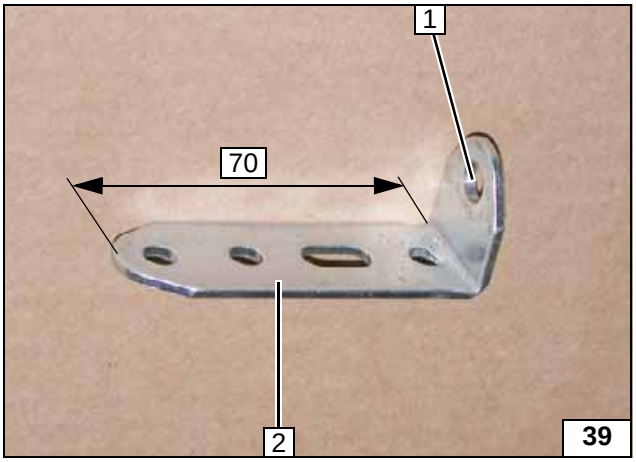
Installing lines



Cut off an end of approx. 500mm from fuel line **1** and install it on metering pump **2**.

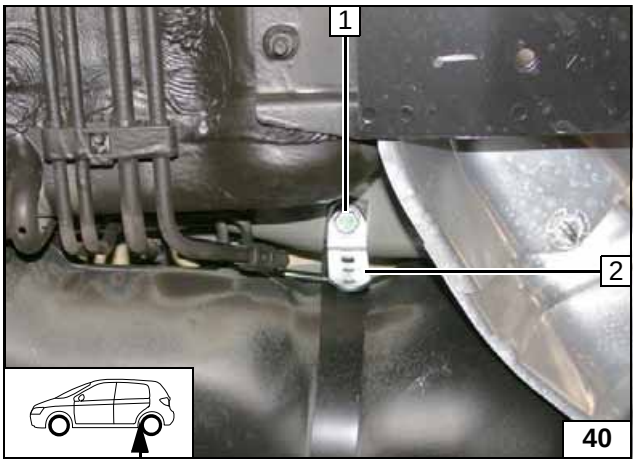
3 Rubber-coated pipe clamp
4 Hose section, 10 mm dia. clamp
5 Silent block, flanged nut
6 Hose section, 10 mm dia. clamp [2x]
7 Slide on fabric fuel line hose

Premounting metering pump



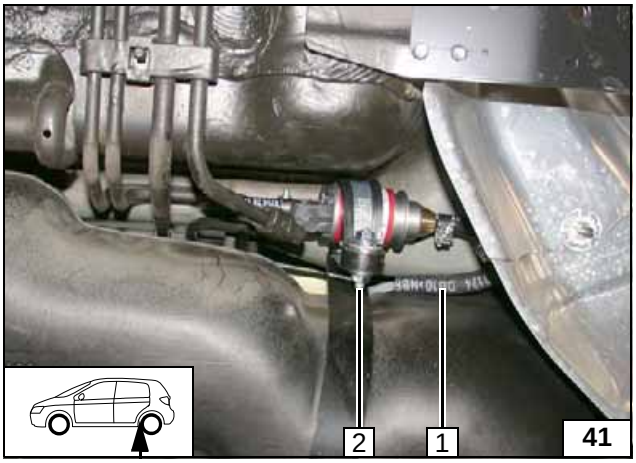
Drill out perforated bracket **2** at position **1** to 8.5mm dia. and angle down by 90°.

Preparing perforated bracket



1 Original vehicle bolt
2 Perforated bracket

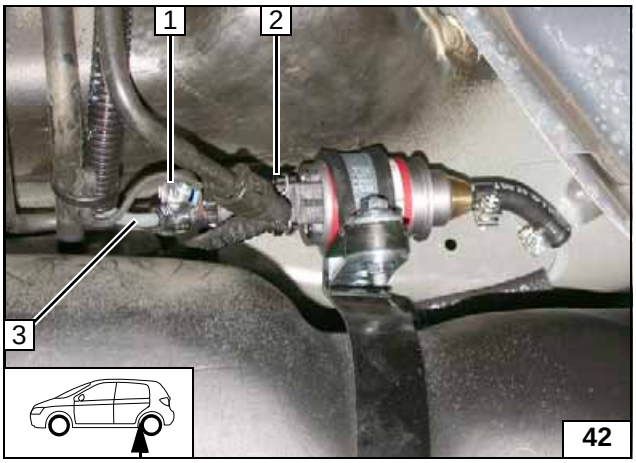
Installing perforated bracket



Routing fuel line over the fuel-tank to the fuel-tank sending unit.

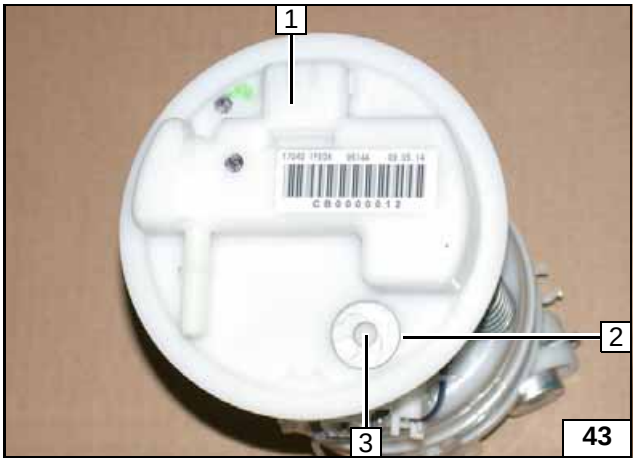
1 Position fabric-reinforced hose
2 Flanged nut

Installing metering pump



1 10 mm dia. clamp
2 Wiring harness of metering pump, connector mounted
3 Fuel line

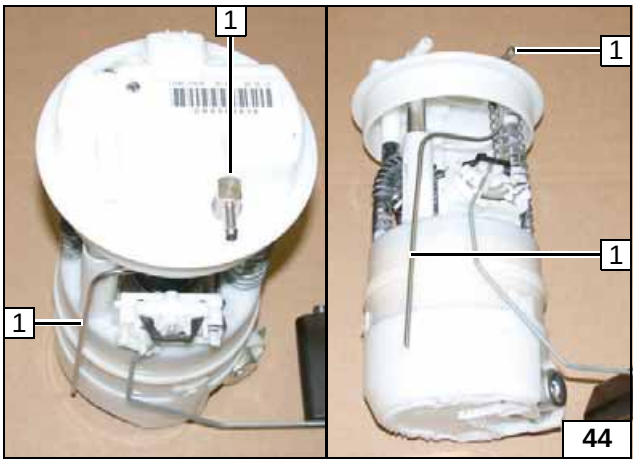
Connecting metering pump



Remove fuel-tank sending unit **1** according to manufacturer's instructions.

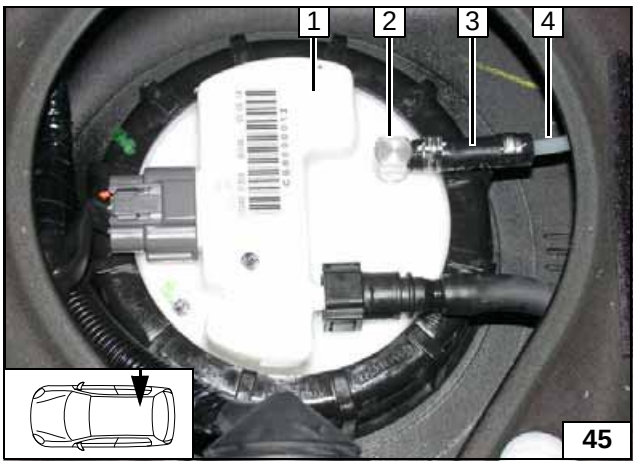
2 Large diameter washer d_a =21,5
3 Copy hole pattern, 6 mm dia. hole

Removing fuel



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

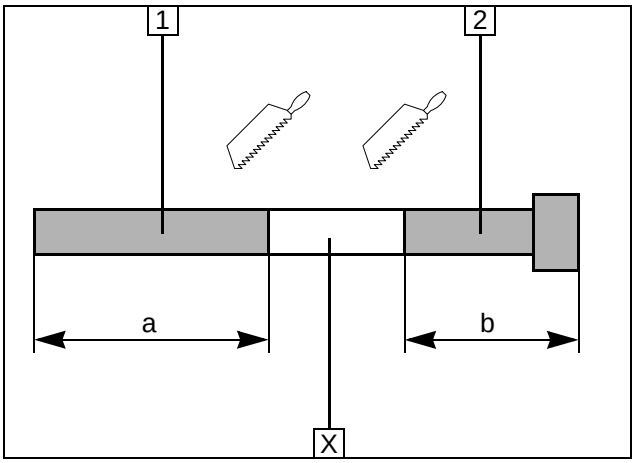
Installing fuel standpipe



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

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

Connecting fuel line

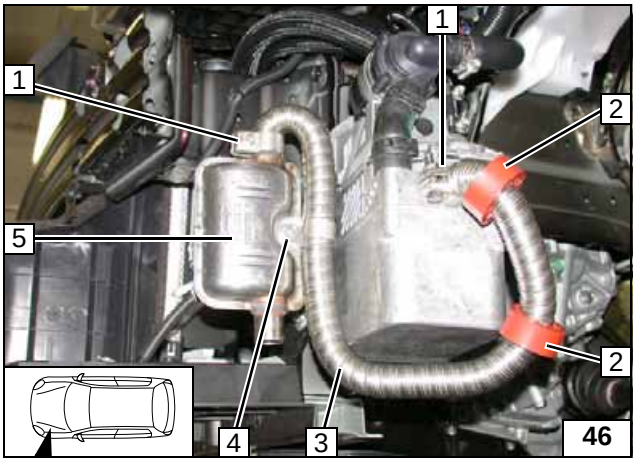


Exhaust gas

Discard section **X**

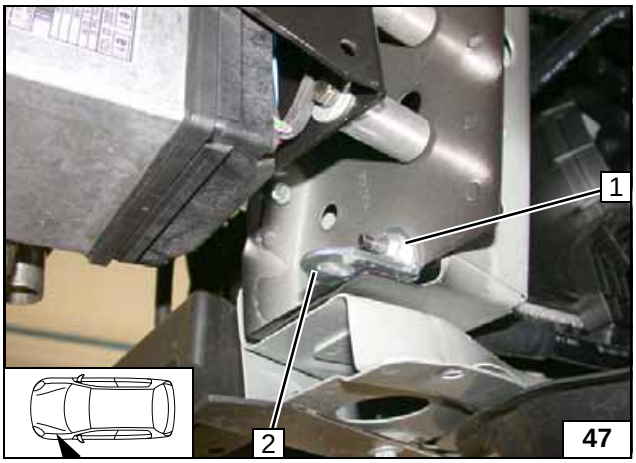
1 Exhaust pipe
a = 580
2 Exhaust end section
b = 280

Preparing exhaust pipe



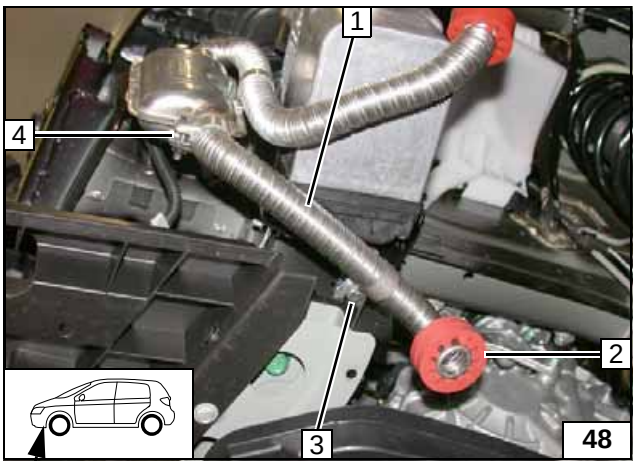
1 Hose clamp [2x]
2 Push on red (rt) rubber isolator [2x]
3 Exhaust pipe
4 M6x20 bolt, pipe clamp, flanged nut
5 Silencer

Installing silencer



1 Original vehicle stud bolt, flanged nut
2 Angle bracket

Installing angle bracket



1 Exhaust pipe
2 Slide on red (rt) rubber isolator with groove
3 M6x20 bolt, pipe clamp, flanged nut
4 Hose clamp

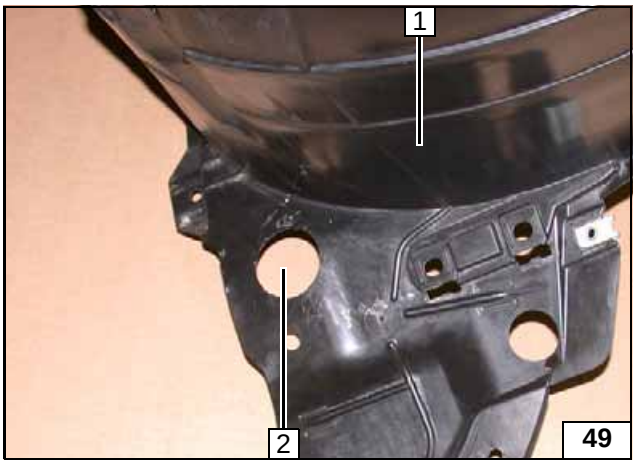
Installing end section

Final Work

WARNING!
Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose lines and tie back.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

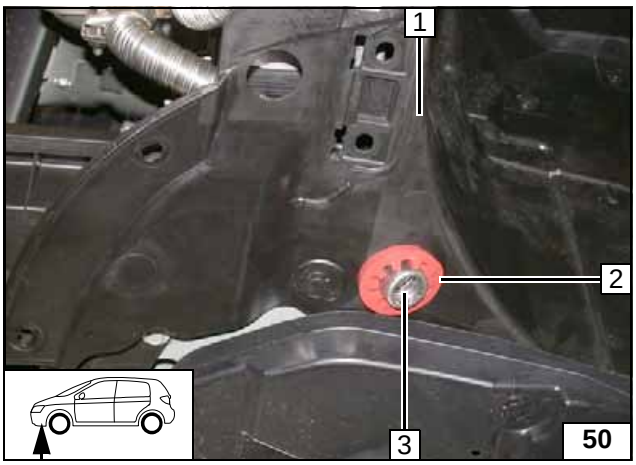
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Adjust digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Apply the sticker "Switch off parking heater before refilling" in the area of the filler neck**
- **See installation instructions for initial start-up and function check**

Cutting out wheel well trim



1 Wheel well trim left
2 42 mm dia. hole

Mounting rubber isolator



Installing wheel well trim **1** Align exhaust end section **3** flush on red rubber isolator **2**.

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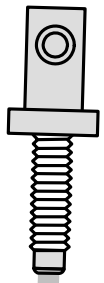
http://www.webasto.de

Template for fuel standpipe



100mm

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 “minimise margins” and 100% of the normal size.

100mm

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.

In vehicles with passenger compartment monitoring it is to be deactivated along with making the vehicle adjustments for the heating operation.
Deactivation instructions can be taken from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

1 Air outlet to windscreen
2 Set temperature to "HI“