

Water Heater



Thermo Top Evo Parking Heater e1 00 0258

Installation documentation

Nissan Juke

1.6 Petrol Turbo
from Model Year 2010
Left-hand drive vehicle
6-gear manual transmission
2WD
Automatic air-conditioning



WARNING!

Hazard warning:

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



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

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

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

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.

Table of Contents

Validity	2	Preparing bracket	11
Heater/Installation Kit	3	Preparing installation location	11
Foreword	3	Preparing heater	12
General Instructions	3	Installing heater	14
Special Tools	3	Combustion air	15
Explanatory Notes on Document	4	Fuel	16
Preliminary Work	5	Coolant circuit	20
Heater installation location	5	Exhaust gas	24
Preparing electrical system	6	Final Work	26
Electrical system	7	Template for fuel standpipe	27
Fan control	8	Operating Instructions for End Customer	28
Digital timer option	10		
Remote option (Telestart)	10		

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Nissan	Juke	F15	e11 * 2007 / 46 * 0132 * ...

Engine type	Engine model	Output in kW	Displacement in cm ³
MR 16	Petrol	140	1618

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	Basic delivery scope <i>Thermo Top Evo</i>	See Price list
1	Installation kit for Nissan Juke 2010 1.6 Petrol	1316592B
1	Heater control	See Price list

Foreword

This installation documentation applies to Nissan Juke 1.6 Petrol Turbo 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 Evo* 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.

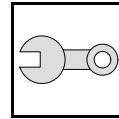
Special Tools

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

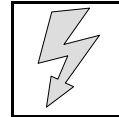
Explanatory Notes on Document

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.

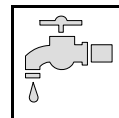
Mechanical system



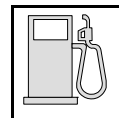
Electrical system



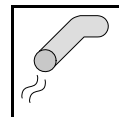
Coolant circuit



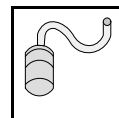
Fuel



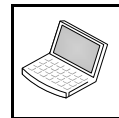
Exhaust gas



Combustion air



Software



Special features are highlighted using the following symbols:



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



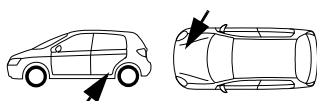
Specific risk of fire or explosion.



Reference to general installation instructions of 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 5x13 heater bolts = 8Nm!

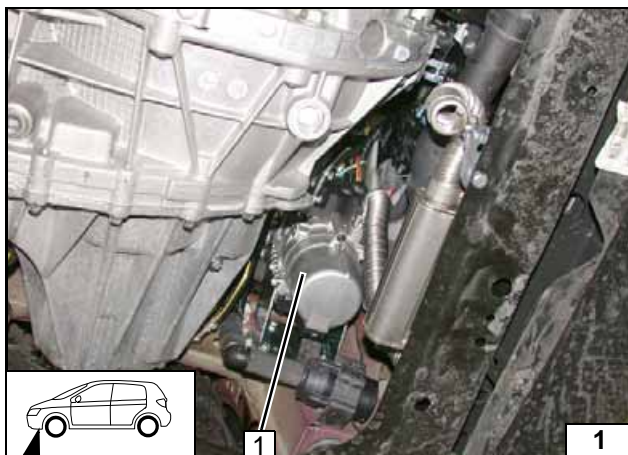
Tightening torque of 5x15 bolt of water connection piece retaining plate = 7Nm!

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 engine control unit with bracket
- Remove the air filter together with the intake hose
- 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 left footwell trim.
- Remove the instrument panel trim on the driver's side.
- Remove the A/C control panel.
- Detach A/C booster

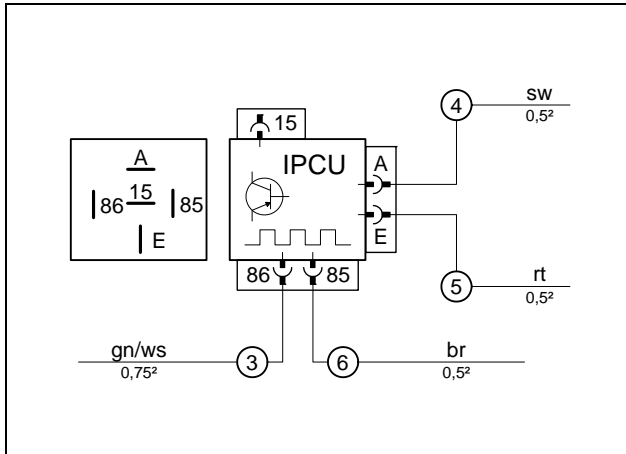
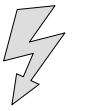
Remove page 28 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location



Preparing electrical system

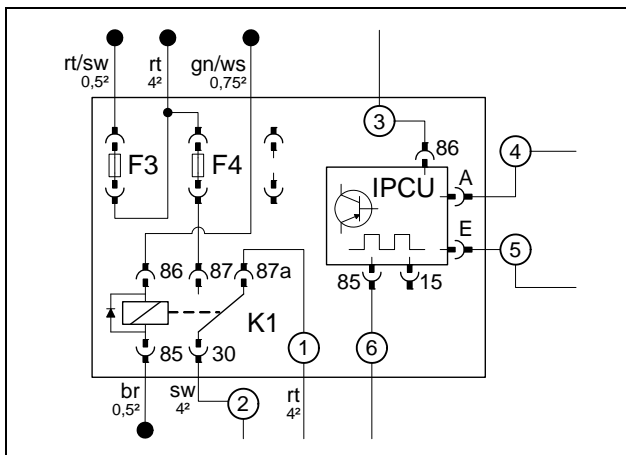
The wire sections retain their numbering in the entire document.

View of IPCU from below.

The pre-programmed settings of the IPCU are to be checked on the vehicle during function control and adjusted if necessary. Connect wires to the IPCU socket according to the wiring diagram, see figure.

Duty cycle: 100%
 Frequency: 14 kHz
 Voltage: 2.7V
 Function: High-side

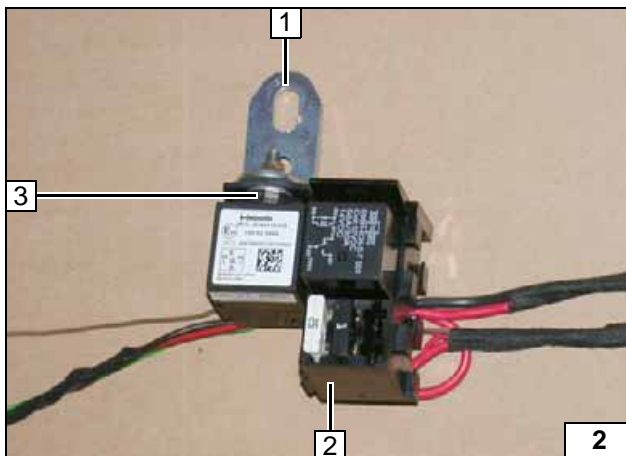
Preparing IPCU



Connect wires according to wiring diagram to the K1 relay socket.

- ① Red (rt) wire from K1/87a socket
- ② Black (sw) wire from K1/30 socket
- ③ Green/white (gn/ws) wire from IPCU/86 socket
- ④ Black (sw) wire of IPCU/A socket
- ⑤ Red (rt) wire from IPCU/E socket
- ⑥ Brown (br) wire from IPCU/85 socket

Preparing K1 relay of IPCU and F4



Lock IPCU socket and fuse holder into position. Mount F4 25A fuse, K1 relay and IPCU.

- 1 Angle bracket
- 2 Fuse holder
- 3 M5x16 bolt, large diameter washer [2x], nut

Preparing fuse holder of passenger compartment

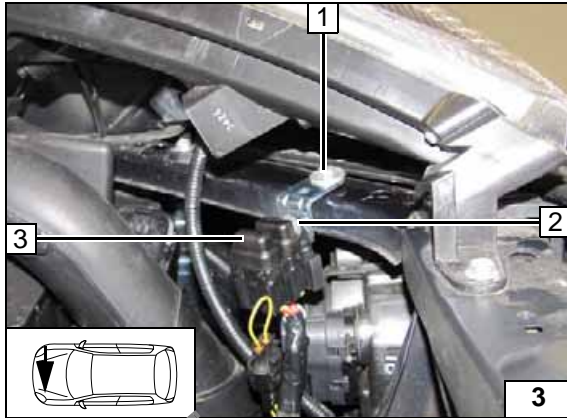




Electrical system

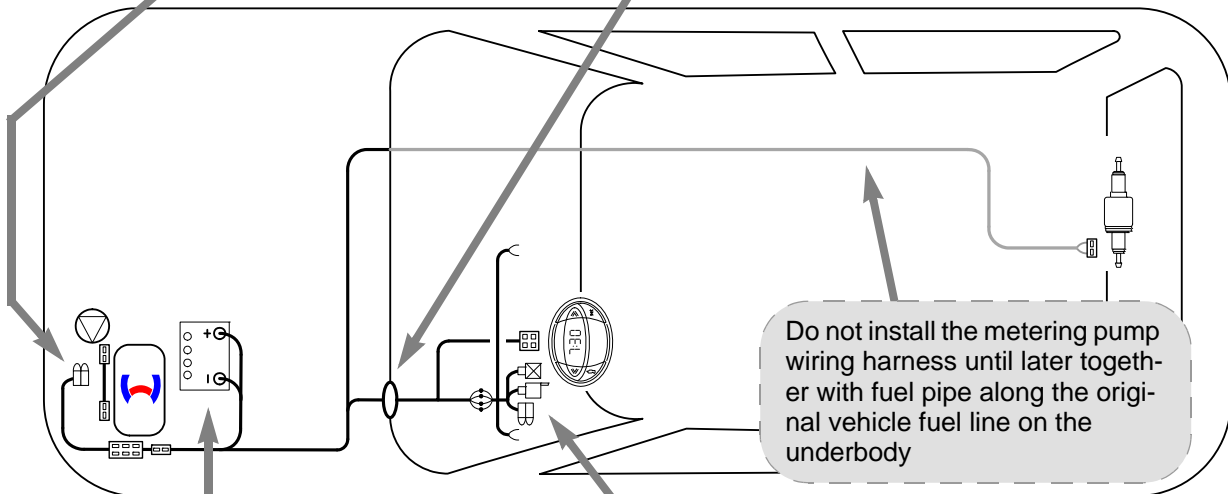
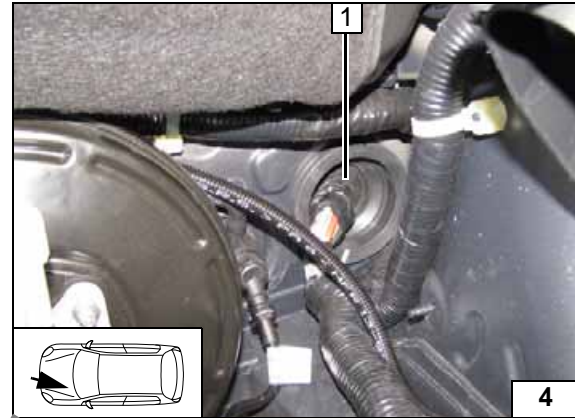
Fuse holder of engine compartment

- 1 M6x20 bolt, large diameter washer, angle bracket, original vehicle hole, flanged nut
- 2 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut
- 3 F1-2 fuses mounted

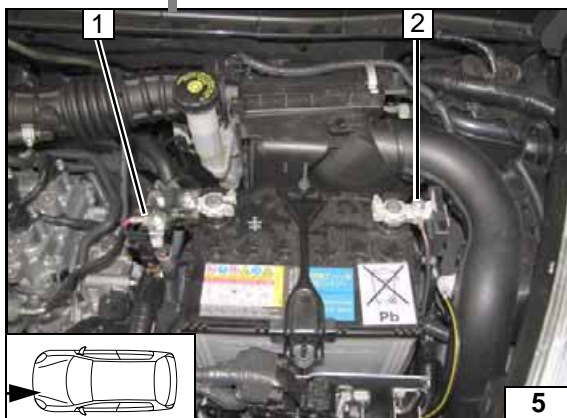


Wiring harness pass through

- 1 Protective rubber plug

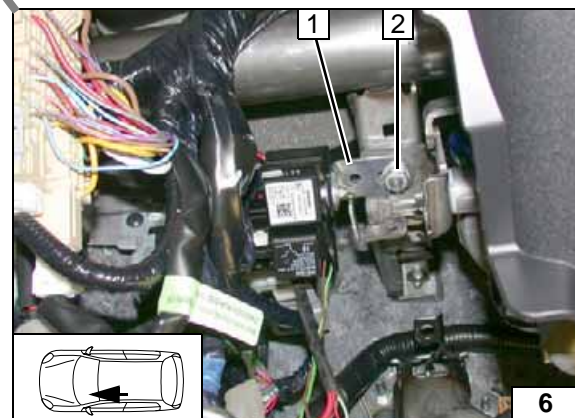


Wiring harness routing installation diagram



Positive and earth wire

- 1 Positive wire to positive battery terminal
- 2 Earth wire on negative battery terminal

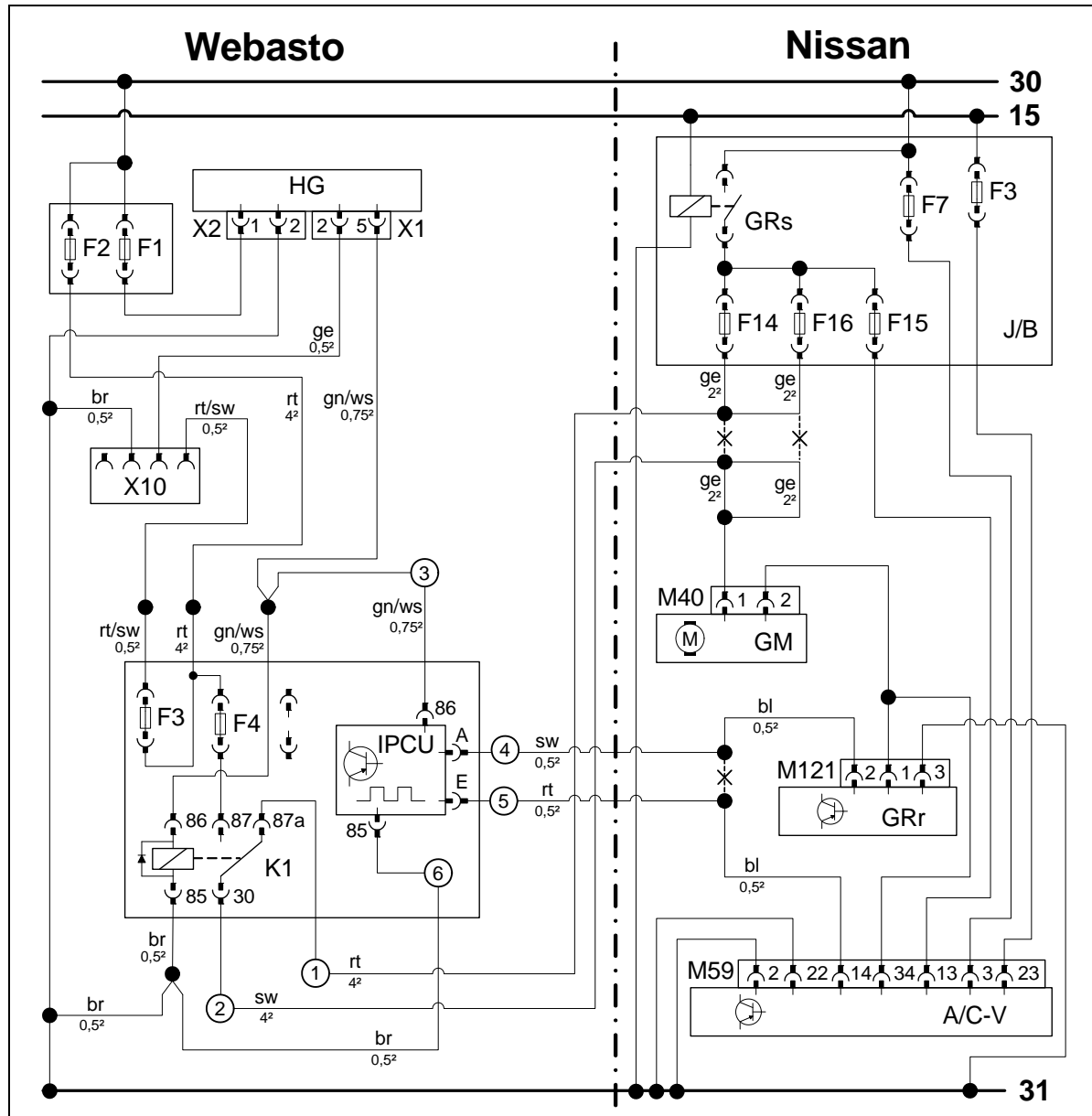


Fuse holder of passenger compartment

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



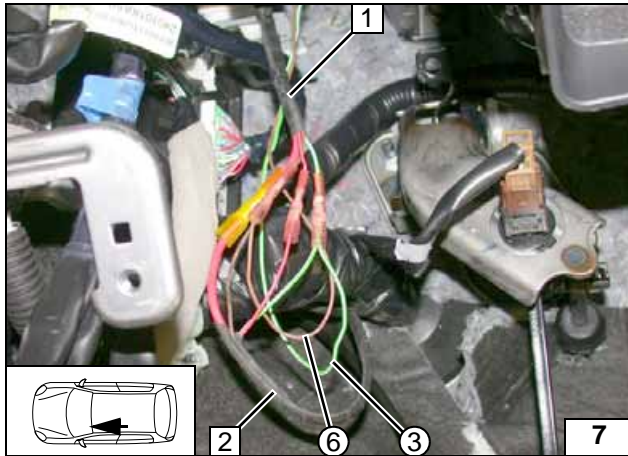
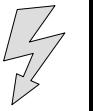
Fan control



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	J/B	Fuse and relay box	rt	red
X1	6-pin heater connector	F3	10A fuse	sw	black
X2	2-pin heater connector	F7	10A fuse	ge	yellow
X10	4-pin connector Heater control	F14	15A fuse	gn	green
K1	Fan relay	F15	10A fuse	bl	blue
F1	20A fuse	F16	15A fuse	ws	white
F2	30A fuse	GRs	Fan relay	br	brown
F3	1A fuse	GM	Fan motor		
F4	25 A fuse	GRr	Fan controller		
IPCU	Pulse-width modulator	A/C-V	A/C booster		
IPCU adjustment values:		M59	40-pin AC-V connector		
Duty cycle: 100%					
Frequency: 14 kHz					
Voltage: 2.7V				X	Cutting point
Function: High-side				Wiring colours may vary.	

Legend

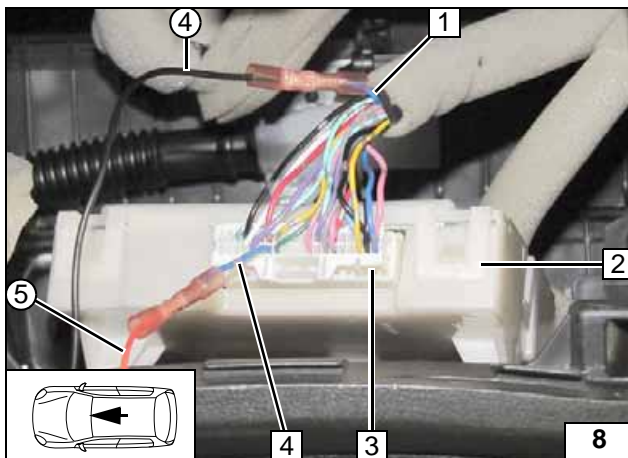


Connect fuse holder of passenger compartment **1** to wiring harness of heater **2** according to wiring diagram, with same colour wires connected to each other.

- ③ Green/white (gn/ws) wire to IPCU/86
- ⑥ Brown (br) wire to IPCU/85



Connecting wiring harnesses

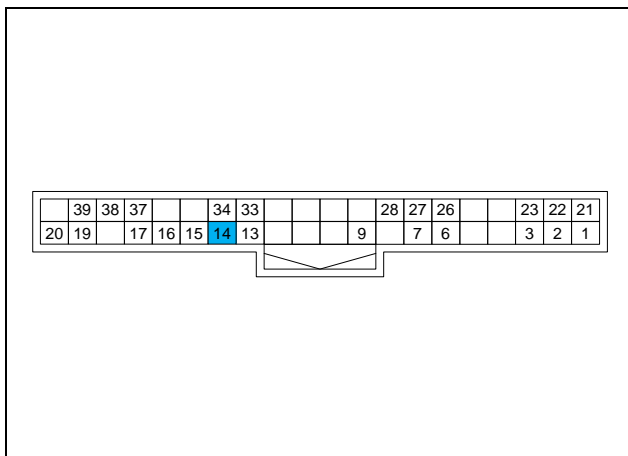


Connection on 40-pin M59 connector **3** from A/C booster **2**.
Produce connections as shown in wiring diagram.

- 1** Blue (bl) wire to fan unit
- 4** Blue (bl) wire of 40-pin M59 connector, Pin 14
- ④ Black (sw) wire to IPCU/A
- ⑤ Red (rt) wire to IPCU/E



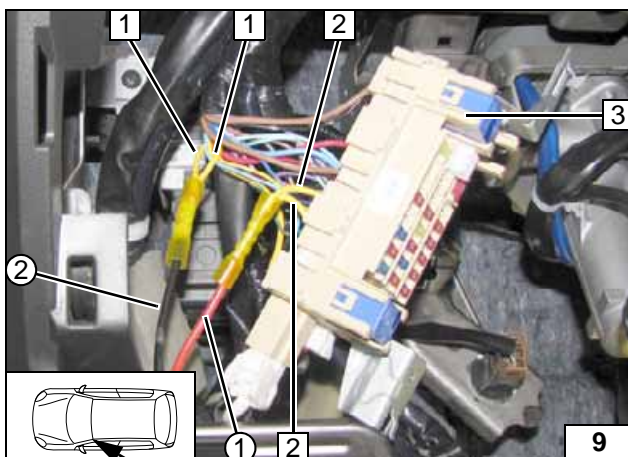
Connecting A/C booster



View of M59 connector on wire side.



M59 connector



Connecting fan motor to fuse and relay box **3**.
Produce connections as shown in wiring diagram.

- 1** Yellow (ge) wire [2x] of fan motor
- 2** Yellow (ge) wire [2x] for fuse F14 and F16
- ① Red (rt) wire from K1/87a
- ② Black (sw) wire from K1/30



Connecting fan-motor

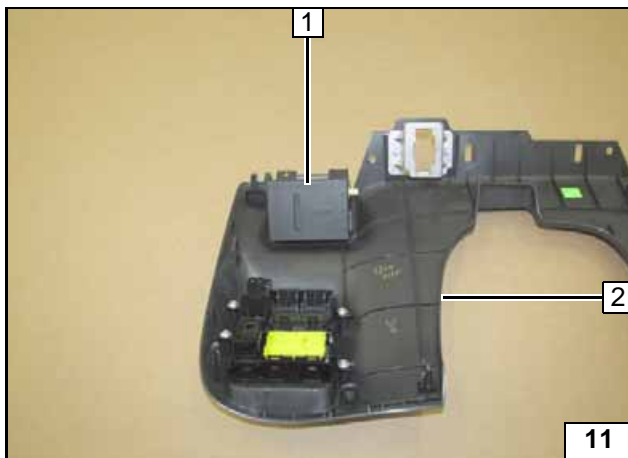


Digital timer option

1 Digital timer



Installing digital timer



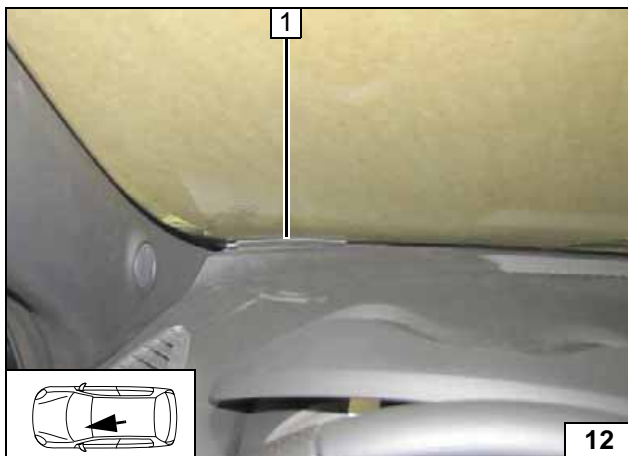
Remote option (Telestart)

Fasten receiver 1 with adhesive tape.

2 Instrument panel trim

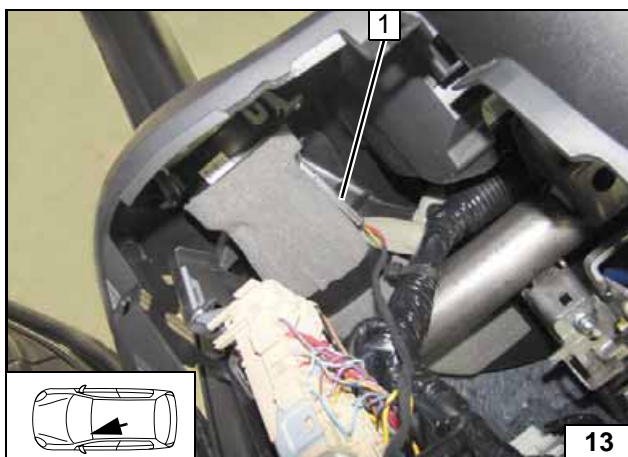


Installing receiver



1 Antenna

Installing antenna

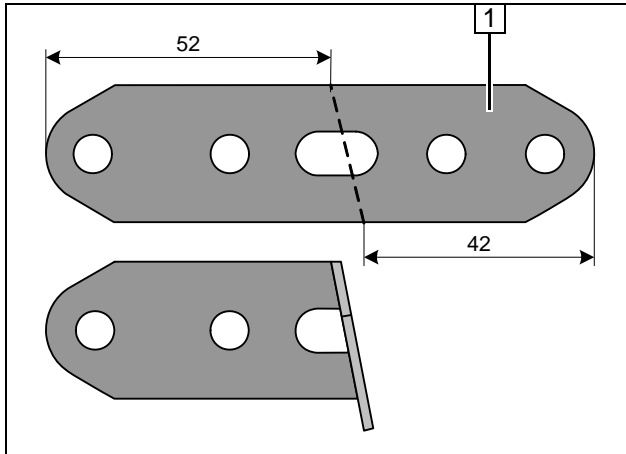
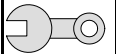


Temperature sensor T100 HTM

Fasten temperature sensor 1 with adhesive tape.



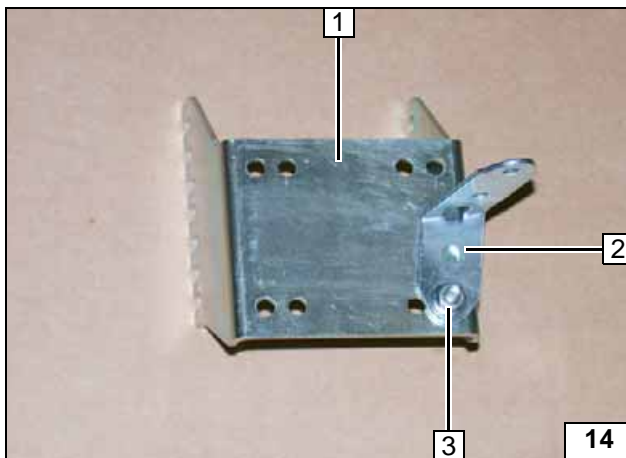
Installing temperature sensor



Preparing bracket

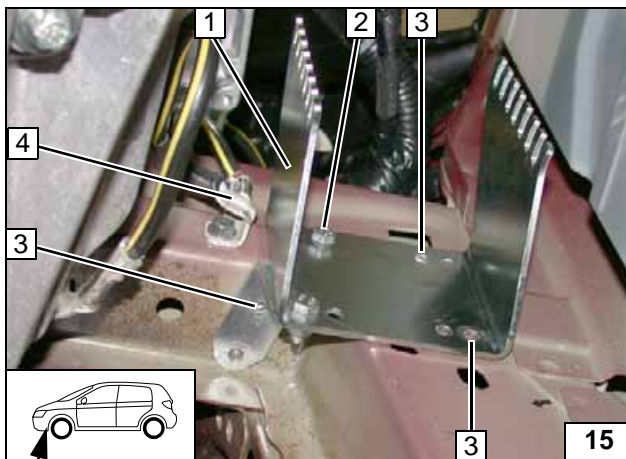
- 1 Perforated bracket

Angling down perforated bracket by 90°



- 1 Bracket
- 2 Perforated bracket
- 3 M6x12 bolt, flanged nut

Premounting bracket

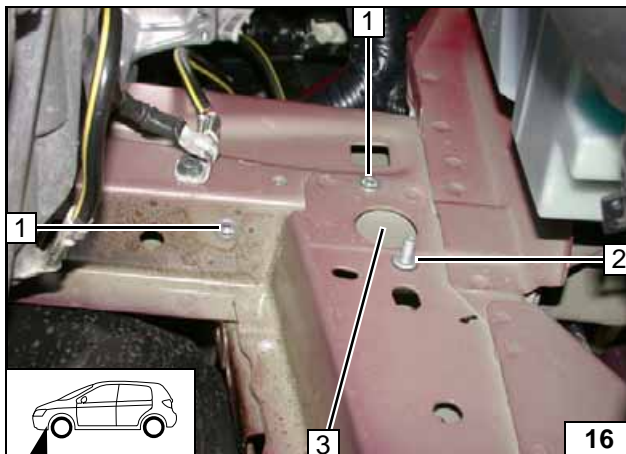


Preparing installation location

Align earth wire 4 as shown.

- 1 Loosely mount bracket
- 2 M6x20 bolt, spring lockwasher, existing threaded hole
- 3 Copy hole pattern

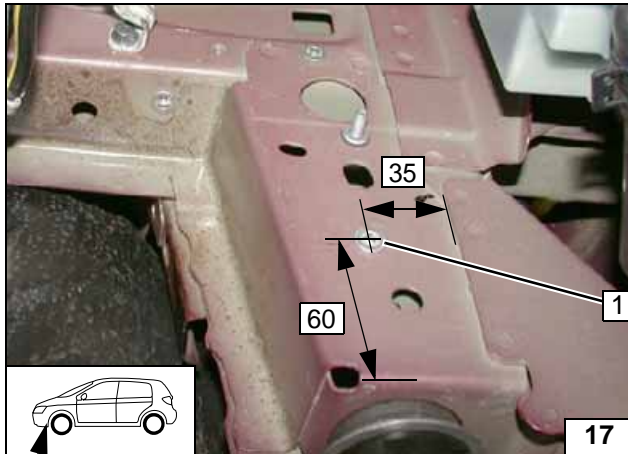
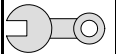
Copying hole pattern



Remove bracket. Insert M6x16 bolt into existing hole 3.

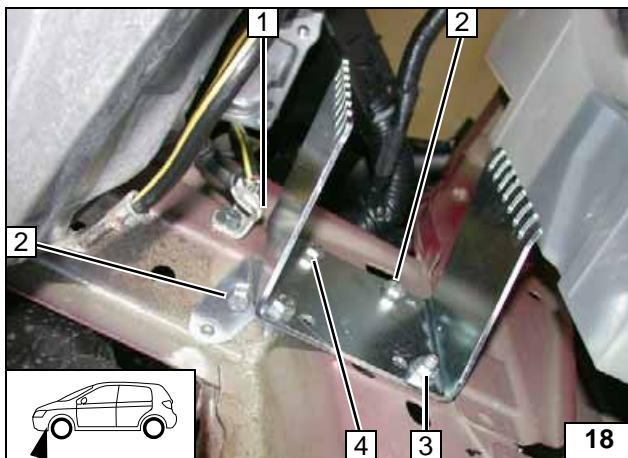
- 1 9.1 mm dia. hole; M6 Rivet nut [2x each]
- 2 7mm dia. hole, M6x16 bolt, pin lock, plain washer

Installing rivet nut



1 9.1mm dia hole, M6 rivet nut

Installing rivet nut

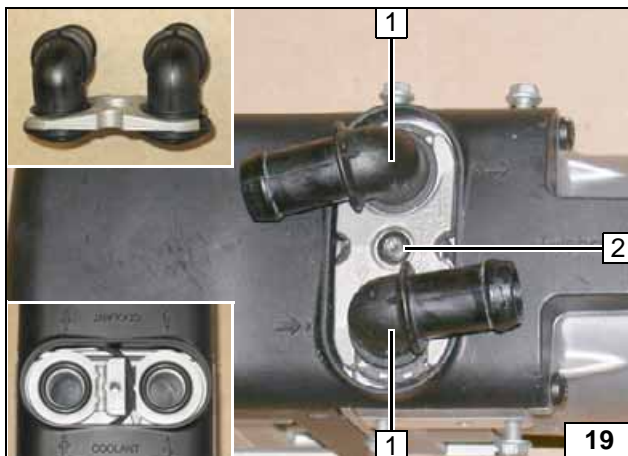


Install two plain washers between bracket and frame side member at position 4. Ensure sufficient clearance at position 1, correct if necessary.



Installing bracket

- 2 M6x20 bolt, spring lockwasher [2x each]
- 3 Flanged nut
- 4 M6x20 bolt, spring-lock washer, plain washer [2x], existing threaded hole

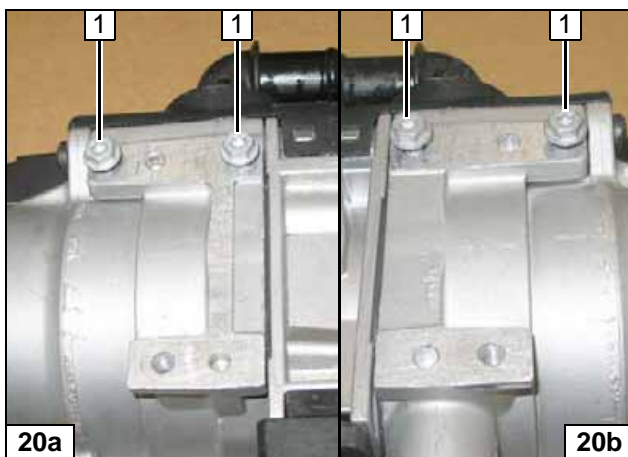


Preparing heater



- 1 Coolant connection piece, sealing ring [2x each]
- 2 5x15 self-tapping bolt, retaining plate of coolant connection piece

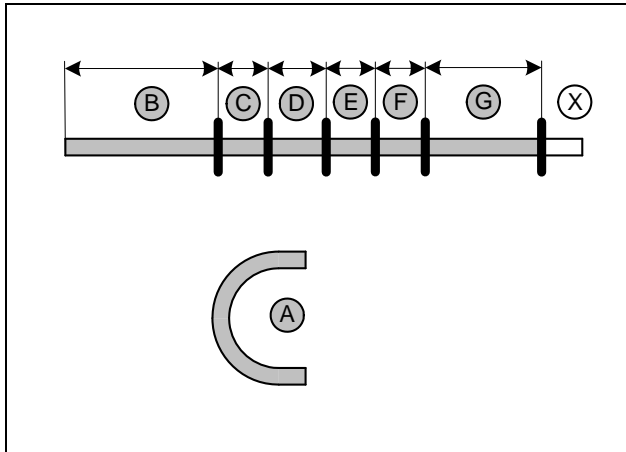
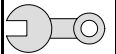
Installing coolant connection piece



Cut thread with 5x13 self-tapping screw 1 [4x] and install loosely (turn max. 3 threads).



Premounting bolt loosely

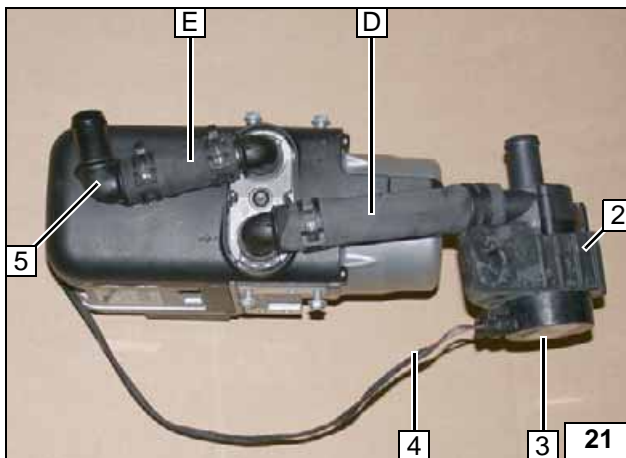


Hose **A** = 180°, 18mm dia. moulded hose
Discard section **X**

- B** = 640
- C** = 60
- D** = 120
- E** = 60
- F** = 60
- G** = 480



Cutting hoses to length

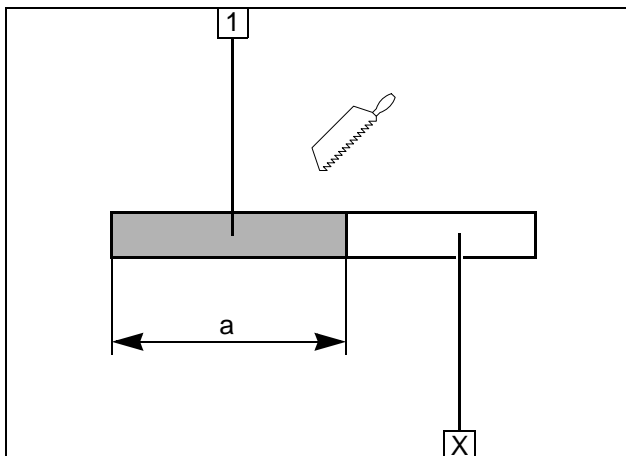


All spring clips of 25mm dia.

- 2** Circulating pump intake
- 3** Circulating pump
- 4** Wiring harness of circulating pump
- 5** 90° 18mm dia, connecting pipe



Premounting hoses

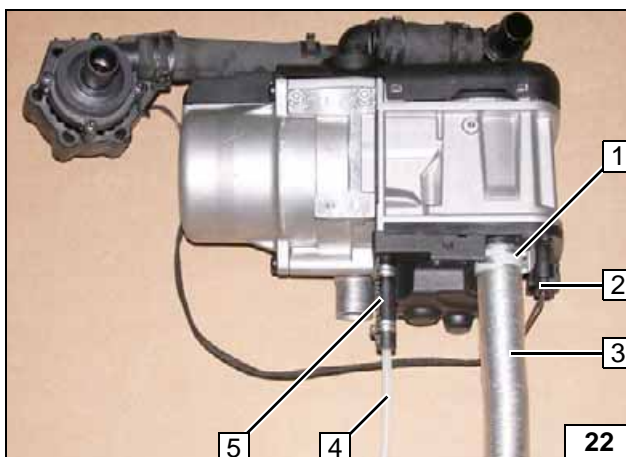


Discard section **X**

- 1** Combustion air pipe
a = 210

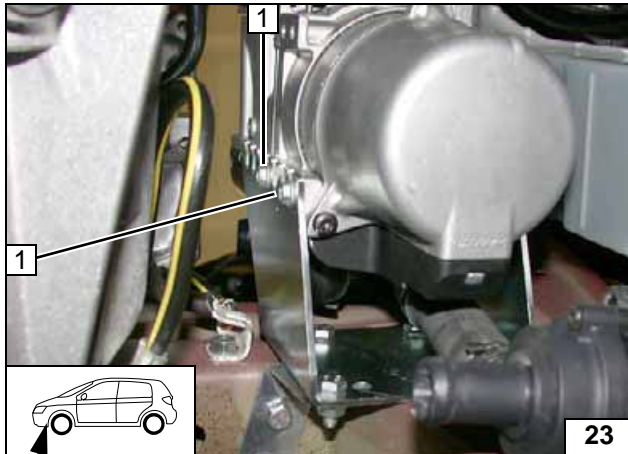
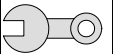


Cutting combustion air pipe to length



- 1** 25 mm dia. spring clip
- 2** Wiring harness of circulating pump
- 3** Combustion air pipe
- 4** Fuel line
- 5** Hose section, 10 mm dia. clamp [2x]

Premounting heater



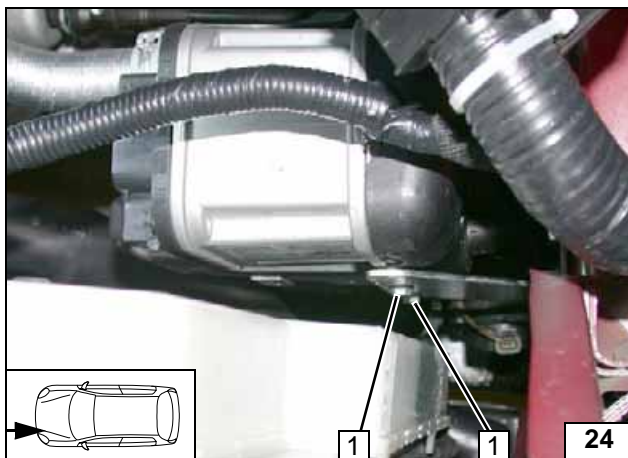
Installing heater

Install heater in lowest lock-in position of bracket.

1 5x13 self-tapping bolt [2x]

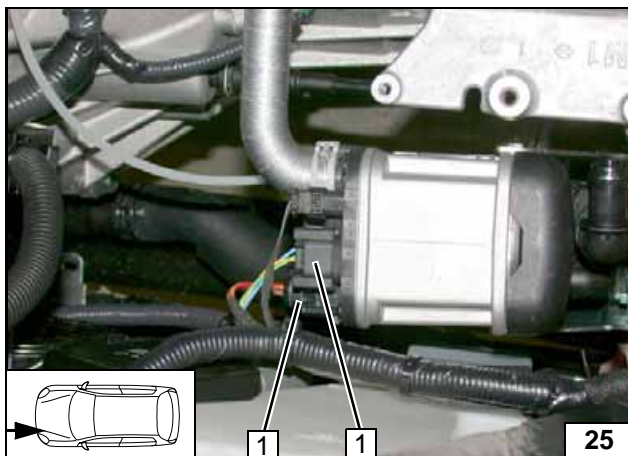


Installing heater



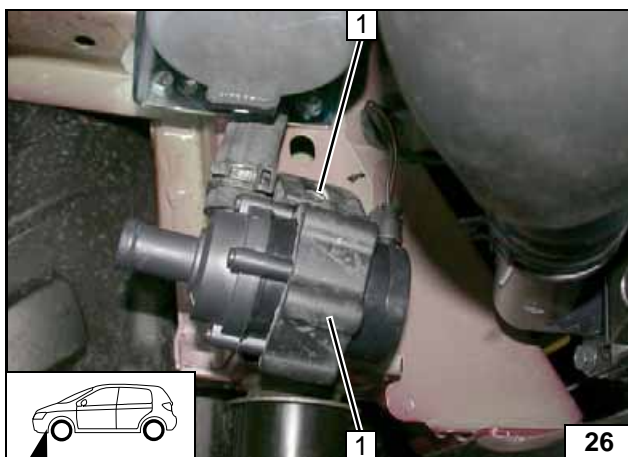
1 5x13 self-tapping bolt [2x]

Installing heater



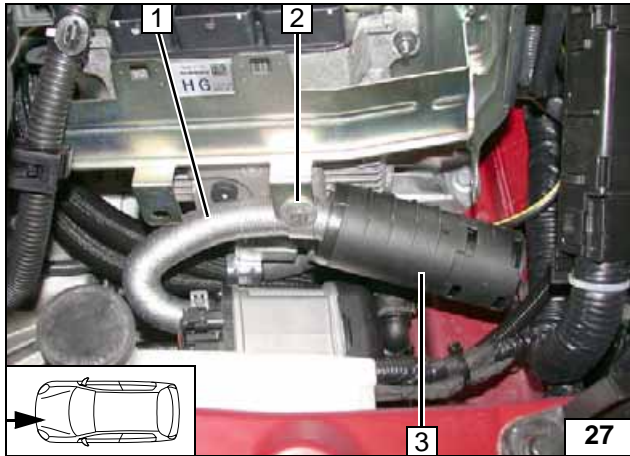
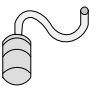
1 Wiring harness of heater [2x]

Mounting wiring harness



1 M6x25 detent-edged bolt
2 Circulating pump intake

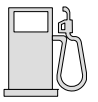
Installing circulating pump



Combustion air

- 1 Combustion air pipe
- 2 M6x20 bolt, large diameter washer, pipe clamp, flanged nut, existing hole
- 3 Silencer

**Installing
silencer**



Fuel

CAUTION!

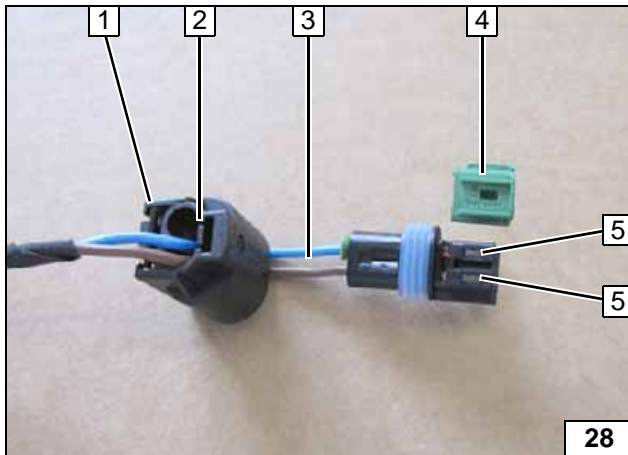
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

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.

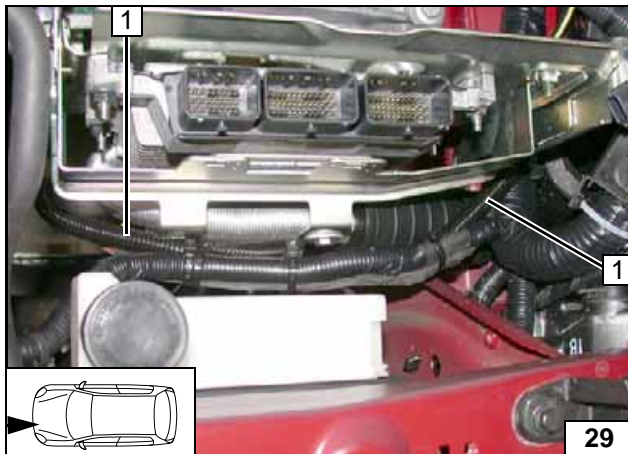


Complete connector of metering pump again after routing. Pin assignment is not relevant.

- 1 Connector housing
- 2 Lock
- 3 Blue/brown (bl / br) wires
- 4 Coding
- 5 Time lock

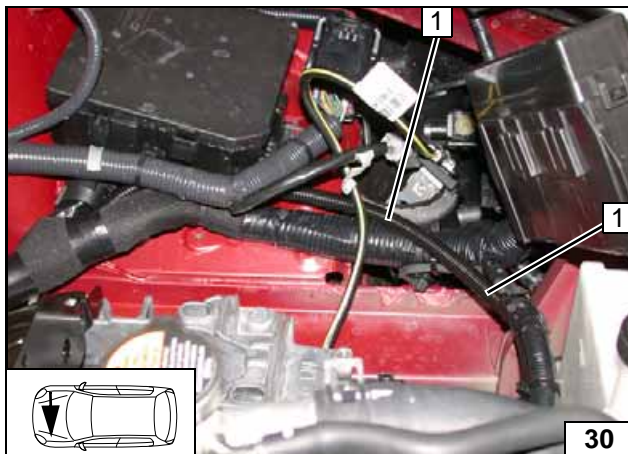


Dismantling connector



1 2100mm corrugated tubewith fuel line and wiring harness of metering pump

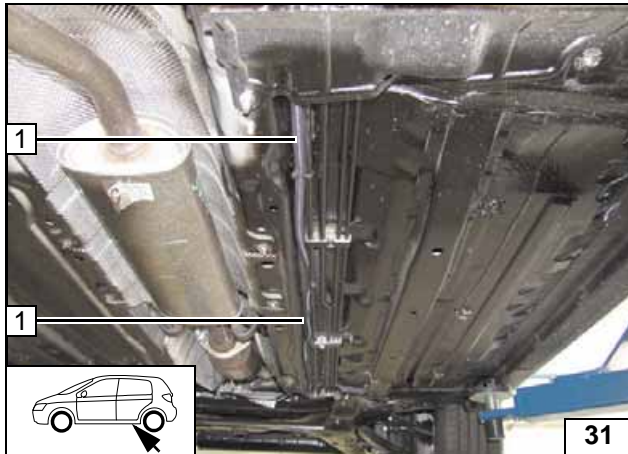
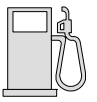
Installing lines



1 Corrugated tube with fuel line and wiring harness for metering pump

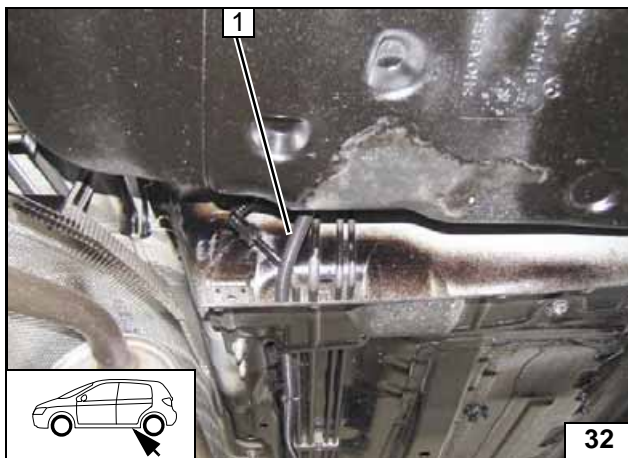


Installing lines



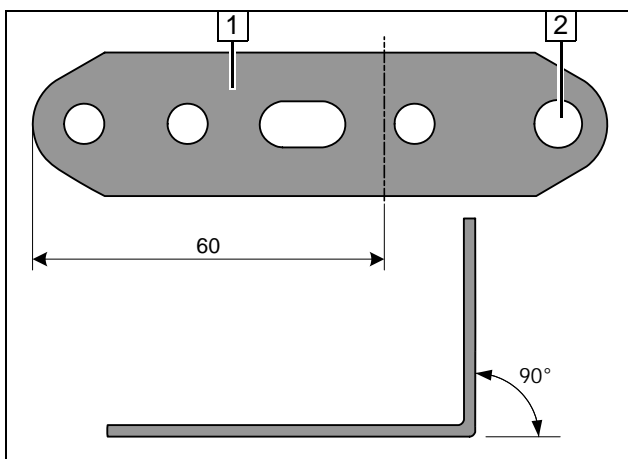
1 2100mm corrugated tubewith fuel line and wiring harness of metering pump

Installing lines



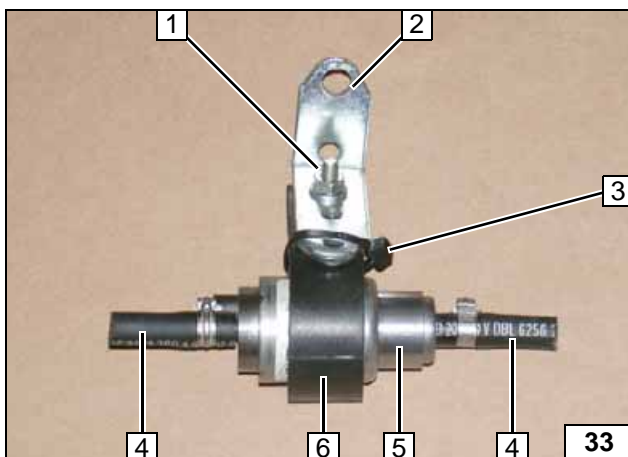
1 1130mm corrugated tubewith fuel line and wiring harness of metering pump

Installing lines



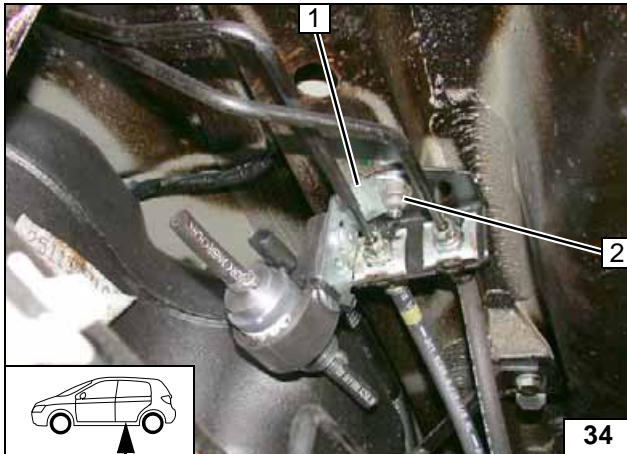
1 Perforated bracket
2 Drill out hole to 8.5mm dia.

Preparing perforated bracket



1 M6x25 bolt, flanged nut
2 Perforated bracket
3 Cable tie
4 Hose section, 10 mm dia. clamp [2x each]
5 Metering pump
6 Metering pump intake

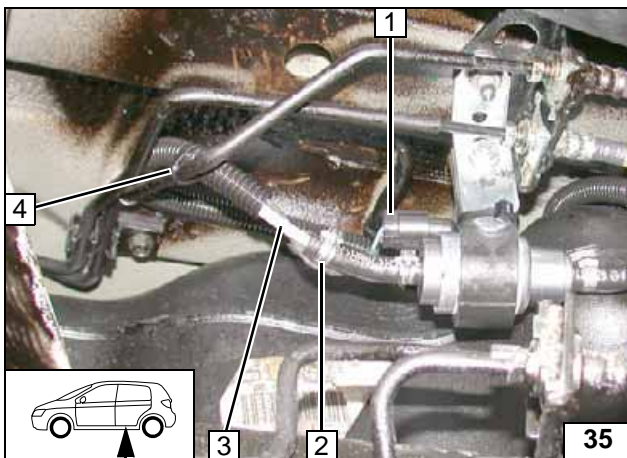
Premounting metering pump



- 1 Perforated bracket
- 2 Original vehicle nut



Installing metering pump

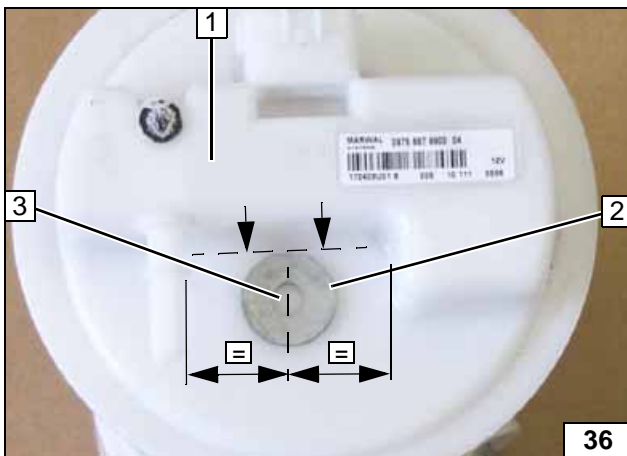


Check the position of the components; adjust if necessary. Check that they have freedom of movement. Cut corrugated tube to length, section will be reused.

- 1 Wiring harness of metering pump, connector mounted
- 2 10 mm dia. clamp
- 3 Fuel line of heater
- 4 Cable tie



Connecting metering pump

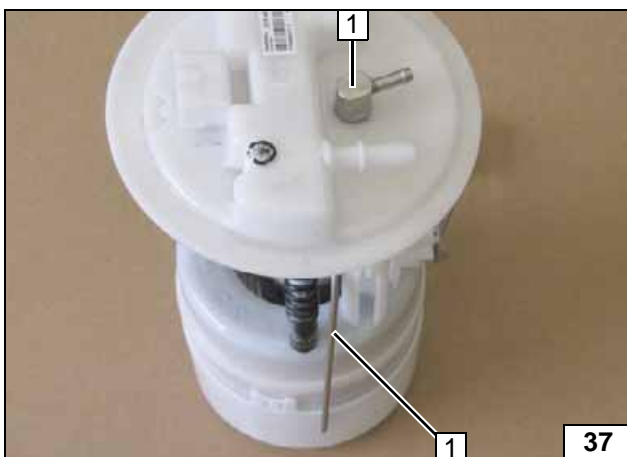


Remove fuel-tank sending unit **1** according to manufacturer's instructions. Place large diameter washer **2** on rounding and position at the centre.

- 3 Copy hole pattern, 6 mm dia. hole



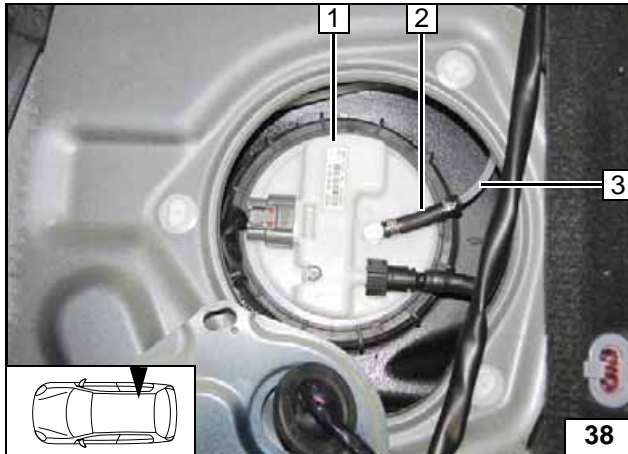
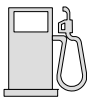
Removing fuel



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



Installing fuel standpipe

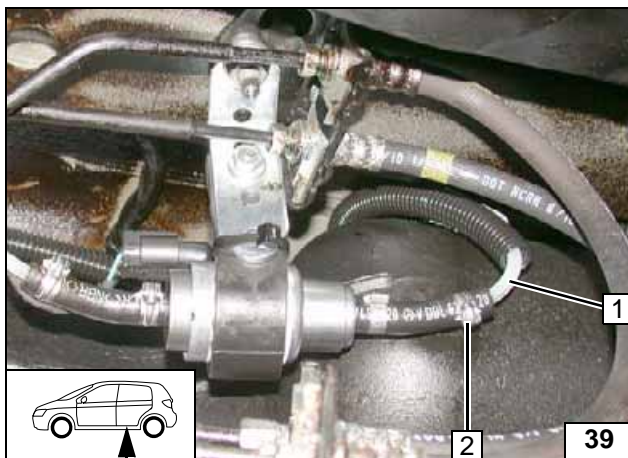


Install fuel-tank sending unit **1** in accordance with manufacturer's instructions.

- 2** Moulded hose, 10 mm dia. clamp [2x]
- 3** Fuel line



**Connect-
ing fuel
line**

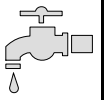


Check the position of the components; adjust if necessary. Check that they have freedom of movement. Slide corrugated tube section on to fuel line **1**.

- 2** 10 mm dia. clamp



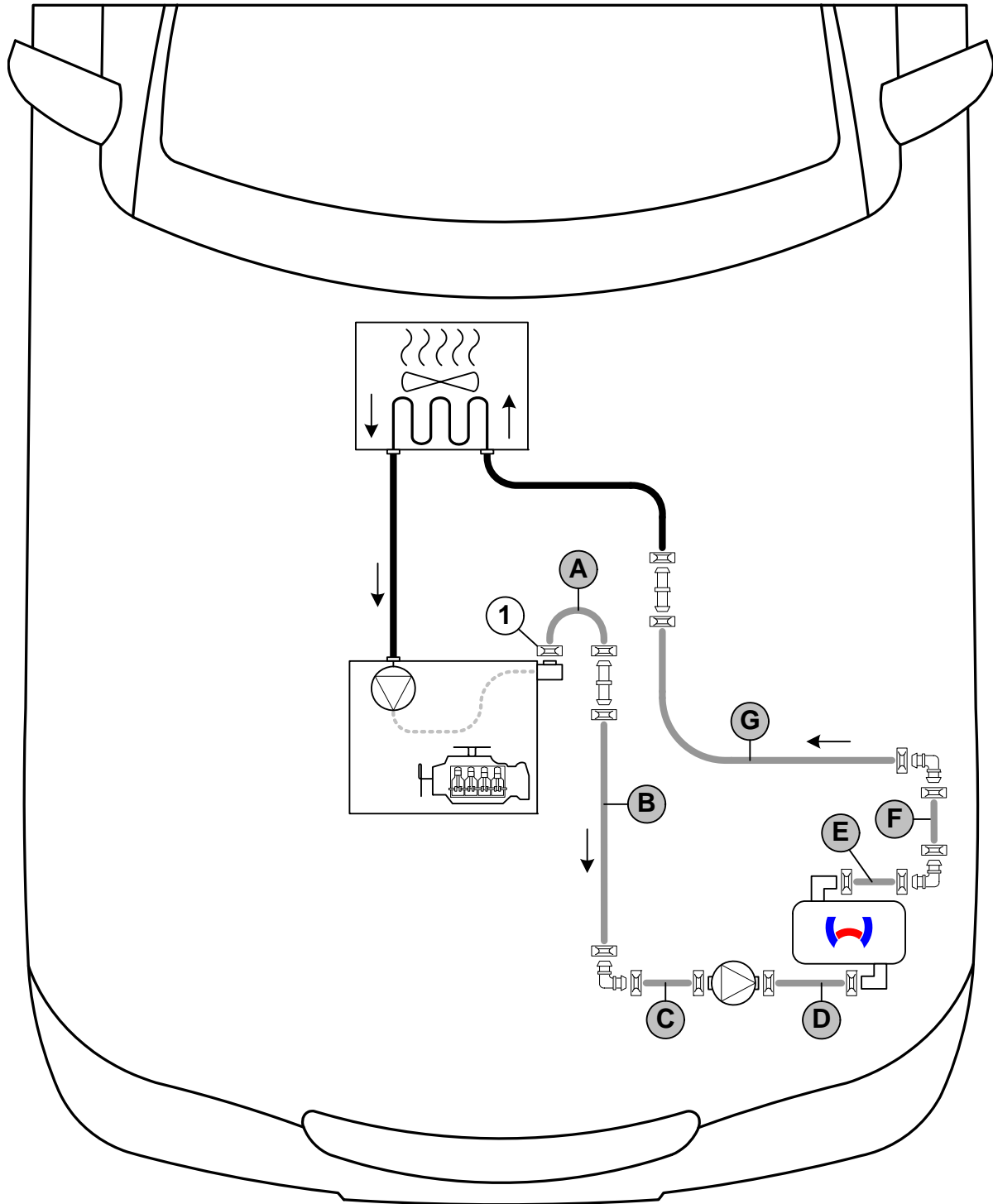
**Connect-
ing meter-
ing pump**







Coolant circuit

WARNING!

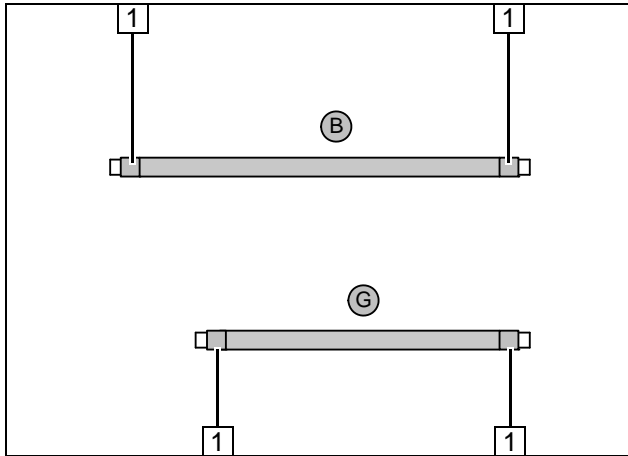
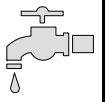
Any coolant running off should be collected in an appropriate container. Install hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the coolant hose.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



Hose routing diagram

All spring clips  = 25mm dia.
 1 = Original vehicle spring clip .
 All connecting pipes  and  = 18x18mm dia.



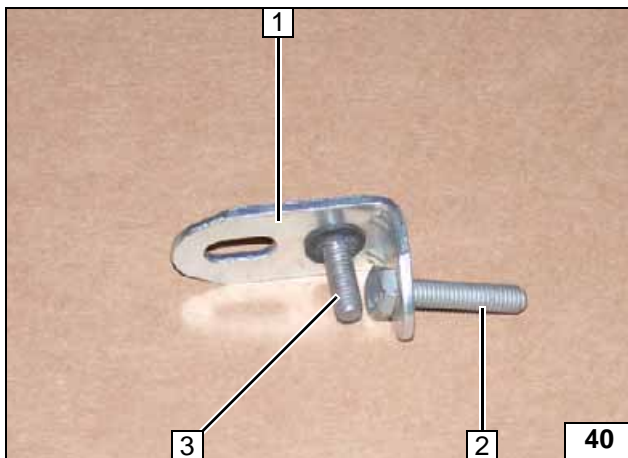


Push braided protection hose onto hose **B** and **G** and cut to length.
Cut heat shrink plastic tubing to length.

- 1 50 mm long heat shrink plastic tubing [4x]

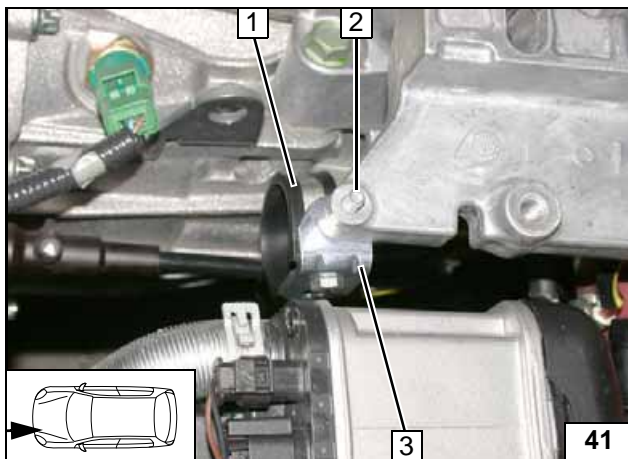


Preparing hoses



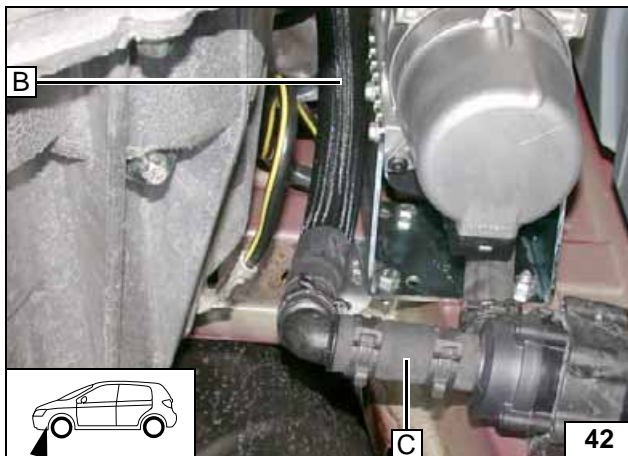
- 1 Angle bracket
- 2 M6x30 bolt
- 3 M6x20 bolt, pin lock

Premounting angle bracket

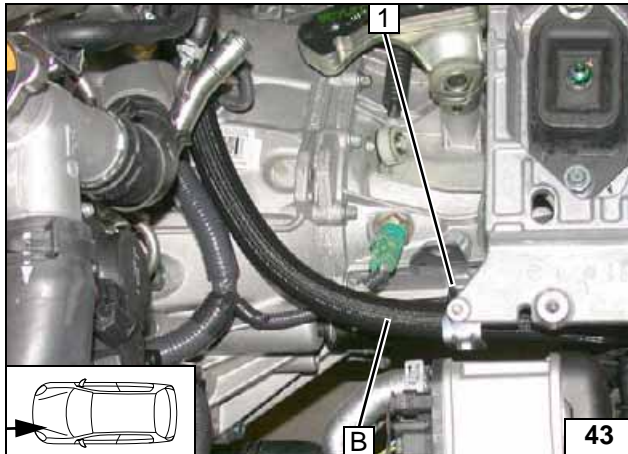
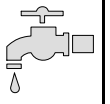


- 1 38mm dia. rubber-coated p-clamp, flanged nut
- 2 Tighten M6x30 bolt
- 3 Angle bracket

Premounting rubber-coated pipe clamp



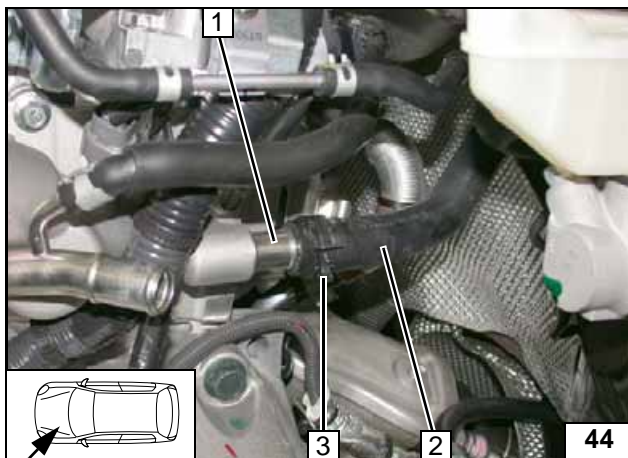
Connecting circulating pump



Route hose **B** through rubber-coated pipe clamp **1**.



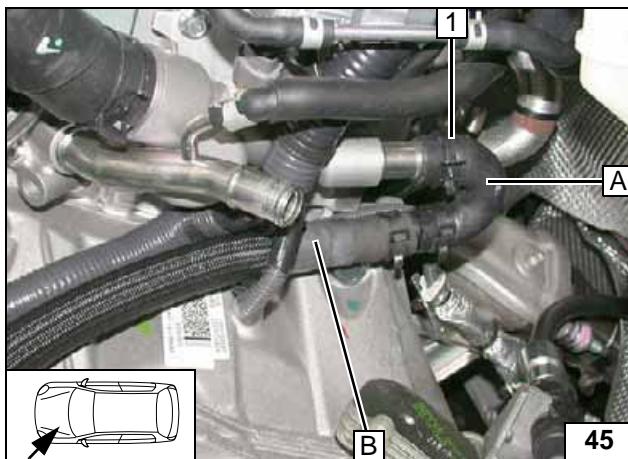
Routing in engine compartment



Detach engine outlet/heat exchanger inlet hose **2** on connection piece of engine outlet **1**. Spring clip **3** will be reused.

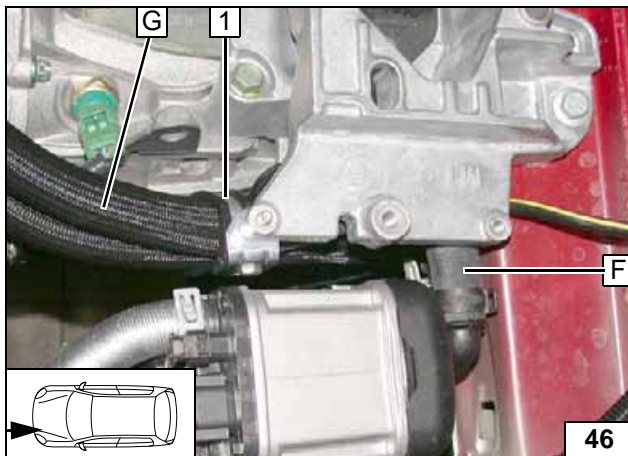


Cutting point



1 Original vehicle spring clip

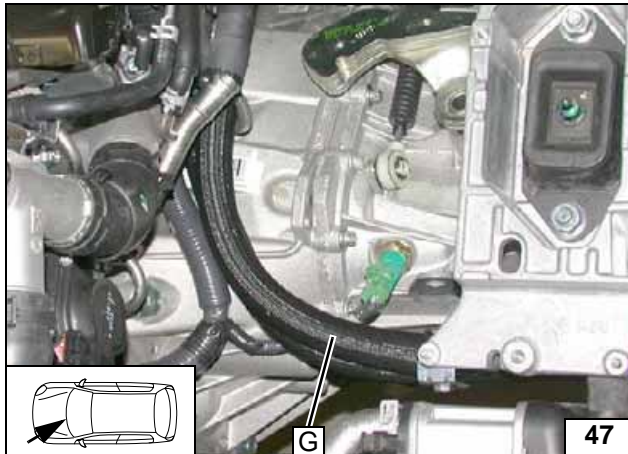
Connecting engine outlet



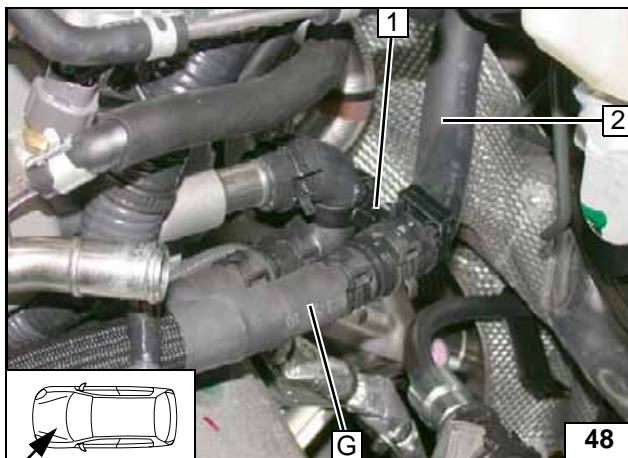
Connect hose **F** and **G**. Route hose **G** through rubber-coated pipe clamp **1**.



Connecting heater outlet



Routing in engine compartment

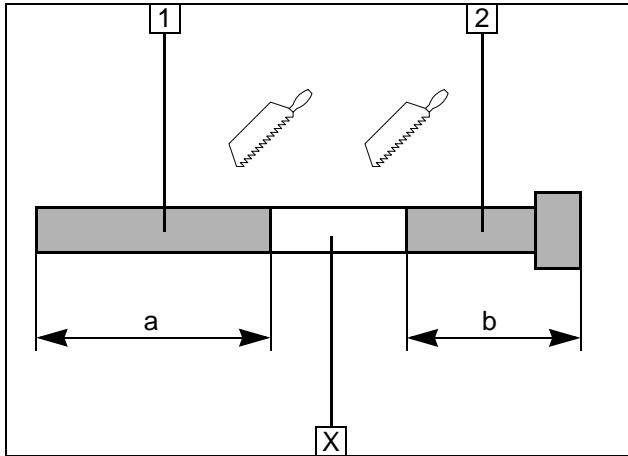
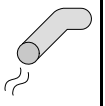


Ensure sufficient distance from neighbouring components.



- 1 Hose bracket
- 2 Hose on heat exchanger inlet

Connecting heat exchanger inlet



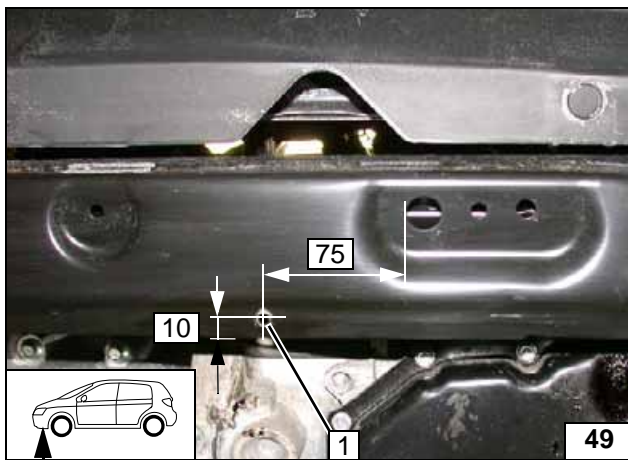
Exhaust gas

Discard section X

- 1 Exhaust pipe
a = 350
- 2 Exhaust end section
b = 165

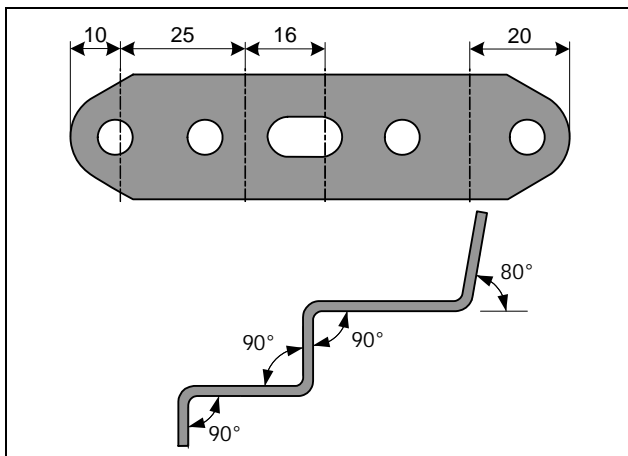


Preparing exhaust pipe



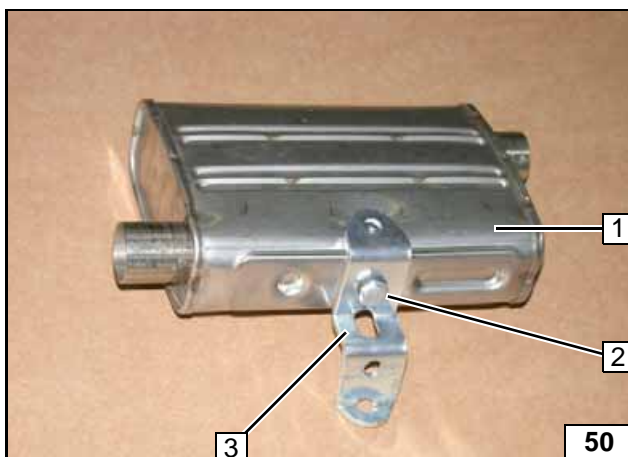
1 7 mm dia. hole

Drilling hole in cross member



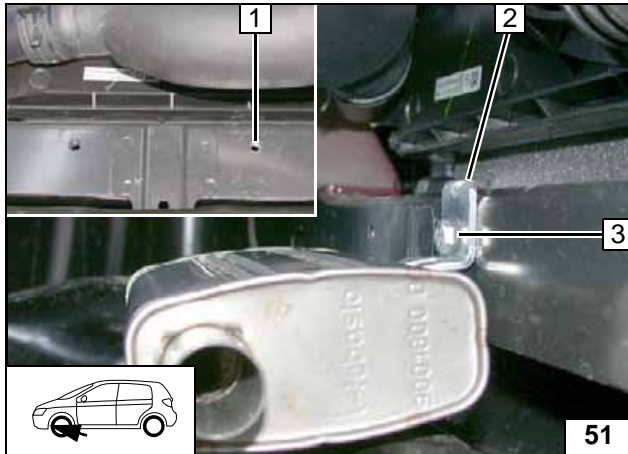
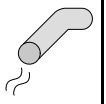
1 Perforated bracket

Bending perforated bracket



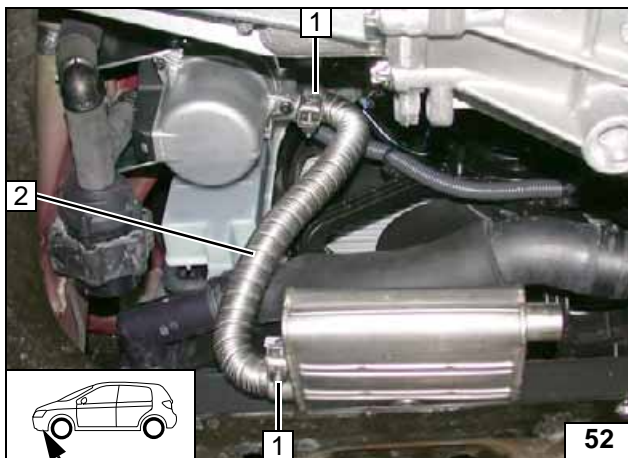
- 1 Silencer
- 2 M6x16 bolt, spring lockwasher
- 3 Perforated bracket

Premounting silencer



- 1 Original vehicle threaded hole
- 2 Perforated bracket
- 3 M6x20 bolt, spring lockwasher

Installing silencer

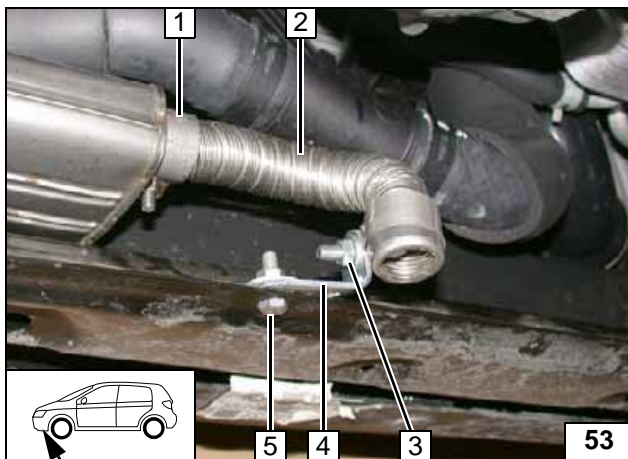


Ensure sufficient distance from neighbouring components, correct if necessary.

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



Installing exhaust pipe

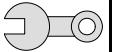


Ensure sufficient distance from neighbouring components, correct if necessary.

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



Installing exhaust end section



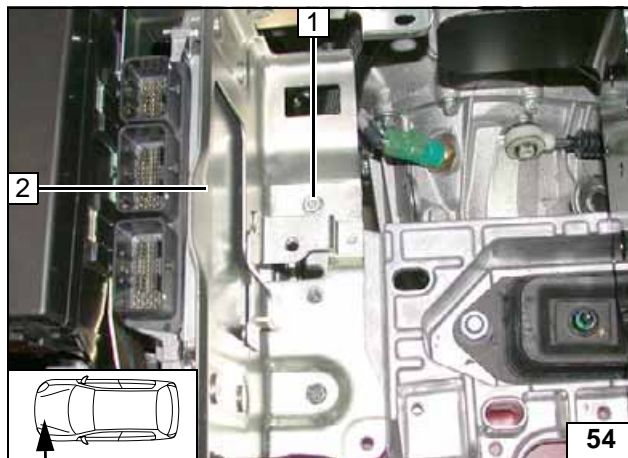
Final Work

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 Telearstart 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

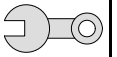


- 1 M6 Flanged nut
- 2 Control unit with bracket

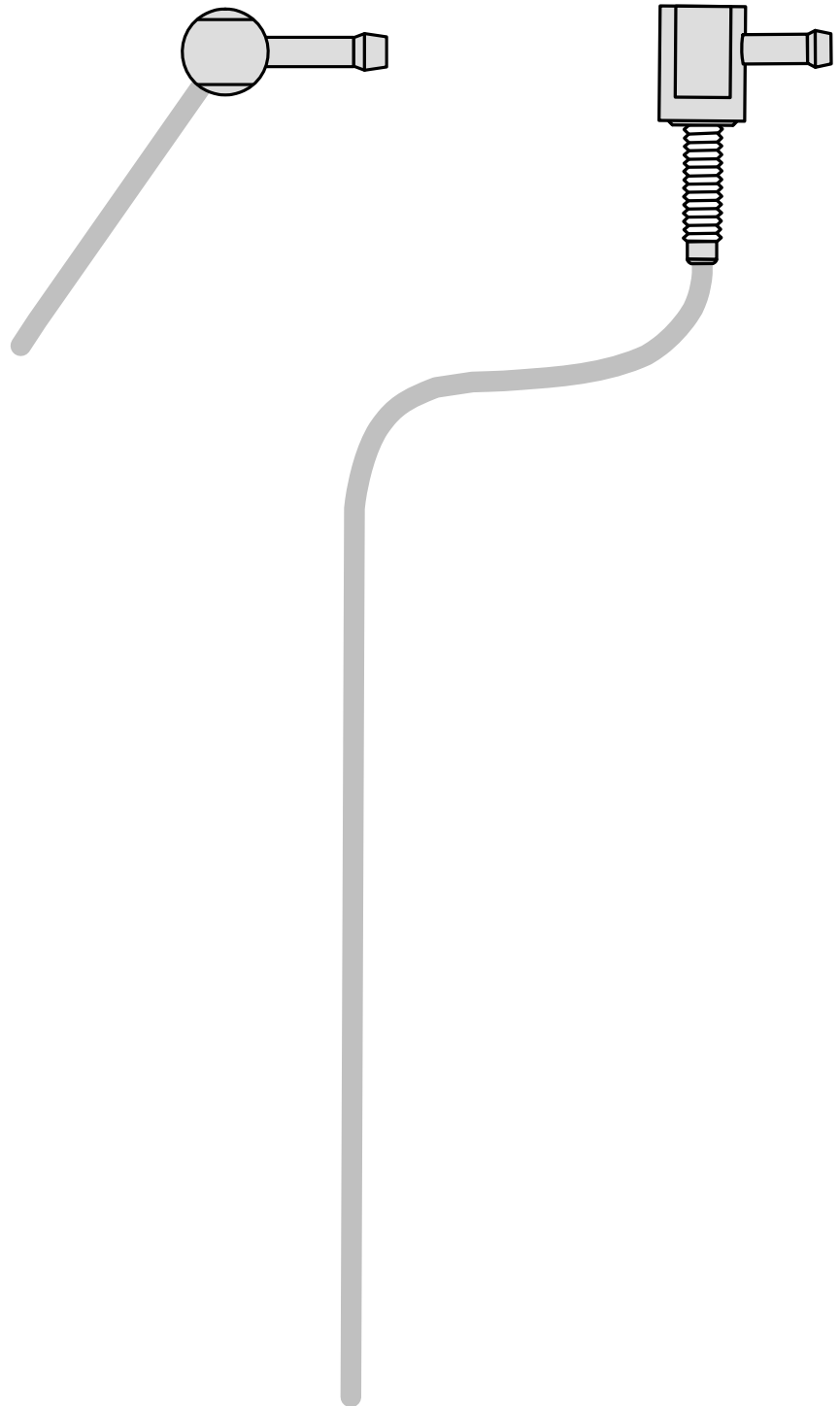
Installing
control
unit

Webasto
Feel the drive

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



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:

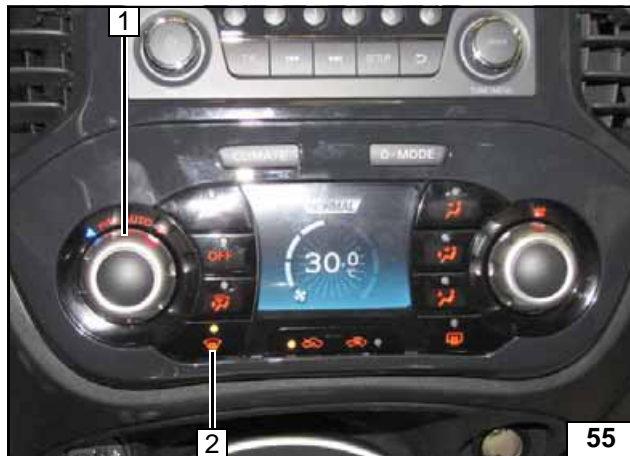
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

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 Set temperature to "30.0 °C"
- 2 Air outlet to windscreen

Automatic air-conditioning