Water Heater

***Thermo Top Evo* Parking Heater** e1 00 0258

Installation documentation

Nissan Juke

1.5 Diesel
from Model Year 2011
Left-hand drive vehicle
6-gear manual transmission
2 WD
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.

Ident. No.: 1316961A_EN Fee Euro 10.00
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Validity

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

Engine type	Engine model	Output in kW	Displacement in cm³
K9K	Diesel	81	1461

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 *Thermo Top Evo*	See Price list
1	Installation kit for Nissan Juke 2011 1.5 Diesel	1316960A
1	Heater control	See Price list

Foreword

This installation documentation applies to Nissan Juke 1.5 Diesel vehicles - for validity, see page 2 - from model year 2011 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.

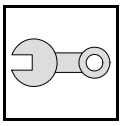
Special Tools

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

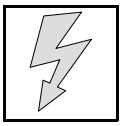
Explanatory Notes on Document

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.

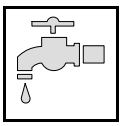
Mechanical system



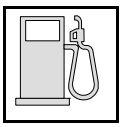
Electrical system



Coolant circuit

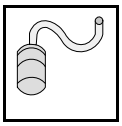


Fuel



Exhaust gas

Combustion air



Software

Special features are highlighted using the following symbols:

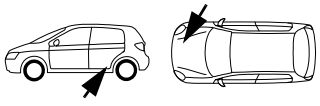
Specific risk of injury or fatal accidents.

Specific risk of damage to components.

Specific risk of fire or explosion.

Reference to general installation instructions of 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.

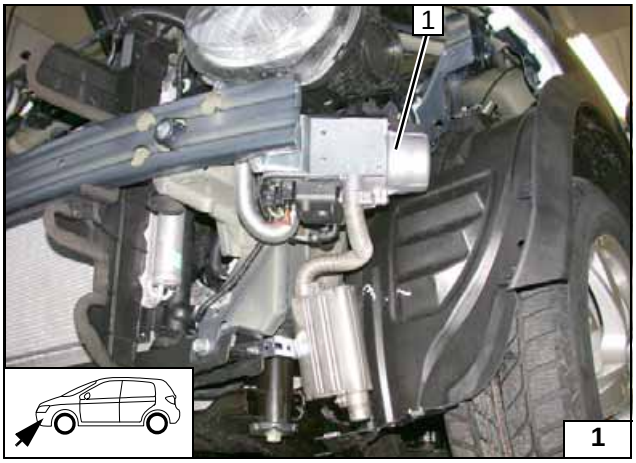
All dimensions are in mm!
Tightening torque of 5x13 heater bolts = 8Nm!
Tightening torque of 5x15 bolt of water connection piece retaining plate = 7Nm!

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
- Remove the air filter together with the intake hose
- Remove battery carrier and air filter bracket
- Remove bumper trim
- Remove the rear bench seat.
- Open the right-hand tank-fitting service lid.
- 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

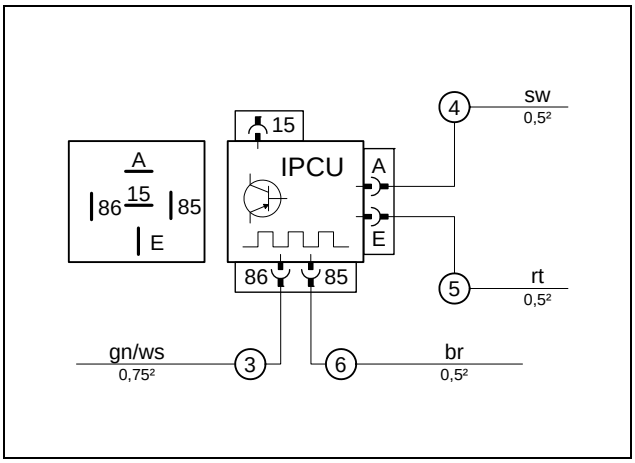
Remove page 29 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

Installation location

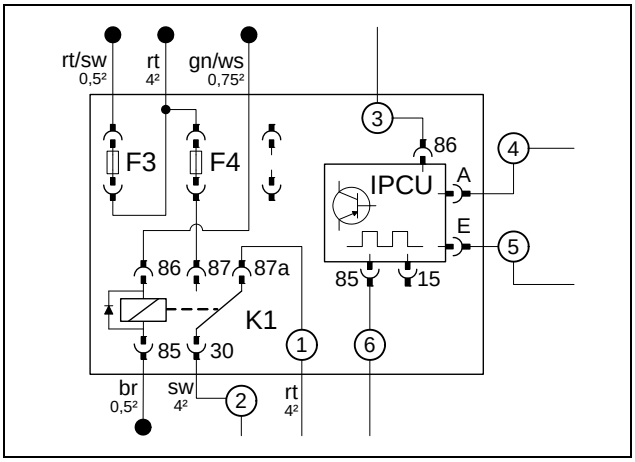


Preparing electrical system

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

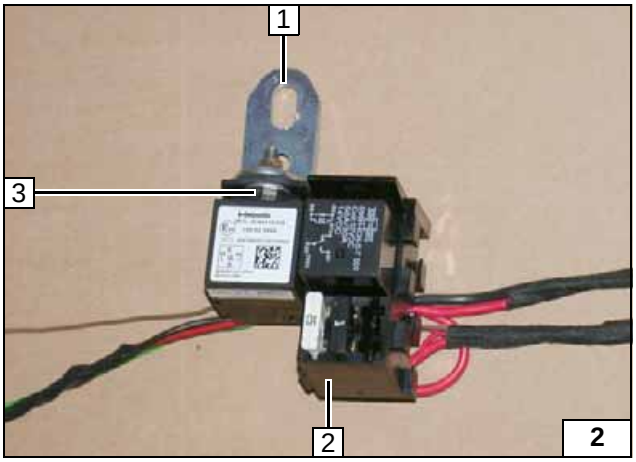
Preparing IPCU



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

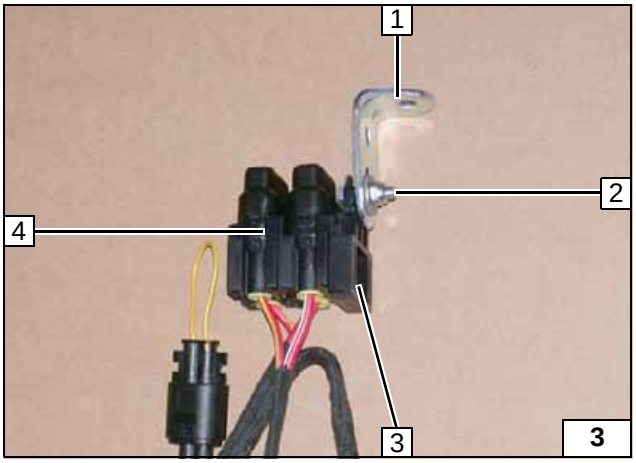
Preparing K1 relay of IPCU and F4



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



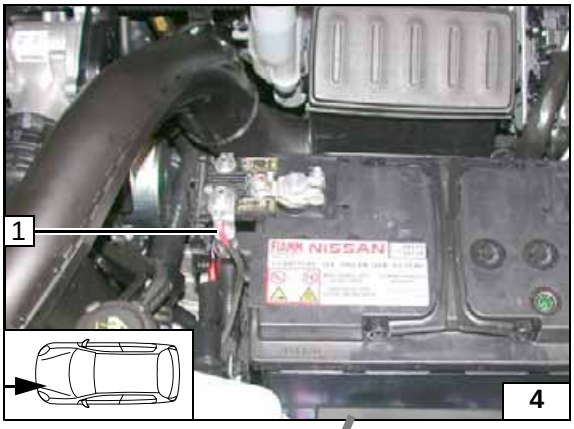
1 Angle bracket
2 M5x16 bolt, large diameter washer [2x], nut
3 Retaining plate of fuse holder
4 Fuse F1-2

Preparing fuse holder of engine compartment

Electrical system

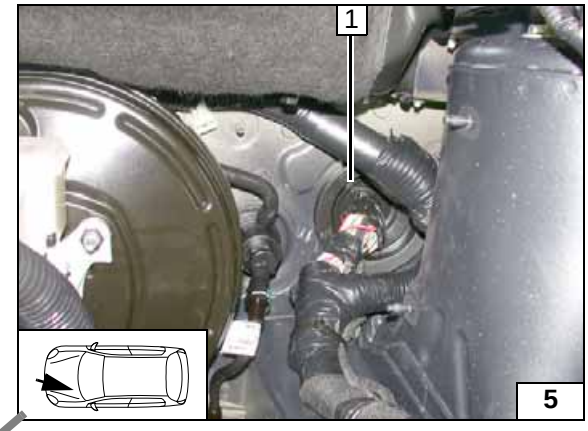
Positive wire

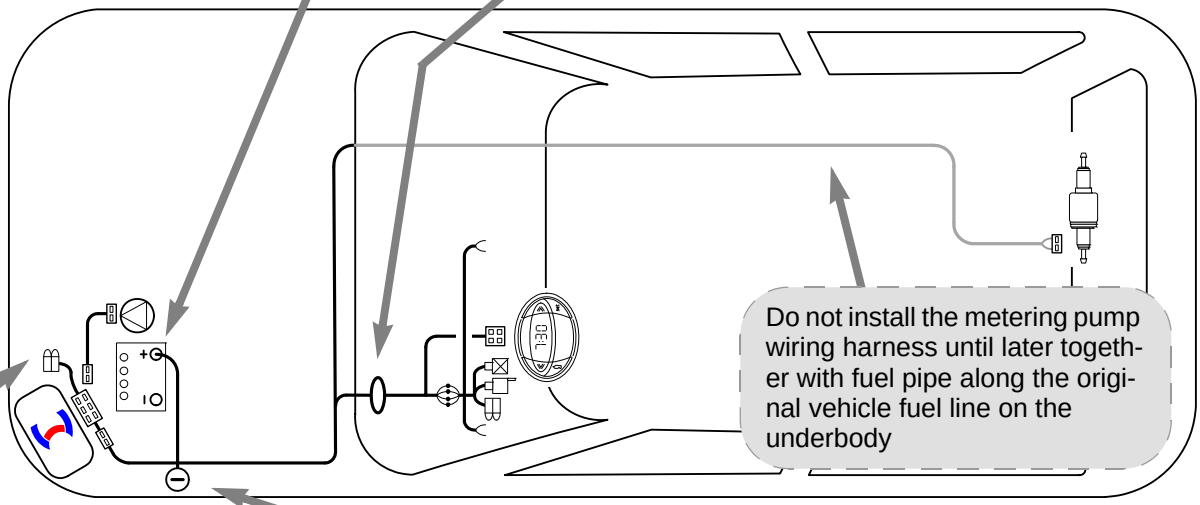
1 Positive wire to positive battery terminal



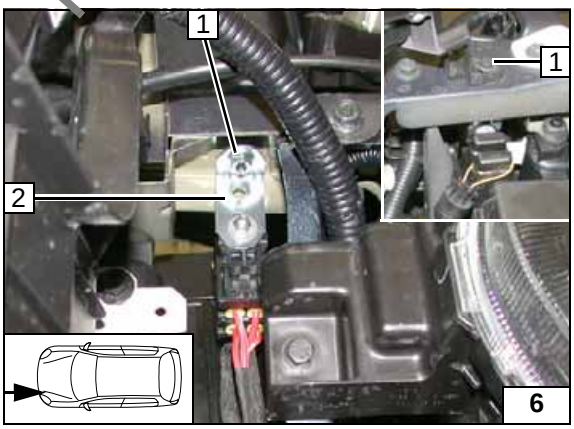
Wiring harness pass through

1 Protective rubber plug



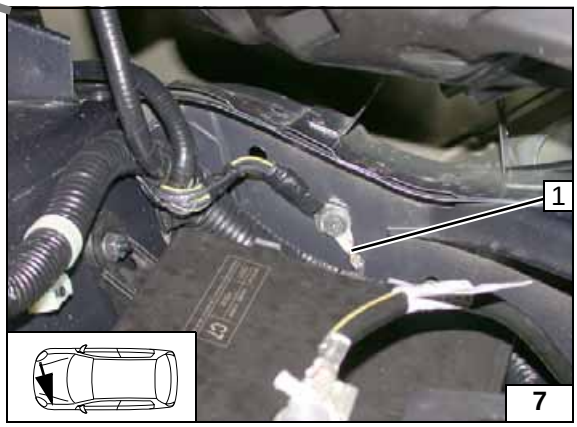


Wiring harness routing installation diagram



Fuse holder of engine compartment

1 Original vehicle stud bolt, M6 flanged nut
2 Angle bracket

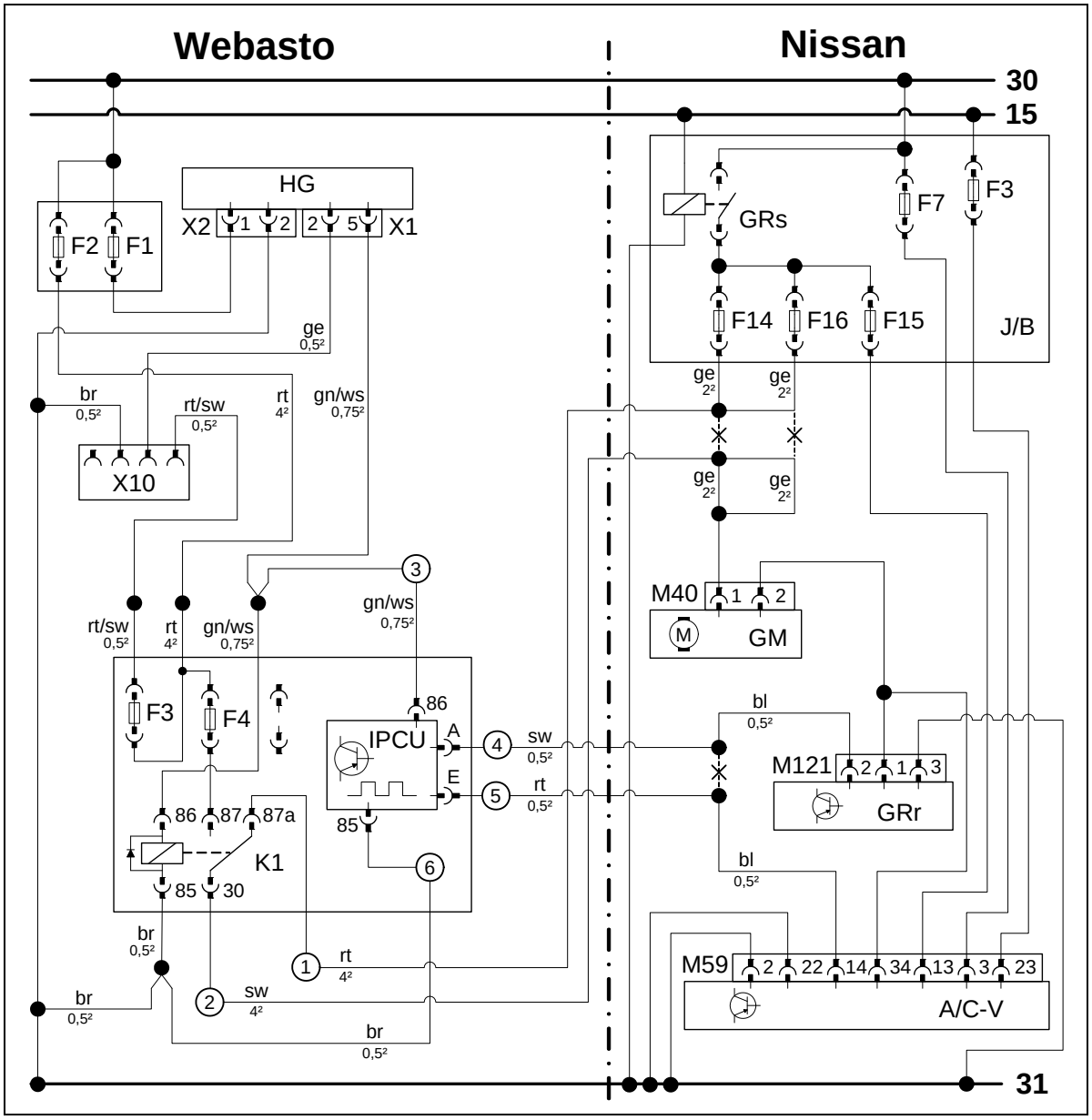


Earth wire

1 Earth wire on negative battery terminal

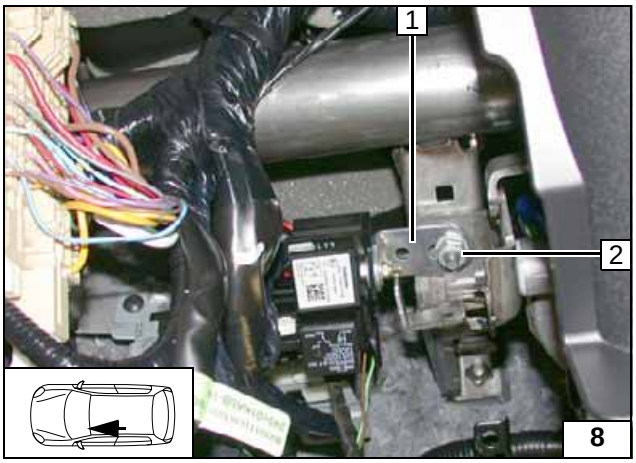
Fan control

Wiring diagram



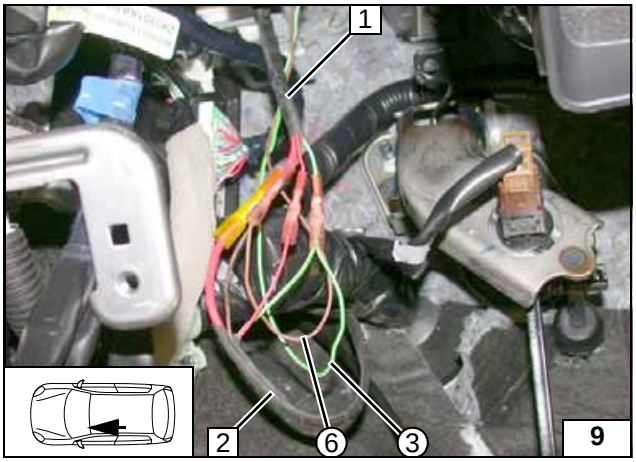
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	J/B	Fuse and relay box	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector	F3	10A fuse	ge	yellow
X10	4-pin connector Heater control	F7	10A fuse	gn	green
		F14	15A fuse	bl	blue
K1	Fan relay	F15	10A fuse	ws	white
F1	20A fuse	F16	15A fuse	br	brown
F2	30A fuse	GRs	Fan relay		
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.	



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

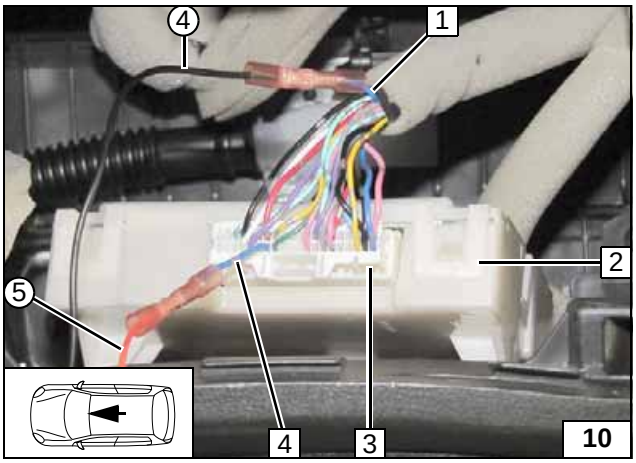
Installing fuse holder of passenger compartment



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

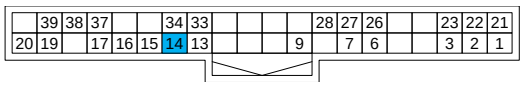


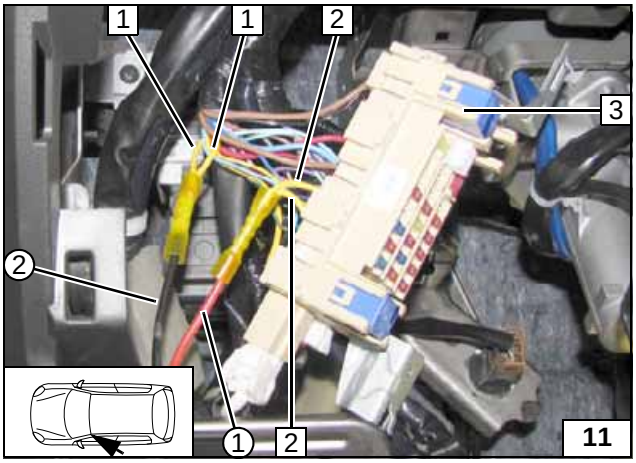
Connection on 40-pin M59 connector **3** from A/C booster **2**.
Produce connections as shown in wiring diagram.

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.

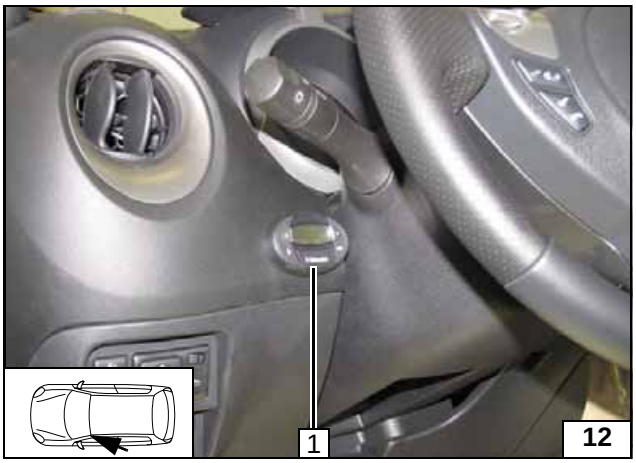




Connecting fan motor to fuse and relay box **3**. Produce connections as shown in wiring diagram.

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

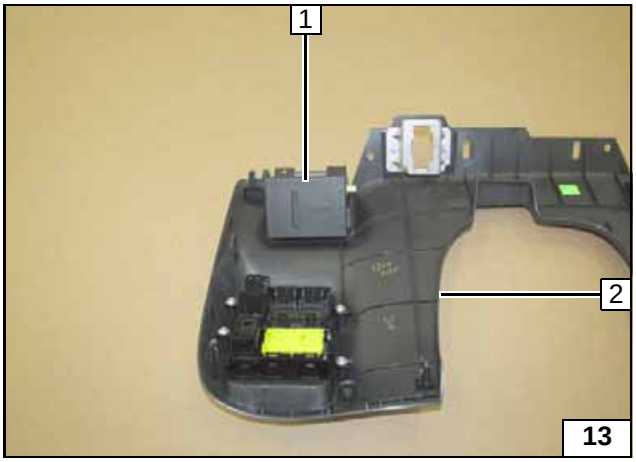
Connecting fan-motor



Digital timer option

1 Digital timer

Installing digital timer

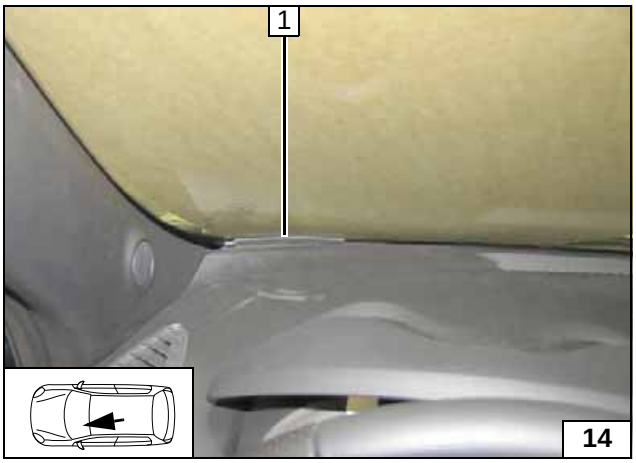


Remote option (Telestart)

Fasten receiver **1** with adhesive tape.

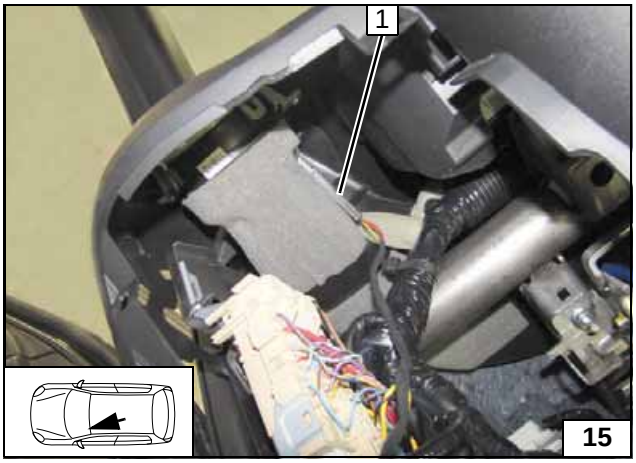
2 Instrument panel trim

Installing receiver



1 Antenna

Installing antenna

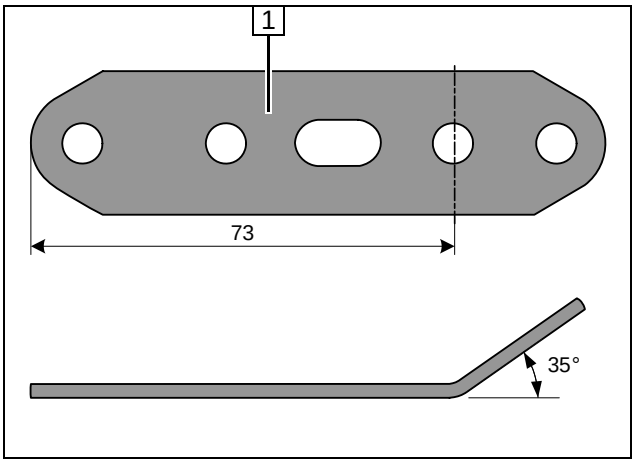


Temperature sensor T100 HTM

Fasten temperature sensor **1** with adhesive tape.

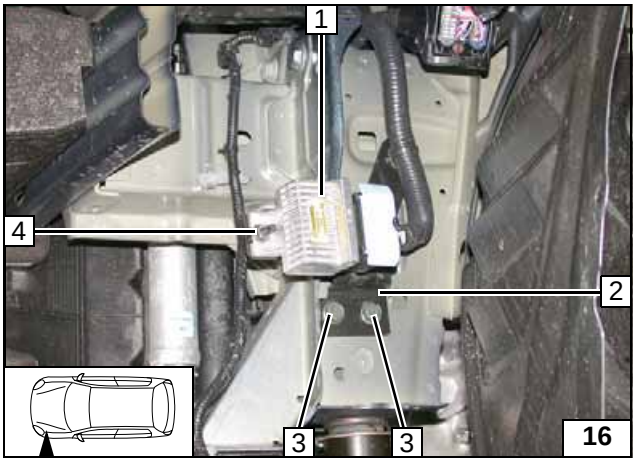
Installing temperature sensor

Preparing installation location



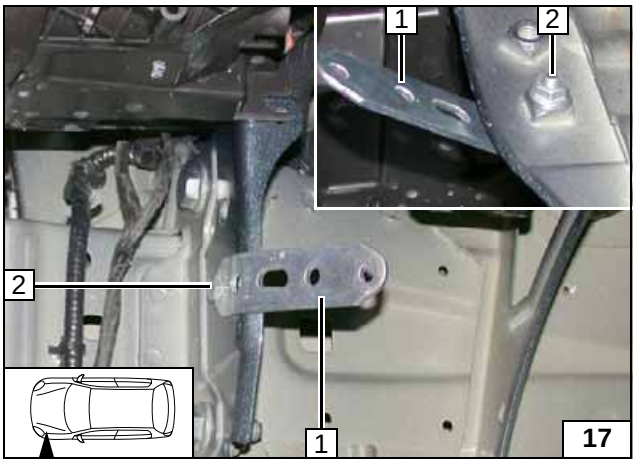
1 Perforated bracket

Angling down perforated bracket



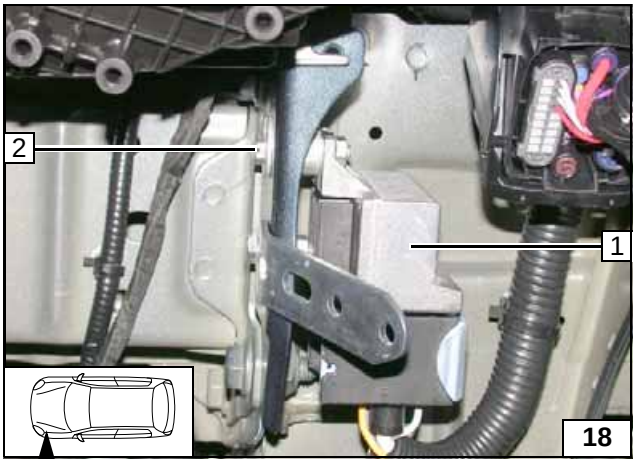
1 Control unit of radiator fan
2 Discard bracket of control unit
3 Remove original bolt [2x] and discard
4 Discard original flanged nut

Removing control unit



1 Perforated bracket
2 M6x20 bolt, flanged nut, existing M8 weld-on nut

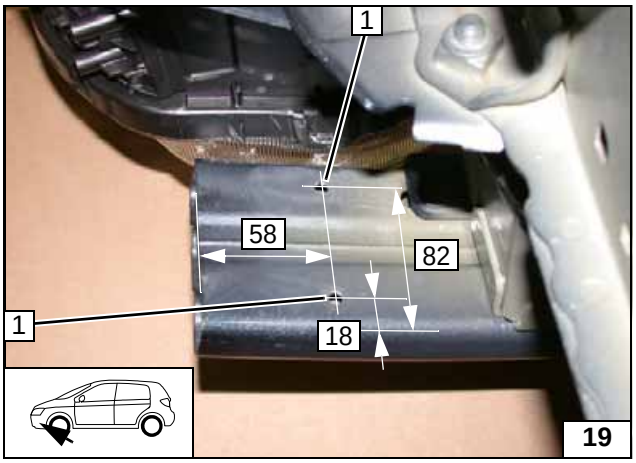
Installing perforated bracket



Insert shim between cross member and radiator fan control unit **1**

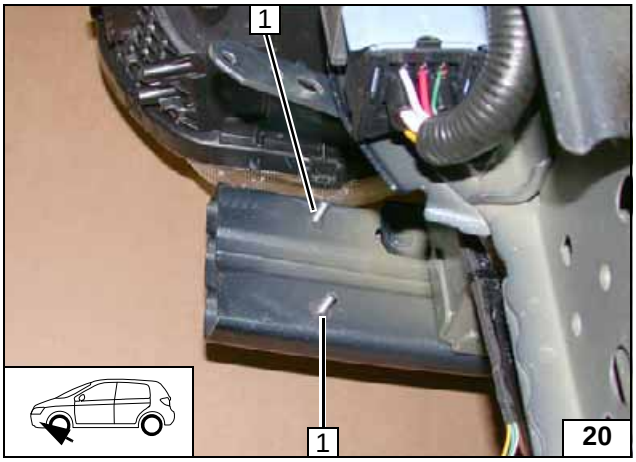
1 M6x30 bolt, large diameter washer, 10mm shim, flanged nut, existing M8 weld-on nut

Installing control unit



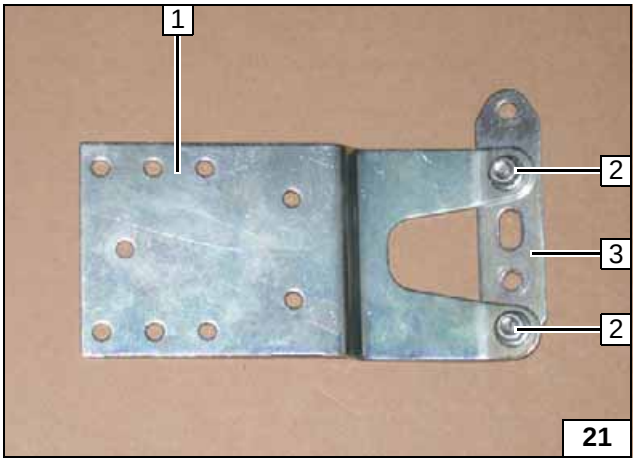
1 Drill 7 mm dia. hole [2x]

Hole in bumper



1 M6x20 bolt, pin lock

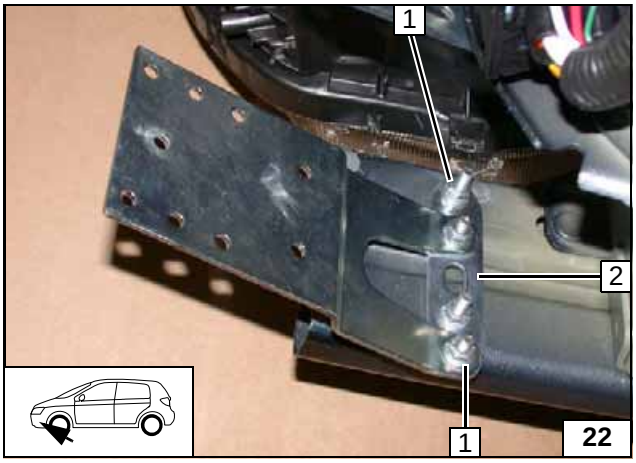
Inserting bolts



Cut bracket **1** to length as shown and bend

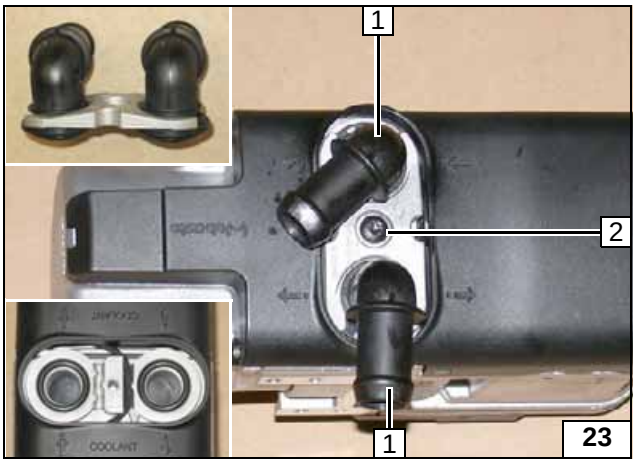
2 M6x16 bolt, flanged nut [2x each]
3 Perforated bracket

Premounting bracket



1 Flanged nut [2x]
2 Perforated bracket

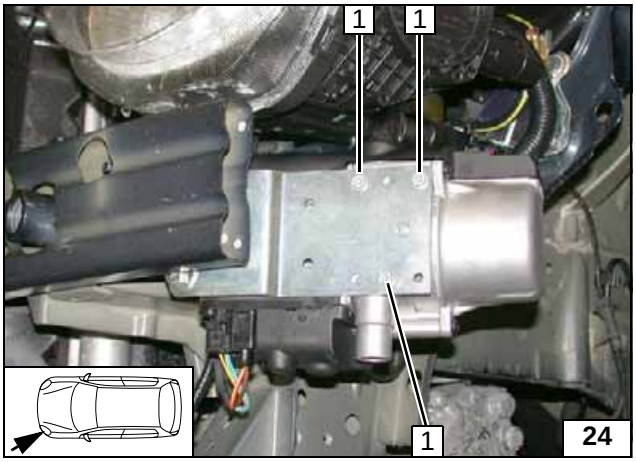
Installing bracket



Preparing heater

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

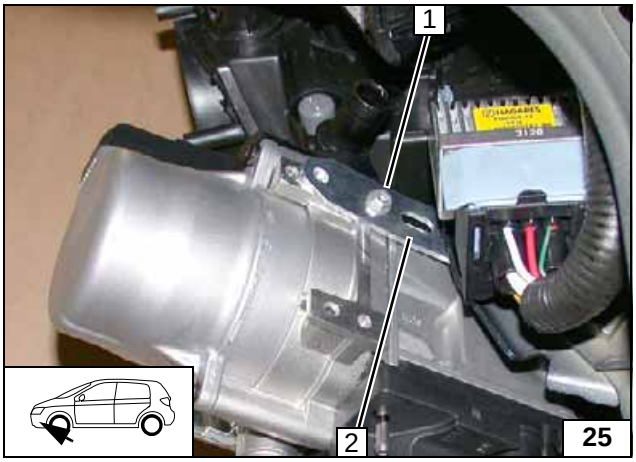
Installing coolant connection piece



Installing heater

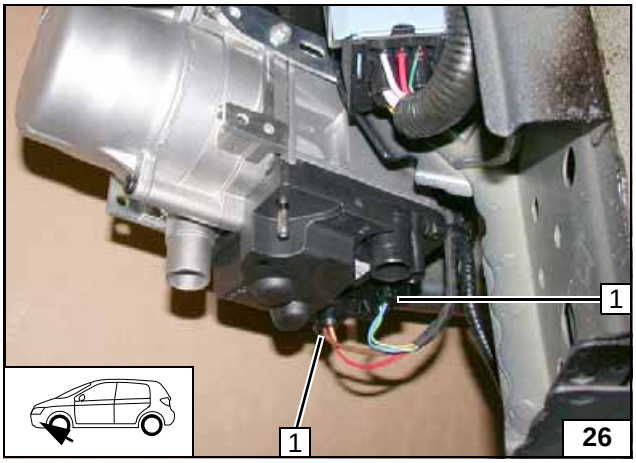
1 5x13 self-tapping bolt [3x]

Installing heater



1 5x13 self-tapping bolt
2 Perforated bracket

Installing heater



1 Wiring harness of heater [2x]

Mounting wiring harness

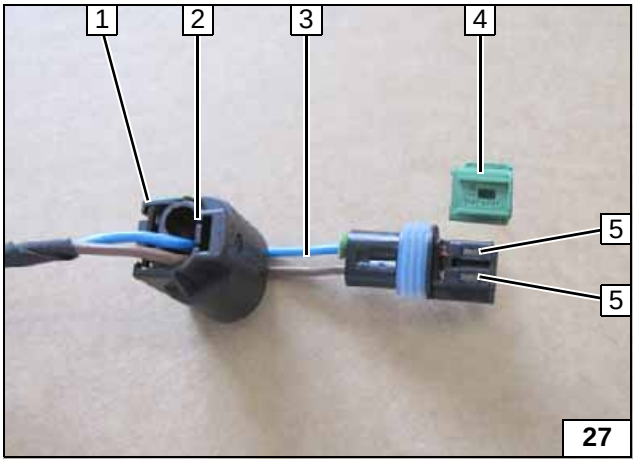
Fuel

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.

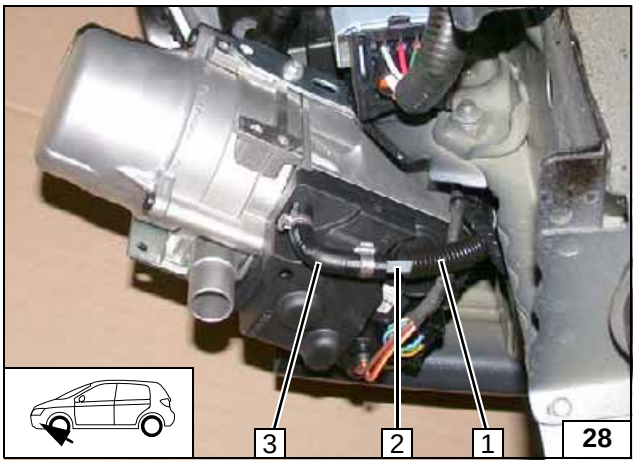
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Dismantling connector

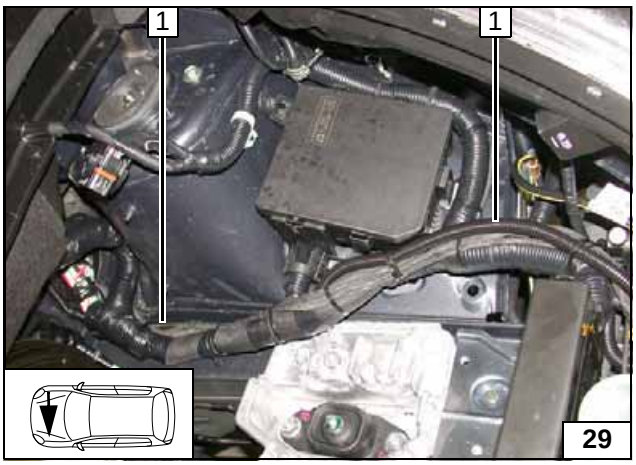
Complete connector of metering pump again after routing. Pin assignment is not relevant.

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



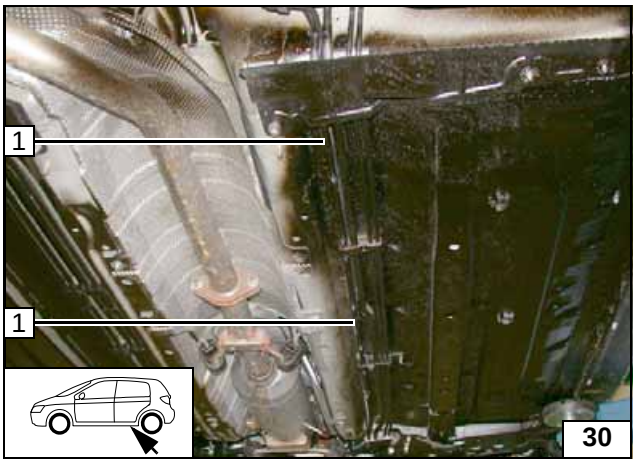
Connecting heater

1 2100mm corrugated tubewith fuel line and wiring harness of metering pump
2 Fuel line
3 90° moulded hose, 10mm dia. clamp [2x]



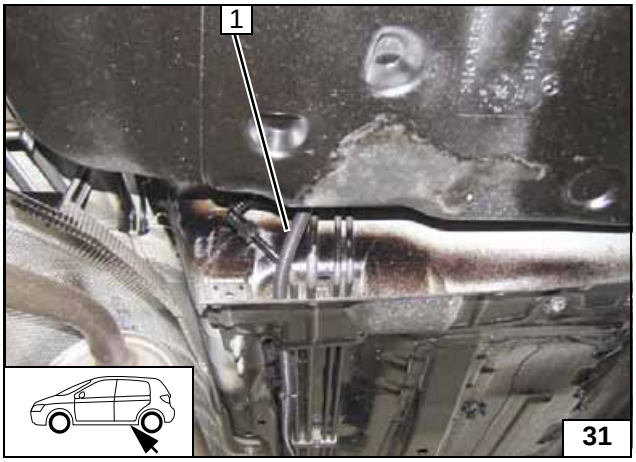
Installing lines

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



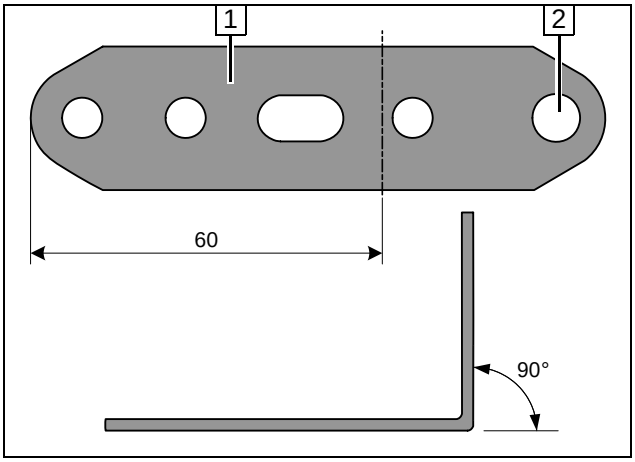
1 2100mm corrugated tubewith fuel line and wiring harness of metering pump

Installing lines



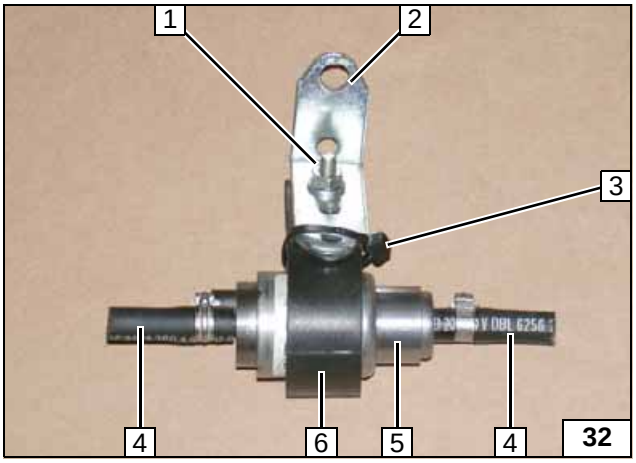
1 1130mm corrugated tubewith fuel line and wiring harness of metering pump

Installing lines



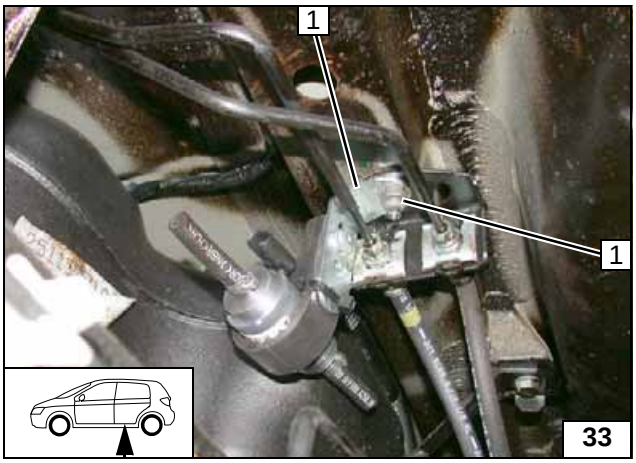
1 Perforated bracket
2 Drill out hole to 8.5mm dia.

Preparing perforated bracket



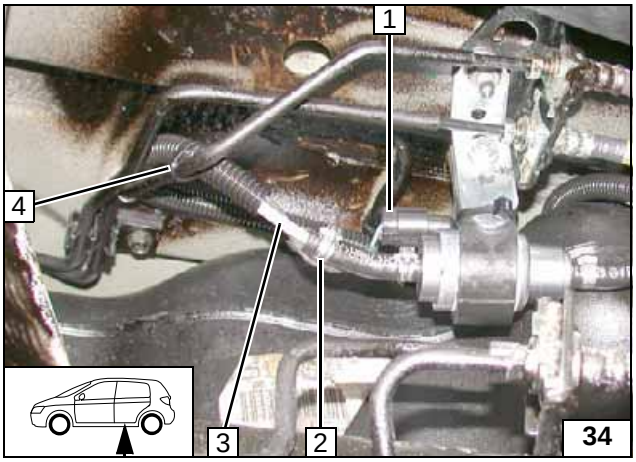
1 M6x25 bolt, flanged nut
2 Perforated bracket
3 Cable tie
4 Hose section, 10 mm dia. clamp [2x each]
5 Metering pump
6 Metering pump intake

Premounting metering pump



1 Perforated bracket
2 Original vehicle nut

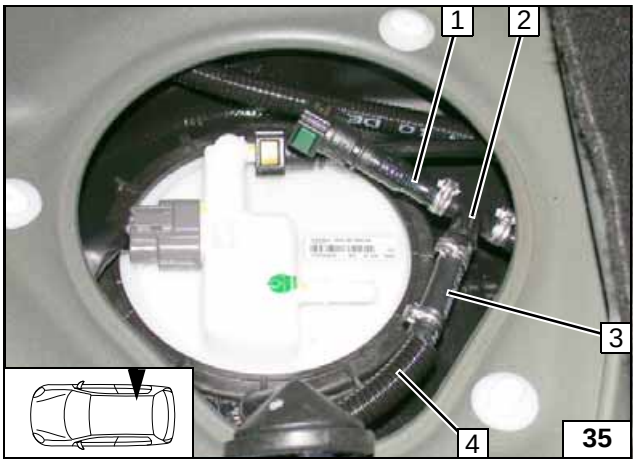
Installation location of metering pump



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

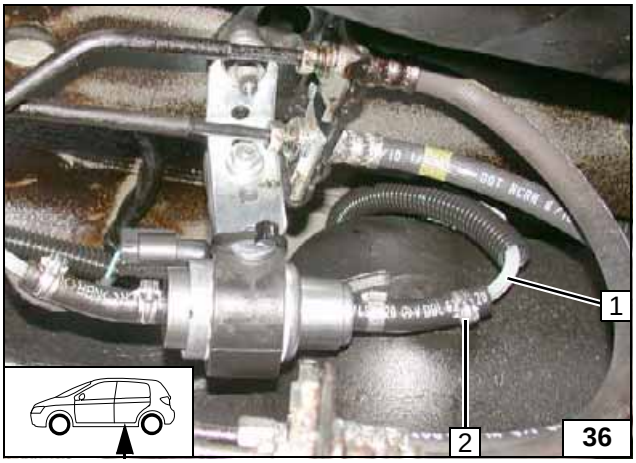
Connecting metering pump



Disconnect fuel supply line as shown. Slide corrugated tube **4** on to fuel line.

2 8x5x8 fuel standpipe, 10mm dia. clamp [2x]
3 Fuel line, hose section, 10mm dial clamp [2x]

Connecting fuel line



Check the position of the components; adjust if necessary. Check that they have freedom of movement.

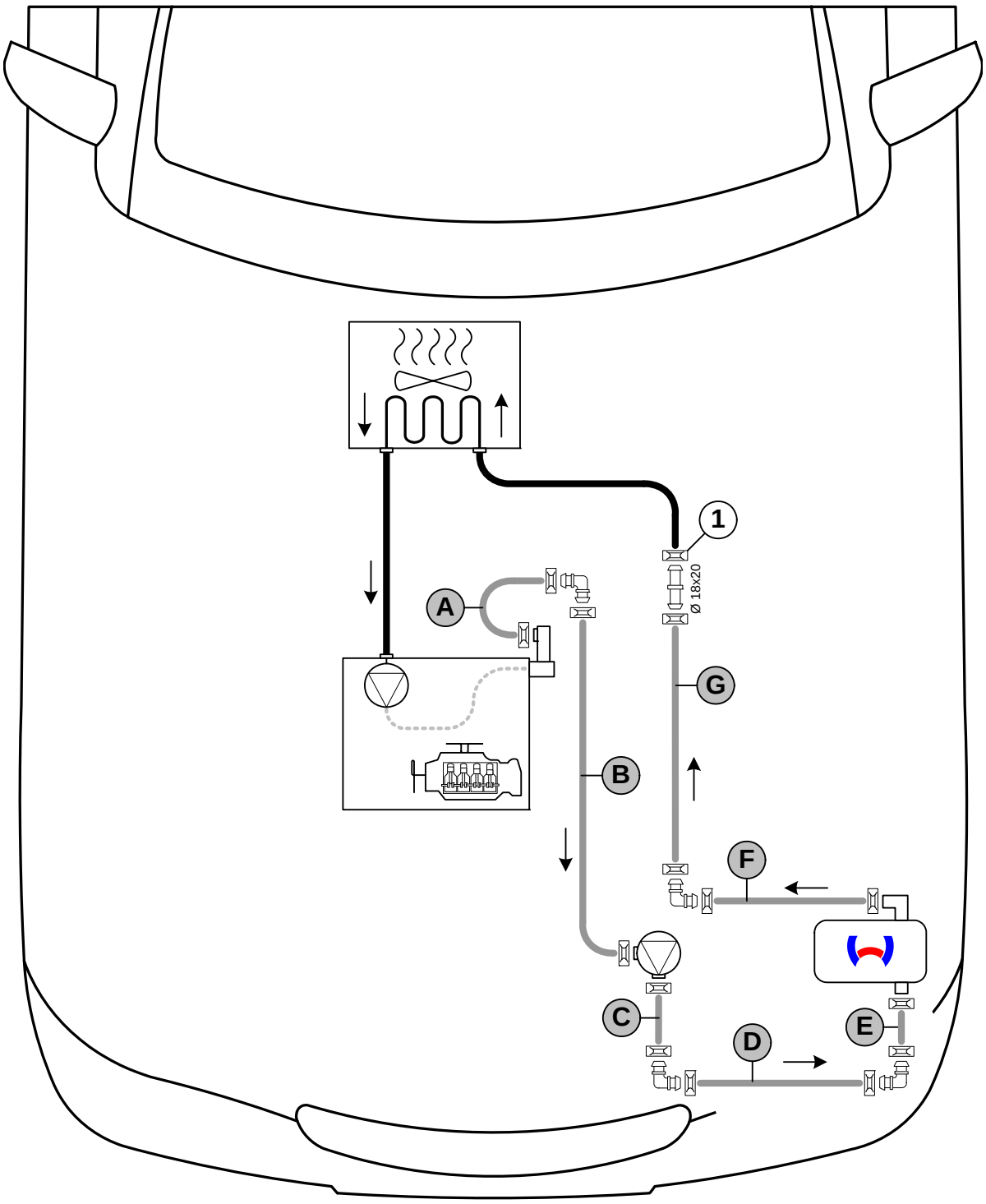
2 10 mm dia. clamp

Connecting metering pump

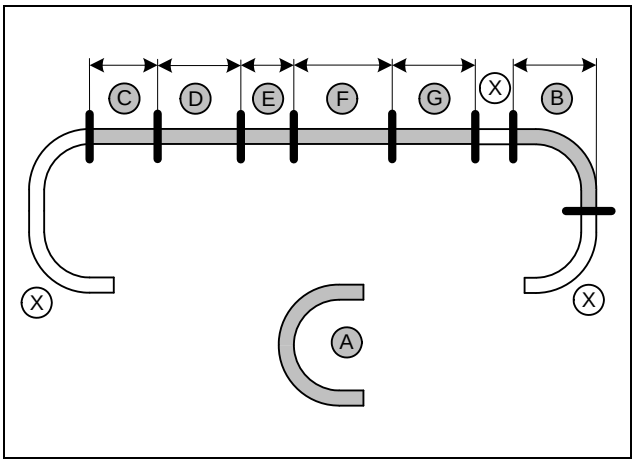
Coolant circuit

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:

Hose routing diagram



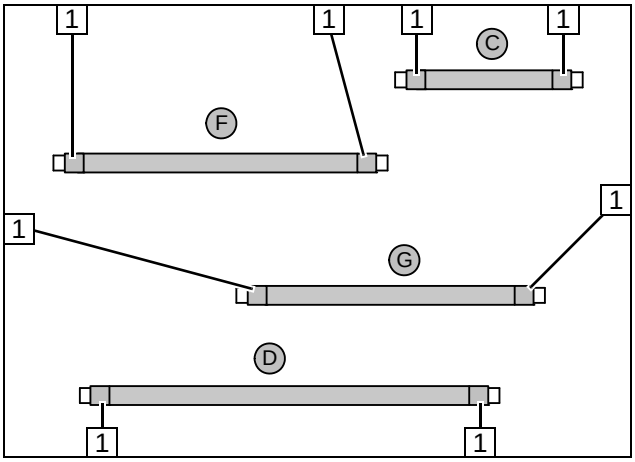
All connecting pipes without a specific designation = 25 mm dia.
1 = Original vehicle spring clip .
All connecting pipes = 18x18mm dia.



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

B = 185
C = 180
D = 480
E = 60
F = 450
G = 340

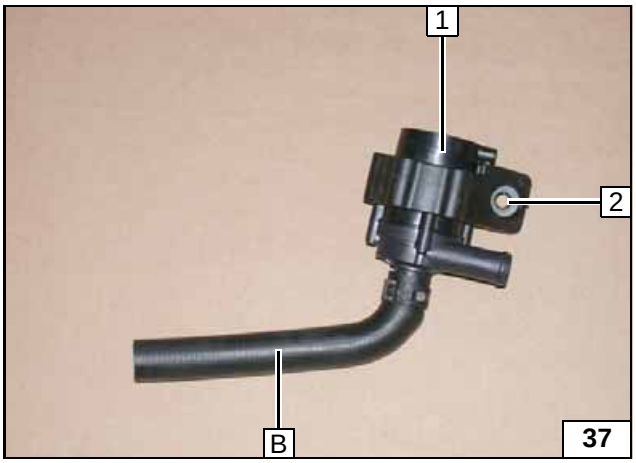
Cutting hoses to length



Push braided protection hose onto hose **C**, **D**, **F** and **G** and cut to length.
Cut heat shrink plastic tubing to length.

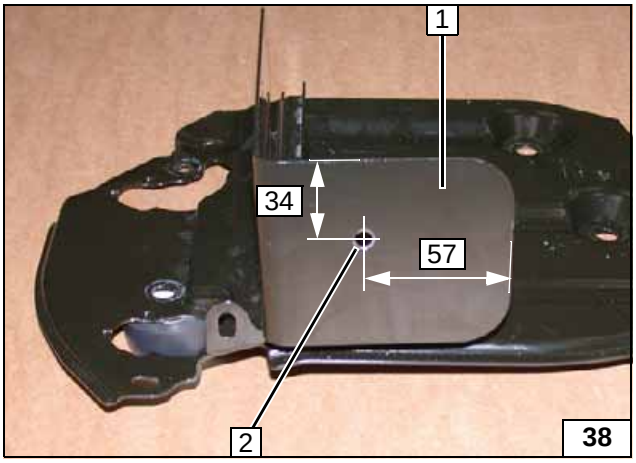
1 50 mm long heat shrink plastic tubing [8x]

Preparing hoses



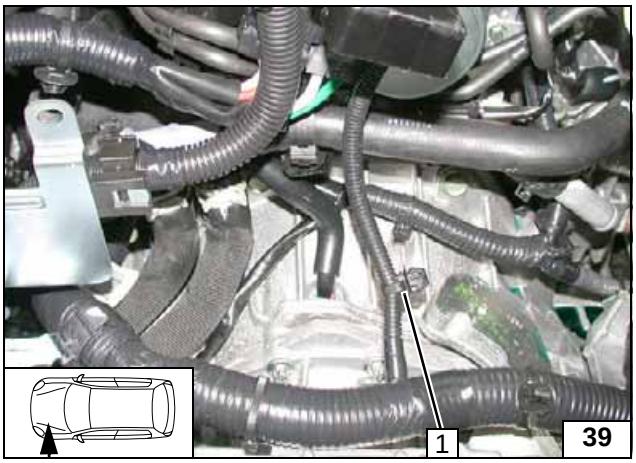
1 Circulating pump
2 Circulating pump intake

Premounting circulating pump



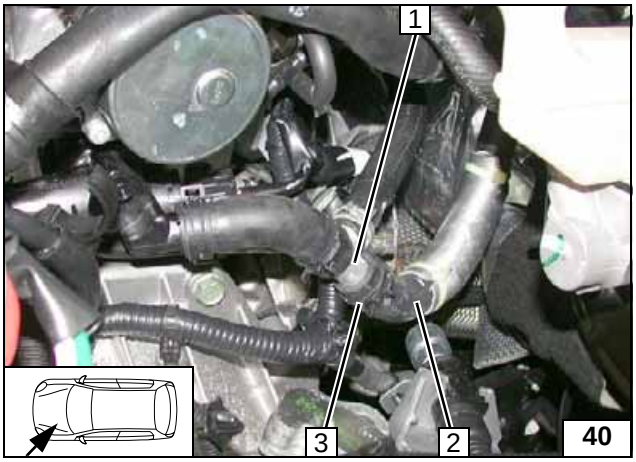
1 Battery carrier
2 7 mm dia. hole

Drilling hole in battery carrier



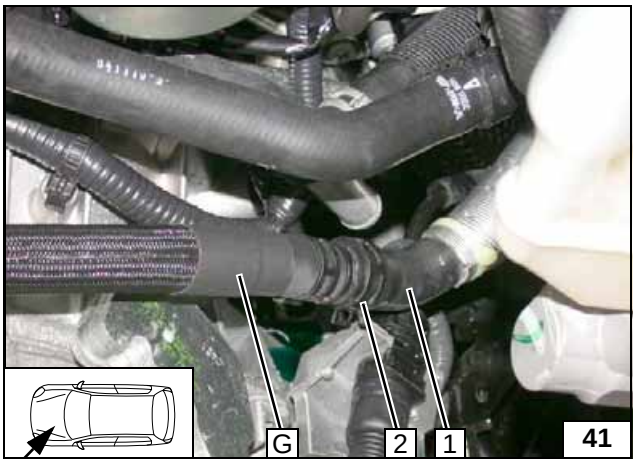
1 Original vehicle clip

Removing and discarding clip



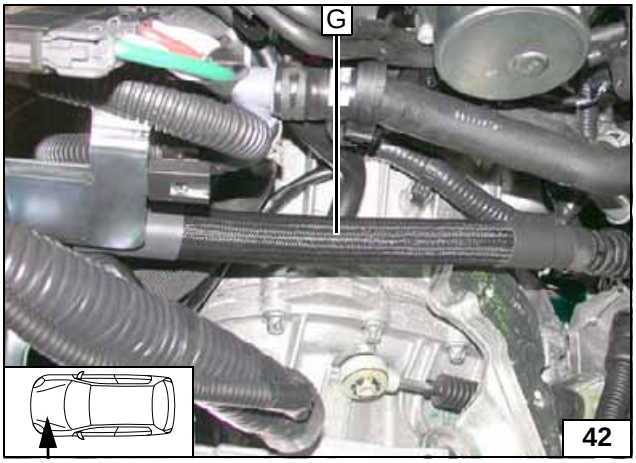
Detach engine outlet/heat exchanger inlet hose **2** on connection piece of engine outlet **1**. Spring clip **3** will be reused.

Cutting point

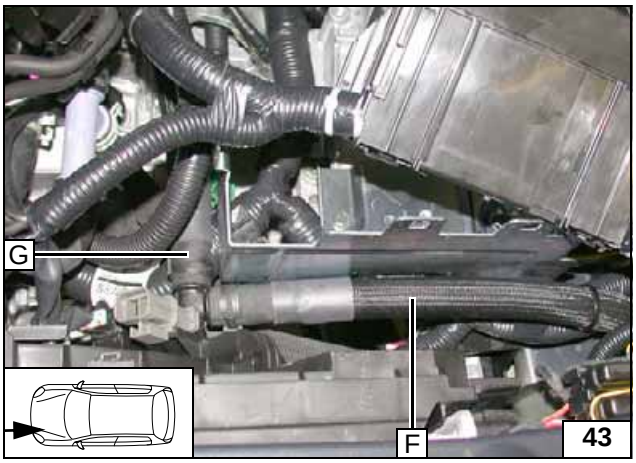


1 Hose on heat exchanger inlet
2 Original vehicle spring clip

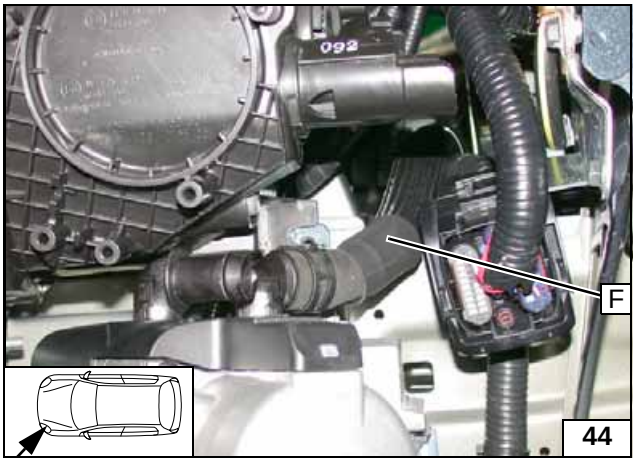
Connecting heat exchanger inlet



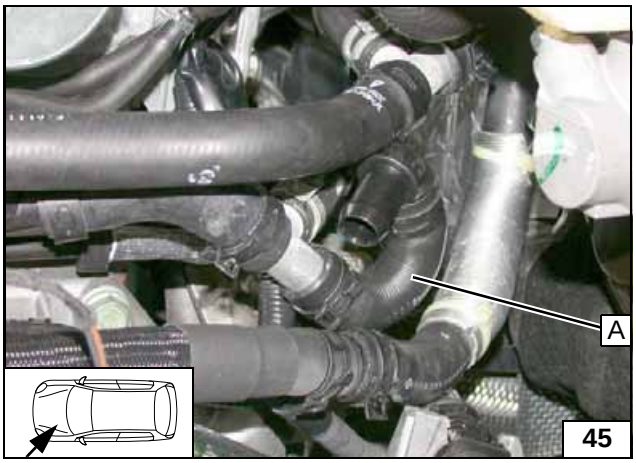
Routing in engine compartment



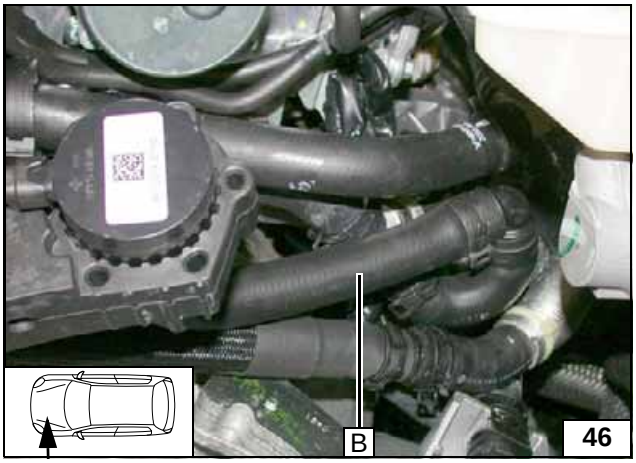
Routing in engine compartment



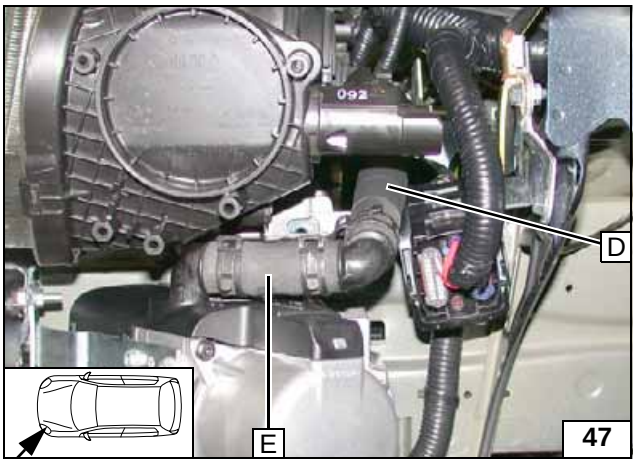
Connecting heater outlet



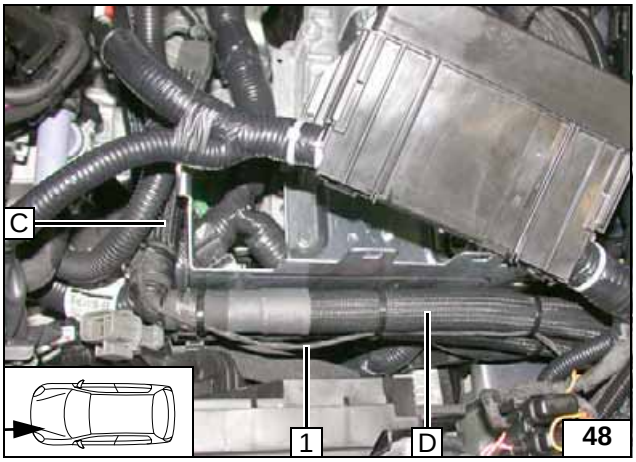
Connecting engine outlet



Connecting circulating pump

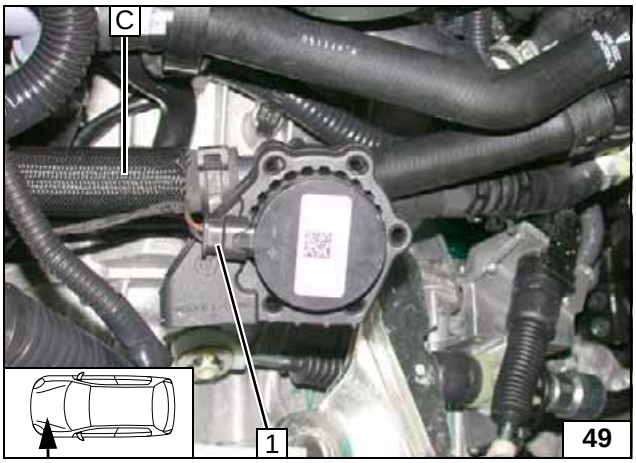


Connecting heater inlet



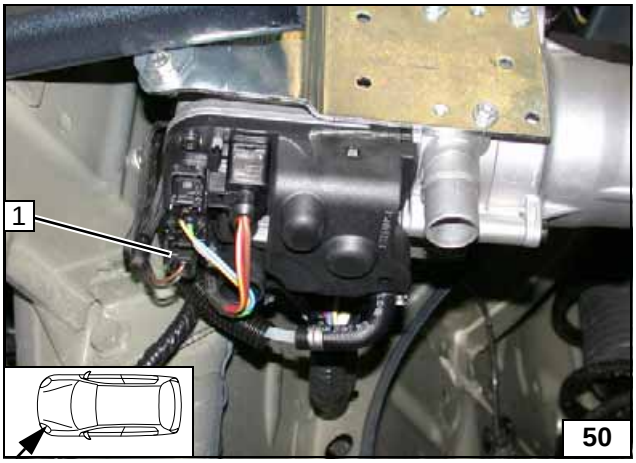
Fasten wiring harness of circulating pump **1** with cable tie on hose **D** and **C**.

Routing in engine compartment



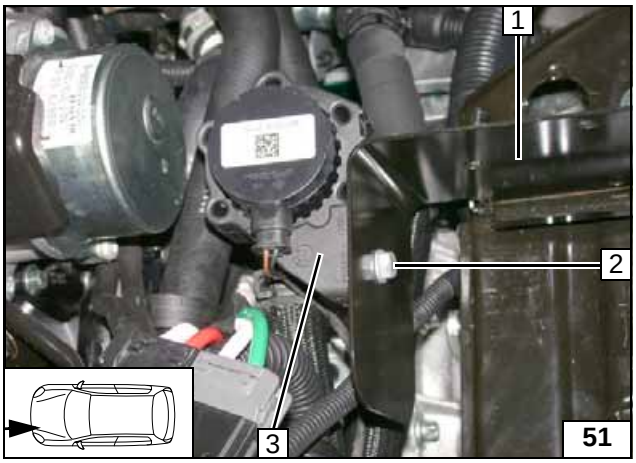
1 Mount wiring harness of circulating pump

Connecting circulating pump



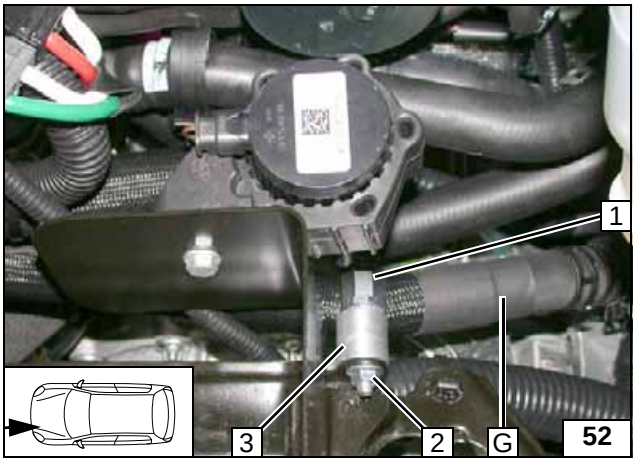
1 Mount wiring harness of circulating pump

Connecting circulating pump



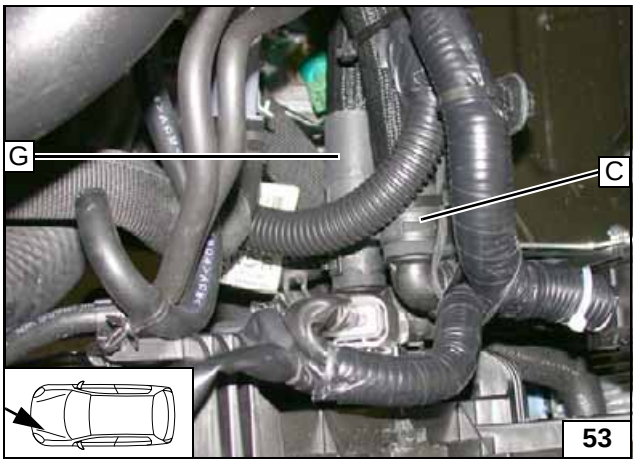
1 Install battery carrier
2 M6x25 bolt, flanged nut
3 Circulating pump intake

Fastening circulating pump



1 25 mm dia. rubber-coated p-clamp
2 M6x35 bolt, flanged nut, existing hole
3 20 mm shim

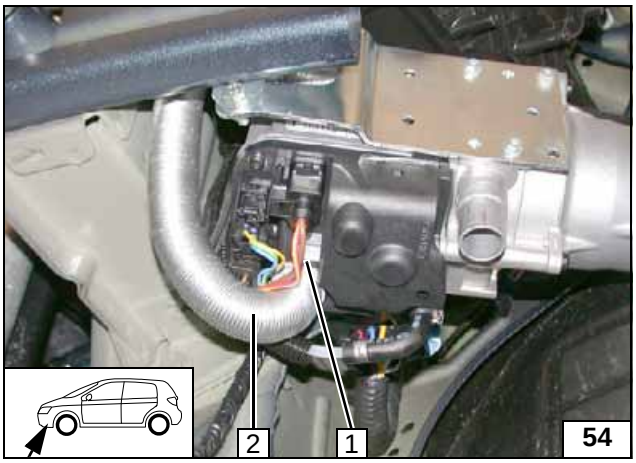
Fastening hose G



Ensure sufficient distance from neighbouring parts, especially hose **C** and **G**, correct if necessary

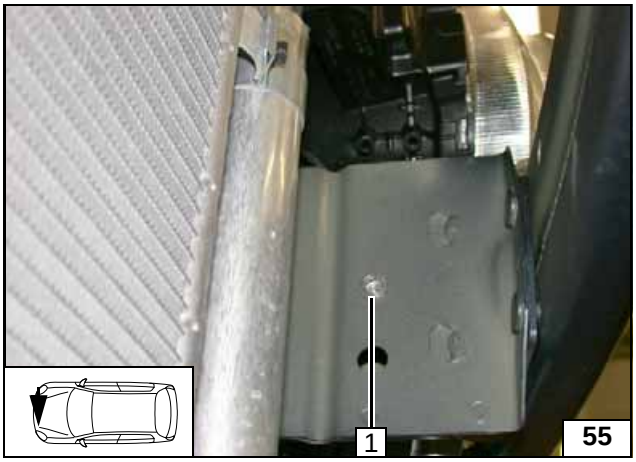
Aligning hoses

Combustion air



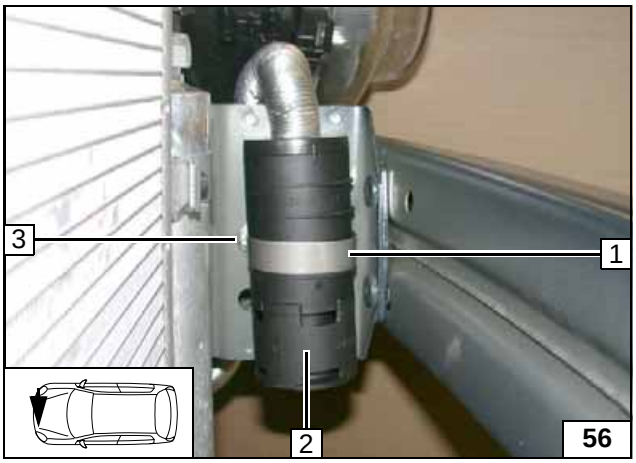
1 25mm dia. spring clip
2 Combustion air pipe

Installing combustion air pipe



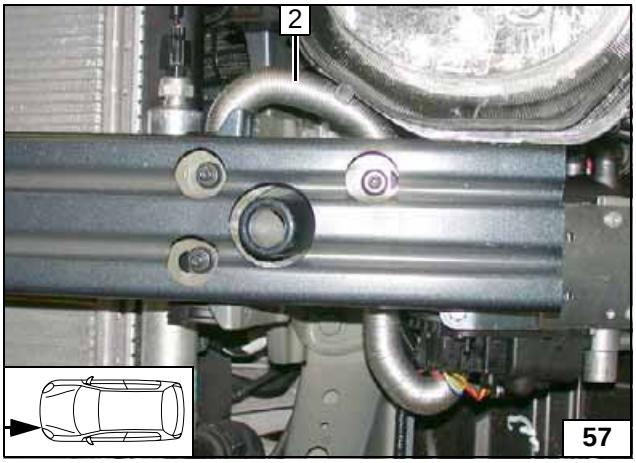
1 Drill out 9.1mm dia. hole, rivet nut

Installing rivet nut



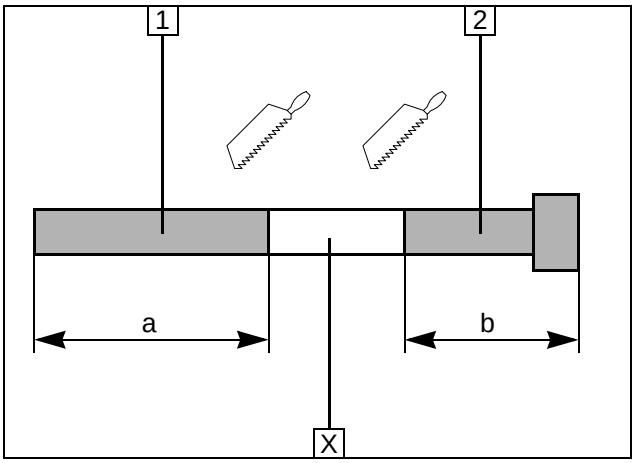
1 48 mm dia. clamp
2 Silencer
3 M6x20 bolt

Installing silencer



1 Combustion air pipe

Aligning combustion air pipe

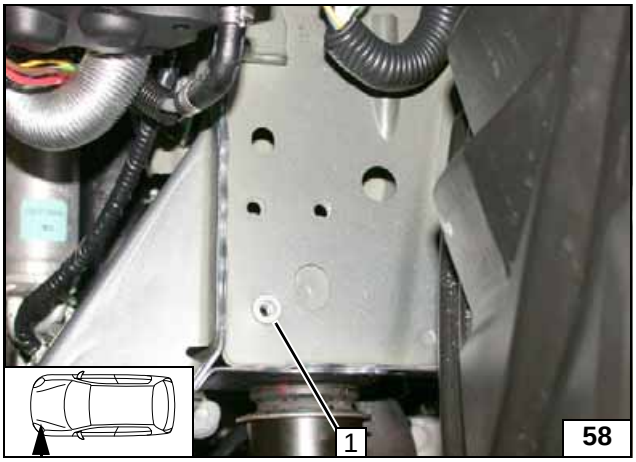


Exhaust gas

Discard section **X**

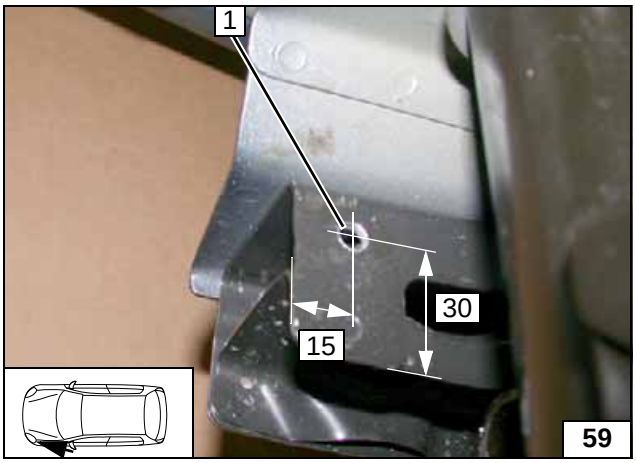
1 Exhaust pipe
a = 260
2 Exhaust end section
b = 30

Preparing exhaust pipe



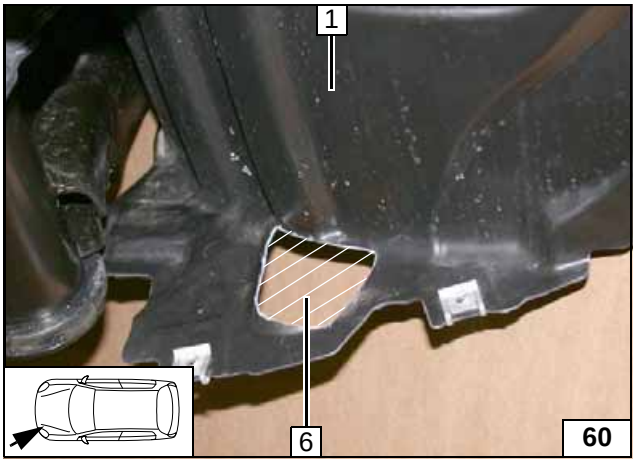
1 Drill out 9.1mm dia. hole, rivet nut

Installing rivet nut



1 7 mm dia. hole

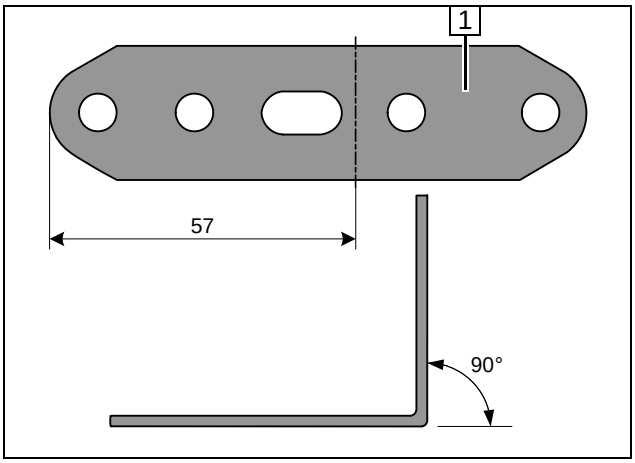
Hole in bumper



Cut out wheel well trim **1** in the area of the markings.

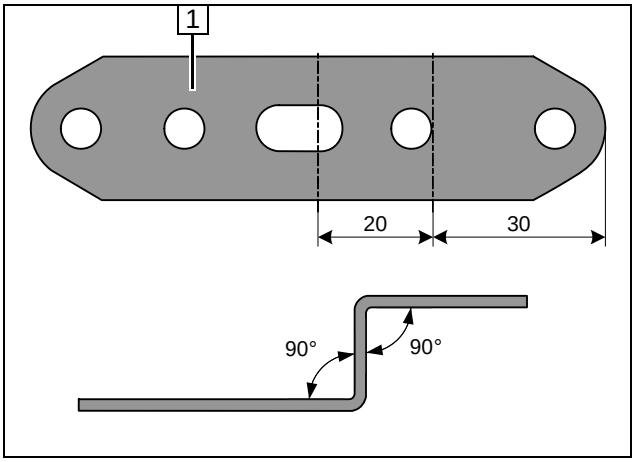
1 Discard section

Cutting out wheel well trim



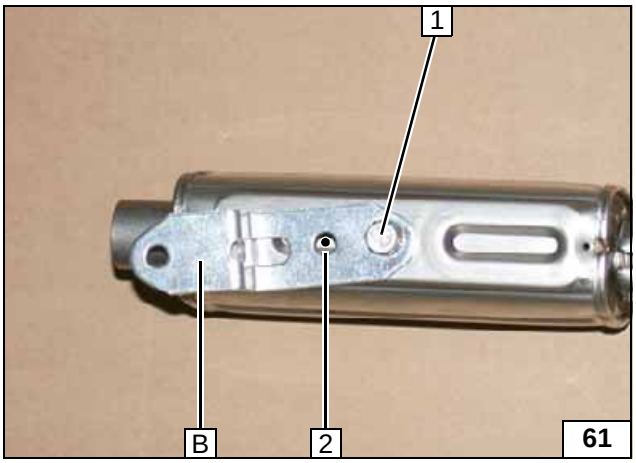
1 Perforated bracket **A**

Bending perforated bracket A



1 Perforated bracket **B**

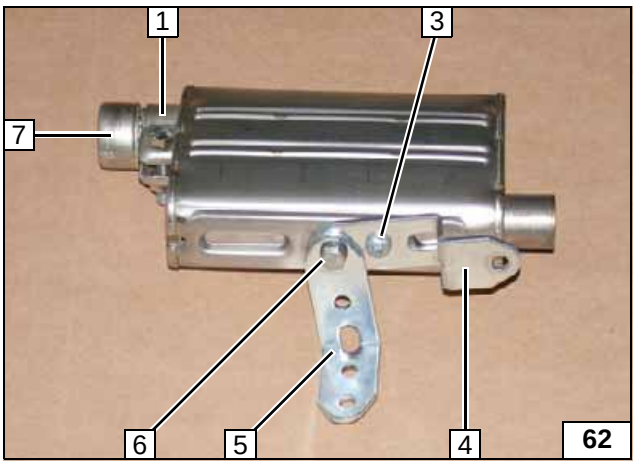
Bending perforated bracket B



Align perforated bracket **B** as shown.

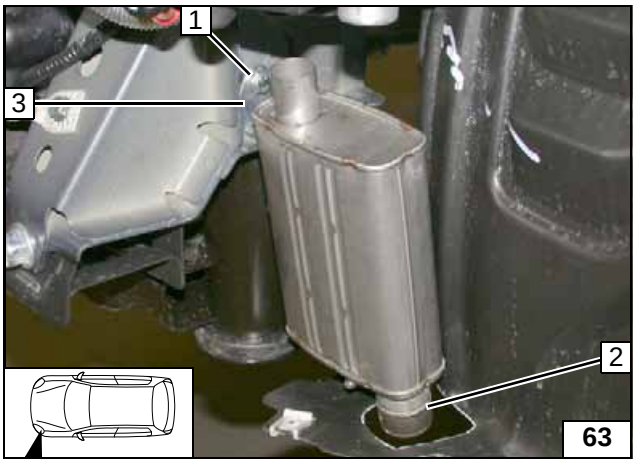
1 Install M6x16 bolt, mount lockwasher loosely
2 Copy hole pattern, 4mm dia. hole

Preparing silencer



1 Hose clamp
2 Silencer
3 5.5x13 self-tapping screw (twist protection)
4 Perforated bracket **B**
5 Perforated bracket **A**
6 M6x16 bolt, spring lockwasher
7 Exhaust end section

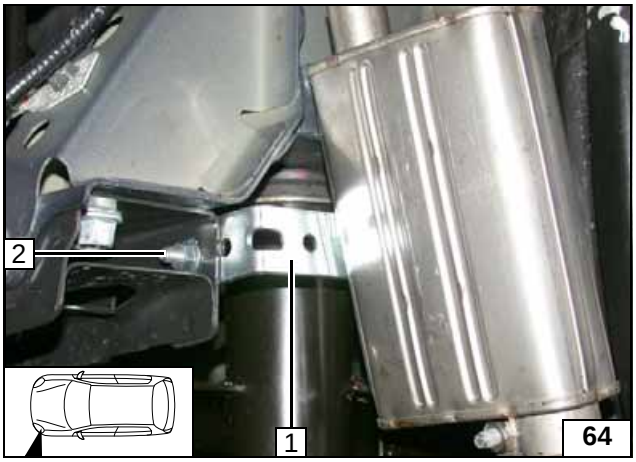
Premounting silencer



Position exhaust end section **2** at the centre of the wheel-well trim recess

1 M6x20 bolt, spring lockwasher
3 Perforated bracket **B**

Installing silencer

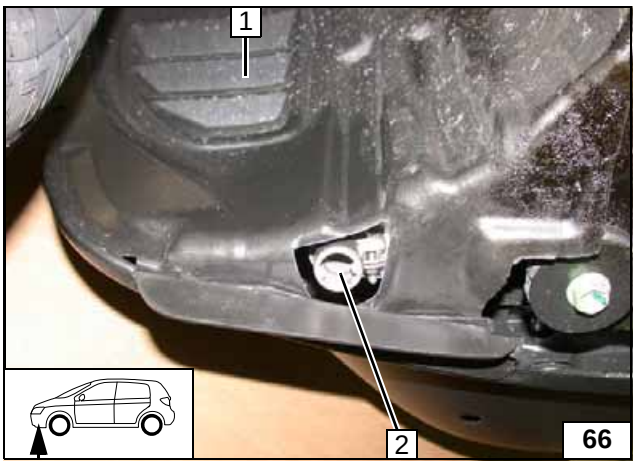


1 Perforated bracket **A**
2 M6x20 bolt, flanged nut

Installing silencer

1 Hose clamp [2x]
2 Exhaust pipe

Installing exhaust pipe



Align exhaust end section **2** flush on wheel well trim **1**. Ensure sufficient distance from neighbouring components, correct if necessary.

Aligning 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 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**

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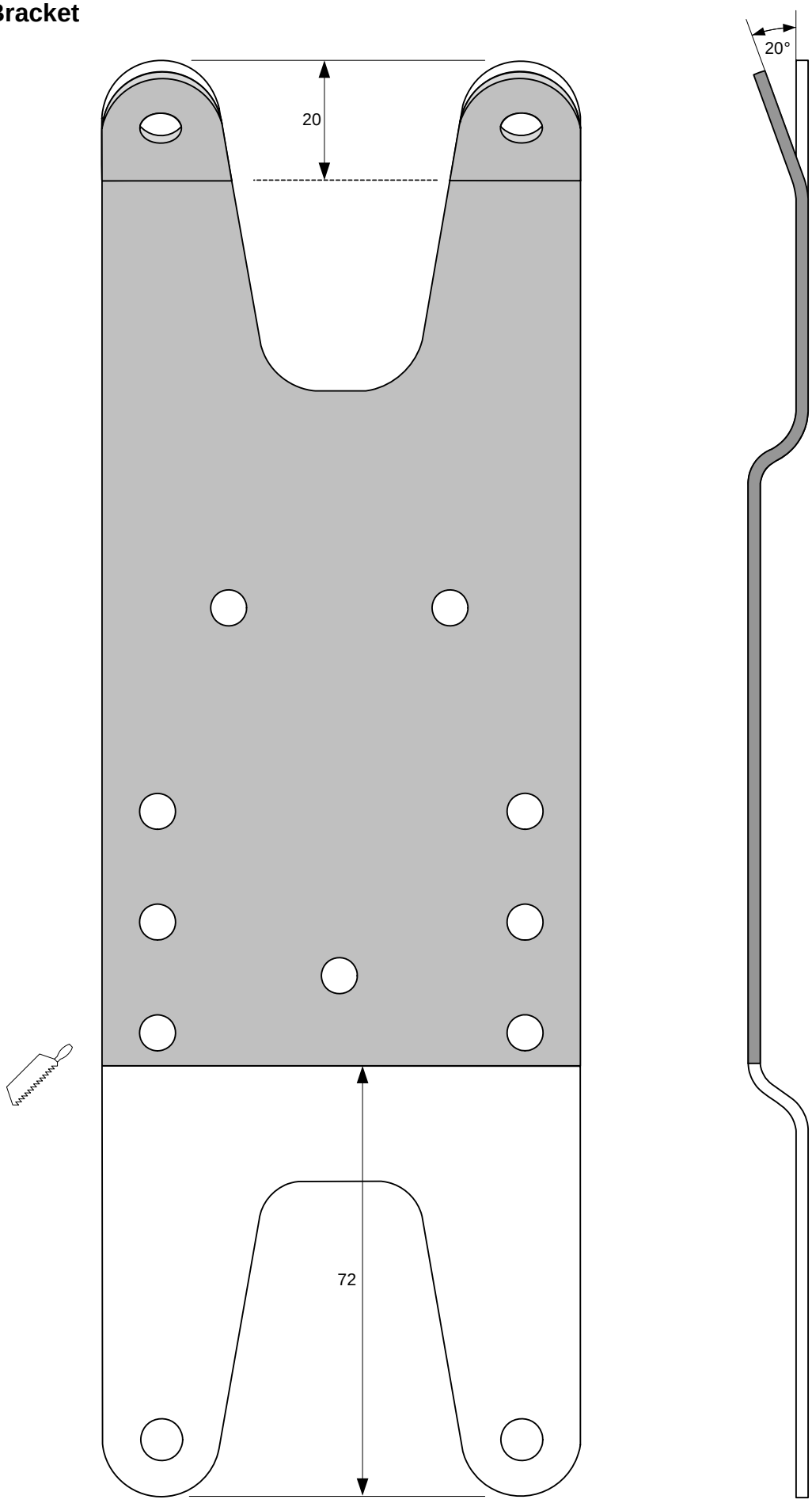
Hotmail: technikcenter@webasto.com
http://www.webasto.com

Template for Bracket



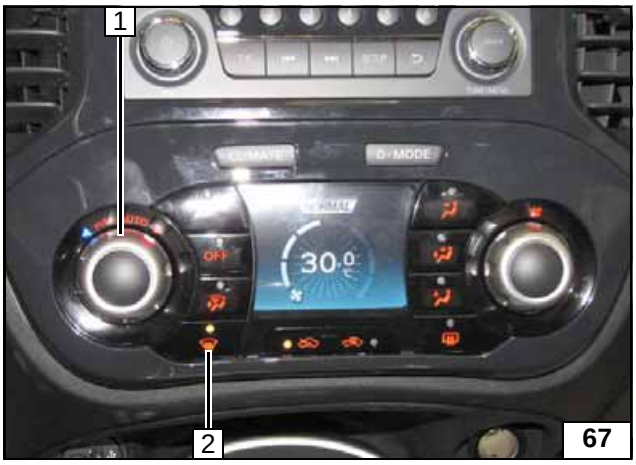
Operating Instructions for End Customer

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