Water Heater

***Thermo Top E* Parking Heater** E1 00 0003

***Thermo Top C* Parking Heater** E1 00 0002

Installation Documentation

Hyundai ix55

Diesel
from model year 2009
Left-hand drive vehicle
Automatic air-conditioning

WARNING!

Hazard warning:

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.
Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

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

Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	ix55	EN	e1 * 2001 / 116 * 0071 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
D6EA	Diesel	176	2959
D6EB	Diesel	183	2959

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 a digital timer and summer/winter switch should be confirmed with the end customer before installation.

Heater/Installation Kit

Quantity	Designation	Order No.:
1	Retail accessories for *Thermo Top E / C*	See price list
1	Installation kit for Hyundai ix55 2009 Diesel	1315100B
1	Heater control	See price list

to be ordered additionally from model year 2013:

Quantity	Designation	Order No.:
1	Additional kit Hyundai ix55 MY 2013	1318839A

Heater recommended for the respective vehicle class:

Vehicle	Heater
Compact car	Thermo Top E
Mid-size car, estate car	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 Hyundai ix55 Diesel vehicles - for validity, see page 2 - from model year 2009 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, where this is the case the stipulations in the "installation documentation", the "operating instructions" and the "installation instructions for the *Thermo Top C/E* should be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.

General Instructions

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties.
Sharp edges should be fitted with rub protection (split-open fuel hose).
Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).
The respective settings must be checked and set prior to the installation when installing an IPCU.

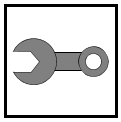
Special Tools

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

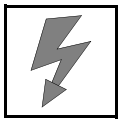
Explanatory Notes on Document

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

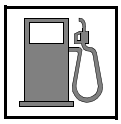


Electrical system

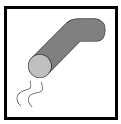


Coolant circuit

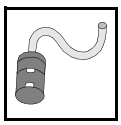
Fuel



Exhaust gas



Combustion air



Software

Special features are highlighted using the following symbols:

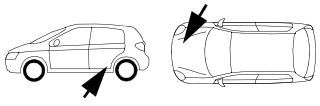
Specific risk of injury or fatal accidents.

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.

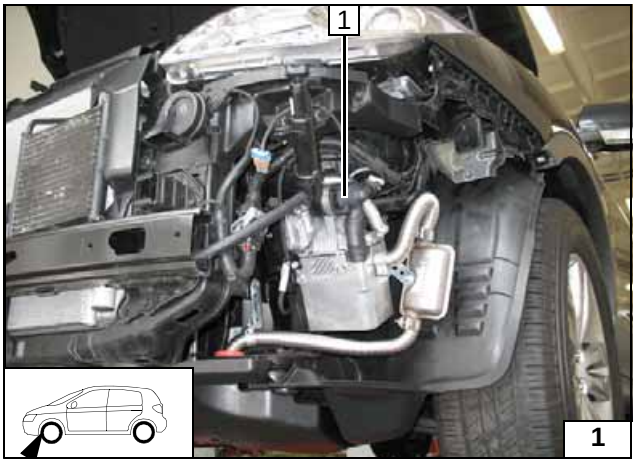
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

Preliminary Work

WARNING!

- Open the fuel tank cap, ventilate the tank.
- Close the fuel tank cap again.
- Disconnect the battery "earth" or "ground" connection.
- Depressurise 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 engine cover.
- Completely remove battery.
- Remove the battery box
- Remove the cover cap from the cable pass through to the engine compartment.
- Remove the air filter together with the intake hose.
- Remove the air filter box.
- Detach the diesel filter.
- Detach the wheel well trim on the right and left.
- Remove the bumper.
- Remove the left underride protection.
- Remove left back seat bench.
- Open the left tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the glove compartment.
- Remove the lower instrument panel trim on the front passenger's side.

Remove page 31 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater Installation Location

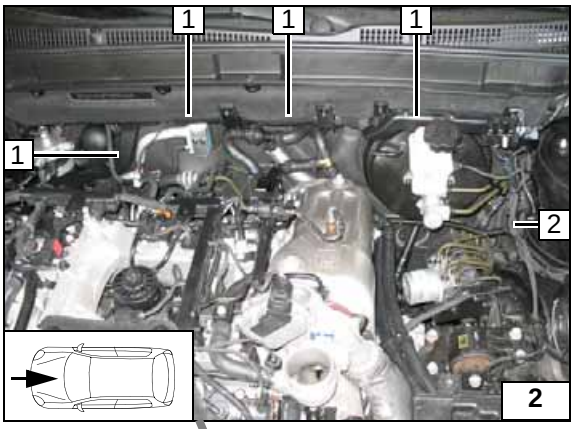
1 Heater

Installation location

Electrical System

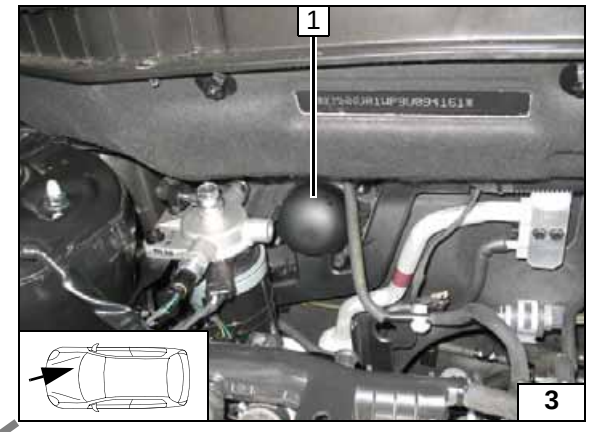
Wiring harness routing

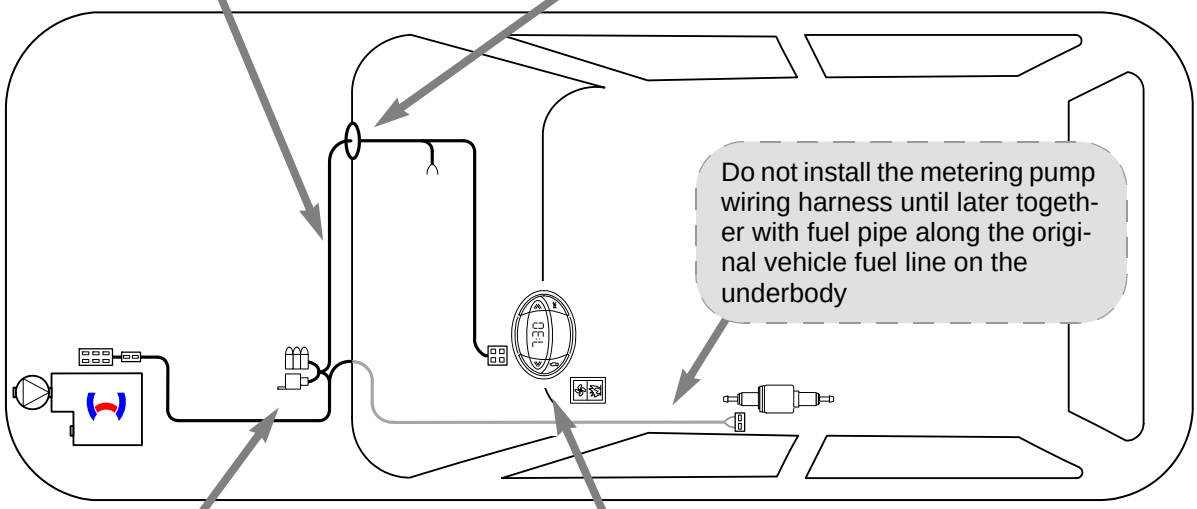
1 Wiring harness of fan controller and wiring harness of digital timer
2 Wiring harness of heater



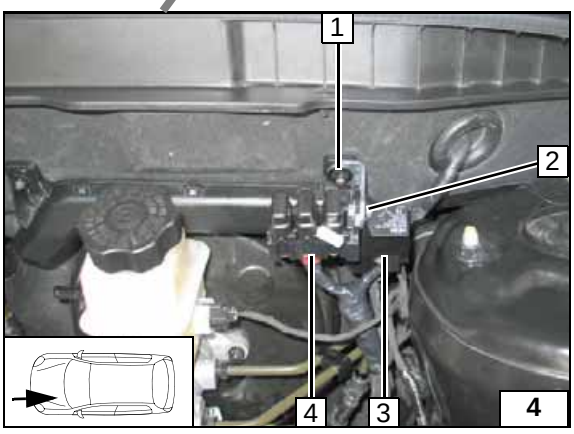
Wiring harness pass through

1 Protective rubber plug



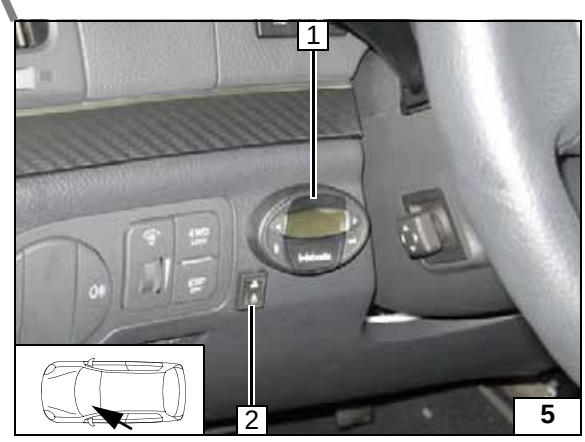


Wiring harness routing diagram



Fuse holder, K3 relay

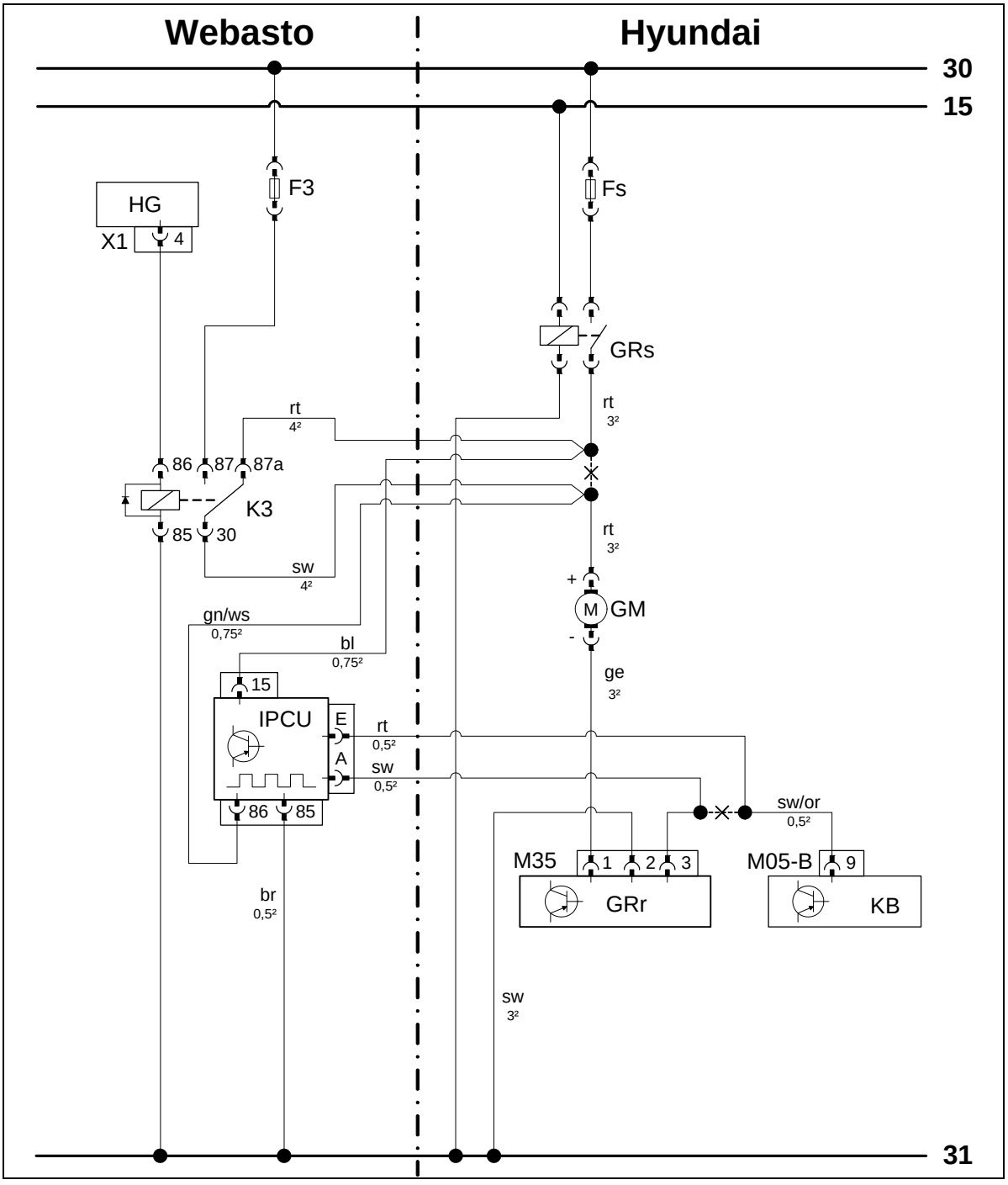
1 Original vehicle nut, angle bracket
2 M5x16 bolt, washer, flanged nut
3 K3 relay
4 Fuse holder



Digital timer, summer/winter switch option

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

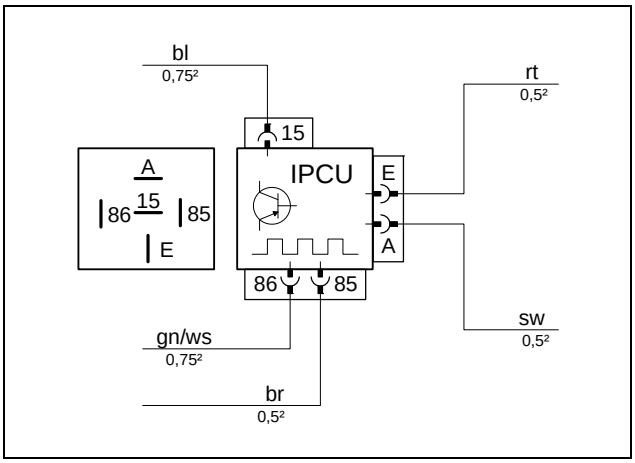
Fan Controller



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GRs	Fan relay	ws	white
F3	25A fuse	GRr	Fan controller	sw	black
K3	Fan relay	KB	A/C control panel	br	brown
		Fs	40A fuse	gn	green
IPCU	Pulse width modulator			or	orange
IPCU settings:				ge	yellow
Duty cycle:	100%			bl	blue
Frequency:	14 kHz				
Voltage:	4.7V			**X**	Cutting point
Function:	High side			Wiring colours may vary.	

Wiring diagram

Legend

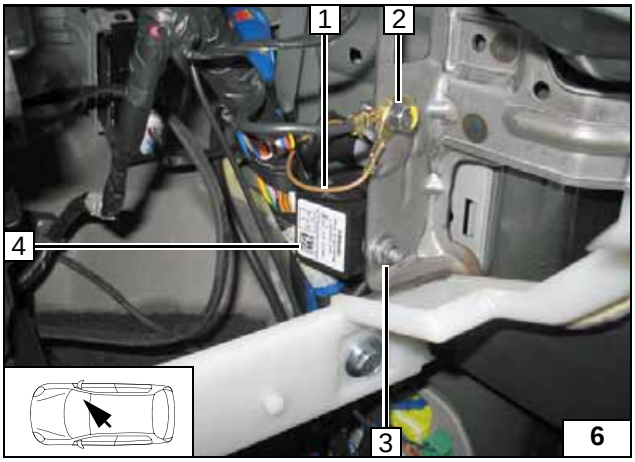


Connect lines to IPCU.
IPCU view on the contact side!
The IPCU is pre-programmed at the following settings:

Duty cycle: 100%
Frequency: 14 kHz
Voltage: 4.7V
Function: High side

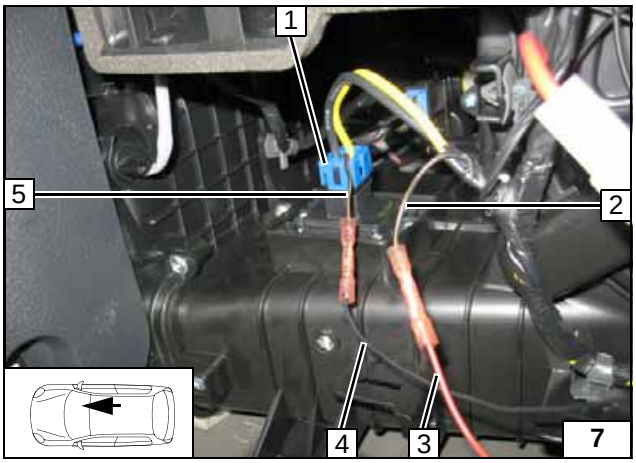
Premounting IPCU

Check fan speed (depending on vehicle) , if necessary check voltage value of IPCU after the function check by using the Webasto diagnostics. Observe the power consumption of the fan motor.



1 Brown (br) wire from IPCU/85
2 Original vehicle earth support point
3 M5x16 bolt, washer, flanged nut
4 Pre-assembled IPCU

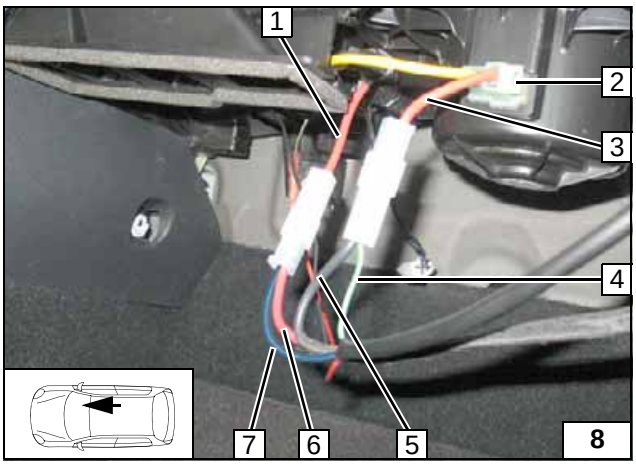
IPCU assembly



Connection to 3-pin connector **1** from the fan controller.
Produce connections as shown in wiring diagram.

2 Black/orange (sw/or) wire from A/C control unit
3 Red (rt) wire from IPCU/E
4 Black (sw) wire from IPCU/A
5 Black/orange (sw/or) wire from fan controller

Connecting fan controller



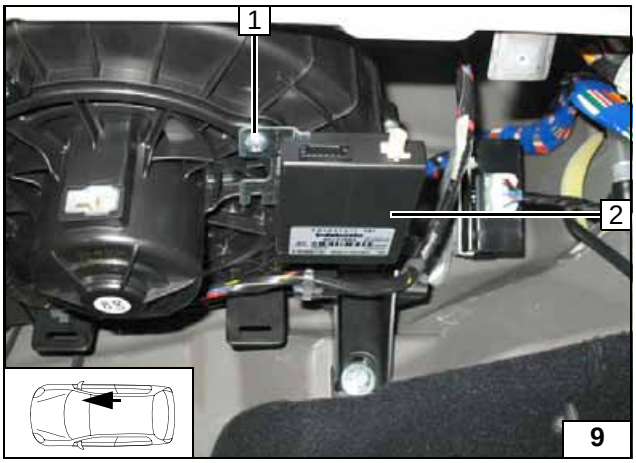
Connection to 2-pin connector **2** from the fan motor.
Produce connections as shown in wiring diagram.

1 Red (rt) wire from original vehicle fuse
3 Red (rt) wire from connector
4 Green/white (gn/ws) wire from IPCU/86
5 Black (sw) wire from K3/30
6 Red (rt) wire from K3/87a
7 Blue (bl) wire from IPCU/15

Connecting fan-motor

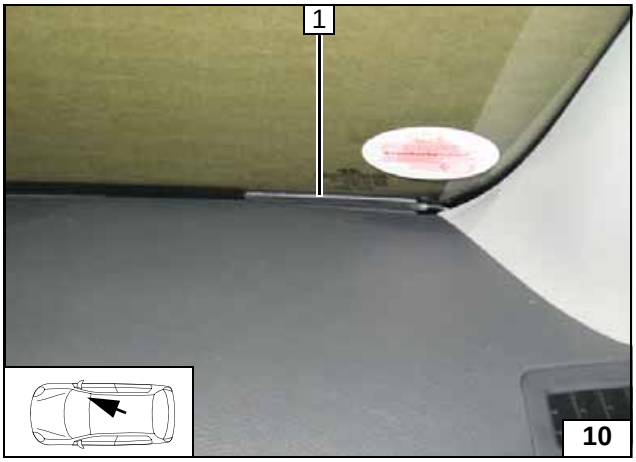
Remote Option (Telestart)

Mounting receiver



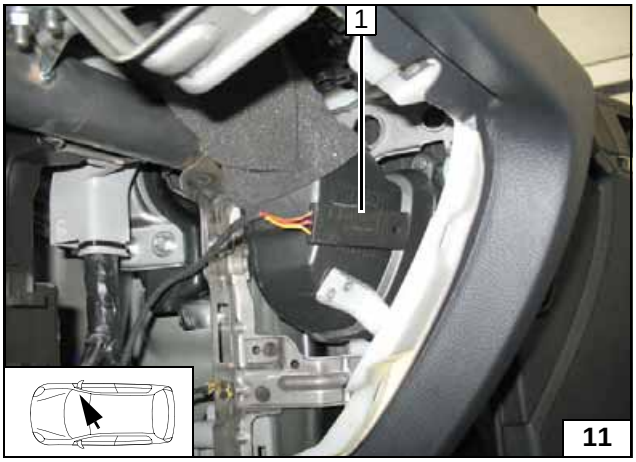
1 Original vehicle bolt of fan motor
2 Receiver

Mounting antenna



1 Antenna

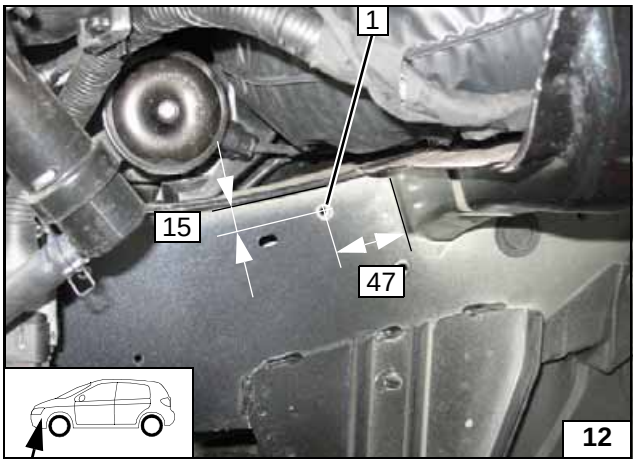
Mounting temperature sensor



Temperature sensor HTM100

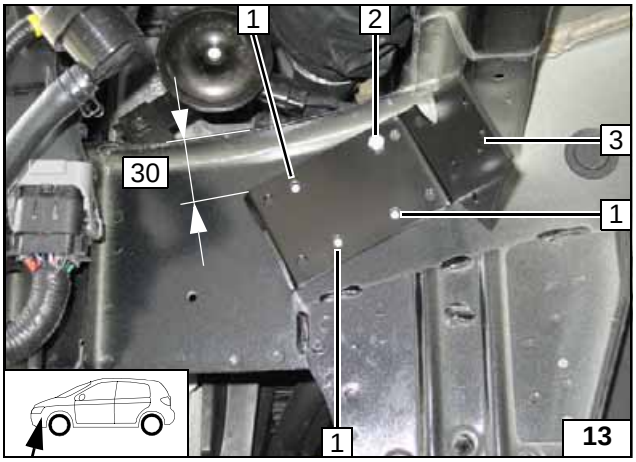
Fasten temperature sensor **1** with adhesive tape.

Preparing Installation Location



1 Install rivet nut in 9.1 mm dia. hole

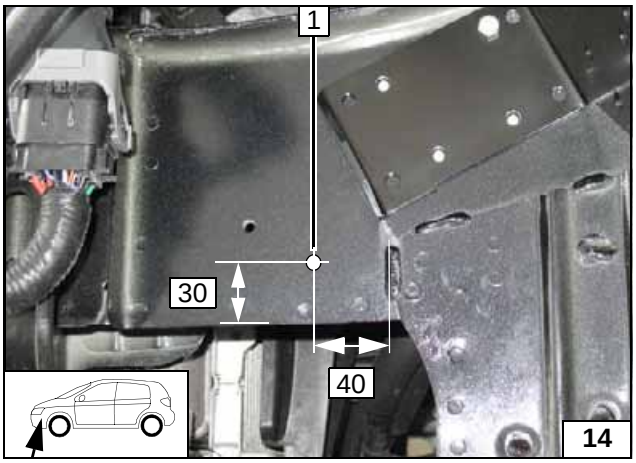
Installing rivet nut



Align and loosely mount bracket **3**.

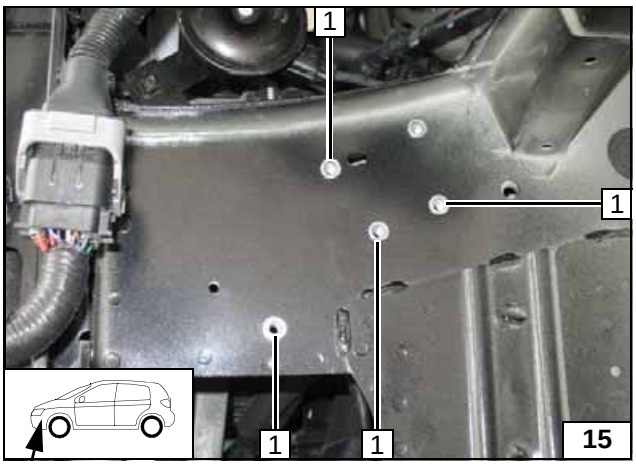
1 Copy hole pattern [2x]
2 M6x30 bolt on rivet nut

Copying hole pattern



1 Copy hole pattern

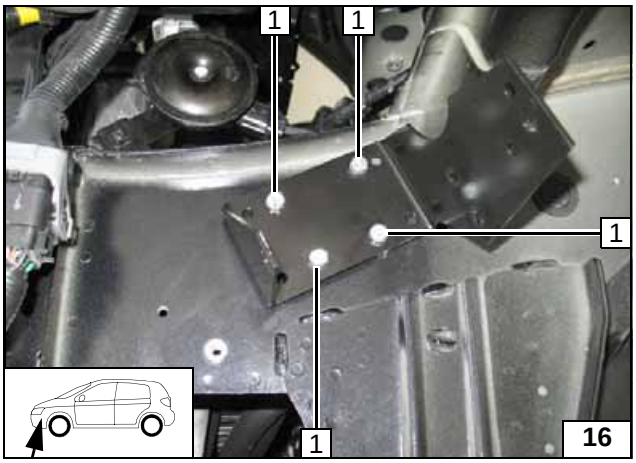
Copying hole pattern



Remove bracket.

1 Install rivet nut in 9.1 mm dia. hole [4x each]

Installing rivet nuts

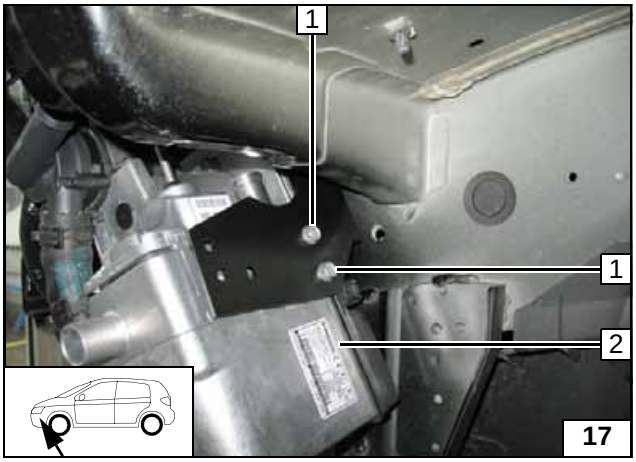


1 M6x30 bolt, spring lockwasher, 5 mm shim [4x each]

Installing bracket

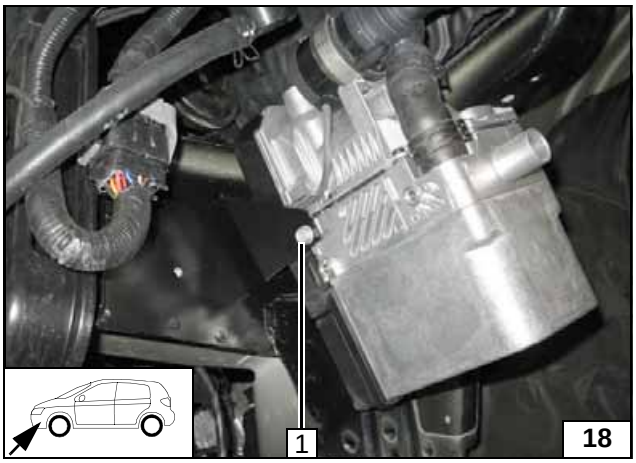
Installing Heater

Connect wiring harness of heater to the heater **2** prior to installation.



1 Ejot screw [2x]

Mounting heater



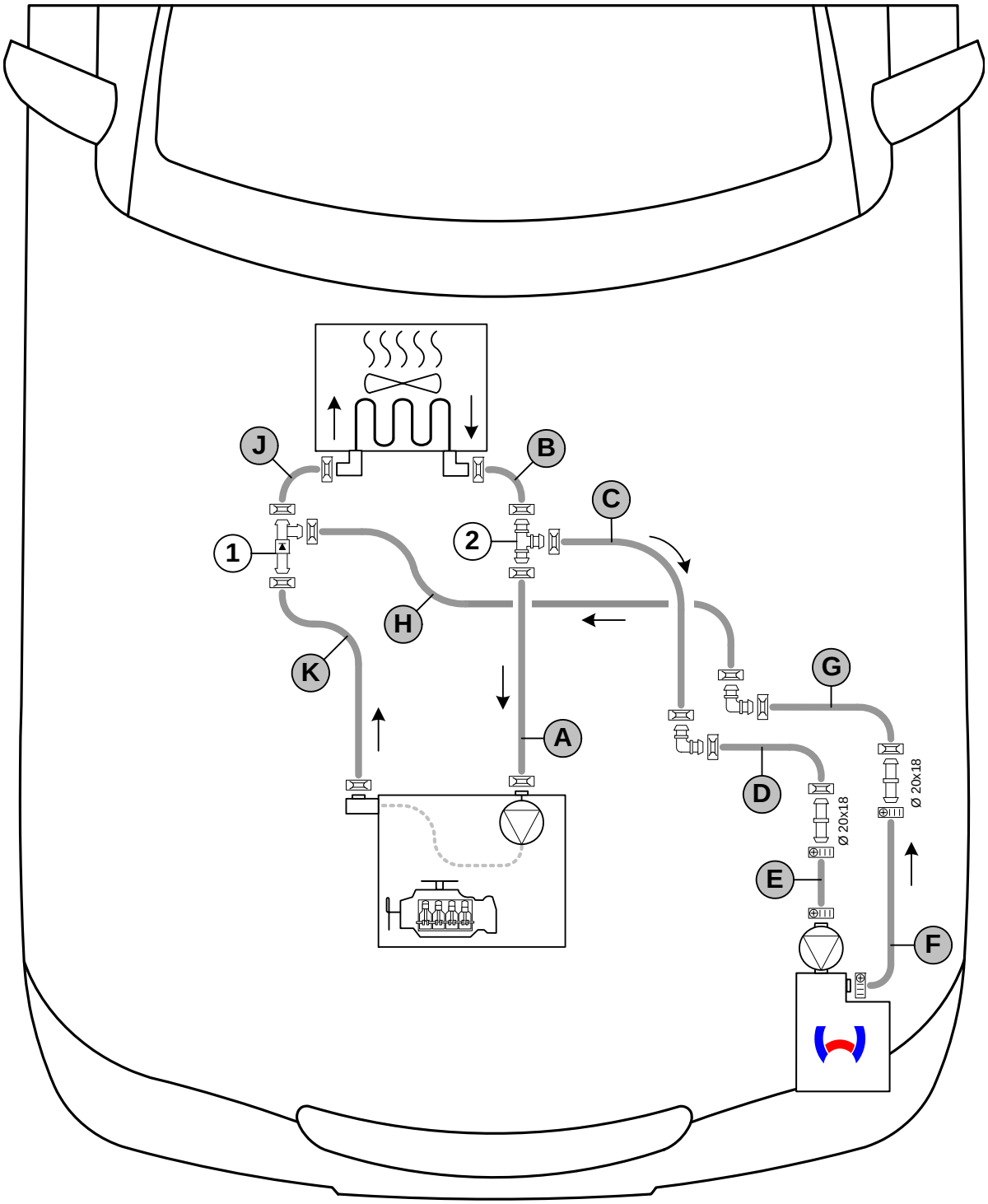
1 Ejot screw

Mounting heater

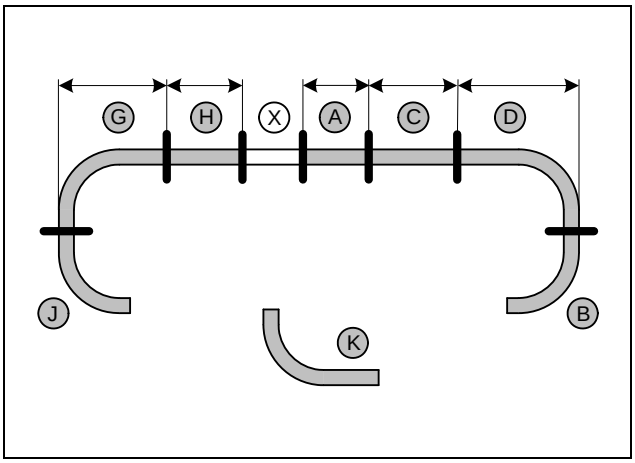
Coolant Circuit, Model 2009 - 2012

WARNING!
Any coolant running off should be collected using a suitable 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 hoses.
The connection should be "island" based on the following diagram:

Hose installation diagram



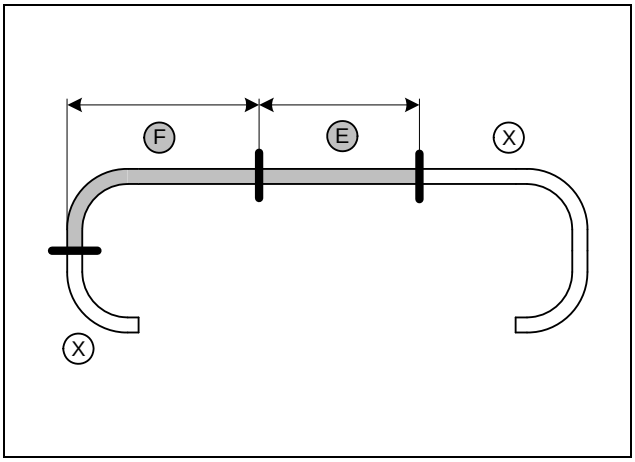
All spring clips = 25 mm dia. All hose clamps = 20-27 mm dia.
All connecting pipes without a specific designation and = dia. 18x18 mm. **1** = check valve !
2 = Connecting pipe = dia. 18x18x18 mm!



Discard section **X**
Hose **K** = 90° moulded hose

A = 85
C = 190
D = 580
G = 630
H = 340

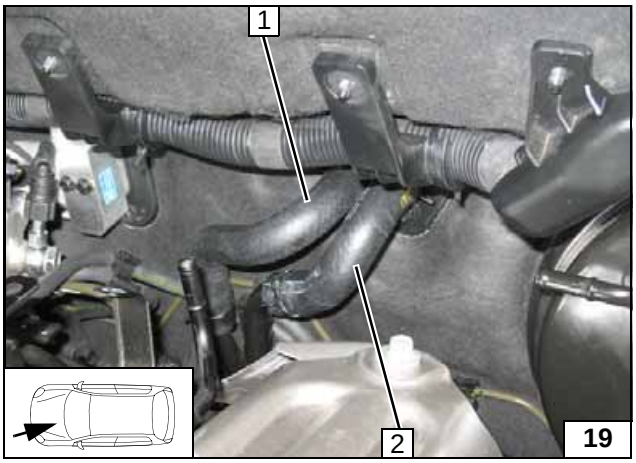
Cutting hose 18mm dia., to length



Discard section **X**

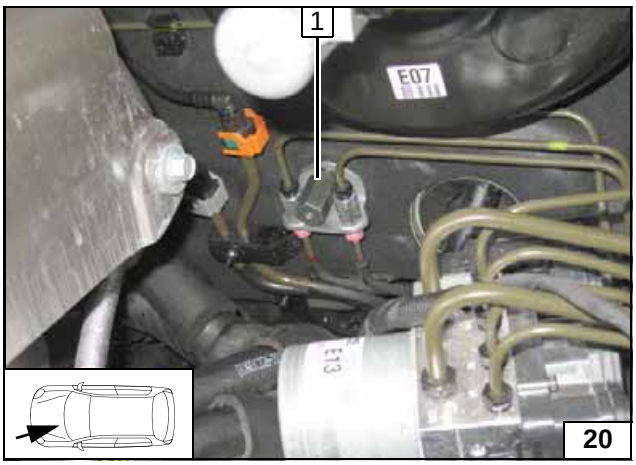
E = 460
F = 360

Cutting hose 20mm dia., to length



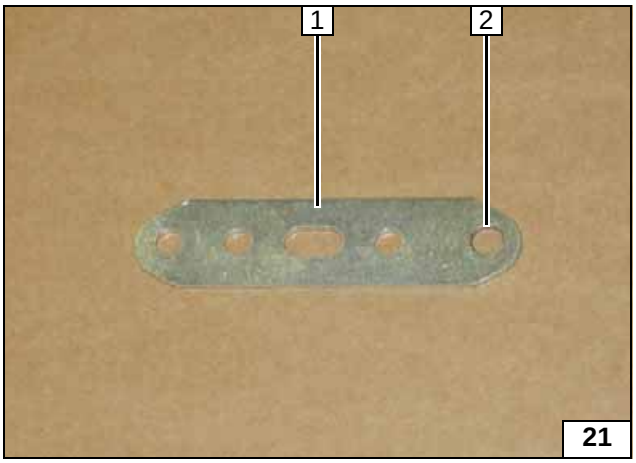
Remove hose of heat exchanger inlet **1** and hose of heat exchanger outlet **2** and discard.

Cutting point



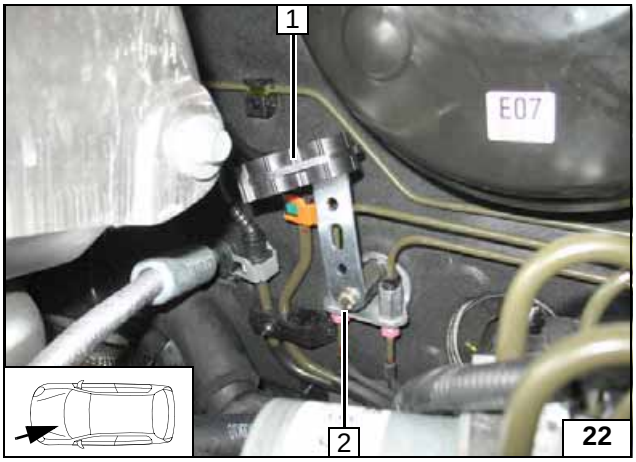
1 M6x30 spacer nut on original vehicle stud bolt

Installing spacer nut



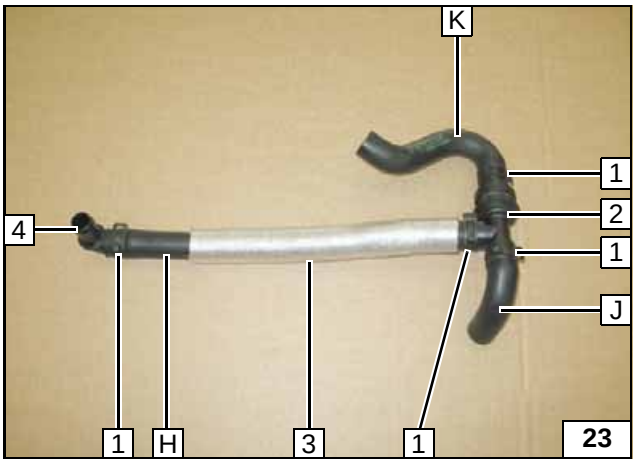
1 Perforated bracket
2 8 mm dia. hole

Drilling out perforated bracket



1 Hose bracket
2 M6x12 bolt, spring lockwasher

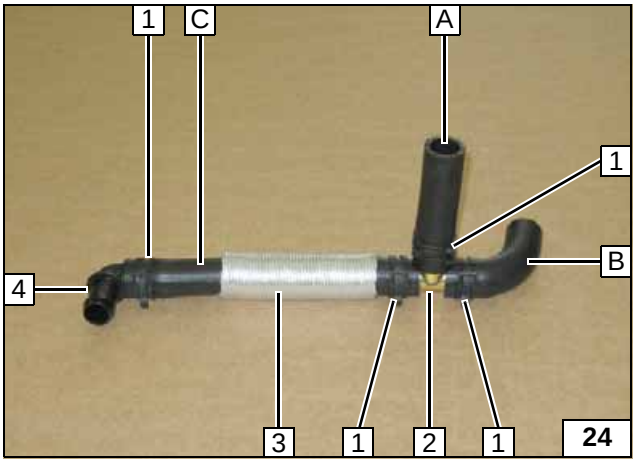
Mounting perforated bracket



Cut to length, 230mm from the heat protection hose.

1 Spring clip 25 mm dia. [4x]
2 Check valve
3 Cut heat protection hose to length
4 Connecting pipe 90°

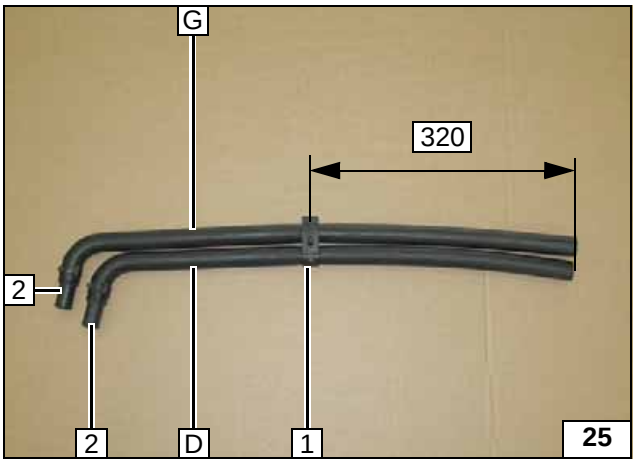
Preparing hose group



Cut to length, 100mm from the heat protection hose.

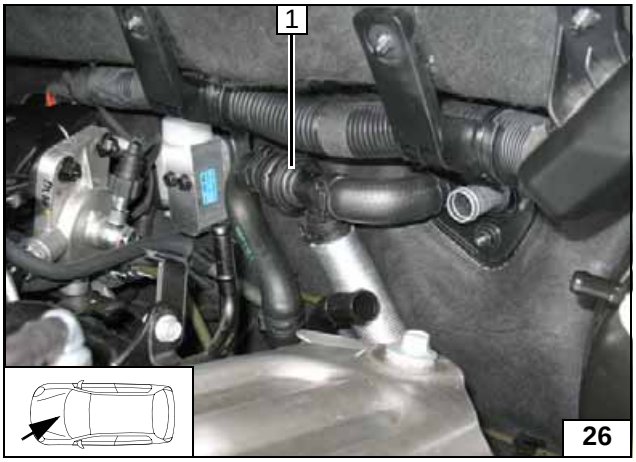
1 Spring clip 25 mm dia. [4x]
2 18x18x18 connecting pipe
3 Cut heat protection hose to length
4 Connecting pipe 90°

Preparing hose group



1 Position hose bracket
2 Connecting pipe 18x20, spring clip 25 mm dia. [2x each]

Preparing hose group

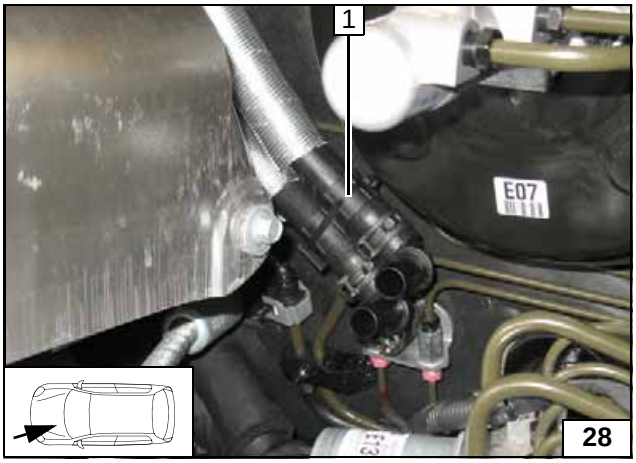


1 Pre-assembled hose group

Connection to heat exchanger inlet

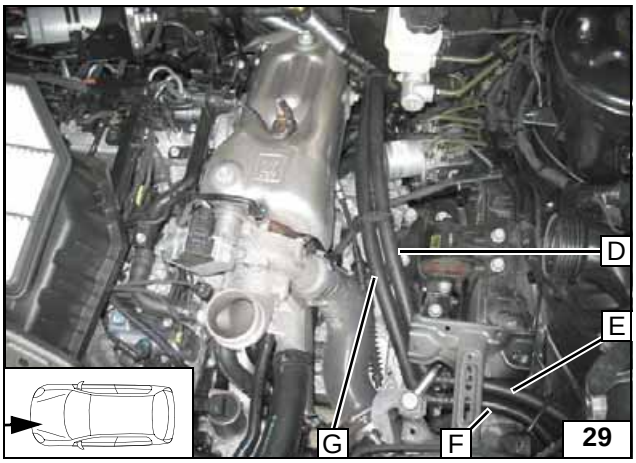
1 Pre-assembled hose group

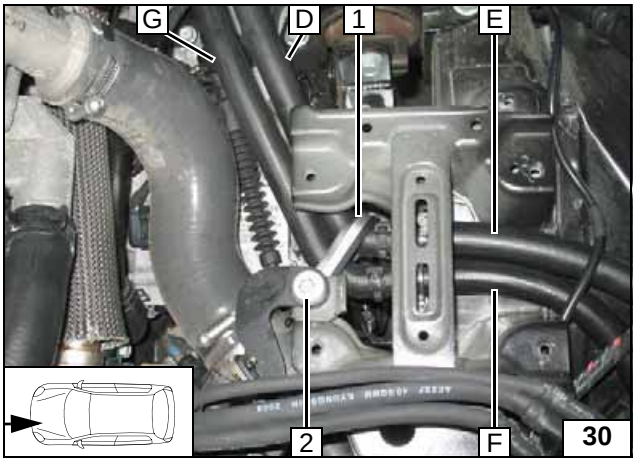
Connection to heat exchanger inlet

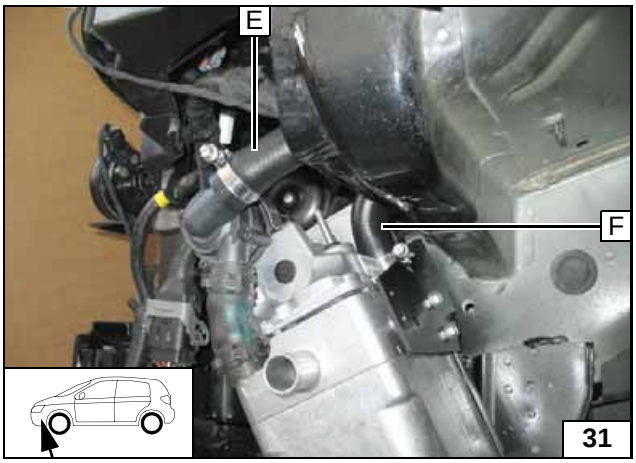


Clip hose groups [2x] in hose bracket **1**.

Routing in engine compartment







Routing in engine compartment

Remove original vehicle bolt at position **2**.

1 48 mm dia. rubber-coated p-clamp
2 M6x40 bolt, large diameter washer, flanged nut

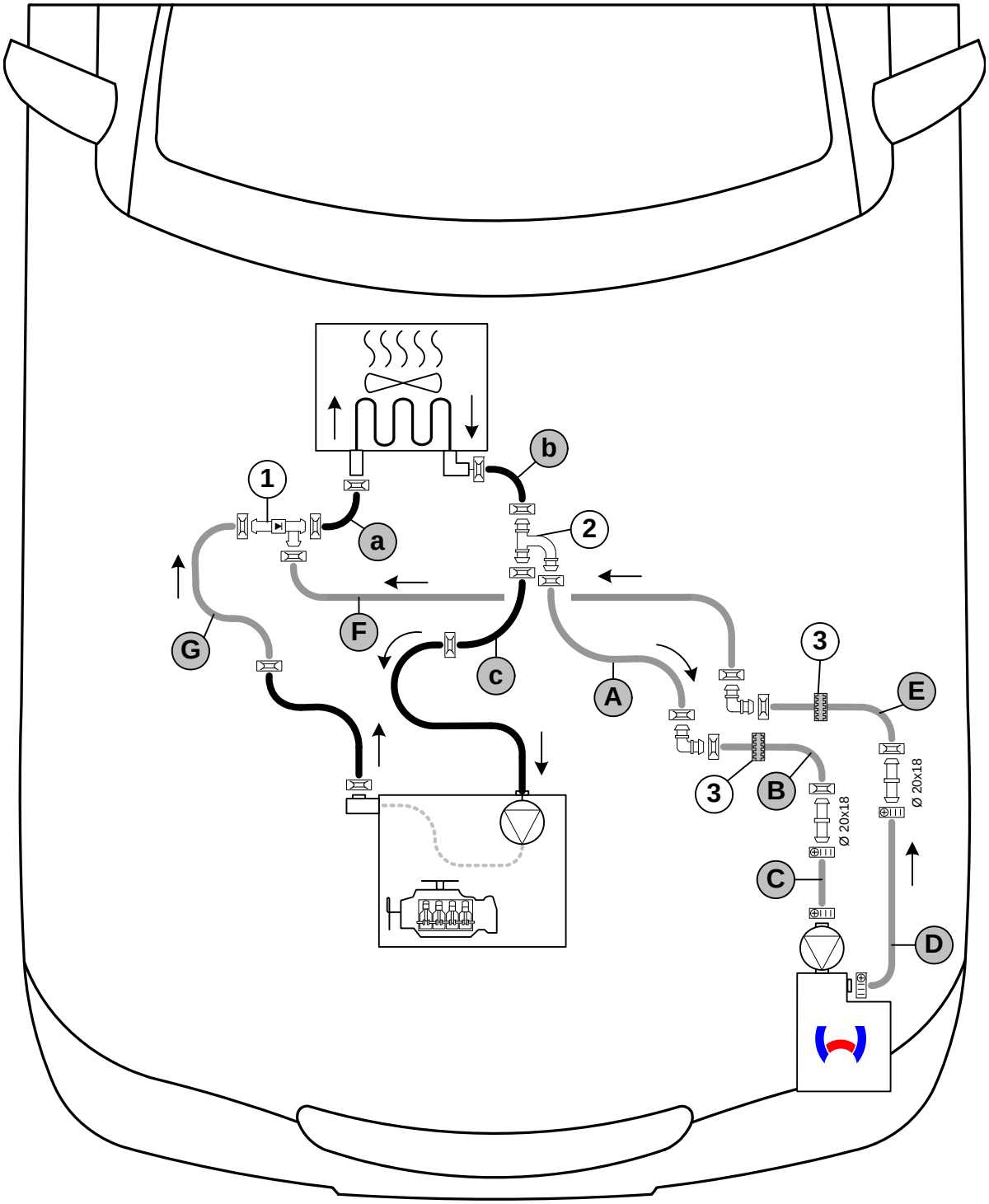
Mounting clamp

Connecting heater

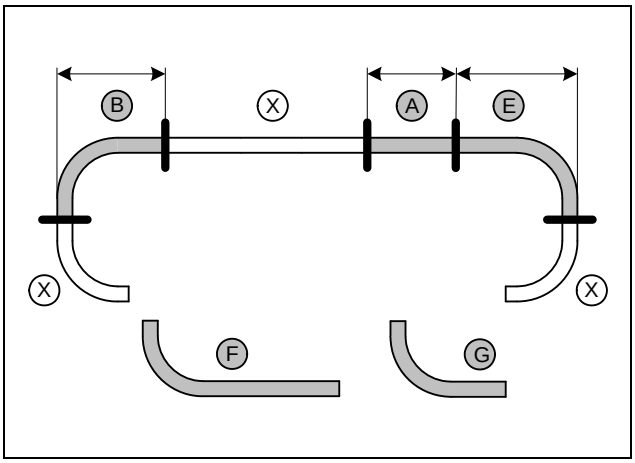
Coolant Circuit, from Model Year 2013

WARNING!
Any coolant running off should be collected using a suitable 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 hoses.
The connection should be "island" based on the following diagram:

Hose installation diagram



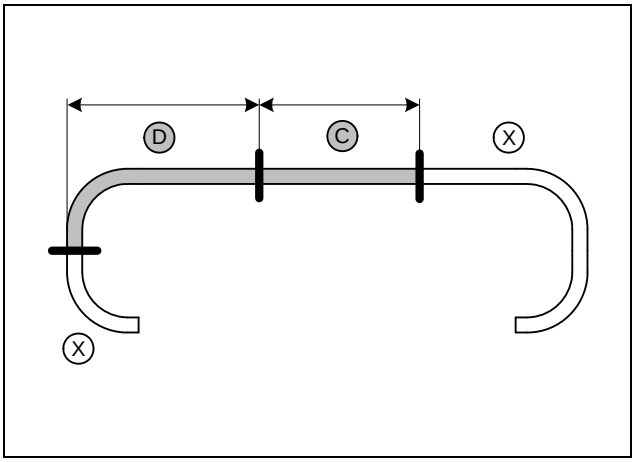
All spring clips = 25 mm dia. All hose clamps = 20-27 mm dia.
All connecting pipes without a specific designation and = dia. 18x18 mm. **1** = check valve !
2 = Connecting pipe = dia. 18x18x18 mm! **3** = Black (sw) rubber isolator



Discard section **X**
Hose **F** = 90° moulded hose
Hose **G** = Moulded hose

A = 195
B = 580
E = 630

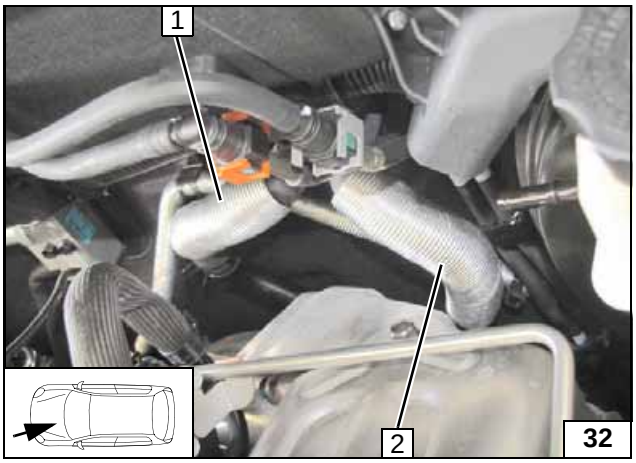
Cutting hose 18mm dia., to length



Discard section **X**

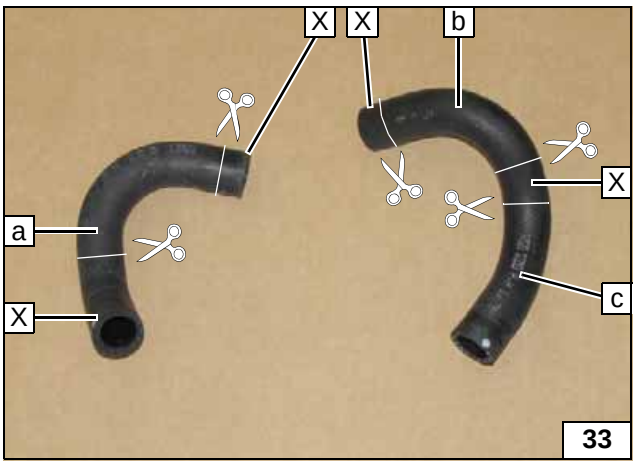
C = 460
D = 360

Cutting hose 20mm dia., to length



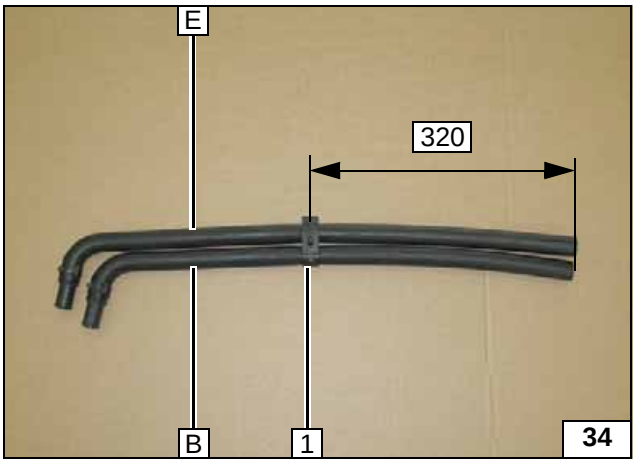
Remove hose of heat exchanger inlet **1** and hose of heat exchanger outlet **2**. Discard spring clips and heat protection hose of hose **2**. Heat protection hose of hose **1** will be needed again.

Cutting point



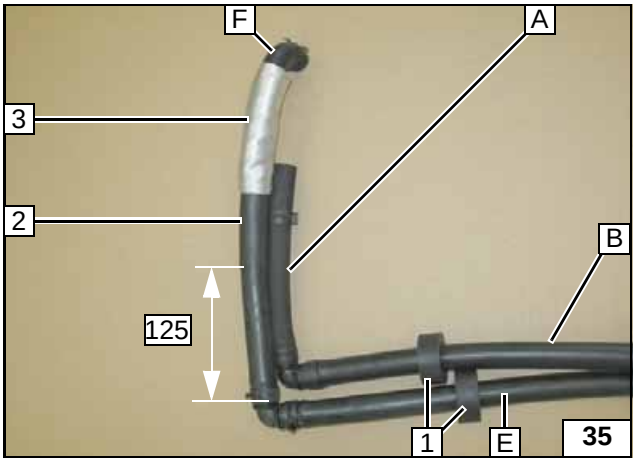
Cut hose of heat exchanger inlet and hose of heat exchanger outlet to length. Discard sections **X**. Hoses **a**, **b** and **c** will be re-used.

Cutting hoses to length



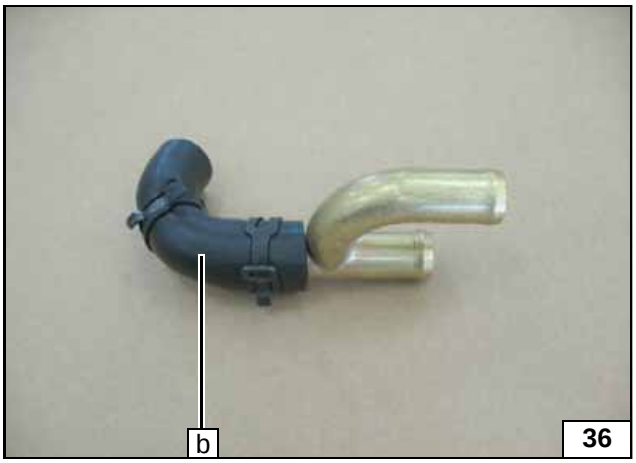
1 Position hose bracket

Preparing hose group



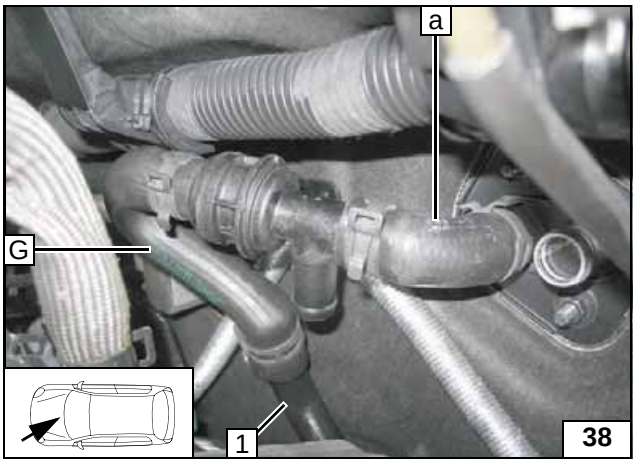
1 Black (sw) rubber isolator [2x]
2 100mm long heat shrink plastic tubing
3 Heat protection hose of heat exchanger inlet hose

Preparing hose group



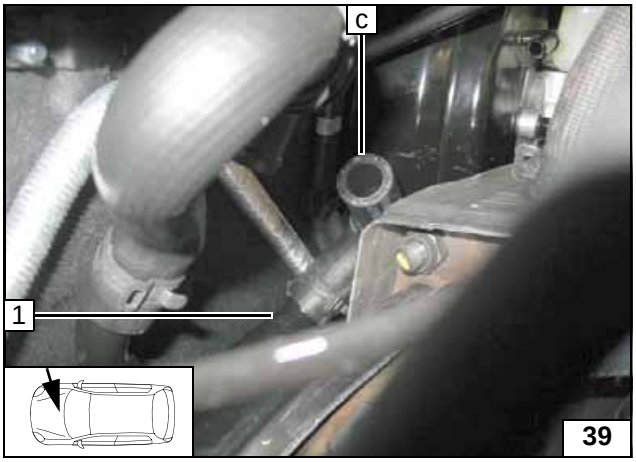
Preparing T-piece

Preparing check valve



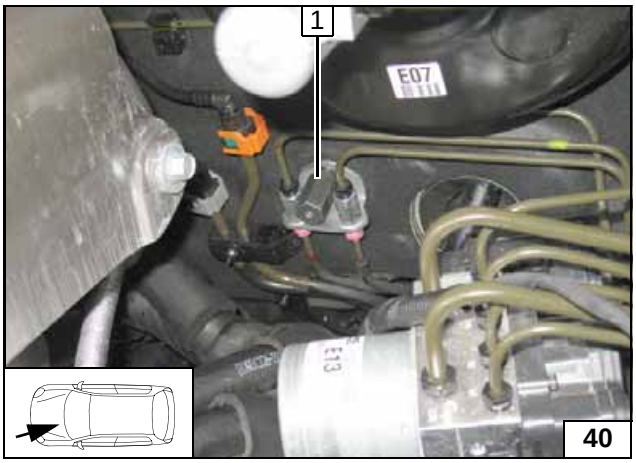
1 Pipe of engine outlet

Checking valve connection



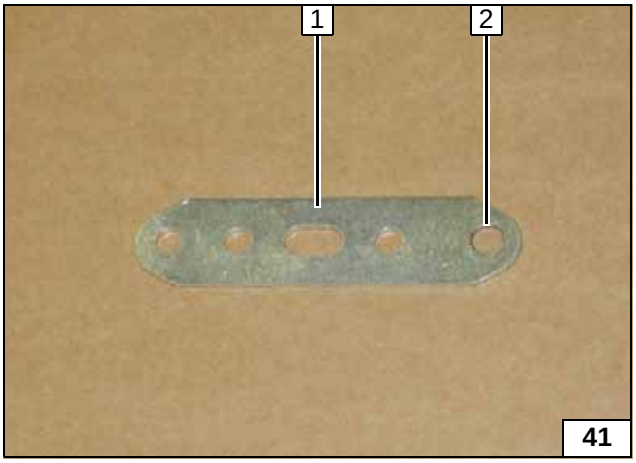
1 Pipe of engine inlet

Connection of hose section c



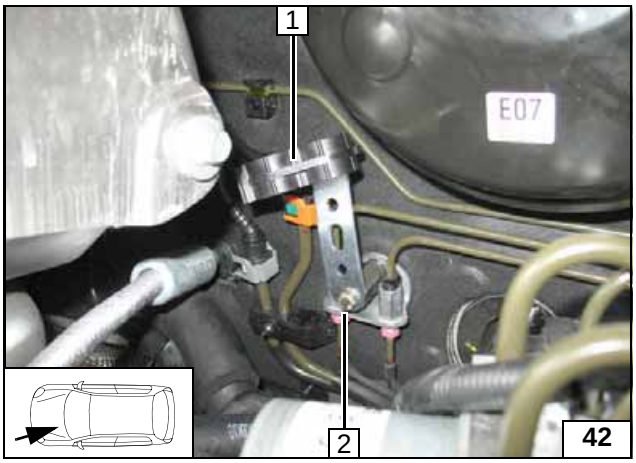
1 M6x30 spacer nut on original vehicle stud bolt

Installing spacer nut



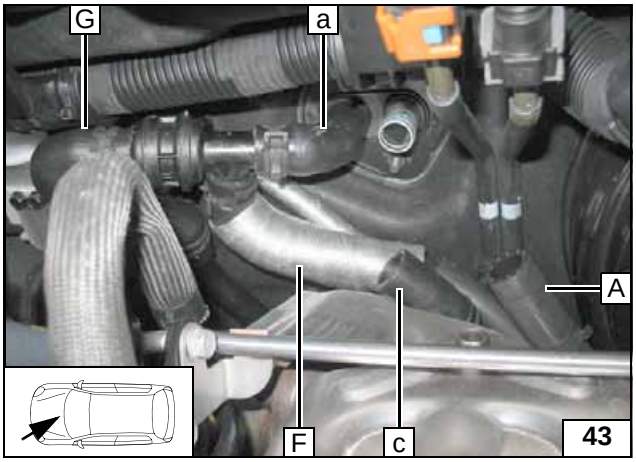
1 Perforated bracket
2 8 mm dia. hole

Drilling out perforated bracket

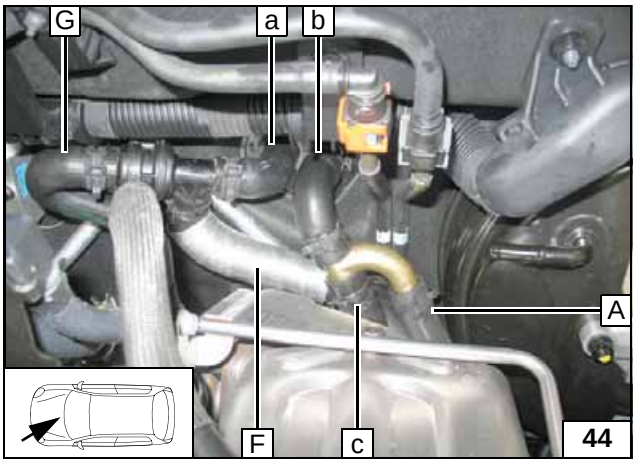


1 Hose bracket
2 M6x12 bolt, spring lockwasher

Mounting perforated bracket

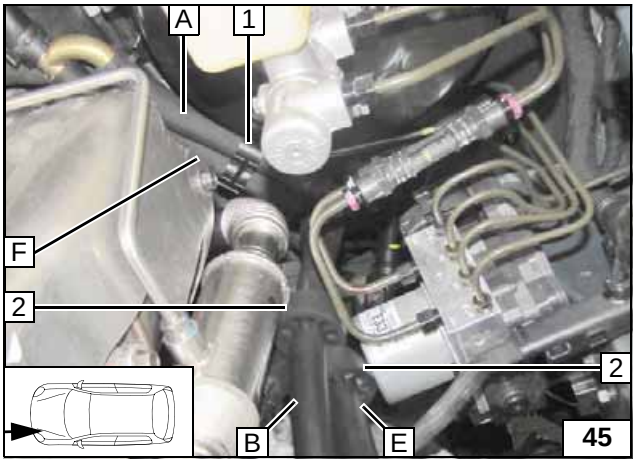


Connection to heat exchanger inlet



Ensure sufficient distance between engine and water hoses.

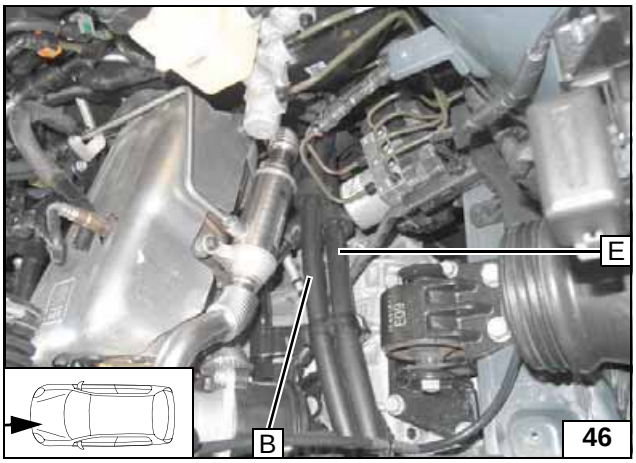
Connection to heat exchanger outlet

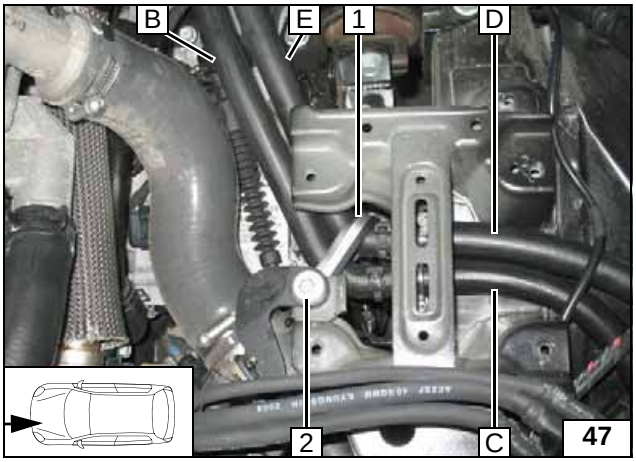


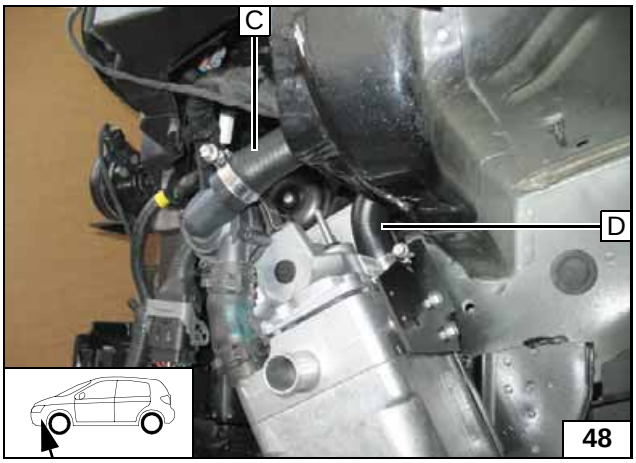
Clip hoses **A** and **F** into hose bracket **1**.

2 Position black (sw) rubber isolator [2x]

Routing in engine compartment







Routing in engine compartment

Remove original vehicle bolt at position **2**.

Mounting clamp

1 48 mm dia. rubber-coated p-clamp
2 M6x40 bolt, large diameter washer, flanged nut

Connecting heater

Fuel

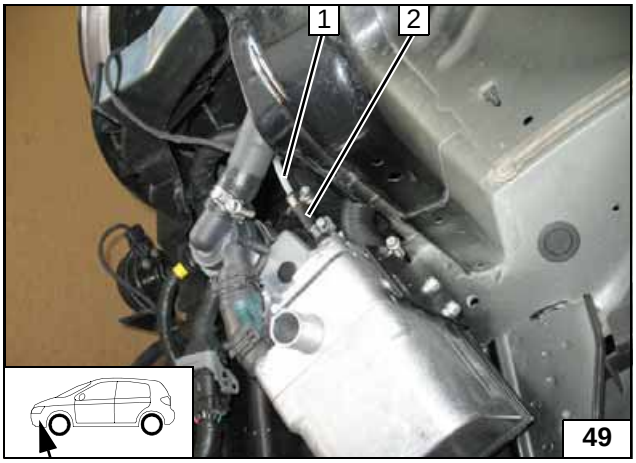
CAUTION!
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in a suitable 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.

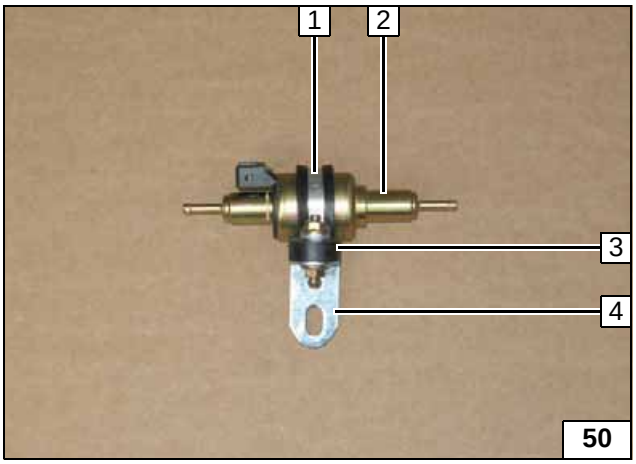
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Connecting heater



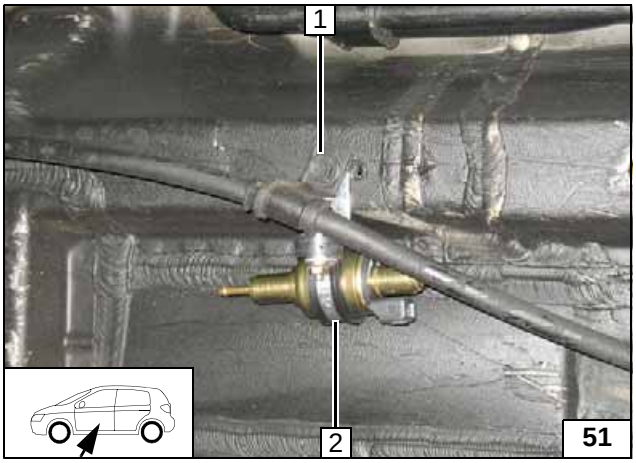
1 Fuel line
2 Hose section, 10 mm dia. clamp [2x]

Premounting metering pump

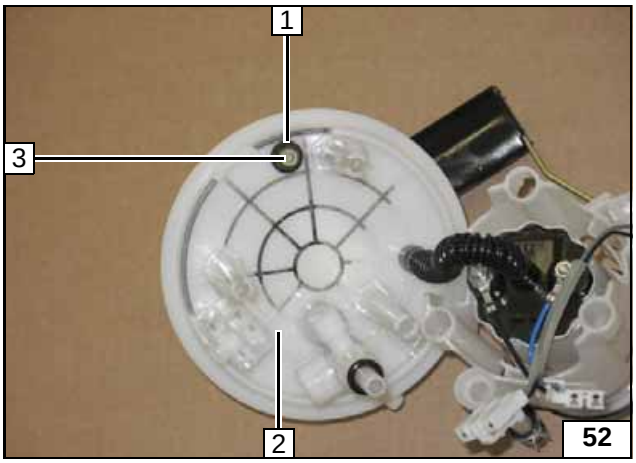


1 Rubber-coated pipe clamp
2 Metering pump
3 Silent block, flanged nut [2x]
4 Angle bracket

Mounting metering pump



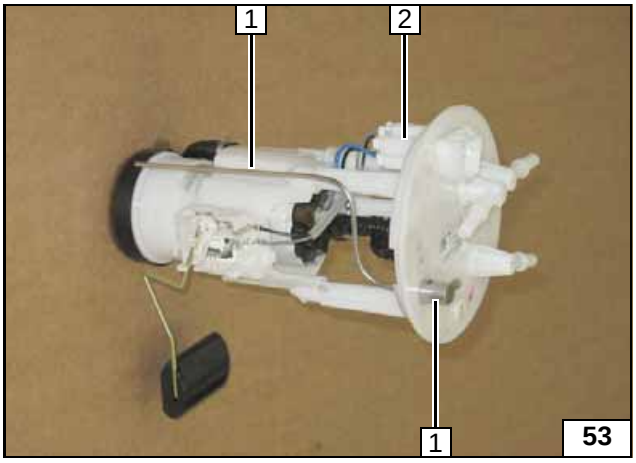
1 Original vehicle bolt bracket for hand brake cable
2 Pre-assembled metering pump



Remove and detach fuel-tank sending unit **2** according to manufacturer's instructions.

1 Flanged nut for fuel standpipe
3 Copy hole pattern, 6 mm dia. hole

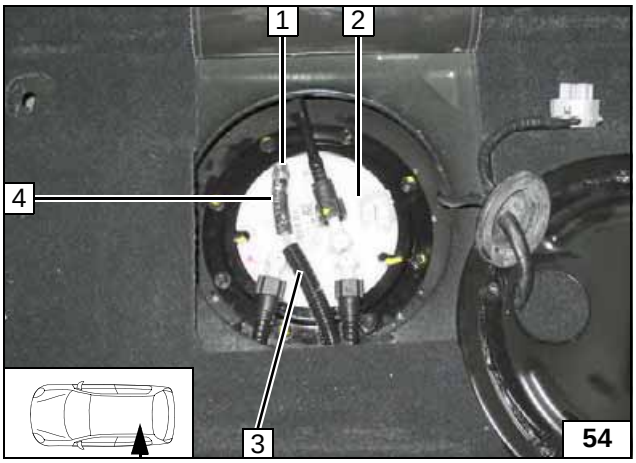
Fuel extraction



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

2 Fuel-tank sending unit

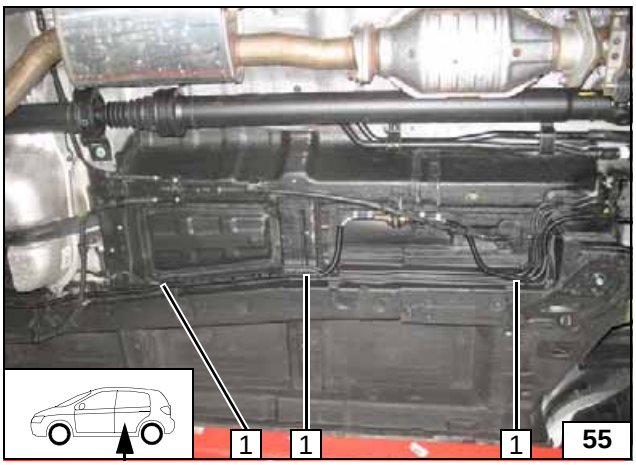
Inserting fuel standpipe



Install fuel-tank sending unit **2** in accordance with manufacturer's instructions.

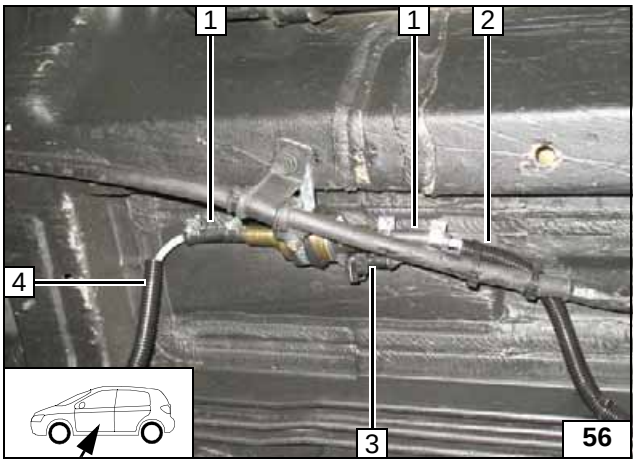
1 Fuel standpipe
3 Fuel line in corrugated tube
4 Hose section, 10 mm dia. clamp [2x]

Connecting fuel line



Attach fuel line **1** on original vehicle fuel line.

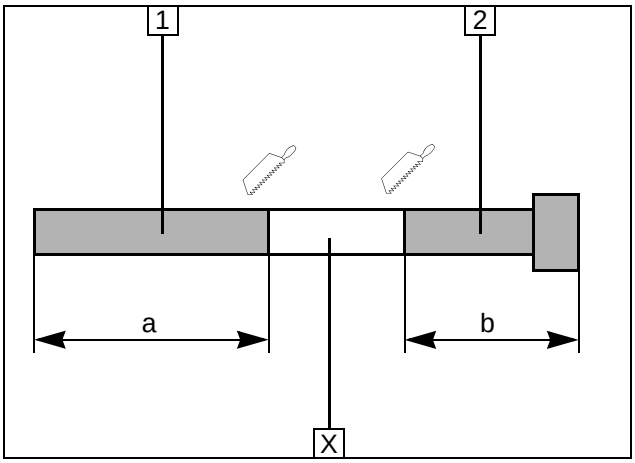
Installing fuel line



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

1 Hose section [2x], 10 mm dia. clamp [4x]
2 Fuel line in corrugated tube for heater
3 Wiring harness of metering pump, connector mounted
4 Fuel line in corrugated tube of fuel standpipe

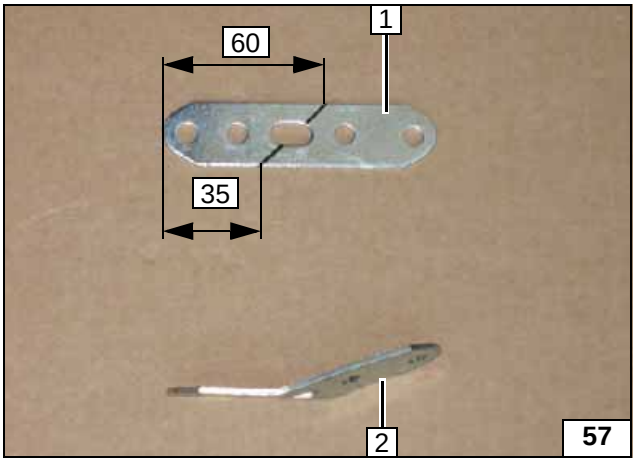
Exhaust Gas



1 Exhaust pipe
a = 235
2 Exhaust end section
b = 380

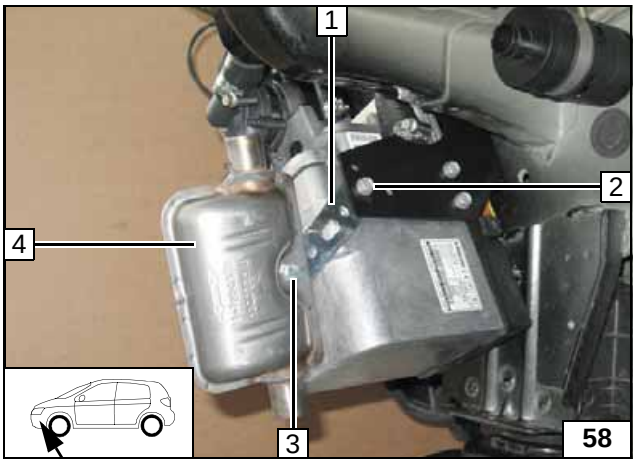
Discard section **X**

Preparing exhaust pipe



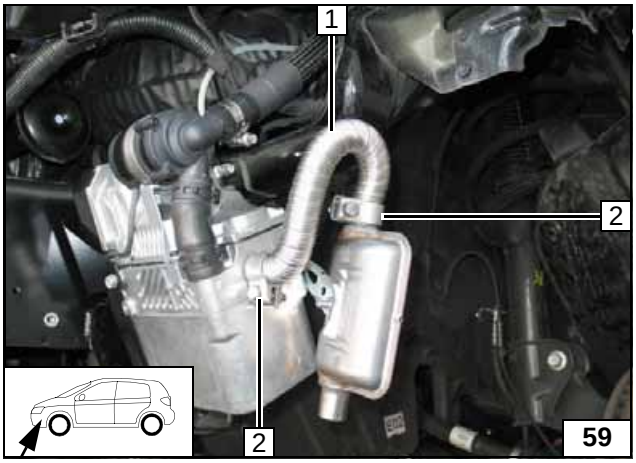
1 Perforated bracket
2 Bend perforated bracket approx. 20°

Bending perforated bracket



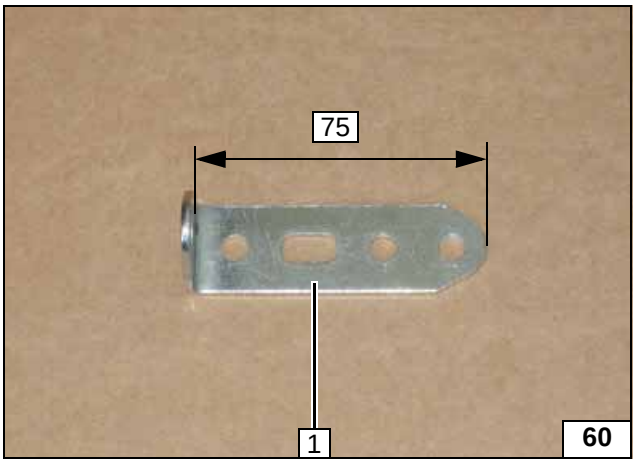
1 Perforated bracket
2 Ejot screw
3 M6x20 bolt, flanged nut
4 Exhaust silencer

Mounting silencer



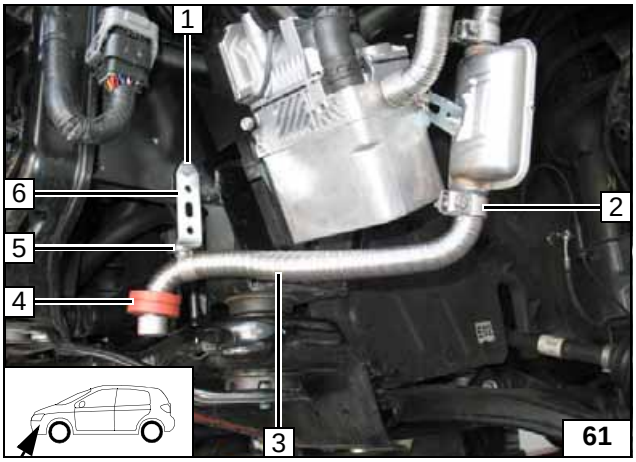
1 Exhaust pipe
2 Hose clamp [2x]

Mounting exhaust pipe



Bent perforated bracket **1** 90°

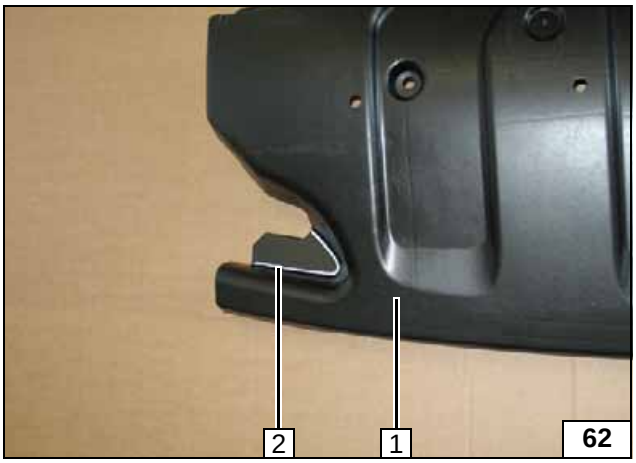
Bending perforated bracket



Ensure sufficient distance from neighbouring components.

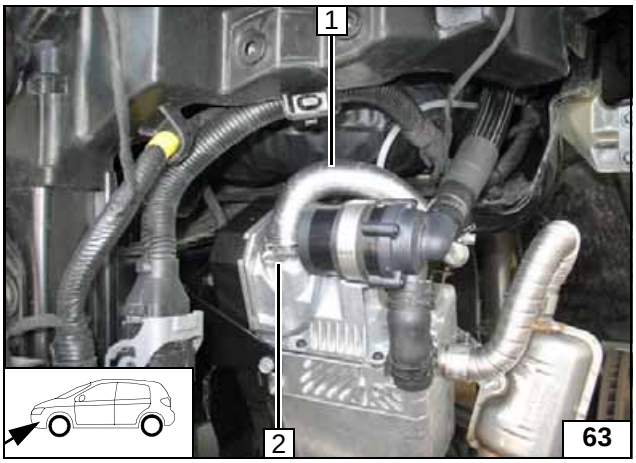
1 M6x20 bolt, spring lockwasher
2 Hose clamp
3 Exhaust end section
4 Red (rt) rubber isolator with groove
5 M6x20 bolt, pipe clamp, flanged nut
6 Perforated bracket

Installing exhaust gas end section



Cut out underride protection **1** in the area of the marking **2**.

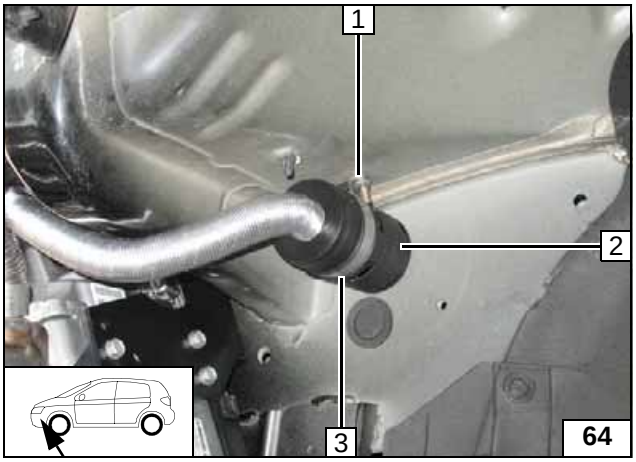
Cutting out underride protection



Combustion Air

1 Combustion air pipe
2 27 mm dia. clamp

Mounting combustion air pipe



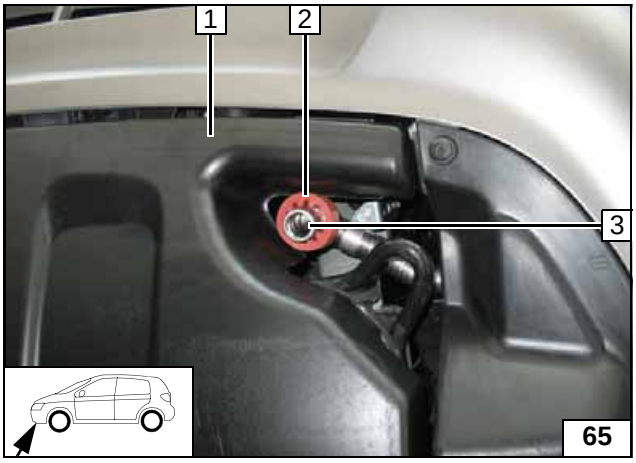
1 M5x20 bolt, large diameter washer, flanged nut on existing hole
2 Silencer
3 51 mm dia. clamp

Mounting silencer

Final Work

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

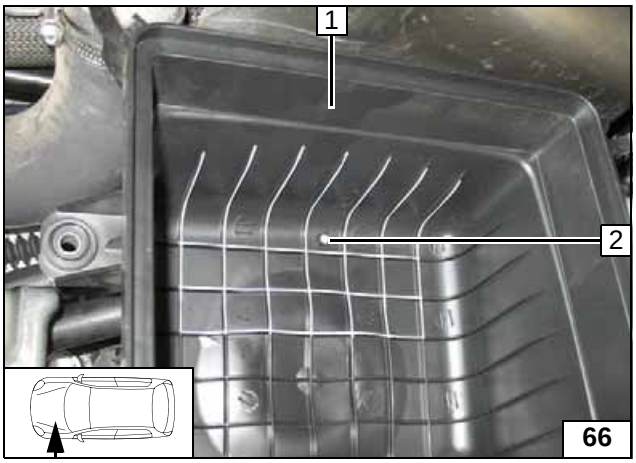
- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer, teach telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Check fan speed, if necessary, adjust settings of IPCU**
- **Place the "Switch off parking heater before refueling" signboard near the filler neck**
- **See installation instructions for initial start-up and function check**



Align exhaust end section **3** flush on red rubber isolator **2**.

1 Underride protection

Aligning rubber isolator



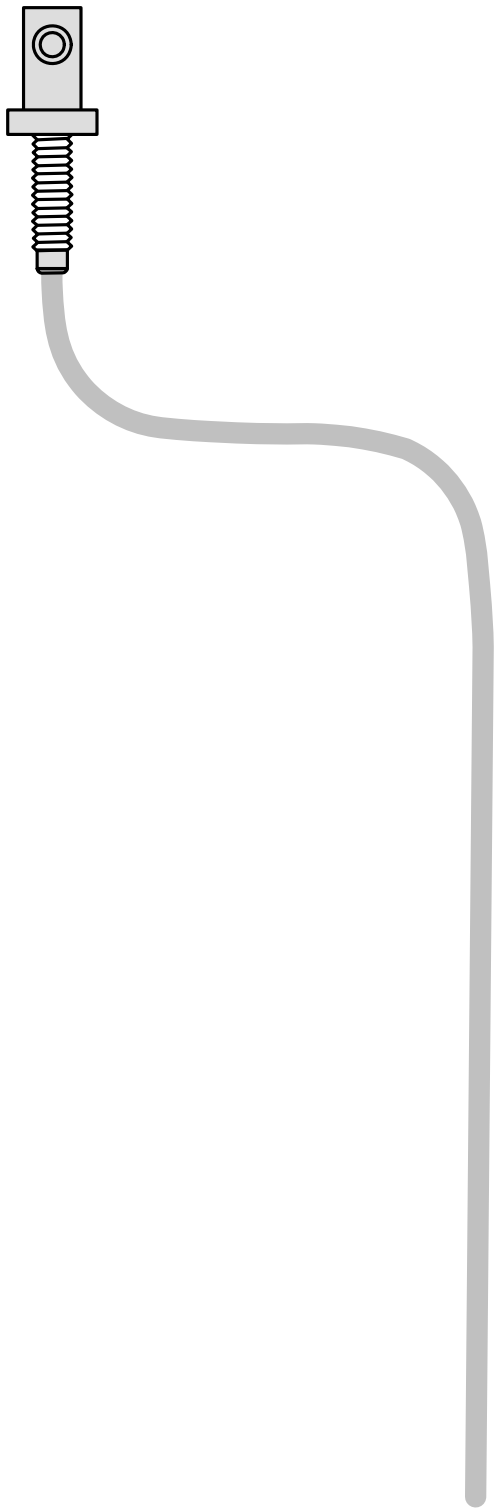
8 mm dia. hole at position **2** in the air filter box. Install pre-assembled hose bracket at position **2**.

1 Air filter box

Installing air filter box

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.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

1315101D_EN

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

If the vehicle has passenger compartment monitoring this must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for de-activation may be obtained from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

1 Set temperature to "HI“ [2x]
2 Air outlet to windscreen