Water Heater

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

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

Installation documentation

Hyundai ix35

Petrol
from model year 2010
Left-hand drive vehicle
2 WD / 4 WD

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.: 1315910D_EN Fee Euro 10.00

Table of Contents

Validity

Manufacturer	Model	Type	EG-BE No./ABE
Hyundai	ix35	EL	e11 * 2007 / 46 * 0104 * ...

Engine type	Engine model	Output in kW	Displacement in cm³
G4FD	Petrol	99	1591
G4KD	Petrol	120	1998

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 *Thermo Top E / C*	See price list
1	Installation kit Hyundai ix35 2010 Petrol	1315909A
1	Heater control	See price list

Also required for automatic air-conditioning:

Quantity	Designation	Order No.:
1	Automatic air-conditioning kit Hyundai ix35	1315911B

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 ix35 Petrol vehicles - for validity, see page 2 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

However, where this is the case the stipulations in the "installation documentation", the "operating instructions" and the "installation instructions for the *Thermo Top E / C* should be observed.
The corresponding rules of technology and any information from the vehicle manufacturer should be observed during the installation work.
The respective settings must be checked and set prior to the installation when installing an IPCU.

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).

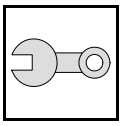
Special Tools

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

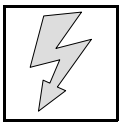
Explanatory Notes on Document

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.

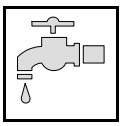
Mechanical system



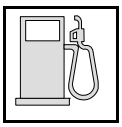
Electrical system



Coolant circuit

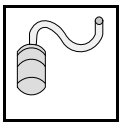


Fuel



Exhaust gas

Combustion air



Software

Special features are highlighted using the following symbols:

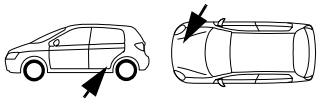
Specific risk of injury or fatal accidents.

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.

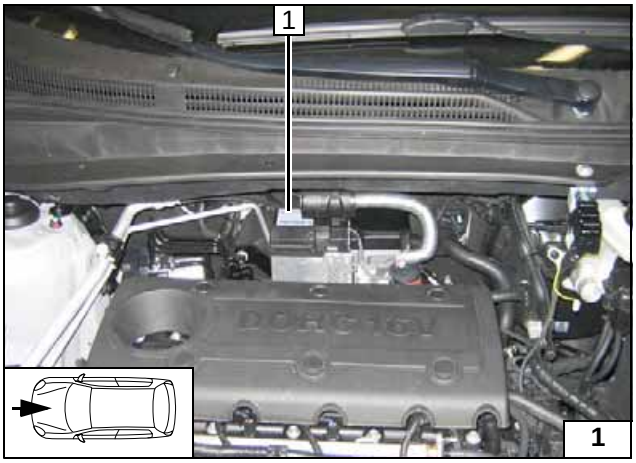
All dimensions are in mm!
Tightening torque of hose clamps = 2.0 + 0.5 Nm!
Tightening torque of Ejot screws, Ejot studs = 10 Nm!

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.
- Disconnect the battery "earth" or "ground" connection.
- Remove the windscreen wiper.
- Remove the coolant reservoir cap and the coolant reservoir.
- Remove the underride protection.
- Remove the underbody trim on the left in front of the tank.
- Remove the seat surface of the rear bench seat.
- Open the tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.
- Remove the glove compartment.
- Remove the entrance strip on the front passenger's side.
- Remove the A-pillar trim in the front passenger's side footwell.
- Pull up the shift lever sleeve (only for digital timer).

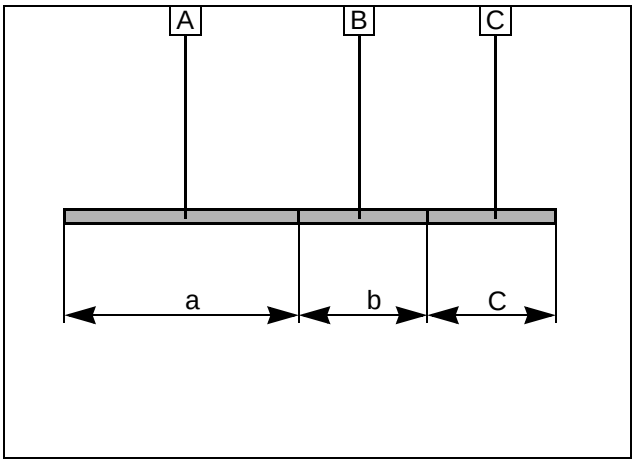
Remove page 25 "Operating Instructions for End Customer" and add to the vehicle operating instructions.



Heater installation location

1 Heater

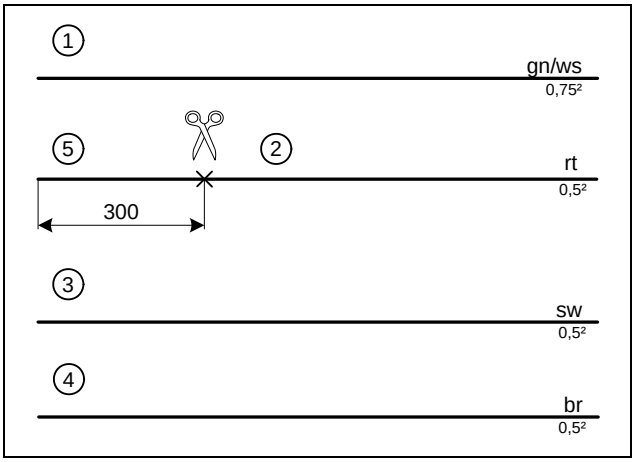
Installation location



Preparing electrical system

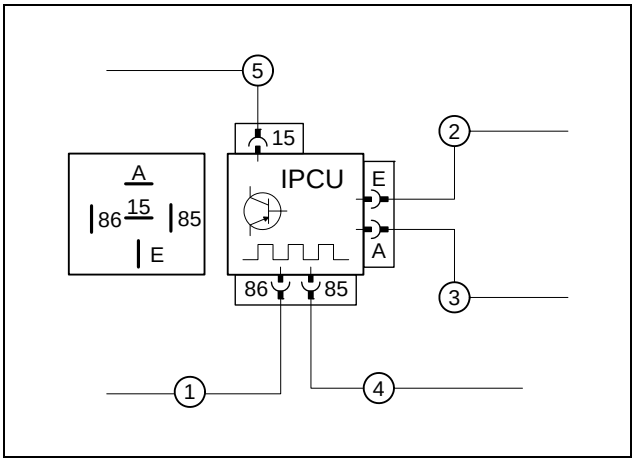
Only with automatic air-conditioning!

Cutting protective sleeving to length



Pull in red (rt) wire ② and black (sw) wire ③ into protective sleeving **A**. Pull green/white (gn/ws) wire ① into protective sleeving **B** and red (rt) wire ⑤ into protective sleeving **C**.

Preparing lines



IPCU view on the contact side!
IPCU is preprogrammed with the default settings of model year 2011. The default values must be checked during the function check on the vehicle and adjusted, if necessary!

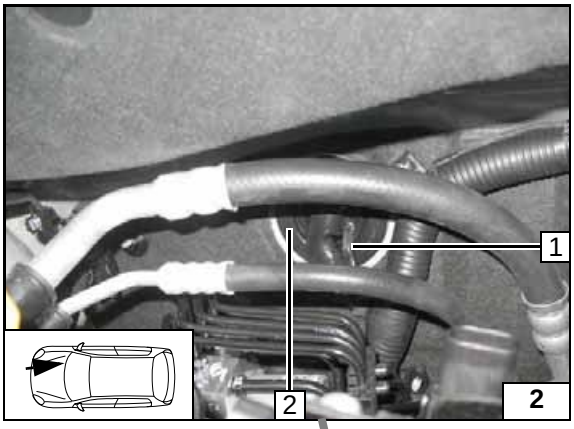
Preparing IPCU

Model year:	**2010**	**2011**
Duty cycle:	100%	100%
Frequency:	14 kHz	1 kHz
Voltage:	4.4V	3.6V
Function:	High side	High side

Electrical system

Wiring harness pass through

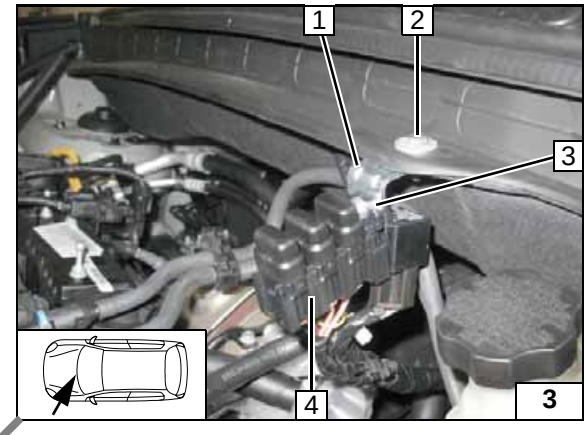
1 Protective rubber plug
2 Wiring harnesses of fan controller, heater control

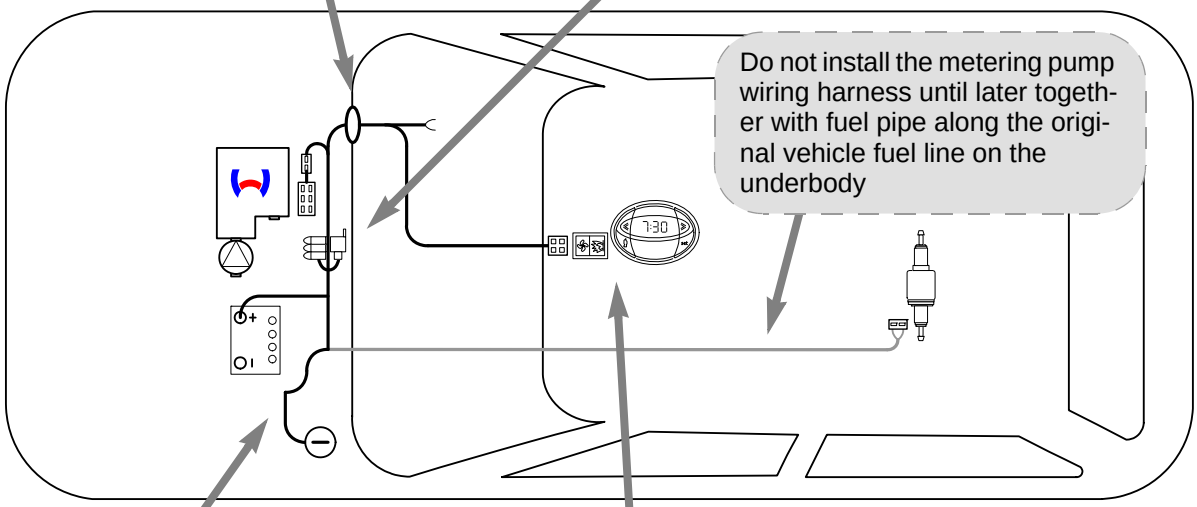


Fuse holder, K3 relay

Loosely mount angle bracket **1**.

2 Remove clip, M6x20 bolt, large diameter washer, flanged nut
3 M5x16 bolt, washer, retaining plate for fuse holder, K3 relay, flanged nut
4 Fuses F1-3 connected

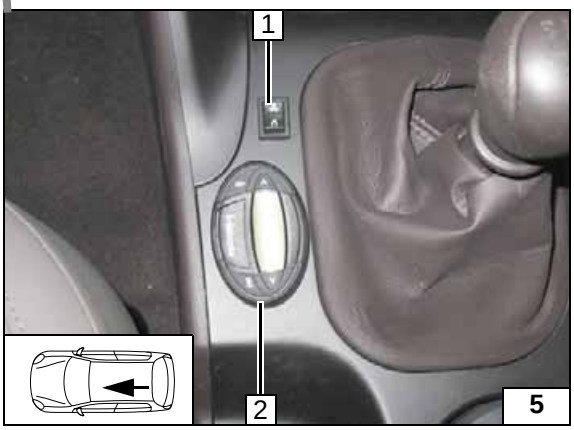




Wiring harness routing diagram

Positive and earth wire

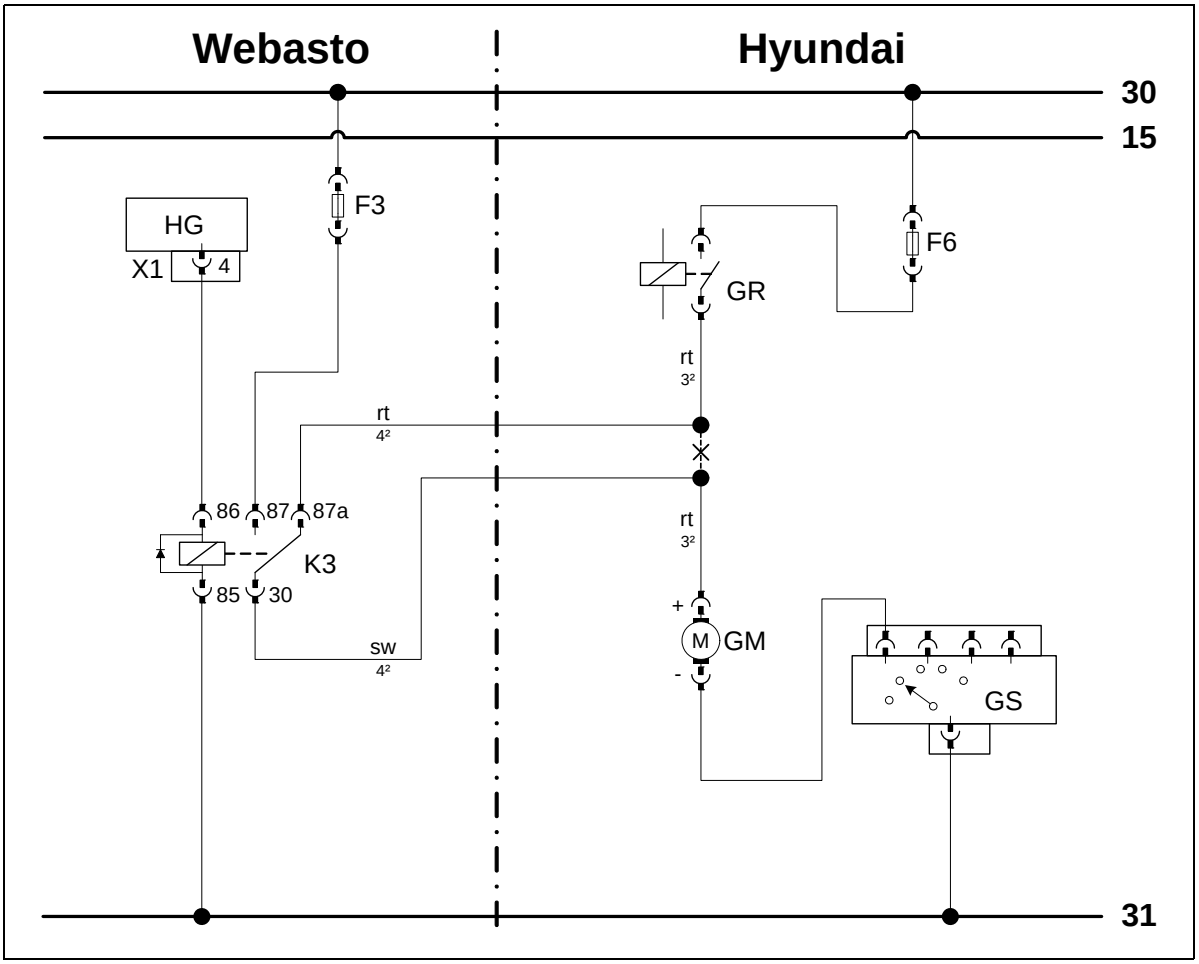
1 Earth wire on original vehicle earth support point
2 Positive wire on positive battery terminal



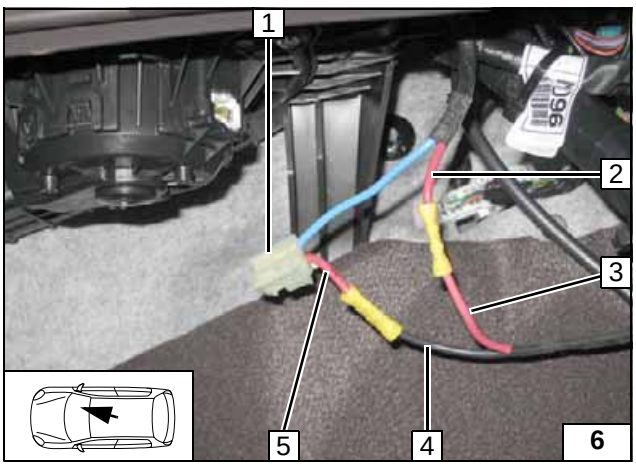
Digital timer, summer/winter switch option

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

Fan control for manual air conditioning



Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	GR	Fan relay	sw	black
F3	Fuse	GS	Fan switch		
K3	Fan relay	F6	40A fuse		
				X	Cutting point
				Wiring colours may vary.	



Connection to 2-pin connector **1** from the fan motor.
Produce connections as shown in wiring diagram.

2 Red (rt) wire from fuse
3 Red (rt) wire from K3/87a
4 Black (sw) wire from K3/30
5 Red (rt) wire from connector GM

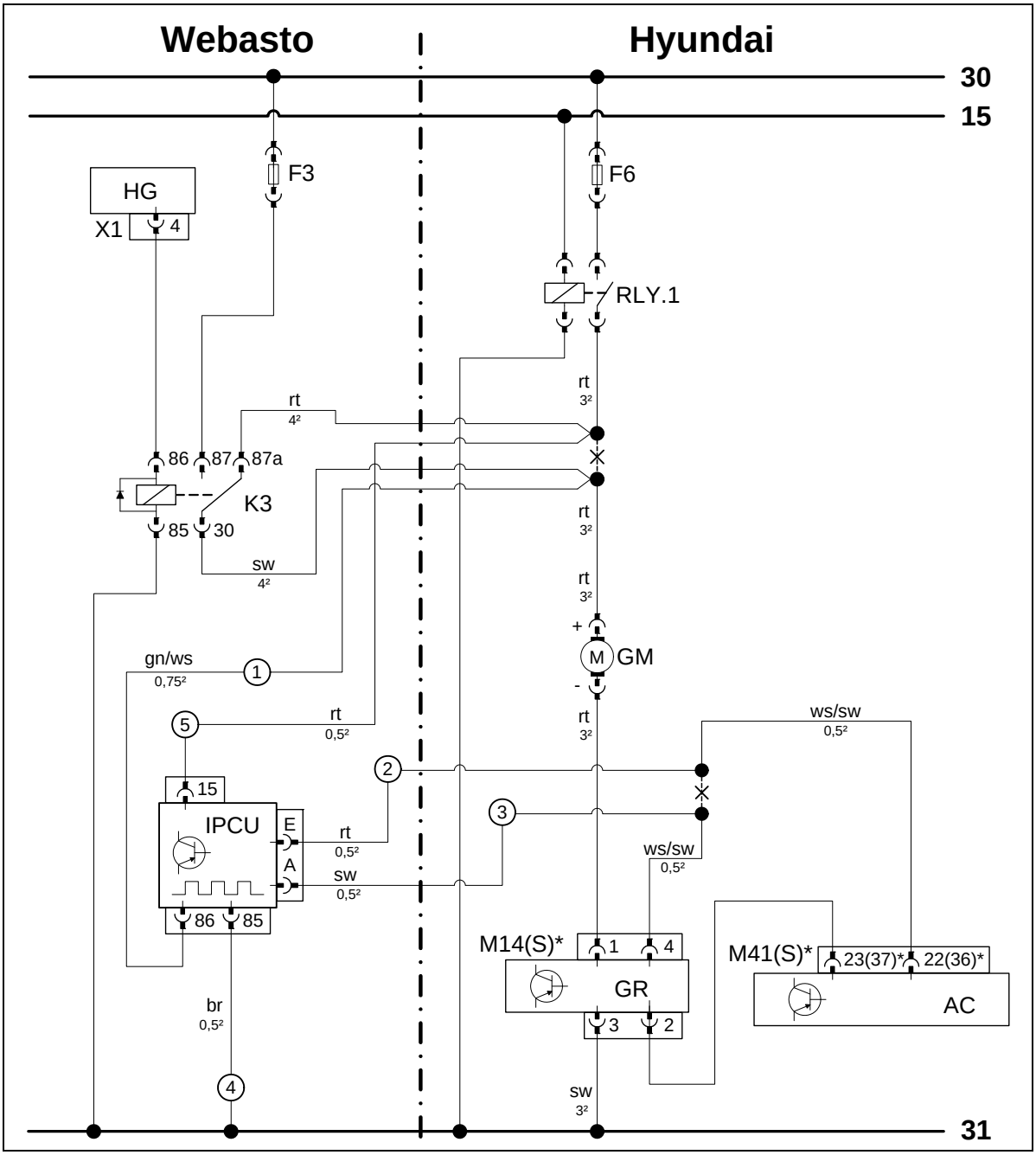
Wiring diagram

Legend

Connecting fan-motor

Automatic air-conditioning fan control

Wiring diagram

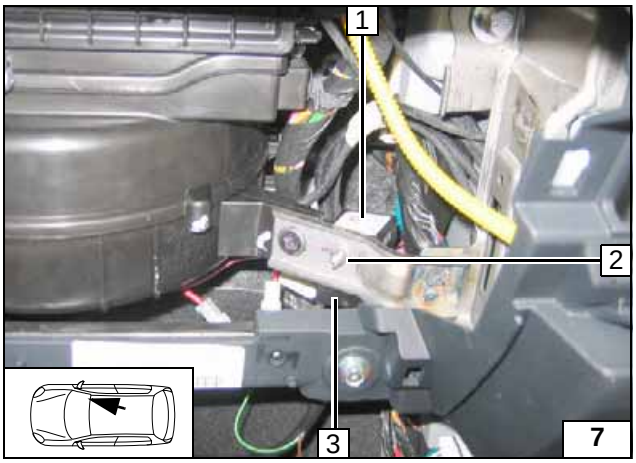


Legend

Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-C/E	GM	Fan motor	rt	red
X1	6-pin heater connector	RLY.1	Fan relay	ws	white
F3	25A fuse	GR	Fan controller	sw	black
K3	Fan relay	AC	A/C control unit	br	brown
IPCU	Pulse width modulator	F6	40A fuse	gn	green
		M14(S)	Connector GM		
		M41(S)	AC connector		

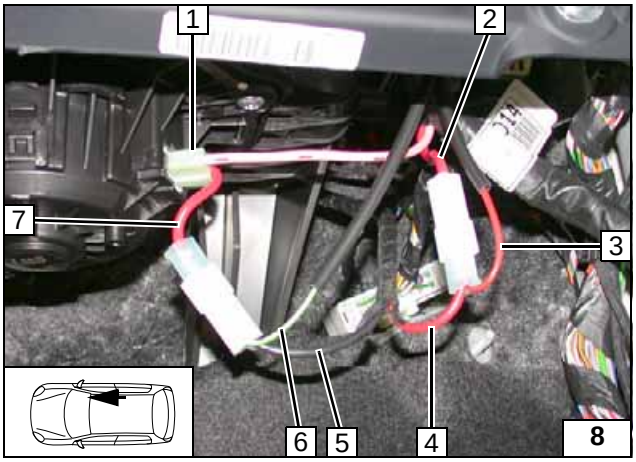
IPCU settings		
Model year:	**2010**	**2011**
Duty cycle:	100%	100%
Frequency:	14 kHz	1 kHz
Voltage:	4.4V	3.6V
Function:	High side	High side

*	Specifications in brackets are valid from MY 2011
!	Insulate wire ends and tie back
X	Cutting point
Wiring colours may vary.	



1 IPCU installed
2 M5x16 bolt, large diameter washer [2x], existing hole, flanged nut
3 IPCU socket

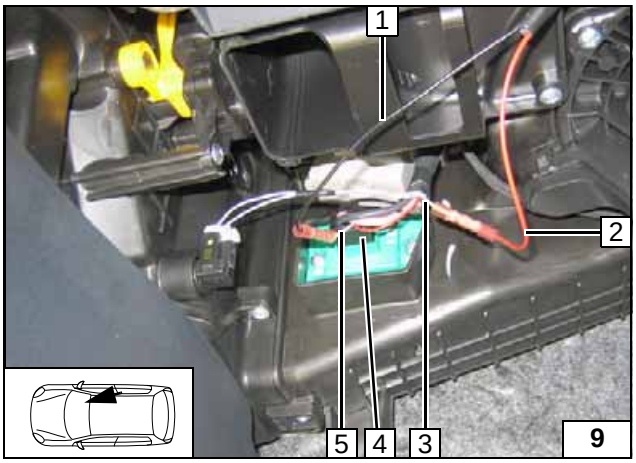
Installing IPCU



Connection to 2-pin connector **1** from the fan motor.
Produce connections as shown in wiring diagram.

2 Red (rt) wire of fan relay
3 Red (rt) wire ⑤ from IPCU/15
4 Red (rt) wire from K3/87a
5 Black (sw) wire from K3/30
6 Green/white (gn/ws) wire ① from IPCU/86
7 Red (rt) wire from connector GM

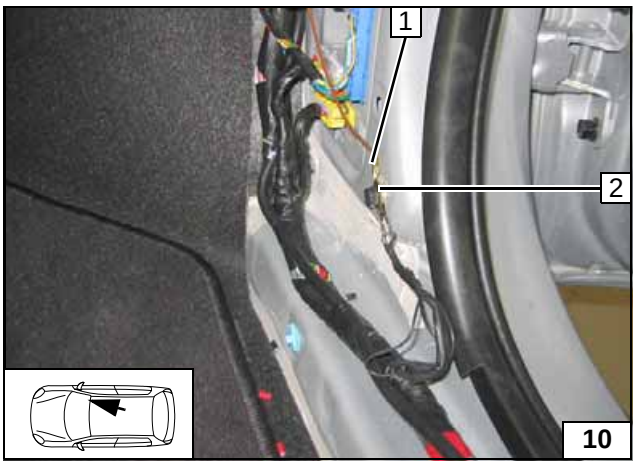
Connecting fan-motor



Connection to 4-pin connector **4** from the fan controller.
Produce connections as shown in wiring diagram.

1 Black (sw) wire ③ from IPCU/A
2 Red (rt) wire ② from IPCU/E
3 White/black (ws/sw) wire for A/C control unit pin 22 (36)
5 White/black (ws/sw) wire of connector for fan controller, pin 4

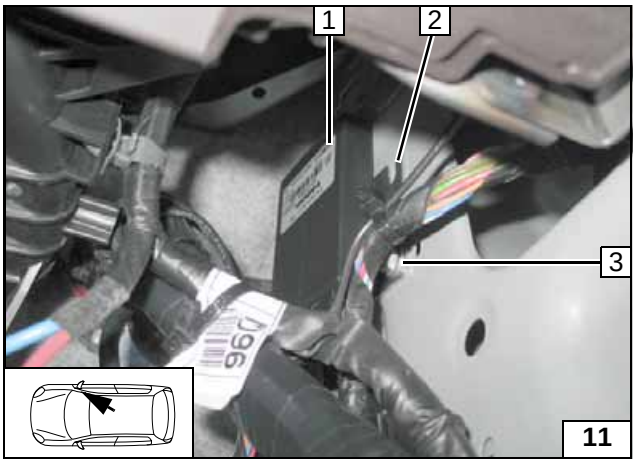
Connecting fan controller



Produce connections as shown in wiring diagram.

1 Brown (br) wire ④ IPCU/85 with cable lug
2 Original vehicle earth point

Connection of earth for IPCU

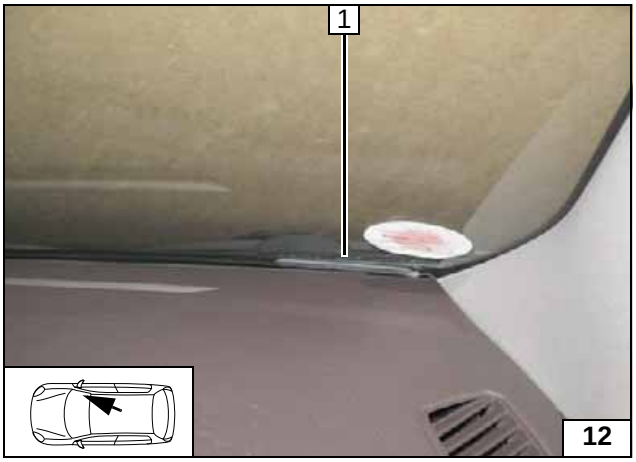


Remote option (Telestart)

Drill out bracket **2** to 6.5 mm dia. at position **3**.

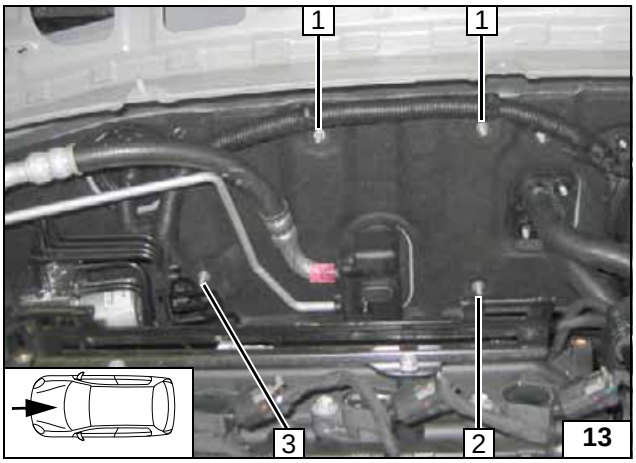
1 Receiver
2 Bracket
2 M6x20 bolt, spring lockwasher, existing threaded hole

Mounting receiver



1 Antenna

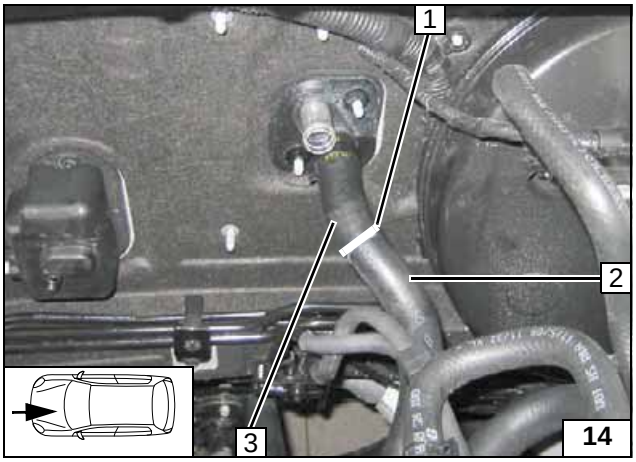
Mounting antenna



Preparing installation location

Remove original vehicle wiring harness at position **1** and **3**. Attach one washer each on stud bolt **1** [2x], **2**, **3** (washers as compensation of insulation mat and bracket). Cut out insulation mat, if necessary.

Releasing wiring harness

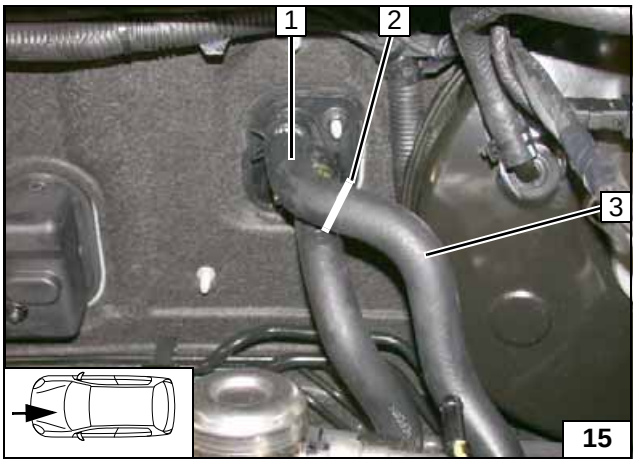


2.0 l

The heat exchanger outlet hose was dismantled for a better illustration.

1 Cutting point
2 Hose of engine outlet
3 Remove hose section and spring clip and discard

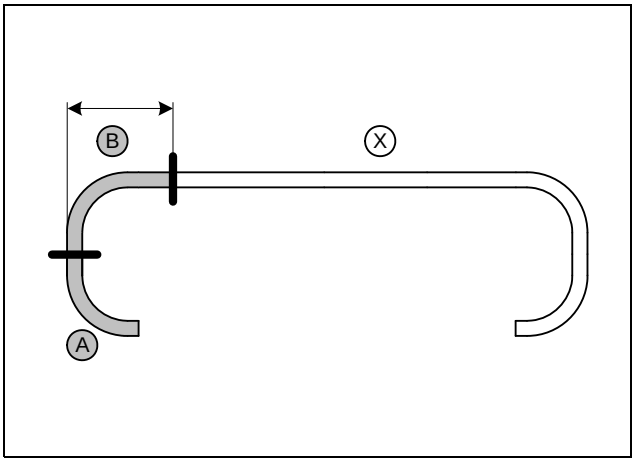
Preparing connection of heat exchanger inlet



1.6 l

1 Hose of engine outlet
2 Cutting point
3 Remove hose section and spring clip and discard

Preparing connection of heat exchanger inlet



Preparing heater

Discard section **X**.

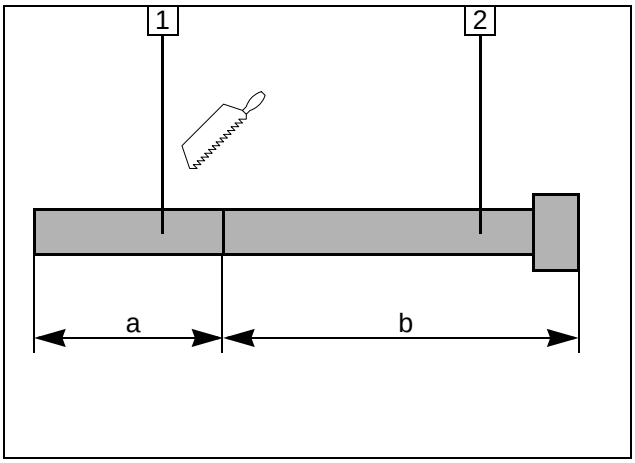
2.0 l

B = 180

1.6 l

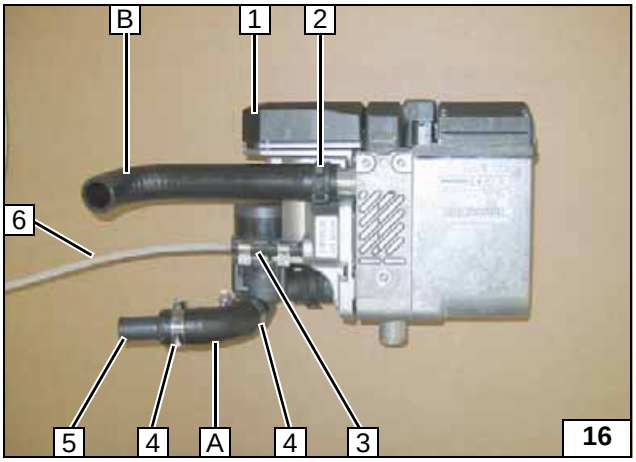
B = 140

Cutting coolant hoses to length



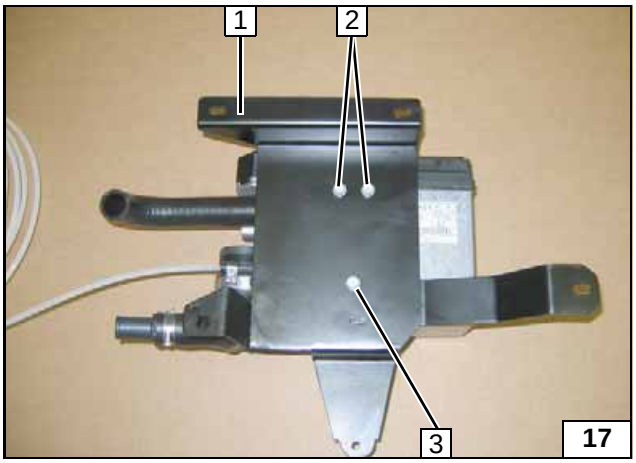
1 Exhaust pipe
a = 250
2 Exhaust end section
b = 750

Preparing exhaust pipe



1 Heater
2 27 mm dia. spring clip
3 Hose section, 10 mm dia. clamp [2x]
4 27 mm dia. clamp [2x]
5 18x20 connecting pipe
6 Fuel line

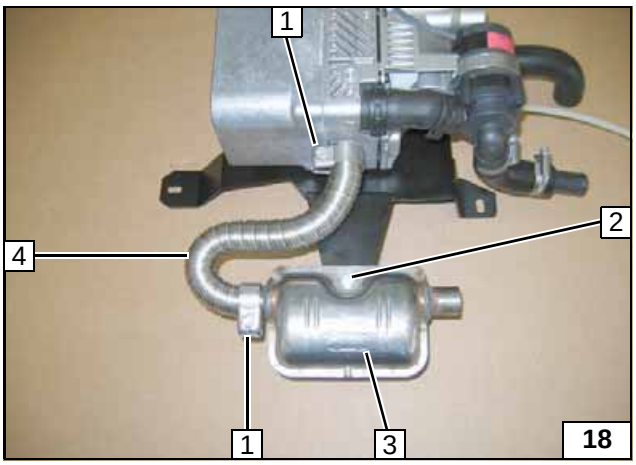
Premounting heater



Insert two washers between heater and bracket **1** at position **3**.

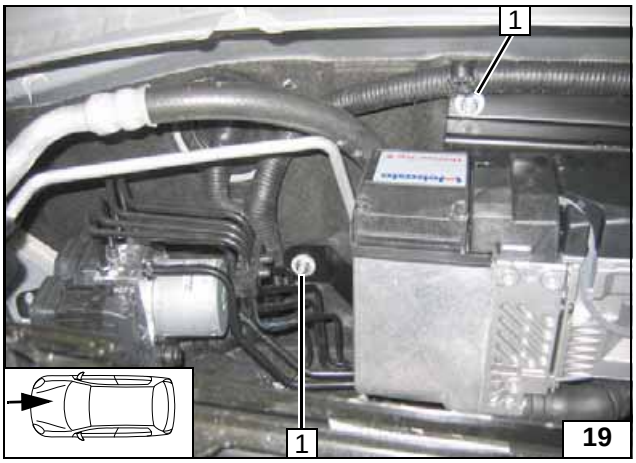
2 Ejot screw [2x]
3 Ejot screw, washer [2x]

Mounting bracket



1 Hose clamp [2x]
2 M6x20 bolt, flanged nut
3 Silencer
4 Exhaust pipe

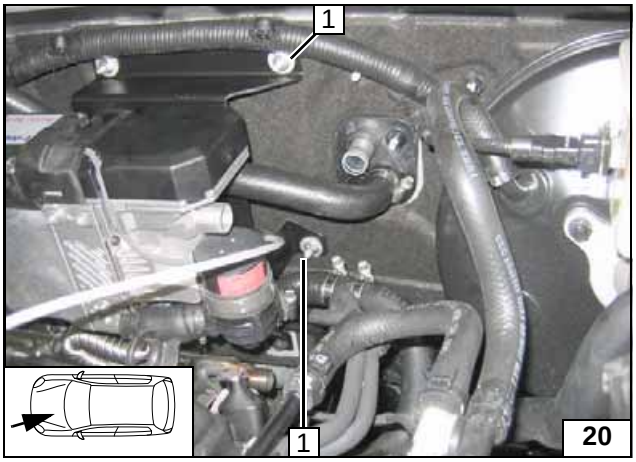
Installing exhaust silencer



Installing heater

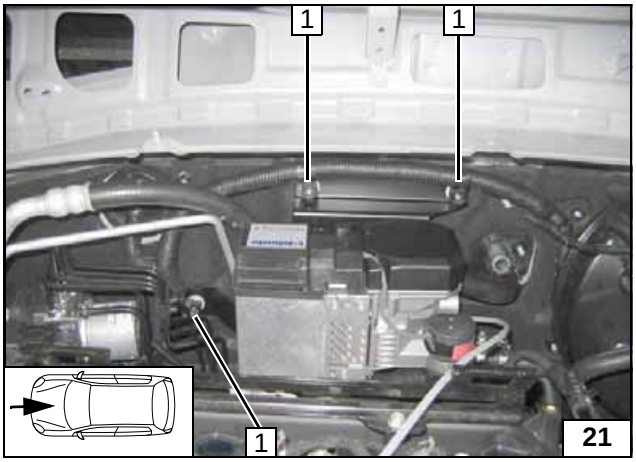
1 Large diameter washer, flanged nut [2x each]

Mounting heater



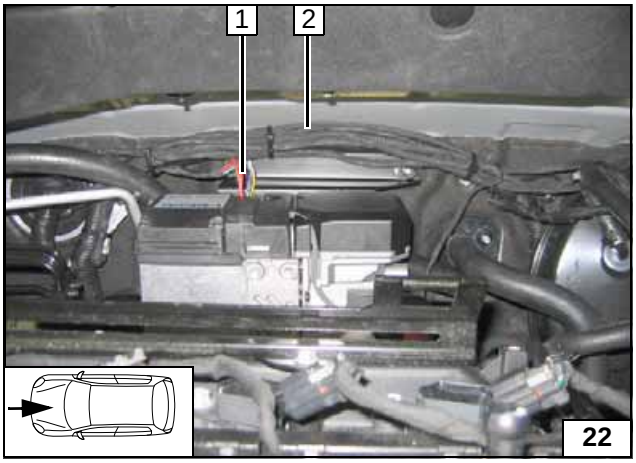
1 Large diameter washer, flanged nut [2x each]

Mounting heater



Re-attach original vehicle wiring harness on stud bolt **1** [3x].

Installing wiring harness



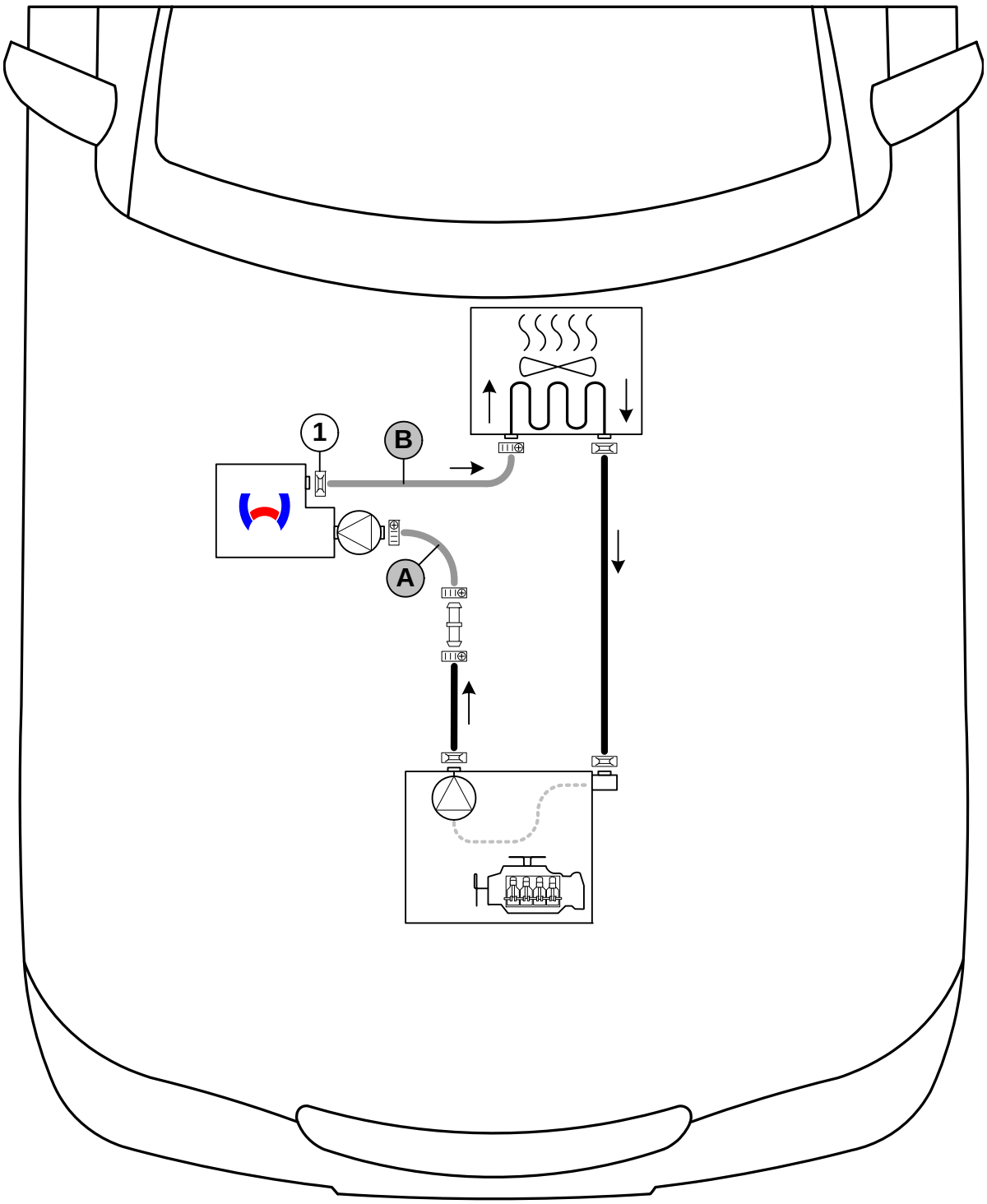
Install wiring harness **1** on heater. Attach wiring harnesses on original vehicle wiring harness **2**.

Routing wiring harness

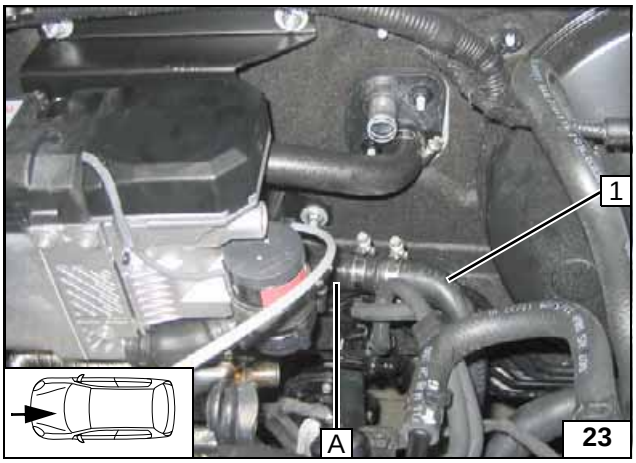
Coolant circuit

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 based on the following diagram:

Hose installation diagram



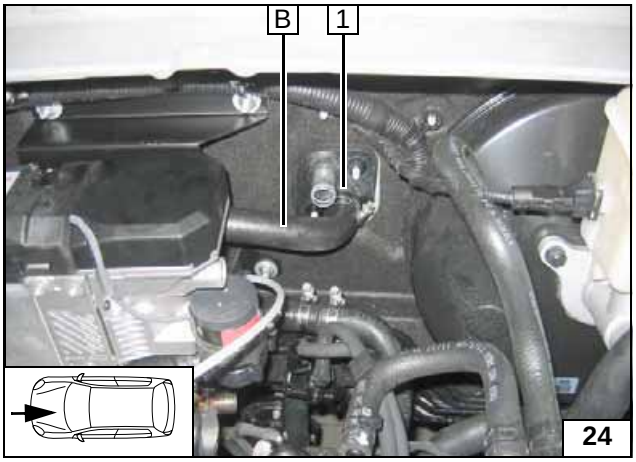
All spring clips not designated = original vehicle spring clip! **1** = 27 mm dia. spring clip All hose clamps without a specific designation = 20-27 mm dia.
Connecting pipe = 18x20 dia.



2.0 l

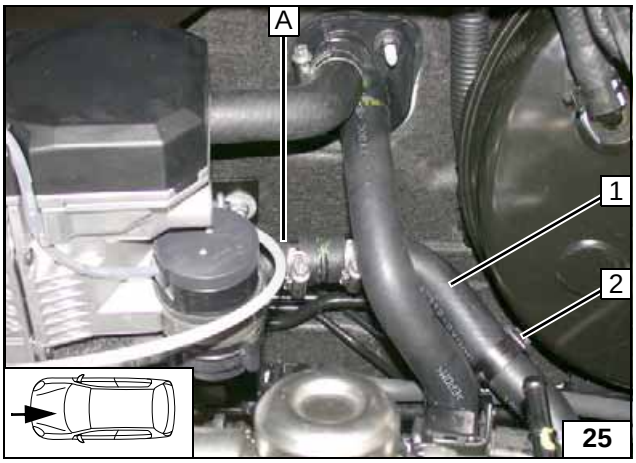
1 Hose of engine outlet

Connecting engine outlet



1 Connection piece of heat exchanger inlet

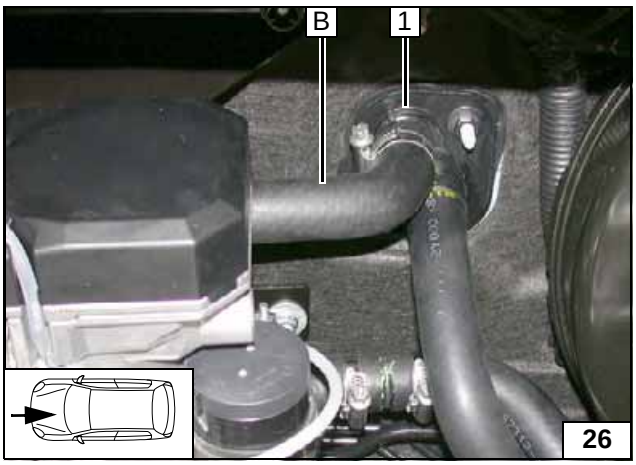
Connection of heat exchanger inlet



1.6 l

1 Hose of engine outlet
2 Install hose bracket

Connecting engine outlet



1 Connection piece of heat exchanger inlet

Connection of heat exchanger inlet

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.

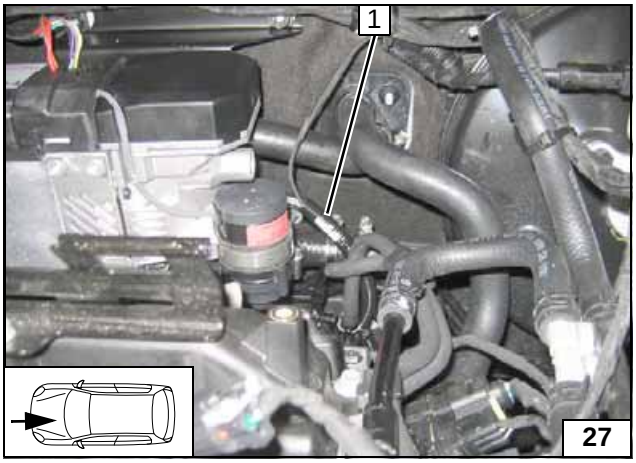
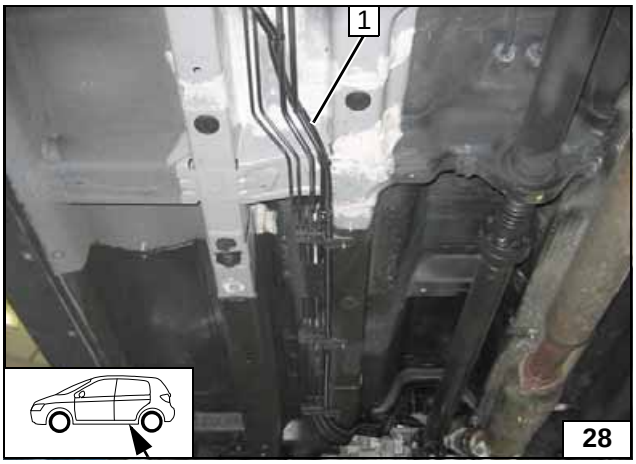


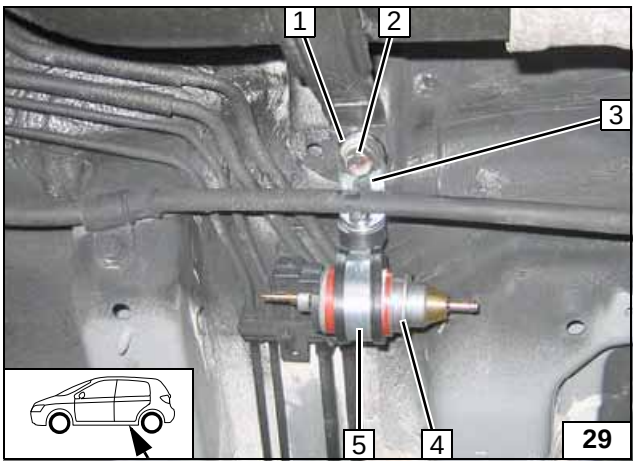
Figure shows 2.0l !
Insert fuel line and wiring harness of metering pump in 2100 mm corrugated tube **1** and route original vehicle fuel lines toward the underbody.

Routing lines



Route wiring harness of metering pump and fuel line in corrugated tube **1** on the underbody toward the installation location of the metering pump.

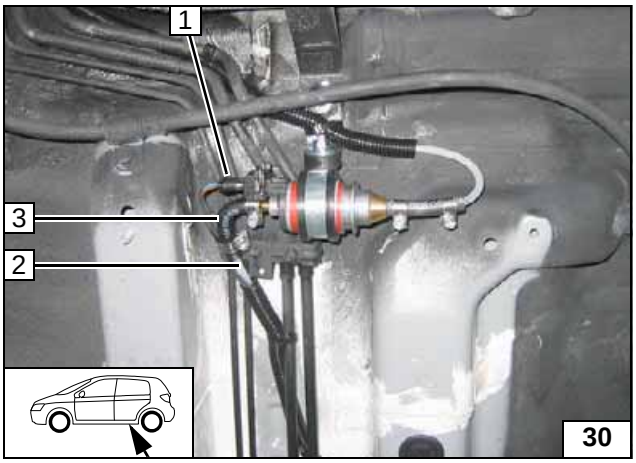
Routing lines



Drill angle bracket **3** in the oblong hole at position **2** to
10.5 mm dia.

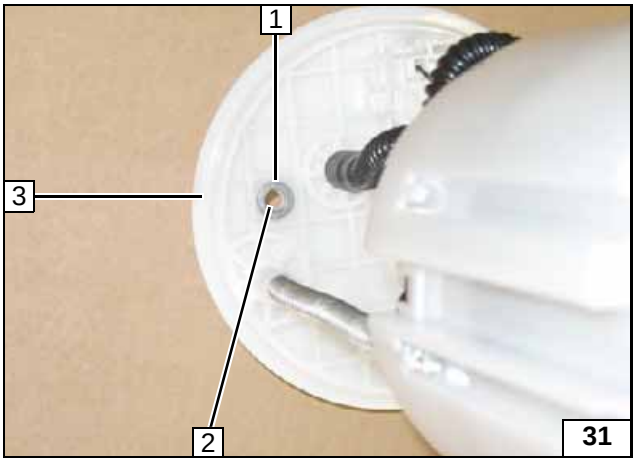
1 Silent block, flanged nut [2x]
2 Original vehicle bolt for fuel tank attachment
4 Metering pump
5 Rubber-coated pipe clamp

Mounting metering pump



1 Wiring harness of metering pump, connector mounted
2 Fuel line of heater
3 90° moulded hose, 10 mm dia. clamp [2x]

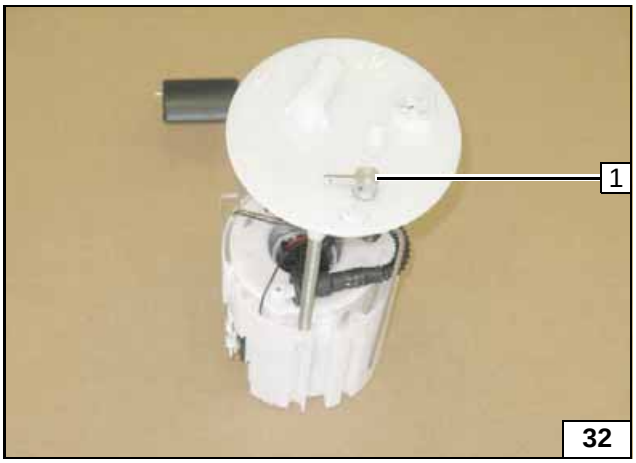
Connecting metering pump



Remove and detach fuel-tank sending unit **3** according to manufacturer's instructions. Position washer (dia. d_a = 12 mm) **1** in the centre between the bars.

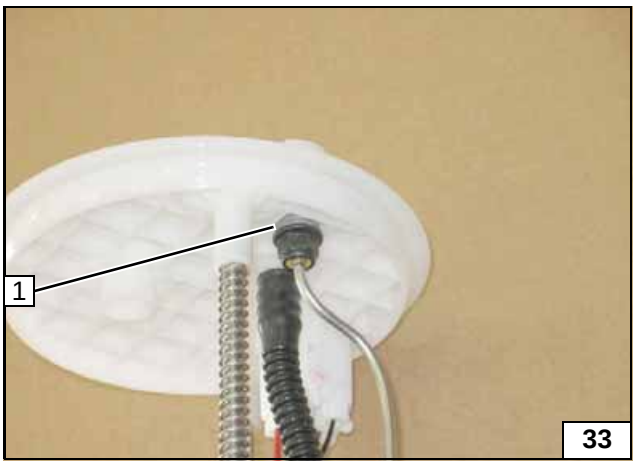
2 Copy hole pattern, 6 mm dia. hole

Fuel extraction



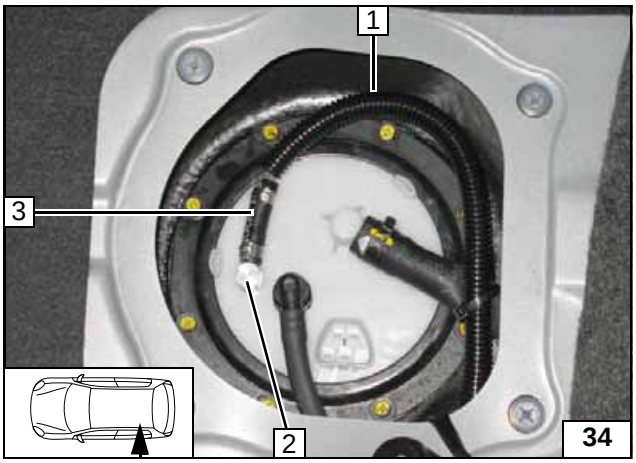
Shape fuel standpipe **1** according to template, cut to length and install.

Inserting fuel standpipe



Insert four dia. d_a = 11.6mm washers at position **1** as height adjustment.

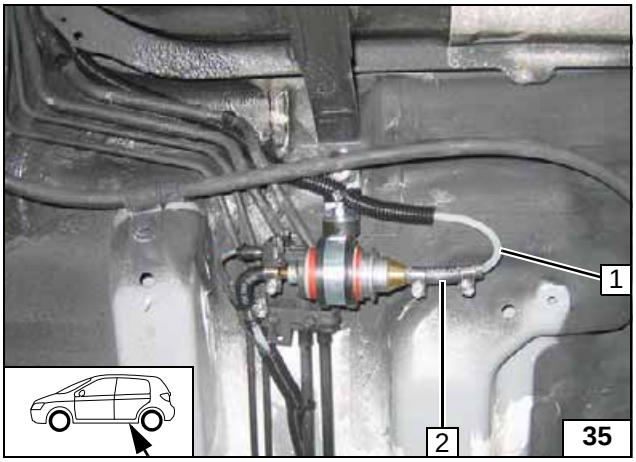
Mounting fuel standpipe



Install fuel-tank sending unit according to manufacturer's instructions. Route fuel line in 1130 mm corrugated tube **1** toward the metering pump.

2 Fuel standpipe
3 Fuel line, hose section, 10 mm dia. Caillau clamp [2x]

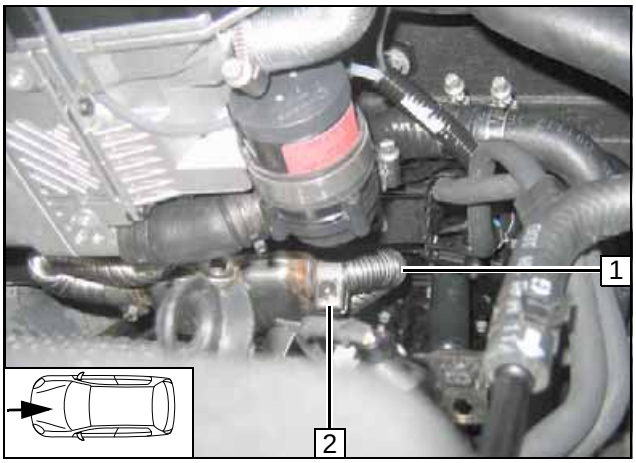
Connecting fuel line



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

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

Connecting metering pump

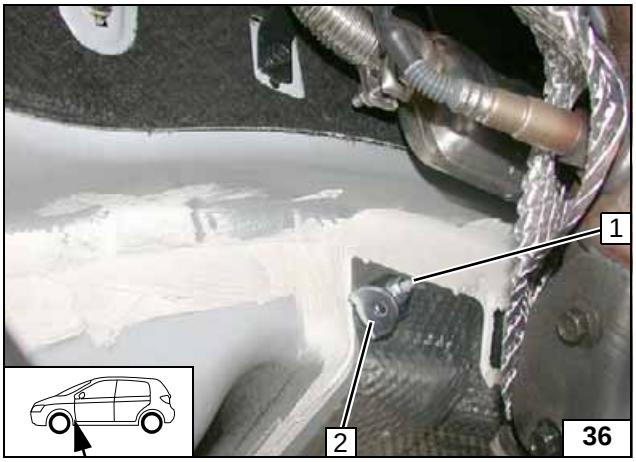


Exhaust gas

When assembling the exhaust end section **1**, you must watch for sufficient distance to adjacent components.

2 Hose clamp

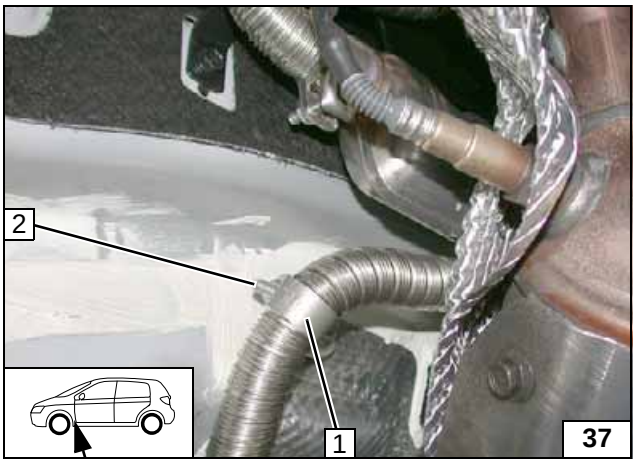
End section installation



2 WD

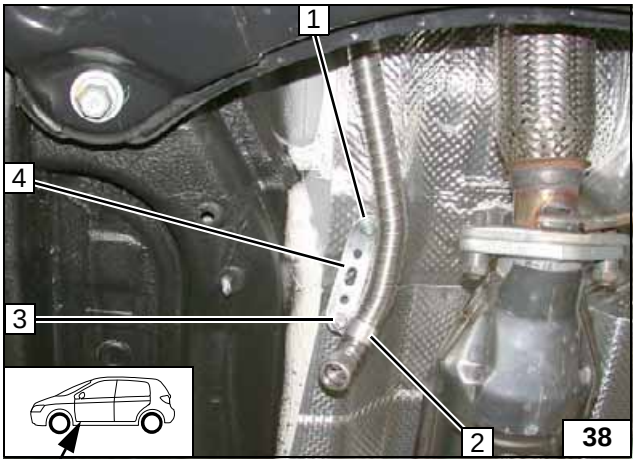
On position **1**, position a large diameter washer between angle bracket **2** and original vehicle nut.

Mounting angle bracket



1 P-clamp
2 M6x20 bolt, flanged nut

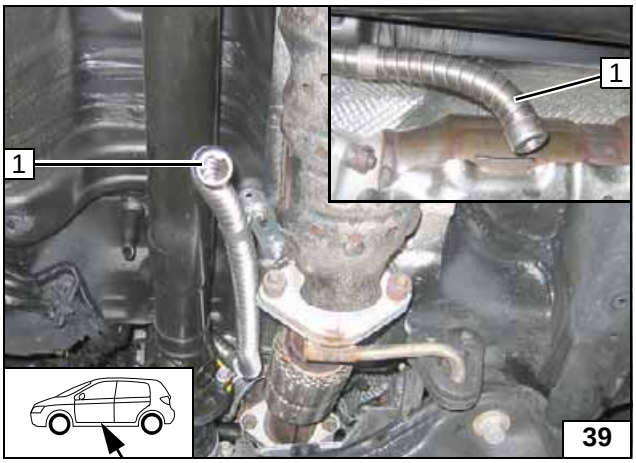
Attaching end section



On position **1**, position a large diameter washer between perforated bracket **4** and original vehicle nut.

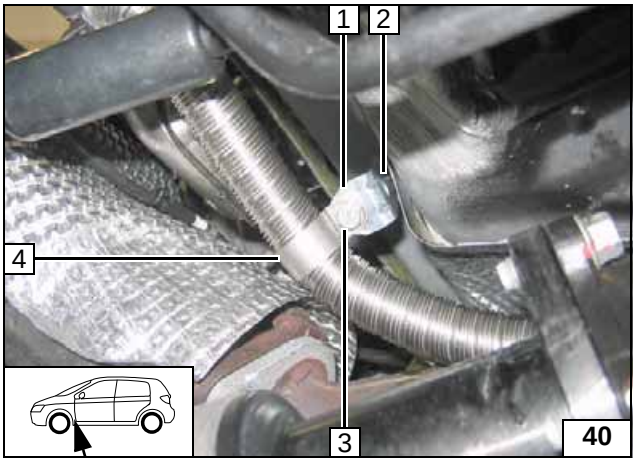
1 Original vehicle stud bolt, flanged nut
2 P-clamp
3 M6x20 bolt, flanged nut

Attaching end section



Align exhaust end section **1**.

Aligning end section

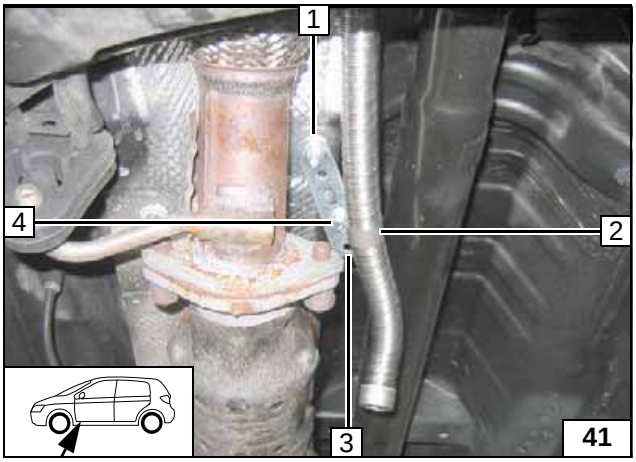


4 WD

On position **2**, position a large diameter washer between angle bracket **1** and original vehicle nut.

2 Original vehicle stud bolt, angle bracket, flanged nut
3 M6x20 bolt, flanged nut
4 P-clamp

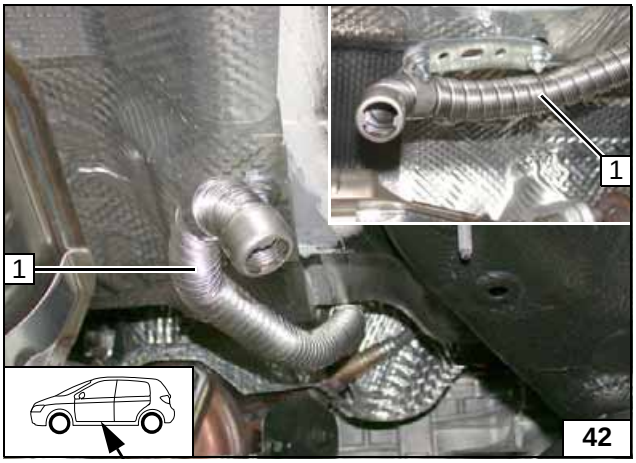
Attaching end section



On position **1**, position a large diameter washer between perforated bracket **3** and original vehicle nut.

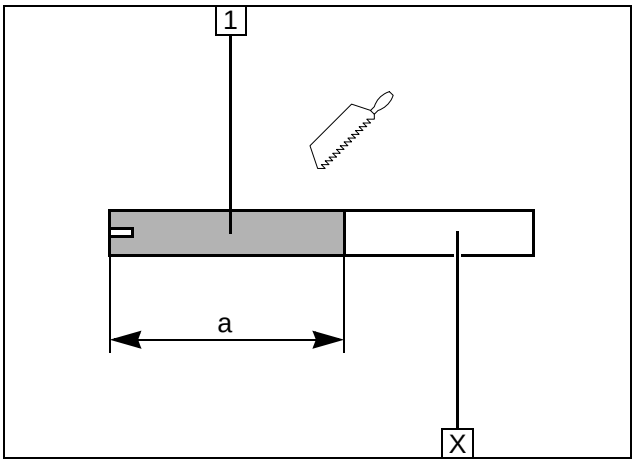
1 Original vehicle stud bolt, flanged nut
2 P-clamp
4 M6x20 bolt, flanged nut

Attaching end section



Align exhaust end section **1**. Bend perforated bracket, if necessary.

Aligning end section

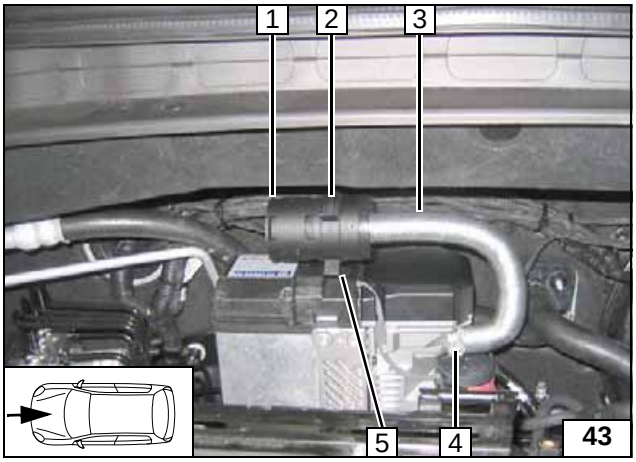


Combustion air

Discard section **X**.

1 Combustion air pipe
a = 250

Cutting combustion air pipe to length



Punch through perforation for hole on heater cover on position **5** and install retaining clip **2**!

1 Silencer
3 Combustion air pipe
4 27 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".**
- **Place the "Switch off parking heater before refueling" signboard near the filler neck**
- **See installation instructions for initial start-up and function check**

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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.

If vehicles have 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.

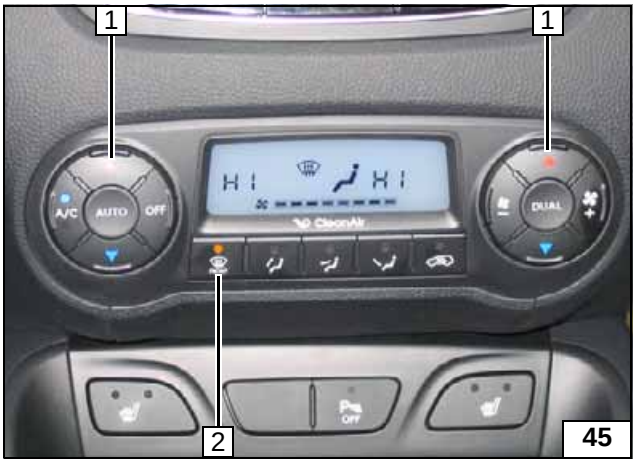
If the summer/winter switch option has been installed, this must be switched in accordance with the time of year. The heater will then heat in the position Winter and in the position Summer it will only switch on the vehicle fan to ventilate the vehicle interior .

Before parking the vehicle, make the following settings:

Manual air-conditioning

1 Set fan to level "1", max. "2"
2 Set temperature to "max."
3 Air outlet to windscreen

Automatic air-conditioning



1 Set temperature to "max."
2 Air outlet to windscreen