Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Hyundai i20

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Hyundai	i20	GB	e11 * 2007 / 46 * 1600 *

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.1 CRDi	Diesel	SG	55	1120	D3FA
1.4 CRDi	Diesel	SG	66	1396	D4FC

SG = manual transmission

From model year 2015
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog lights
Start-Stop

Not verified: Alarm system

Total installation time: approx. 6.5 hours

Hyundai i20

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix for Hyundai i20 2015 Diesel: **1324022A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of MultiControl CAR installation: MultiControl installation frame: **9030077**_
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

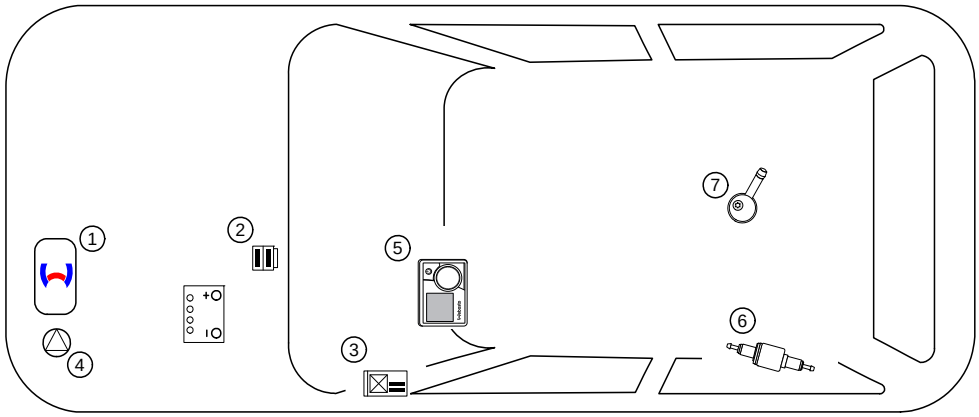
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full.
- The installation location of the push button in case of Telestart or Thermo Call should be confirmed with the end customer.
- Depending on the available space and manufacturer's instructions, we recommend the use of a vehicle battery with more electrical capacity.

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. MultiControl CAR
6. Metering pump
7. FuelFix



Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting of the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater. The total installation time may vary for vehicle equipment other than provided.

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

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.

Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel diesel (DIN EN 590) or petrol (DIN EN 228).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

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

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs, installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

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. Insulate loose wire ends and tie back. Connectors on electronic components have to audibly click into place during installation.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components!

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

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

2 Statutory regulations governing installation

Guidelines	TT-Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled.

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust gas outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to Hyundai i20 Diesel vehicles - for validity, see page 1 - from model year 2015 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’.

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

Technical Information

Special Tools
- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

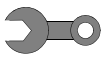
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 water connection piece retaining plate bolt = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

Explanatory Notes on Document

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

Mechanical System



Electrical System

Coolant Circuit

Combustion Air

Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of damage to components.

Specific risk due to electrical voltage.

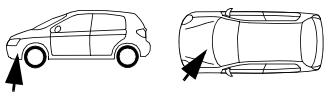
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

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

Reference to a special technical feature.

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



Tightening torque according to the manufacturer's vehicle-specific documents.

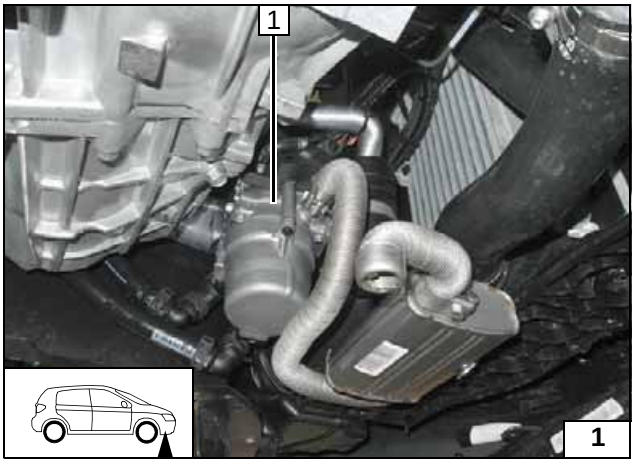
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the left front wheel.
- Remove the left wheel well trim.
- Disassemble the engine underride protection.
- Remove the underbody trim on the left.
- Remove the air filter and the hoses to the engine.
- Disconnect and remove the battery.
- Remove the engine control unit and bracket.
- The diesel filter (behind the engine control unit) should be detached for the wiring harness pass through.
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Take off the lower instrument panel trim on the driver's side.
- Disconnect the central electrical box of the passenger compartment and lay it aside.

Heater

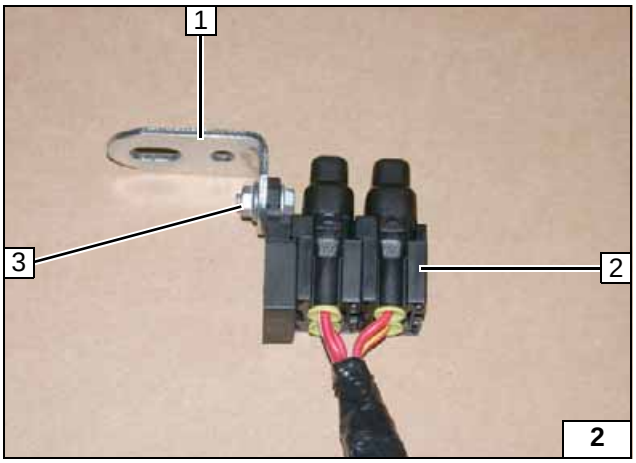
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



2

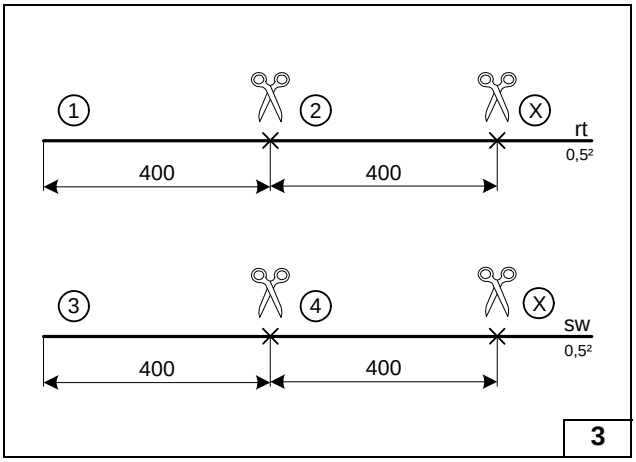
Preparing Electrical System

Wire sections retain their numbering throughout the entire document.

Produce all following electrical connections as shown in the wiring diagram.

1 Angle bracket
2 Engine compartment fuse holder
3 M5x16 bolt, washer [2x], retaining plate of fuse holder, nut

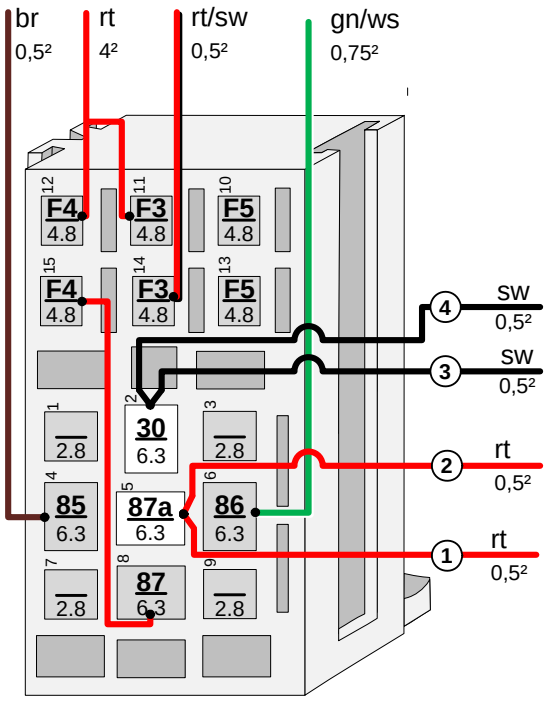
Preparing engine compartment fuse holder



3

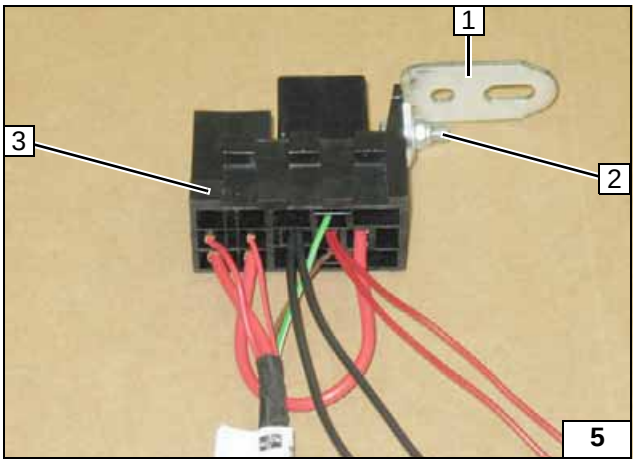
Discard sections **X**.

Cutting to length / assigning wires



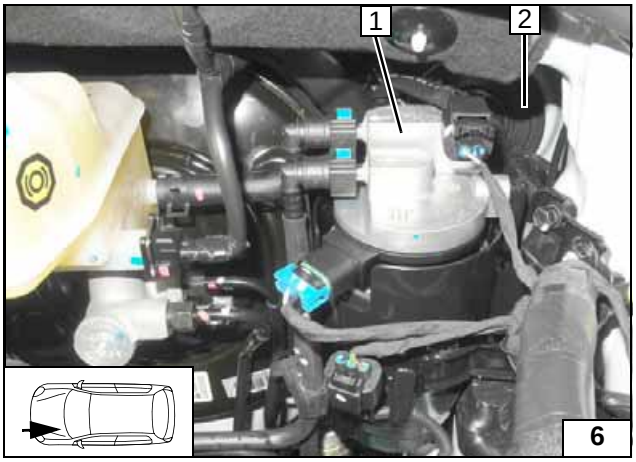
4

Connecting wires to socket of passenger compartment relay and fuse holder



1 Angle bracket
2 M5x16 bolt, washer [2x], nut
3 Passenger compartment relay and fuse holder

Preparing passenger compartment relay and fuse holder



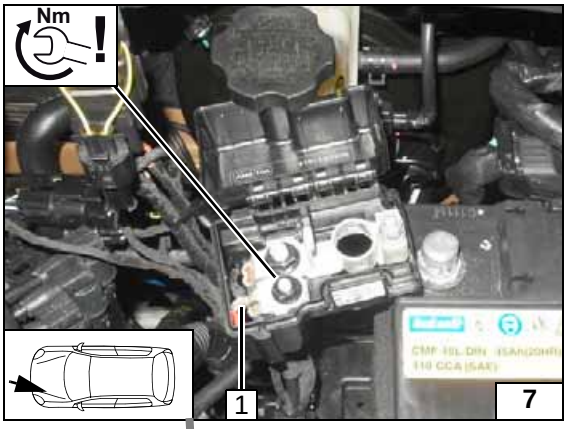
1 Diesel filter
2 Protective rubber plug

Diesel filter removal for wiring harness pass through

Electrical System

Positive wire

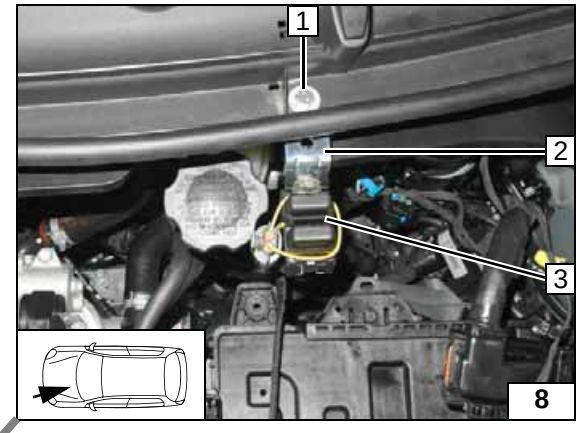
1 Positive wire on positive distributor



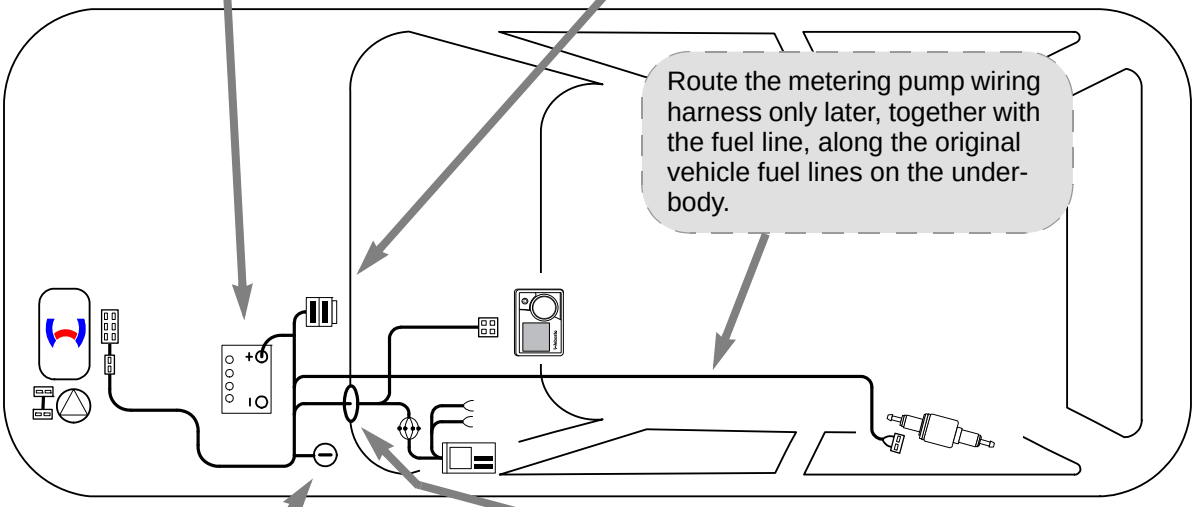
Engine compartment fuse holder

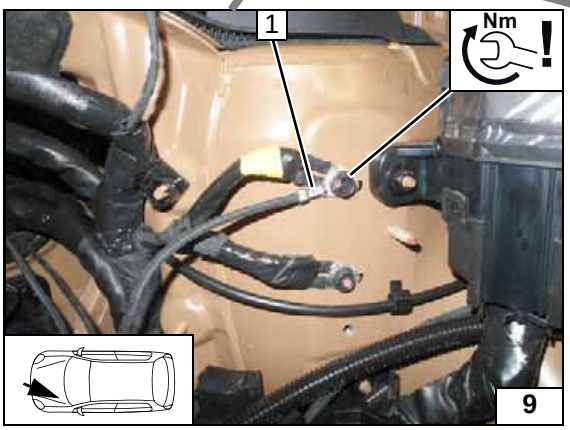
Remove fastening clip at position **1**.

1 M6x20 bolt, washer, flanged nut
2 Angle bracket
3 Fuses F1-2



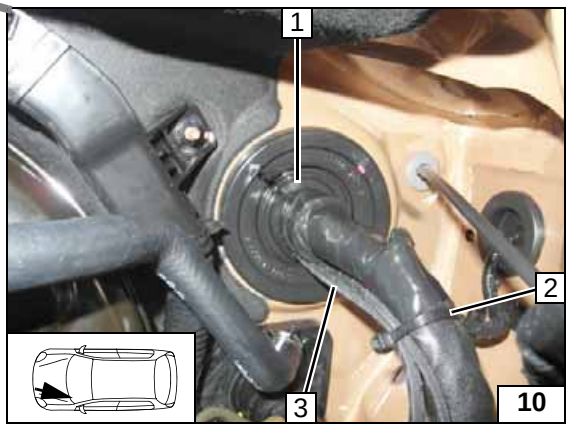
Wiring harness routing diagram





Earth wire

1 Earth wire on original vehicle earth support point

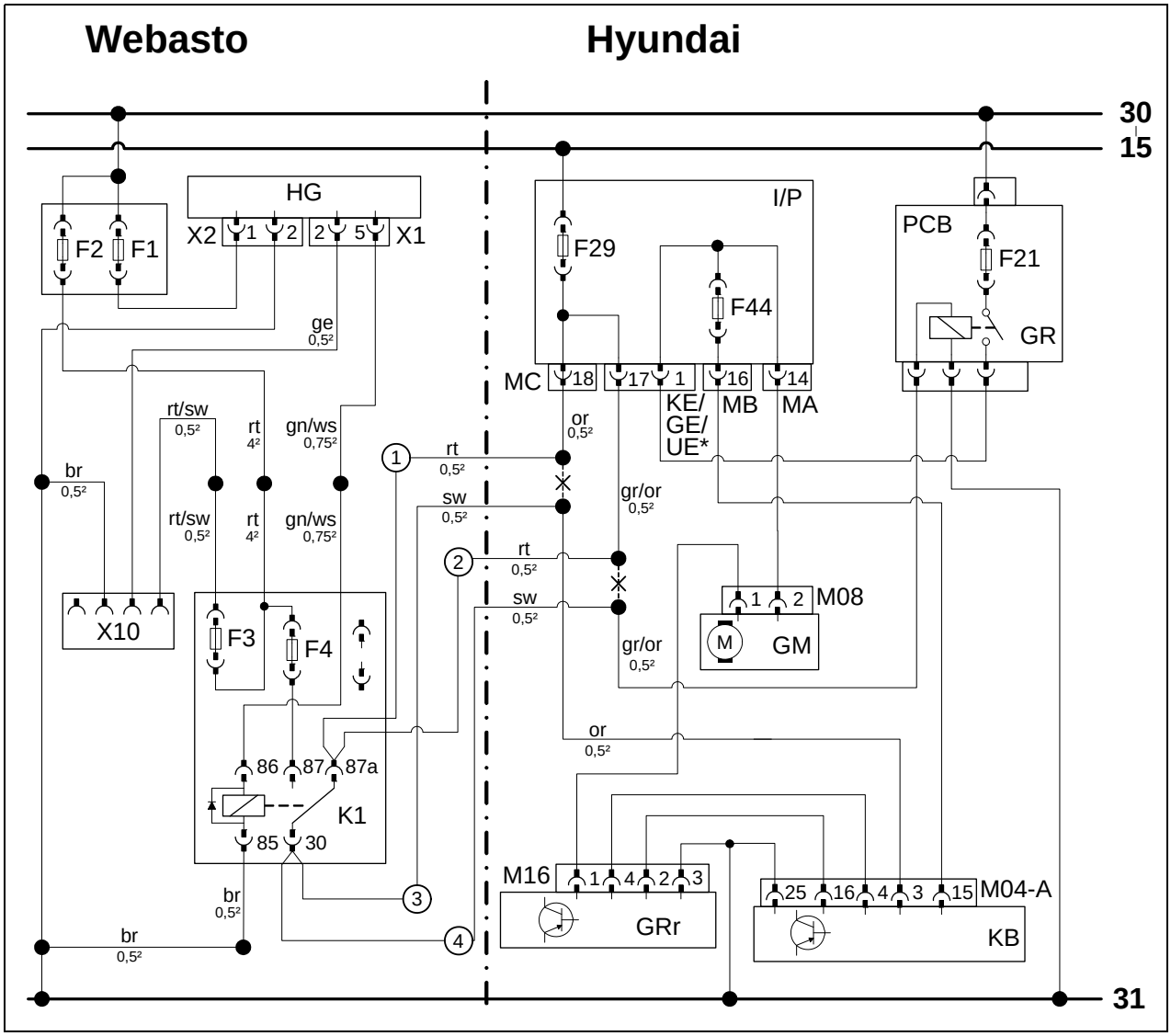


Wiring harness pass through

Route wiring harnesses of heater and heater control **3** through rubber plug **1** in passenger compartment.

2 Cable tie

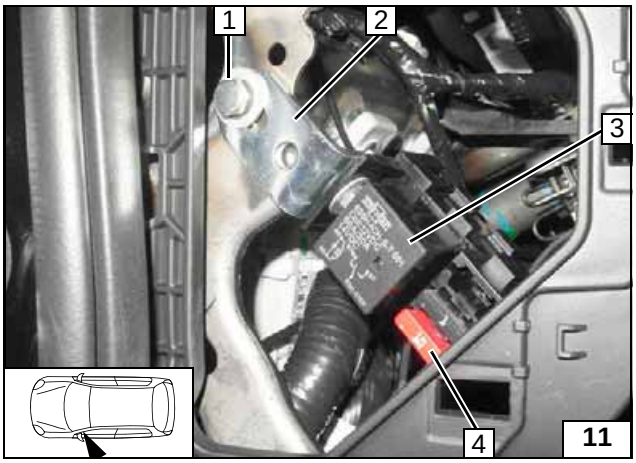
Fan Controller



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	I/P	Central electrical box for passenger compartment	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector	F29	10A fuse	ge	yellow
F1	20A fuse	F44	10A fuse	gn	green
F2	30A fuse	MC	Connector I/P	br	brown
X10	4-pin connector of heater control	KE/GE/ UE*	Connector I/P dependent on engine	ws	white
				or	orange
F3	1A fuse	MB	Connector I/P	gr	grey
F4	10A fuse	MA	Connector I/P		
K1	Fan relay	PCB	Fuse and relay box		
		F21	40A fuse		
		GR	Fan relay		
		GM	Fan motor		
		M08	Connector of GM		
		GRr	Fan controller		
		M16	Connector of GRr		
		KB	A/C control unit	**X**	Cutting point
		M04-A	Connector of KB	Wiring colours may vary.	

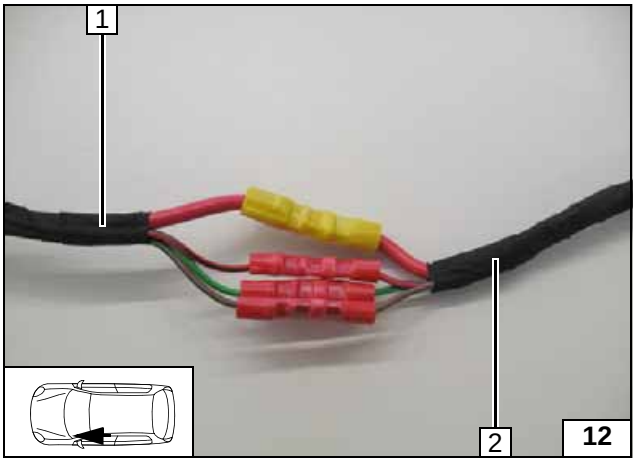
Wiring diagram

Legend



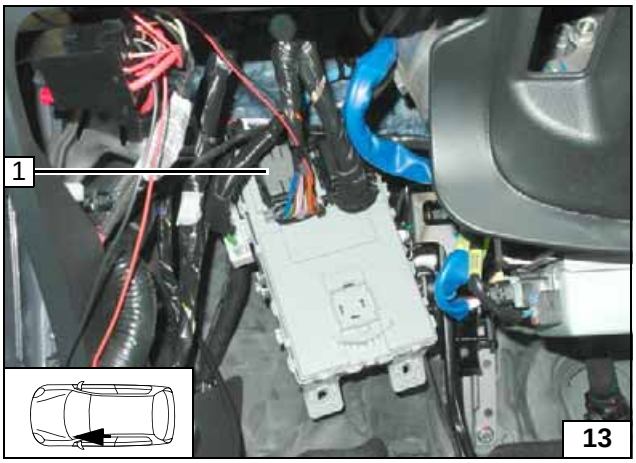
1 M6x20 bolt, spring lockwasher, large diameter washer, original vehicle thread
2 Angle bracket
3 K1 relay
4 10A fuse F4

Installing passenger compartment relay and fuse holder



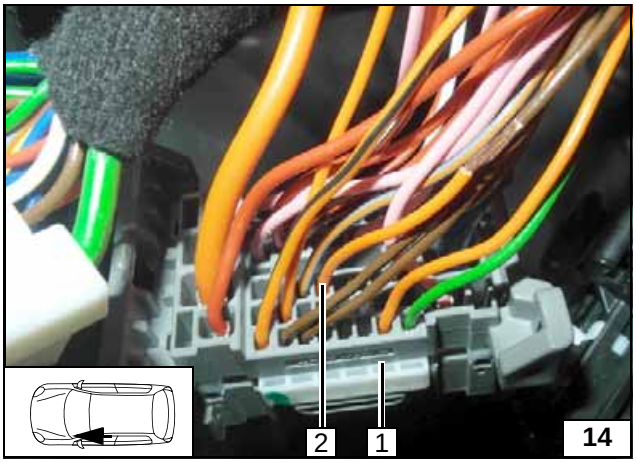
1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting same colour wires of wiring harnesses



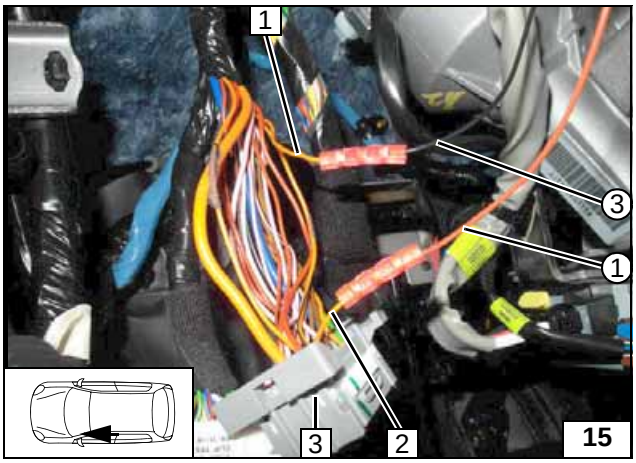
1 Grey connector I/P-MC (back side of central electrical box)

View of connector I/P-MC



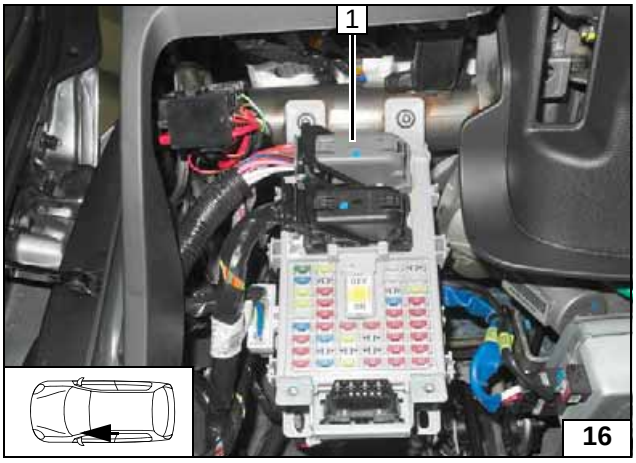
1 Grey connector I/P-MC (back side of central electrical box)
2 Socket of orange (or) wire, pin 18

View of connector I/P-MC



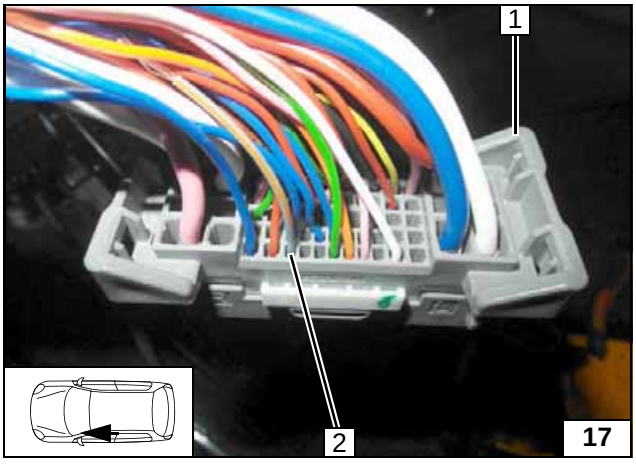
1 Orange (or) wire of connector M04-A, pin 3, from A/C control unit
2 Orange (or) wire of connector I/P-MC/ pin 18, from central electrical box
3 Grey connector I/P-MC (back side of central electrical box)
① Red (rt) wire of K1/87a
③ Black (sw) wire of K1/30

Connection of central electrical box



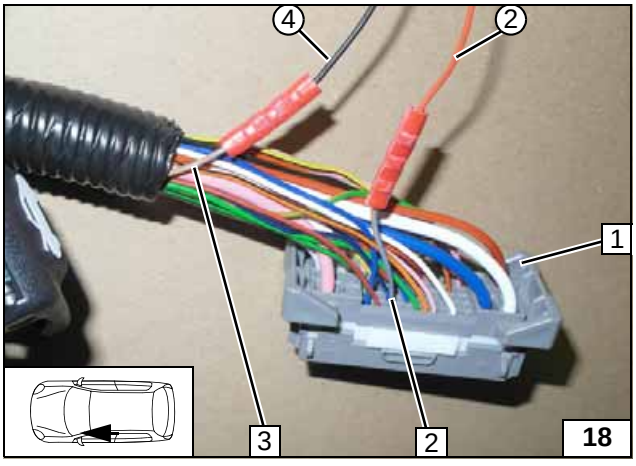
1 Grey connector I/P-KE/GE/UE (front side of central electrical box)

View of connector I/P-KE/GE/UE



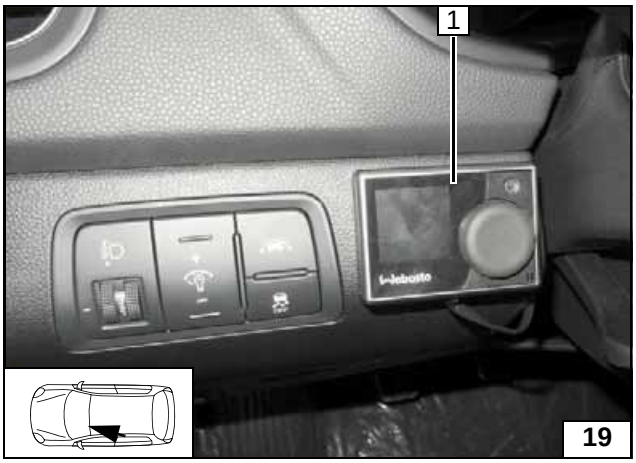
1 Grey connector I/P-KE/GE/UE (front side of central electrical box)
2 Socket of grey/orange (gr/or) wire, pin 17

View of connector I/P-KE/GE/UE



1 Grey connector I/P-KE/GE/UE (front side of central electrical box)
2 Grey / orange (gr/or) wire of connector I/P-KE/GE/UE/ pin 17, from central electrical box
3 Grey / orange (gr/or) wire of fan relay
② Red (rt) wire of K1/87a
④ Black (sw) wire of K1/30

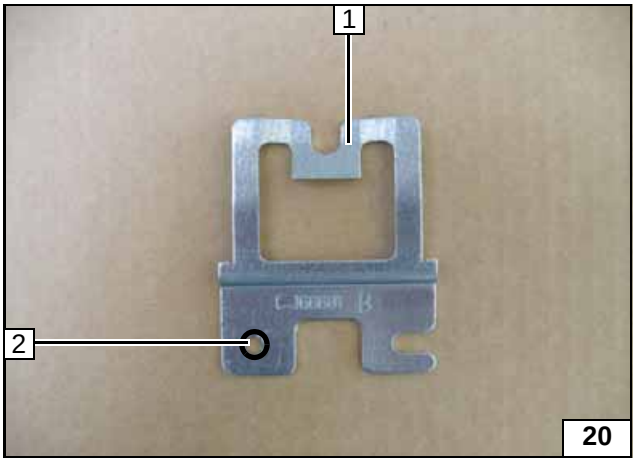
Connection of central electrical box



MultiControl CAR Option

1 MultiControl CAR with installation frame

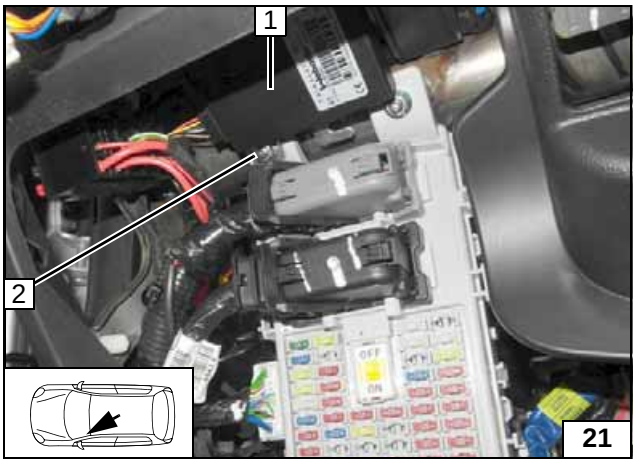
Installing MultiControl CAR



Remote Option (Telestart)

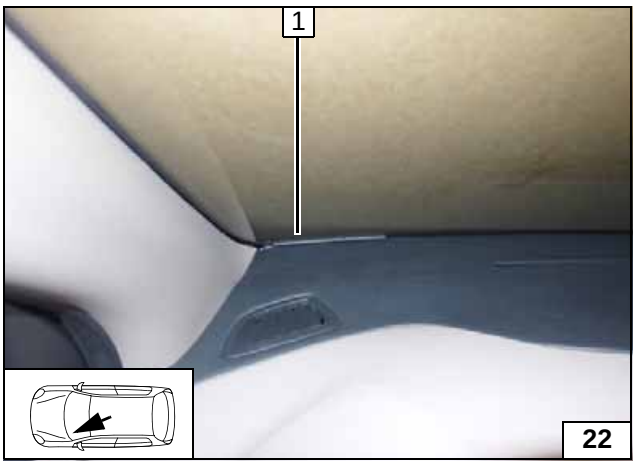
1 Receiver bracket
2 Drill out to 6.5 mm dia.

Preparing bracket



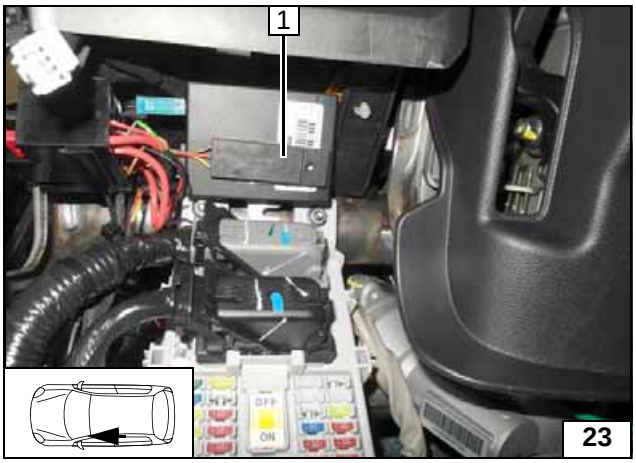
1 Receiver
2 Original vehicle stud bolt (fastening of central electrical box), receiver bracket, original vehicle nut

Installing receiver



1 Aerial

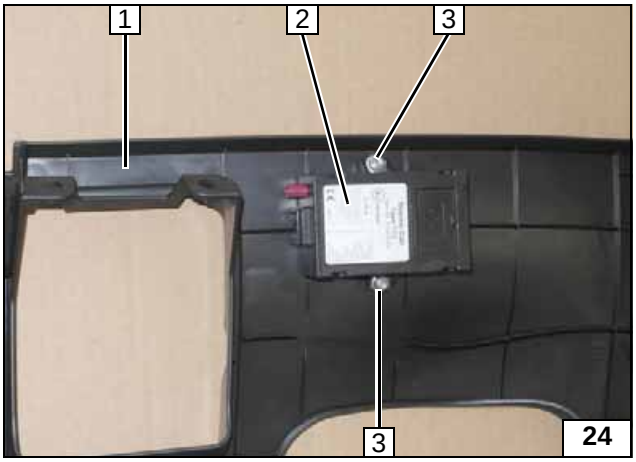
Installing aerial



Temperature sensor T100 HTM

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

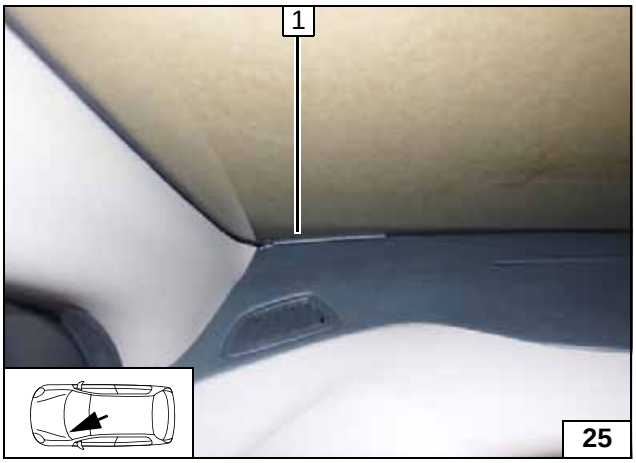
Installing temperature sensor



Thermo Call Option

1 Trim under the steering column
2 Receiver
3 5.5mm hole; M5x16 bolt, washer, flanged nut [2x]

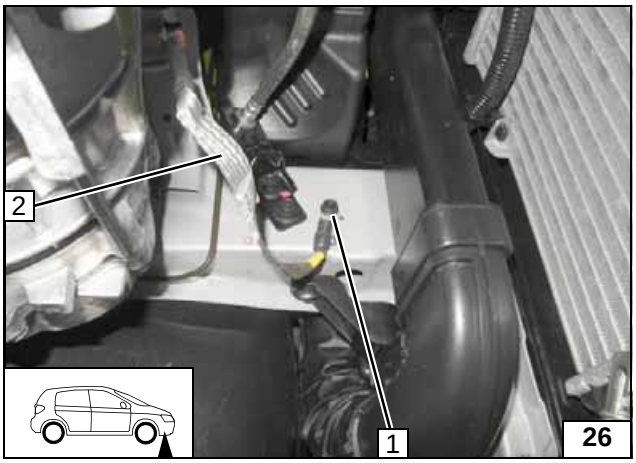
Installing receiver



1 Aerial

Installing aerial

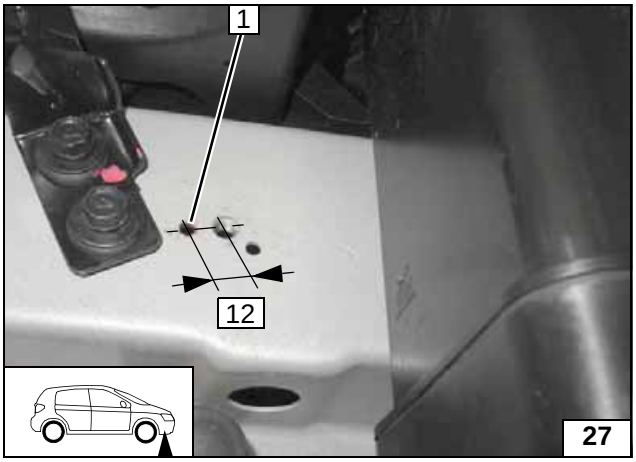
Preparing Installation Location



1 Original vehicle bolt
2 Earth strap

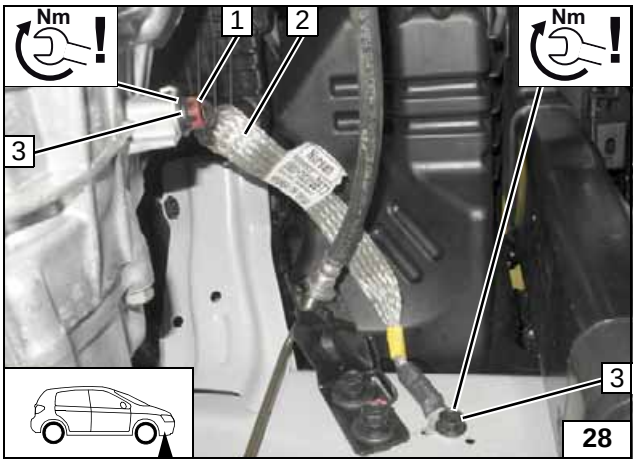
The earth strap will be installed later!

Detaching original vehicle earth strap



1 5mm dia. hole pattern for twist protection

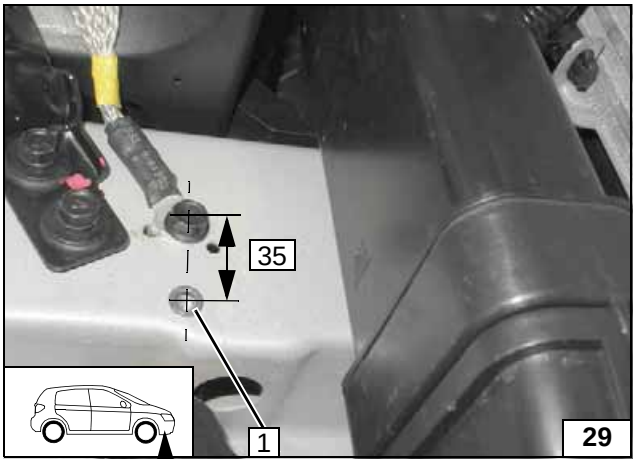
Copying hole pattern



Turn original vehicle earth strap **2** at position **1** upwards by approx. 180°.

3 Original vehicle bolt [2x]

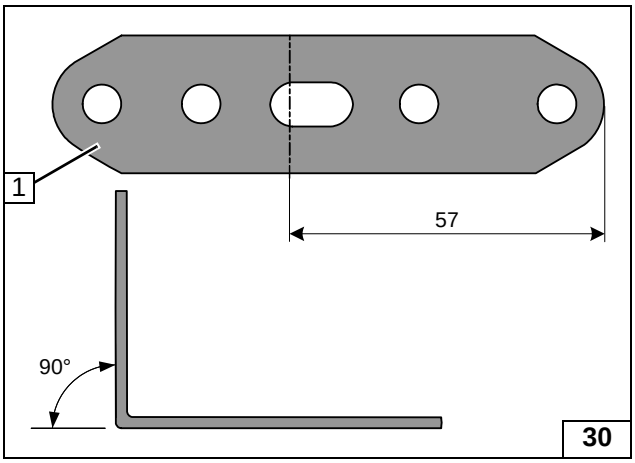
Installing original vehicle earth strap



1 9.1mm dia. hole; rivet nut

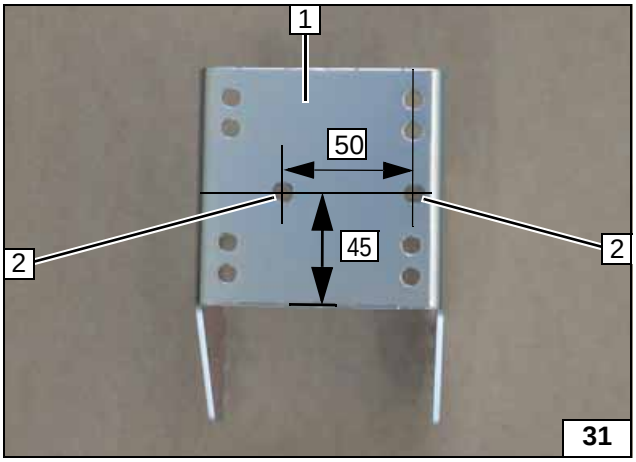
Installing rivet nut

Bending perforated bracket



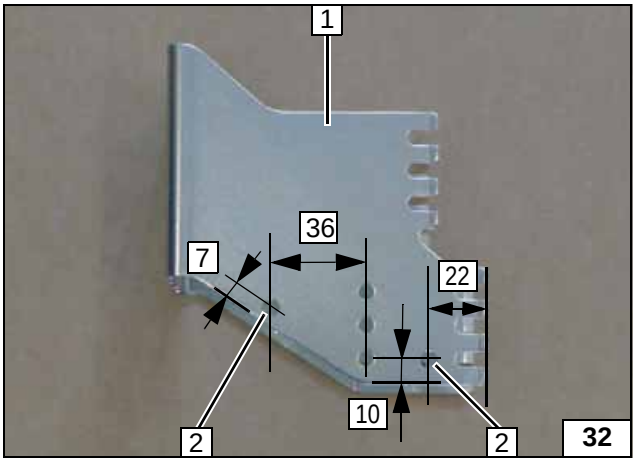
1 Perforated bracket [2x]

Preparing bracket



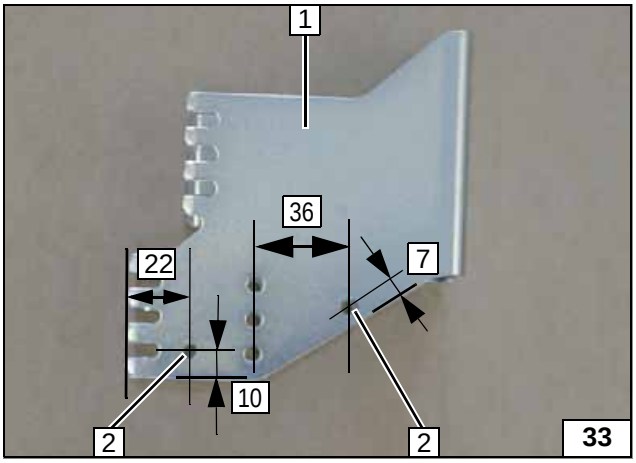
1 Bracket
2 7 mm dia. hole [2x]

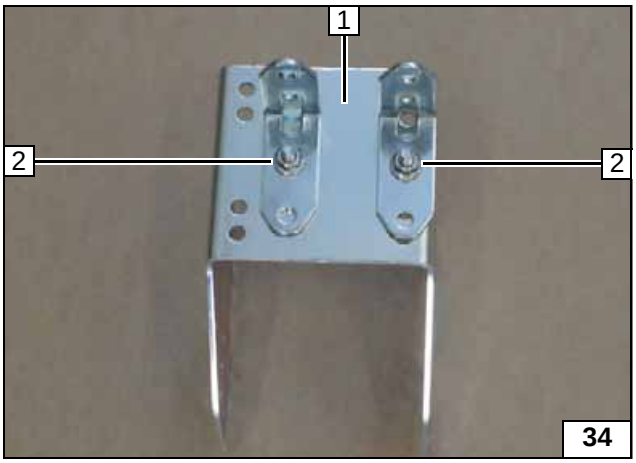
Preparing bracket



1 Bracket
2 7 mm dia. hole [2x]

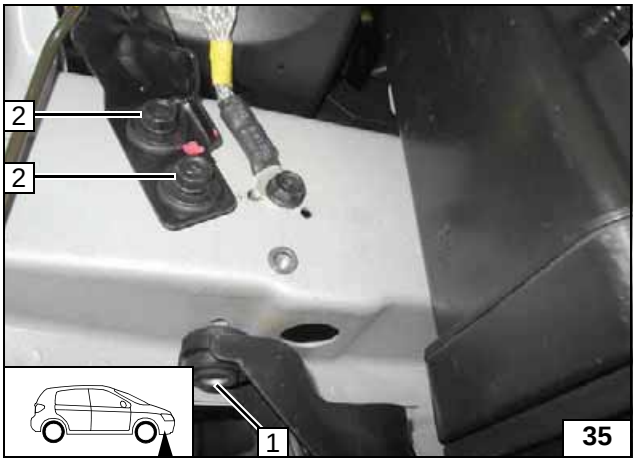
Preparing bracket





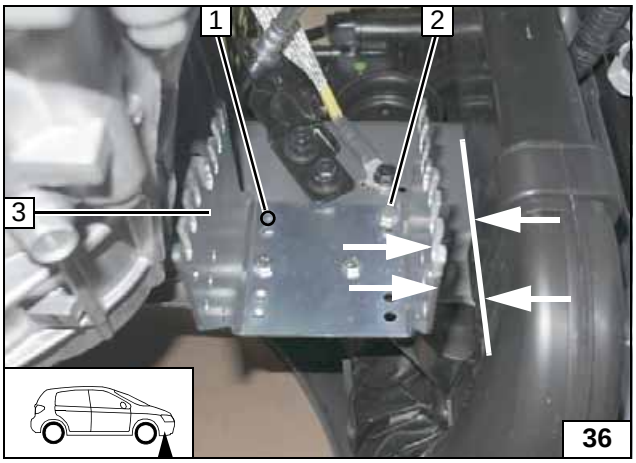
1 Bracket
2 M6x16 bolt, hole, perforated bracket (long side), flanged nut [2x each]

Installing perforated bracket



1 Remove original vehicle bolt; will be installed again later
2 Original vehicle bolt [2x]

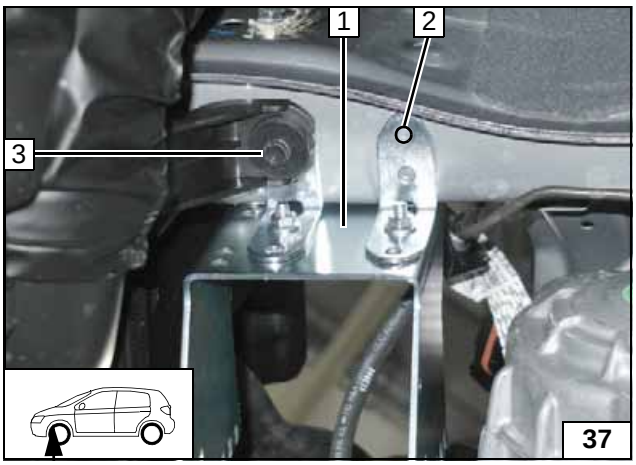
Removing original vehicle bolt



Loosely install bracket and align. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Hole pattern
2 M6x20 bolt, spring lockwasher
3 Bracket

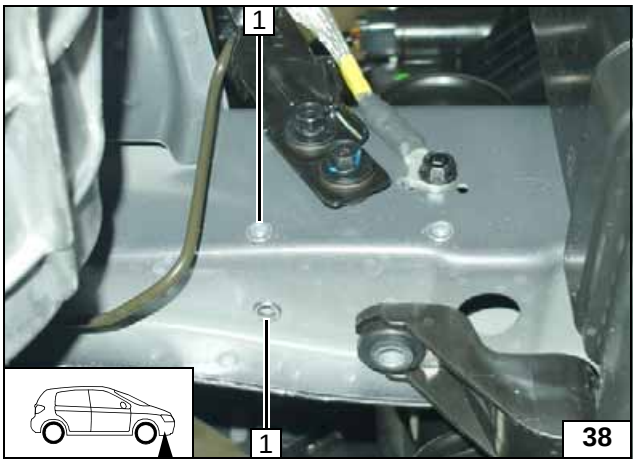
Copying hole pattern



1 Bracket
2 Hole pattern
3 Original vehicle bolt

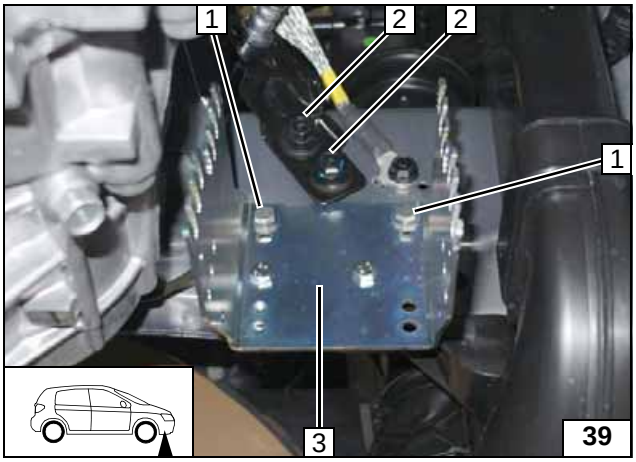
Remove bracket again.

Copying hole pattern



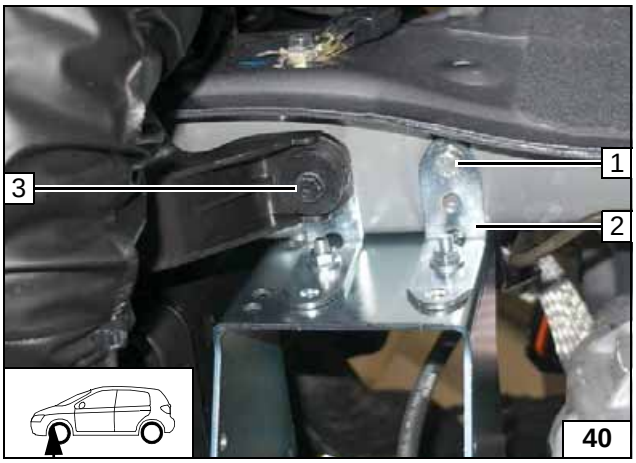
1 9.1mm dia. hole; rivet nut [2x each]

Installing rivet nut



1 M6x20 bolt, spring lockwasher [2x each]
2 Tighten original vehicle bolts [2x]
3 Bracket

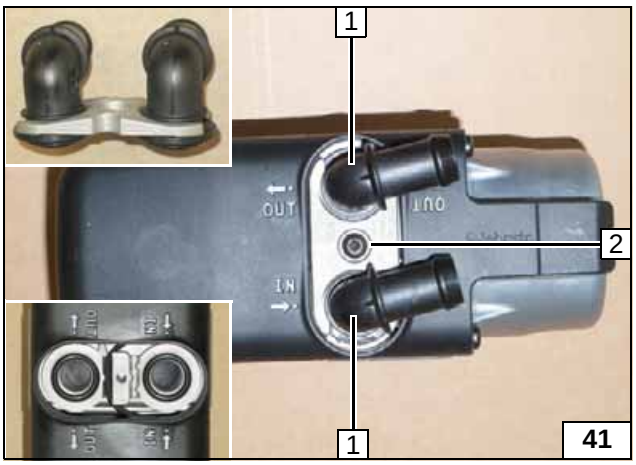
Installing bracket



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

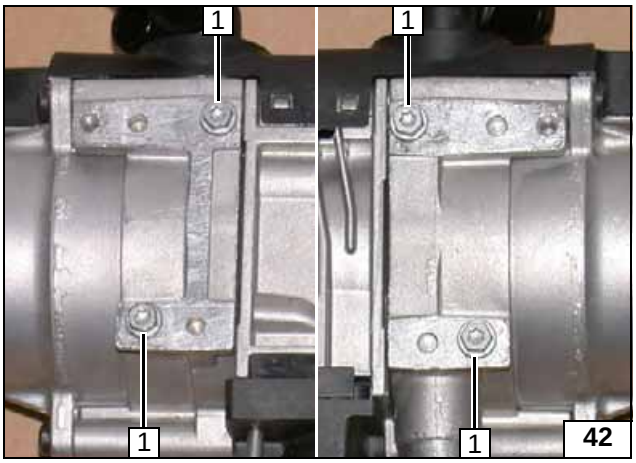
Installing bracket

Preparing Heater



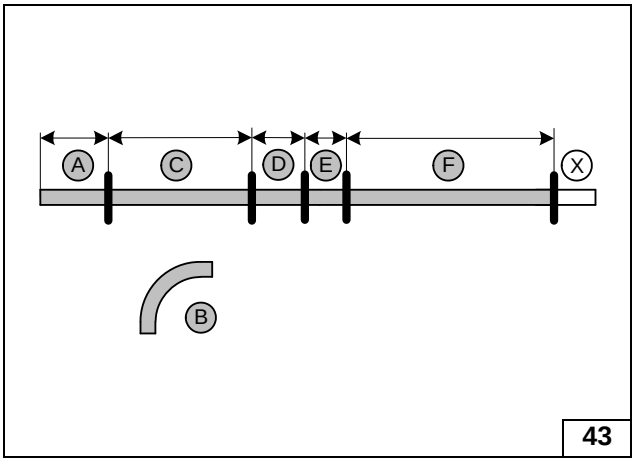
1 90° water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Mounting water connection piece



Screw 5x13 self-tapping bolts **1** [4x] into existing holes by a maximum of 3 thread turns.
Remove bolts again.

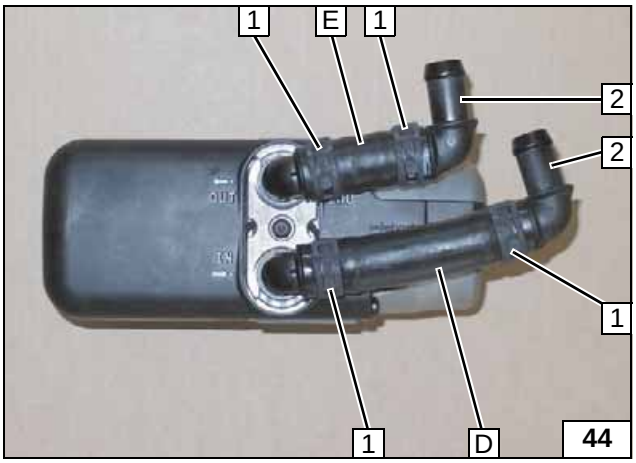
Screwing bolts in by a number of thread turns



Discard section **X**.
Hose **B** = 90°, 18mm dia. moulded hose

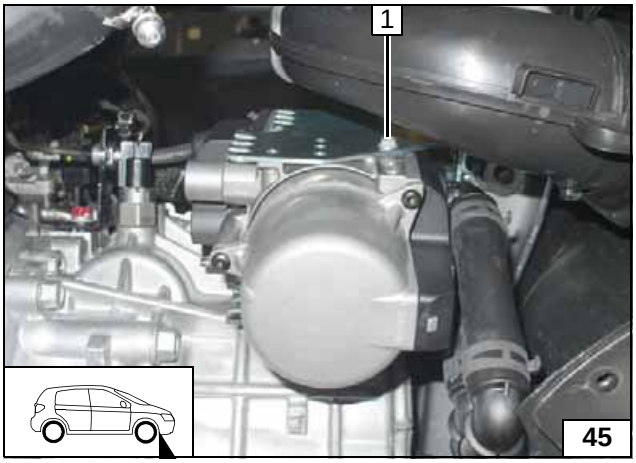
	1.1	1.4
A=	200	150
C=	420	420
D=	100	100
E=	60	60
F=	700	600

Cutting hoses to length



1 25mm dia. spring clip [4x]
2 90°, 18x18mm connecting pipe [2x]

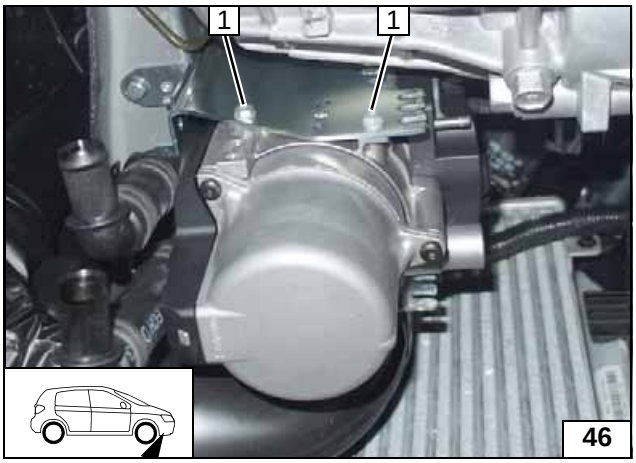
Installing hoses D and E



Installing Heater

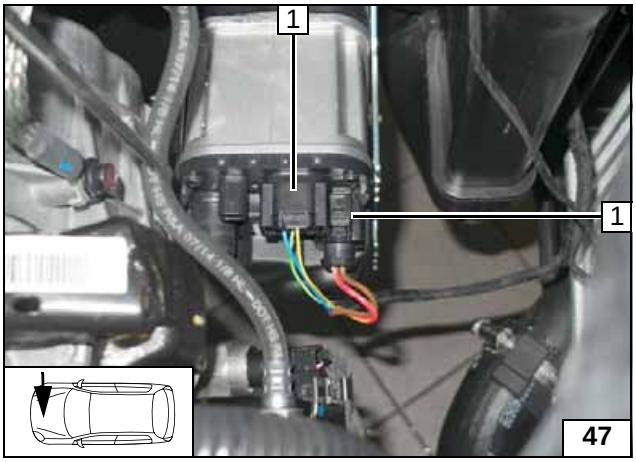
1 5x13 self-tapping bolt

Installing heater



1 5x13 self-tapping bolt [2x]

Installing heater



1 Heater wiring harness connector [2x]

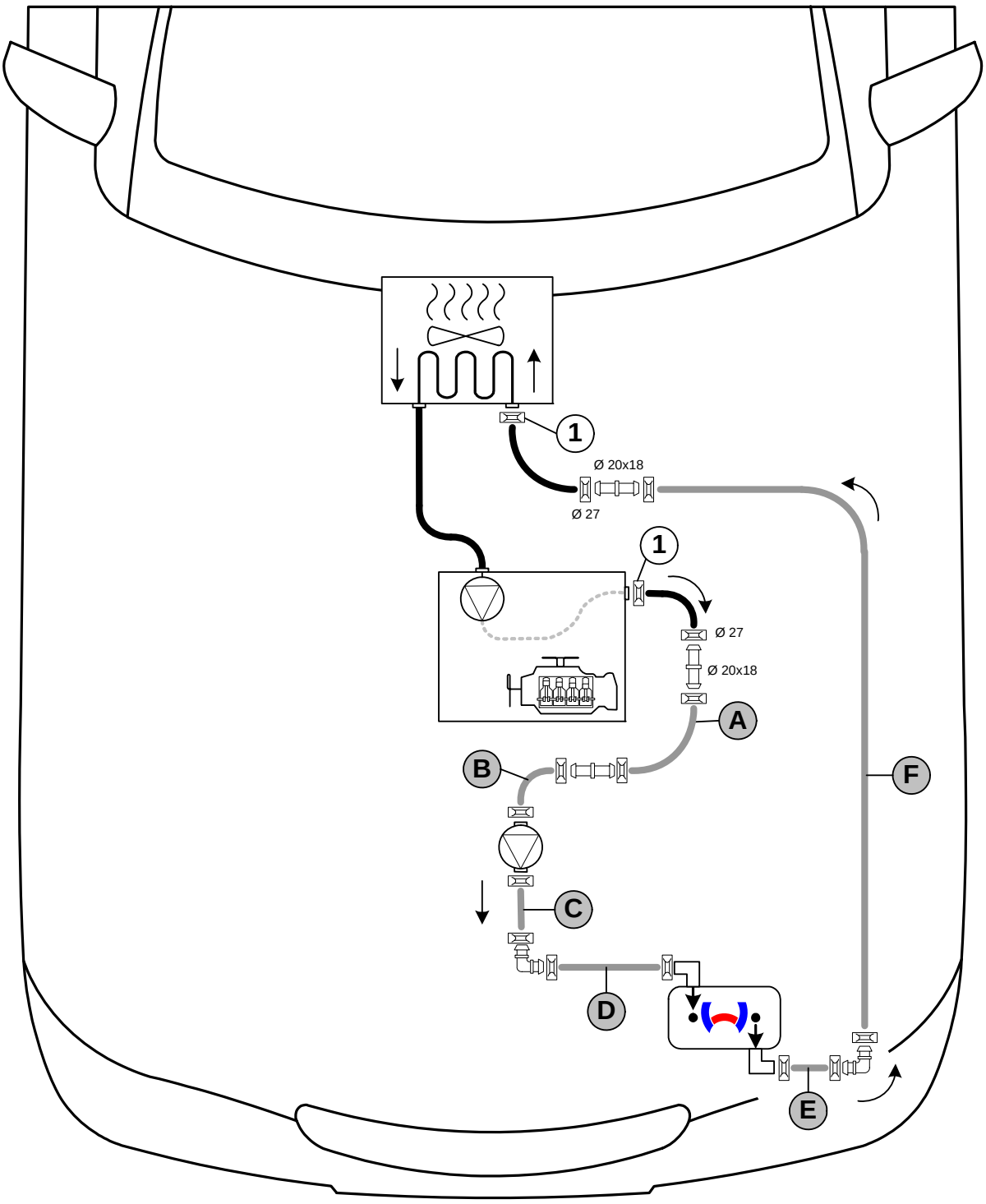
Installing wiring harness of heater

Coolant Circuit

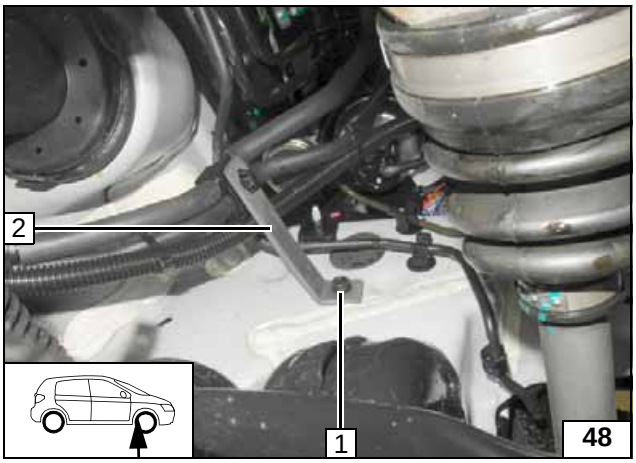
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

The connection should be modelled on an ‘inline’ circuit and based on the following diagram:

Hose routing diagram



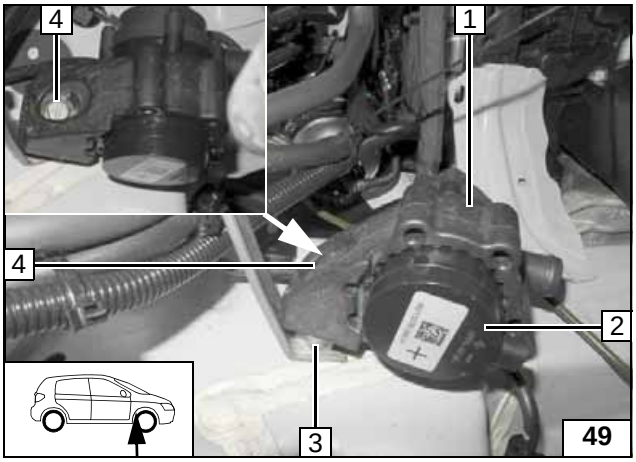
All spring clips without a specific designation = 25 mm dia. **1** = Original vehicle spring clip .
All connecting pipes without a specific designation = 18x18mm dia.



Coolant Circuit 1.1

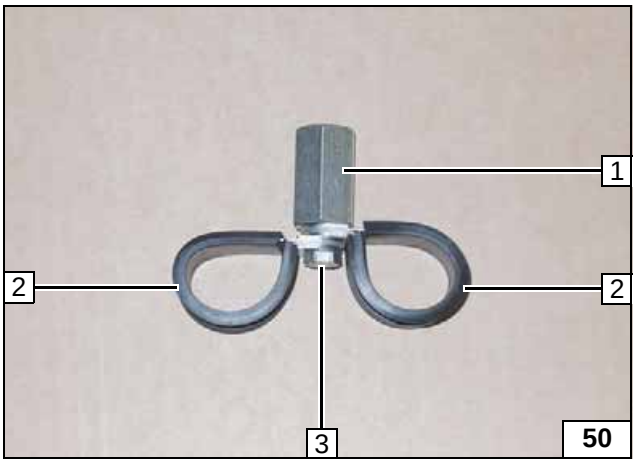
1 Remove original vehicle bolt
2 Original vehicle bracket

Installing circulating pump



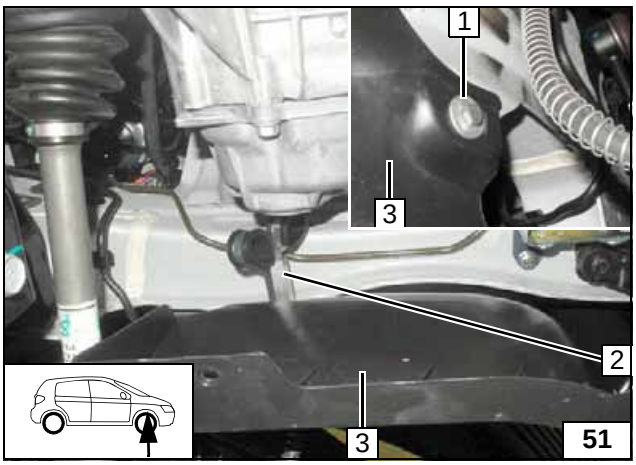
1 Circulating pump mount
2 Circulating pump
3 20mm shim
4 M6x50 bolt

Installing circulating pump



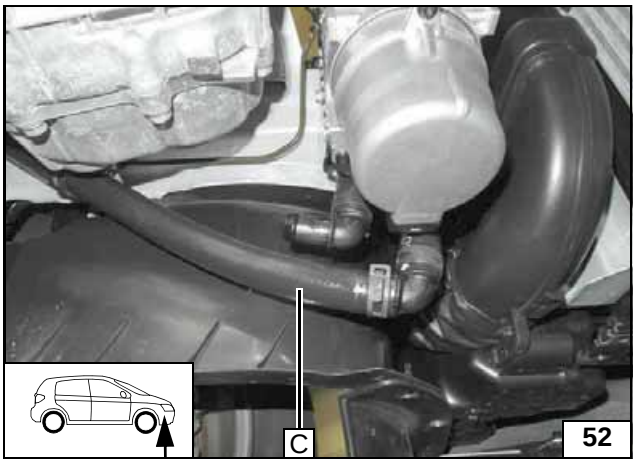
1 30mm spacer nut
2 25mm dia. rubber-coated p-clamp [2x]
3 M6x16 bolt

Premounting fastening for hoses

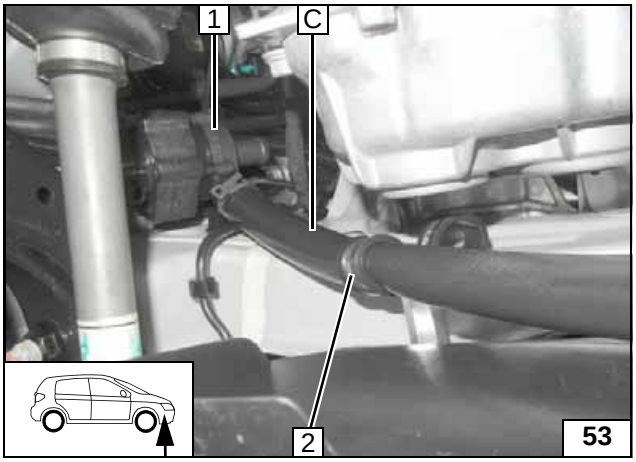


1 Install M6x16 bolt, large diameter washer loosely
2 Premounted fastening for hoses, M6x16 bolt, large diameter washer
3 Wheel-well inner panel

Installing fastening for hoses



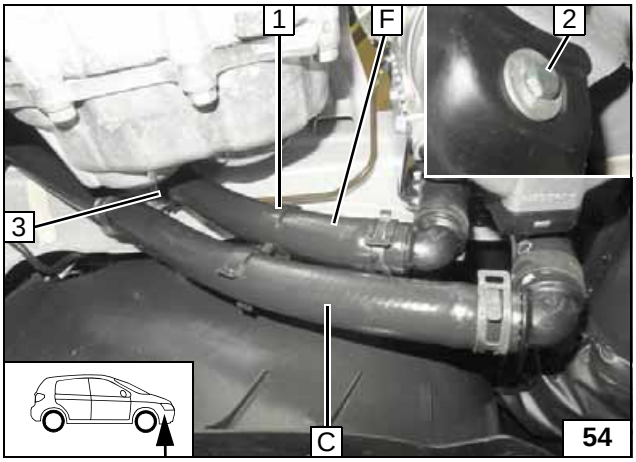
Connecting heater inlet



Lead hose **C** through rubber-coated hose clamp **2**.

1 Circulating pump

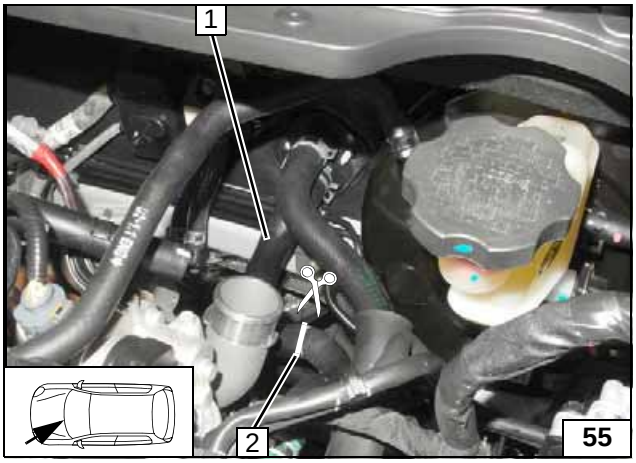
Connecting circulating pump outlet



Lead hose **F** through rubber-coated hose clamp **3**.
Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

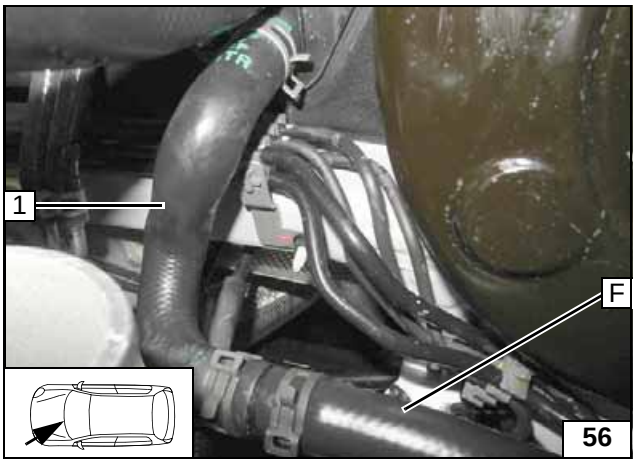
1 20x22 spacer bracket
2 Tighten M6x16 bolt, large diameter washer

Connecting heater outlet



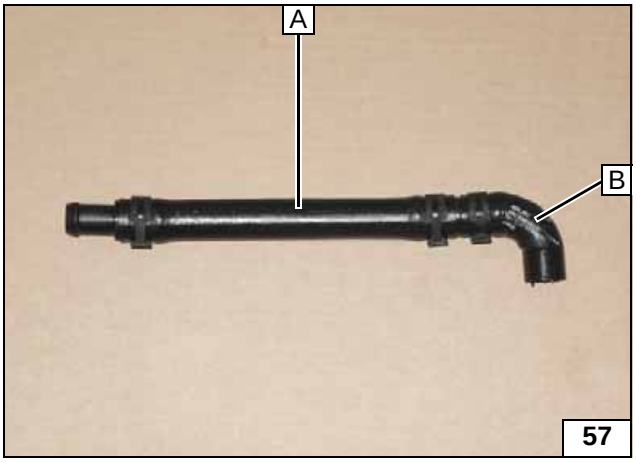
1 Hose on engine outlet / heat exchanger inlet
2 Cutting point

Cutting point

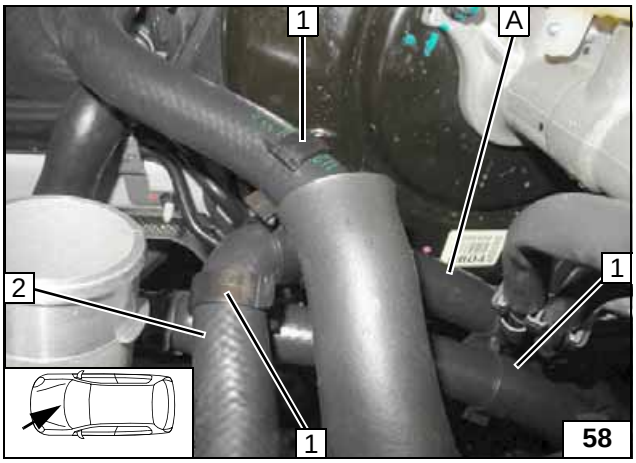


1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



Premounting hoses A and B

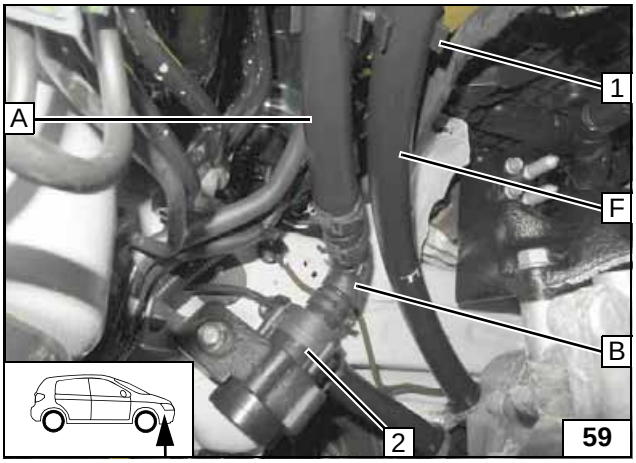


Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

1 20x22 spacer bracket [3x]
2 Hose section of engine outlet

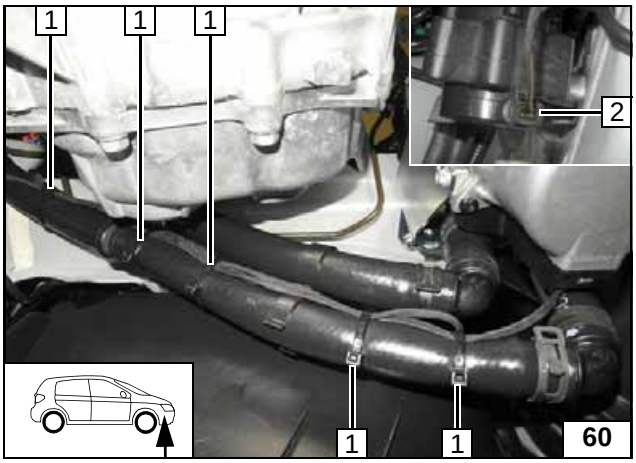
(Connecting point of engine outlet is hidden.)

Connecting engine outlet



1 20x22 spacer bracket
2 Circulating pump

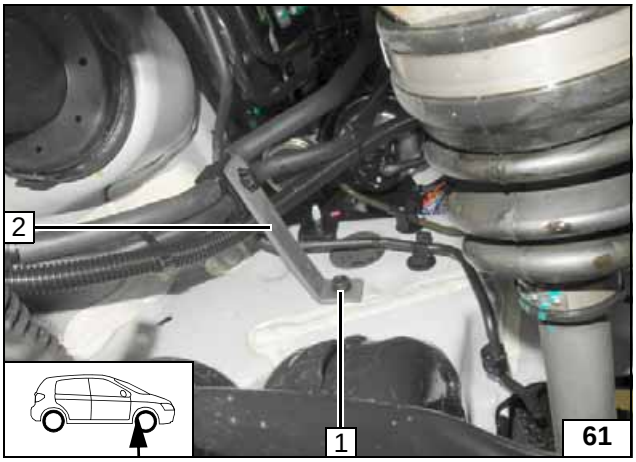
Connecting circulating pump inlet



1 Cable tie [5x]
2 Mounted connector of circulating pump wiring harness

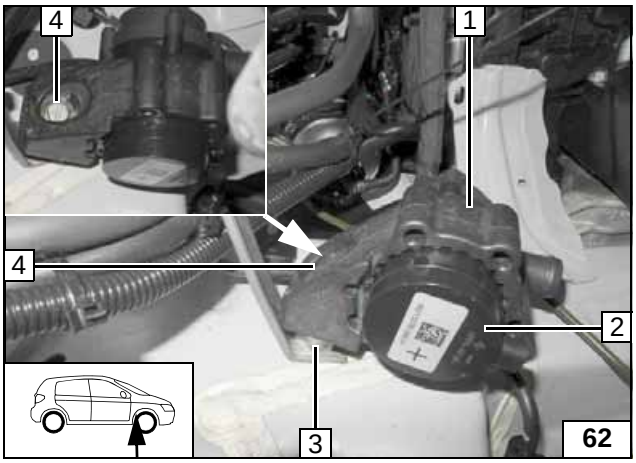
Routing wiring harness of circulating pump

Coolant Circuit 1.4



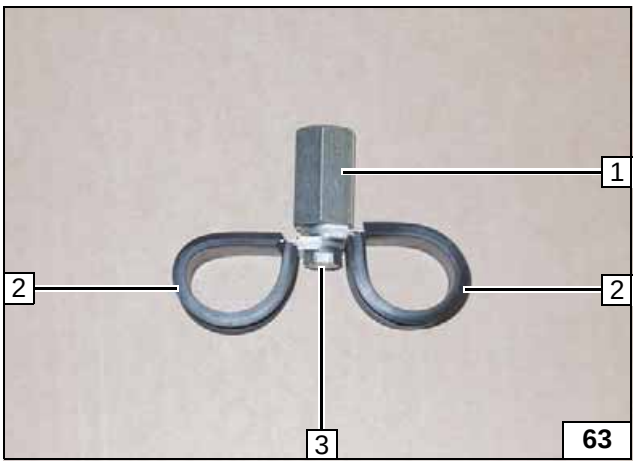
1 Remove original vehicle bolt
2 Original vehicle bracket

Installing circulating pump



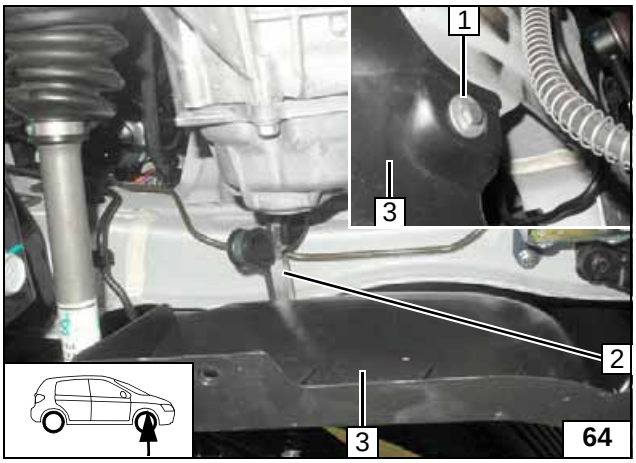
1 Circulating pump mount
2 Circulating pump
3 20mm shim
4 M6x50 bolt

Installing circulating pump



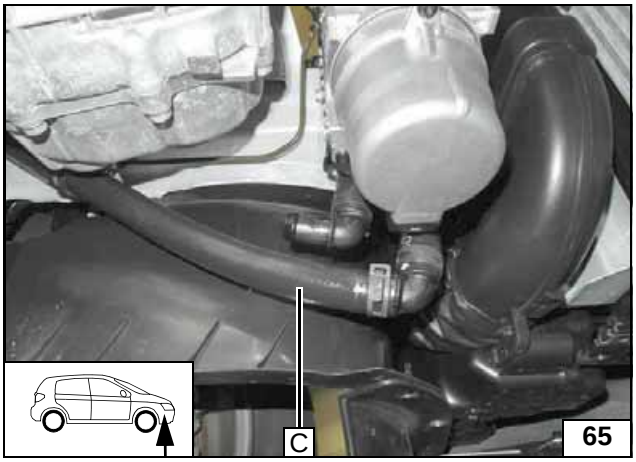
1 30mm spacer nut
2 25mm dia. rubber-coated p-clamp [2x]
3 M6x16 bolt

Premounting fastening for hoses

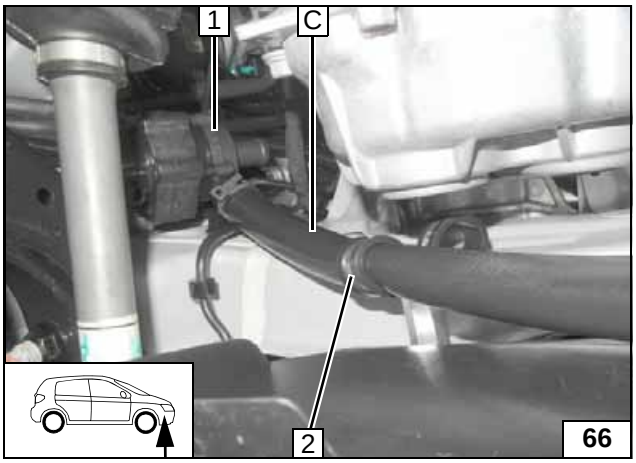


1 Install M6x16 bolt, large diameter washer loosely
2 Premounted fastening for hoses, M6x16 bolt, large diameter washer
3 Wheel-well inner panel

Installing fastening for hoses



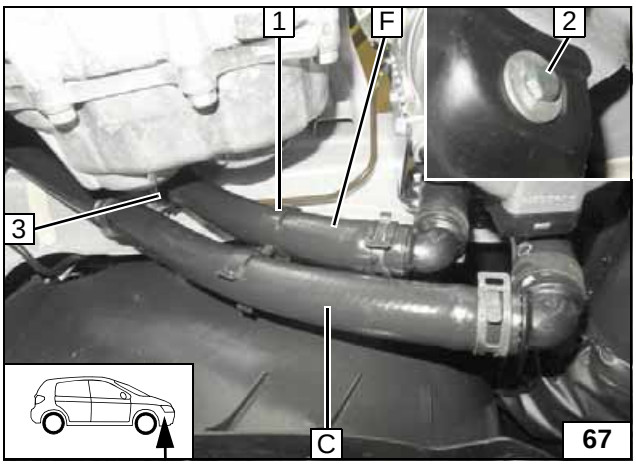
Connecting heater inlet



Lead hose **C** through rubber-coated hose clamp **2**.

1 Circulating pump

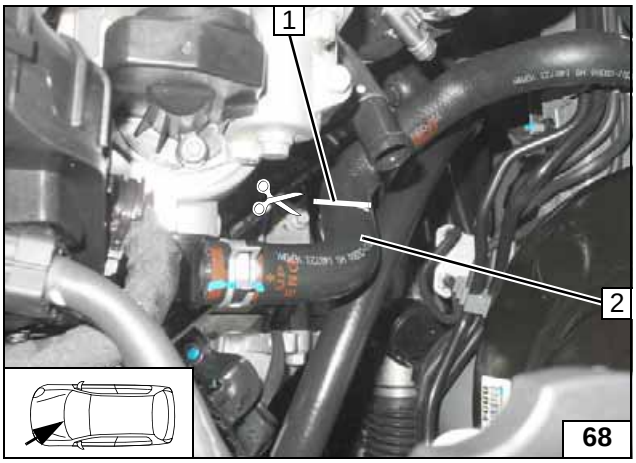
Connecting circulating pump outlet



Lead hose **F** through rubber-coated hose clamp **3**.
Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

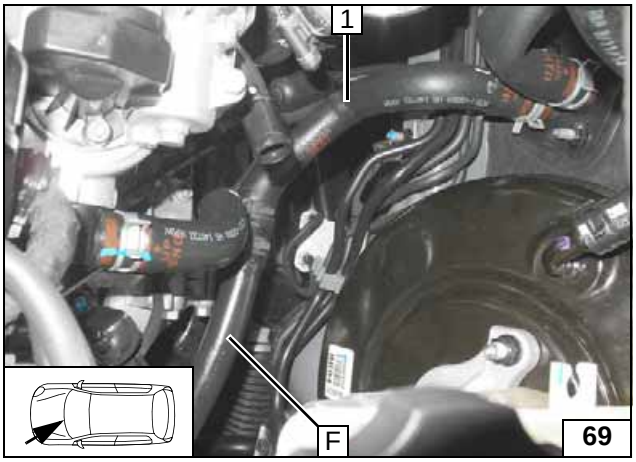
1 20x22 spacer bracket
2 Tighten M6x16 bolt, large diameter washer

Connecting heater outlet



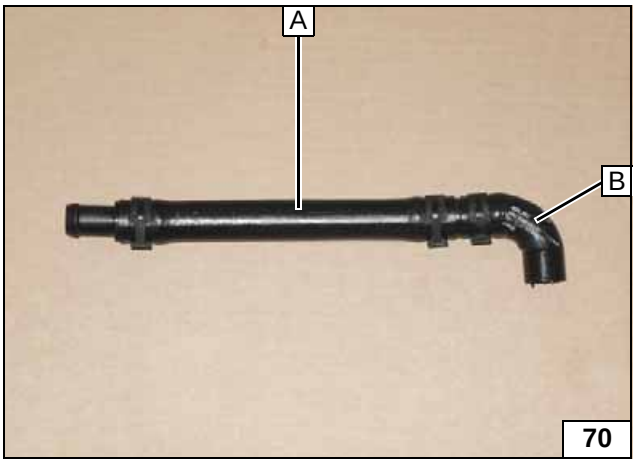
1 Cutting point (in the middle between the bends in the hose)
2 Hose on engine outlet / heat exchanger inlet

Cutting point

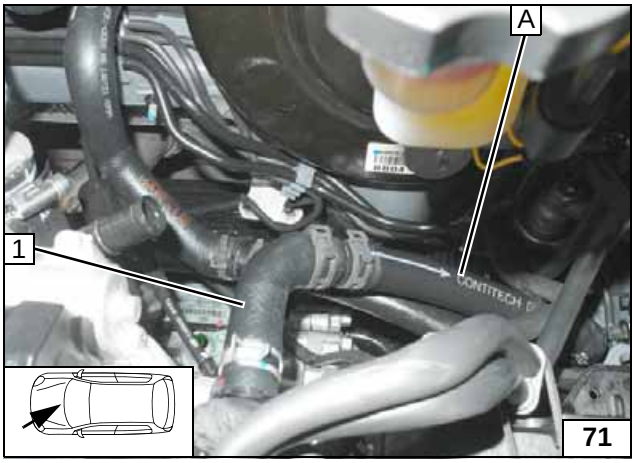


1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet

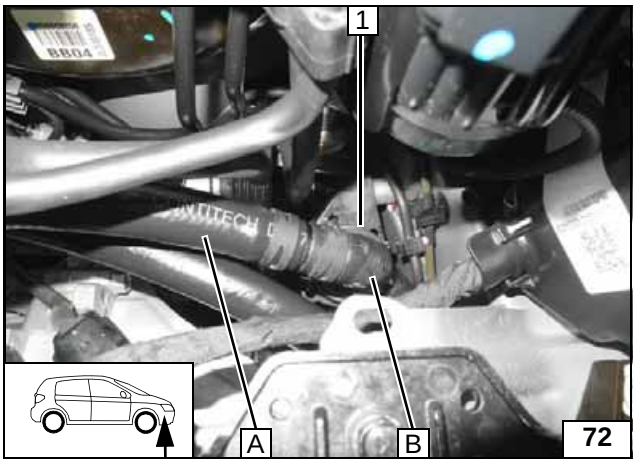


Premounting hoses A and B



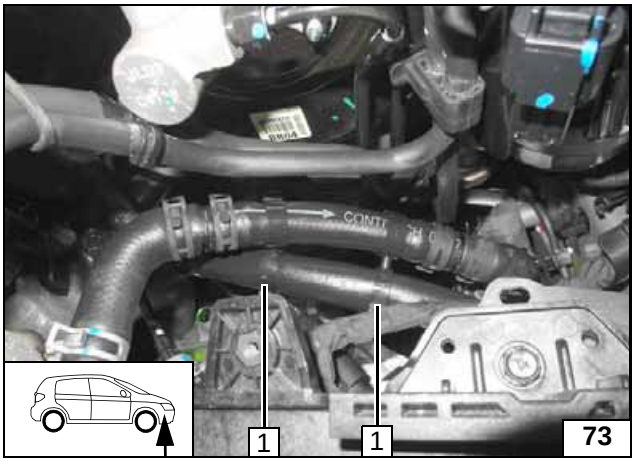
1 Hose section of engine outlet

Connecting engine outlet



1 Circulating pump (hidden)

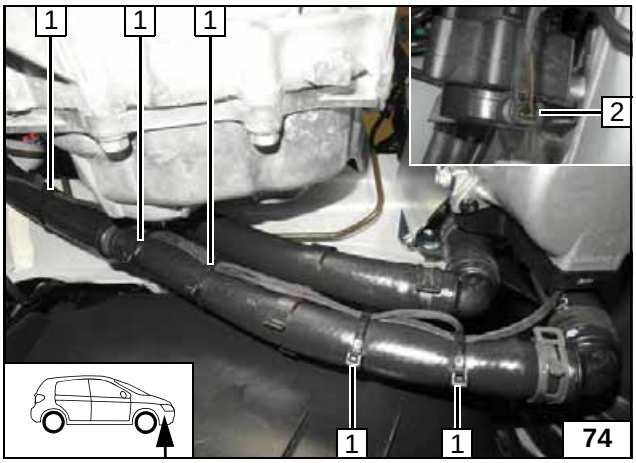
Connecting circulating pump inlet



Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

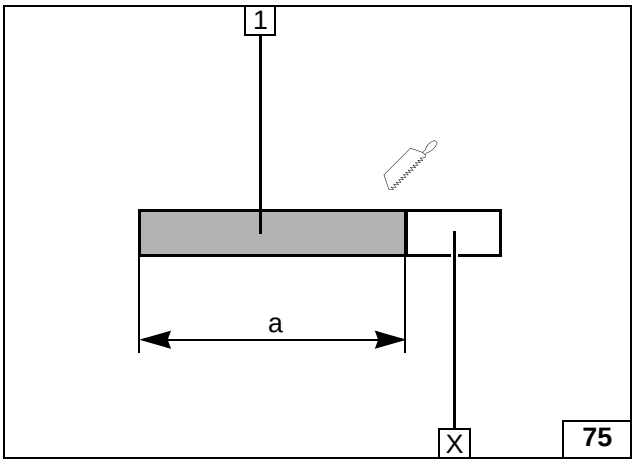
1 20x22 spacer bracket [2x]

Installing spacer bracket



1 Cable tie [5x]
2 Mounted connector of circulating pump wiring harness

Routing wiring harness of circulating pump

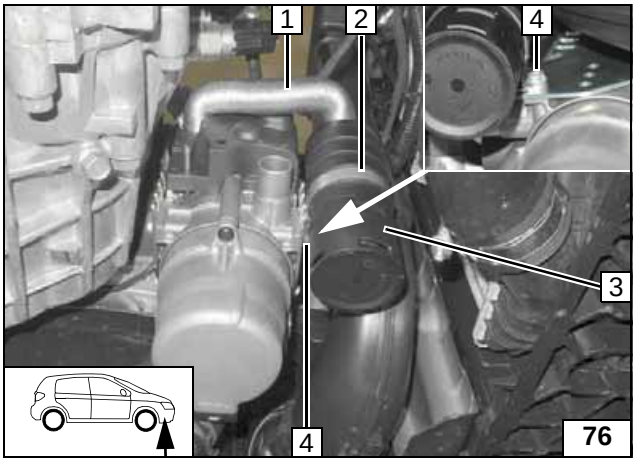


Combustion Air

Discard section **X**.

1 Combustion air pipe
a = 240

Cutting combustion air pipe to length



1 Combustion air pipe
2 51mm dia. clamp
3 Silencer
4 5x16 self-tapping bolts

Installing silencer and combustion air pipe

Fuel

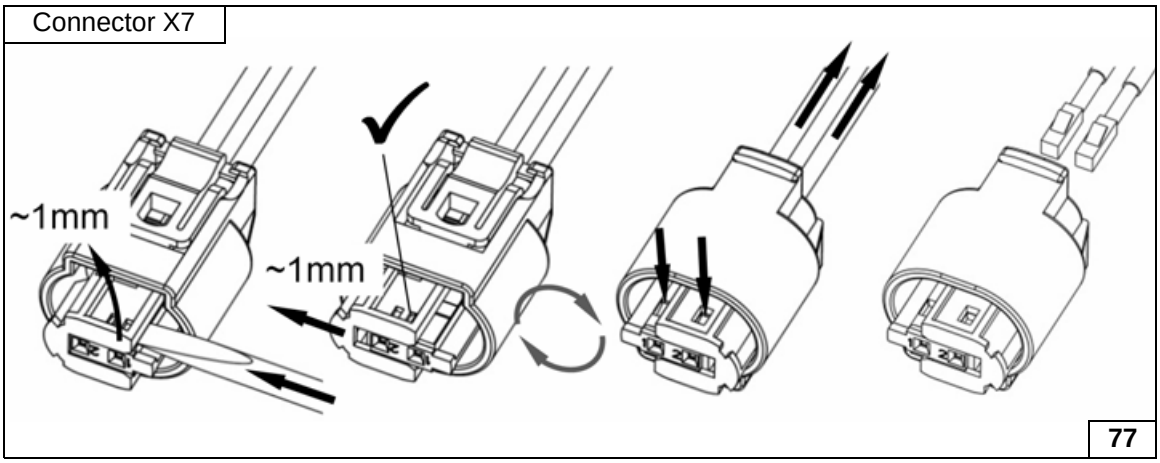
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

Catch any fuel running off in an appropriate container.

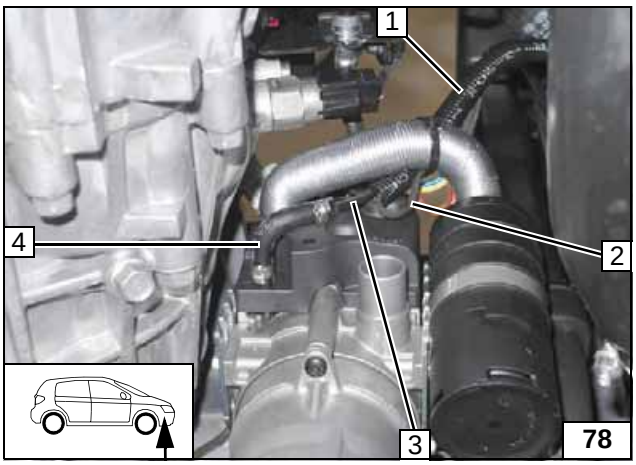
Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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

Dismantling metering pump connector



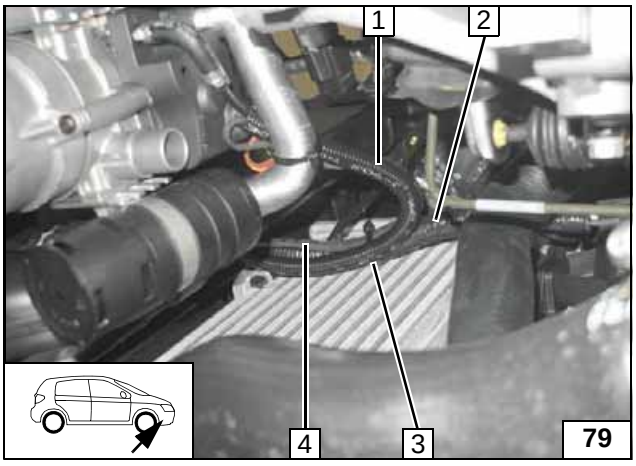
Installing wiring harnesses and fuel line



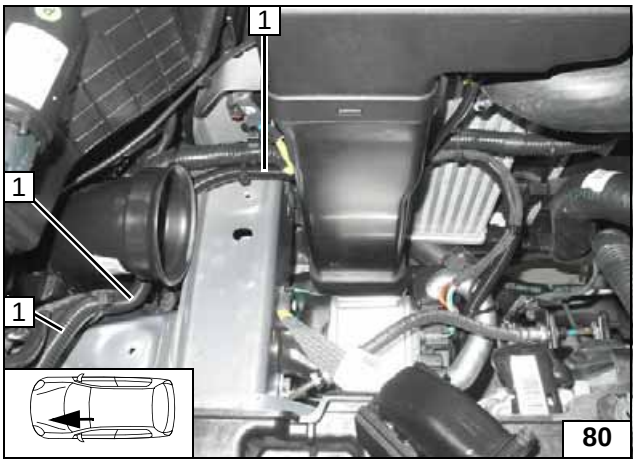
Pull fuel line **3** and wiring harness of metering pump **2** into 10mm dia. corrugated tube **1**. Attach wiring harness of heater and wiring harness of circulating pump to corrugated tube **1** using a cable tie.

4 90° moulded hose, 10mm dia. clamp [2x]

Routing lines

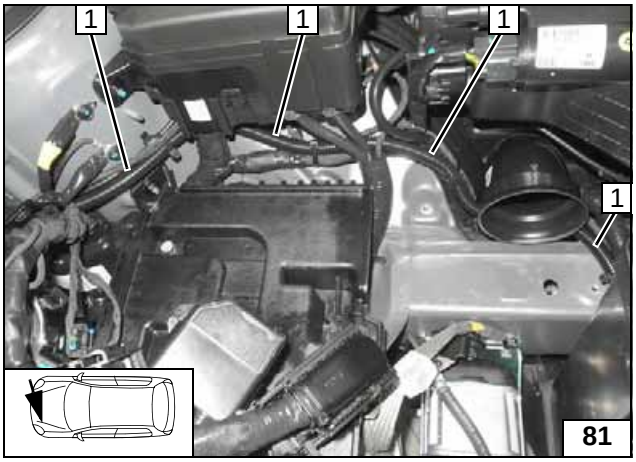


1 Fuel line and wiring harness of metering pump in 10mm dia. corrugated tube
2 Original vehicle wiring harness
3 Cable tie
4 Wiring harness of heater



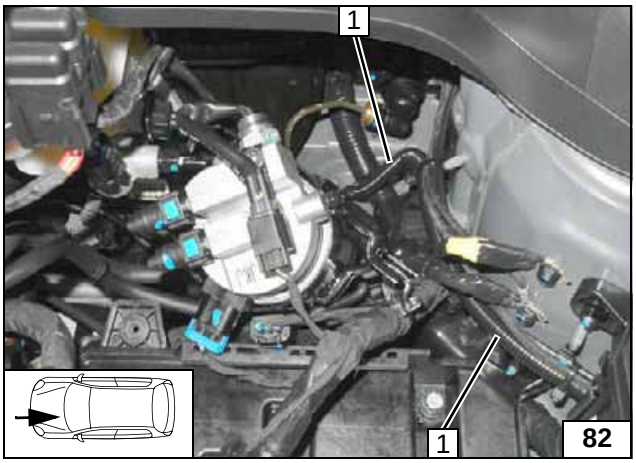
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle wiring harness upwards in the engine compartment.

Routing lines



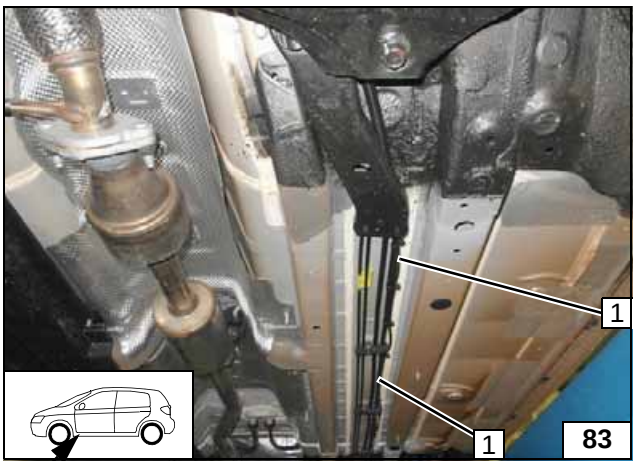
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** to the firewall and secure with cable ties.

Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle fuel lines to the underbody!

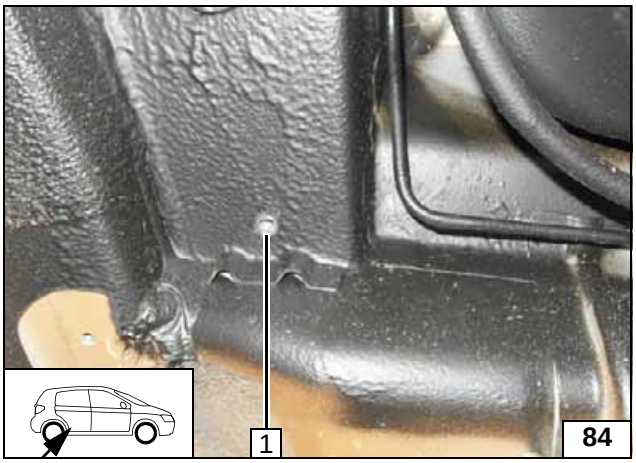
Routing lines



Route fuel line and wiring harness of metering pump **1** along original vehicle fuel lines to installation location of metering pump.

Routing lines

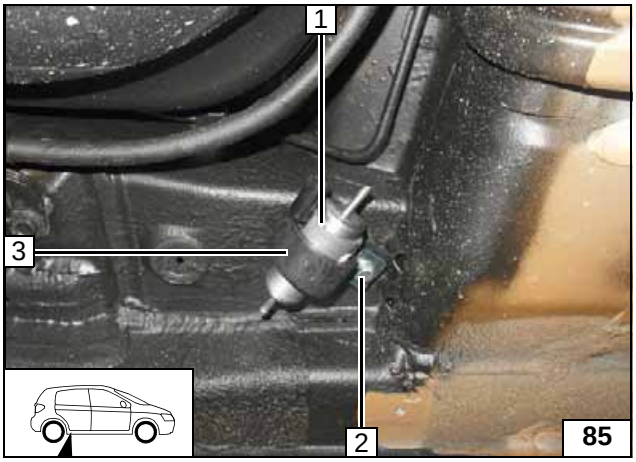
Preparing installation location of metering pump



Drill out original vehicle hole to 9.1 mm dia.

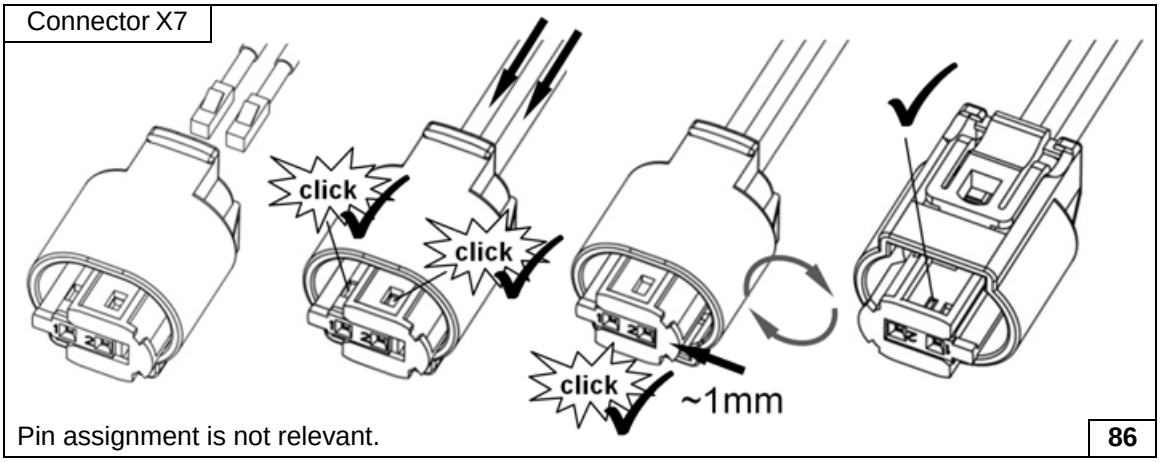
1 M6 rivet nut in original vehicle hole

Installing metering pump

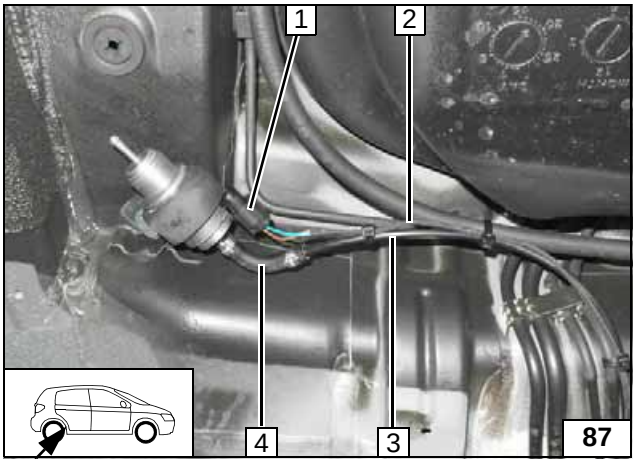


1 Metering pump
2 M6x25 bolt, support angle bracket
3 Metering pump mount

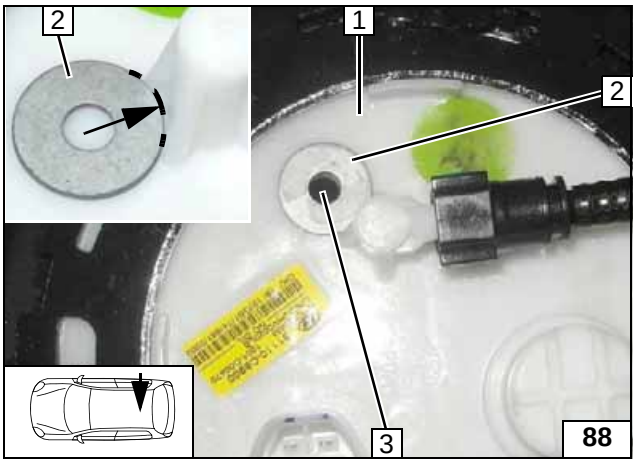
Completing metering pump connector



Connecting metering pump



1 Wiring harness of metering pump, connector X7 mounted
2 Wiring harness of metering pump
3 Fuel line of heater
4 90° moulded hose, 10 mm dia. clamp [2x]

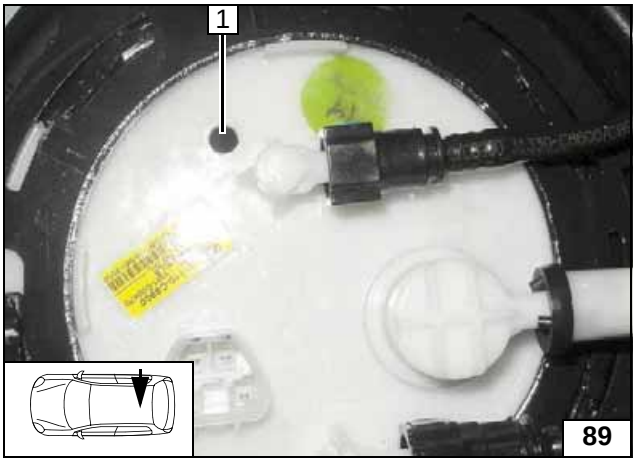


Installing FuelFix

Work steps F1 and F2.

1 Fuel tank sending unit
2 Position washer with outer dia. d_a = 21.6mm as template against the raised part.
3 Hole pattern

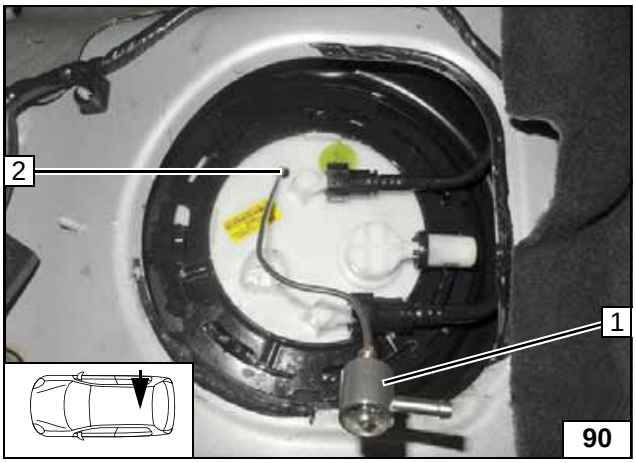
Copying hole pattern



Work step F3.

1 Hole made with provided drill

Hole for FuelFix



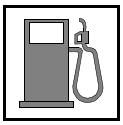
Work steps F4 and F5.

Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.

Inserting FuelFix

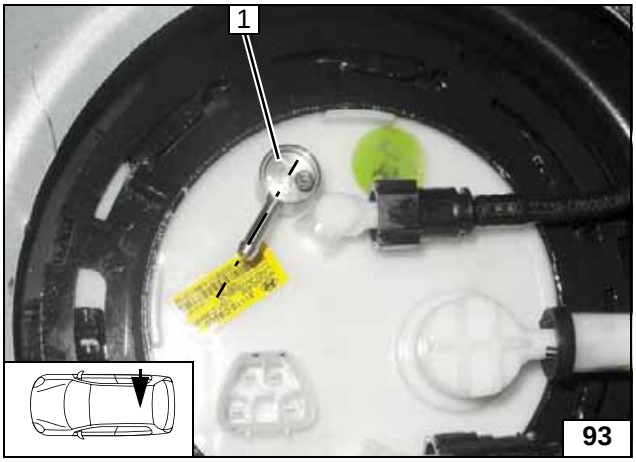
Work step F5.

Inserting FuelFix



Work step F5.

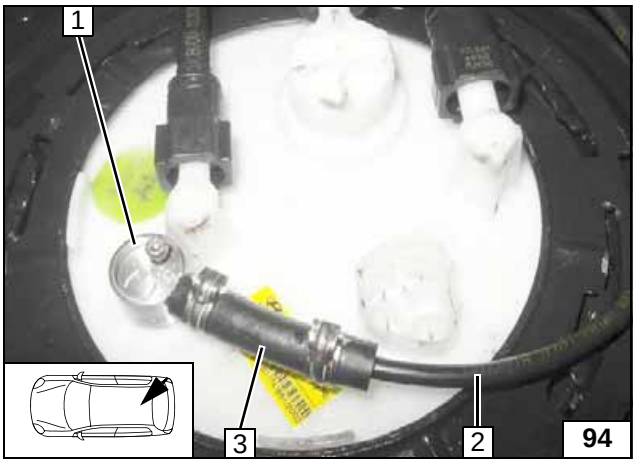
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

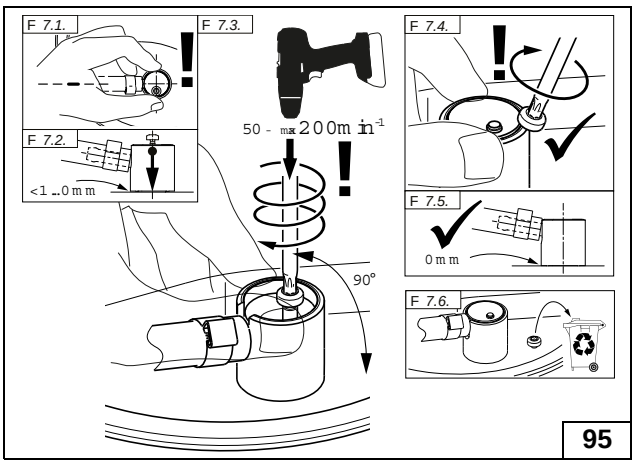
Aligning FuelFix



Work step F6.

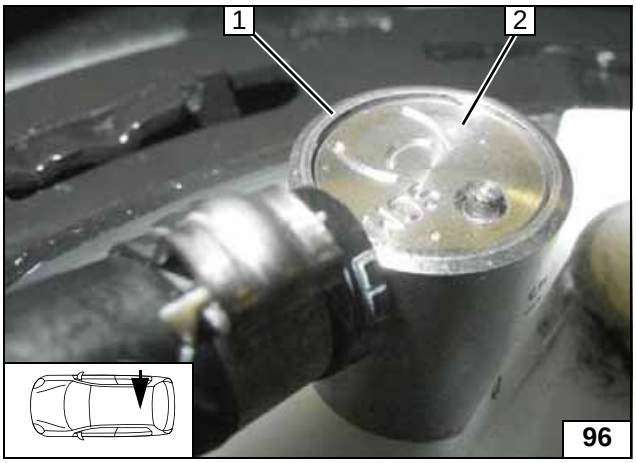
1 FuelFix
2 Fuel line
3 Hose section, 10mm dia. clamp [2x]

Connecting fuel line



Work step F7.

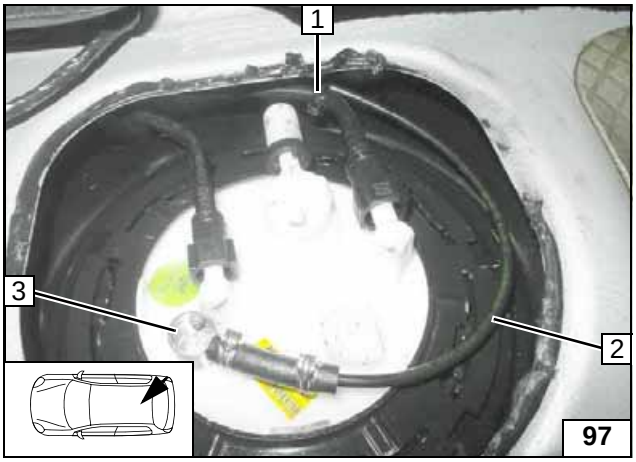
Mounting FuelFix



Work step F8.

Ensure firm seating of FuelFix and positioning of clamping piece **2** with respect to upper edge **1** of the housing.

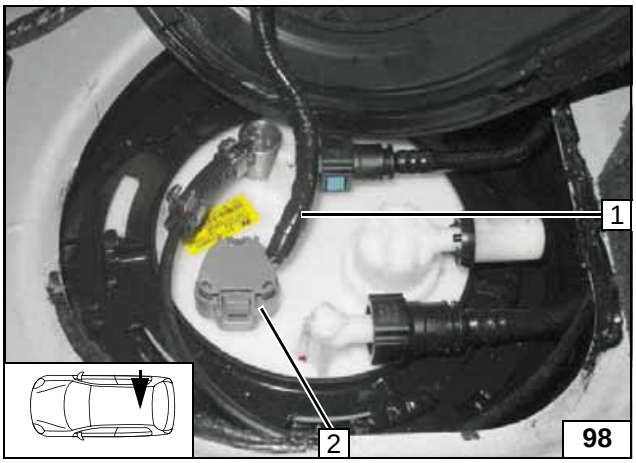
Checking final position



Work step F8.

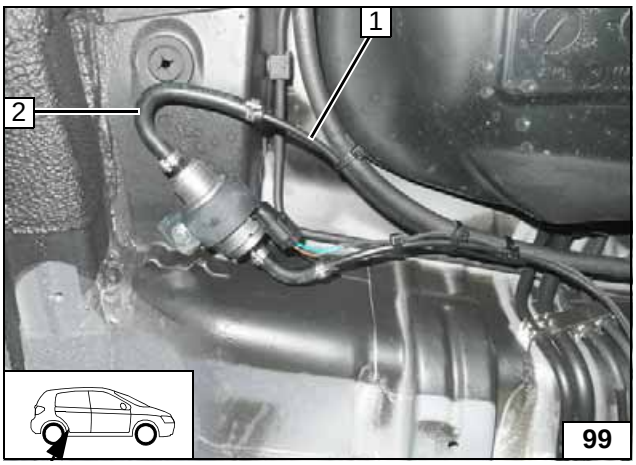
1 Cable tie as tension relief
2 Fuel line of FuelFix
3 FuelFix mounted

Securing fuel line



1 Original vehicle wiring harness
2 Original vehicle connector

Installing original vehicle wiring harness



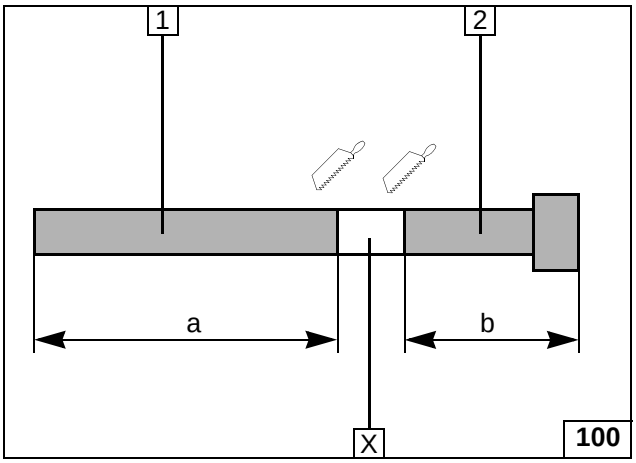
Check the position of the components; adjust if necessary. Check that they have freedom of movement.

1 Fuel line of FuelFix
2 180° moulded hose, 10 mm dia. clamp [2x]

Connecting metering pump

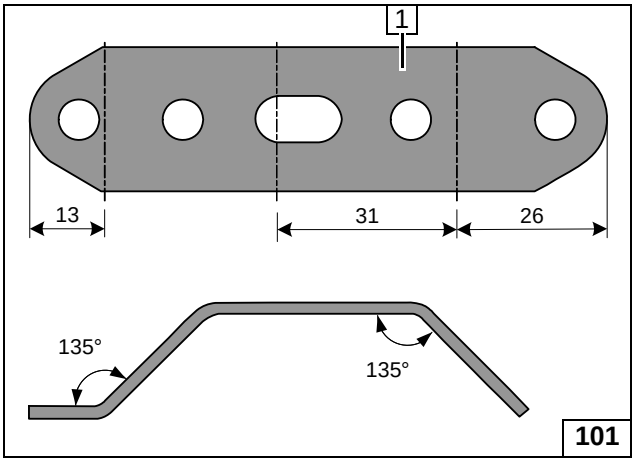
Exhaust Gas

Discard section **X**.



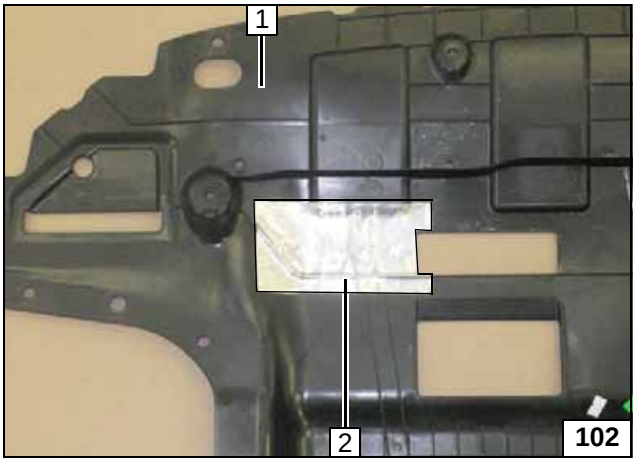
1 Exhaust pipe
a = 450
2 Exhaust end section
b = 130

Preparing exhaust pipe



1 Perforated bracket

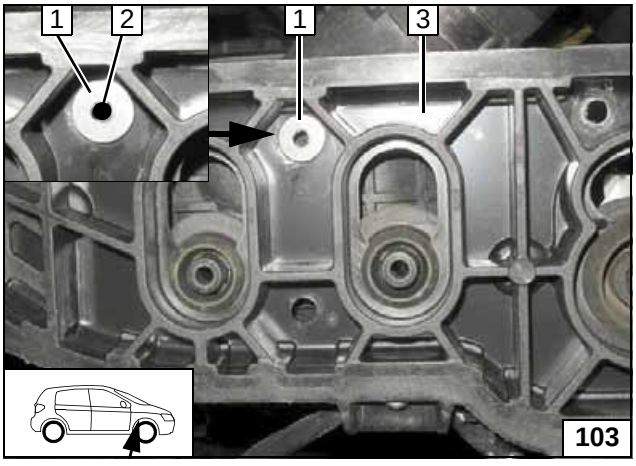
Bending perforated bracket



1 Underride protection of engine
2 2x180 thermal insulation film

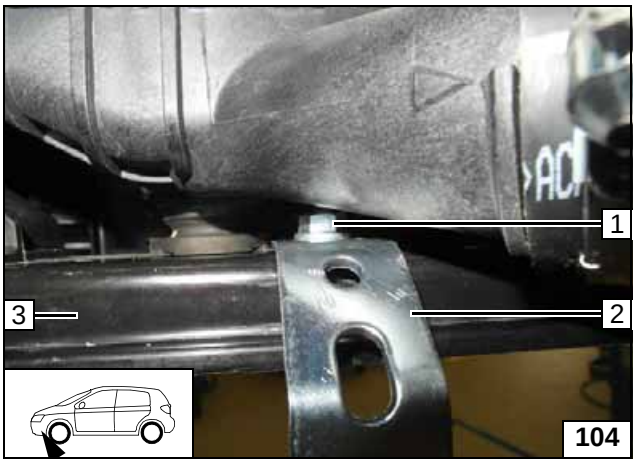
Applying thermal insulation film on underride protection of engine

When drilling ensure sufficient distance from neighbouring components.



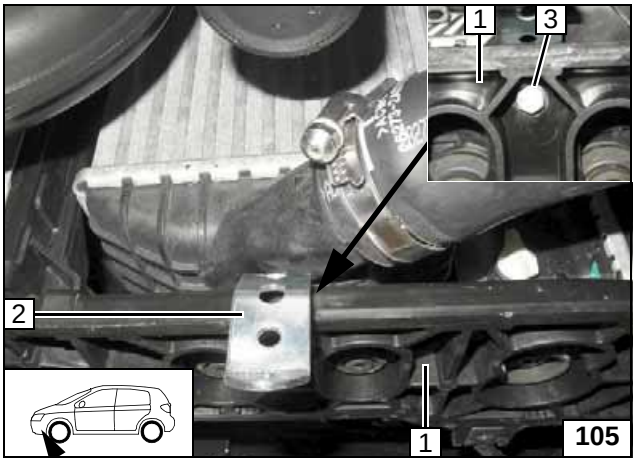
1 M5 large diameter washer, used as template
2 Hole pattern, 6.5 mm dia. hole
3 Radiator carrier

Drilling hole



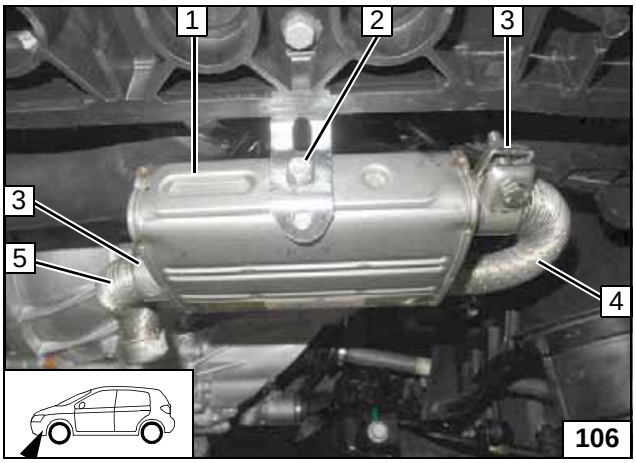
1 M6x12 bolt, large diameter washer, hole, perforated bracket, flanged nut
2 Perforated bracket
3 Radiator carrier

Installing perforated bracket



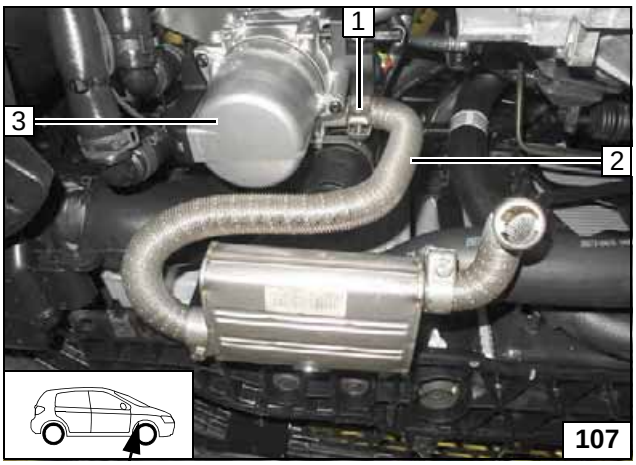
1 Radiator carrier
2 Perforated bracket
3 M6x12 bolt, large diameter washer, hole, perforated bracket, flanged nut

Installing perforated bracket



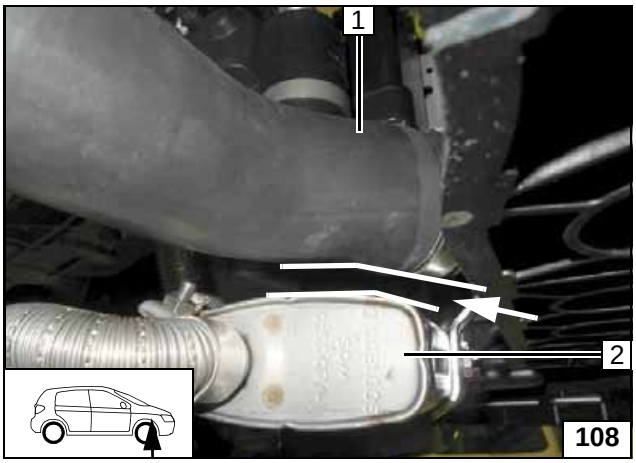
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Hose clamp [2x]
4 Exhaust pipe
5 Exhaust end section

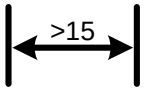
Installing silencer, exhaust pipe and exhaust end section



1 Hose clamp
2 Exhaust pipe
3 Heater

Installing silencer, exhaust pipe and exhaust end section





1 Charge-air tube
2 Silencer

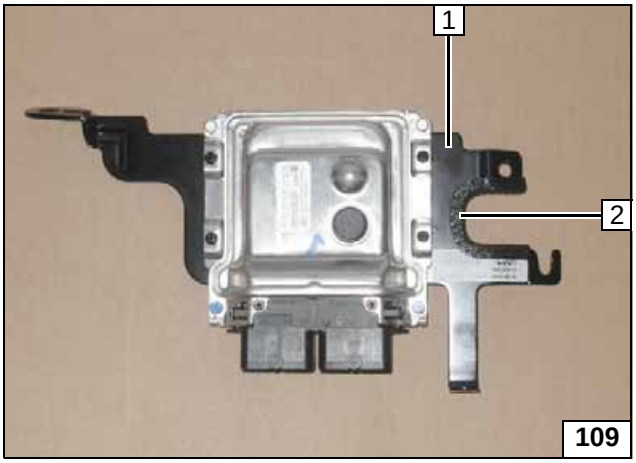
View of silencer

Final Work

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).

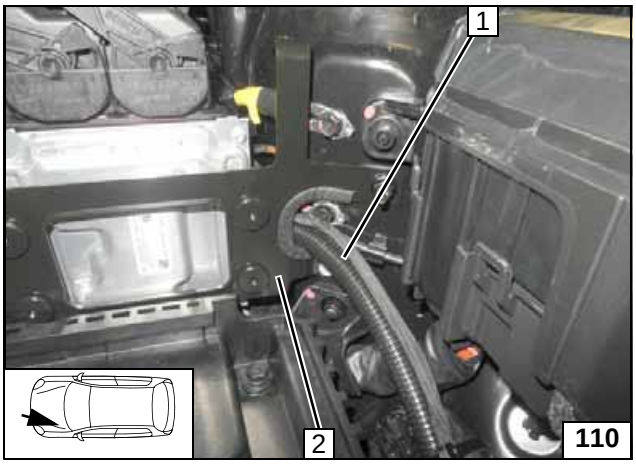
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the 'Operating Instructions for End Customer'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**
- **For initial startup and function check, please see installation instructions.**

Installing edge protection



1 Bracket of engine control unit
2 100 mm edge protection

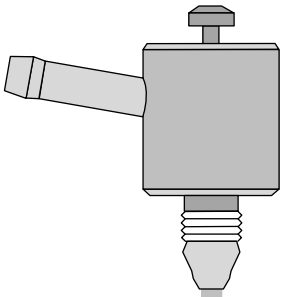
Installing engine control unit



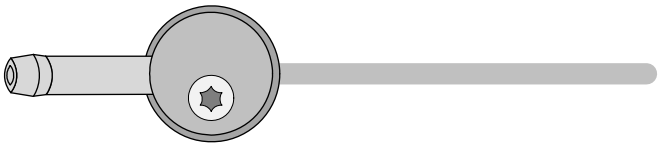
1 Wiring harness of heater and fuel line as well as wiring harness of metering pump in corrugated tube
2 Engine control unit bracket

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

FuelFix Template



Top view



100mm

Scale 1:1

Compare 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

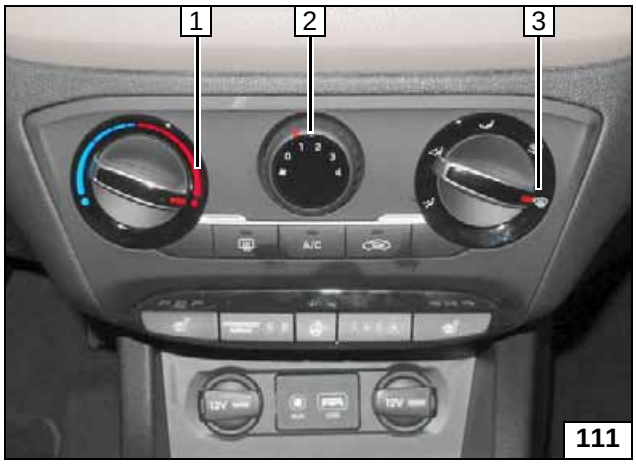
Operating Instructions for Manual Air-Conditioning

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.

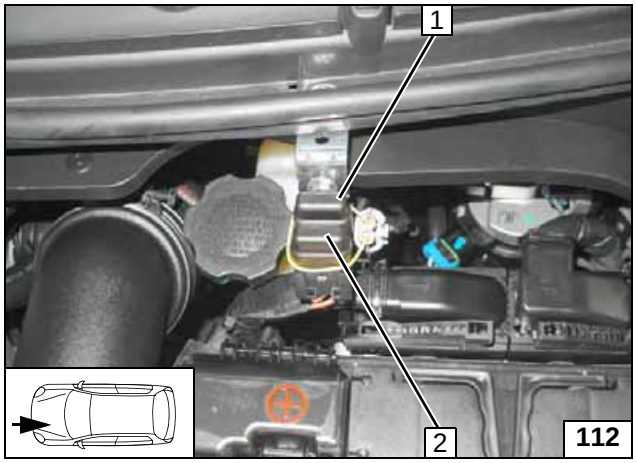
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



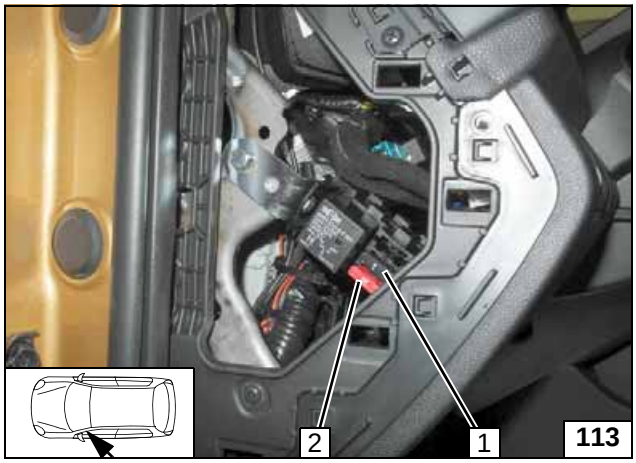
1 Set temperature to ‘max.’
2 Set fan to level ‘1’, or max. ‘2’
3 Air outlet faces ‘upward’ (windscreen)

A/C control panel



1 30A main fuse F2 of passenger compartment
2 20A heater fuse F1

Engine compartment fuses



1 1A fuse F3 of heater control
2 10A fan fuse F4

Passenger compartment fuses

Operating Instructions for Automatic A/C

Please remove page and add to the vehicle operating instructions.

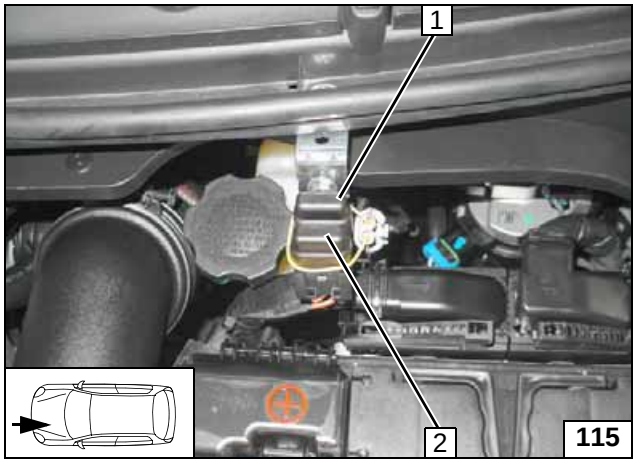
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

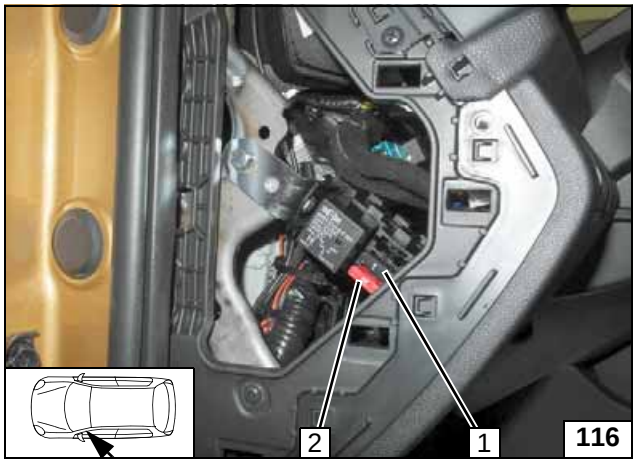
1 Set temperature to ‘HI’
2 Set fan to level ‘2’, or max. ‘3’
3 Air outlet faces ‘upward’ (windscreen)

A/C control panel



1 30A main fuse F2 of passenger compartment
2 20A heater fuse F1

Engine compartment fuses



1 1A fuse F3 of heater control
2 10A fan fuse F4

Passenger compartment fuses