Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Hyundai i20 / i20 Coupe

Validity

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

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.2	Petrol	SG	62	1248	G4LA
1.4	Petrol	SG	74	1368	G4LC
1.4	Petrol	AG	74	1368	G4LC

SG = manual transmission
AG = automatic transmission

From Model Year 2015
Left-hand drive vehicle

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

Total installation time: approx. 5.5 hours

Hyundai i20 / i20 Coupe

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix Hyundai i20 / i20 Coupe 2015 Petrol: **1323918B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of MultiControl CAR installation: MultiControl installation frame: **9030077A**
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

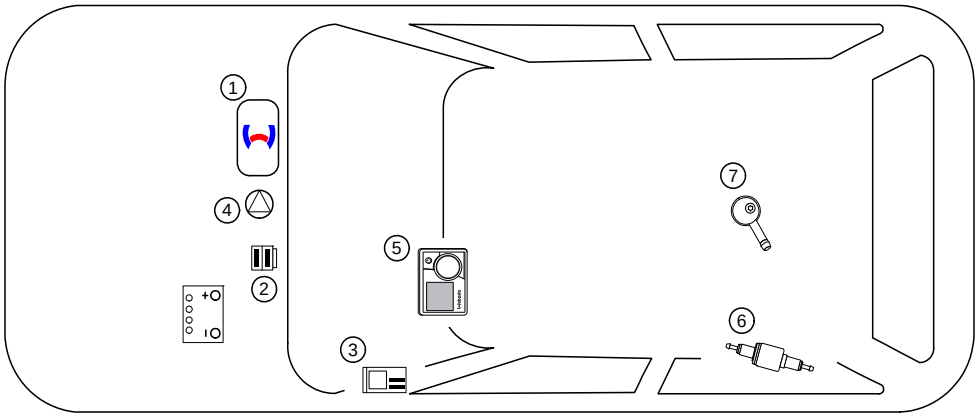
Installation instructions:

- 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 the directive 122 (heater) section 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 / i20 Coupe Petrol 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

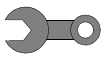
Special Tools
- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole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

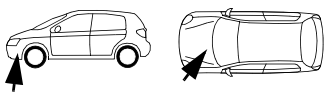
Specific risk due to electrical voltage. 

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. 

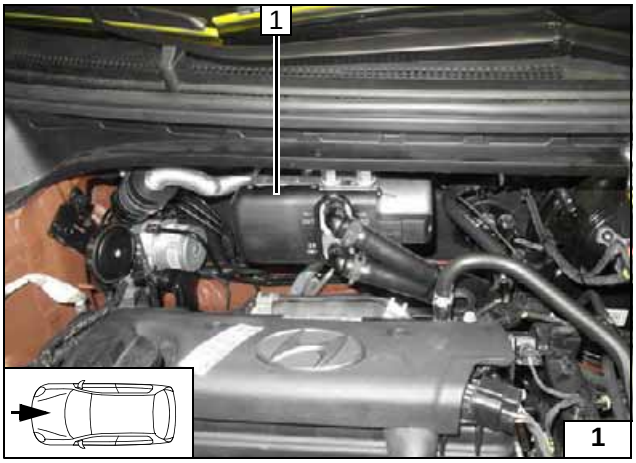
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the windscreen wiper.
- Remove the cover of the coolant reservoir.
- Remove the engine control unit and bracket.
- Disconnect the central electrical box of the passenger compartment and lay it aside.
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Remove the engine underride protection.
- Remove the underbody trim.
- Remove the lower instrument panel trim on the driver's side.
- Remove the A-pillar trim on the driver's side (only in case of Telestart and/or Thermo Call).

Heater

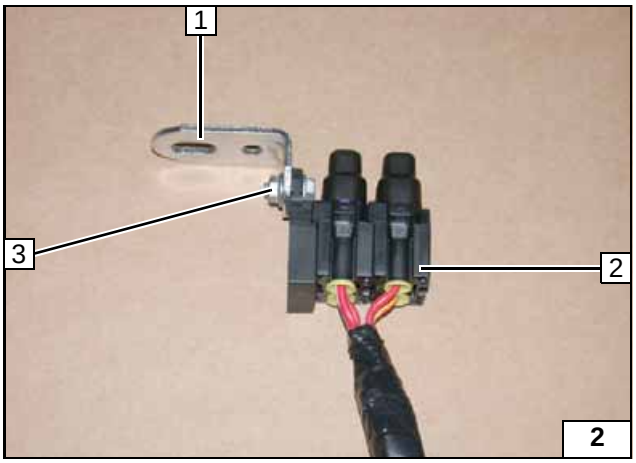
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



2

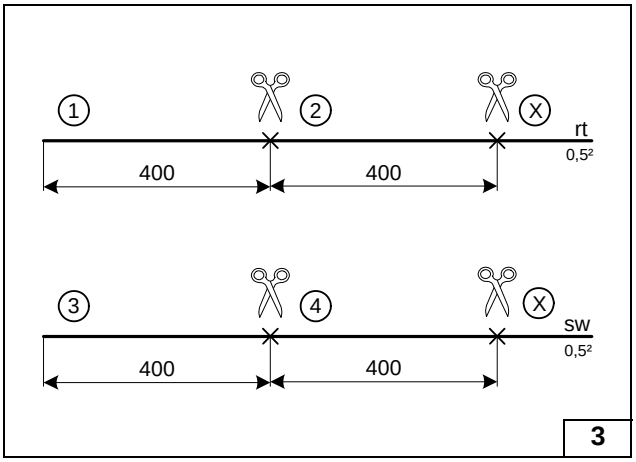
Preparing Electrical System

Wire sections retain their numbering throughout the entire document.

Produce all following electrical connections as shown in wiring diagram.

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

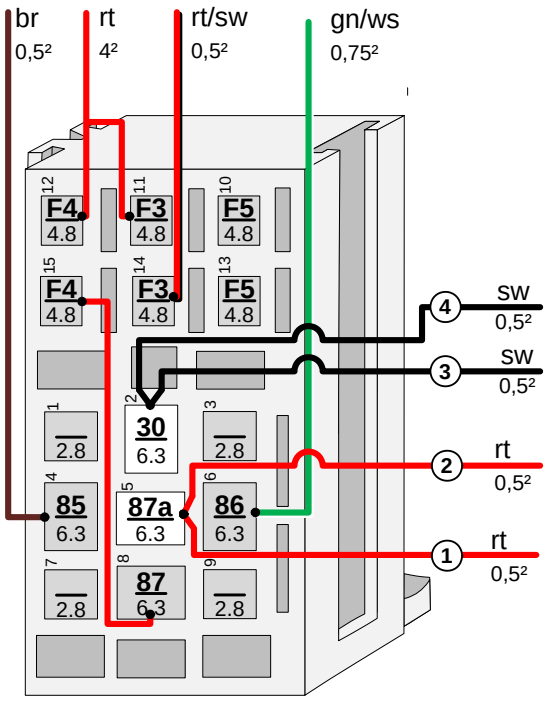
Preparing engine compartment fuse holder



3

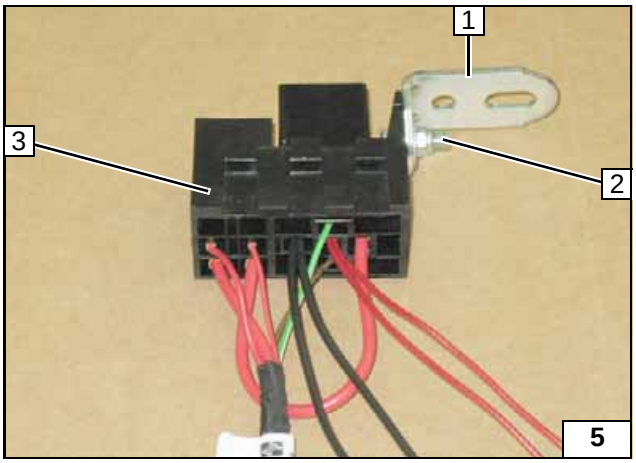
Discard sections **X**.

Cutting to length / assigning wires



4

Connecting wires to socket of passenger compartment relay and fuse holder



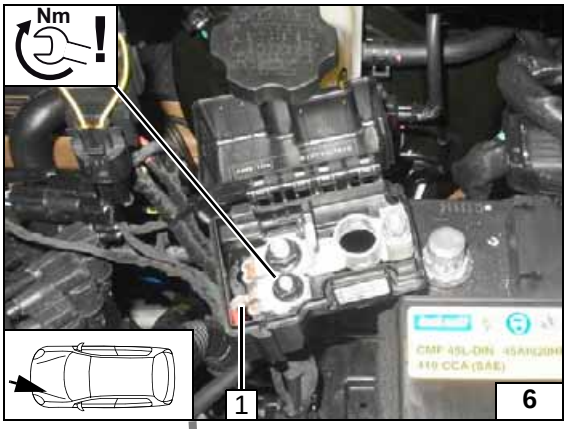
1 Angle bracket
2 M5x16 bolt, washer [2x], nut
3 Passenger compartment relay and fuse holder

Preparing passenger compartment relay and fuse holder

Electrical System

Positive wire

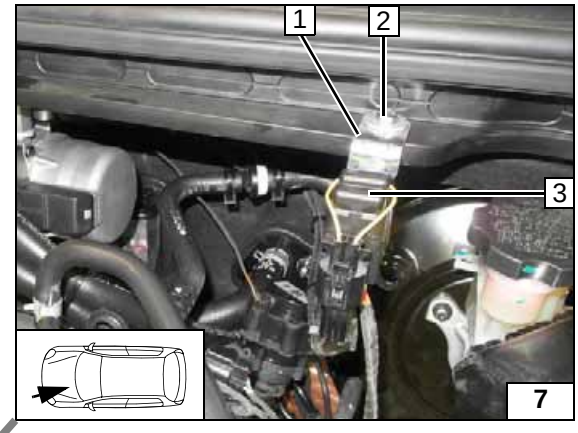
1 Positive wire on positive distributor

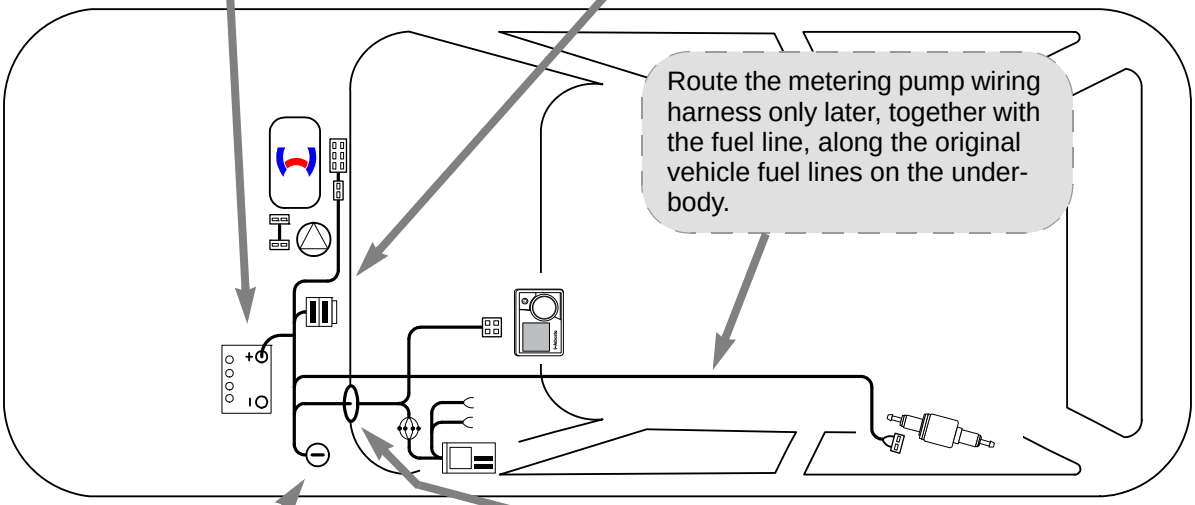


Engine compartment fuse holder

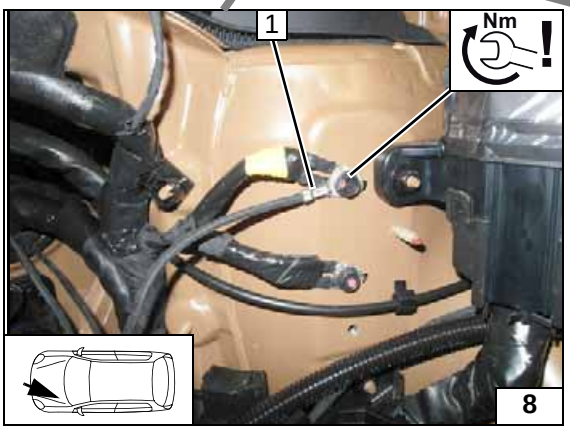
Remove fastening clip at position **2**.

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



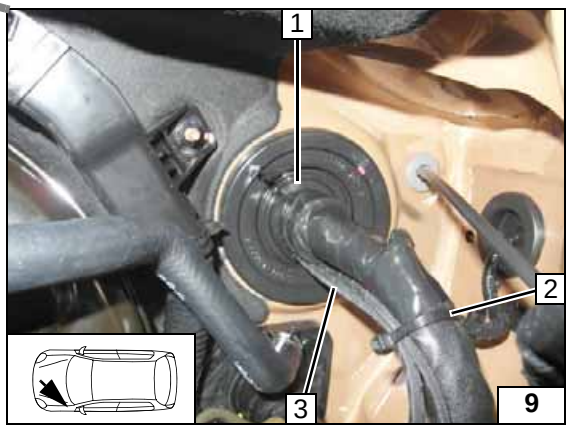


Wiring harness routing diagram



Earth wire

1 Earth wire on original vehicle earth support point



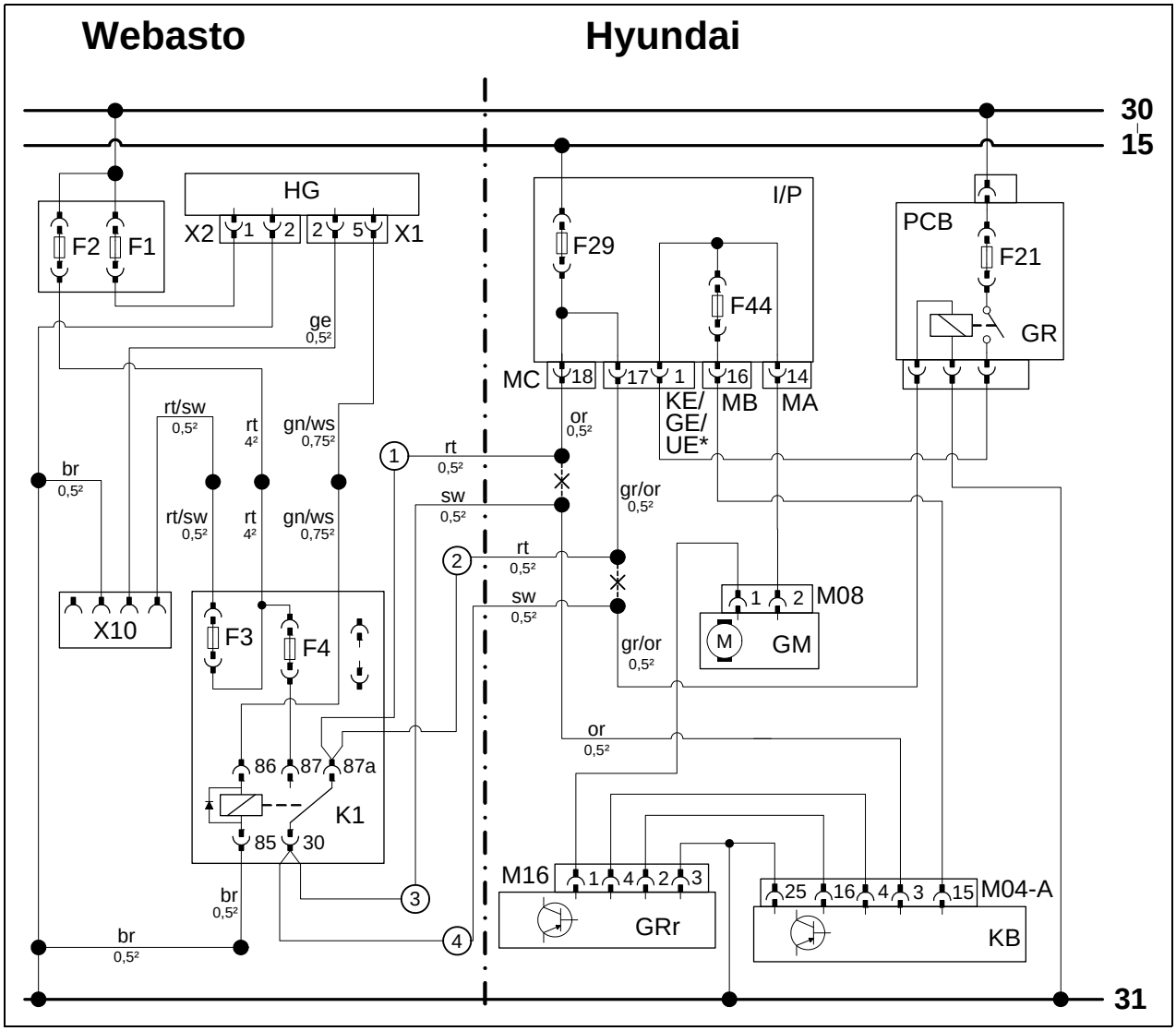
Wiring harness pass through

Route heater wiring harnesses and heater control **3** through protective rubber plug **1** into the passenger compartment.

2 Cable tie

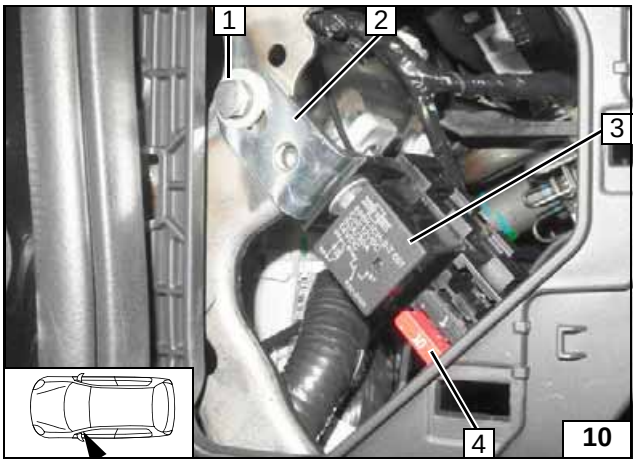
Fan Controller

Wiring diagram



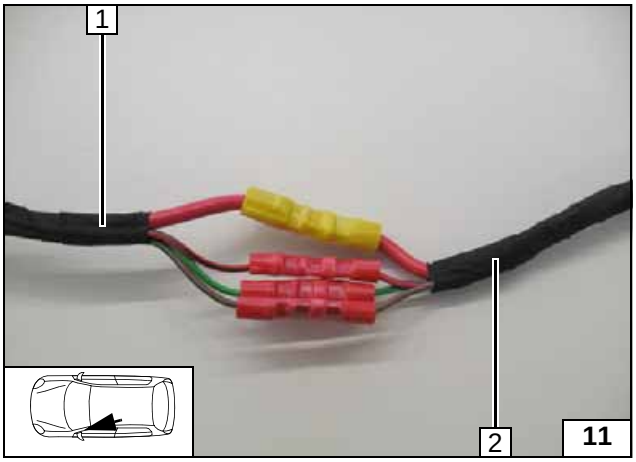
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	I/P	Central electrical box for passenger compartment	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector	F29	10A fuse	ge	yellow
F1	20A fuse	F44	10A fuse	gn	green
F2	30A fuse	MC	Connector I/P	br	brown
X10	4-pin connector of heater control	KE/GE/ UE*	Connector I/P dependent on engine	ws	white
				or	orange
K1	Fan relay	MB	Connector I/P	gr	grey
F3	1A fuse	MA	Connector I/P		
F4	10A fuse	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.	

Legend



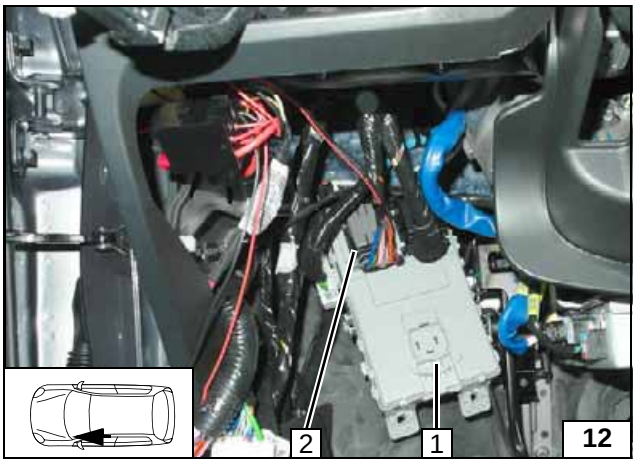
1 M6x20 bolt, spring lockwasher, large diameter washer, original vehicle thread
2 Angle bracket
3 K1 relay
4 10A fuse F4

Installing passenger compartment relay and fuse holder



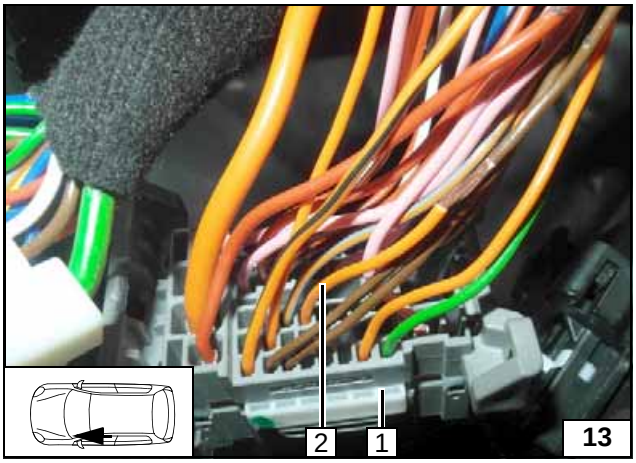
1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting same colour wires of wiring harnesses



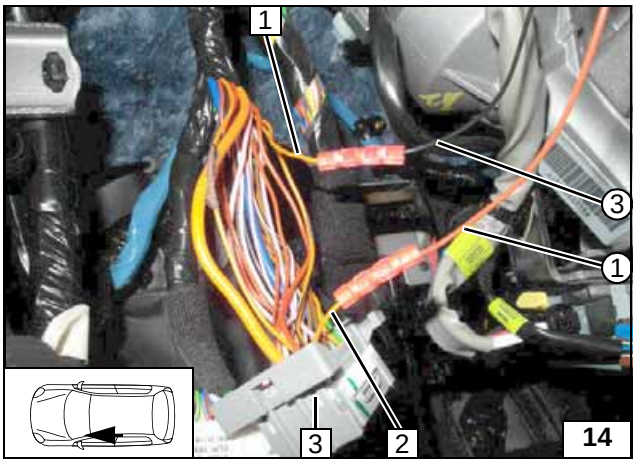
1 Central electrical box, rear view
2 Grey connector I/P-MC

Rear view of central electrical box



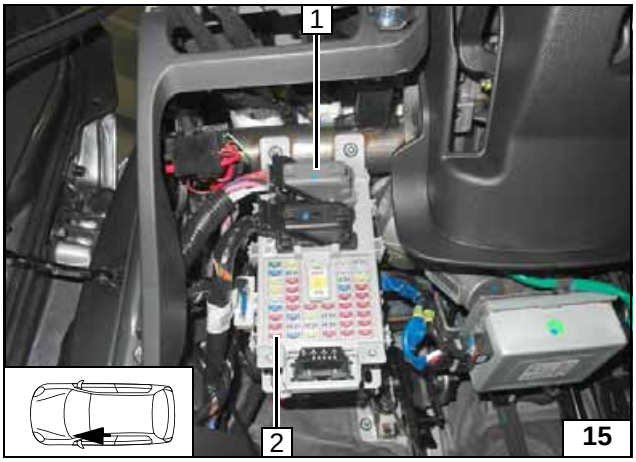
1 Grey connector I/P-MC (back side of central electrical box)
2 Socket of orange (or) wire, pin 18

View of connector



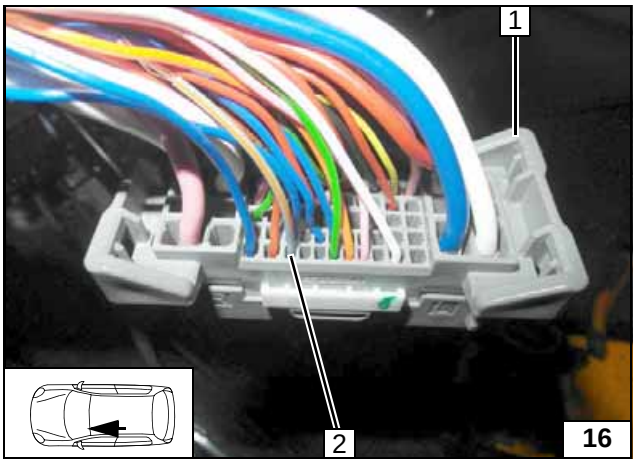
1 Orange (or) wire of connector M04-A, pin 3, from A/C control unit
2 Orange (or) wire of connector I/P-MC/ pin 18, from central electrical box
3 Grey connector I/P-MC (back side of central electrical box)
① Red (rt) wire of K1/87a
③ Black (sw) wire of K1/30

Connection of central electrical box



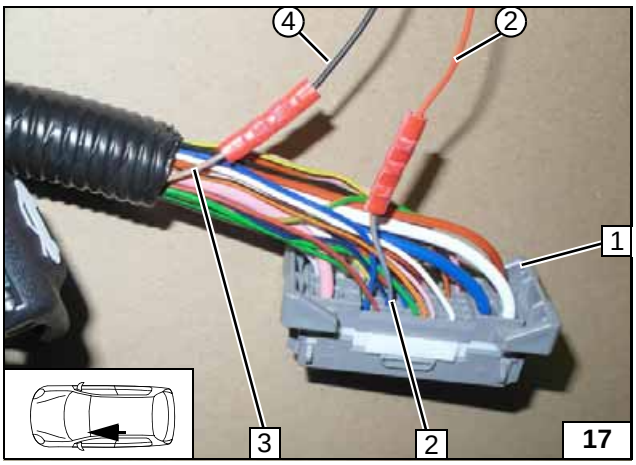
1 Grey connector I/P-KE/GE/UE
2 Central electrical box, front view

Front view of central electrical box



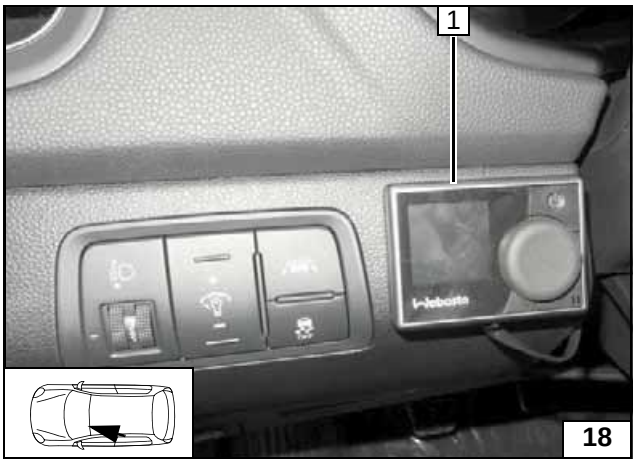
1 Grey connector I/P-KE/GE/UE
2 Socket of grey/orange (gr/or) wire, pin 17

View of connector



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

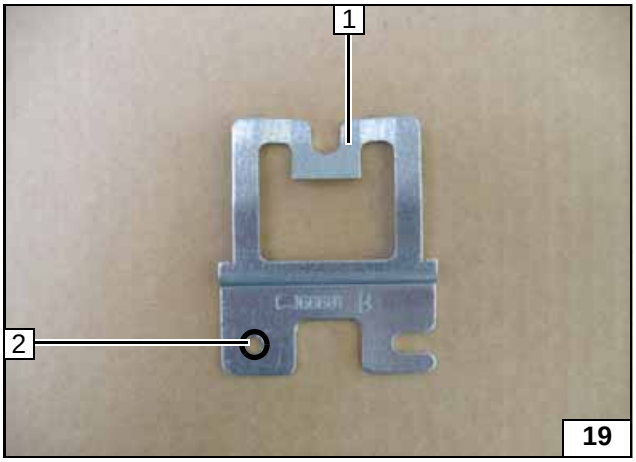
Connection of central electrical box



MultiControl CAR Option

1 MultiControl CAR with installation frame

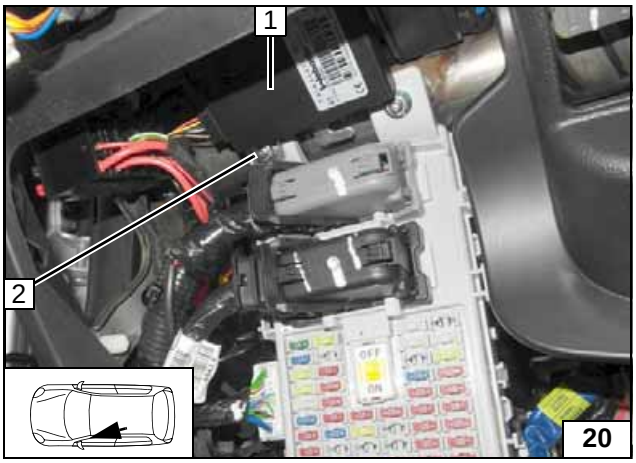
Installing MultiControl CAR



Remote Option (Telestart)

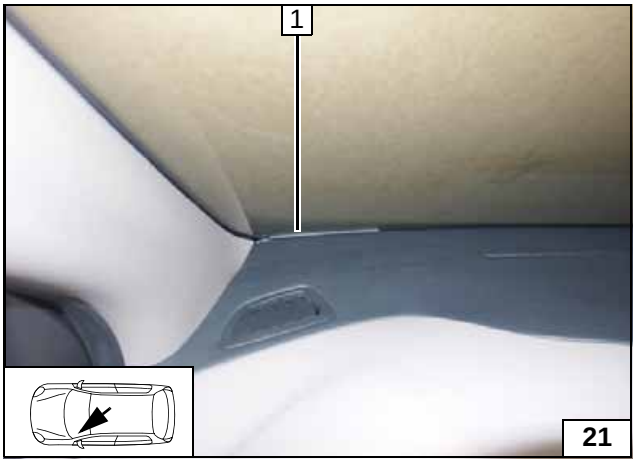
1 Receiver bracket
2 Drill out to 6.5 mm dia.

Preparing bracket



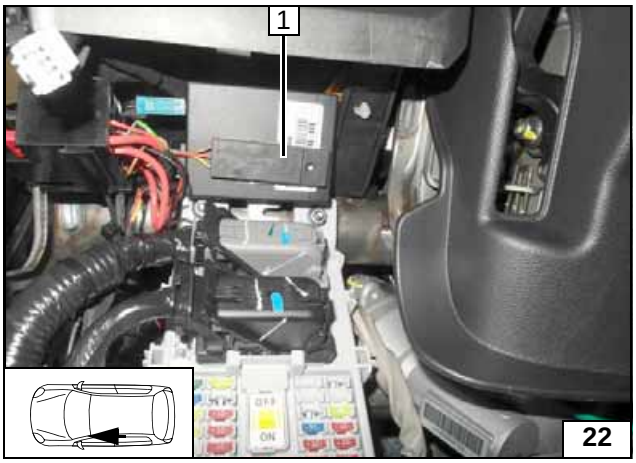
1 Receiver
2 Original vehicle bolt (fastening of central electrical box), receiver bracket, original vehicle nut

Installing receiver



1 Antenna

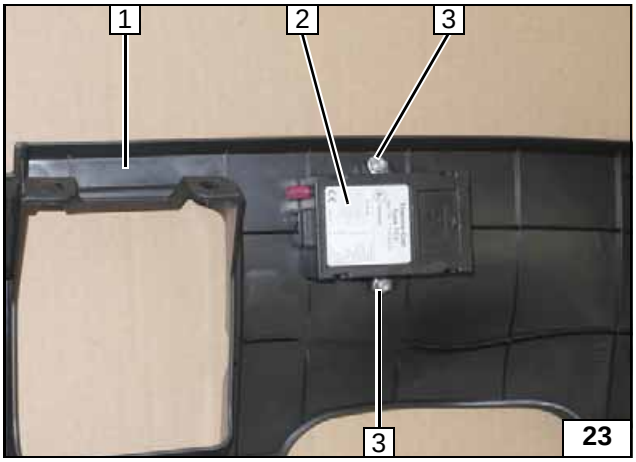
Installing antenna



Temperature sensor T100 HTM

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

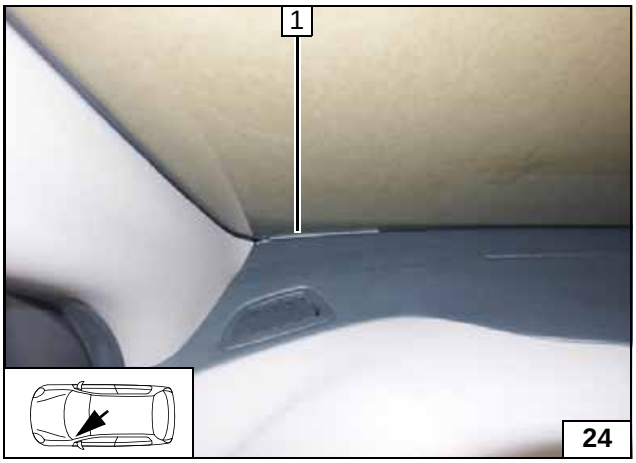
Installing temperature sensor



Thermo Call TC3 Option

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

Installing receiver



1 Antenna

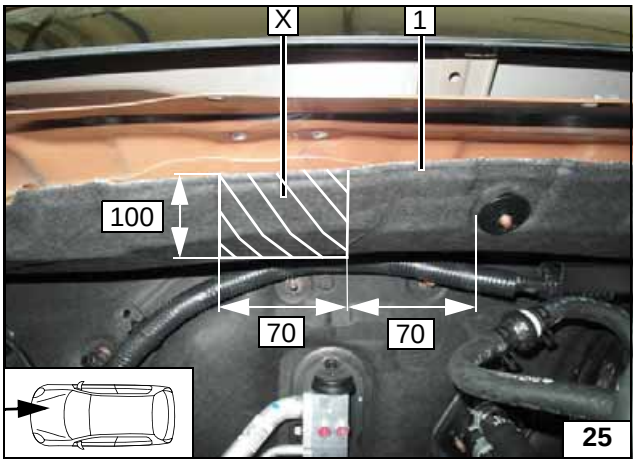
Installing antenna

Preparing Installation Location

Discard section **X**.

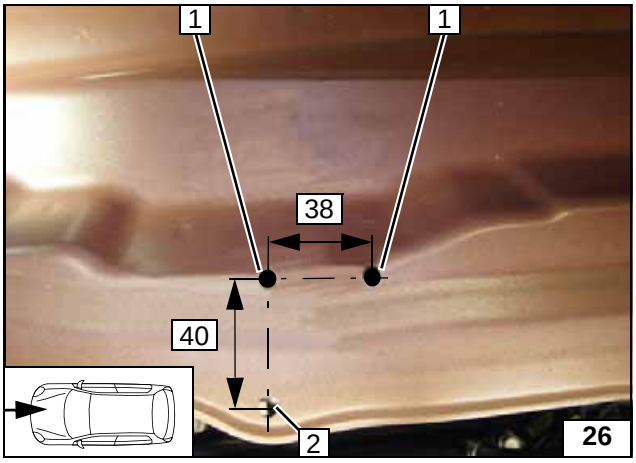
1 Insulation mat

Cutting out insulation mat



1 Copy hole pattern, 7 mm dia hole [2x]
2 Original vehicle hole

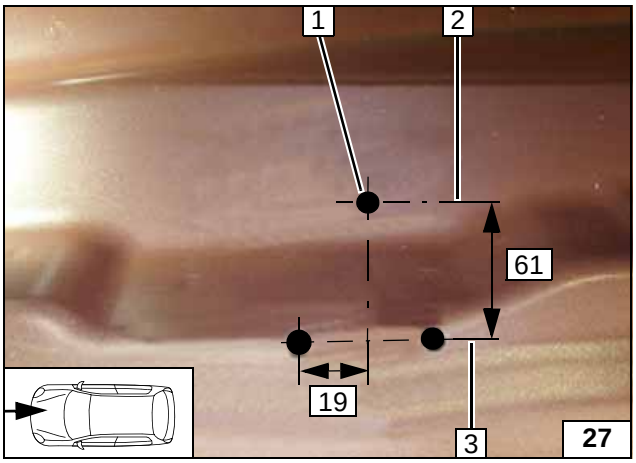
Copying hole pattern



Measure the 61 mm length horizontally at the level of dimension line **3** and make the marking on the level of dimension level **2**. Drill a hole through both layers at position **1**.

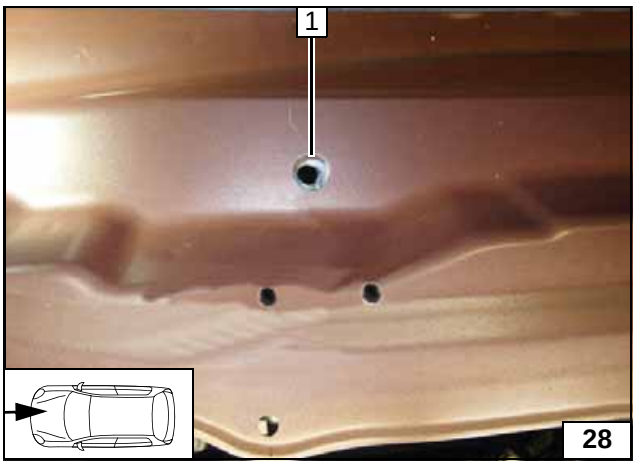
1 Copy hole pattern, 7mm dia. hole

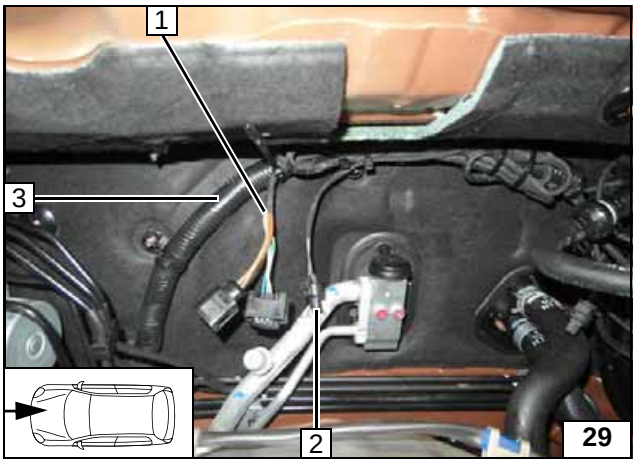
Copying hole pattern



Drill hole in top layer at position **1** to 15mm dia.

Drilling hole

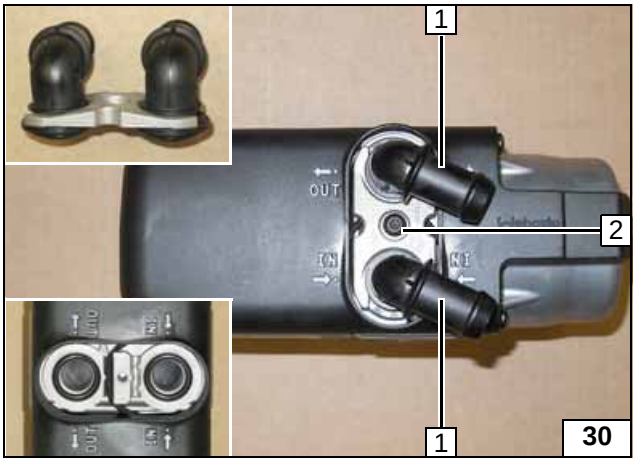




Route wiring harnesses of heater **1** and circulating pump **2** along original vehicle wiring harness **3** to the installation location.

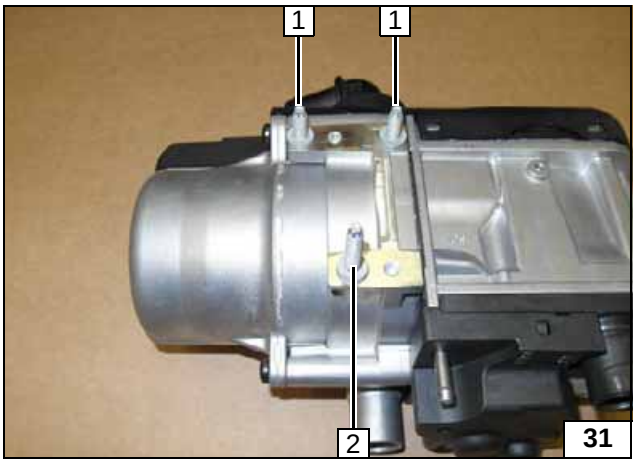
Routing wiring harness

Preparing Heater



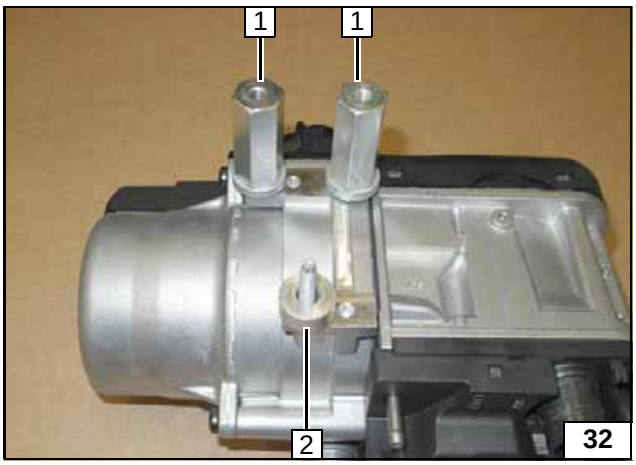
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Mounting water connection piece



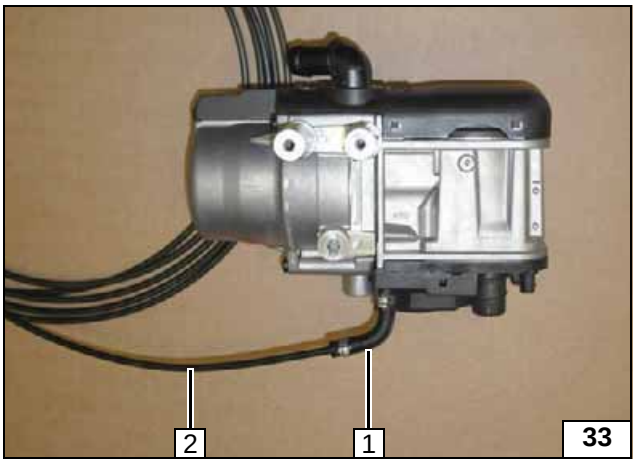
1 Self-tapping stud bolt, M5xGF11 / M6x15.5
2 Self-tapping stud bolt, M5xGF11 / M6x25.5

Installing stud bolt



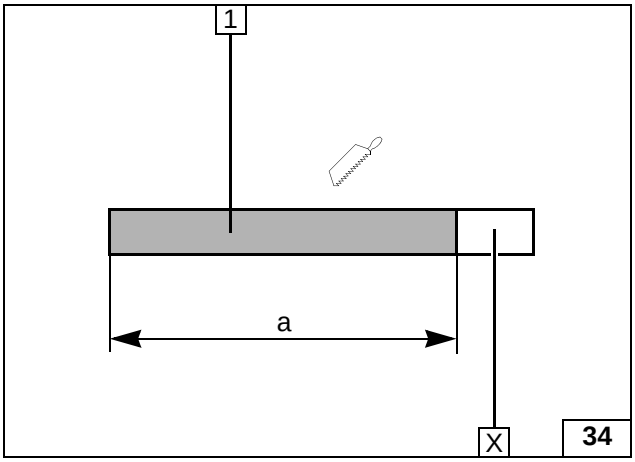
1 Large diameter washer [2x each], M6x40 spacer nut [2x]
2 8mm spacer

Installing spacer nut



1 90° moulded hose, 10mm dia. clamp [2x]
2 Fuel line

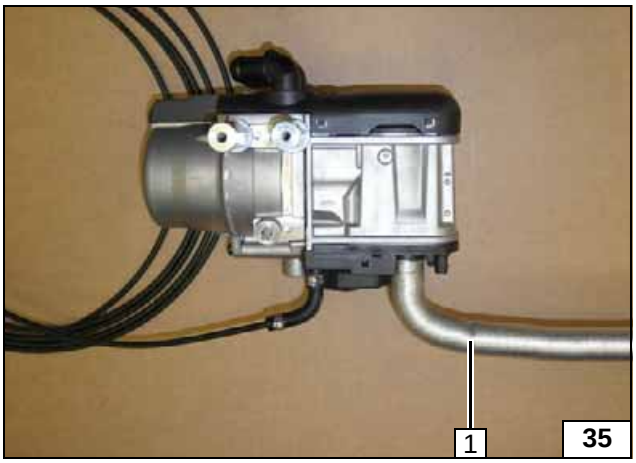
Premounting fuel line



Discard section **X**.

1 Combustion air pipe
a = 300

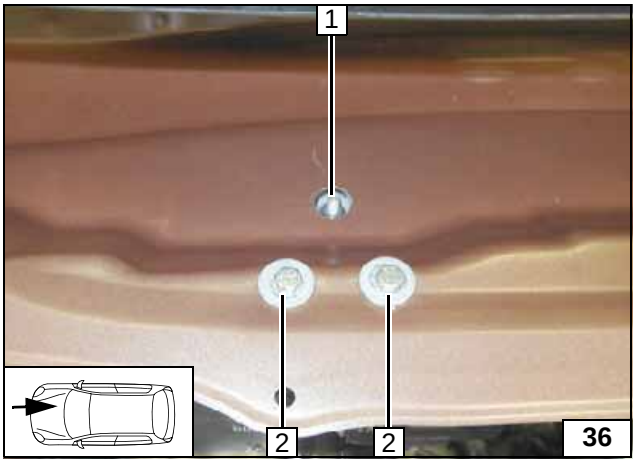
Cutting combustion air pipe to length



1 Combustion air pipe

Premounting combustion air pipe

Installing Heater



1 Flanged nut M6
2 M6x20 bolt, large diameter washer, spring lockwasher [2x each]

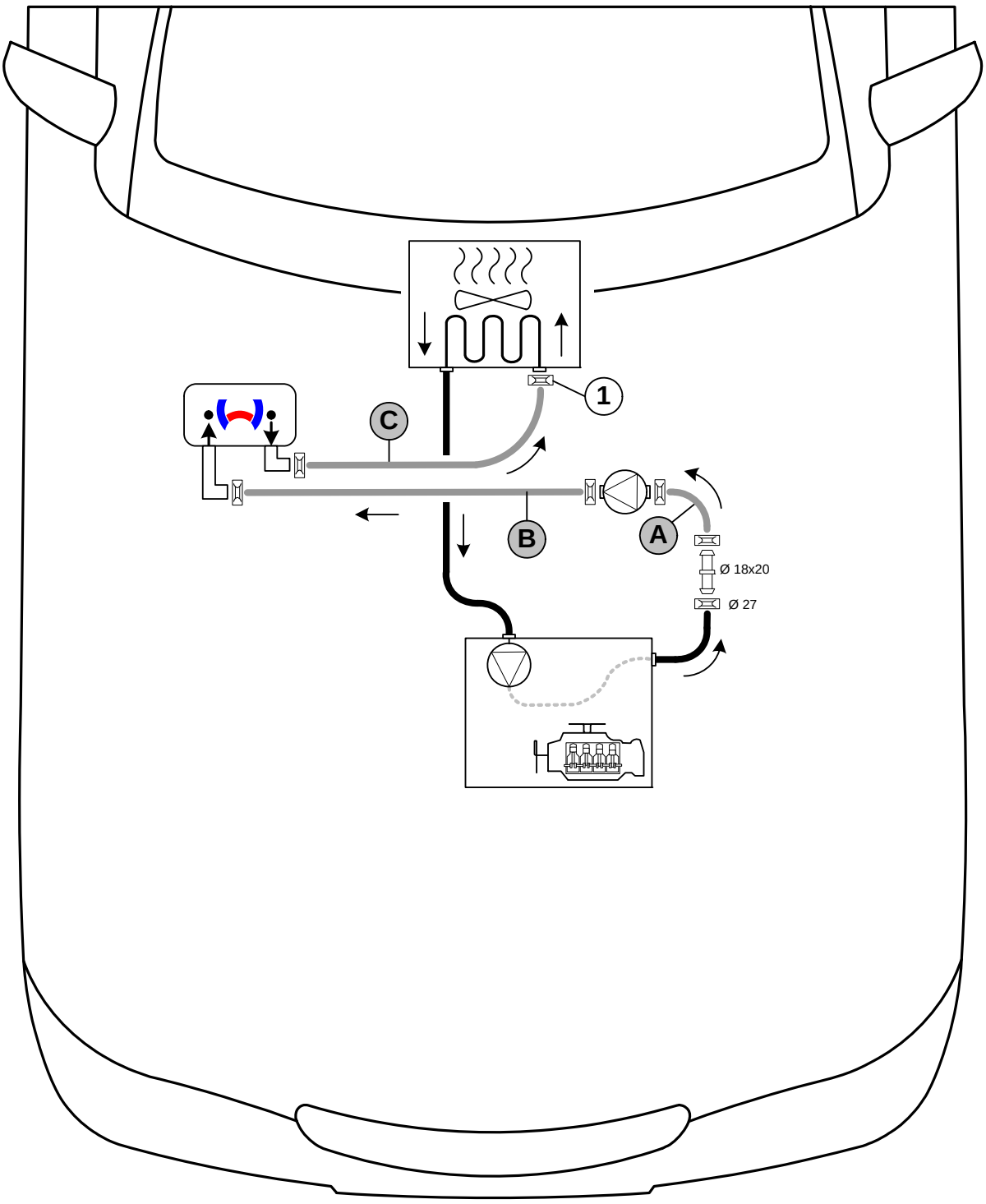
Mounting heater

Coolant Circuit

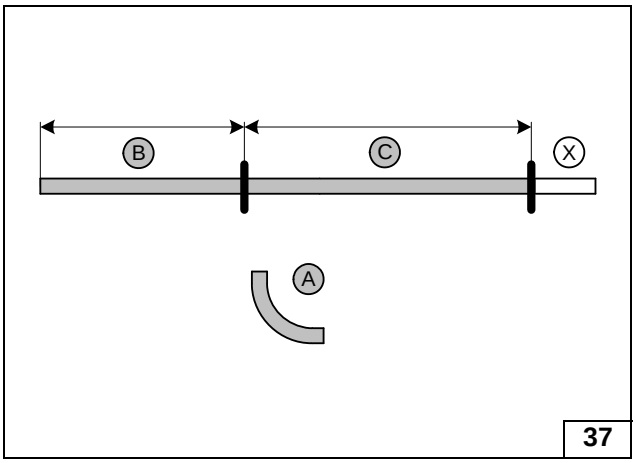
Any coolant running off should be collected in an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



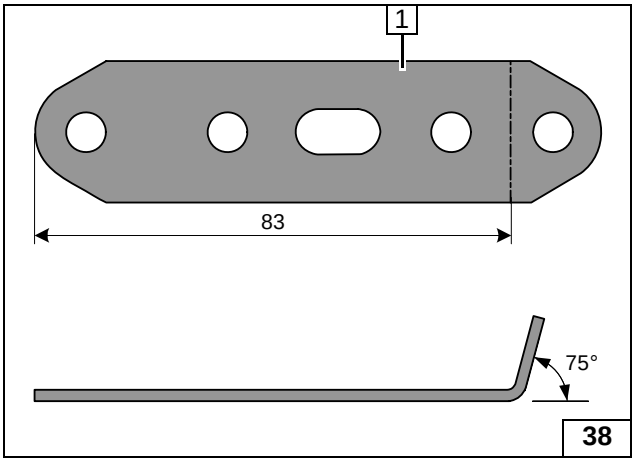
All spring clips without a specific designation = 25 mm dia. **1** = Original vehicle spring clip .



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

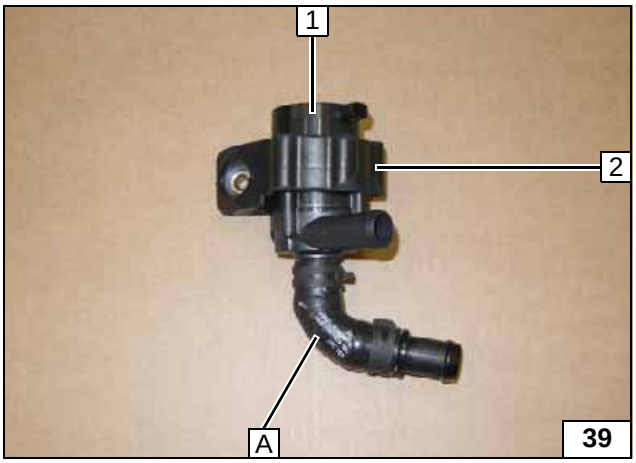
B = 265
C = 420

Cutting hoses to length



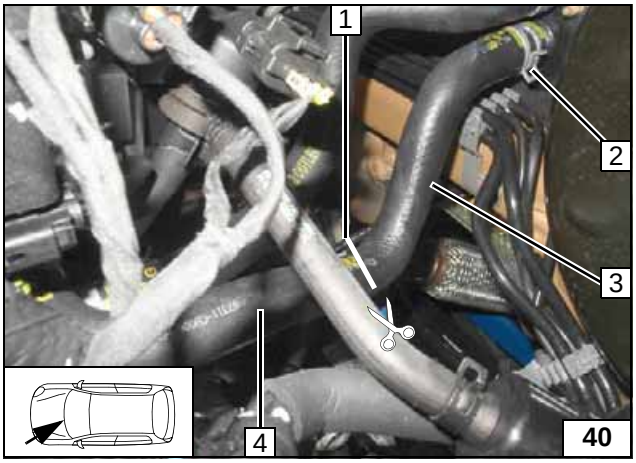
1 Perforated bracket

Bending perforated bracket



1 Circulating pump
2 Circulating pump mounting

Premounting circulating pump

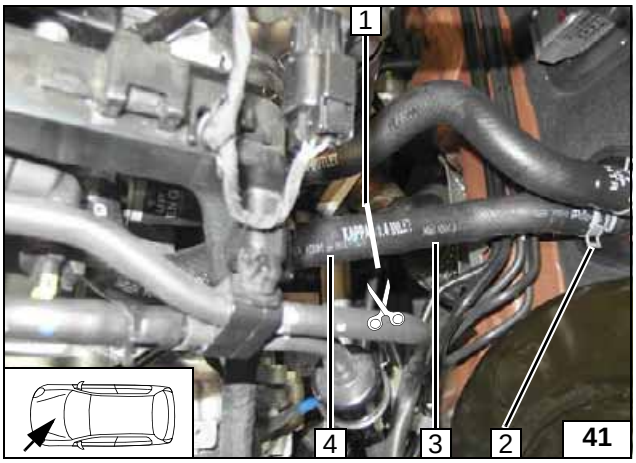


1.2 P

Cut hose on engine outlet/heat exchanger inlet at marking **1**. Original vehicle spring clip **2** will be reused.

3 Discard hose section of heat exchanger inlet
4 Hose section of engine outlet

Cutting point

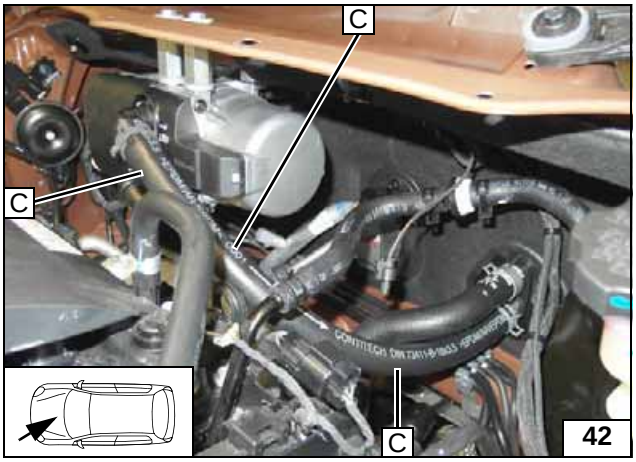


1.4 P

Cut hose on engine outlet/heat exchanger inlet at marking **1**. Original vehicle spring clip **2** will be reused.

3 Discard hose section of heat exchanger inlet
4 Hose section of engine outlet

Cutting point



All vehicles

Figure shows 1.4 P.
Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

Connection of hose C

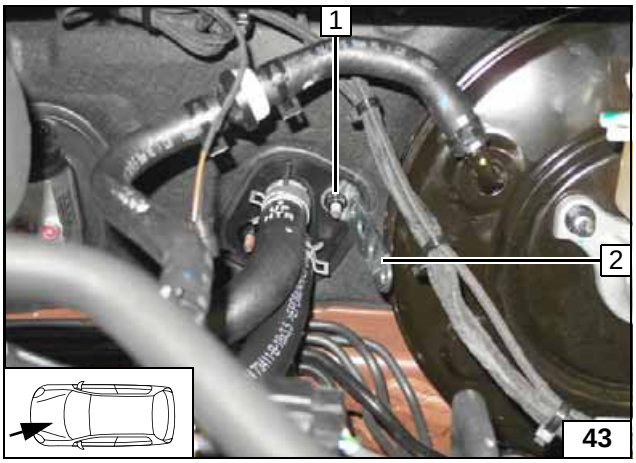


Figure shows 1.4 P.

1 Original vehicle stud bolt and M6 nut
2 Perforated bracket

Installing perforated bracket

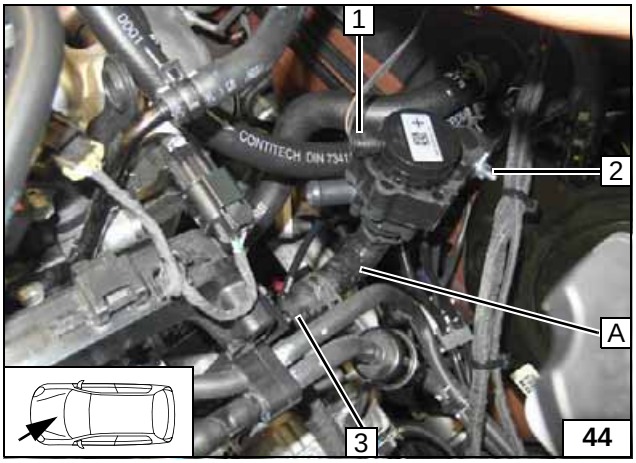


Figure shows 1.4 P.

1 Connector of circulating pump wiring harness
2 M6x25 bolt, M6 flanged nut
3 Hose section of engine outlet

Mounting circulating pump

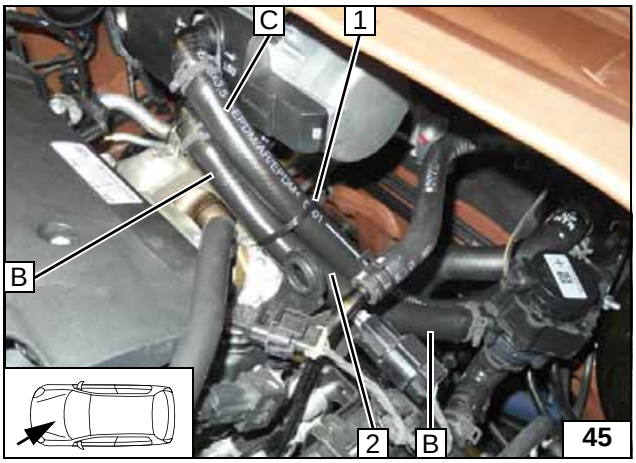


Figure shows 1.4 P.
Ensure sufficient distance at position **2**.

1 Cable tie

Connecting hose B

Fuel

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

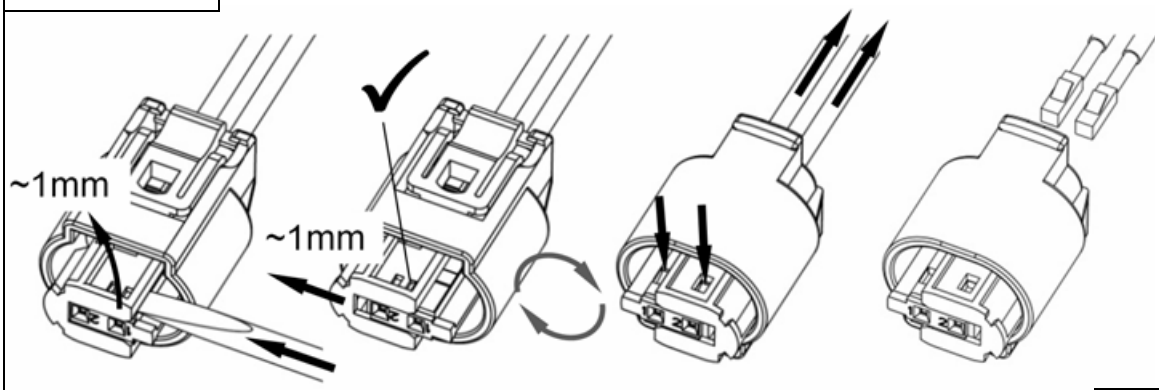
Catch any fuel running off in an appropriate container.

Install 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.

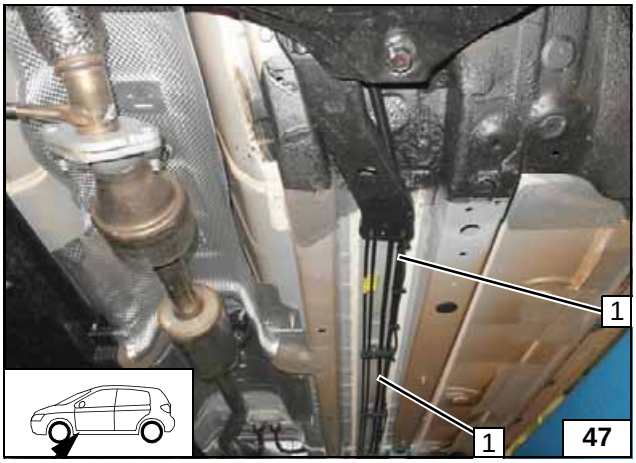
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Dismantling metering pump connector

Connector X7



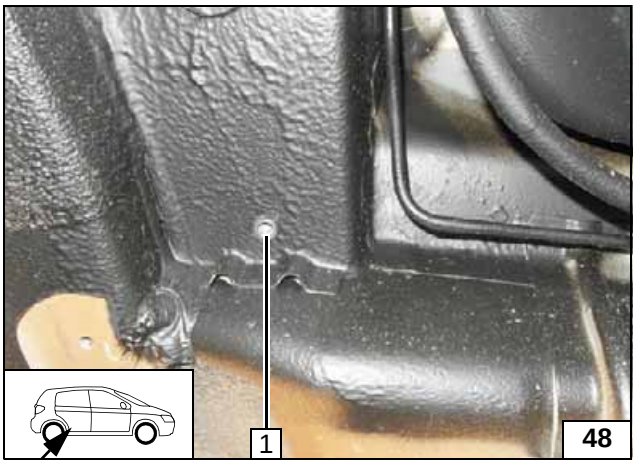
46



47

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

Routing lines

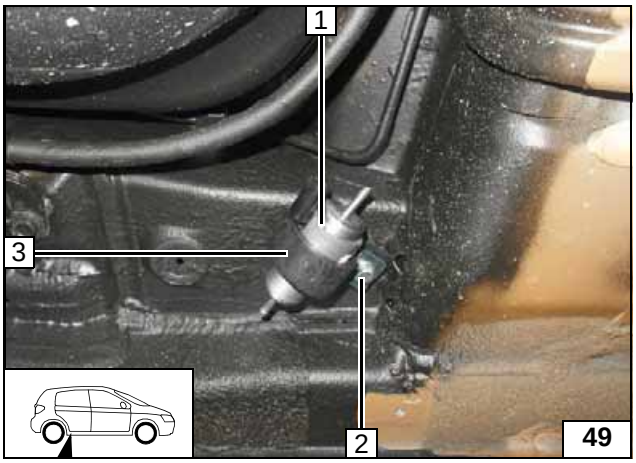


48

Drill out original vehicle hole to 9.1 mm dia.

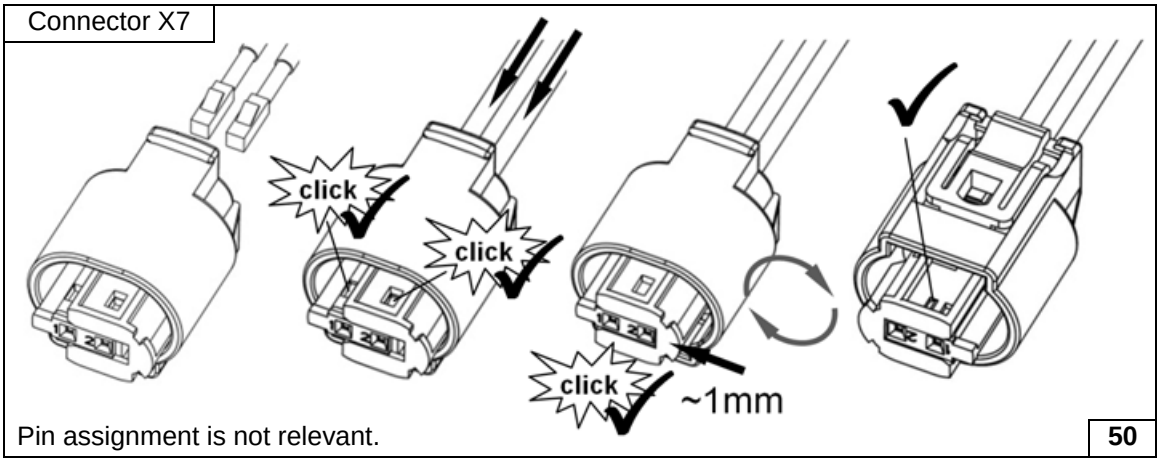
1 M6 rivet nut in original vehicle hole

Preparing installation location of metering pump

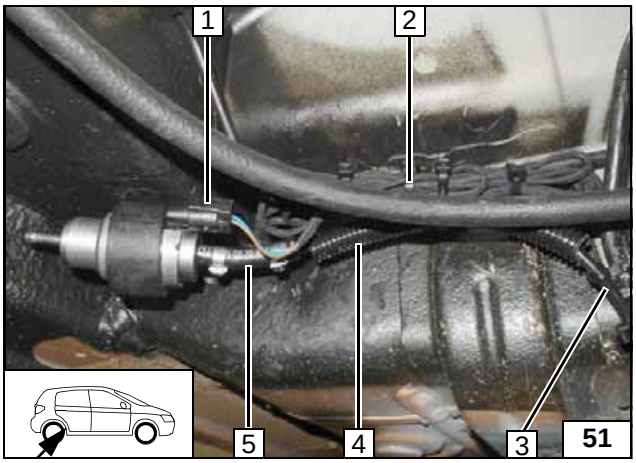


1 Metering pump
2 M6x25 bolt, support angle bracket
3 Mounting of metering pump

Installing metering pump

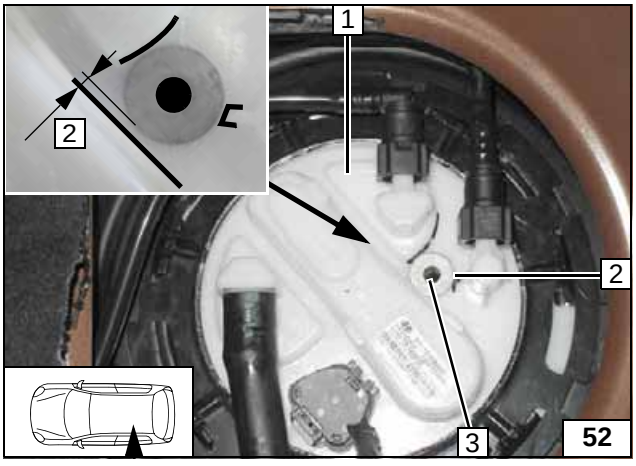


Completing metering pump connector



1 Wiring harness of metering pump, connector X7 mounted
2 Wiring harness of metering pump
3 Fuel line of heater
4 150mm, 10mm dia. corrugated tube
5 Hose section, 10mm dia. clamp [2x]

Connecting metering pump

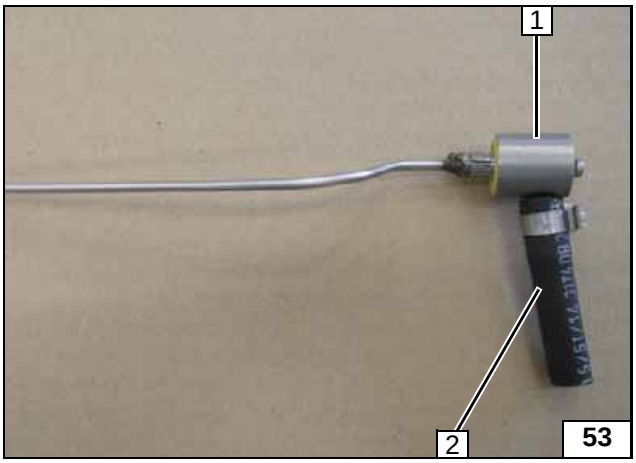


Installing FuelFix

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 parts.
3 Hole pattern, hole made with provided dril

Copying hole pattern

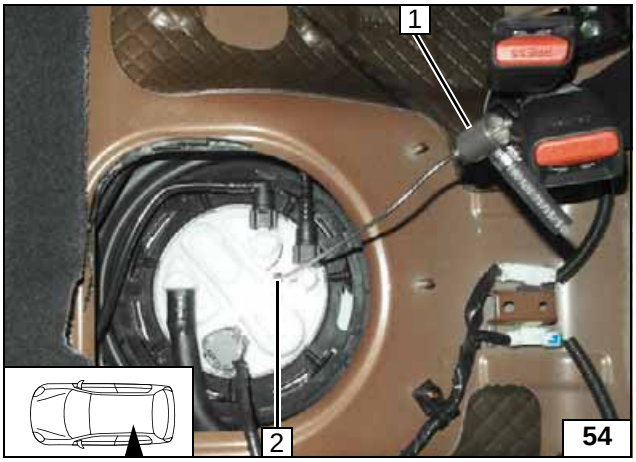


Work steps F4 and F6.1.

Bend FuelFix **1** according to template and cut to length.

2 Hose section, 10 mm dia. clamp

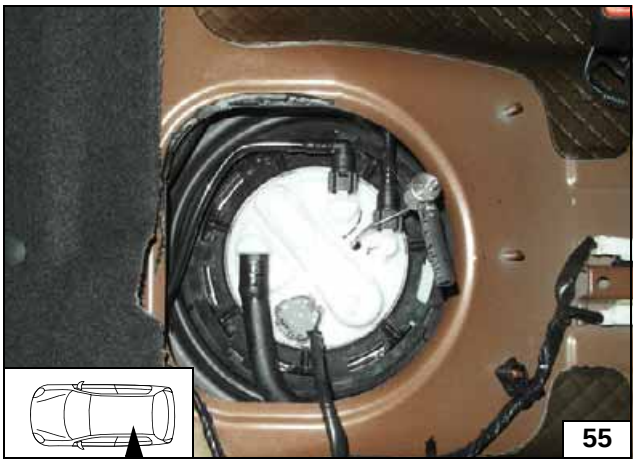
Premounting FuelFix



Work step F5.

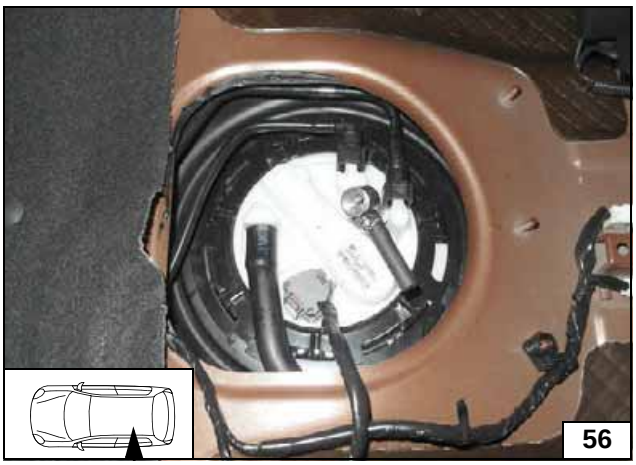
Insert FuelFix **1** into hole **2**.

Inserting FuelFix



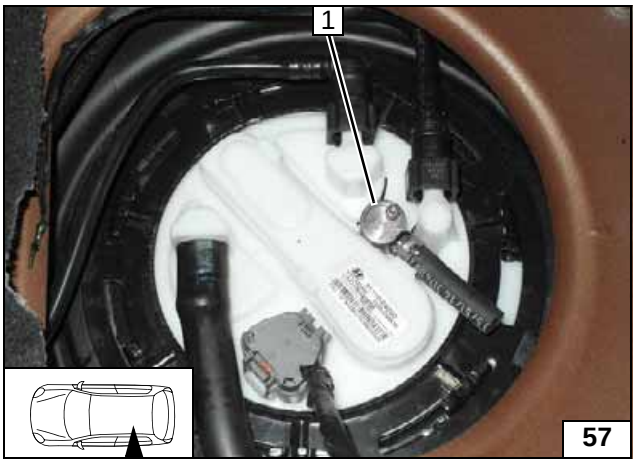
Work step F5.

Inserting FuelFix



Work step F5.

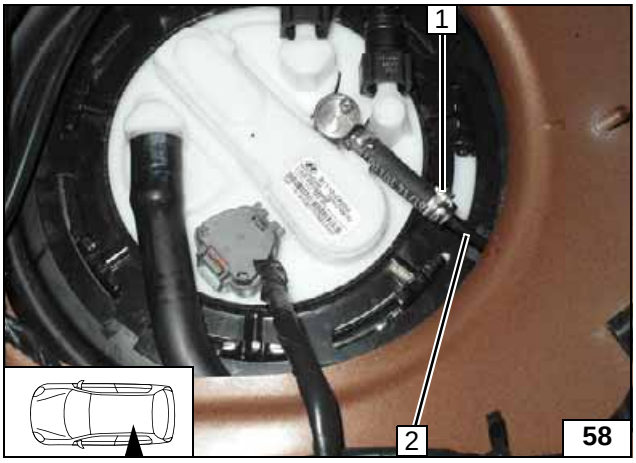
Inserting FuelFix



Work step F5.4.

Align FuelFix **1** as shown.

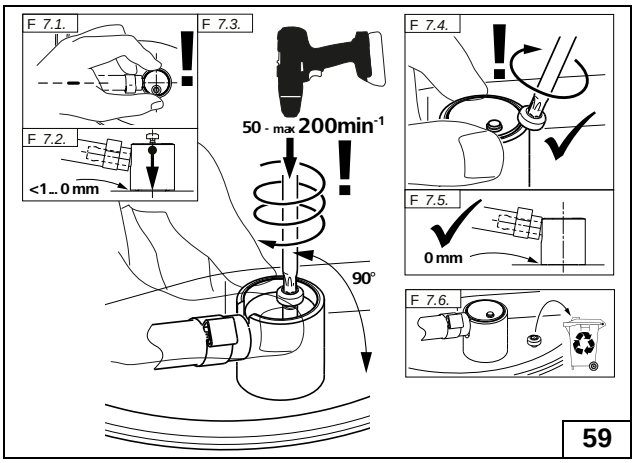
Aligning FuelFix



Work step F6.

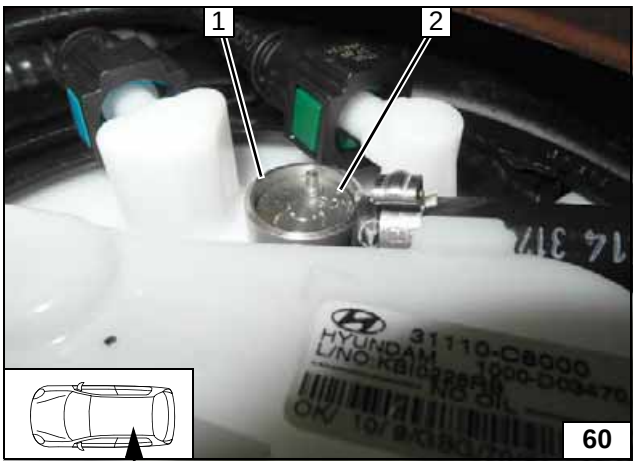
1 Hose section, 10mm dia. clamp [2x]
2 Fuel line

Connecting fuel line



Work step F7.

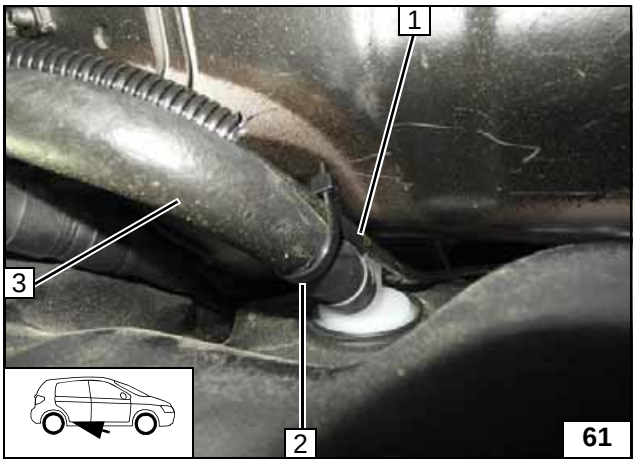
Mounting FuelFix



Work step F8.

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

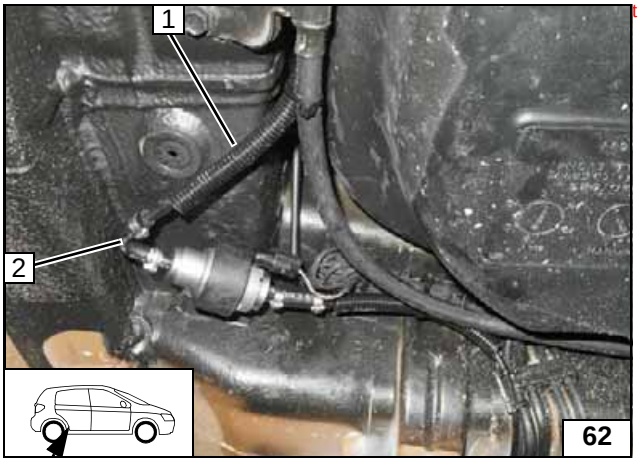
Checking final position



Work step F8.

1 Fuel line of FuelFix
2 Cable tie as tension relief
3 Original vehicle hose

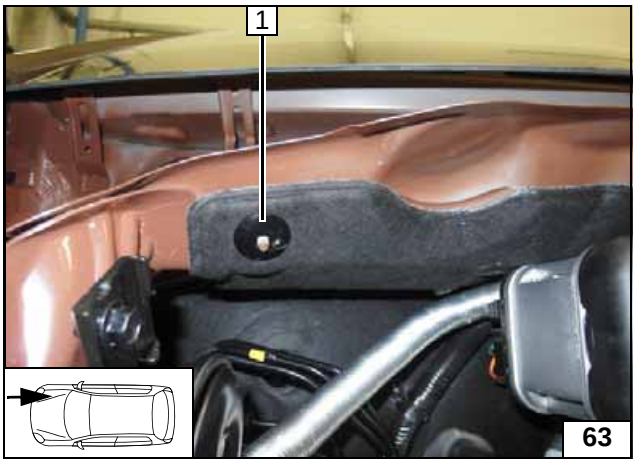
Securing fuel line



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

1 Fuel line of FuelFix in corrugated tube
2 90° moulded hose, 10mm dia. clamp [2x]

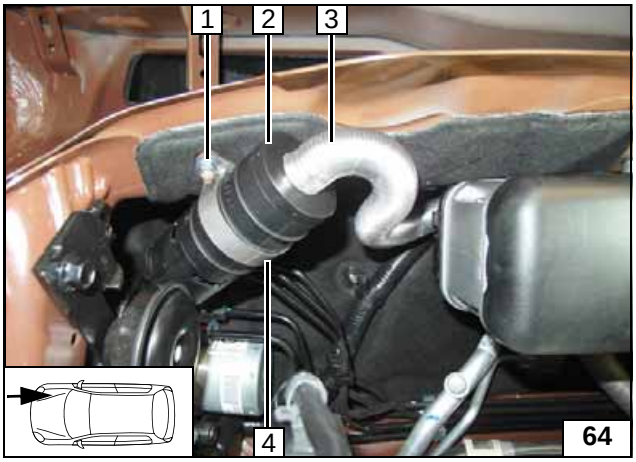
Connecting metering pump



Combustion Air

1 Remove and discard original vehicle plastic nut

Removing plastic nut

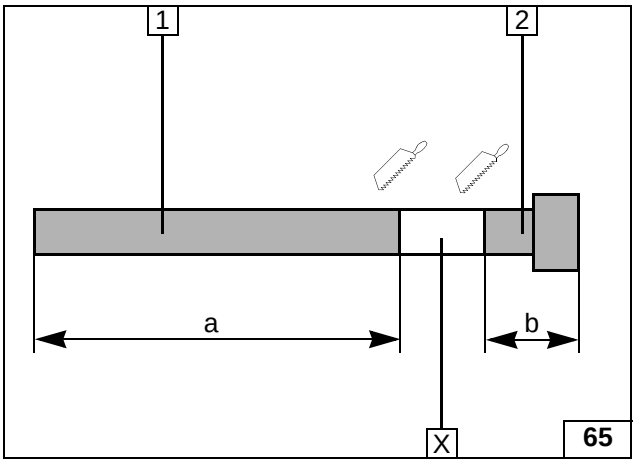


1 Original vehicle stud bolt, M6 flanged nut
2 Silencer
3 Combustion air pipe
4 52 mm dia. p-clamp

Installing combustion air silencer

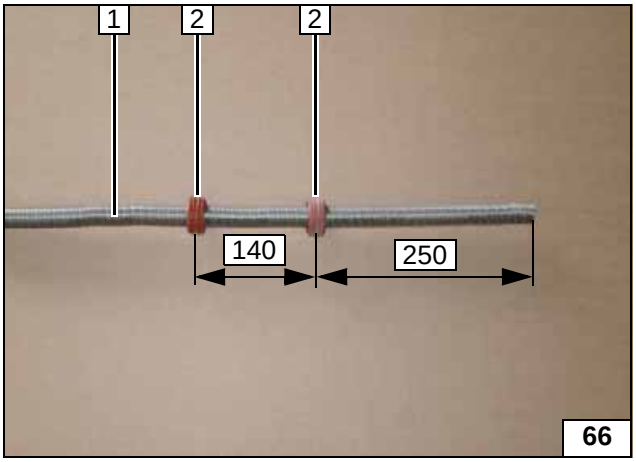
Exhaust Gas

Discard section **X**.



1 Exhaust pipe
a = 670
2 Exhaust end section
b = 50

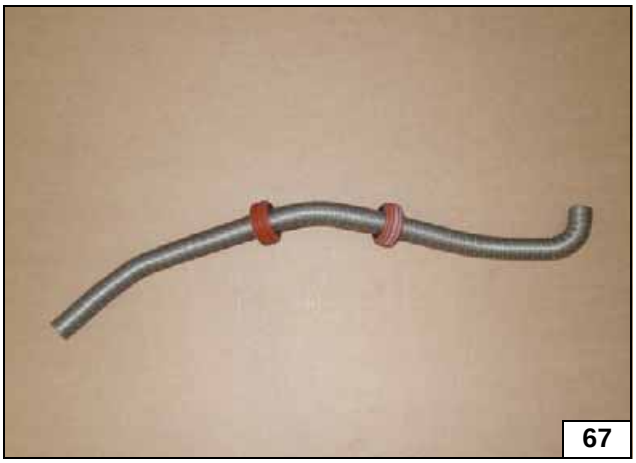
Cutting exhaust pipe to length



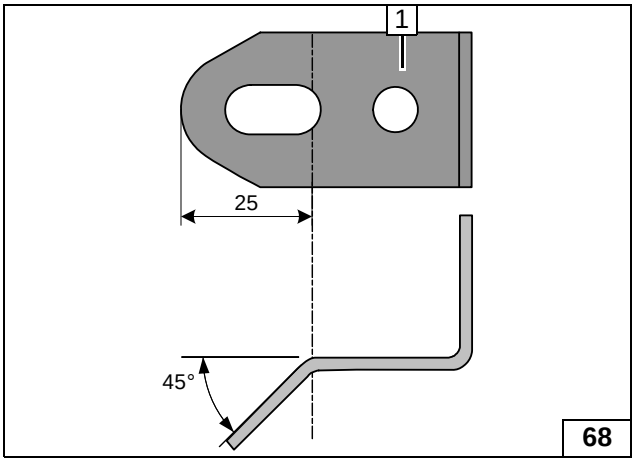
1 Exhaust pipe
2 Spacer bracket [2x]

Positioning spacer bracket

Bend exhaust pipe as shown.

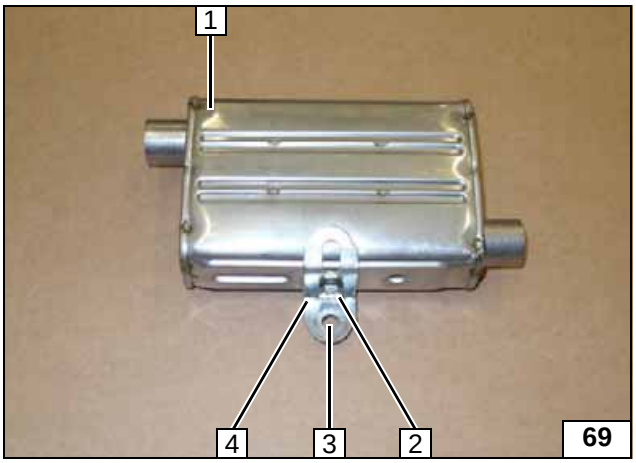


Bending exhaust pipe



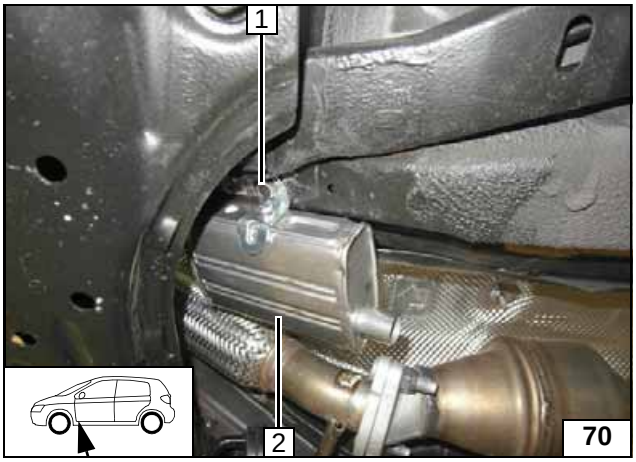
1 Angle bracket

Bending angle bracket



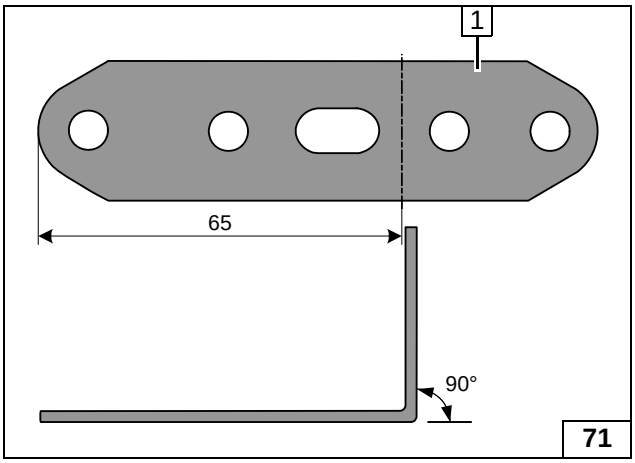
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Drill out hole to 8.5 mm dia.
4 Angle bracket

Premounting exhaust silencer



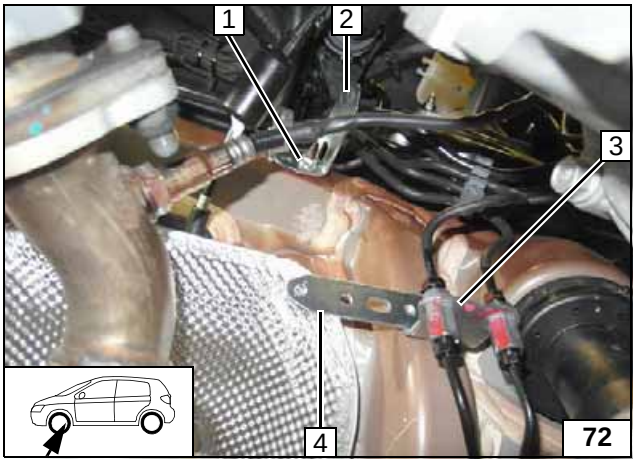
1 Original vehicle bolt
2 Silencer

Installing silencer



1 Perforated bracket

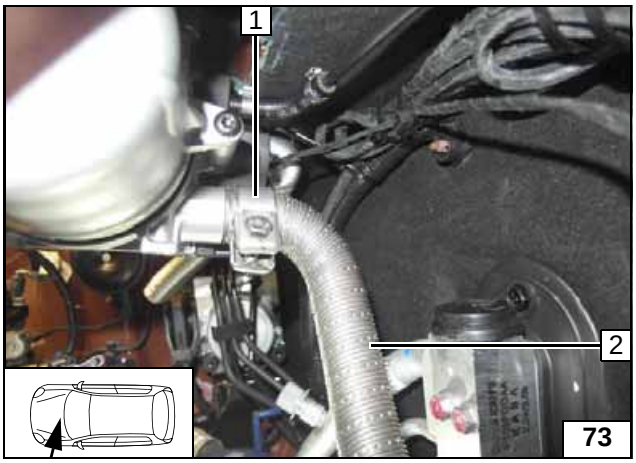
Bending perforated bracket



Install perforated bracket **4** on original vehicle bolt (hidden) at position **3**.

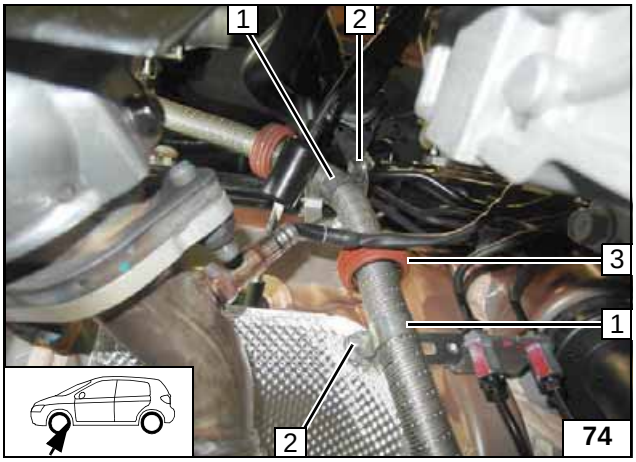
1 Original vehicle stud bolt, M6 flanged nut
2 Pre-bent perforated bracket

Installing perforated brackets



1 Hose clamp
2 Exhaust pipe

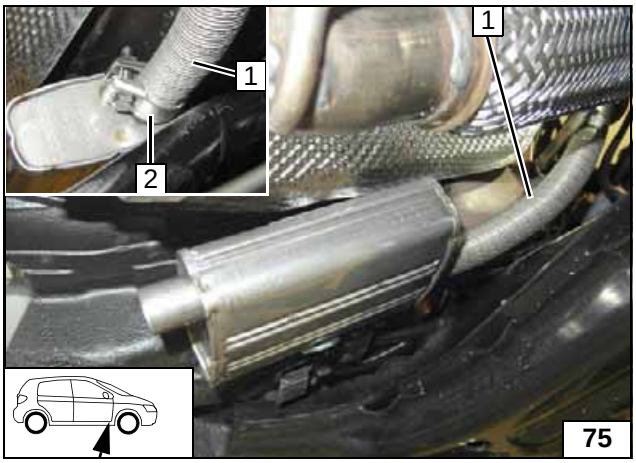
Installing exhaust pipe



Align spacer bracket **3** with original vehicle line.

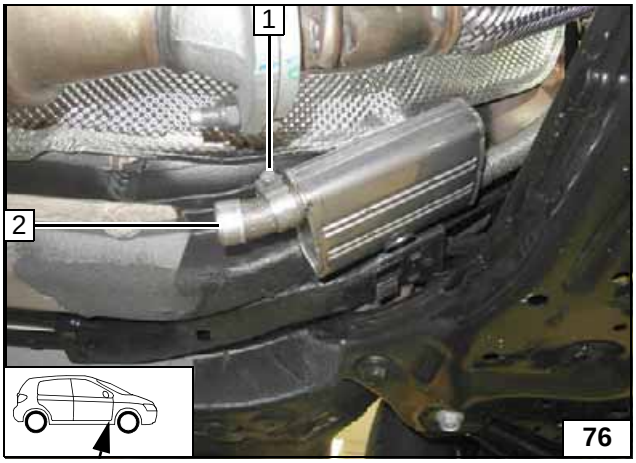
1 P-clamp [2x]
2 M6x20 bolt, flanged nut [2x]

Installing exhaust pipe



1 Exhaust pipe
2 Hose clamp

Installing exhaust pipe



1 Hose clamp
2 Exhaust end section

Installing exhaust end section

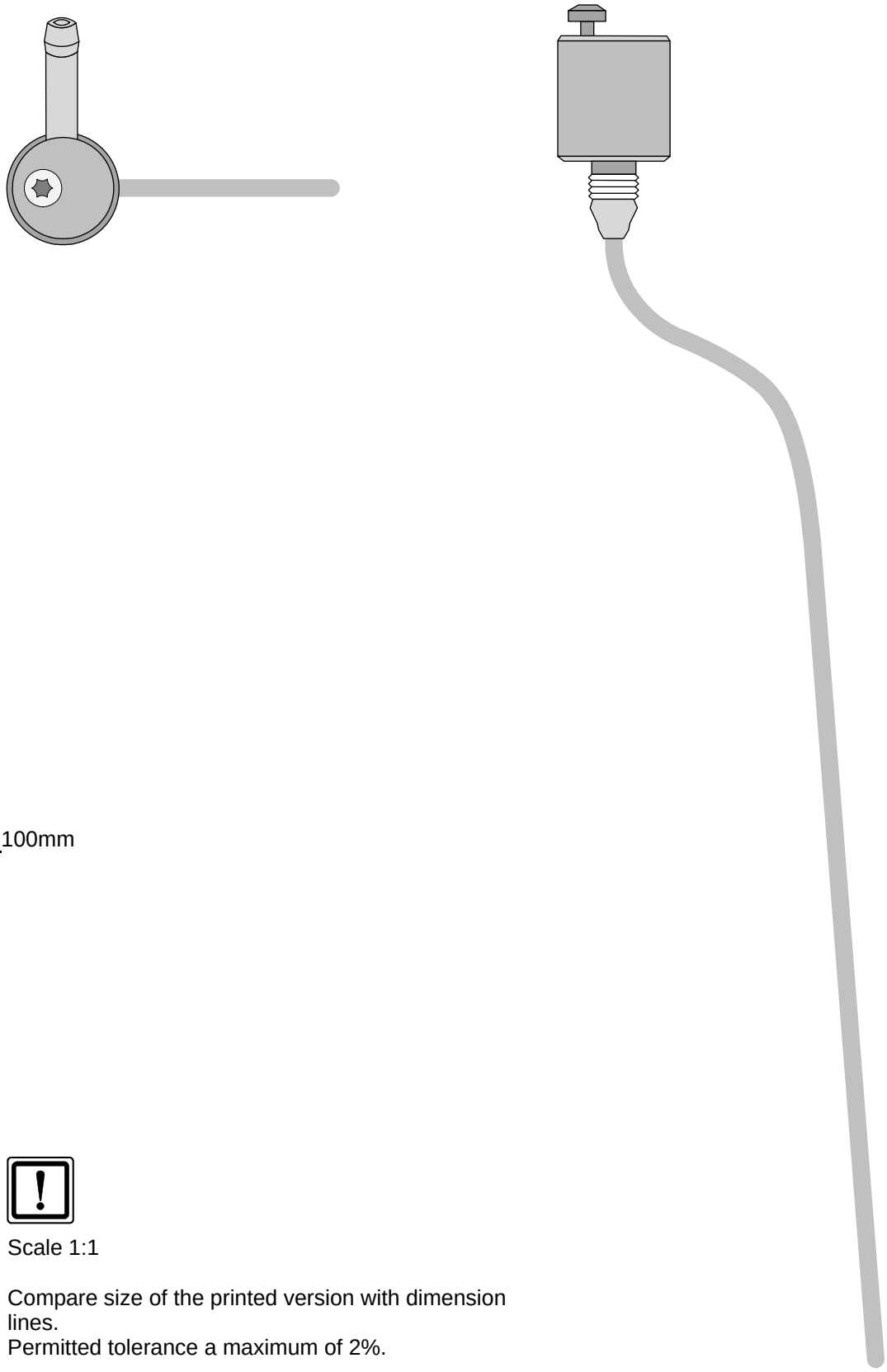
Final Work

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**
- **See installation instructions for initial start-up and function check**

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

FuelFix template



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 A/C

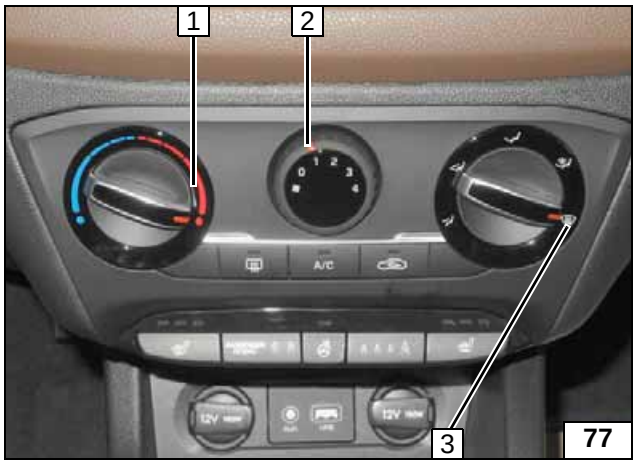
Please remove page and add to the vehicle operating instructions.

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.
Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

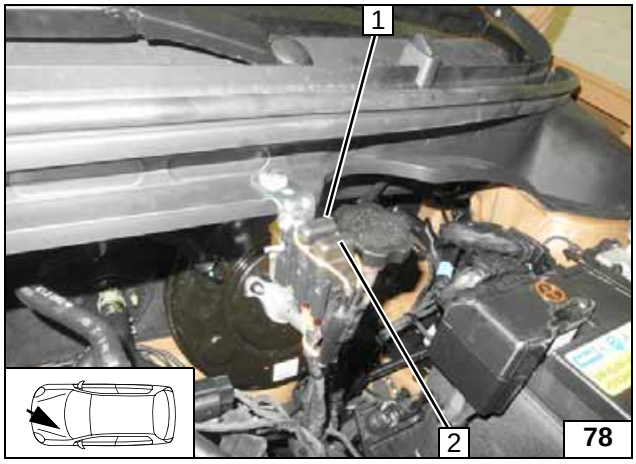
Before parking the vehicle, make the following settings:

A/C control panel



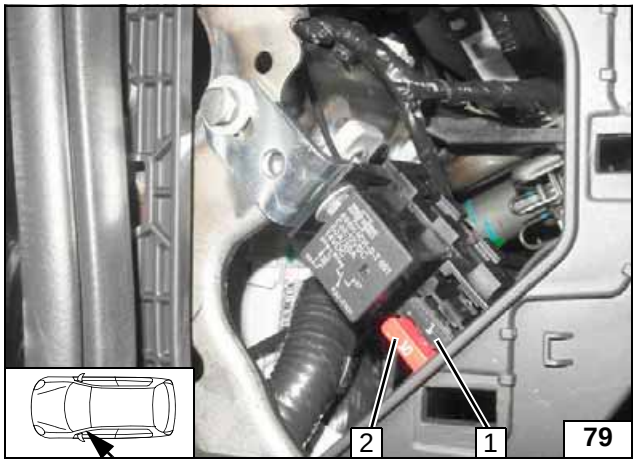
1 Set temperature to "HI"
2 Set fan to level "1", or max. "2"
3 Air outlet faces "upward" (windscreen)

Engine compartment fuses



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

Passenger compartment fuses



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

Webasto
Feel the Drive

Operating Instructions for Automatic A/C

Please remove page and add to the vehicle operating instructions.

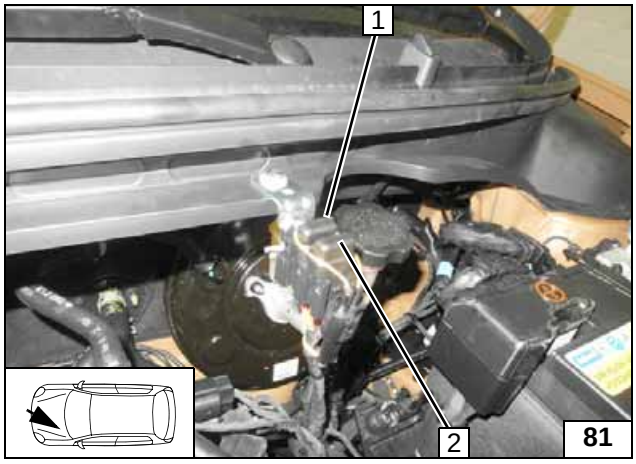
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

Before parking the vehicle, make the following settings:

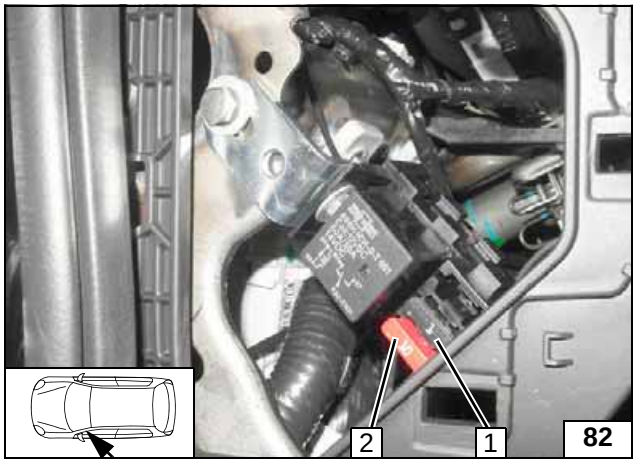
1 Set temperature to "HI"
2 Set fan to level "2", or max. "3"
3 Air outlet faces "upward" (windscreen)

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses