Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Kia Rio

Validity

Manufacturer	Model	Type	EG BE No. / ABE
Kia	Rio	UB	e11 * 2007 / 46 * 0195 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.4 P CVVT	Petrol	6-speed SG	80	1396	G4FA

SG = manual transmission

From model year 2011
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog lights
Euro 5 / Euro 6

Total installation time: approx. 7 hours

Kia Rio

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo in accordance with price list
- Installation kit with FuelFix Kia Rio 1.2 / 1.4 Petrol 2012: **1318003G**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

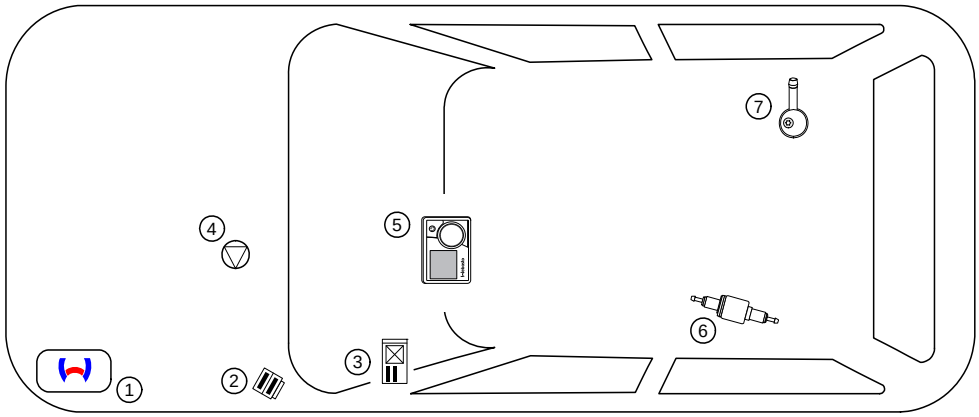
Installation instructions:

- 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 ThermoCall should be confirmed with the end customer.
- Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher 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 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).

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	Thermo Top 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 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 Kia Rio Petrol vehicles - for validity, see page 1 - from model year 2011 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this 'installation documentation'.

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

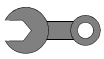
Dimensions
- All dimensions are in mm.

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.

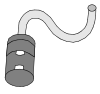
Mechanical System



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.

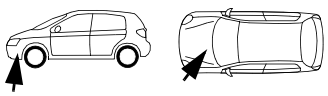
Specific risk of injury or fatal accidents.

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.

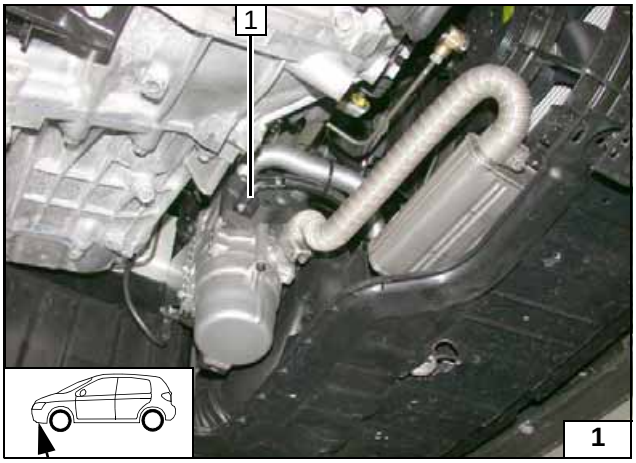
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the air filter completely, together with the intake hose.
- Disconnect and completely remove the battery together with the carrier.
- Remove the engine control unit.
- Remove the cover of the fuse and relay box in the engine compartment.
- Remove the left underride protection.
- Remove the left front wheel.
- Remove the left front wheel well trim.
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Remove the lower instrument panel trim on the driver's side.
- Remove the A/C control panel (only with automatic air-conditioning).

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

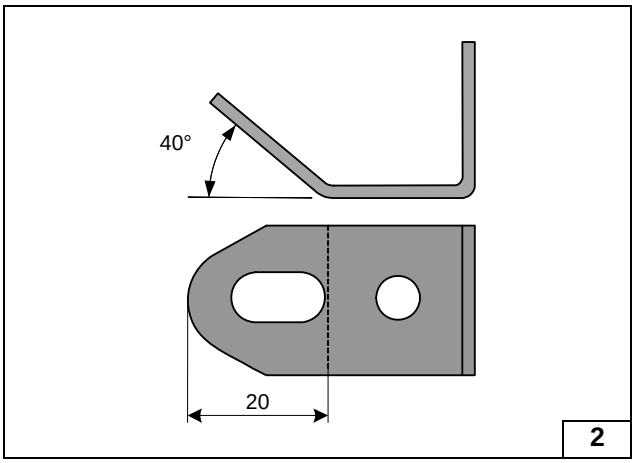
1 Heater

Installation location

Preparing Electrical System

All vehicles

Preparing angle bracket



2

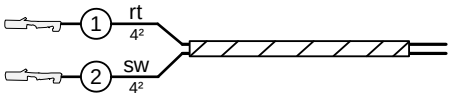
Wire sections retain their numbering in the entire document.

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

Assigning wires

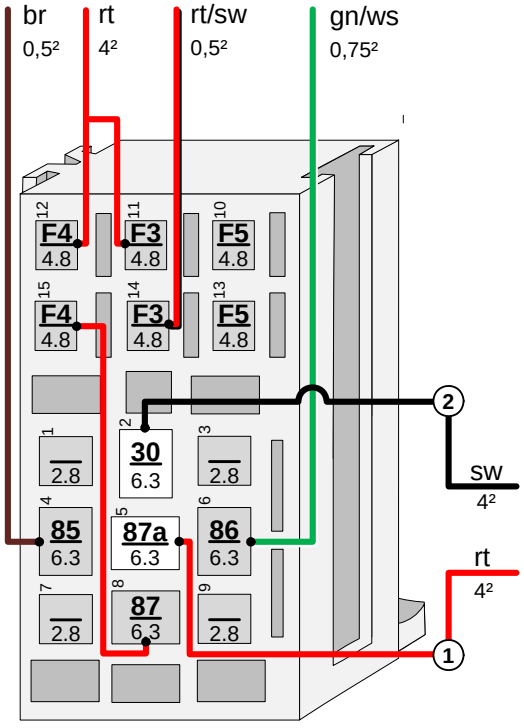
Manual air-conditioning

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness



3

Connecting wires to passenger compartment relay and fuse holder



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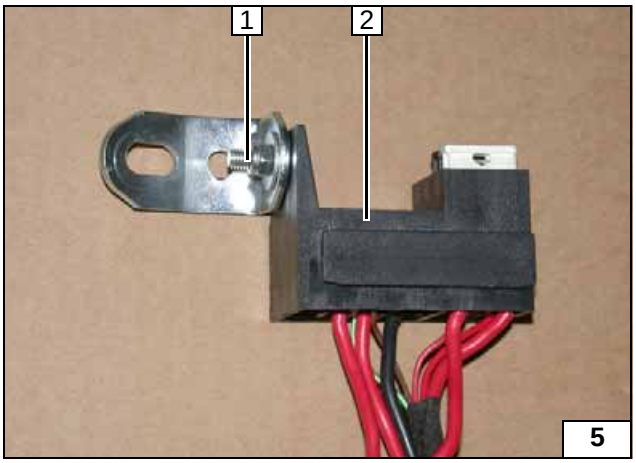
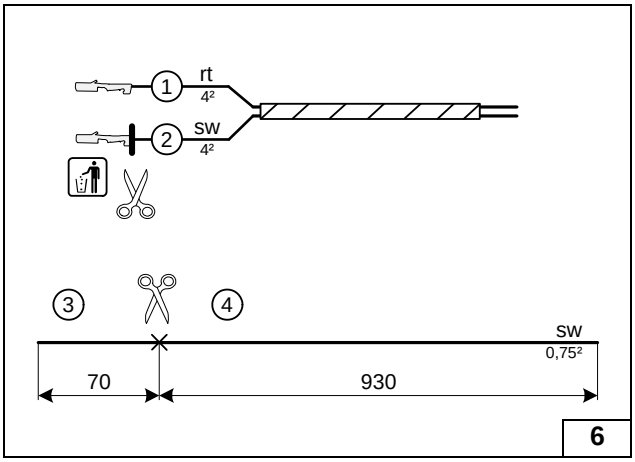


1 M5x16 bolt, pre-bent angle bracket, large diameter washer [2x], nut
2 Passenger compartment relay and fuse holder

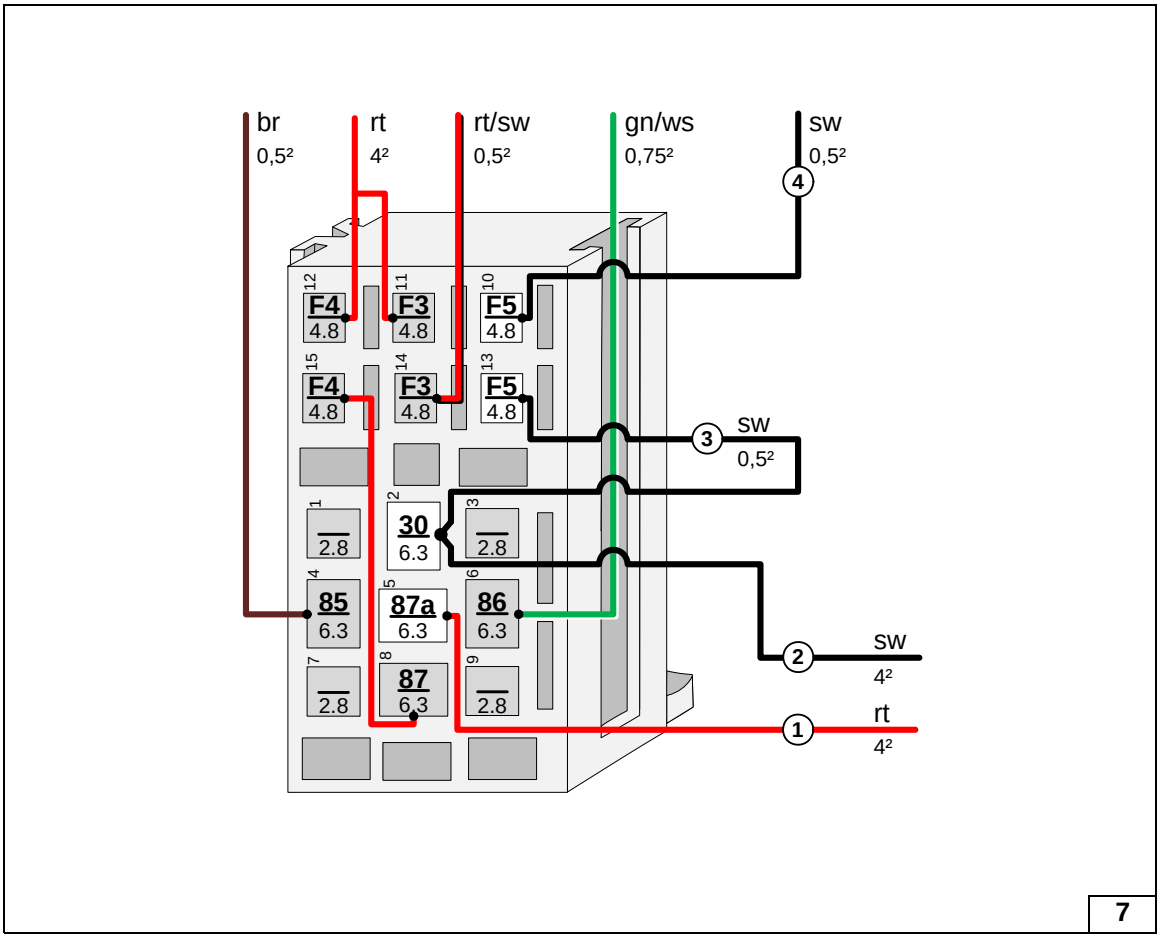
Premounting passenger compartment relay and fuse holder



Automatic air-conditioning

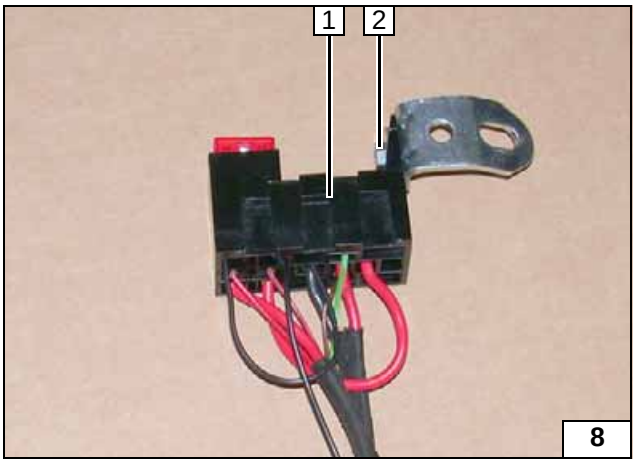
Pull wire section ④ into provided protective sleeving.

Cutting to length / assigning wires



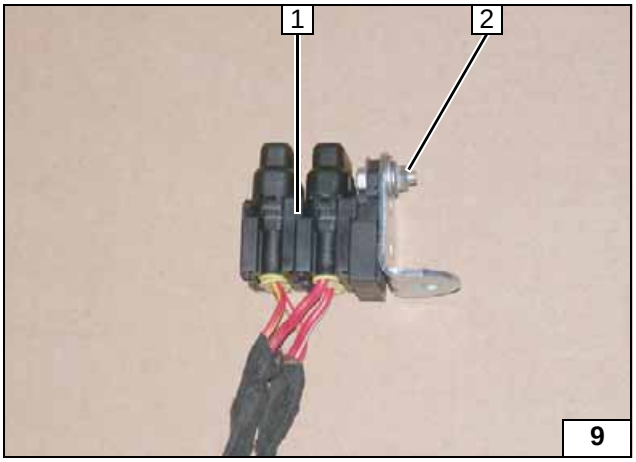
Connecting wires to passenger compartment relay and fuse holder

Premounting passenger compartment relay and fuse holder



1 Passenger compartment relay and fuse holder
2 M5x16 bolt, angle bracket, large diameter washer [2x], nut

Premounting engine compartment fuse holder

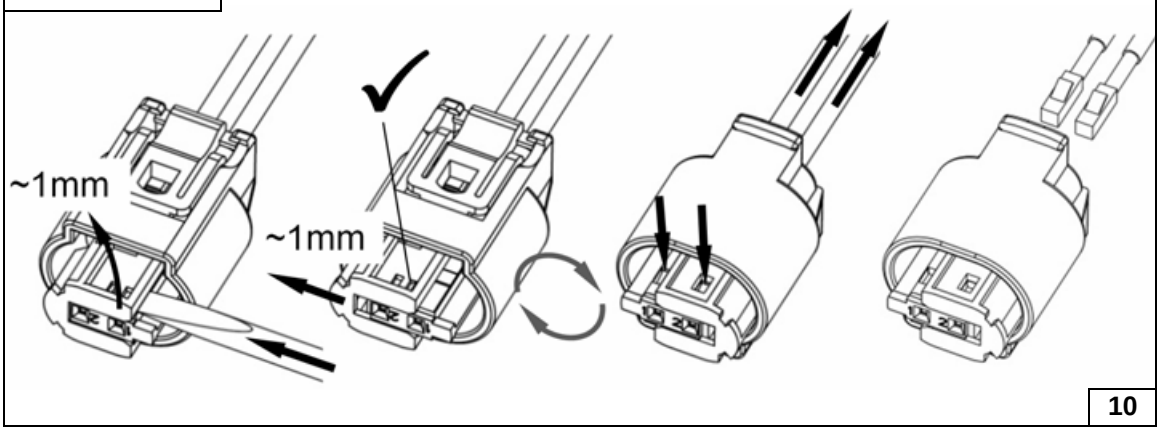


All vehicles

1 Fuse holder
2 M5x16 bolt, angle bracket, large diameter washer [2x], nut

Dismantling metering pump connector

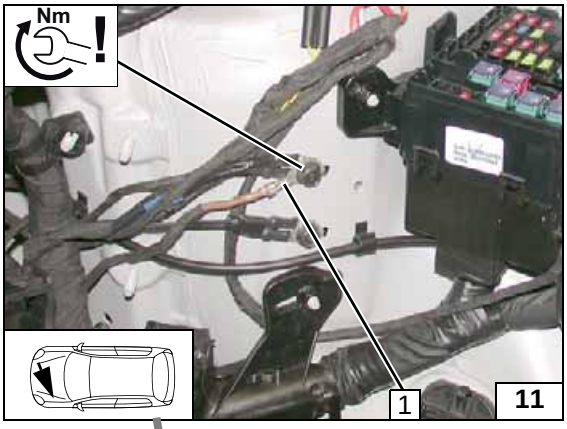
Connector X7



Electrical System

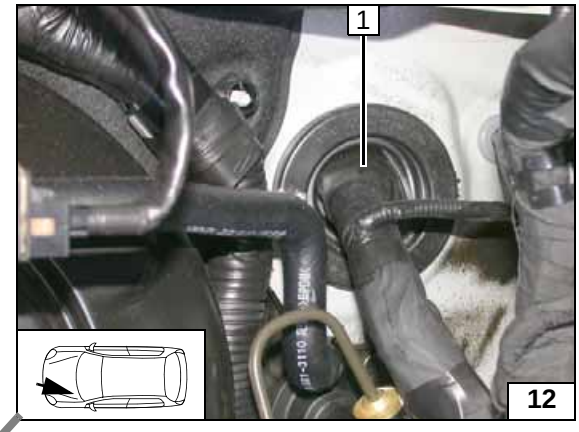
Earth wire

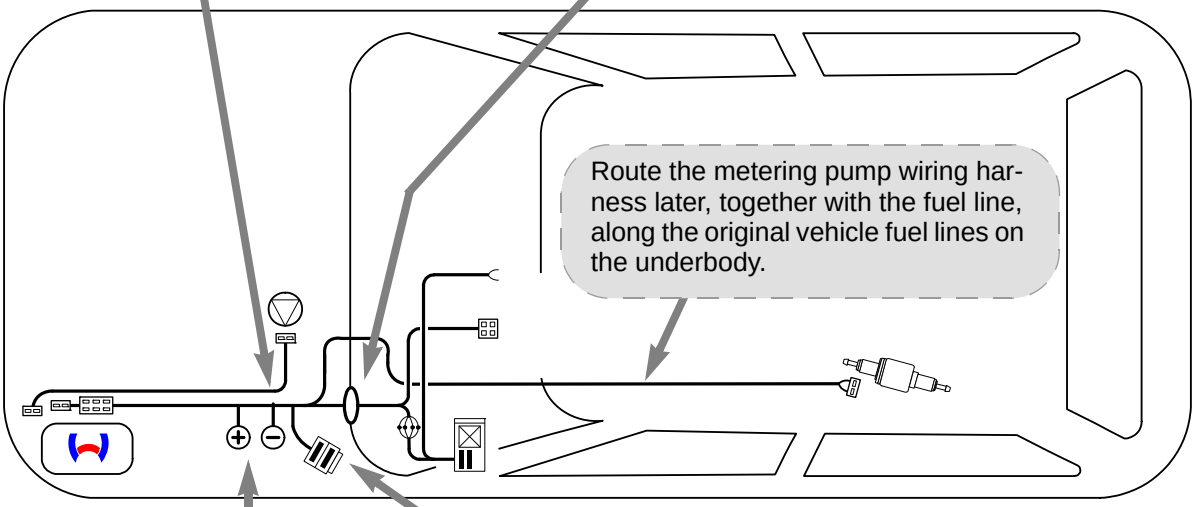
1 Earth wire on original vehicle earth support point



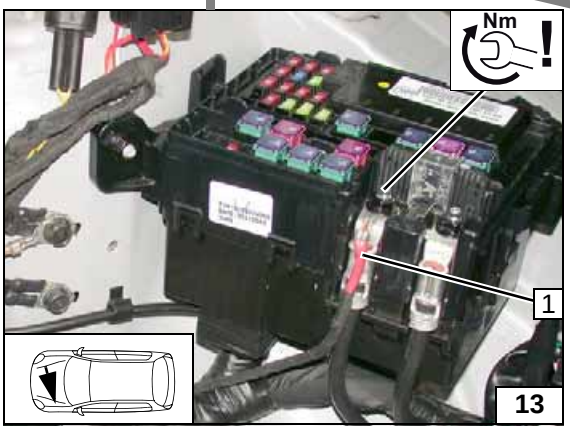
Wiring harness pass through

1 Protective rubber plug



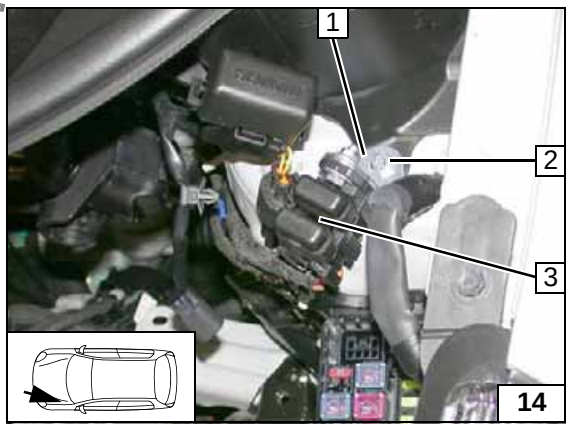


Wiring harness routing diagram



Positive wire

1 Positive wire on positive distributor

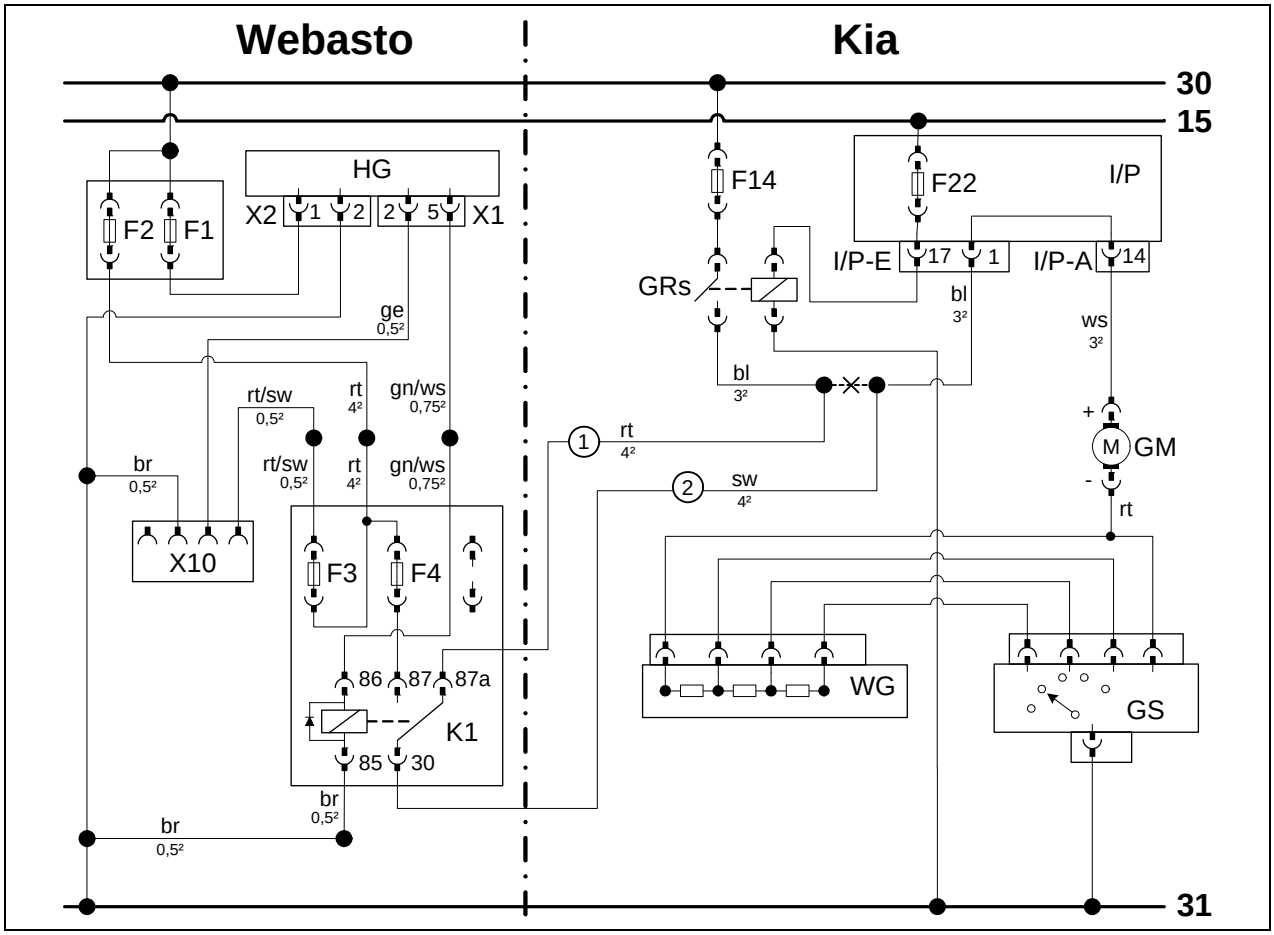


Engine compartment fuse holder

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

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

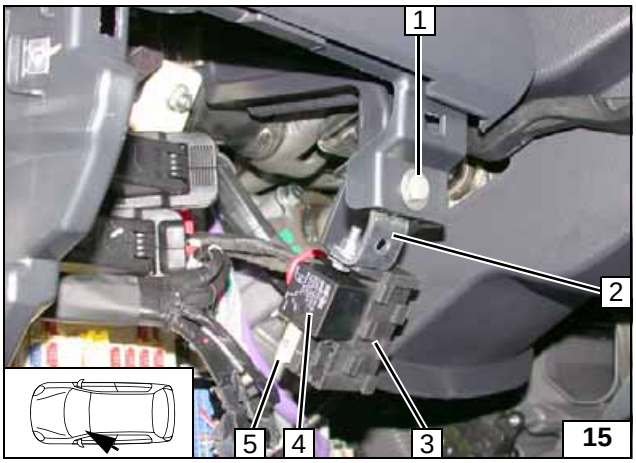
Manual Air-Conditioning Fan Controller



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	I/P	Instrument panel fuse box	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector	F22	10A fuse	ge	yellow
F1	20A fuse	I/P-A	Connector I/P	gn	green
F2	30A fuse	I/P-E	Connector I/P	br	brown
X10	4-pin connector of heater control	F14	40A fuse	ws	white
		GRs	Fan relay	bl	blue
F3	1A fuse	GM	Fan motor		
F4	25A fuse	WG	Resistor group	**X**	Cutting point
K1	Fan relay	GS	Fan switch	Wiring colours may vary.	

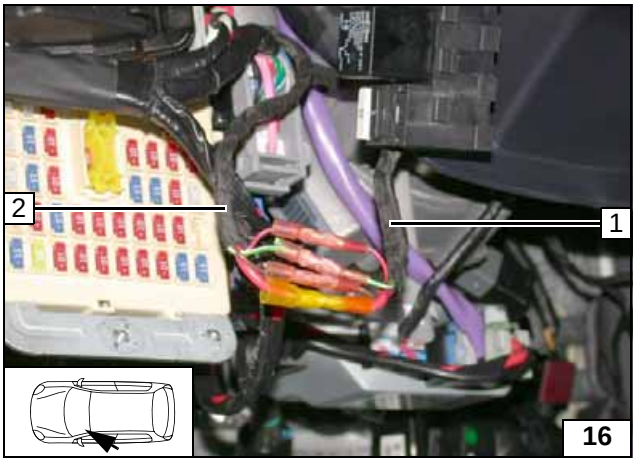
Legend



Remove original vehicle bolt at position **1**.

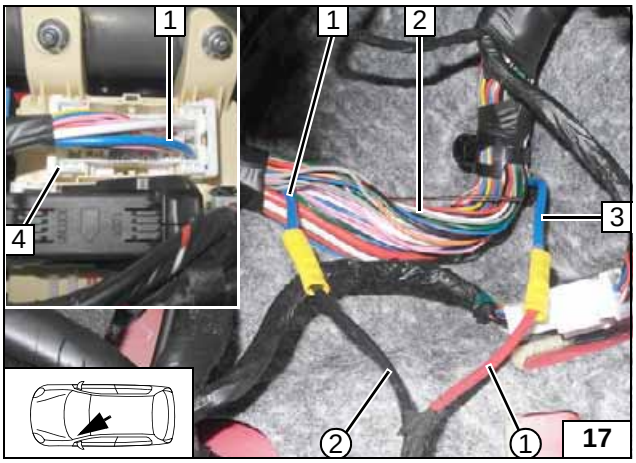
1 M6x25 bolt, washer, existing hole, 5mm shim, angle bracket, nut
2 Angle bracket
3 Passenger compartment relay and fuse holder
4 Relay K1
5 25A fuse F4

Installing passenger compartment relay and fuse holder



1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses

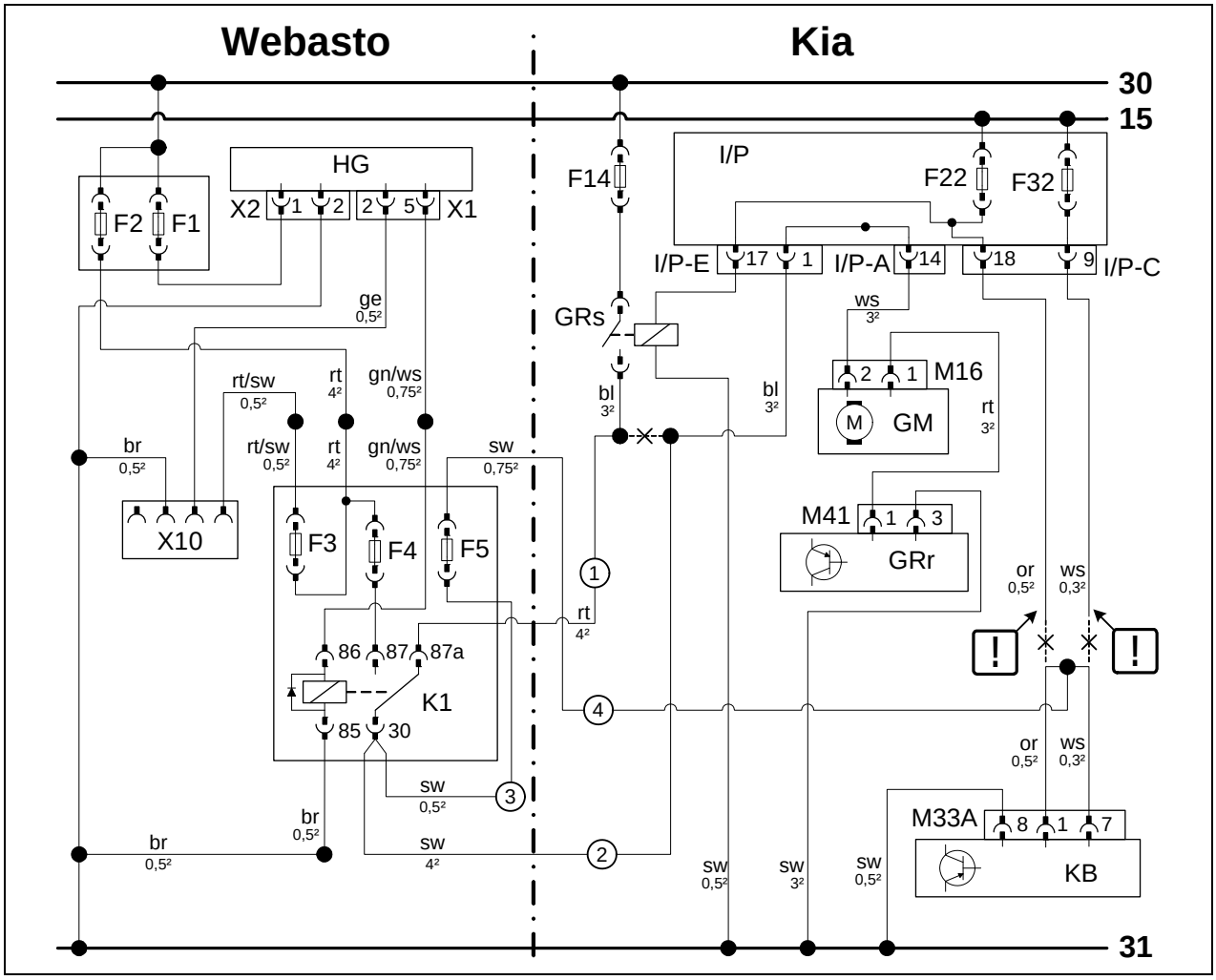


Identify blue (bl) wire (3²) of original vehicle wiring harness **2** that connects the fan relay to the fan motor by measuring, detach and separate it.

1 Blue (bl) wire of connector I/P-E/ pin 1
3 Blue (bl) wire of fan relay
4 Connector I/P-E (see small image)
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor

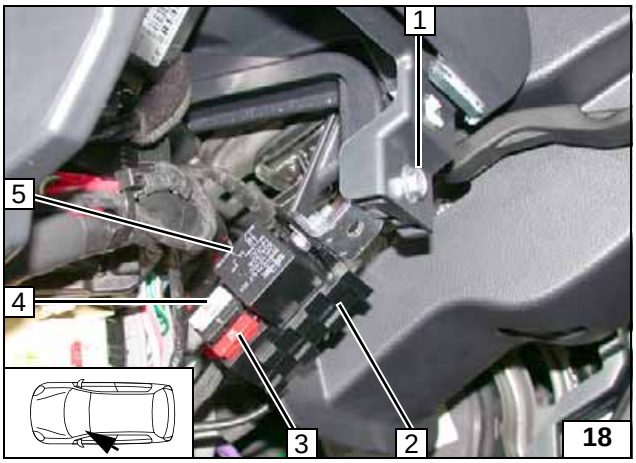
Automatic Air-Conditioning Fan Controller



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	I/P	Instrument panel fuse box	rt	red
X1	6-pin heater connector			sw	black
X2	2-pin heater connector	F22	10A fuse	ge	yellow
F1	20A fuse	F32	10A fuse	gn	green
F2	30A fuse	I/P-E	Connector I/P	or	orange
X10	4-pin connector of heater control	I/P-A	Connector I/P	ws	white
		I/P-C	Connector I/P	br	brown
F3	1A fuse	F14	40A fuse	or	orange
F4	25A fuse	GRs	Fan relay	bl	blue
F5	10A fuse	GM	Fan motor		
K1	Fan relay	M16	2-pin connector of GM		
		GRr	Fan controller	**X**	Cutting point
		M41	4-pin connector of GRr	!	Insulate wire end and tie back
		KB	A/C control unit		
		M33A	8-pin connector of KB	Wiring colours may vary.	

Wiring diagram

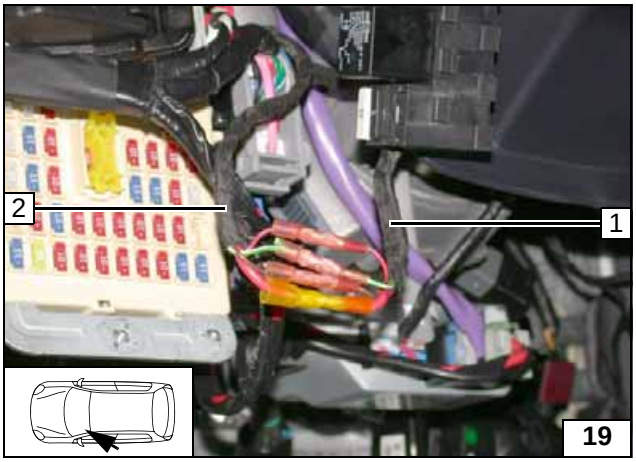
Legend



Remove original vehicle bolt at position **1**.

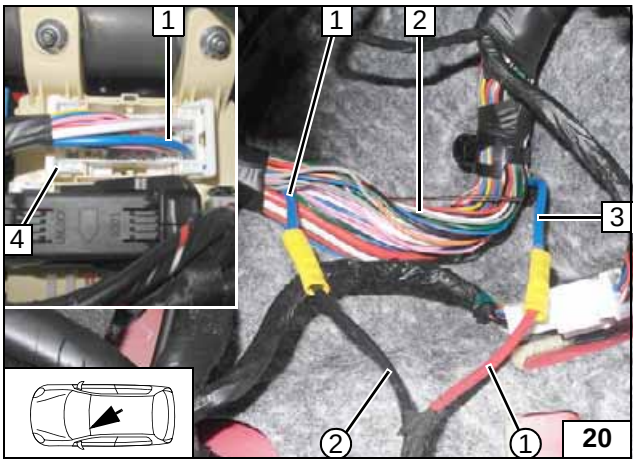
1 M6x25 bolt, washer, existing hole, 5mm shim, angle bracket, nut
2 Passenger compartment relay and fuse holder
3 10A fuse F5
4 25A fuse F4
5 Relay K1

Installing passenger compartment relay and fuse holder



1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



Identify blue (bl) wire (3²) of original vehicle wiring harness **2** that connects the fan relay to the fan motor by measuring, detach and separate it.

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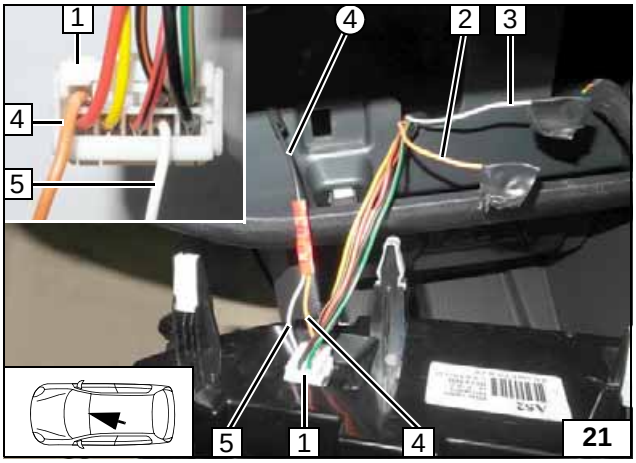
3 Blue (bl) wire of fan relay
4 Connector I/P-E (see small image)
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

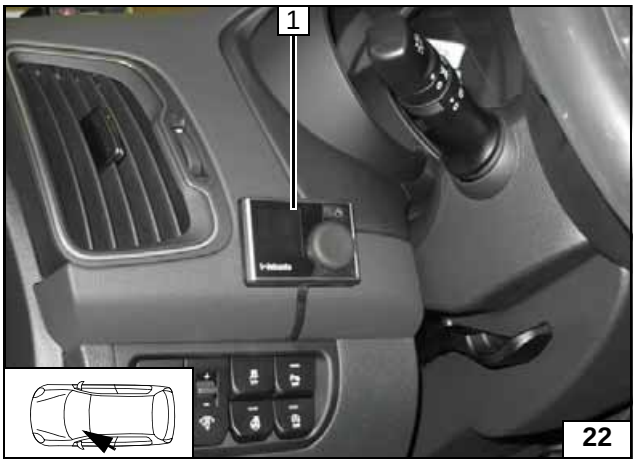
Connecting fan motor



Connection to 10-pin connector M33A **1** of A/C control unit (see small image). Insulate and tie back orange (or) wire **2** and white (ws) wire **3**.

4 Orange (or) wire of 10-pin connector M33A, pin 1
5 White (ws) wire of 10-pin connector M33A, pin 7
④ Black (sw) wire of fuse F5

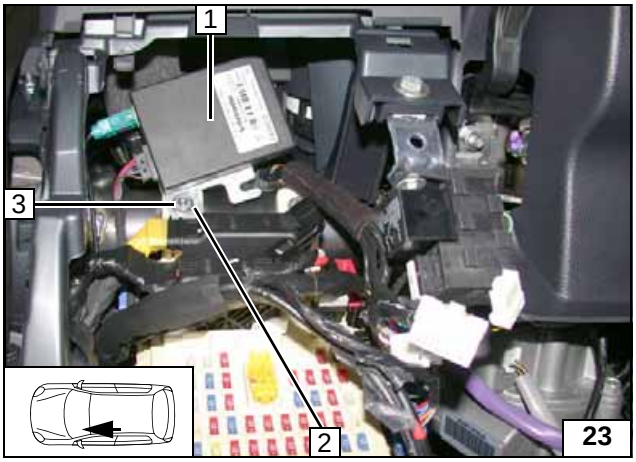
Connecting A/C control unit



MultiControl CAR Option

1 MultiControl CAR

Installing MultiControl CAR

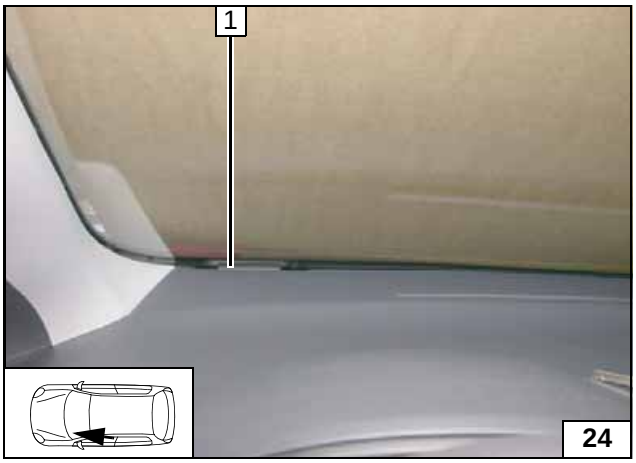


Remote Option (Telestart)

Drill out hole in bracket of receiver **2** to 7mm dia.

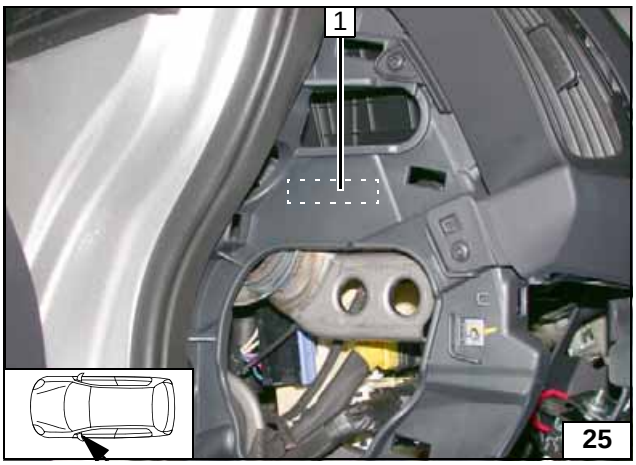
1 Receiver
3 Original vehicle stud bolt, flanged nut

Installing receiver



1 Aerial

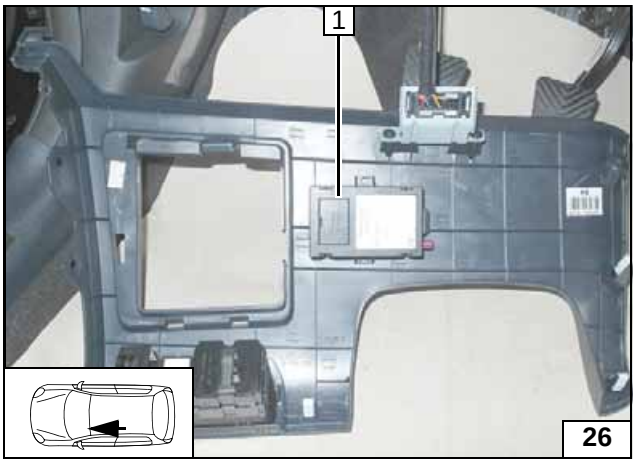
Installing aerial



Temperature sensor T100 HTM

Fasten temperature sensor **1** using double-sided adhesive tape.

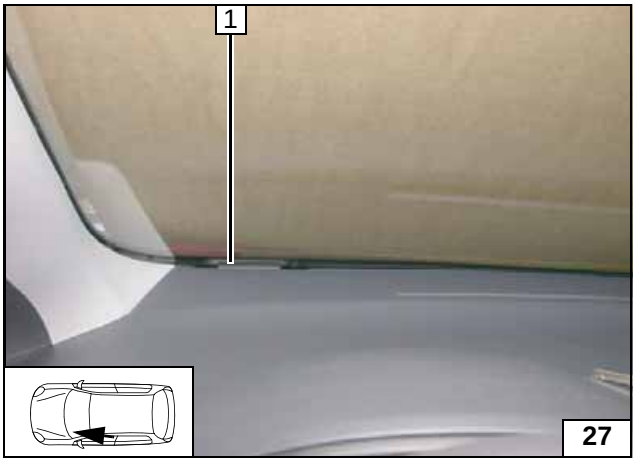
Installing temperature sensor



ThermoCall Option

Fasten receiver **1** with double-sided adhesive tape.

Installing receiver

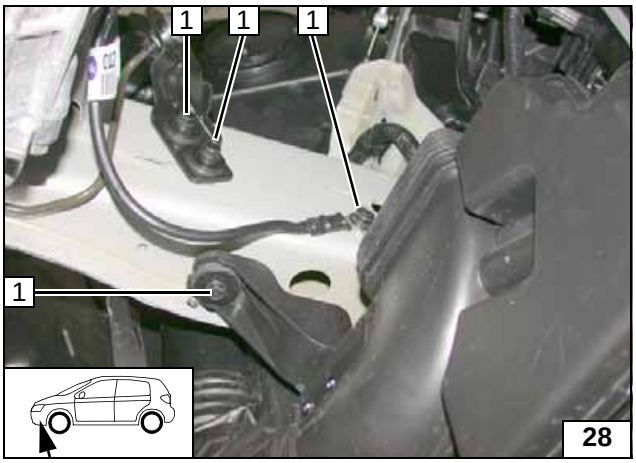


1 Aerial (optional)

Installing aerial

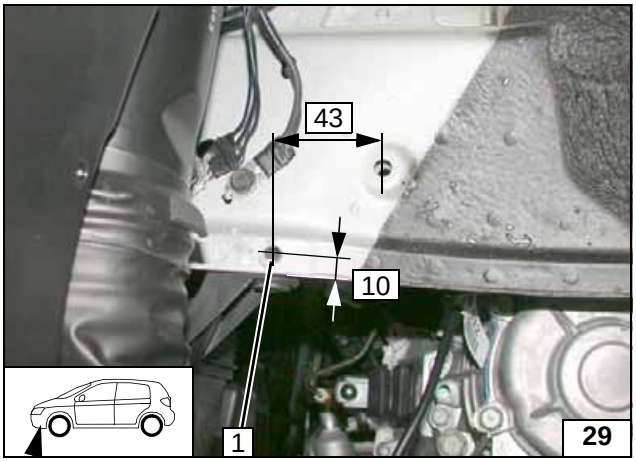
Preparing Installation Location

Remove original vehicle bolts **1** [4x], will be reused.



Preparing installation location

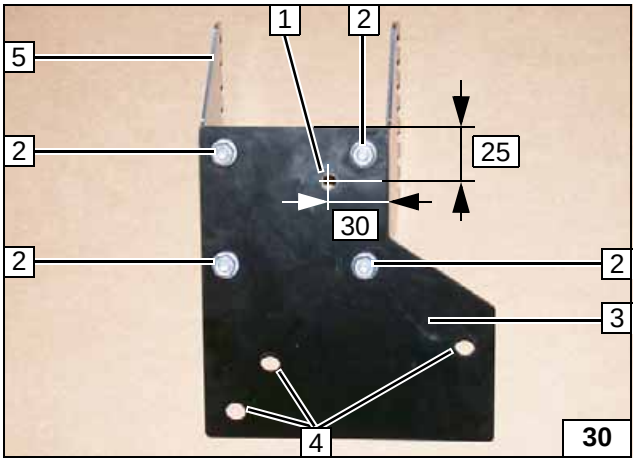
Copy hole pattern **1** for 7mm dia. hole and drill.



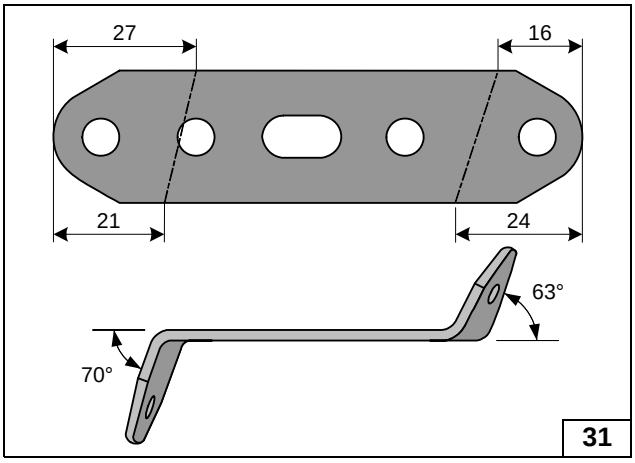
Preparing installation location

Install bracket **5** and retaining plate **3**, copy hole pattern **1** for 7mm dia. hole and drill.

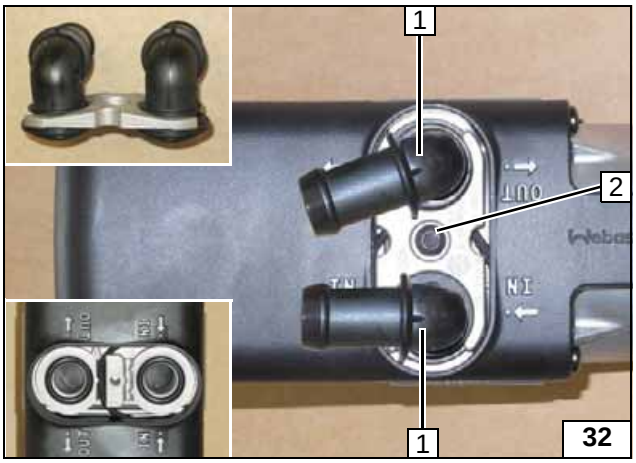
2 M6x12 bolt, flanged nut [4x each]
4 Drill hole to 12mm dia., coat with corrosion protection [3x]



Preparing bracket



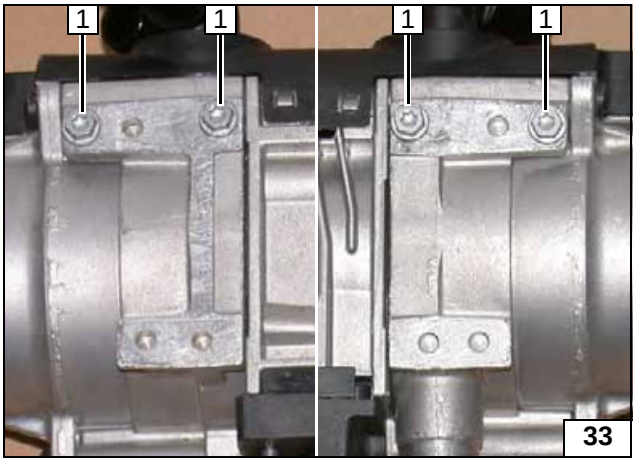
Bending perforated bracket



Preparing Heater

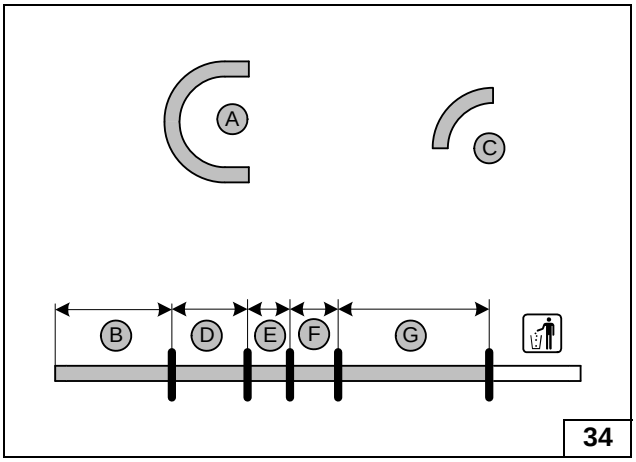
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



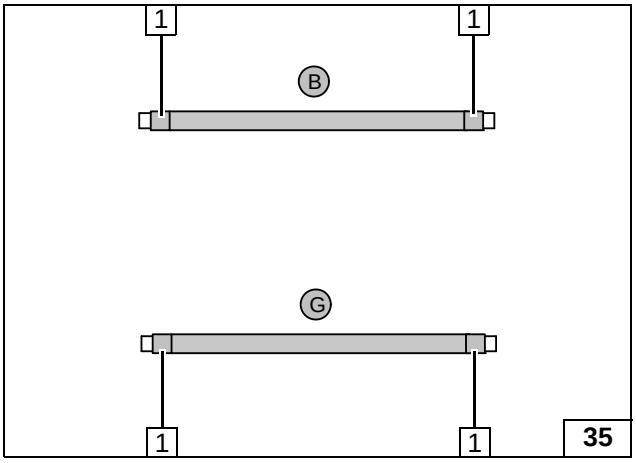
Screw 5x13 self-tapping bolts **1** [4x] into existing holes by a max. of 3 thread turns.

Premounting bolts loosely



A = 180°, 18mm dia.
B = 340
C = 90°, 18mm dia.
D = 200
E = 110
F = 150
G = 550

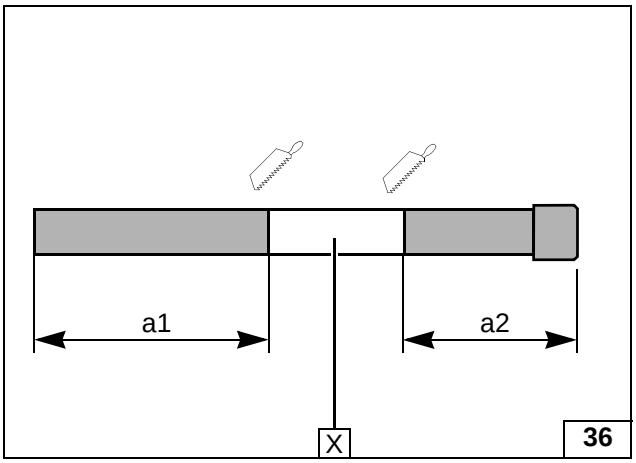
Cutting hoses to length



Slide braided protection hoses onto hoses **B** and **G** and cut to length. Cut heat shrink plastic tubing to size.

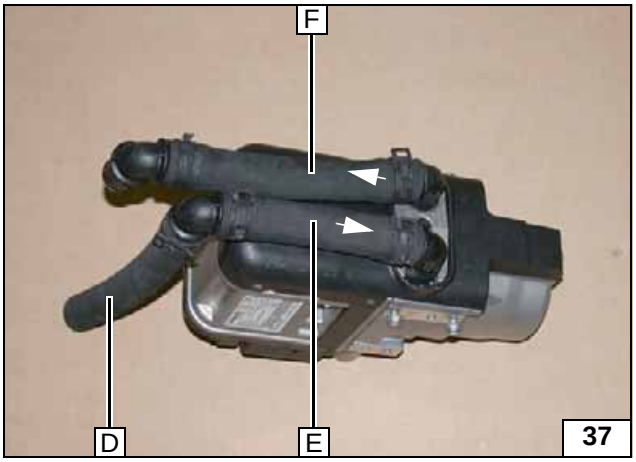
1 50 mm long heat shrink plastic tubing [4x]

Preparing hoses



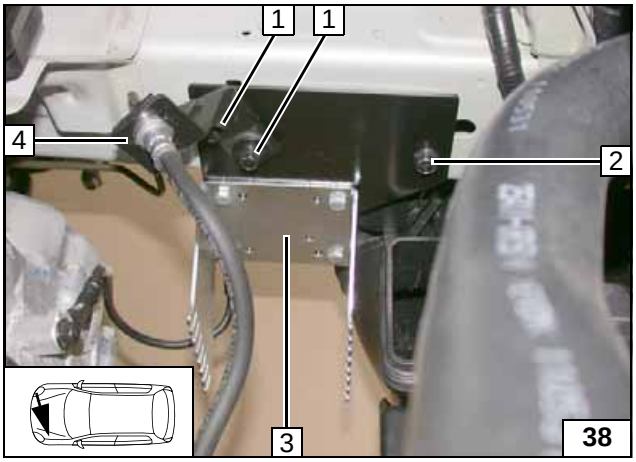
a1 = 380
a2 = 100
X =

Preparing exhaust pipe



All spring clips = 25 mm dia.
All connecting pipes = 90°, 18x18 mm dia.

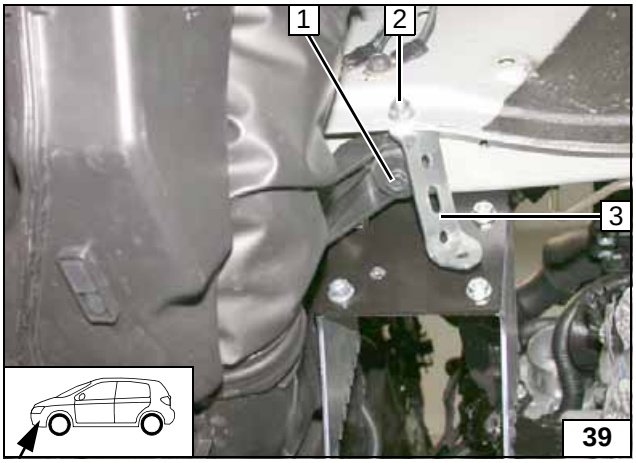
Premounting hoses



Installing Bracket

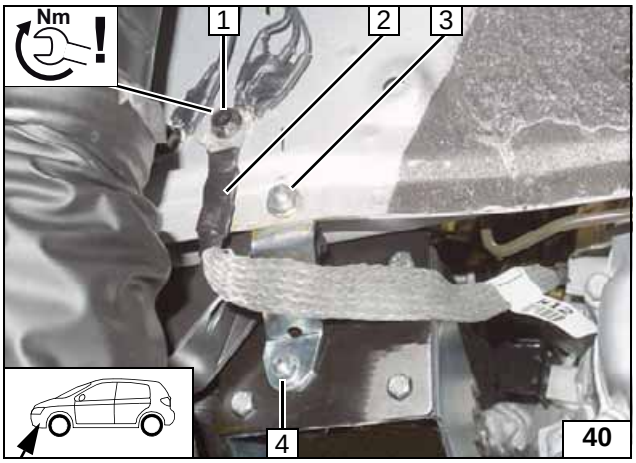
1 Original vehicle bolts [2x]
2 Original vehicle bolt
3 Bracket
4 Original vehicle bracket

Installing bracket



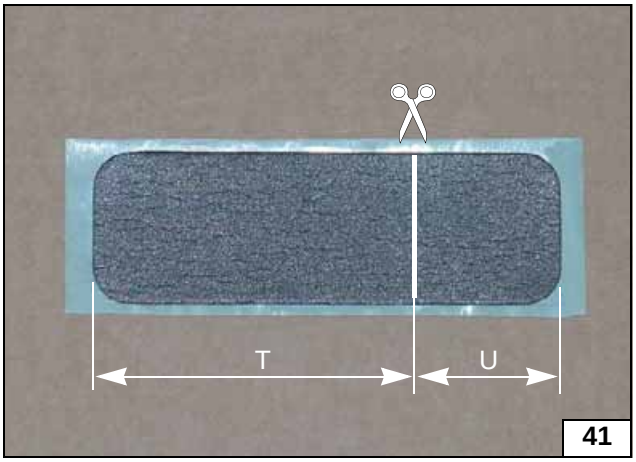
1 Original vehicle bolt
2 M6x16 bolt, flanged nut
3 Loosely mount perforated bracket

Premounting perforated bracket



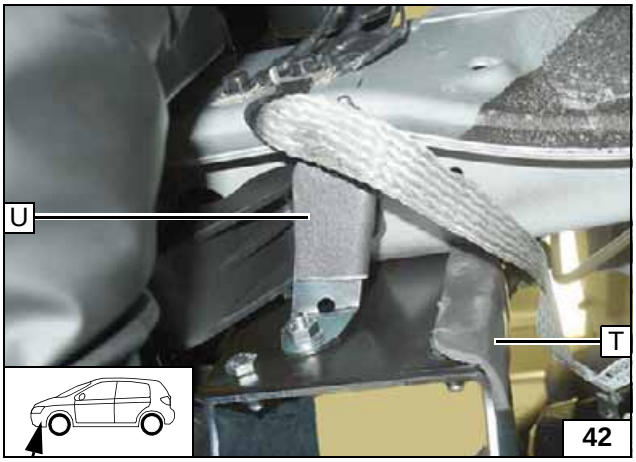
1 Original vehicle bolts
2 Original vehicle earth cable
3 Tighten screw fitting
4 M6x16 bolt, flanged nut

Installing perforated bracket and earth cable

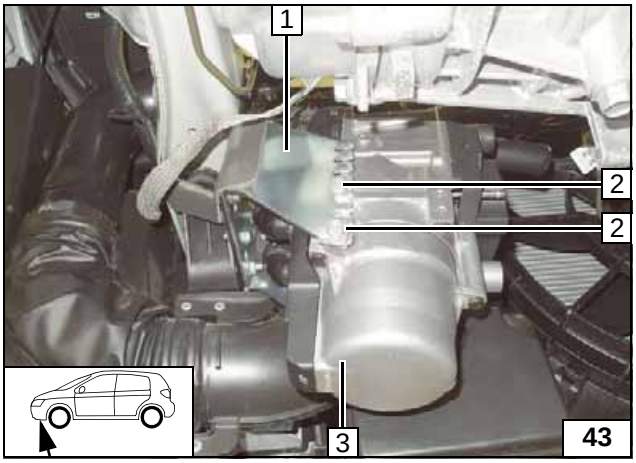


T = 80
U = 40

Cutting self-adhesive foam to size



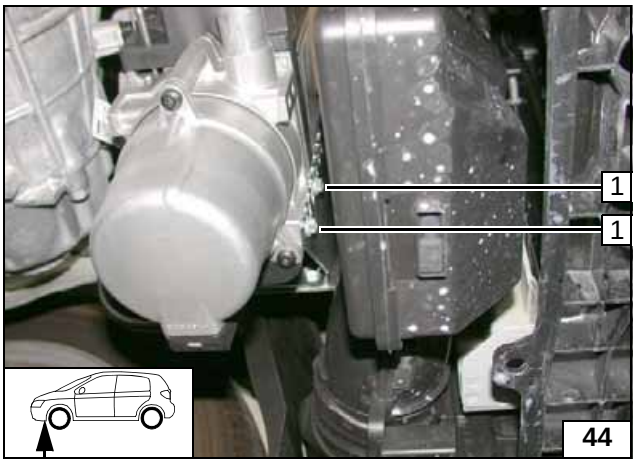
Installing self-adhesive foam to size



Installing Heater

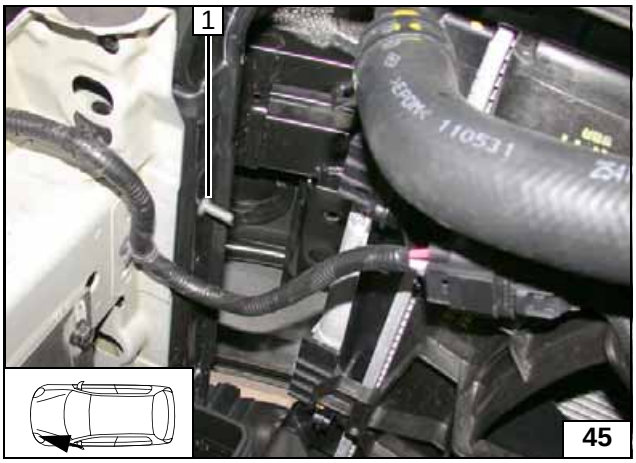
Insert heater **3** in bracket **1** and tighten self-tapping bolts **2** [2x].

Installing heater



Tighten self-tapping bolts **1** [2x].

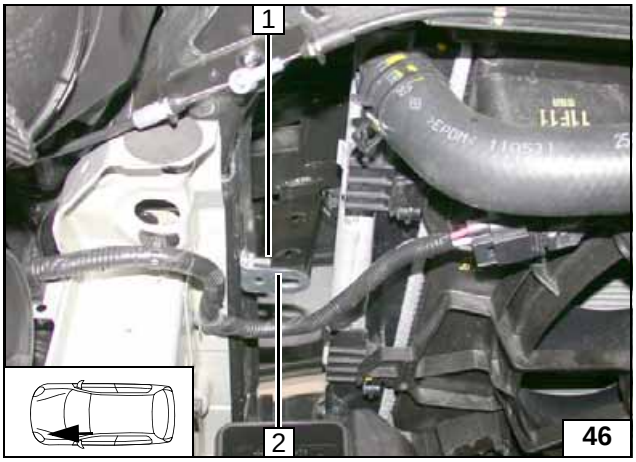
Installing heater



Combustion Air

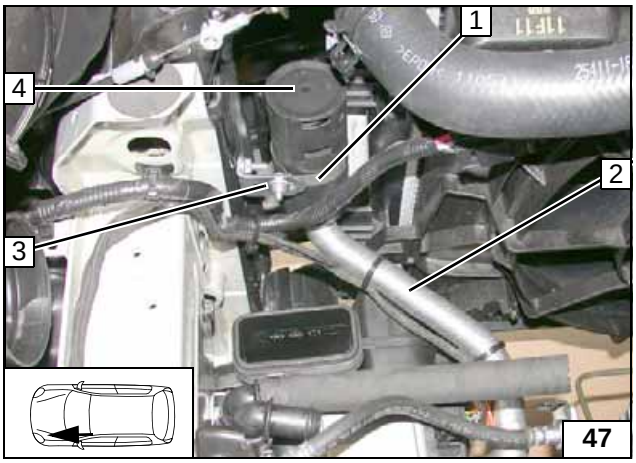
Insert M6x20 bolt **1** with pin lock in original vehicle hole.

Inserting bolt



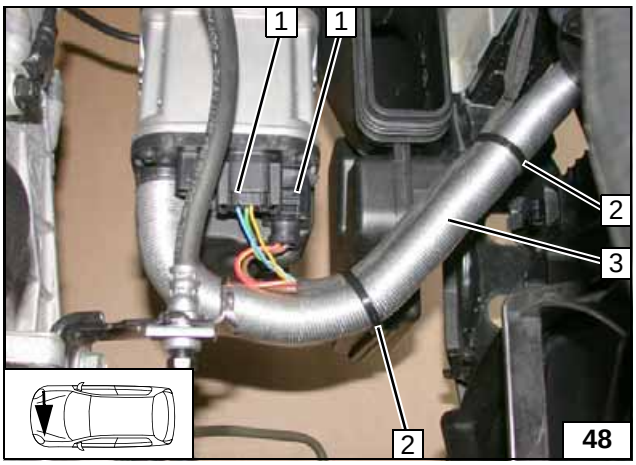
Install angle bracket **2** to bolt **1** using flanged nut.

Installing angle bracket



1 51mm dia. p-clamp
2 Combustion air pipe
3 M5x16 bolt, large diameter washer, flanged nut
4 Silencer

Installing combustion air pipe and silencer



1 Heater wiring harness connector [2x]
2 Cable tie
3 Combustion air pipe

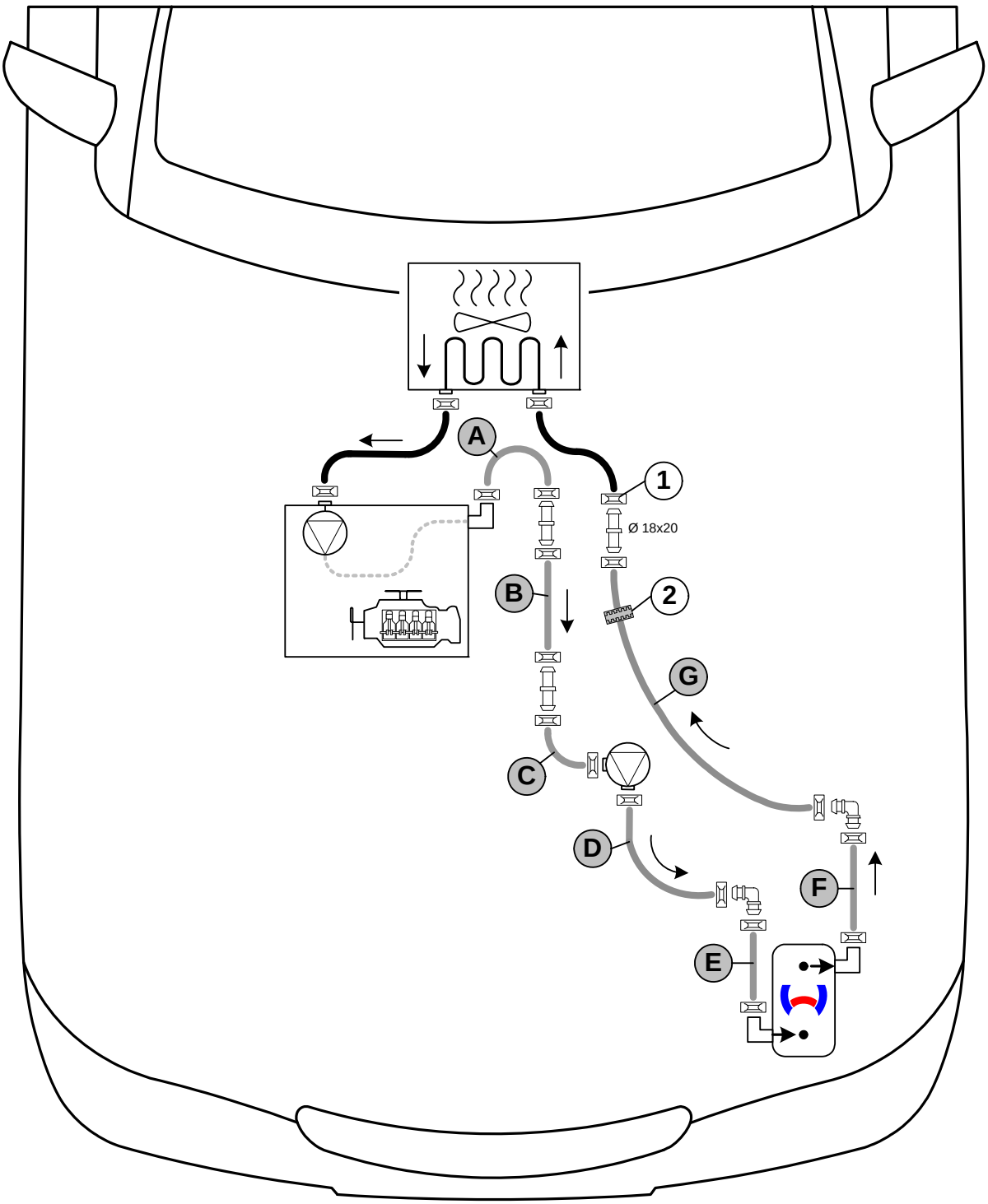
Installing heater wiring harness

Coolant Circuit

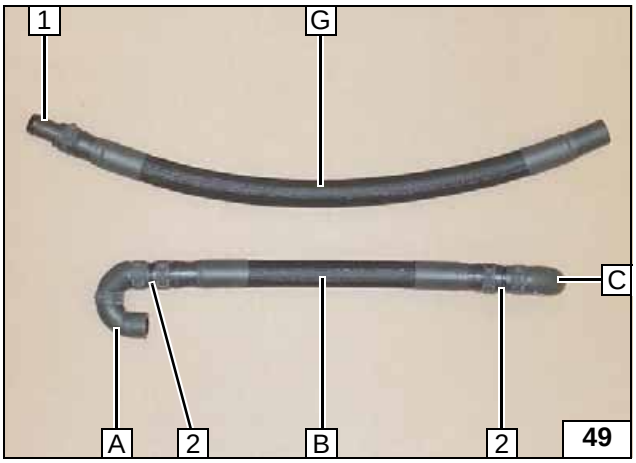
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



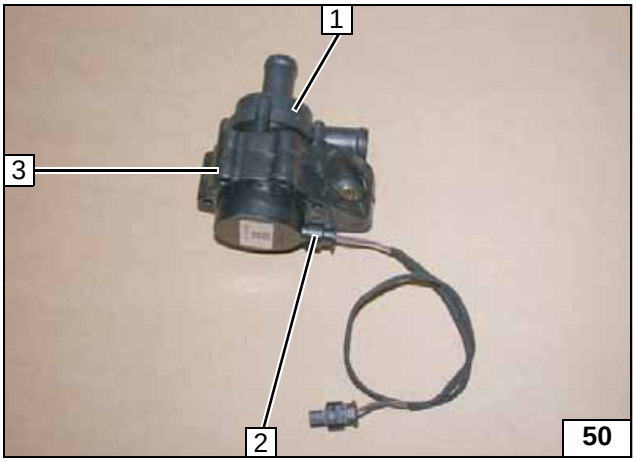
All spring clips without a specific designation = 25 mm dia. **1** = Original vehicle spring clip .
2 = Black (sw) rubber isolator . All connecting pipes without a specific designation and = 18x18mm dia.



All spring clips = 25mm dia.!

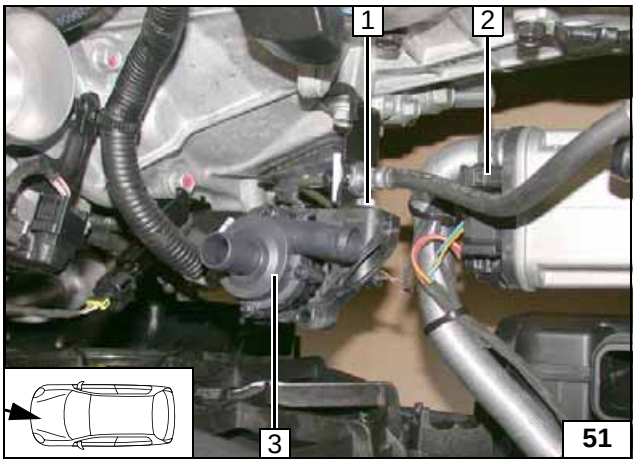
1 18x20 connecting pipe
2 18x18 connecting pipe [2x]

Preparing hoses



1 Circulating pump
2 Wiring harness of circulating pump
3 Mounting

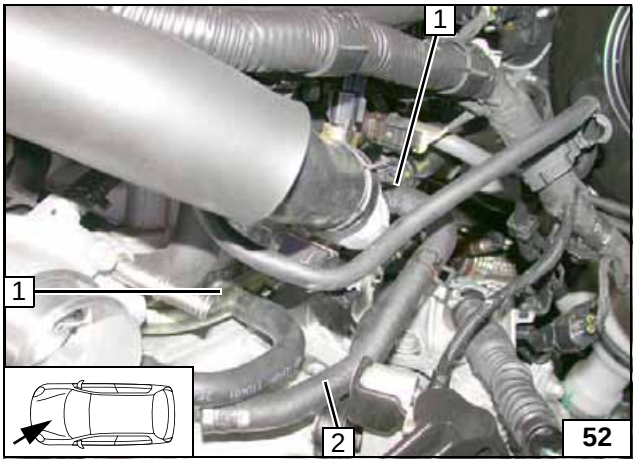
Preparing circulating pump



Ensure sufficient distance from neighbouring components.

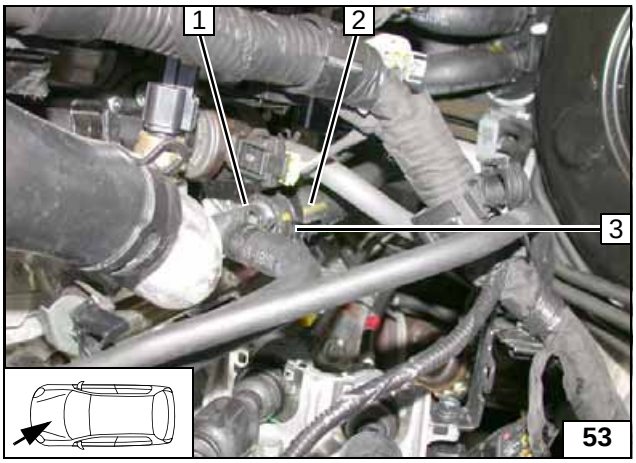
1 M6x25 bolt, original vehicle hole, flanged nut
2 Wiring harness of circulating pump
3 Circulating pump

Installing circulating pump



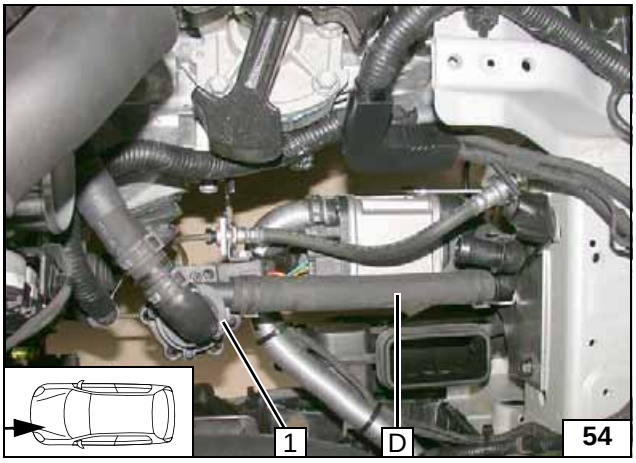
Original vehicle hose **2** has been removed for illustrative purposes. Twist original vehicle spring clips **1** [2x] upwards.

Preparing hose routing



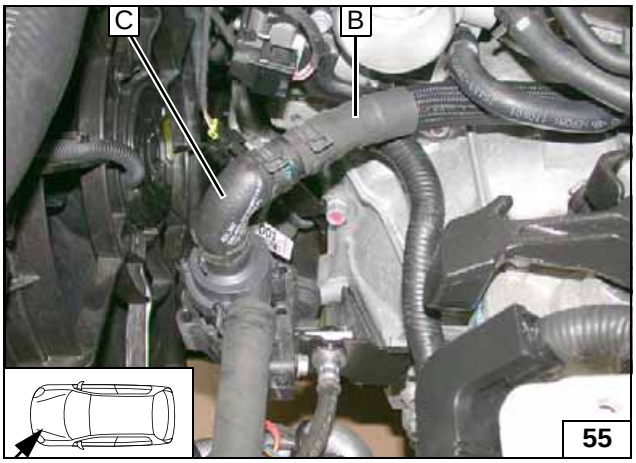
1 Engine outlet connection piece
2 Remove hose section of engine outlet
3 Original vehicle spring clip will be re-used.

Cutting point

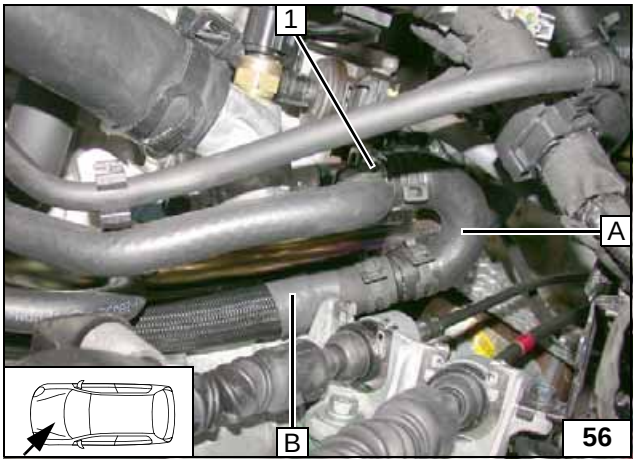


1 Circulating pump

Connecting circulating pump

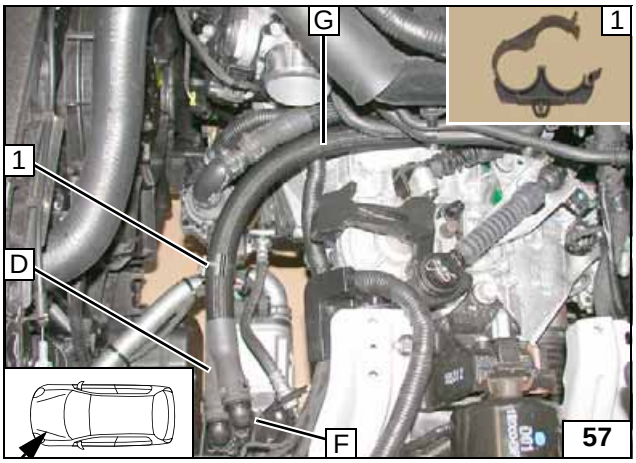


Connecting circulating pump



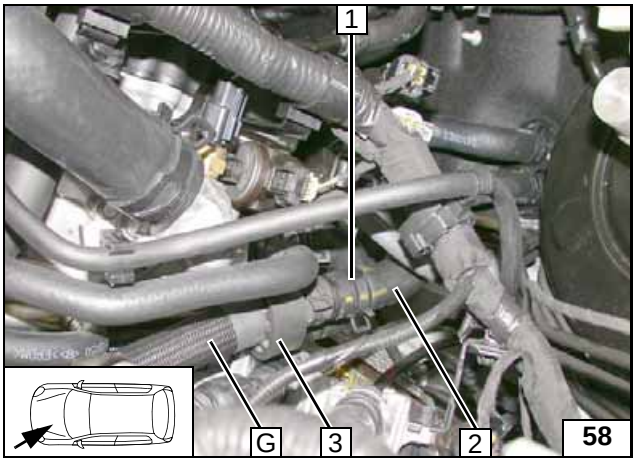
1 Engine outlet connection piece

Connecting engine outlet



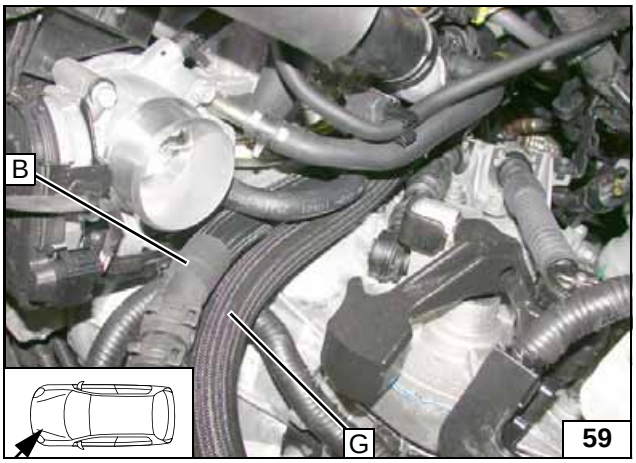
Position hose bracket **1** between hoses **D** and **G**.

Connecting heater



1 Original vehicle spring clip
2 Hose of heat exchanger inlet
3 Rubber isolator

Connecting heat exchanger inlet



Ensure sufficient distance and freedom of movement with regard to parts of the gear change, correct if necessary.

Aligning hoses

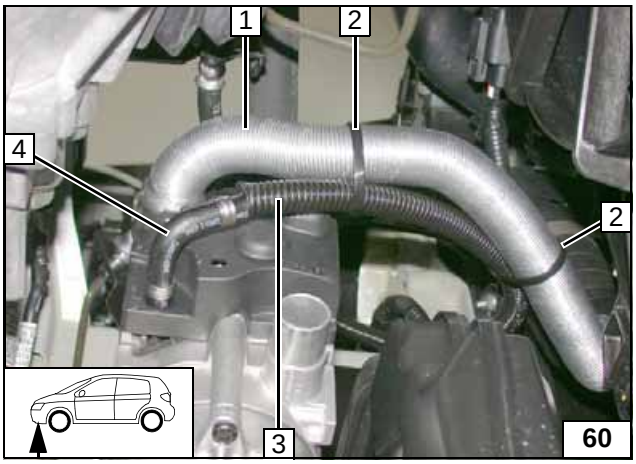
Fuel

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.

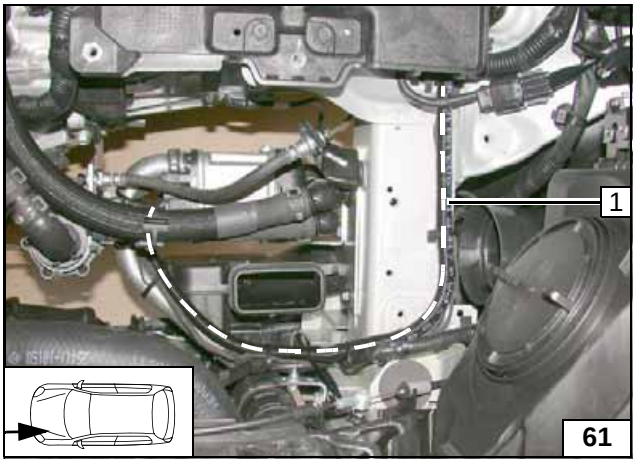
Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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



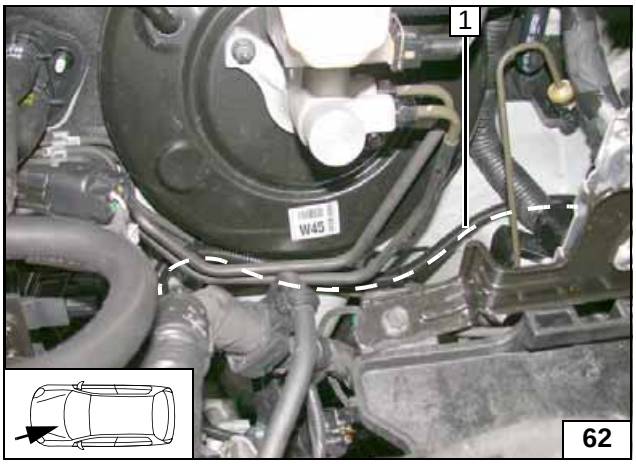
1 Combustion air pipe
2 Cable tie [2x]
3 Fuel line, wiring harness of metering pump in 10mm dia. corrugated tube
4 90° moulded hose, 10mm dia. clamp [2x]

Connecting heater



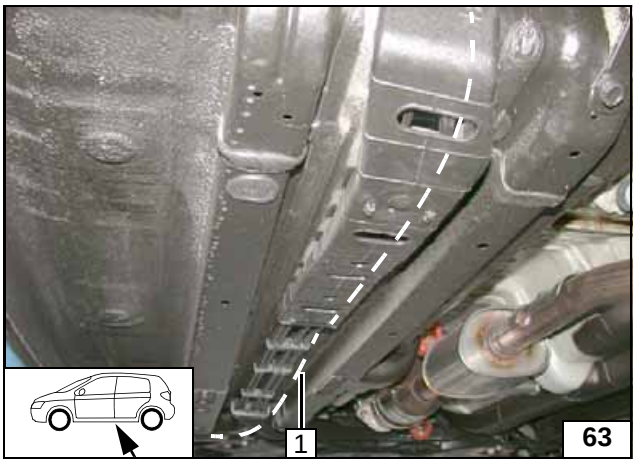
Route fuel line, wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle lines and secure using cable ties.

Routing lines



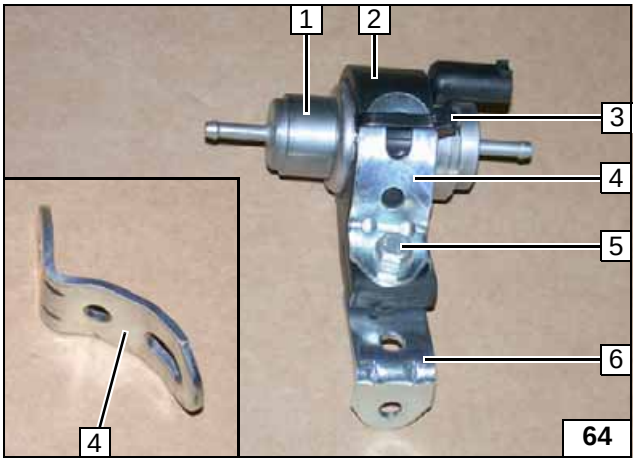
Route fuel line, wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle lines to the underbody and secure using cable ties.

Routing lines



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

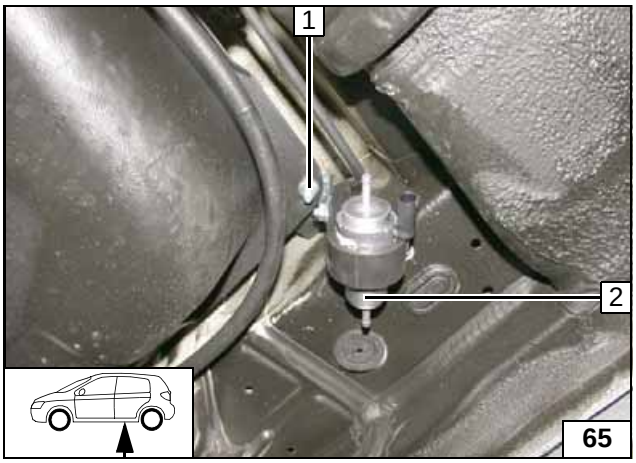
Routing lines



Bend angle bracket **4** as shown.

1 Metering pump
2 Metering pump mount
3 Cable tie
4 Angle bracket
5 M6x25 bolt, flanged nut
6 Angle bracket

Premounting metering pump

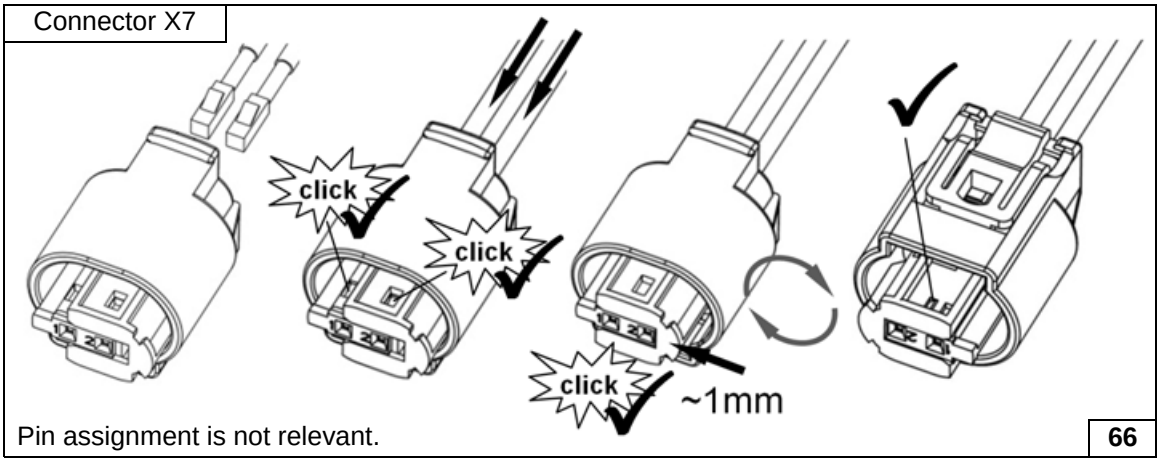


Check the position of the components; correct if necessary. Check that they have freedom of movement.

1 M6x20 bolt, flanged nut, original vehicle hole
2 Metering pump

Installing metering pump

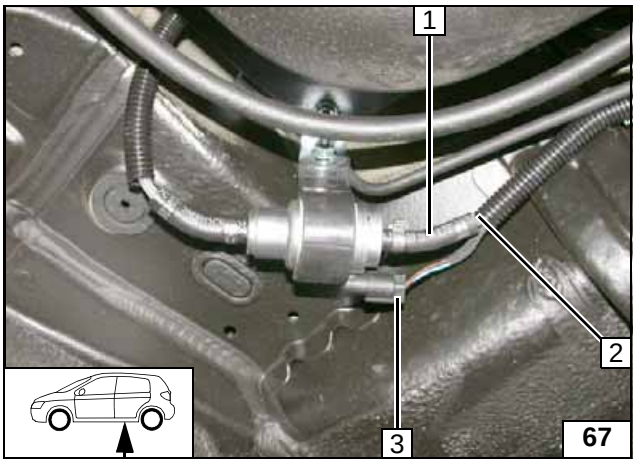
Connector X7



Pin assignment is not relevant.

66

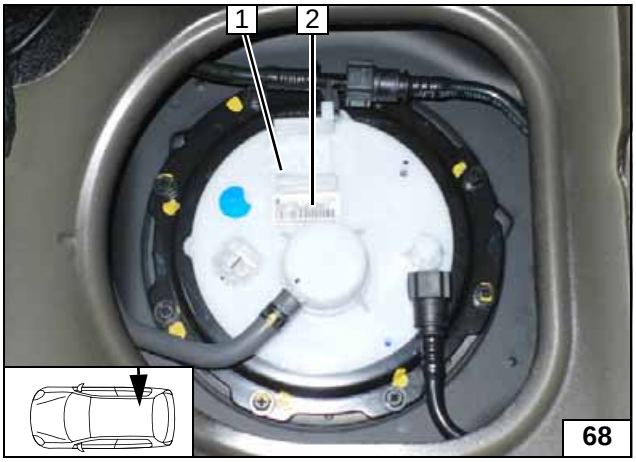
Completing metering pump connector



1 Hose section, 10mm dia. clamp [2x]
2 Fuel line of heater
3 X7 connector of metering pump wiring harness

Connecting metering pump

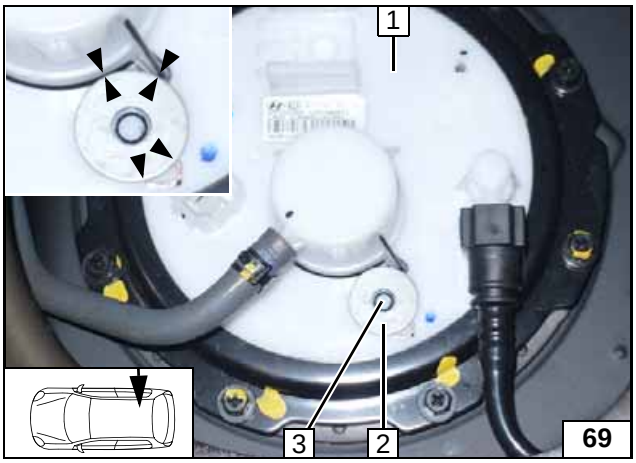
Installing FuelFix



Work step F1.

1 Fuel tank sending unit
2 New position of sticker

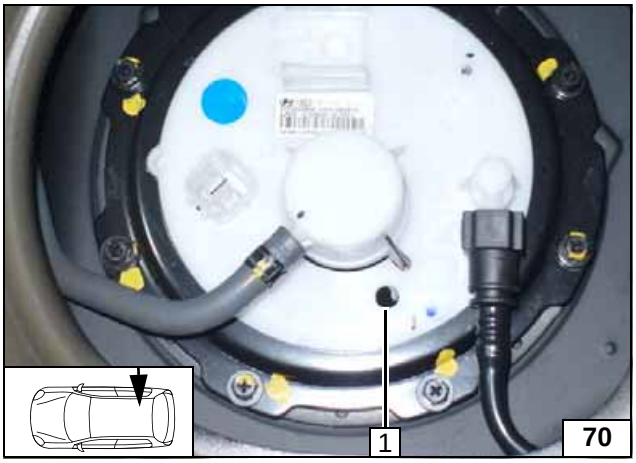
Moving sticker



Work step 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

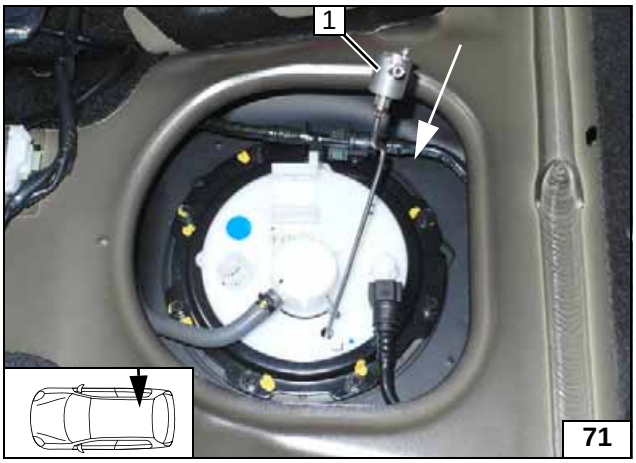
Copying hole pattern



Work step F3.

1 Hole made with provided drill

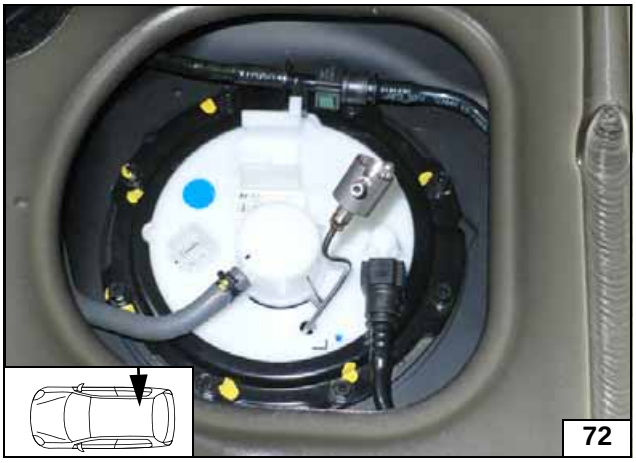
Hole for FuelFix



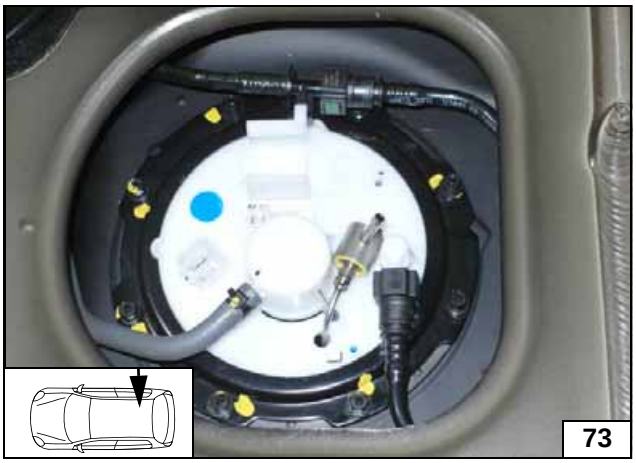
Work steps F4 and F5.

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

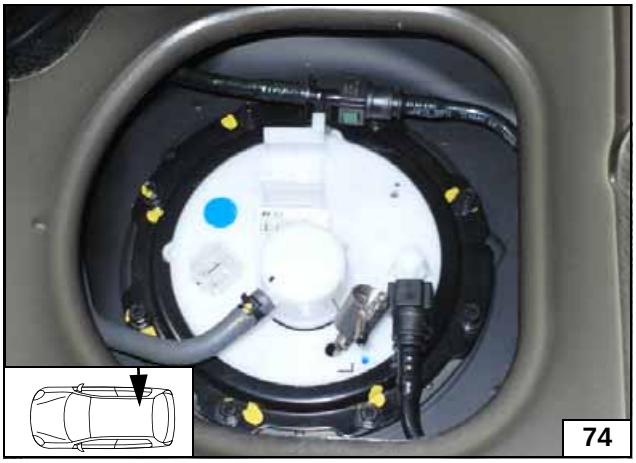
Inserting FuelFix



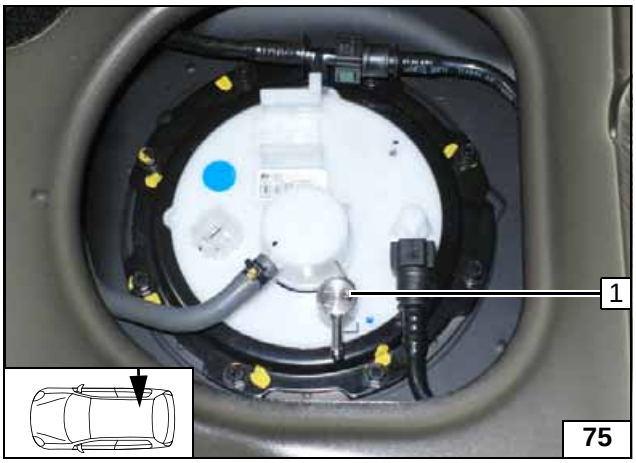
Inserting FuelFix



Inserting FuelFix



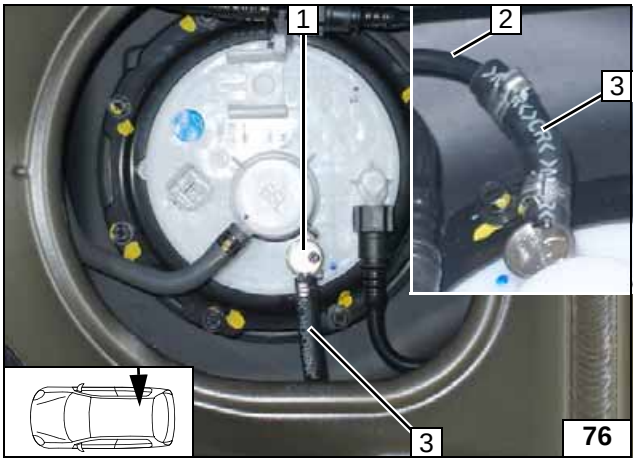
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

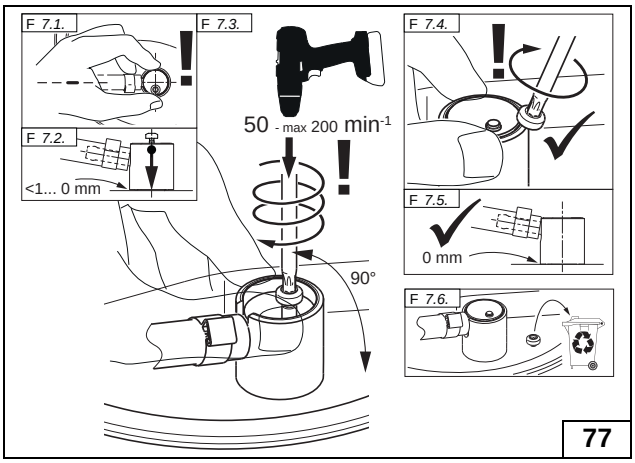
Aligning FuelFix



Work step F6.

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

Connecting fuel line

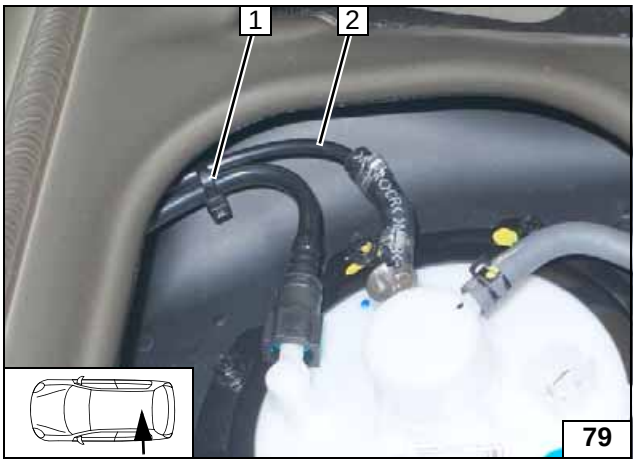


Work step F7.

Installing FuelFix

Work step F8.

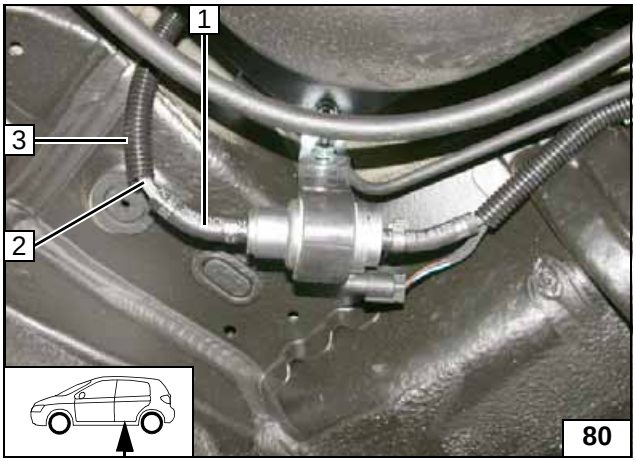
Checking firm seating of FuelFix



Work step F8.

1 Cable tie as tension relief
2 Fuel line of FuelFix

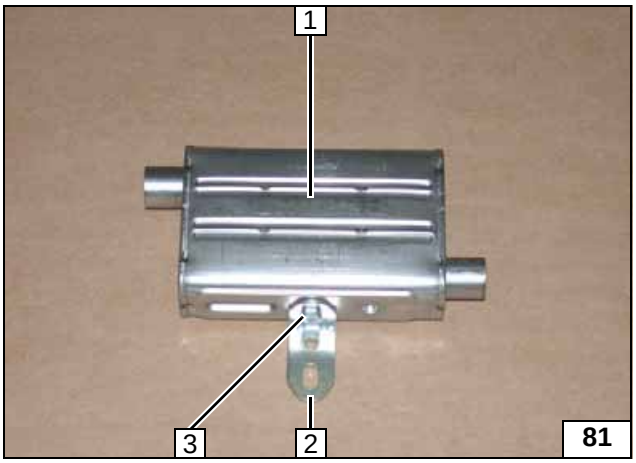
Securing fuel line



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

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

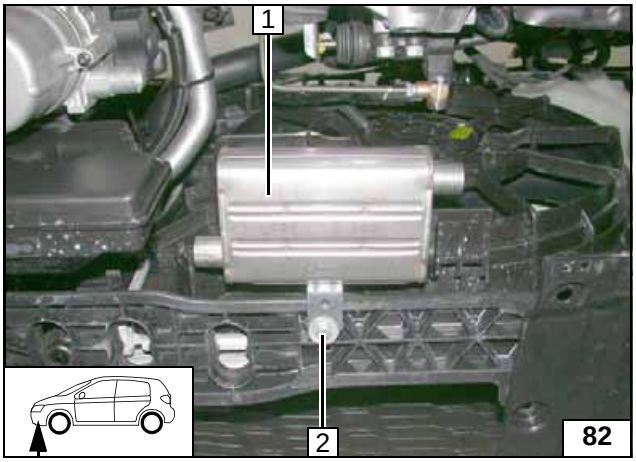
Connecting metering pump



Exhaust Gas

1 Silencer
2 Angle bracket
3 M6x16 bolt, spring lockwasher

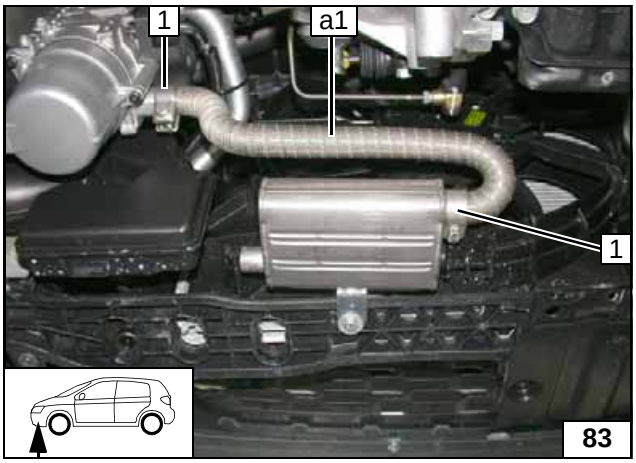
Premounting silencer



Ensure sufficient distance from neighbouring components.

1 Silencer
2 M6x35 bolt, large diameter washer, 20mm shim, original vehicle hole, flanged nut

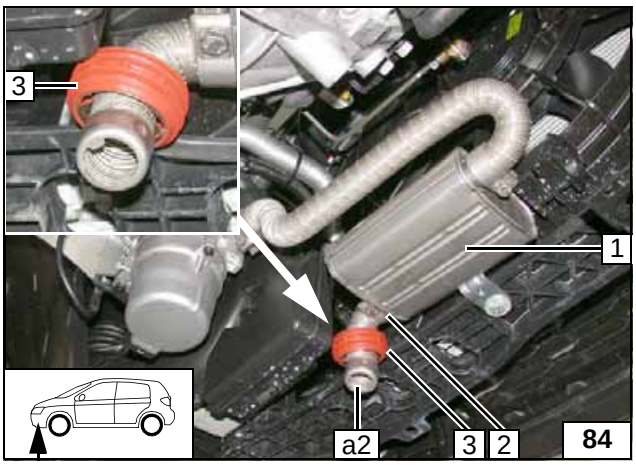
Installing silencer



Ensure sufficient distance to adjacent components, ensure freedom of movement, correct if necessary.

1 Hose clamp [2x]

Installing exhaust pipe a1



Ensure sufficient distance from neighbouring components.

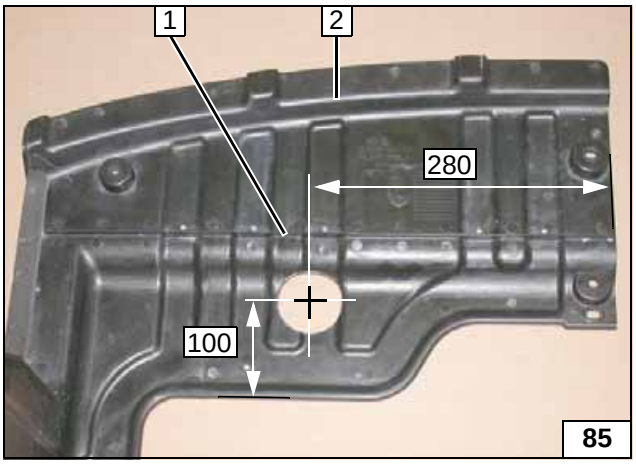
1 Silencer
2 Hose clamp
3 Spacer bracket

Installing exhaust pipe a2

Final Work

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate loose wire ends and tie back.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

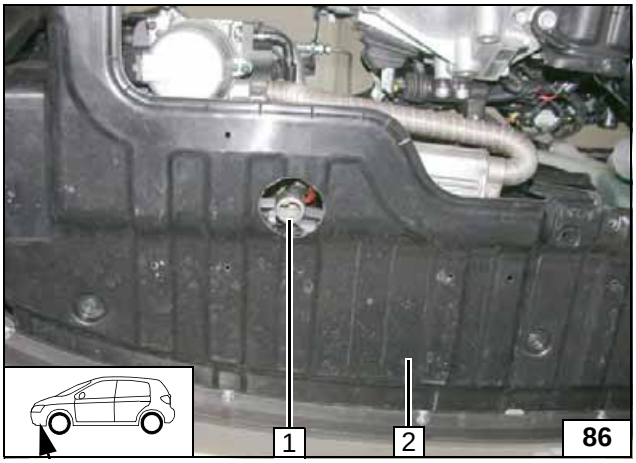
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the 'Operating Instructions'.**
- **Place the 'Switch off parking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



Copy hole pattern**1** for 60mm dia. hole and drill.

2 Underride protection

Cutting out underride protection



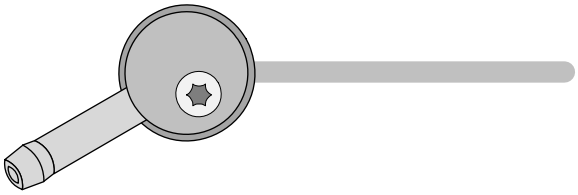
Install underride protection **2**. Align exhaust end section **1** centrally in hole and flush with underride protection **2**.

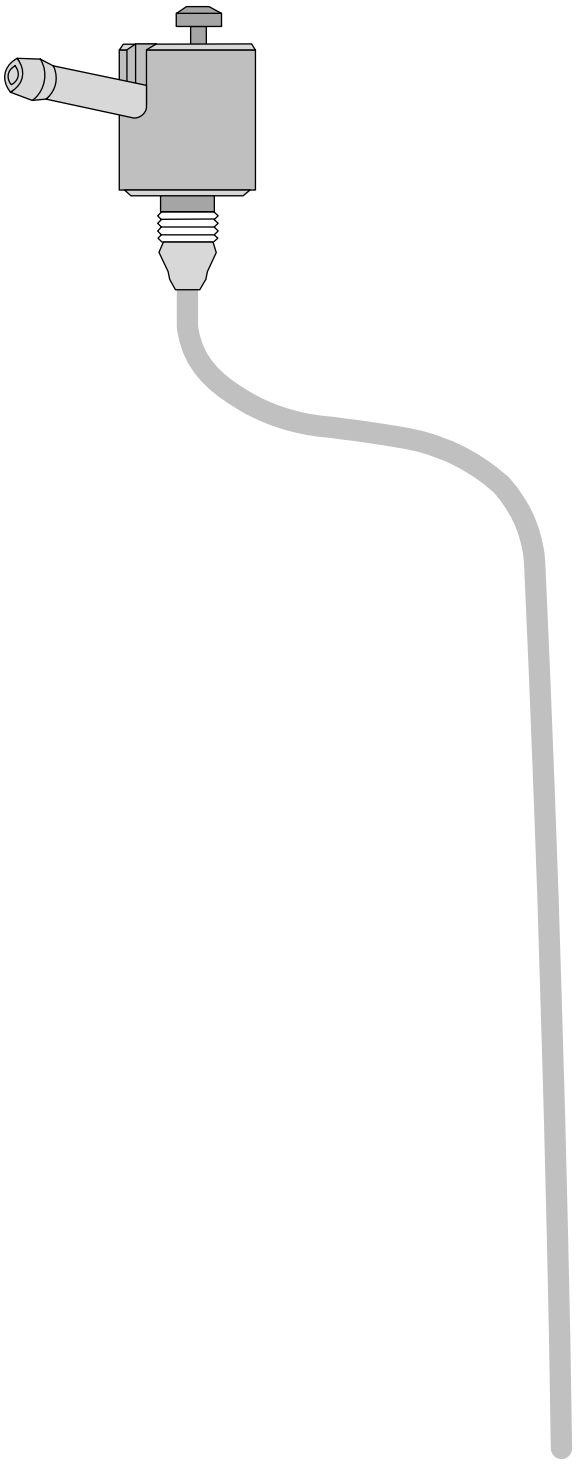
Aligning exhaust end section

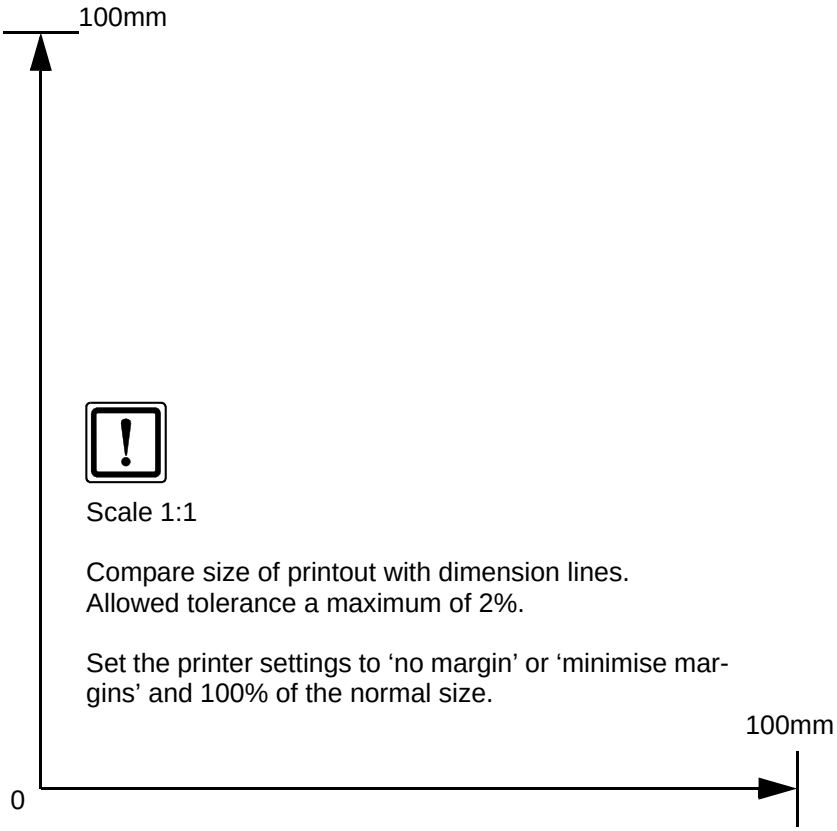
Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

FuelFix Template

Top view







Scale 1:1

Compare size of printout with dimension lines.
Allowed tolerance a maximum of 2%.

Set the printer settings to ‘no margin’ or ‘minimise margins’ and 100% of the normal size.

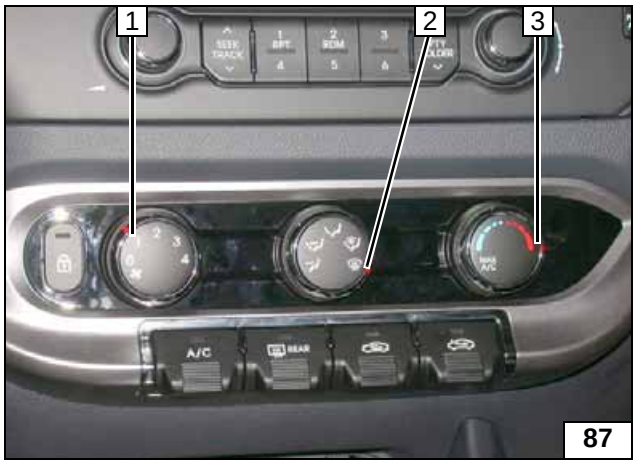
Operating Instructions for Manual Air-Conditioning

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.

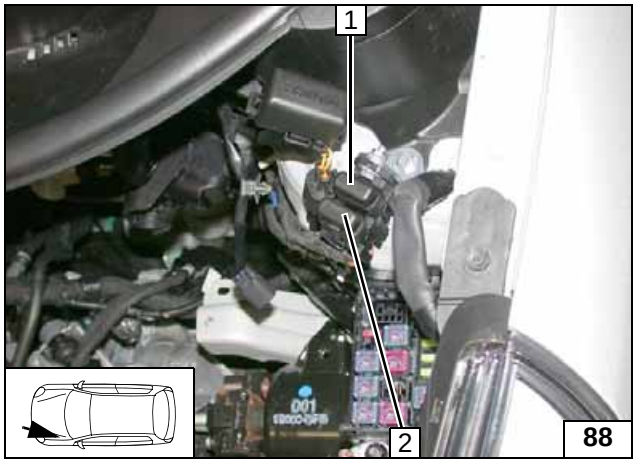
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



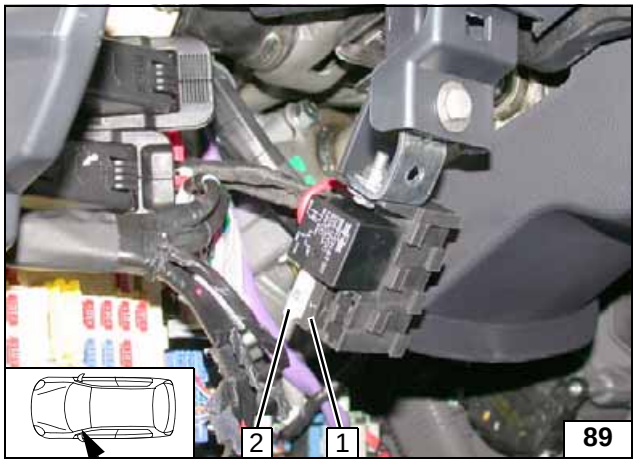
1 Set fan to level ‘1’
2 Air outlet to windscreen
3 Set temperature to ‘max.’

A/C control panel



1 30A main fuse F2
2 20A heater fuse F1

Engine compartment fuses



1 1A heater control fuse F3
2 25A fan fuse F4

Passenger compartment fuses

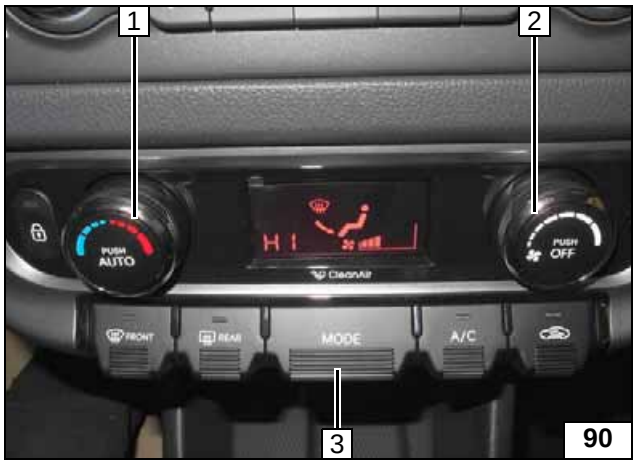
Operating Instructions for Automatic Air-Conditioning

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.

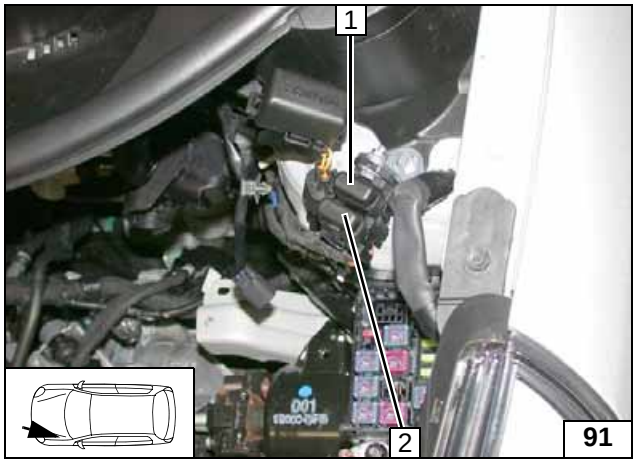
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



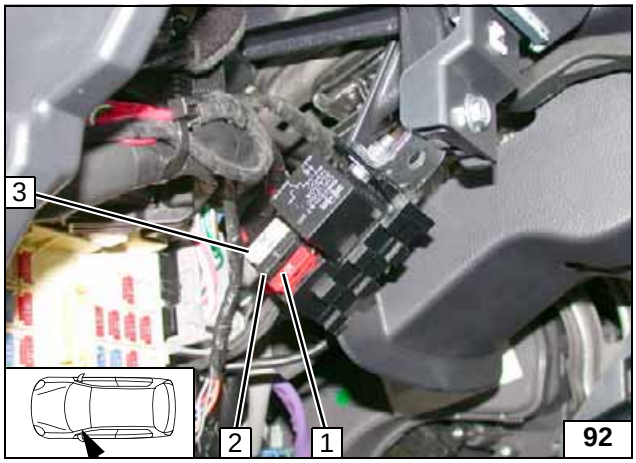
1 Set temperature to ‘HI’
2 Set fan to level ‘3’
3 Set air outlet to ‘windscreen / footwell’ using ‘Mode’ button

A/C control panel



1 30A main fuse F2
2 20A heater fuse F1

Engine compartment fuses



1 10A additional fuse F5
2 1A heater control fuse F3
3 25A fan fuse F4

Passenger compartment fuses