Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Citroen C3

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Citroen	C3	A51	e2 * 2007 / 46 * 0003 * ...

Model year from 2010 up to 2012:

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.6 HDI 90 FAP	Diesel	SG	68	1560	9H06
1.6 HDI 90 FAP 99g	Diesel	SG	68	1560	9H06

SG = Manual transmission

Verified equipment variants: Manual air-conditioning / Manual air-conditioningautomatic air-conditioning
Front fog lightsManual air-conditioning

From model year 2013:

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.0 VTi 68	Petrol	SG	50	999	ZM01
1.2 VTi 82	Petrol	SG	60	1199	HM01
1.6 VTi 120	Petrol	SG	88	1598	5F01

From model year 2014:

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.6 eHDI 90	Diesel	SG	68	1560	9H06

SG = Manual transmission

Verified equipment variants: Manual air-conditioning
Front fog lightsManual air-conditioning
Manual air-conditioningLED daytime running lights
Start - Stop

Not verified: Automatic air-conditioning

Left-hand drive vehicle

Total installation time: approx. 10 hours

Citroen C3

Table of Contents

Necessary Components

- Basic delivery scope of *Thermo Top Evo* based on price list
- Installation kit for Citroen C3 2010 Petrol and Diesel: **1316207D**
- To be ordered additionally in case of automatic air-conditioning: Citroen C3 **1316209A** automatic air-conditioning kit
- 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

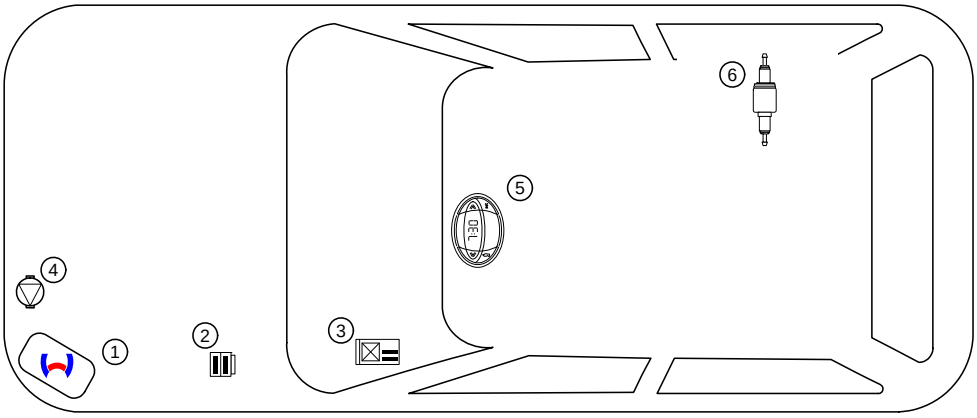
Installation instructions:

- 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 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. Fuse holder of engine compartment
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. Digital Timer
6. Metering pump



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 notes (not complete)

1.1 Installation and Repair

The improper installation or repairing 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 227).

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 an IPCU, the corresponding settings must be checked or adjusted before the installation.

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

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

2.1 Excerpt from the directive 2001/56/EC Appendix VII 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.

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Information on Validity

This installation documentation applies to Citroen C3 diesel vehicles from model year 2010 up to 2012 and 2014 as well as Citroen C3 petrol vehicles from model year 2013 and later - for validity, see page 1 - , 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
- Webasto Thermo Test Diagnosis with current software

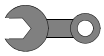
Dimensions
- All dimensions in mm.

Tightening torque values
- Tightening torque values for 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 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:

Special risk of injury or fatal accidents.

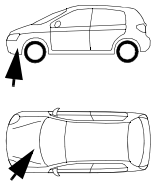
Specific risk of damage to components.

Specific risk of fire or explosion.

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

Reference to a special technical feature.

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



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

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Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and completely remove the battery with carrier.
- Detach the control unit and put it aside.
- Remove the air filter together with the intake hose (petrol only).
- Remove the charge-air tube (diesel only).
- Detach the wheel well trim on the right and left.
- Remove the bumper trim.
- Remove the right-hand underbody trim.
- Remove the front underride protection.
- Remove the left-hand headlight.
- Remove the instrument panel trim in the footwell on the driver's side.
- Detach the central switching unit (BSI) on the driver's side and lay it aside.
- Remove the instrument panel trim on the left (only with Telestart T100 HTM).
- Remove the radio / A/C control panel according to the manufacturer's instructions (only with automatic A/C).

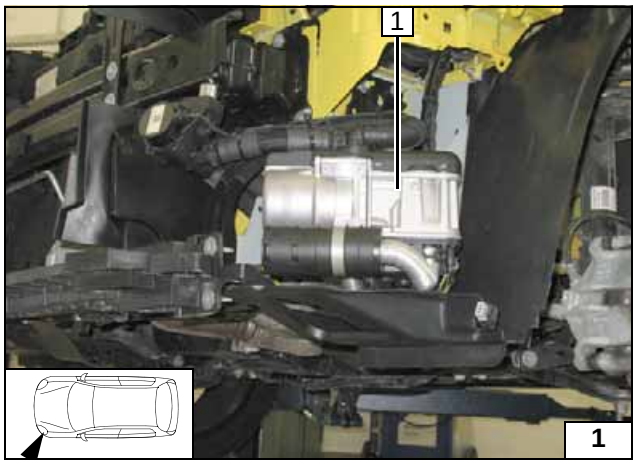
The following work should only be performed during the corresponding installation sequence:

- Fold the rear bench seat (up to MY 2013)
- Remove the rear bench seat (from MY 2014)
- Open the right-hand tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with the manufacturer's instructions.

Heater

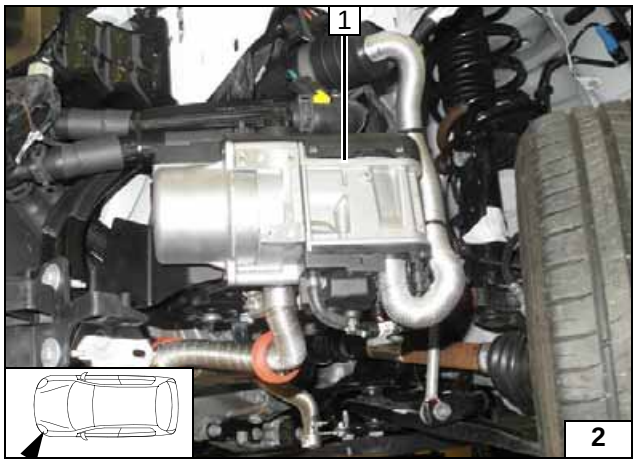
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.

Heater Installation Location



1 Heater

Installation location up to MY 2013



1 Heater

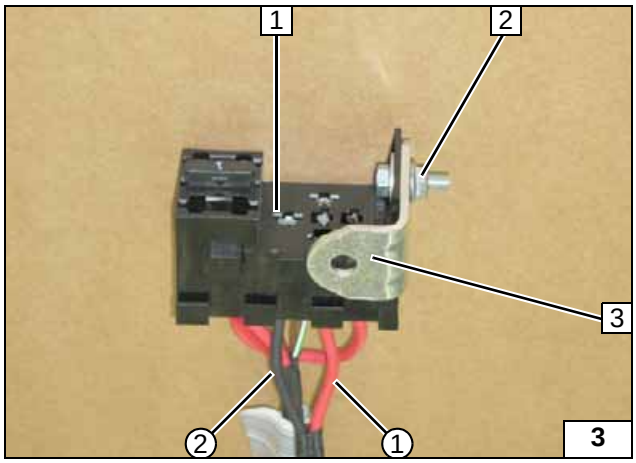
Installation location from MY 2014

Preparing Electrical System

Wire sections retain their numbering throughout the entire document.

Manual air-conditioning up to MY 2013

Preparing passenger compartment relay and fuse holder

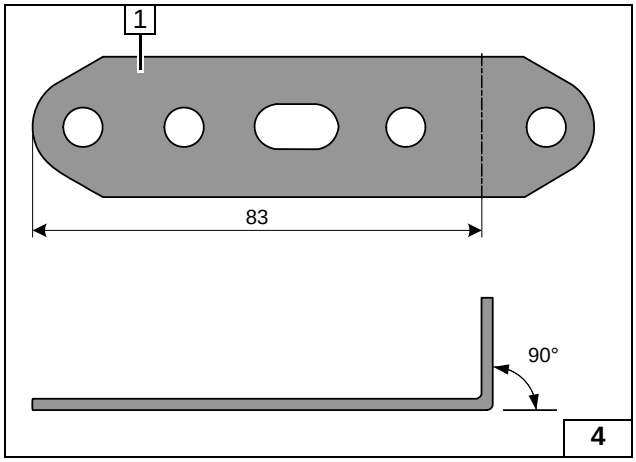


3

1 Relay and fuse holder of passenger compartment
2 M5x16 bolt, large diameter washer, flanged nut
3 Angle bracket
① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness

Manual air-conditioning from MY 2014

Preparing perforated bracket



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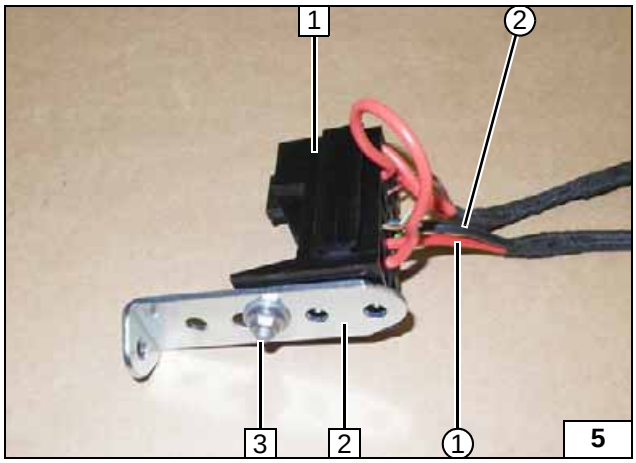
1 Perforated bracket

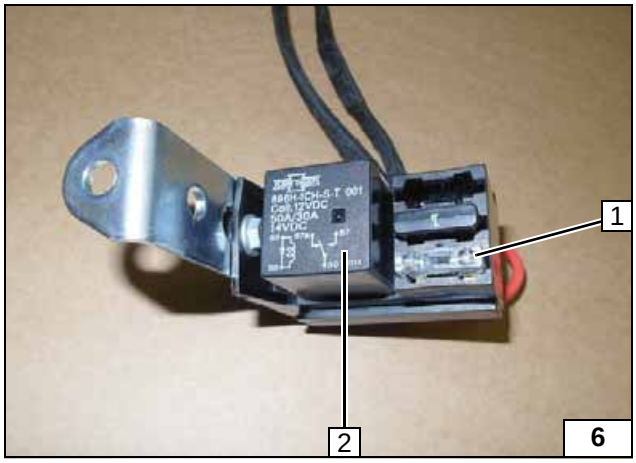
Preparing passenger compartment relay and fuse holder



5

1 Relay and fuse holder of passenger compartment
2 Angle bracket
3 M5x16 bolt, large diameter washer, flanged nut
① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness

Preparing passenger compartment relay and fuse holder



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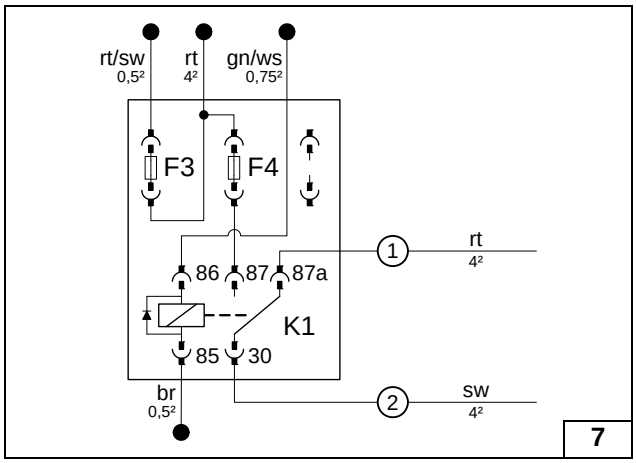
1 25A fuse F4
2 K1 relay



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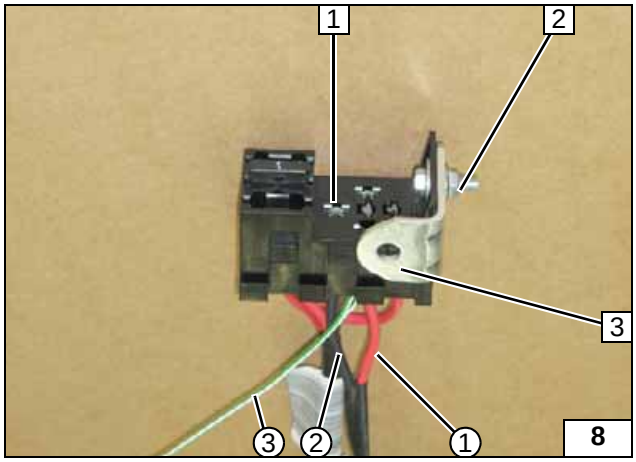
Manual air-conditioning of all vehicles

25A F4 and K1 relay are inserted in the relay and fuse holder after installation for MY up to 2013.

Connection diagram of passenger compartment relay and fuse holder



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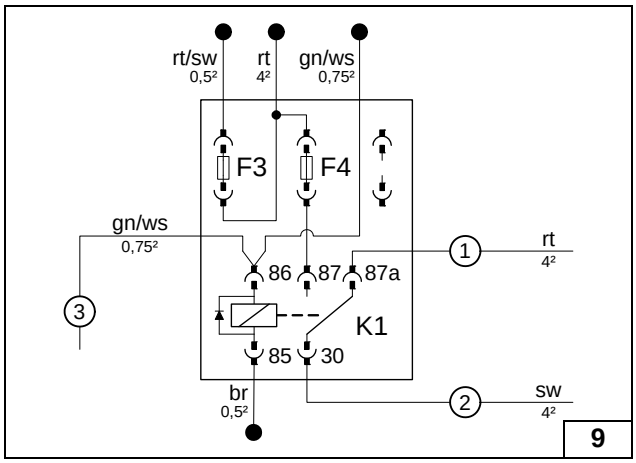
Automatic air-conditioning (only up to MY 2012)

Detach and remove contact of K1/86. Install wires with provided contacts onto socket of K1 relay.

1 Relay and fuse holder of passenger compartment
2 M5x16 bolt, large diameter washer, flanged nut
3 Angle bracket
① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness
③ 2000mm long green/white (gn/ws) wire of K1/86

Preparing passenger compartment relay and fuse holder



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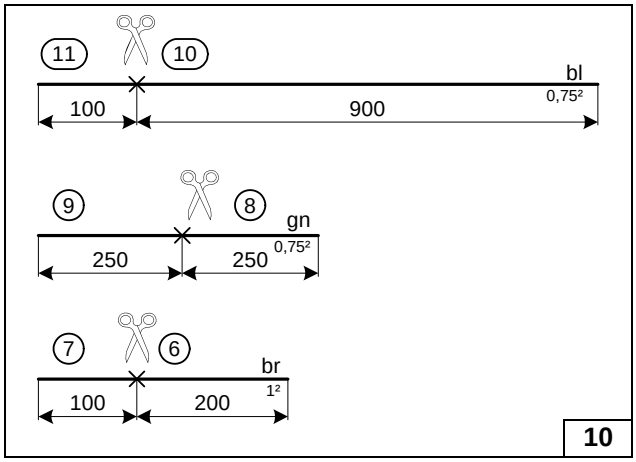
25A F4 and K1 relay are inserted in the relay and fuse holder after installation. Cut off 1700mm of protective sleeving. Pull green/white (gn/ws) wire ③ into 1700mm protective sleeving.

Connection diagram of passenger compartment relay and fuse holder



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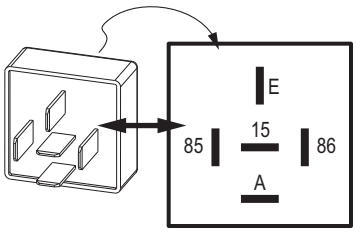
Cutting wires to length



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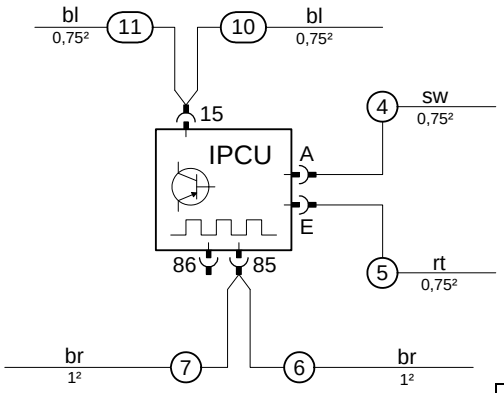
Check the IPCU settings when starting up the heater and adjust if necessary.

Settings:

Duty cycle: 27%
Frequency: 400Hz
Voltage: not relevant
Function: Low-side

View of IPCU



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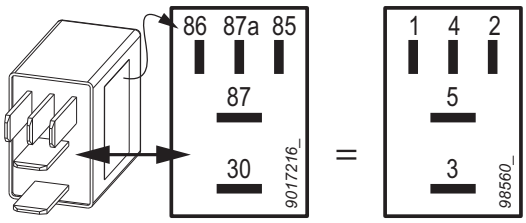
Connect lines to IPCU socket.
Pull wire section ⑩ into 800 mm protective sleeving.

④ 500mm long black (sw) wire of IPCU/A
⑤ 500mm long red (rt) wire of IPCU/E
⑥ Brown (br) wire of IPCU/85
⑦ Brown (br) wire of IPCU/85
⑩ Blue (bl) wire of IPCU/15
⑪ Blue (bl) wire of IPCU/15

Connection diagram of IPCU



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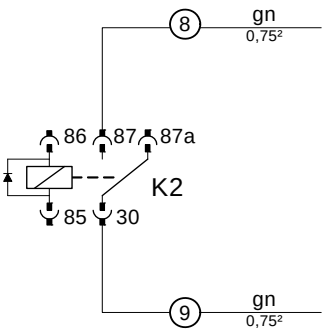
View of additional K2 relay



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Produce connections as shown in wiring diagram.
Additional K2 relay will be mounted later.

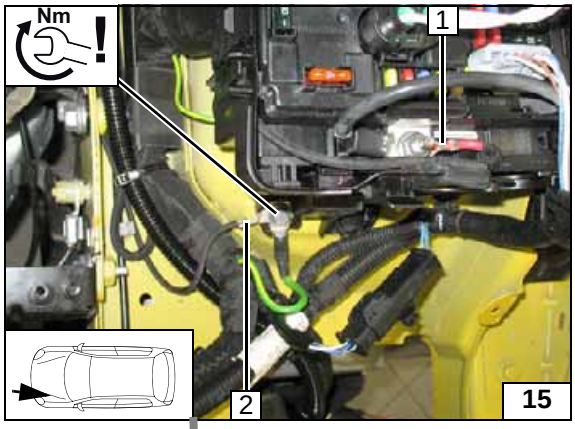
⑧ Green (gn) wire from K2/87
⑨ Green (gn) wire from K2/30

Connection diagram of additional K2 relay

Electrical System

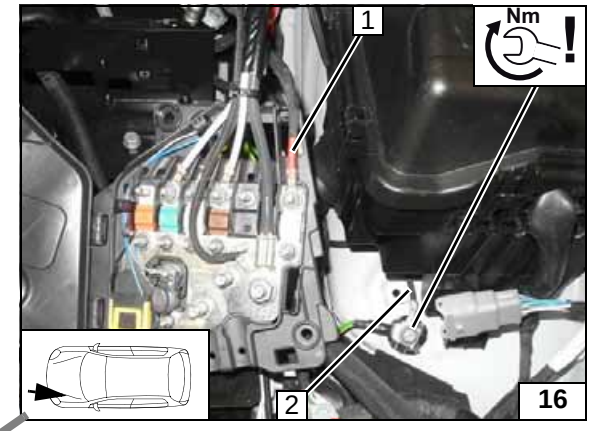
Positive and earth wire up to MY 2013

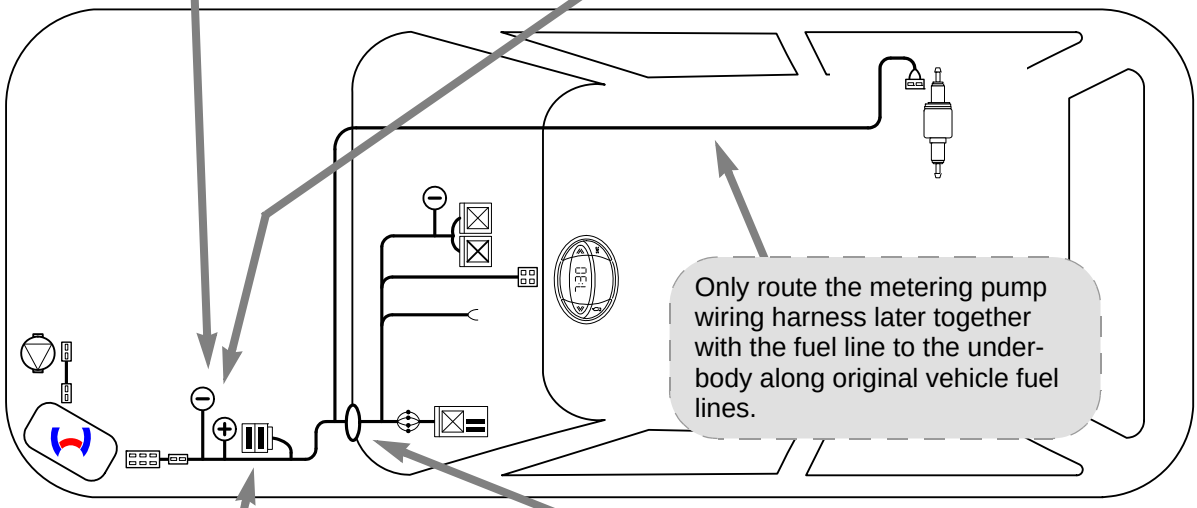
1 Positive wire on original vehicle positive support point
2 Earth wire on original vehicle earth support point



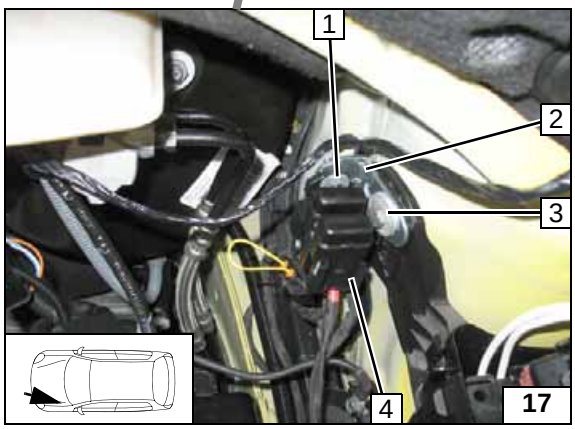
Positive and earth wire from MY 2014

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



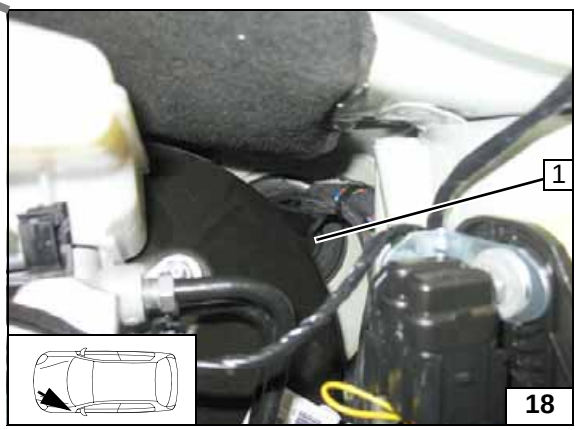


Wiring harness routing diagram



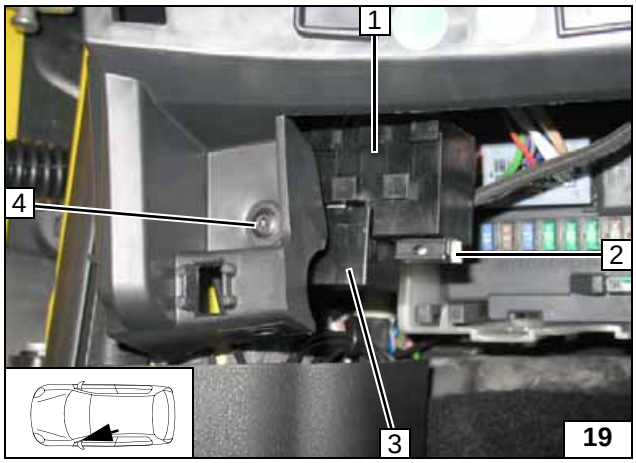
Fuse holder of engine compartment

1 M5x16 bolt, large diameter washer, retaining plate of fuse holder, flanged nut
2 Angle bracket
3 Retaining clip removed, M6x20 bolt, large diameter washer, flanged nut
4 F1-2 fuses mounted



Wiring harness pass through to engine compartment

1 Protective rubber plug

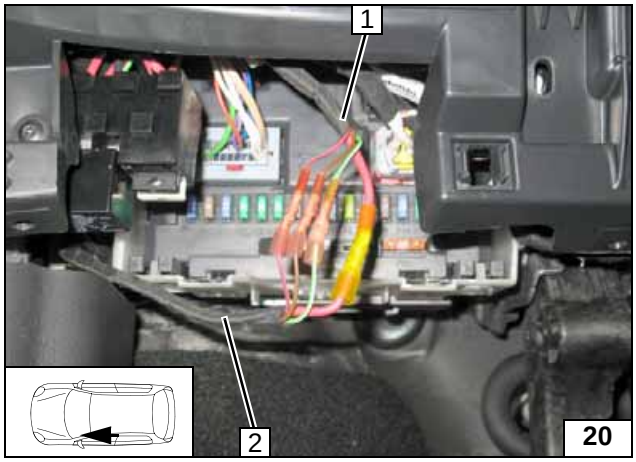


Up to MY 2013

Install angle bracket on original vehicle bolt **4**.

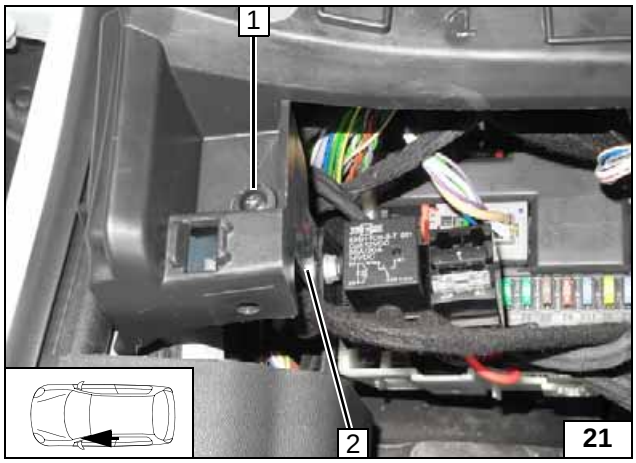
1 Relay and fuse holder of passenger compartment
2 F4 fuse inserted
3 K1 relay mounted

Mounting passenger compartment relay and fuse holder



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

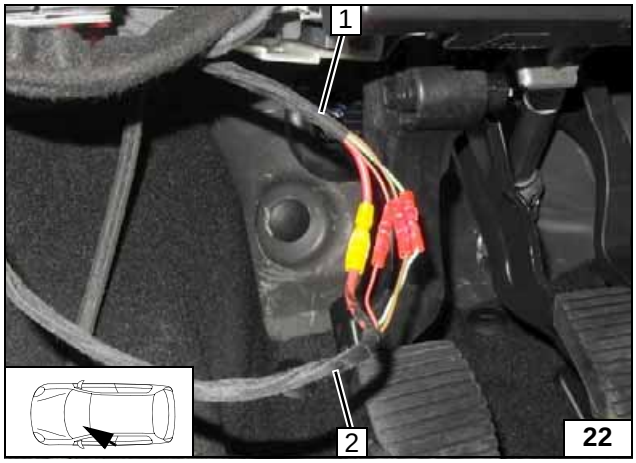
Connecting wiring harnesses using same colour wires



From MY 2014

1 Original vehicle bolt
2 Perforated bracket

Mounting passenger compartment relay and fuse holder

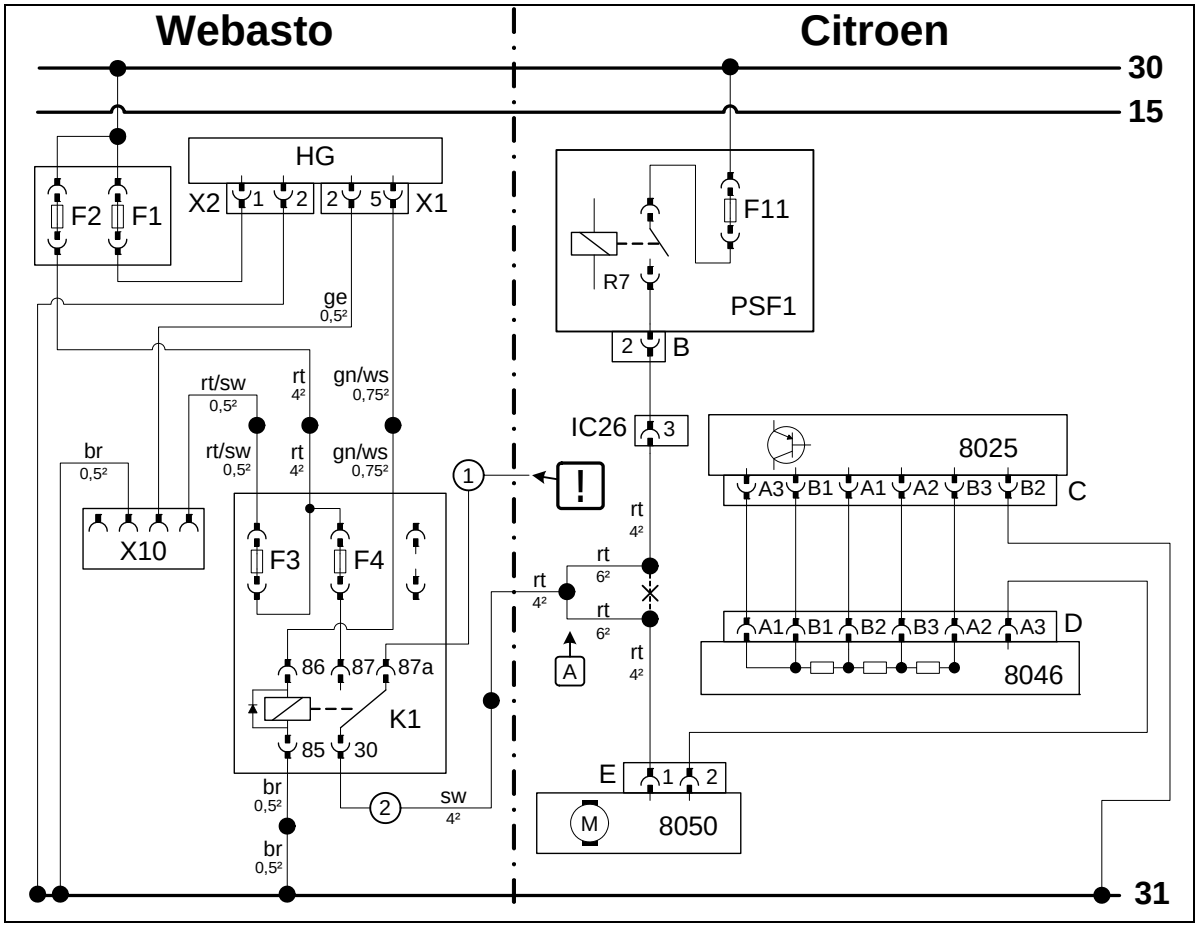


1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting wiring harnesses using same colour wires

Fan Controller for Manual Air-Conditioning

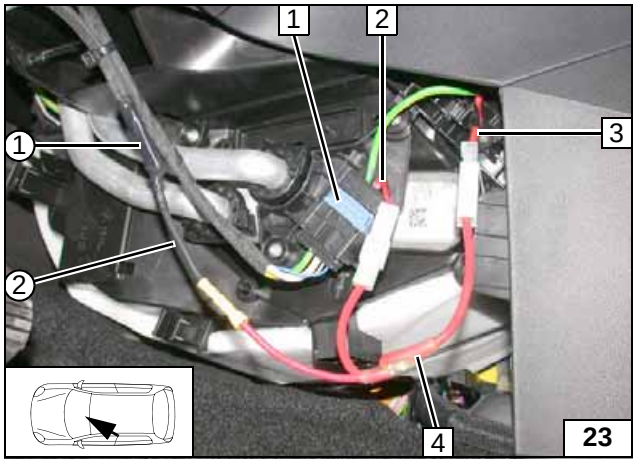
Wiring diagram



Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F11	Fuse	rt	red
X1	6-pin heater connector	PSF1	Engine compartment fuse box	ws	white
X2	2-pin heater connector			sw	black
X10	4-pin connector Heater control	B	2V connector NR	br	brown
		IC26	6-pin connector	gn	green
K1	Fan relay	8025	A/C control panel	ge	yellow
F1	20A fuse	C	6V connector NR		
F2	30A fuse	D	6V connector NR	!	Insulate wire end and tie back
F3	1A fuse	8046	Fan switch		
F4	25A fuse	E	2V connector NR	**X**	Cutting point
A	Output adapter	8050	Fan motor	Wiring colours may vary.	

Connecting fan motor

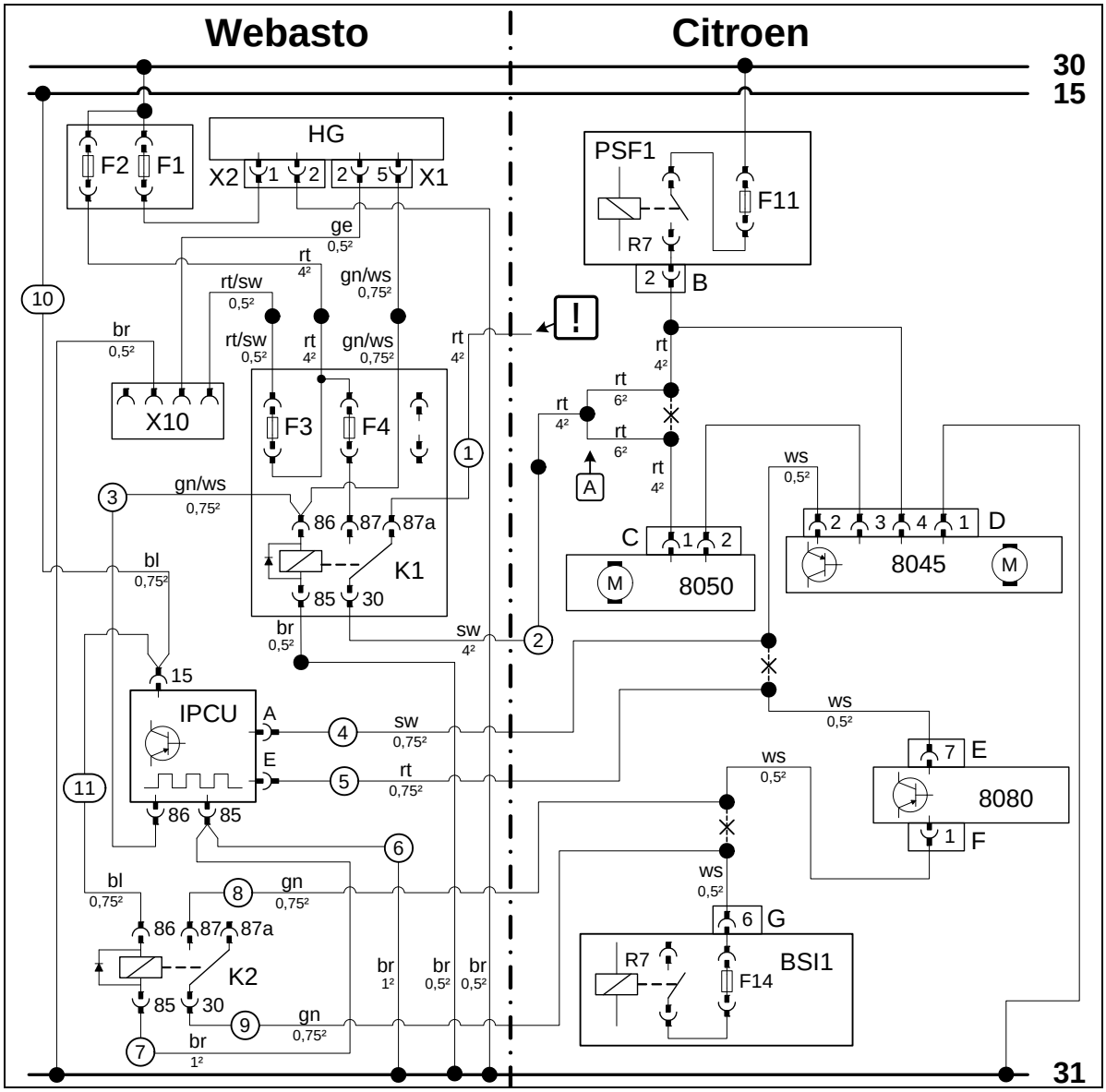


Connection on 6-pin connector IC26 **1**. Insulate red (rt) wire ① of K1/87a and tie back. Produce connections as shown in wiring diagram.

2 Red (rt) wire of connector IC26, pin 3
3 Red (rt) wire of fan motor
4 Output adapter
② Black (sw) wire from K1/30

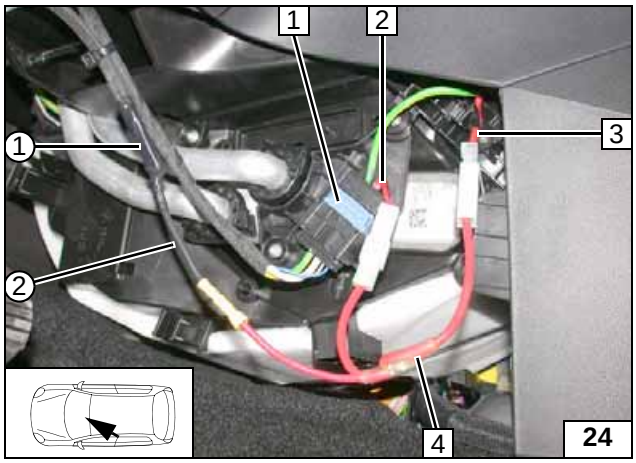
Fan Controller for Automatic A/C (up to MY 2012)

Wiring diagram



Legend

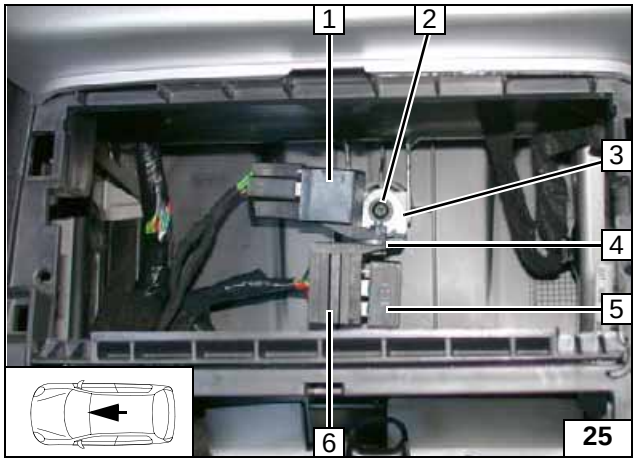
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F11	Fuse	rt	red
X1	6-pin heater connector	PSF1	Engine compartment fuse box	ws	white
X2	2-pin heater connector			sw	black
X10	4-pin connector of heater control	B	2V connector NR	br	brown
		C	2V connector NR	bl	blue
K1	Fan relay	8050	Fan motor	gn	green
K2	Additional relay	D	4V connector NR	ge	yellow
F1	20A fuse	8045	Fan controller		
F2	30A fuse	E	26V connector JN		
F3	1A fuse	8080	A/C control panel		
F4	25A fuse	F	6V connector NR		
A	Output adapter	G	10V connector NR		
IPCU	Pulse width modulator	BSI1	Central switching unit		
IPCU settings:					
Duty cycle:	27%			!	Insulate wire end and tie back
Frequency:	400Hz				
Voltage:	not relevant			**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	



Connecting fan motor

Connection on 6-pin connector IC26 **1**. Insulate red (rt) wire ① of K1/87a and tie back. Produce connections as shown in wiring diagram.

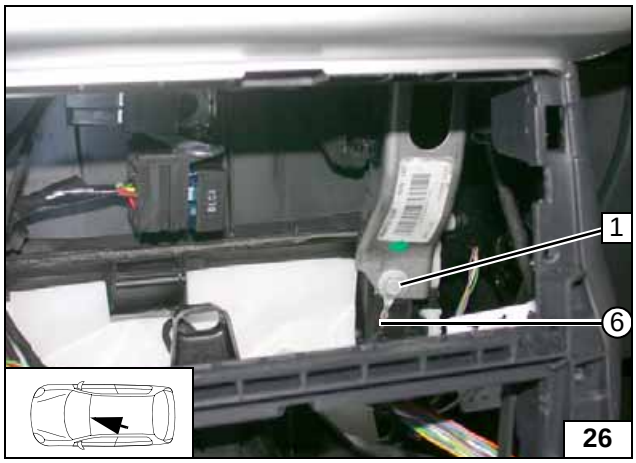
2 Red (rt) wire of connector IC26, pin 3
3 Red (rt) wire of fan motor
4 Output adapter
② Black (sw) wire from K1/30



Installing additional K2 relay and IPCU

Produce connections as shown in wiring diagram.

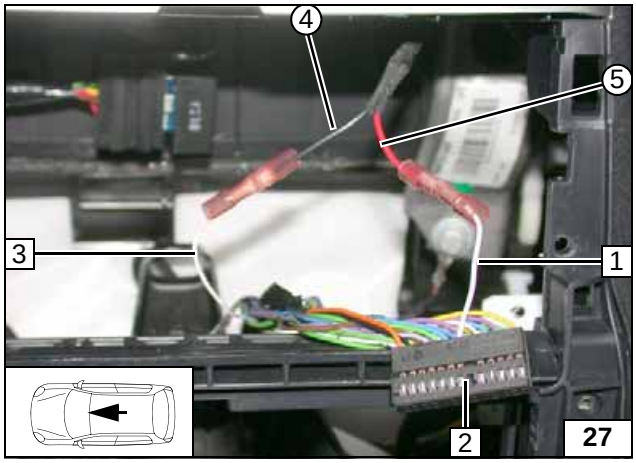
1 K2 relay
2 Original vehicle bolt
3 Angle bracket
4 M5x16 bolt, large diameter washer, flanged nut
5 IPCU mounted
6 IPCU socket



Earth connection of additional K2 relay and IPCU

Produce connections as shown in wiring diagram.

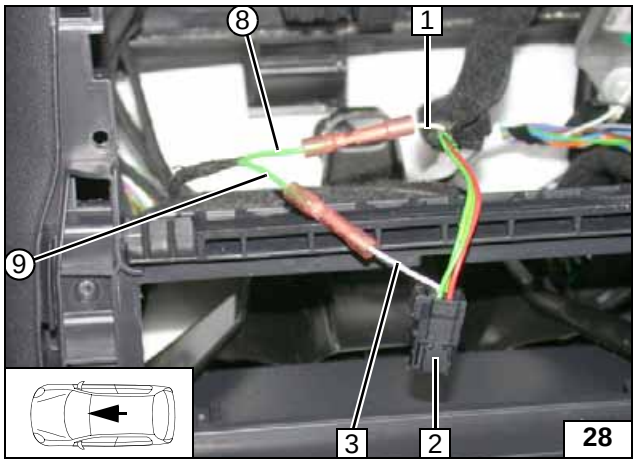
1 Original vehicle bolt
⑥ Brown (br) wire of IPCU/85



Connecting IPCU

Connection on 26-pin connector **2** from A/C control panel. Produce connections as shown in wiring diagram.

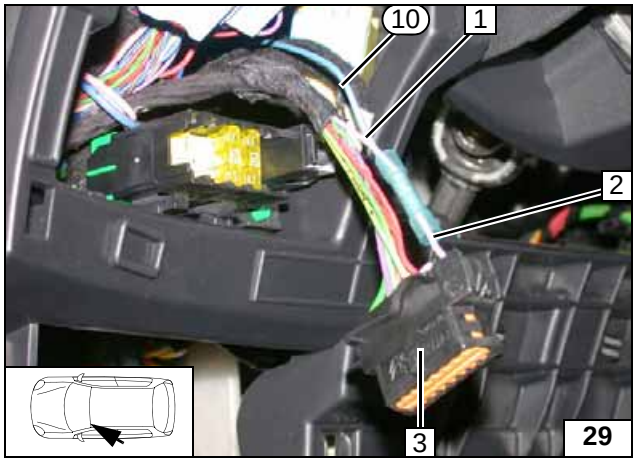
1 White (ws) wire 26-pin connector pin 7
3 White (ws) wire of fan controller
④ Black (sw) wire from IPCU/A
⑤ Red (rt) wire from IPCU/E



Connection on 6-pin connector **2** from A/C control panel. Produce connections as shown in wiring diagram.

1 White (ws) wire of BSI
3 White (ws) wire of 6-pin connector Pin1
⑧ Green (gn) wire from K2/87
⑨ Green (gn) wire from K2/30

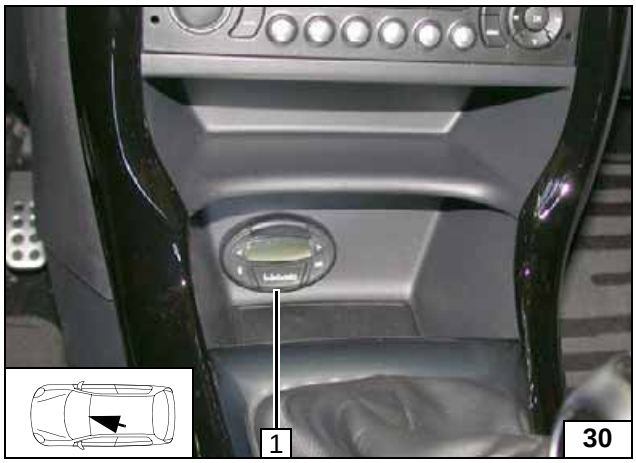
Connecting additional K2 relay



Connection on 16-pin OBD connector **3**. Produce connections as shown in wiring diagram.

1 White (ws) wire of Terminal 15
2 White (ws) wire of 16-pin OBD connector Pin1
⑩ Blue (bl) wire of IPCU/15

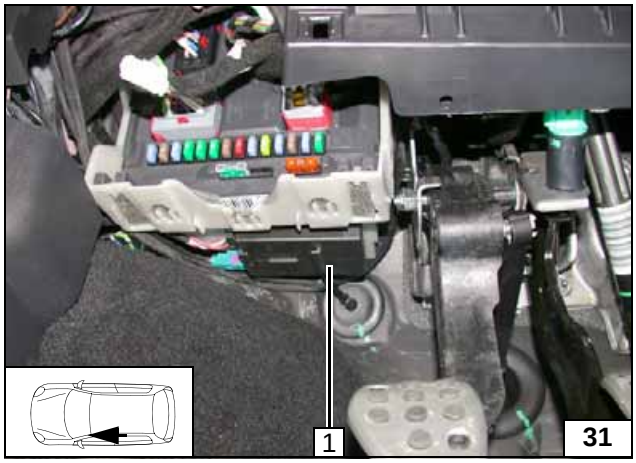
Connection of IPCU Terminal 15



Digital Timer

1 Digital timer

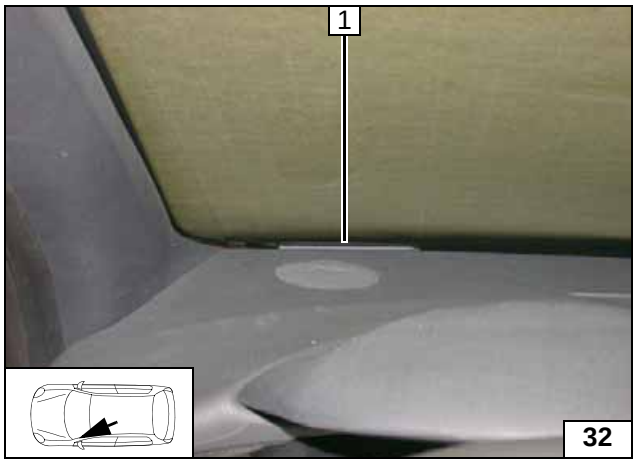
Installing digital timer



Remote Option (Telestart)

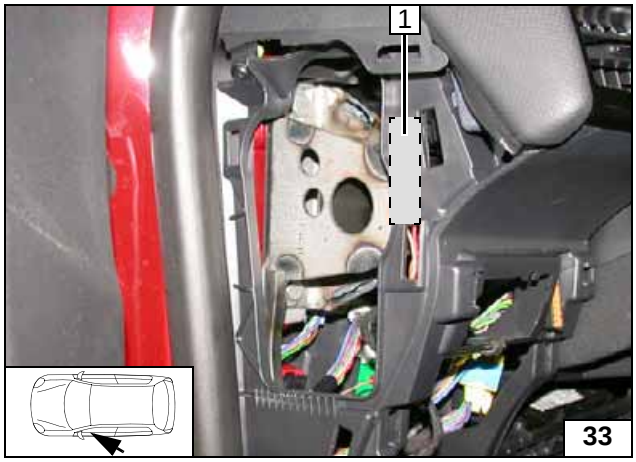
Fasten receiver **1** with adhesive tape.

Installing receiver



1 Antenna

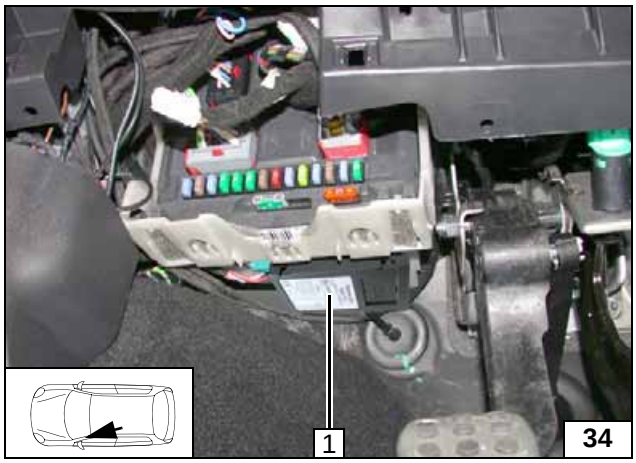
Installing antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** behind instrument panel trim at left with adhesive tape.

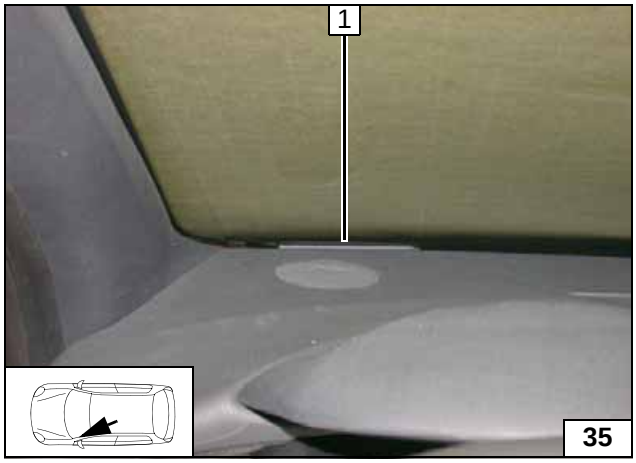
Installing temperature sensor



Remote Option (Thermo Call TC3)

Fasten receiver **1** with adhesive tape.

Installing receiver



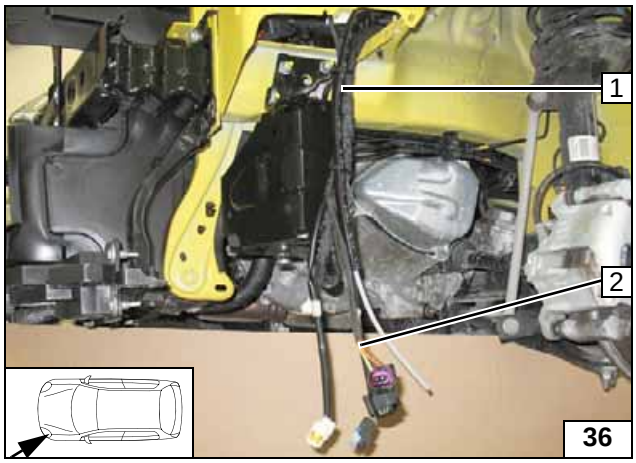
1 Antenna

Installing antenna

Preparing Installation Location

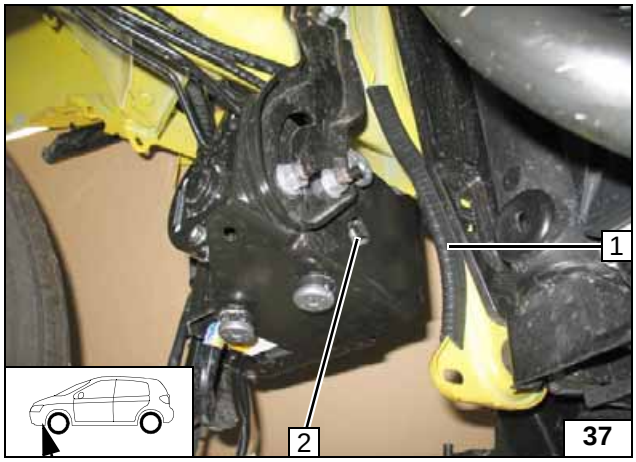
Pull fuel line into corrugated tube **1** and route to the engine compartment. Route wiring harness of heater **2** to installation location.

Preparing installation location



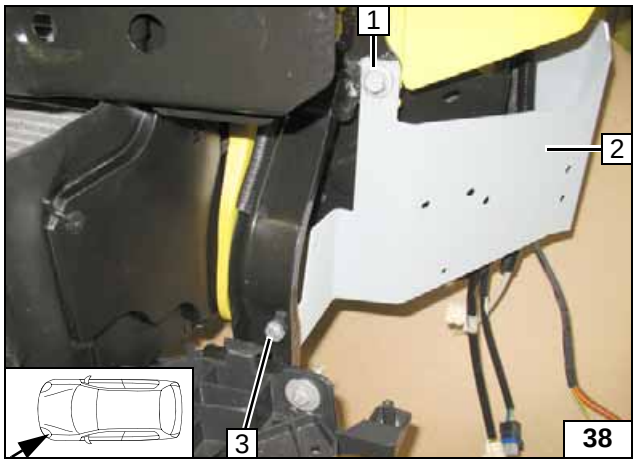
1 200 mm edge protection
2 Bend tab

Installing edge protection



1 Original vehicle bolt
2 Install bracket loosely
3 M8x20 bolt, flanged nut, existing hole

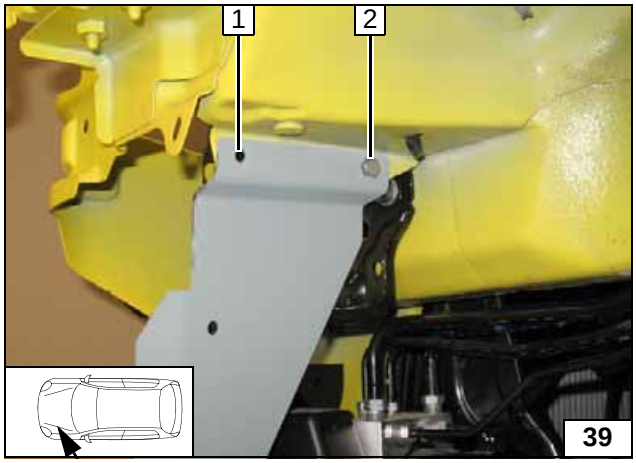
Installing bracket loosely

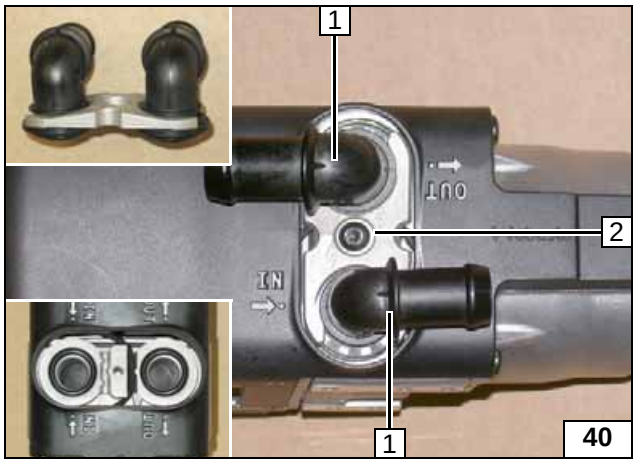


After copying hole pattern at position **1** , remove bracket.

1 7 mm dia. hole
2 M6x20 bolt, flanged nut, existing hole

Copying hole pattern

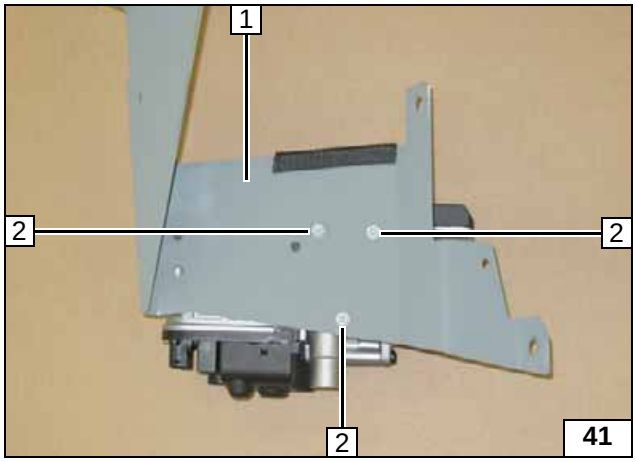




Preparing Heater

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

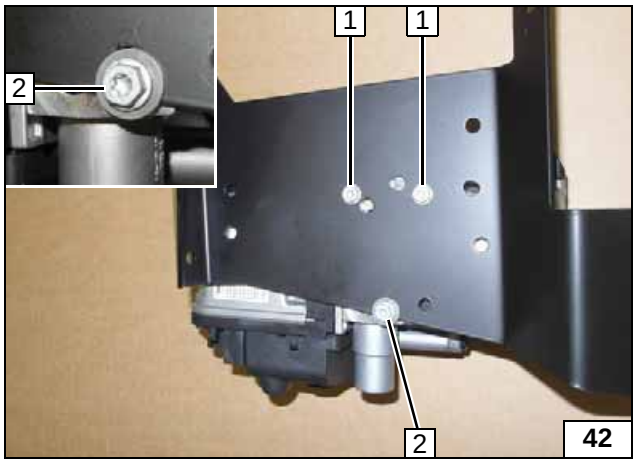
Installing water connection pieces



Up to MY 2013

1 Bracket
2 5x13 self-tapping bolt [3x]

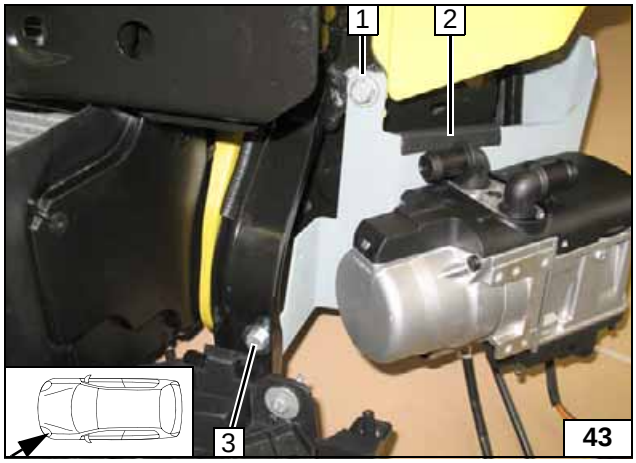
Premounting heater



From MY 2014

1 5x13 self-tapping bolt [2x]
2 5x13 self-tapping bolt, large diameter washer with outer dia. d_a = 17.6mm

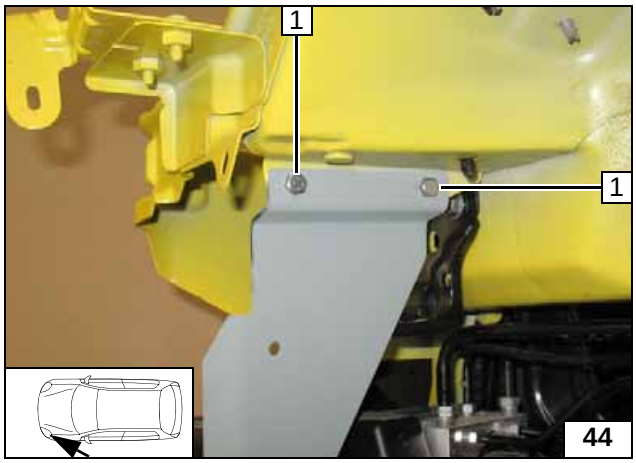
Premounting heater



Installing Heater

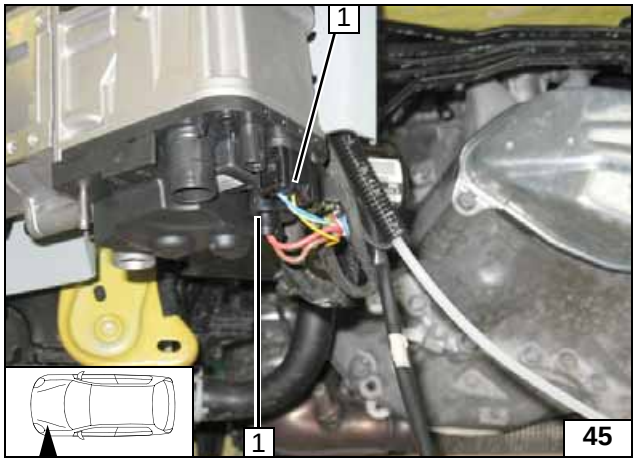
1 Original vehicle bolt
2 80 mm edge protection
3 M8x20 bolt, large diameter washer, flanged nut, existing hole

Mounting heater



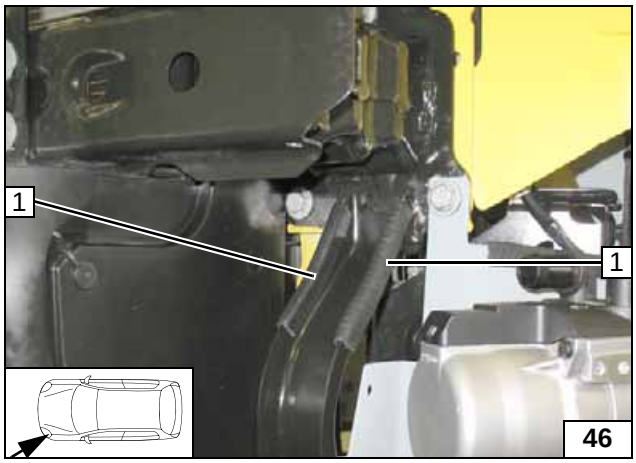
1 M6x20 bolt, flanged nut [2x each]

Mounting heater



1 Wiring harness of heater [2x]

Installing wiring harness



1 90mm edge protection [2x]

Installing edge protection

Fuel

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

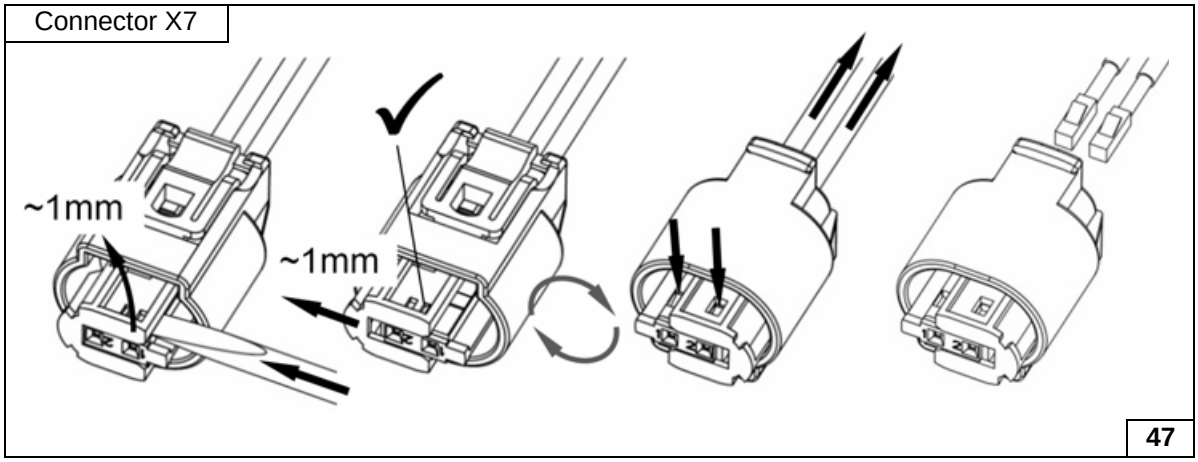
Catch any fuel running off in an appropriate container.

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.

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

Dismantling connector of metering pump

Connector X7



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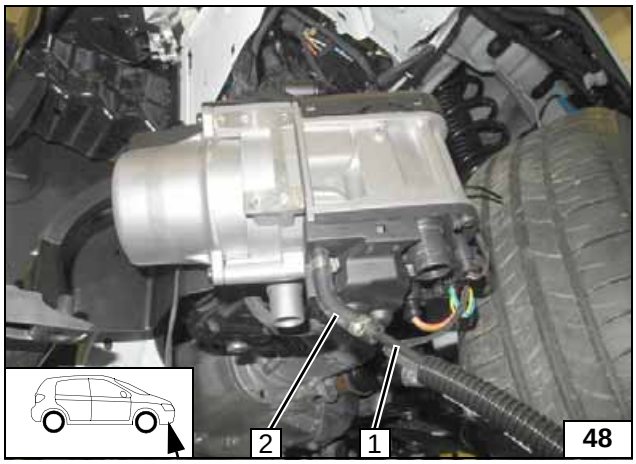
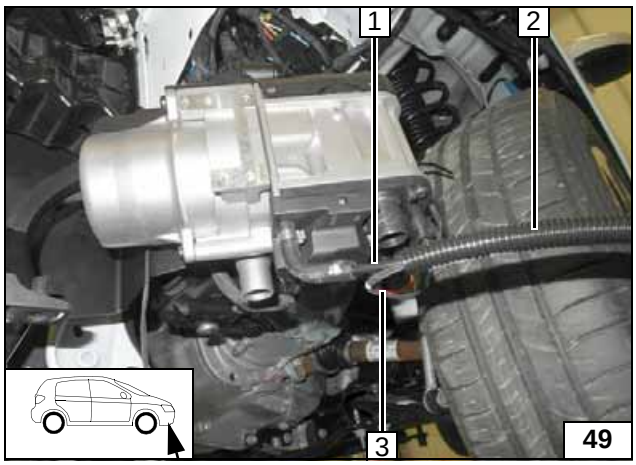
Connecting heater



48

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

Connecting heater



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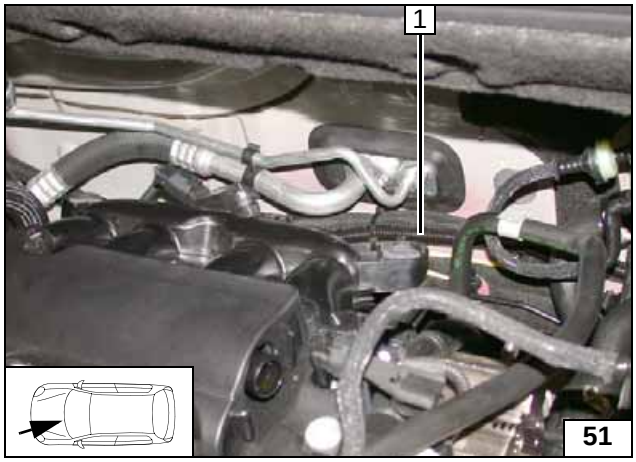
Pull fuel line **1** and wiring harness of metering pump **3** into 10mm dia. corrugated tube **2** and route in engine compartment.

Route fuel line and wiring harness of metering pump into corrugated tube **1** to the firewall.

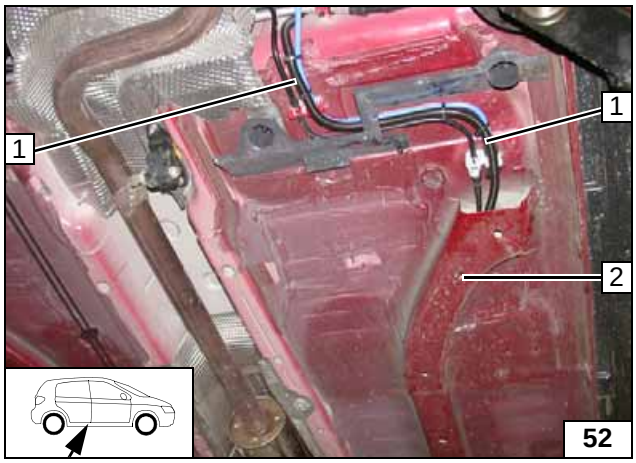
Routing lines



Petrol

Route fuel line and wiring harness of metering pump in corrugated tube **1** to the right vehicle side and further to the underbody.

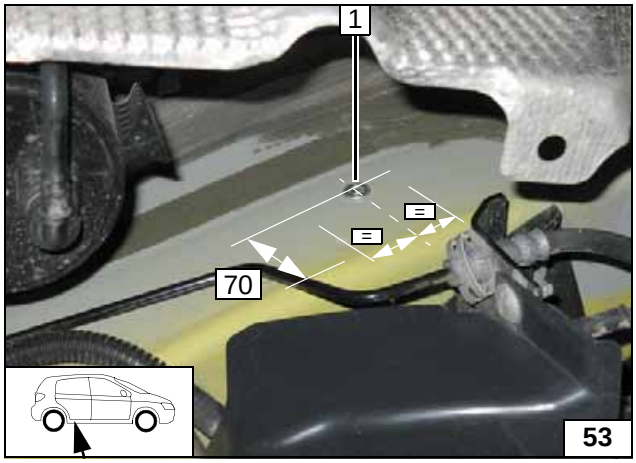
Routing lines



Route fuel line and wiring harness of metering pump in cable duct **2** along original vehicle lines to installation location of metering pump and secure using cable ties.

1 Fuel line and wiring harness of metering pump in 10mm dia. corrugated tube

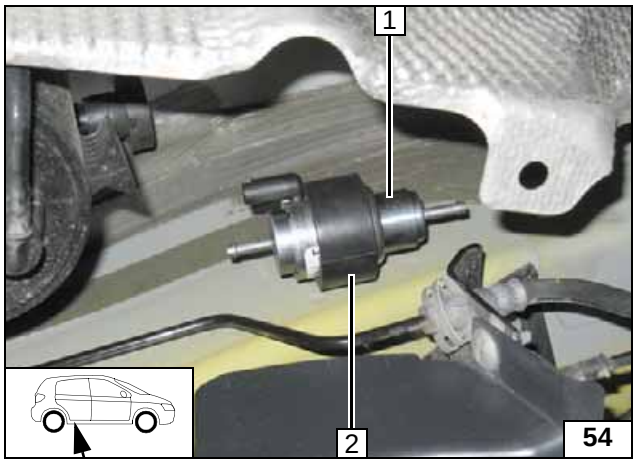
Routing lines



Drill 9.1mm hole at position **1** centrally between the welding points.

1 Rivet nut

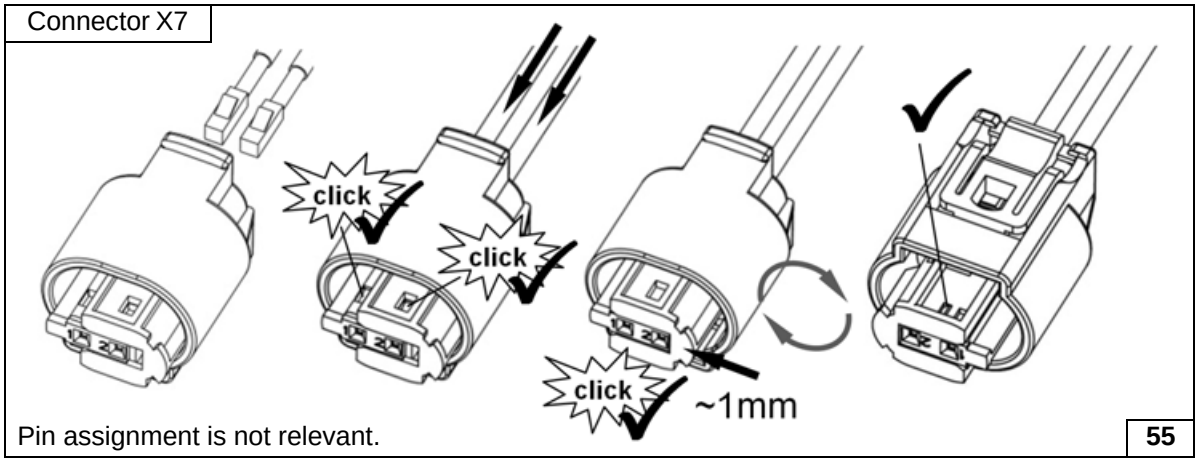
Installing rivet nut



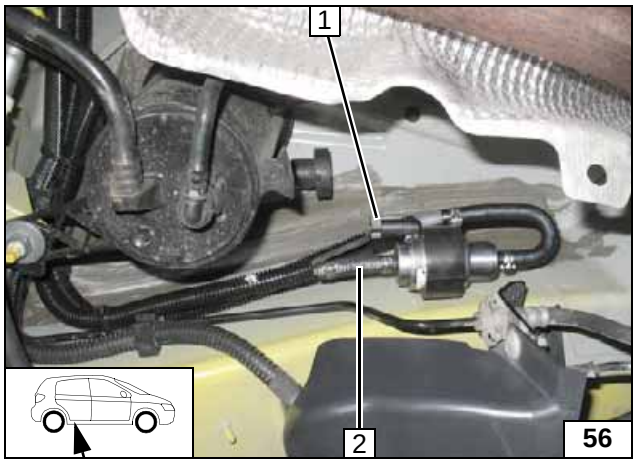
Install metering pump mounting **2** on rivet nut with M6x25 bolt and support angle bracket.

1 Metering pump

Mounting metering pump

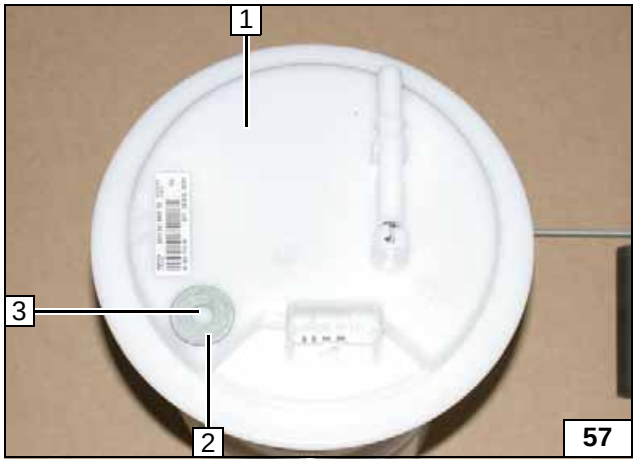


Completing connector of metering pump



1 Wiring harness of metering pump, connector X7 mounted
2 Fuel line of heater, hose section, 10mm dia. clamp [2x]

Connecting metering pump



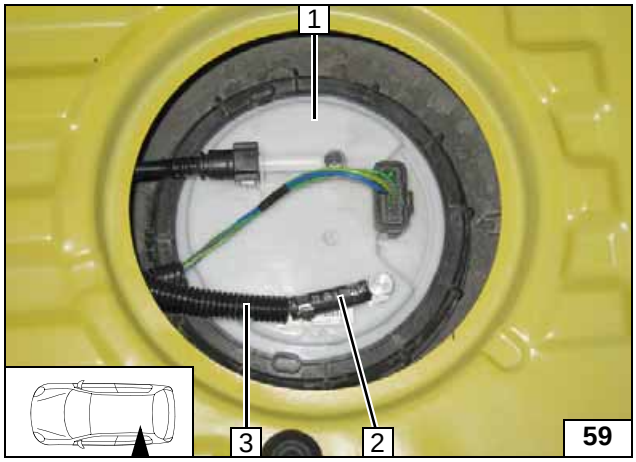
Remove fuel-tank sending unit **1** in accordance with the manufacturer's instructions.

2 Large diameter washer outer dia. = 21.6mm
3 Copy hole pattern, 6mm dia. hole

Fuel extraction

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

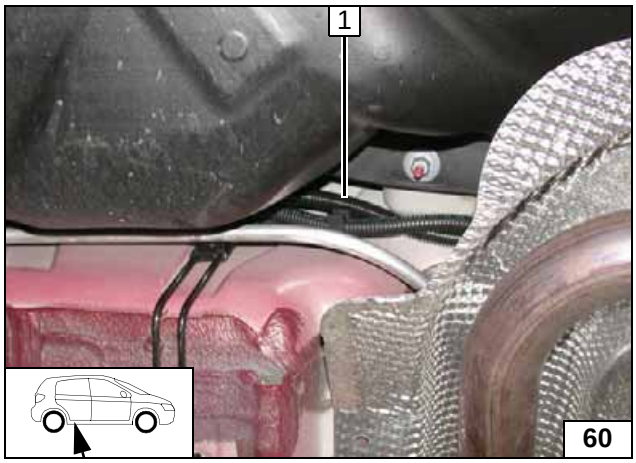
Installing fuel stand-pipe



Install fuel-tank sending unit **1** in accordance with the manufacturer's instructions. Slide corrugated tube **3** onto fuel line.

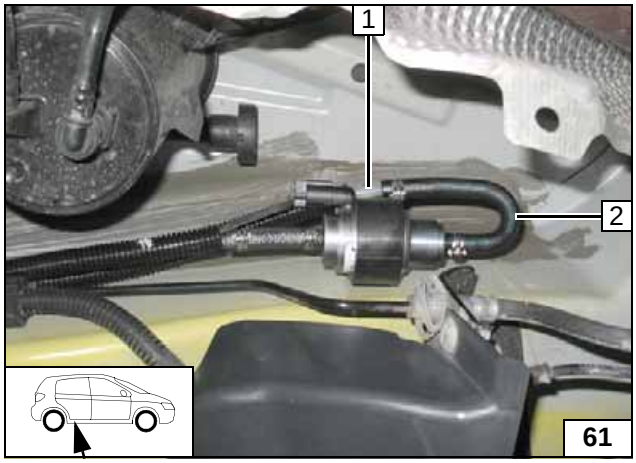
2 Hose section, 10mm dia.clamp [2x]

Connecting fuel line



Route fuel line of fuel standpipe in corrugated tube **1** to installation location of metering pump.

Routing line



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

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

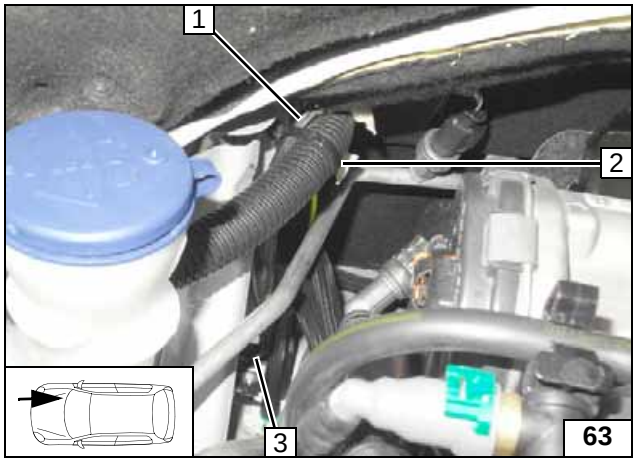
Connect-ing meter-ing pump

Diesel

Route fuel line and wiring harness of metering pump behind the insulation mat to the right vehicle side.

1 Fuel line and wiring harness of metering pump in corrugated tube

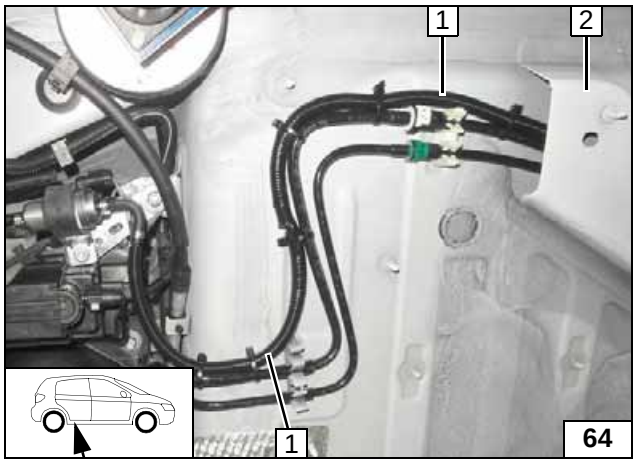
Routing lines



Route fuel line and wiring harness of metering pump **1** in original vehicle line duct **3** to the underbody.

2 Cable tie

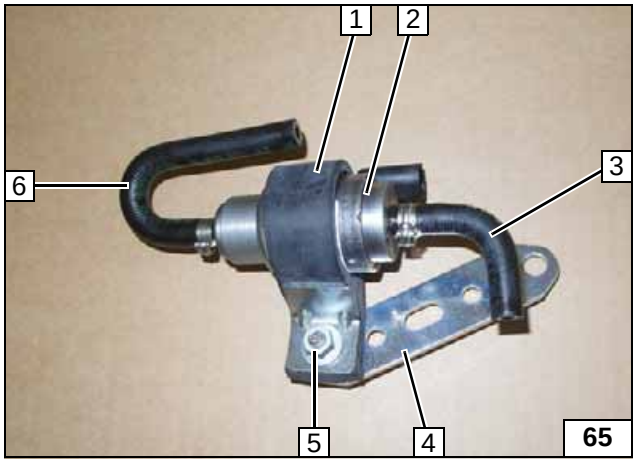
Routing lines



Route fuel line and wiring harness of metering pump in cable duct **2** along original vehicle lines to installation location of metering pump and secure using cable ties.

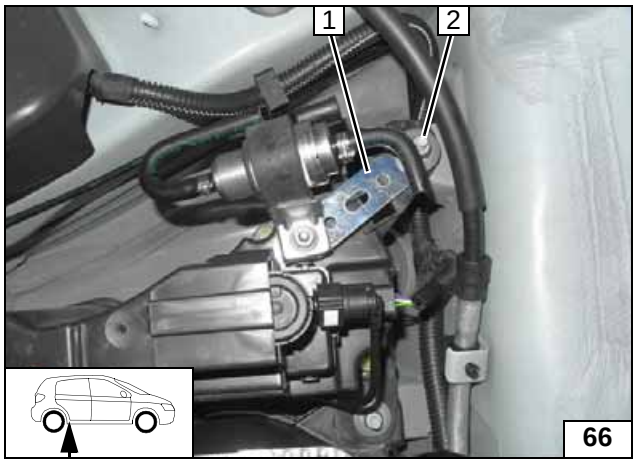
1 Fuel line and wiring harness of metering pump in 10mm dia. corrugated tube

Routing lines



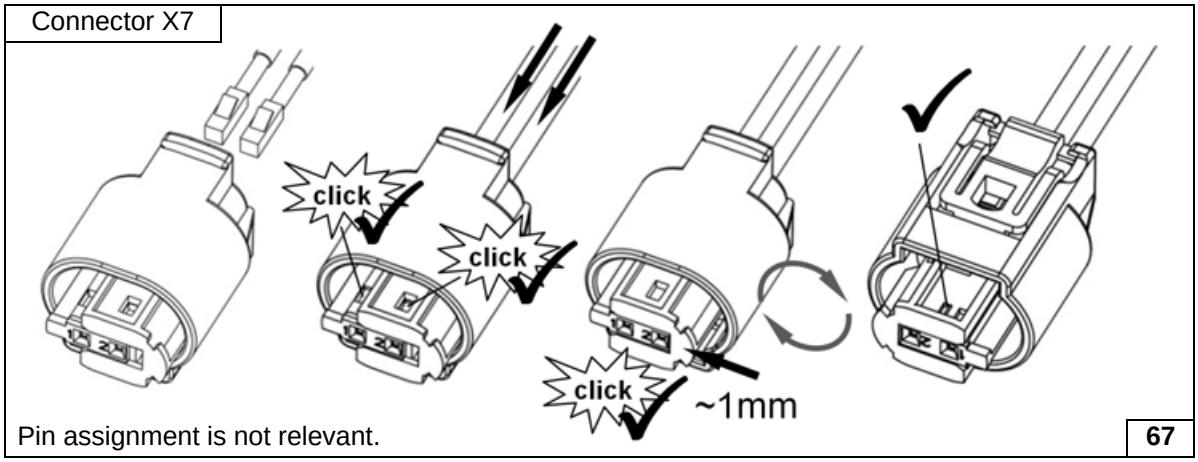
1 Mounting of metering pump
2 Metering pump
3 90° moulded hose, 10mm dia. clamp
4 Perforated bracket
5 M6x25 bolt, support angle bracket, flanged nut
6 180° moulded hose, 10mm dia. clamp

Premounting metering pump

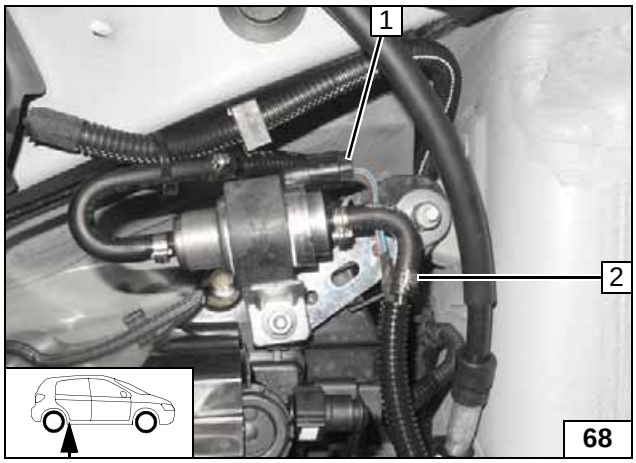


1 Perforated bracket
2 Original vehicle bolt, original vehicle nut

Mounting metering pump

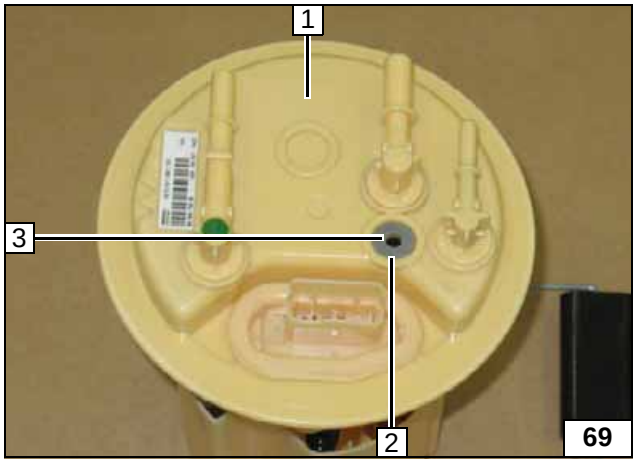


Completing connector of metering pump



1 Wiring harness of heater, connector X7 mounted
2 Fuel line of heater, 10mm dia. clamp

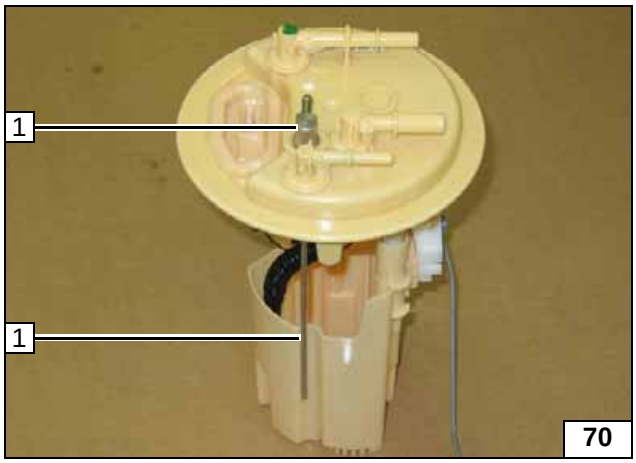
Connecting metering pump



Remove fuel-tank sending unit **1** in accordance with the manufacturer's instructions.

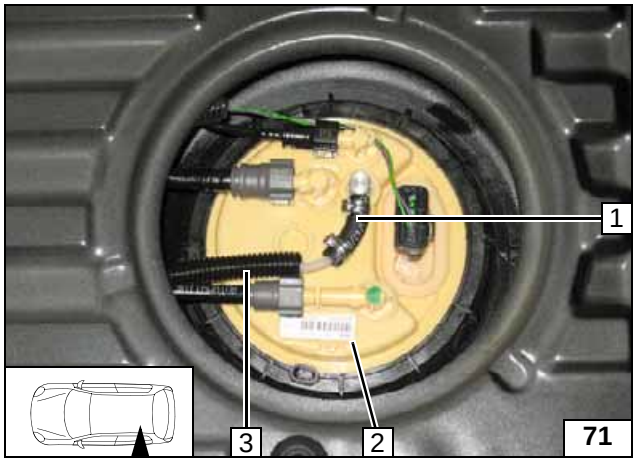
2 Large diameter washer outer dia. = 14.6mm
3 Copy hole pattern, 6mm dia. hole

Fuel extraction



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

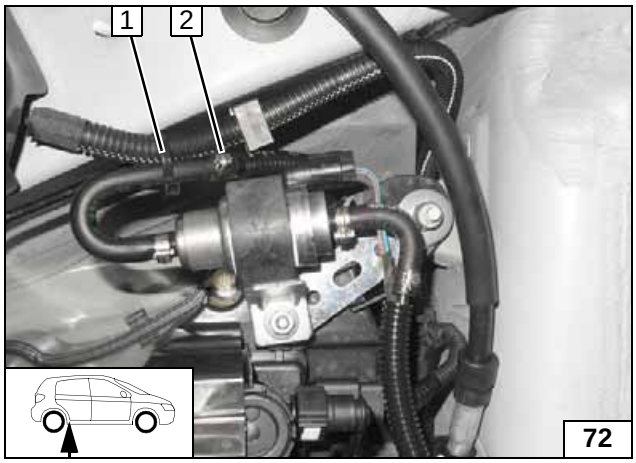
Installing fuel stand-pipe



Install fuel-tank sending unit **2** in accordance with the manufacturer's instructions. Slide on corrugated tube **3** on to fuel line.

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

Connecting fuel line



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

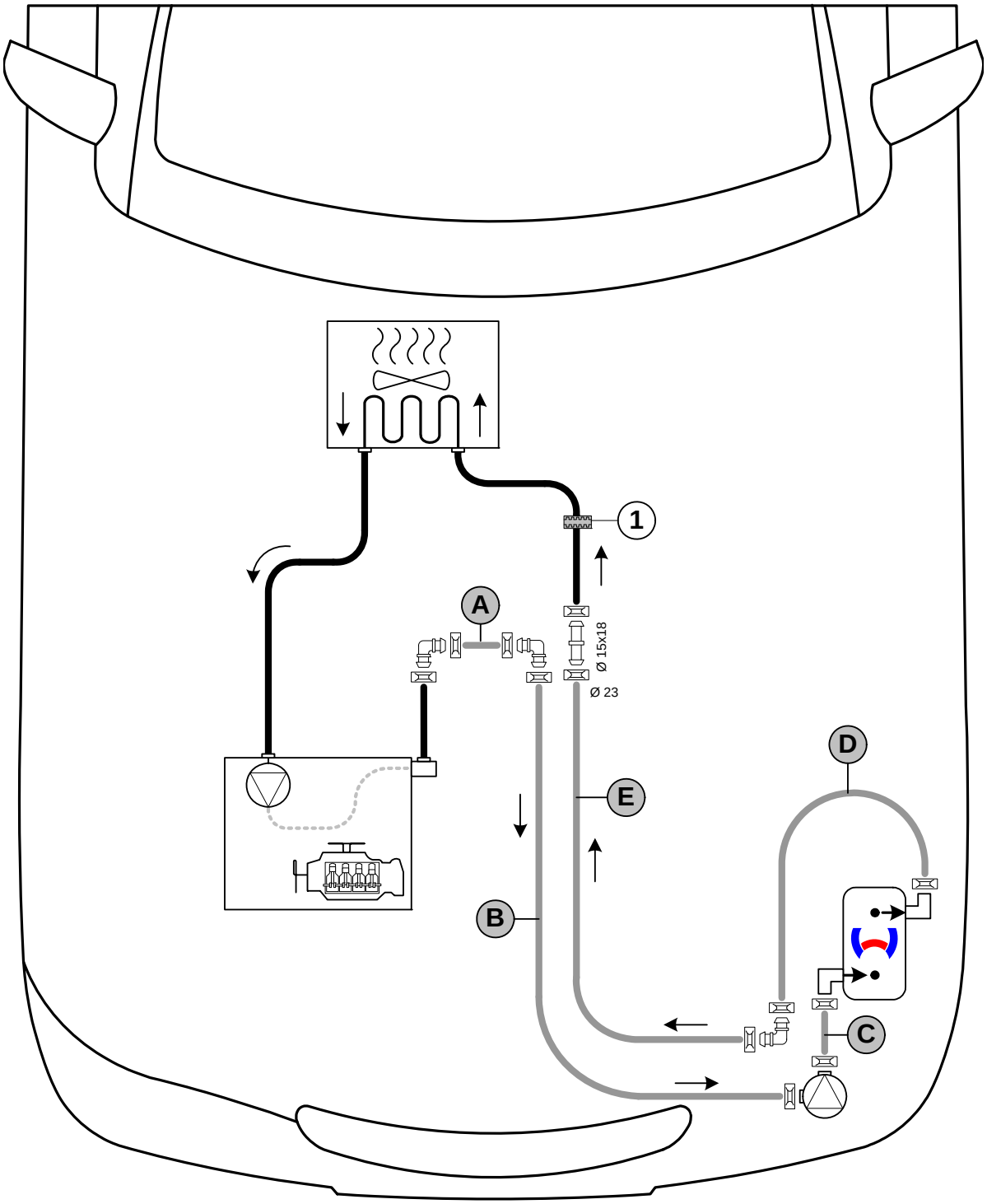
1 Cable tie
2 Fuel line of fuel standpipe, 10mm dia. clamp on 180° moulded hose

Connect-ing meter-ing pump

Coolant Circuit Petrol

WARNING!
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. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram

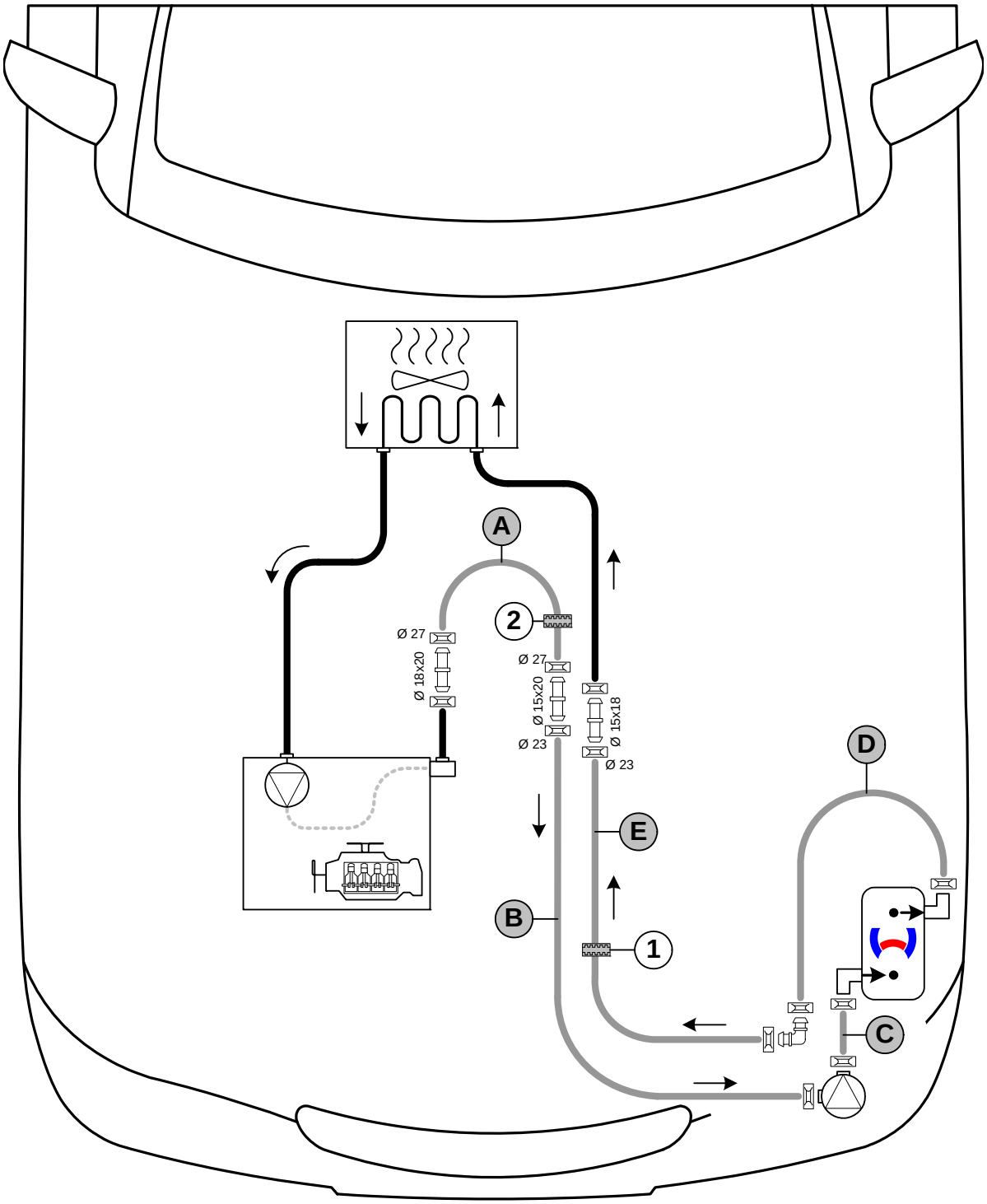


All connecting pipes without a specific designation = 25mm dia. **1** = Black (sw) rubber isolator .
All connecting pipes without a specific designation = 18x18 mm dia.

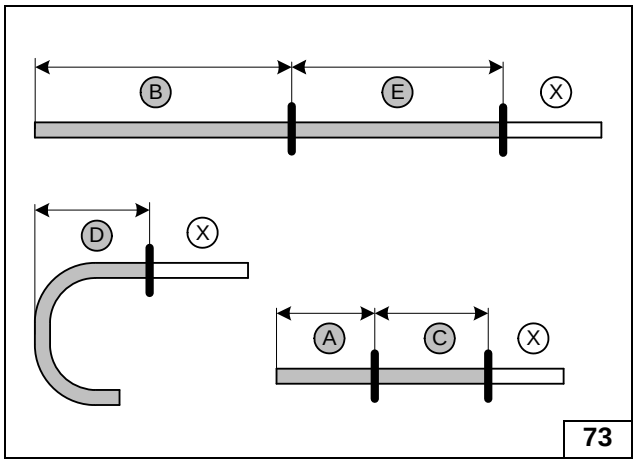
Coolant Circuit Diesel

WARNING!
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. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



All connecting pipes without a specific designation = 25mm dia. **1** = Black (sw) rubber isolator .
All connecting pipes without a specific designation and = 18x18mm dia.
2 = Black (sw) rubber isolator from MY 2014!



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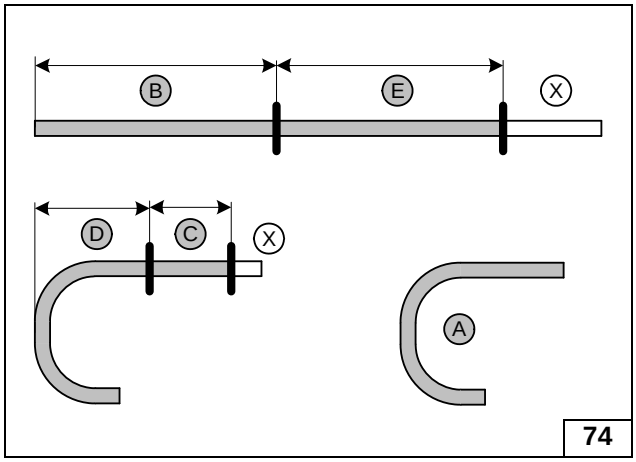
Preparing Coolant Circuit

Petrol

Cutting hoses to length

Hose **A / C** = 18mm dia. hose
Hose **B / E** = 15mm dia. hose
Hose **D** = 180°, 18mm dia moulded hose
Discard section **X**.

A = 120
B = 970
C = 160
D = 250
E = 930



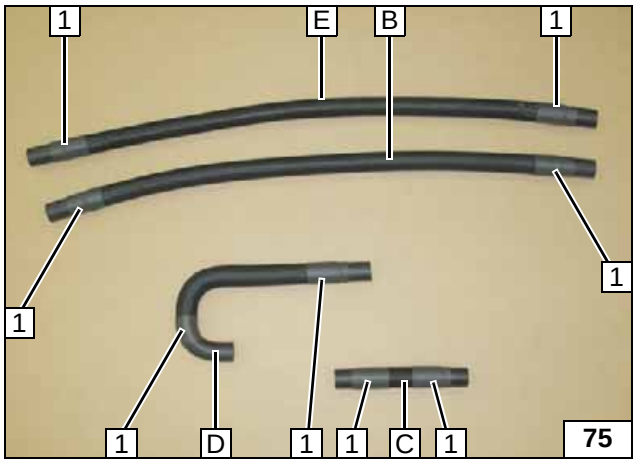
74

Diesel

Cutting hoses to length

Hose **A** = 20mm dia., 180° moulded hose
Hose **B / E** = 15mm dia. hose
Hose **C** /**D** = 180°, 18mm dia. moulded hose
Discard section **X**.

	Up to MY 2013	From MY 2014
B =	850	820
C =	160	185
D =	250	270
E =	870	920



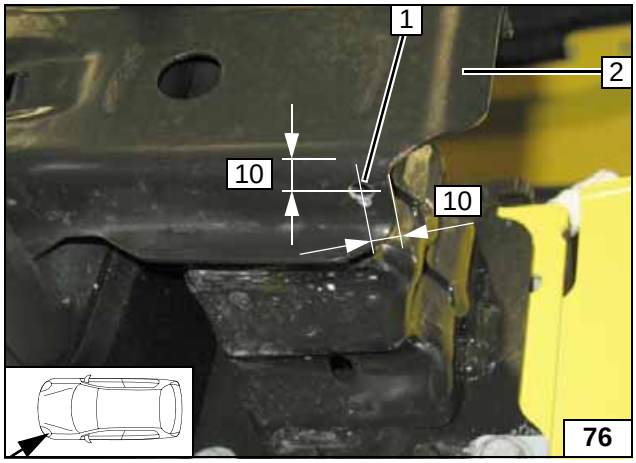
75

All vehicles

Preparing hoses

Push braided protection hoses onto hose **B**, **C**, **D** and **E** and cut to length.
Cut heat shrink plastic tubing to size.

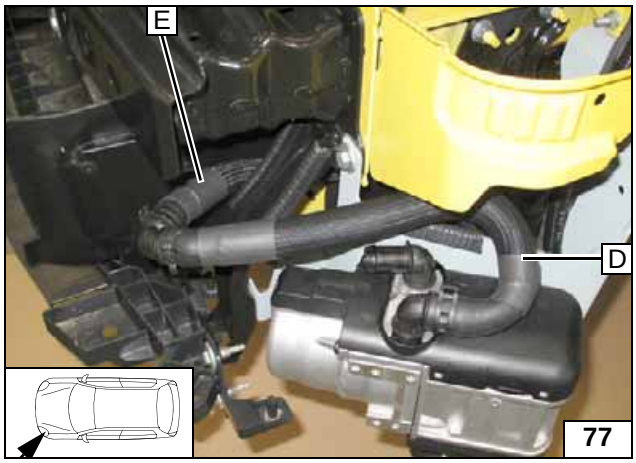
1 50 mm long heat shrink plastic tubing [8x]



76

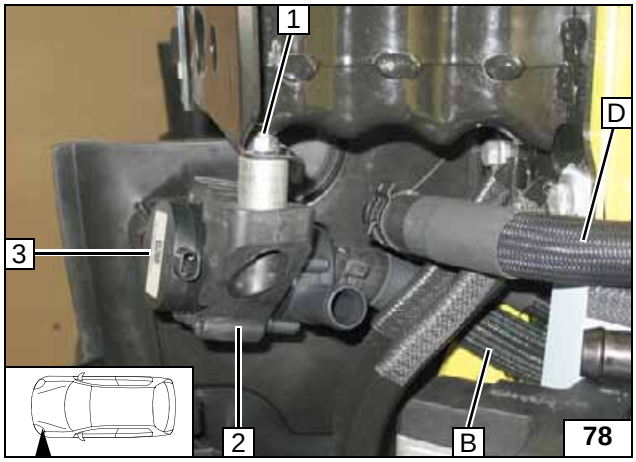
1 7 mm dia. hole
2 Bumper

Hole in bumper



Route hose **E** in the engine compartment over the transmission.

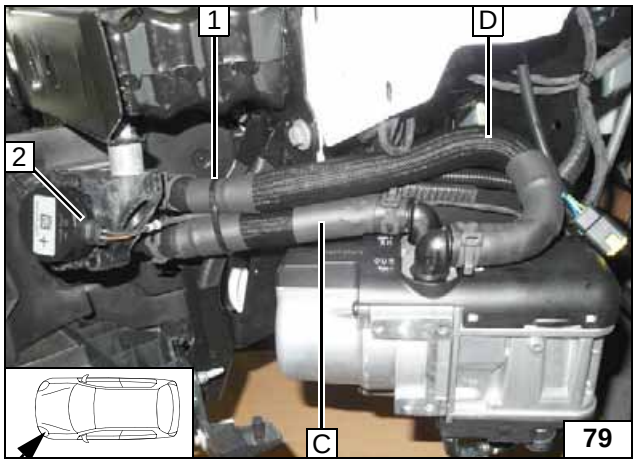
Connecting heater outlet



Route hose **B** to the engine compartment over the transmission.

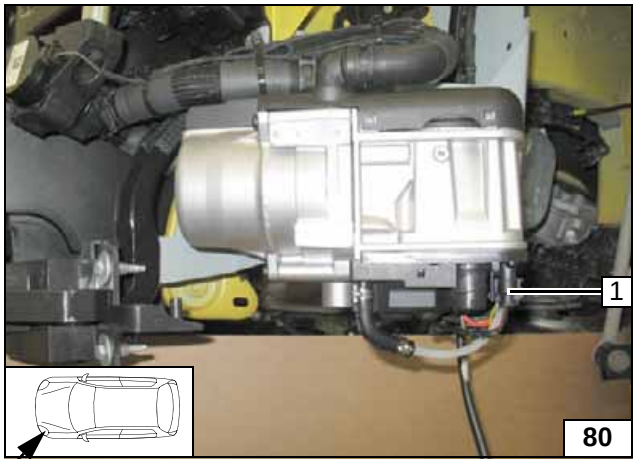
1 M6x40 bolt, large diameter washer, 20mm shim, flanged nut, prepared hole
2 Bracket of circulating pump
3 Circulating pump

Installing circulating pump and hose B



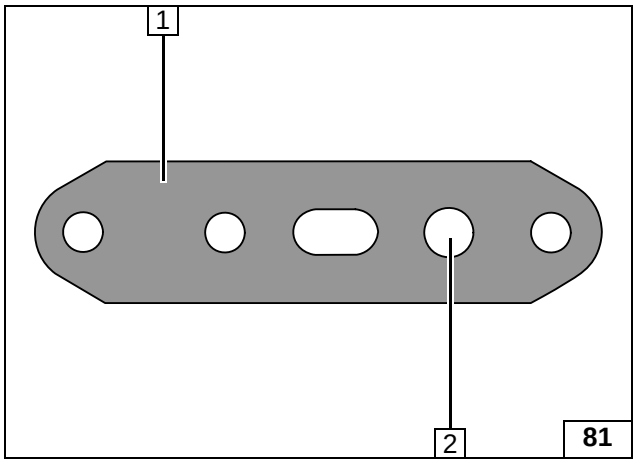
1 Cable tie
2 Wiring harness of circulating pump

Connecting heater inlet



1 Wiring harness of circulating pump

Installing wiring harness of circulating pump



1 Perforated bracket
2 Drill out hole to 8 mm dia.

Preparing perforated bracket

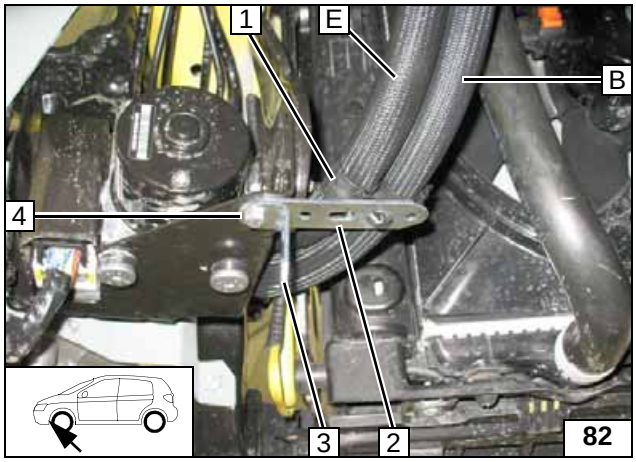


Figure shows vehicle with ABS bracket up to MY 2013!

1 Spacer bracket in 8mm dia. hole
2 Perforated bracket
3 Angle bracket of exhaust silencer
4 M6x20 bolt, flanged nut, ABS bracket

Routing in engine compart-ment

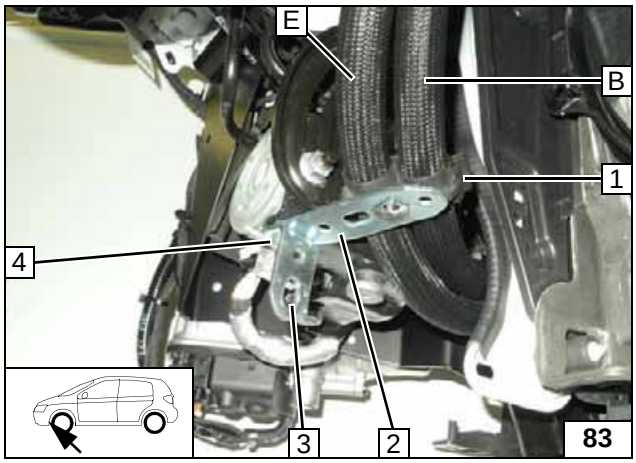
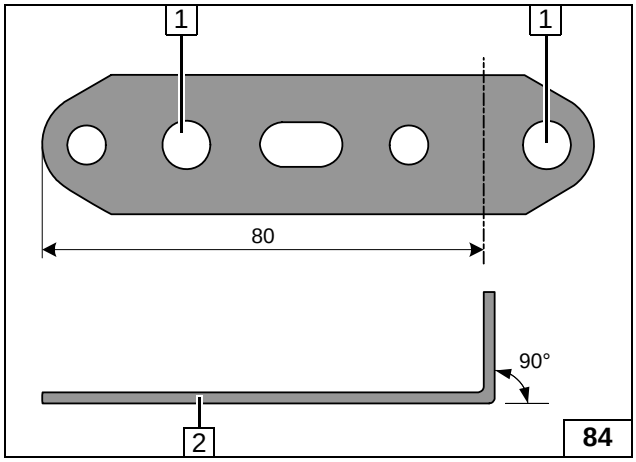


Figure shows vehicle with ABS bracket from MY 2014!

1 Spacer bracket in 8mm dia. hole
2 Perforated bracket
3 Angle bracket of exhaust silencer
4 M6x20 bolt, flanged nut, ABS bracket

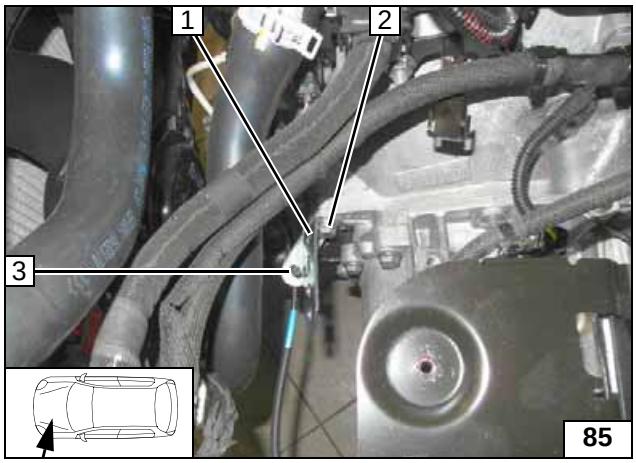
Routing in engine compart-ment



Petrol

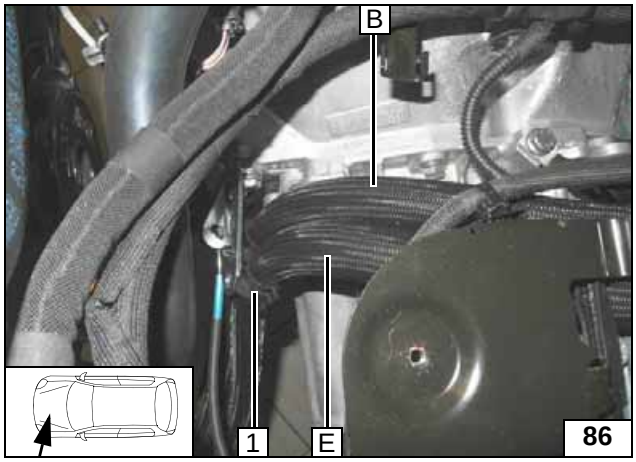
1 Drill out hole to 8 mm dia. [2x]
2 Perforated bracket

Preparing perforated bracket



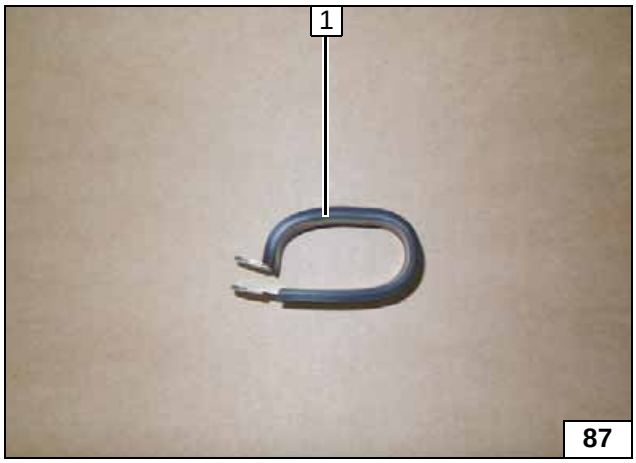
1 Perforated bracket
2 Original vehicle bolt
3 Bracket of coupling line

Installing perforated bracket



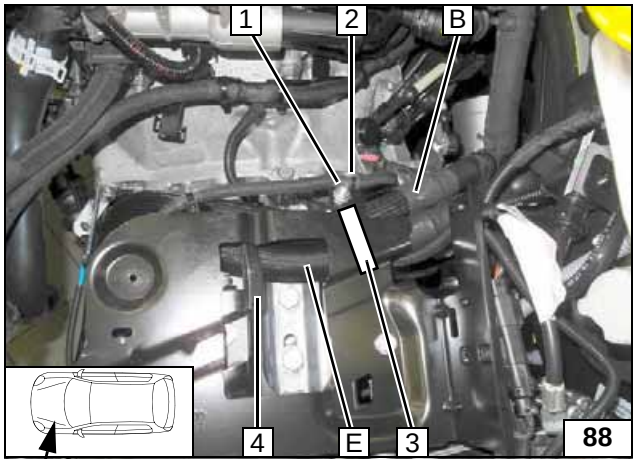
Install spacer bracket **1**. Route hose **B** and **E** through hose bracket, align hoses and shut lock. Ensure sufficient distance from neighbouring components.

Routing in engine compartment



1 Shape clamp

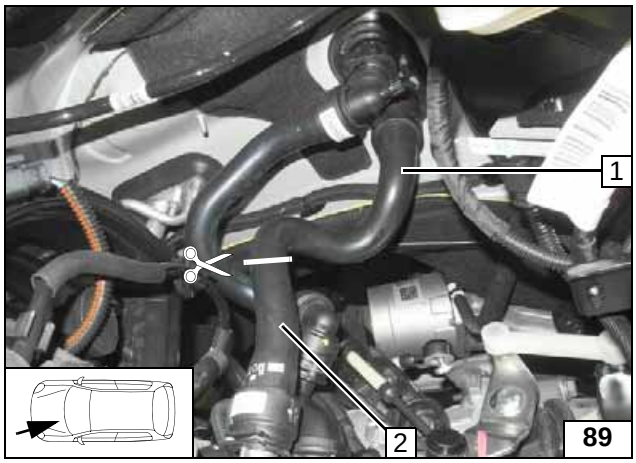
Preparing clamp



Remove clip at Pos. **1** and discard.

1 M6x20 bolt, existing hole
2 Thin cable tie, original vehicle hole
3 Clamp (covered by bracket)
4 50 mm edge protection

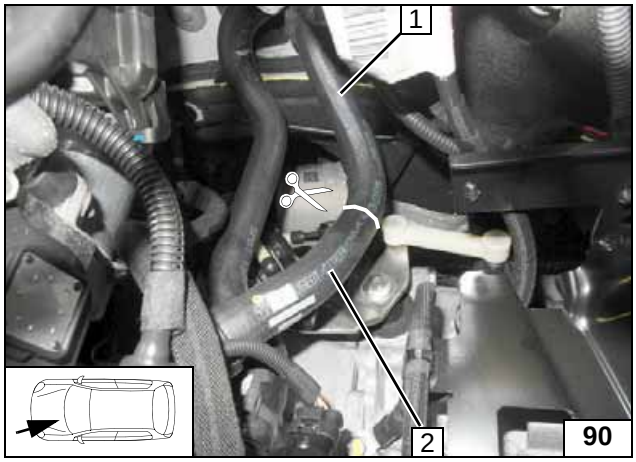
Routing in engine compartment



VTi 68 and 82

1 Hose section of heat exchanger inlet
2 Hose section of engine outlet

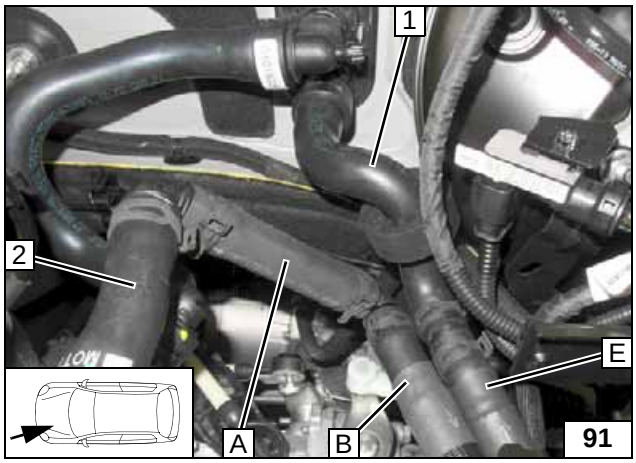
Cutting point



VTi 120

1 Hose section of heat exchanger inlet
2 Hose section of engine outlet

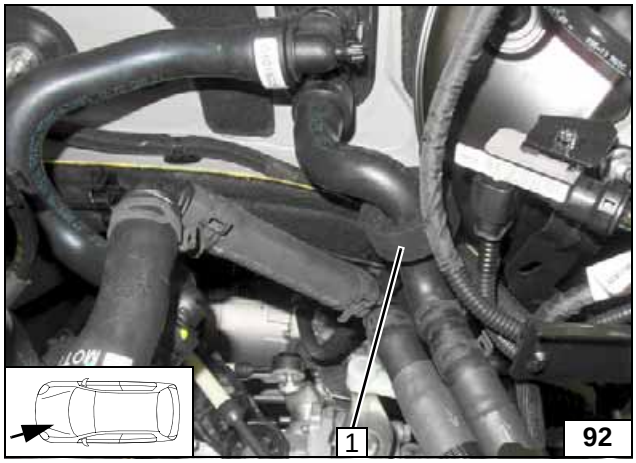
Cutting point



Petrol, all vehicles

1 Hose of heat exchanger inlet
2 Hose of engine outlet

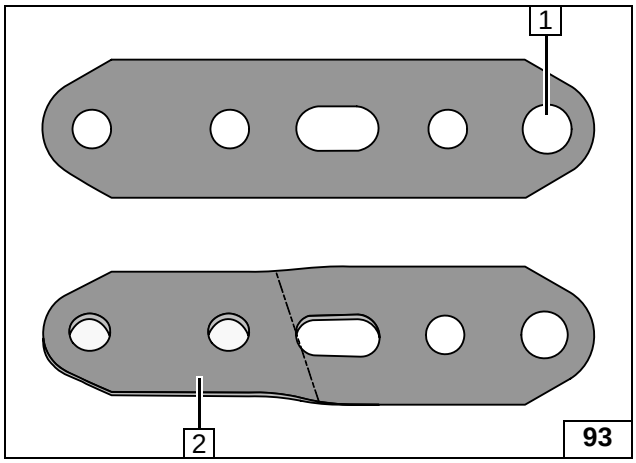
Connecting engine outlet / heat exchanger inlet



Align hoses. Ensure sufficient distance from neighbouring components.

1 Black (sw) rubber isolator

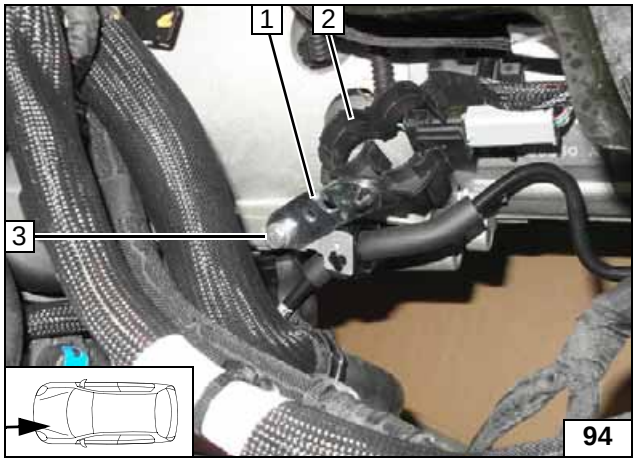
Aligning rubber isolator



Diesel

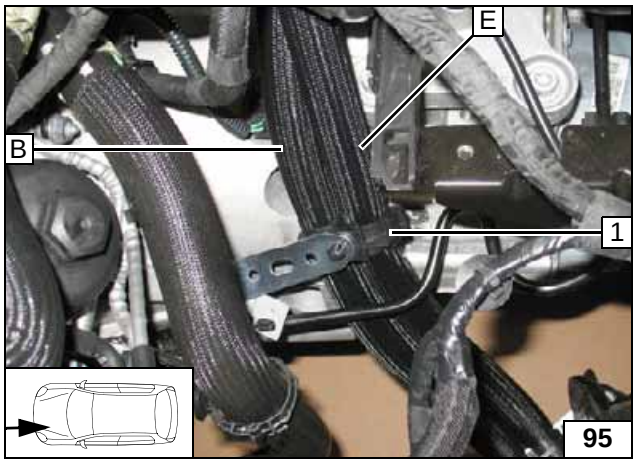
1 Drill out hole to 8 mm dia.
2 Turn perforated bracket by 15°

Preparing perforated bracket



1 Perforated bracket in 8mm dia. hole
2 Hose bracket
3 Original vehicle bolt, bracket of coupling line

Installing perforated bracket

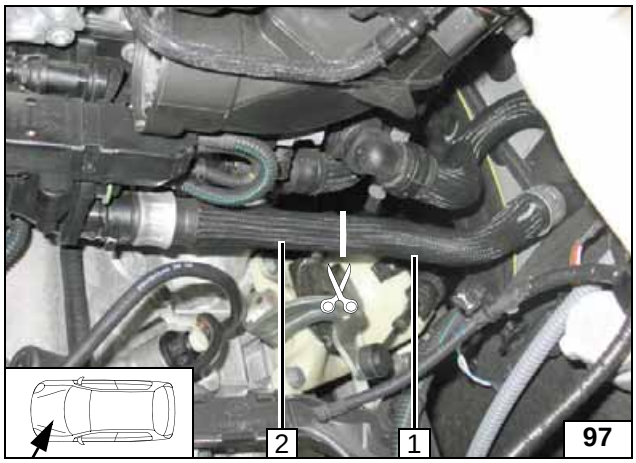


Route hose **B** and **E** through spacer bracket **1**, align hoses and shut lock. Ensure sufficient distance from neighbouring components.

Routing in engine compart-ment

Slide 100mm edge protection **1** onto the transmission edge.

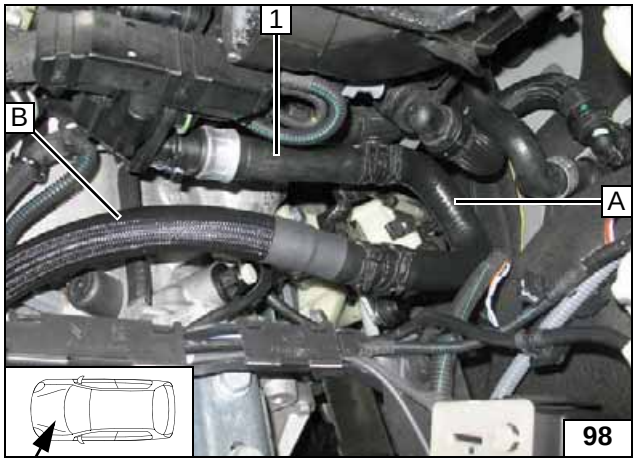
Installing edge pro-tection



Up to MY 2013

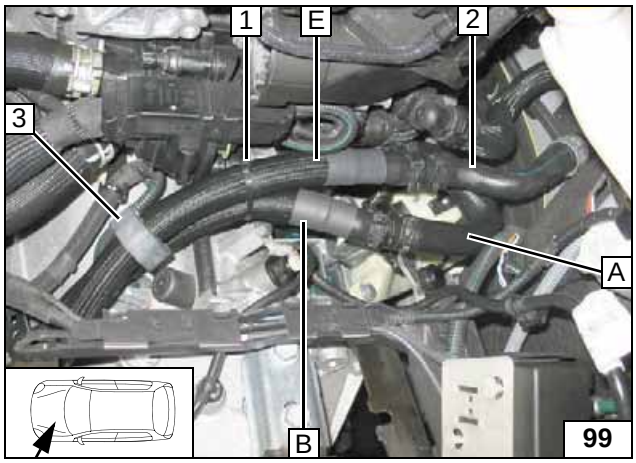
1 Hose section of heat exchanger inlet
2 Hose section of engine outlet

Cutting point



1 Hose of engine outlet

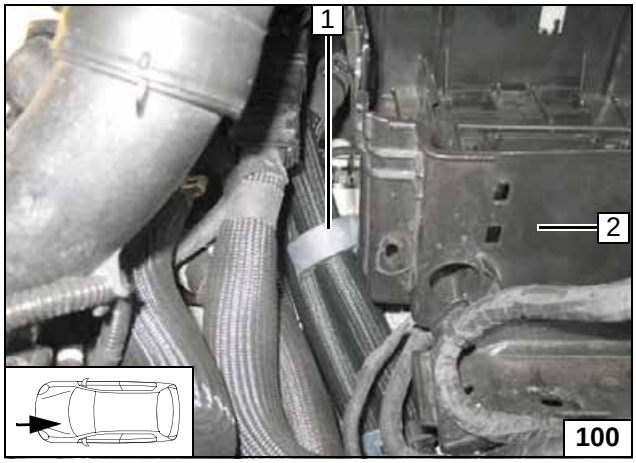
Connecting engine outlet



Push black (sw) rubber isolator **3** onto hose **E**.

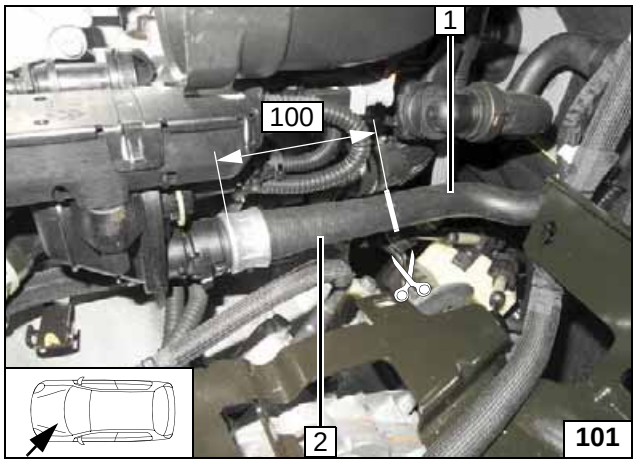
1 Cable tie
2 Hose of heat exchanger inlet

Connecting heat exchanger inlet



Align black (sw) rubber isolator **1** to battery box **2**. Align hoses. Ensure sufficient distance to neighbouring components; correct if necessary.

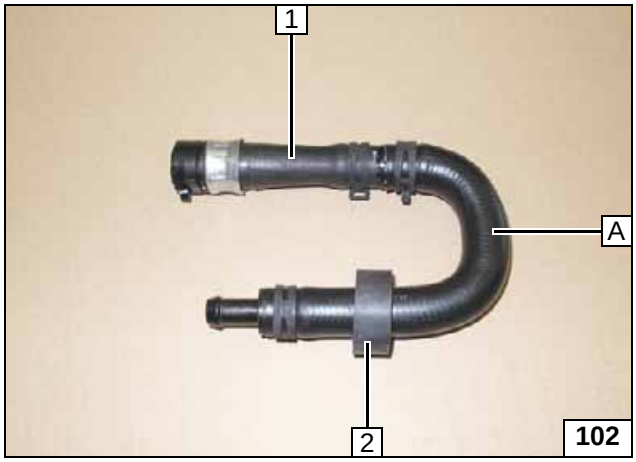
Aligning rubber isolator



From MY 2014

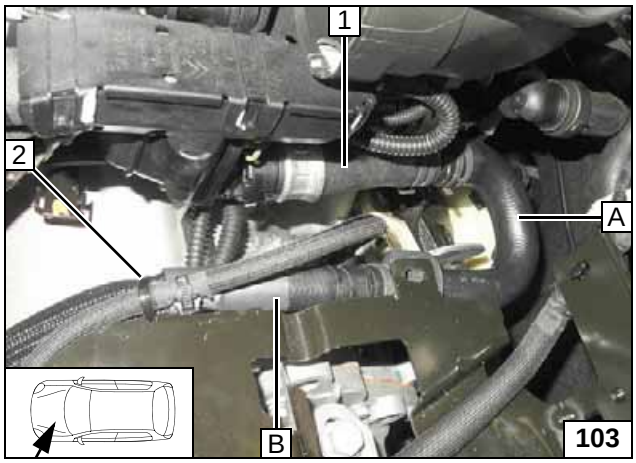
1 Hose section of heat exchanger inlet
2 Remove hose section of engine outlet

Cutting point



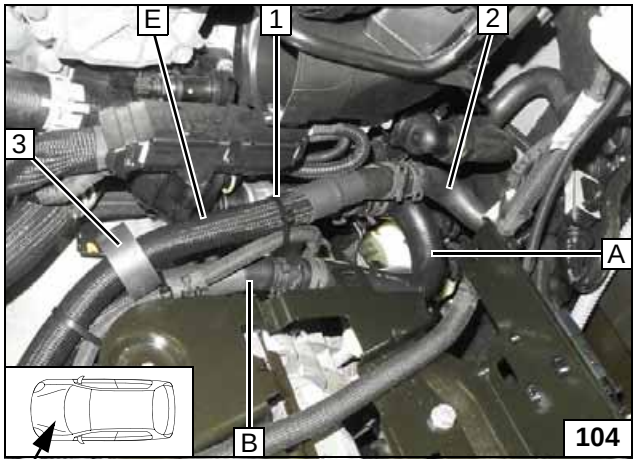
1 Hose of engine outlet
2 Slide on black (sw) rubber isolator

Premounting hose A



1 Hose of engine outlet
2 Cable tie

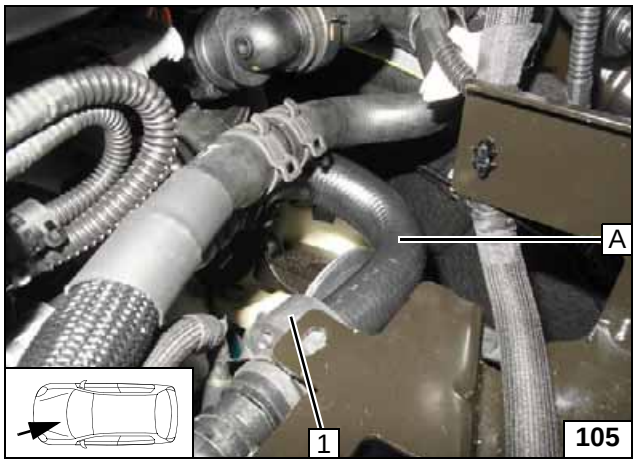
Connecting engine outlet



Push black (sw) rubber isolator **3** onto hose **E**.

1 Cable tie
2 Hose of heat exchanger inlet

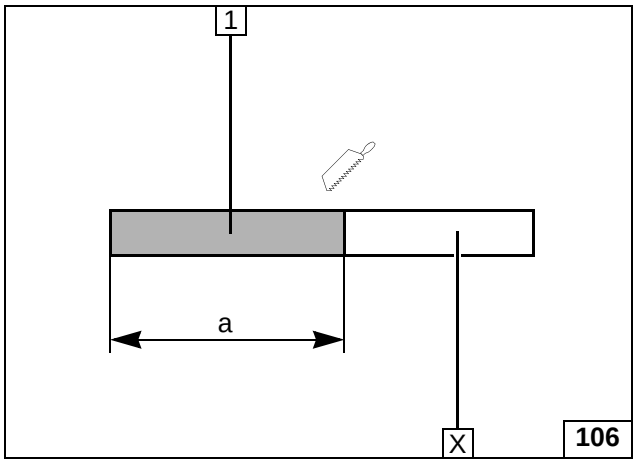
Connecting heat exchanger inlet



Aligning rubber isolator

Align hoses. Ensure sufficient distance to neighbouring components; correct if necessary.

1 Align black (sw) rubber isolator



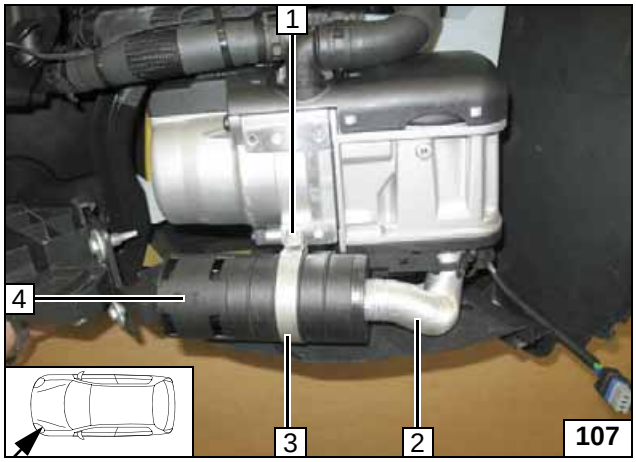
Combustion Air

Discard section **X**.

1 Combustion air pipe

Cutting combustion air pipe to length

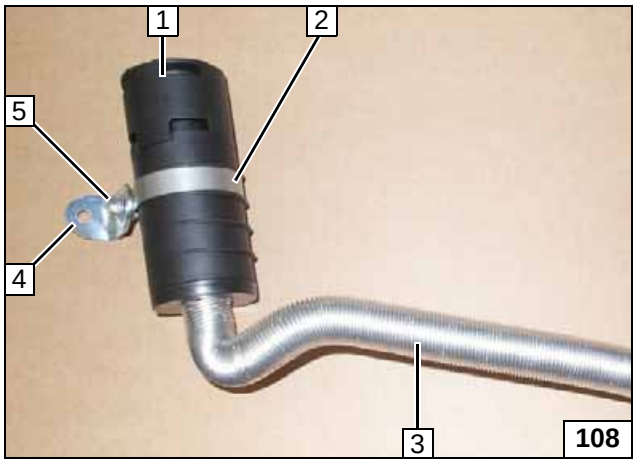
	Up to MY 2013	From MY 2014
a =	120	400



Up to MY 2013

Mounting silencer

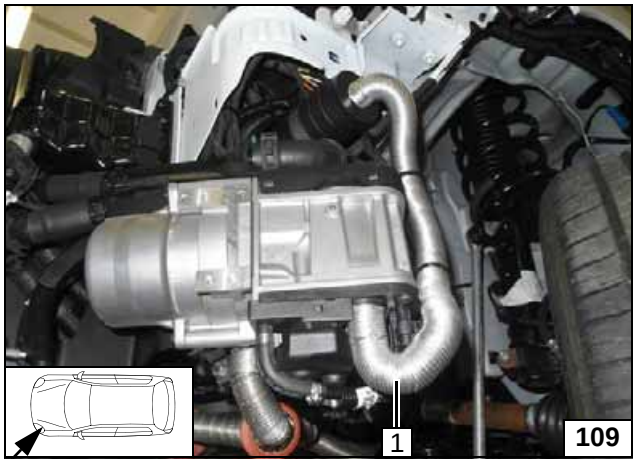
1 5x13 self-tapping bolt
2 Combustion air pipe
3 51 mm dia. p-clamp
4 Silencer



From MY 2014

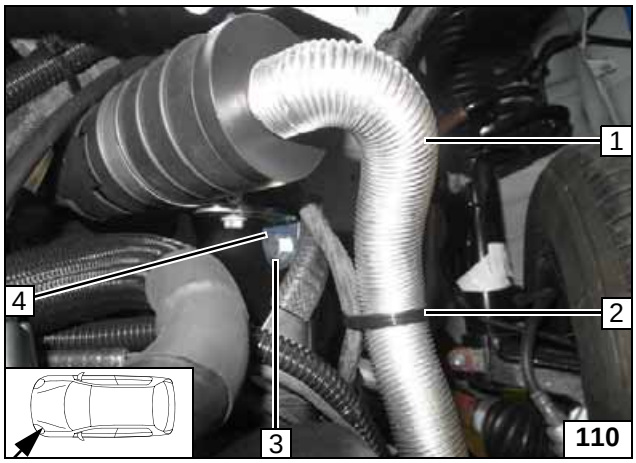
Premounting silencer

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



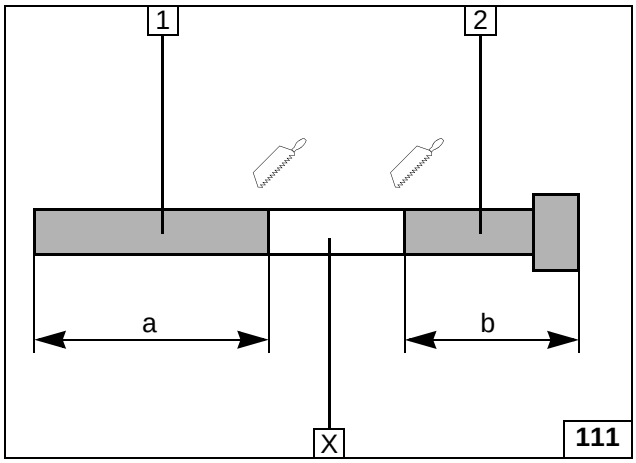
Installing combustion air pipe

1 Combustion air pipe



1 Combustion air pipe
2 Cable tie
3 M6x20 bolt, flanged nut, existing hole
4 Angle bracket

Mounting silencer



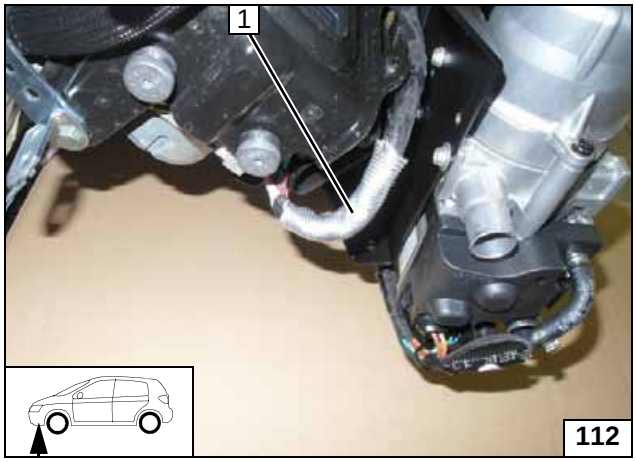
Exhaust Gas

Discard section **X**.

1 Exhaust pipe a
2 Exhaust end section b

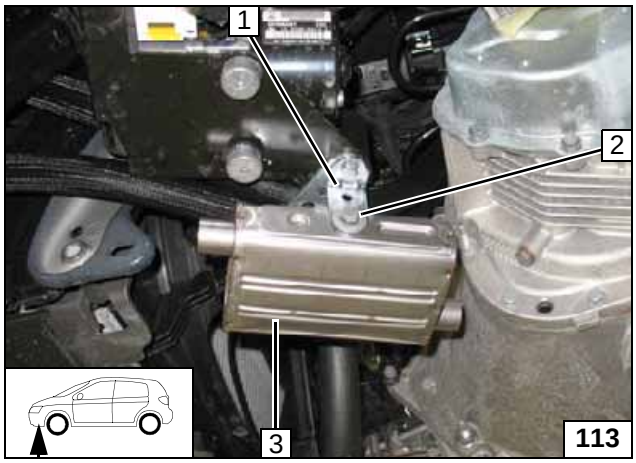
	Up to MY 2013	From MY 2014
a =	280	300
b =	310	300

Preparing exhaust pipe



Cut heat protection hose **1** lengthways then install onto original vehicle hose and align.

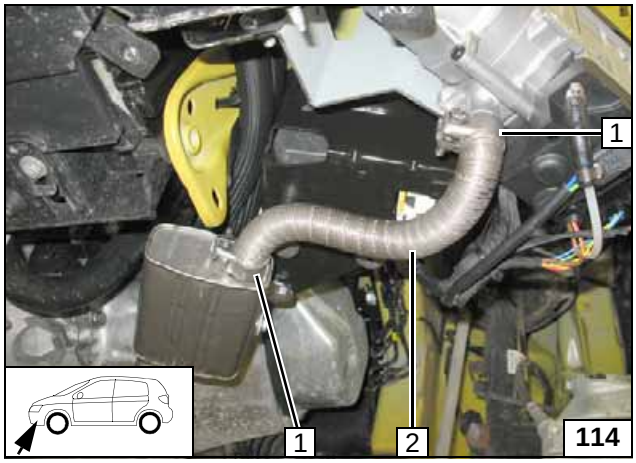
Mounting heat protection hose



Up to MY 2013

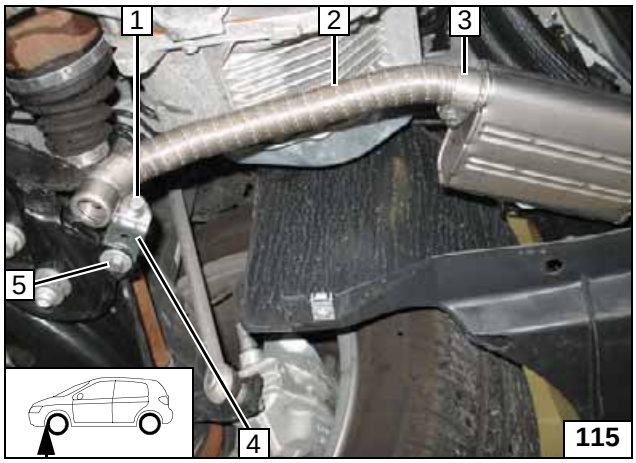
1 Premounted angle bracket
2 M6x16 bolt, spring lockwasher, large diameter washer
3 Exhaust silencer

Mounting silencer



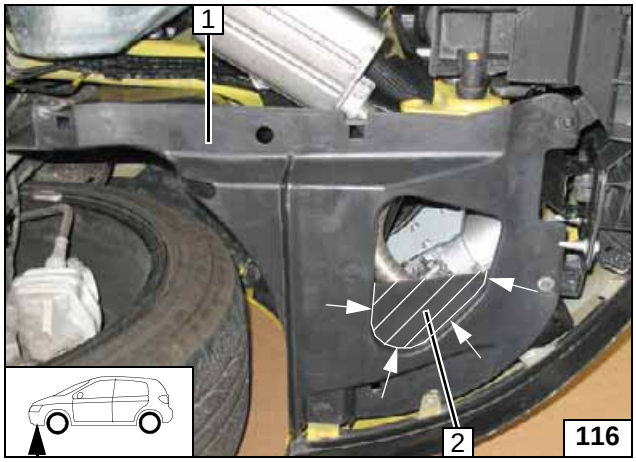
1 Hose clamp [2x]
2 Exhaust pipe

Installing exhaust pipe



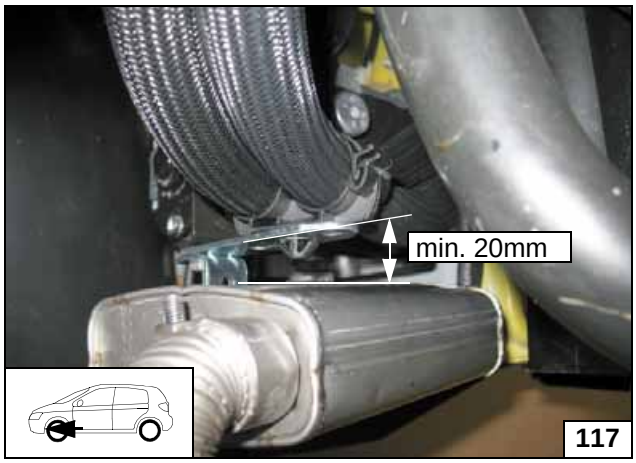
1 M6x20 bolt, p-clamp, flanged nut
2 Align exhaust end section
3 Hose clamp
4 Angle bracket
5 M6x20 bolt, large diameter washer [2x], flanged nut, existing hole

Installing exhaust end section



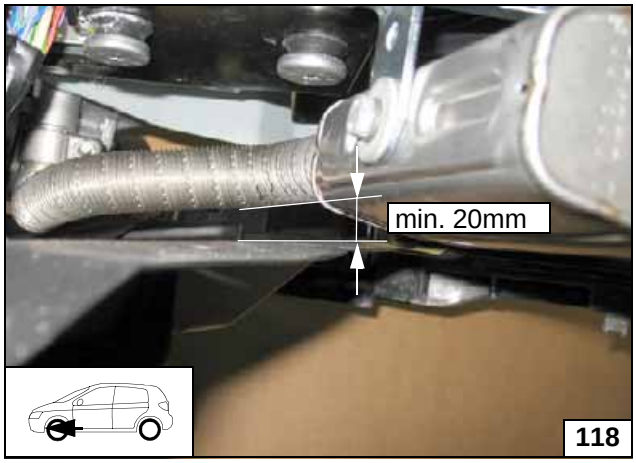
Cut out wheel well trim **1** at the marking. Discard section **2** .

Cutting out wheel well trim



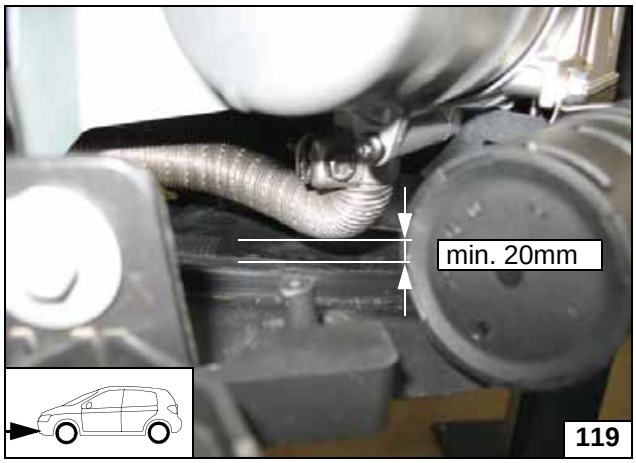
Ensure sufficient distance from silencer; correct if necessary.

Aligning silencer



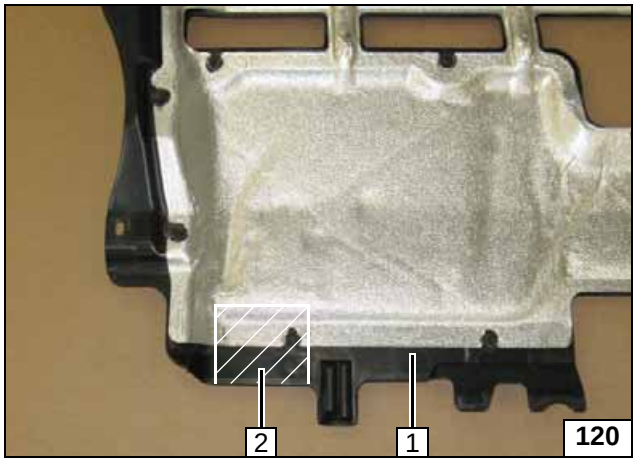
Ensure sufficient distance from wheel well trim; correct if necessary.

Aligning exhaust pipe



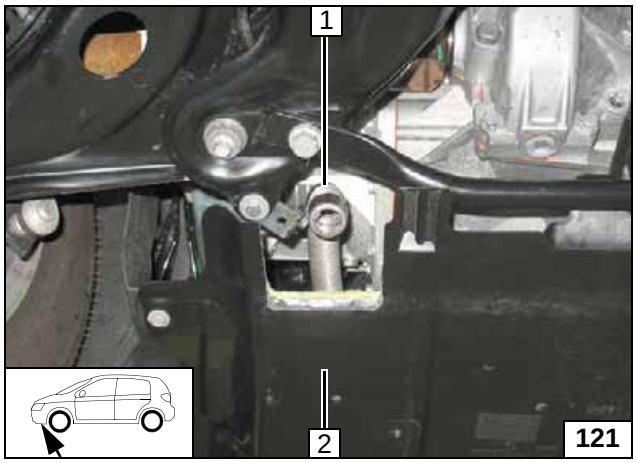
Ensure sufficient distance from wheel well trim; correct if necessary.

Aligning exhaust pipe



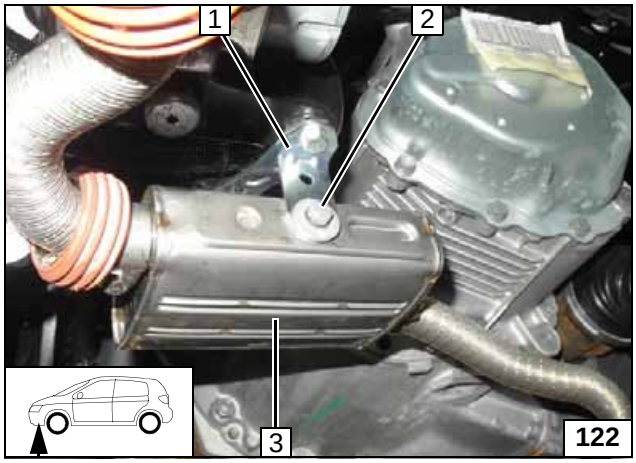
Cut out underride protection **1** (if present) at the marking. Discard section **2** .

Cutting out underride protection



Install underride protection **2**. Ensure sufficient distance between exhaust end section **1** and underride protection **2**, correct if necessary!

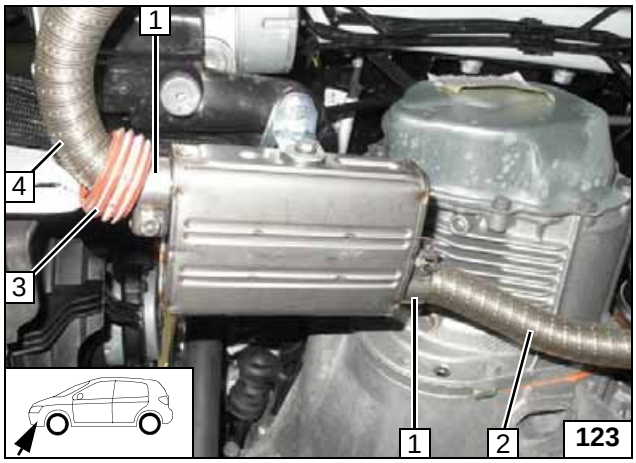
Mounting underride protection



From MY 2014

1 Premounted angle bracket
2 M6x16 bolt, spring lockwasher, large diameter washer
3 Exhaust silencer

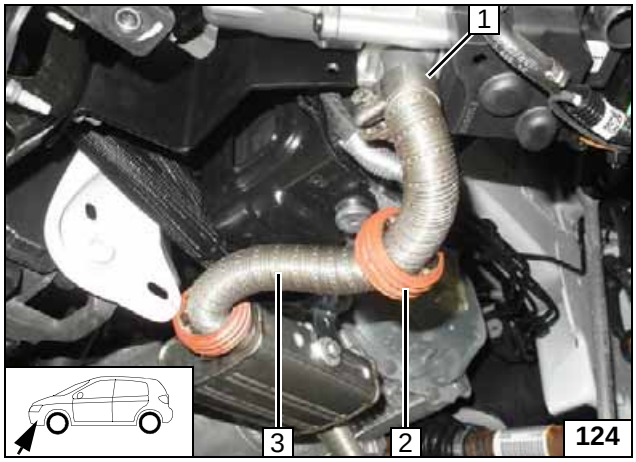
Mounting silencer



Slide spacer bracket **3** onto exhaust pipe **4**!

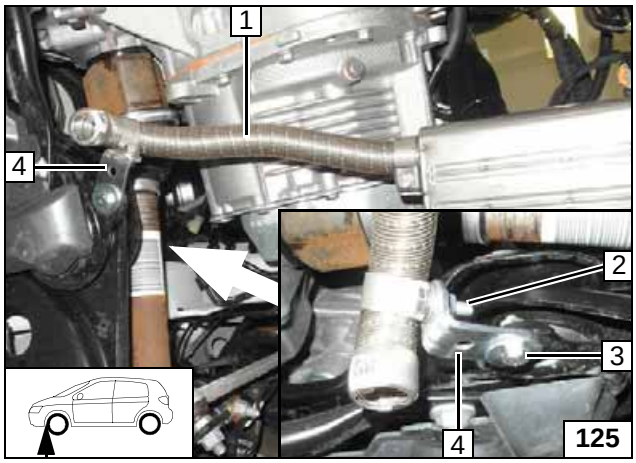
1 Hose clamp [2x]
2 Exhaust end section

Installing exhaust pipe and exhaust end section



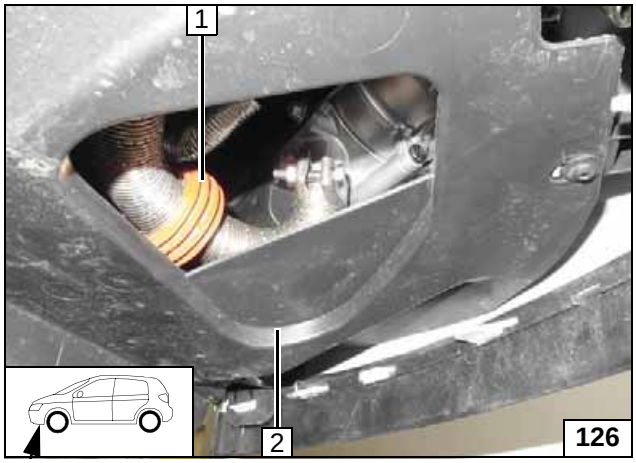
1 Hose clamp
2 Slide on spacer bracket
3 Exhaust pipe

Installing exhaust pipe



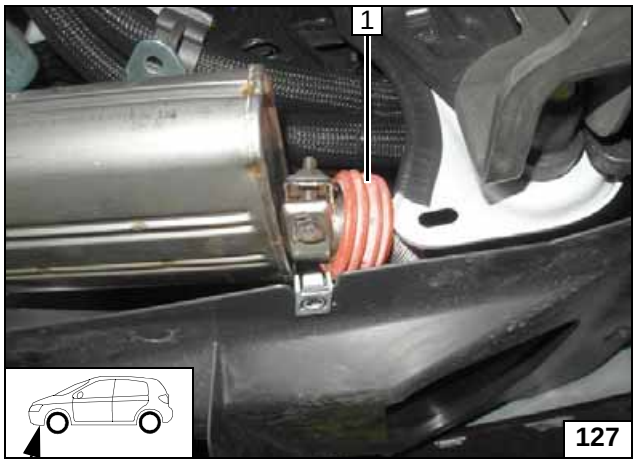
1 Align exhaust end section
2 M6x20 bolt, p-clamp, flanged nut
3 M6x20 bolt, large diameter washer [2x], flanged nut, existing hole
4 Angle bracket

Installing exhaust end section



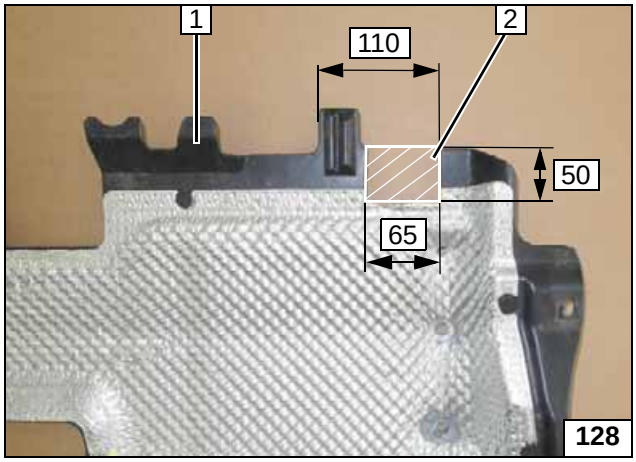
Install wheel well trim **2**. Align spacer bracket **1** with wheel well trim **2**.

Aligning exhaust pipe



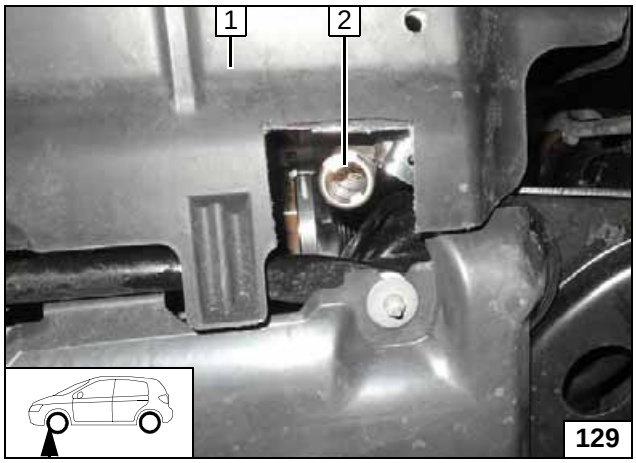
Align spacer bracket **1** as shown.

Aligning exhaust pipe



Cut out underride protection **1** at the marking. Discard section **2** .

Cutting out underride protection



Install underride protection **1**. Align exhaust end section **2** with the centre of the cut-out and flush with underride protection **1**. Ensure sufficient distance to neighbouring components; correct if necessary.

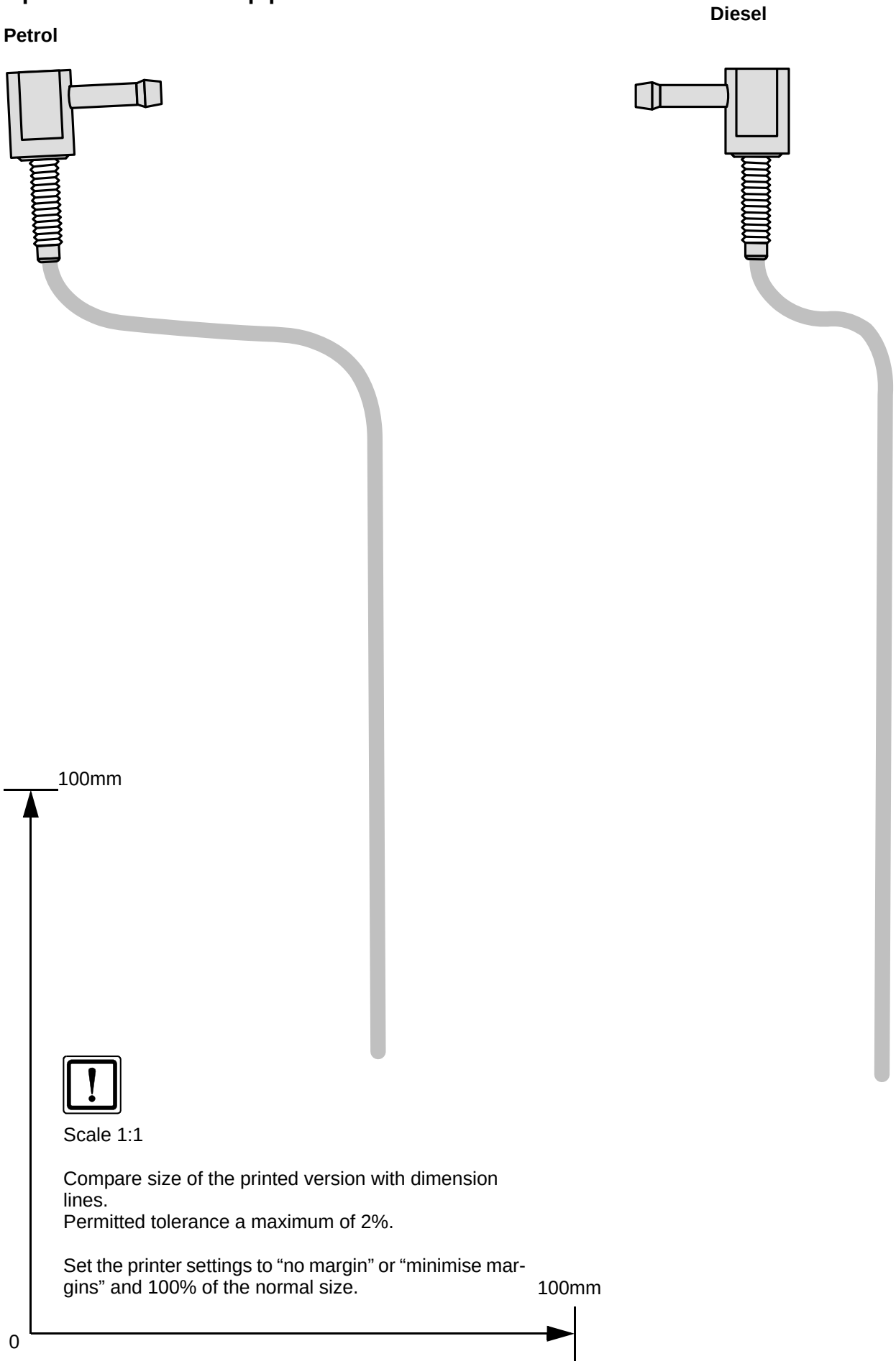
Aligning exhaust pipe

Final Work

WARNING!
Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose wires and tie back.
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.**
- **Adjust digital timer, teach telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place the "Switch off parking heater before refuelling" caution label in the area of the filler neck.**
- **For initial startup and function check, please see installation instructions.**

Templates for Fuel Standpipe



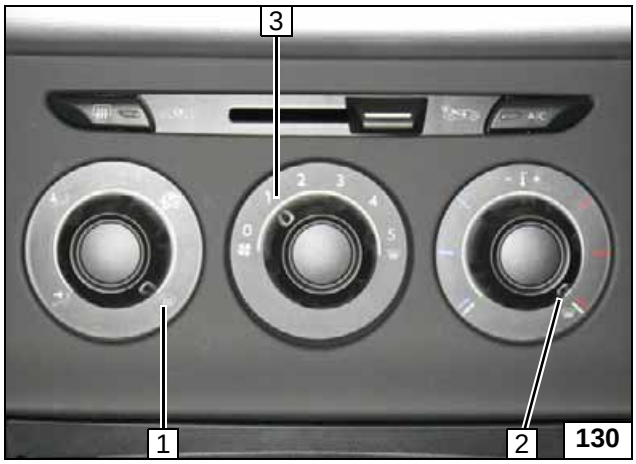
Operating Instructions for Man. A/C up to 2013

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.

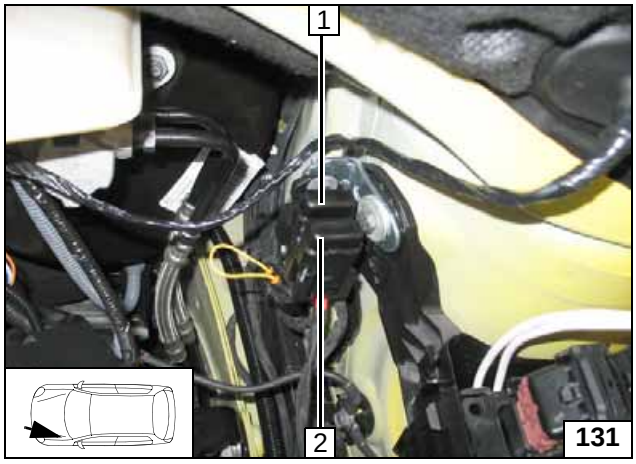
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



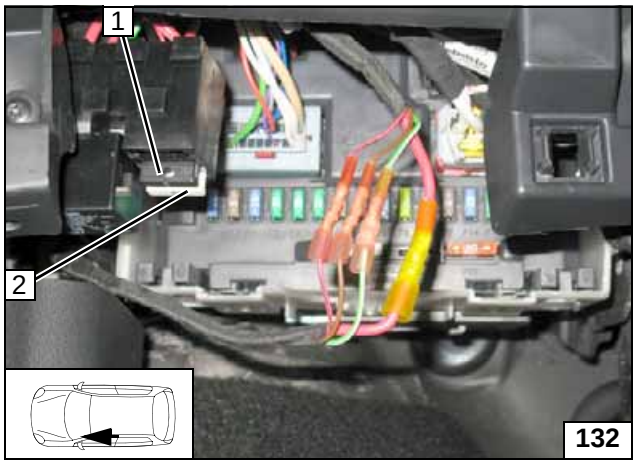
1 Air outlet onto windscreen
2 Set temperature to "max."
3 Set fan to level "1“, or possibly "2“

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment

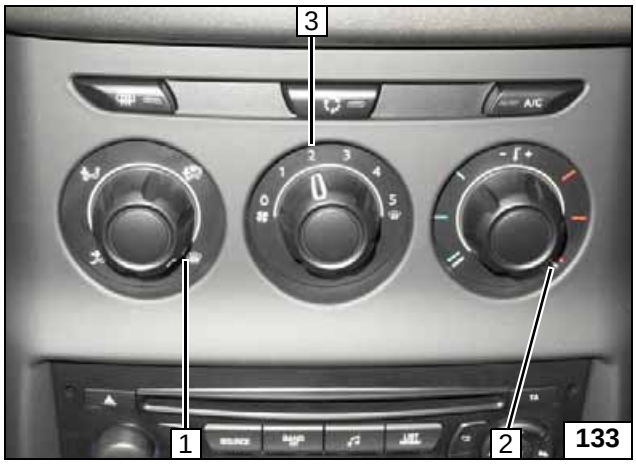
Operating Instructions for Man. A/C from 2014

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.

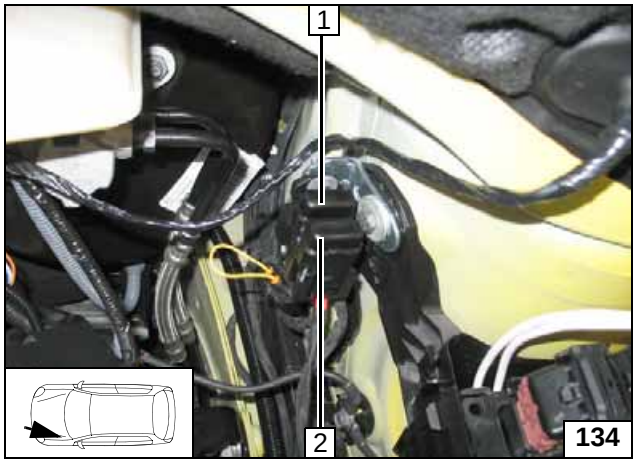
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



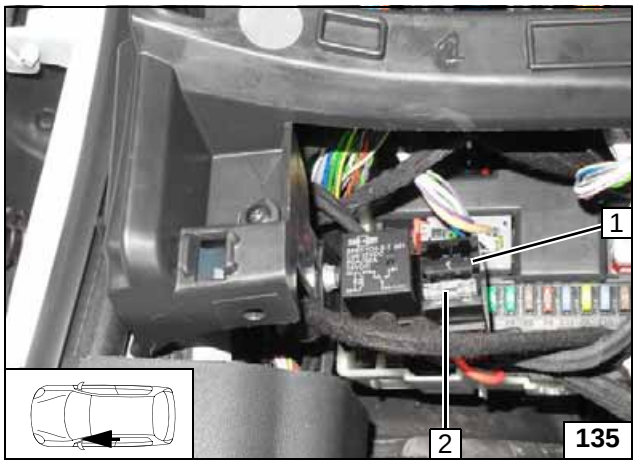
1 Air outlet onto windscreen
2 Set temperature to "max."
3 Set fan to level "1“, or possibly "2“

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment

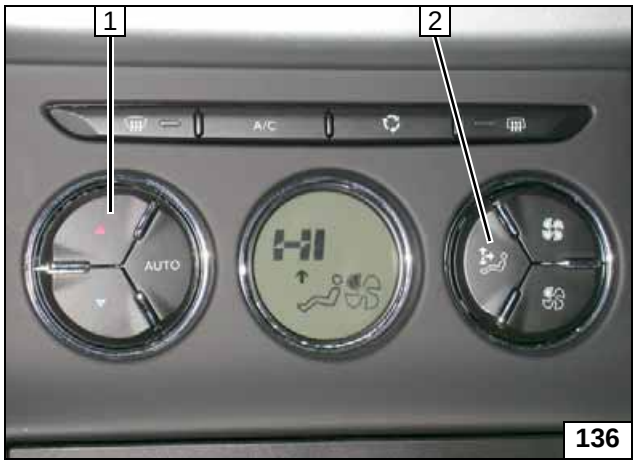
Operating Instructions for Automatic A/C up to 2012

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.

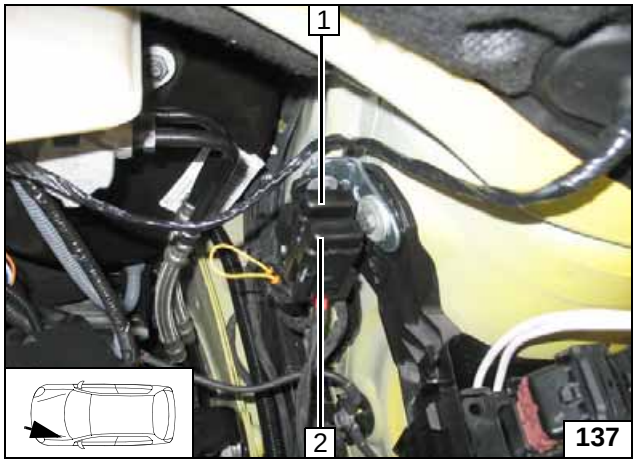
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



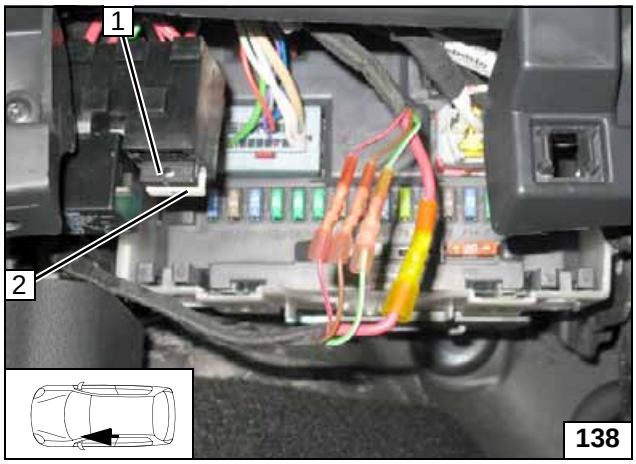
1 Set temperature to "HI"
2 Air outlet faces upward

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment