Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Fiat Doblo / Doblo Cargo

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Fiat	Doblo	263	e3 * 2007 / 46 * 0007 * ...
Fiat	Doblo Cargo	263	e3 * 2007 / 46 * 0002 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.3 JTD	Diesel	SG	66	1248	199 A3.000
1.6 JTD	Diesel	SG	74	1598	263 A3.000
1.6 JTD	Diesel	SG	77	1598	198 A3.000
2.0 JTD	Diesel	SG	99	1956	263 A1.000

SG = manual transmission

From model year 2010
Left-hand drive vehicle

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

Not verified: Passenger compartment monitoring

Exclusion: Headlight washer system up to model year 2014

Total installation time: approx. 9.5 hours

Fiat Doblo / Doblo Cargo

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix for Fiat Doblo / Doblo Cargo 2010 Diesel: **1315993D**
- To be ordered additionally in case of automatic air-conditioning Automatic A/C kit: **1316747B**
- 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

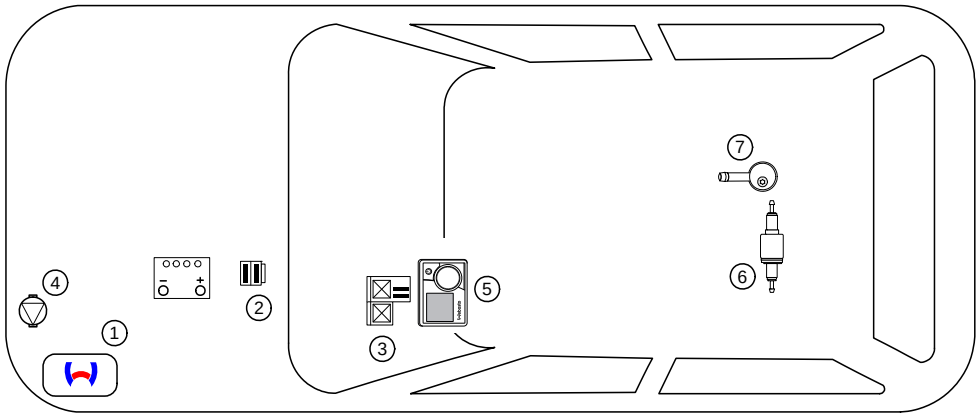
Installation instructions:

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



Information on Total Installation Time

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

Fiat Doblo / Doblo Cargo

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

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

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components have to audibly click into place during installation.

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

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

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

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

2 Statutory regulations governing installation

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

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

2.4.1. The exhaust 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.

Fiat Doblo / Doblo Cargo

Information on Validity

This installation documentation applies to Fiat Doblo / Doblo Cargo Diesel vehicles - for validity, see page 1 - from model year 2010 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this ‘installation documentation’.

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

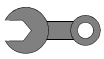
Dimensions
- All dimensions are in mm.

Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8 Nm.
- 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.

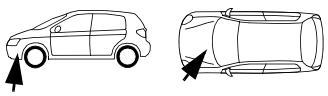
Specific risk of injury or fatal accidents.

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.

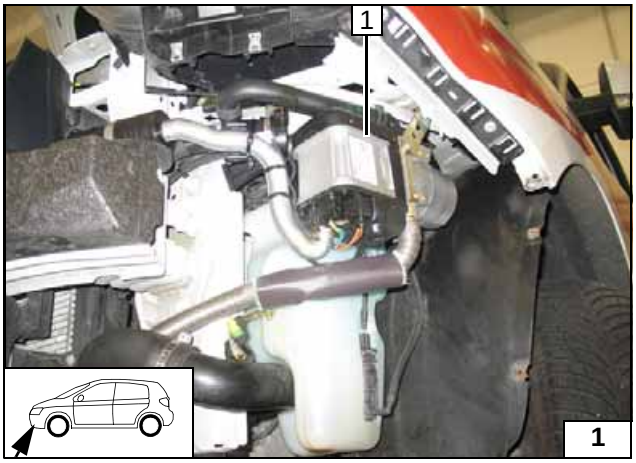
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the air filter completely, together with the intake hose.
- Remove the coolant reservoir cap.
- Remove the bumper.
- Remove the left-hand headlight.
- Remove the underride protection.
- Remove the fuel tank in accordance with manufacturer's instructions (only in case of Doblo Cargo).
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Remove the lower instrument panel trim on the driver's and front passenger's side.

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

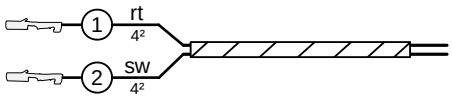
Wire sections retain their numbering throughout the entire document.

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

Assigning wires

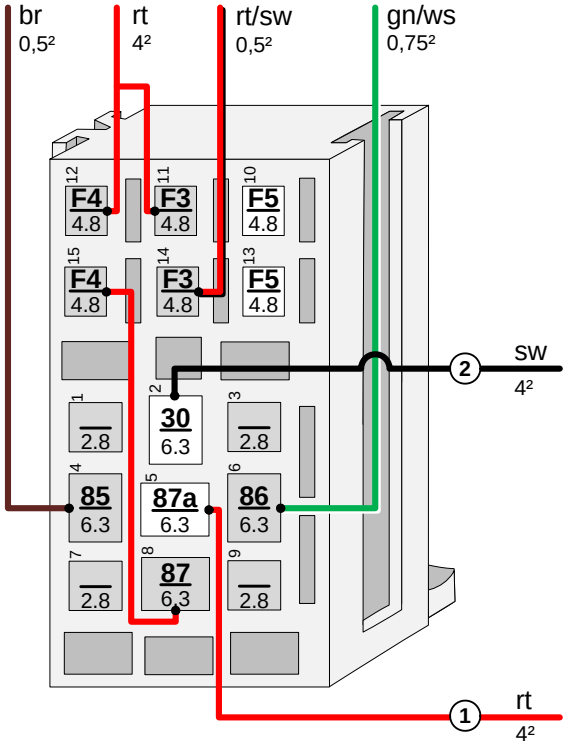
Manual air-conditioning

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



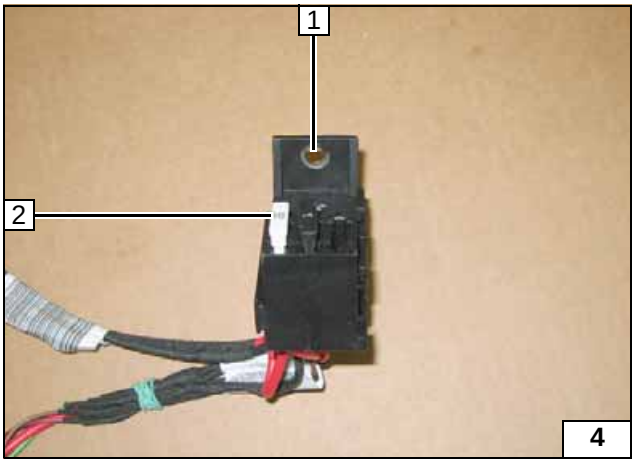
2

Connecting wires to passenger compartment relay and fuse holder



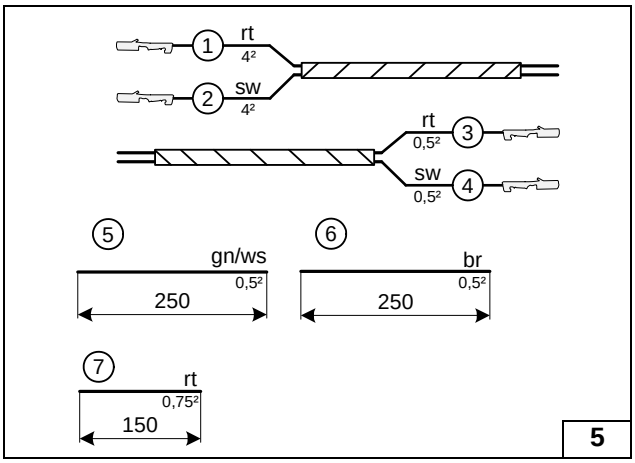
3

Preparing passenger compartment relay and fuse holder



4

1 Drill out hole to 6.5mm dia.
2 Insert 25A fuse F4

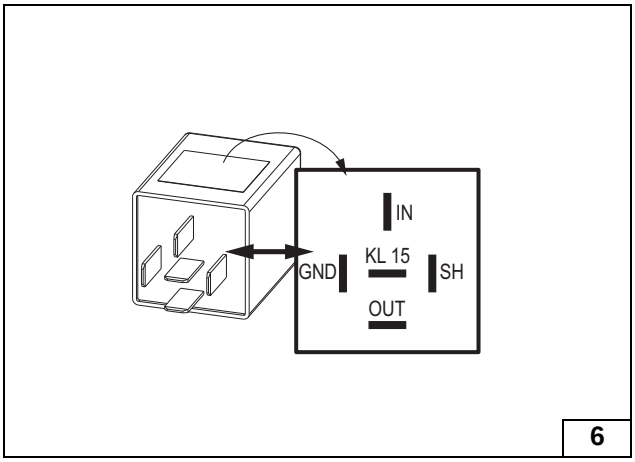


5

Automatic air-conditioning

Assigning wires

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness
③ Red (rt) wire from wiring harness of PWM control
④ Black (sw) wire from wiring harness of PWM control



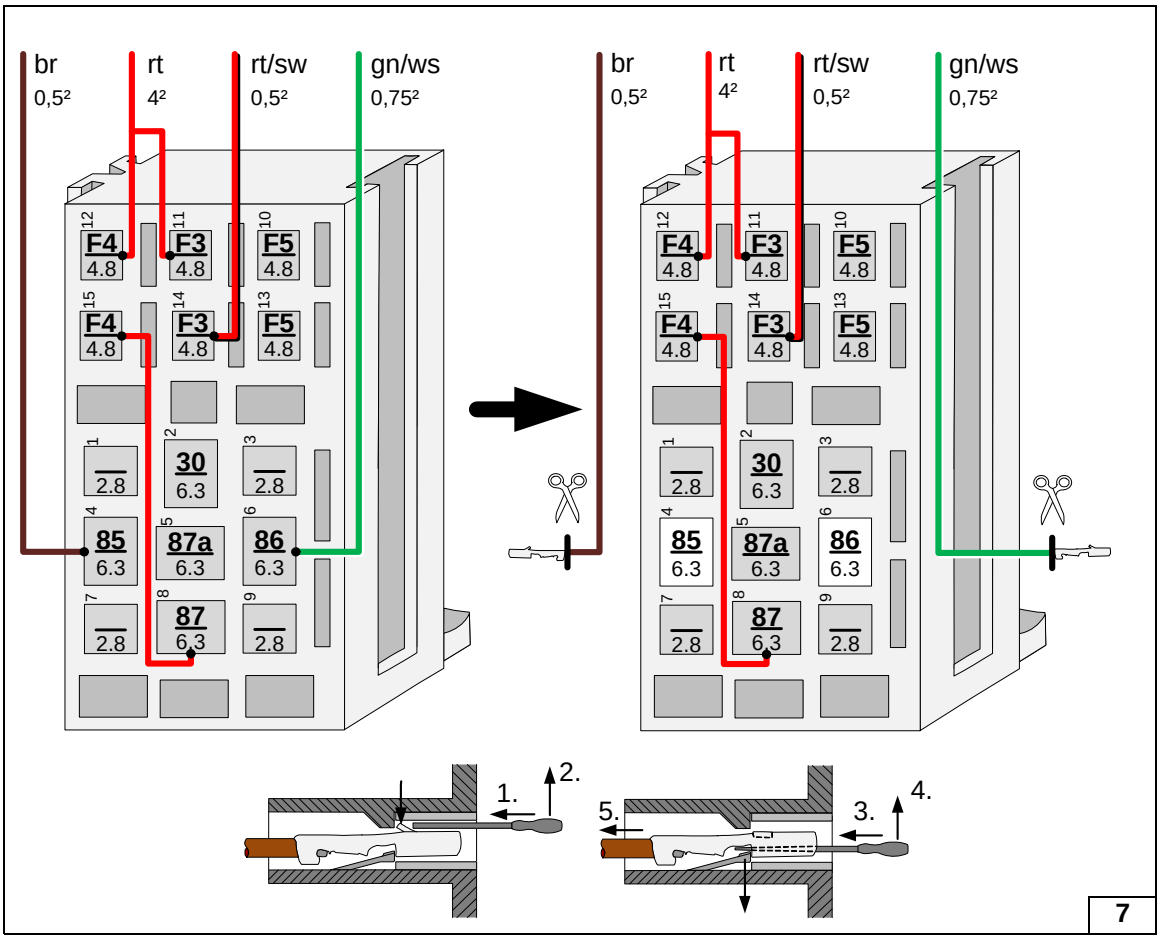
6

View of PWM GW

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

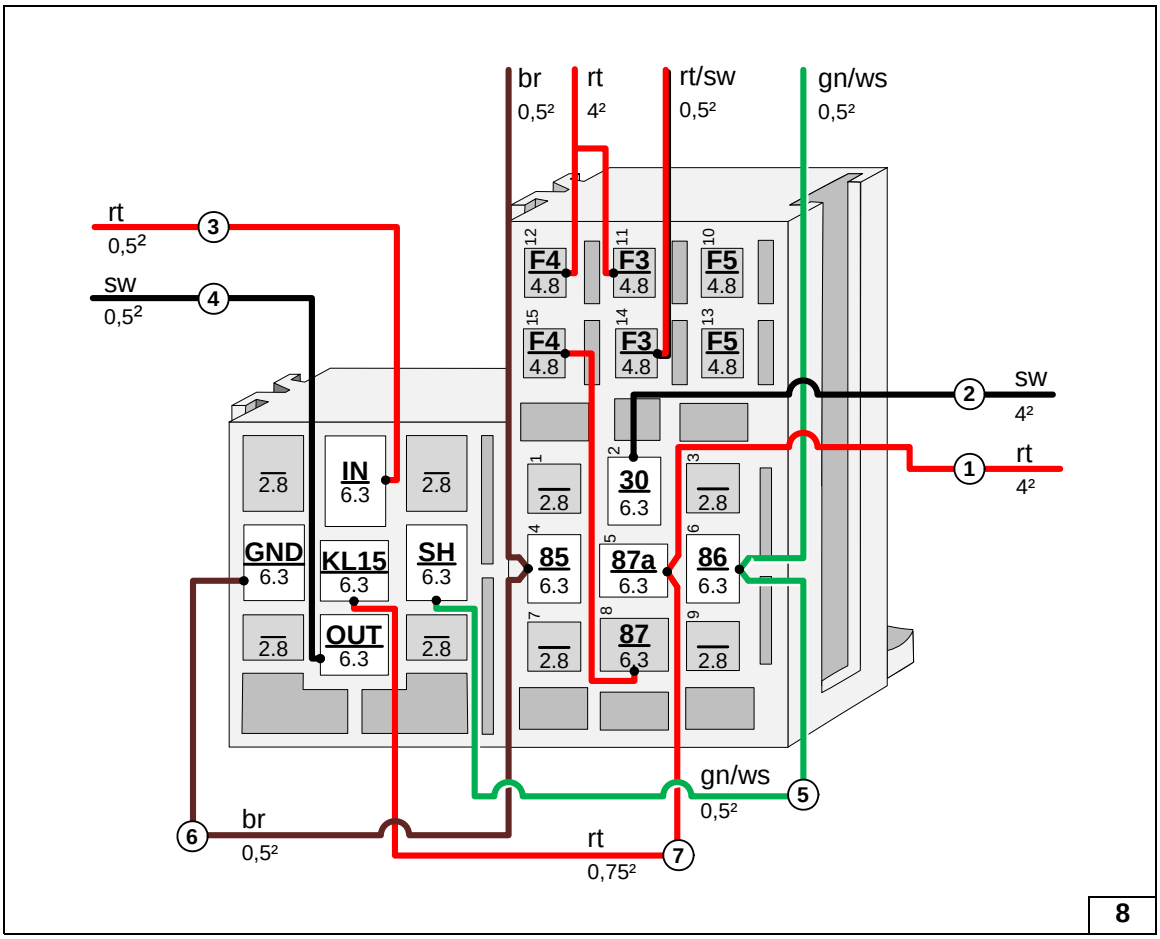
Settings:

Duty cycle: 35%
Frequency: 1200Hz
Voltage: 4.2V
Function: High side



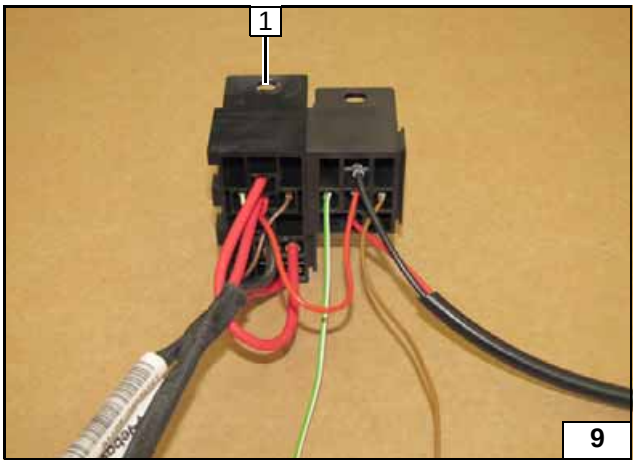
7

Interlocking passenger compartment relay and fuse holder and PWM GW socket, connecting wires



8

Interlocking passenger compartment relay and fuse holder and PWM GW socket, connecting wires

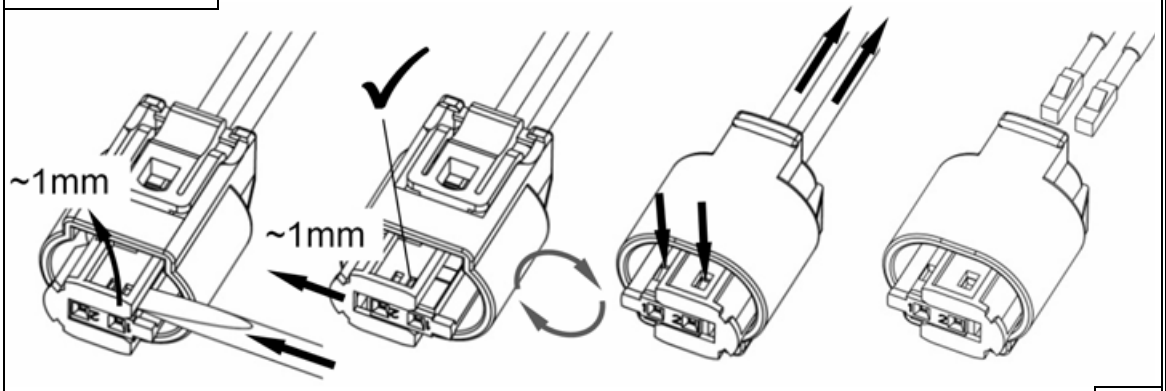


9

1 Drill out hole to 6.5mm dia.

Preparing passenger compartment relay and fuse holder

Connector X7



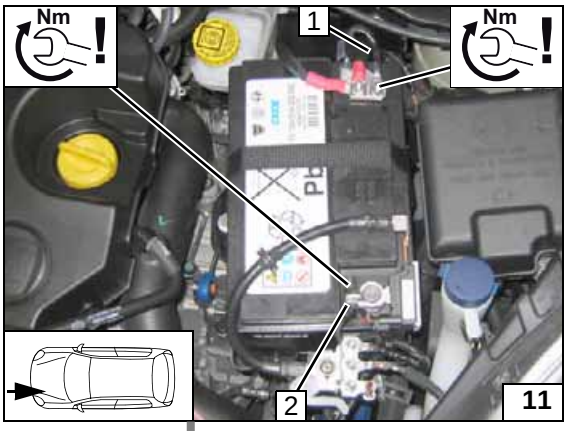
10

Dismantling metering pump connector

Electrical System

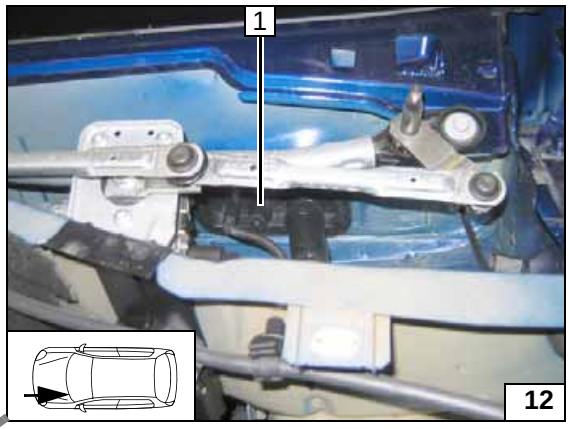
Positive and earth wire

1 Positive wire on positive battery terminal
2 Earth wire on negative battery terminal

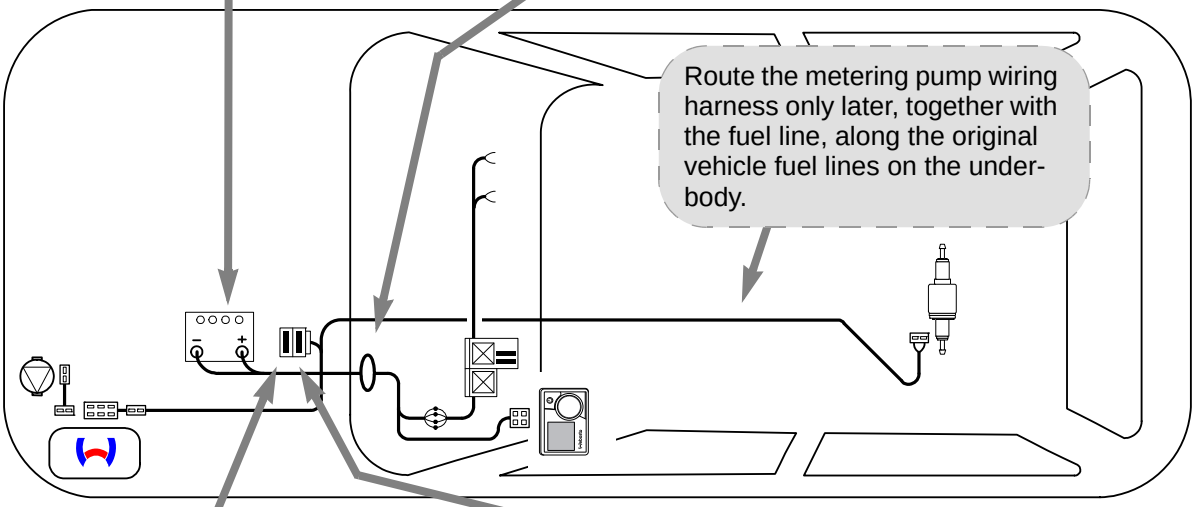


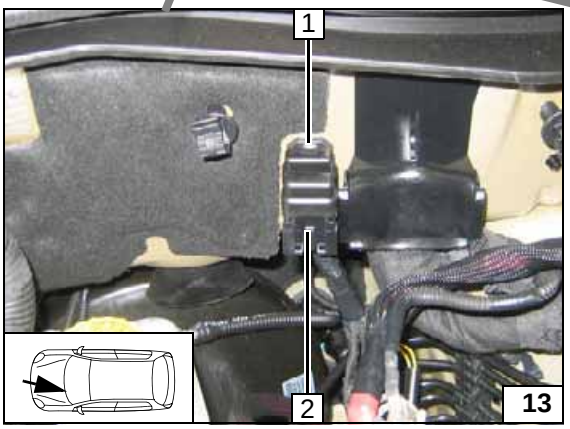
Wiring harness pass through

1 Protective rubber plug



Wiring harness routing diagram

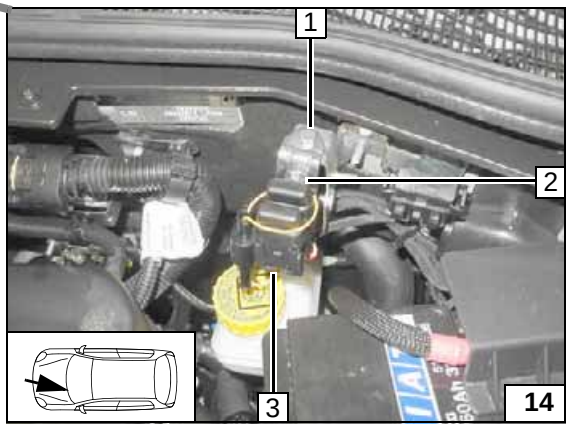




Engine compartment fuse holder up to model year 2014

4.5 mm dia. hole at position **1** in coolant reservoir!

1 5.5x9.5mm self-tapping screw; fuse holder retaining plate
2 F1 and F2 fuses

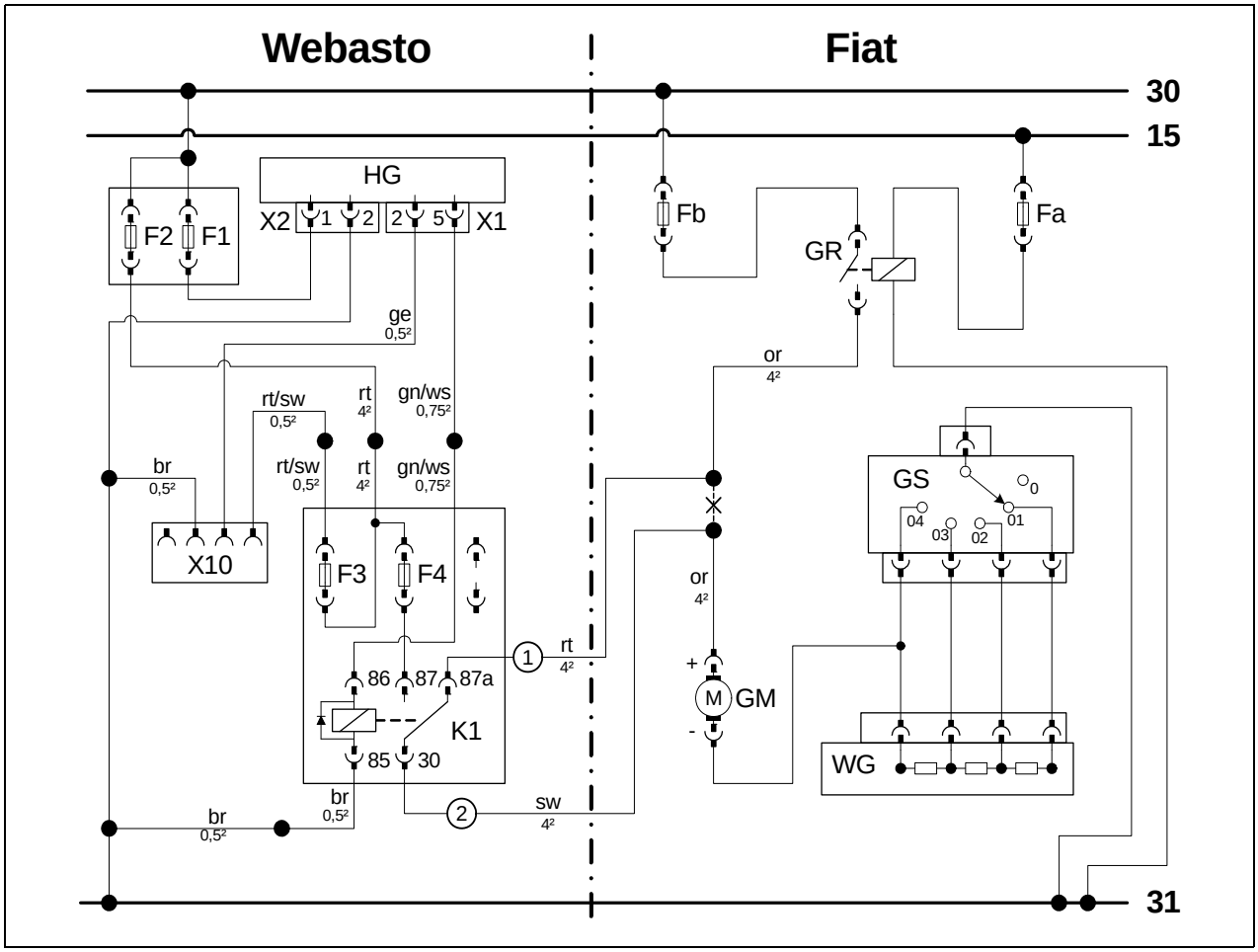


Engine compartment fuse holder from model year 2015

1 M6x20 bolt, angle bracket, original vehicle hole, flanged nut
2 M5x16 bolt, large diameter washer [2x], fuse holder retaining plate, nut
3 F1 and F2 fuses

Fan Controller for Manual Air-Conditioning

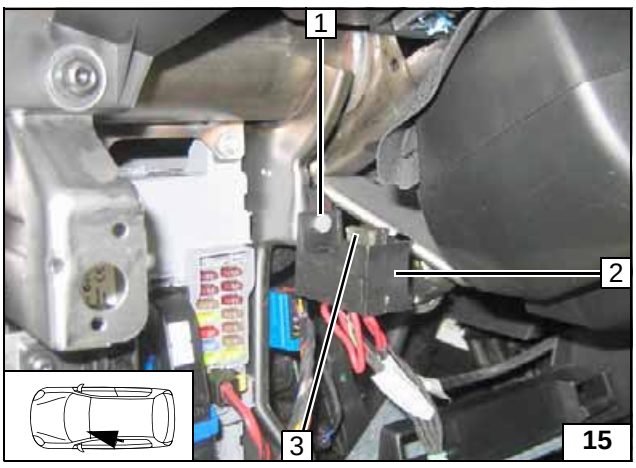
Wiring diagram



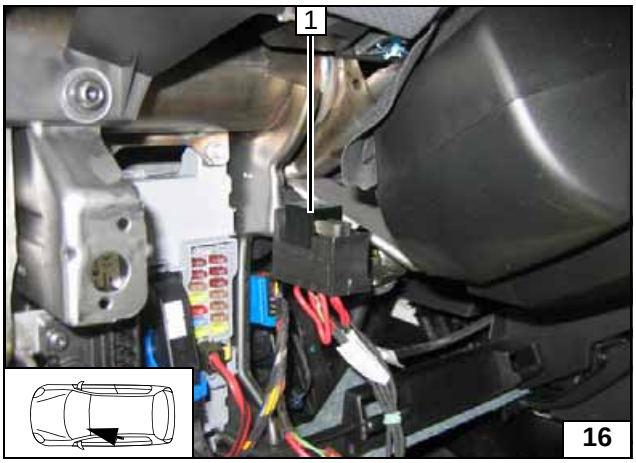
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	Fb	Fuse	rt	red
X1	6-pin heater connector	Fa	Fuse	ws	white
X2	2-pin heater connector	GR	Fan relay	sw	black
F1	20A fuse	GS	Fan switch	br	brown
F2	30A fuse	GM	Fan motor	gn	green
X10	4-pin connector of heater control	WG	Resistor group	ge	yellow
				or	orange
F3	1A fuse				
F4	25A fuse			**X**	Cutting point
K1	Fan relay			Wiring colours may vary.	

Installing passenger compartment relay and fuse holder

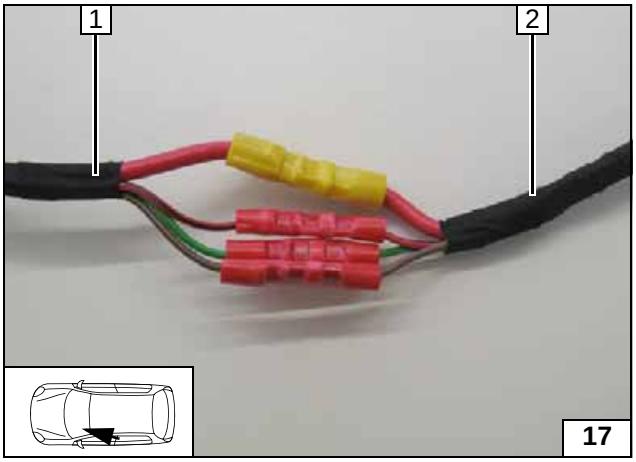


1 M6x12 bolt, existing threaded hole
2 Passenger compartment relay and fuse holder
3 25A fuse F4



1 K1 relay

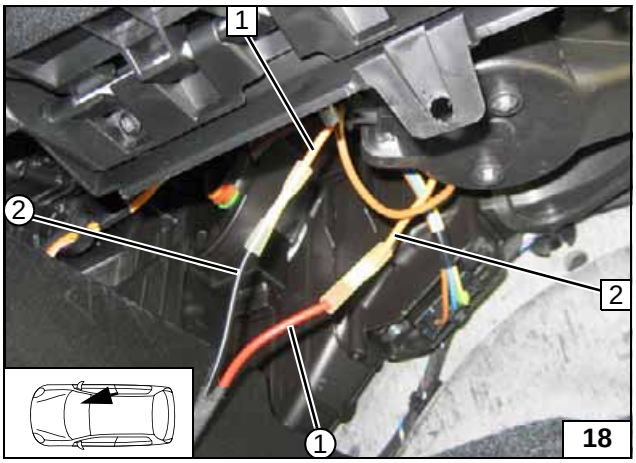
Installing K1 relay



Route wiring harness of fan controller to the right vehicle side!

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

Connecting same colour wires of wiring harnesses



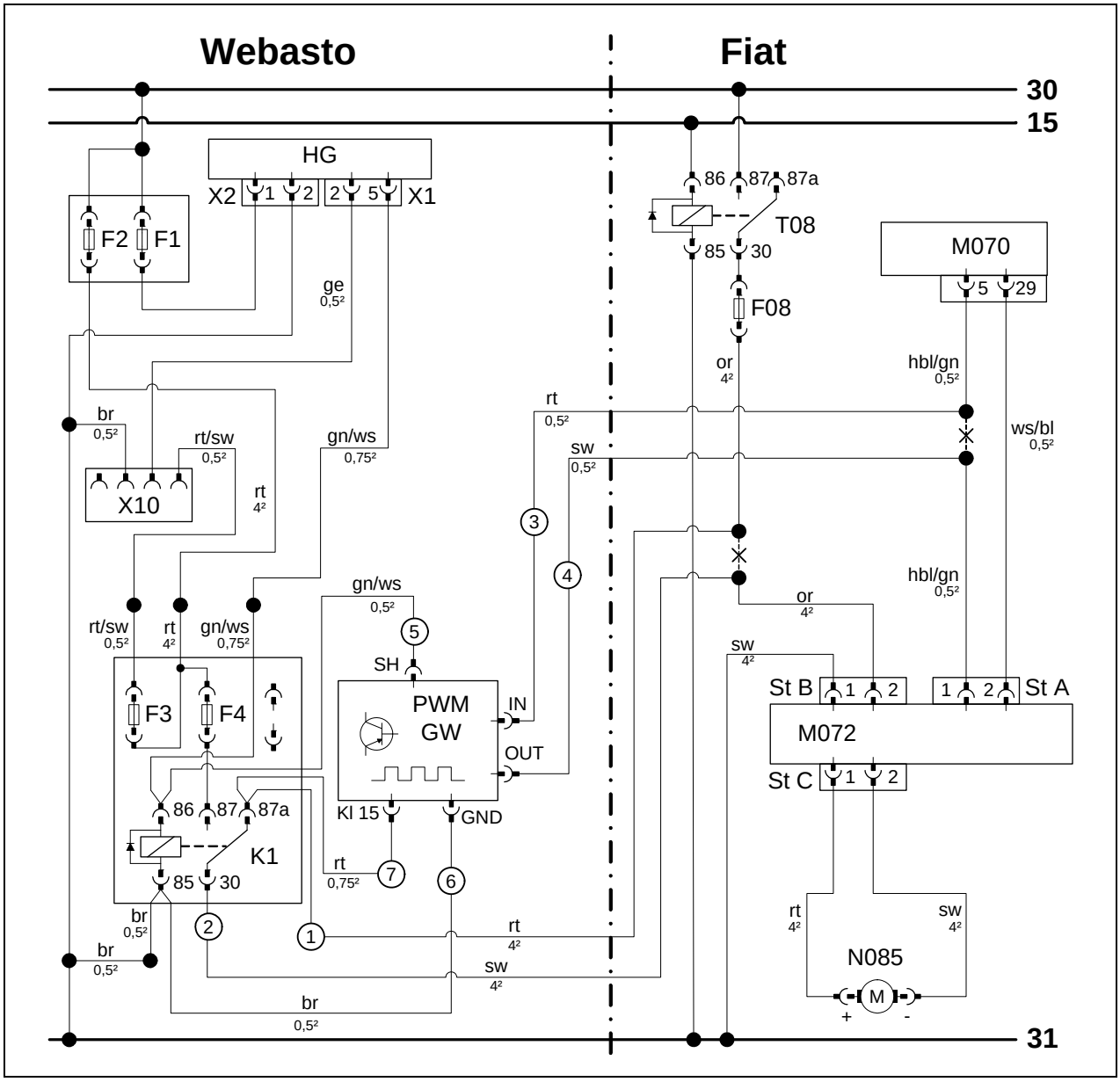
Connection to 2-pin connector from the fan motor.

1 Orange (or) wire of 2-pin GM connector
2 Orange (or) wire of GR
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor

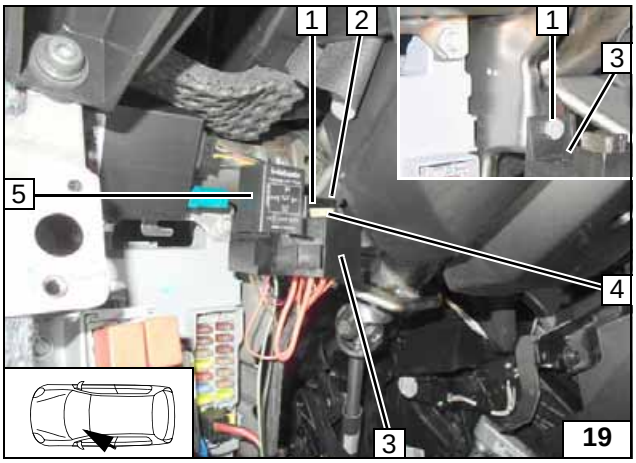
Fan Controller for Automatic Air-Conditioning

Wiring diagram



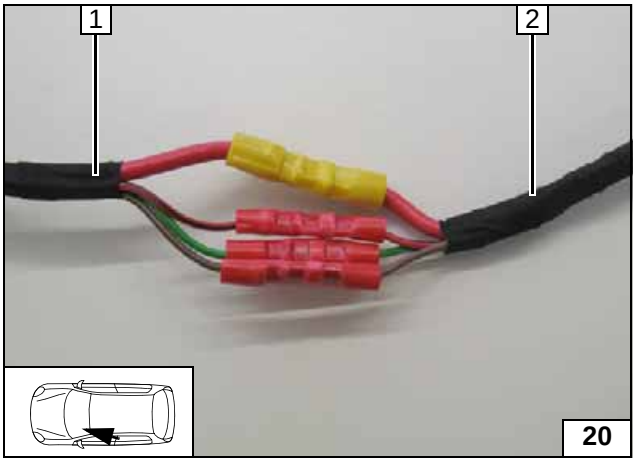
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	T08	Fan relay	rt	red
X1	6-pin heater connector	M070	A/C control panel	sw	black
X2	2-pin heater connector	F08	40A fuse	ge	yellow
F1	20A fuse	M072	Fan controller	gn	green
F2	30A fuse	St A	1-pin connector M072	or	orange
X10	4-pin connector of heater control	St B	2-pin connector M072	ws	white
		St C	2-pin connector M072	br	brown
F3	1A fuse	N085	Fan motor	hbl	light blue
F4	25A fuse				
PWM GW	Pulse width modulator				
K1	Fan relay				
Settings of PWM GW:					
Duty cycle:	35%				
Frequency:	1200Hz				
Voltage:	4.2V			**X**	Cutting point
Function:	High side			Wiring colours may vary.	

Legend



1 M6x12 bolt, existing threaded hole
2 K1 relay
3 Passenger compartment relay and fuse holder
4 25A fuse F4
5 PWM GW

Installing passenger compartment relay and fuse holder



Route wiring harness of fan controller to the right vehicle side!

1 Wiring harness of passenger compartment relay and fuse holder
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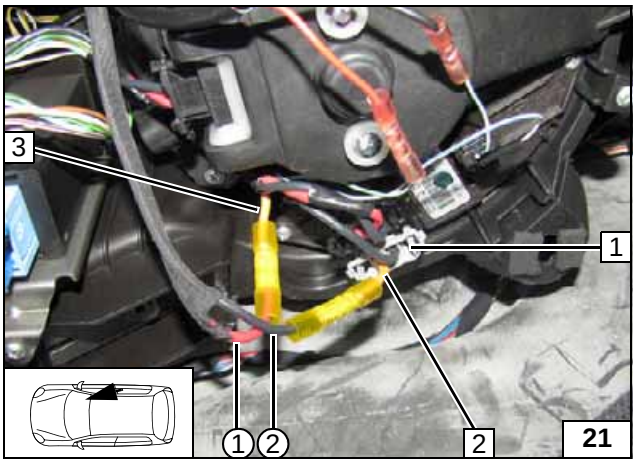
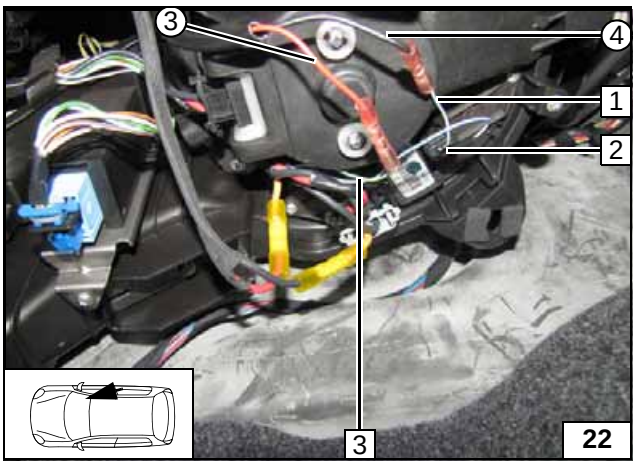
Connecting same colour wires of wiring harnesses



Connection of fan motor to connector B **1** from fan controller.

2 Orange (or) wire of connector B/2 PWM GW/SH
3 Orange (or) wire of fuse F08
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

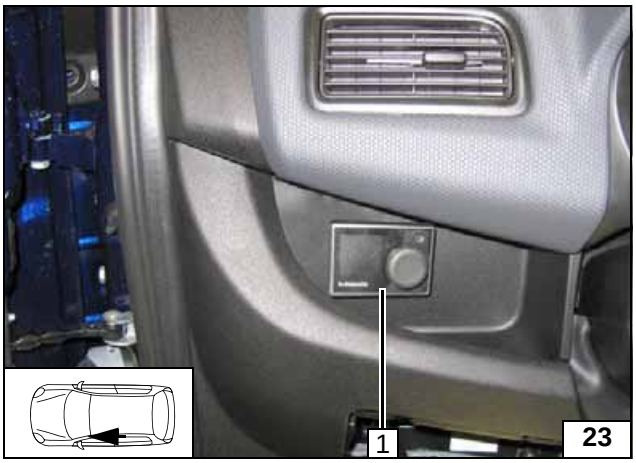
Connecting fan motor



Connection of PWM GW to 2-pin connector A **2** of fan controller.

1 Light blue/green (hbl/gn) wire of connector M072 A/1
3 Light blue/green (hbl/gn) wire of M070/5
③ Red (rt) wire of PWM GW / IN, PWM control wiring harness
④ Black (sw) wire of PWM GW/OUT, PWM control wiring harness

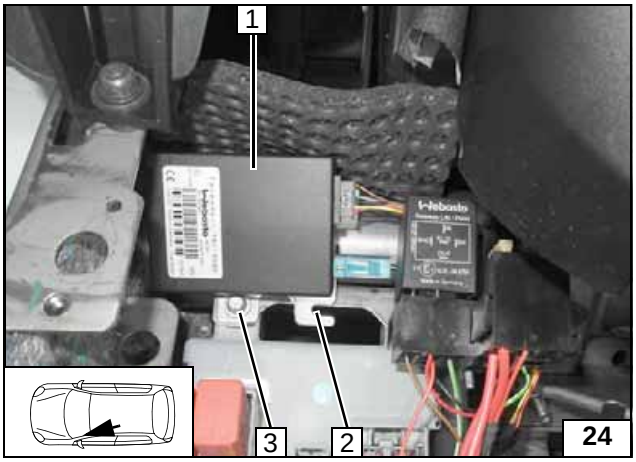
Connecting PWM GW



MultiControl CAR Option

1 Secure MultiControl CAR with double-sided adhesive tape.

Mounting MultiControl

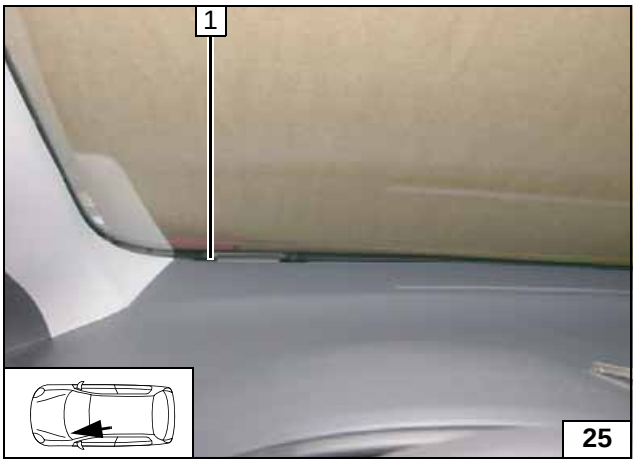


Remote Option (Telestart)

Drill out hole in Telestart bracket **2** at position **3** to 6.5mm.

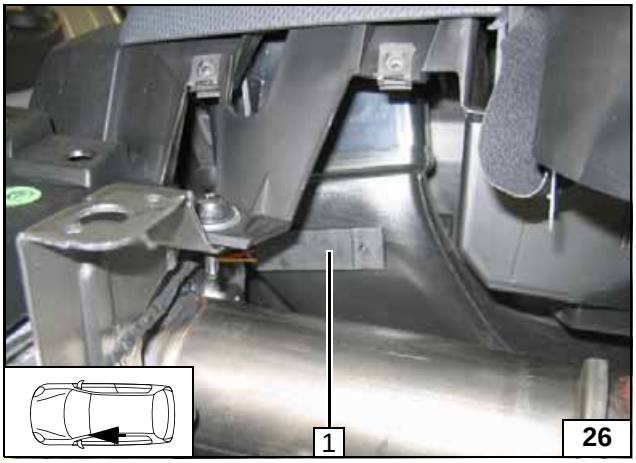
1 Receiver
3 Original vehicle bolt

Installing receiver



1 Aerial

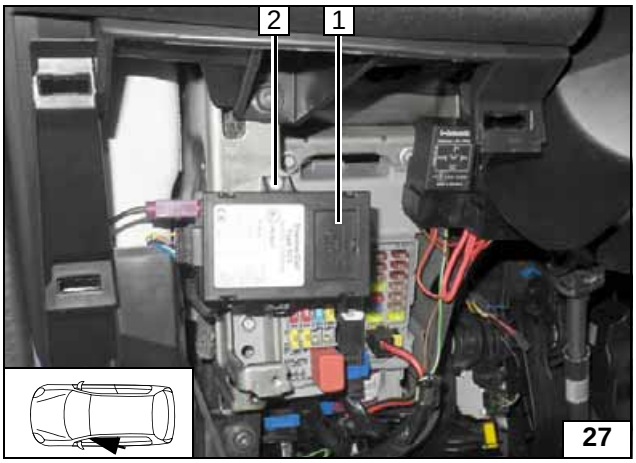
Installing aerial



Temperature sensor T100 HTM

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

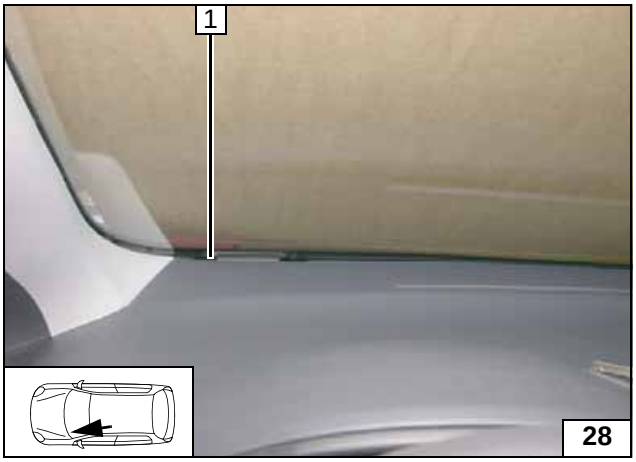
Installing temperature sensor



Thermo Call Option

1 M5x16 bolt, original vehicle hole, flanged nut

Installing receiver



1 Aerial

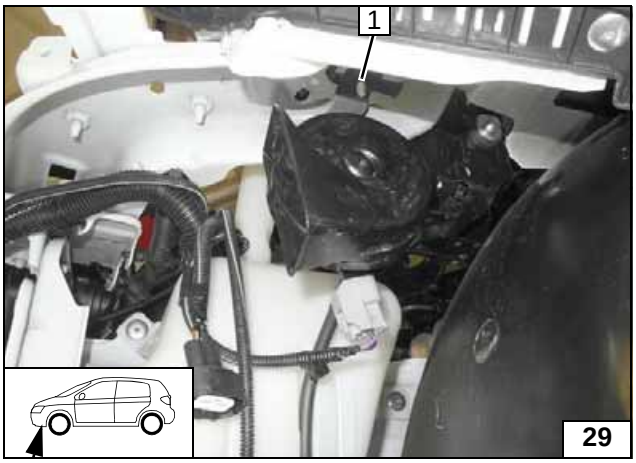
Installing aerial

Preparing Installation Location

From model year 2015

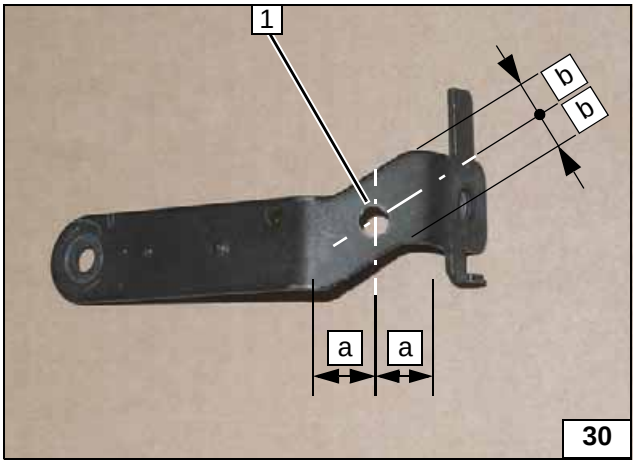
Remove horn with its bracket.

Removing horn



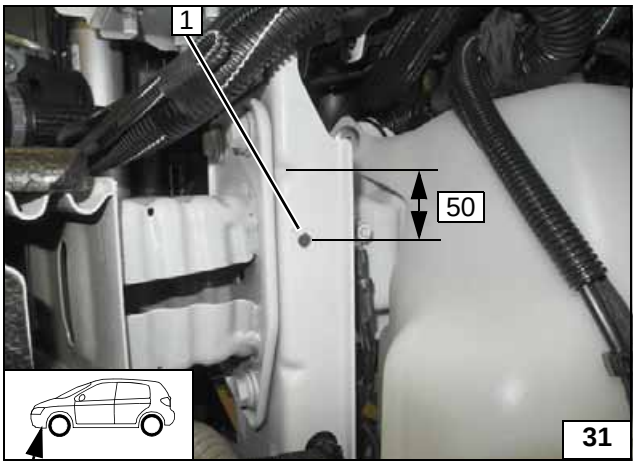
1 Original vehicle bolt

Adapting horn bracket



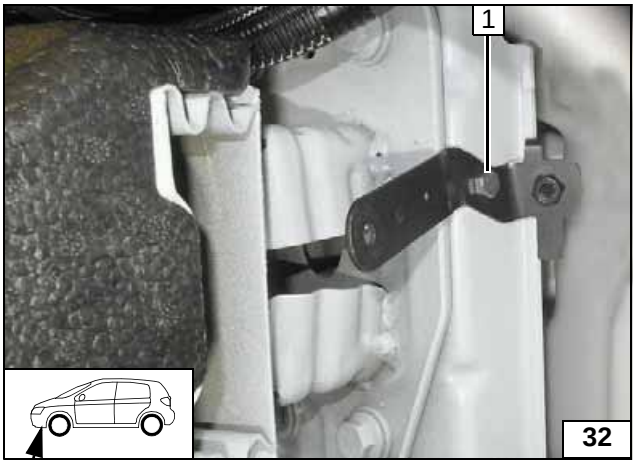
1 7 mm dia. hole

Drilling hole

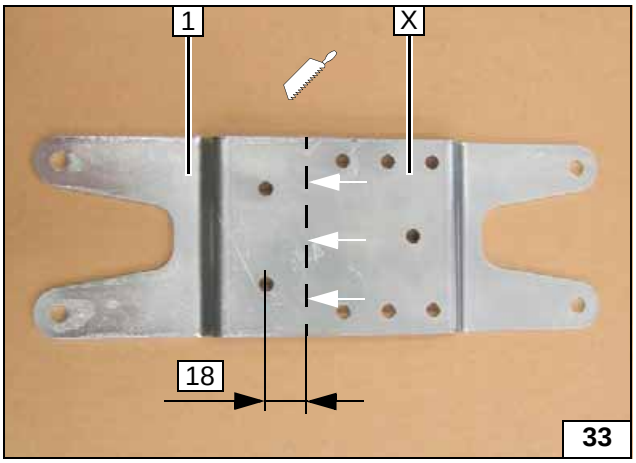


1 7 mm dia. hole

Installing bracket of horn



1 M6x20 bolt, flanged nut



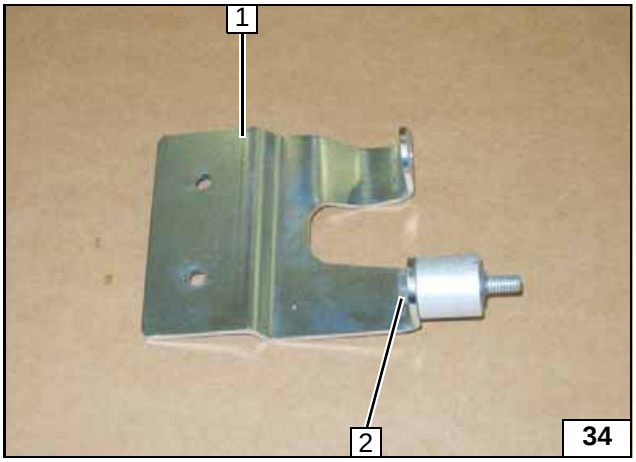
Preparing Bracket

All vehicles

Discard section **X**.

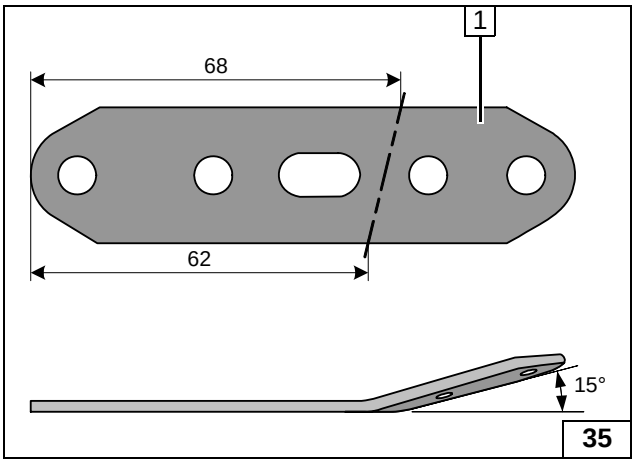
Separate bracket **1** at the marking and bend according to template.

Preparing bracket



1 Bracket
2 M6x35 bolt, 20 mm shim, pin lock

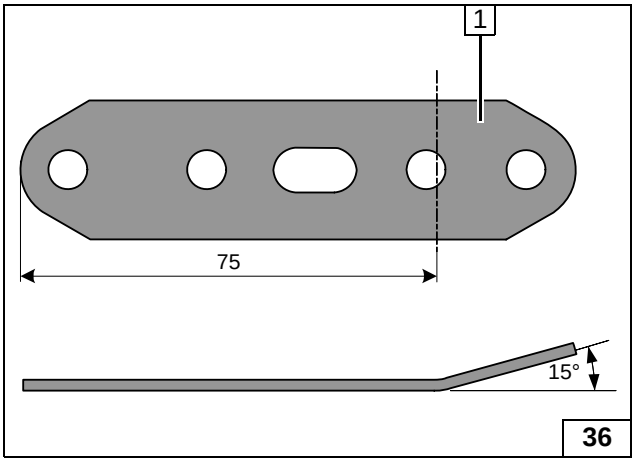
Preparing bracket



Up to model year 2014

1 Perforated bracket

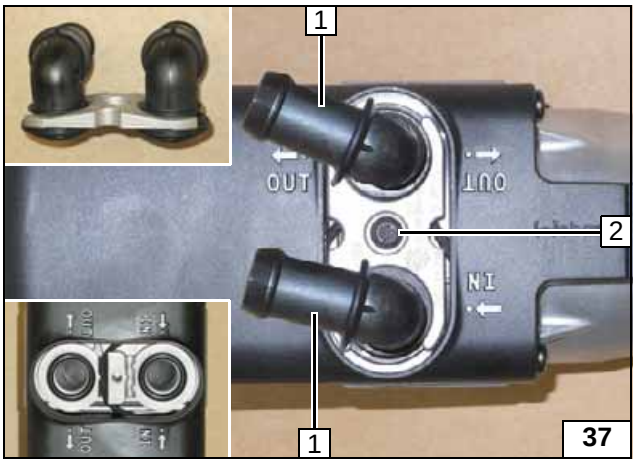
Preparing perforated bracket



From model year 2015

1 Perforated bracket

Preparing perforated bracket

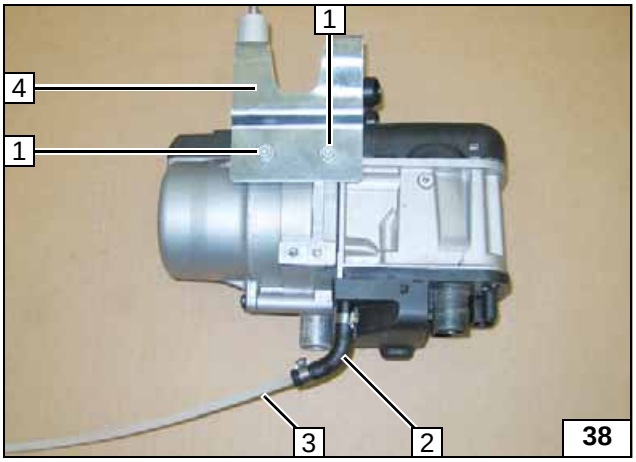


Preparing Heater

All vehicles

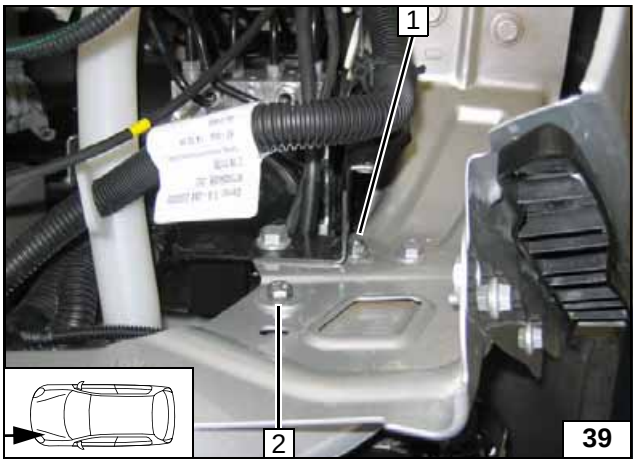
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



1 5x13 self-tapping bolt [2x]
2 90° moulded hose, 10mm dia. clamp [2x]
3 Fuel line
4 Bracket

Installing bracket

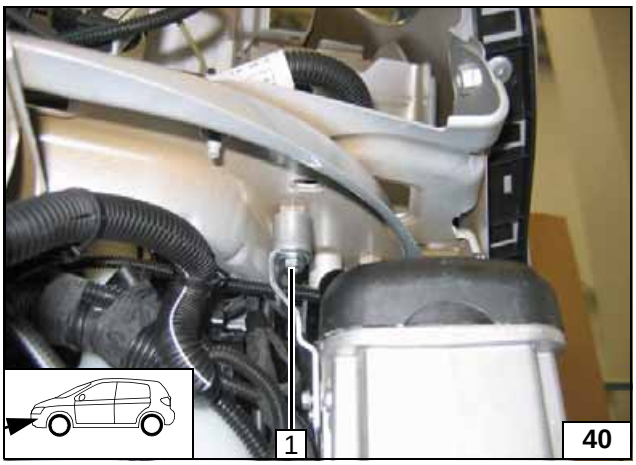


Installing Heater

Replace original vehicle bolt at position **2** with M6x40 bolt, spring lock washer and large diameter washer.

1 Large diameter washer, flanged nut, existing hole

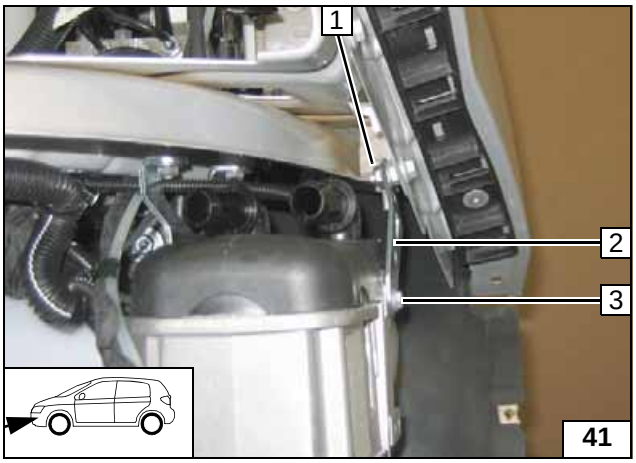
Installing heater



Insert 20 mm shim between body and bracket.

1 20mm shim, flanged nut

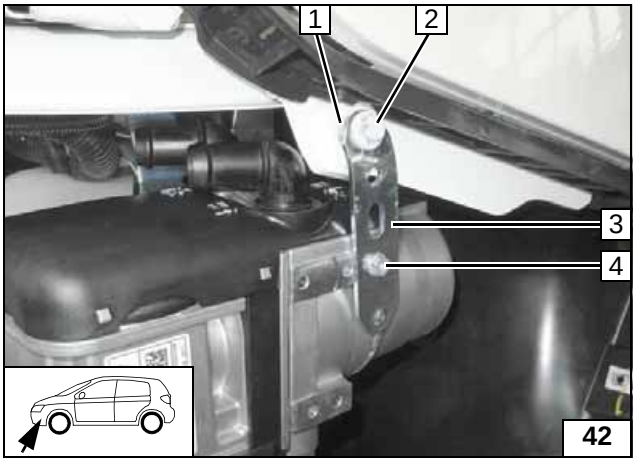
Installing heater



Up to model year 2014

1 Flanged nut, existing bolt
2 Perforated bracket
3 5x13 self-tapping bolt

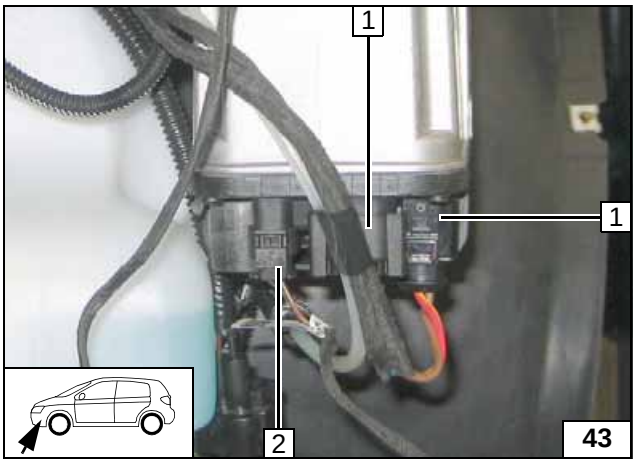
Installing heater



From model year 2015

1 5 mm shim
2 Original vehicle bolt
3 Perforated bracket
4 5x13 self-tapping bolt

Installing heater



1 Connector of heater wiring harness [2x]
2 Connector of circulating pump wiring harness

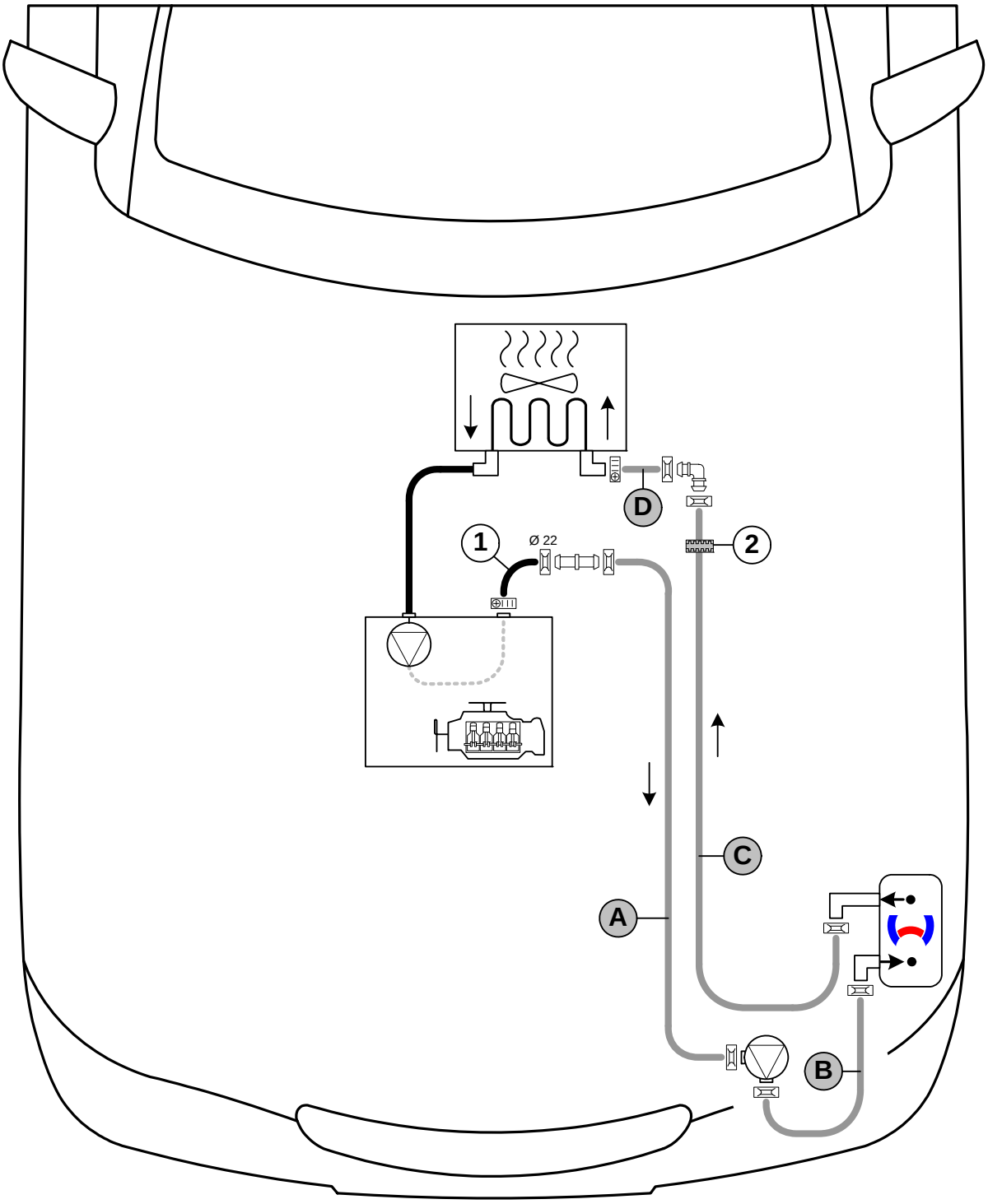
Installing wiring harness

Coolant Circuit 1.6 / 2.0 JTD

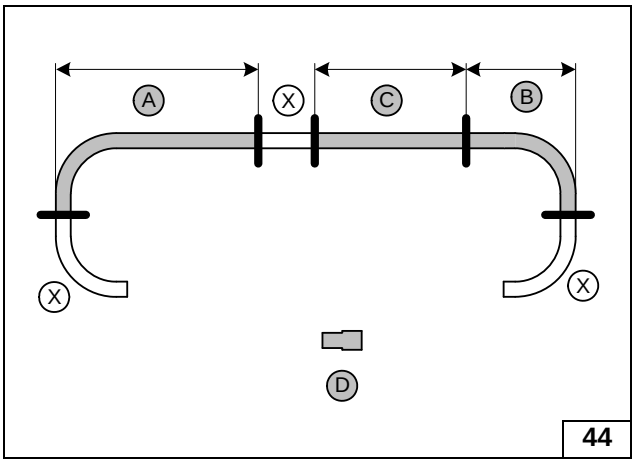
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



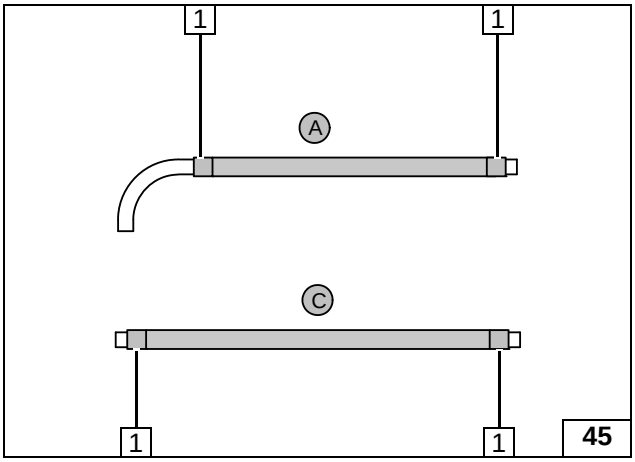
All spring clips = 25 mm dia. All hose clamps = 20-27 mm dia.
1= Original vehicle hose **2** = Black (sw) rubber isolator. Connecting pipe = 18x18mm dia.
Connecting pipe = 15x18mm dia.



Discard sections **X**.
Hose **D** = 18x 20 moulded hose

A = 870
B = 240
C = 1050

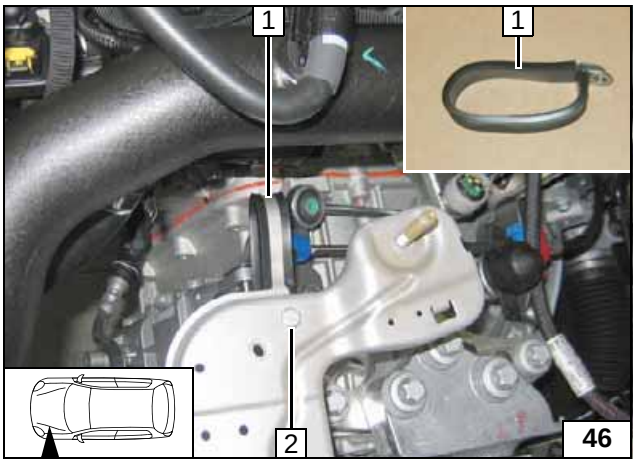
Cutting hoses to length



Push braided protection hoses onto hoses **A** and **C** and cut to length.
Cut heat shrink plastic tubing to size.

1 25 mm long heat shrink plastic tubing [4x]

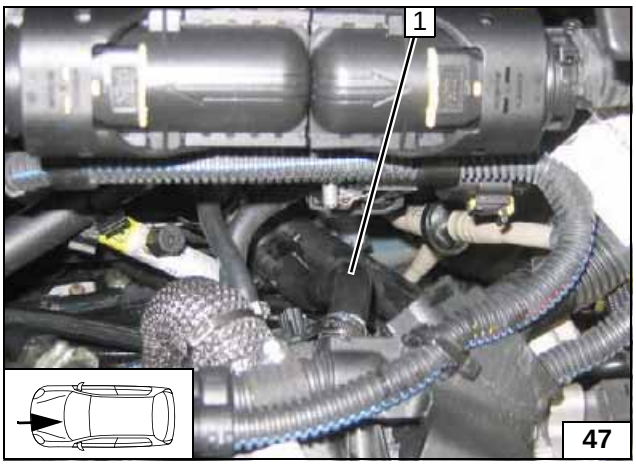
Preparing hoses



Shape 48 mm dia. rubber-coated p-clamp **1** Insert 10 mm shim between vehicle carrier and rubber-coated pipe clamp.

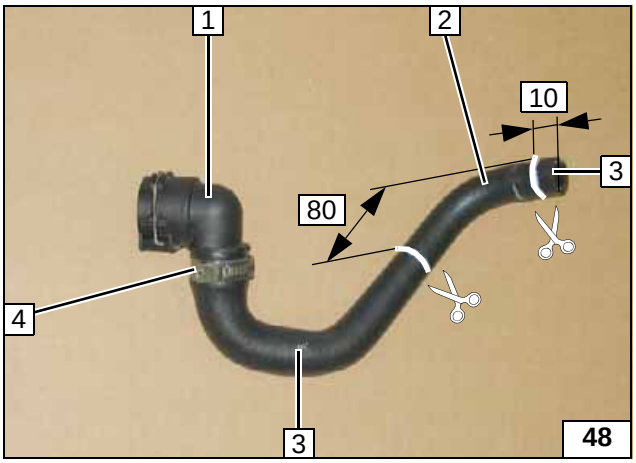
2 M6x25 bolt, 10 mm shim, flanged nut, existing hole

Installing rubber-coated pipe clamp



Remove original vehicle hose of engine outlet/heat exchanger inlet**1** completely.

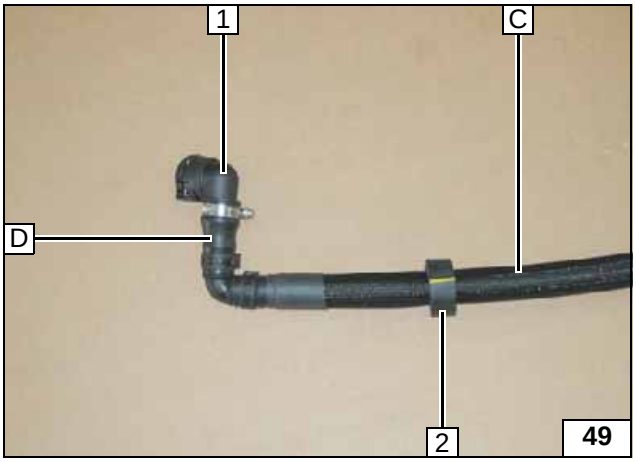
Cutting point



Cut original vehicle hose **2** at the markings [2x].

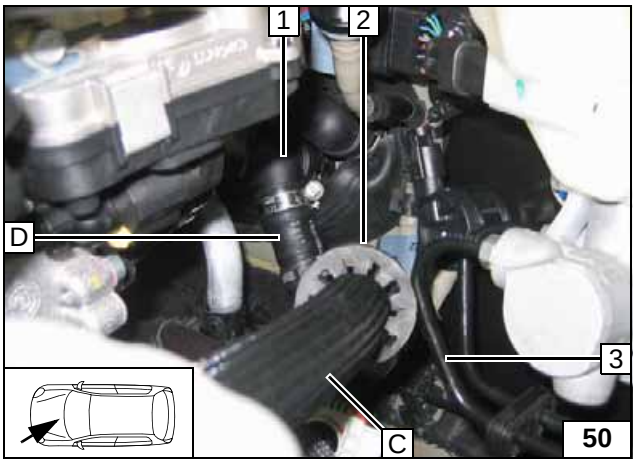
1 Heat exchanger inlet coupling (will be reused)
3 Discard hose sections
4 Discard hose clamp

Preparing hose



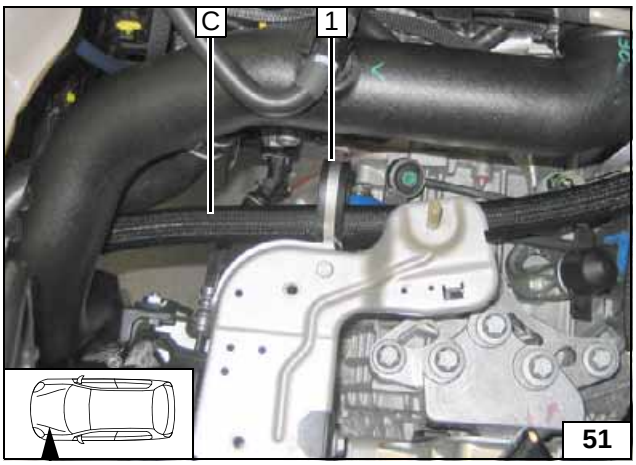
1 Coupling on heat exchanger inlet
2 Slide on black (sw) rubber isolator

Premounting hoses C and D



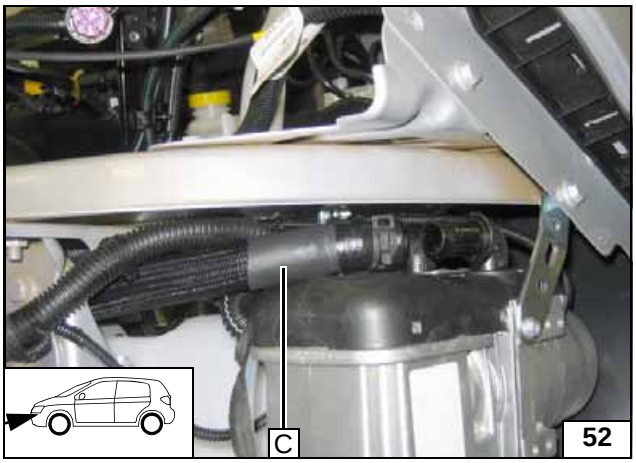
Push coupling **1** onto the heat exchanger inlet. Align rubber isolator **2** with brake line **3**.

Connecting heat exchanger inlet

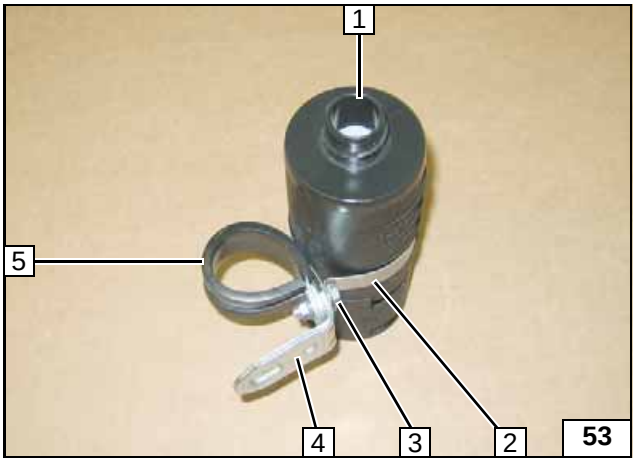


Route hose **C** through rubber-coated pipe clamp **1**.

Routing in engine compartment

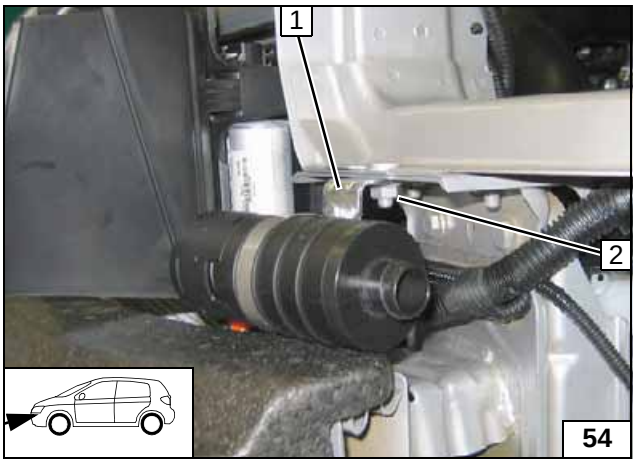


Connecting heater outlet



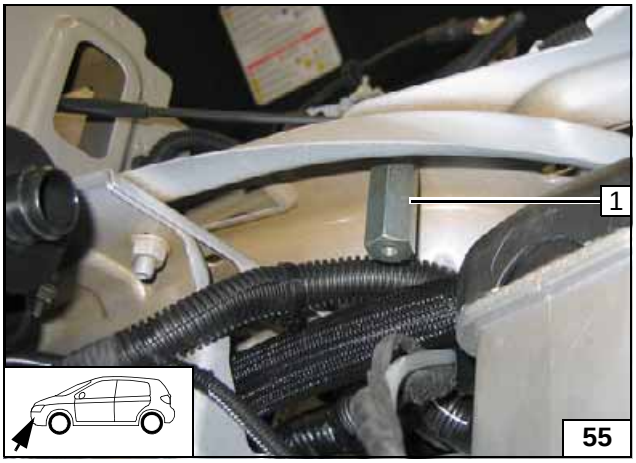
1 Combustion air silencer
2 51 mm pipe clamp
3 M5x16 bolt, flanged nut
4 Angle bracket
5 29 mm dia. rubber-coated p-clamp

Premounting silencer



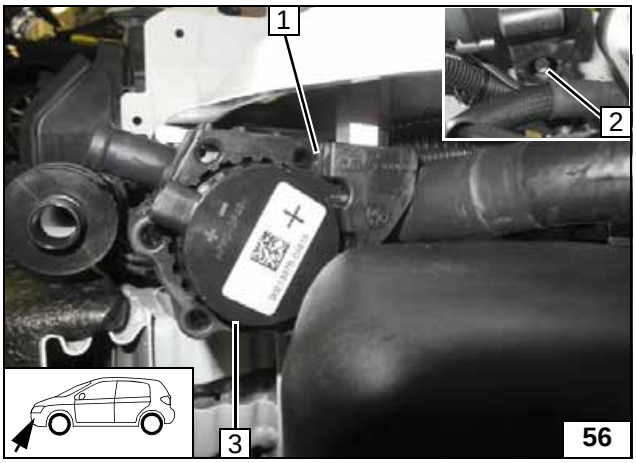
1 Angle bracket
2 Original vehicle nut

Installing silencer



Install M6x40 spacer nut **1** to original vehicle bolt.

Installing spacer nut

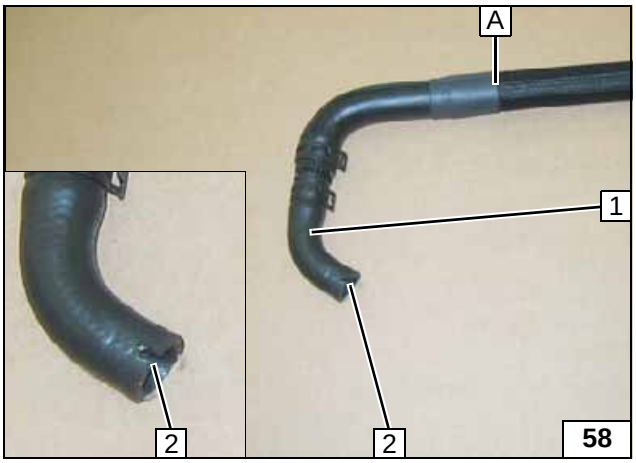


1 Circulating pump mount
2 M6x25 bolt
3 Circulating pump

Installing circulating pump

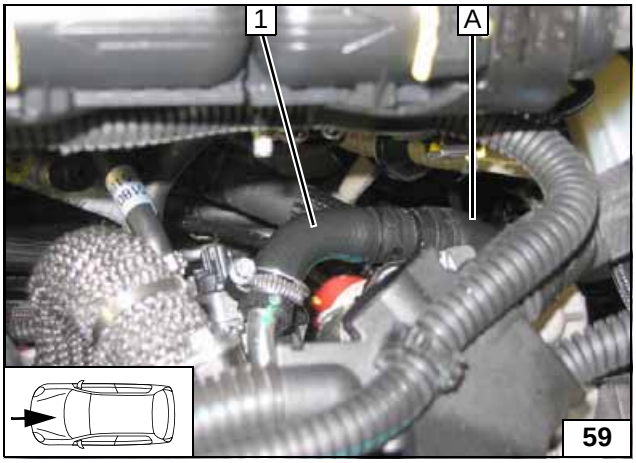
1 Connector of circulating pump wiring harness

Installing wiring harness



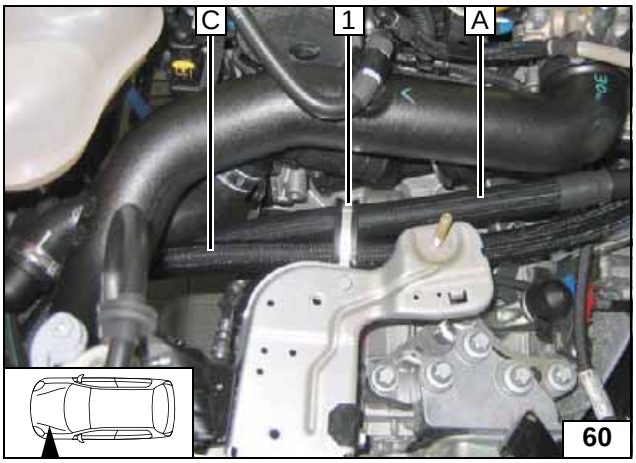
In the original vehicle hose **1** cut a notch **2** of 3mm width and 5mm length.

Premounting hose A



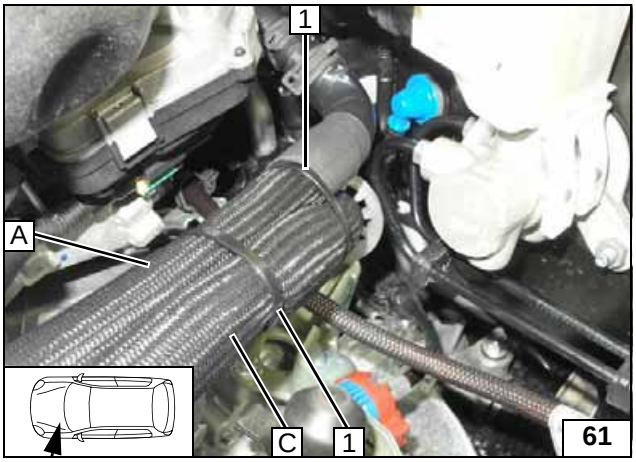
1 Original vehicle hose

Connecting engine outlet



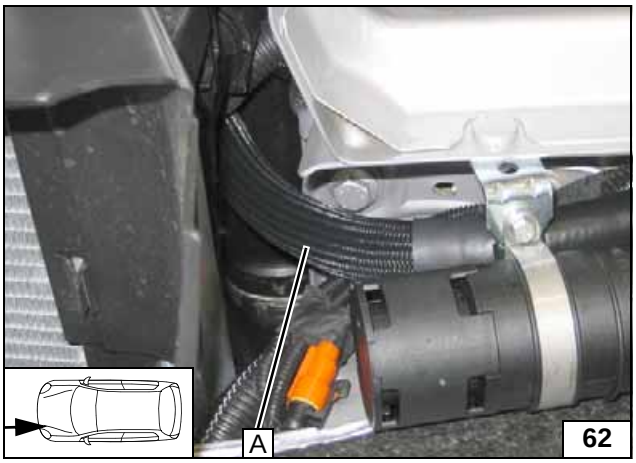
Route hose **A** through rubber-coated pipe clamp **1**.

Routing in engine compartment

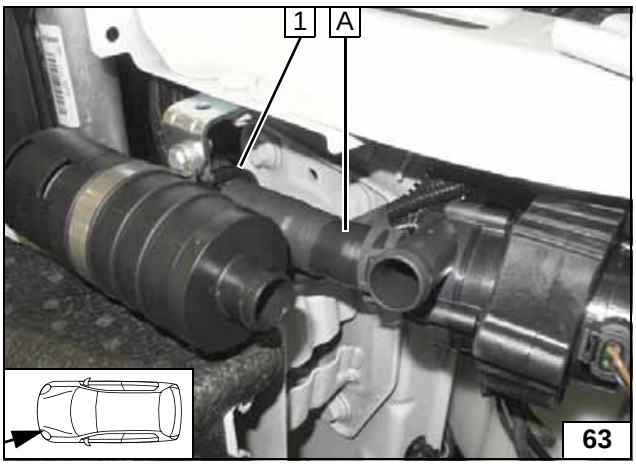


1 Cable tie [2x]

Routing in engine compartment

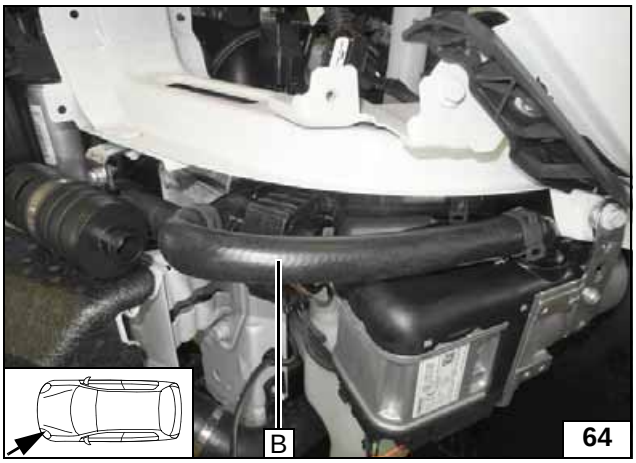


Routing in engine compartment



Route hose **A** through rubber-coated pipe clamp **1**.

Connecting circulating pump



Align hoses. Ensure sufficient distance from neighbouring components.

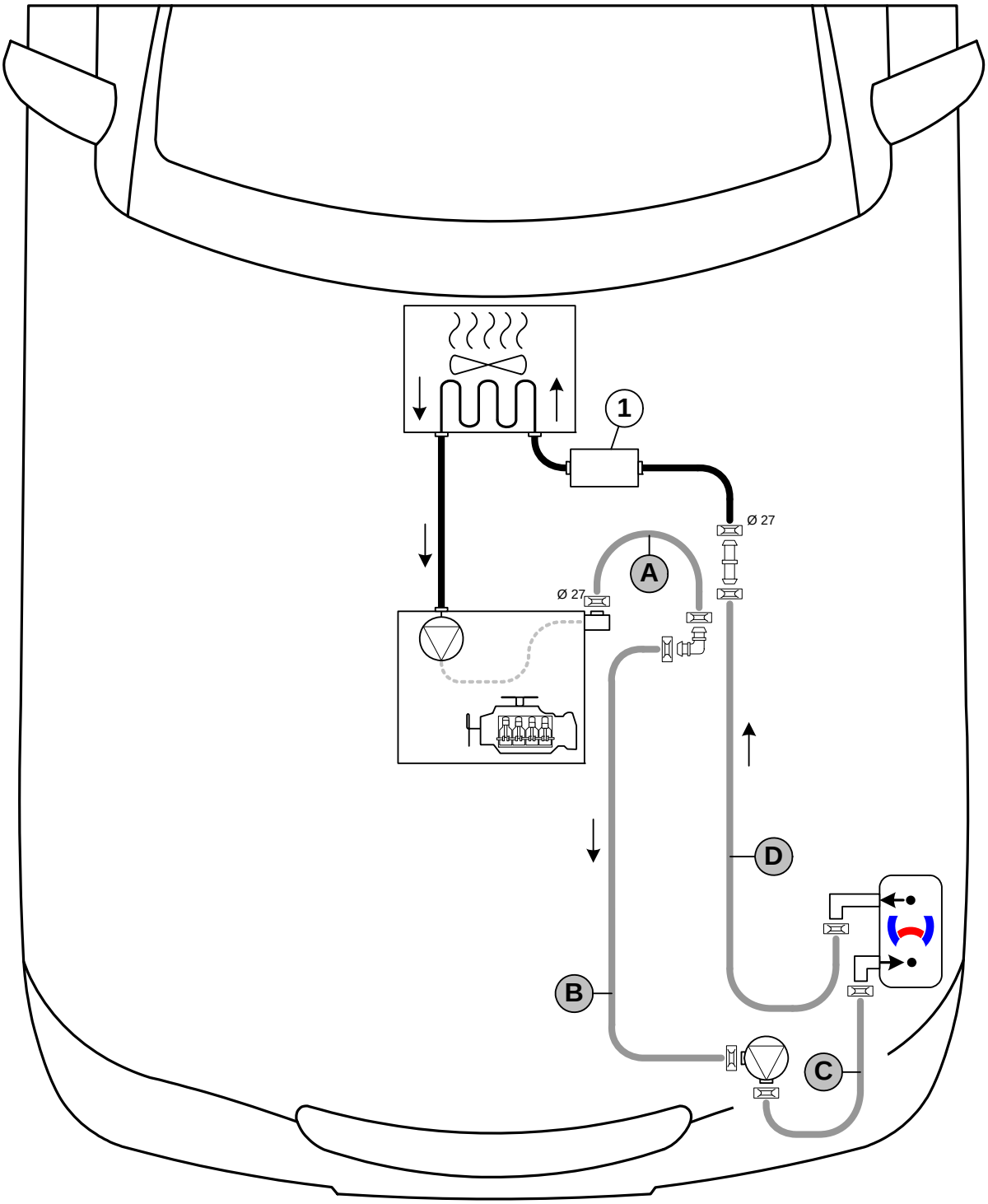
Connecting heater inlet

Coolant Circuit 1.3 JTD

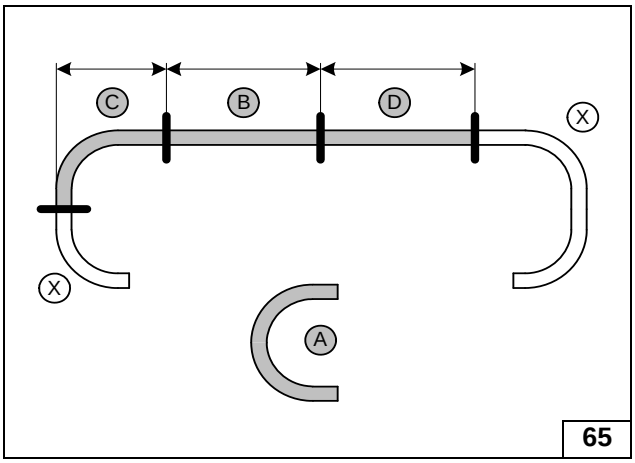
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



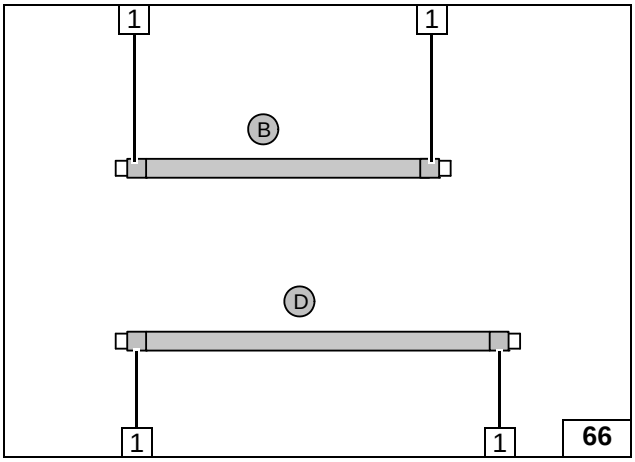
All spring clips without a specific designation = 25mm dia.
Connecting pipe = 18x18mm dia. Connecting pipe = 18x20 mm dia.
1 = AGR!



Discard sections **X**.
Hose **A** = 180°, 18x18 mm dia. moulded hose

B = 725
C = 220
D = 810

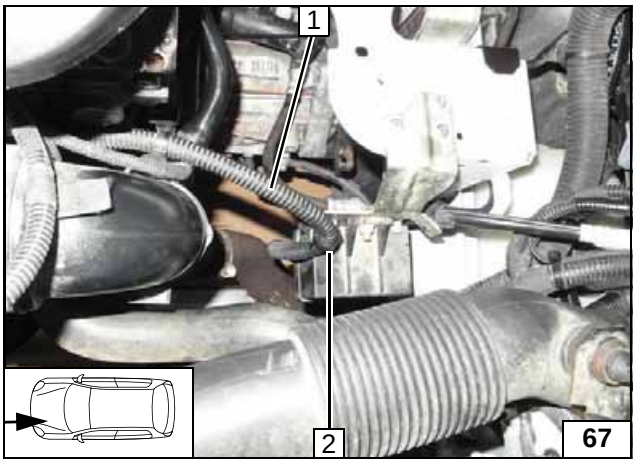
Cutting hoses to length



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

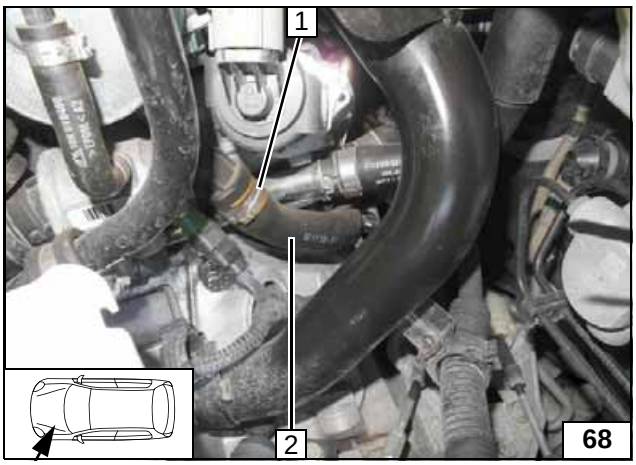
1 25 mm long heat shrink plastic tubing [4x]

Preparing hoses



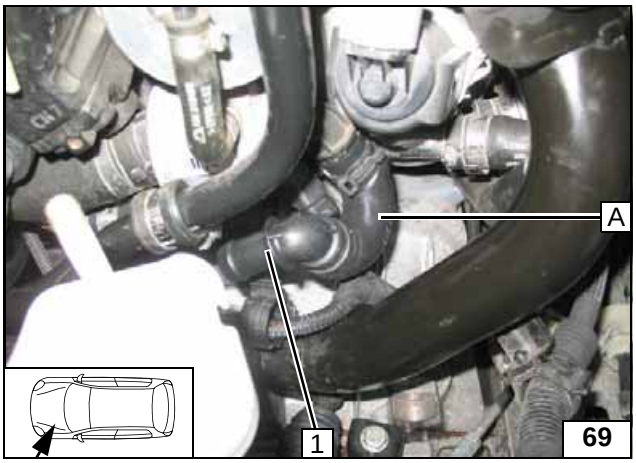
Detach retaining clip **2** from original vehicle wiring harness **1**. Route original vehicle wiring harness **1** as shown.

Relocating wiring harness



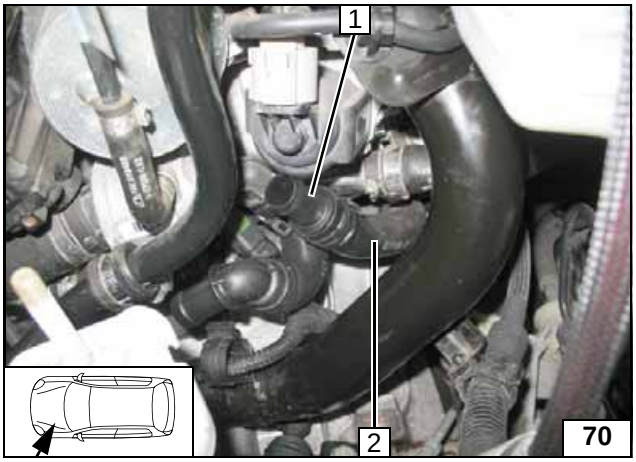
Remove and discard spring clip **1**. Pull hose of engine outlet / heat exchanger inlet **2** off connection piece of engine outlet.

Cutting point



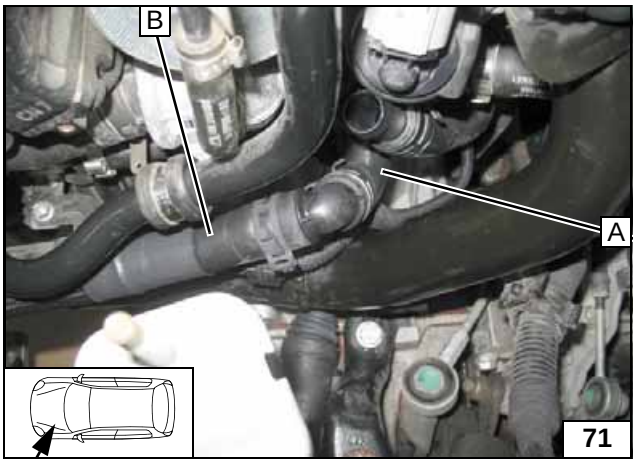
1 Install 90° connecting pipe

Connecting engine outlet

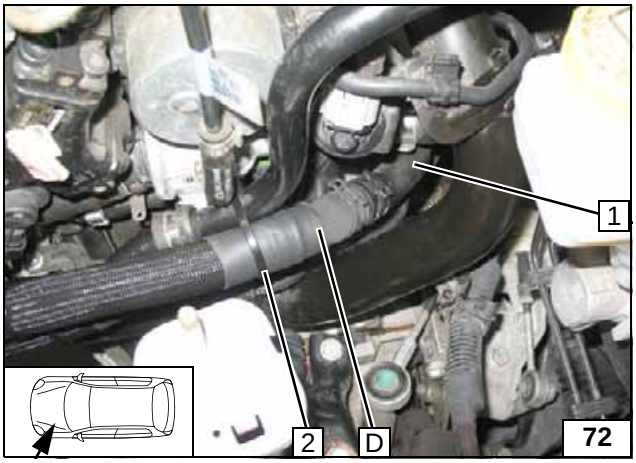


1 Install connecting pipe
2 Hose of heat exchanger inlet

Connecting heat exchanger inlet

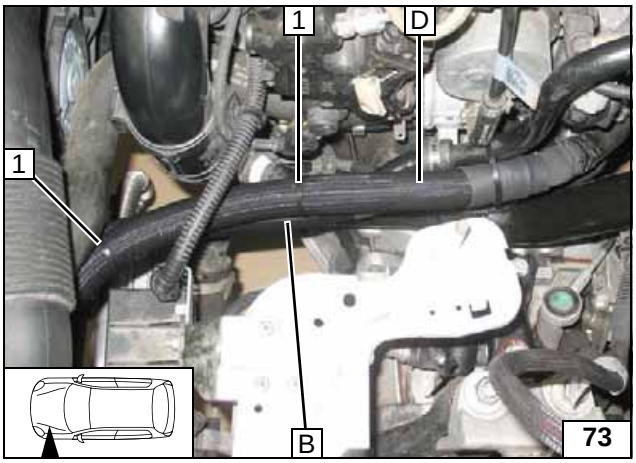


Routing in engine compartment



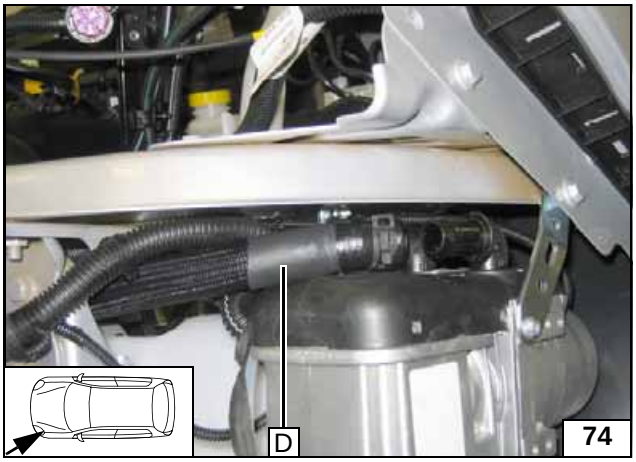
1 Hose of heat exchanger inlet
2 Cable tie

Routing in engine compartment

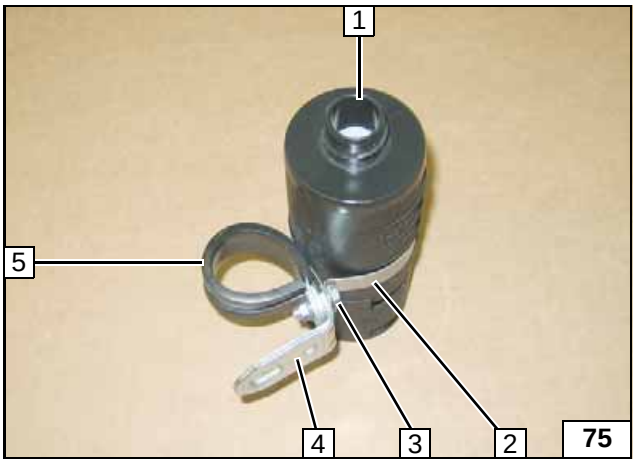


1 Cable tie

Routing in engine compartment

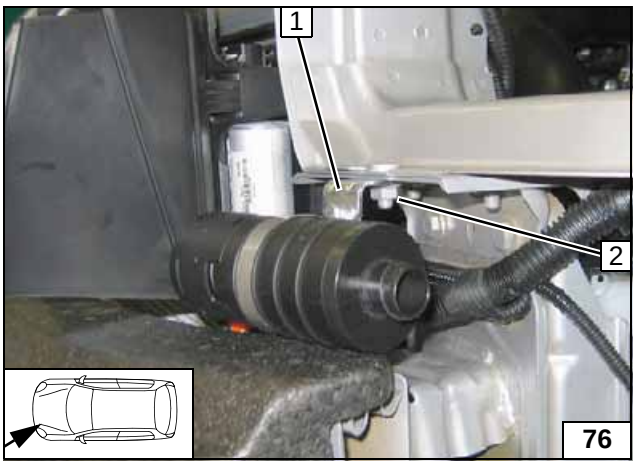


Connecting heater outlet



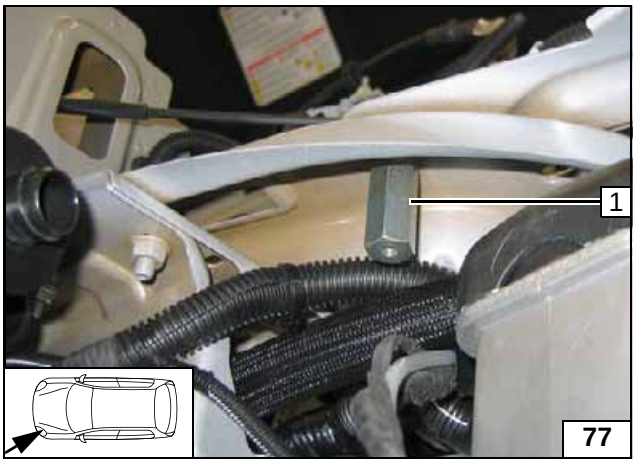
1 Combustion air silencer
2 51 mm pipe clamp
3 M5x16 bolt, flanged nut
4 Angle bracket
5 29 mm dia. rubber-coated p-clamp

Premounting silencer



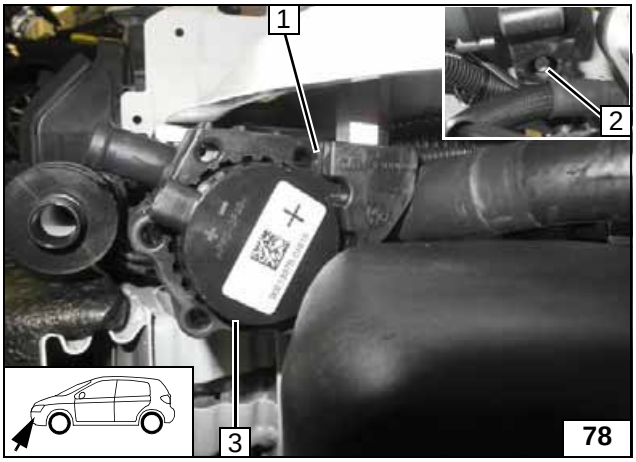
1 Angle bracket
2 Original vehicle nut

Installing silencer



Install M6x40 spacer nut **1** to original vehicle bolt.

Installing spacer nut

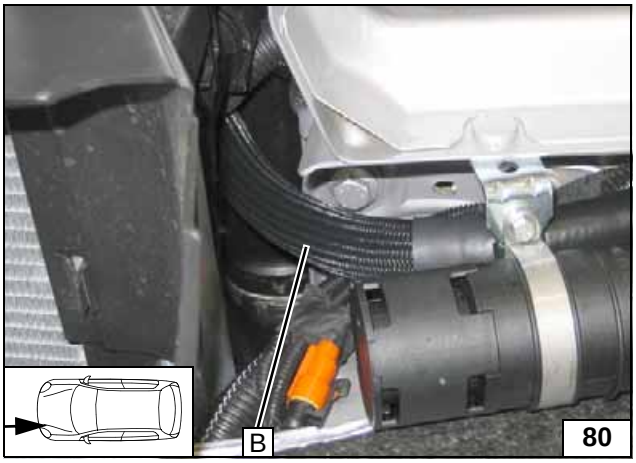


1 Circulating pump mount
2 M6x25 bolt
3 Circulating pump

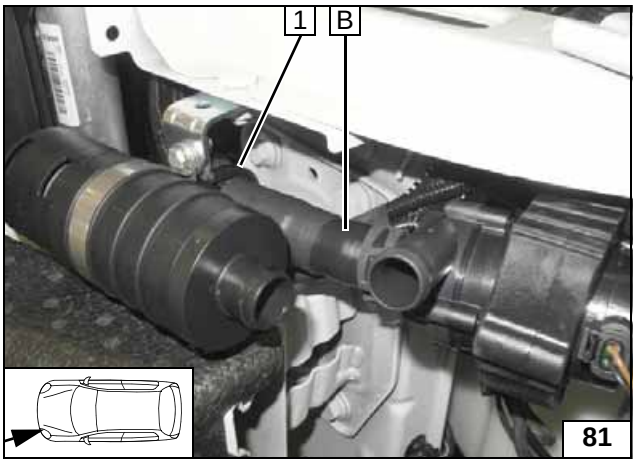
Installing circulating pump

1 Connector of circulating pump wiring harness

Installing wiring harness

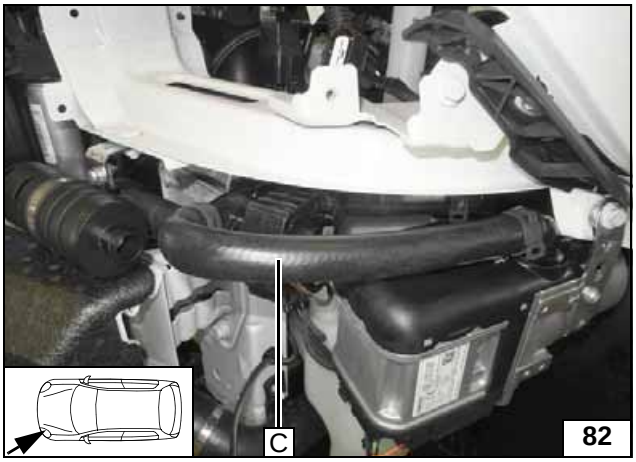


Routing in engine compartment



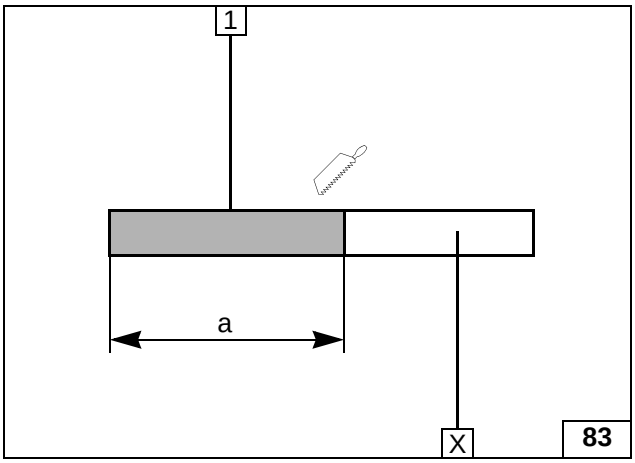
Route hose **B** through rubber-coated pipe clamp **1**.

Connecting circulating pump



Align hoses. Ensure sufficient distance from neighbouring components.

Connecting heater inlet

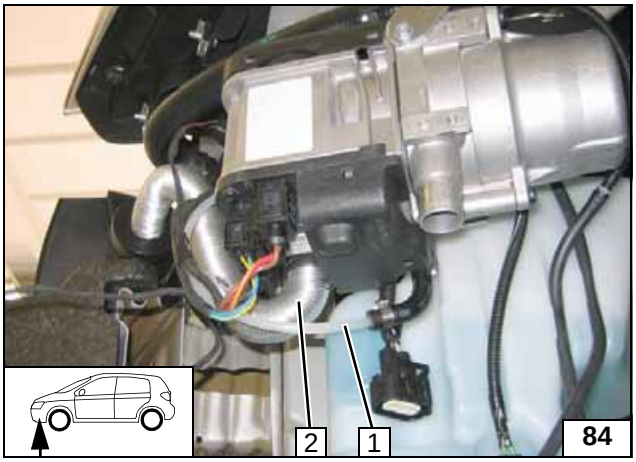


Combustion Air

Discard section **X**.

1 Combustion air pipe
a = 300

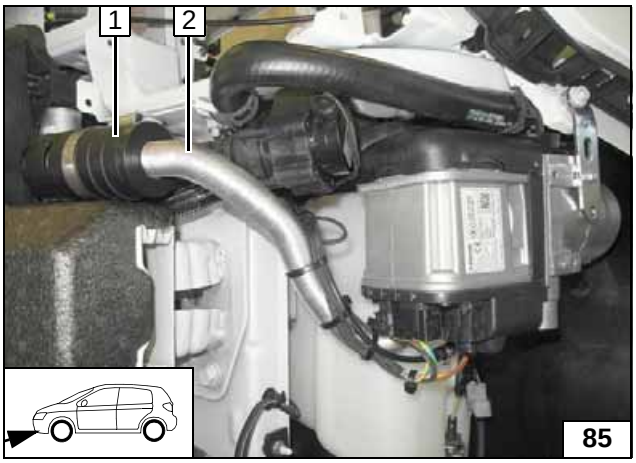
Cutting combustion air pipe to length



Route fuel line **1** and wiring harness of metering pump to the engine compartment and onto the underbody along original vehicle lines.

2 Combustion air pipe

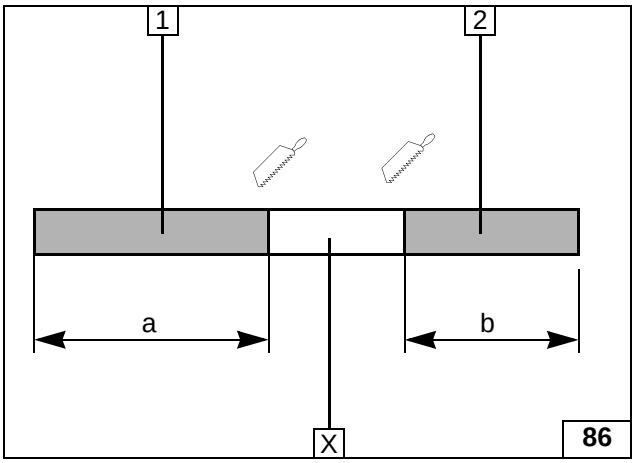
Installing combustion air pipe



Secure wiring harnesses and fuel line with cable tie.

1 Silencer
2 Combustion air pipe

Installing combustion air pipe



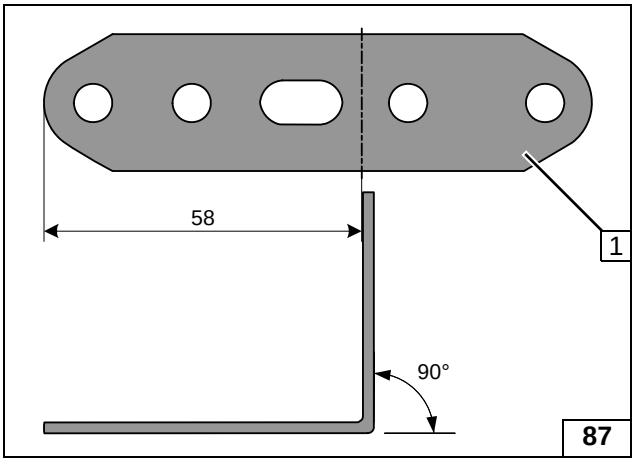
Exhaust Gas

Discard section **X**.

1 Exhaust pipe
2 Exhaust end section

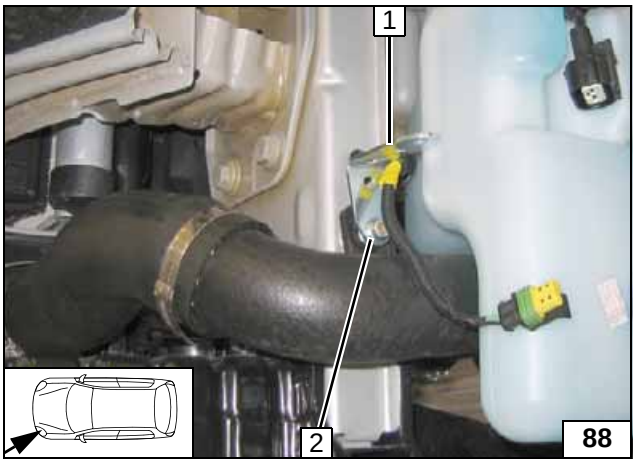
	1.6 / 2.0 JTD	1.3 JTD
a =	620	620
b =	240	145

Preparing exhaust pipe



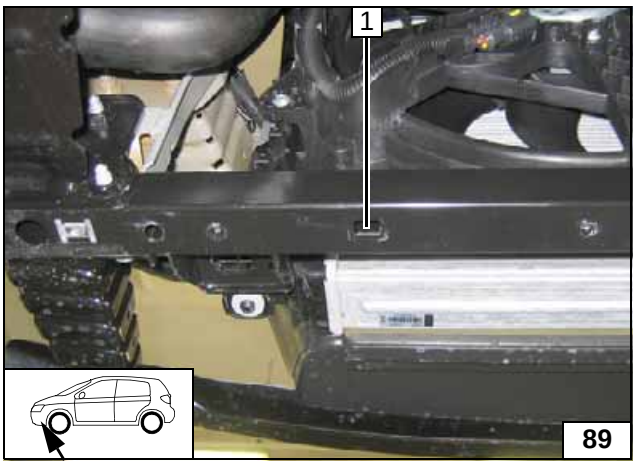
1 Perforated bracket

Preparing perforated bracket



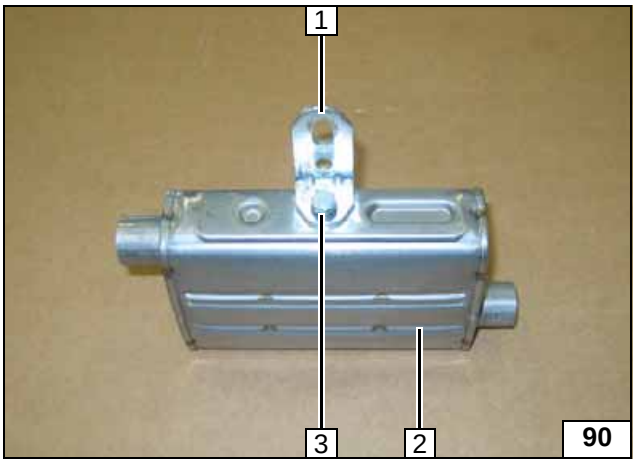
1 Perforated bracket
2 Flanged nut, original vehicle bolt

Installing perforated bracket



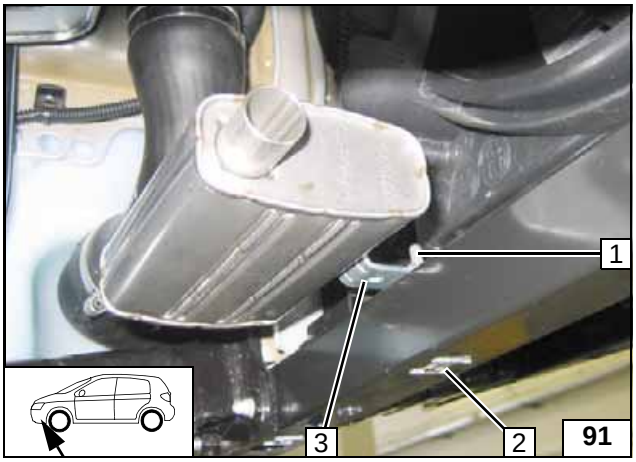
Remove retaining clip at position **1** (will be reinserted later).
6.5 mm hole through upper section of cross member, in the centre of recess **1**.

Hole in cross member



1 Angle bracket
2 Silencer
3 M6x12 bolt, spring lockwasher

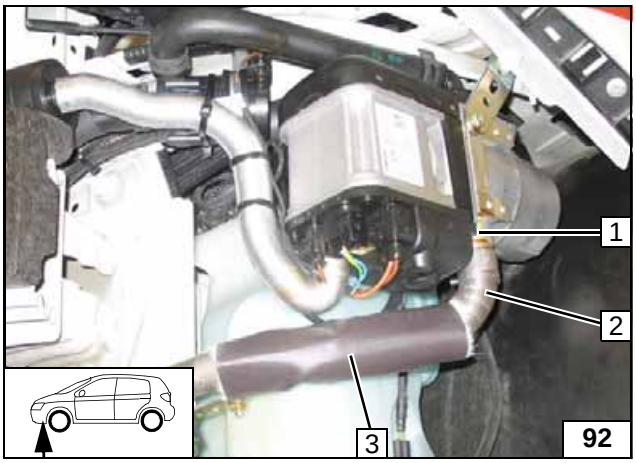
Installing silencer



Reinsert retaining clip **2** after installation.

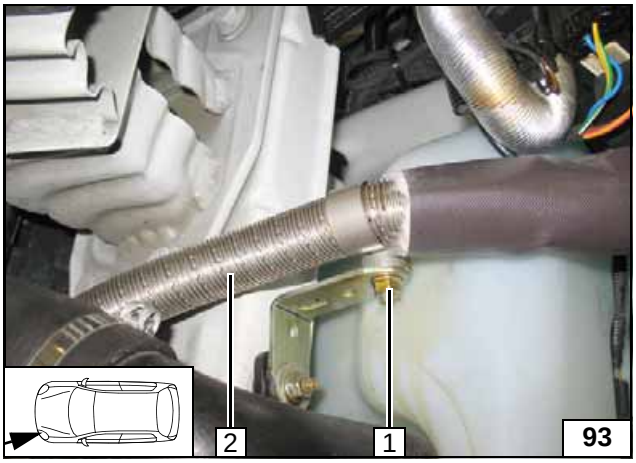
1 M6x20 cap screw, flanged nut
3 Angle bracket

Installing silencer



1 Hose clamp
2 Exhaust pipe
3 Exhaust insulation

Installing exhaust pipe

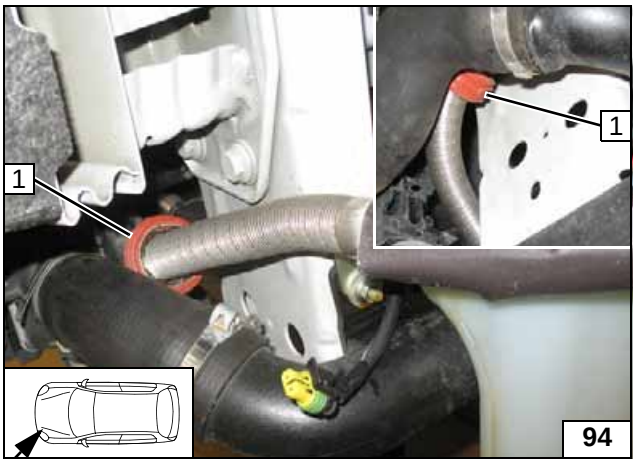


1.6 / 2.0 JTD

Insert 10mm shim between perforated bracket and pipe clamp.

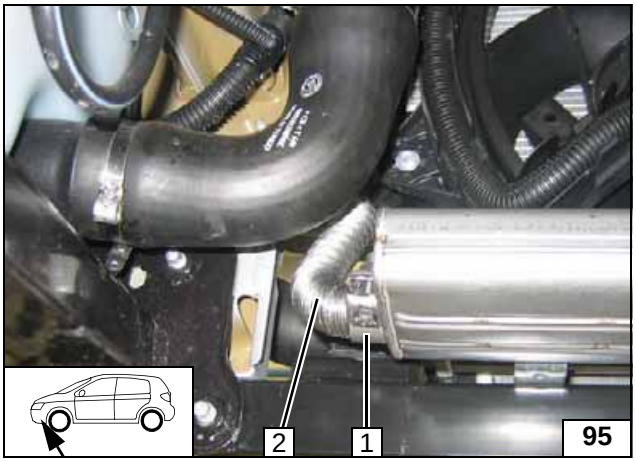
1 M6x25 bolt, 10 mm shim, pipe clamp, flanged nut
2 Exhaust pipe

Routing exhaust pipe



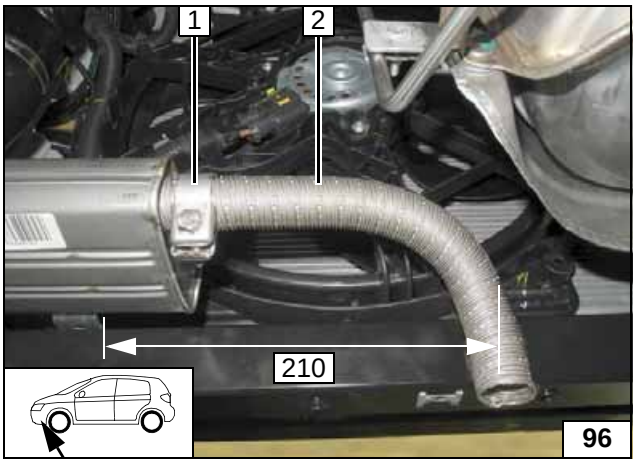
Align spacer bracket **1** with charge-air hose.

Pushing on spacer bracket



1 Hose clamp
2 Exhaust pipe

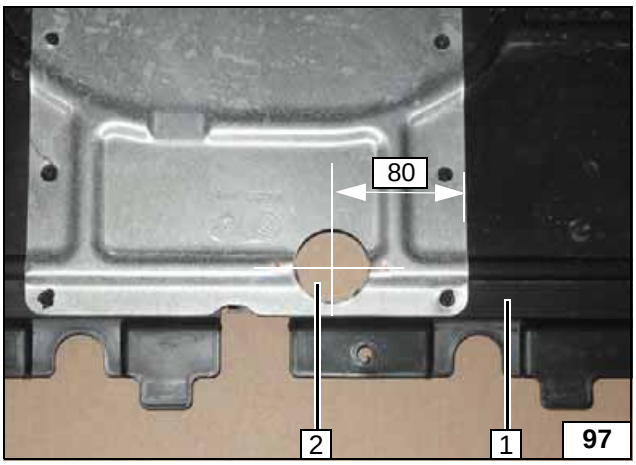
Installing exhaust pipe



Ensure sufficient distance from neighbouring components.
Alignment as per work step 2 of the installation instructions.

1 Hose clamp
2 Exhaust end section

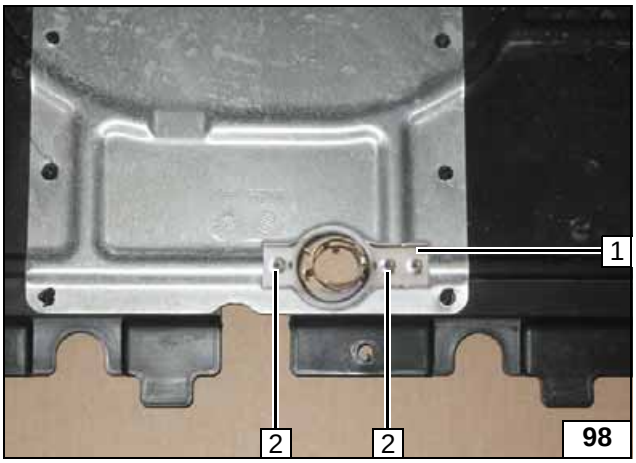
Installing exhaust end section



Hole **2** as per work step 1 of the installation instructions.

1 Lower engine cover
2 Hole (as per work step 1 of the installation instructions)

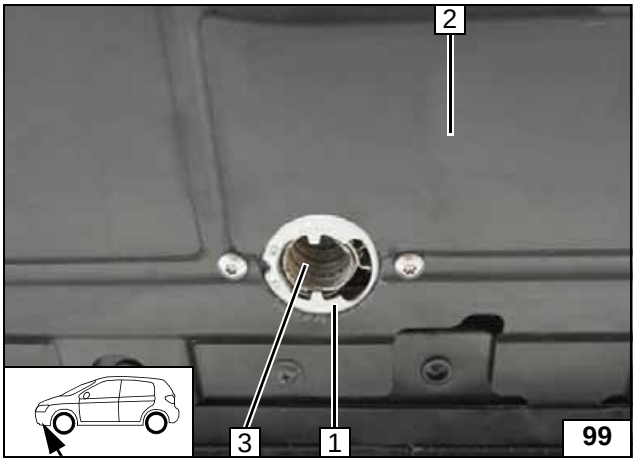
Hole in underride protection



Place exhaust end fastener **1** as per work steps 3, 4 and 5 of the installation instructions in the installation position, copy hole pattern 2 [2x], drill hole [2x] and install using provided bolts [2x].

1 Exhaust end fastener

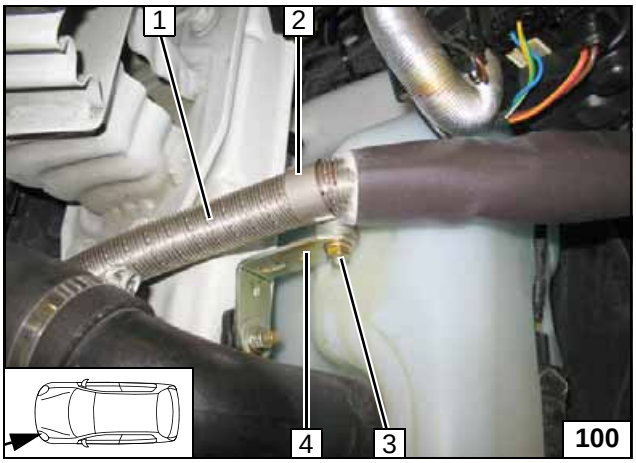
Hole in engine cover



Install engine cover **2**.
Install exhaust end section **3** according to work step 6 - 8 of the installation instructions.

1 Exhaust end fastener

Installing exhaust end section

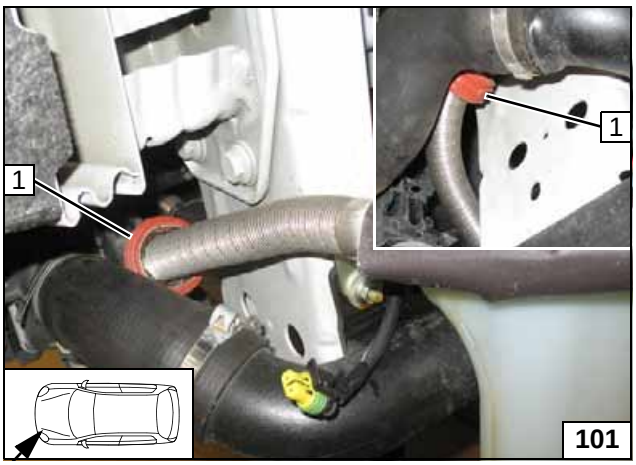


1.3 JTD

Insert 10mm shim between perforated bracket **4** and pipe clamp **2**.

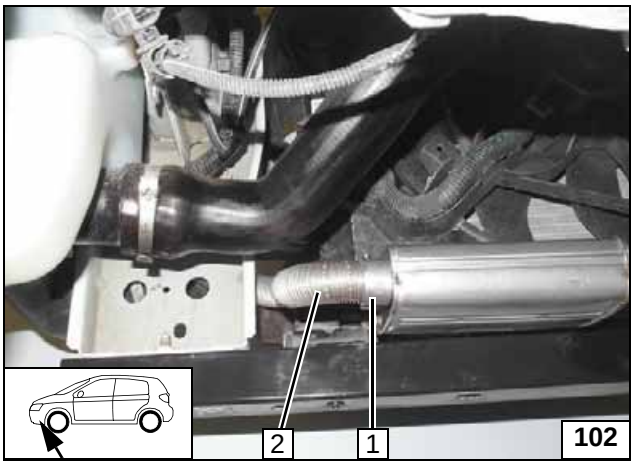
1 Exhaust pipe
3 M6x25 bolt, 10 mm shim, flanged nut

Routing exhaust pipe



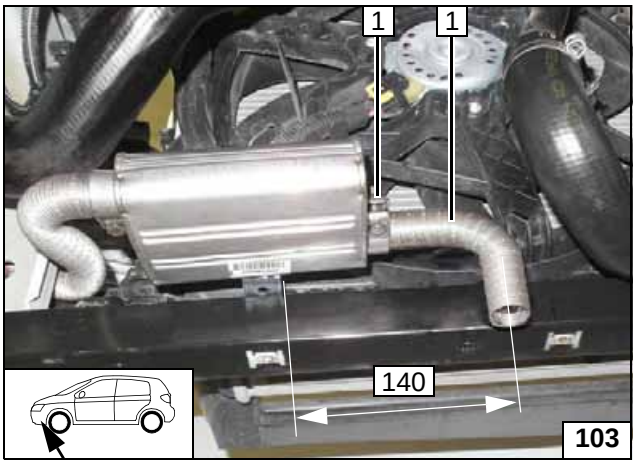
Align spacer bracket **1** with charge-air hose.

Pushing on spacer bracket



1 Hose clamp
2 Exhaust pipe

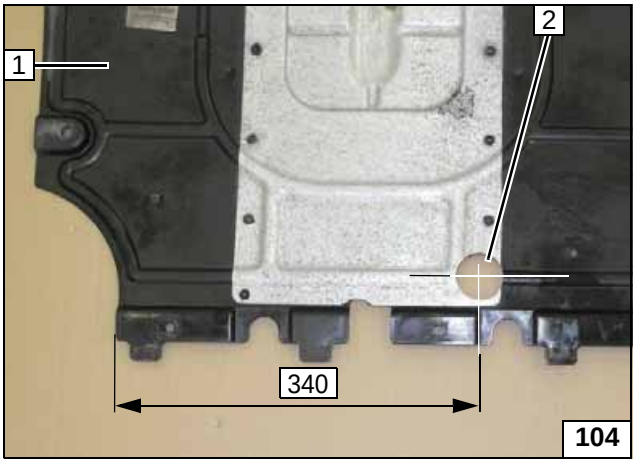
Installing exhaust pipe



Ensure sufficient distance from neighbouring components.
Alignment as per work step 2 of the installation instructions.

1 Hose clamp
2 Exhaust end section

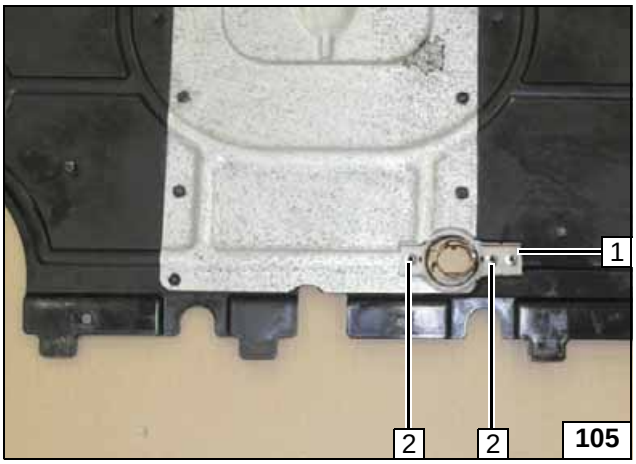
Installing exhaust end section



Hole **2** as per work step 1 of the installation instructions.

1 Lower engine cover
2 Hole (as per work step 1 of the installation instructions)

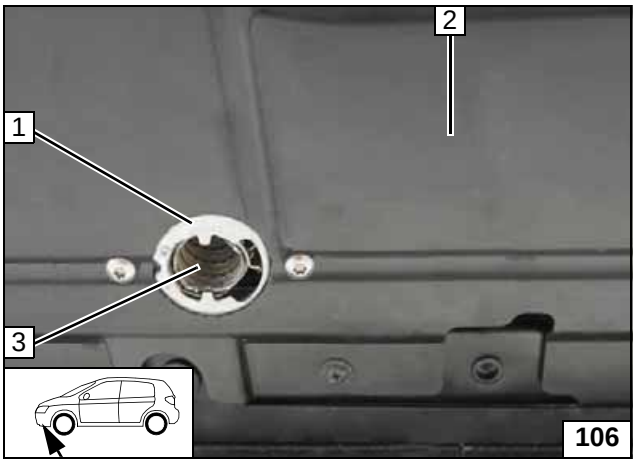
Hole in underride protection



Place exhaust end fastener **1** as per work steps 3, 4 and 5 of the installation instructions in the installation position, copy hole pattern 2 [2x], drill hole [2x] and install using provided bolts [2x].

1 Exhaust end fastener

Hole in engine cover



Install engine cover **2**.
Install exhaust end section **3** according to work step 6 - 8 of the installation instructions.

1 Exhaust end fastener

Installing exhaust end section

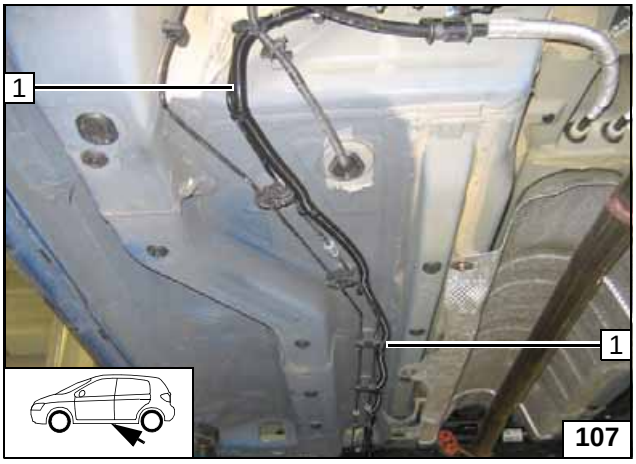
Fuel

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.

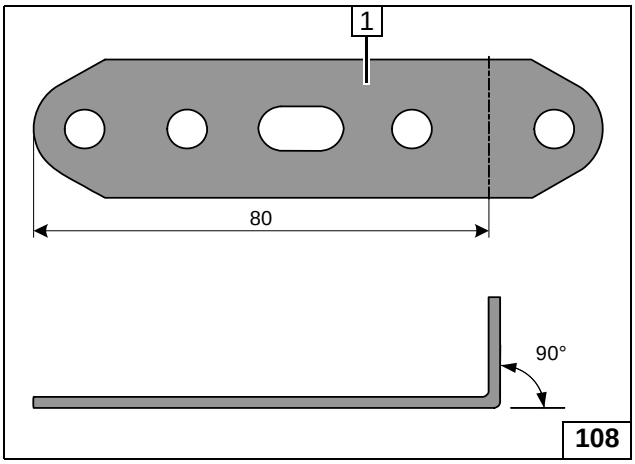
Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

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



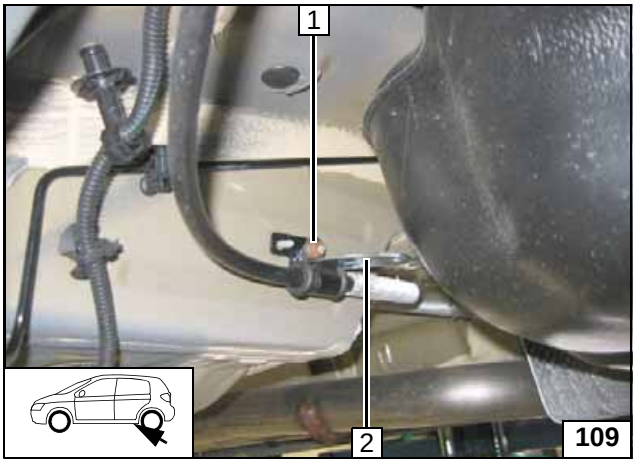
Route fuel line and wiring harness of metering pump in corrugated tube **1** to the installation location of the metering pump.

Routing lines



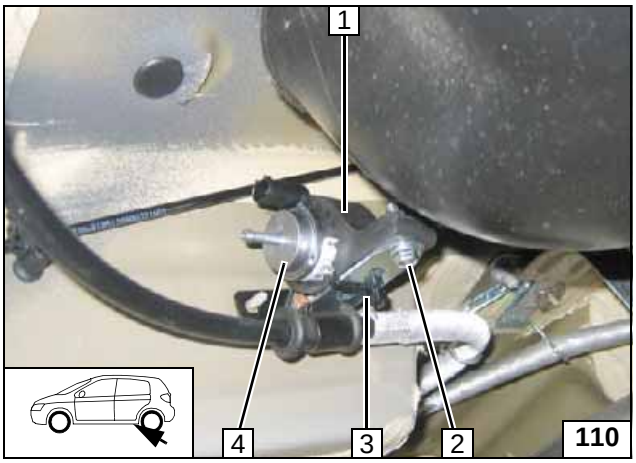
1 Angle down perforated bracket

Preparing perforated bracket



1 Original vehicle nut
2 Perforated bracket

Installing perforated bracket

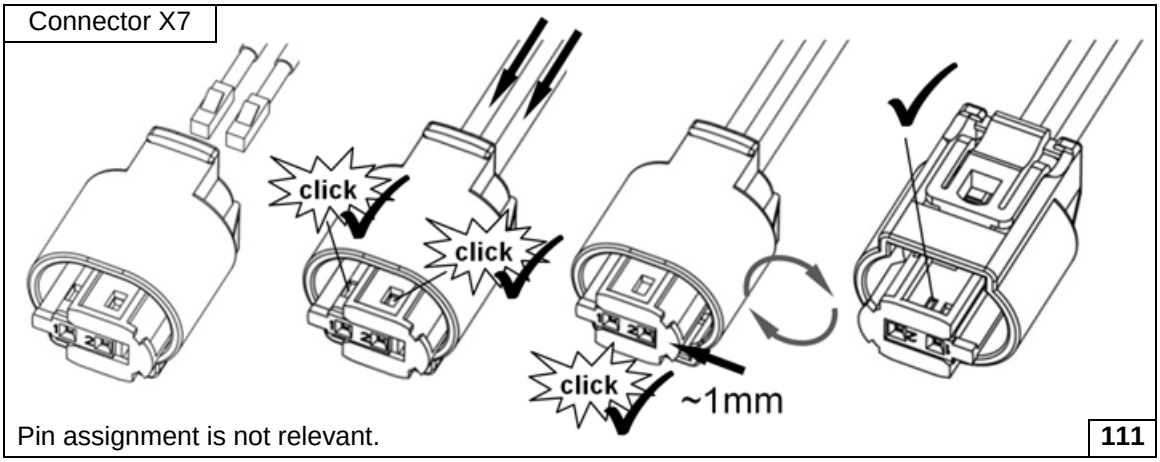


Fix mounting of metering pump**1** with cable tie **3** on the perforated bracket.

2 M6x25 bolt, support angle bracket, flanged nut
4 Metering pump

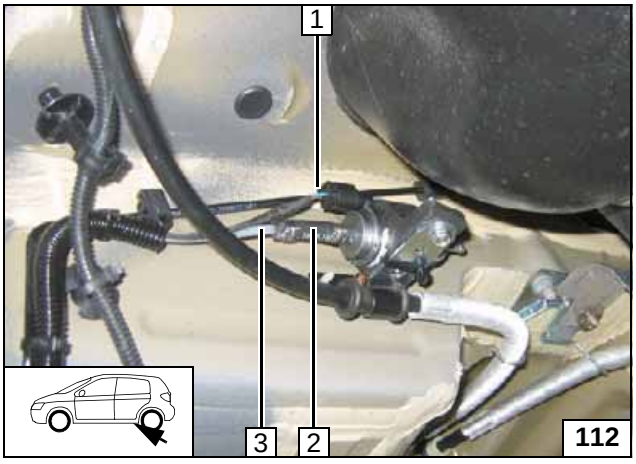
Installing metering pump

Connector X7



Pin assignment is not relevant.

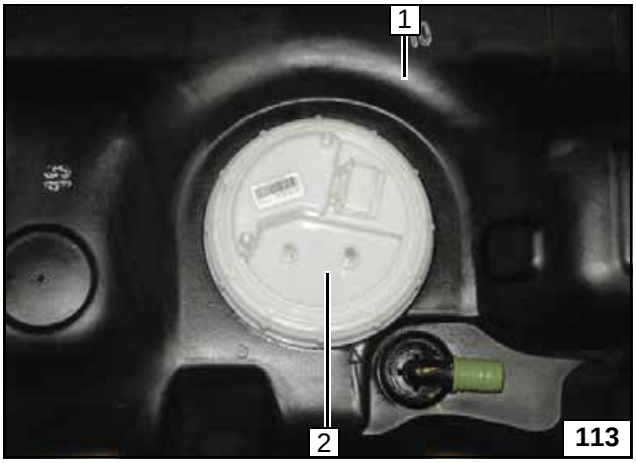
Completing metering pump connector



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

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

Connecting metering pump

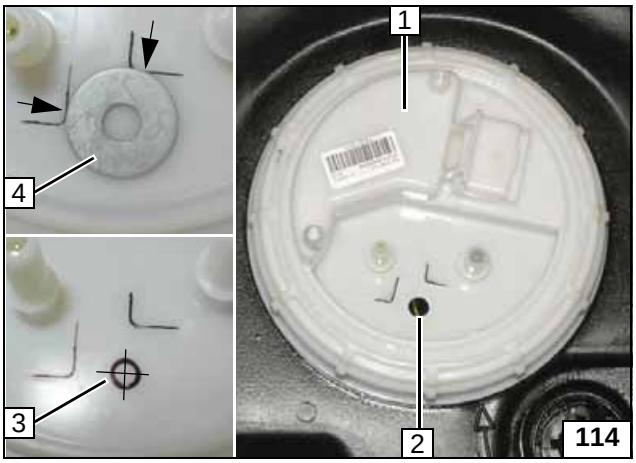


Installing FuelFix

Fuel tank **1** has to be removed in accordance with manufacturer's instructions for vehicles without service lid.
The installation procedure for the FuelFix is shown in the next section on a vehicle with a removed tank, but it applies to all models!

2 Fuel tank sending unit

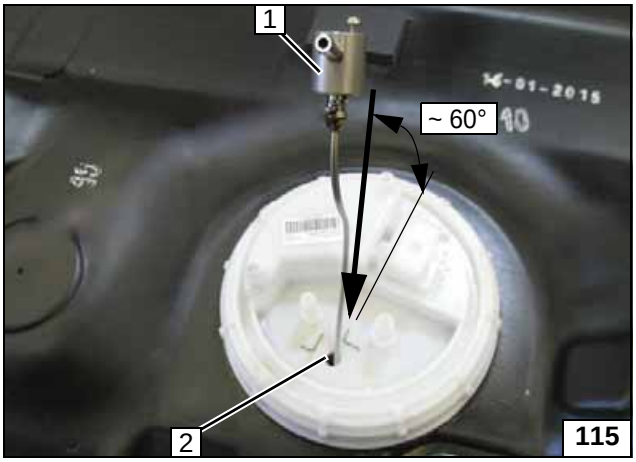
Info



Work steps F1, F2 and F3.

1 Fuel tank sending unit
2 Hole made with provided drill
3 Hole pattern
4 Position washer with outer dia. d_a = 21.6mm as template at the marked perforation.

Copying hole pattern, drilling hole



Work steps F4 and F5.

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

Inserting FuelFix

Inserting FuelFix

Inserting FuelFix

118

Inserting FuelFix

119

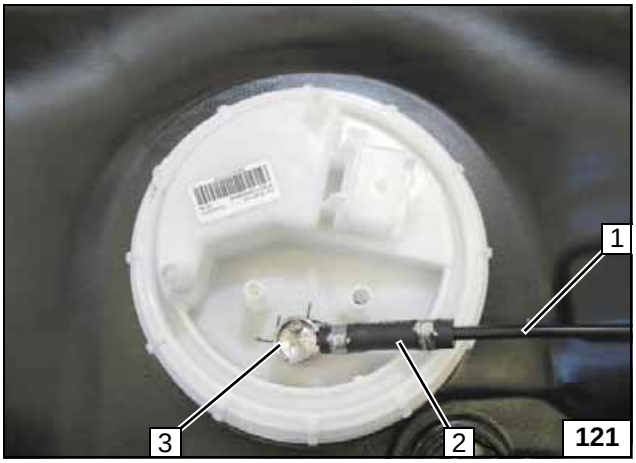
Inserting FuelFix

120

Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

Inserting FuelFix



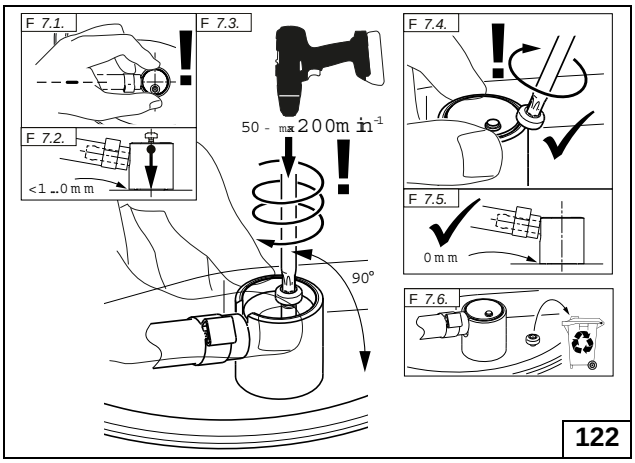
121

Work step F6.

Ensure sufficient distance for the installation of the original vehicle fuel lines.

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

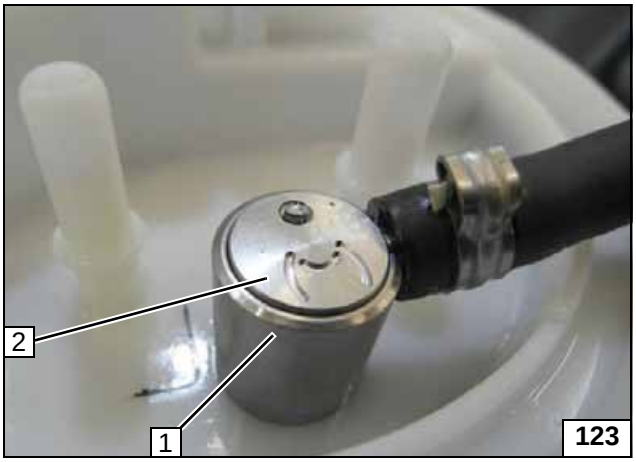
Connecting fuel line



122

Work step F7.

Mounting FuelFix



123

Work step 8!

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

Checking final position

124

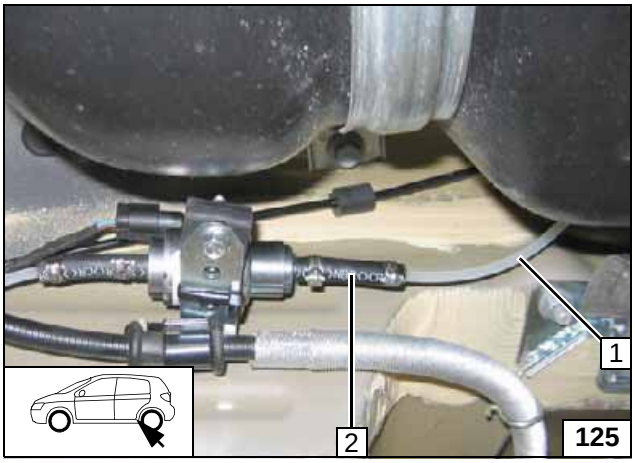
Work step 8!

Attach fuel line of FuelFix using a cable tie at an appropriate place for strain relief.

1 Fuel line of FuelFix
2 FuelFix mounted

Install Fuel tank, if removed, in accordance with manufacturer's instructions.

Securing fuel line



125

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

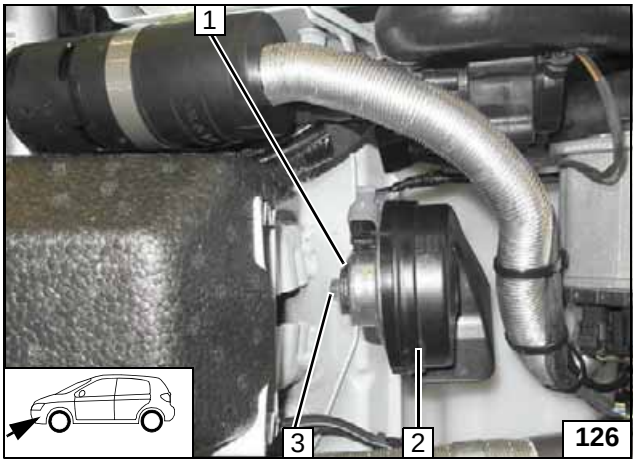
1 Fuel line of FuelFix
2 Hose section, 10mm dia. clamp [2x]

Connecting metering pump

Final Work

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

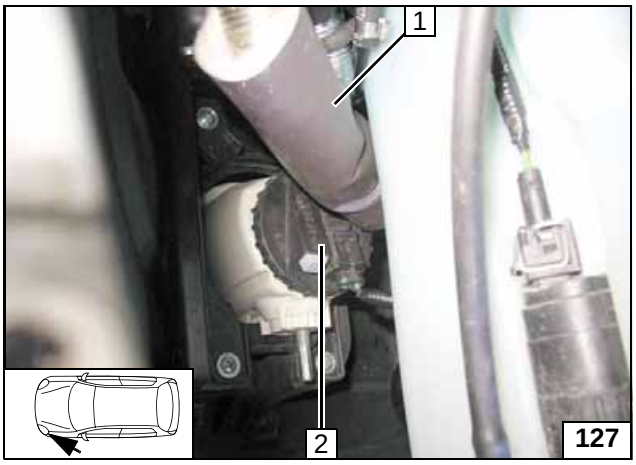
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the 'Operating Instructions for End Customer'.**
- **Place the 'Switch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



From model year 2015.

1 Bracket of horn
2 Horn
3 Original vehicle nut

Installing horn



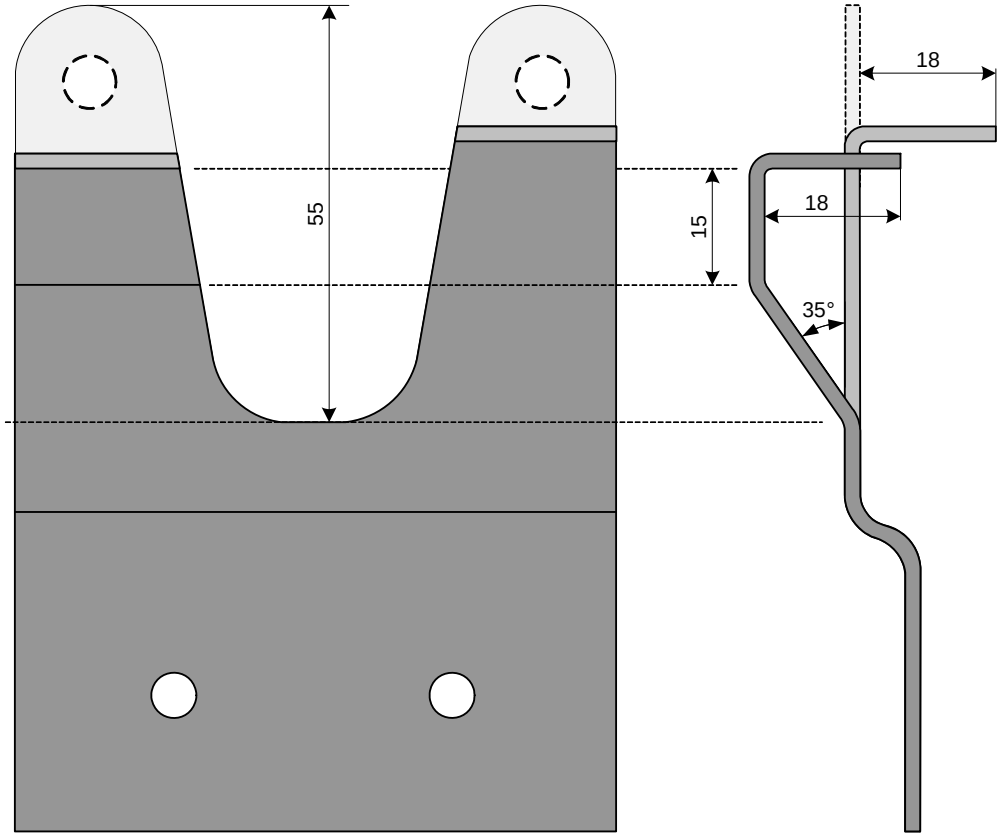
All vehicles

Align exhaust pipe **1** with front fog lights **2** after the installation of the bumper. Ensure sufficient distance from neighbouring components, correct if necessary.

Aligning exhaust pipe

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

Template for Bracket



100mm

Scale 1:1

Compare size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

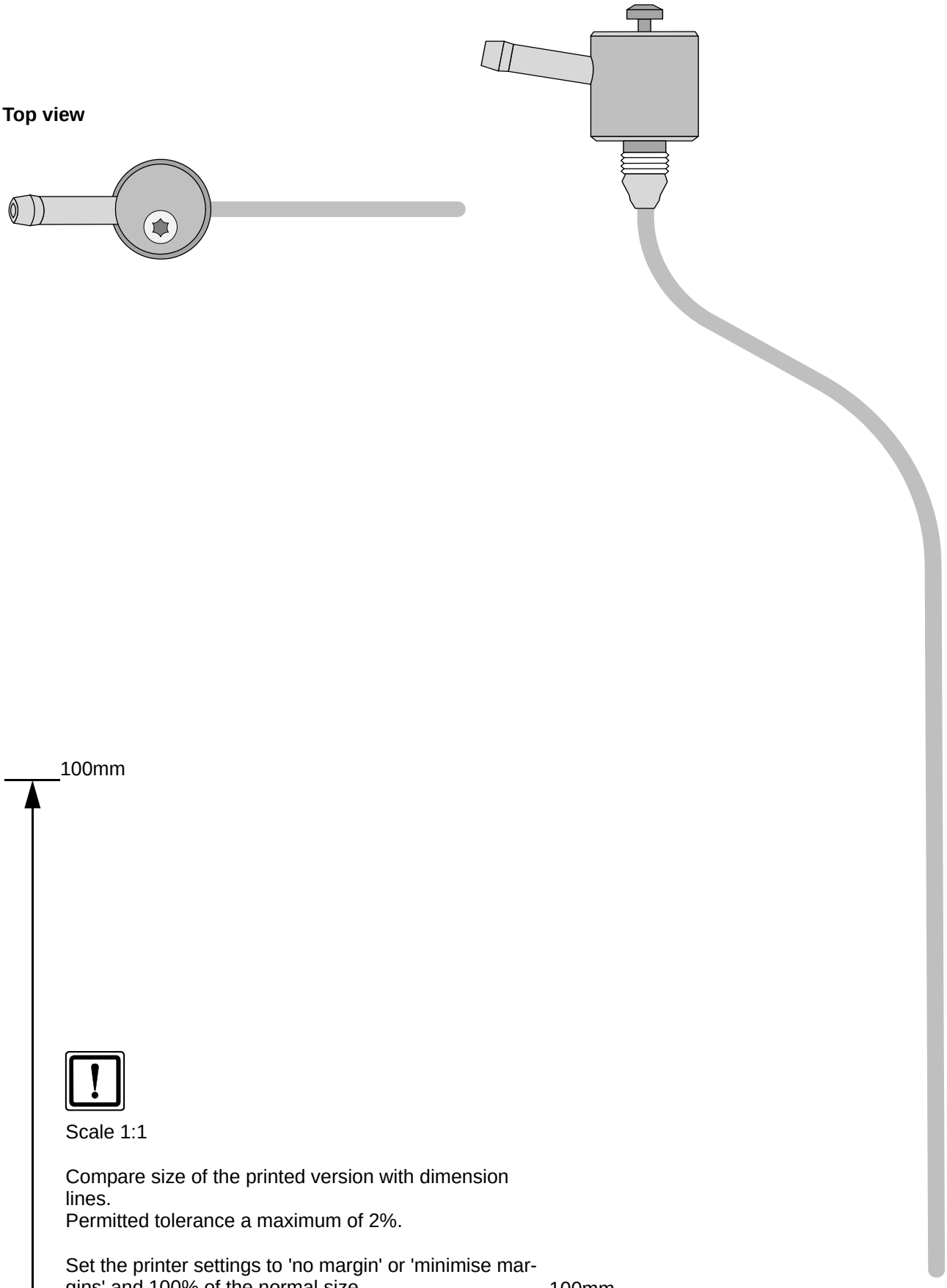
Set the printer settings to 'no margin' or 'minimise margins' and 100% of the normal size.

100mm

0

FuelFix Template

Top view



Scale 1:1

Compare size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

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

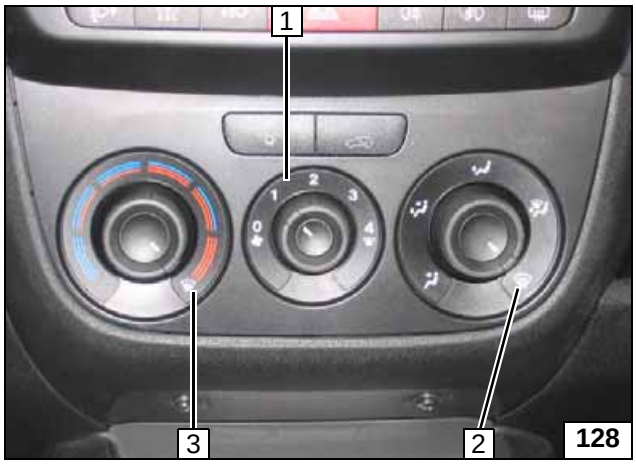
Operating Instructions for Manual Air-Conditioning

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.

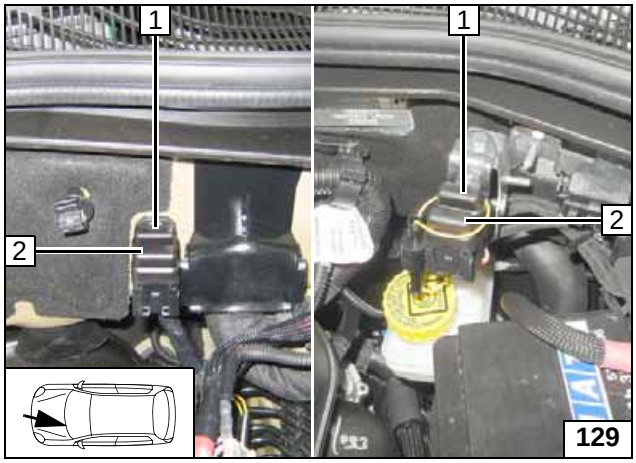
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



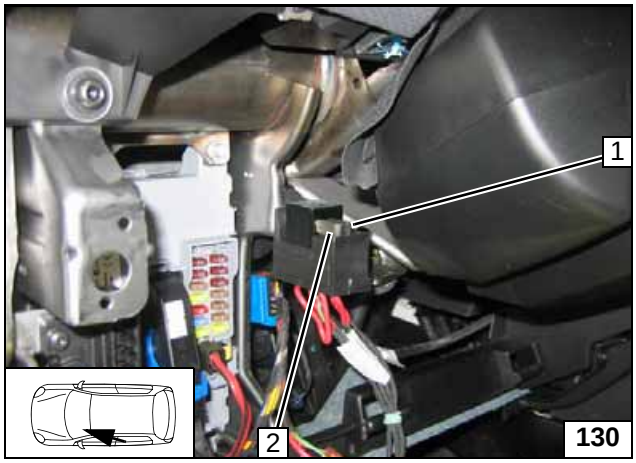
1 Set fan to level ‘1’, or max. ‘2’
2 Air outlet onto windscreen
3 Set temperature to ‘max.’

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses

Operating Instructions for Automatic Air-Conditioning

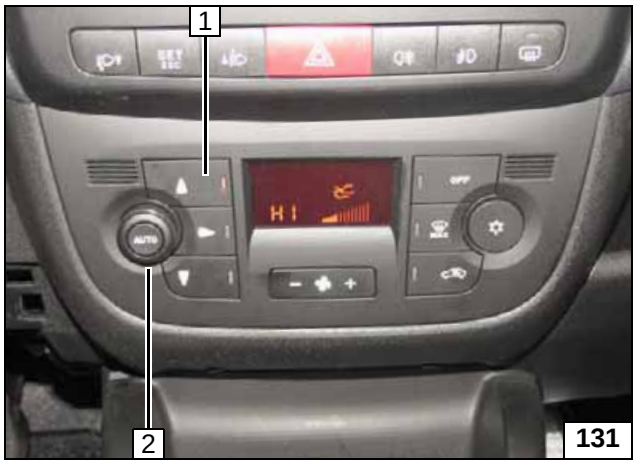
Please remove page and add to the vehicle operating instructions.

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.

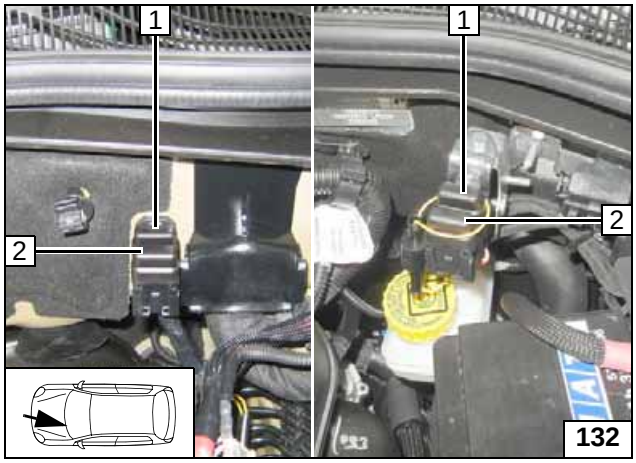
Before parking the vehicle, make the following settings:

A/C control panel



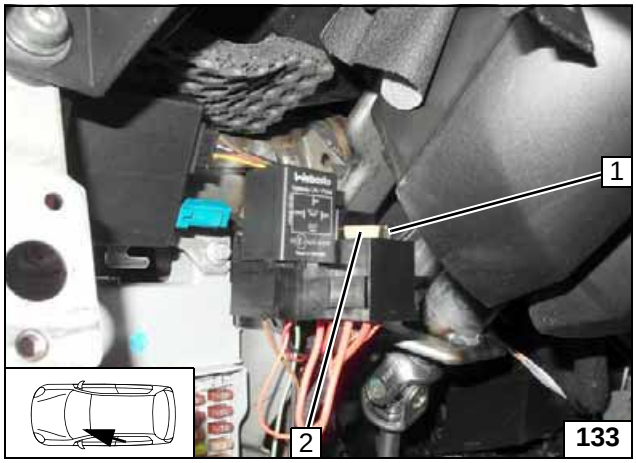
1 Air outlet onto windscreen
2 Set temperature to ‘HI’

Engine compartment fuses



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

Passenger compartment fuses



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