Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
VW Polo

Validity

Manufacturer	Model	Type	EG BE No. / ABE
VW	Polo	6C	e1 * 2001 / 116 * 0510 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.0 MPI	Petrol	5-speed SG	44	999	CHYA
1.0 MPI	Petrol	5-speed SG	55	999	CHYB
1.2 TSI	Petrol	6-speed SG	66	1197	CJZC
1.4 TDI	Diesel	5-speed SG	55	1422	CUSA

SG = manual transmission

From model year 2015
Left-hand drive vehicle

Verified equipment variants:
Manual / automatic air-conditioning system
Front fog lights
Headlight washer system
Start / Stop
Blue Motion
Euro 6

Not verified:
Passenger compartment monitoring
Full LED

Total installation time: approx. 8 hours

VW Polo

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo in accordance with price list
- Installation kit with FuelFix for VW Polo 2015 Petrol and diesel: **1323162E**
- Additionally required in case of automatic air-conditioning: Additional kit AAC VW Polo 2015 **1323164**_
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

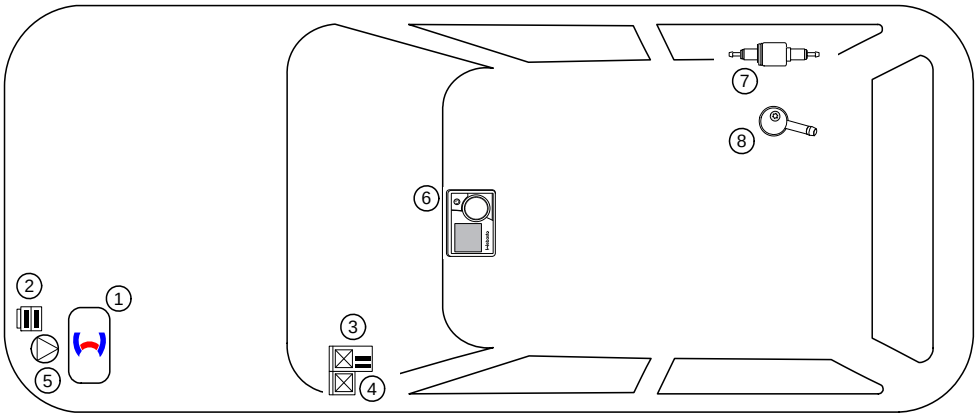
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. PWM GW (only for automatic A/C)
5. Circulating pump
6. MultiControl CAR
7. Metering pump
8. FuelFix



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

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

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

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

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

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

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

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to VW Polo Petrol and diesel vehicles - for validity, see page 1 - from model year 2015 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this ‘installation documentation’.

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

Technical Information

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

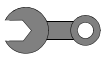
Dimensions
- All dimensions are in mm.

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

Explanatory Notes on Document

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

Mechanical System



Electrical System

Coolant Circuit

Combustion Air

Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of damage to components.

Specific risk due to electrical voltage.

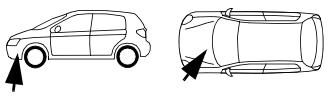
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

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

Reference to a special technical feature.

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



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

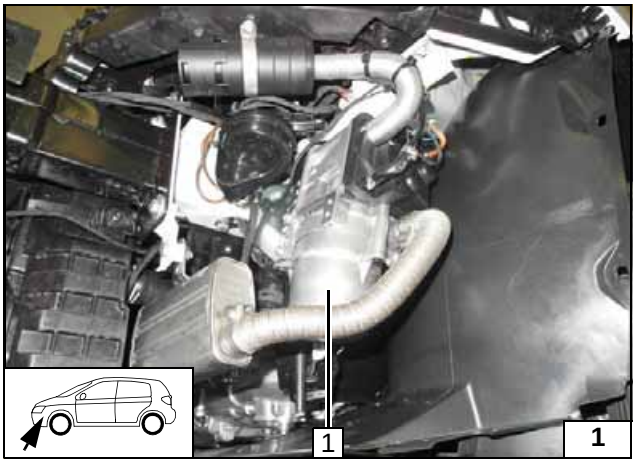
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the windscreen wipers.
- Remove the coolant reservoir cap.
- Remove the partition wall of the coolant reservoir.
- Remove the windscreen wiper motor.
- Remove the air filter.
- Remove the intake hose of the air filter (only in case of 1.0 MPI).
- Remove the headlights on the left and right.
- Remove the bumper trim.
- Remove the horn (one or two can be present) with the bracket.
- Remove the lateral instrument panel trim on the left and right.
- Completely remove the glove box.
- Remove the underride protection.
- Remove the right vehicle underbody trim.
- Fold up the seat surface of the rear bench seat.
- Open the tank-fitting service lid.

Heater

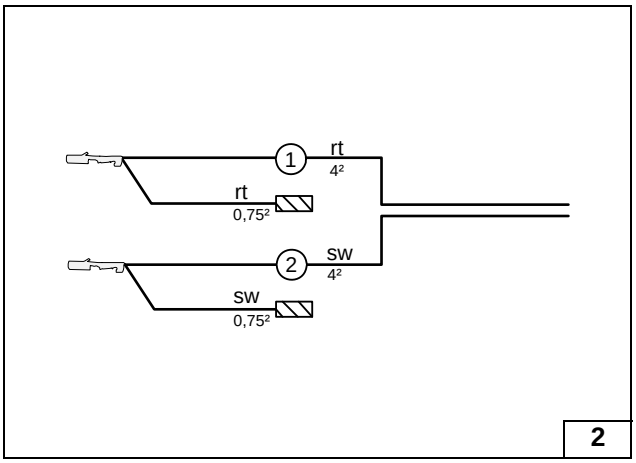
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



2

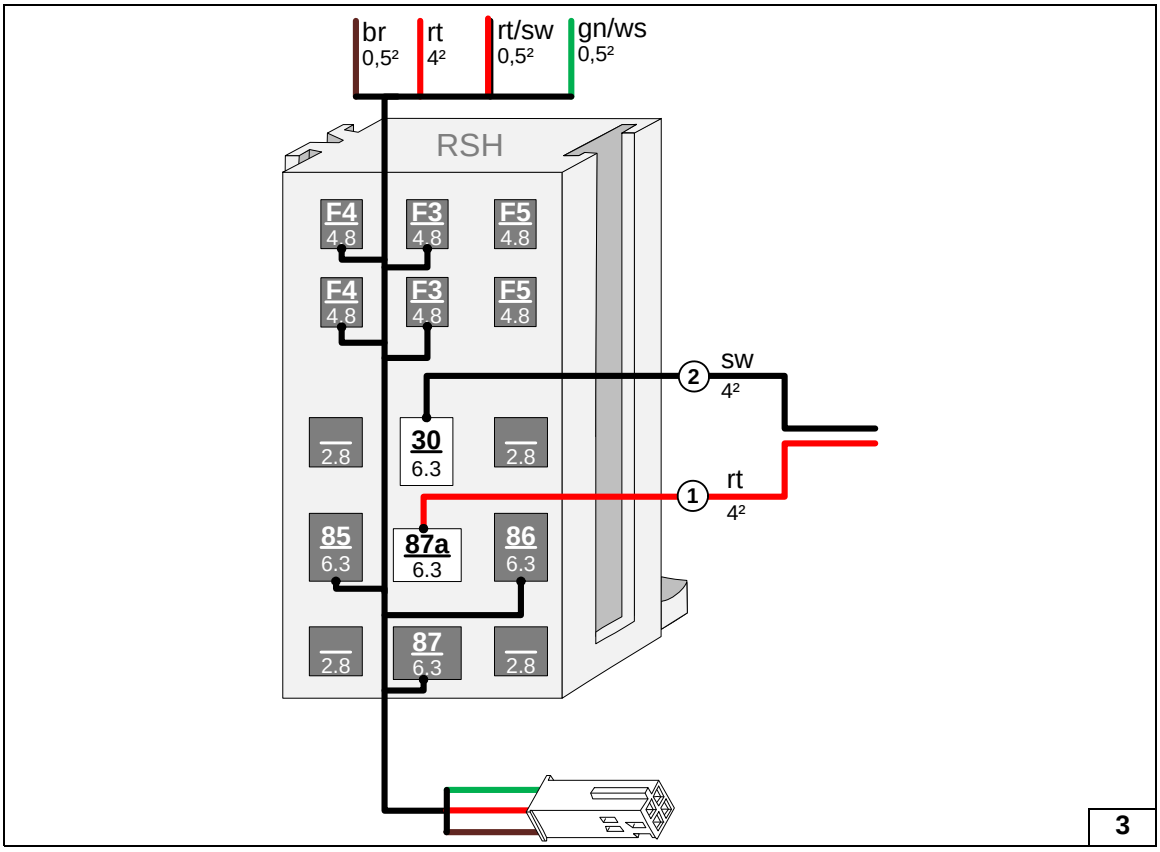
Preparing Electrical System

Wire sections retain their numbering in the entire document.

Manual air conditioning

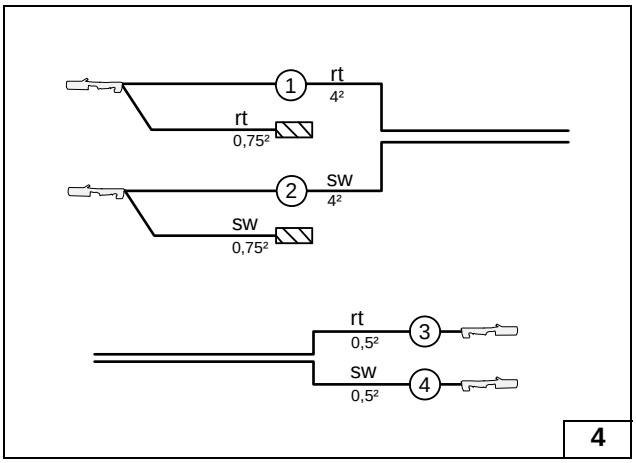
① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness

Assigning wires



3

Preparing passenger compartment relay and fuse holder



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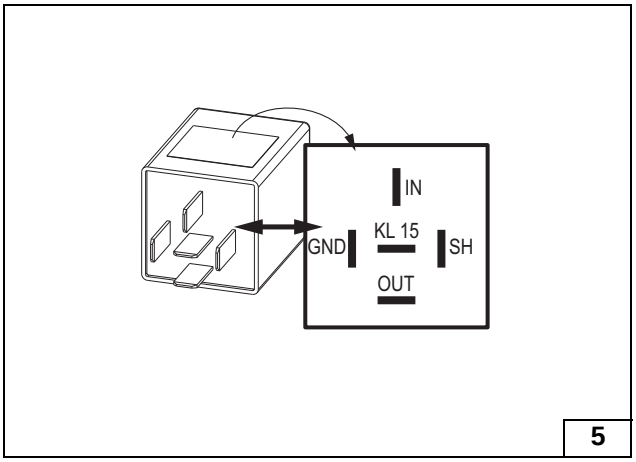
Automatic air-conditioning

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

Assigning wires



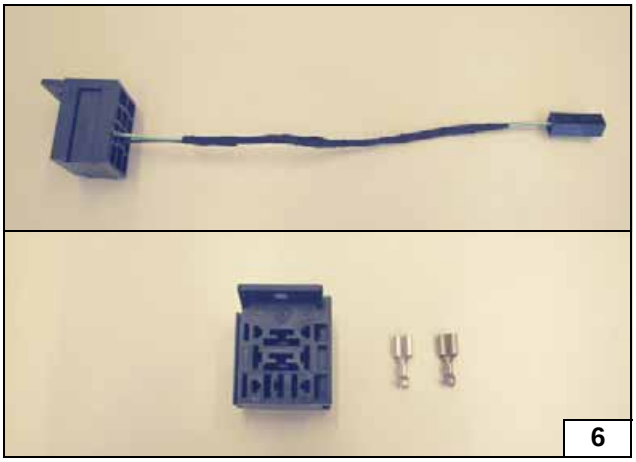
5

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

Settings:

Duty cycle: 100% (DC)
Frequency: not relevant
Voltage: 3.3V
Function: High side

View of PWM GW



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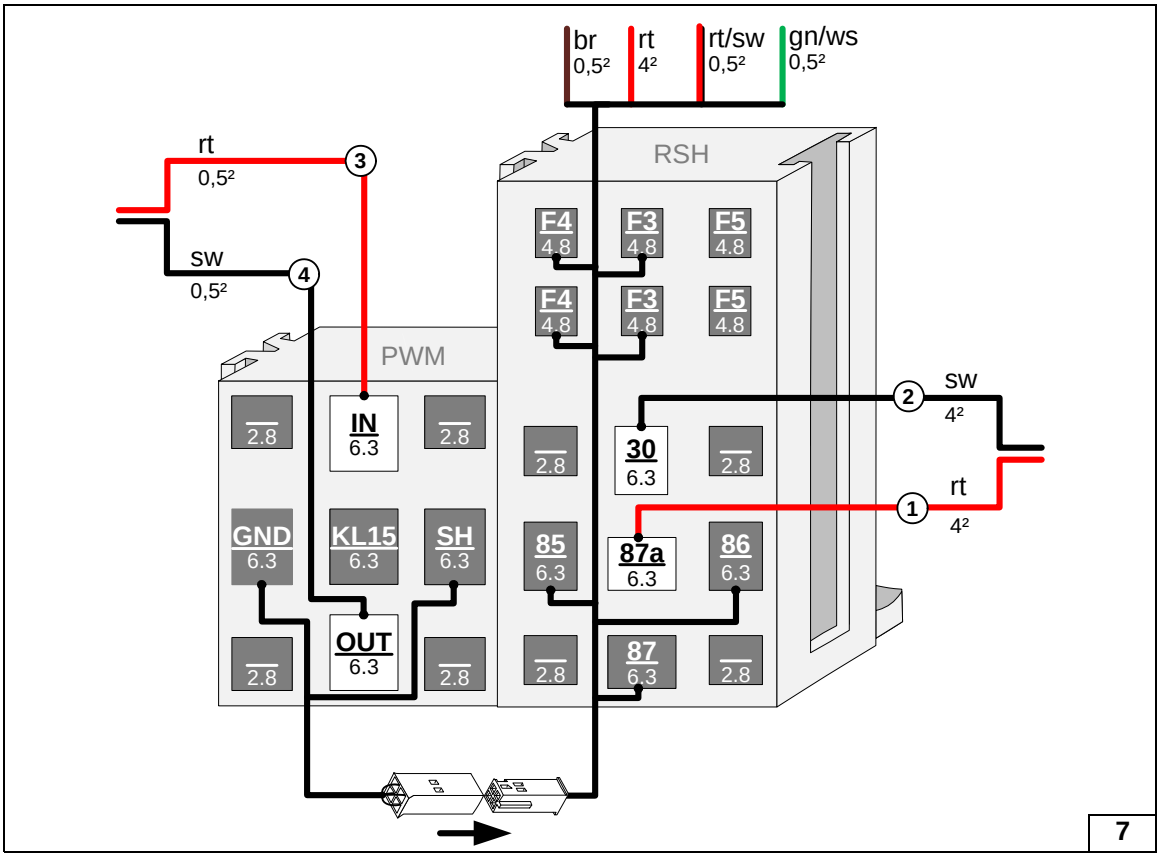
View of PWM GW socket

Version 1
(wiring harness incl. PWM GW socket in kit)

Version 2
(PWM GW socket loose in kit)

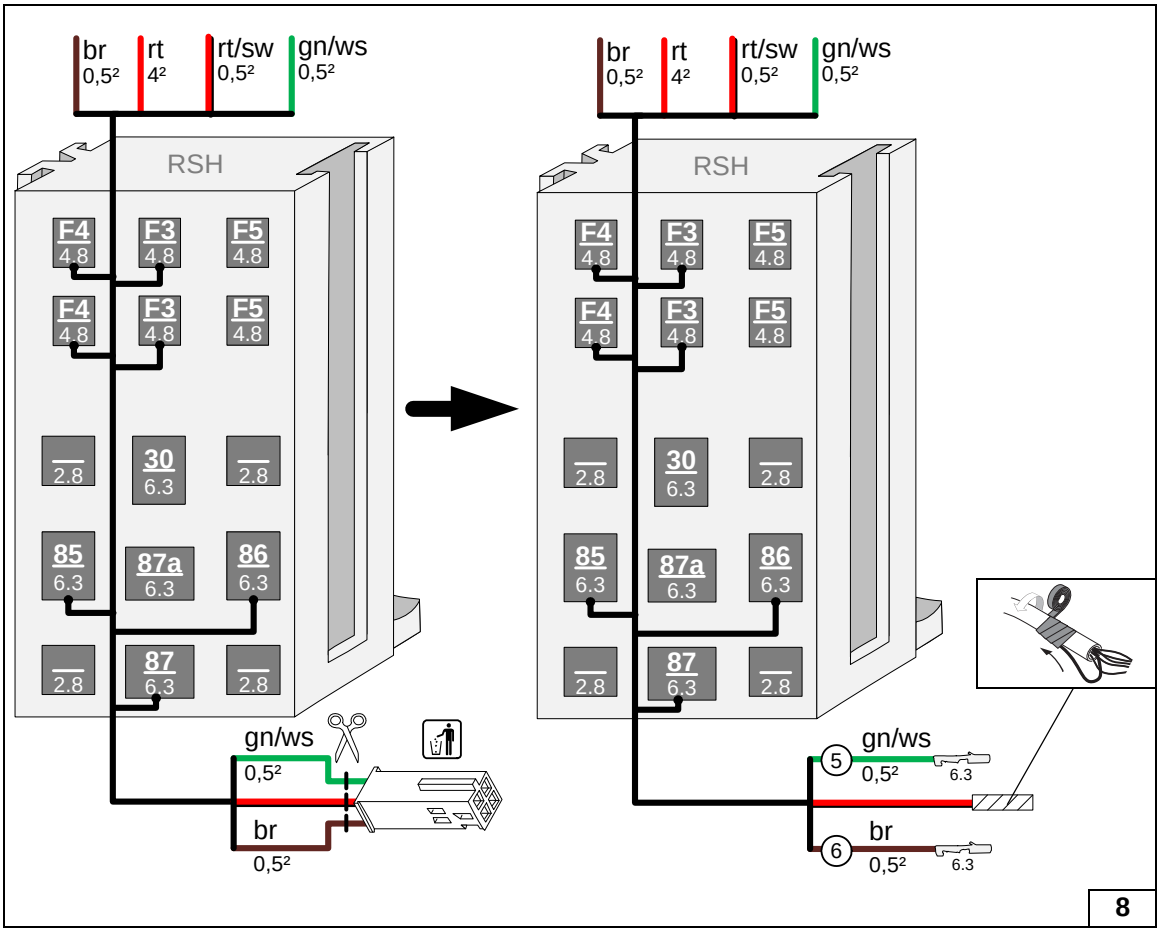
PWM GW socket versions

Version 1



Interlocking PWM GW and passenger compartment relay and fuse holder sockets, inserting connector into bushing, connecting wires

Version 2



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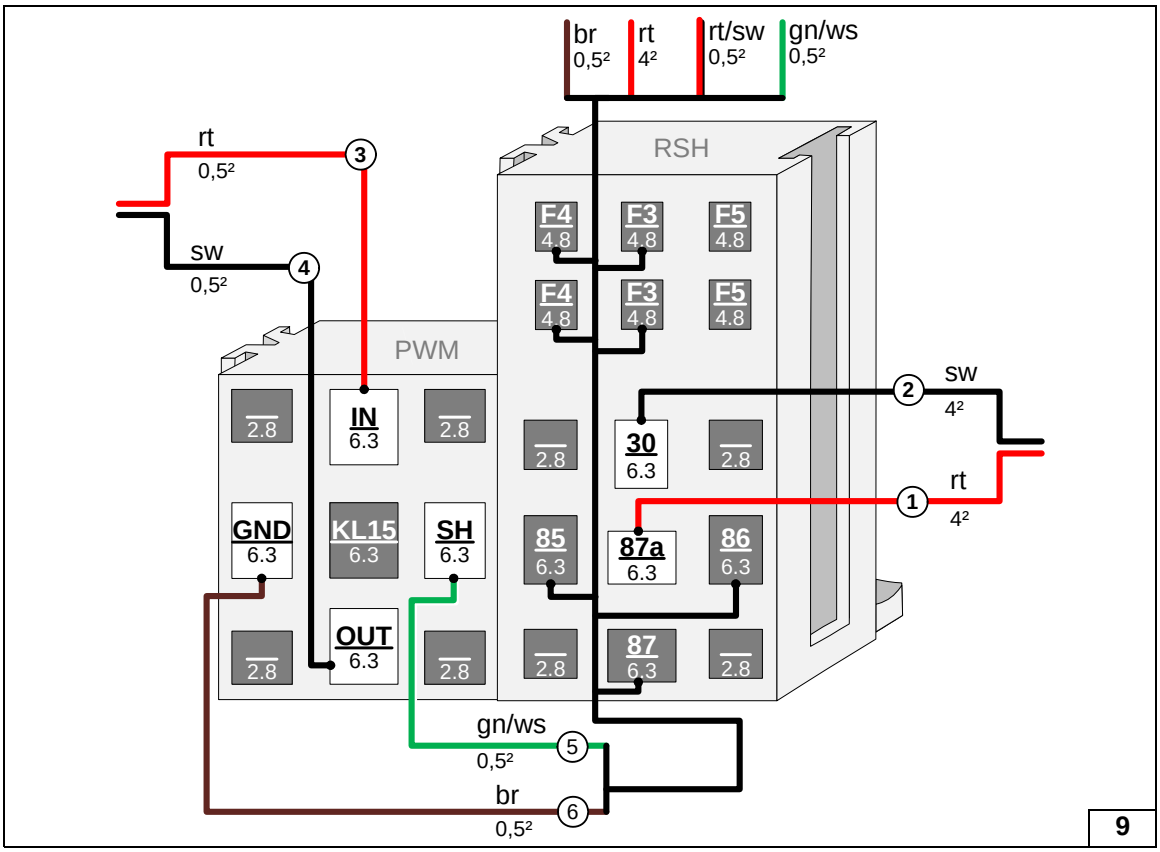
Preparing passenger compartment relay and fuse holder/ installing blade receptacle/ assigning/insulating wires



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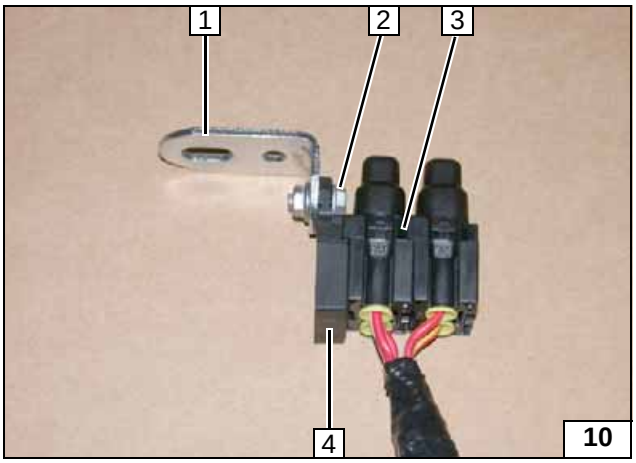
Interlocking PWM GW and passenger compartment relay and fuse holder sockets, connecting wires



All versions

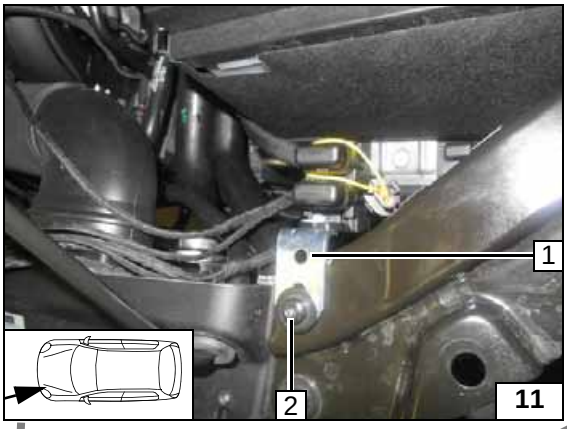
1 Angle bracket
2 M5x16 bolt, large diameter washer [2x], nut
3 Fuses F1-2
4 Fuse holder retaining plate

Preparing engine compartment fuse holder

Electrical System

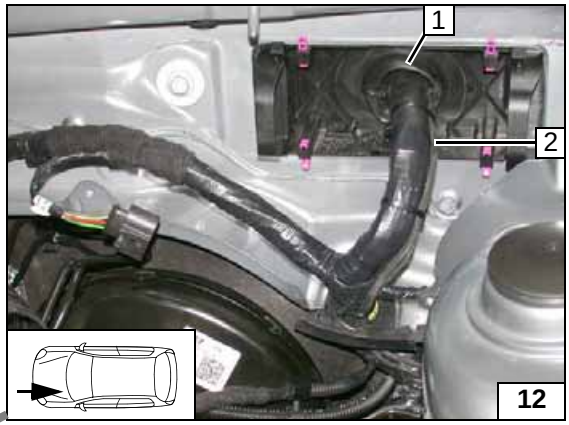
Engine compartment fuse holder

1 Angle bracket
2 Original vehicle bolt

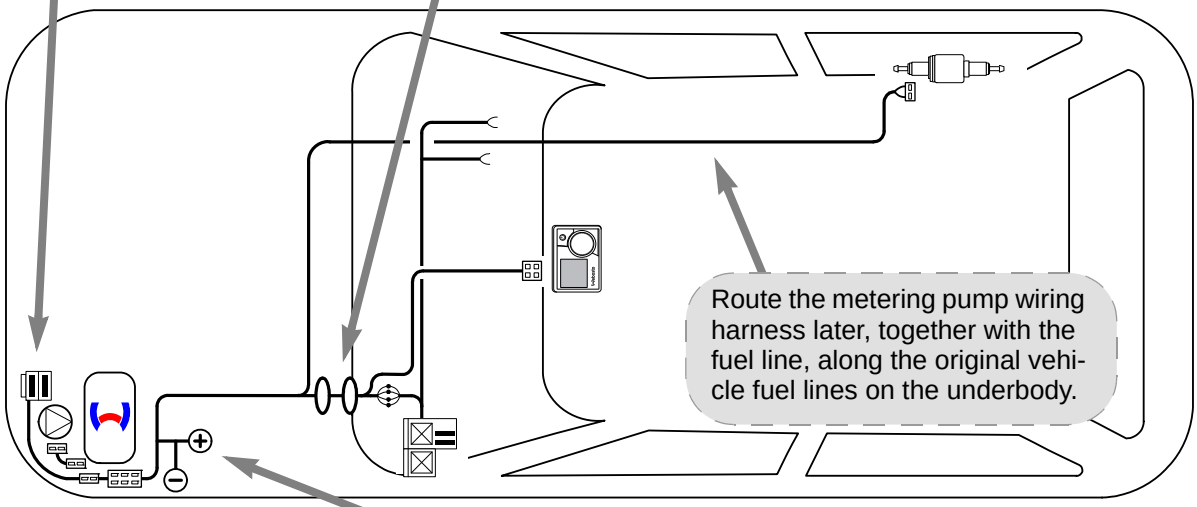


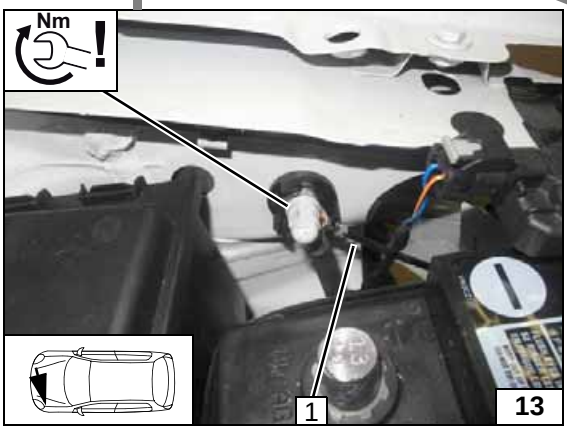
Passenger compartment wiring harness pass through

1 Rubber plug of coolant reservoir pass through
2 Heater wiring harnesses, heater control



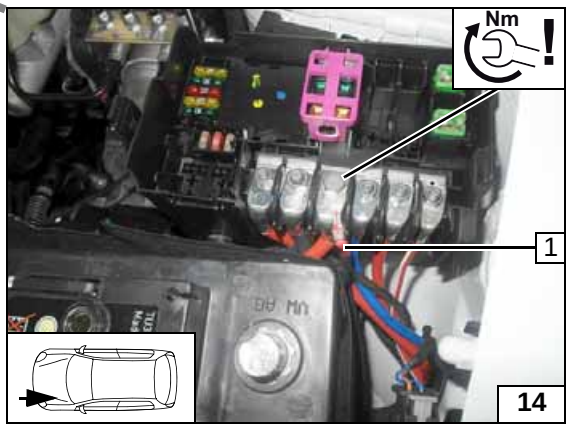
Wiring harness routing diagram





Earth wire

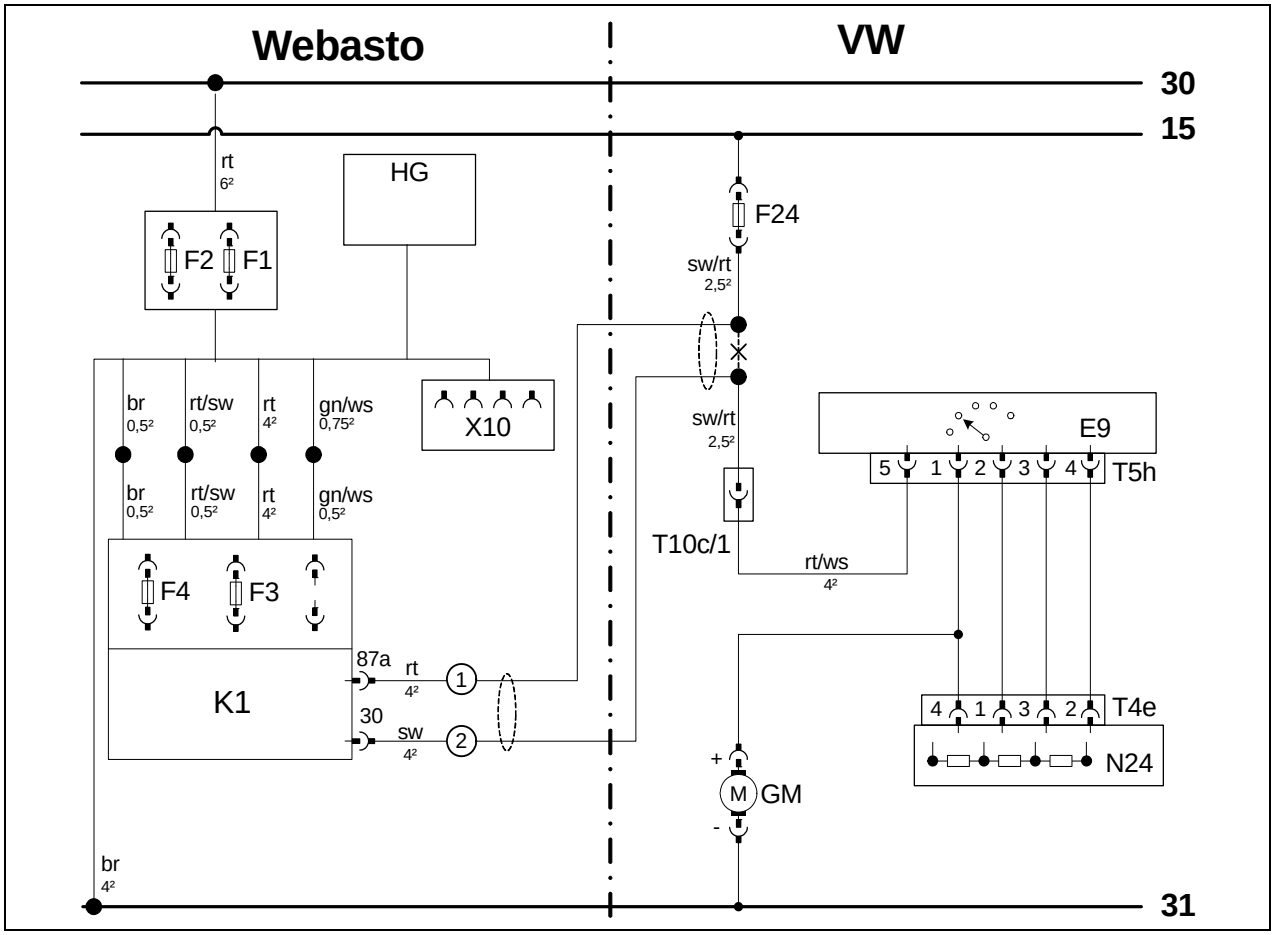
1 Earth wire on original vehicle earth support point



Positive wire

1 Positive wire on positive distributor

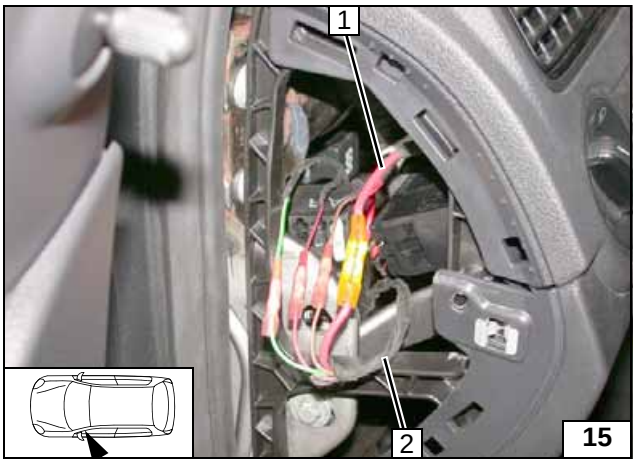
Manual Air-Conditioning Fan Controller



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F24	30A fuse	rt	red
F1	20A fuse	E9	Switch unit	ws	white
F2	30A fuse	T5h	5-pin connector E9	sw	black
X10	4-pin connector of heater control	T10c	10-pin connector	br	brown
		N24	Resistor group	gn	green
F3	1A fuse	T4e	4-pin connector N24		
F4	25A fuse	GM	Fan motor		
K1	Fan relay				
				X	Cutting point
				Wiring colours may vary.	

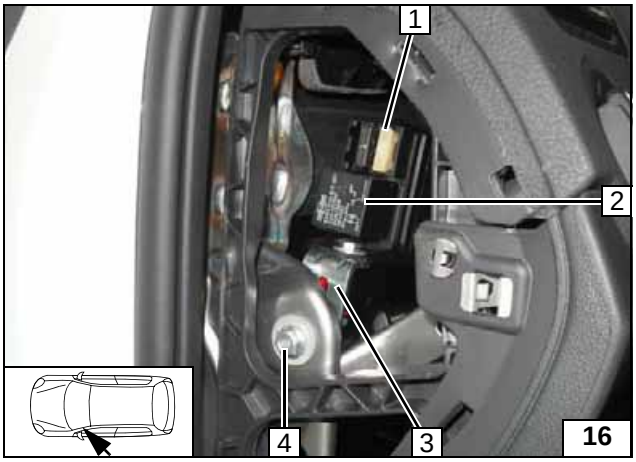
System wiring diagram

Legend



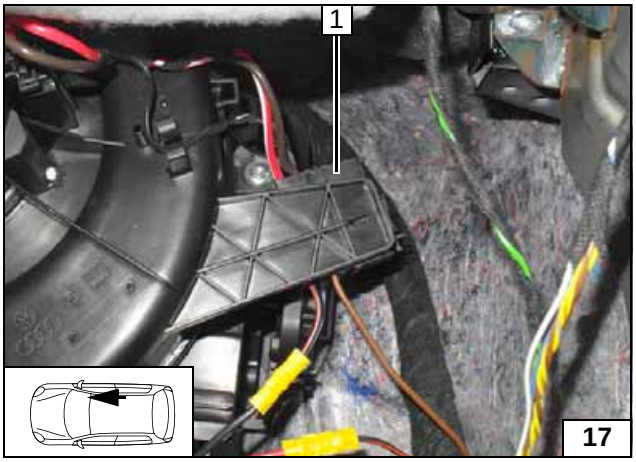
1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



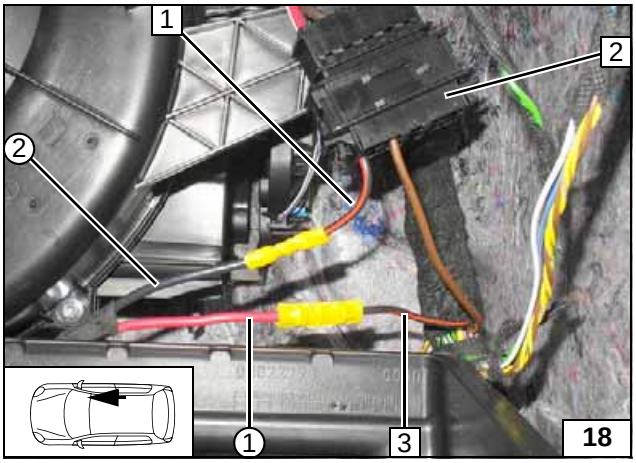
1 25A fuse F4
2 Relay K1
3 Angle bracket
4 Original vehicle bolt

Installing passenger compartment relay and fuse holder



1 Detach connector T10c

Attaching connector T10c

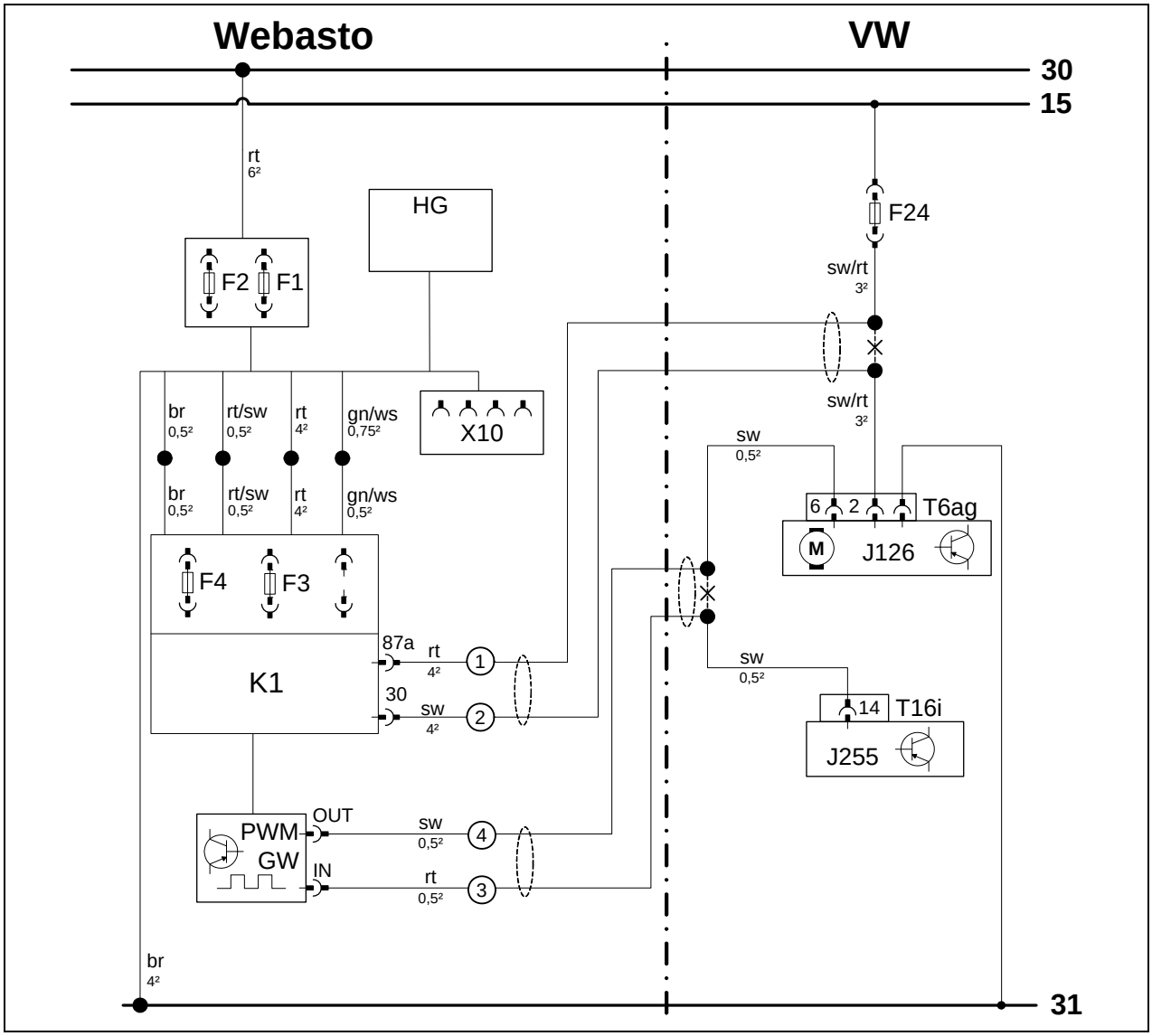


Connection to 10-pin connector T10c **2**.

1 Black/red (sw/rt) wire from T10c connector, pin 1
3 Black/red (sw/rt) wire of fuse F24
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Attaching connector T10c

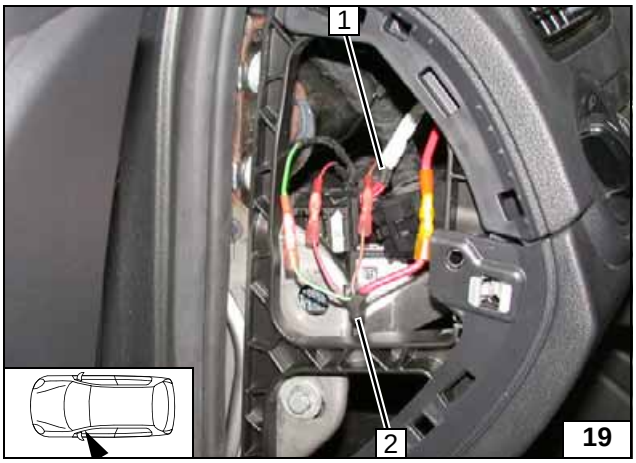
Automatic Air-Conditioning Fan Controller



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F24	30A fuse	rt	red
F1	20A fuse	J126	Fan unit	ws	white
F2	30A fuse	T6ag	6-pin connector J126	sw	black
X10	4-pin connector of heater control	J255	A/C control unit	br	brown
		T16i	16-pin connector J255	bl	blue
F3	1A fuse			gn	green
F4	25A fuse			ge	yellow
K1	Fan relay				
PWM GW	Pulse width modulator				
PWM GW settings:					
Duty cycle:	100% (DC)				
Frequency:	not relevant				
Voltage:	3.3V			**X**	Cutting point
Function:	High side			Wiring colours may vary.	

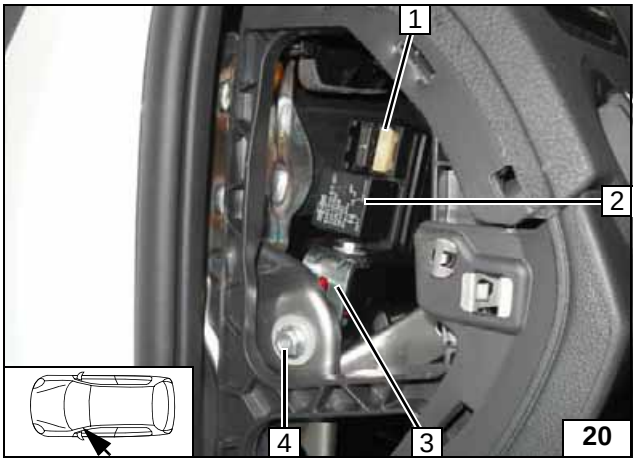
System wiring diagram

Legend



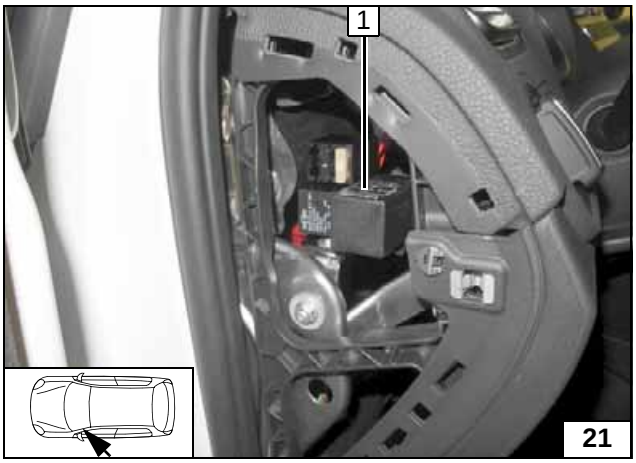
1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



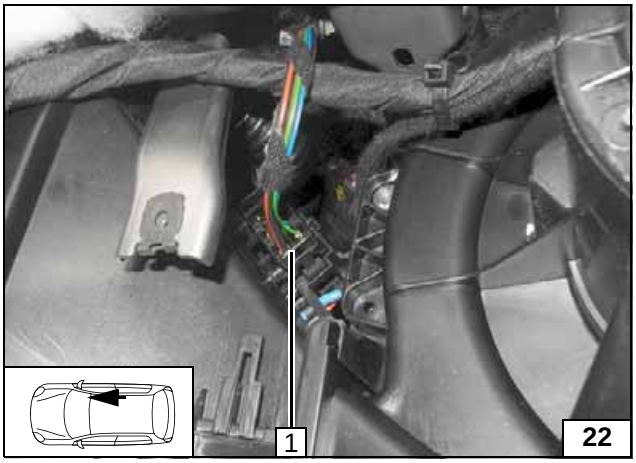
1 25A fuse F4
2 Relay K1
3 Angle bracket
4 Original vehicle bolt

Installing passenger compartment relay and fuse holder



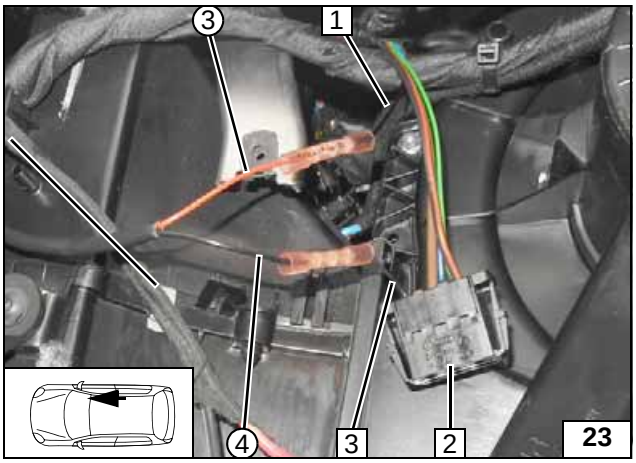
1 PWM-GW

Installing PWM GW



1 Pull off 6-pin connector T6ag

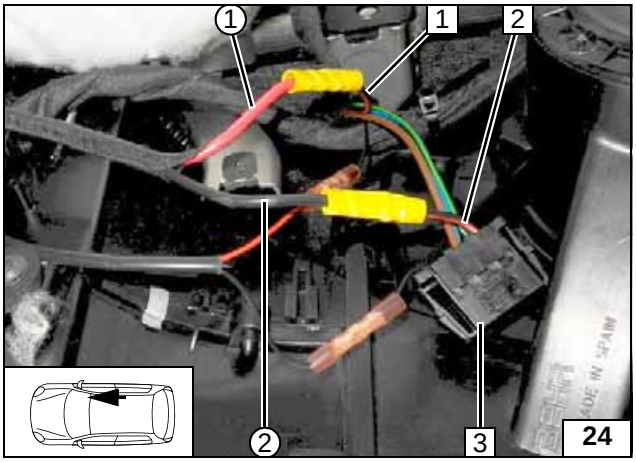
Connecting fan unit



Connection to 6-pin connector T6ag **2**.

1 Black (sw) wire from A/C control unit
3 Black (sw) wire from connector T6ag, pin 6
③ Red (rt) wire from wiring harness of PWM control
④ Black (sw) wire from wiring harness of PWM control

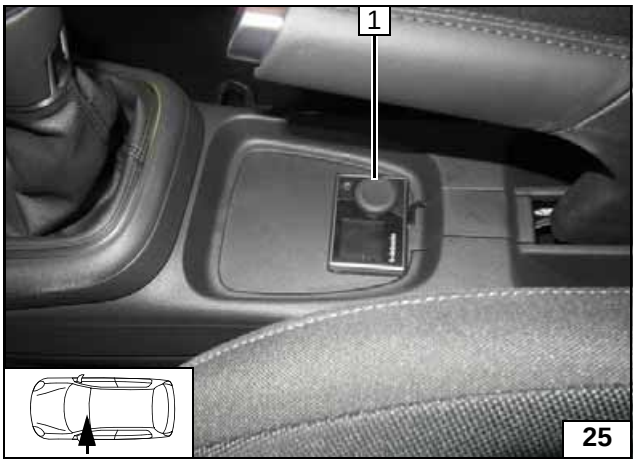
Connecting fan unit



Connection to 6-pin connector T6ag **3**.

1 Black/red (sw/rt) wire of fuse SB40
2 Black/red (sw/rt) wire from connector T6ag, pin 2
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

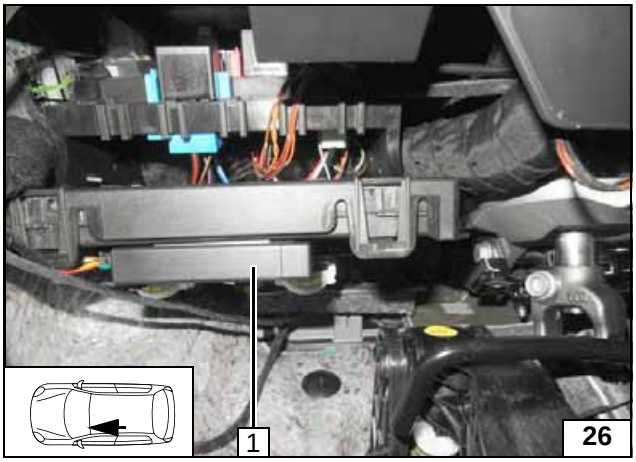
Connecting fan unit



MultiControl CAR Option

1 MultiControl CAR

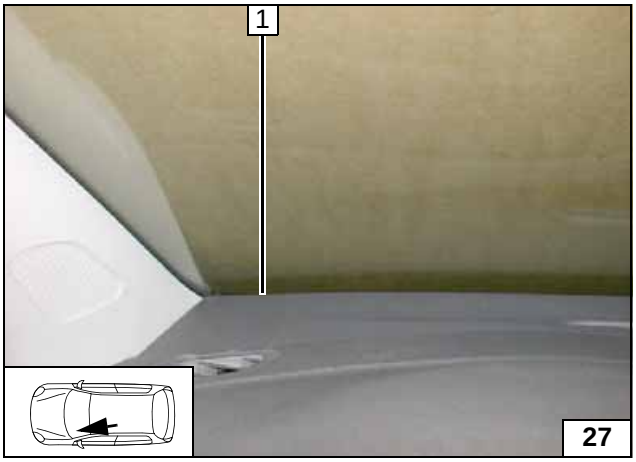
Installing MultiControl CAR



Remote Option (Telestart)

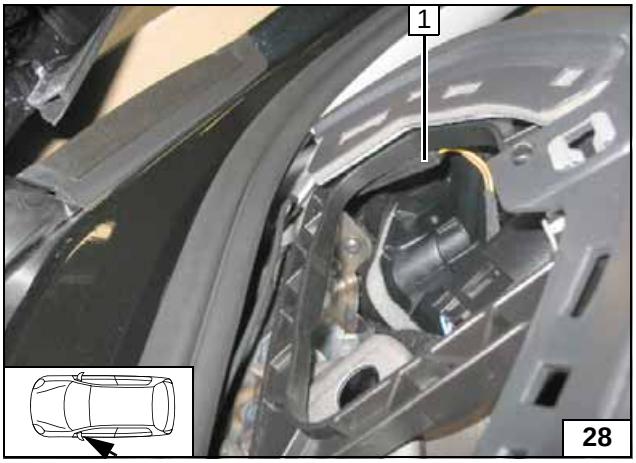
Fasten receiver **1** with double-sided adhesive tape.

Installing receiver



1 Aerial

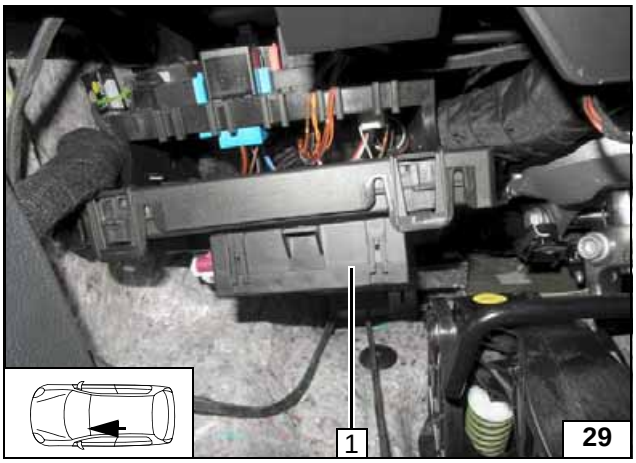
Installing aerial



Temperature sensor T100 HTM

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

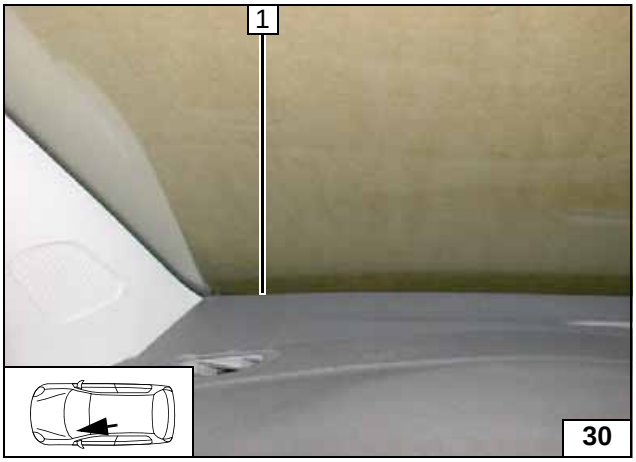
Installing temperature sensor



ThermoCall Option

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

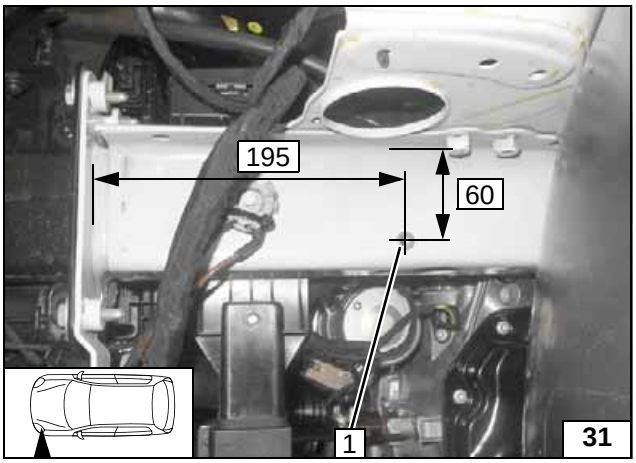
Installing receiver



1 Aerial (optional)

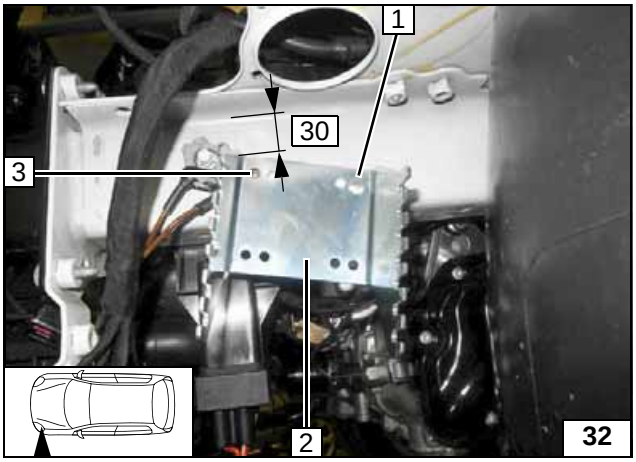
Installing aerial

Preparing Installation Location



1 9.1 mm dia. hole; M6 rivet nut

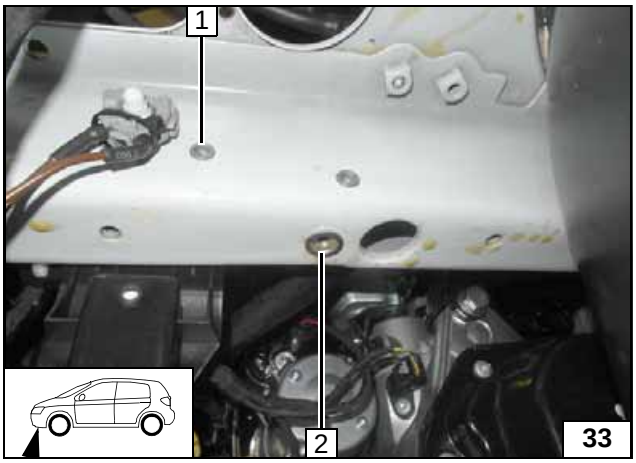
Installing rivet nut



Loosely install bracket **2** and align as shown.

1 M6x20 bolt
3 Copy hole pattern

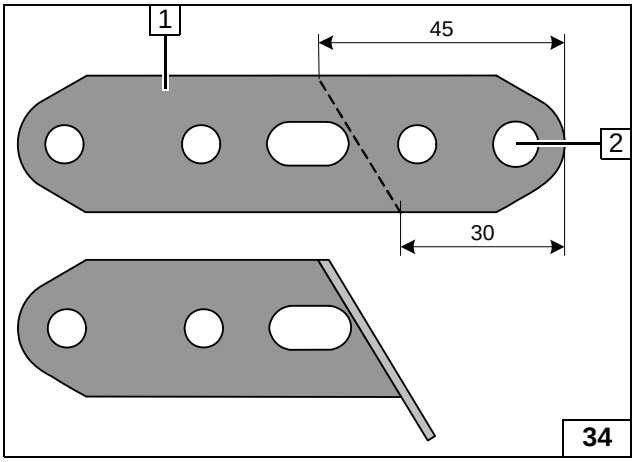
Copying hole pattern



Remove bracket.

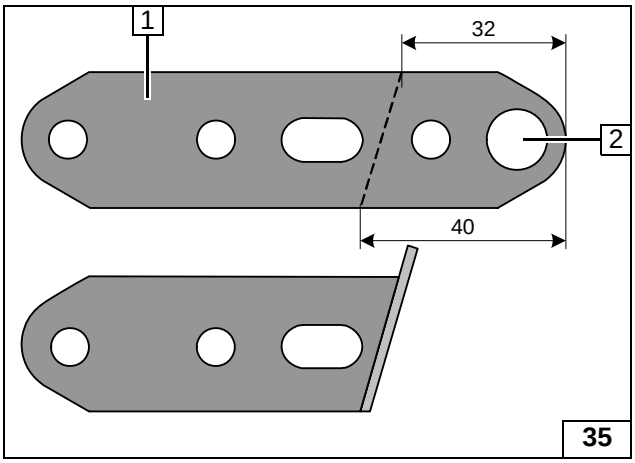
1 9.1 mm dia. hole; M6 rivet nut
2 Original vehicle hole, M10 rivet nut

Installing rivet nuts



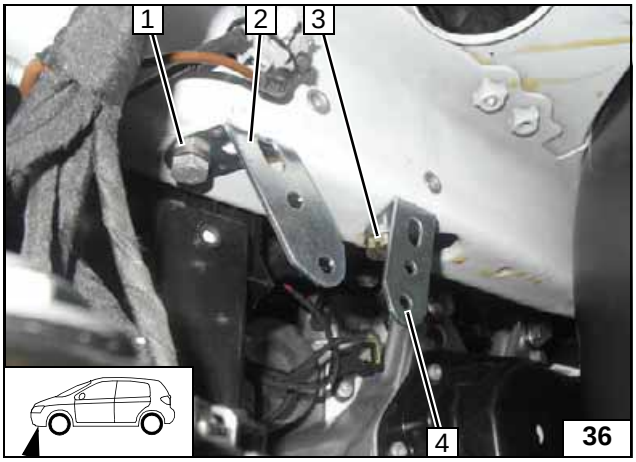
1 Angle down perforated bracket **A** by 90°
2 Drill out hole to 8.5 mm dia.

Preparing perforated bracket



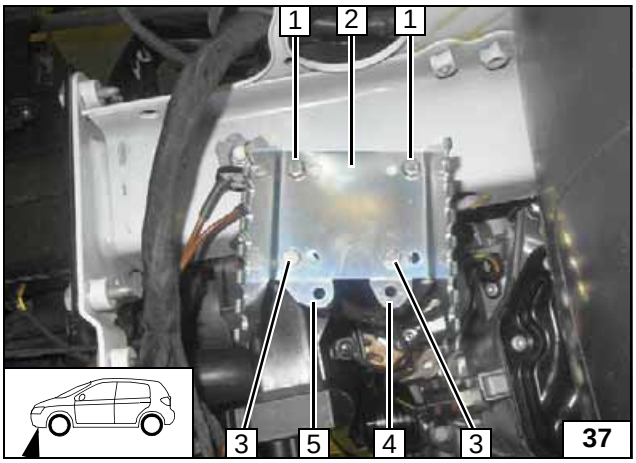
1 Angle down perforated bracket **B** by 90°
2 Drill out hole to 10.5 mm dia.

Preparing perforated bracket



1 M8x20 bolt, spring lockwasher, existing threaded hole
2 Perforated bracket A
3 M10x16 bolt, spring lockwasher
4 Perforated bracket B

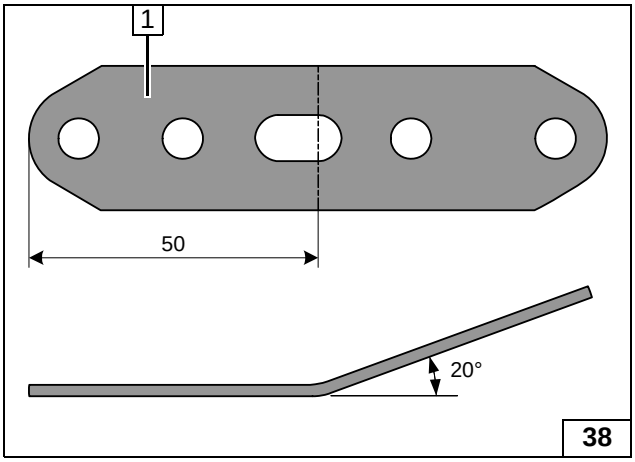
Loosely installing perforated brackets



Tighten loose screw connections.

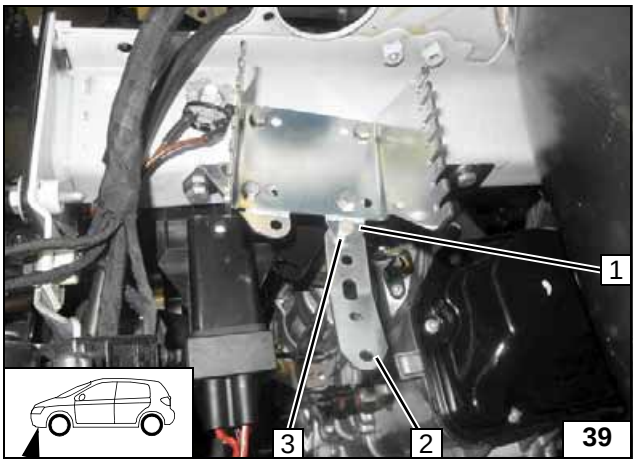
1 M6x20 bolt, spring lockwasher [2x each]
2 Bracket
3 M6x12 bolt, flanged nut [2x each]
4 Perforated bracket B
5 Perforated bracket A

Installing bracket



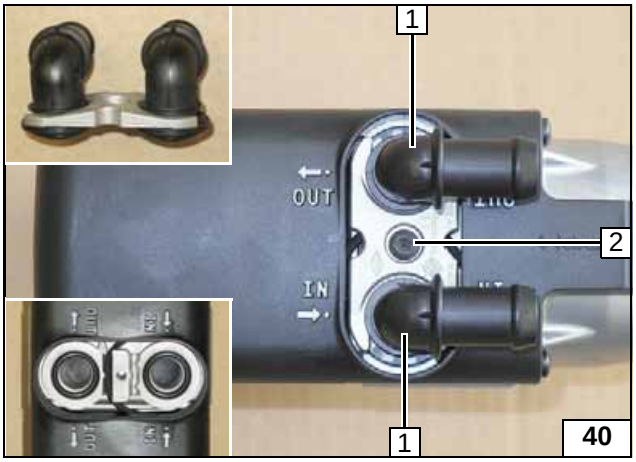
1 Perforated bracket **C**

Preparing perforated bracket



1 Perforated bracket B
2 Perforated bracket C
3 M6x12 bolt, flanged nut

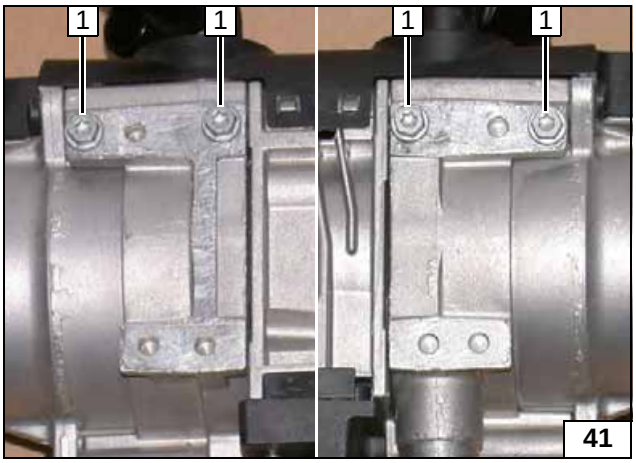
Installing perforated bracket C



Preparing Heater

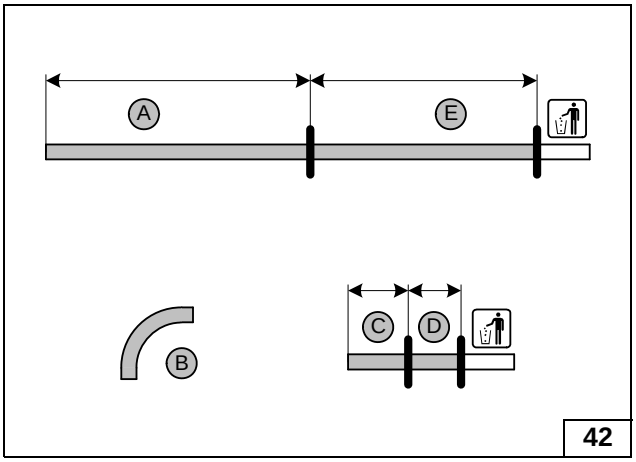
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



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

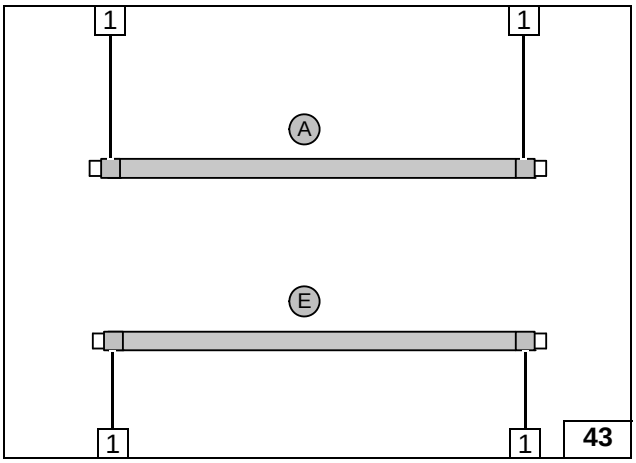
Premounting bolts loosely



Hose **A**, **E** = 15 mm dia.
Hose **C**, **D** = 18 mm dia.
Hose **B** = 90°, 18 mm dia. moulded hose

	1.0 P	1.2 P	1.4 D
A =	1030	900	860
C =	60	60	60
D =	85	85	85
E =	1020	930	930

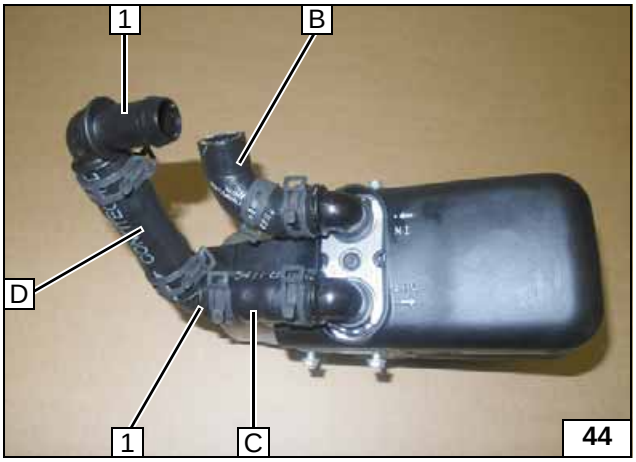
Cutting hoses to length



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

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

Preparing hoses

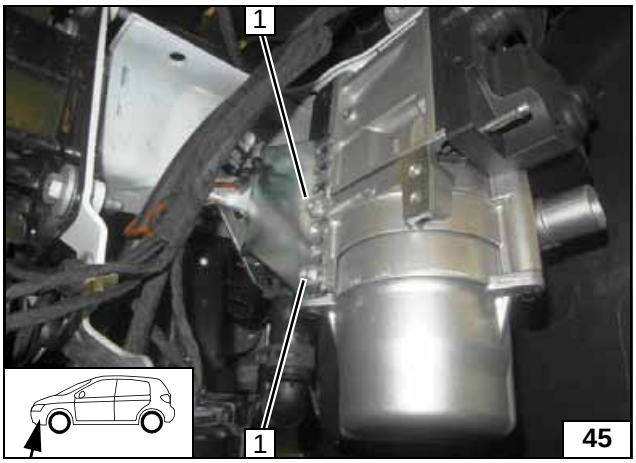


All spring clips = 25 mm dia.

1 90°, 18x18mm dia. connecting pipe [2x]

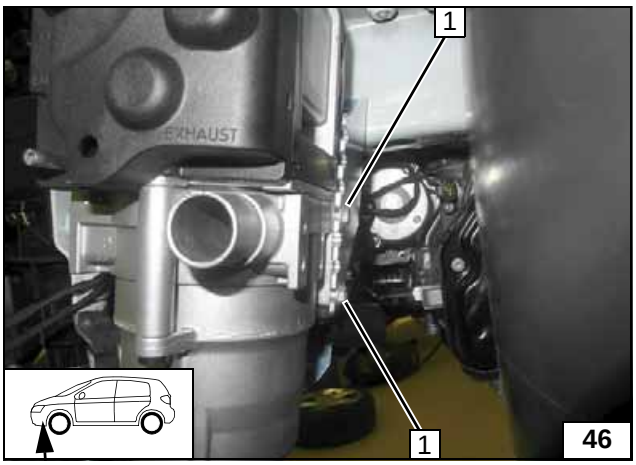
Premounting hoses

Installing Heater



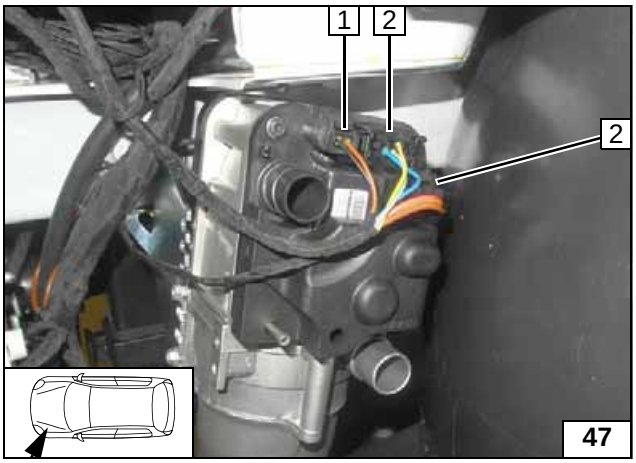
1 Tighten 5x13 self-tapping bolt [2x]

Installing heater



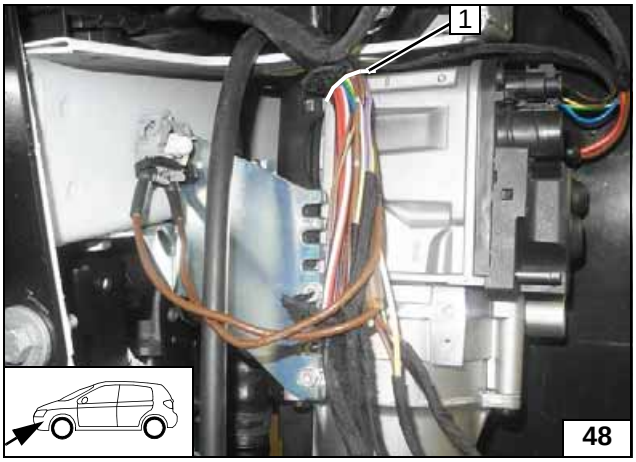
1 Tighten 5x13 self-tapping bolt [2x]

Installing heater



1 Connector of circulating pump wiring harness
2 Heater wiring harness connector [2x]

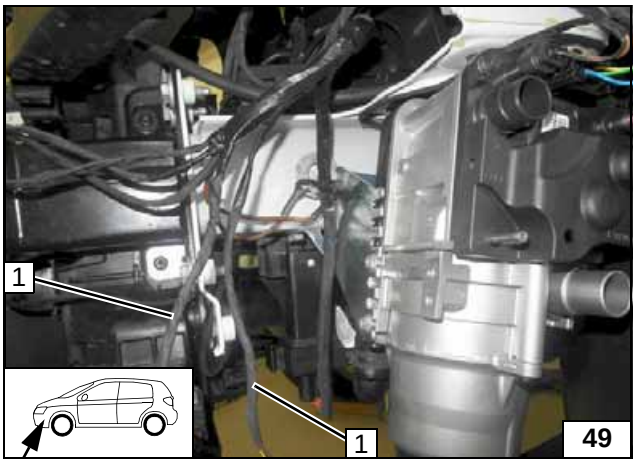
Installing wiring harnesses



Moving the horn

Remove insulation of original vehicle wiring harness up to marking **1**.

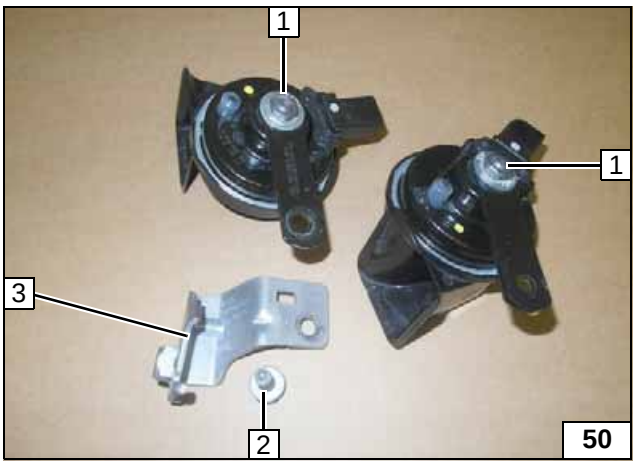
Preparing wiring harness



Wrap original vehicle wiring harnesses individually with new insulating tape as shown.

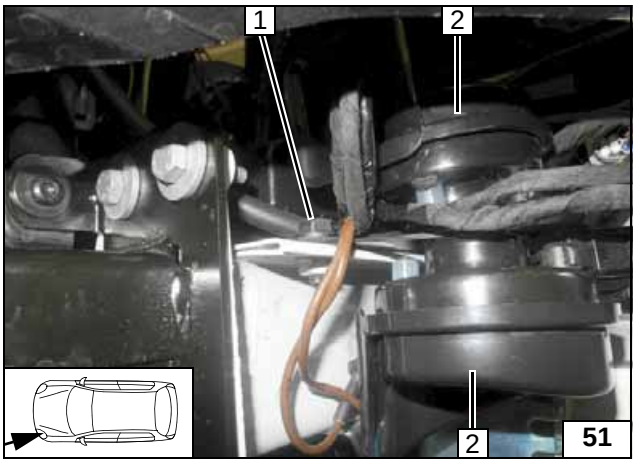
1 Wiring harness of horn [2x]

Preparing wiring harnesses



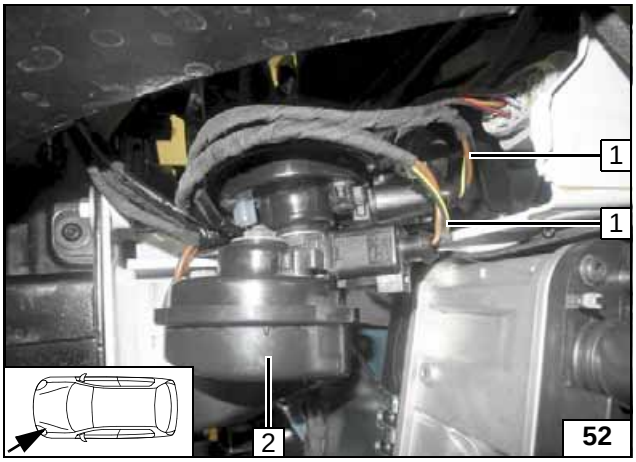
The number of horns depends on the equipment, one or two horns.
Detach screw fitting at position **1** [2x]. Discard original vehicle bolt **2** and horn bracket **3**.

Removing horn



Loosely mount horn **2** [2x] with bracket on original vehicle bolt **1**.

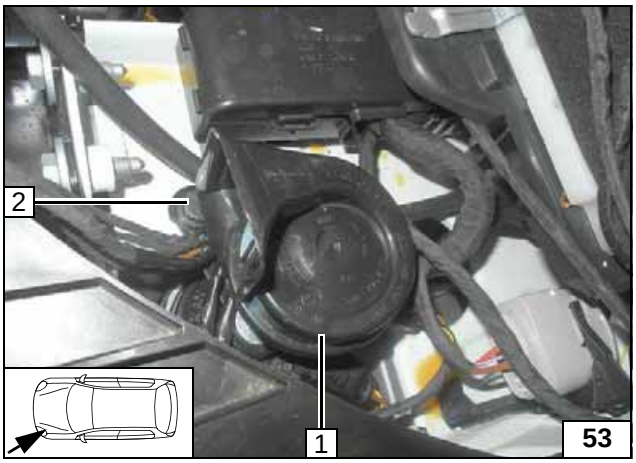
Loosely installing horns



Lower horn **2,** identical installation position in case of one horn, align as shown. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Attach wiring harness of horn [2x]

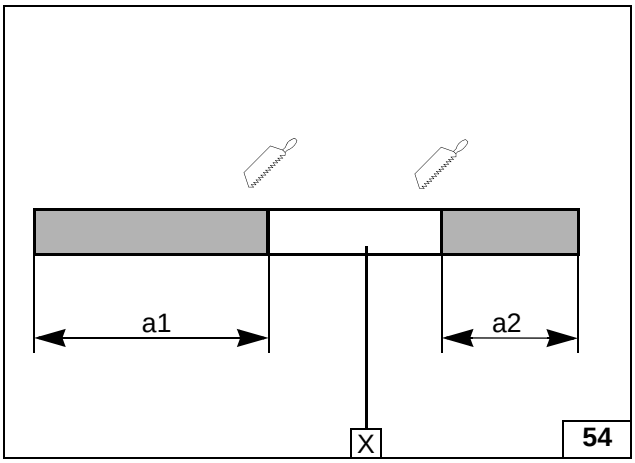
Aligning lower horn



Align upper horn **1** as shown. Ensure sufficient distance from neighbouring components, correct if necessary.

2 Tighten original vehicle bolt

Aligning upper horn

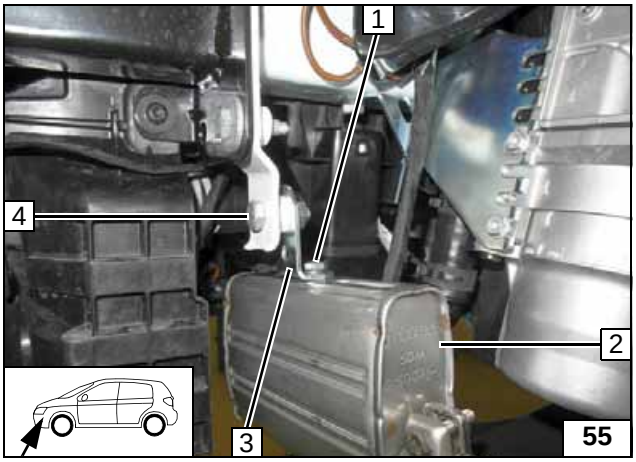


Exhaust System Section 1

a1 = 270
a2 = 160

X =

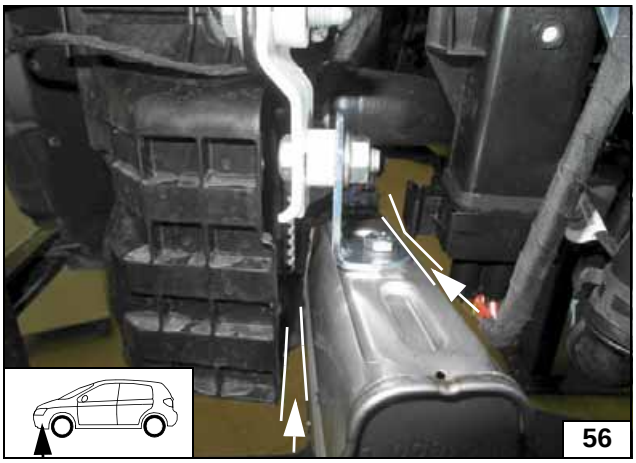
Preparing exhaust pipe

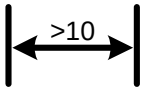


Replace original vehicle bolt at position **4** with M8x40 bolt.

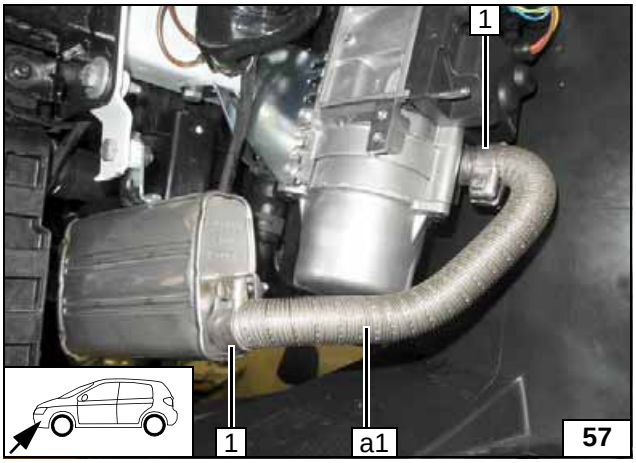
1 M6x16 bolt, spring lockwasher
2 Silencer
3 Angle bracket
4 8x40 bolt, flanged nut

Installing silencer





Aligning silencer



1 Hose clamp [2x]

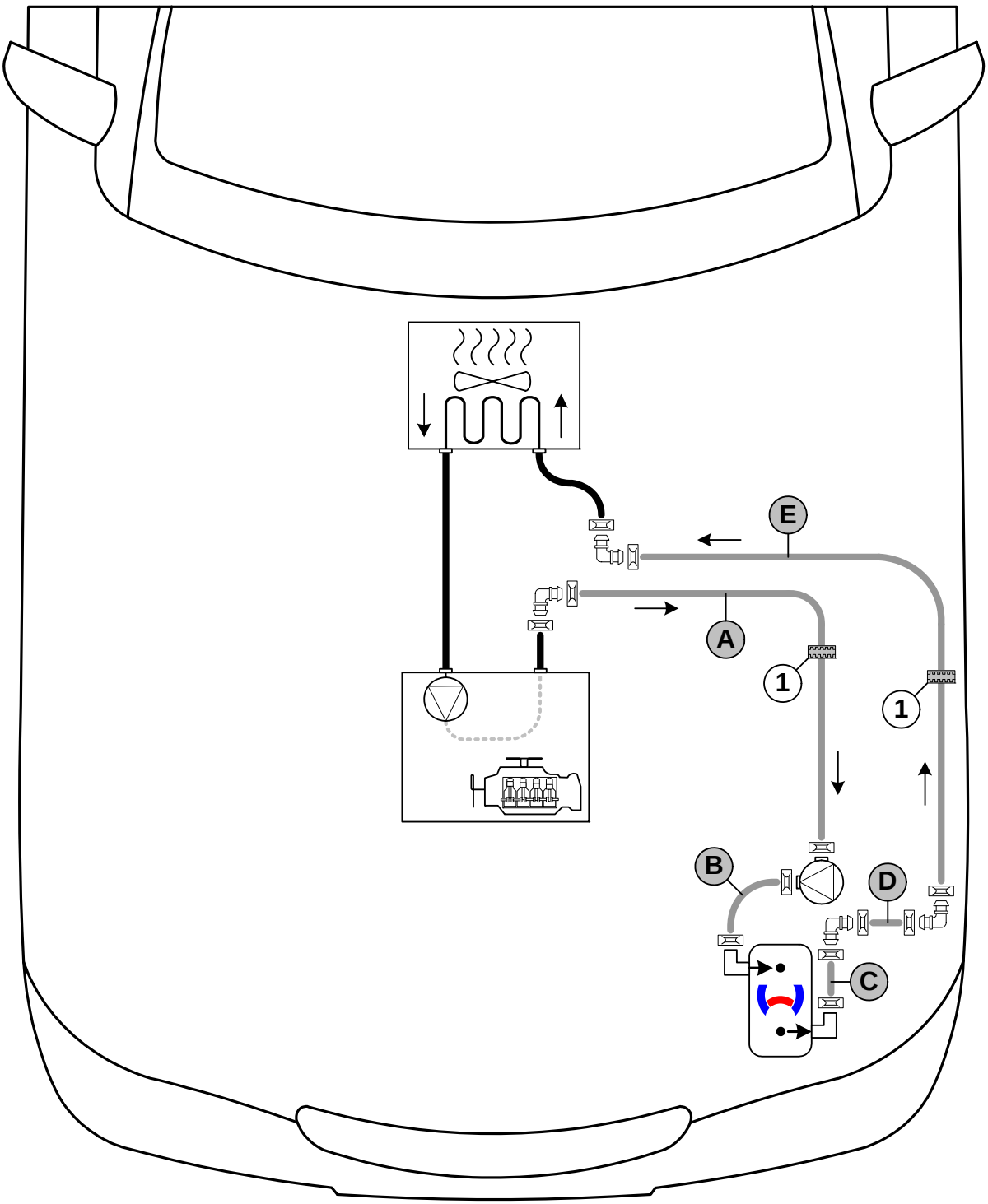
Installing exhaust pipe a1

Coolant Circuit for Petrol Engine

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

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

Hose routing diagram



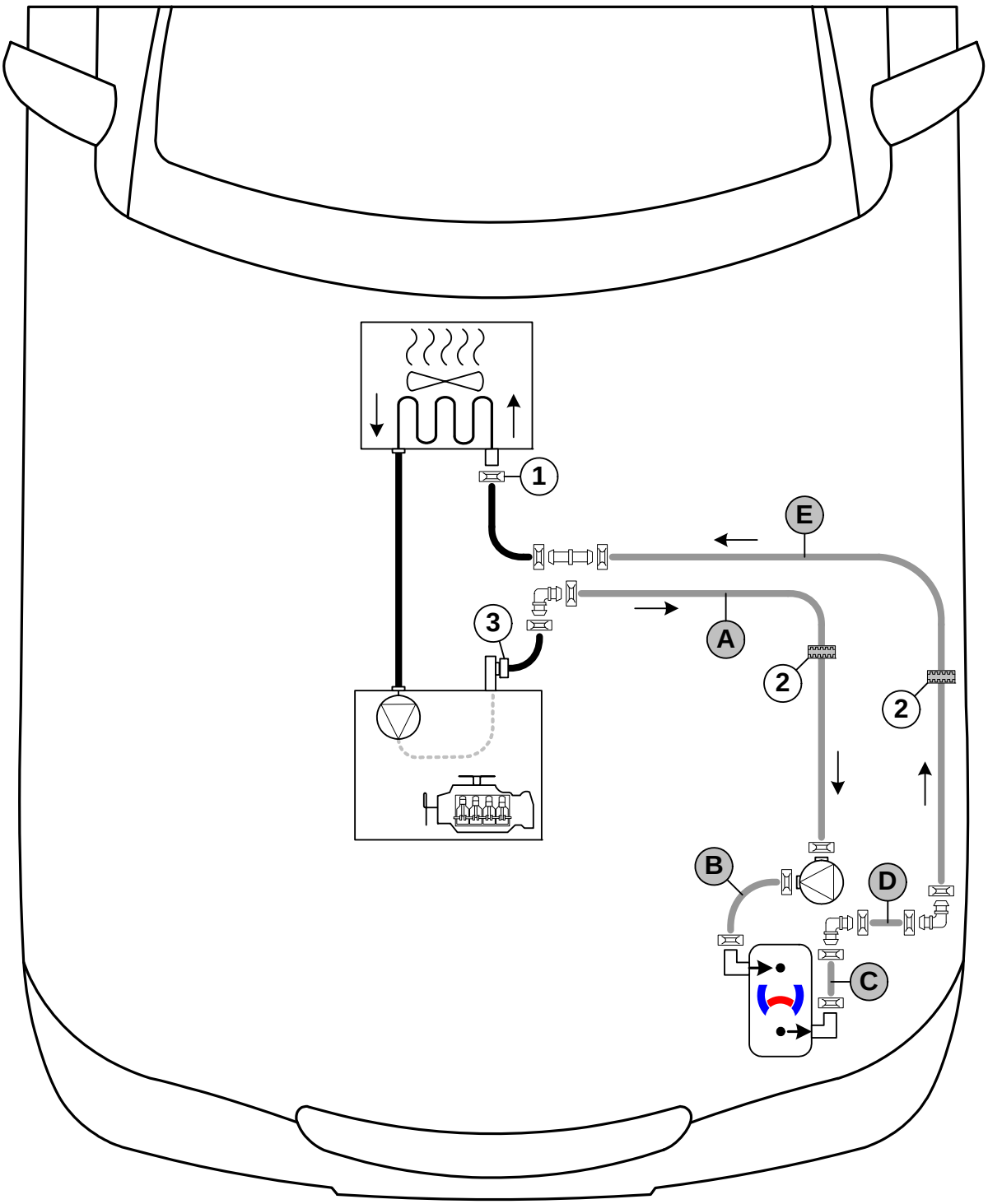
All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.
1 = Black (sw) rubber isolator

Coolant Circuit for Diesel Vehicles

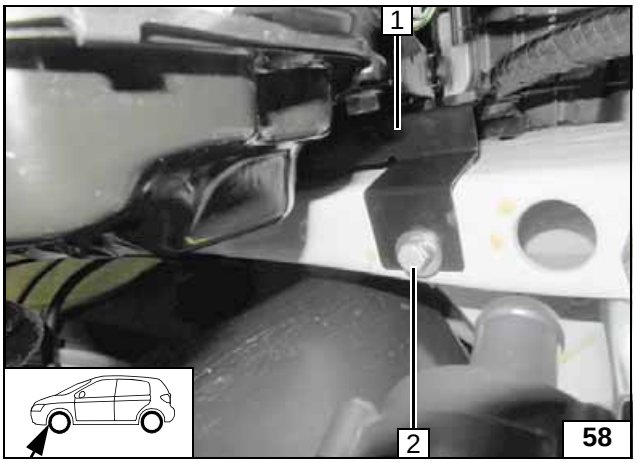
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram

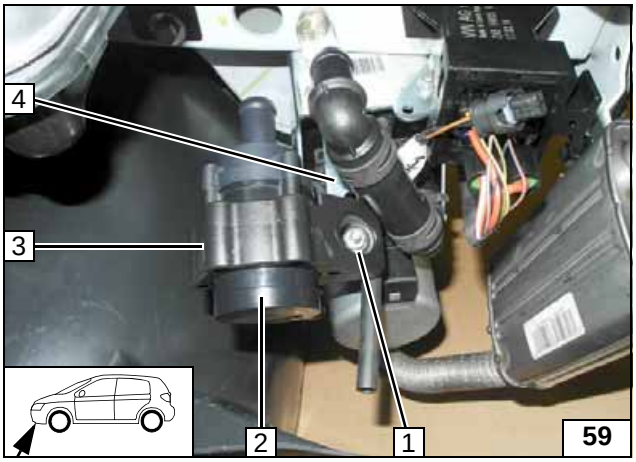


All spring clips without a specific designation = 25 mm dia. All connecting pipes and = 18x18 mm dia.
1 = Original vehicle spring clip .
2 = Black (sw) rubber isolator
3 = Coupling piece of engine outlet



1 Guard plate
2 M8x20 bolt, spring lockwasher, large diameter washer, existing threaded hole

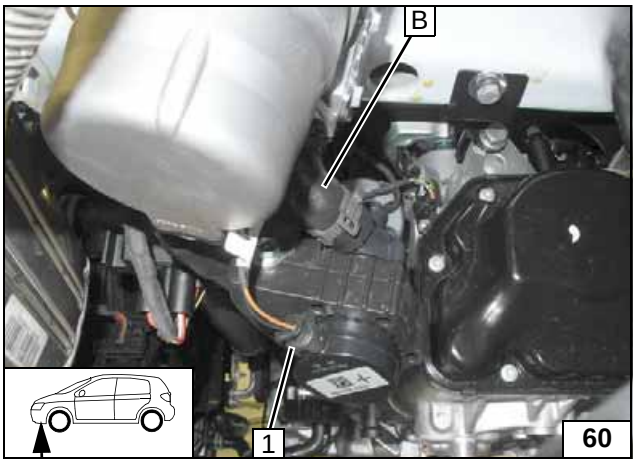
Installing guard plate



Use lower hole of perforated bracket C **4**.

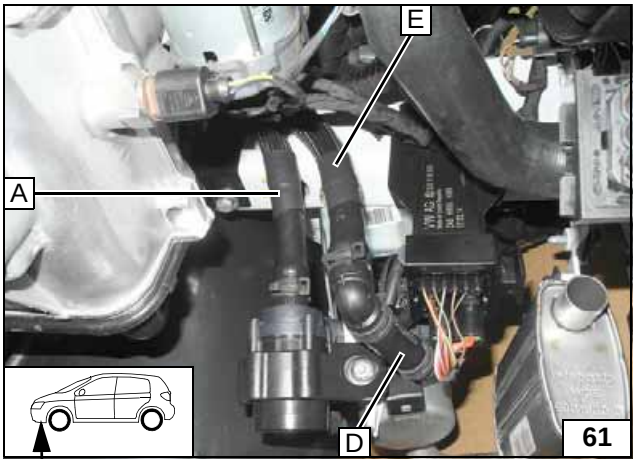
1 M6x25 bolt, flanged nut
2 Circulating pump
3 Circulating pump mount

Installing circulating pump

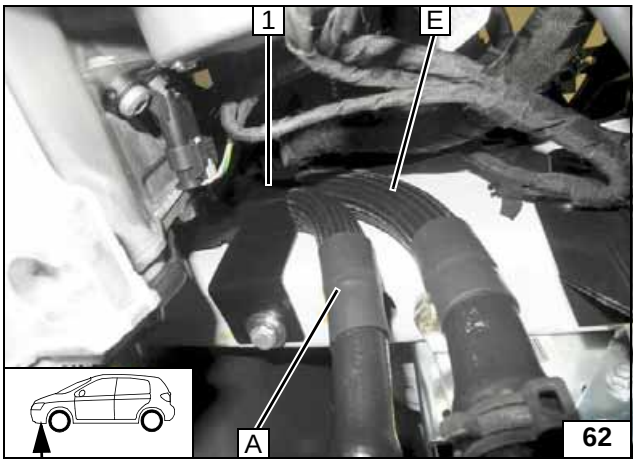


1 Connector of circulating pump wiring harness

Connecting circulating pump

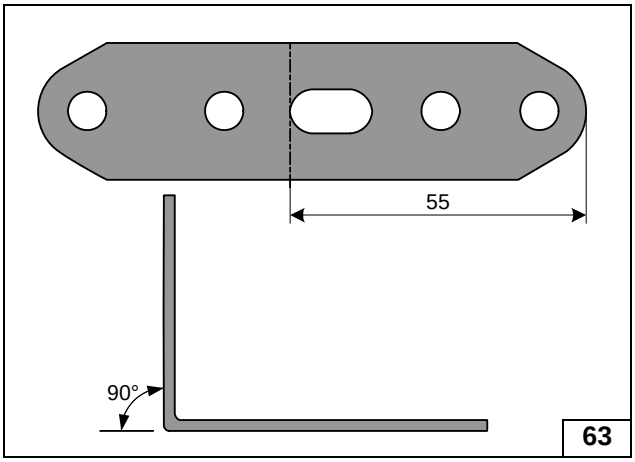


Connecting heater

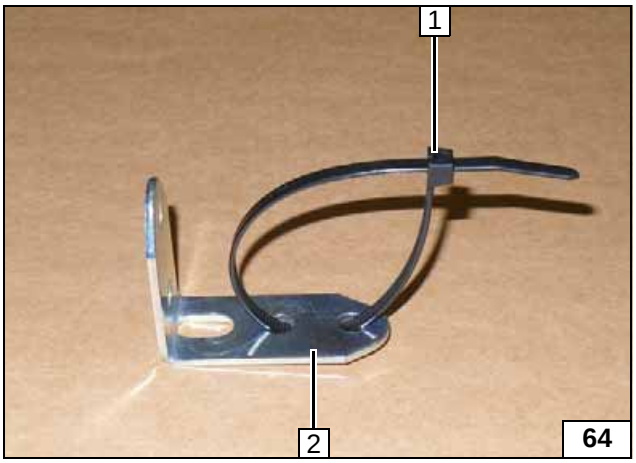


Route hose **A** and **E** on the frame side member behind guard plate **1**.

Routing in engine compartment



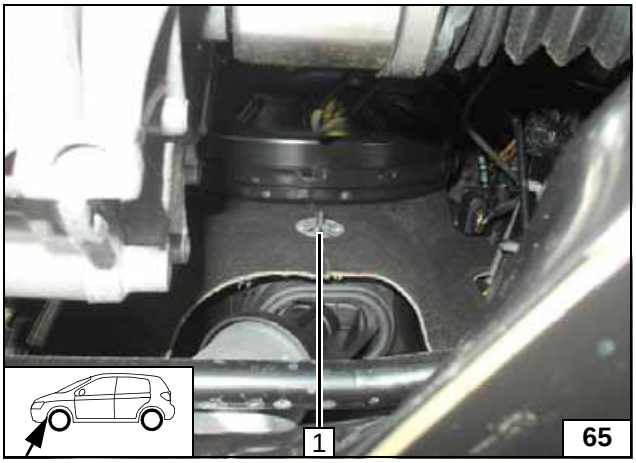
Preparing perforated bracket



Petrol

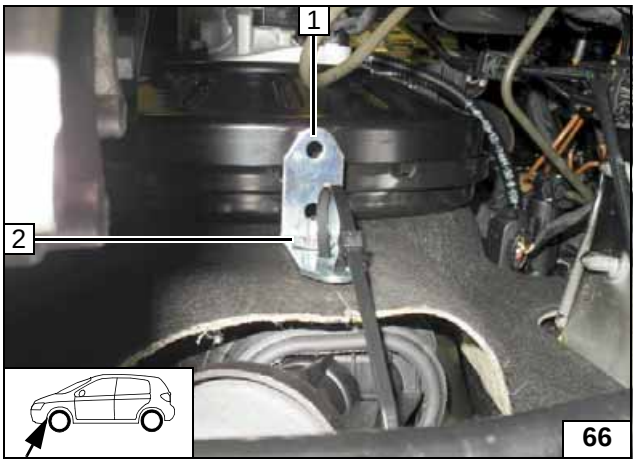
1 Cable tie through both holes, do not pull tight
2 Perforated bracket

Preparing perforated bracket



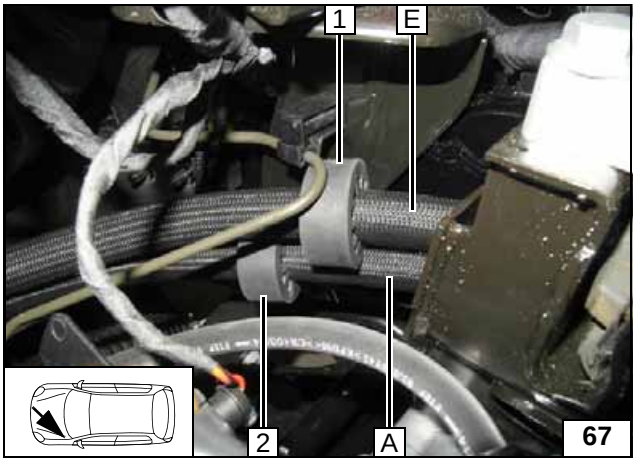
1 Discard retaining clamp

Removing retaining clamp



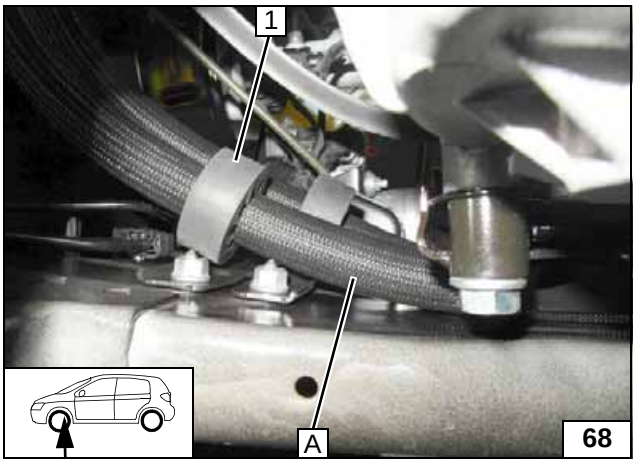
1 Perforated bracket
2 Plate nut on original vehicle stud bolt

Installing perforated bracket



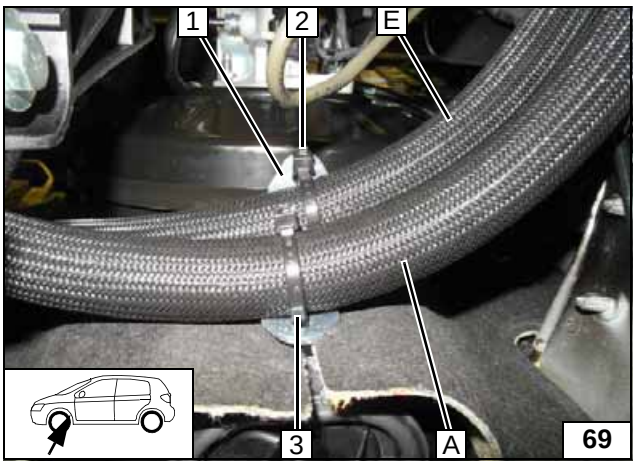
Slide black (sw) rubber isolator **1** onto hose **E** and align with coupling line. Slide black (sw) rubber isolator **2** onto hose **A**.

Routing in engine compartment



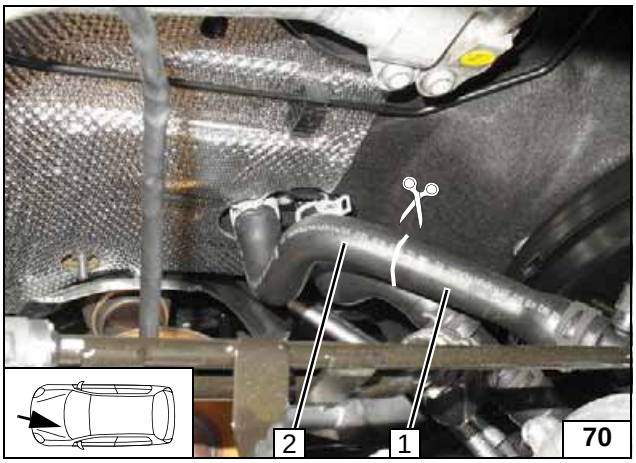
Align black (sw) rubber isolator **1** on hose **A** with original vehicle bolt.

Routing in engine compartment



Insert cable tie **2** through free holes in perforated bracket **1**. Close cable tie **2** and **3** .

Routing in engine compartment

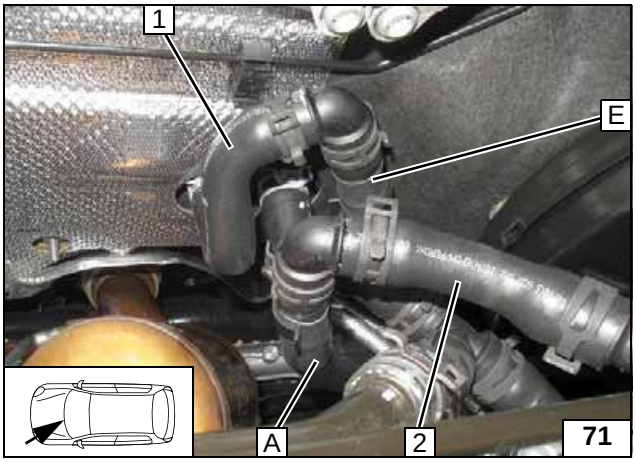


1.0 MPI

Cut off hose on engine outlet/heat exchanger inlet at marking.

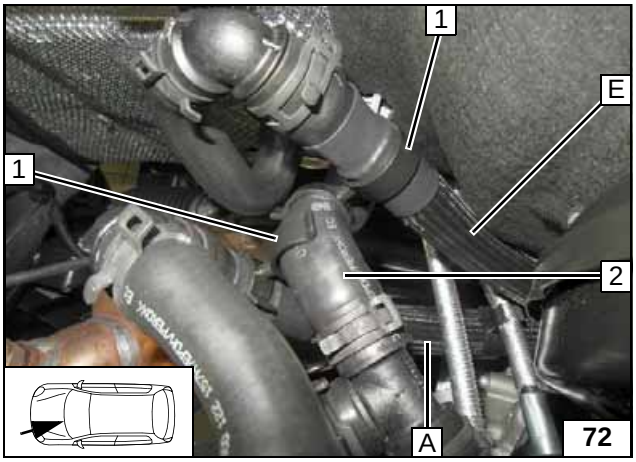
1 Engine outlet hose section
2 Heat exchanger inlet hose section

Cutting point



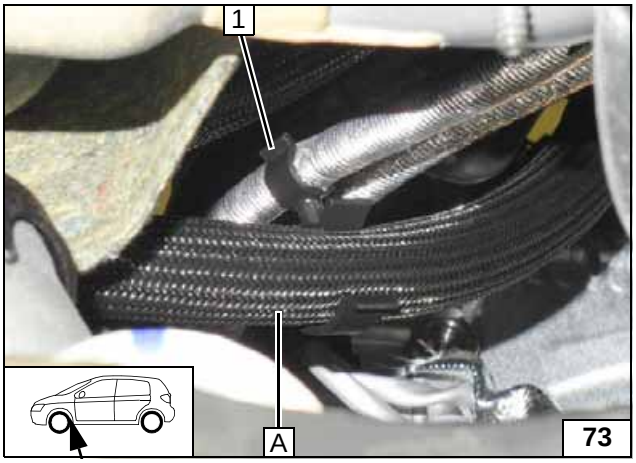
1 Heat exchanger inlet hose section
2 Engine outlet hose section

Connecting engine outlet / heat exchanger inlet



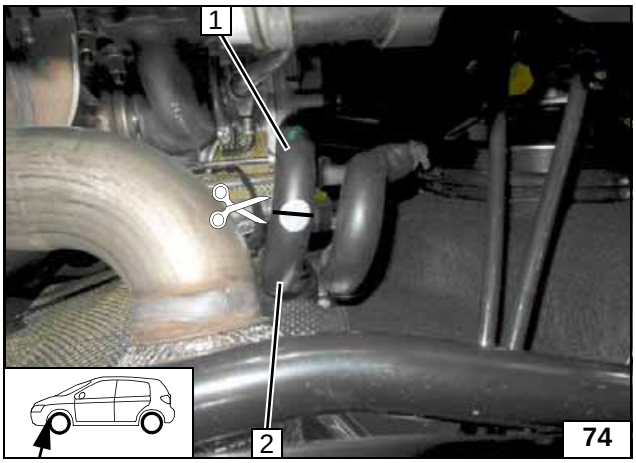
1 20x20 hose bracket [2x] between hose of heat exchanger outlet **2** and hoses **E** and **A**

Installing hose bracket



1 10x20 hose bracket between gearshift cable and hose **A**

Installing hose bracket

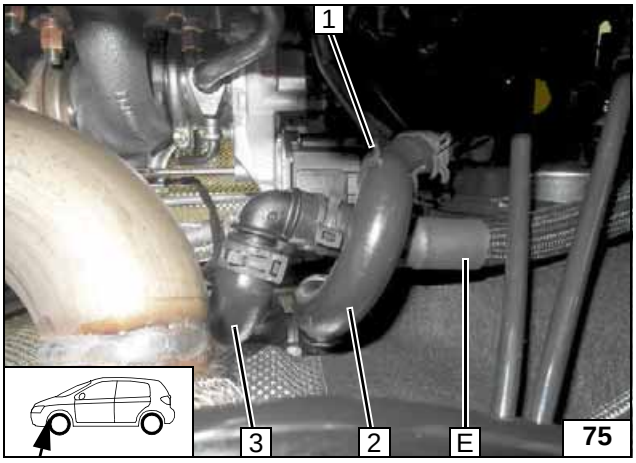


1.2 TSI

Cut off hose on engine outlet/heat exchanger inlet at marking.

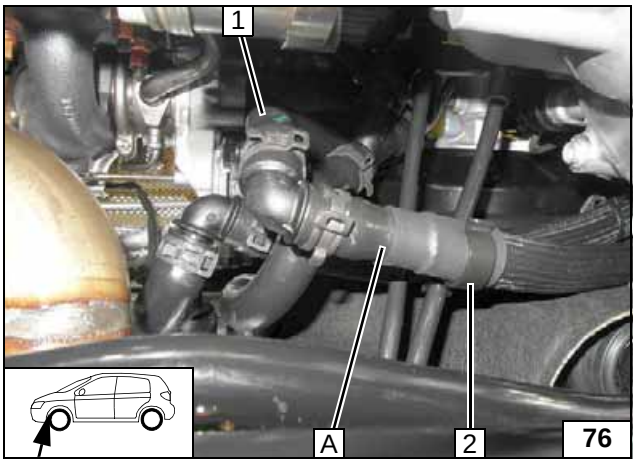
1 Engine outlet hose section
2 Heat exchanger inlet hose section

Cutting point



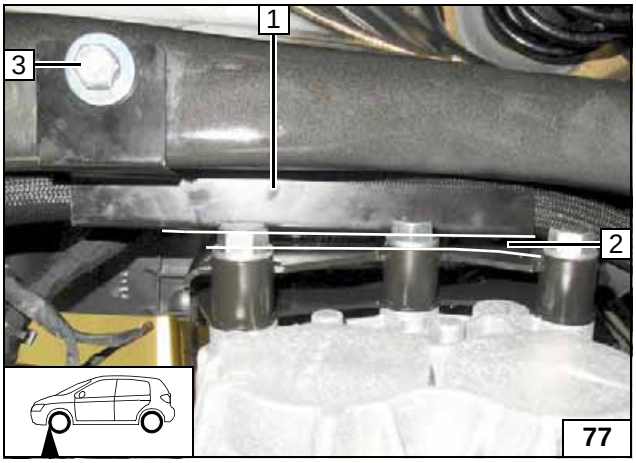
1 20x20 hose bracket between hose of heat exchanger outlet **2** and hose **E**
3 Heat exchanger inlet hose section

Connecting heat exchanger inlet



1 Engine outlet hose section
2 10x20 hose bracket between gearshift cable and hose **A**

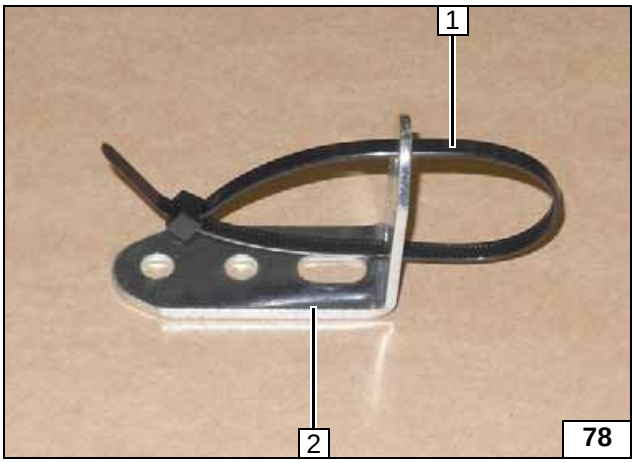
Connecting engine outlet



Petrol

Image shows 1.0 MPI. Ensure sufficient distance from neighbouring components (at least 5mm between hose bracket **1** and transmission bracket at position **2**), correct if necessary.

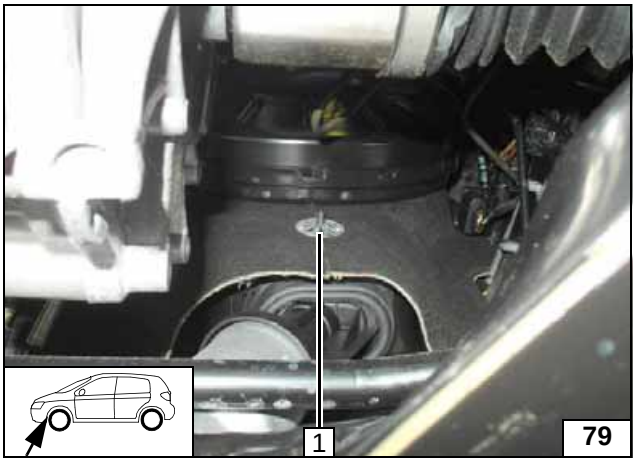
Aligning hose bracket



Diesel

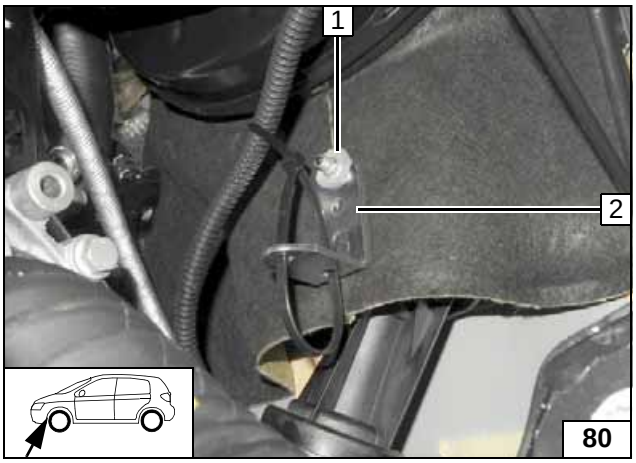
1 Cable tie through both holes, do not pull tight
2 Perforated bracket

Preparing perforated bracket



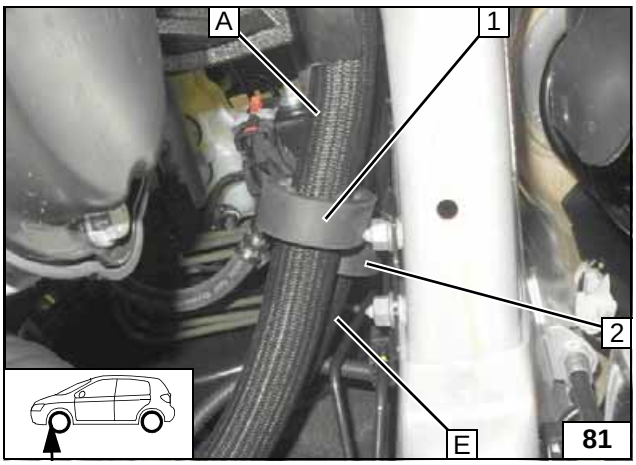
1 Discard retaining clamp

Removing retaining clamp



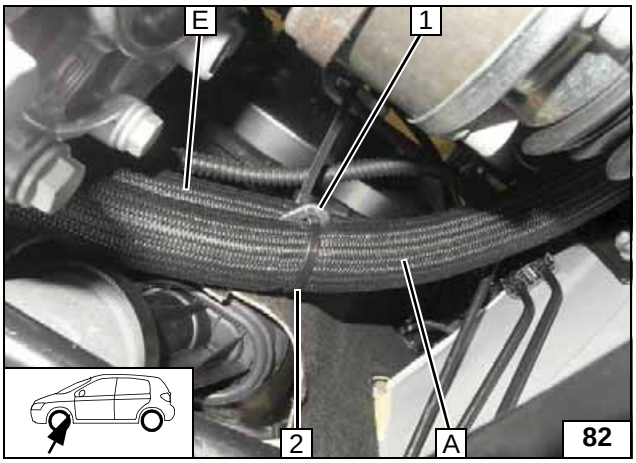
1 Plate nut on original vehicle stud bolt
2 Perforated bracket

Installing perforated bracket



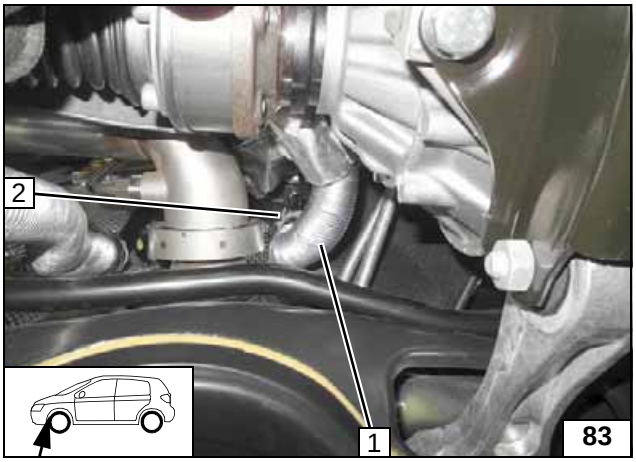
Slide black (sw) rubber isolator **2** onto hose **E** and align with coupling line. Slide black (sw) rubber isolator **1** onto hose **A** and align with original vehicle bolt.

Routing in engine compart-ment



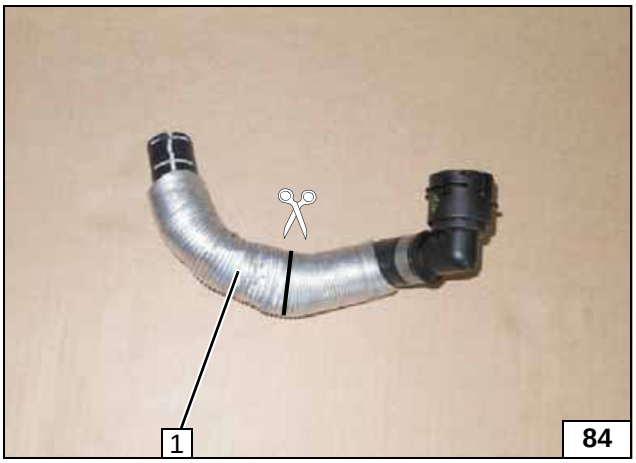
Route hose **E** above and hose **A** under perforated bracket **1** and through cable tie **2**. Align hoses, fasten cable tie **2**.

Routing in engine compart-ment



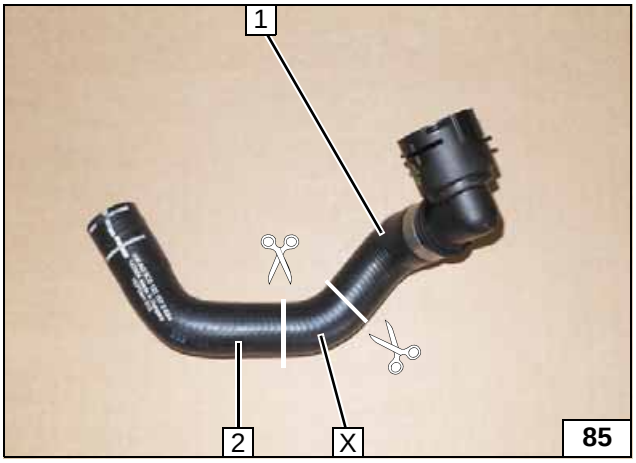
Remove hose from engine outlet / heat exchanger inlet **1** together with coupling piece of engine outlet. Spring clip **2** will be reused.

Cutting point



Remove heat protection hose **1** and cut at the marking.

Cutting point

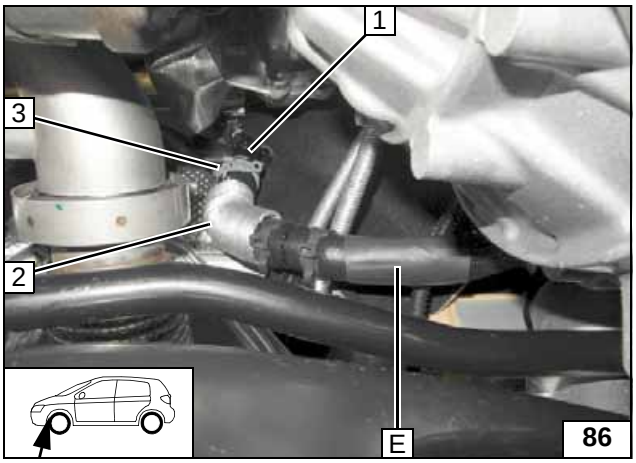


Cut off hose of engine outlet / heat exchanger inlet at the markings.

1 Engine outlet hose section
2 Heat exchanger inlet hose section

X =

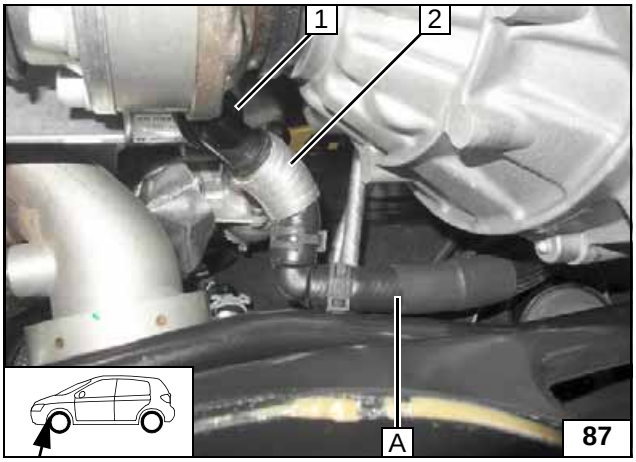
Cutting point



Slide heat protection hose onto hose section of heat exchanger inlet **2**.

1 Connection piece of heat exchanger inlet
3 Original vehicle spring clip

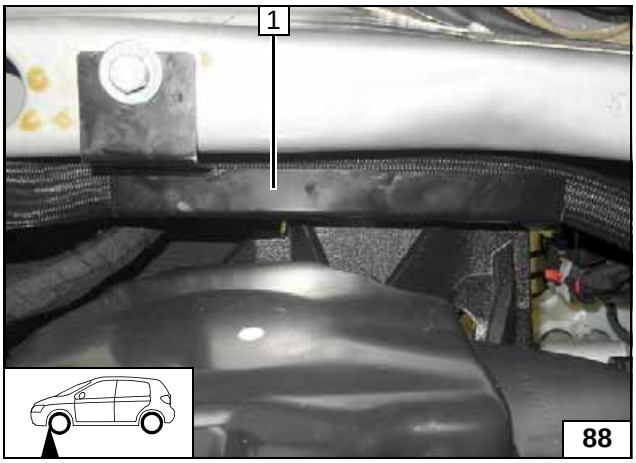
Connecting heat exchanger inlet



Slide heat protection hose onto hose section of engine outlet **2**.
Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Coupling piece of engine outlet

Connecting engine outlet



Ensure sufficient distance from neighbouring components, correct if necessary.

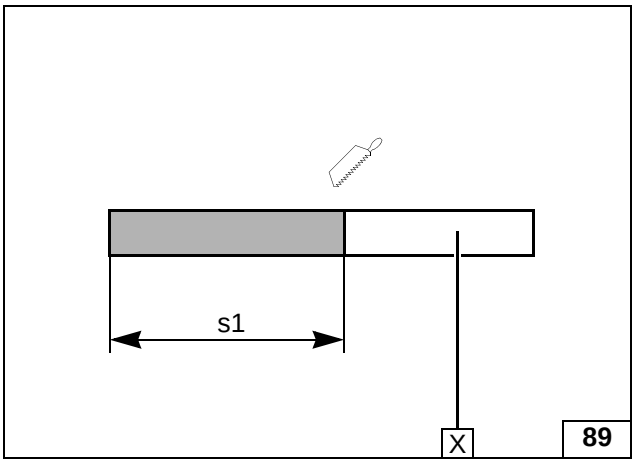
1 Hose bracket

Aligning hose bracket

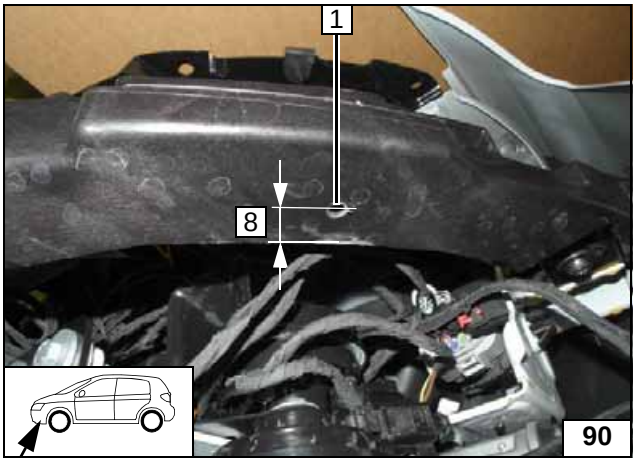
Combustion Air

s1 = 180

X =

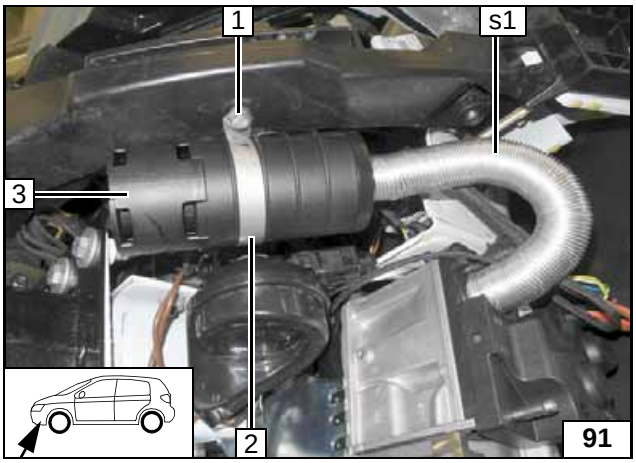


Cutting combustion air pipe to length



1 6 mm dia. hole

Hole for silencer



1 M5x16 bolt, flanged nut
2 51mm dia. clamp
3 Silencer

Installing combustion air pipe s1 and silencer

Fuel

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

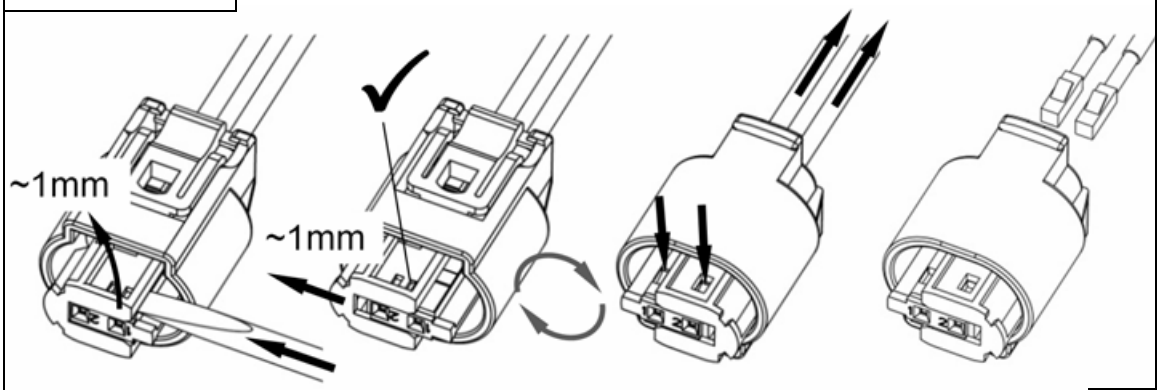
Catch any fuel running off in an appropriate container.

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

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

Dismantling metering pump connector

Connector X7



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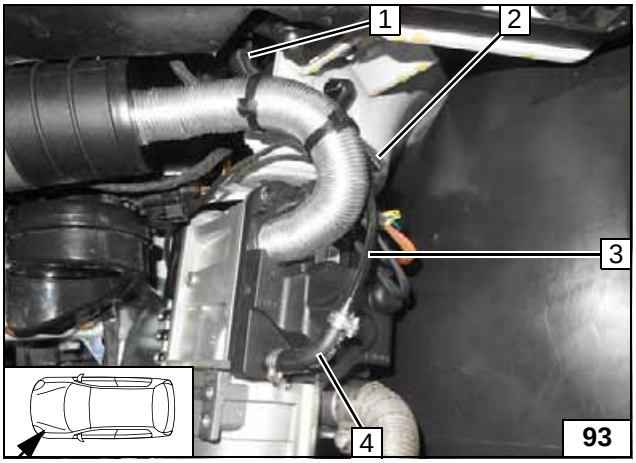
Connecting heater



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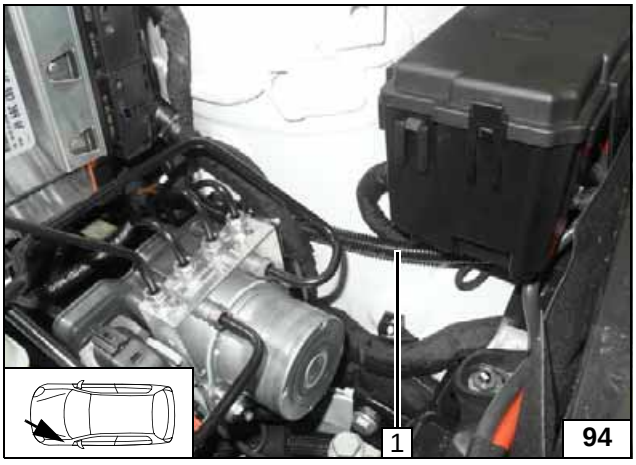
Pull fuel line **3** and metering pump wiring harness **2** into 10 mm dia. corrugated tube **1**. Route 10 mm dia. corrugated tube **1** in the engine compartment and secure to combustion air pipe using a cable tie.

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

Routing lines



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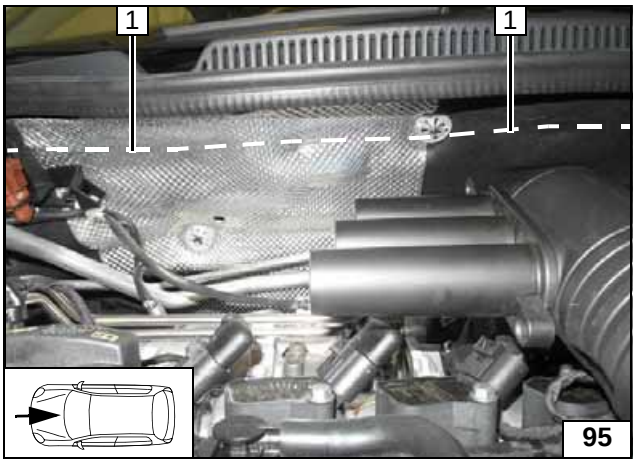
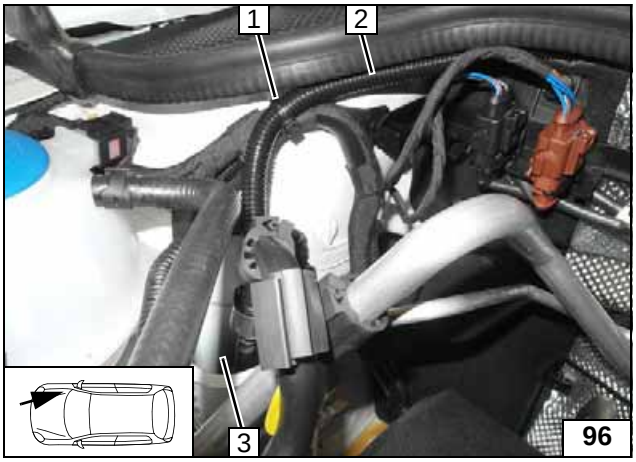
1 Fuel line and wiring harness of metering pump in 10mm dia. corrugated tube



Route fuel line and metering pump wiring harness **1** along the marking behind the insulation mat to the right side of the vehicle.

Routing lines



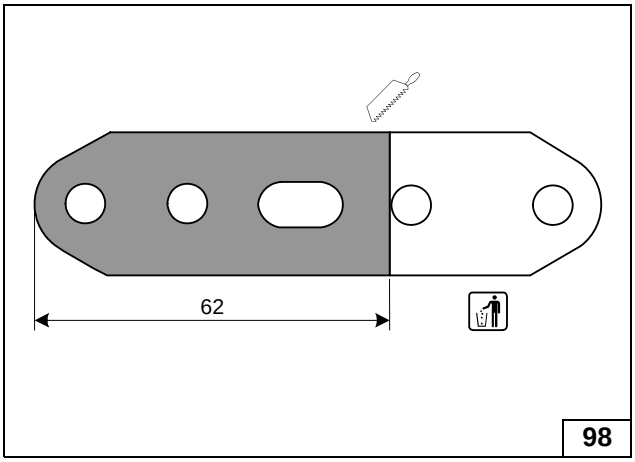
Route fuel line and wiring harness of metering pump through original vehicle line duct **3** to underbody.

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

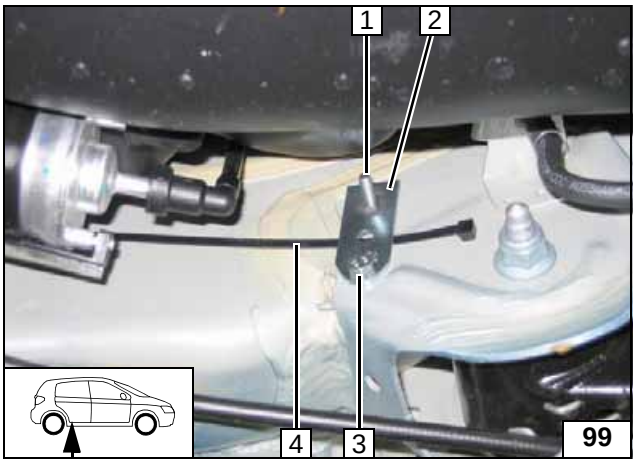
Routing lines

1 Fuel line, metering pump wiring harness
2 Original vehicle pass through of fuel lines

Routing lines



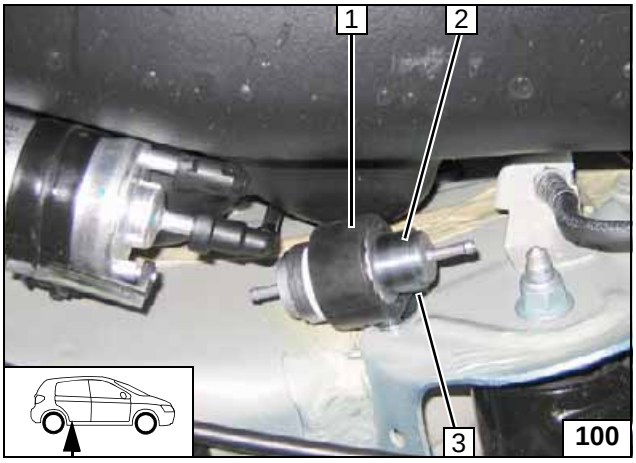
Cutting perforated bracket to length



Insert cable tie **4** between perforated bracket **2** and body.

1 M6x25 bolt, premount pin lock
3 M6x20 bolt, flanged nut, original vehicle hole

Installing perforated bracket

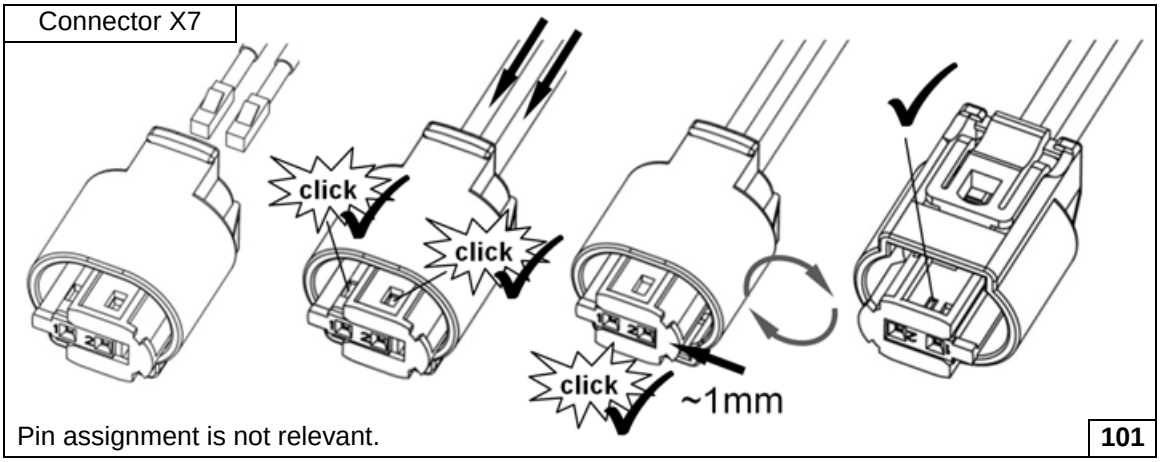


Attach metering pump mount **1** with support angle bracket and flanged nut on M6x25 bolt. Close cable tie **3** around the metering pump mount **1** .

2 Metering pump

Installing metering pump

Connector X7



Pin assignment is not relevant.

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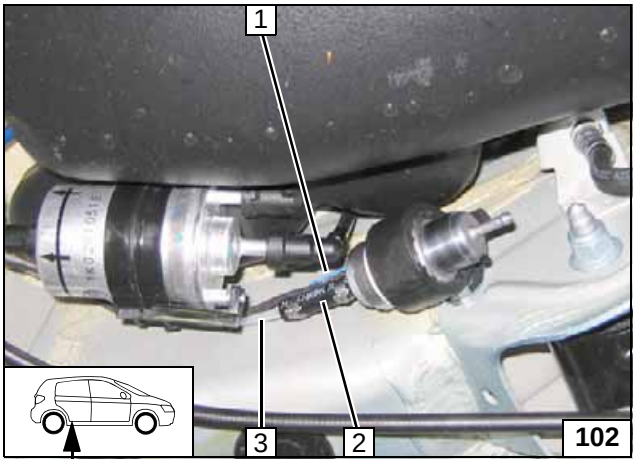
Completing metering pump connector



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

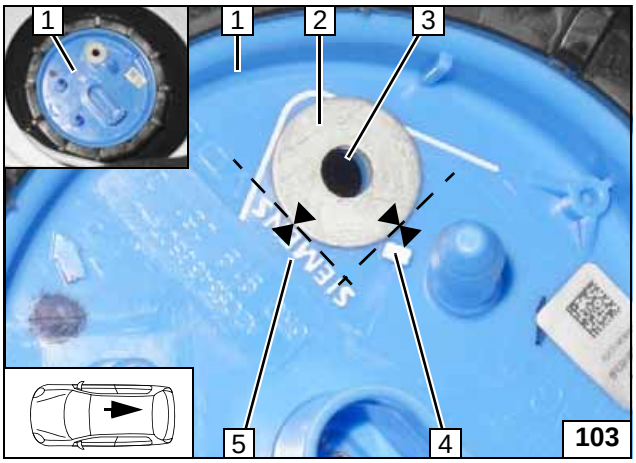
Connecting metering pump

Installing FuelFix

Petrol

Work steps F1, F2 and F3.

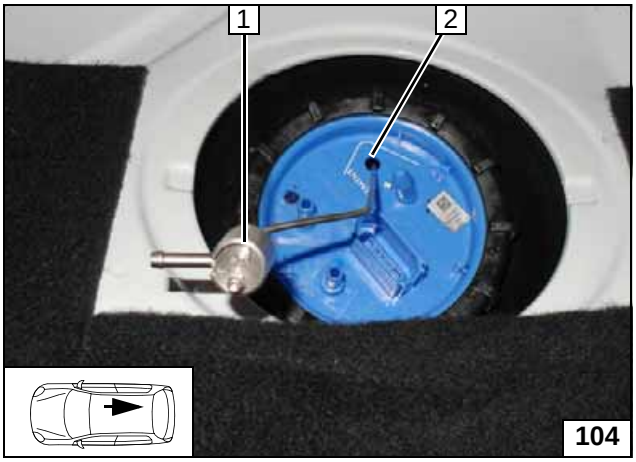
1 Fuel tank sending unit
2 Position washer with outer dia. d_a = 21.6mm as template, copy hole pattern
3 Hole made with provided drill
4 Contact point with raised part
5 Contact point with writing (text may vary)



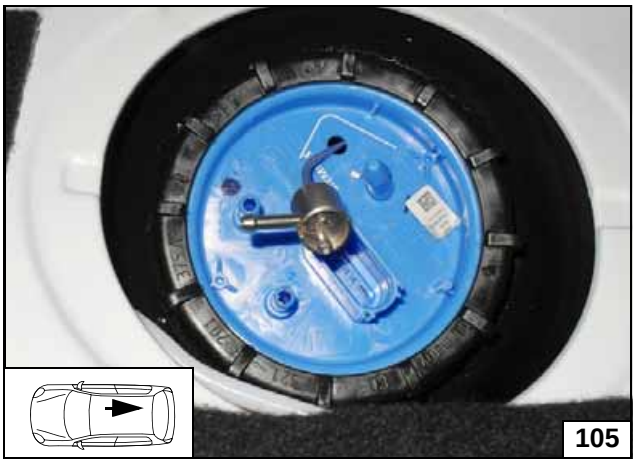
Hole for FuelFix

Work steps F4 and F5.

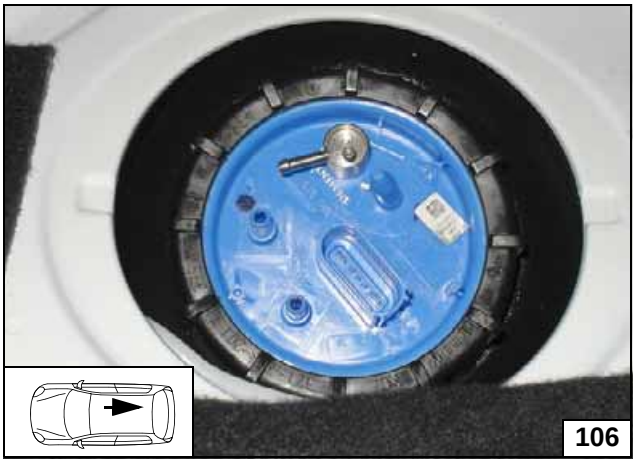
Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.



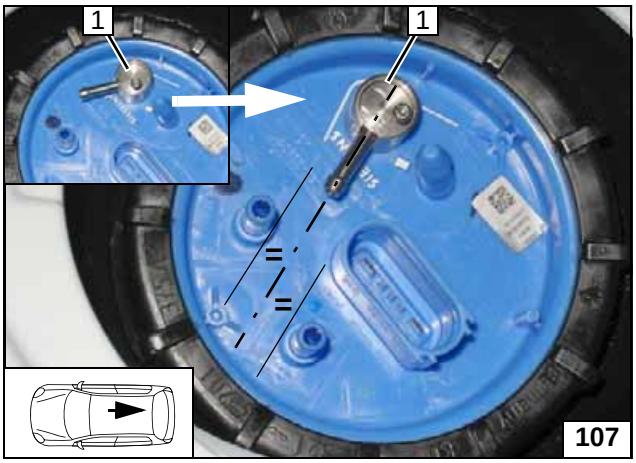
Preparing and inserting FuelFix



Inserting FuelFix



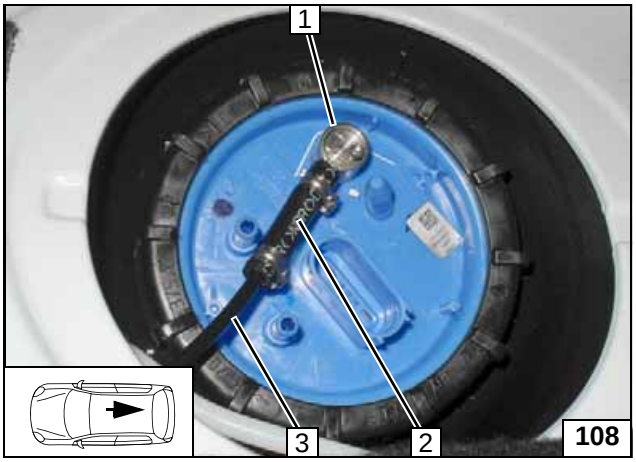
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

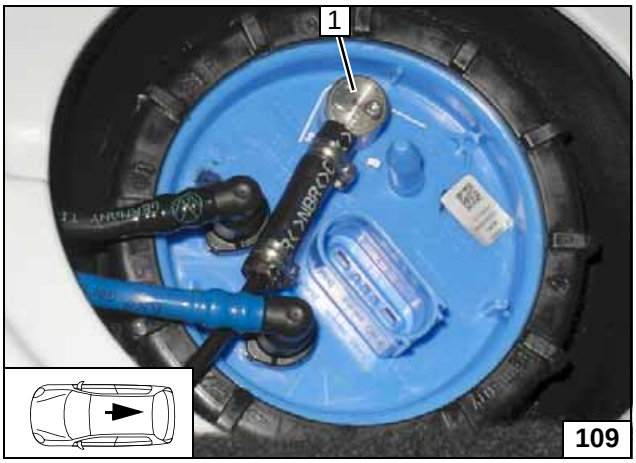
Aligning FuelFix



Work step F6.

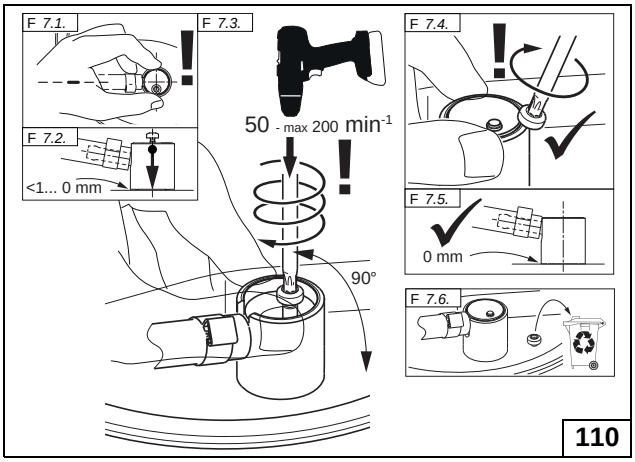
1 FuelFix
2 Hose section, 10mm dia. clamp [2x]
3 Fuel line

Connecting fuel line



Install original vehicle fuel lines.
Align and install FuelFix **1** as shown in the following figure.

Installing FuelFix

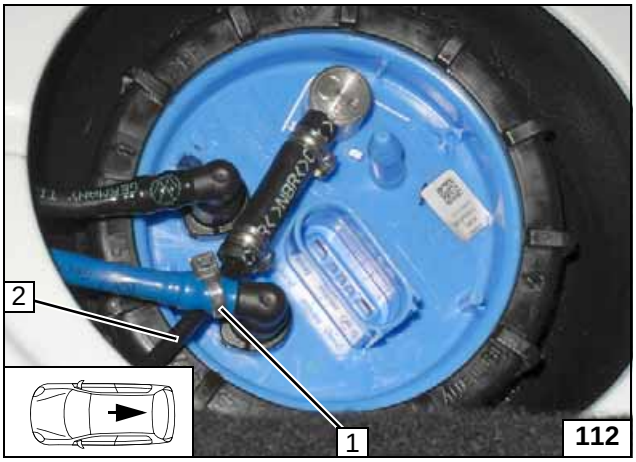


Work step F7.

Installing FuelFix

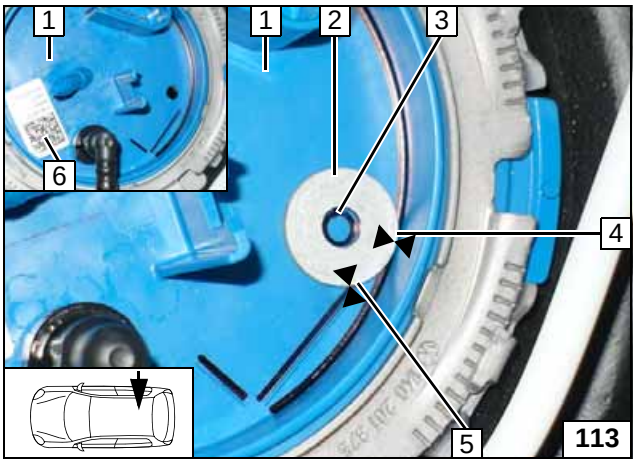
Work step F8.

Ensuring firm seating of FuelFix



1 Cable tie as tension relief
2 Fuel line of FuelFix

Securing fuel line

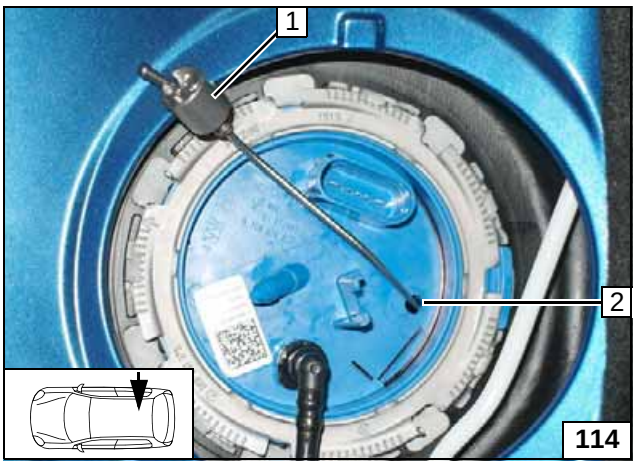


Version 2

Work steps F1, F2 and F3.

1 Fuel tank sending unit
2 Position washer with outer dia. d_a = 21.6mm as template, copy hole pattern
3 Hole made with provided drill
4 Contact point with rim of fuel tank sending unit
5 Contact point with end of raised part
6 Barcode label, moved

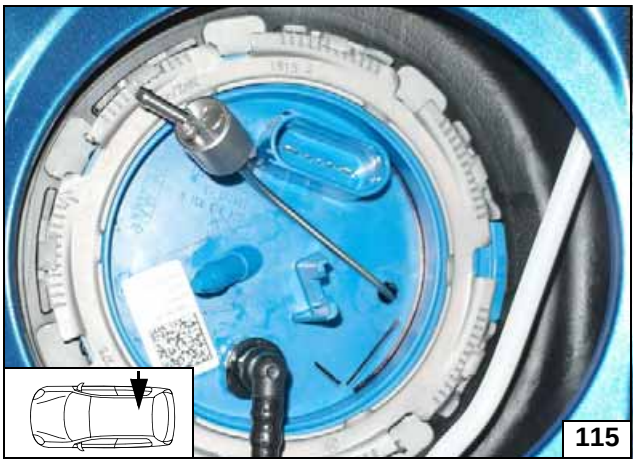
Hole for FuelFix



Work steps F4 and F5.

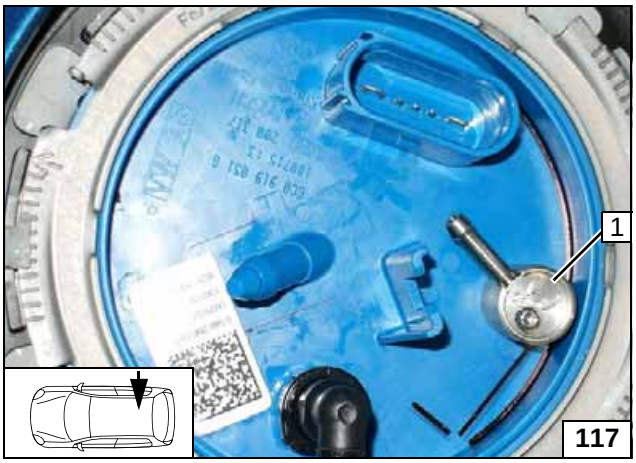
Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.

Preparing and inserting FuelFix



Inserting FuelFix

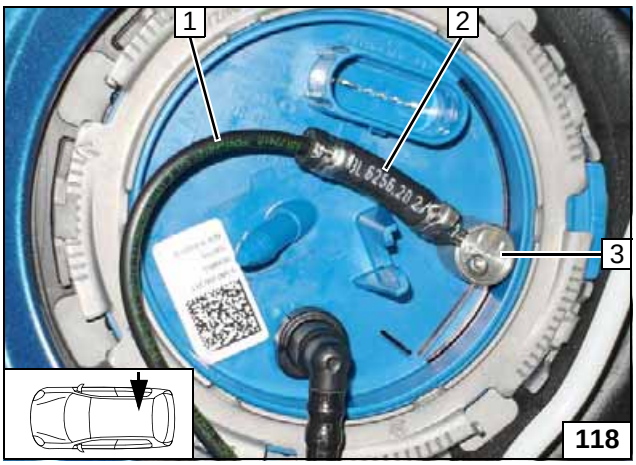
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

Aligning FuelFix



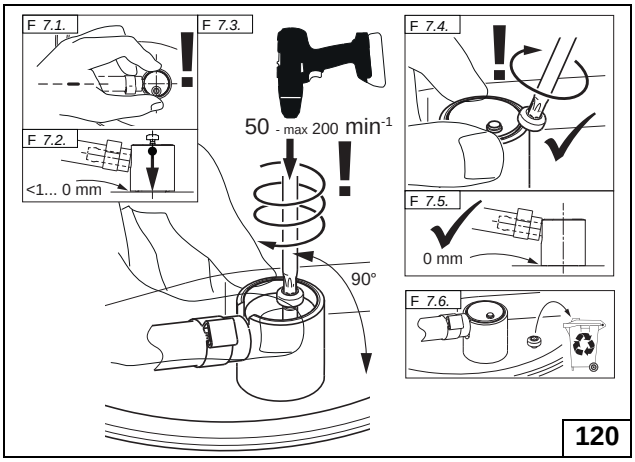
Work step F6.

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

Connecting fuel line

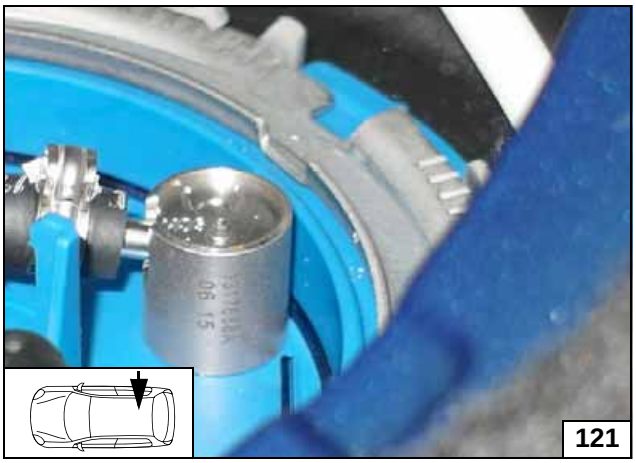
Install original vehicle connector.
Align and install FuelFix **1** as shown in the following figure.

Installing FuelFix



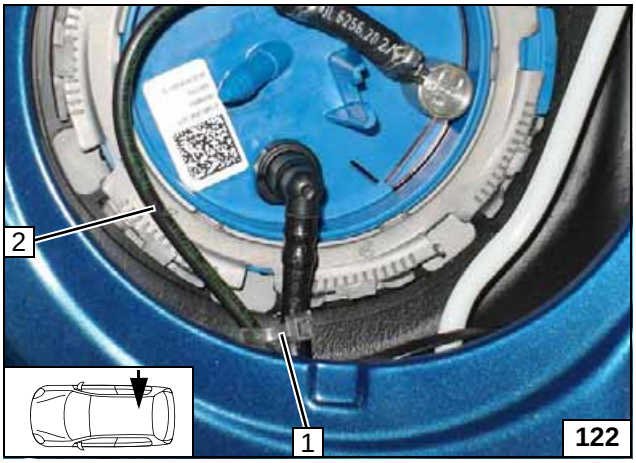
Work step F7.

Installing FuelFix



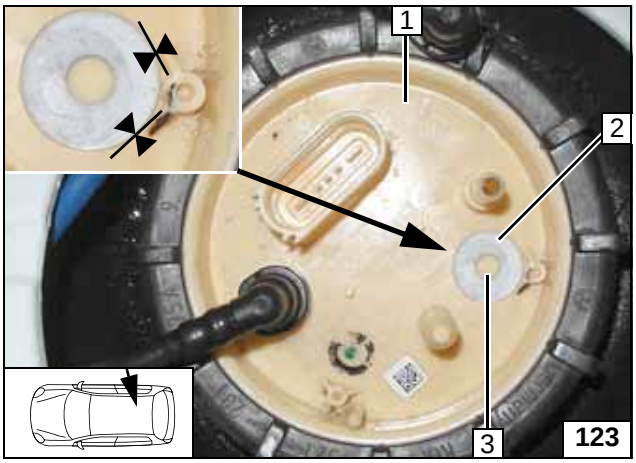
Work step F8.

Ensuring firm seating of FuelFix



1 Cable tie as tension relief
2 Fuel line of FuelFix

Securing fuel line

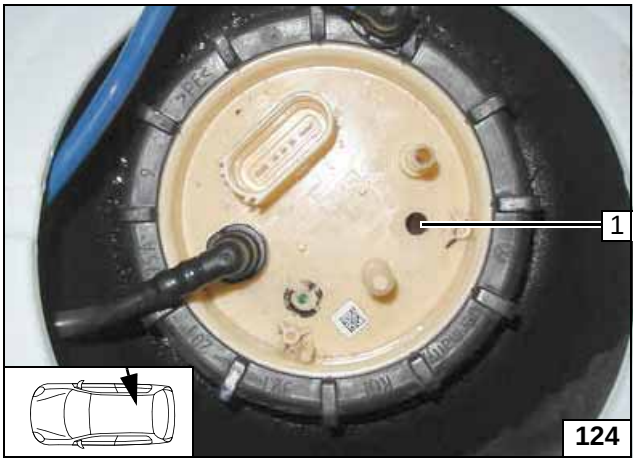


Diesel

Work steps F1 and F2.

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

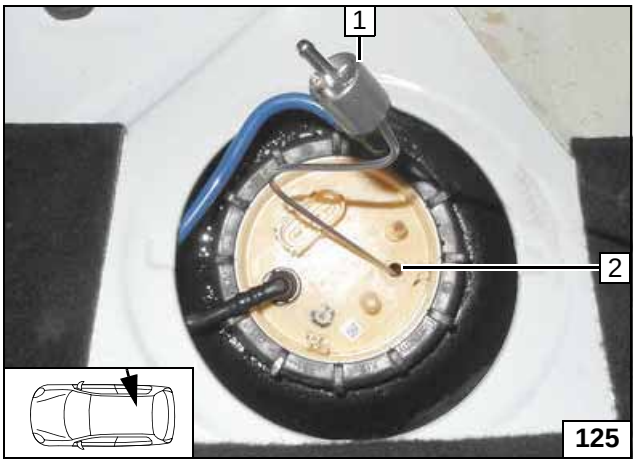
Fuel extraction



Work step F3.

1 Hole made with provided drill

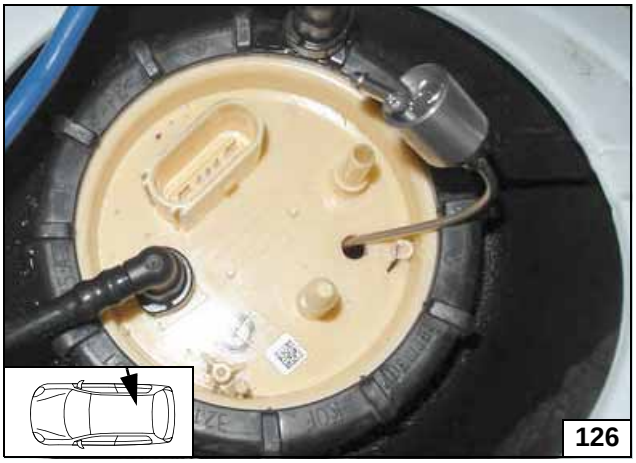
Hole for FuelFix



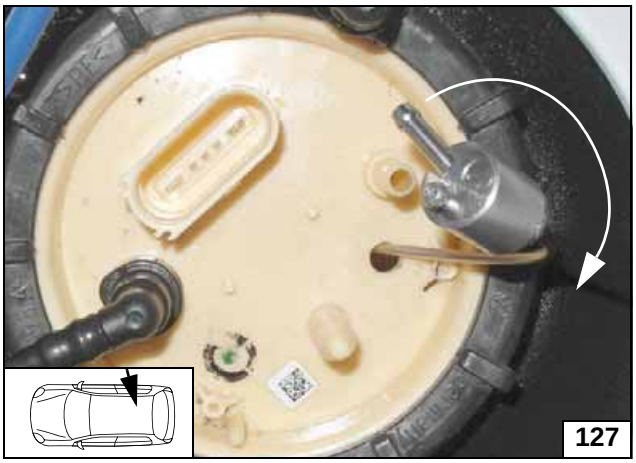
Work steps F4 and F5.

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

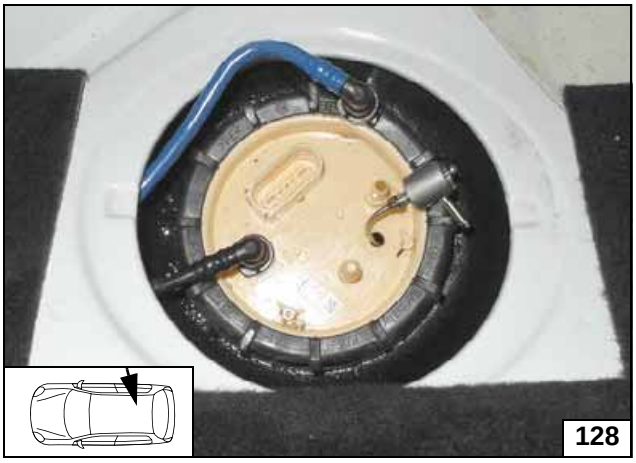
Inserting FuelFix



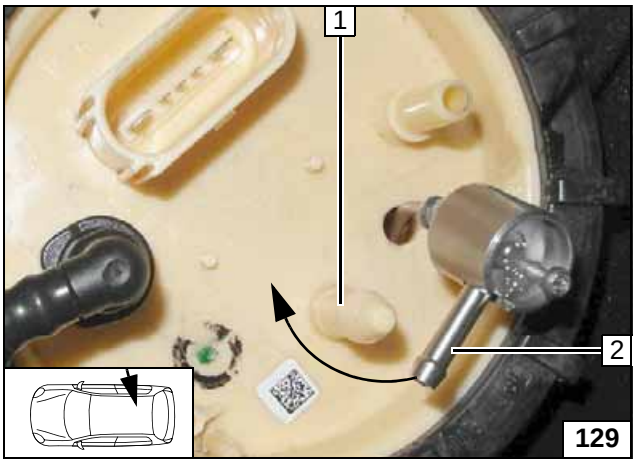
Inserting FuelFix



Inserting FuelFix

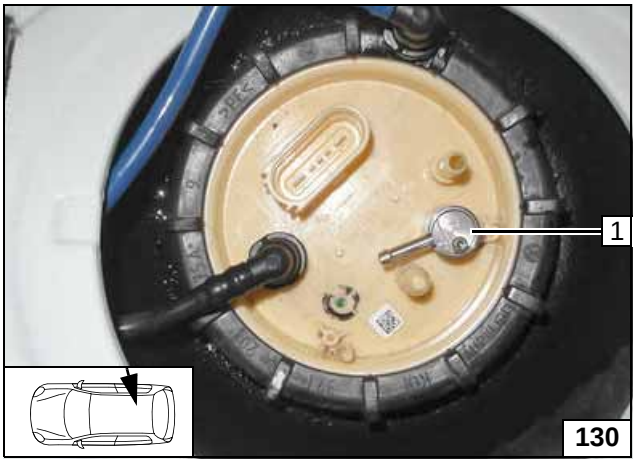


Inserting FuelFix



Move FuelFix connection piece **2** over closed stub **1**.

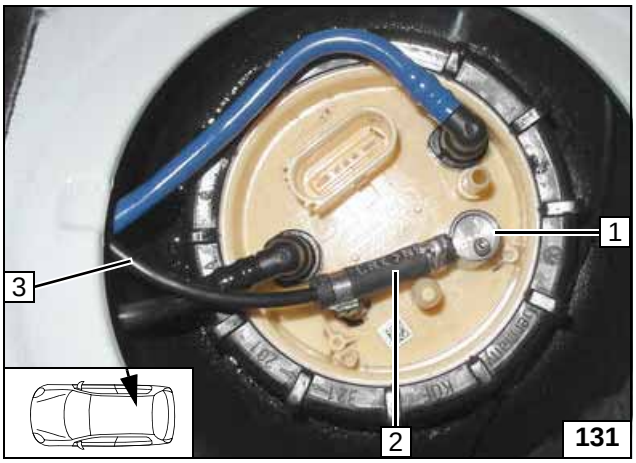
Inserting FuelFix



Work steps F5.3 and F5.4.

Turn FuelFix **1** in position as shown.

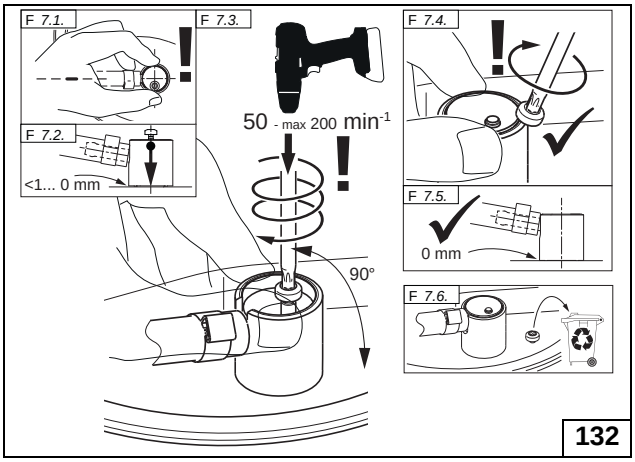
Positioning FuelFix



Work step F6.

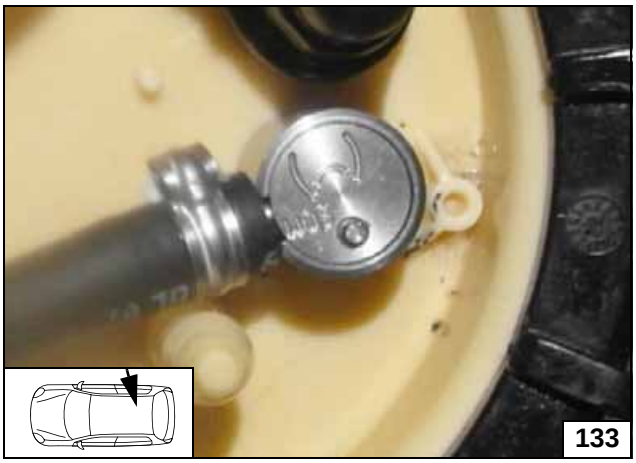
1 FuelFix
2 Hose section, 10mm dia. clamp [2x]
3 Fuel line

Connecting fuel line



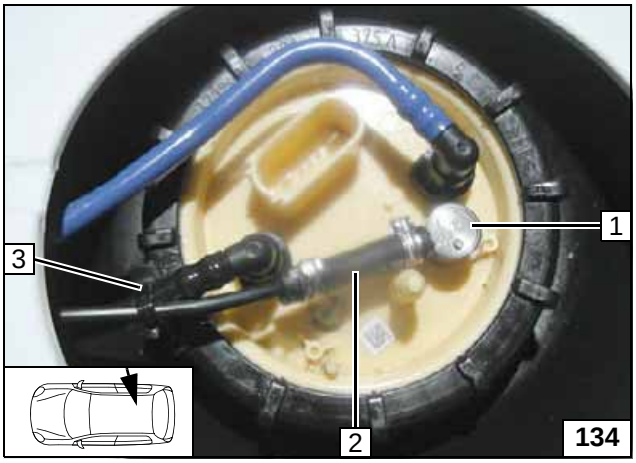
Work step F7.

Installing FuelFix



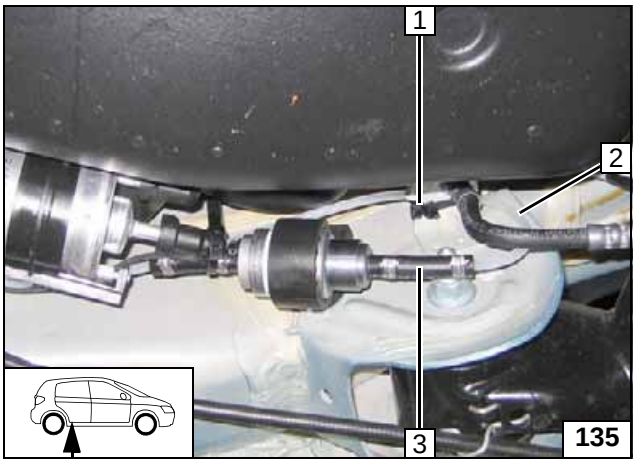
Work step F8.

Ensuring firm seating of FuelFix



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

Securing fuel line

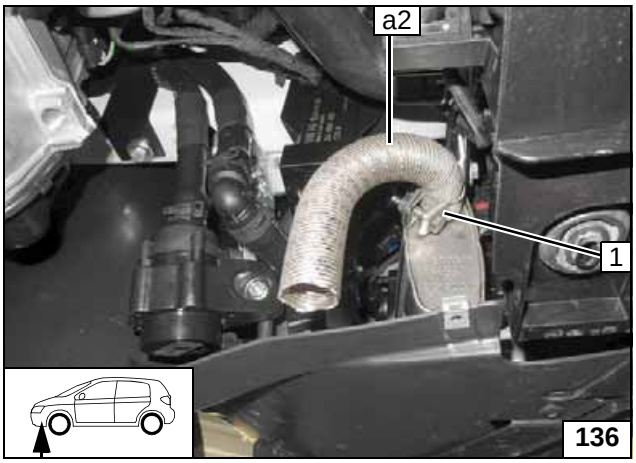


All vehicles

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

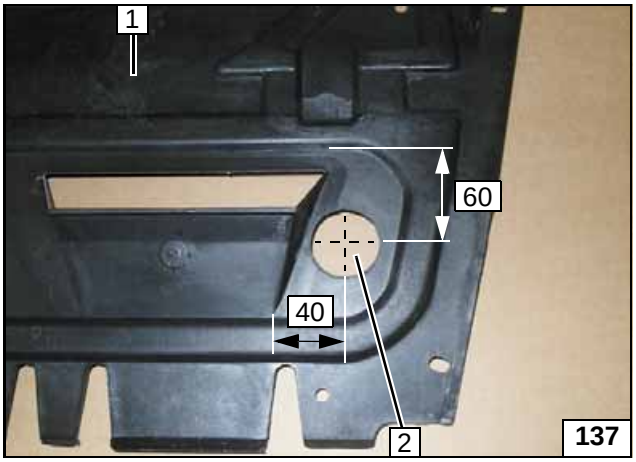
Connecting metering pump



Exhaust System Section 2

1 Hose clamp

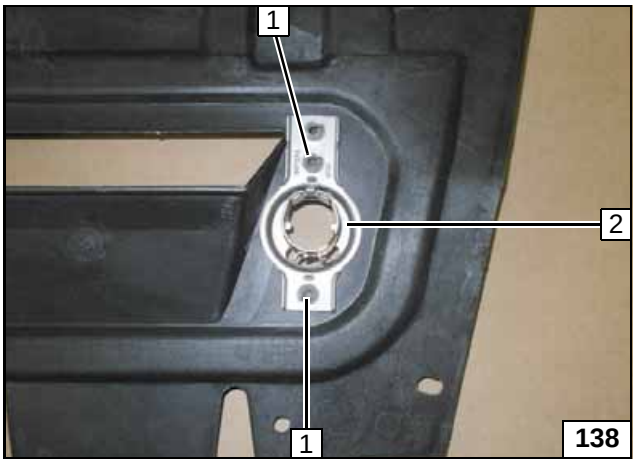
Installing exhaust pipe a2



Petrol

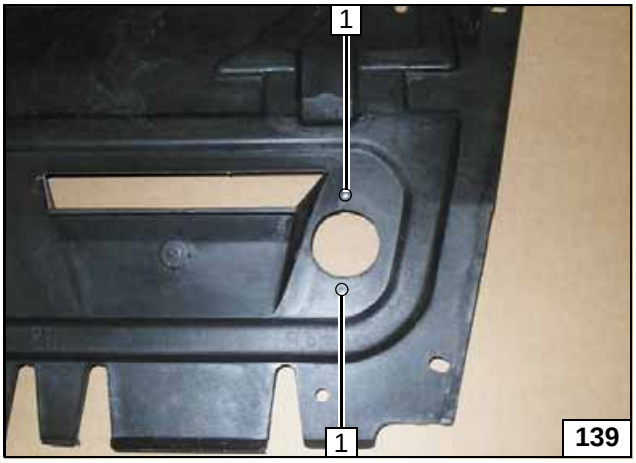
1 Underride protection
2 Hole (as per work step 1 of the installation instructions)

Hole in underride protection



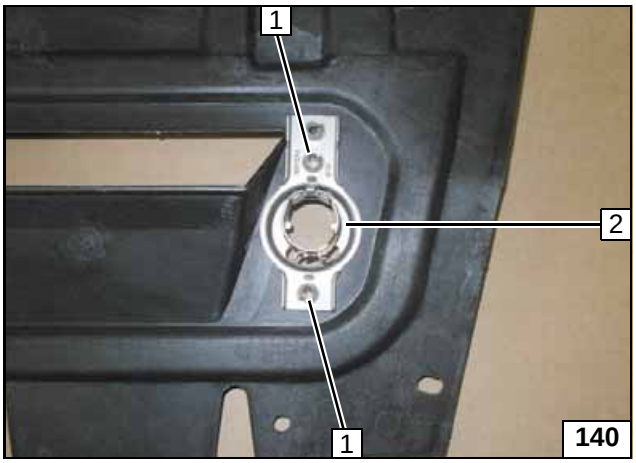
Position exhaust end fastener **2** as per work step 3 of the installation instructions and copy hole pattern **1** [2x].

Copying hole pattern



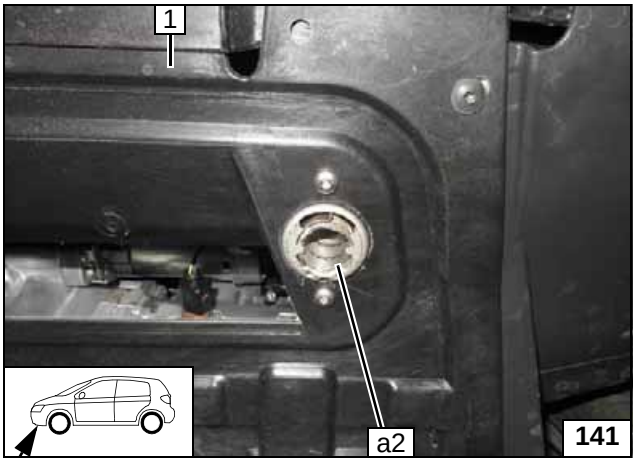
Hole **1** [2x] as per work step 4 of the installation instructions.

Holes in underride protection



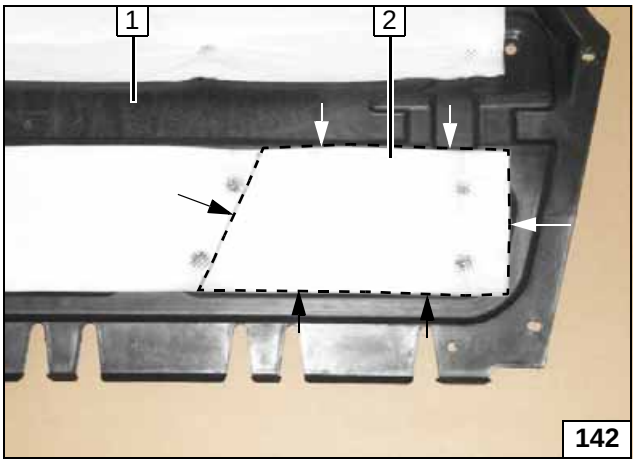
1 5x13 self-tapping screw [2x] as per work step 5 of the installation instructions
2 Exhaust end fastener

Installing exhaust end fastener



Install underride protection **1**. Install exhaust pipe **a2** as per work steps 6 - 8 of the installation instructions.

Installing exhaust pipe a2

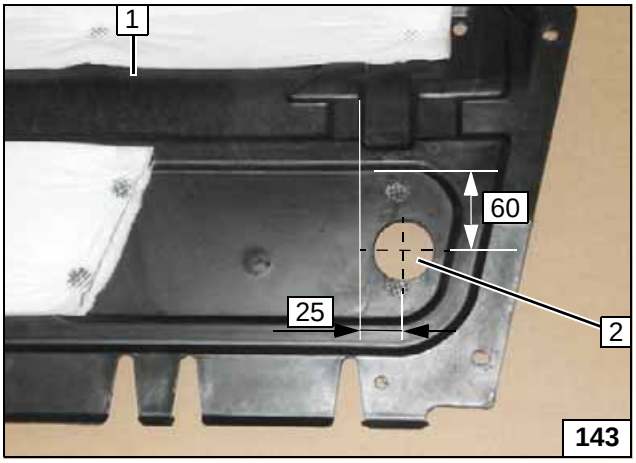


Diesel

Remove marked section **2** of the insulation mat.

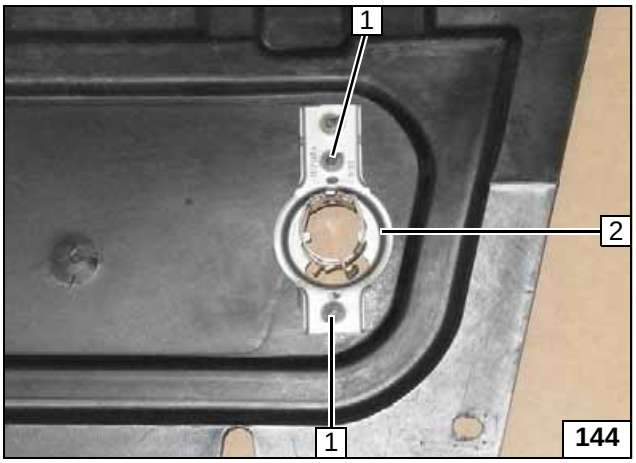
1 Underride protection

Removing insulation mat



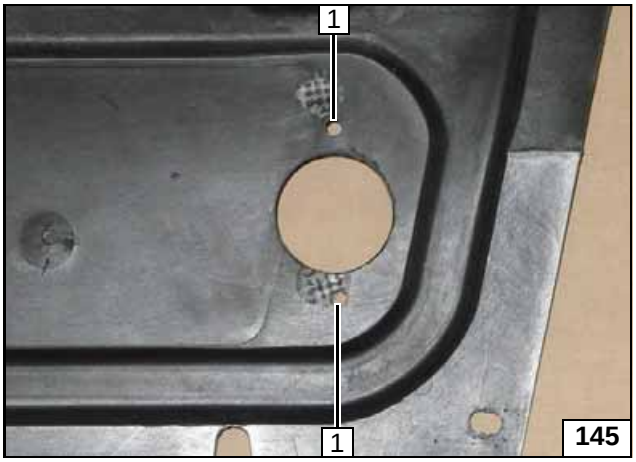
1 Underride protection
2 Hole (as per work step 1 of the installation instructions)

Hole in underride protection



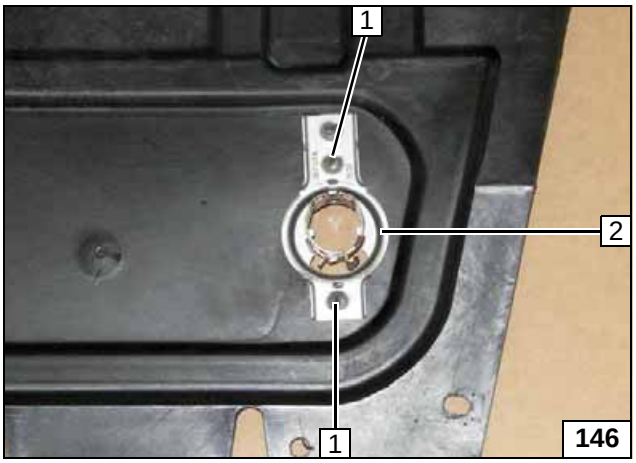
Position exhaust end fastener **2** as per work step 3 of the installation instructions and copy hole pattern **1** [2x].

Copying hole pattern



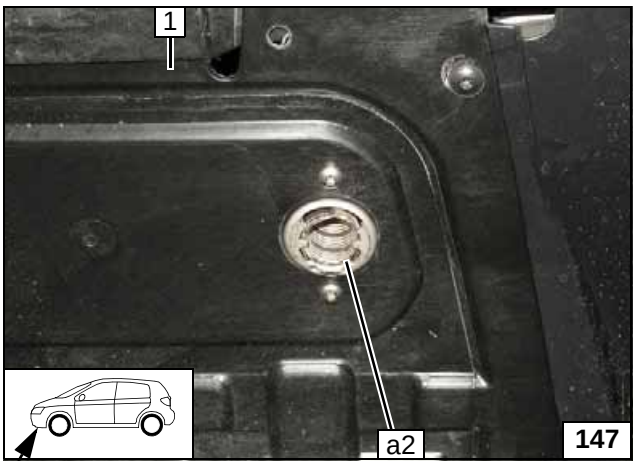
Hole **1** [2x] as per work step 4 of the installation instructions.

Holes in underride protection



1 5x13 self-tapping screw [2x] as per work step 5 of the installation instructions
2 Exhaust end fastener

Installing exhaust end fastener



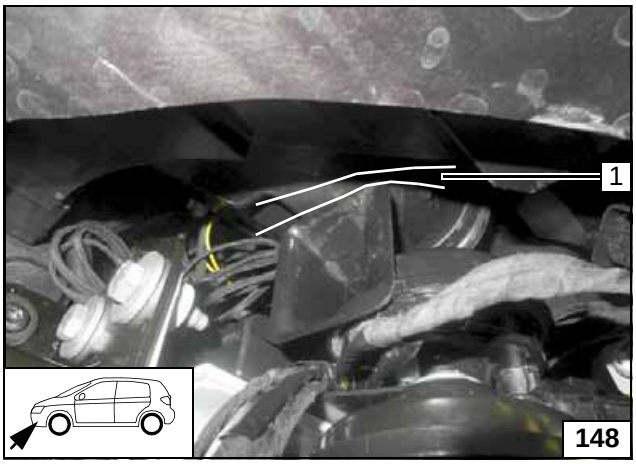
Install underride protection **1**. Install exhaust pipe **a2** as per work steps 6 - 8 of the installation instructions.

Installing exhaust pipe a2

Final Work

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

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



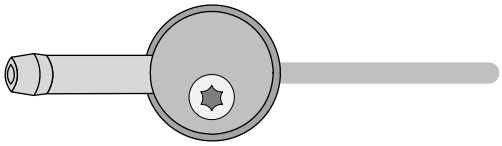
Check the distance **1** from the upper horn after the installation of the headlight, correct if necessary.
Check the distance between the wiring harnesses for the horns, the cornering light as well as the front fog light and the exhaust system after the installation, correct if necessary.

Checking distance

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

FuelFix Template for Petrol Vehicles

Top view



100mm

Scale 1:1

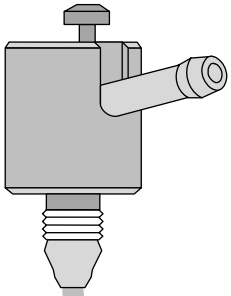
Compare size of printout with dimension lines.
Allowed tolerance a maximum of 2%.

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

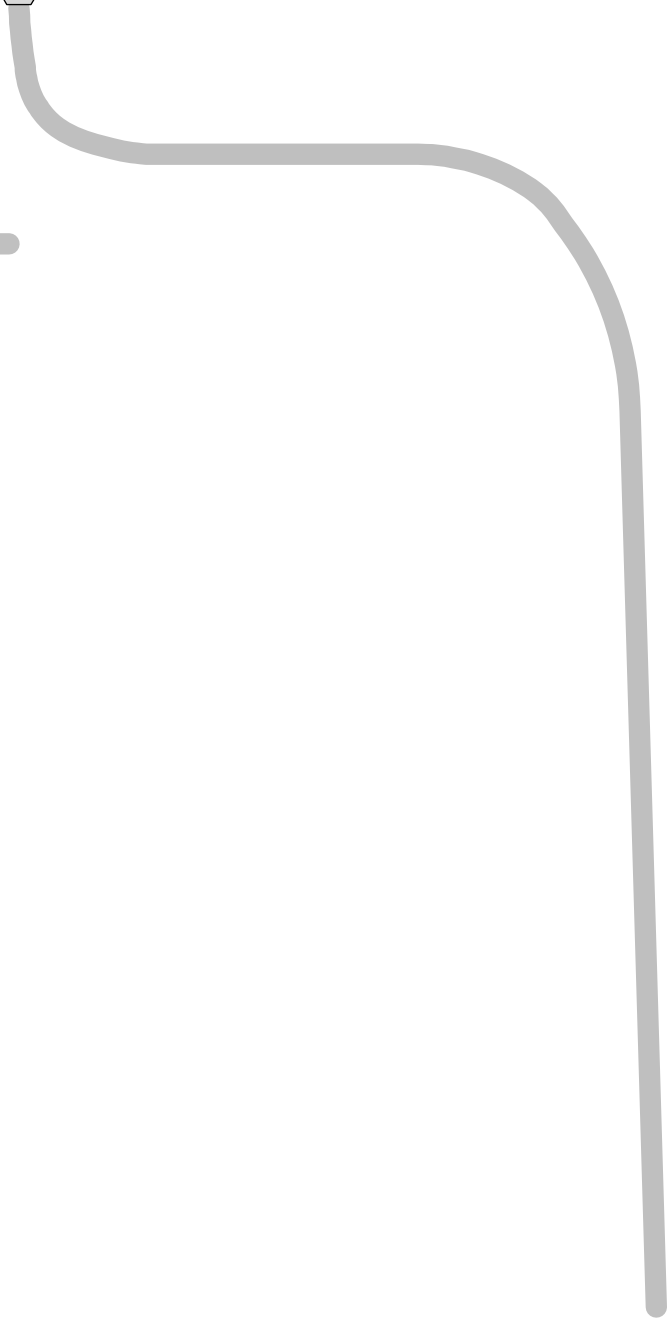
100mm

0

FuelFix Template for Diesel Vehicles



Top view



100mm

Scale 1:1

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

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

100mm

0

Operating Instructions for Manual Air-Conditioning

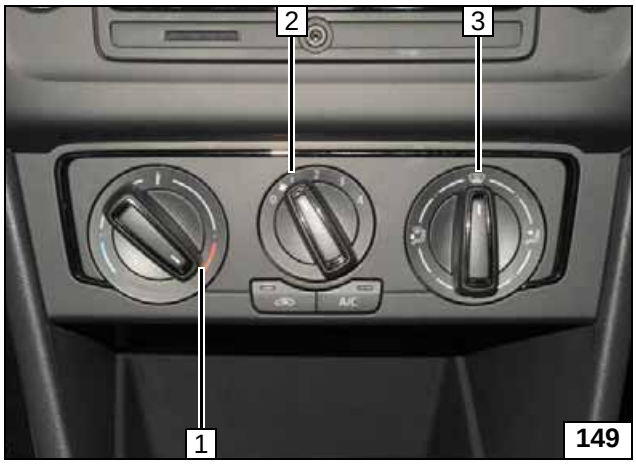
Please remove page and add to the vehicle operating instructions.

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

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

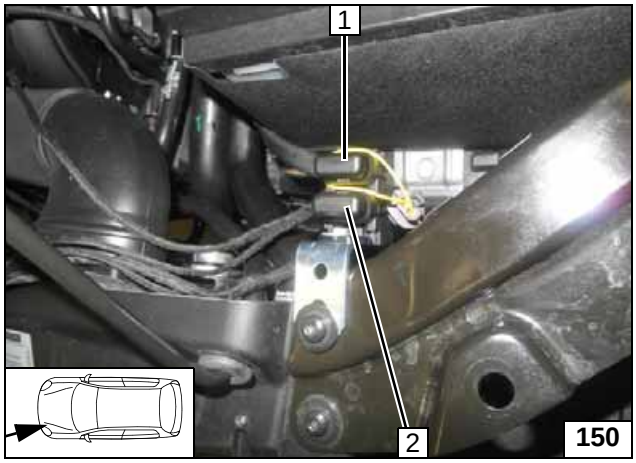
Before parking the vehicle, make the following settings:

A/C control panel



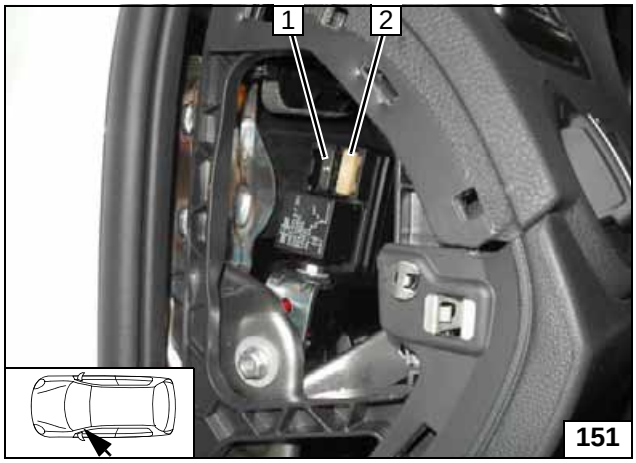
1 Set temperature to ‘max.’
2 Set fan to level ‘1’, or max. ‘2’
3 Air outlet to windscreen

Engine compartment fuses



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

Passenger compartment fuses



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

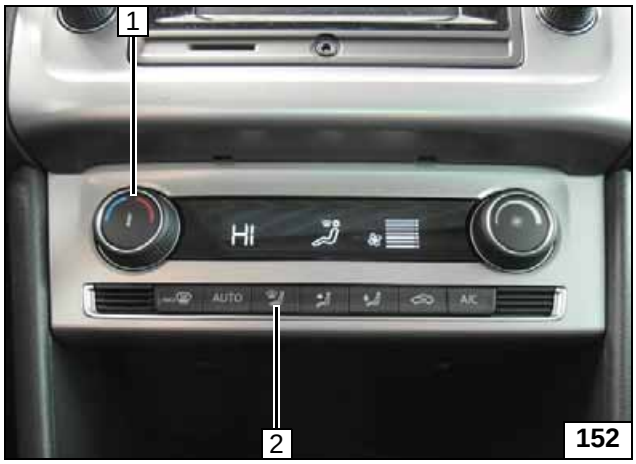
Operating Instructions for Automatic Air-Conditioning

Please remove page and add to the vehicle operating instructions.

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

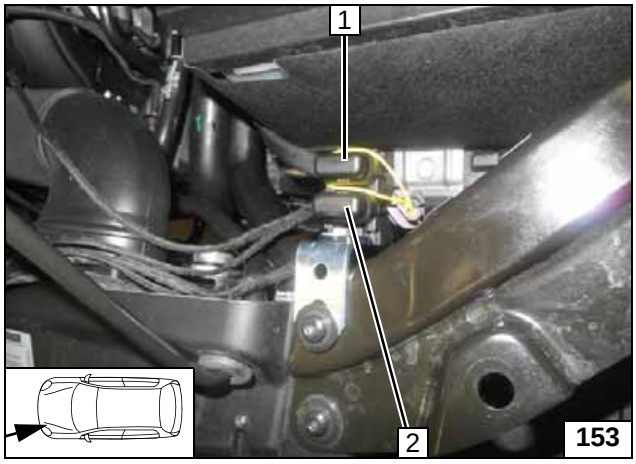
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



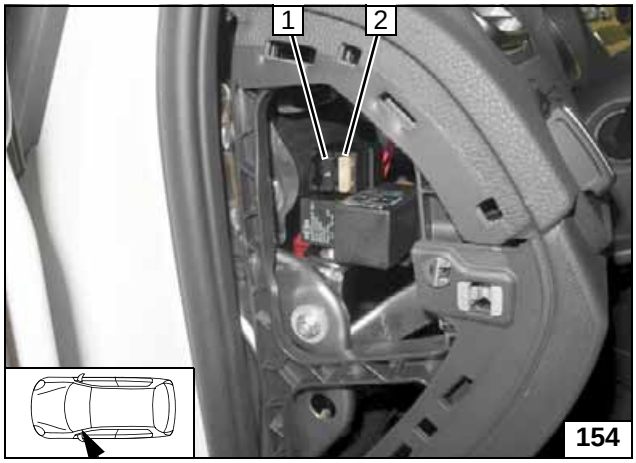
1 Set temperature to ‘HI’
2 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses