Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Suzuki Vitara

Validity

Manufacturer	Model	Type	EG BE No. / ABE
Suzuki	Vitara	LY	e4 * 2007 / 46 * 0928 * 01

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.4 P	Petrol	6-speed SG	103	1373	K14C
1.6 P	Petrol	5-speed SG	88	1586	M16A
1.6 D	Diesel	6-speed SG	88	1598	D16AA
1.6 D	Diesel	6-speed CVT	88	1598	D16AA

SG = manual transmission
CVT = continuously variable automatic transmission

From model year 2015
Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
Automatic air-conditioning
Front fog lights
Euro 6
2WD / 4WD
Daytime running lights (LED and Halogen)
LED main headlights
Keyless start
Start / Stop

Not verified: Alarm system

Total installation time: about 8.5 hours

Suzuki Vitara

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix for Suzuki Vitara 2015 Petrol and diesel: **1324321B**
- To be ordered additionally in case of automatic A/C: Additional kit for automatic A/C: **1324331_**
- 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

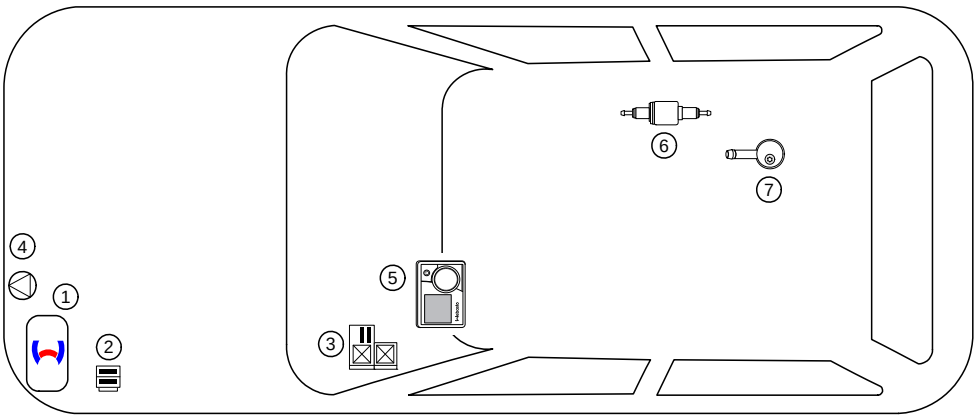
Installation instructions:

- 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 space required and the manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

Installation Overview

Legend:

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



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

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

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

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

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

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

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

2 Statutory regulations governing installation

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

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Suzuki Vitara

Information on Validity

This installation documentation applies to Suzuki Vitara 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 - 6 mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6 mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

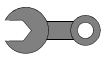
Dimensions
- All dimensions are in mm.

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.

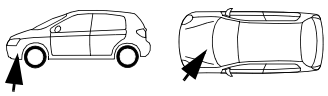
Specific risk of injury or fatal accidents.

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

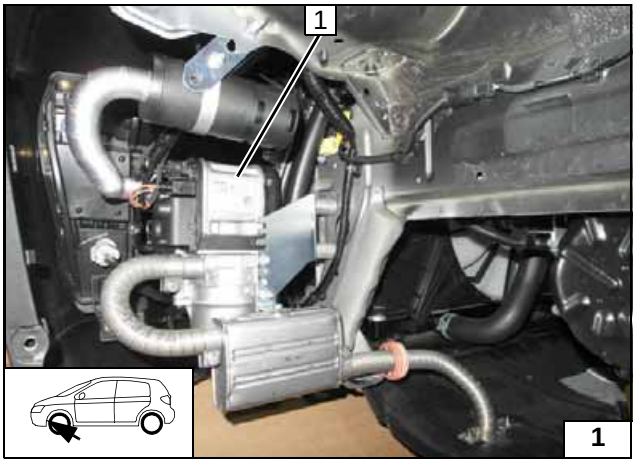
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and completely remove the battery together with the carrier.
- Remove the left front wheel.
- Remove the wheel well trim on the left-hand side.
- Remove the engine underride protection.
- Detach the underride protection on the right-hand side.
- Remove the instrument panel decorative trim piece on the right (only in case of automatic air-conditioning).
- Remove the radio / navigation system.
- Remove the A/C control panel.
- Remove the AC booster.
- Remove the lower instrument panel trim on the driver's side.
- Remove the footwell trim on the driver's and front passenger's sides.

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

- Remove the silencer (petrol only).
- Loosen the Cardan shaft (4 WD only).
- Remove the fuel tank in accordance with the manufacturer's instructions.

Heater

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



Heater Installation Location

1 Heater

Installation location

Preparing Electrical System

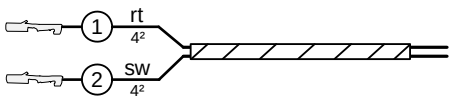
Manual air-conditioning

Wire sections retain their numbering in the entire document.

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

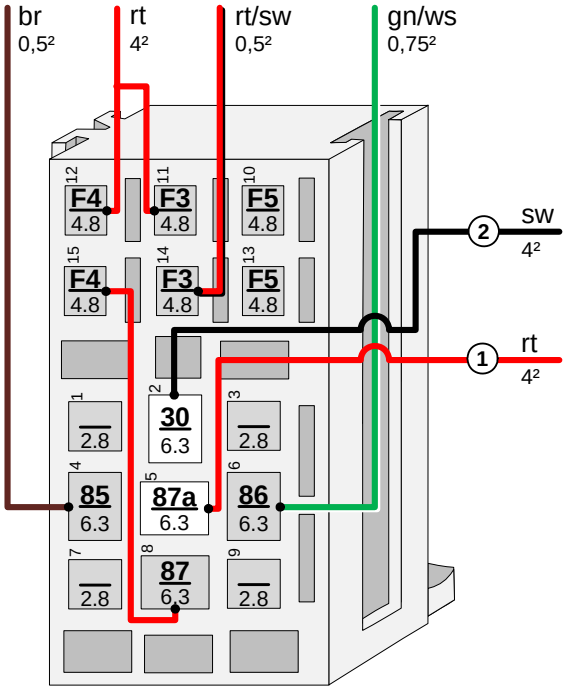
① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness

Cutting to length / assigning wires

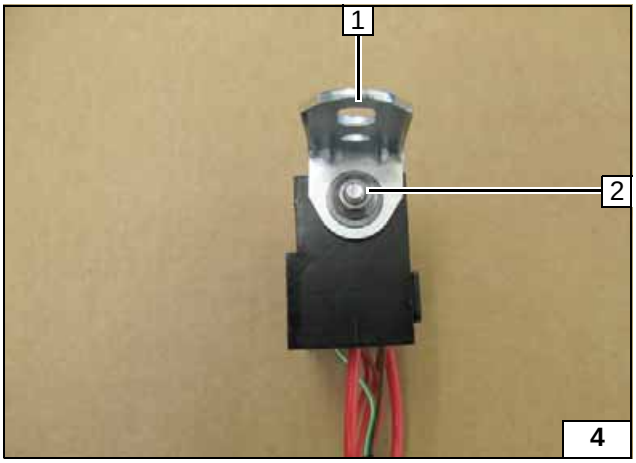


2

Connecting wires to passenger compartment relay and fuse holder



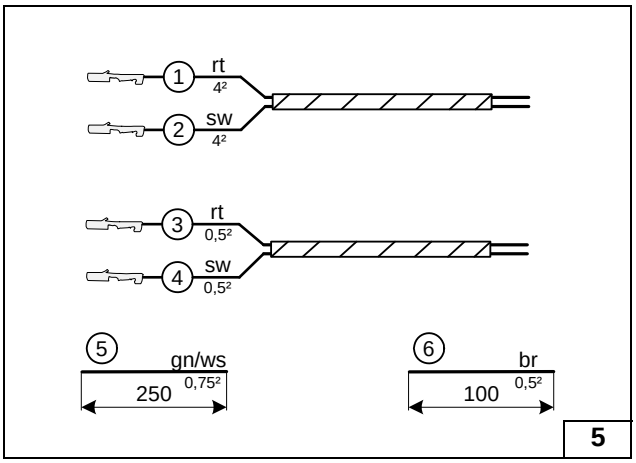
3



4

1 Angle bracket
2 M5x16 bolt, large diameter washer, flanged nut

Premounting passenger compartment relay and fuse holder

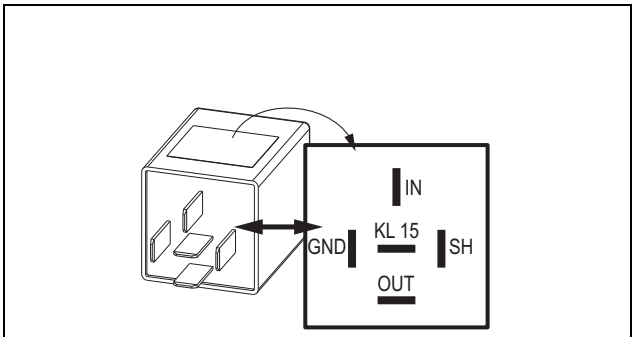


5

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

Cutting to length / assigning wires



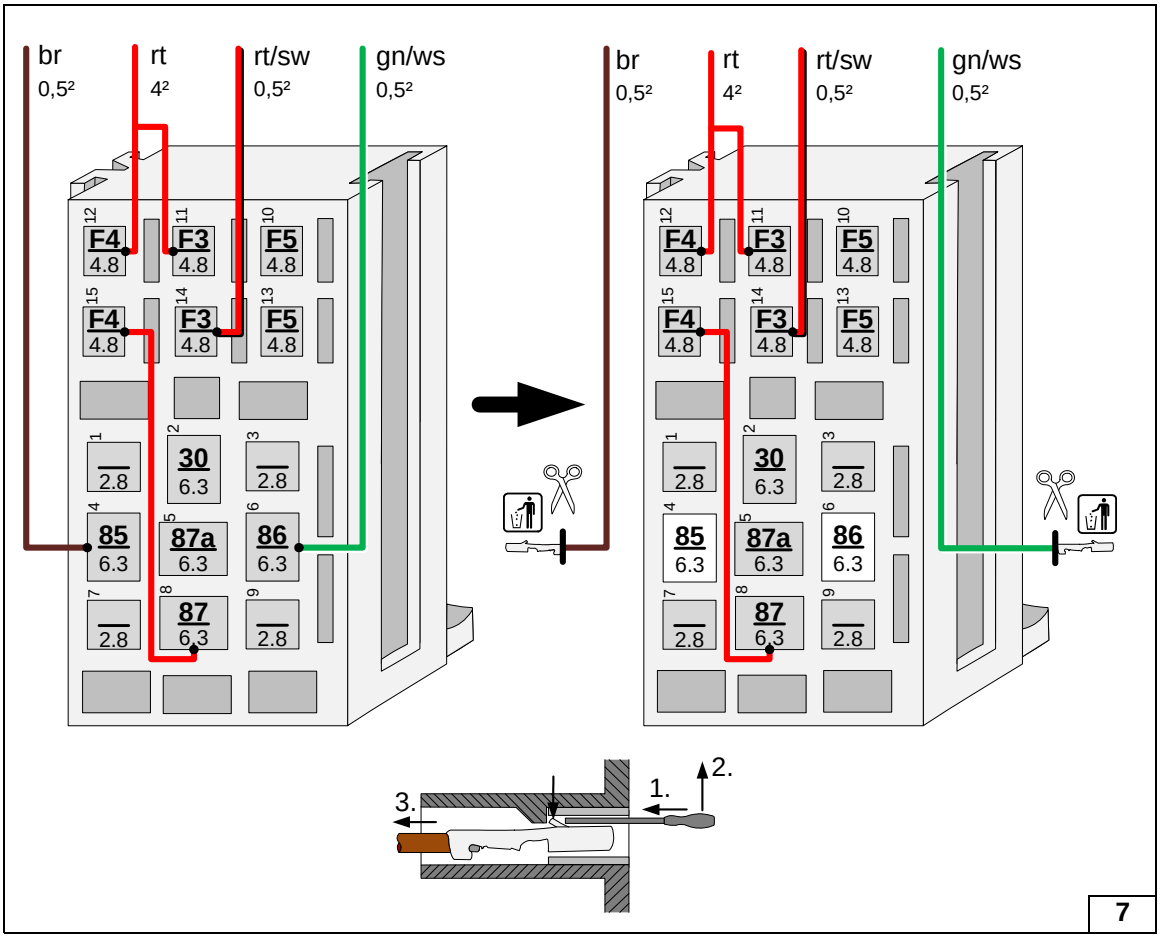
6

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

Settings:

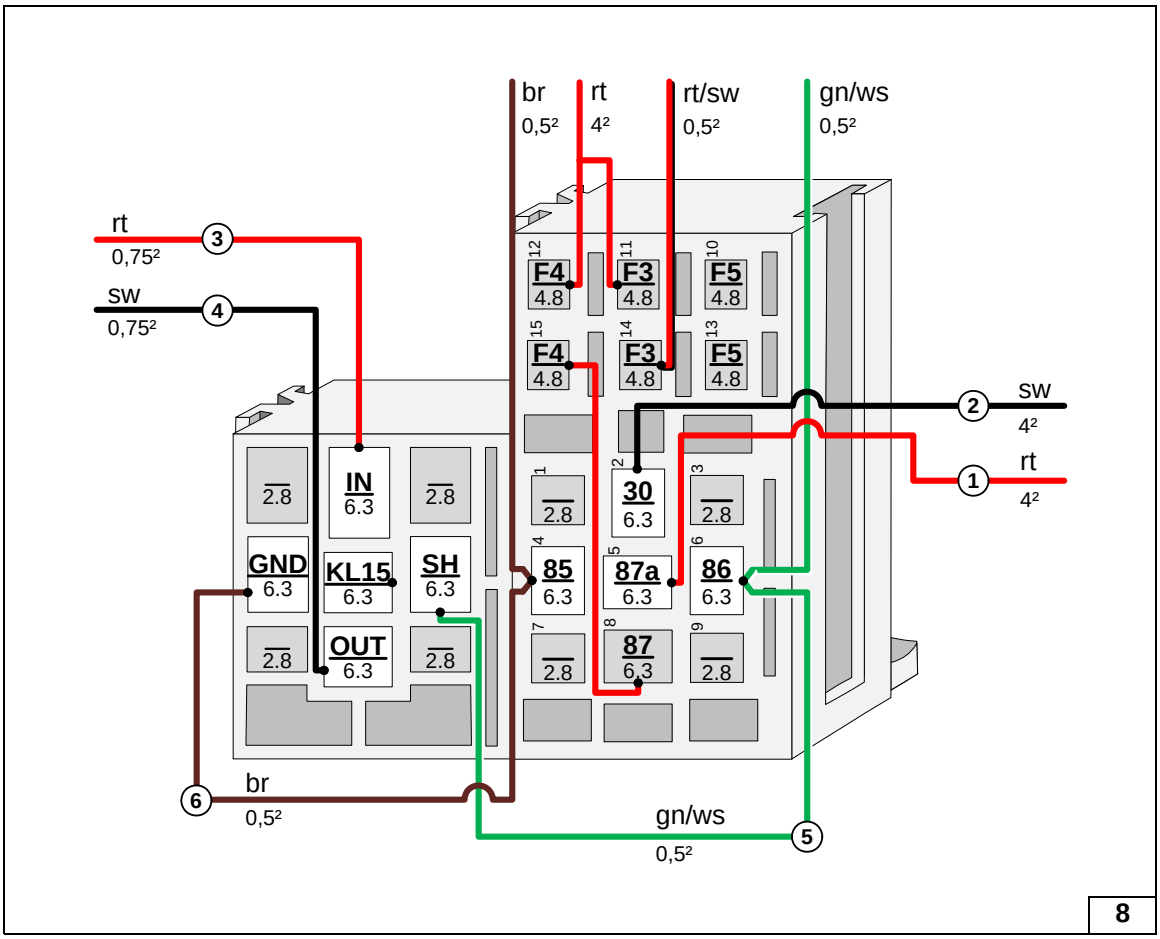
Duty cycle: 100% (DC)
Frequency: not relevant
Voltage: 3.9V
Function: High side

View of PWM GW



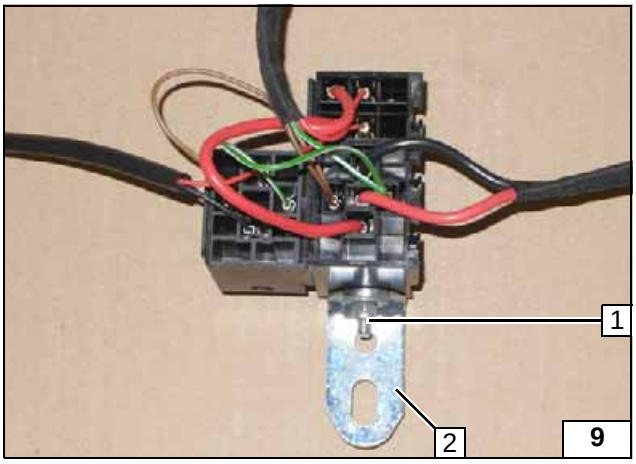
7

Preparing passenger compartment relay and fuse holder



8

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



9

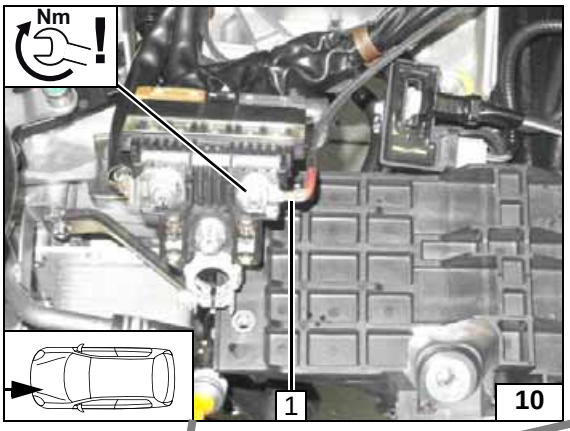
1 M5x16 bolt, large diameter washer, flanged nut
2 Angle bracket

Premounting passenger compartment relay and fuse holder

Electrical System

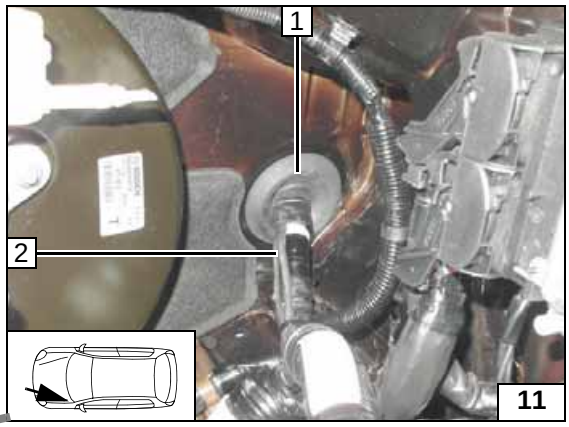
Positive wire

1 Positive wire on positive battery distributor

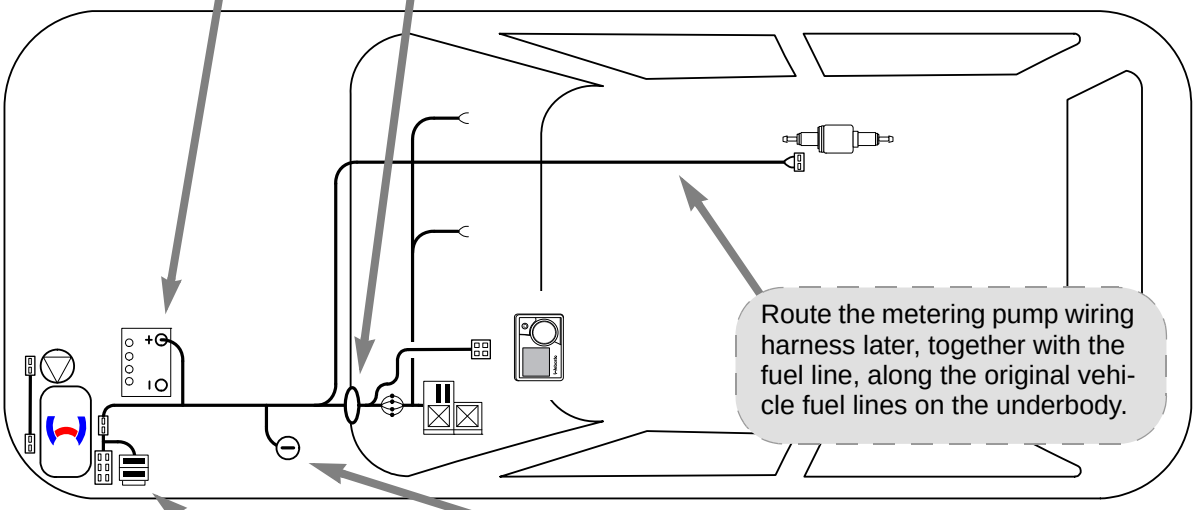


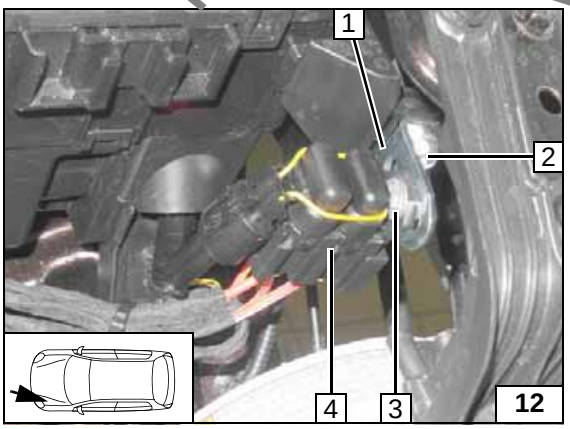
Wiring harness routing

1 Protective rubber plug
2 Wiring harnesses of heater and heater control



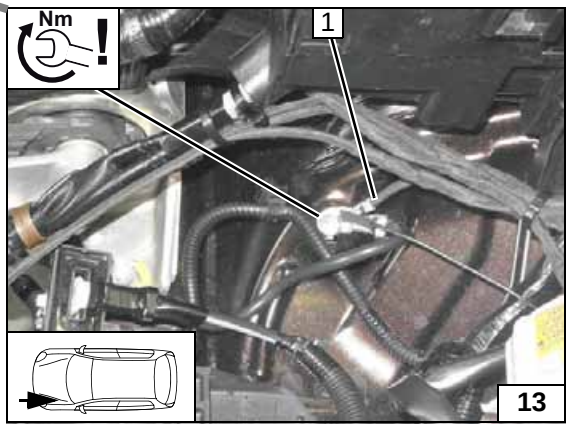
Wiring harness routing diagram





Engine compartment fuse holder

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

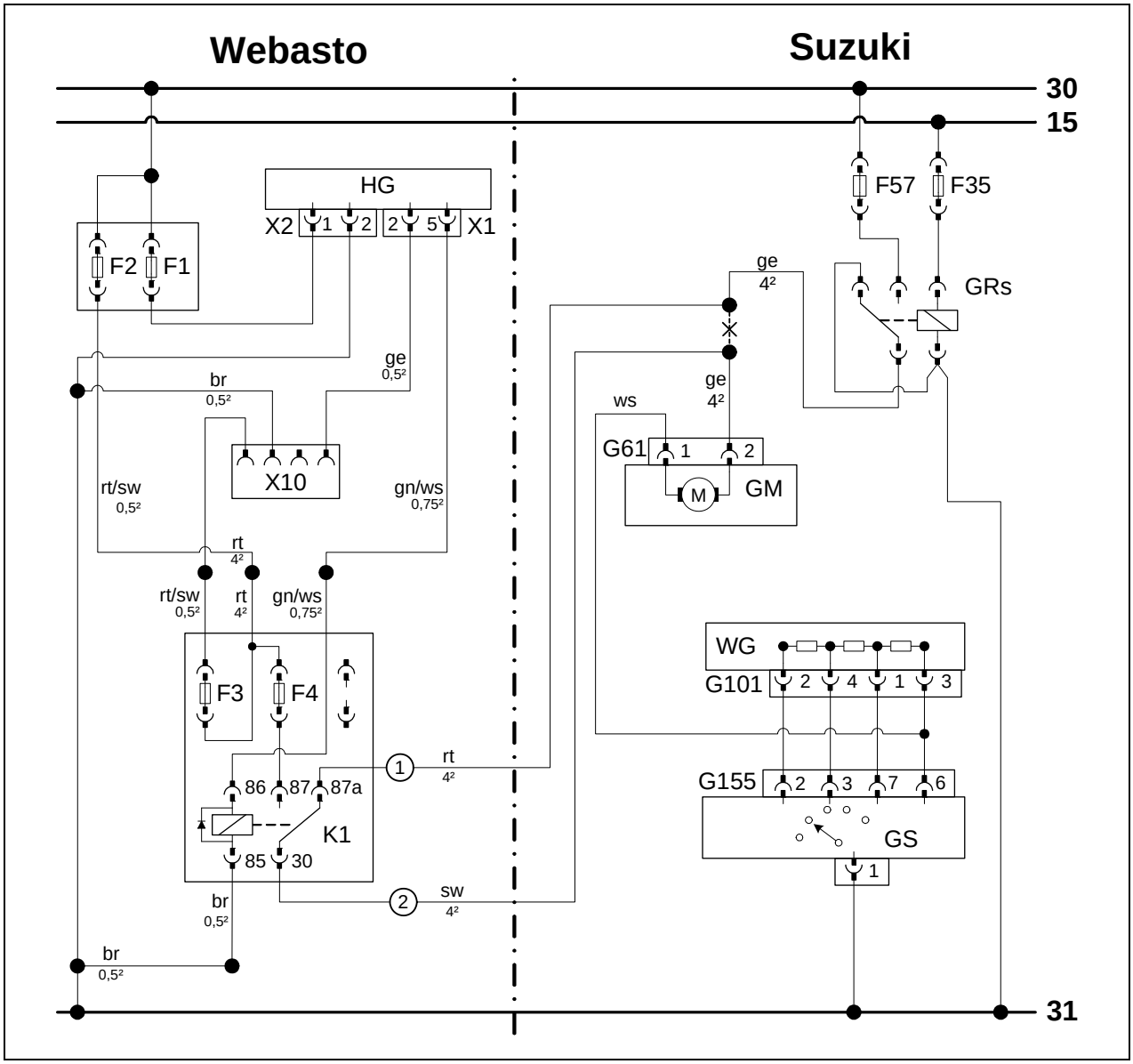


Earth wire

1 Earth wire on original vehicle earth support point

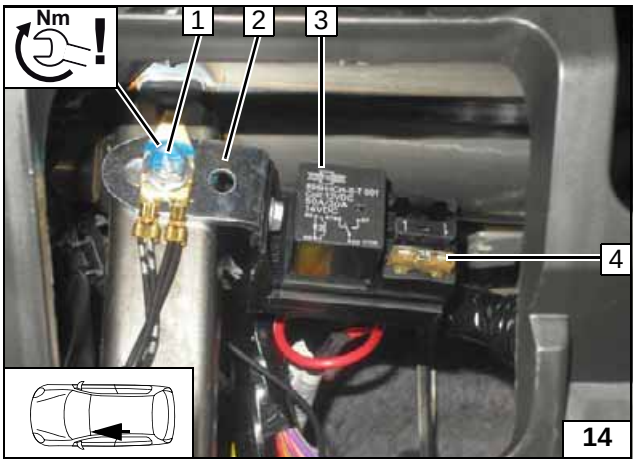
Manual Air-Conditioning Fan Controller

Wiring diagram



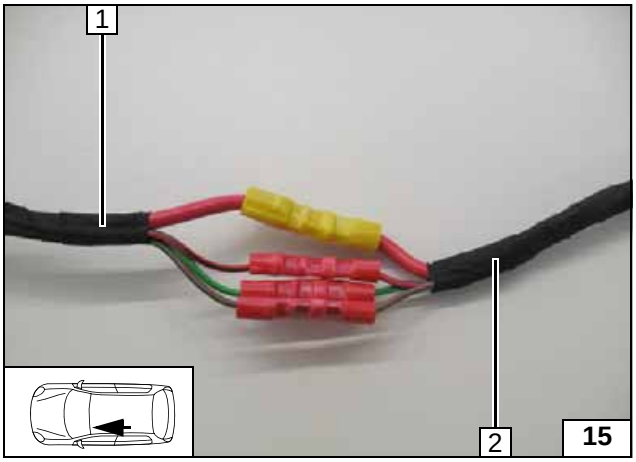
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F57	30A fuse	rt	red
X1	6-pin heater connector	F35	7.5A fuse	sw	black
X2	2-pin heater connector	GRs	Fan relay	ge	yellow
F2	30A fuse	F40	40A fuse	gn	green
F1	20A fuse	G61	Fan motor	ws	white
X10	4-pin connector of heater control	WG	Resistor group	br	brown
		G101	4-pin connector of WG		
F3	1A fuse	GS	Fan switch		
F4	25A fuse	G155	Connector of GS	**X**	Cutting point
K1	Fan relay			Wiring colours may vary.	

Legend



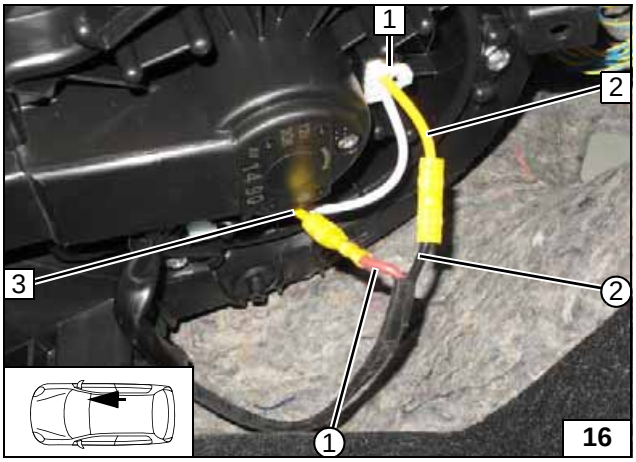
1 Original vehicle bolt earth point
2 Angle bracket
3 Relay K1
4 25A fuse F4

Installing passenger compartment relay and fuse holder



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

Connecting same colour wires of wiring harnesses

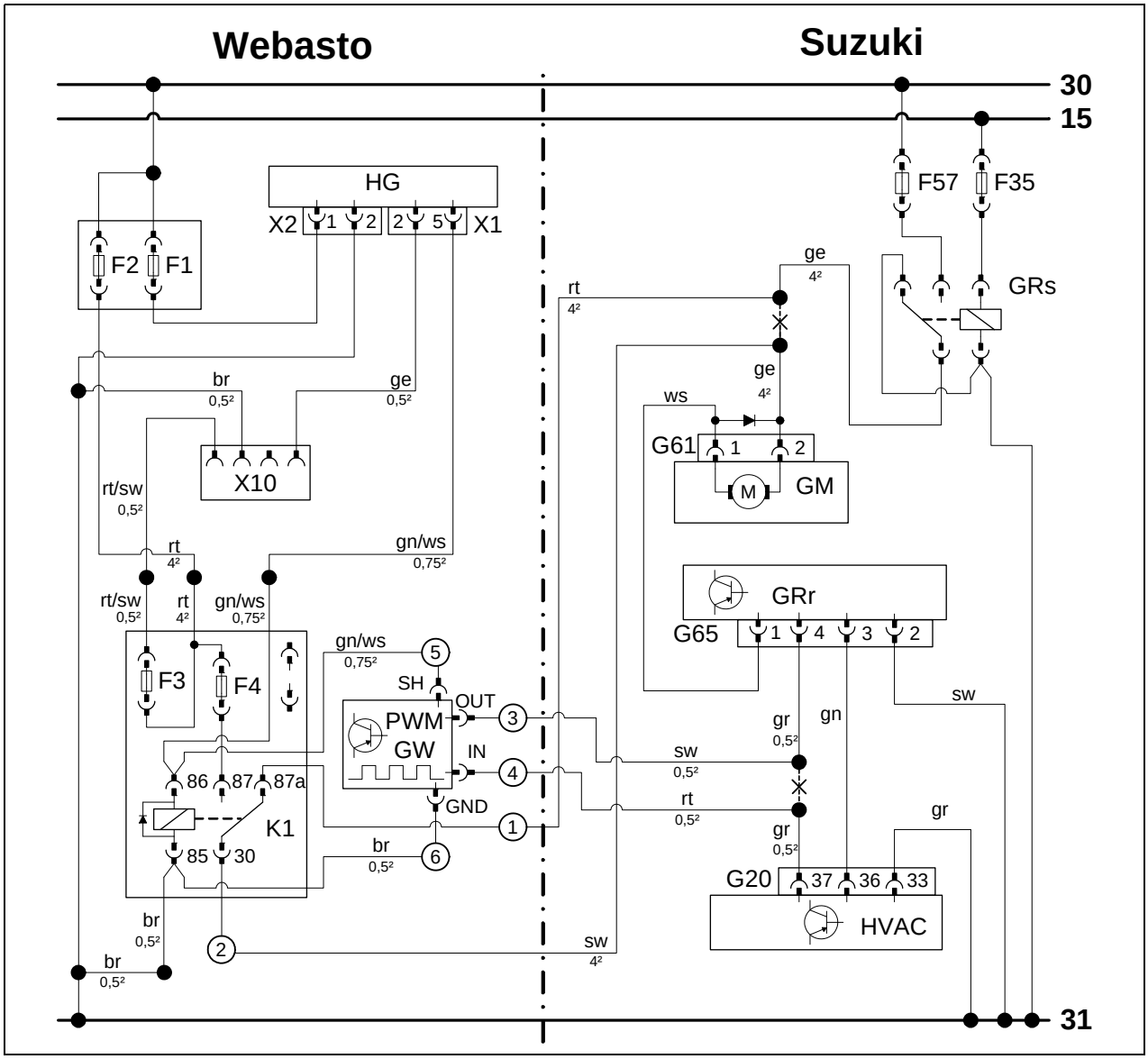


1 2-pin connector G61/2 of fan motor
2 Yellow (ge) wire of 2-pin GM connector
3 Yellow (ge) wire of fan relay
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor

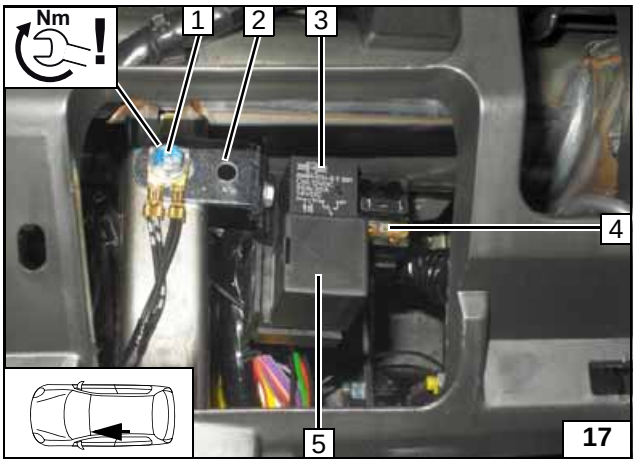
Automatic Air-Conditioning Fan Controller

Wiring diagram



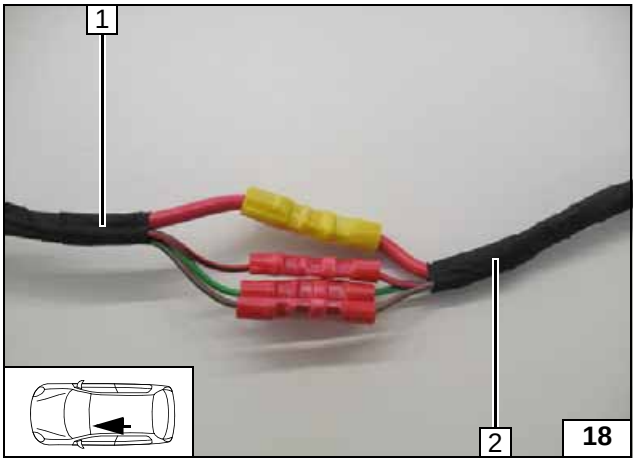
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F57	30A fuse	rt	red
X2	2-pin heater connector	F35	7.5A fuse	sw	black
X1	6-pin heater connector	GRs	Fan relay	ge	yellow
F2	30A fuse	GM	Fan motor	gn	green
F1	20A fuse	G61	2-pin connector of GM	gr	grey
X10	4-pin connector of heater control	GRr	Fan controller	ws	white
		G65	4-pin connector of GRr	br	brown
F3	1A fuse	HVAC	AC booster		
F4	25A fuse	G20	40-pin connector of HVAC		
PWM GW	PWM Gateway				
K1	Fan relay				
PWM GW settings:					
Duty cycle:	100% (DC)				
Frequency:	not relevant				
Voltage:	3.9V			**X**	Cutting point
Function:	High side			Wiring colours may vary.	

Legend



1 Original vehicle bolt earth point
2 Angle bracket
3 Relay K1
4 25A fuse F4
5 PWM Gateway

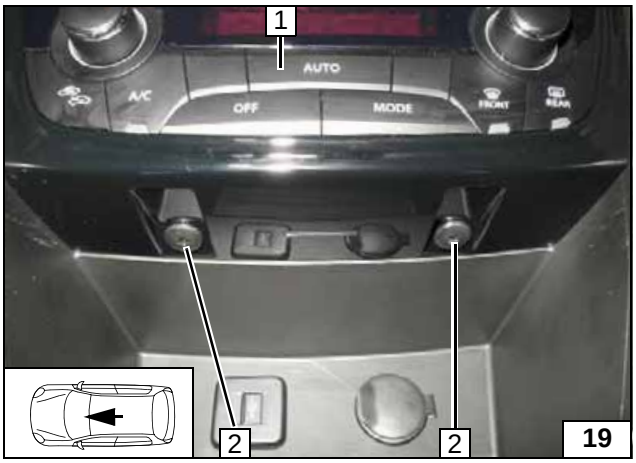
Installing passenger compartment relay and fuse holder



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

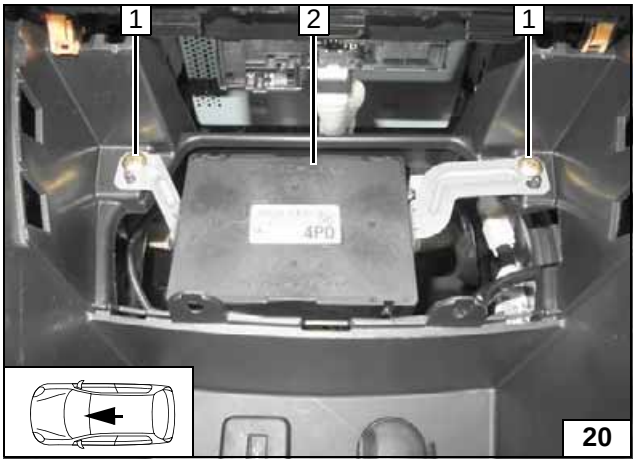
Connecting same colour wires of wiring harnesses

HVAC Installation Aid



1 A/C control panel
2 Plastic plug [2x]

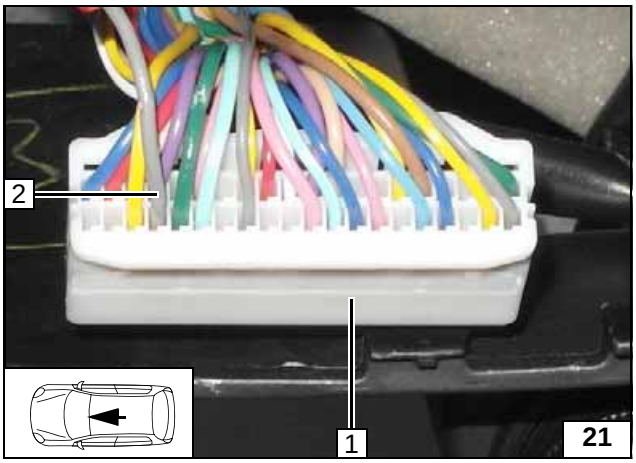
Removing A/C control panel



1 Bolts [2x]
2 HVAC

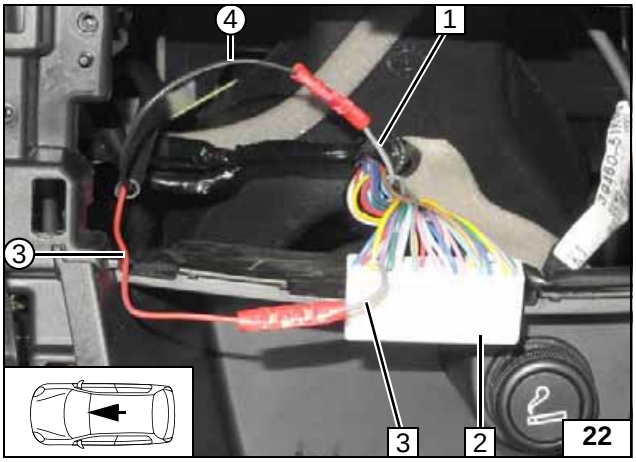
Removing HVAC

Connecting HVAC and GM



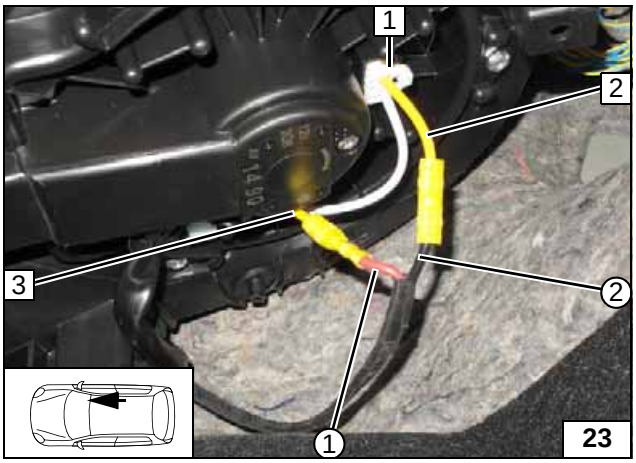
1 40-pin G20 connector for AC booster (HVAC)
2 Grey (gr) wire, pin 37

View of connector G20



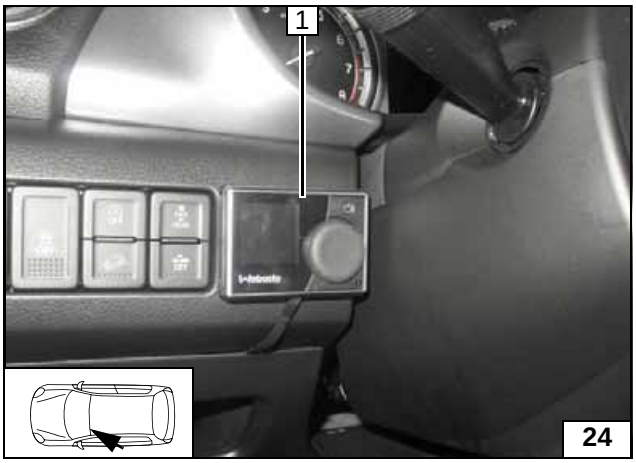
1 Grey (gr) wire for fan controller
2 40-pin G20 connector for AC booster (HVAC)
3 Grey (gr) wire of G20, pin 37
③ Red (rt) wire of PWM Gateway/IN
④ Black (sw) wire of PWM Gateway/OUT

Connecting A/C control unit



1 2-pin connector G61/2 of fan motor
2 Yellow (ge) wire of 2-pin GM connector
3 Yellow (ge) wire of fan relay
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

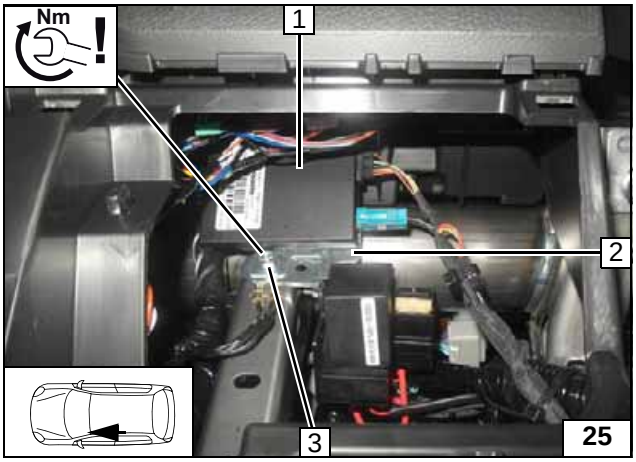
Connecting fan motor



MultiControl CAR Option

1 MultiControl CAR

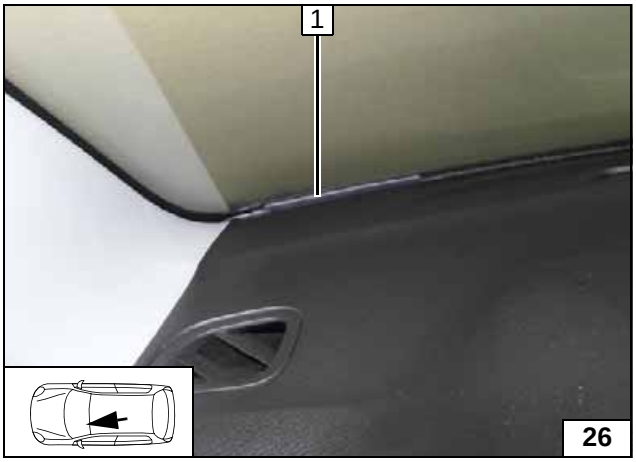
Installing MultiControl CAR



Remote Option (Telestart)

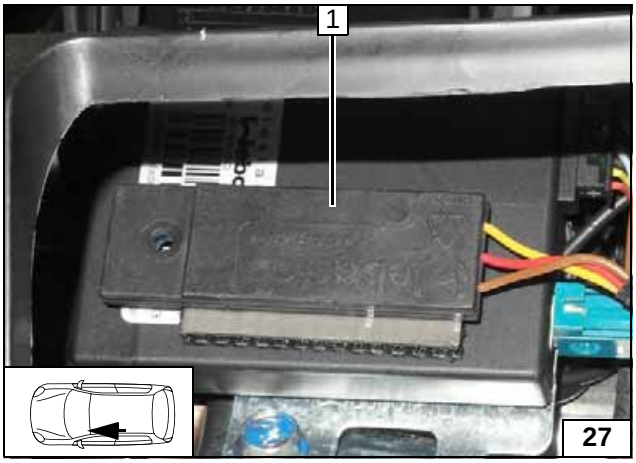
1 Receiver
2 Telestart bracket
3 Original vehicle bolt earth point

Installing receiver



1 Aerial

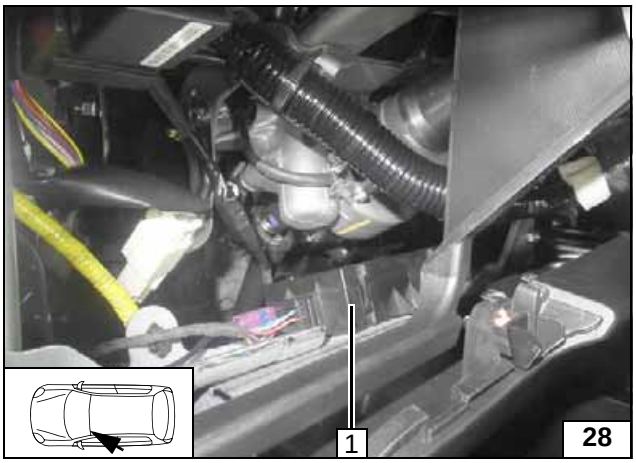
Installing aerial



Temperature sensor T100 HTM

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

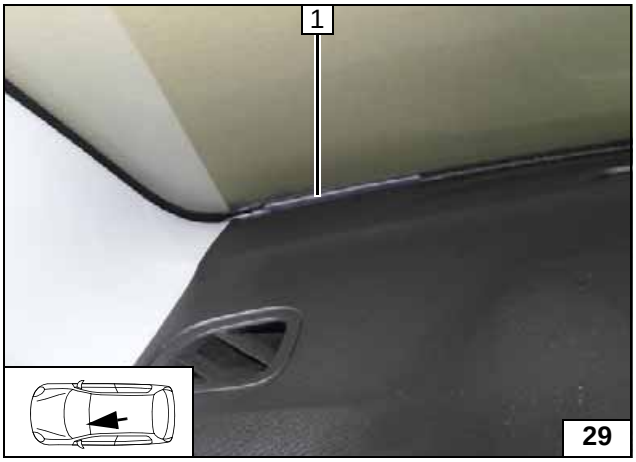
Installing temperature sensor



ThermoCall Option

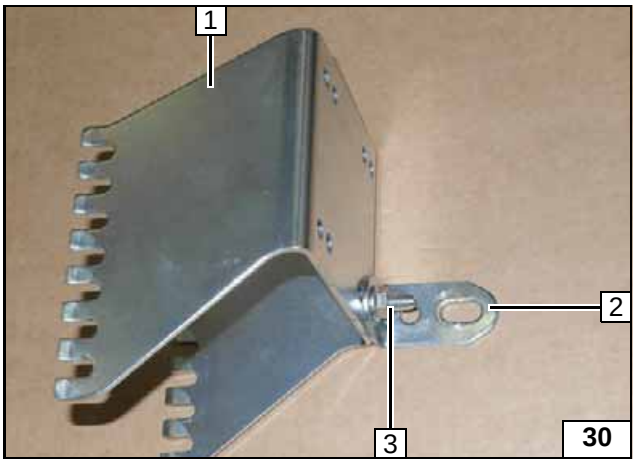
Fasten receiver **1** with double-sided adhesive tape.

Installing receiver



1 Aerial (optional)

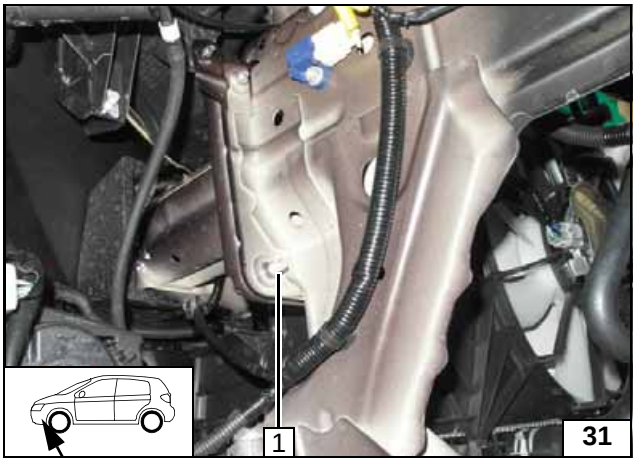
Installing aerial



Preparing Installation Location

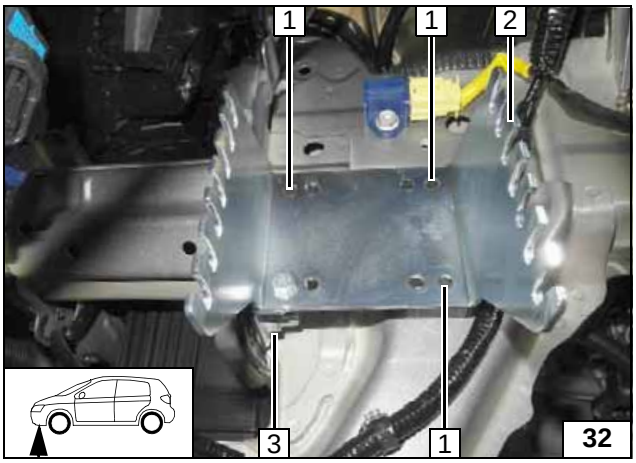
1 Bracket
2 Angle bracket
3 M6x20 bolt, flanged nut

Premounting bracket



Replace original vehicle bolt with M8x30 bolt **1**.

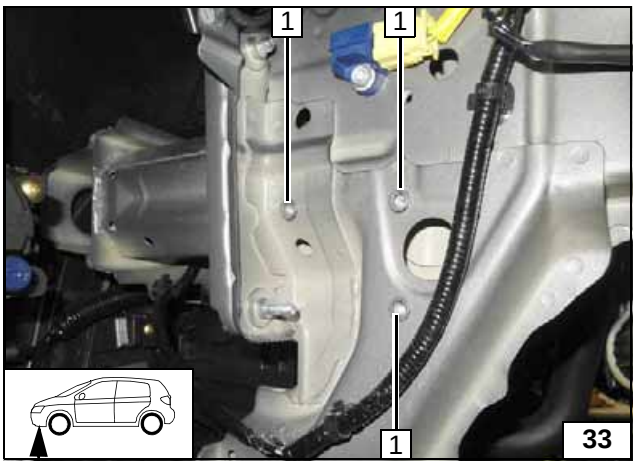
Replacing bolt



Install bracket **2** loosely and align vertically.

1 Copy hole pattern [3x]
3 Angle bracket, M8 flanged nut

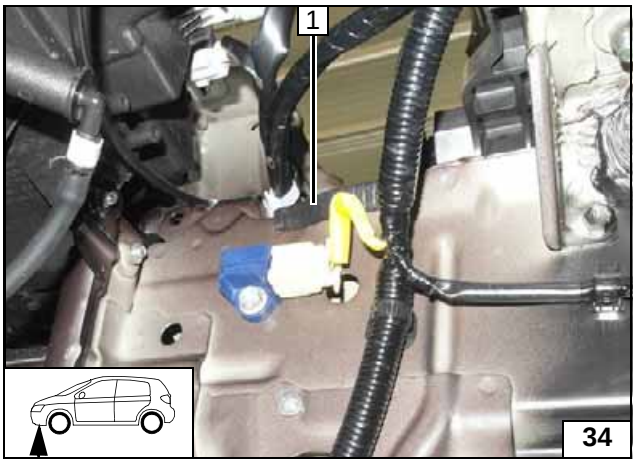
Copying hole pattern



Remove bracket.

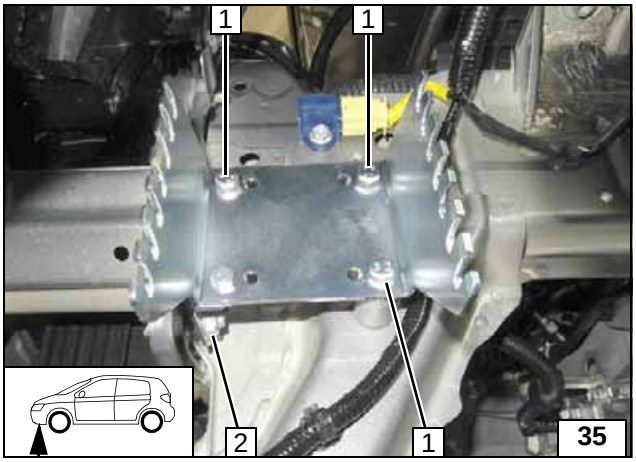
1 9.1 mm dia. hole; rivet nut [3x each]

Installing rivet nut



1 50 mm edge protection

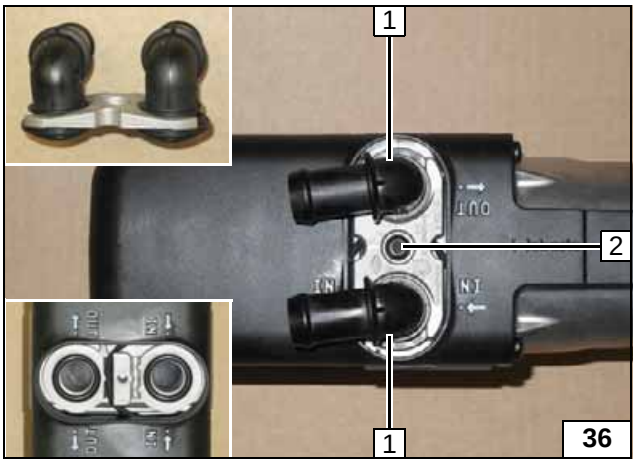
Installing edge protection



1 M6x50 bolt, spring lockwasher, bracket, 30 mm shim [3x each]
2 Angle bracket, M8 flanged nut

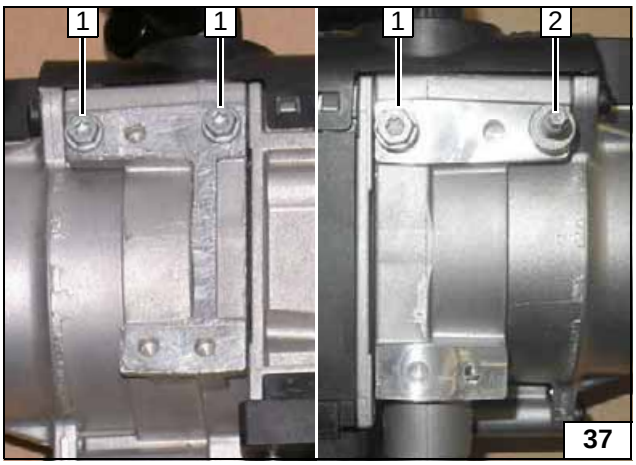
Installing bracket

Preparing Heater



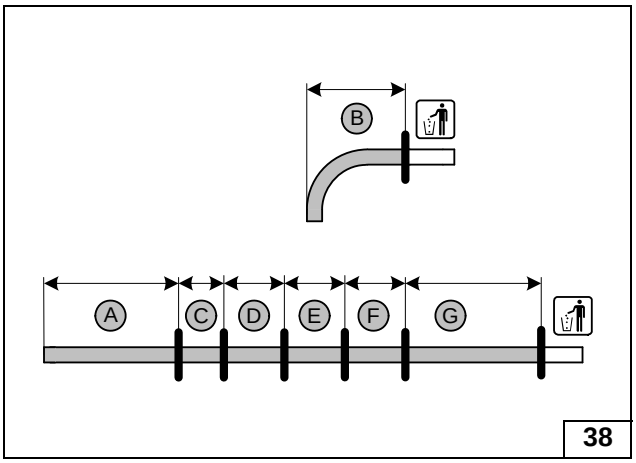
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



Screw 5x13 self-tapping bolts **1** [3x] and M5 / M6x15,5 stud bolt **2** in existing holes by a maximum of 3 thread turns.

Premounting bolts loosely

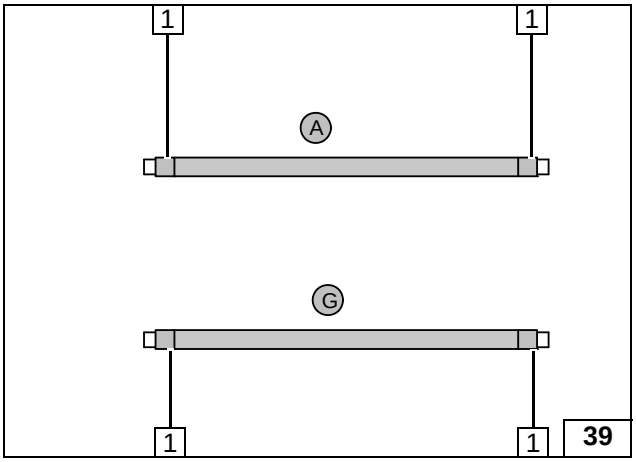


38

1.4 Petrol

A = 380
B = 125 (90°, 18mm dia.)
C = 70
D = 150
E = 200
F = 190
G = 610

Cutting hoses to length

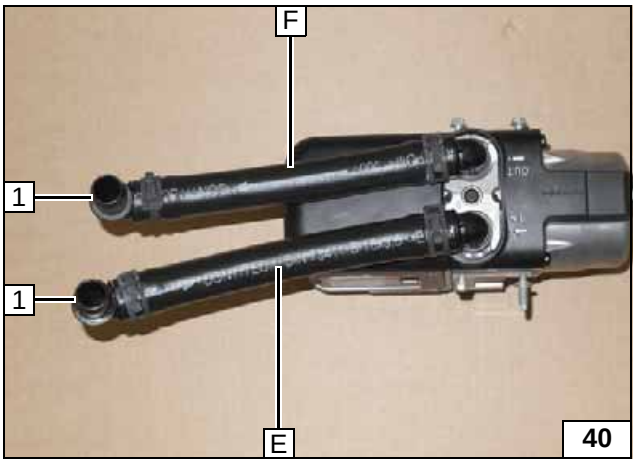


39

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

1 60 mm long heat shrink plastic tubing [4x]

Preparing hoses

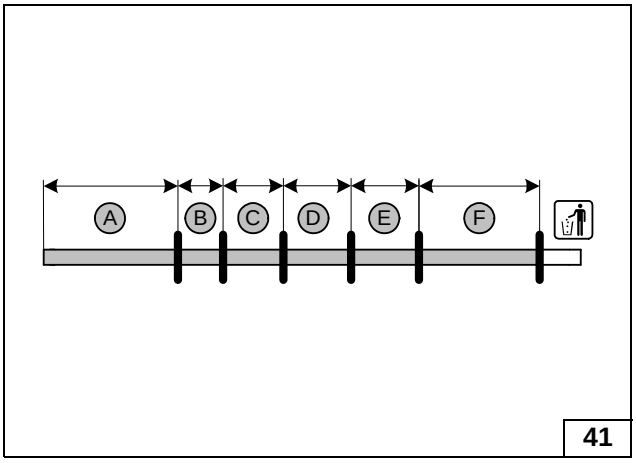


40

All spring clips = 25 mm dia.

1 90° connecting pipe [2x]

Premount-ing hoses E and F

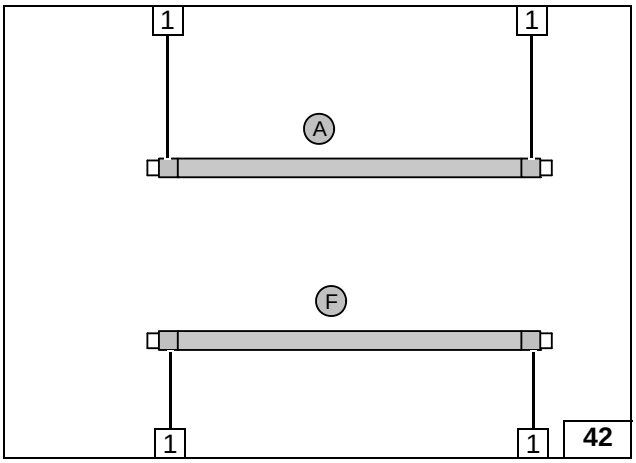


41

1.6 Petrol

A = 500
B = 70
C = 150
D = 200
E = 190
F = 580

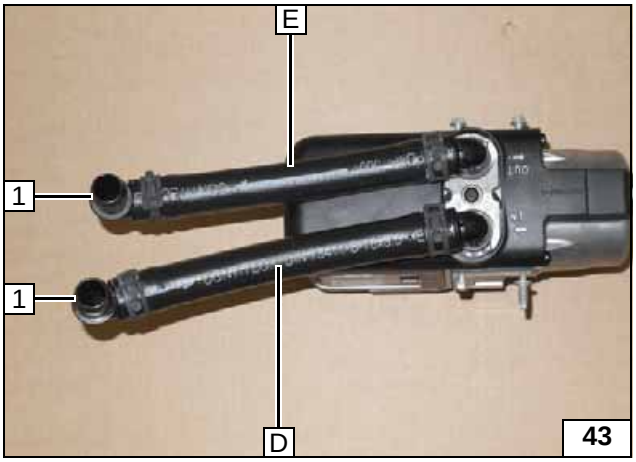
Cutting hoses to length



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

1 60 mm long heat shrink plastic tubing [4x]

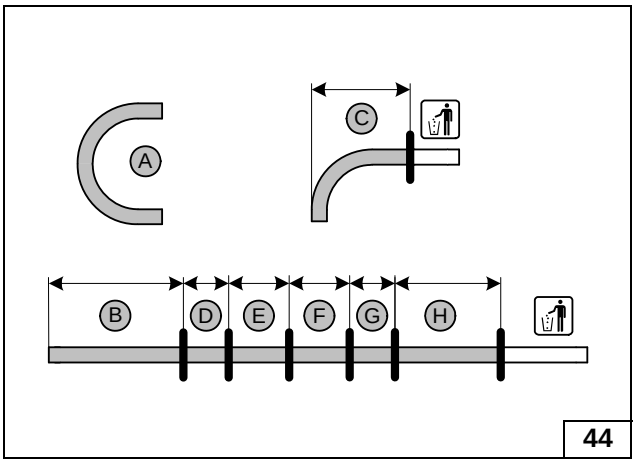
Preparing hoses



All spring clips = 25 mm dia.

1 90° connecting pipe [2x]

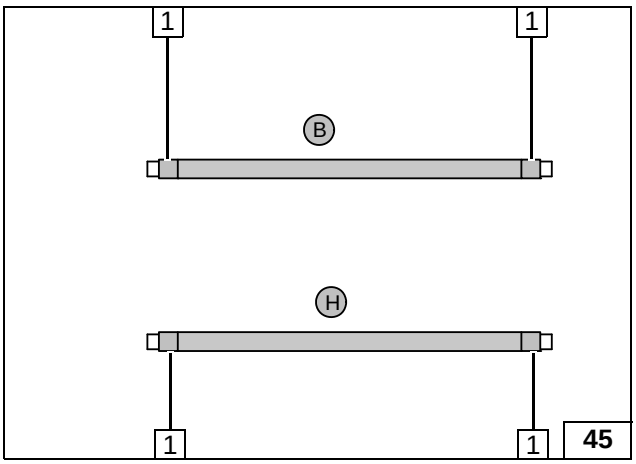
Premounting hoses D and E



Diesel

A = 180°, 18mm dia.
B = 420
C = 125 (90° 18mm dia.)
D = 70
E = 150
F = 200
G = 190
H = 650

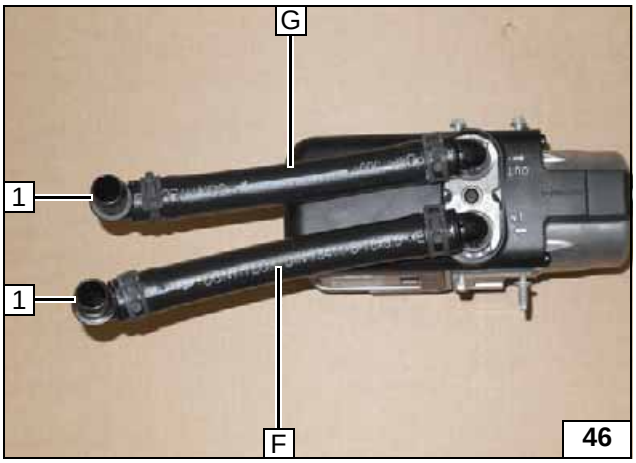
Cutting hoses to length



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

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

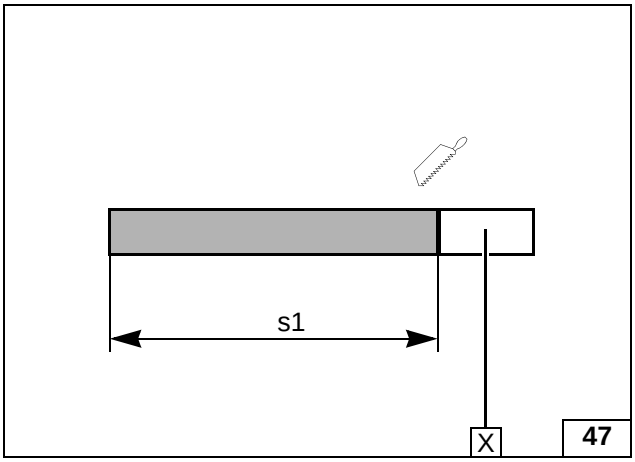
Preparing hoses



All spring clips = 25 mm dia.

1 90° connecting pipe [2x]

Premounting hoses F and G

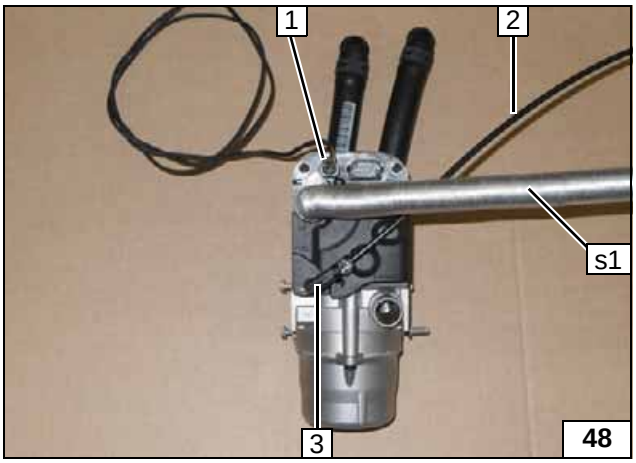


All vehicles

s1 = 330

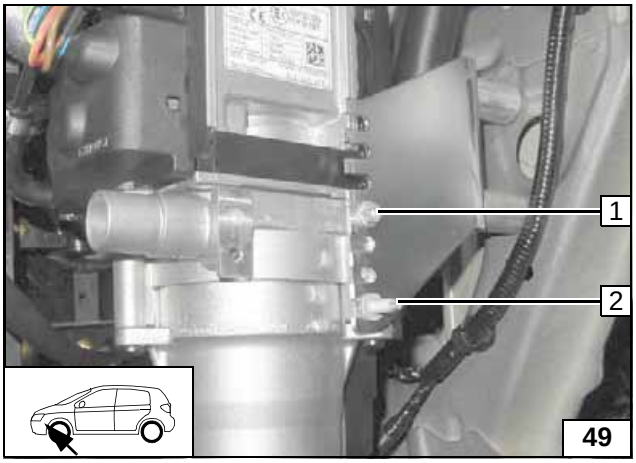
X =

Cutting combustion air pipe to length



1 Circulating pump wiring harness
2 Fuel line
3 90° moulded hose, 10mm dia. clamp [2x]

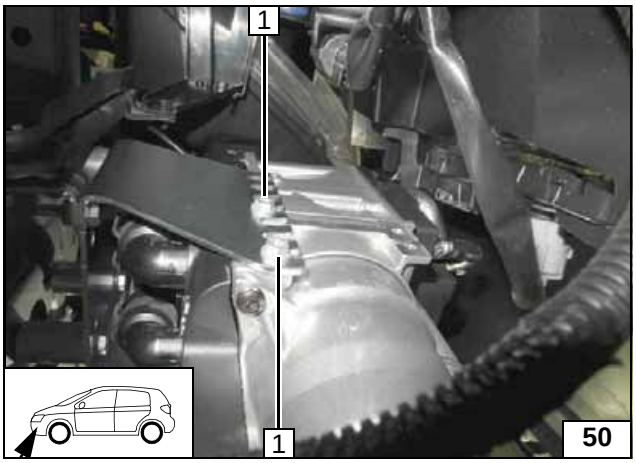
Premounting combustion air pipe and fuel line



Installing Heater

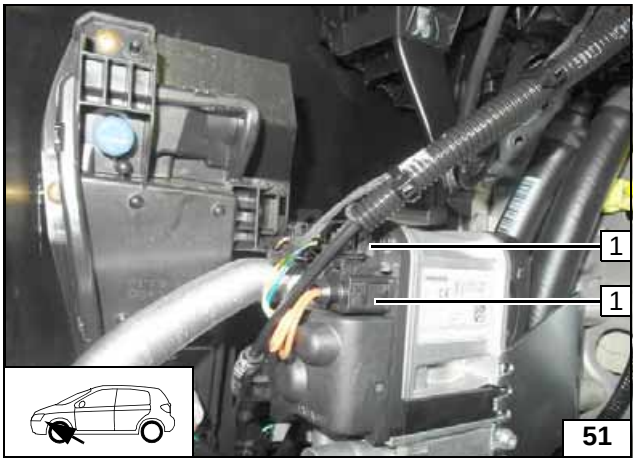
1 Tighten 5x13 self-tapping bolt
2 Tighten M5/M6x15,5 stud bolt

Installing heater



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

Installing heater



1 Heater wiring harness connector [2x]

Installing heater wiring harness

Fuel

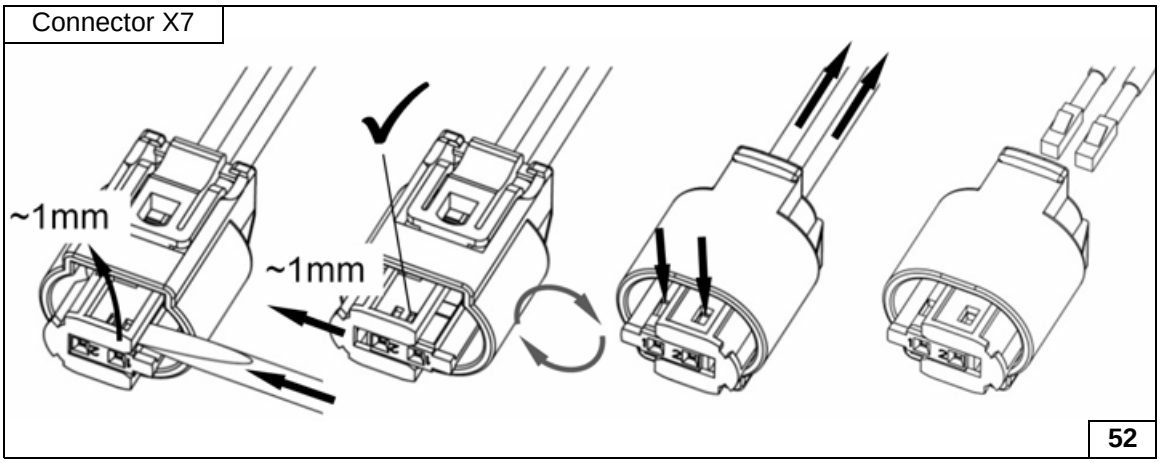
Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

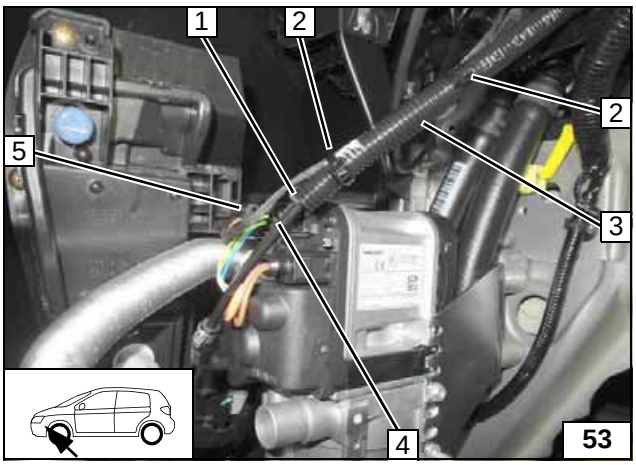
Catch any fuel running off in an appropriate container.

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

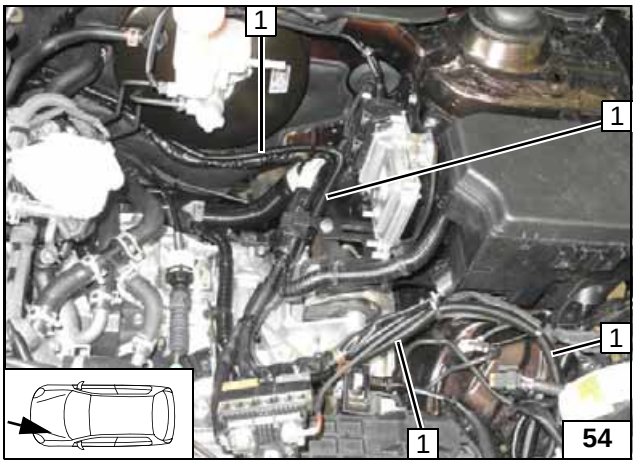




Routing lines

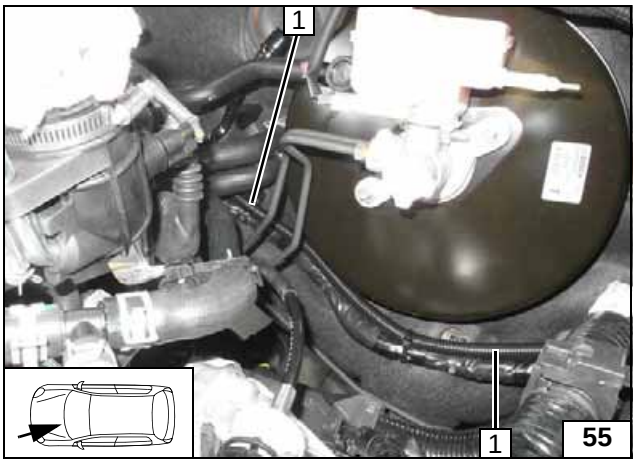
Route fuel line **4** and metering pump wiring harness **1** in 10 mm dia. corrugated tube **3** upwards in the engine compartment.
Route wiring harness of circulating pump along corrugated tube in engine compartment.

- **2** Cable tie [2x]
- **5** Circulating pump wiring harness connector



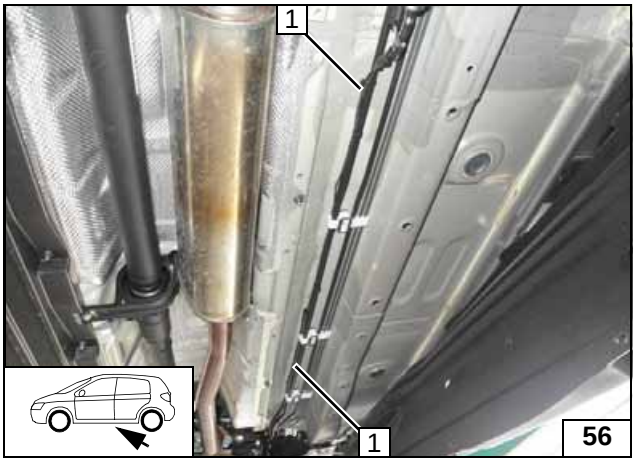
Routing lines

Route fuel line and metering pump wiring harness into 10 mm dia. corrugated tube **1** to the firewall.



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

Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle lines to installation location of metering pump. Cut off a 500mm long section from the fuel line for the connection of the FuelFix.

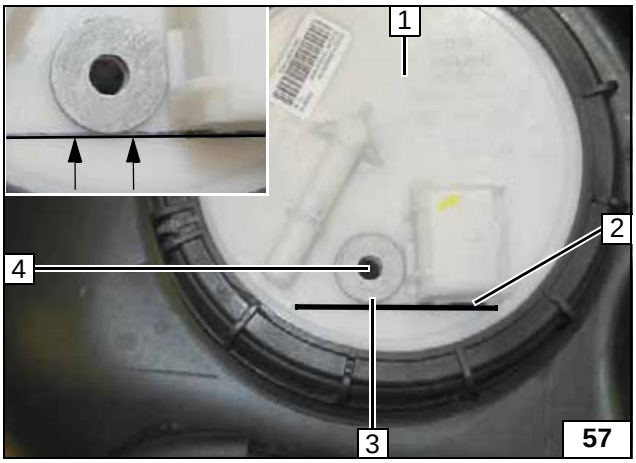
Routing lines

Installing FuelFix

Petrol

Remove the fuel tank in accordance with the manufacturer's instructions.

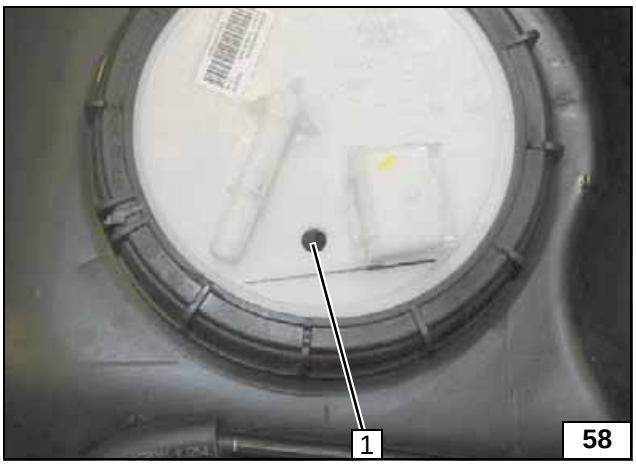
Work steps F1 and F2.



- **1** Fuel tank sending unit
- **2** Draw a guide line
- **3** Position washer with outer dia. d_a = 21.6mm as template against the raised part and guide line.
- **4** Hole pattern

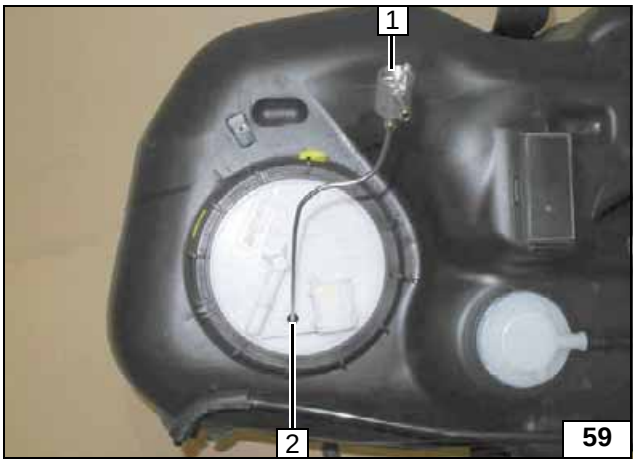
Copying hole pattern

Work step F3.



- **1** Hole made with provided drill

Hole for FuelFix



59

Work steps F4 and F5.

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

Inserting FuelFix


60

Inserting FuelFix


61

Inserting FuelFix


62

Inserting FuelFix

63

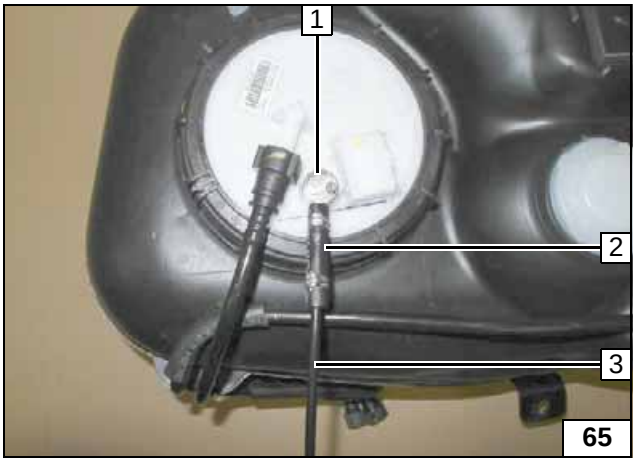
Inserting FuelFix

64

Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

Aligning FuelFix

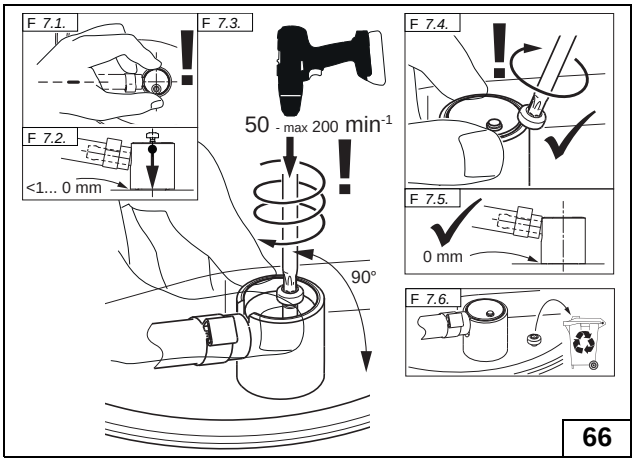


65

Work step F6.

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

Connecting fuel line



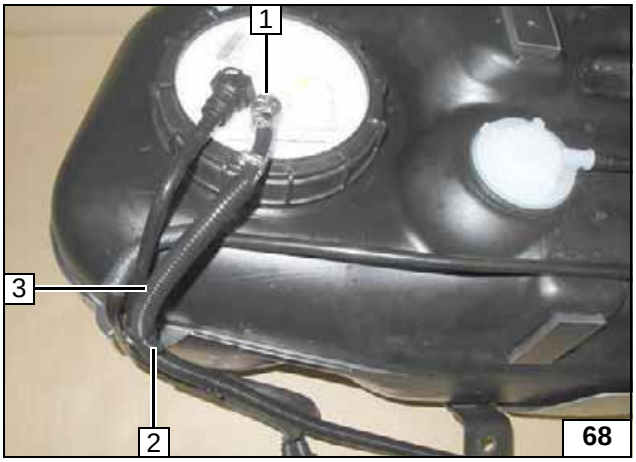
66

Work step F7.

Installing FuelFix

Work step F8.

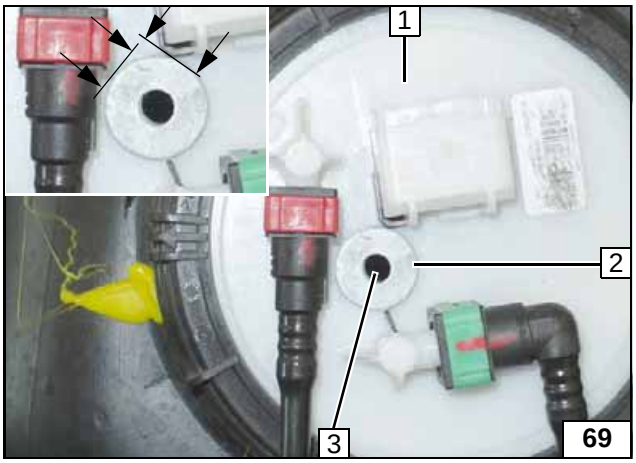
Checking firm seating of FuelFix



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

Securing fuel line

Install fuel tank in accordance with manufacturer's instructions.



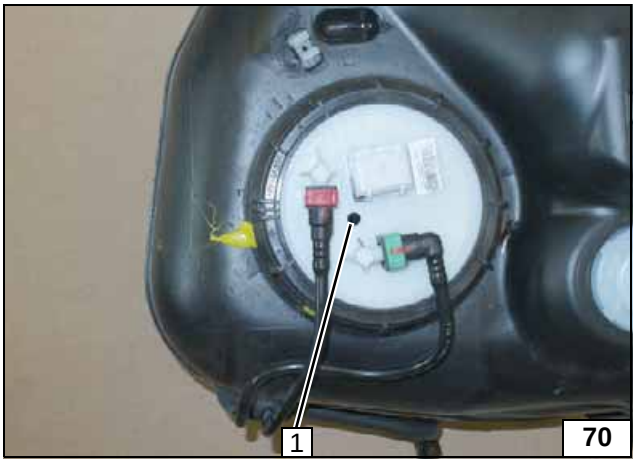
Diesel

Remove fuel tank in accordance with manufacturer's instructions.

Work steps F1 and F2.

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

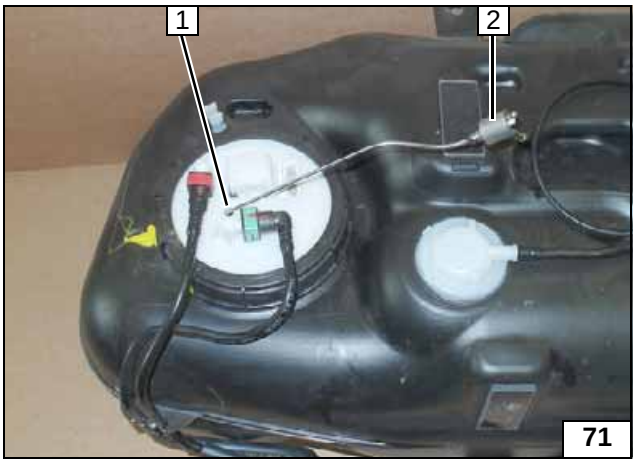
Copying hole pattern



Work step F3.

1 Hole made with provided drill

Hole for FuelFix



Work steps F4 and F5.

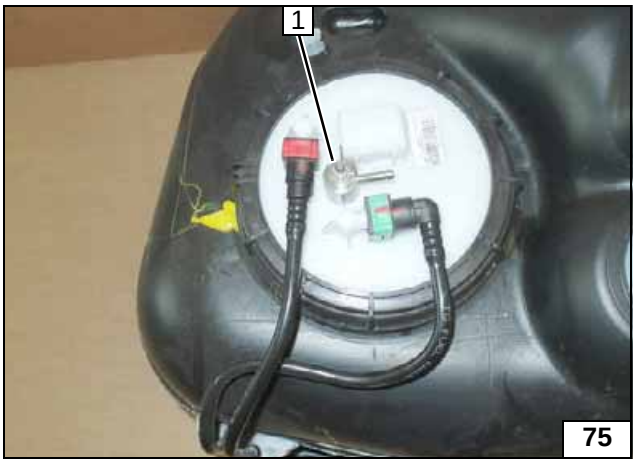
Bend FuelFix **2** according to template and cut to length.
Insert into hole **1**.

Inserting FuelFix

Inserting FuelFix

Inserting FuelFix

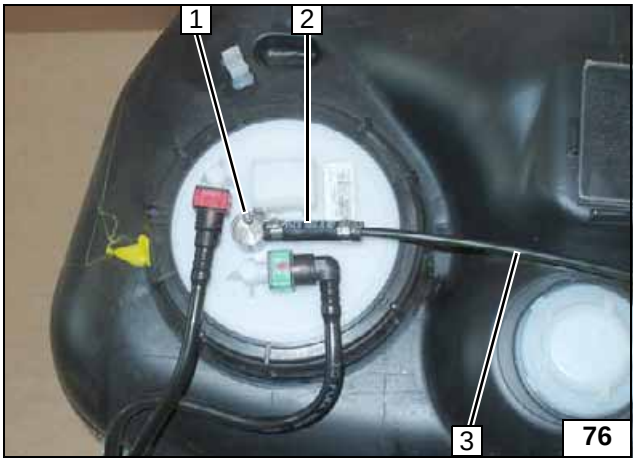
Inserting FuelFix



Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.

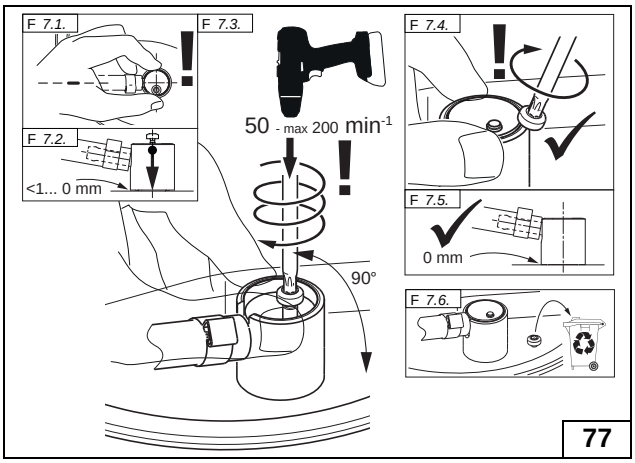
Aligning FuelFix



Work step F6.

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

Connecting fuel line

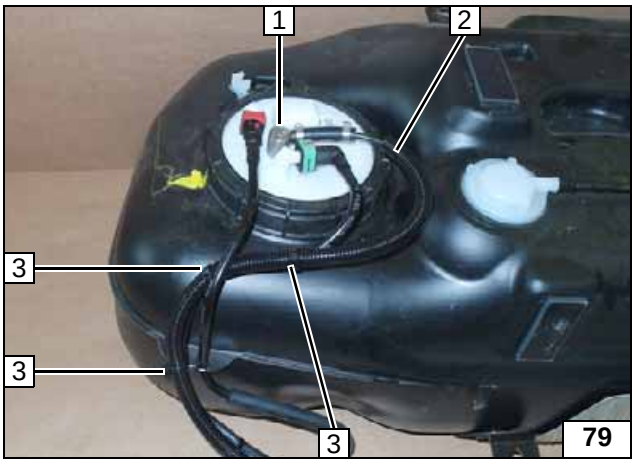


Work step F7.

Installing FuelFix

Work step F8.

Checking firm seating of FuelFix

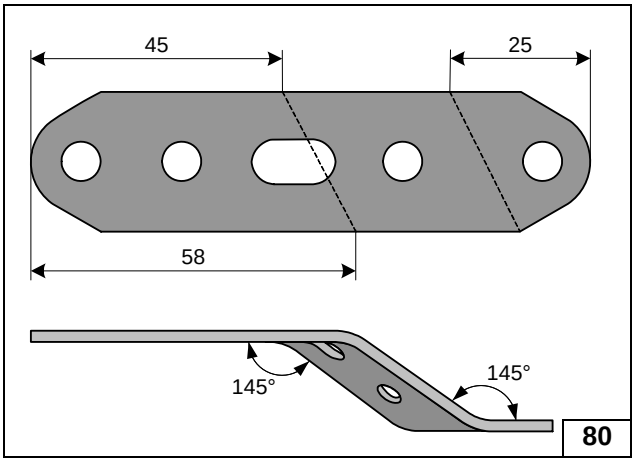


Work step F8.

1 FuelFix installed
2 Fuel line of FuelFix in corrugated tube
3 Cable tie as tension relief [3x]

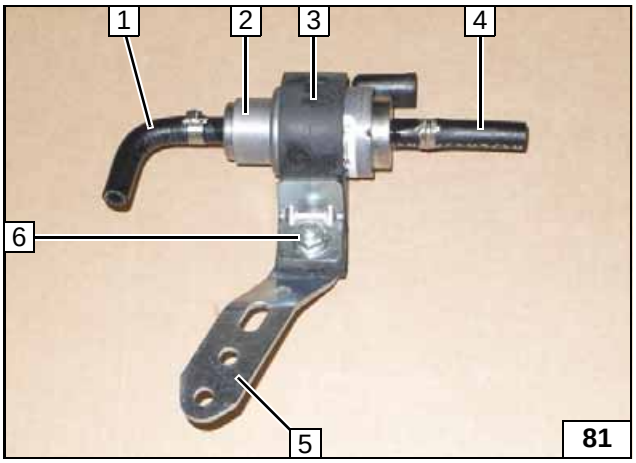
Securing fuel line

Install fuel tank in accordance with manufacturer's instructions.



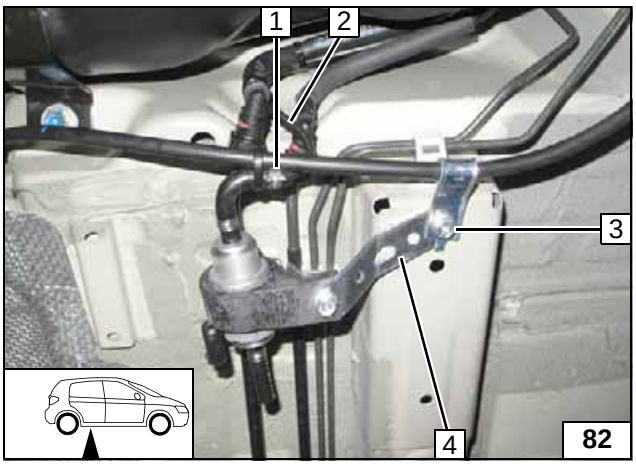
All vehicles

Preparing perforated bracket



1 90° moulded hose, 10mm dia. clamp
2 Metering pump
3 Metering pump mount
4 Hose section, 10 mm dia. clamp
5 Perforated bracket
6 M6x25 bolt, support angle bracket, flanged nut

Premounting metering pump

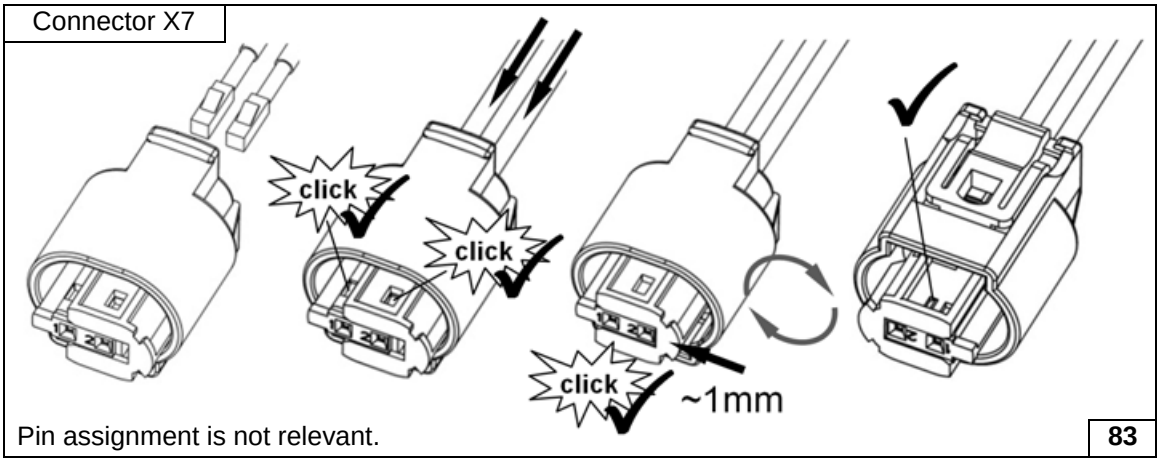


1 10 mm dia. clamp
2 Fuel line of FuelFix
3 Original vehicle bolt
4 Perforated bracket

Installing metering pump

Completing metering pump connector

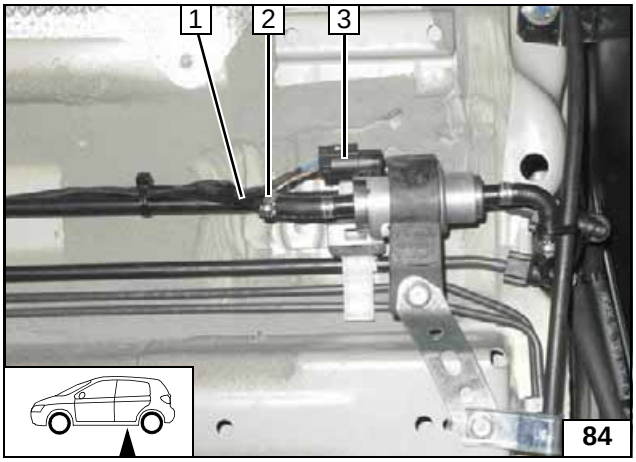
Connector X7



Pin assignment is not relevant.

83

Connecting metering pump



84

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

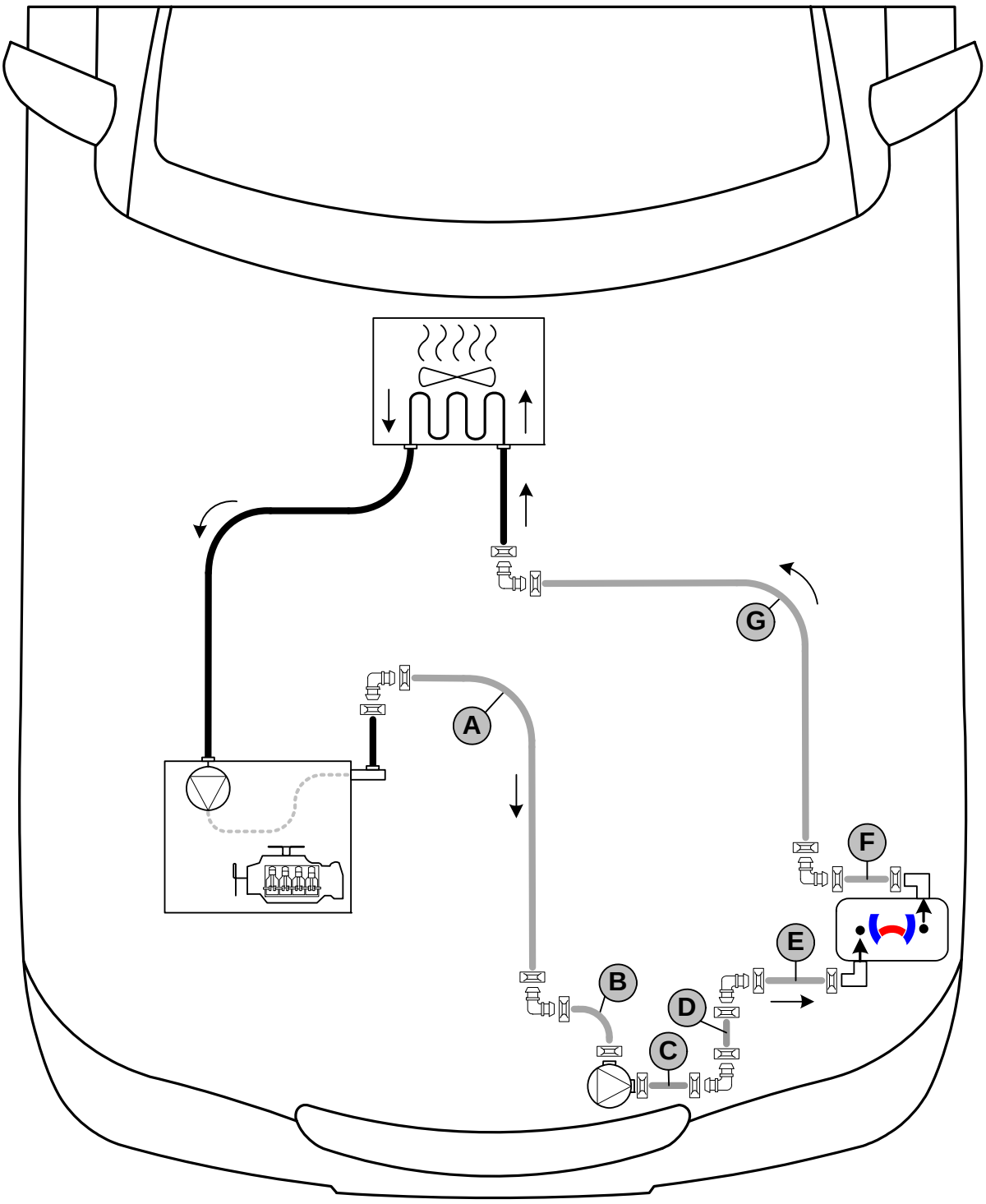
1 Fuel line of heater
2 10 mm dia. clamp
3 Metering pump wiring harness, connector X7 installed

Coolant Circuit for 1.4 Petrol 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



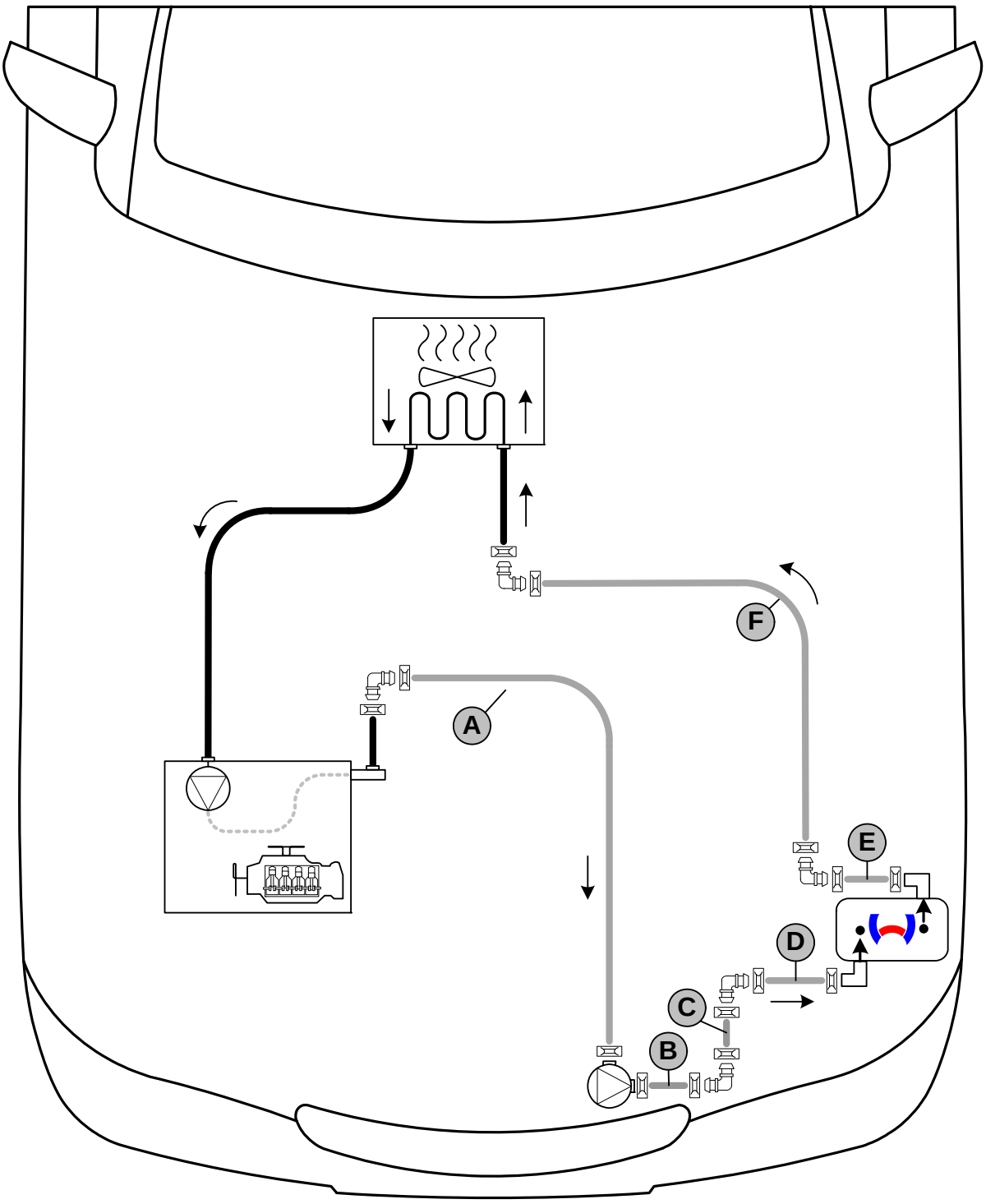
All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.

Coolant Circuit for 1.6 Petrol 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



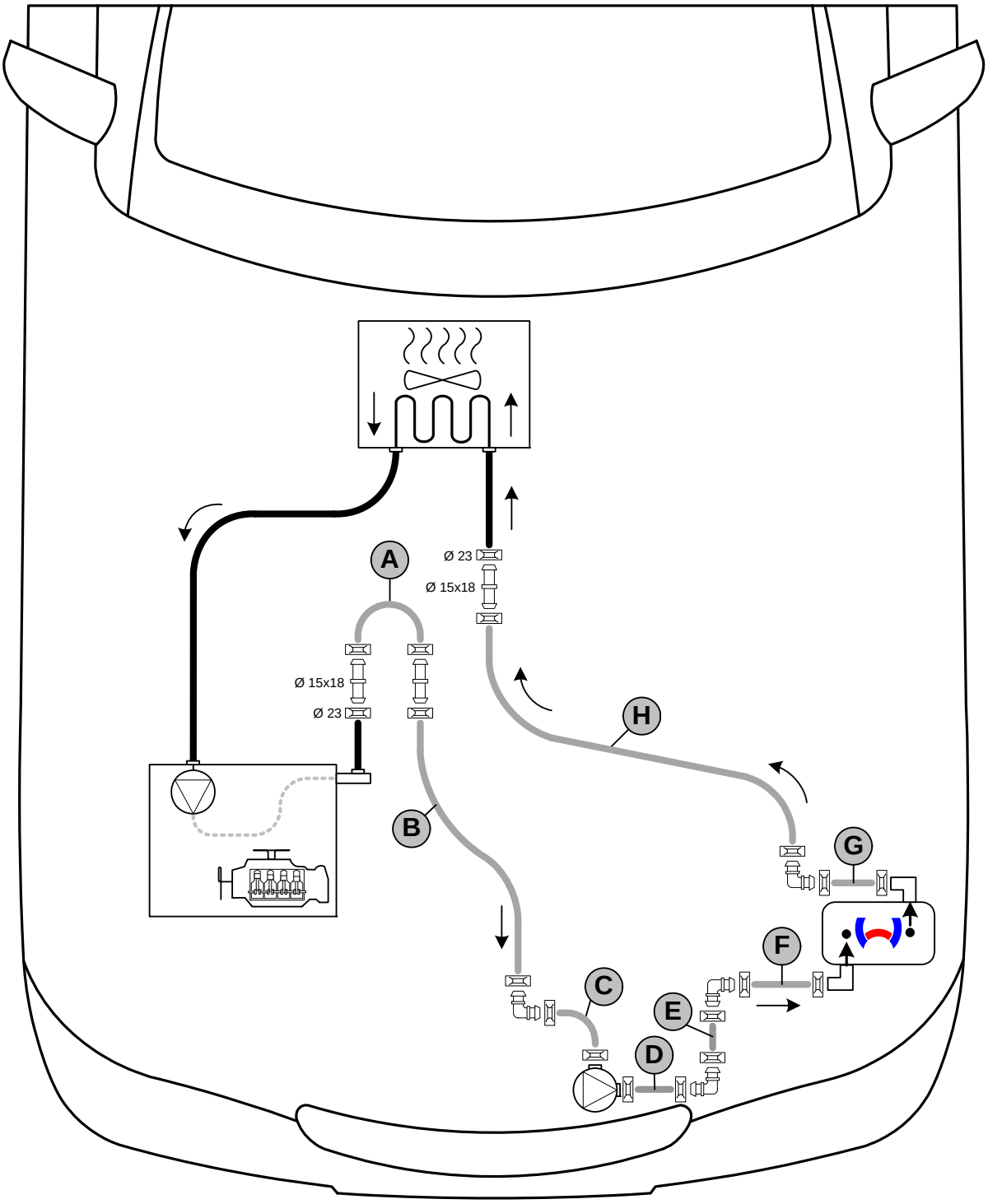
All spring clips without a specific designation = 25 mm dia. All connecting pipes = 18x18 mm dia.

Coolant Circuit for Diesel Vehicles

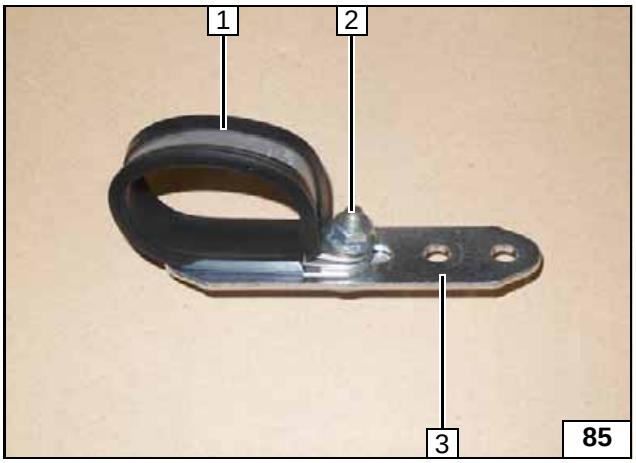
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



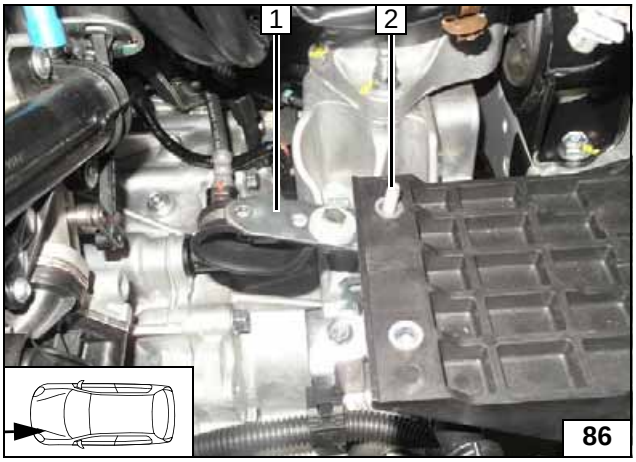
All spring clips without a specific designation = 25 mm dia.
All connecting pipes without a specific designation and = 18x18 mm dia.



All vehicles

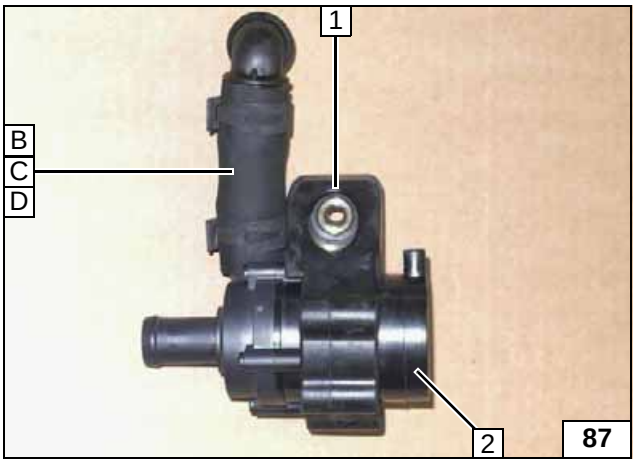
1 38 mm dia. rubber-coated p-clamp
2 Loosely mount M6x20 bolt, large diameter washer, flanged nut
3 Perforated bracket

Premounting perforated bracket



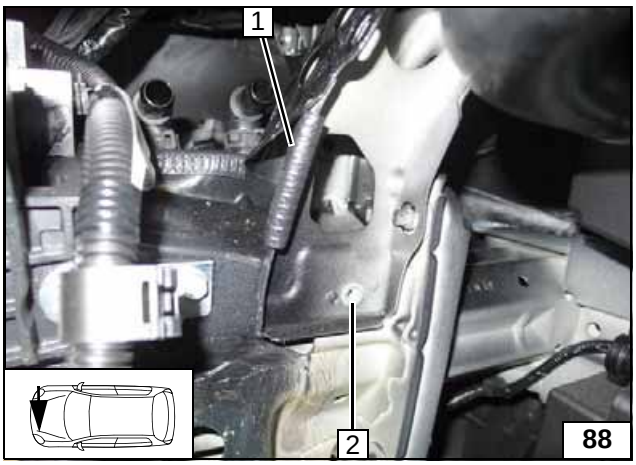
1 Perforated bracket
2 M6x30 bolt, existing threaded hole for battery carrier console

Installing perforated bracket



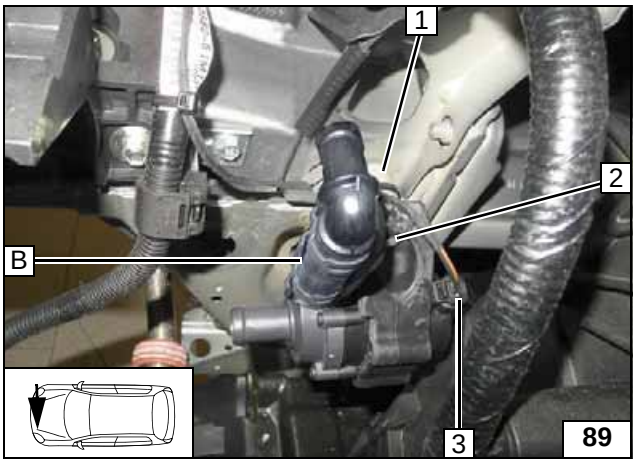
1 Circulating pump mount
2 Circulating pump
B 1.6 petrol
C 1.4 petrol
D 1.6 diesel

Premounting circulating pump



1 50 mm edge protection
2 9.1 mm dia. hole; rivet nut

Installing rivet nut

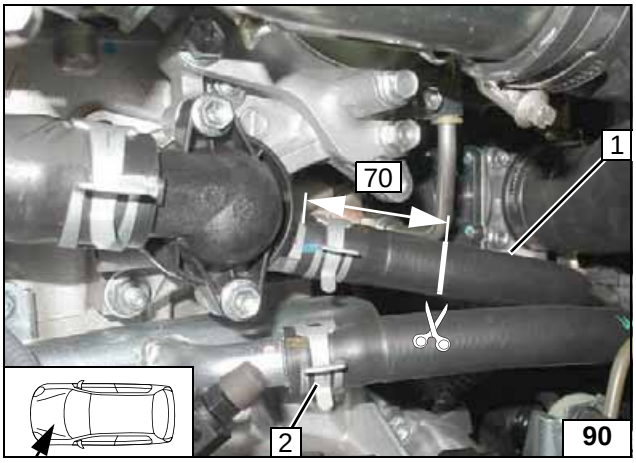


Insert 30 mm shim **1** between frame side member and circulating pump mounting.

2 M6x60 bolt, 30 mm shim
3 Circulating pump wiring harness connector

Installing circulating pump

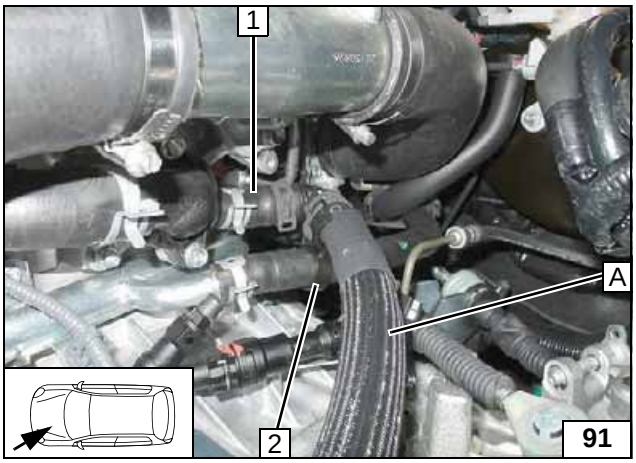
1.4 Petrol



Cut hose of engine outlet/heat exchanger inlet **1** at the marking.

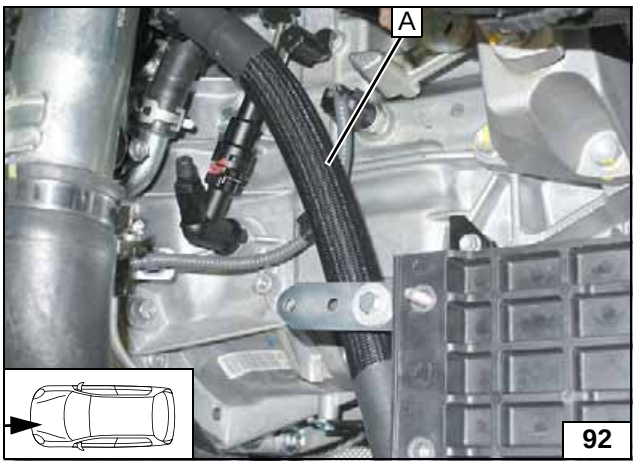
2 Turn original vehicle spring clip as shown

Cutting point



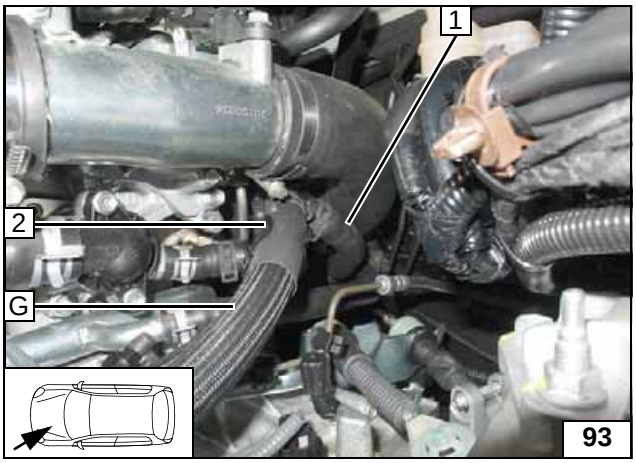
1 Engine outlet hose section
2 Hose bracket

Connecting engine outlet



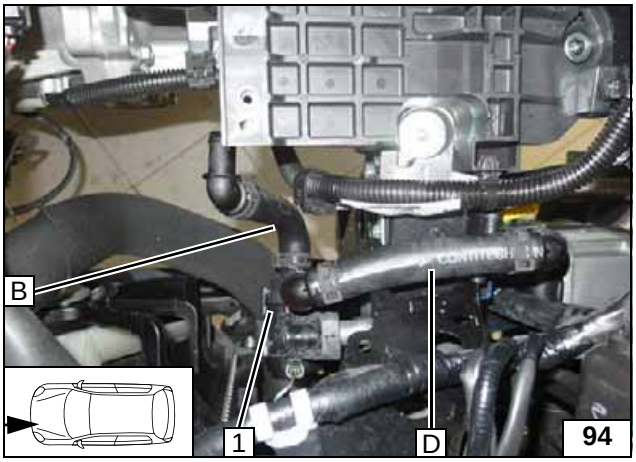
Route hose **A** through premounted p-clamp.

Routing



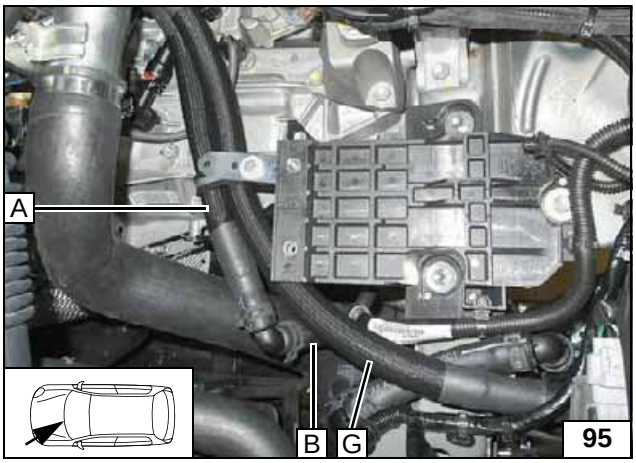
1 Heat exchanger inlet hose section
2 Hose bracket

Connecting heat exchanger inlet



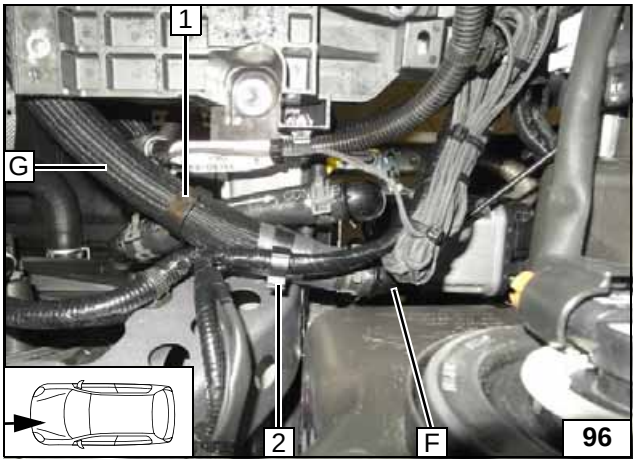
1 Circulating pump

Connecting circulating pump



Route hose **G** through premounted p-clamp.

Connecting circulating pump / heater outlet



1 Hose bracket between hose **D** and hose **G**
2 Hose bracket between hose **G** and original vehicle wiring harness

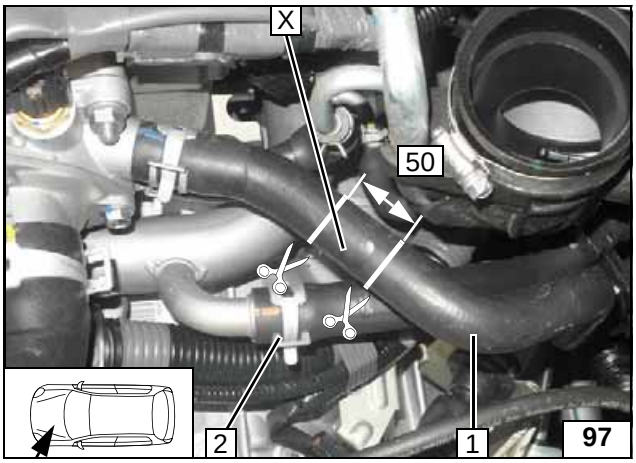
Connecting heater outlet

1.6 Petrol

Cut hose of engine outlet / heat exchanger inlet **1** at the markings.

2 Turn original vehicle spring clip as shown

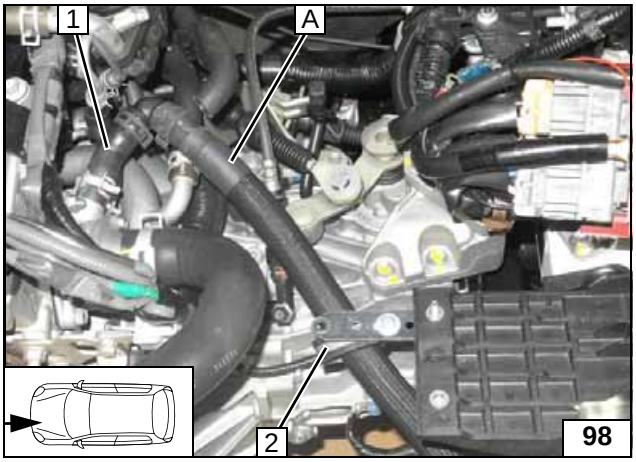
X =



Cutting point

Route hose **A** through premounted p-clamp **2**.

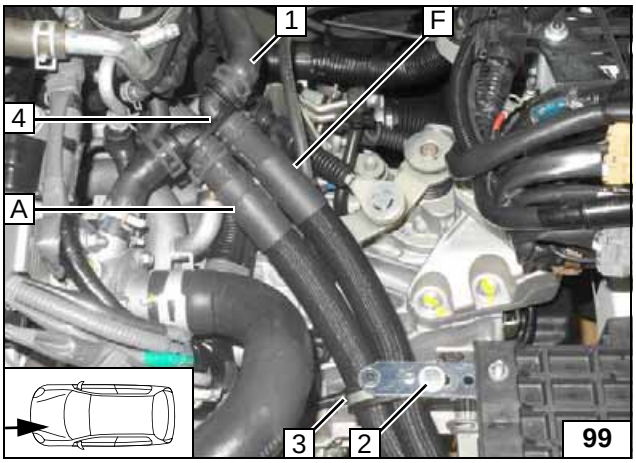
1 Engine outlet hose section



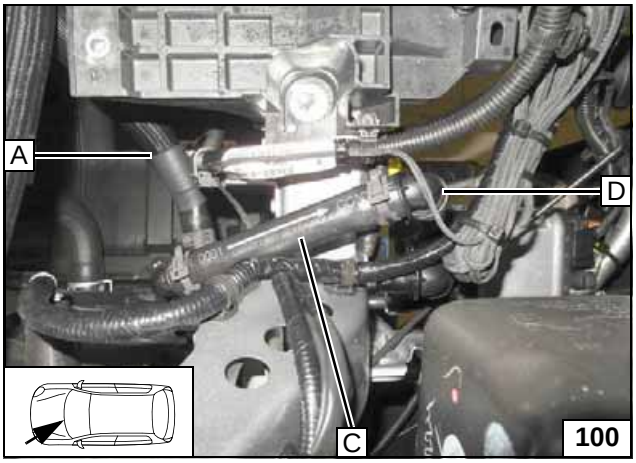
Connecting engine outlet

Route hose **F** through premounted p-clamp **3**. Secure hoses **A** and **F** with cable tie at position **4**.
Ensure sufficient distance from neighbouring components, correct if necessary.

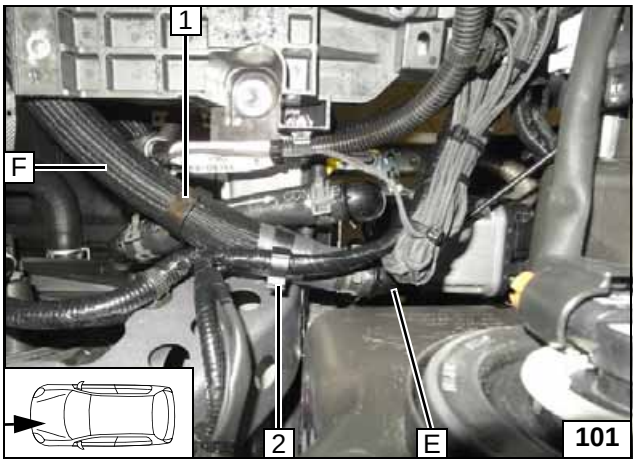
1 Original vehicle hose section of heat exchanger inlet
2 Tighten bolt



Connecting heat exchanger inlet

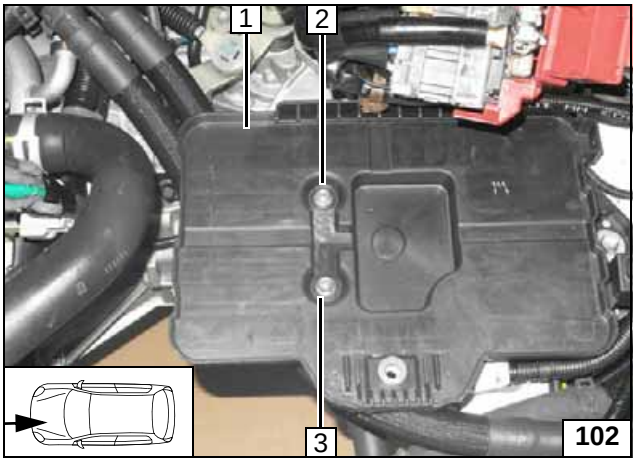


Connecting circulating pump



1 Hose bracket between hoses **C** and **F**
2 Hose bracket between hose **F** and original vehicle wiring harness

Connecting heater outlet

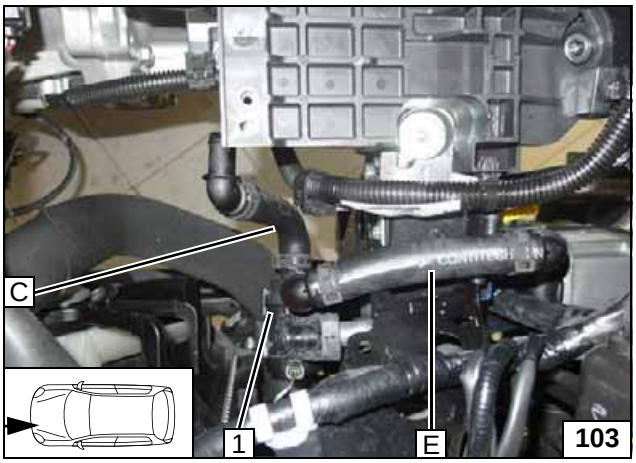


All petrol vehicles

Figure shows 1.6 petrol vehicle.

1 Battery carrier
2 M6 flanged nut
3 Original vehicle bolt

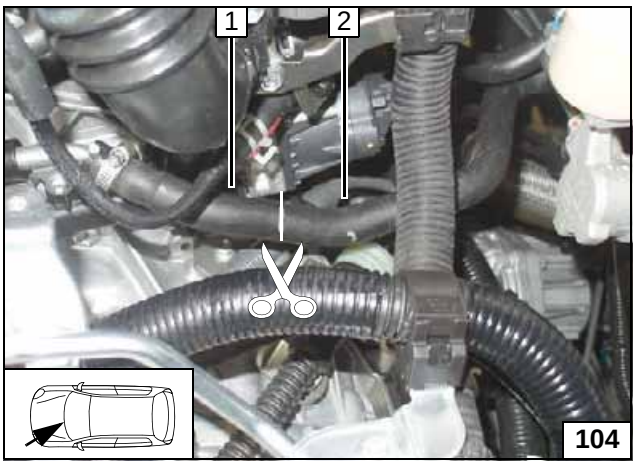
Installing battery carrier



Diesel

1 Circulating pump

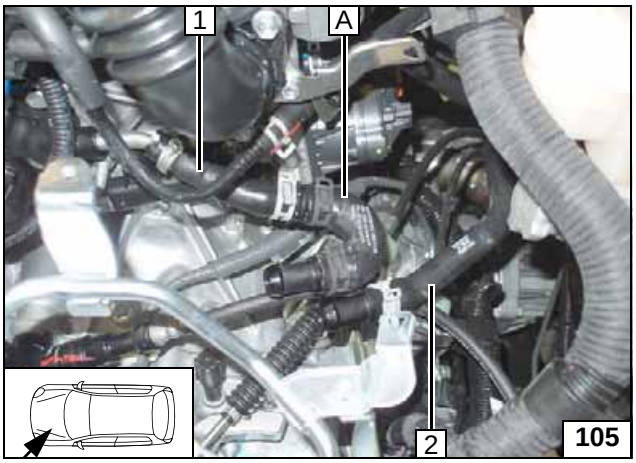
Connecting circulating pump



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

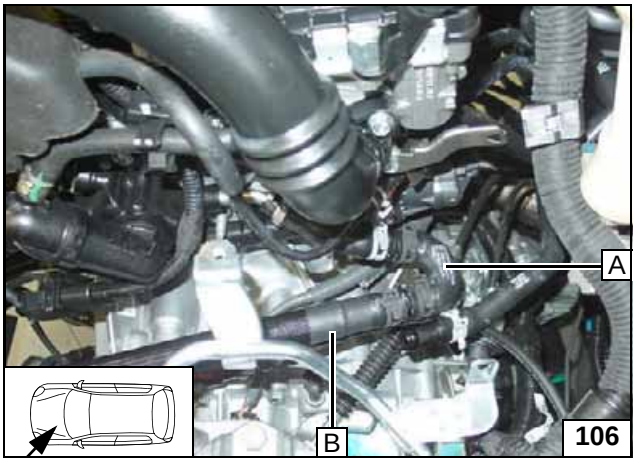
1 Engine outlet hose section
2 Heat exchanger inlet hose section

Cutting point

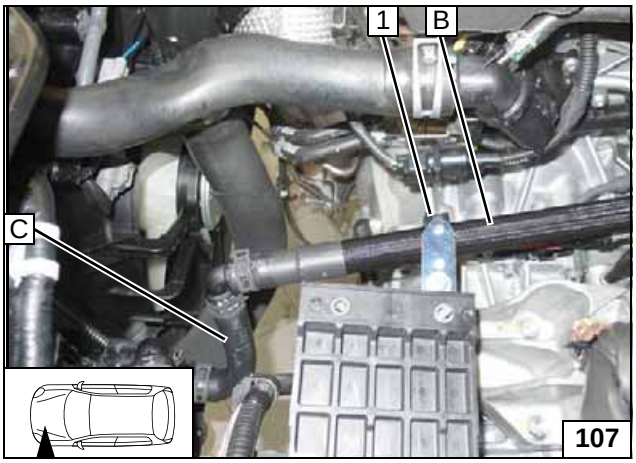


1 Engine outlet hose section
2 Heat exchanger inlet hose section

Preparing hose section of engine outlet and heat exchanger inlet

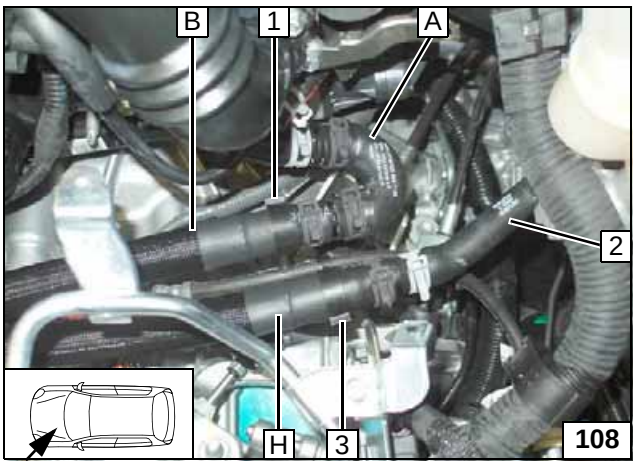


Connecting engine outlet



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

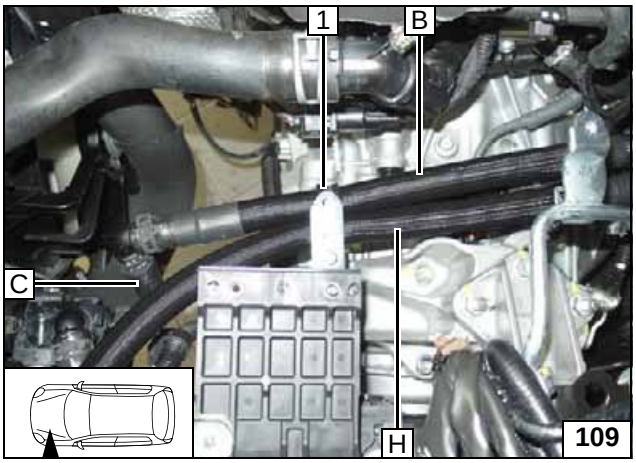
Connecting circulating pump



Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

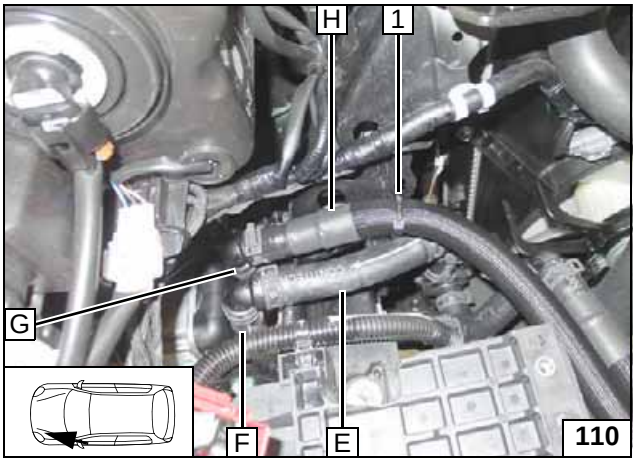
1 Hose bracket between hose **B** and hydraulic line
2 Heat exchanger hose section
3 Hose bracket between hose **H** and hydraulic line

Connecting heat exchanger inlet



Route hose **H** through rubber-coated p-clamp **1** .

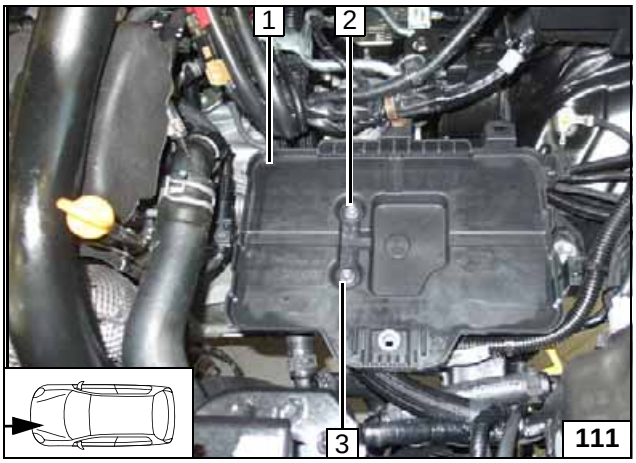
Routing in engine compartment



Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Cable tie

Connecting heater outlet



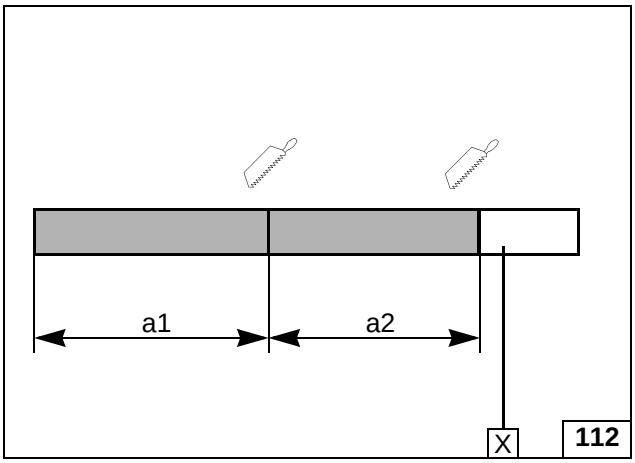
1 Battery carrier
2 M6 flanged nut
3 Original vehicle bolt

Installing battery carrier

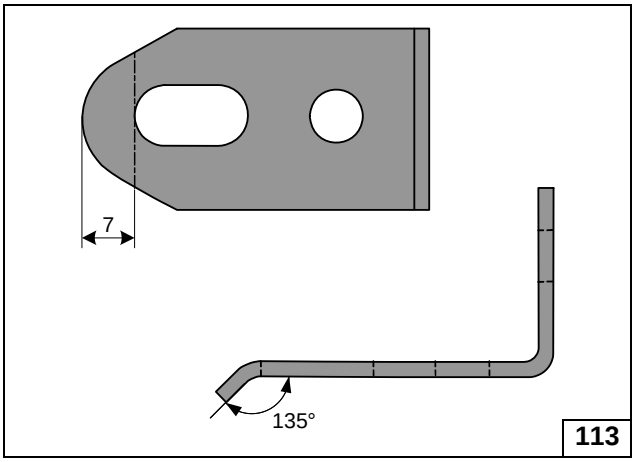
Exhaust Gas

a1 = 240
a2 = 300

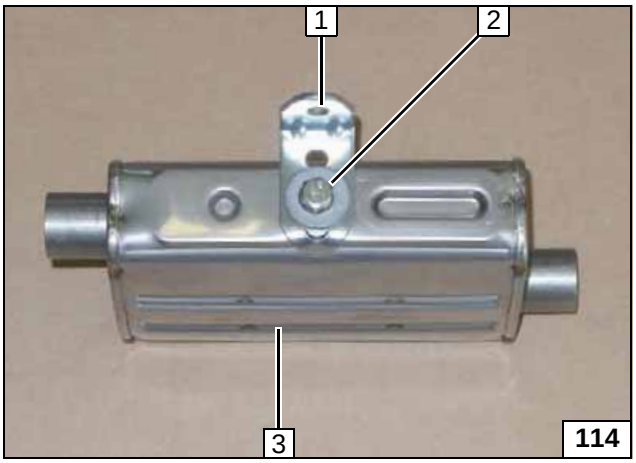
X =



Preparing exhaust pipe

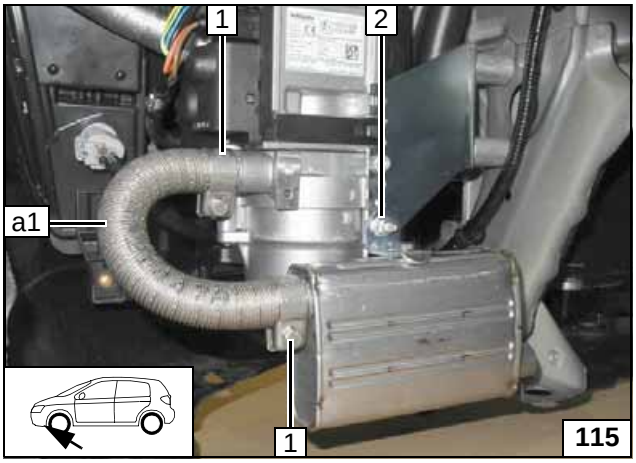


Preparing angle bracket



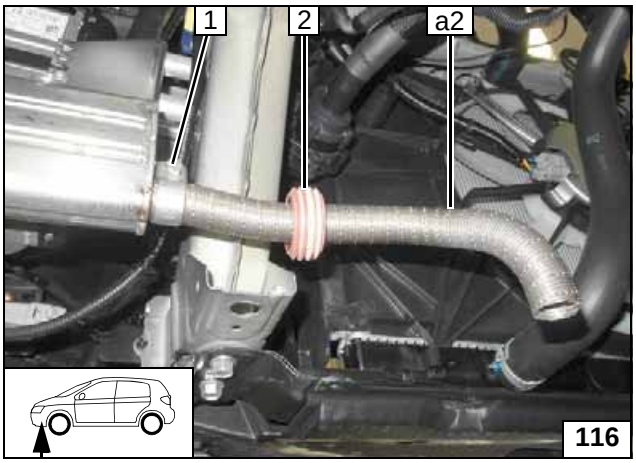
1 Angle bracket
2 M6x16 bolt, spring lockwasher, large diameter washer
3 Silencer

Premounting silencer



1 Hose clamp [2x]
2 Flanged nut

Installing silencer and exhaust pipe a1



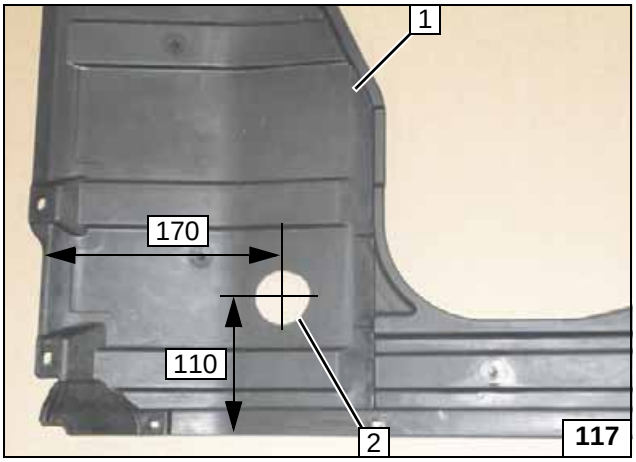
1 Hose clamp
2 Spacer bracket

Installing exhaust pipe a2

Installing Exhaust End Fastener

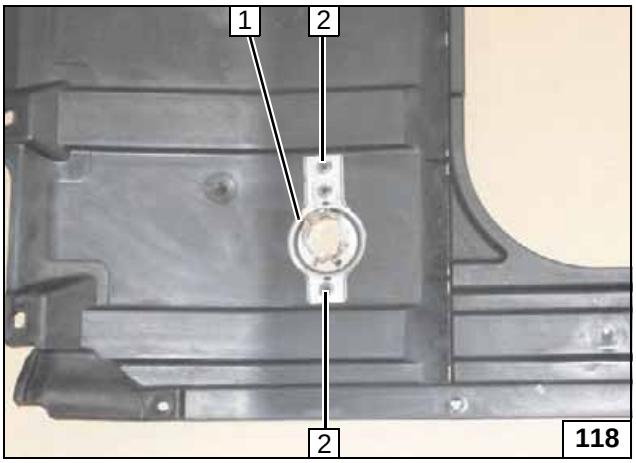
Hole **2** as per work step 1 of the installation instructions.

1 Underride protection



Preparing underride protection

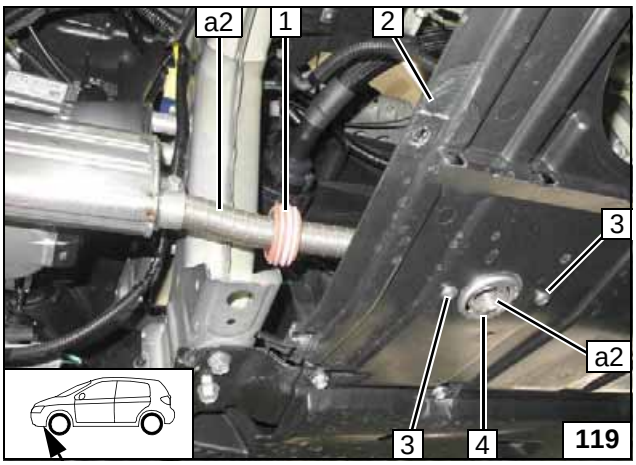
Place exhaust end fastener **1** as per work steps 3 and 4 of the installation instructions in the installation position, copy hole pattern **2**, drill holes [2x].



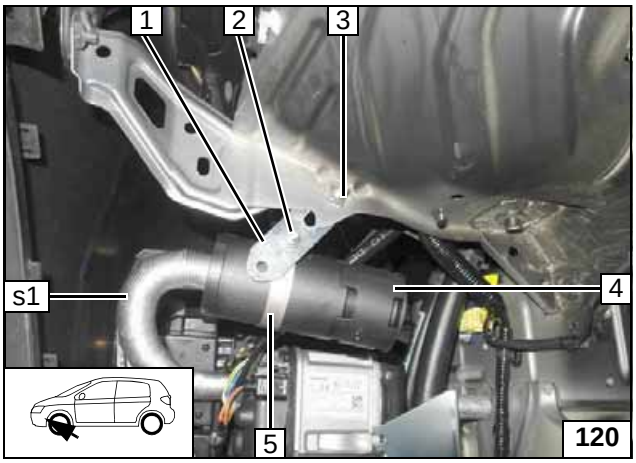
Preparing underride protection

Install underride protection **2**.
Install exhaust end fastener **4** as per work step 5 of the installation instructions using provided bolts **3**.
Install exhaust pipe **a2** as per work steps 6 - 8 of the installation instructions.

1 Align spacer bracket



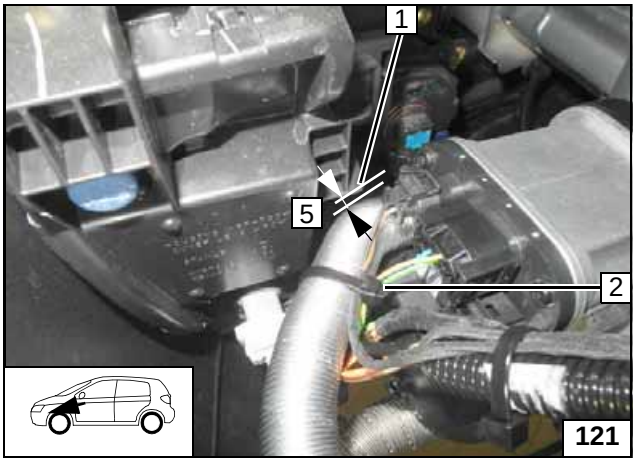
Installing exhaust pipe a2 and exhaust end fastener



Combustion Air

1 Perforated bracket
2 M5x16 bolt, flanged nut
3 M6x20 bolt, spring lockwasher, original vehicle thread
4 Silencer
5 51 mm dia. clamp

Installing combustion air pipe s1 and silencer



Check distance **1** between daytime running light and combustion air pipe.

2 Cable tie

Checking distance

Final Work

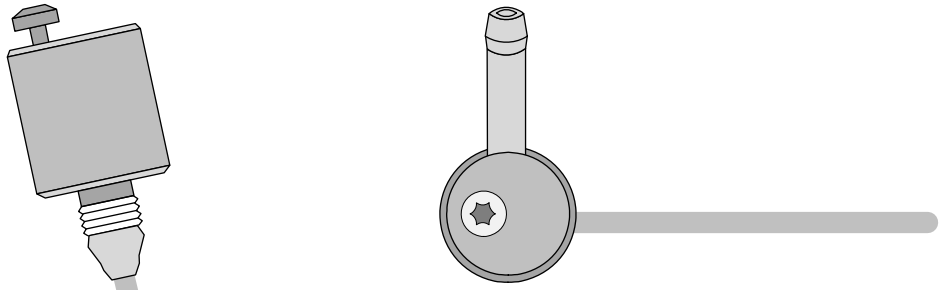
Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate loose wire ends and tie back.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

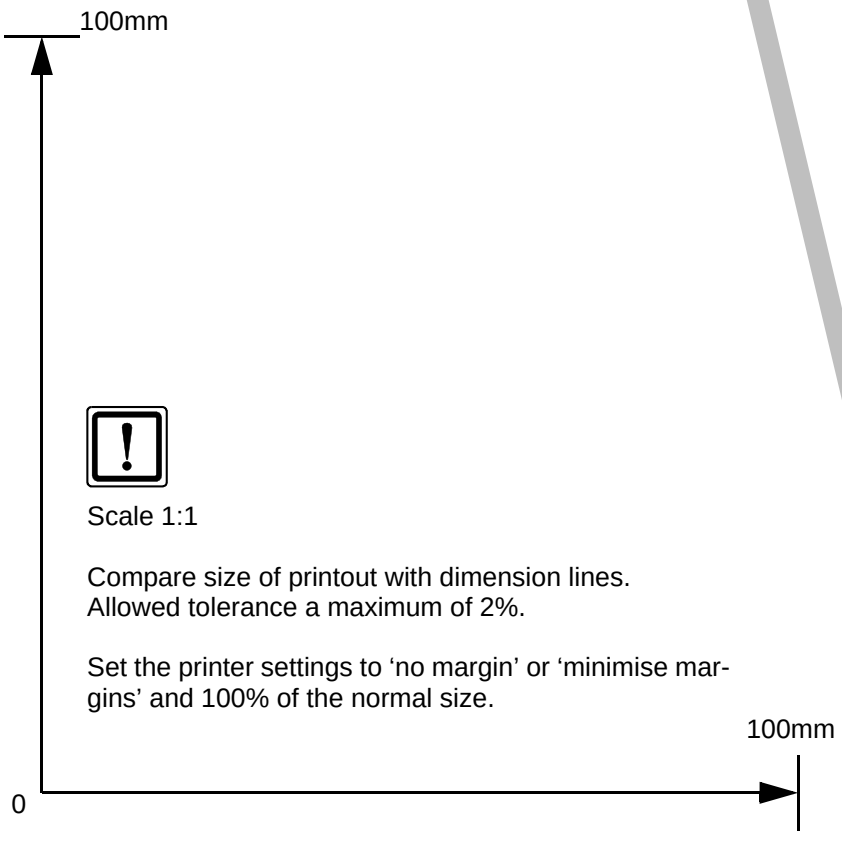
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking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

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

FuelFix Template for Petrol Vehicles

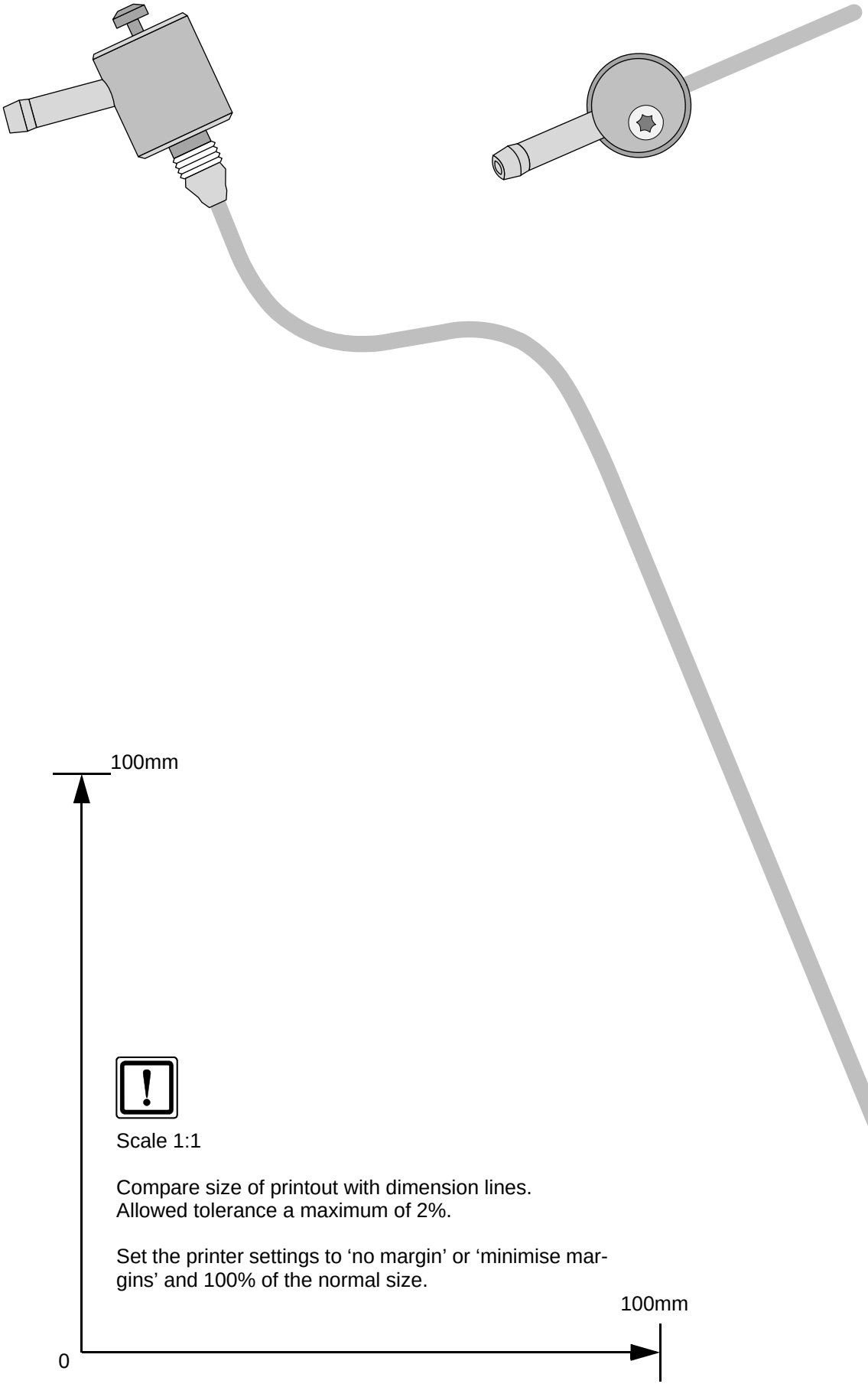
Top view





FuelFix Template for Diesel Vehicles

Top view



Webasto
Feel the Drive

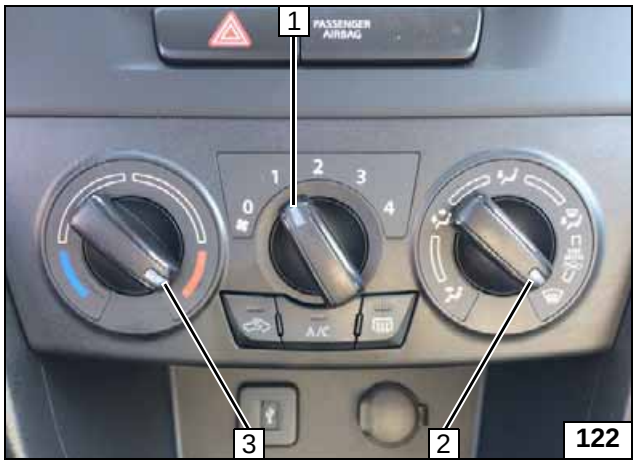
Operating Instructions for Manual Air-Conditioning

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.

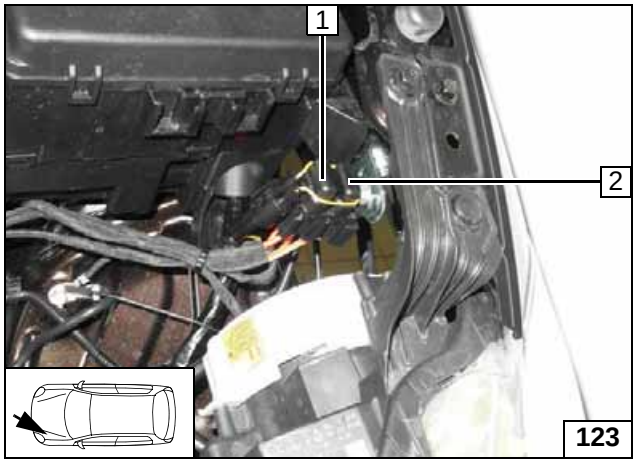
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



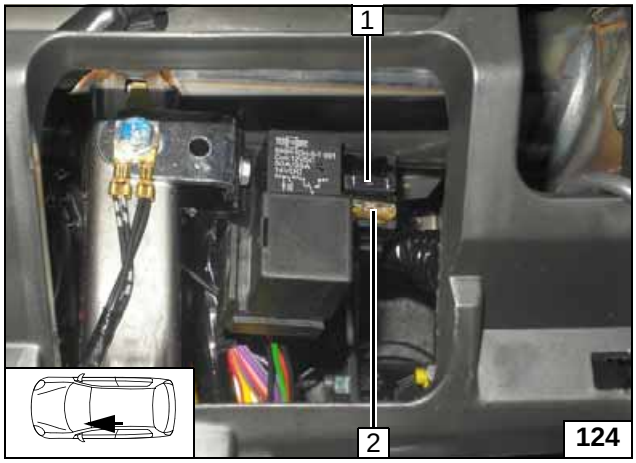
1 Set fan to level ‘1’ or max. ‘2’
2 Air outlet to windscreen
3 Set temperature to ‘max.’

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

Webasto
Feel the Drive

Operating Instructions for Automatic Air-Conditioning

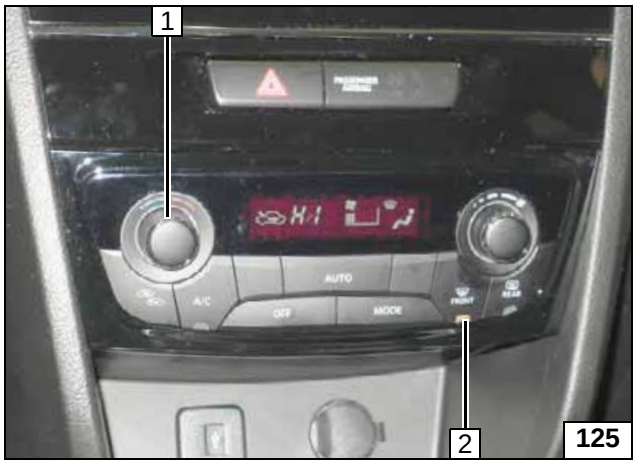
Please remove page and add to the vehicle operating instructions.

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.

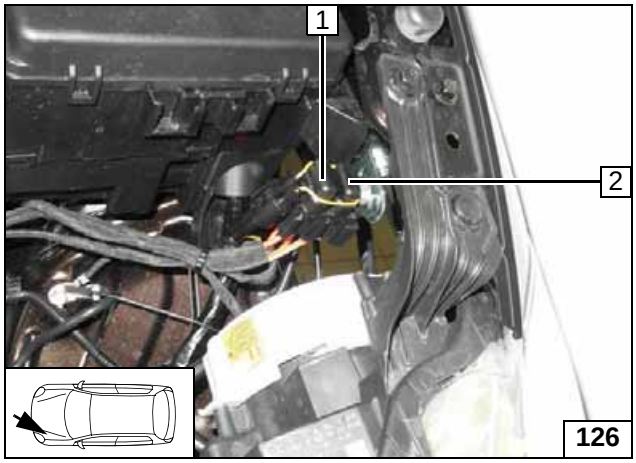
Before parking the vehicle, make the following settings:

A/C control panel



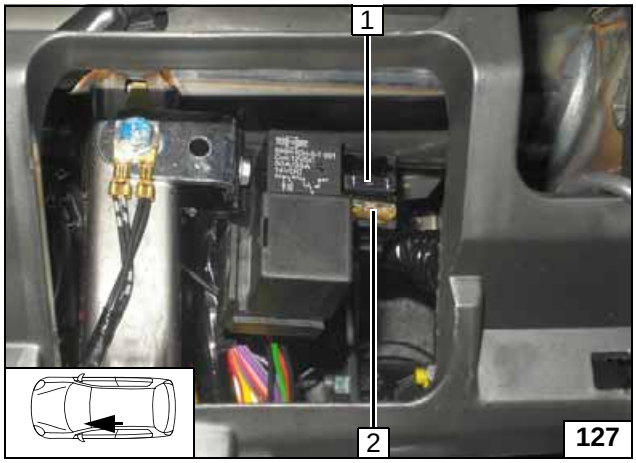
1 Set temperature to ‘HI’
2 Air outlet to windscreen

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