Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Peugeot 508

Validity

Manufacturer	Model	Type	EG-BE No./ ABE
Peugeot	508	W3	e2 * 2007 / 46 * 0080 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
2.0 e-HDi	Diesel	6-speed SG	110	1997	AHX
2.0 blue HDi	Diesel	AG	133	1997	AHW

SG = Manual transmission
AG = Automatic transmission

From model year 2015
Left-hand drive vehicle

Verified equipment variants: Automatic air-conditioning
LED front fog lights
Full LED headlight
Start-Stop
Passenger compartment monitoring

Not verified: Headlight washer system

Total installation time: approx. 8 hours

Peugeot 508

Table of Contents

Necessary Components

- Basic delivery scope for Thermo Top Evo according to price list
- Installation kit with FuelFix for Peugeot 508 2015 Diesel: **1323899A**
- 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

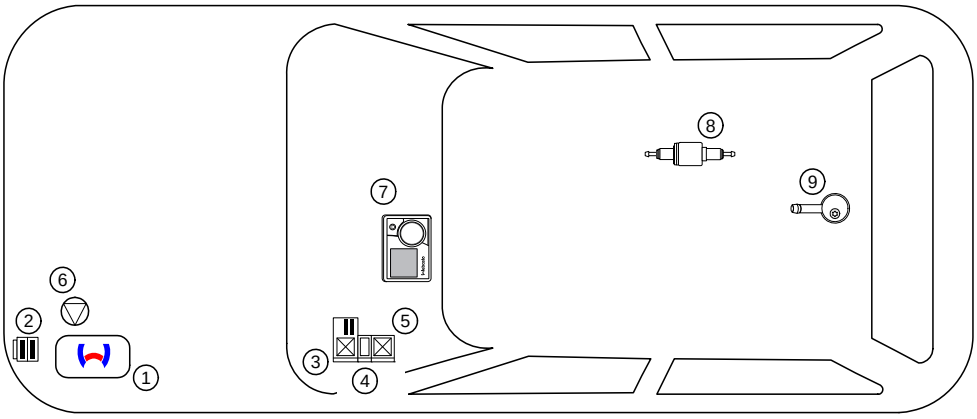
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Fuse holder of engine compartment
3. Relay and fuse holder of passenger compartment
4. K2 relay
5. PWM-Gateway
6. Circulating pump
7. MultiControl CAR
8. Metering pump
9. FuelFix



Information on Total Installation Time

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

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, Order No. 111329).

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

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

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

2 Statutory regulations governing installation

Guidelines	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.

Peugeot 508

Information on Validity

This installation documentation applies to Peugeot 508 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 self-clamping 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
- Peugeot special tool to discharge "Ultracapacitor" S-1288

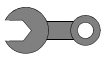
Dimensions
- All dimensions are in mm.

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

Explanatory Notes on Document

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

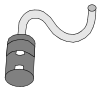
Mechanical System



Electrical System

Coolant Circuit

Combustion Air



Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of damage to components.

Specific risk due to electrical voltage.

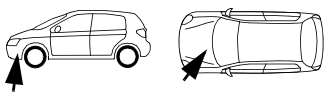
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

Reference to 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

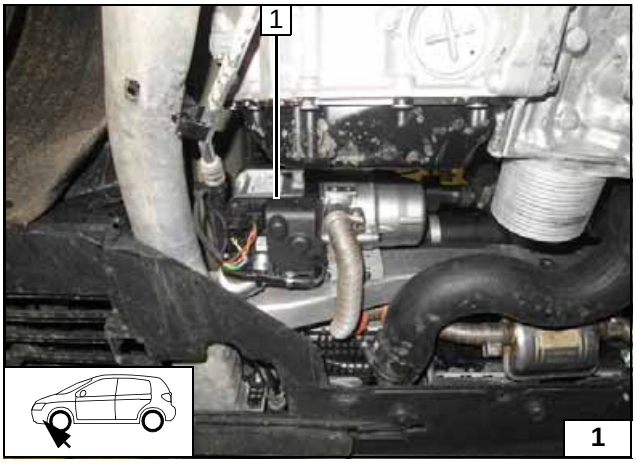
Preliminary Work

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 air filter together with the intake hose.
- Remove the left front wheel.
- Remove the left-hand wheel well trim.
- Remove the underride protection on the front left.
- Remove the lower engine trim/underride protection.
- Drain the engine coolant.
- Remove the rear bench seat.
- Open the tank-fitting service lid.
- Remove the lower instrument panel trim on the driver's side.
- Remove the instrument panel trim on the driver's side (only with Telestart).
- Remove the footwell trim on the driver's side.
- Remove the driver's side storage compartment.
- Remove the radio, CD unit and A/C control panel according to the manufacturer's instructions.
- Remove the A/C booster.

Heater

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

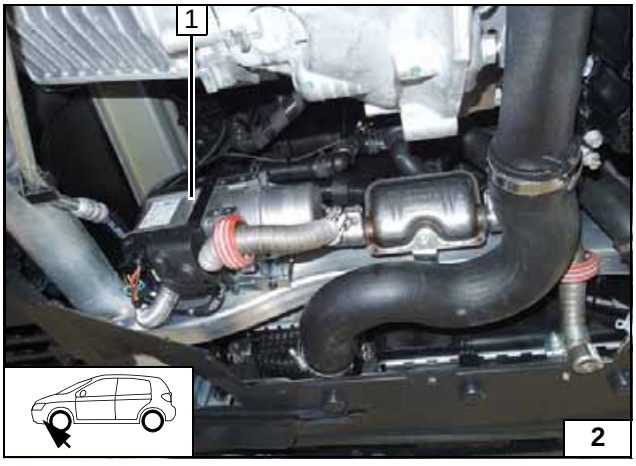


Heater Installation Location

133kW

1 Heater

Installation location



110kW

1 Heater

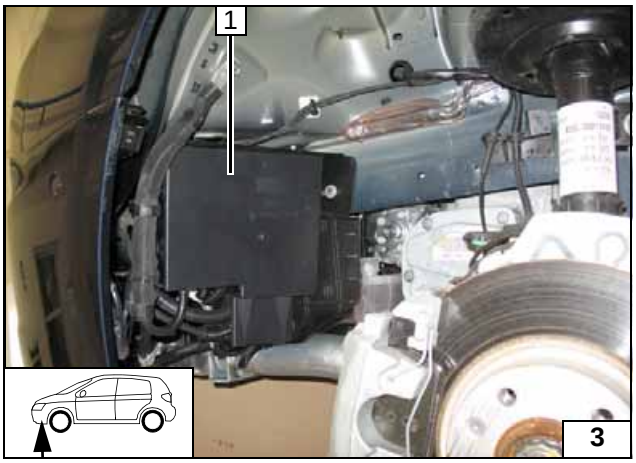
Installation location

Preparing Electrical System

N.B.: before beginning to work on the vehicle's electrical system, discharge, if present, the "Ultracapacitor" (UCAP) according to the manufacturer's instructions using special tool S-1288.

1 Capacitor

Discharging capacitor



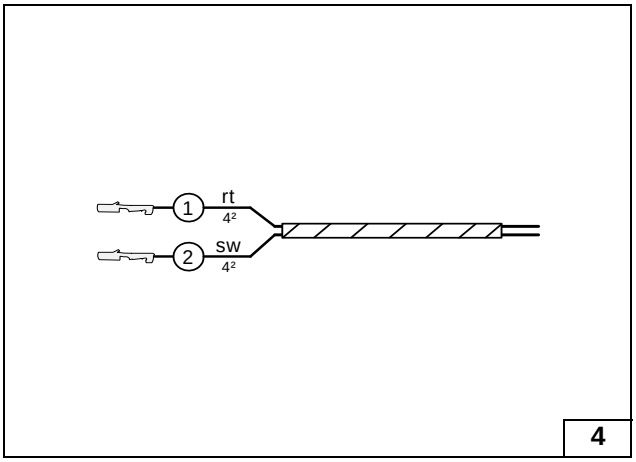
All vehicles

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

Assigning wires

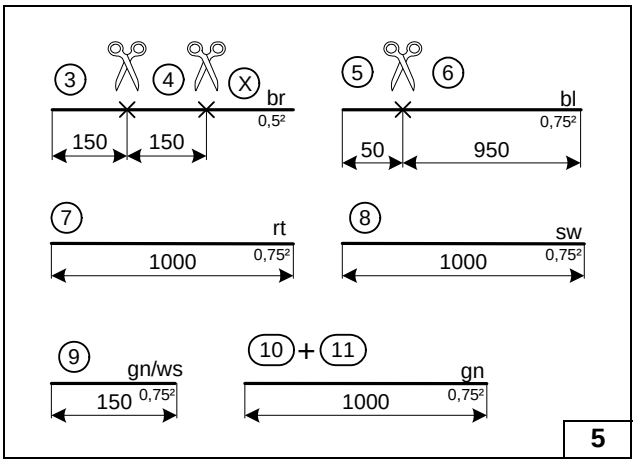


Discard section **X**.

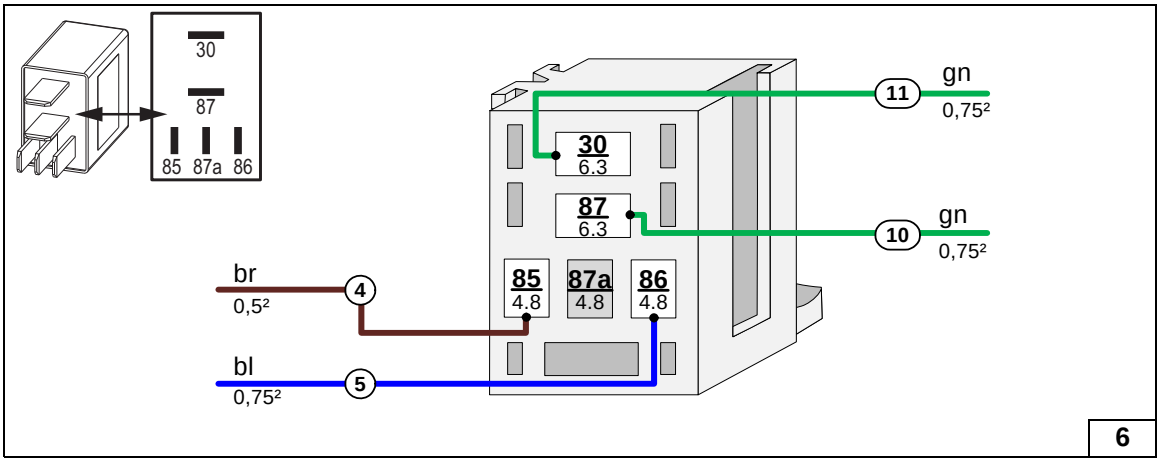
Pull following wires into one protective sleeving each:

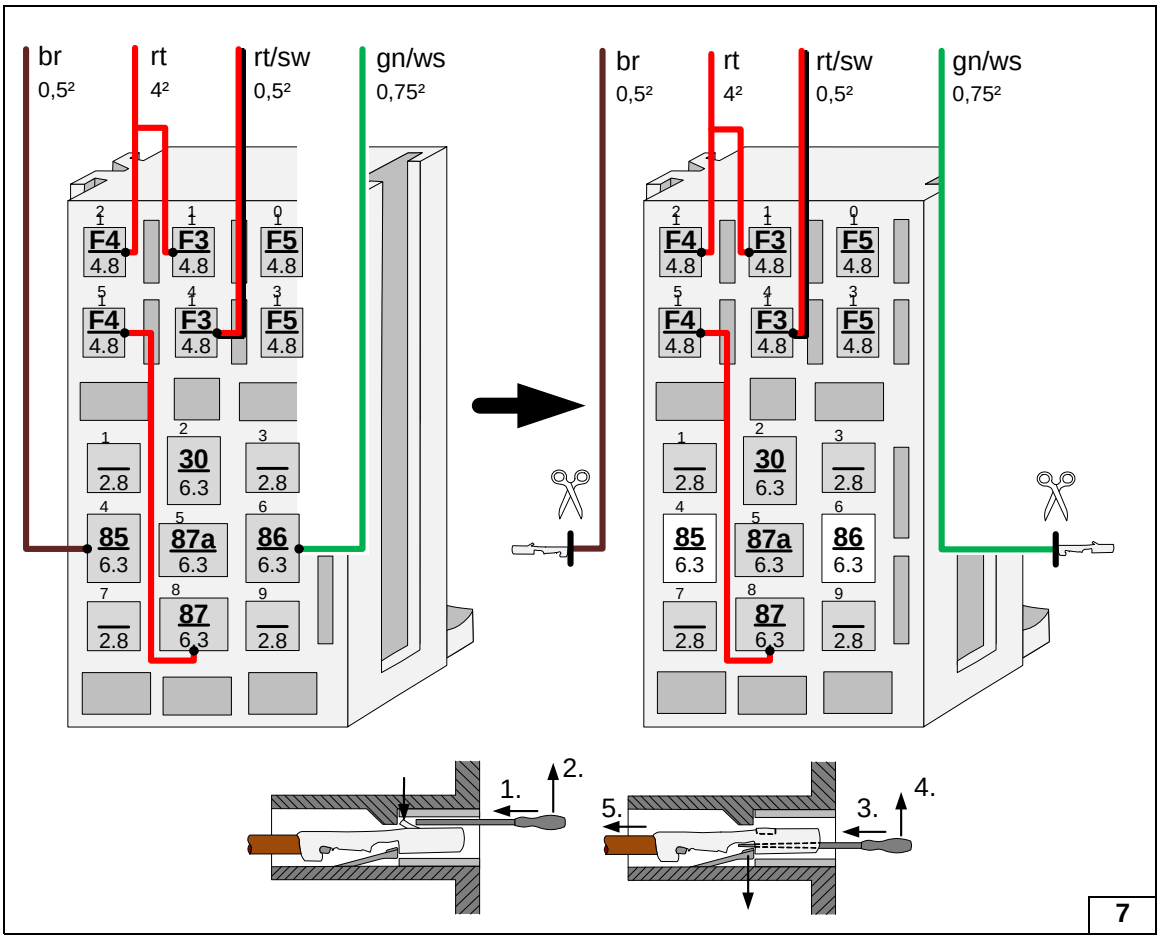
Blue (bl) wire ⑥
Red (rt) wire ⑦ and black (sw) wire ⑧
Green (gn) wire ⑩ and green (gn) wire ⑪

Cutting to length / assigning wires

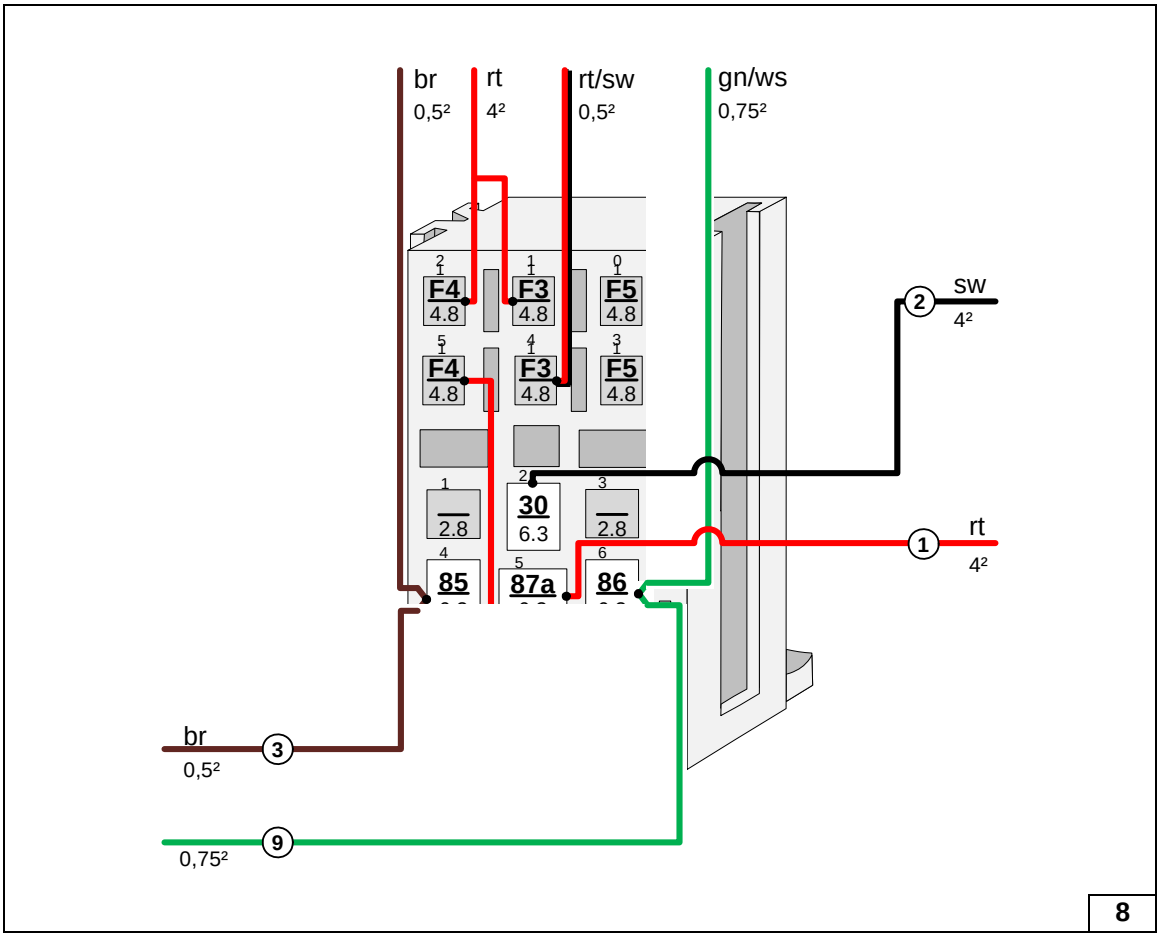


Connecting wires to socket of K2 relay



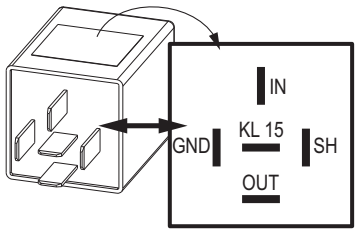


Preparing passenger compartment relay and fuse holder



Connecting wires to passenger compartment relay and fuse holder

Preparing PWM GW



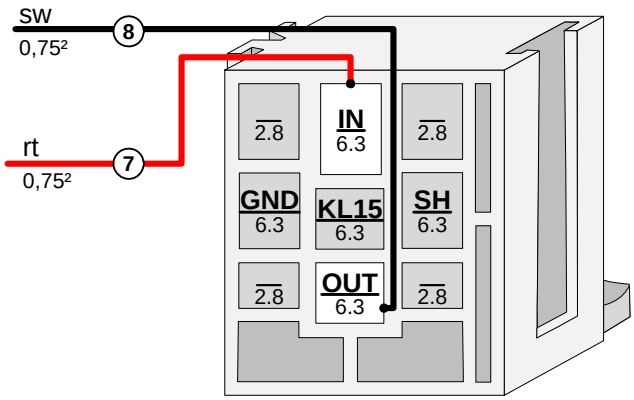
9

Check the PWM Gateway settings during start-up of the heater and adjust if necessary.

Settings:

Duty cycle: 70%
Frequency: 400Hz
Voltage: not relevant
Function: Low-side

Connecting wires to socket of PWM GW



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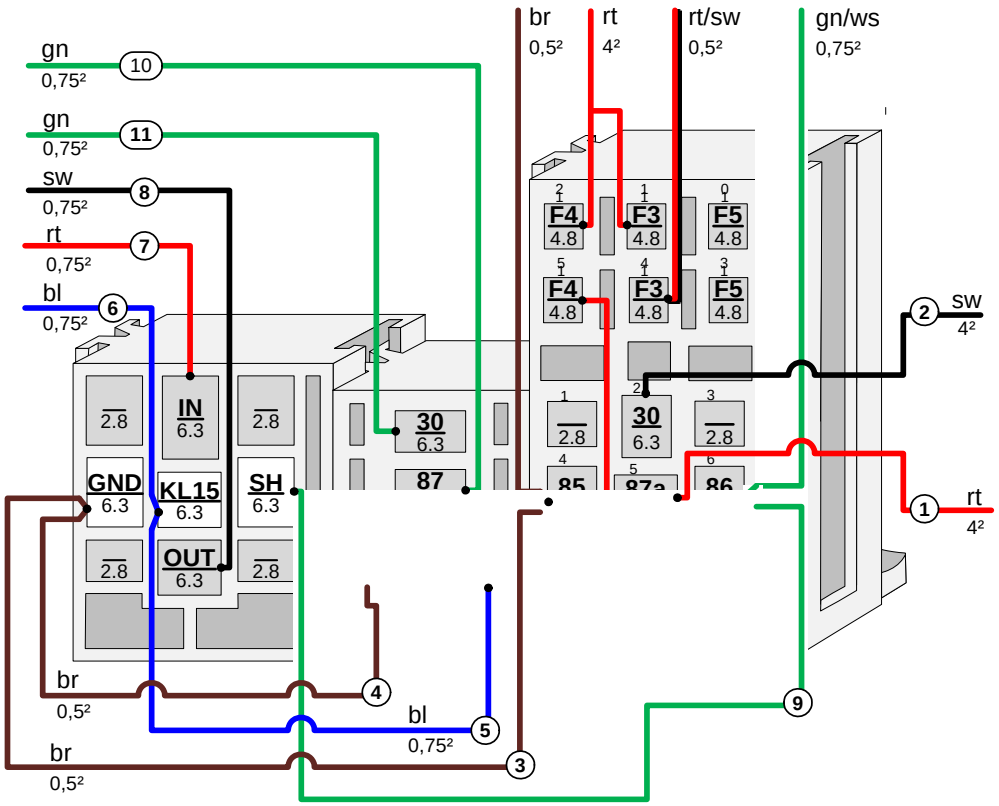
Interlocking PWM GW socket, K2 relay and passenger compartment relay and fuse holder, connecting wires to PWM GW socket



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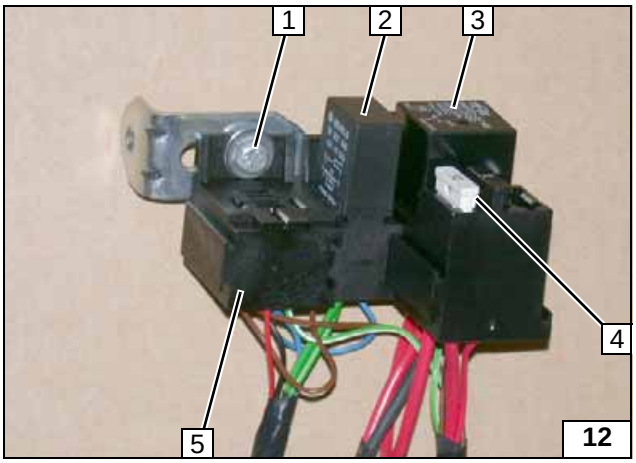
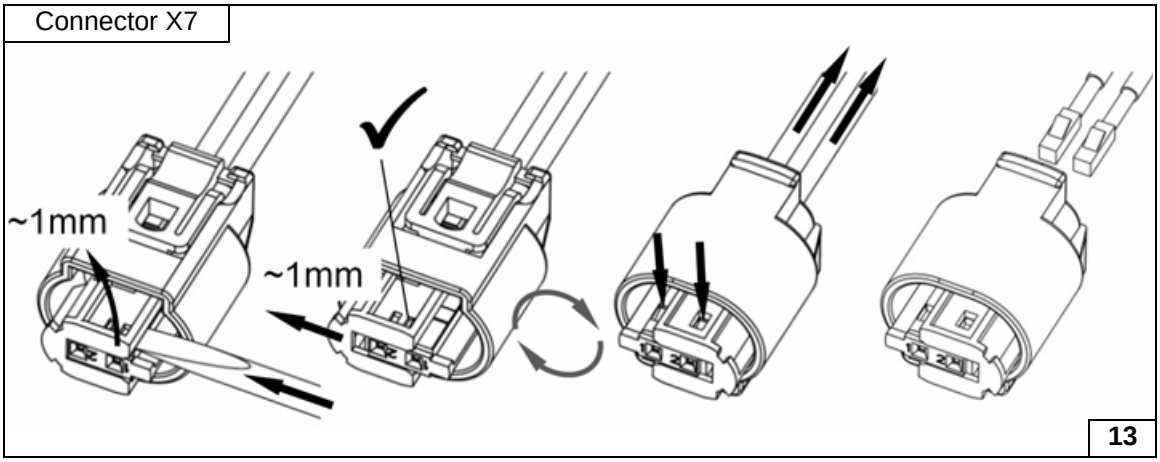


1 M5x16 bolt, large diameter washer [2x], angle bracket, nut
2 K2 relay
3 K1 relay
4 25A fuse F4
5 PWM GW socket

Installing angle bracket, K1 and K2 relays as well as fuse F4

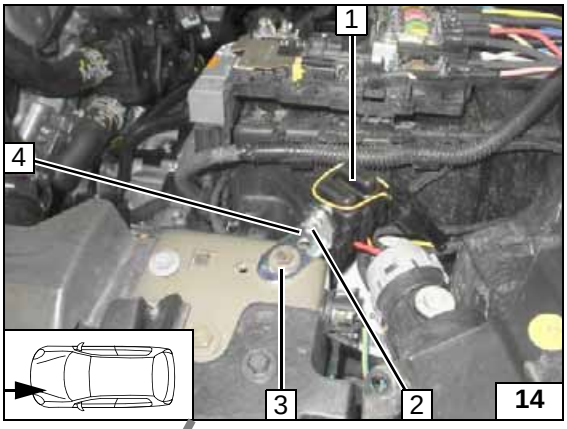


Dismantling connector of metering pump

Electrical System

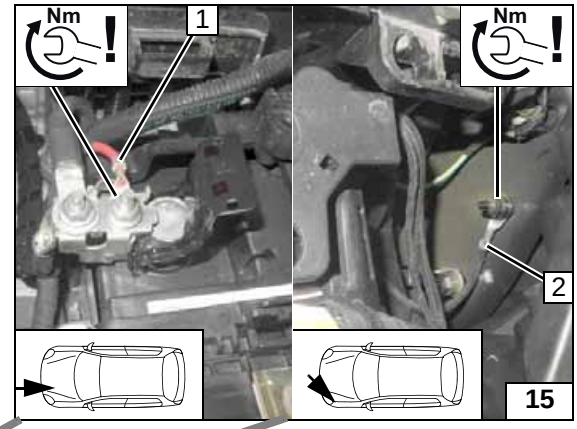
Fuse holder of engine compartment

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

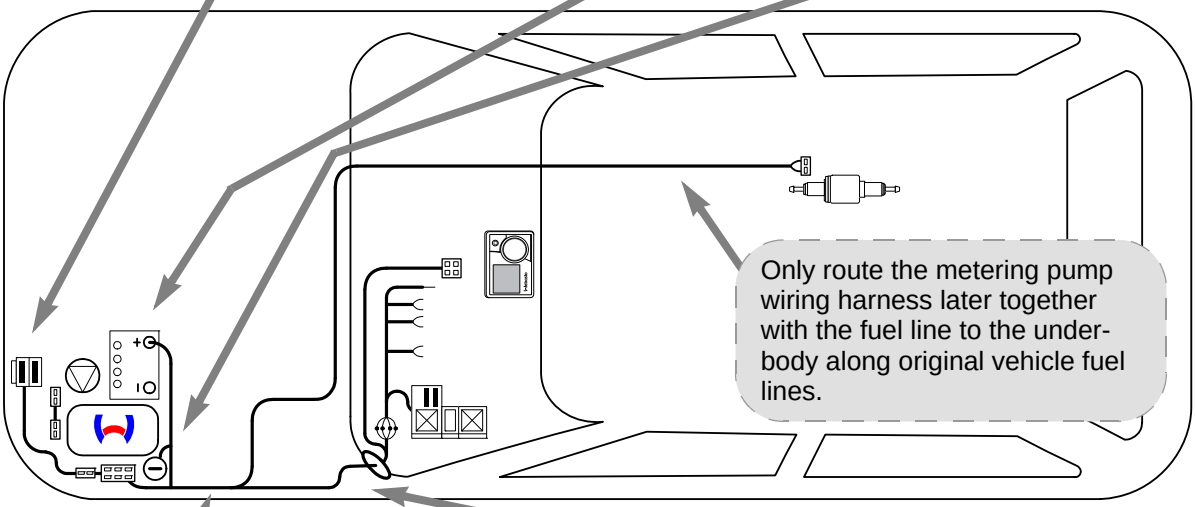


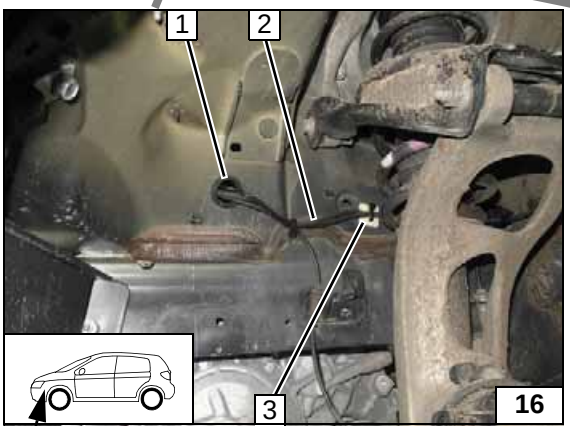
Positive and earth wire

1 Positive wire on positive battery terminal
2 Earth wire on original vehicle stud bolt, original vehicle nut



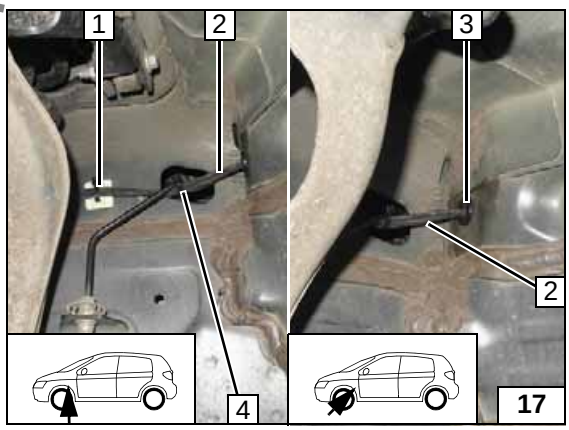
Wiring harness routing diagram





Wiring harness routing

1 Pass through in engine compartment to left side wheel well
2 Wiring harnesses of heater and heater control
3 Adhesive base, cable tie

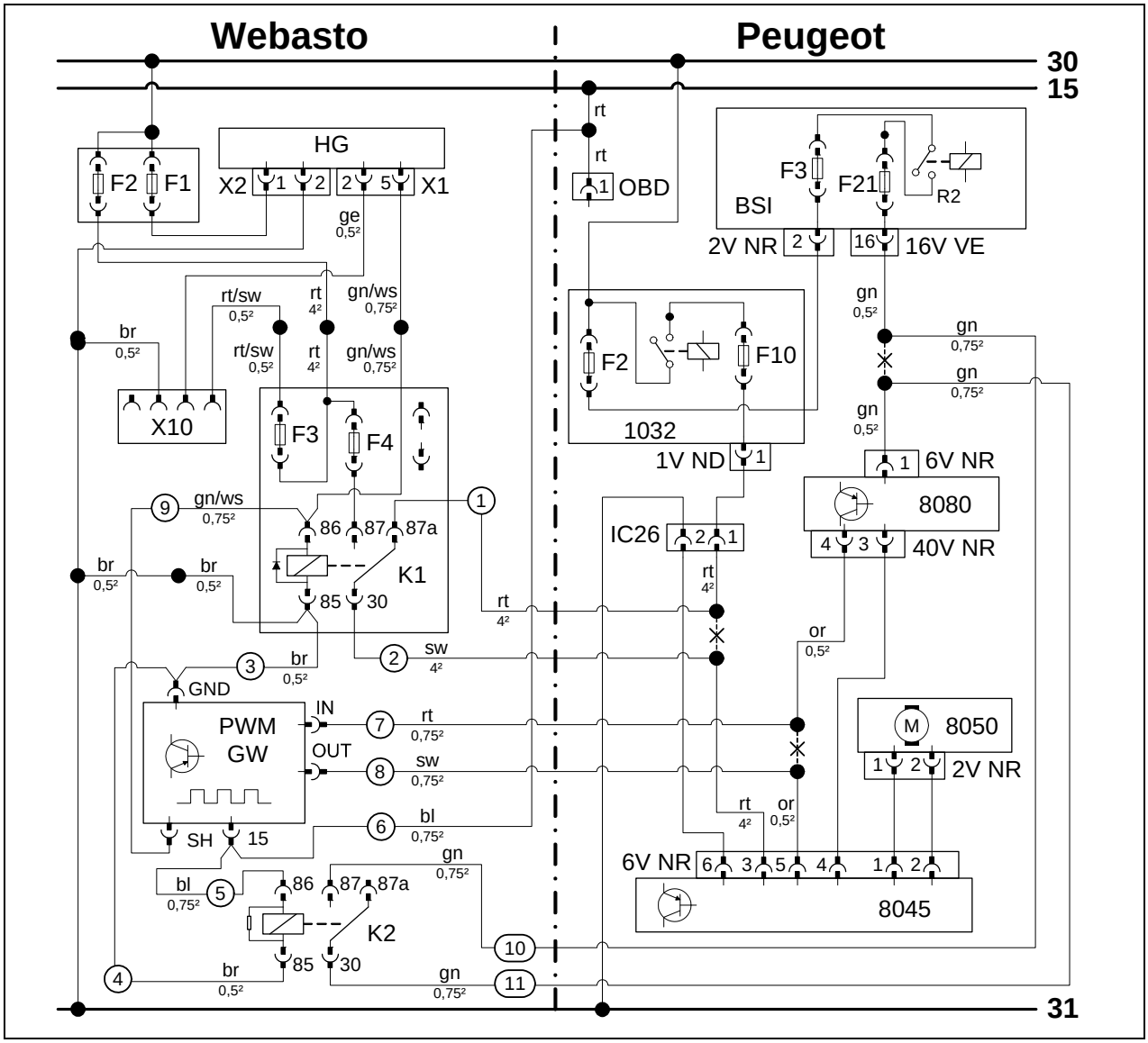


Passenger compartment wiring harness pass through

1 Adhesive base, cable tie
2 Wiring harnesses of heater and heater control
3 Protective rubber plug (perforate hole)
4 Cable tie

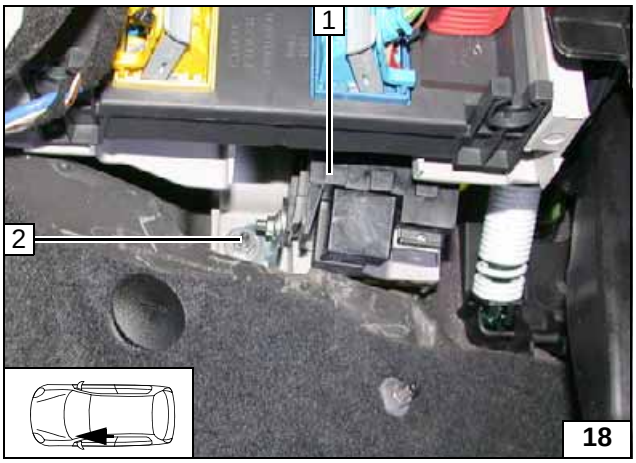
Fan controller

Wiring diagram



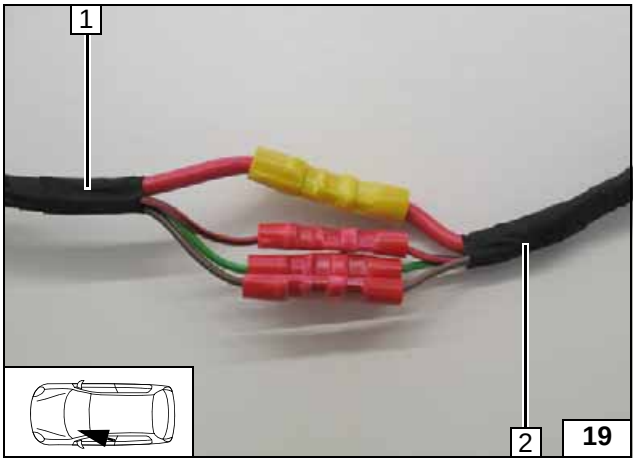
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	OBD	OBD connector	rt	red
X1	6-pin heater connector	BSI	Central electrical box for passenger compartment	sw	black
X2	2-pin heater connector	2V NR	BSI connector	ge	yellow
F1	20A fuse	16V VE	BSI connector	gn	green
F2	30A fuse	1032	Main power supply	or	orange
X10	4-pin connector of heater control	1V ND	Connector 1032	ws	white
		6V NR	6-pin connector 8080	br	brown
F3	1A fuse	8080	A/C control unit		
F4	25A fuse	40V NR	40-pin connector 8080		
K1	Fan relay	IC26	6-pin connector		
PWM GW	Pulse width modulator	8050	Fan motor		
		2V NR	2-pin connector 8050		
K2	Additional relay	8045	Fan controller		
PWM GW settings:		6V NR	6-pin connector 8045		
Duty cycle: 70%					
Frequency: 400Hz					
Voltage: not relevant				**X**	Cutting point
Function: Low-side				Wiring colours may vary.	

Legend



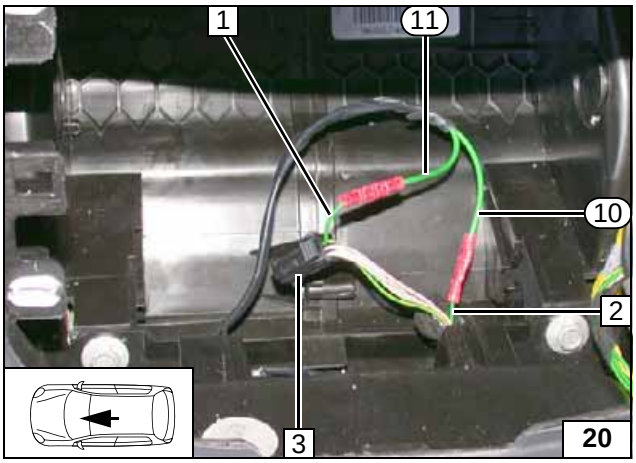
1 Passenger compartment relay and fuse holder
2 Original vehicle stud bolt, flanged nut

Mounting passenger compartment relay and fuse holder



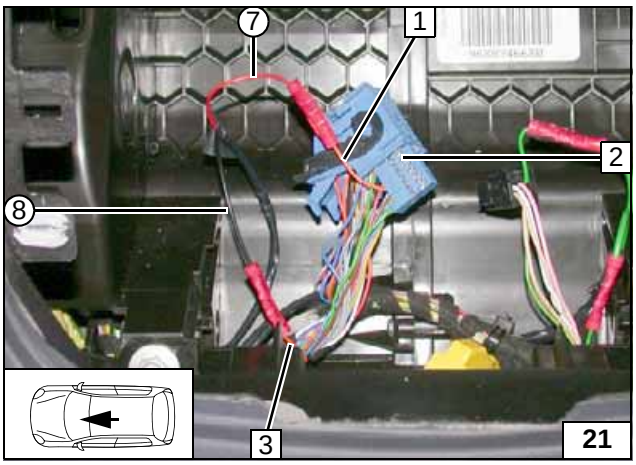
1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting same colour wires of wiring harnesses



1 Green (gn) wire of 6-pin connector 6V NR/pin 1
2 Green (gn) wire of connector 16V VE/ pin 16 from BSI fuse F21
3 6-pin connector 6V NR of A/C control unit
⑩ Green (gn) wire of K2/87
⑪ Green (gn) wire of K2/30

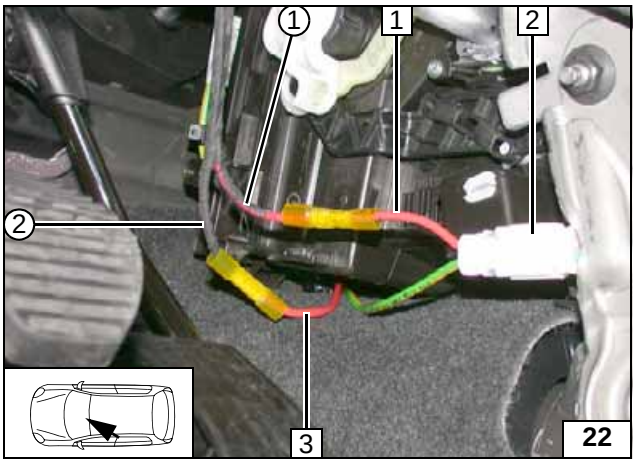
Connecting K2 relay



Connection on 40-pin connector **2** of A/C control unit.

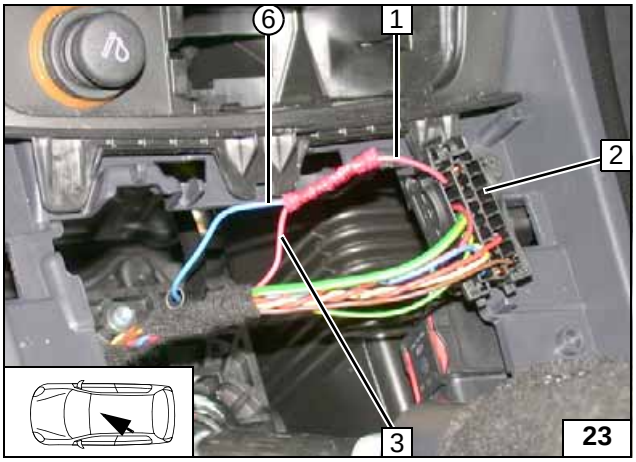
1 Orange (or) wire of connector 40V NR / pin 4
2 40-pin connector 40V NR of A/C control unit
3 Orange (or) wire of connector 6V NR / pin 5 from fan controller
⑦ Red (rt) wire of PWM GW/IN
⑧ Black (sw) wire of PWM GW/OUT

Connecting PWM Gateway



1 Red (rt) wire of intermediate connector IC26/ pin 1
2 Intermediate connector IC26
3 Red (rt) wire of connector 6V NR / pin 3 from fan controller
① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness

Connecting K1 relay



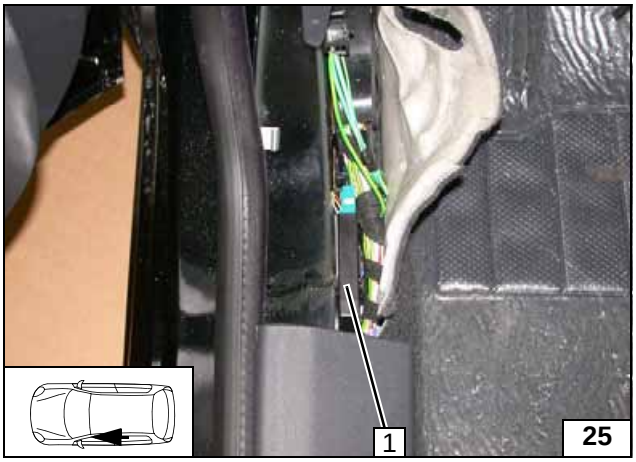
1 Red (rt) wire of OBD connector, pin 1
2 OBD connector
3 Red (rt) wire of terminal 15
⑥ Blue (bl) wire of PWM GW/KL15

Connecting terminal 15

MultiControl CAR Option

1 MultiControl CAR

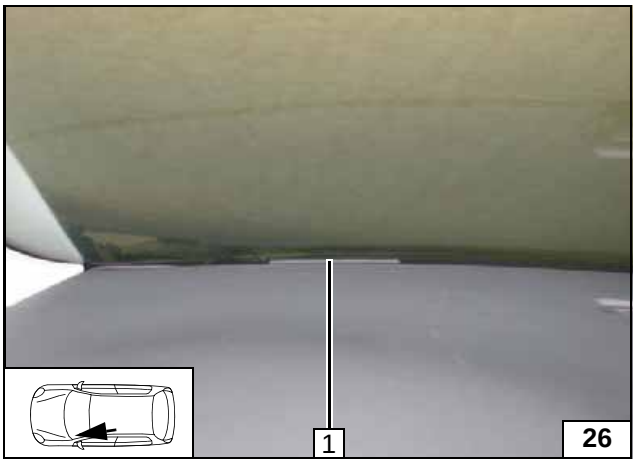
Installing MultiControl CAR



Remote Option (Telestart)

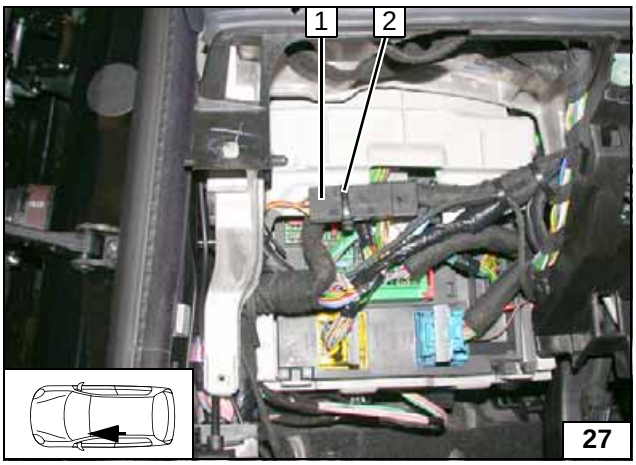
Push back foot mat on the driver's side. Fasten receiver **1** with adhesive tape.

Installing receiver



1 Aerial

Installing aerial

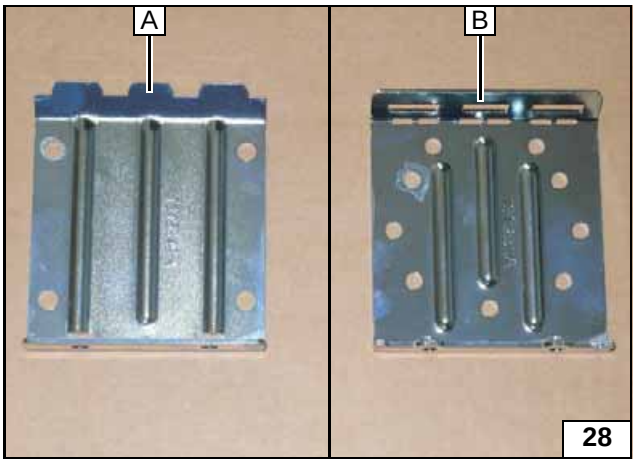


Temperature sensor T100 HTM

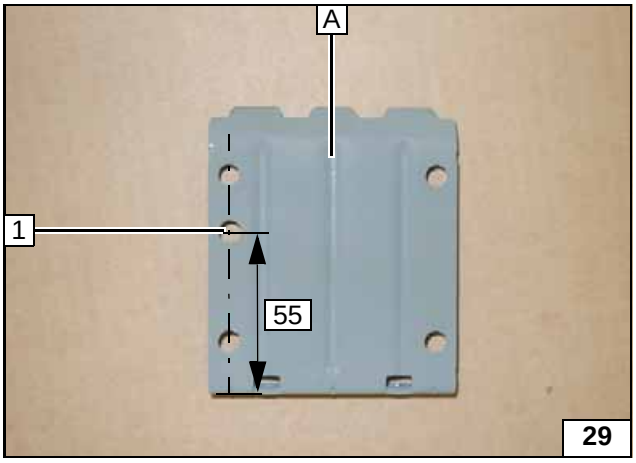
Fasten temperature sensor **2** with cable tie **1** on original vehicle wiring harness.

Mounting temperature sensor

Preparing Installation Location

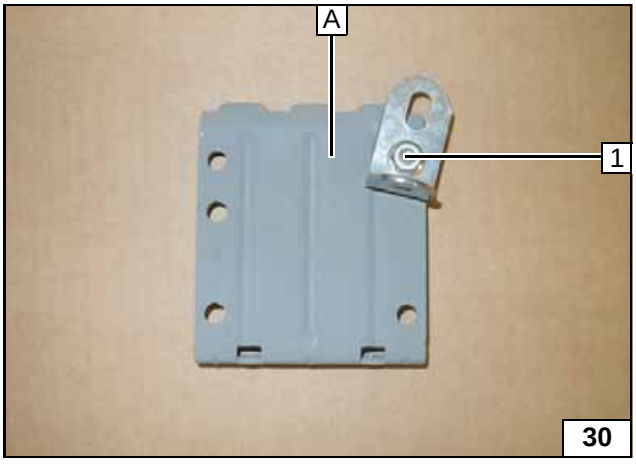


View of interior side and assignment of two-part bracket



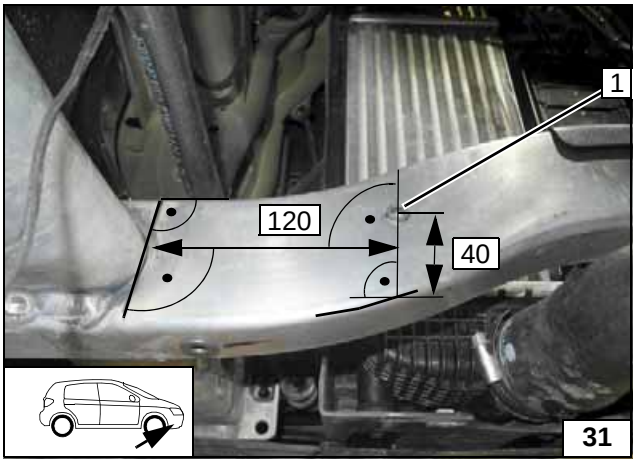
A Exterior side of bracket
1 7 mm dia. hole

Drilling hole



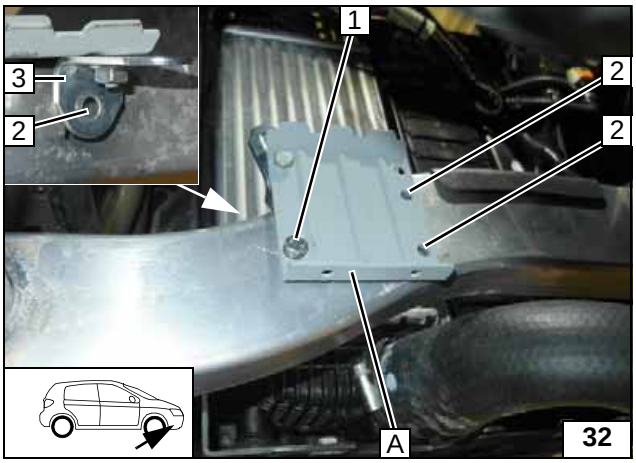
A Exterior side of bracket
1 Install M6x16 bolt, bracket **A**, angle bracket, flanged nut loosely

Premounting angle bracket



1 9.1 mm dia. hole; rivet nut

Installing rivet nut

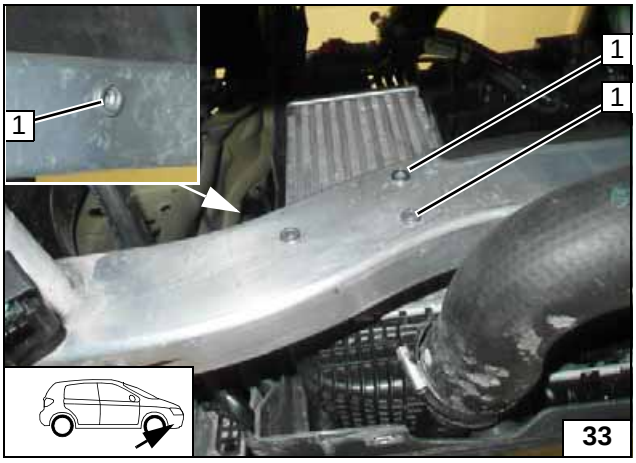


Position bracket **A** with premounted angle bracket **3** vertically on carrier.

1 Insert M6x20 bolt loosely
2 Copy hole pattern [3x]

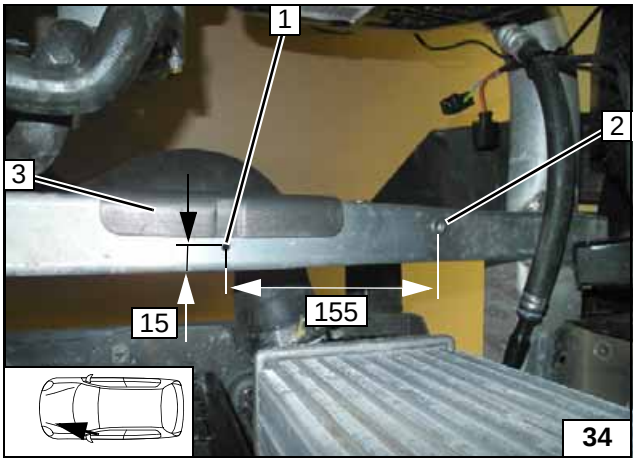
Remove the bracket again.

Copying hole pattern



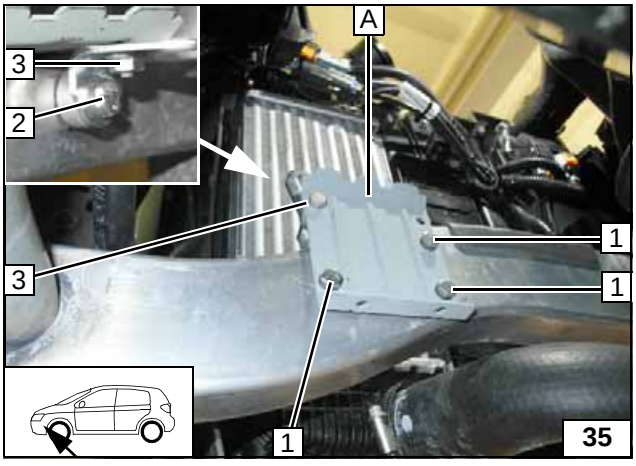
1 9.1 mm dia. hole; rivet nut [3x]

Installing rivet nuts



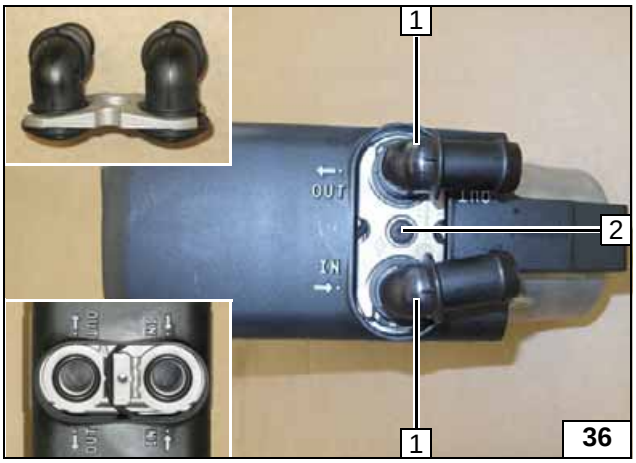
1 4.5 mm dia. hole
2 Rivet nut as reference
3 Insulation protection strips

Hole for intake silencer



1 M6x20 bolt, spring lockwasher [3x each]
2 M6x30 bolt, spring lockwasher, pre-mounted angle bracket, 10 mm shim
3 Tighten M6x16 bolt, flanged nut

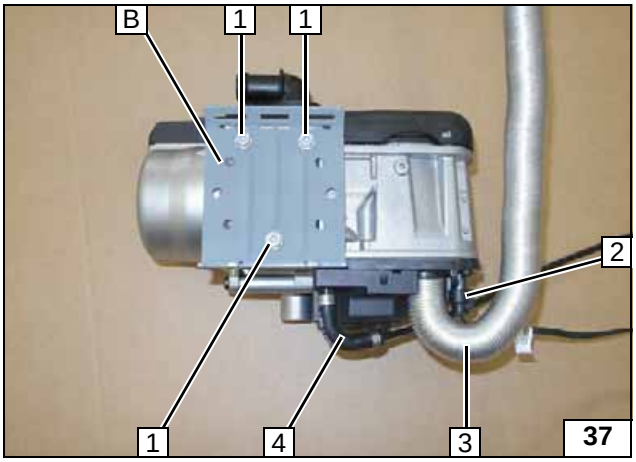
Installing part A of bracket



Preparing Heater

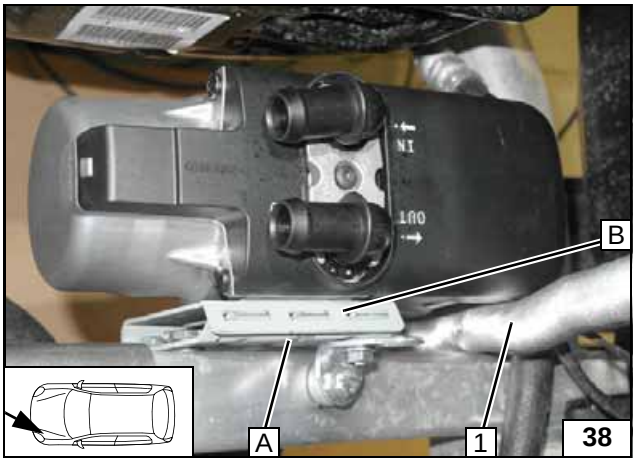
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



1 5x13 self-tapping bolts [3x]
2 Connector of circulating pump wiring harness
3 Combustion air pipe
4 90° moulded hose, 10 mm dia. clamp [2x]

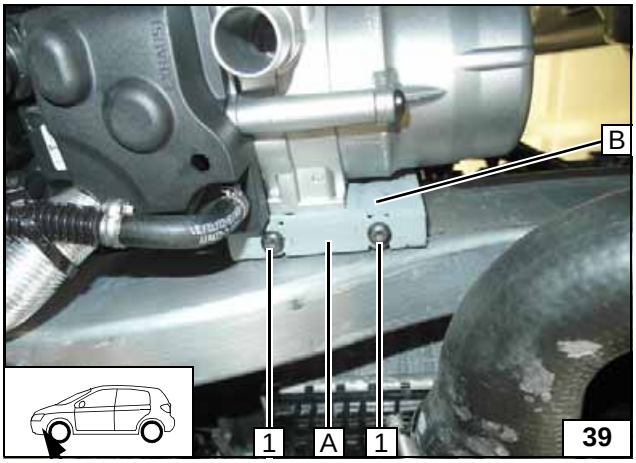
Premounting heater



Installing Heater

Install heater with bracket **B** onto bracket **A** from above.
Route combustion air pipe **1** in the engine compartment.

Installing heater



1 M5x12 Torx screw [2x]

Mounting heater

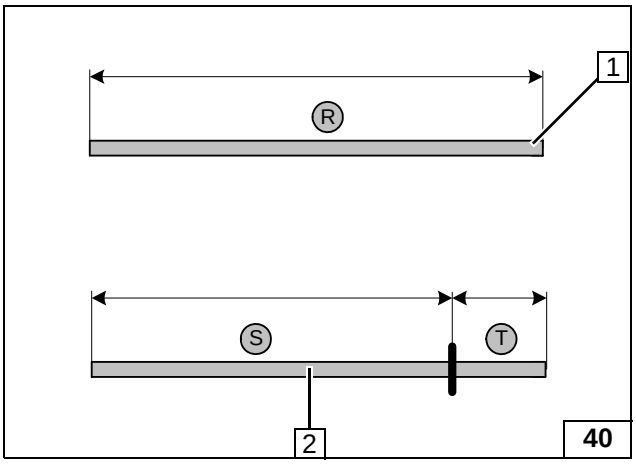
Fuel

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

Catch any fuel running off in an appropriate container.

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

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



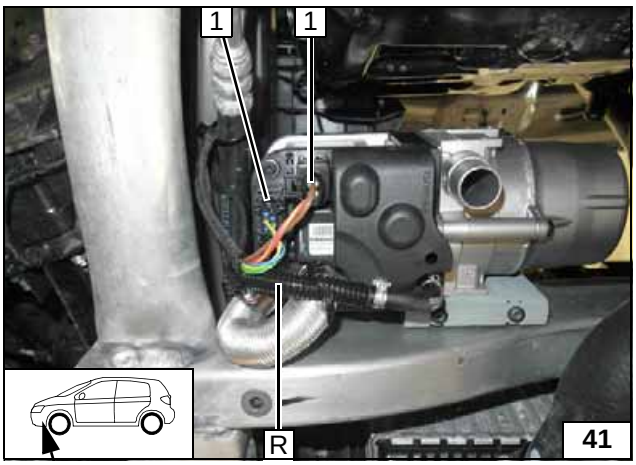
1 10mm dia. corrugated tube; 2100mm long

R = 2100

2 10mm dia. corrugated tube; 2100mm long

S = 1570
T = 530

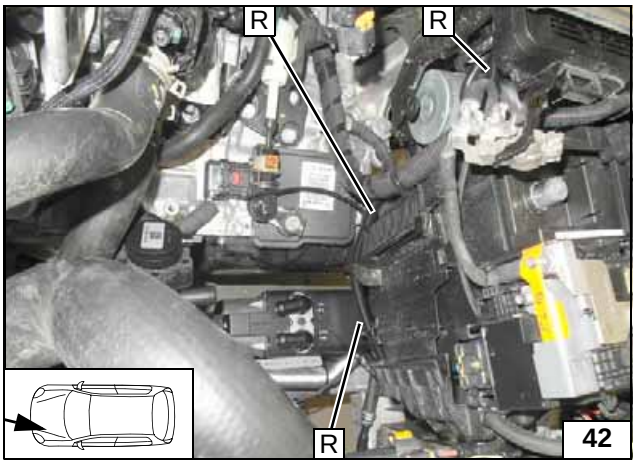
Cutting to length / assigning protective sleeving



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

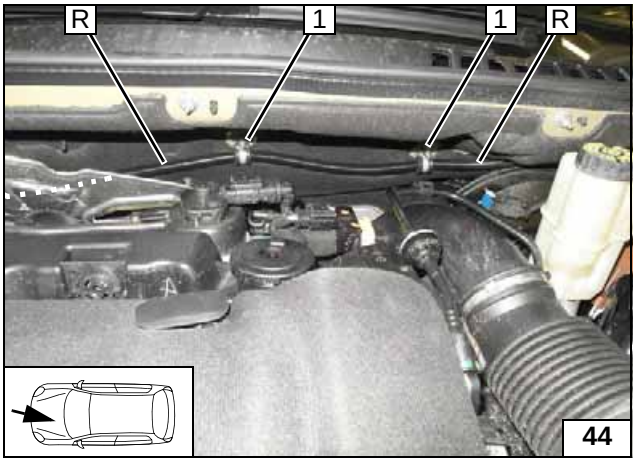
1 Connector of heater wiring harness [2x]

Connecting heater



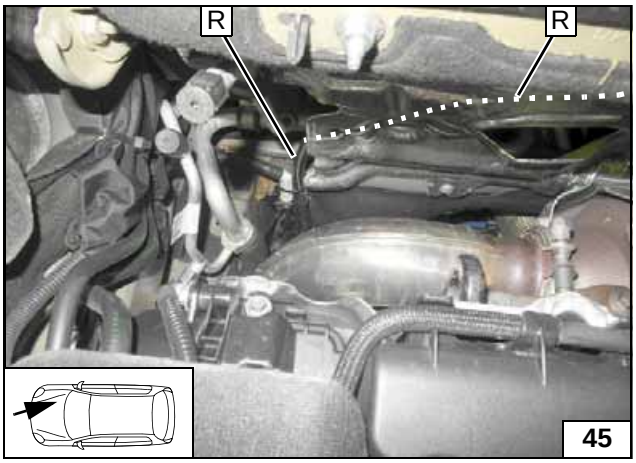
Routing lines

Routing lines



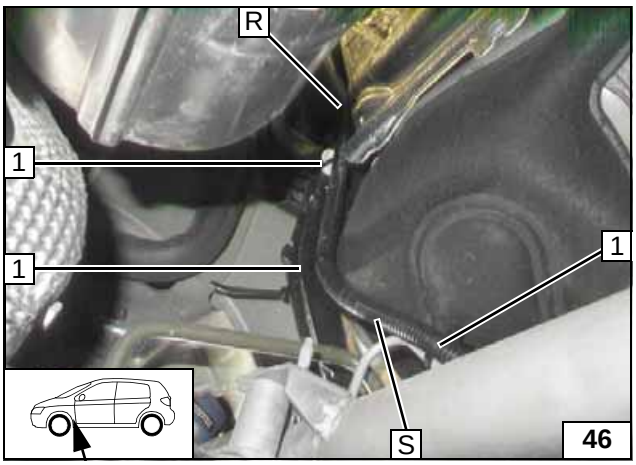
1 15mm dia. rubber-coated p-clamp , M6 flanged nut, existing stud bolt [2x each]

Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **R** behind the heat insulation to the right side of the vehicle and to the firewall.

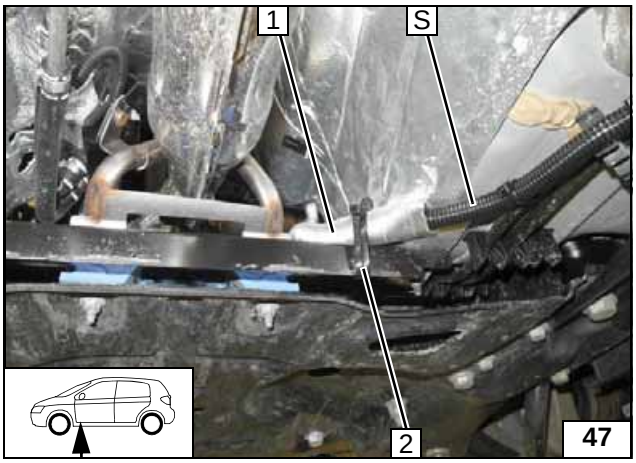
Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **S** to the underbody.

1 Cable tie [3x]

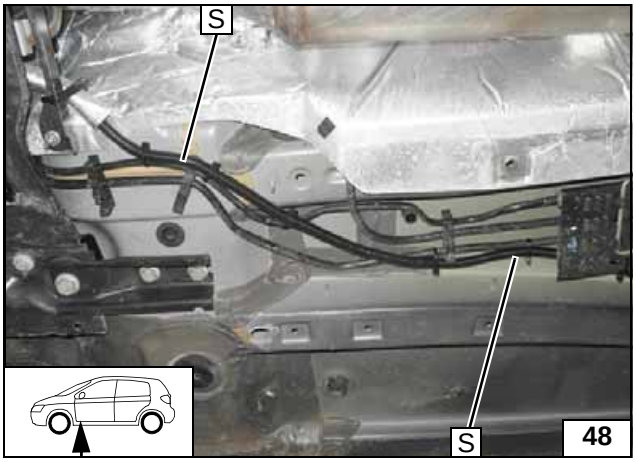
Routing lines



Insert fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **S** into 14mm dia. heat protection tube **1**.

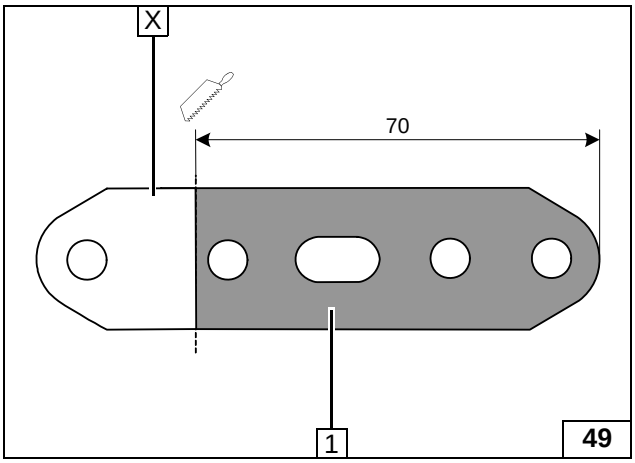
2 Cable tie

Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **S** along original vehicle fuel lines to installation location of metering pump.

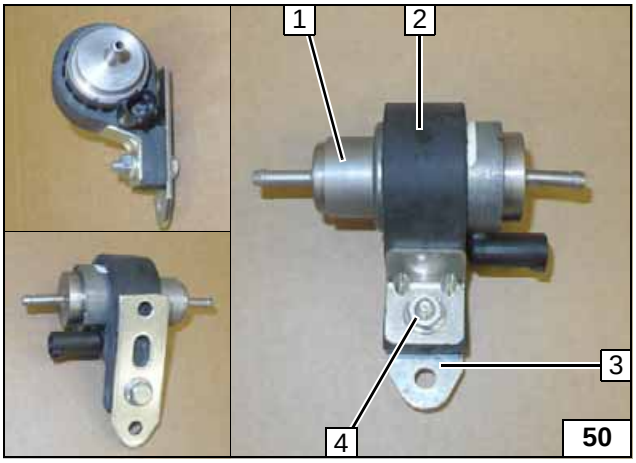
Routing lines



Discard section **X**.

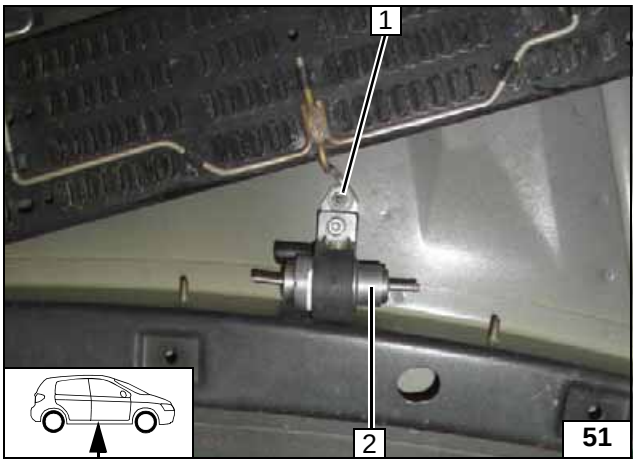
1 Perforated bracket

Preparing perforated bracket



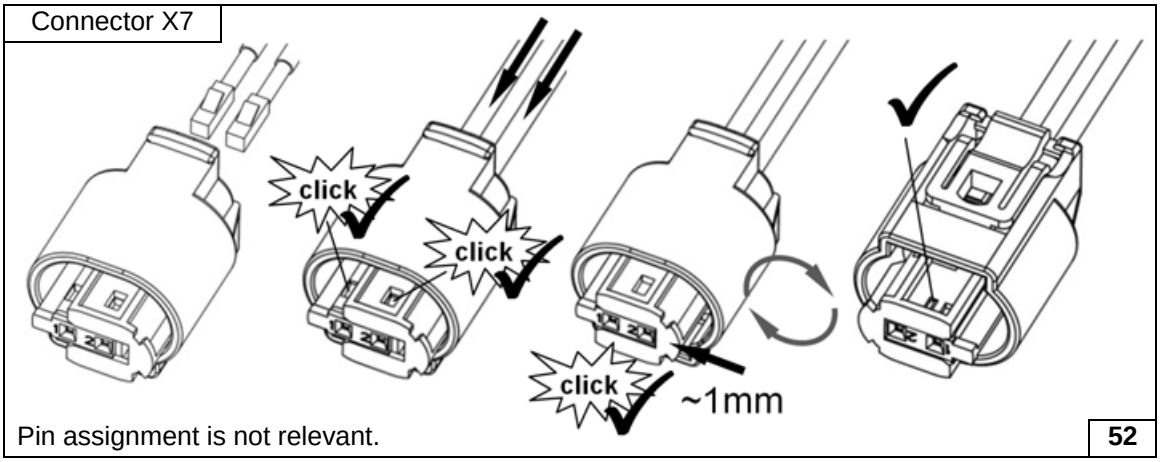
1 Metering pump
2 Metering pump mounting
3 Perforated bracket
4 M6x20 bolt, perforated bracket **3**, metering pump mounting **2**, support angle bracket, flanged nut

Premounting metering pump

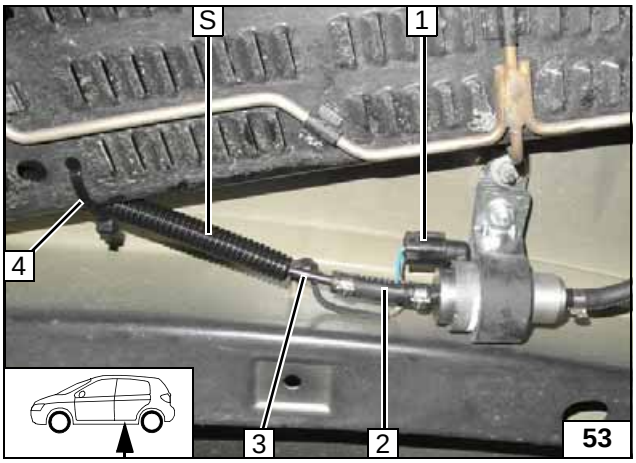


1 Original vehicle stud bolt, large diameter washer, original vehicle flanged nut
2 Metering pump

Mounting metering pump

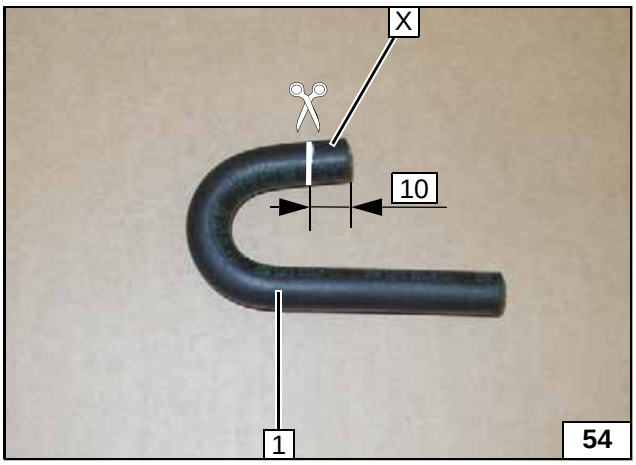


Completing connector of metering pump



1 Wiring harness of metering pump, connector X7 mounted
2 Hose section, 10mm dia. clamp [2x each]
3 Fuel line from heater
4 Cable tie

Connecting metering pump



Discard section **X**.

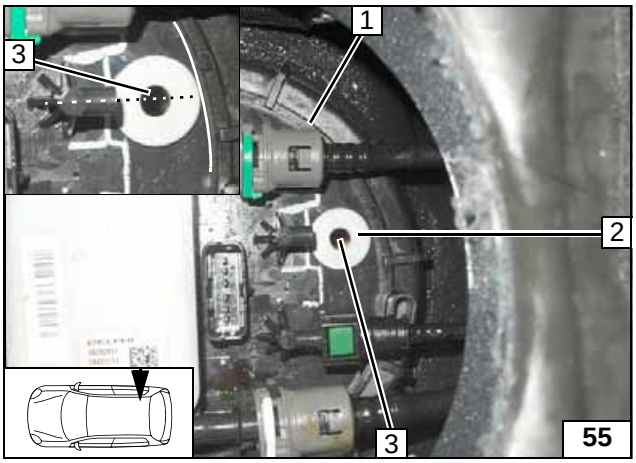
1 180° moulded hose

Shortening moulded hose

Installation of FuelFix

Work steps F1, F2 and F3.

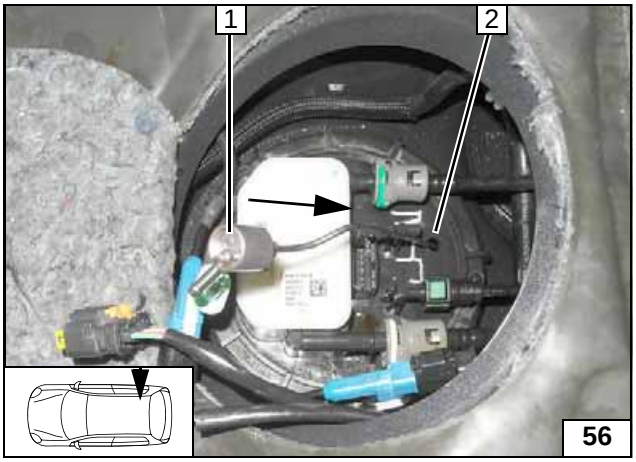
1 Fuel tank sending unit
2 Place washer with outer dia. d_a = 21.6mm as template as shown
3 Hole pattern, hole made with provided drill



Copying hole pattern / drilling hole

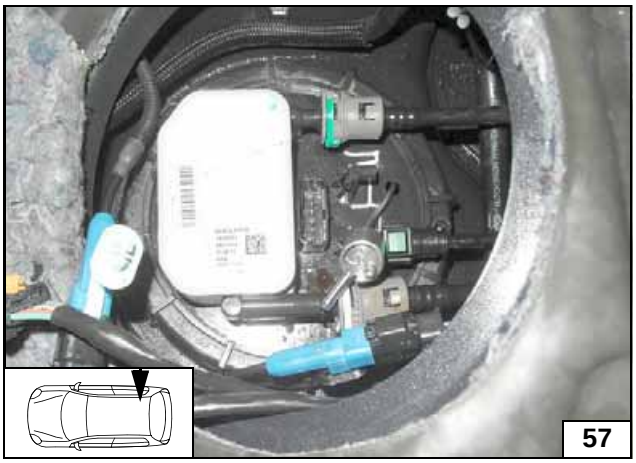
Work steps F4 and F5.

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



Inserting FuelFix

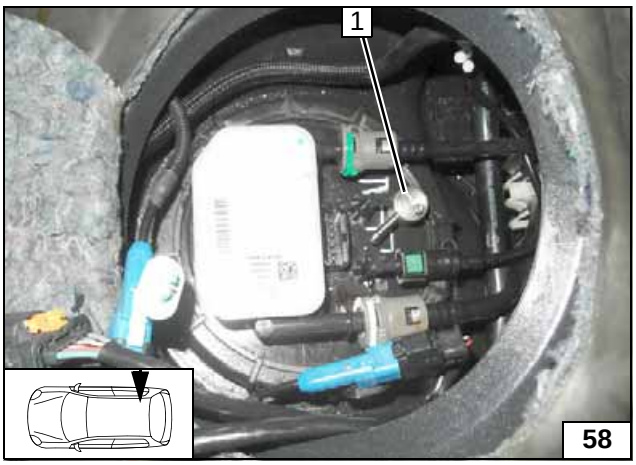
Work step F5.



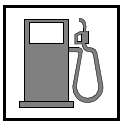
Inserting FuelFix

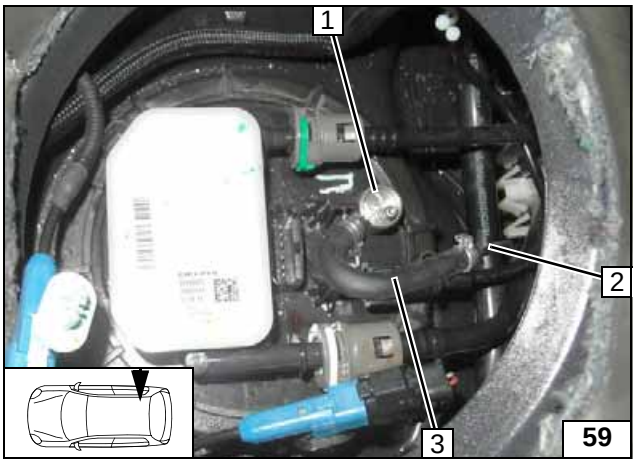
Work steps F5.3 and F5.4.

Align FuelFix **1** as shown.



Inserting FuelFix

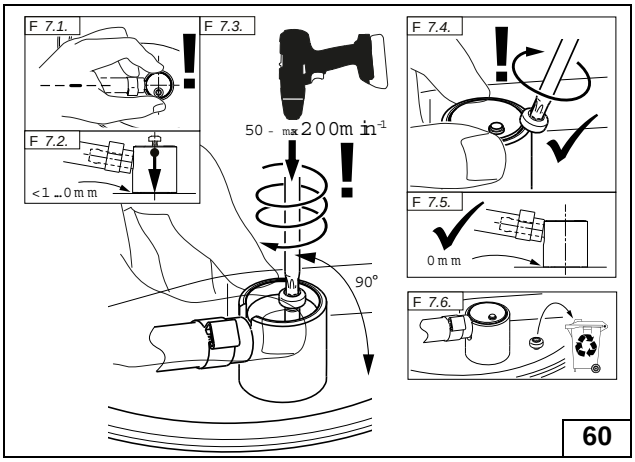




Work step F6.

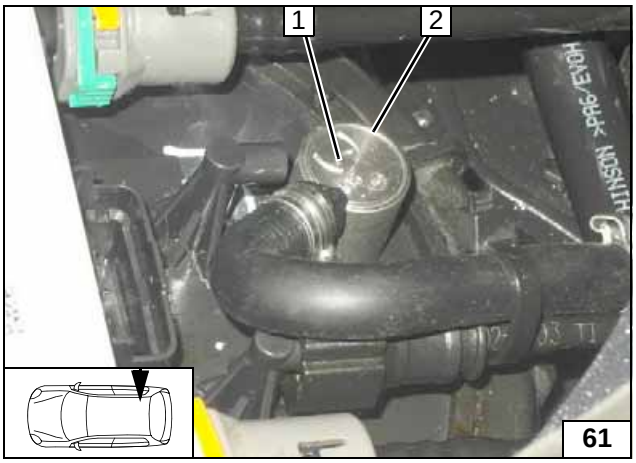
1 FuelFix
2 Fuel line
3 180° moulded hose, 10 mm dia. clamp [2x]

Connecting fuel line



Work step F7.

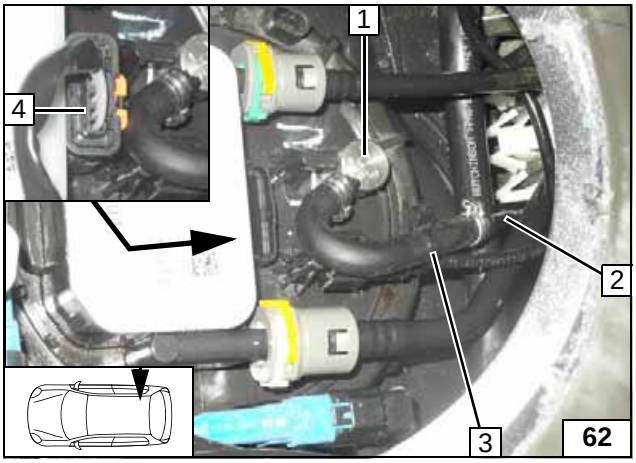
Installing FuelFix



Work step F8.

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

Checking final position

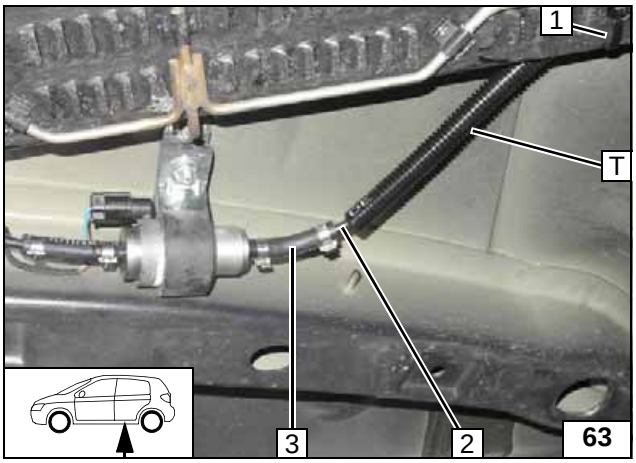


Work step F8.

Ensure sufficient distance from original vehicle connector **4**, correct if necessary.

1 FuelFix, installed
2 Fuel line of FuelFix
3 Cable tie for strain relief

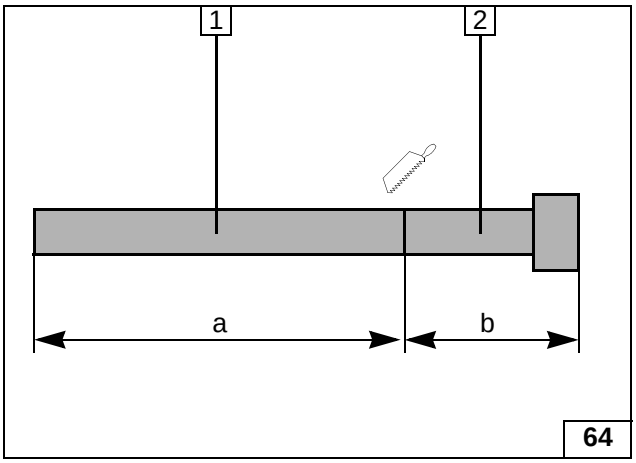
Securing fuel line



Ensure sufficient distance from adjacent components; correct if necessary.

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

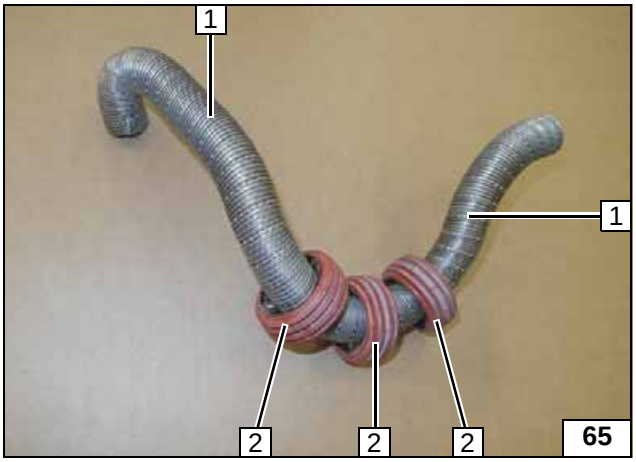
Connecting metering pump



Exhaust Gas for 133kW

1 Exhaust pipe
a = 500
2 Exhaust end section
b = 100

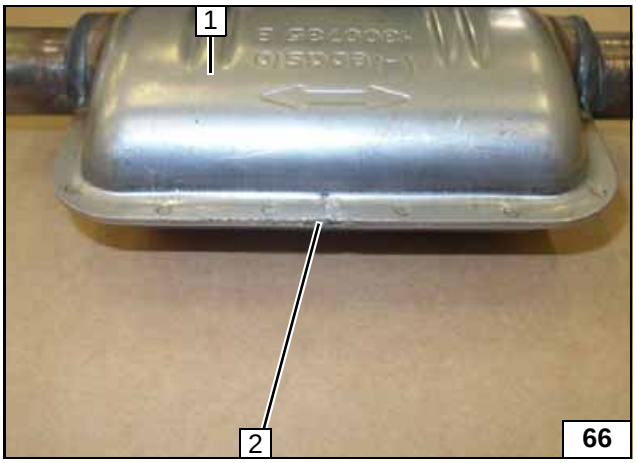
Preparing exhaust pipe



Pre-bend exhaust pipe **1** as shown.

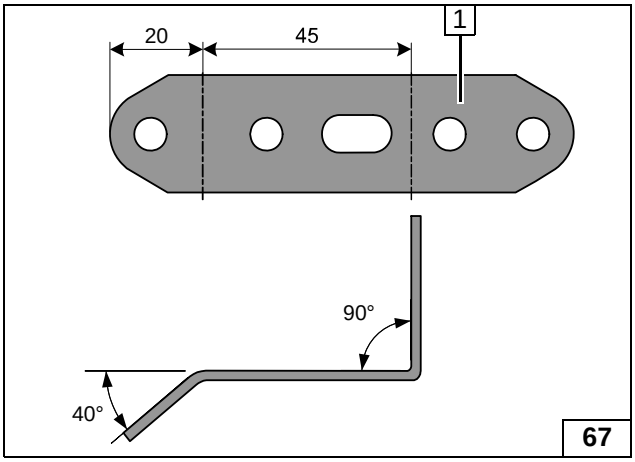
1 Exhaust pipe
2 Spacer bracket [3x]

Preparing exhaust pipe



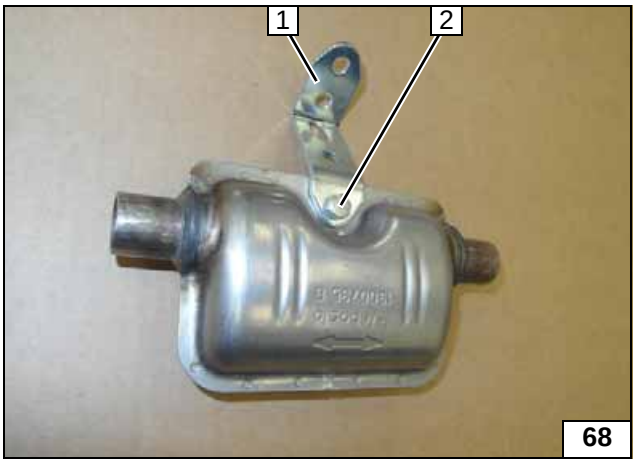
Seal condensed-water drain hole **2** on exhaust silencer **1** by compression.

Preparing exhaust silencer



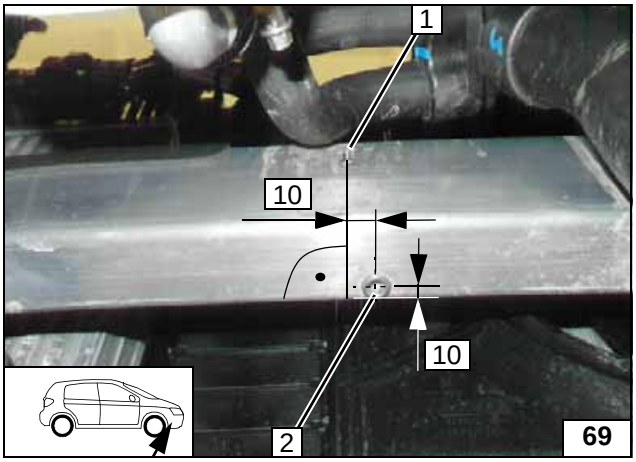
1 Perforated bracket

Bending perforated bracket



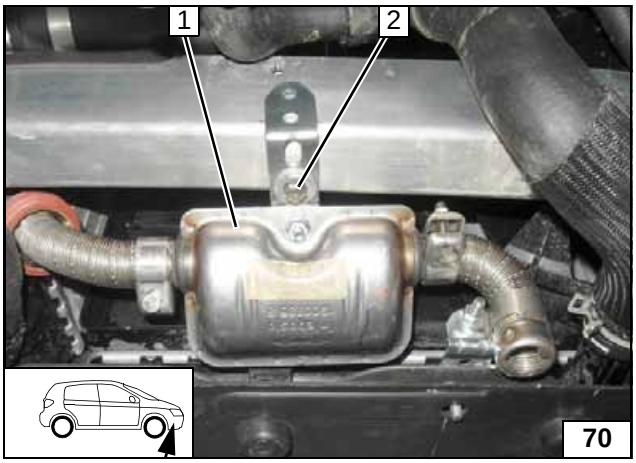
1 Perforated bracket
2 M6x16 bolt, flanged nut

Preparing exhaust silencer



1 Existing hole in cross member
2 9.1 mm dia. hole; rivet nut

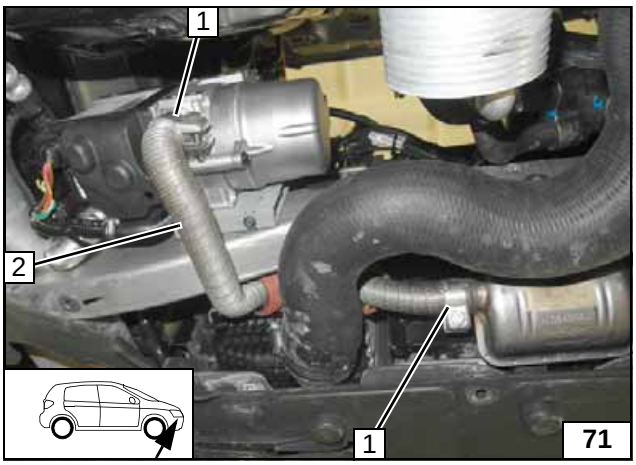
Installing rivet nuts



Exhaust pipe will be installed later.

1 Exhaust silencer
2 M6x20 bolt, spring lockwasher, large diameter washer

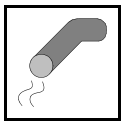
Installing exhaust silencer

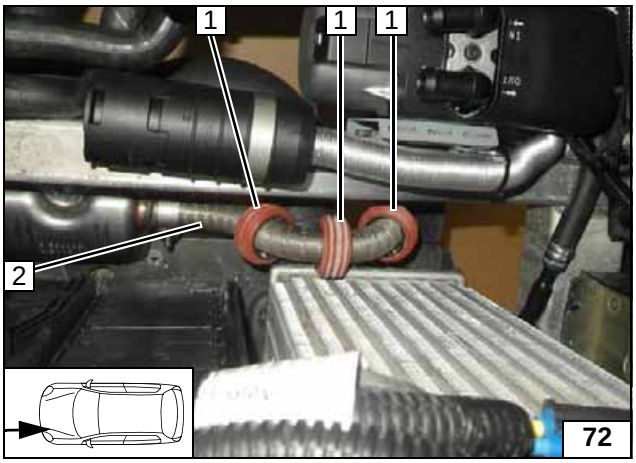


See the next figure for the alignment of the spacer bracket.

1 Hose clamp [2x]
2 Exhaust pipe

Mounting exhaust pipe

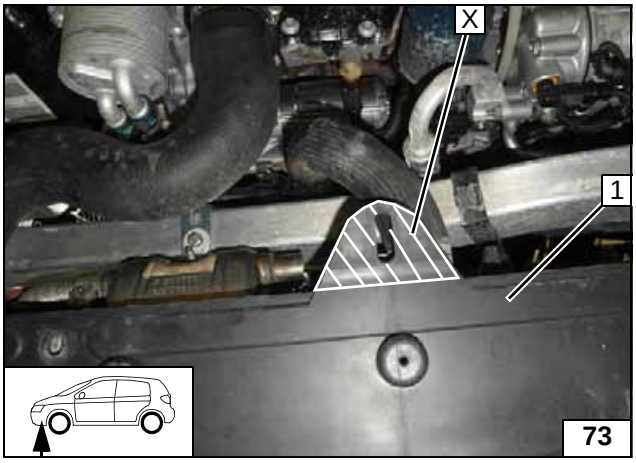




Align spacer bracket **1** [3x] with intercooler and charge-air hose.

2 Exhaust pipe

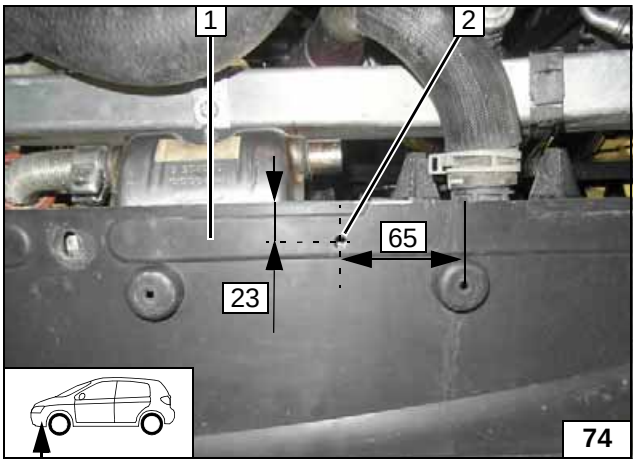
Aligning spacer bracket



Cut out marked area **X** and discard.

1 Lower bumper trim

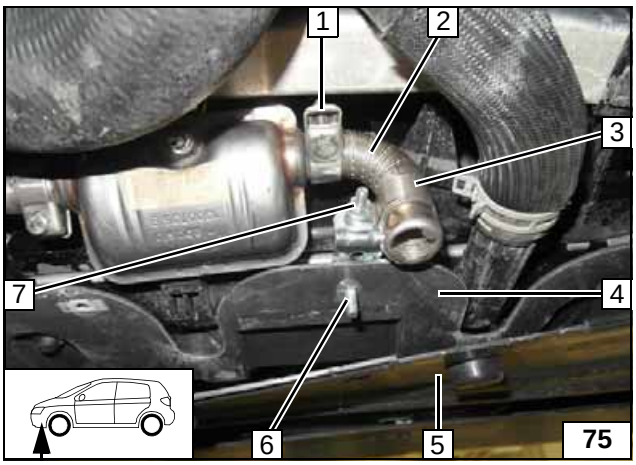
Adapting trim



1 Lower bumper trim
2 6.5mm dia. hole through both layers

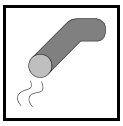
Enlarge hole in lower bumper trim to 8mm dia. (see also next figure).

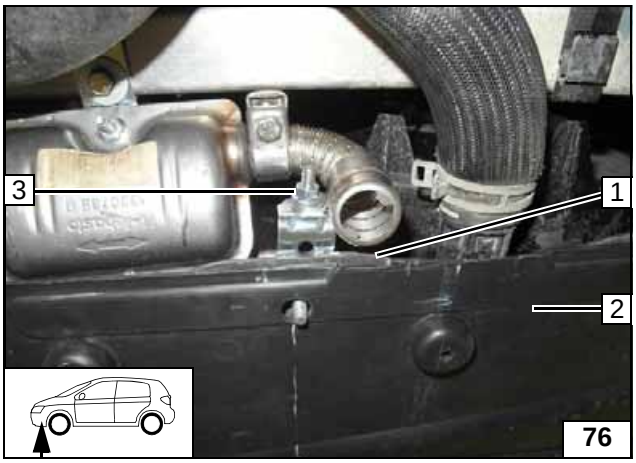
Hole in trim



1 Hose clamp
2 Exhaust end section
3 P-clamp
4 Lower radiator trim
5 Lower bumper trim
6 M6x30 bolt, angle bracket, pin lock
7 Install M6x20 bolt, p-clamp **3** and flanged nut loosely

Installing exhaust end section

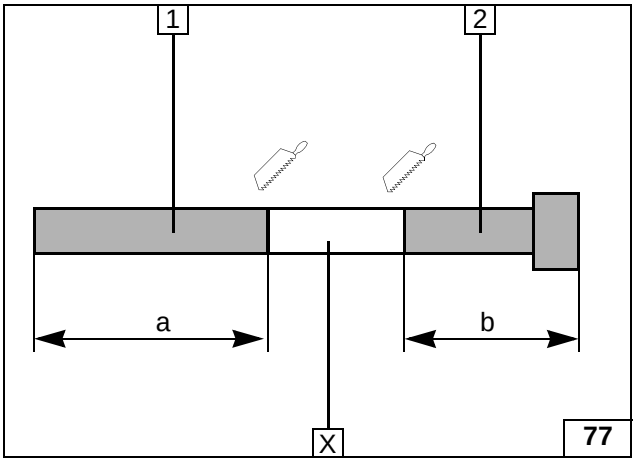




Ensure sufficient distance from adjacent components; correct if necessary.

1 Lower radiator trim
2 Lower bumper trim
3 Tighten flanged nut

Aligning exhaust end section

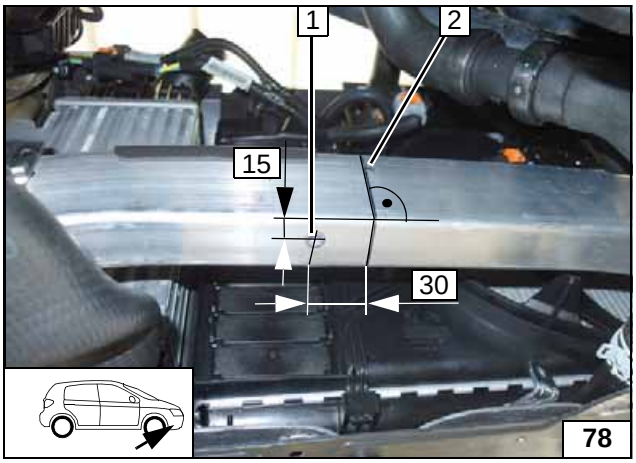


Exhaust Gas for 110kW

Discard section **X**.

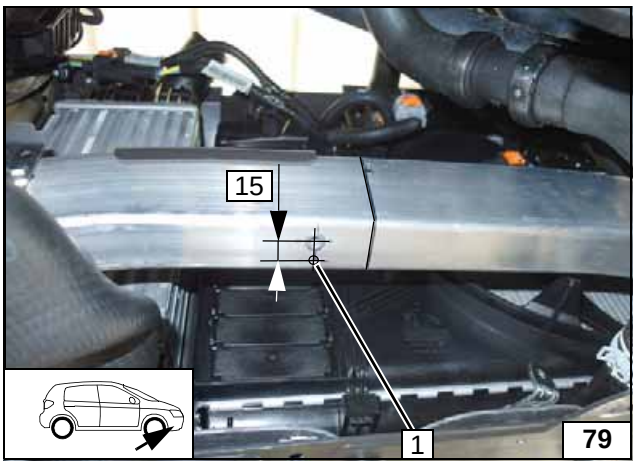
1 Exhaust pipe a =260
2 Exhaust end section b =260

Preparing exhaust pipe



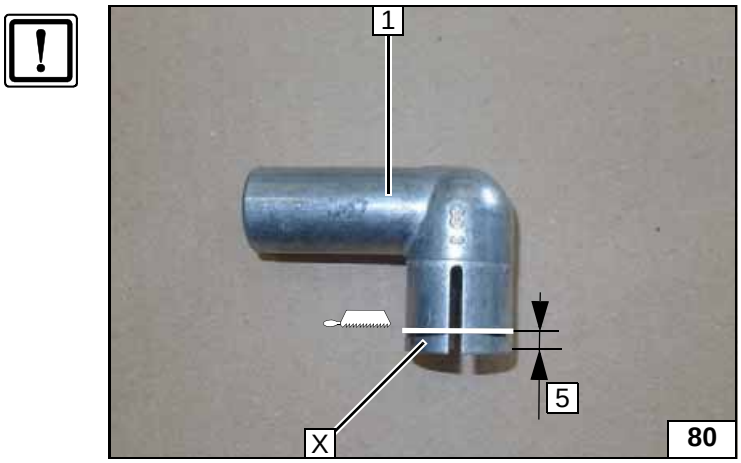
1 9.1 mm dia. hole; rivet nut
2 Existing hole in cross member

Installing rivet nut



1 4.5 mm dia. hole

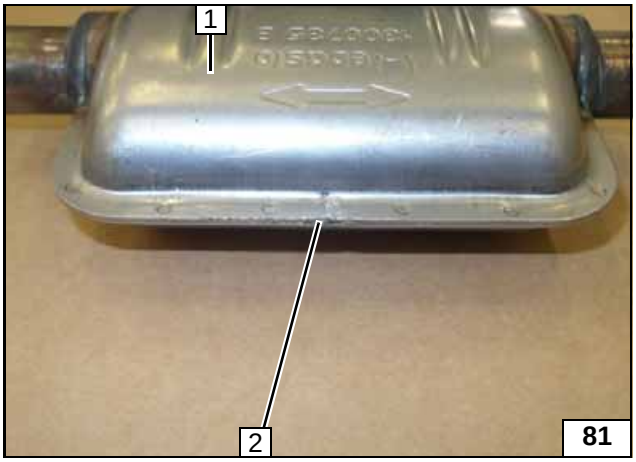
Hole for exhaust silencer



Discard section **X**.

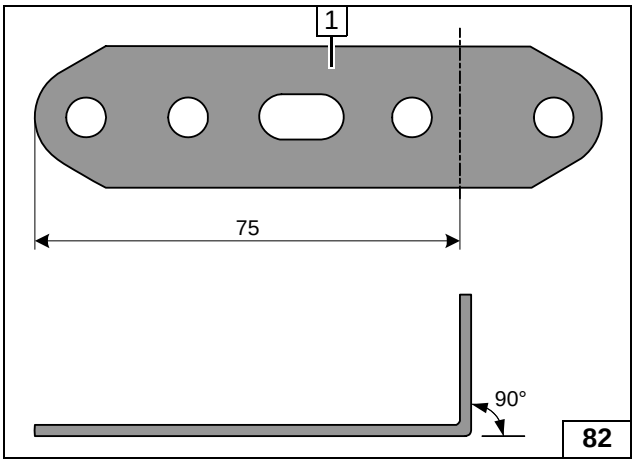
1 Exhaust elbow

Preparing exhaust elbow



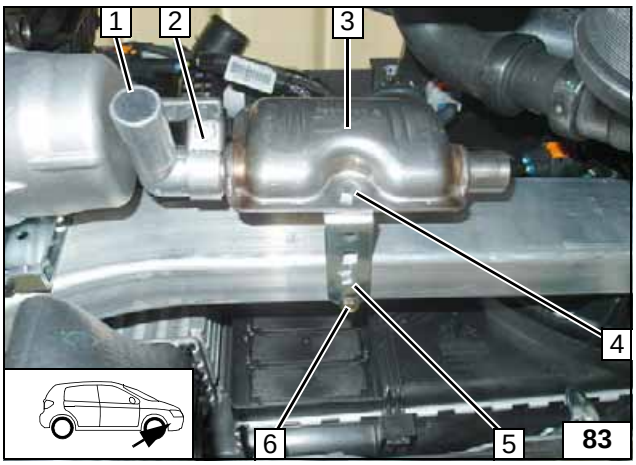
Seal condensed-water drain hole **2** on exhaust silencer **1** by compression.

Preparing exhaust silencer



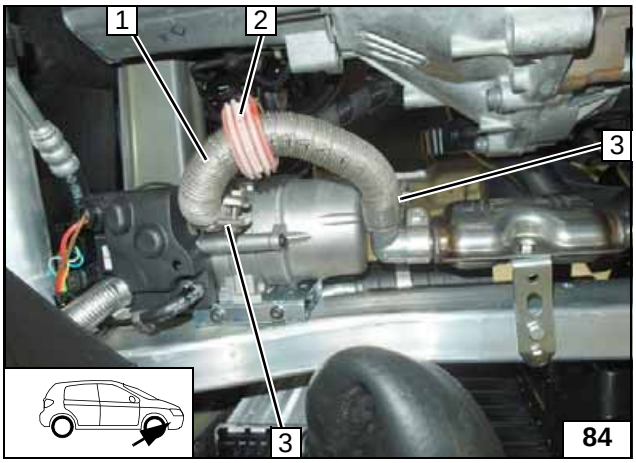
1 Perforated bracket

Preparing perforated bracket



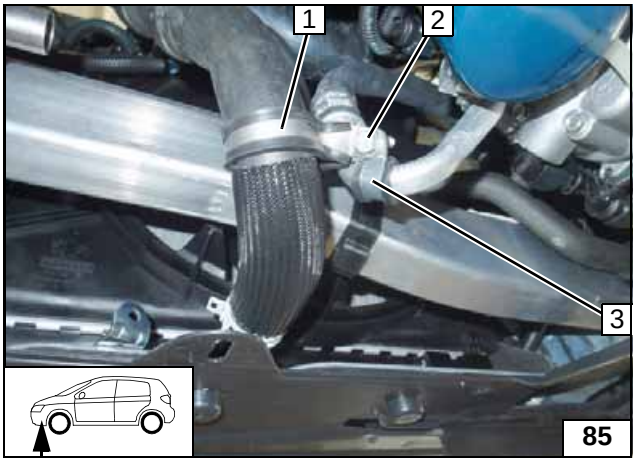
1 Exhaust elbow
2 Hose clamp
3 Exhaust silencer
4 M6x20 bolt, perforated bracket, flanged nut
5 M6x16 bolt, spring lockwasher, large diameter washer
6 ST5.5x13 self-tapping screw

Installing exhaust silencer



1 Exhaust pipe
2 Spacer bracket
3 Hose clamp [2x]

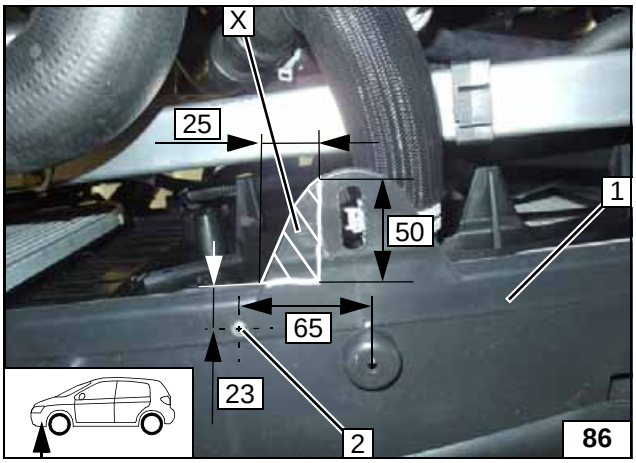
Mounting exhaust pipe



Ensure sufficient distance from adjacent components; correct if necessary.

1 48mm dia. rubber-coated p-clamp on coolant hose
2 M6x20 bolt, flanged nut
3 15mm dia. rubber-coated p-clamp on A/C line

Securing hose

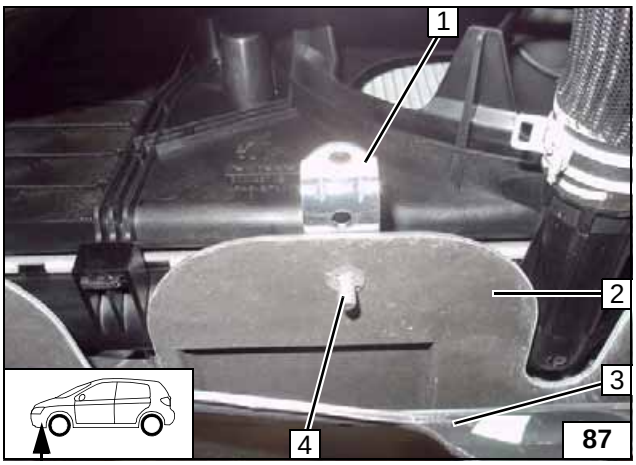


Cut out marked area **X** and discard.

1 Lower bumper trim
2 6.5mm dia. hole through both layers

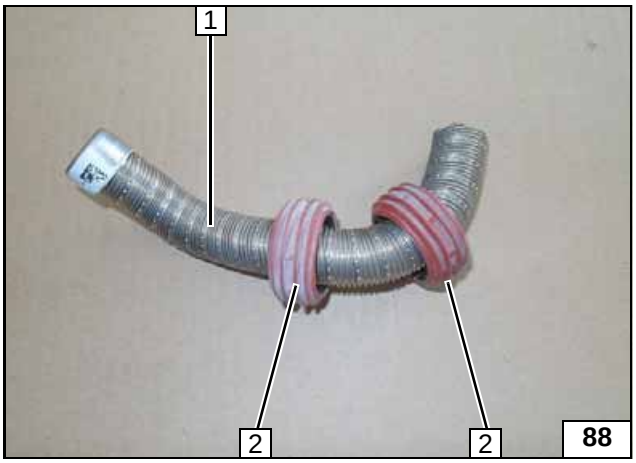
Enlarge hole in lower bumper trim to 8mm dia. (see also next figure).

Adapting trim



1 Angle bracket
2 Lower radiator trim
3 Lower bumper trim
4 M6x30 bolt, angle bracket, pin lock

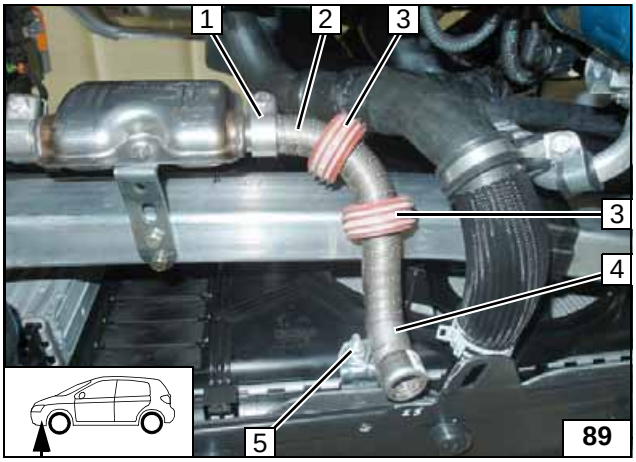
Premounting angle bracket



Pre-bend exhaust end section **1** as shown.

2 Spacer bracket [2x]

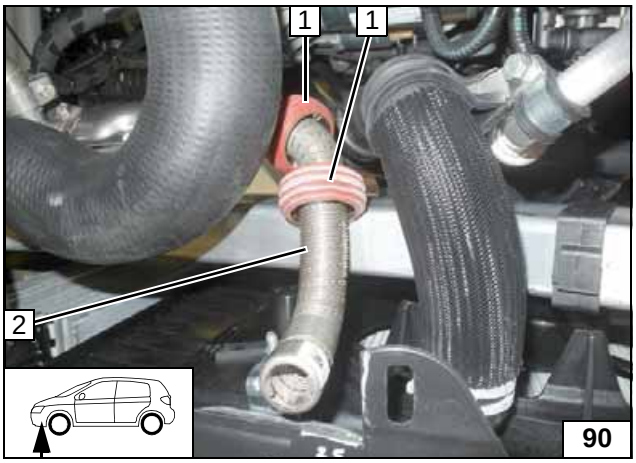
Preparing exhaust end section



See the next figure for the alignment of the spacer bracket.

1 Hose clamp
2 Exhaust end section
3 Spacer bracket [2x]
4 P-clamp
5 M6x20 bolt, angle bracket, p-clamp **4**, flanged nut

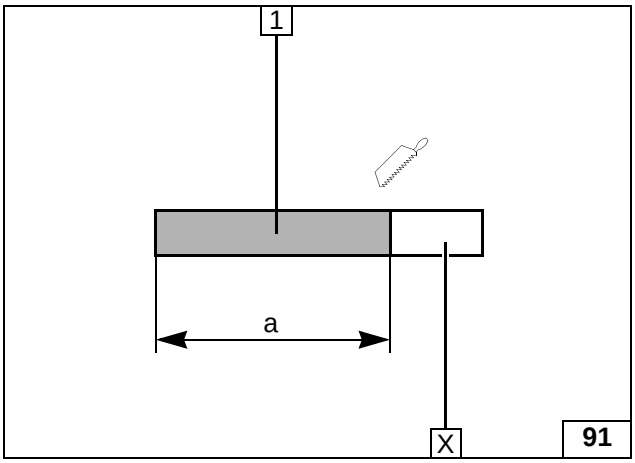
Installing exhaust end section



Align spacer bracket **1** [2x] with coolant hose and charge-air hose.
Ensure sufficient distance from adjacent components; correct if necessary.

2 Exhaust end section

Aligning spacer bracket



Combustion Air

Discard section **X**.

1 Combustion air pipe
a = 370

Cutting combustion air pipe to length

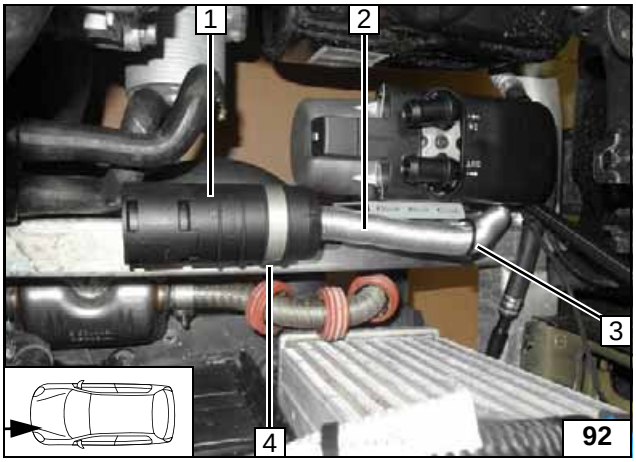


Image shows 133kW.

1 Silencer
2 Combustion air pipe
3 Cable tie around perforated bracket
4 ST5,5x13 self-tapping screw (hidden), 51mm dia. clamp

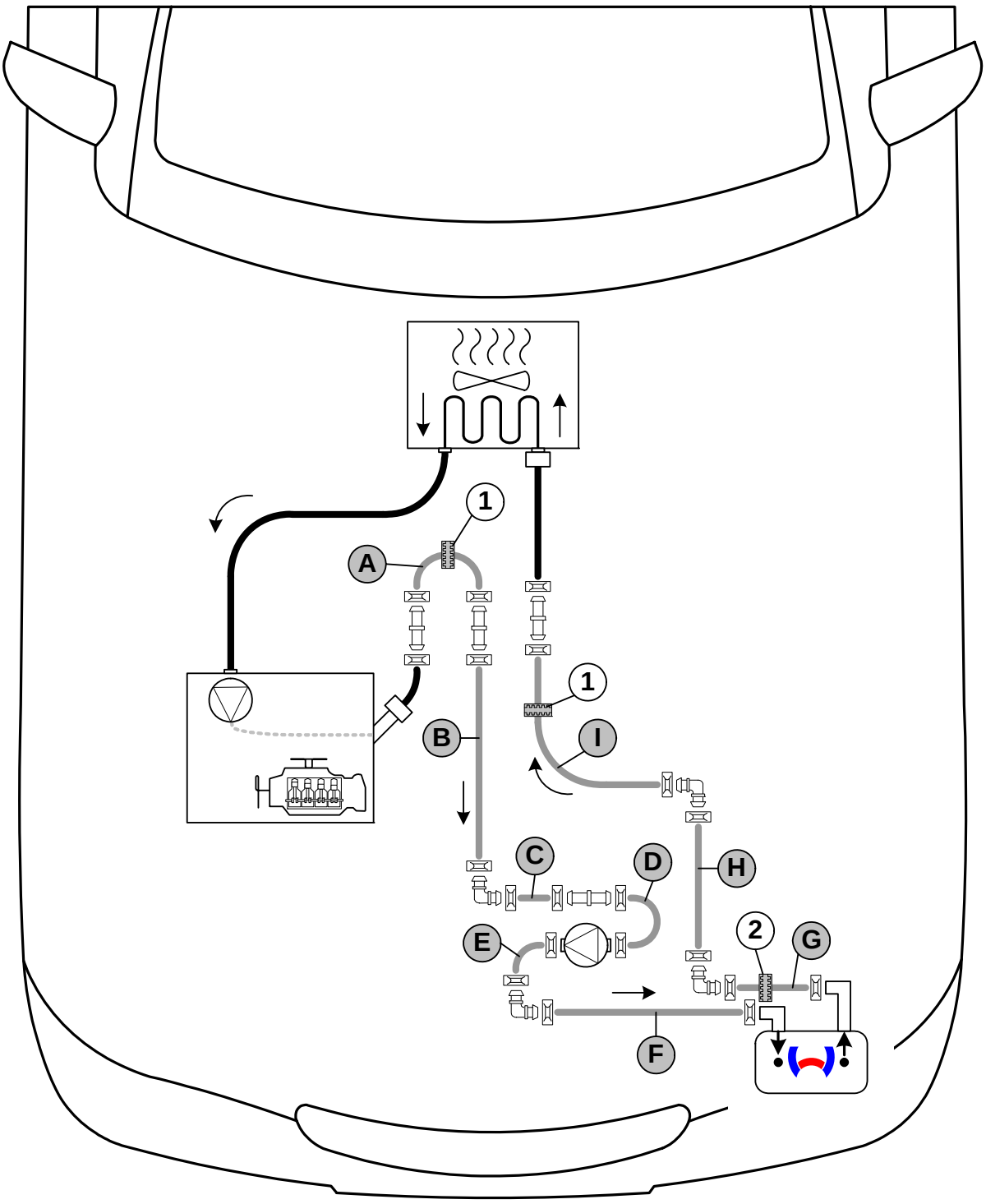
Installing silencer

Coolant Circuit

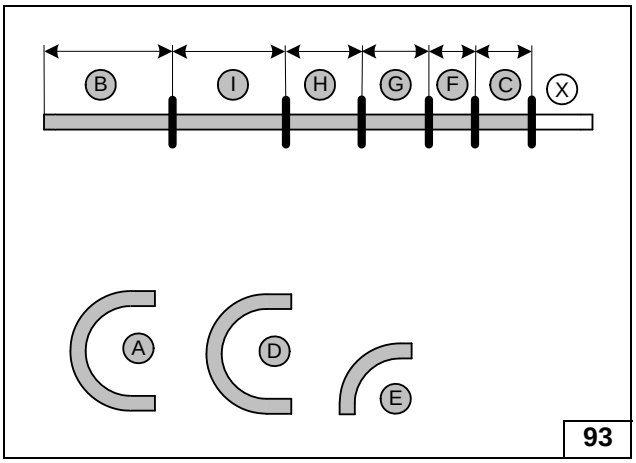
Any coolant running off should be collected using an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



All spring clips without a specific designation = 25 mm dia.
1 = Black (sw) rubber isolator [2x], only for 133kW.
2 = Black (sw) rubber isolator, all vehicles.
All connecting pipes and = 18x18 mm dia.

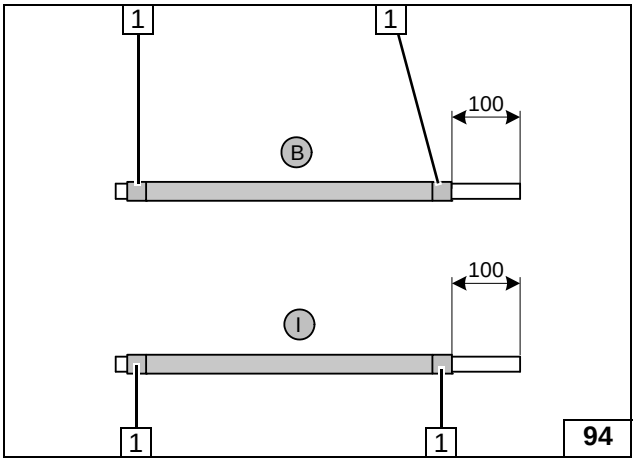


All vehicles

Discard section **X**.
Hose **A** = 180°, 18 mm dia. moulded hose.
Hose **D** = 180°, 18 mm dia. moulded hose.
Hose **E** = 90°, 18 mm dia. moulded hose.

Cutting hoses to length

	133 kW	110 kW
B=	400	410
C=	100	100
F=	100	100
G=	145	145
H=	170	170
I=	480	700

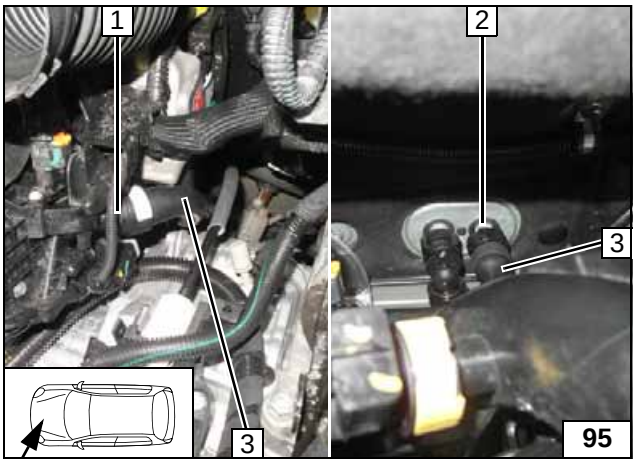


133 kW

Slide on braided protection hoses and cut to length.

1 Cut heat shrink plastic tubing to size, 50mm long [4x]

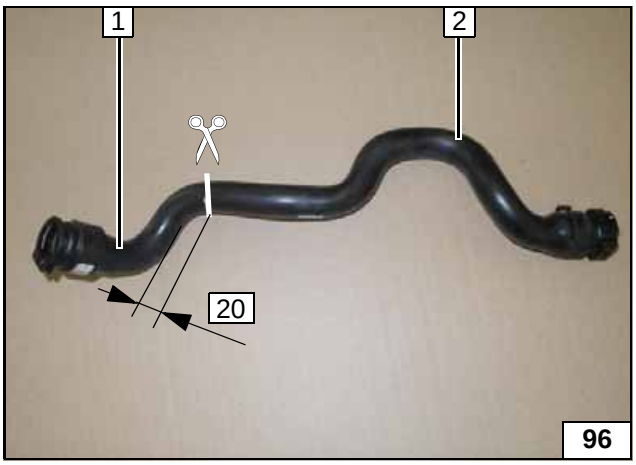
Installing braided protection hoses



Remove hose on engine outlet / heat exchanger inlet **3**.

1 Connection piece of engine outlet
2 Connection piece of heat exchanger inlet

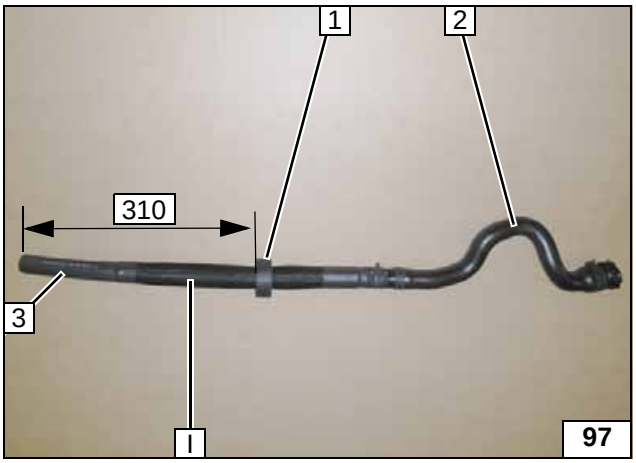
Cutting point



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

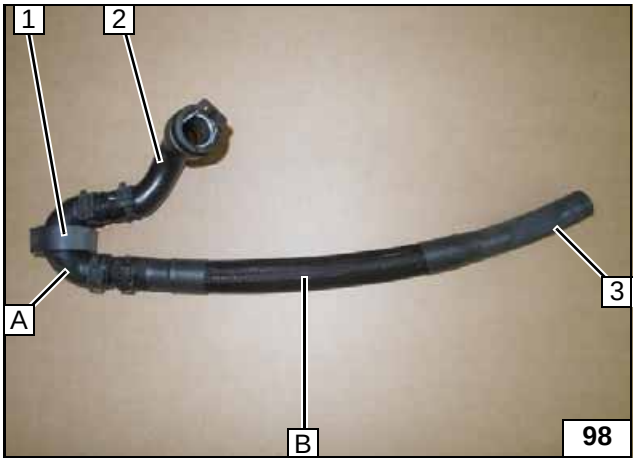
1 Hose section of engine outlet
2 Hose section of heat exchanger inlet

Cutting point



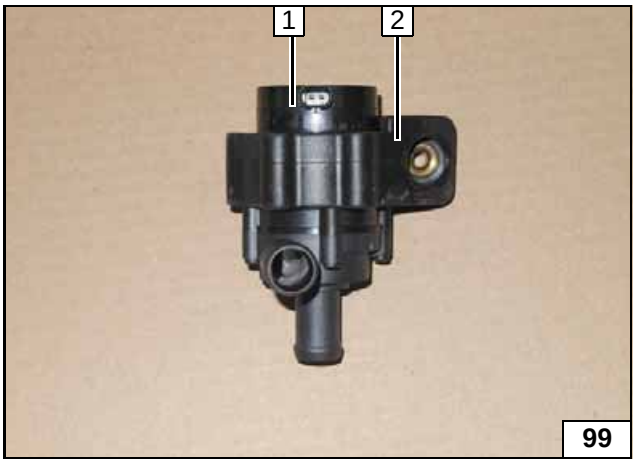
1 Black rubber isolator
2 Hose section of heat exchanger inlet
3 Side without braided protection hose

Preparing hoses



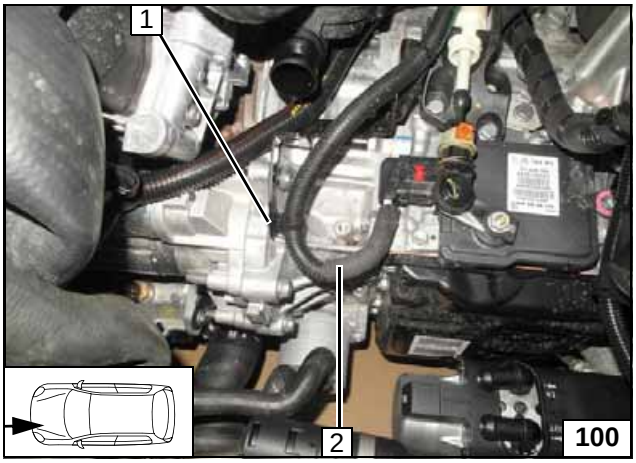
1 Black rubber isolator
2 Hose section of engine inlet
3 Side without braided protection hose

Preparing hoses



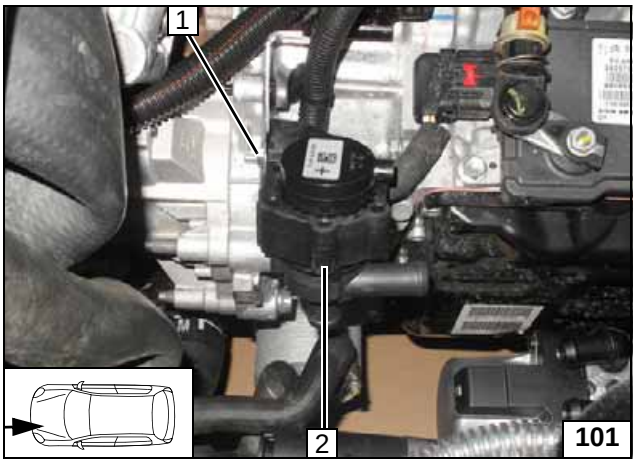
1 Circulating pump
2 Circulating pump mounting

Premounting circulating pump



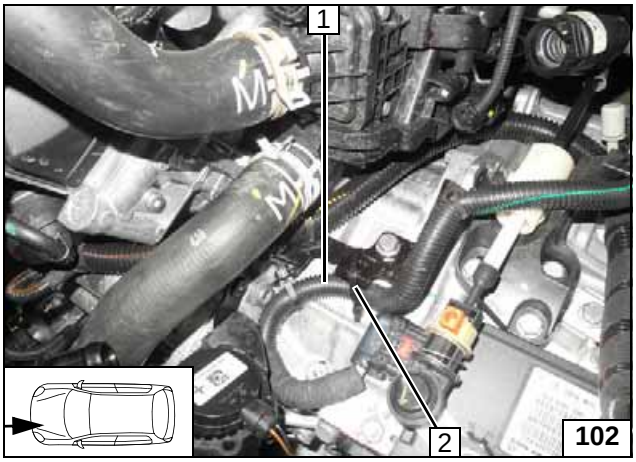
Detach original vehicle wiring harness **2** with retaining clip **1** from bracket.

Relocating wiring harness



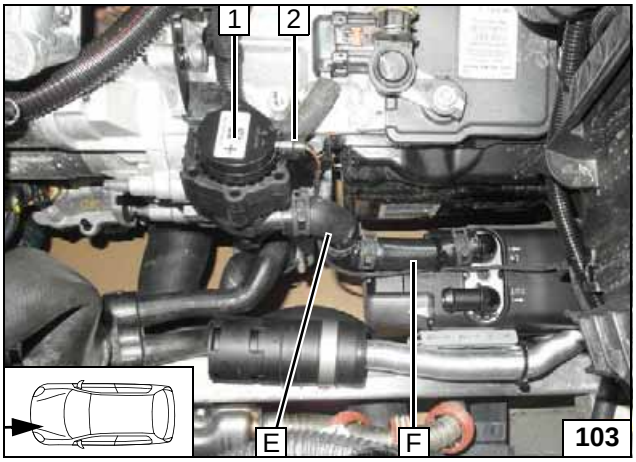
1 M6x25 bolt, original vehicle bracket, flanged nut
2 Circulating pump

Installing circulating pump



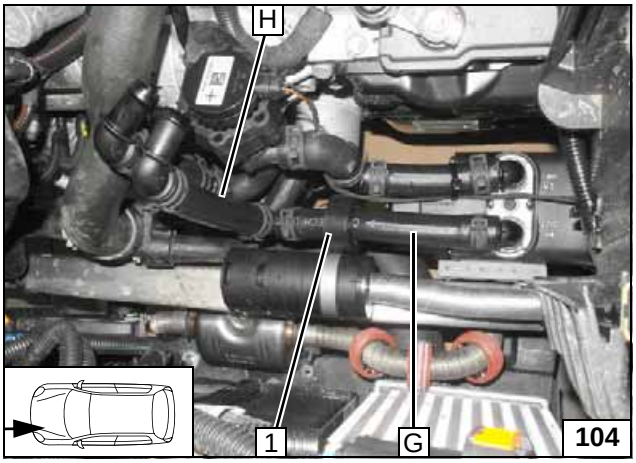
Secure original vehicle wiring harness **1** with cable tie **2**.

Relocating wiring harness



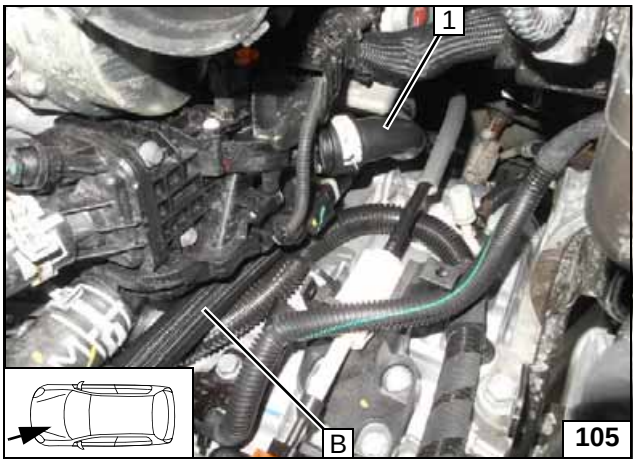
1 Circulating pump
2 Connector of circulating pump wiring harness

Connecting heater inlet



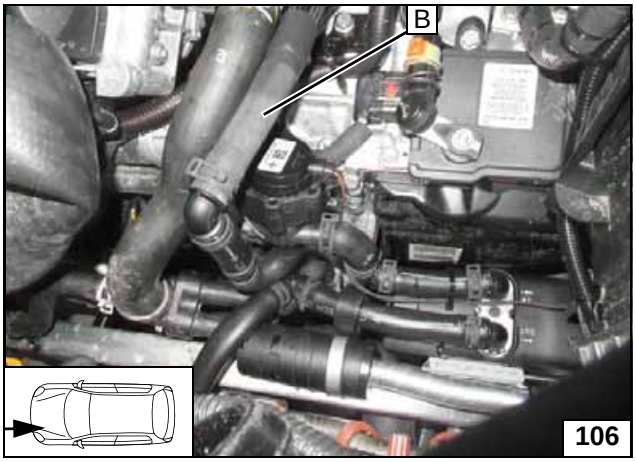
1 Black rubber isolator

Connecting heater outlet

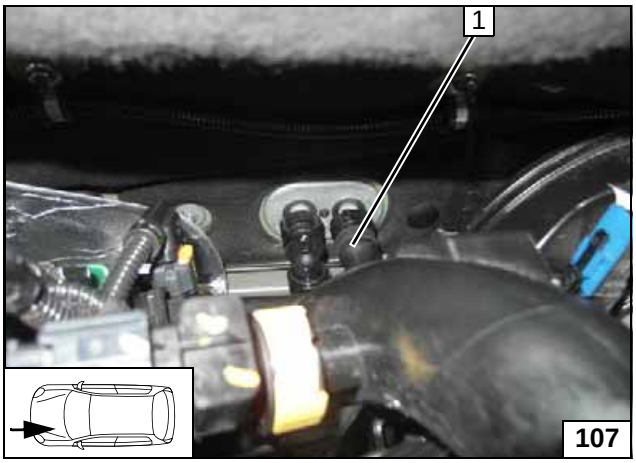


1 Hose section of engine outlet

Connecting engine outlet

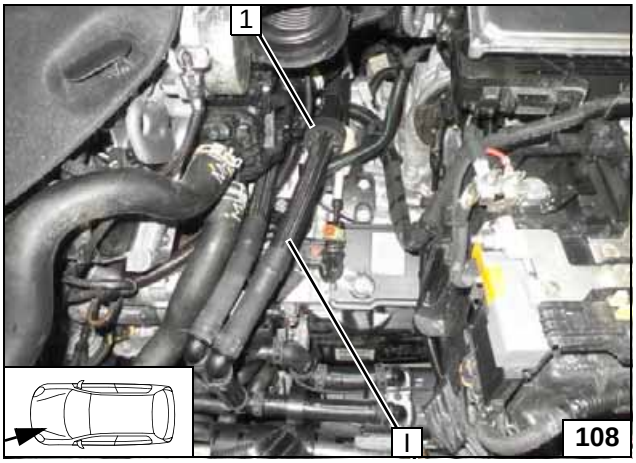


Installing hose B



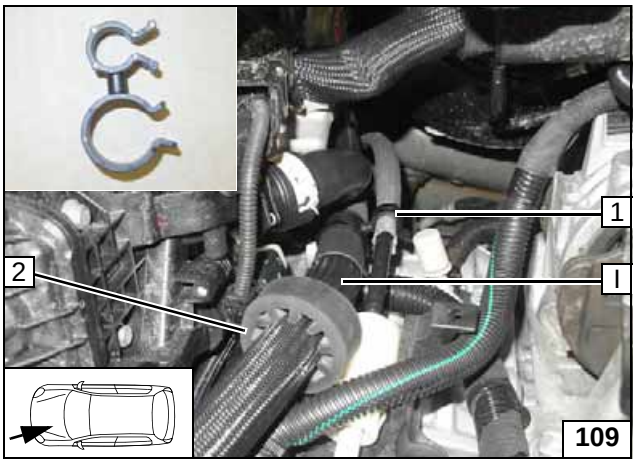
1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



1 Black rubber isolator

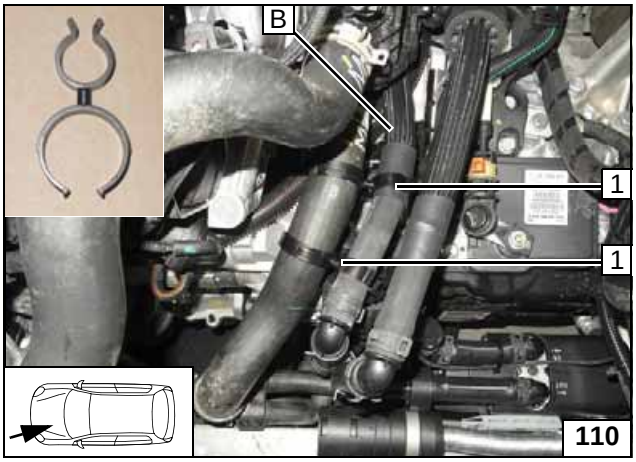
Installing hose I



Align black rubber isolator **2** with gearshift cable and original vehicle wiring harness.

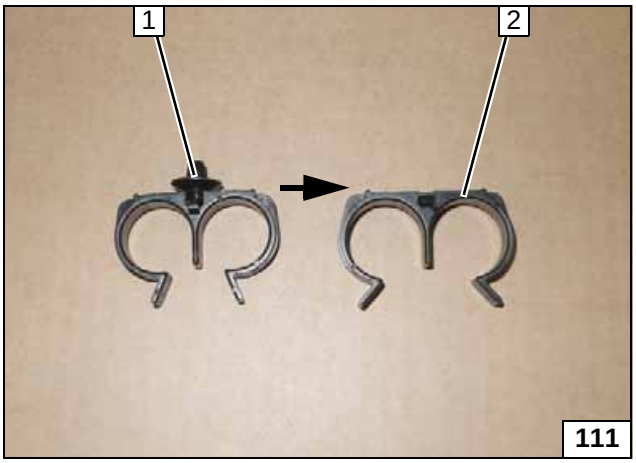
1 23x13 hose bracket

Installing hose bracket



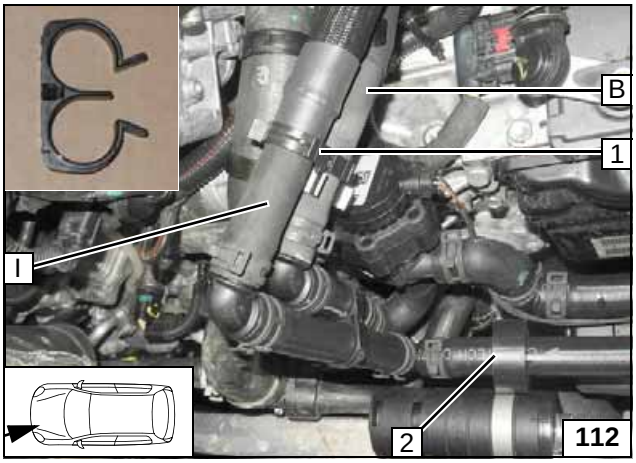
1 37x25 hose bracket [2x]

Installing hose bracket



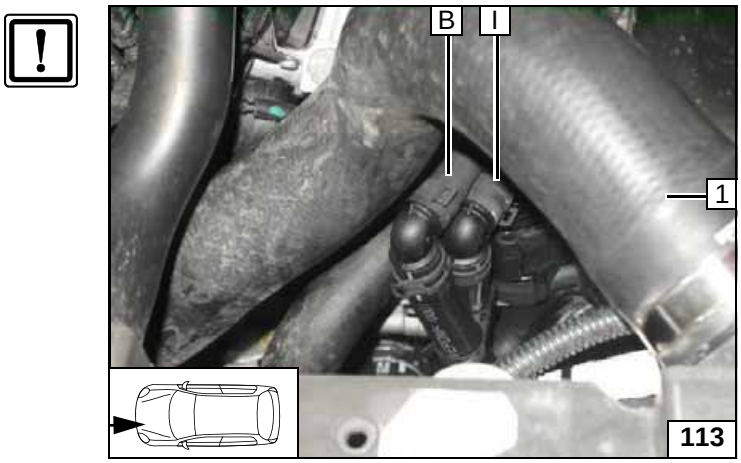
Remove retaining clip **1** from 23x23 hose bracket **2** and discard.

Preparing hose bracket



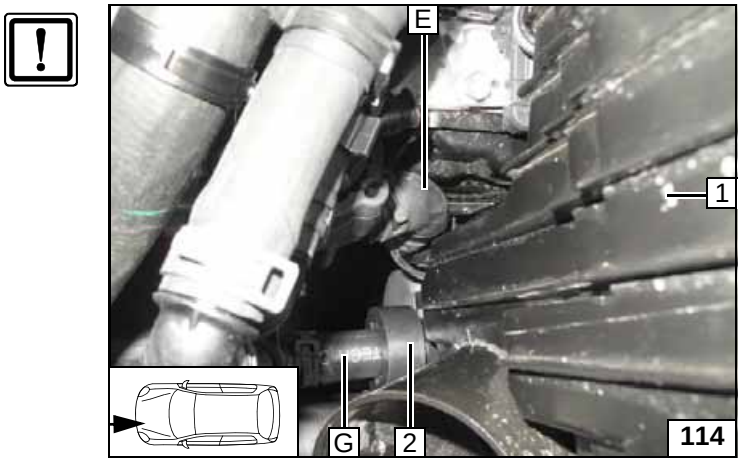
1 23x23 hose bracket
2 Align black rubber isolator with combustion air silencer

Installing hose bracket



Ensure sufficient distance between charge-air hose **1**, hose **B** and hose **I**, correct if necessary.

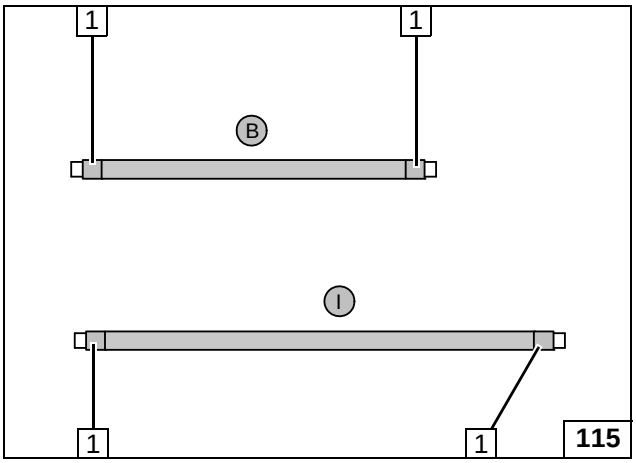
Checking distances



Install air filter.
Ensure sufficient distance between air filter housing **1**, hose **G** and hose **E**, correct if necessary.

2 Black rubber isolator

Checking distances

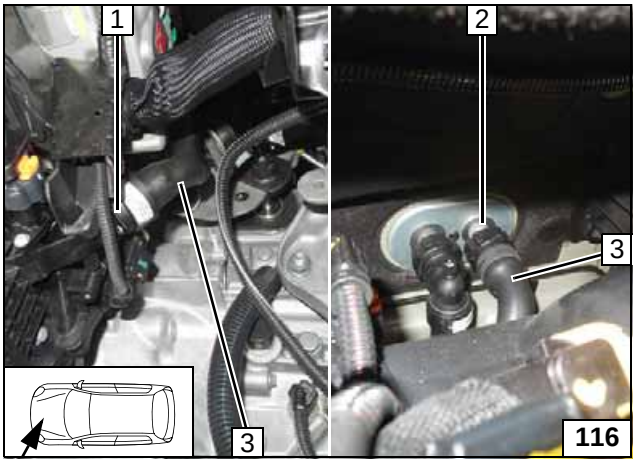


110 kW

Slide on braided protection hoses and cut to length.

1 Cut heat shrink plastic tubing to size, 50mm long [4x]

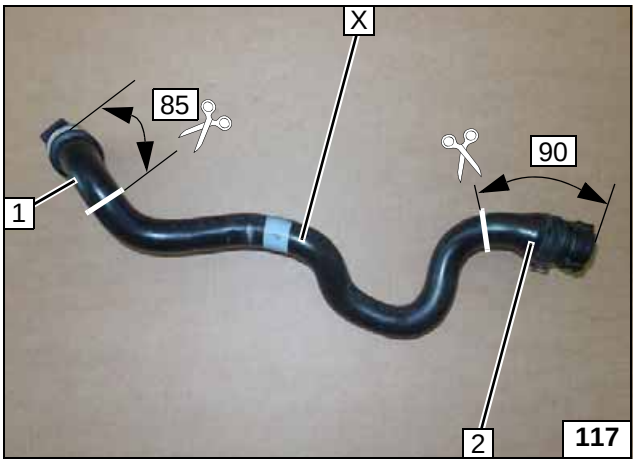
Installing braided protection hoses



Remove hose on engine outlet / heat exchanger inlet **3**.

1 Connection piece of engine outlet
2 Connection piece of heat exchanger inlet

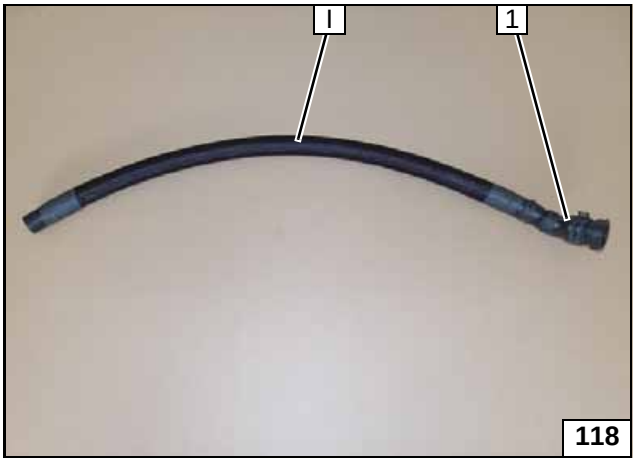
Cutting point



Cut off hose on engine outlet / heat exchanger inlet at the markings.
Discard section **X**.

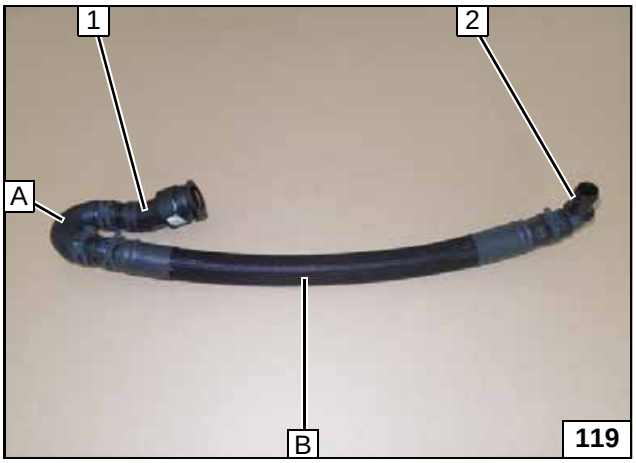
1 Hose section of engine outlet
2 Hose section of heat exchanger inlet

Cutting point



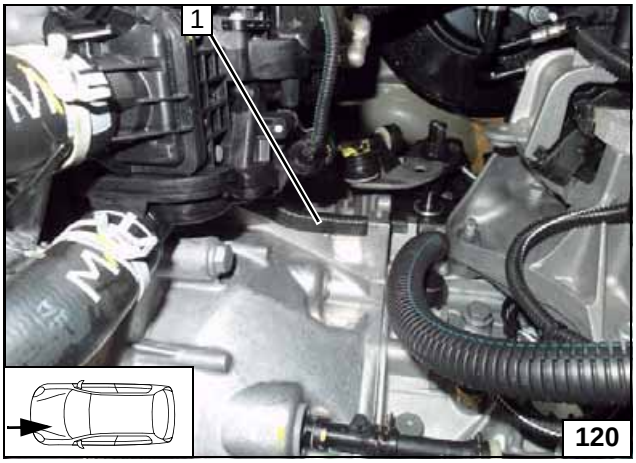
1 Hose section of heat exchanger inlet

Preparing hoses



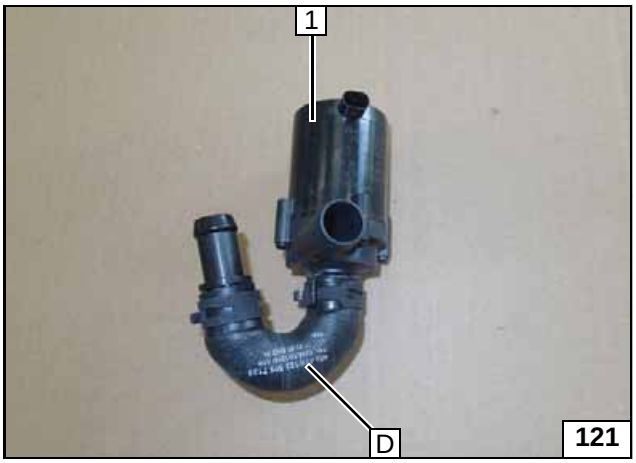
1 Hose section of engine inlet
2 90°, 18mm dia. connecting pipe

Preparing hoses



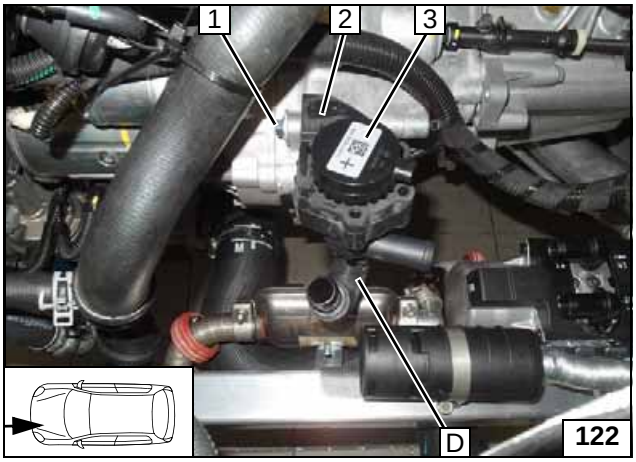
1 Edge protection

Installing edge protection



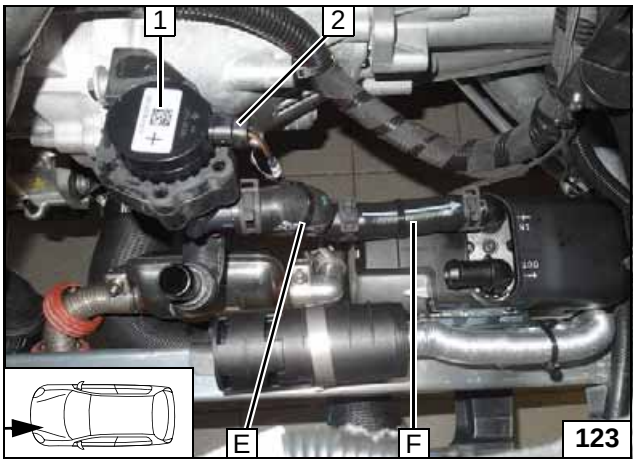
1 Circulating pump

Premounting circulating pump



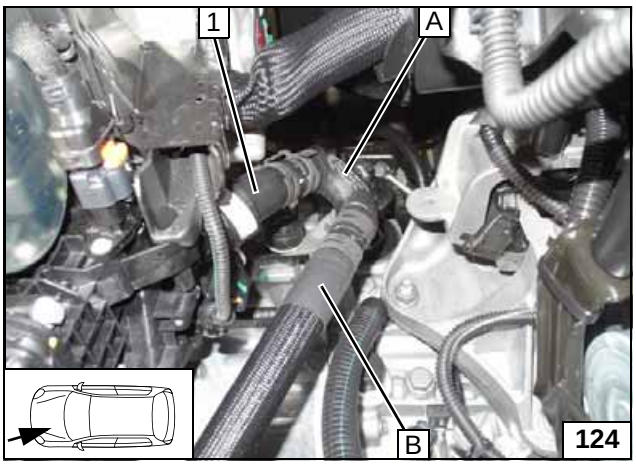
1 M6x40 bolt, open eyelet on transmission, flanged nut
2 Circulating pump mounting
3 Circulating pump

Installing circulating pump



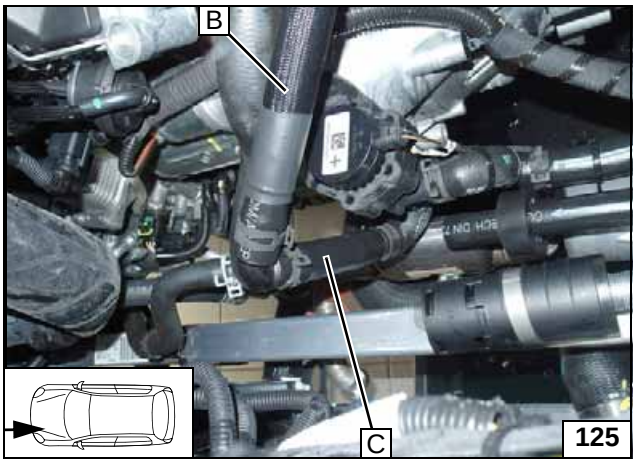
1 Circulating pump
2 Connector of circulating pump wiring harness

Connecting heater inlet

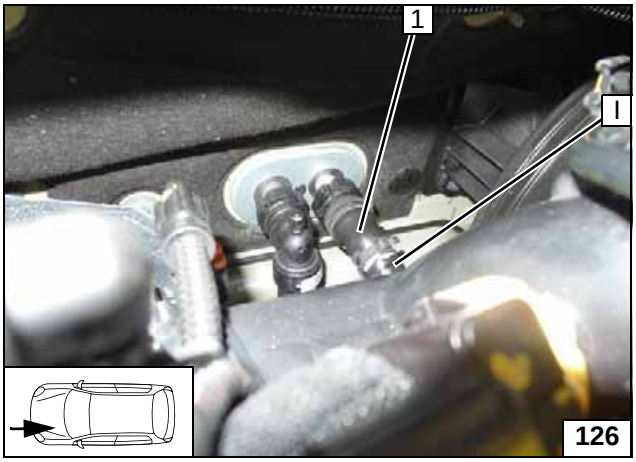


1 Hose section of engine outlet

Connecting engine outlet



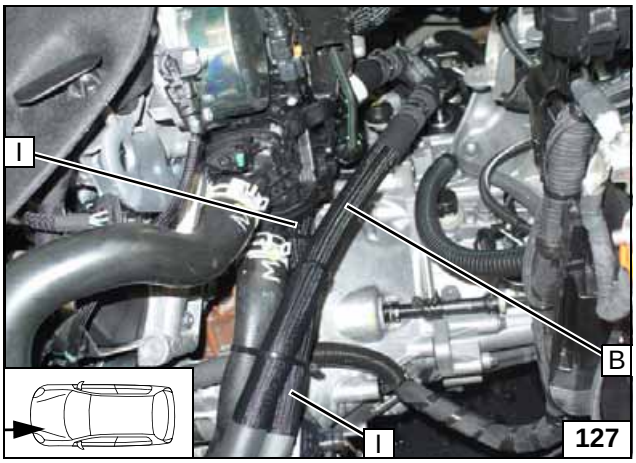
Installing hoses B and C



Route hoses through original vehicle hose bracket (hidden).

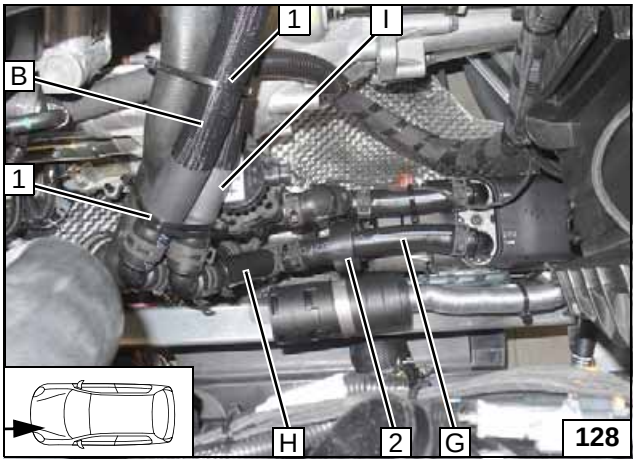
1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



Route hose **I** below hose **B** and secure with cable ties.
Ensure sufficient distance from adjacent components, correct if necessary.

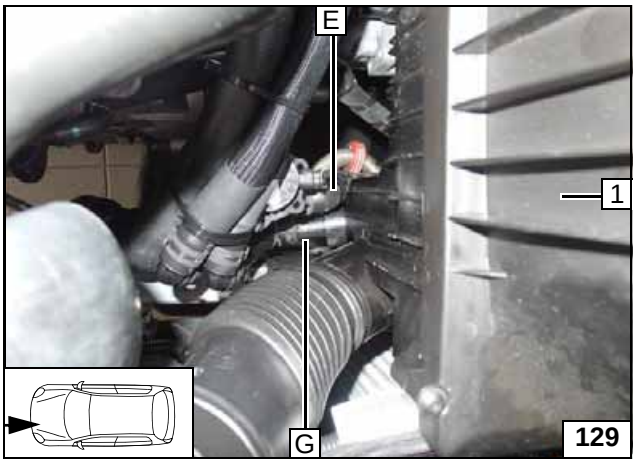
Routing hose I



Ensure sufficient distance from adjacent components, correct if necessary.

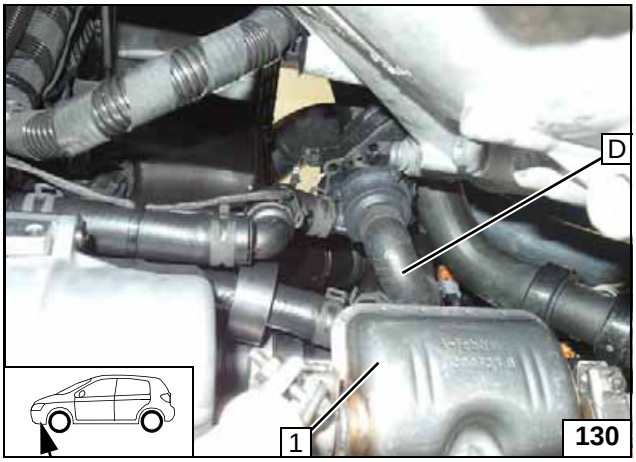
1 Cable tie
2 Align black rubber isolator with combustion air silencer

Connecting heater outlet



Install air filter.
Ensure sufficient distance between air filter housing **1**, hose **G** and hose **E**, correct if necessary.

Checking distances

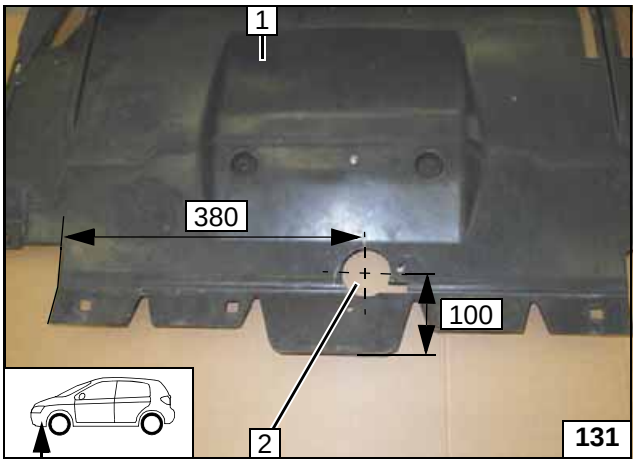


Ensure sufficient distance between exhaust silencer **1** and hose **D**, correct if necessary.

Checking distance

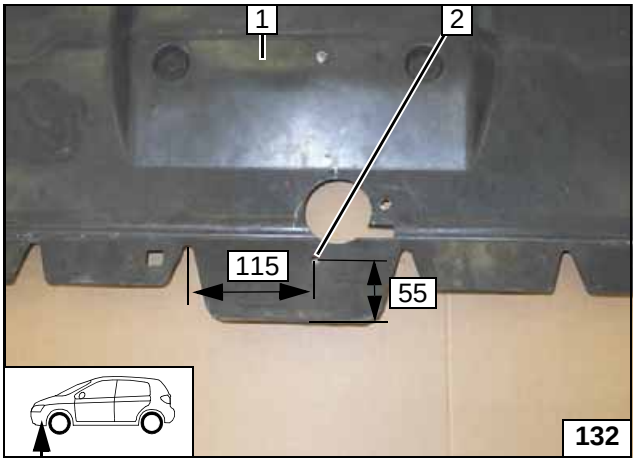
Final Work

All vehicles



1 Lower engine trim
2 60 mm dia. hole

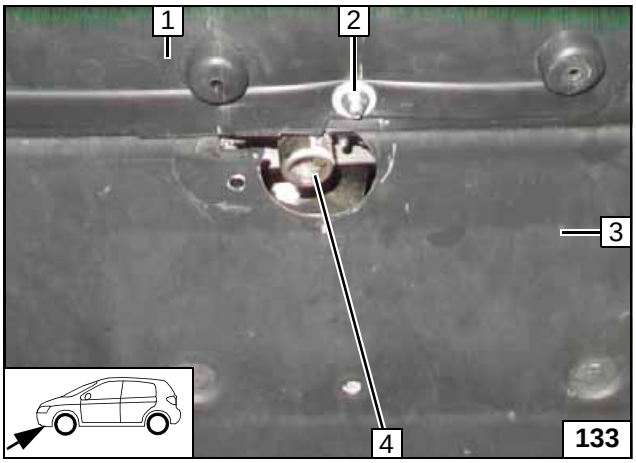
Hole in trim



1 Lower engine trim
2 8mm dia. hole

Hole in trim

133 kW

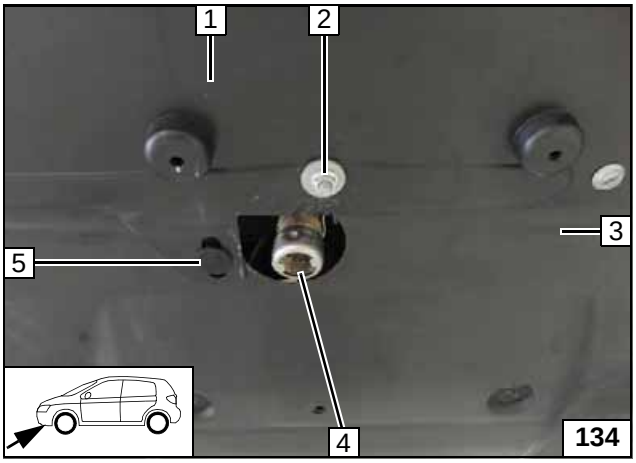


Attach lower engine trim **3**. Insert pre-mounted bolt **2** through lower bumper trim **1** and lower engine trim **3**. Ensure sufficient distance from adjacent components; correct if necessary.

2 M6x20 bolt, large diameter washer, flanged nut
4 Exhaust end section

Installing engine trim, aligning exhaust end section

110 kW



Attach lower engine trim **3**. Insert pre-mounted bolt **2** through lower bumper trim **1** and lower engine trim **3**. Ensure sufficient distance from adjacent components; correct if necessary.

2 M6x20 bolt, large diameter washer, flanged nut
4 Exhaust end section
5 Original vehicle retaining clip

Installing engine trim, aligning exhaust end section

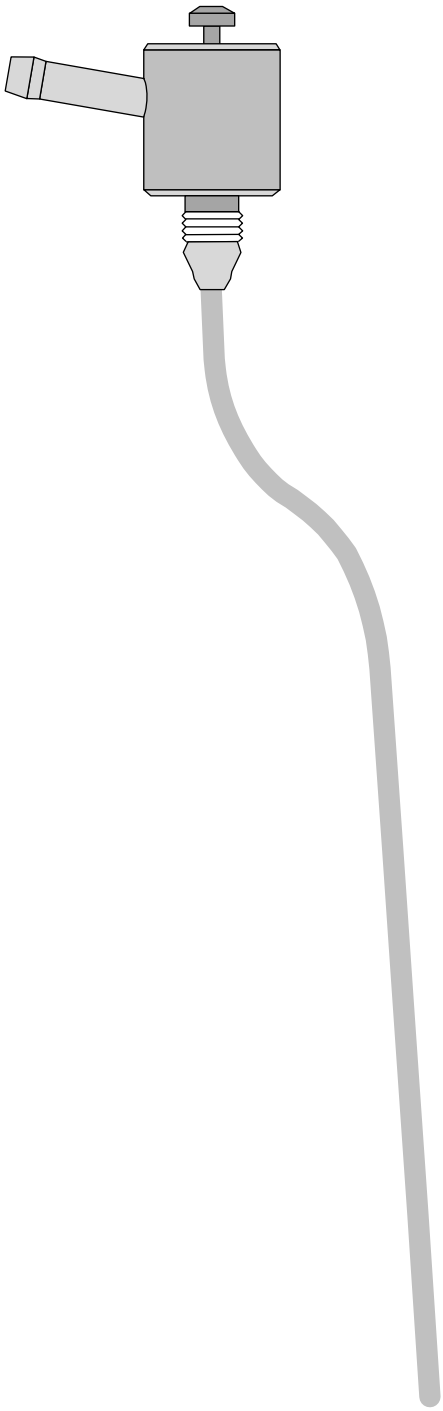
All vehicles

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

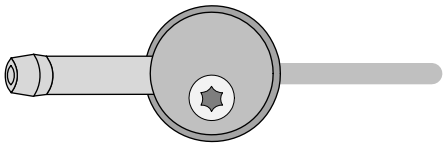
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer’s instructions.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place caution label "Switch off parking heater before refuelling" in the area of 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



Top view



100mm

Scale 1:1

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

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

100mm

0

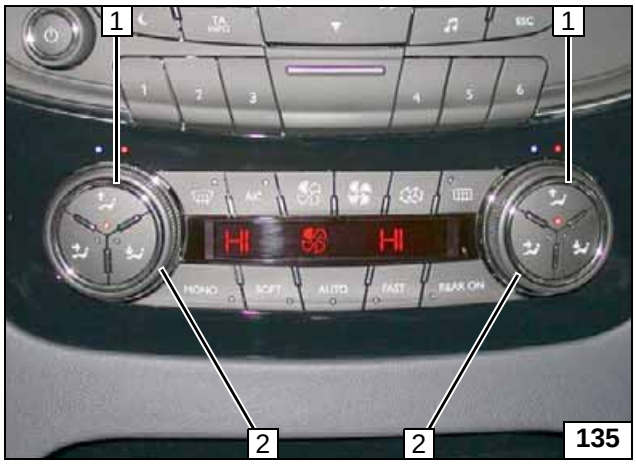
Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

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

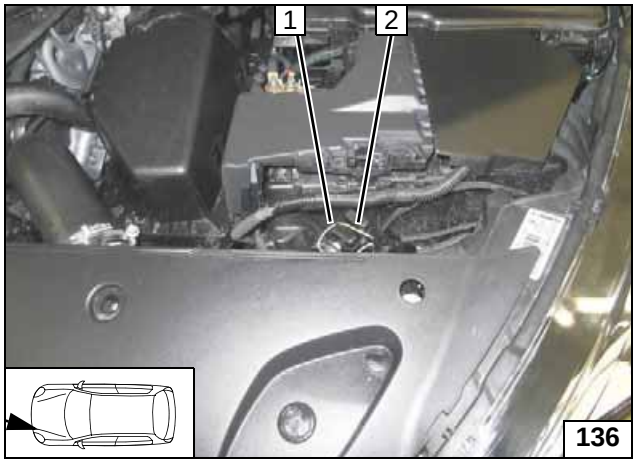
Passenger compartment monitoring , if installed, must be deactivated in addition to the vehicle settings for the heating operation.
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



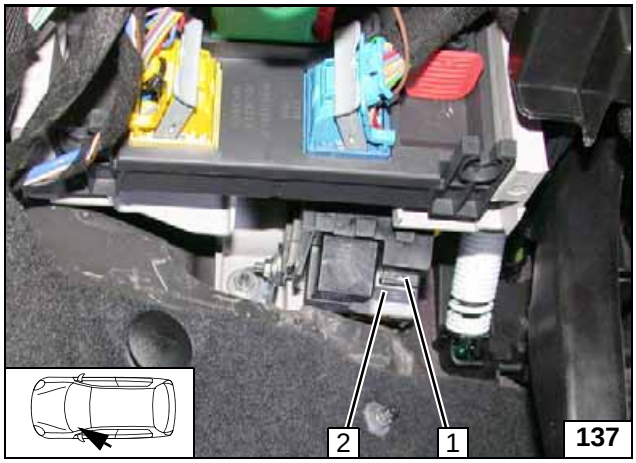
1 Air outlet on both sides "upward"
2 Set temperature on both sides to "Hi"

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses