Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Fiat Panda

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Fiat	Panda	139	e3 * 2007 / 46 * 0064 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
0.9 Twin Air	Petrol	5-speed SG	63	875	312A2000
1.2 8V	Petrol	5-speed SG	51	1242	169A4000

SG = manual transmission

From Model Year 2012
Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
Front fog lights for 0.9 Twin Air
Start - Stop for 0.9 Twin Air
Daytime running lights for 0.9 Twin Air

Not verified: Passenger compartment monitoring
Automatic air-conditioning
Headlight washer system

Exclusion: 0.9 Twin Air Euro 6

Total installation time: approx. 8 hours

Fiat Panda

Table of Contents

Necessary Components

- Basic delivery scope of *Thermo Top Evo* based on price list
- Installation kit for Fiat Panda 2012 Petrol: **1318647A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

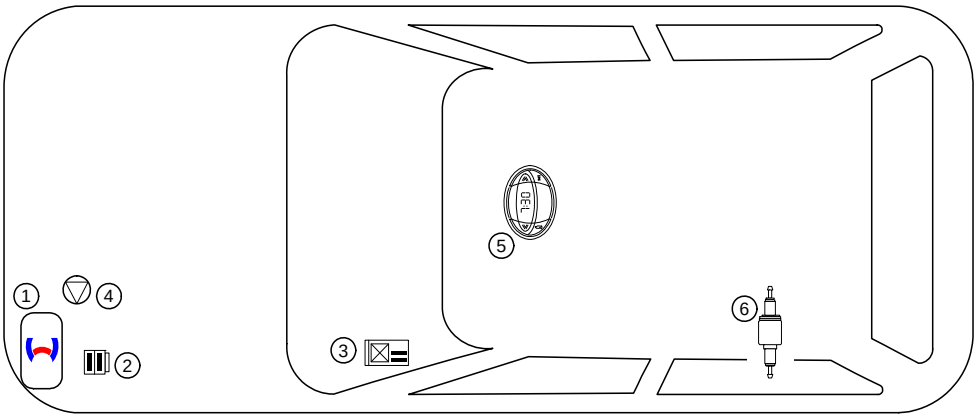
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. Digital timer
6. Metering pump



Information on Total Installation Time

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

Information on Operating and Installation Instructions

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

Note

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

Important

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

Note

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

2.1 Excerpt from the directive 122 (heater) section 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 gas outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

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Information on Validity

This installation documentation applies to Fiat Panda Petrol vehicles - for validity, see page 1 - from model year 2012 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

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

Technical Information

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

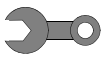
Dimensions
- All dimensions are in mm.

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

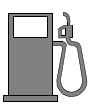


Electrical System

Coolant Circuit

Combustion Air

Fuel



Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

Specific risk due to electrical voltage.

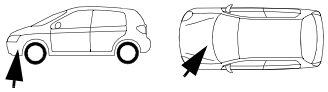
Specific risk of damage to components.

Specific risk of fire and explosion.

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

Reference to a special technical feature.

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



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

Fiat Panda

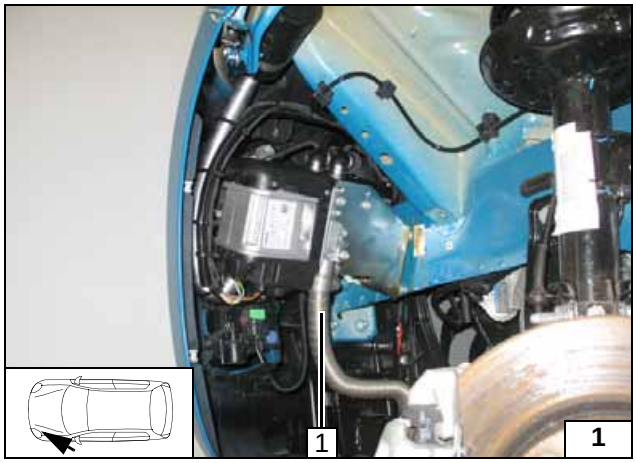
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery and remove completely, including the carrier.
- Remove the air filter intake hose.
- Remove the left-hand wheel well trim.
- Remove the left wheel.
- Remove the underride protection (if present).
- Remove the bumper.
- Remove the trim of the fuel lines on the left-hand side of the underbody.
- Remove the rear seat surface (2 bolts).
- Open the tank-fitting service lid.
- Remove the lower instrument panel trim on the driver's side.
- Remove the left and right lateral trim of the centre console.

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.

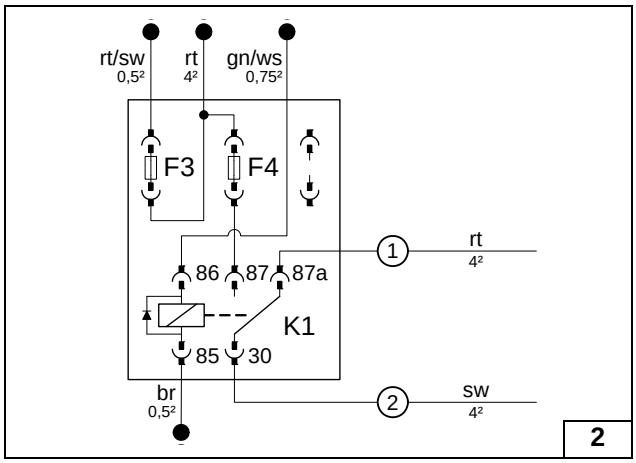


Heater Installation Location

Image shows 0.9 P

1 Heater

Installation location



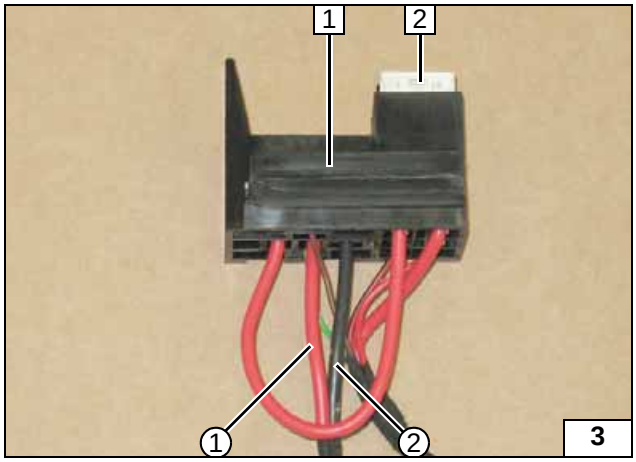
2

Preparing Electrical System

Wire sections retain their numbering throughout the whole document.
Produce connections as shown in wiring diagram.

① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness

Preparing passenger compartment relay and fuse holder

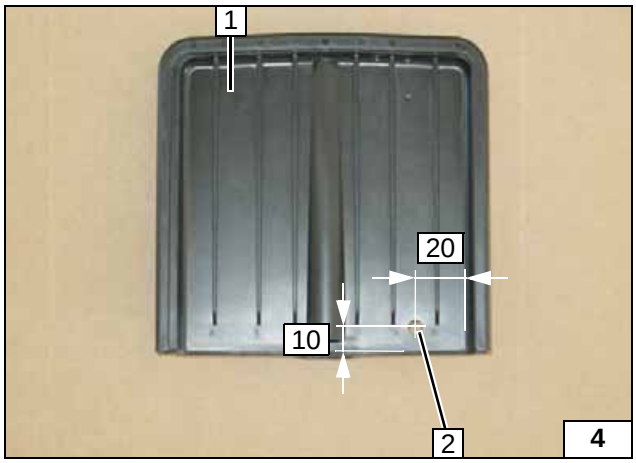


3

Insert 25A fuse F4 **2**. K1 relay will only be inserted after installation of passenger compartment relay and fuse holder.

1 Passenger compartment relay and fuse holder
① Red (rt) wire from K1/87a, fan wiring harness
② Black (sw) wire from K1/30, fan wiring harness

Preparing passenger compartment relay and fuse holder

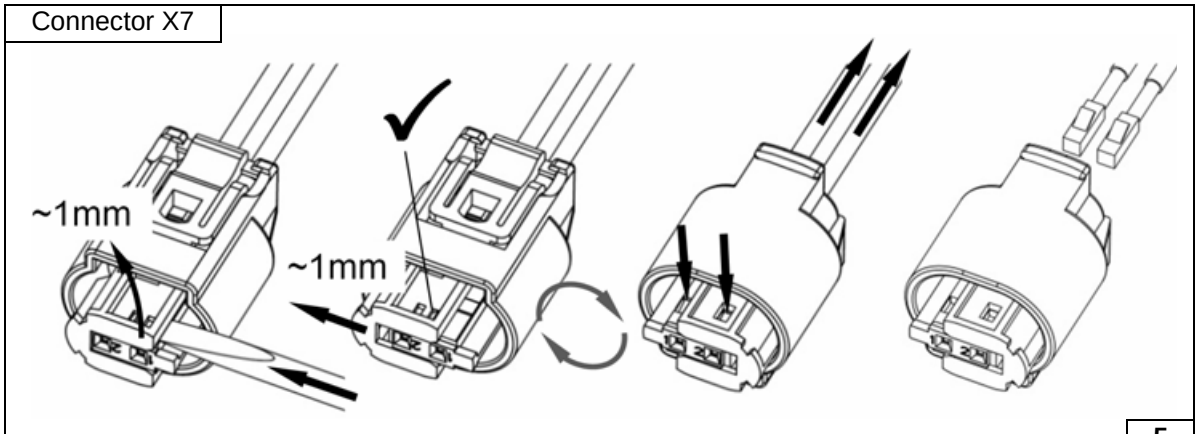


4

1 Cover for fuse carrier of engine compartment
2 5,5 mm dia. hole

Hole in fuse carrier

Connector X7



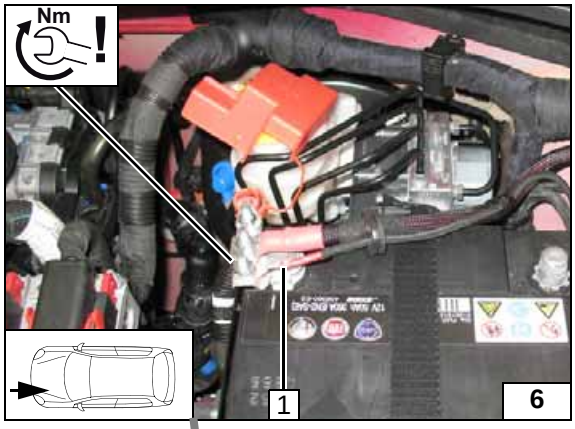
5

Removing metering pump connector

Electrical System

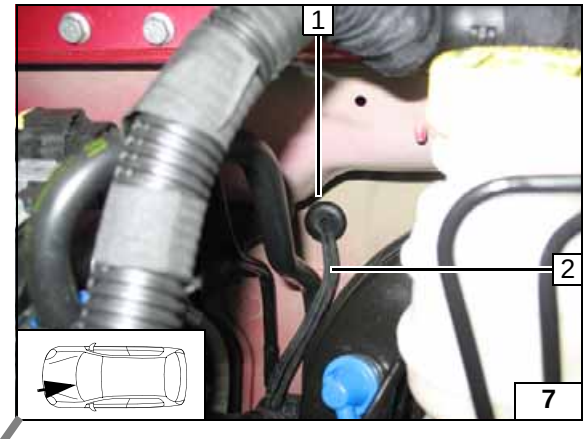
Positive wire

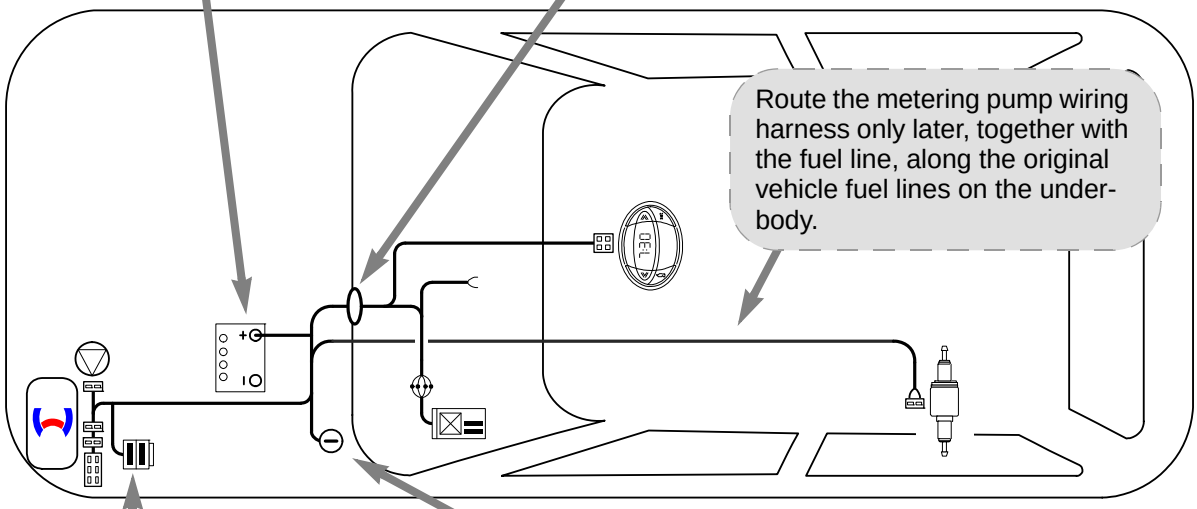
1 Positive wire on positive battery terminal



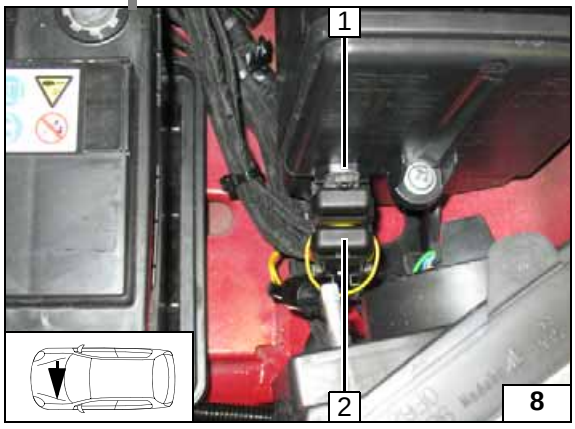
Wiring harness pass through

1 Protective rubber plug (5mm hole punched in centre)
2 Wiring harness of heater, heater control



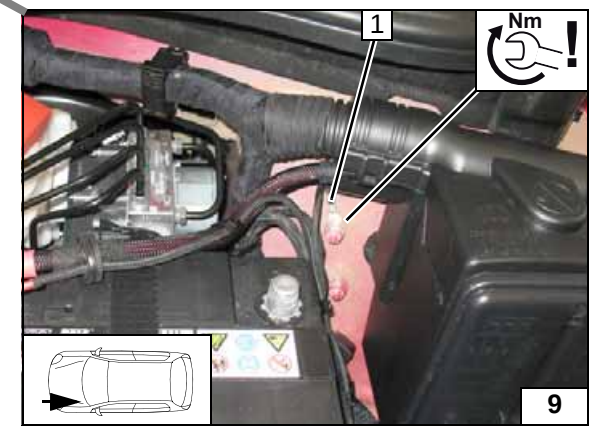


Wiring harness routing diagram



Engine compartment fuse holder

1 M5x12 bolt, washer [2x], retaining plate of fuse holder, nut
2 Fuses F1-2

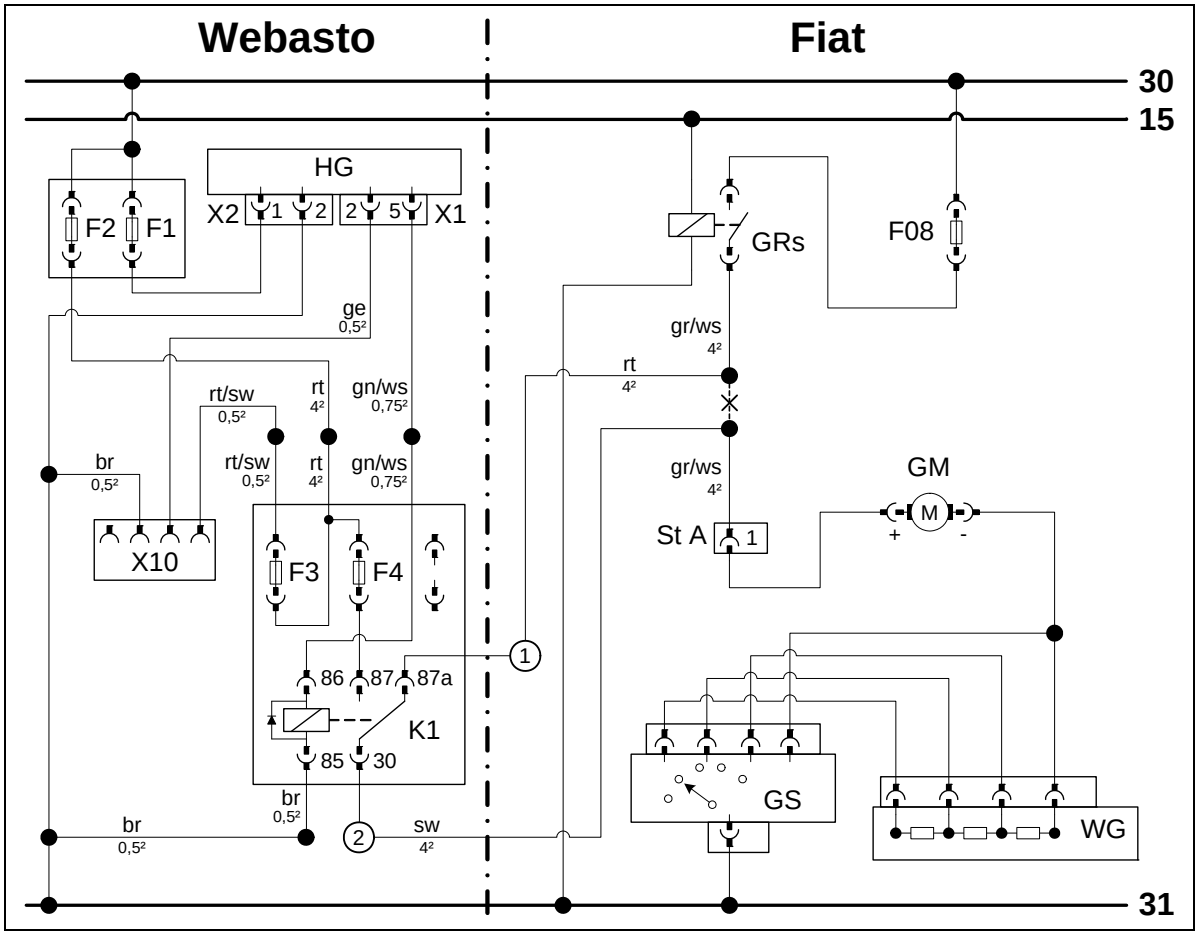


Earth wire

1 Earth wire on original vehicle earth support point

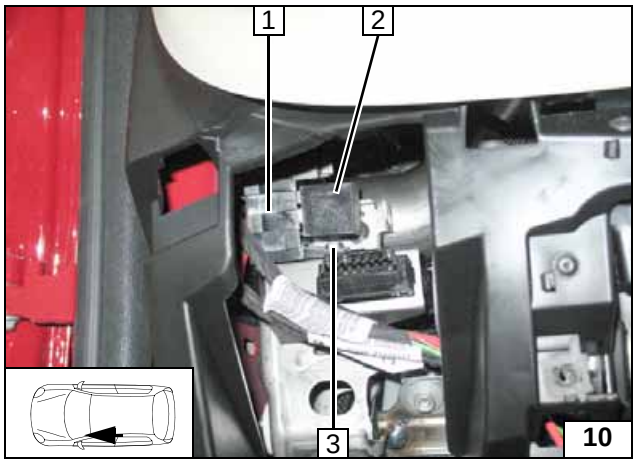
Fan Controller

Wiring diagram



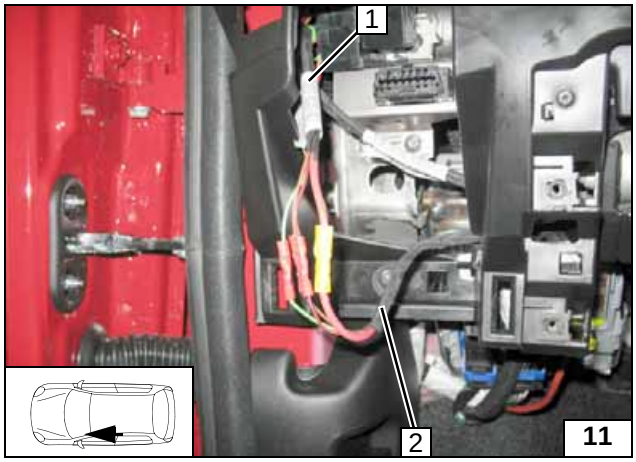
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo Heater	GRs	Fan relay	rt	red
X1	6-pin heater connector	F08	Fuse	sw	black
X2	2-pin heater connector	St A	20-pin connector	ge	yellow
F1	20A fuse	GM	Fan motor	gn	green
F2	30A fuse	GS	Fan switch	gr	grey
X10	4-pin connector of heater control	WG	Resistor group	ws	white
				br	brown
F3	1A fuse				
F4	25A fuse				
K1	Fan relay			**X**	Cutting point
				Wiring colours may vary.	



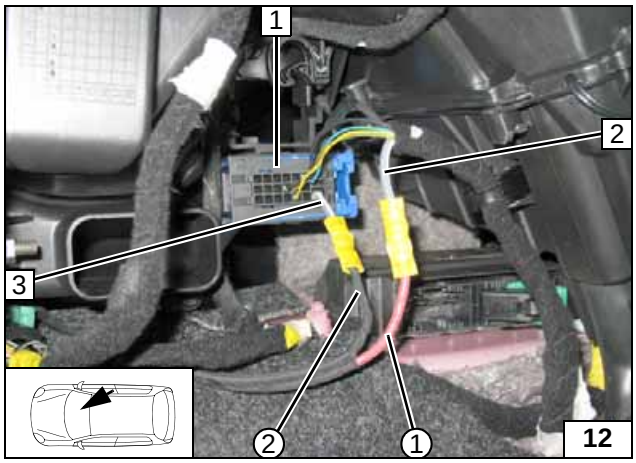
1 Passenger compartment relay and fuse holder
2 K1 relay inserted
3 M5x16 bolt, large diameter washer [2x], nut, existing hole

Installing passenger compartment relay and fuse holder



Connect wiring harness of passenger compartment relay and fuse holder **1** to wiring harness of heater **2** according to the wiring diagram, in such a way that wires of the same colour are connected to each other.

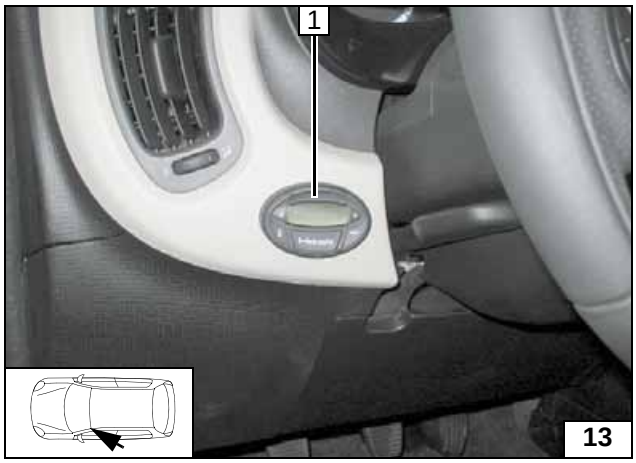
Connecting wiring harnesses



Connection on 20-pin connector **1** of fan unit. Produce connections as shown in wiring diagram.

2 Grey/white (gr/ws) wire of fuse F08
3 Grey/white (gr/ws) wire of fan motor
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30

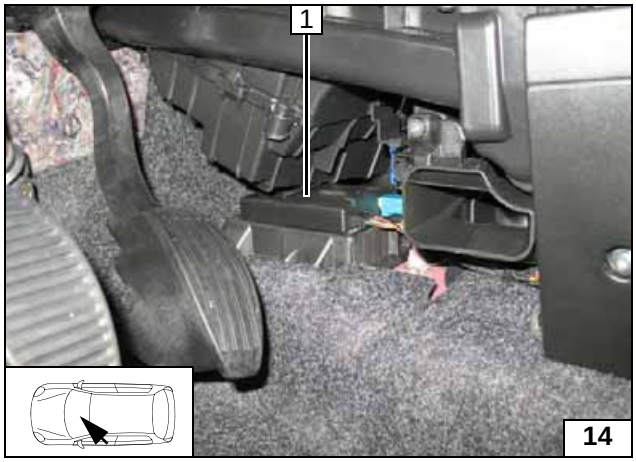
Connecting fan unit



Digital Timer

1 Digital timer

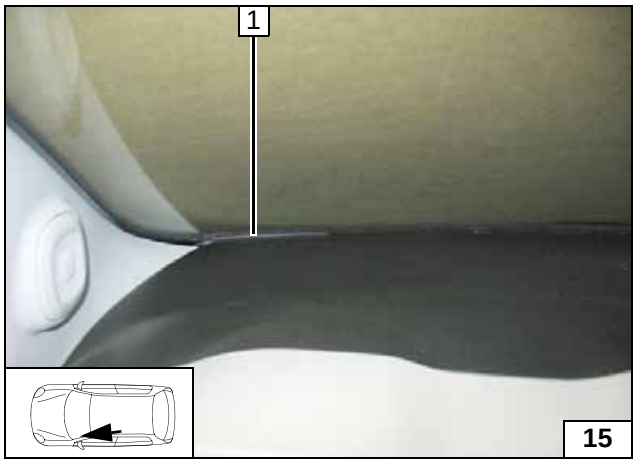
Installing digital timer



Remote Option (Telestart)

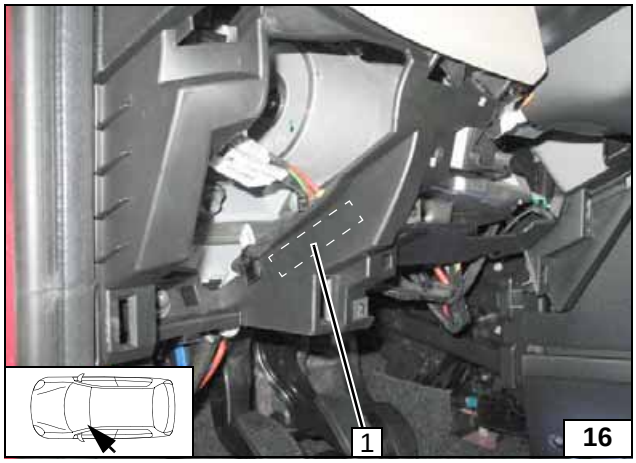
Fasten receiver **1** with adhesive tape.

Installing receiver



1 Aerial

Installing aerial



Temperature sensor T100 HTM

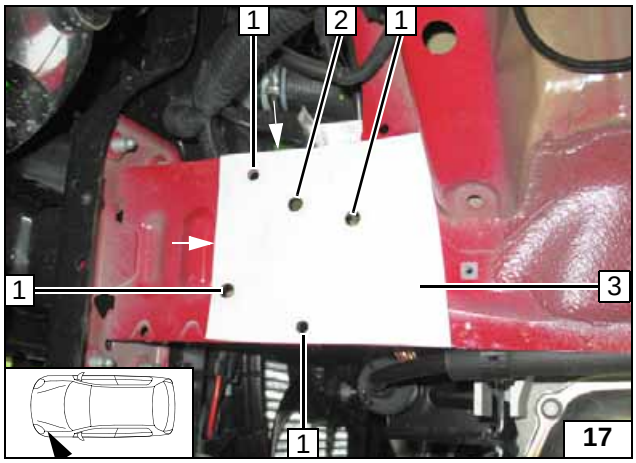
Fasten temperature sensor **1** behind the trim with adhesive tape.

Installing temperature sensor

Preparing Installation Location

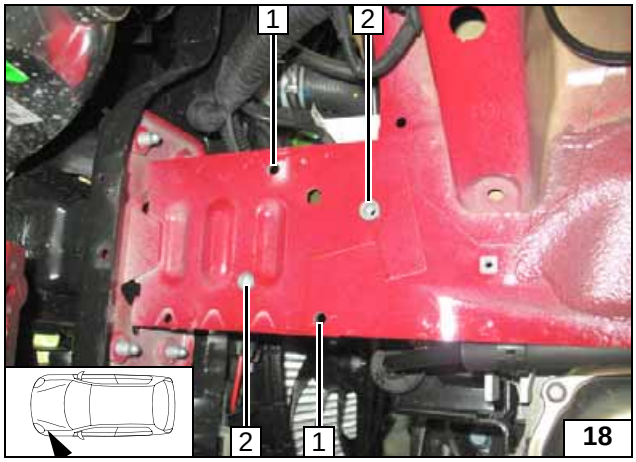
Cut out template **3**. Align template **3** with upper and lower edge of frame side member (hole at position **2** has to be congruent with original vehicle hole).

1 Copy hole pattern [4x]



Copying hole pattern

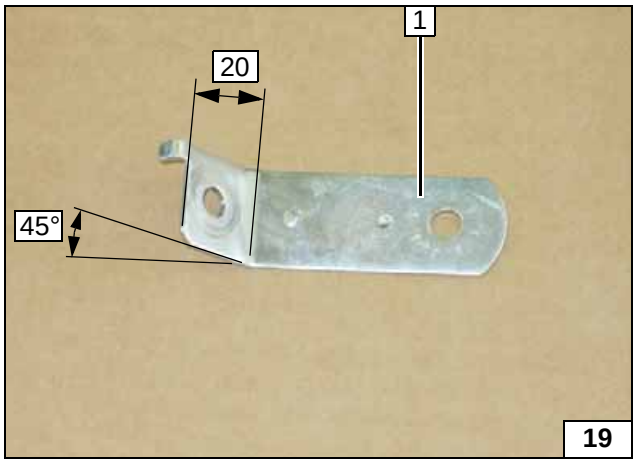
1 7 mm dia. hole [2x]
2 9.1 mm dia. hole, rivet nut [2x]



Installing rivet nut

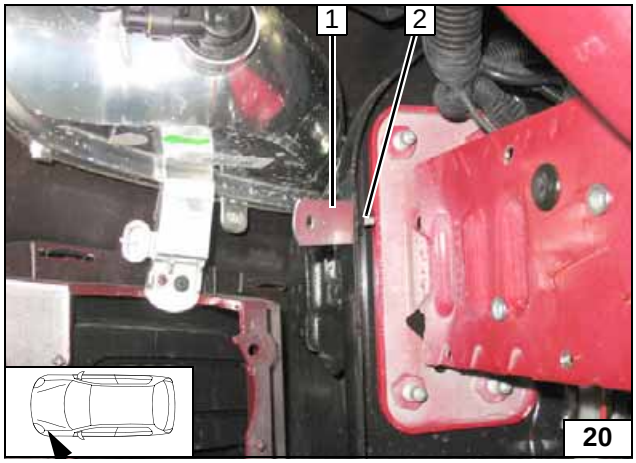
Remove horn with bracket.

1 Bracket of horn

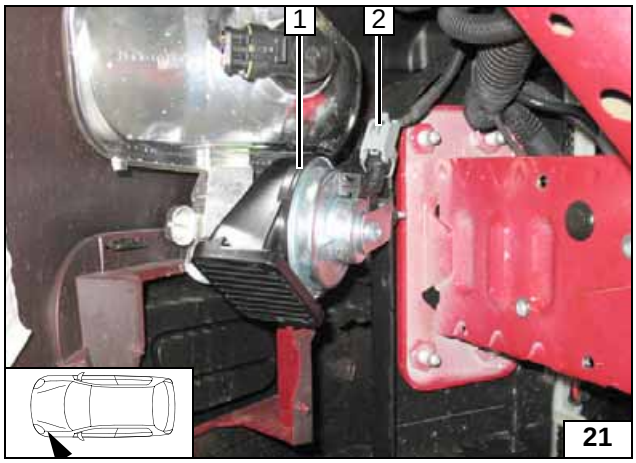


Bending bracket of horn

1 Bracket of horn
2 Original vehicle bolt if available, otherwise M6x16 bolt, spring lockwasher, existing threaded hole



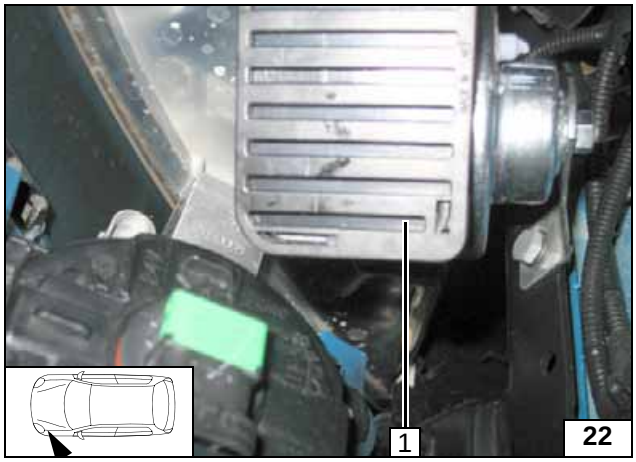
Installing bracket of horn



Install bumper on trial basis. Ensure sufficient distance from front fog lights and daytime running lights, correct if necessary (see following image). Attach connector **2**.

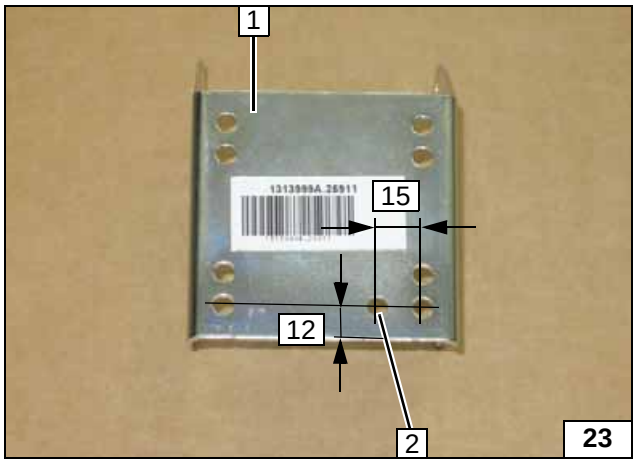
1 Horn

Installing horn



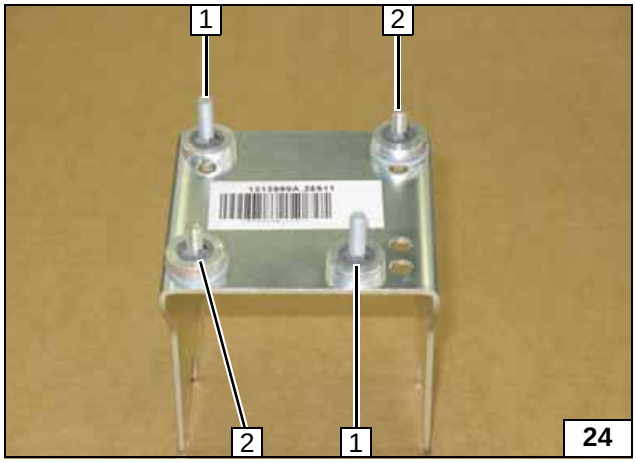
Aligning horn

Preparing Bracket



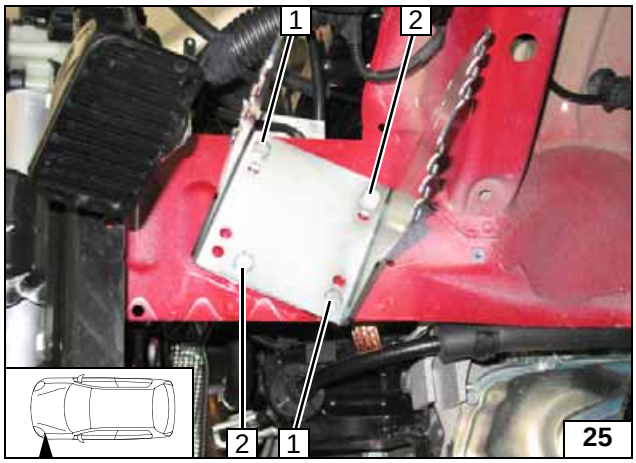
1 Bracket of heater
2 7 mm dia. hole

Hole in bracket



1 M6x25 bolt, spring lockwasher, 5 mm shim, pin lock [2x each]
2 M6x20 bolt, spring lockwasher, large diameter washer, 5 mm shim, pin lock [2x each]

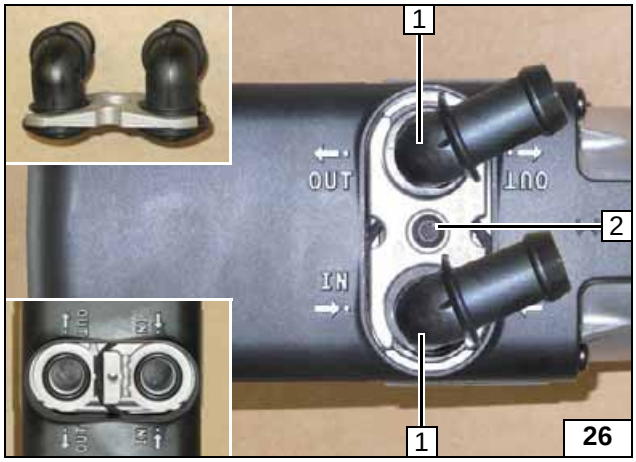
Inserting bolts



1 Tighten flanged nut, M6x20 bolt [2x]
2 Tighten M6x25 bolt [2x]

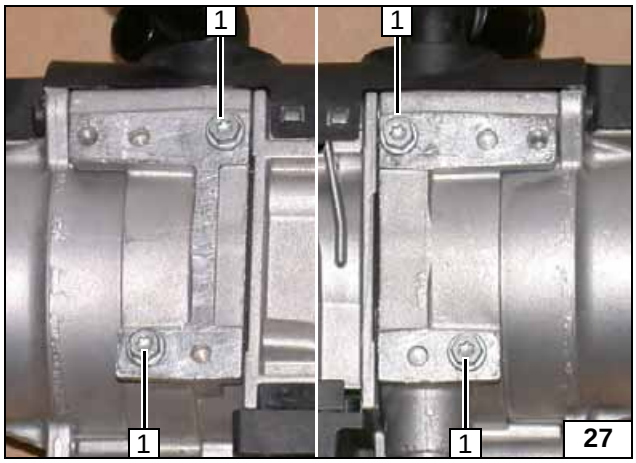
Installing bracket

Preparing Heater



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

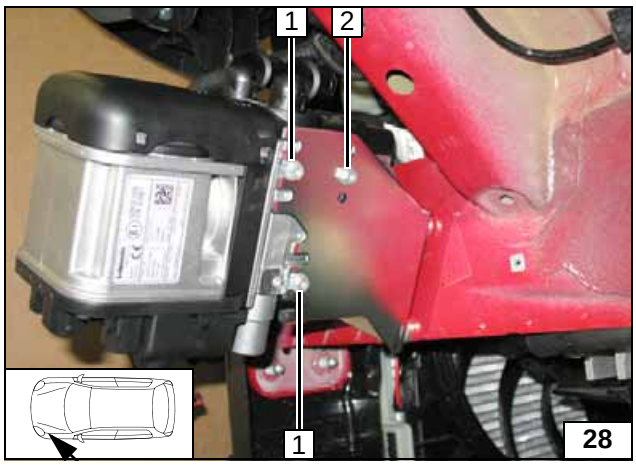
Installing water connection piece



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

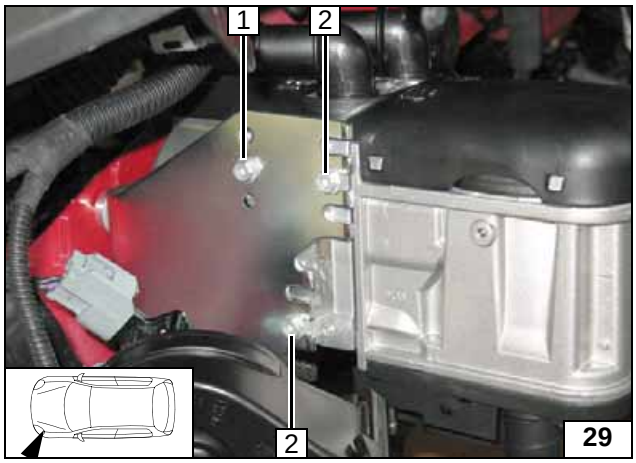
Premounting bolts loosely

Installing Heater



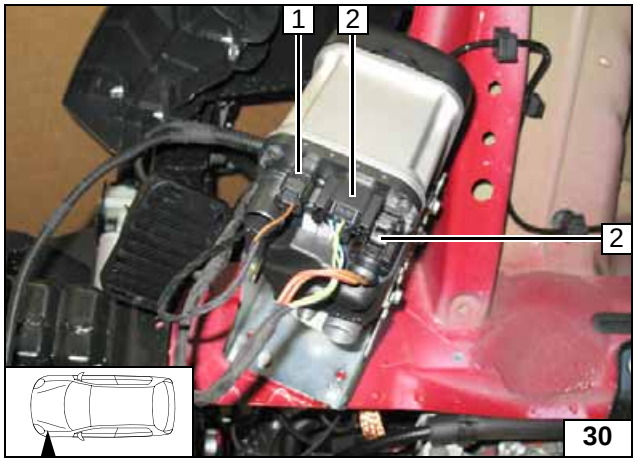
1 Tighten 5x13 self-tapping bolt [2x]
2 5x13 self-tapping bolt

Installing heater



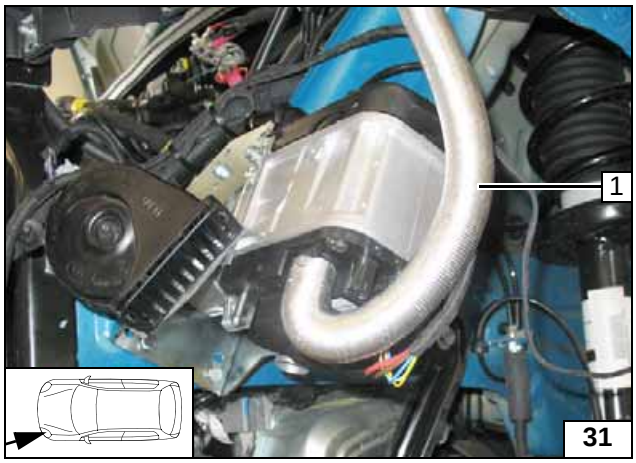
1 5x13 self-tapping bolt
2 Tighten 5x13 self-tapping bolt [2x]

Installing heater



1 Wiring harness of circulating pump
2 Wiring harness of heater [2x]

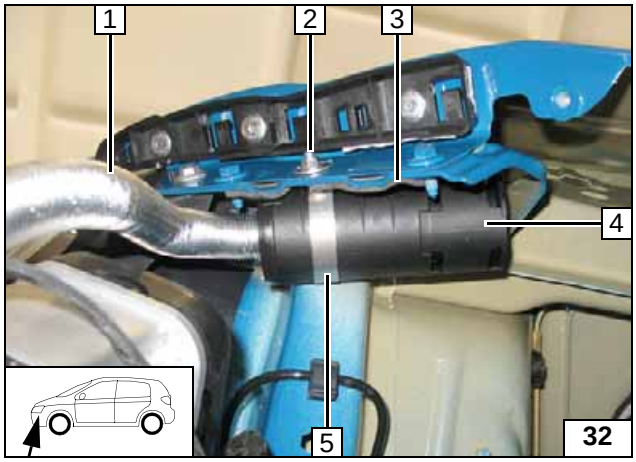
Mounting wiring harnesses



Combustion Air

1 Combustion air pipe

Installing combustion air pipe



Glue on insulation protection strips **3** in the area of the mounting prior to installation of the body.

1 Combustion air pipe
2 M5x16 bolt, large diameter washer [2x], flanged nut, existing hole
4 Silencer
5 51 mm dia. clamp

Installing silencer

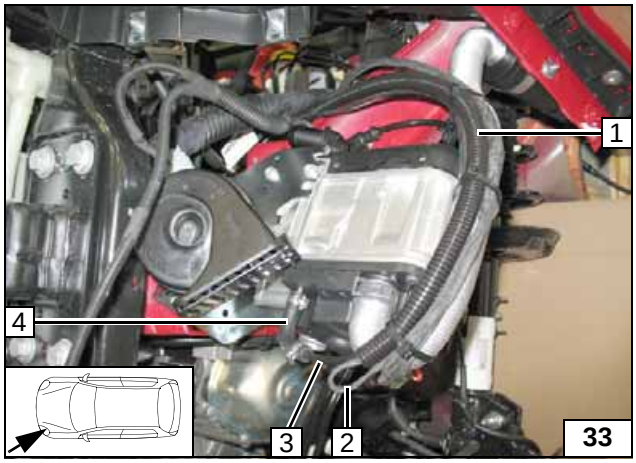
Fuel

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

Catch any fuel running off in an appropriate container.

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.

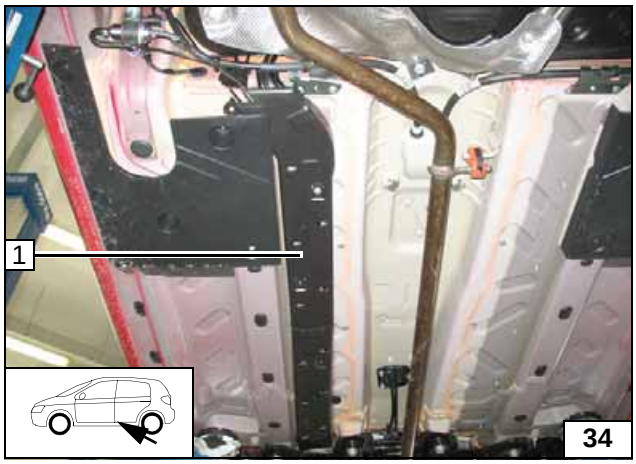
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Pull fuel line **3** and wiring harness of metering pump **2** into 1800 mm long corrugated tube. Pull in **1** and route to the underbody on original vehicle lines.

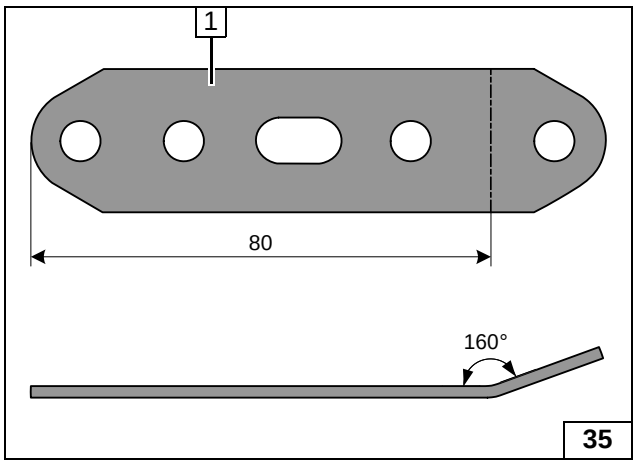
2 90° moulded hose, 10mm dia. clamp [2x]

Connecting heater



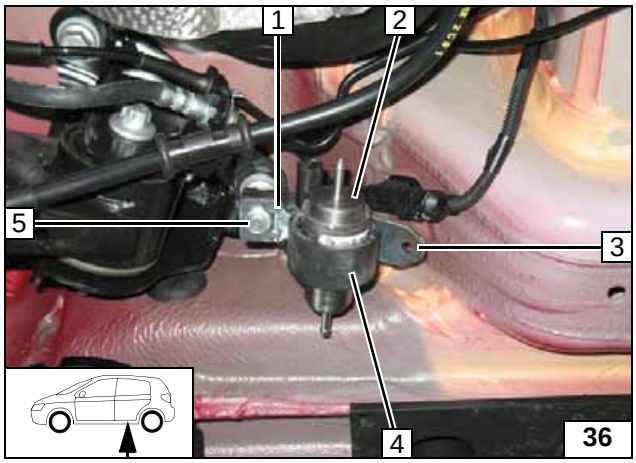
Route fuel line and wiring harness of metering pump below cover **1** along original vehicle fuel lines to installation location of metering pump.

Routing lines



1 Perforated bracket

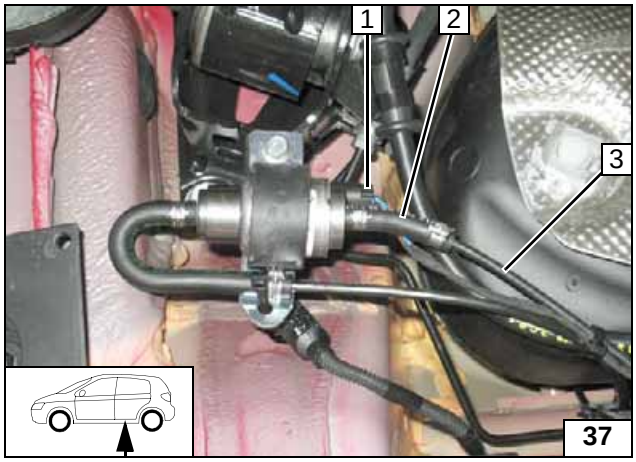
Bending perforated bracket



Insert large diameter washer between perforated bracket **3** and tab of axle suspension.

1 Support angle bracket
2 Metering pump
3 Perforated bracket
4 Mounting of metering pump
5 M6x25 bolt, flanged nut, existing hole

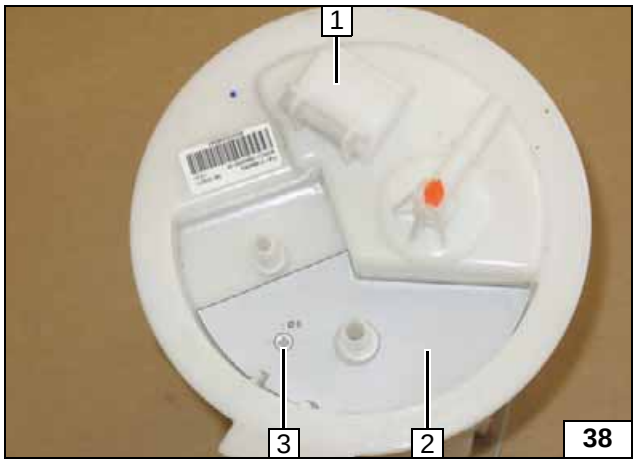
Installing metering pump



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

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

Connecting metering pump

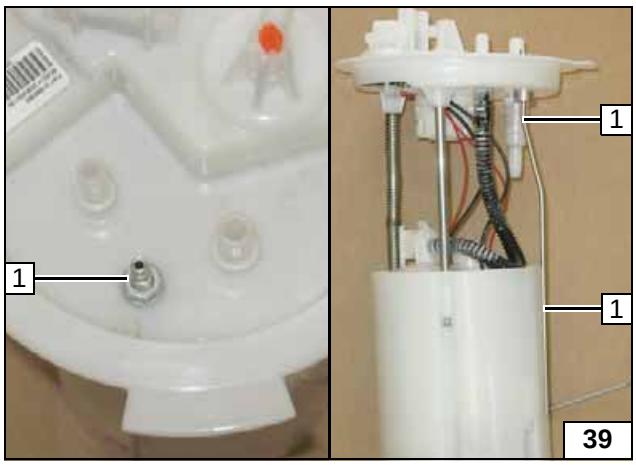


0.9 P

Remove fuel tank sending unit **1** in accordance with the manufacturer's instructions. Cut out template **2** and place it.

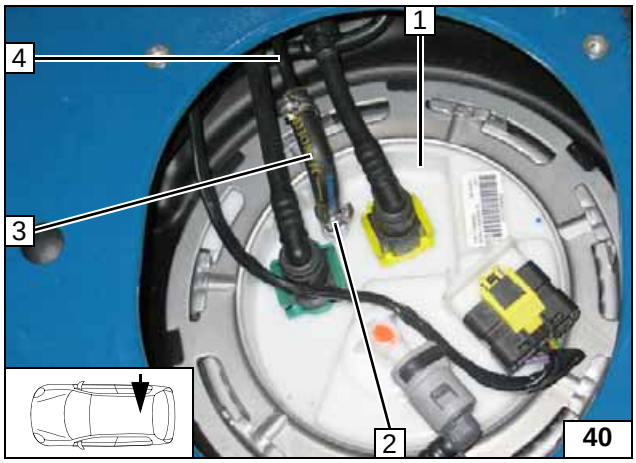
3 Copy hole pattern, 6mm dia. hole

Fuel extraction



Bend fuel standpipe **1** according to template, cut to length and install.

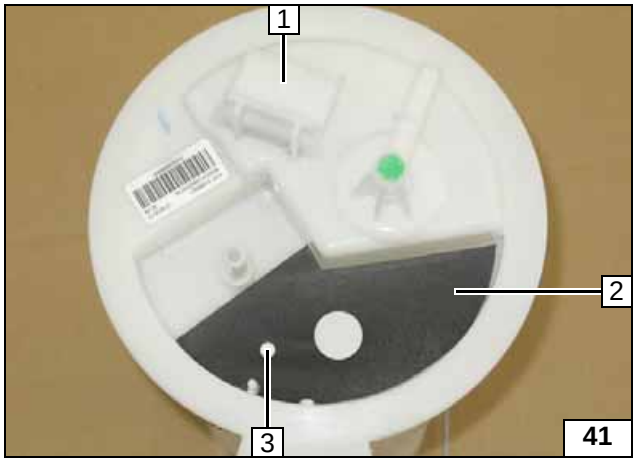
Installing fuel standpipe



Install fuel tank sending unit **1** in accordance with manufacturer's instructions.

2 Fuel standpipe, 9 mm dia. clamp
3 90° moulded hose, 10mm dia. clamp
4 Fuel line

Connecting fuel line

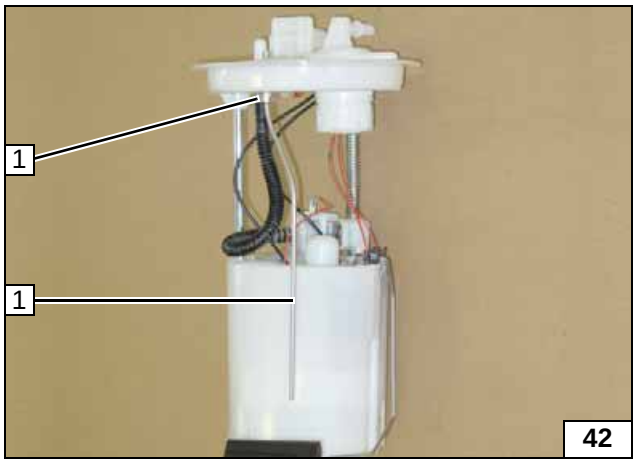


1.2 P

Remove fuel tank sending unit **1** in accordance with the manufacturer's instructions. Cut out template **2** and place it.

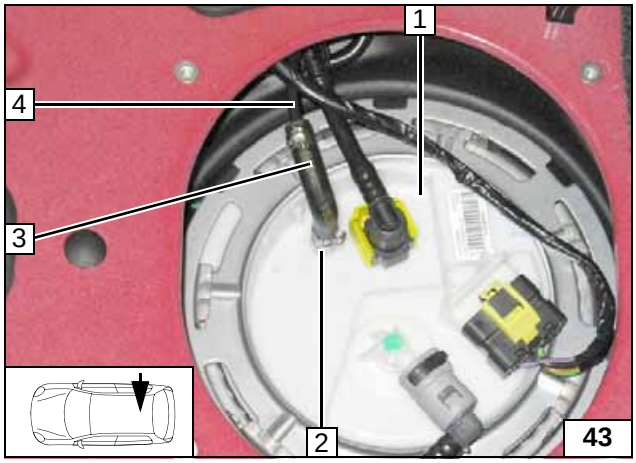
3 Copy hole pattern, 6mm dia. hole

Fuel extraction



Bend fuel standpipe **1** according to template, cut to length and install.

Installing fuel standpipe

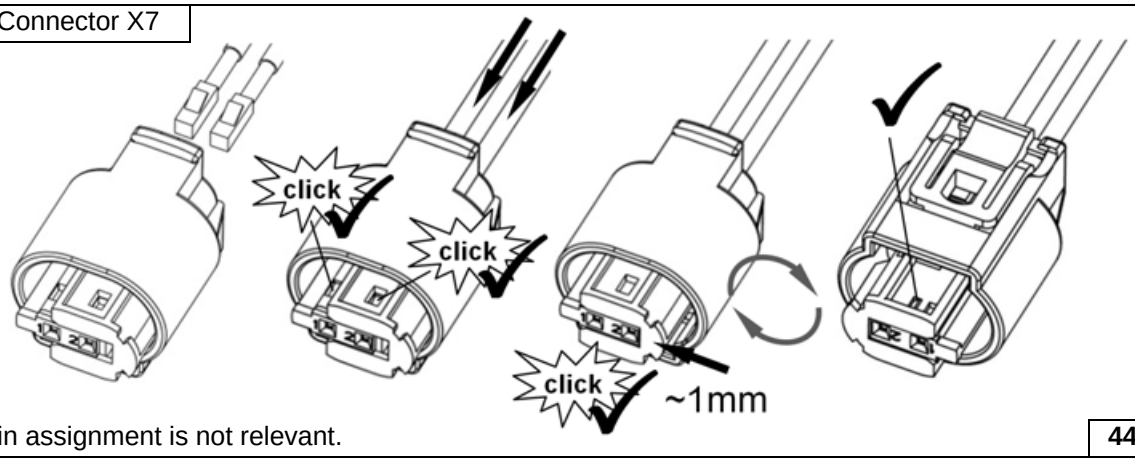


Install fuel tank sending unit **1** in accordance with manufacturer's instructions.

2 Fuel standpipe, 9 mm dia. clamp
3 90° moulded hose, 10mm dia. clamp
4 Fuel line

Connecting fuel line

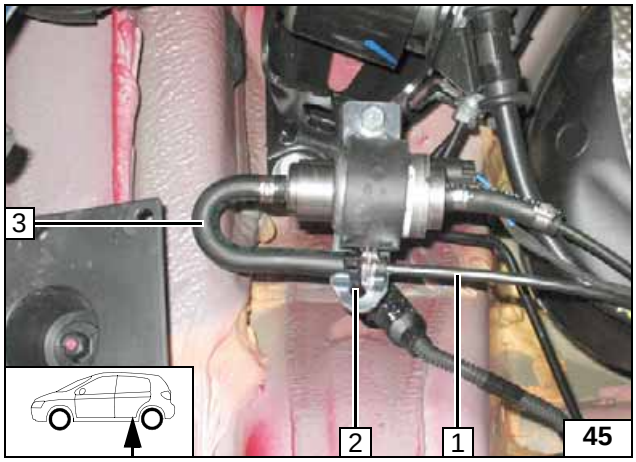
Connector X7



Pin assignment is not relevant.

44

Completing metering pump connector



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All vehicles

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

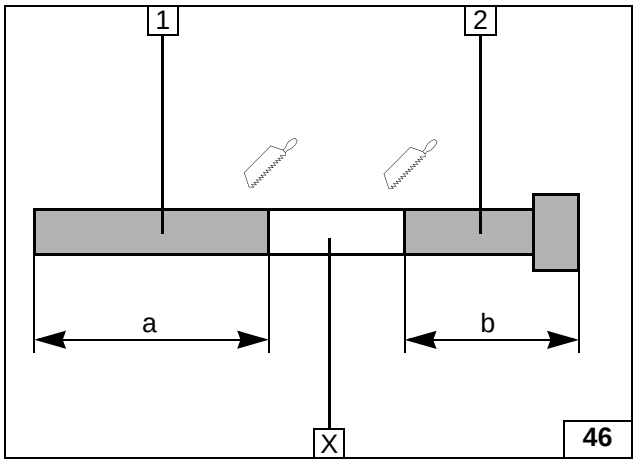
Connecting metering pump

1 Fuel line of fuel standpipe
2 Cable tie
3 180° moulded hose, 10mm dia. clamp [2x]

Exhaust Gas

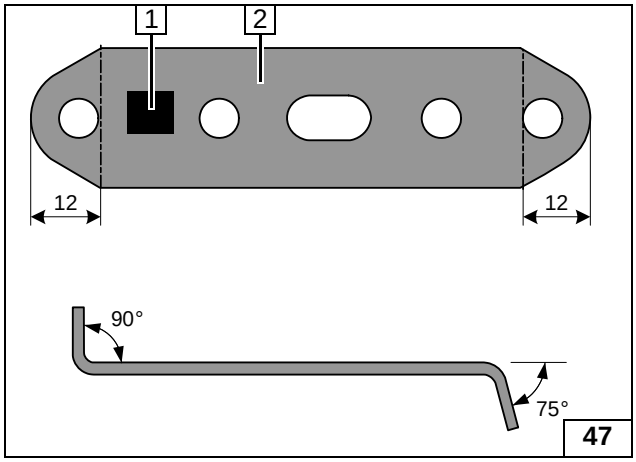
Vehicles without underride protection

Discard section **X**.



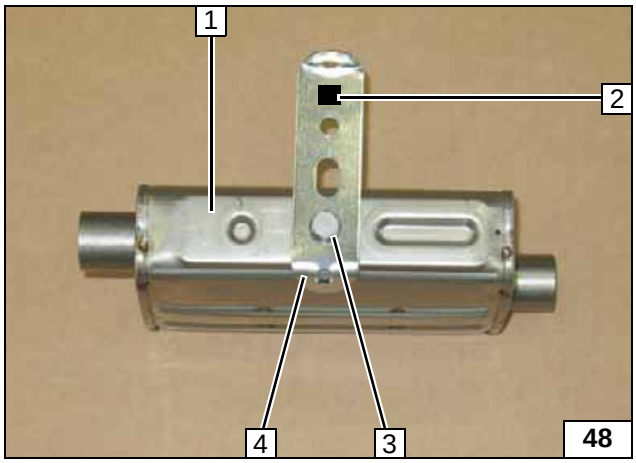
1 Exhaust pipe
a = 370
2 Exhaust end section
b = 70

Preparing exhaust pipe



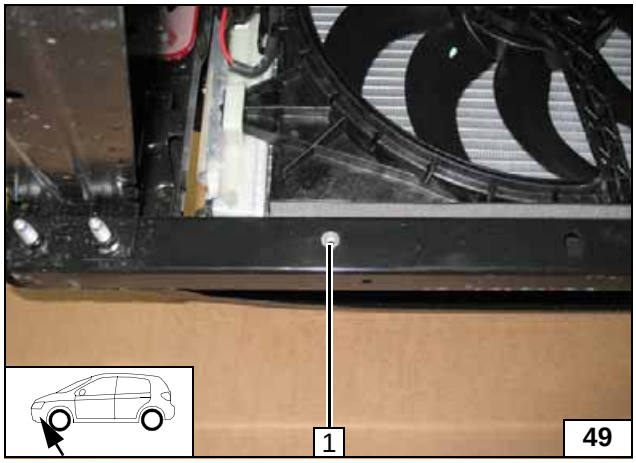
1 Place marking
2 Perforated bracket

Bending perforated bracket



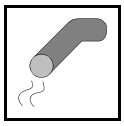
1 Silencer
2 Marking
3 M6x16 bolt, spring lockwasher
4 Perforated bracket

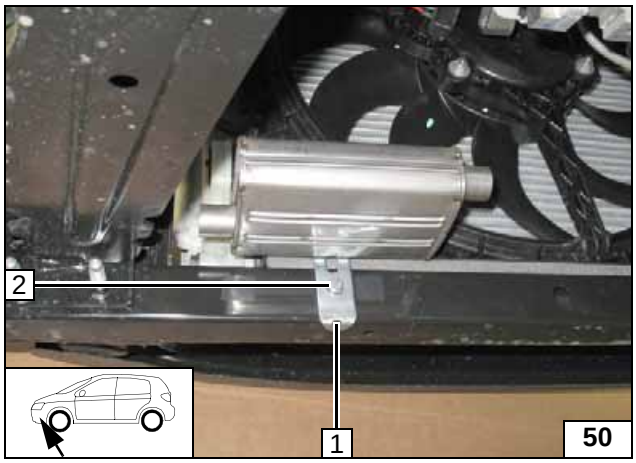
Premounting silencer



1 Drill out hole to 9.1mm dia.; rivet nut

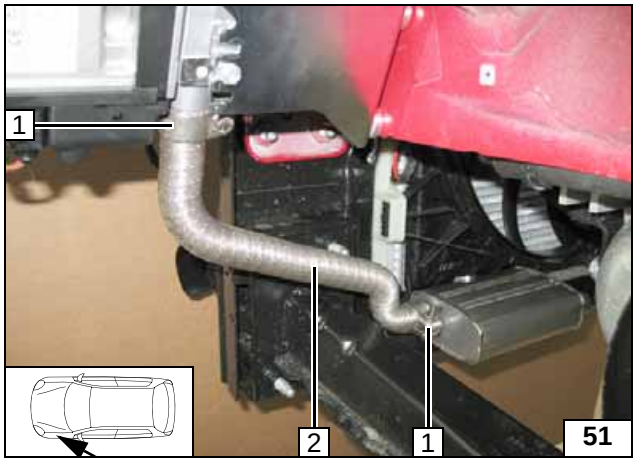
Installing rivet nut





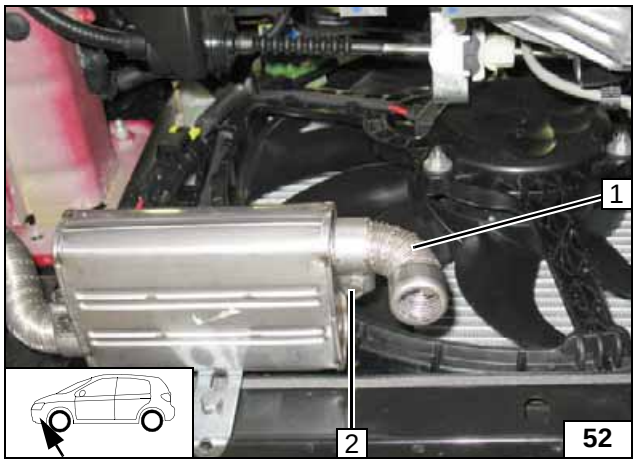
1 Perforated bracket
2 M6x20 bolt, spring lockwasher

Installing silencer



1 Hose clamp [2x]
2 Exhaust pipe

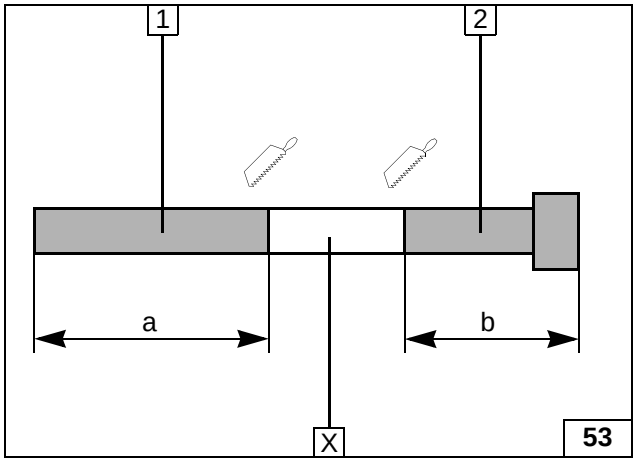
Installing exhaust pipe



Ensure sufficient distance from neighbouring components, correct if necessary.

1 Exhaust end section
2 Hose clamp

Installing exhaust end section

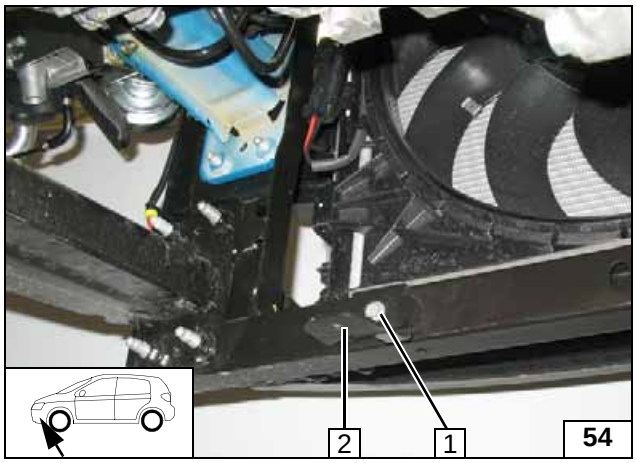


Vehicles with underride protection

Discard section **X**.

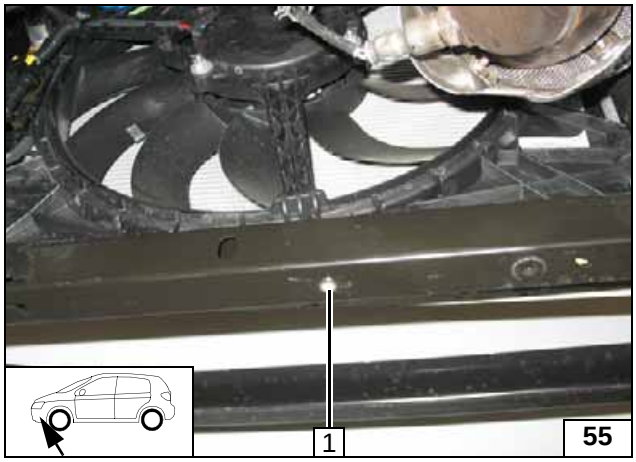
1 Exhaust pipe
a = 370
2 Exhaust end section
b = 300

Preparing exhaust pipe



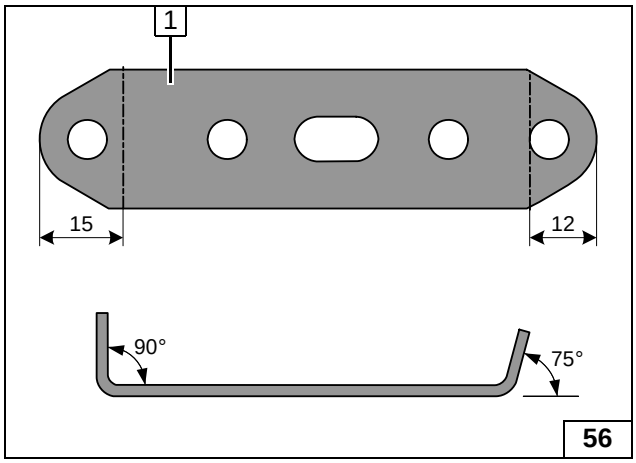
Remove bracket of underride protection **2**. Bracket and original vehicle bolt **1** are re-installed here.

Removing bracket



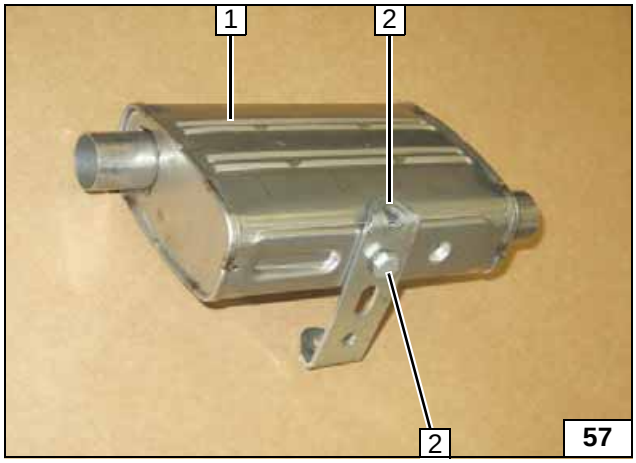
1 Drill out hole to 9.1mm dia.; rivet nut

Installing rivet nut



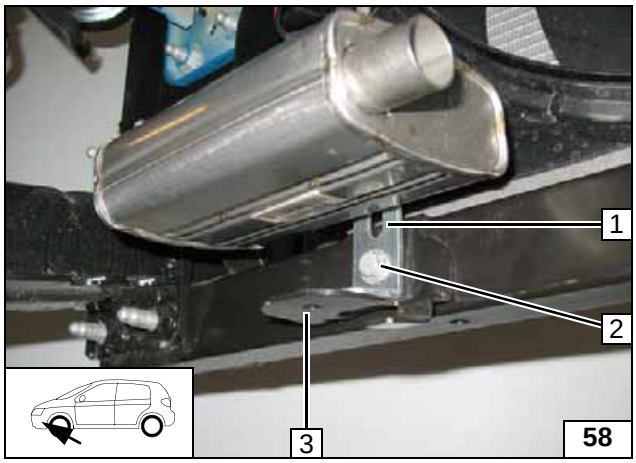
1 Perforated bracket

Bending perforated bracket



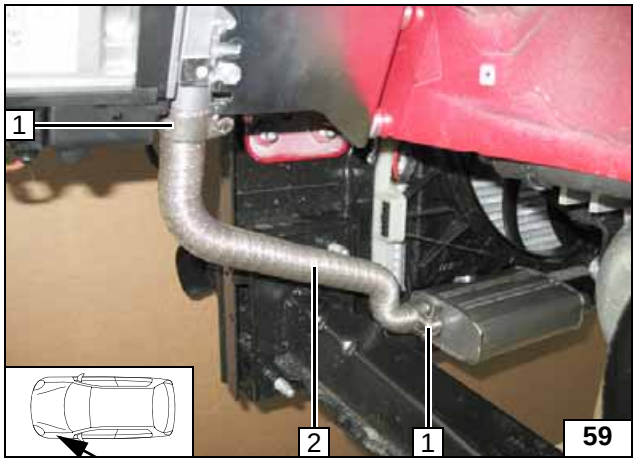
1 Silencer
2 Perforated bracket (bent by 75° here)
3 M6x16 bolt, spring lockwasher

Premounting silencer



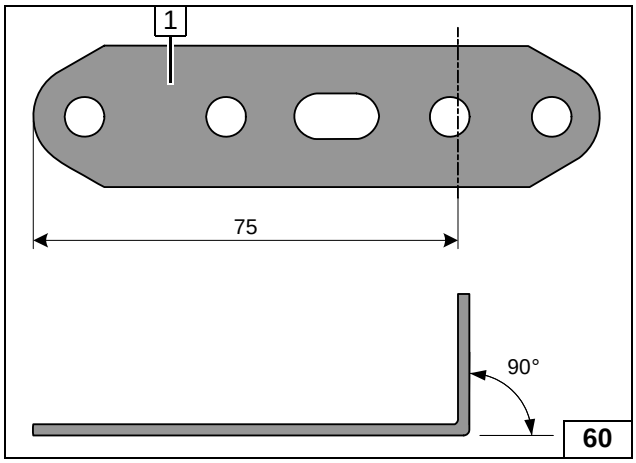
1 Perforated bracket
2 Original vehicle bolt
3 Bracket of underride protection

Installing bracket and silencer



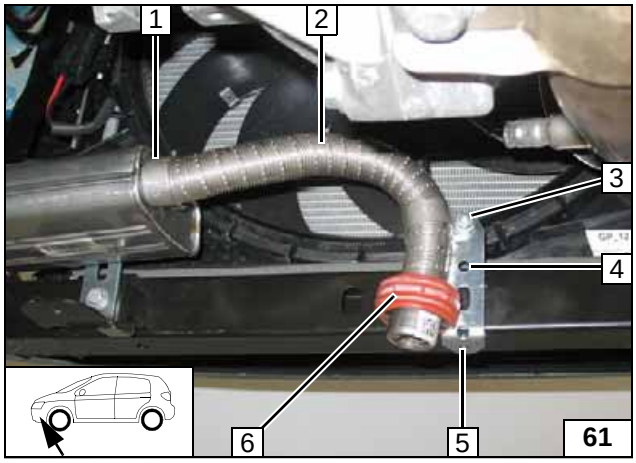
1 Hose clamp [2x]
2 Exhaust pipe

Installing exhaust pipe



1 Perforated bracket

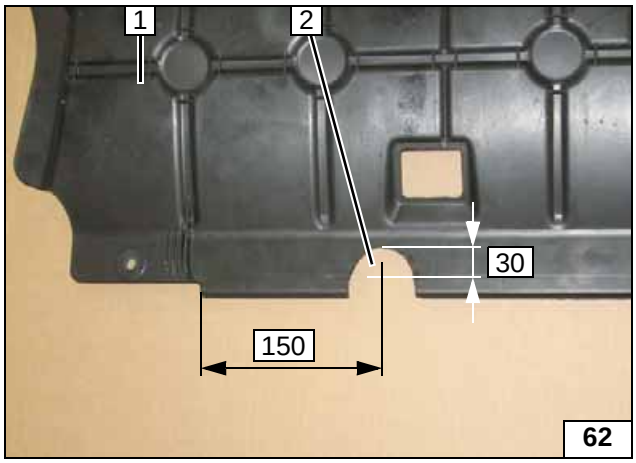
Bending perforated bracket



Align exhaust end section **2** flush with angled perforated bracket **4**. Perforated bracket **4** is only installed at position **5** after installation of bumper. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Hose clamp
3 M6x20 bolt, p-clamp, flanged nut
6 Slide on spacer bracket

Installing exhaust end section



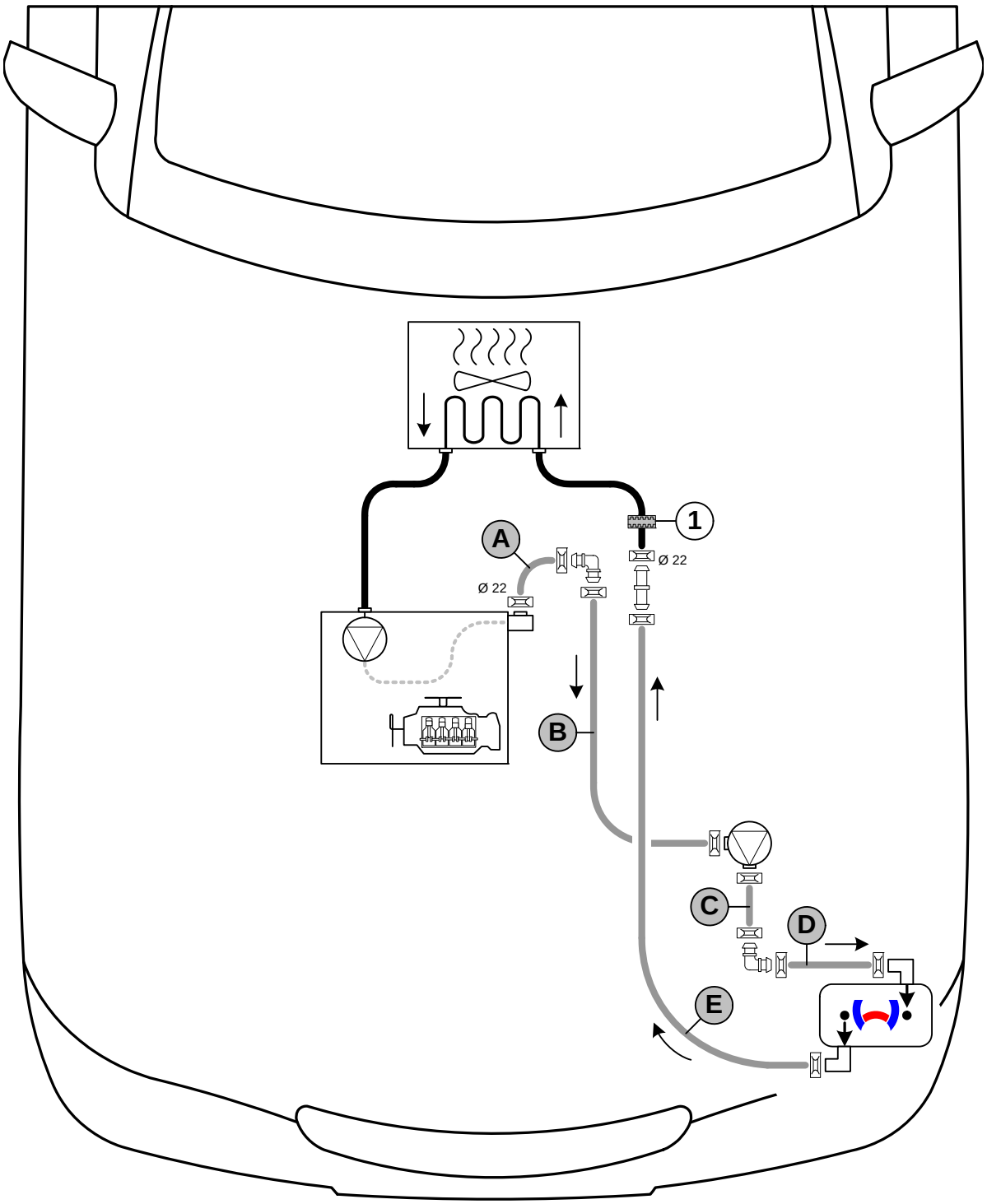
1 Underride protection
2 60 mm dia. hole

Cutting out underride protection

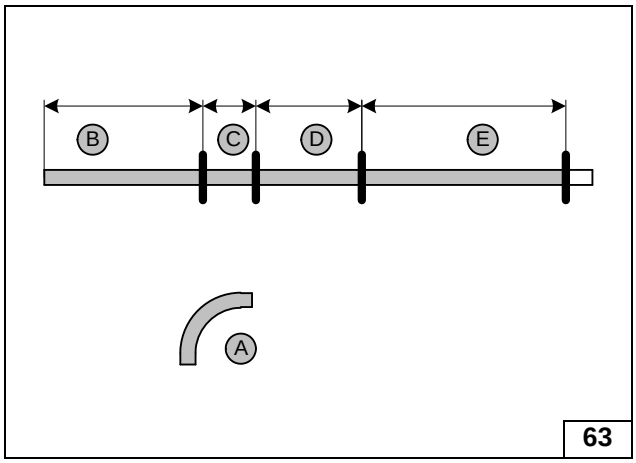
Coolant Circuit

WARNING!
Any coolant running off should be collected in an appropriate container. Install hoses so that they are 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 specific designation = 25mm dia.
1 = Black (sw) rubber isolator (only for 1.2B, present in 0.9B).
Connecting pipe = 16x18mm dia. All connecting pipes = 18x18 mm dia.



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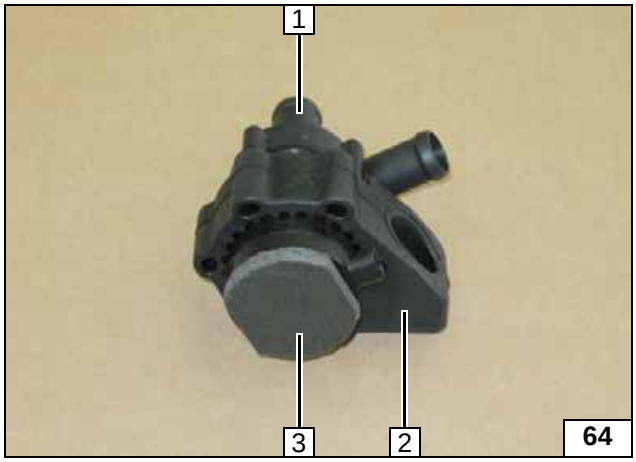
Discard section **X**.
Hose **A** = 15x18mm dia., 90° moulded hose

0.9 P		**1.2 P**	
B =	305	**B** =	310
C =	60	**C** =	60
D =	265	**D** =	220
E =	540	**E** =	520

Cutting hoses to length



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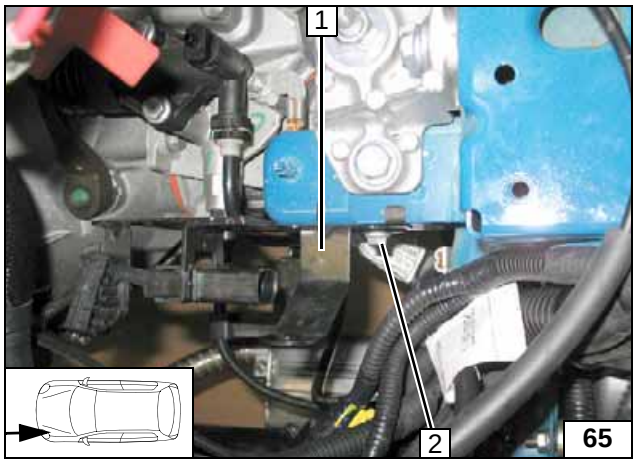
Glue on insulation protection strips **3** and cut to size.

1 Circulating pump
2 Circulating pump mounting

Preparing circulating pump

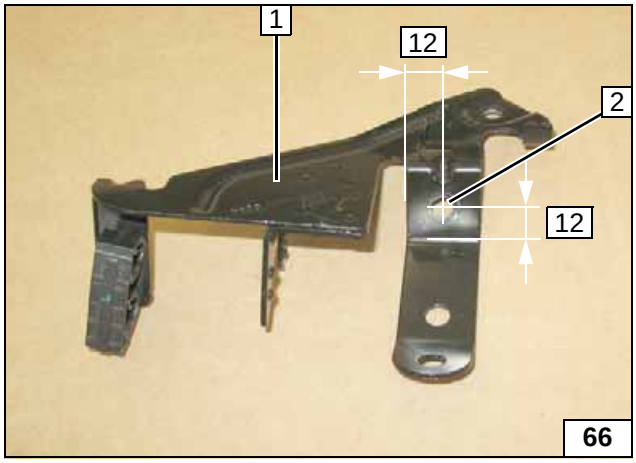


65

0.9 P

Remove original vehicle bracket **1**. Bolt **2** will be reused.

Removing bracket



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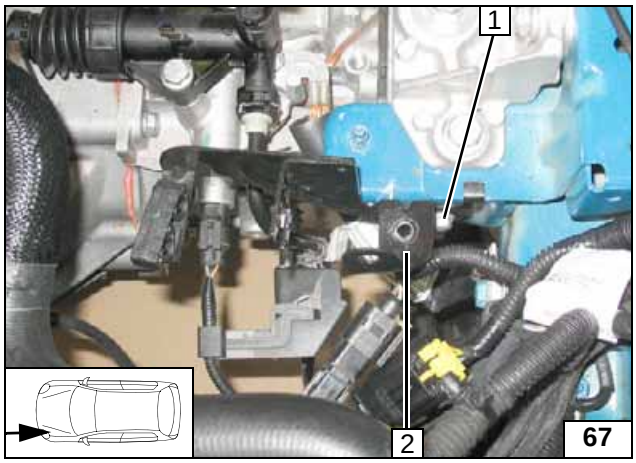
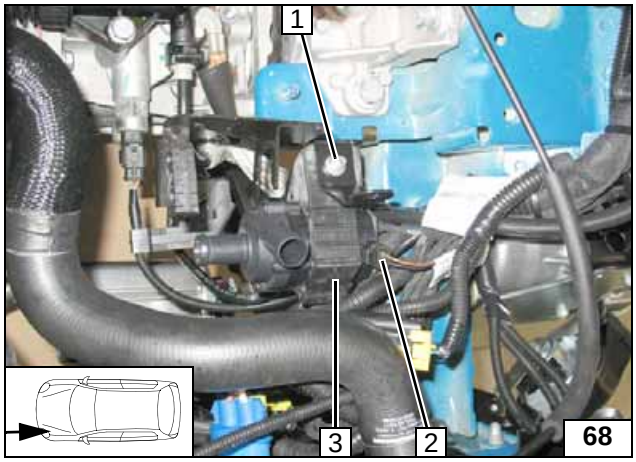
1 Bracket
2 6.5 mm dia. hole

Hole in bracket



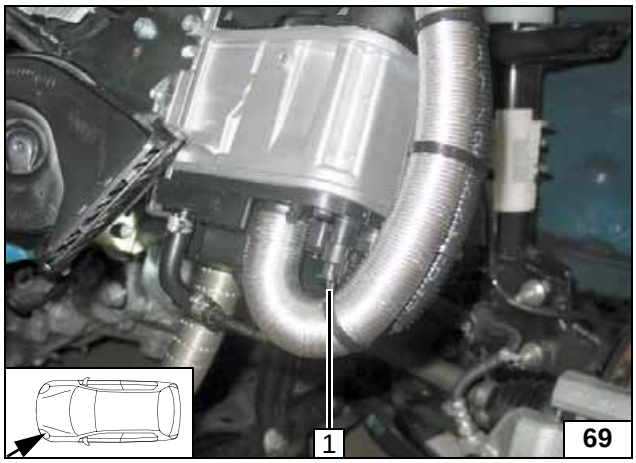
1 Original vehicle bolt
2 Bracket

Installing bracket



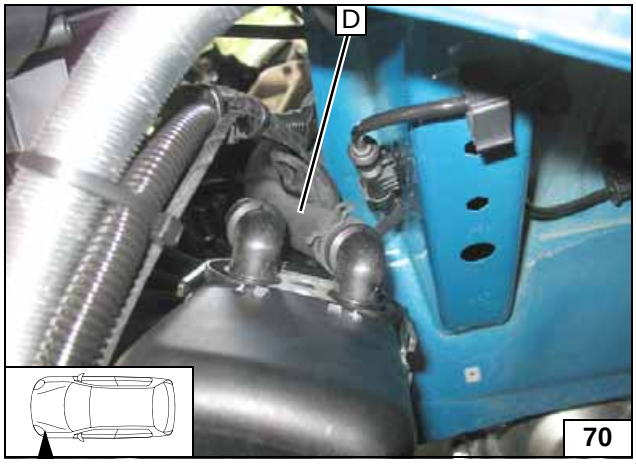
1 M6x25 bolt, flanged nut
2 Mount wiring harness of circulating pump
3 Circulating pump mounting

Installing circulating pump

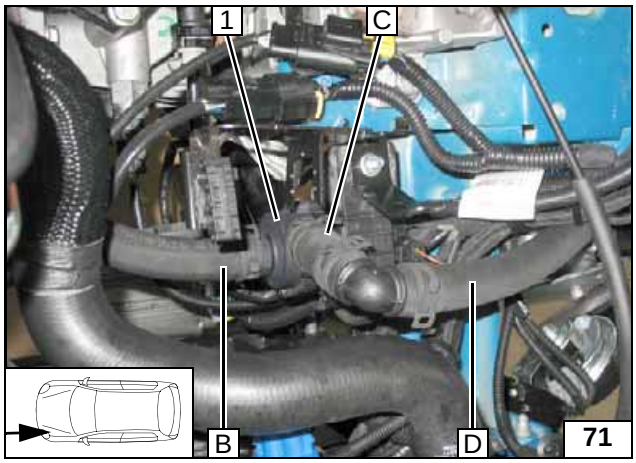


1 Wiring harness of circulating pump

Mounting wiring harness

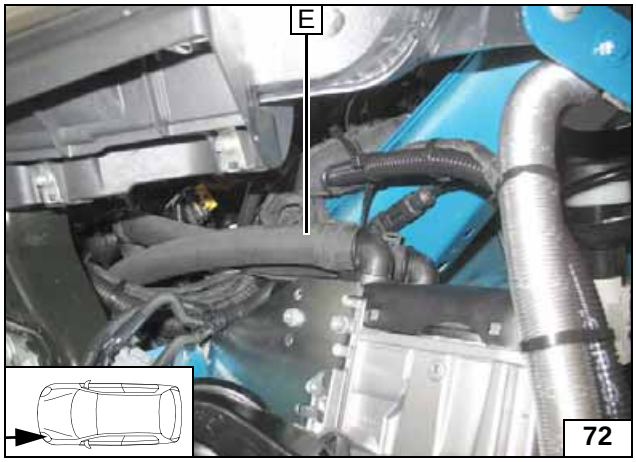


Connecting heater inlet

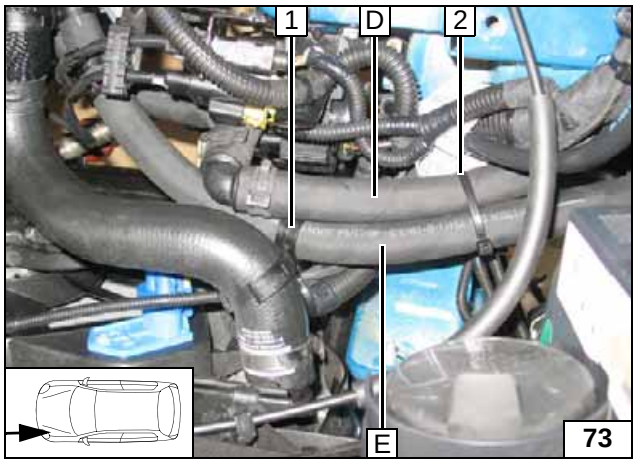


1 Circulating pump

Connecting circulating pump

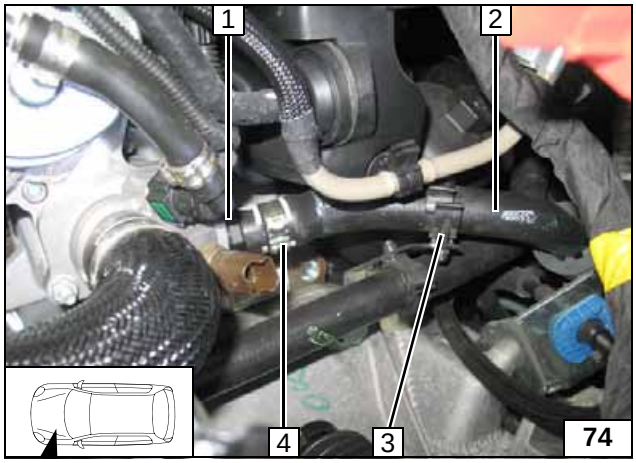


Connecting heater outlet



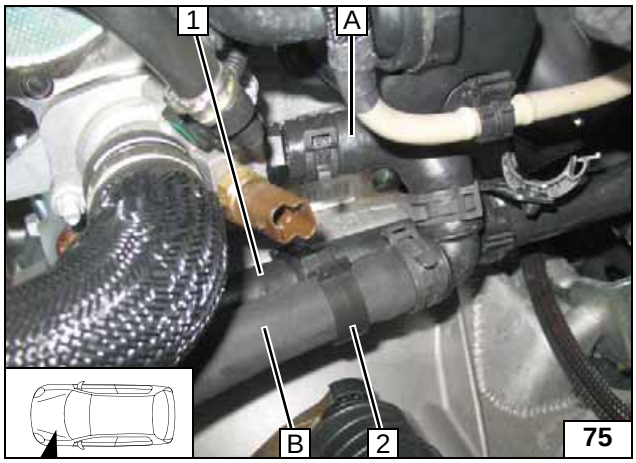
1 Insert 37x25 hose bracket
2 Cable tie

Routing in engine compartment



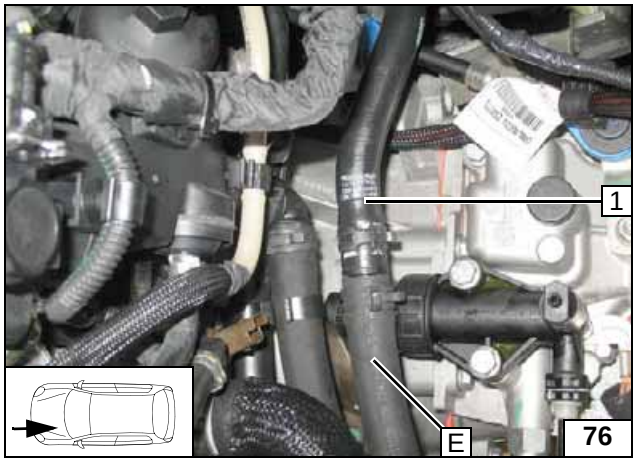
Remove hose of engine outlet / heat exchanger inlet **2** from bracket **3** and pull it off engine outlet connection piece **1**. Discard spring clip **4** .

Cutting point



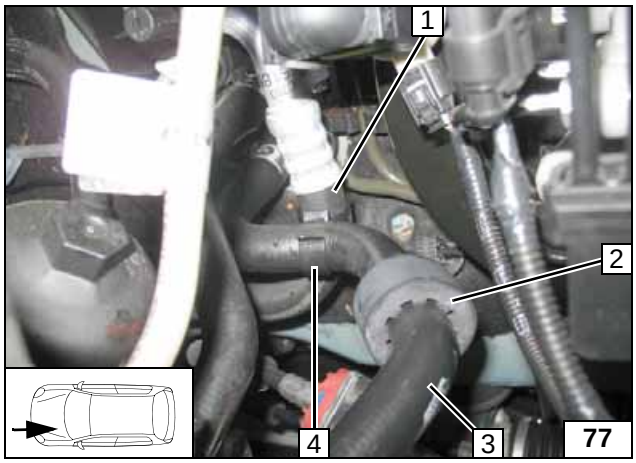
1 Original vehicle hose
2 Insert 25x25 hose bracket

Connecting engine outlet



1 Hose of heat exchanger inlet

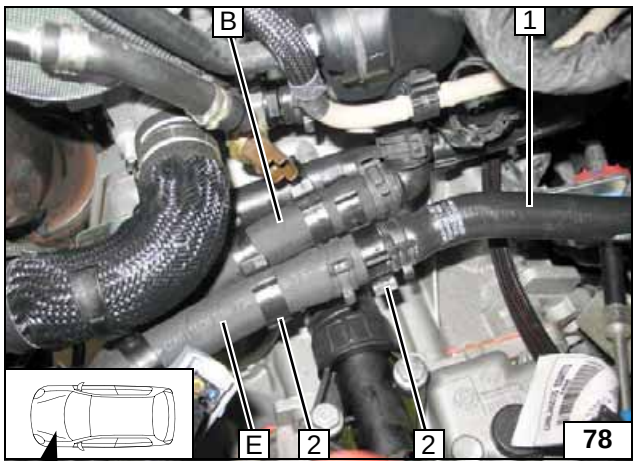
Connecting heat exchanger inlet



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

1 Original vehicle A/C line
2 Align original vehicle rubber isolator
3 Hose of heat exchanger inlet
4 20x20 mm hose bracket

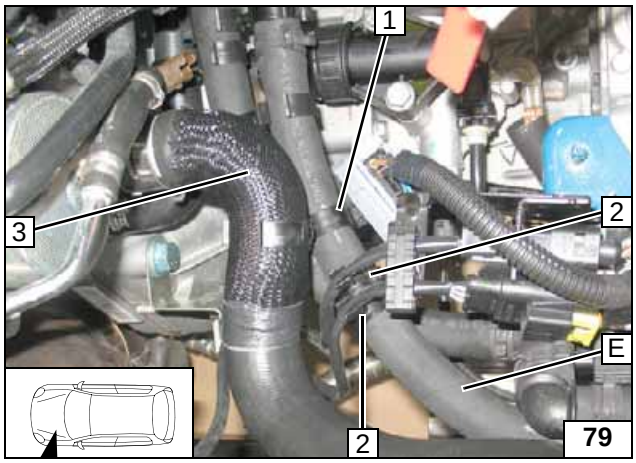
Mounting hose bracket



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

1 Hose of heat exchanger inlet
2 25x25 hose bracket [2x]

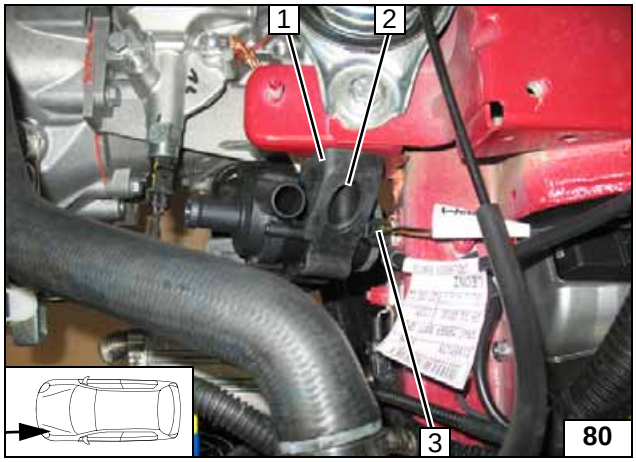
Mounting hose bracket



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

Mounting hose bracket

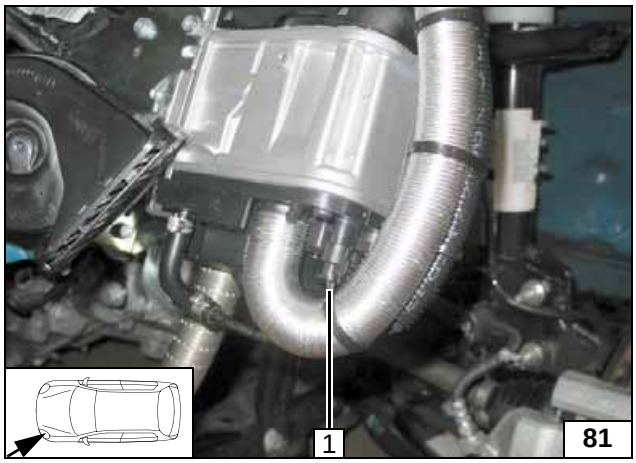
1 37x25 hose bracket
2 25x8 hose bracket [2x]
3 Original vehicle hose



1.2 P

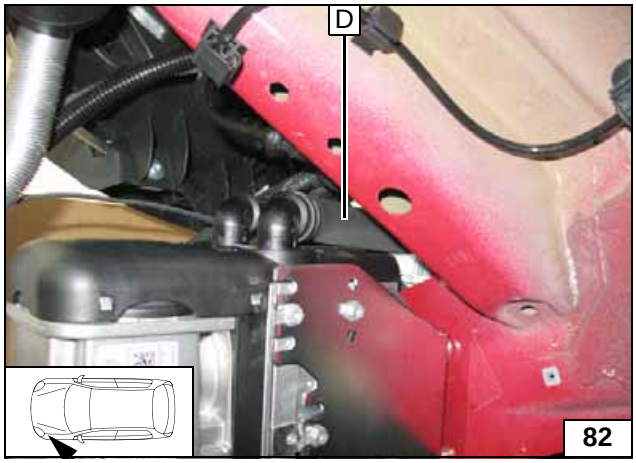
Installing circulating pump

1 Circulating pump mounting
2 M6x25 bolt, large diameter washer, flanged nut
3 Mount wiring harness of circulating pump

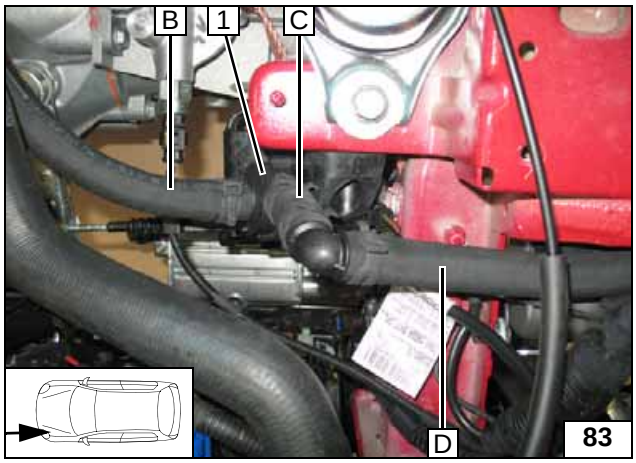


Mounting wiring harness

1 Wiring harness of circulating pump

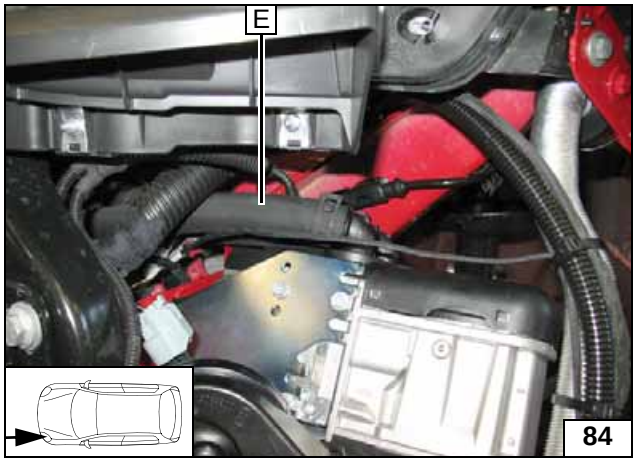


Connecting heater inlet

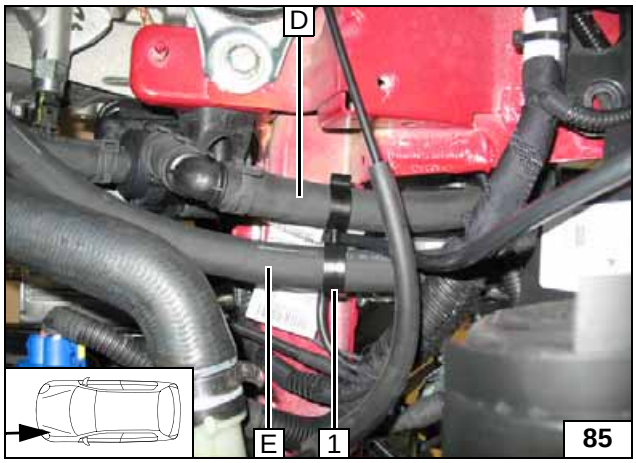


1 Circulating pump

Connecting circulating pump

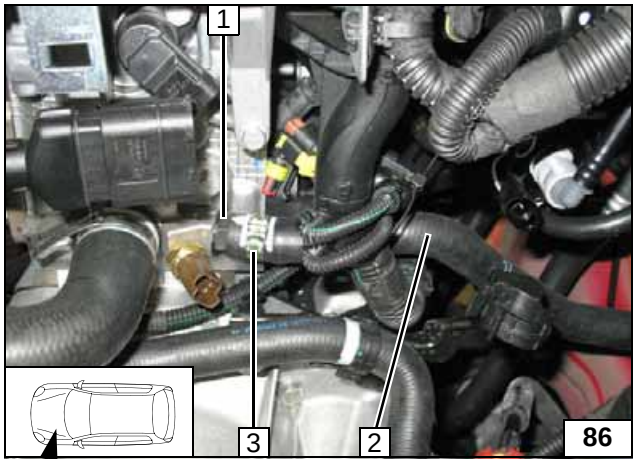


Connecting heater outlet



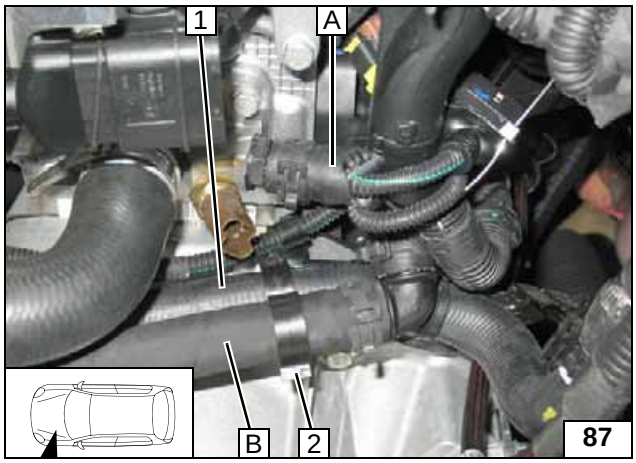
1 Insert 25x25 hose bracket

Routing in engine compartment



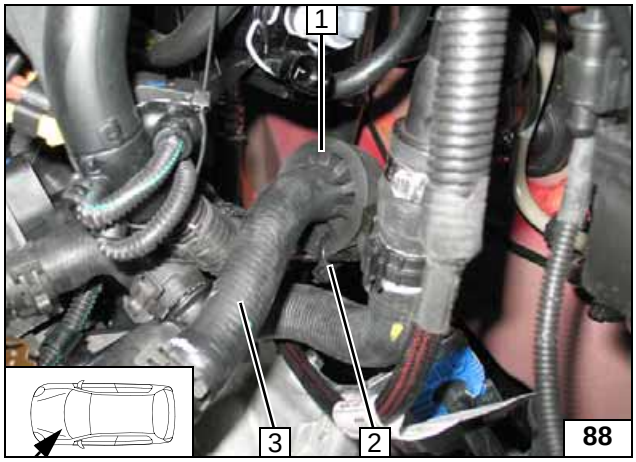
Pull hose to engine outlet / heat exchanger inlet **2** off connection piece of engine outlet **1**. Discard spring clip **3** .

Cutting point



1 Original vehicle hose
2 Insert 25x25 hose bracket

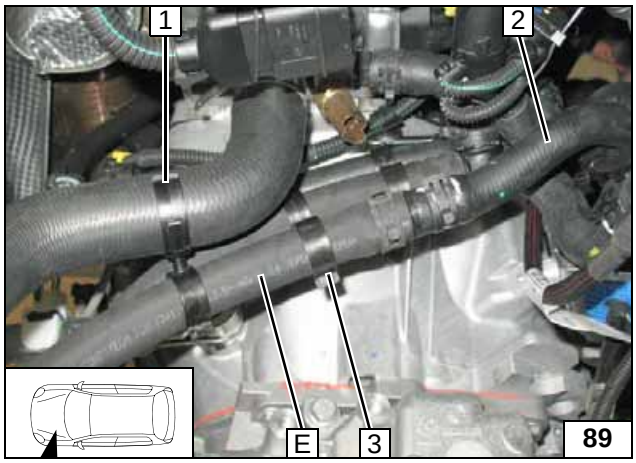
Connecting engine outlet



Cable tie around hose of heat exchanger inlet and bracket of heat exchanger outlet hose.

1 Slide on black (sw) rubber isolator and align
2 Cable tie
3 Hose of heat exchanger inlet

Inserting rubber isolator



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

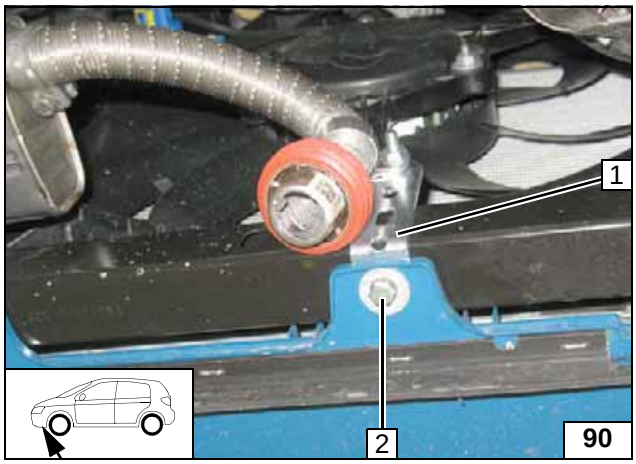
1 37x25 hose bracket
2 Hose of heat exchanger inlet
3 25x25 hose bracket

Connecting heat exchanger inlet

Final Work

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

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

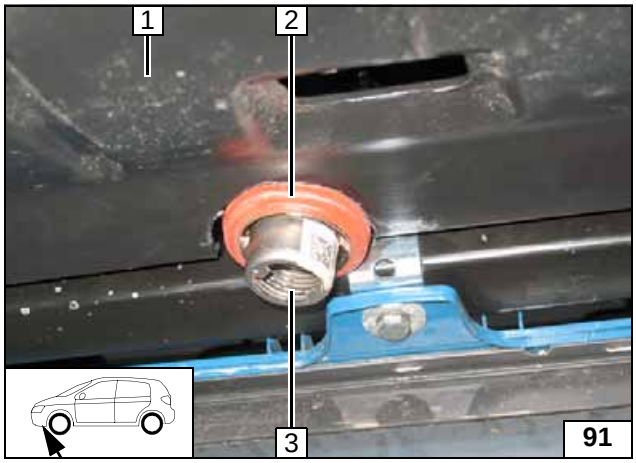


Vehicles with underride protection

Install bumper.

1 Perforated bracket
2 M6x20 bolt, large diameter washer

Fastening exhaust end section

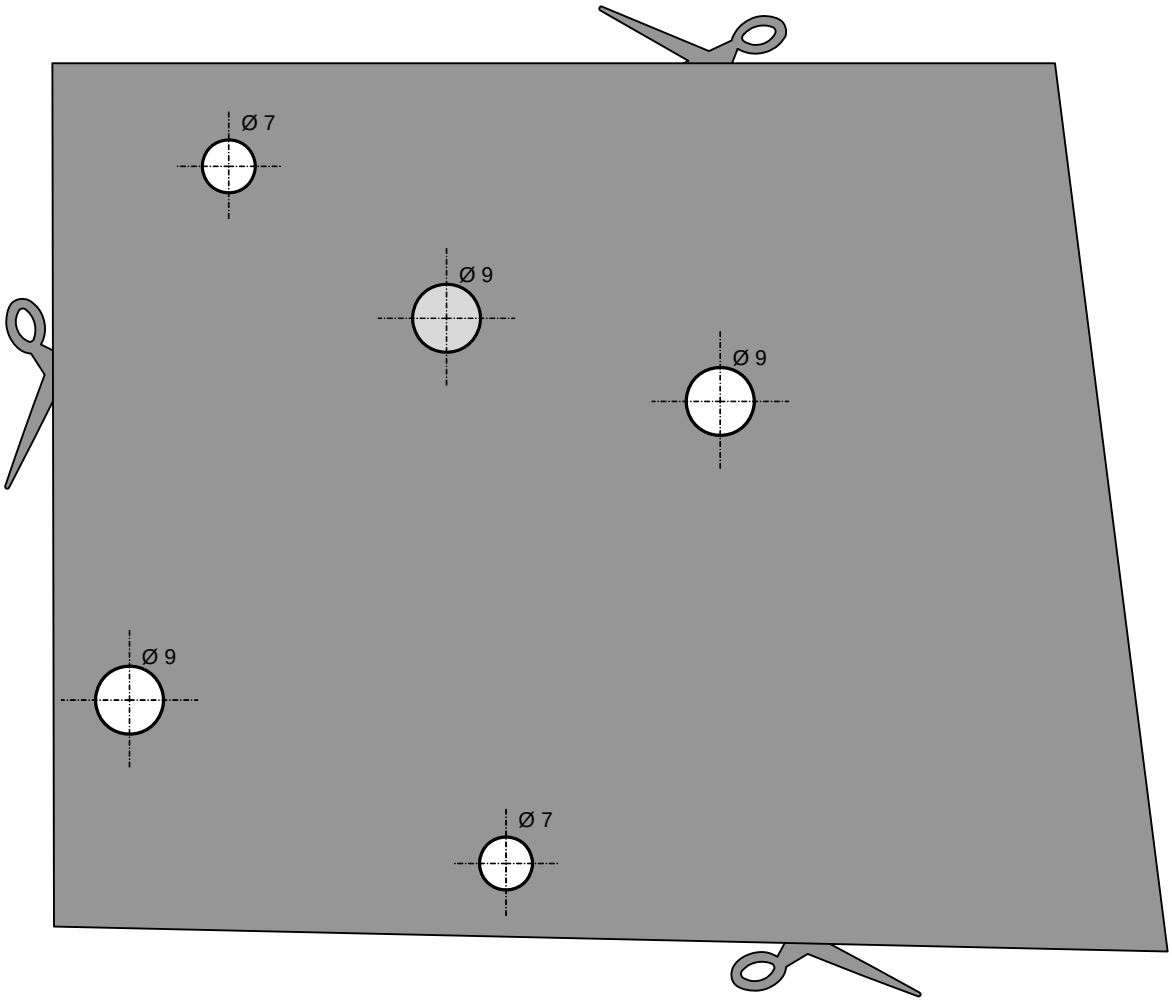


Install underride protection **1**. Position spacer bracket **2** at the centre of the hole. Align exhaust end section **3**. Ensure sufficient distance from neighbouring components, correct if necessary.

Aligning exhaust end section

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

Template for Bracket



100mm

Scale 1:1

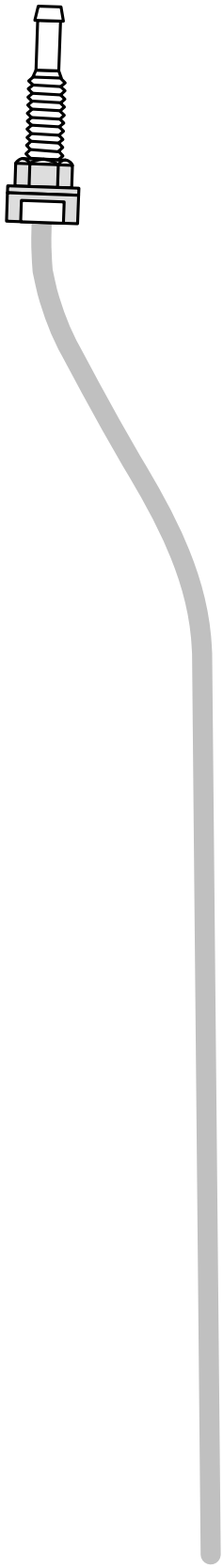
Compare size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

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

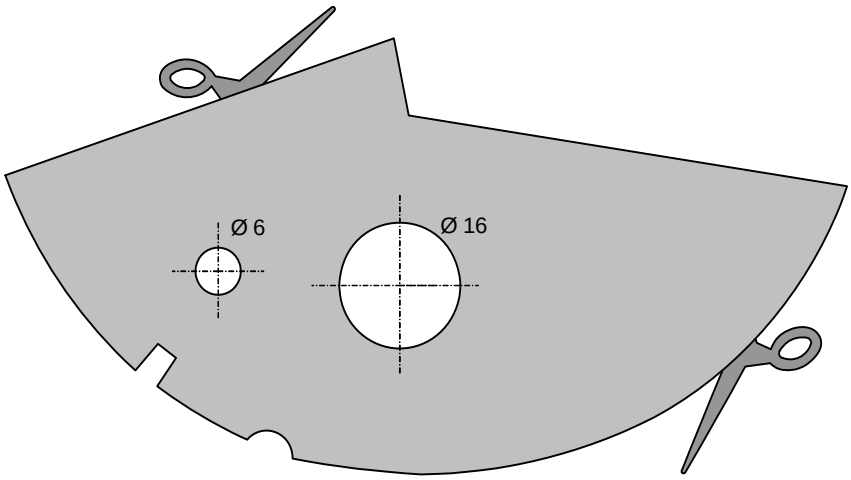
100mm

0

Template for Fuel Standpipe



Template for Fuel Tank Sending Unit



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

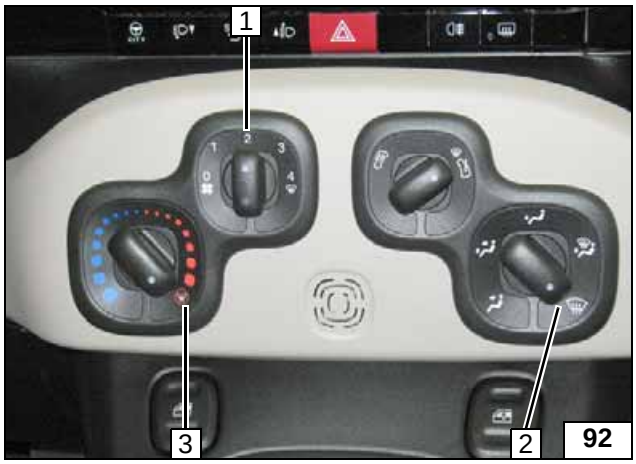
Please remove page and add to the vehicle operating instructions.

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.

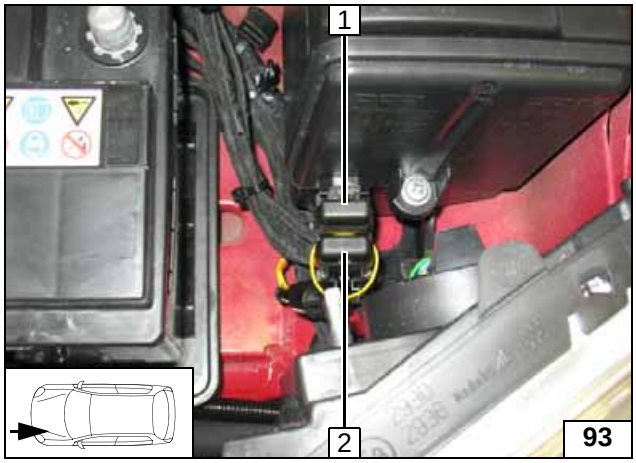
Before parking the vehicle, make the following settings:

A/C control panel



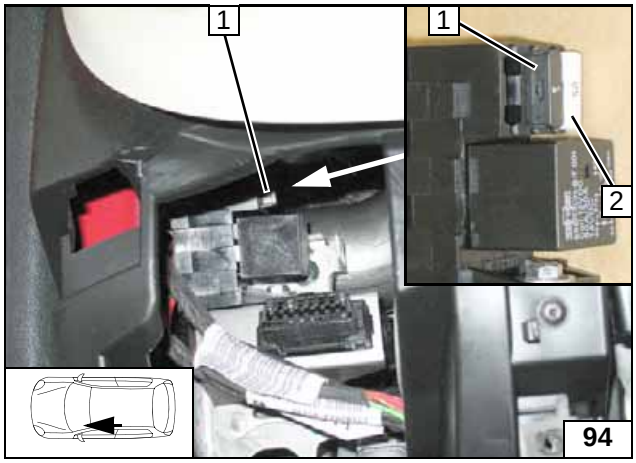
1 Set fan to level "1", or max. "2"
2 Air outlet onto windscreen
3 Set temperature to "max."

Engine compartment fuses



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

Passenger compartment fuses



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