



Water Heater

Thermo Top Evo Parking Heater



Installation Documentation Ford Kuga

Validity

Manufacturer	Model	Type	Model year	EG BE No. / ABE
Ford	Kuga	DM2	From model year 2017	e13 * 2001 / 116 * 0109 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm ³	Engine code
2.0 TDCi	Diesel	6-speed SG	110	1997	T7MA / T7MB
2.0 TDCi	Diesel	6-speed SG	132	1997	T8MA / T8MB

SG = manual transmission

Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
Two zone automatic air-conditioning
Xenon main headlights
Headlight washer system
Halogen front fog lights
Halogen daytime running lights
LED daytime running lights
Euro 6
4WD

Not verified: Passenger compartment monitoring

Total installation time: approx. 12.5 hours

Ford Kuga

Table of Contents

Validity	1	Preparing Installation Location	12
Necessary Components	2	Preparing Heater	15
Installation Overview	2	Preassembled Heater Installation	17
Information on Total Installation Time	2	Fuel	19
Information on Operating and Installation Instructions	3	Installing FuelFix	20
Information on Validity	4	Exhaust Gas	25
Technical Information	4	Coolant Circuit	28
Explanatory Notes on Document	4	Combustion Air	31
Preliminary Work	5	Final Work	33
Heater Installation Location	5	FuelFix Template	34
Preparing Electrical System	6	Operating Instructions for Manual A/C	35
Wiring Harness Routing	7		
Manual Air-Conditioning System Wiring Diagram	8		
Manual Air-Conditioning Fan Controller	9		
Automatic Air-Conditioning Fan Controller	10		
Heater Controls	10		

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit for Ford Focus / C-Max / Grand C-Max / Kuga petrol and Diesel: **1324046B**
- In case of automatic air-conditioning either:
‘Webasto Standard’ A/C control installation kit for Ford Focus / C-Max / Grand C-Max / Kuga: **1324049_**
or
‘Webasto Comfort’ A/C control installation kit for Ford Focus / C-Max / Grand C-Max / Kuga: **1324107_**
- 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
- The installation location should be chosen together with the end customer in case of MultiControl CAR.
- In case of MultiControl CAR installation: Timer cable extension: **1319724_**
- In case of MultiControl CAR installation: MultiControl installation frame: **9030077_**

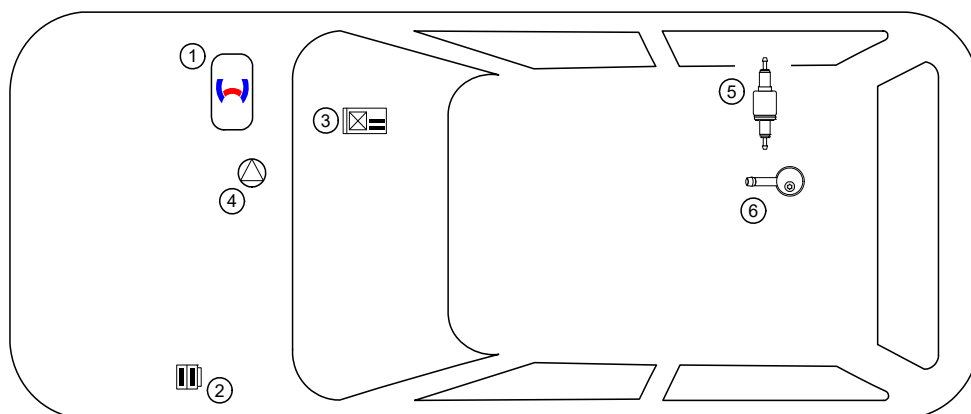
Installation instructions:

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

Installation Overview

Legend:

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



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair



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



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



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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

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

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

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

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

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

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

2 Statutory regulations governing installation

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

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Ford Kuga

Information on Validity

This installation documentation applies to Ford Kuga Diesel vehicles - for validity, see page 1 - from model year 2017 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
- Hose clamping pliers
- Automatic wire stripper, 0.2 - 6mm²
- Crimping pliers for tab connector, 0.14 - 6mm²
- Crimping pliers for cable lug, 0.5 - 10mm²
- Crimping pliers for connector, 0.25 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

Dimensions

- All dimensions are in mm.

Tightening torque values

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

Explanatory Notes on Document

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

Special features are highlighted using the following symbols:

Mechanical System



Electrical System



Coolant Circuit



Combustion Air



Fuel



Exhaust Gas



Software



Specific risk of damage to components.



Specific risk due to electrical voltage.



Specific risk of injury or fatal accidents.



Specific risk of fire or explosion.



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



Reference to a special technical feature.



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



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



Ford Kuga

Preliminary Work

Vehicle



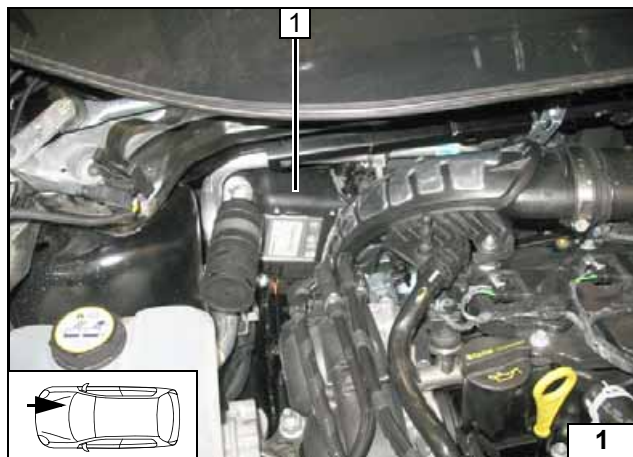
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the engine cover.
- Remove the windscreen wiper.
- Remove the upper cover of the coolant reservoir.
- Remove the cover of the coolant reservoir for the engine compartment.
- Drain the coolant according to the manufacturer's instructions.
- Remove the intake hose.
- Remove the engine underdrive protection.
- Remove the underbody trim on the right next to the tank.



- Detach the heat protection trim of the exhaust system in the area of the tank.
- Remove the fuel tank according to the manufacturer's instructions.
- Remove the footwell trim on the front passenger's side.
- Remove the A-pillar trim of the footwell on the front passenger's side (only in case of Telestart).

Heater

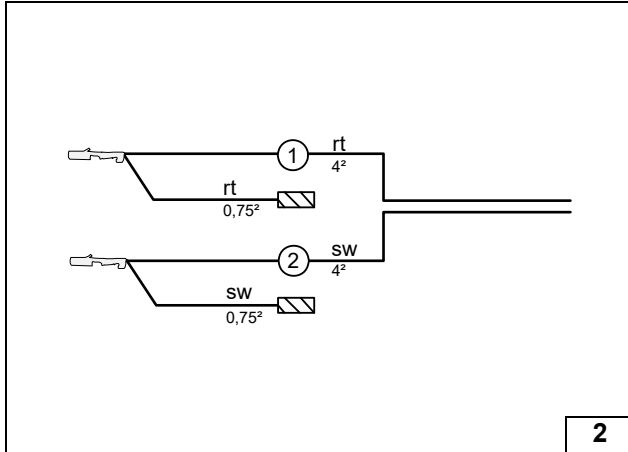
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater Installation Location

- 1 Heater

Installation location



Preparing Electrical System

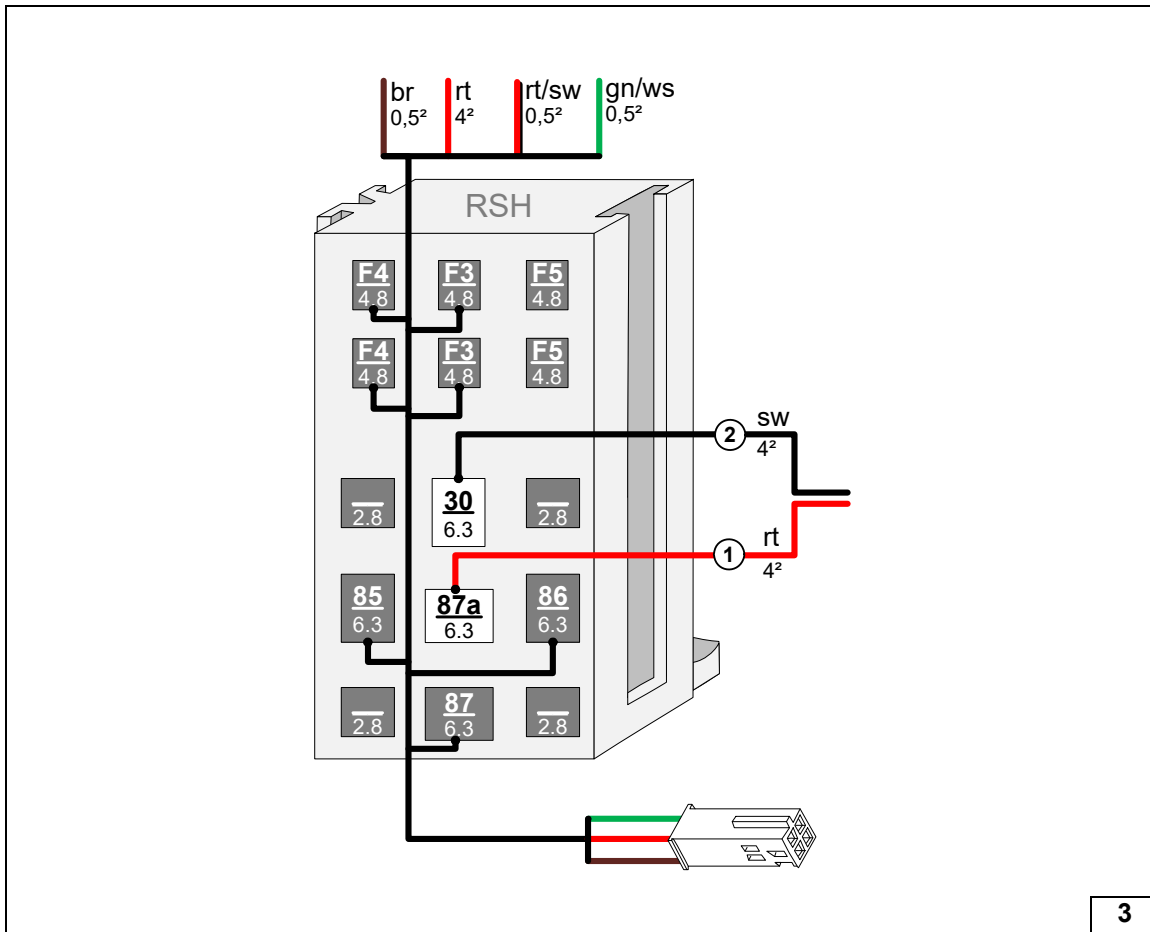
Wire sections retain their numbering in the entire document.

Manual air-conditioning

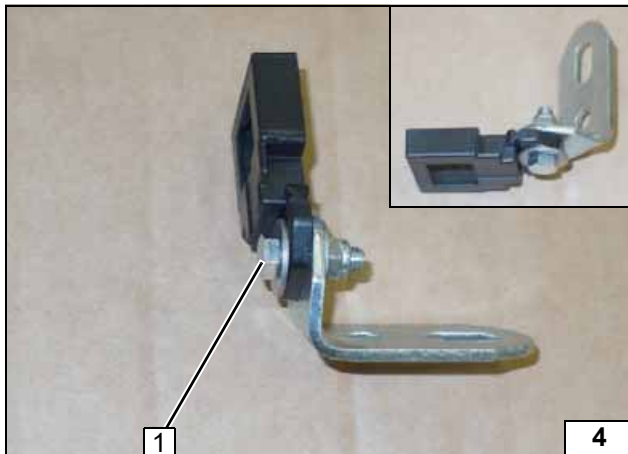
- ① Red (rt) wire of fan wiring harness
- ② Black (sw) wire of fan wiring harness



Assigning wires

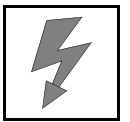


Connecting wires to passenger compartment relay and fuse holder



- 1 M5x16 bolt, large diameter washer, fuse holder retaining plate, angle bracket, large diameter washer, nut

Premounting angle bracket loosely

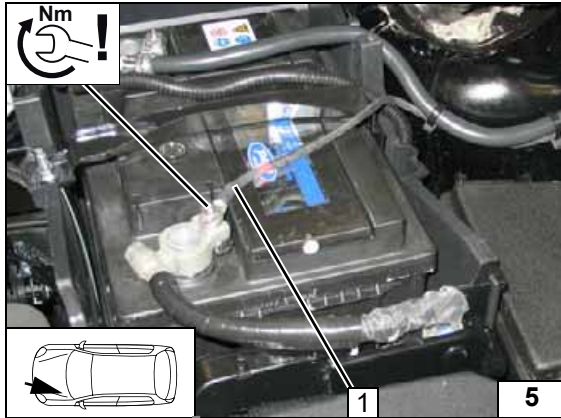


Wiring Harness Routing



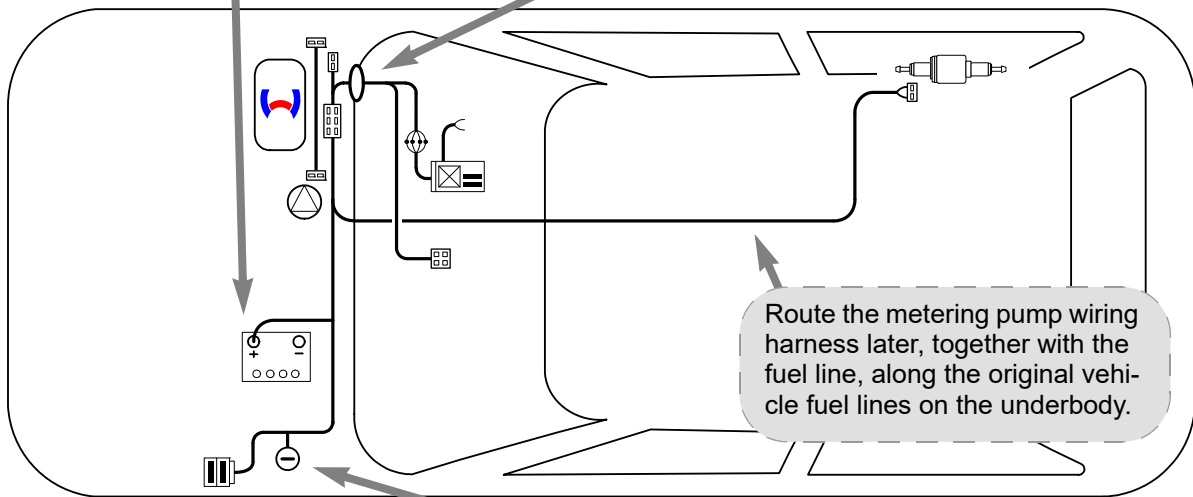
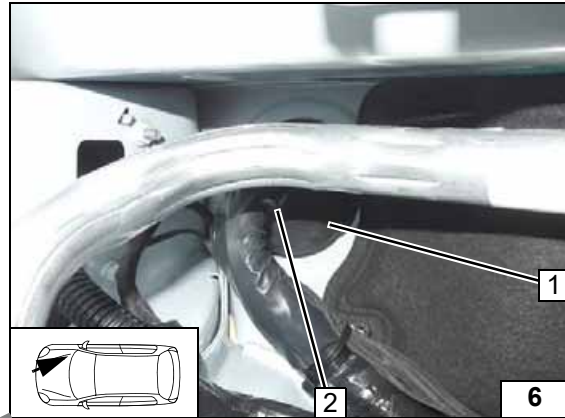
Positive wire

- 1 Positive wire on positive battery terminal

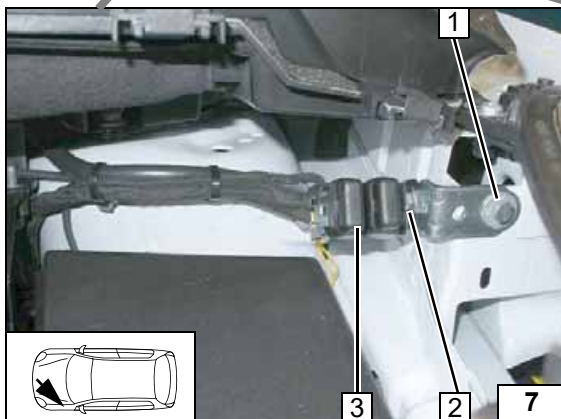


Wiring harness pass through

- 1 Protective rubber plug
- 2 Wiring harnesses of heater, heater control

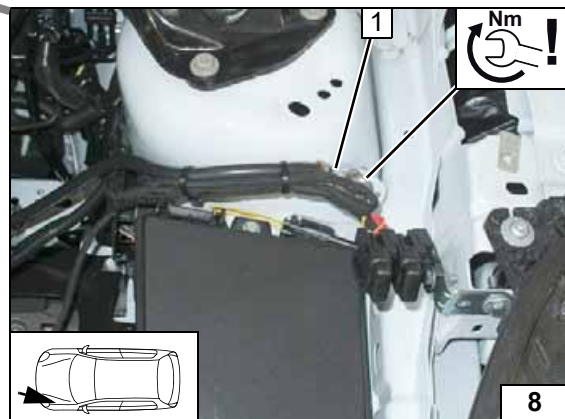


Wiring harness routing diagram



Engine compartment fuse holder

- 1 M5x16 bolt, large diameter washer, angle bracket, existing hole, nut
- 2 Align fuse holder retaining plate as shown, tighten bolt
- 3 Fuses F1-2



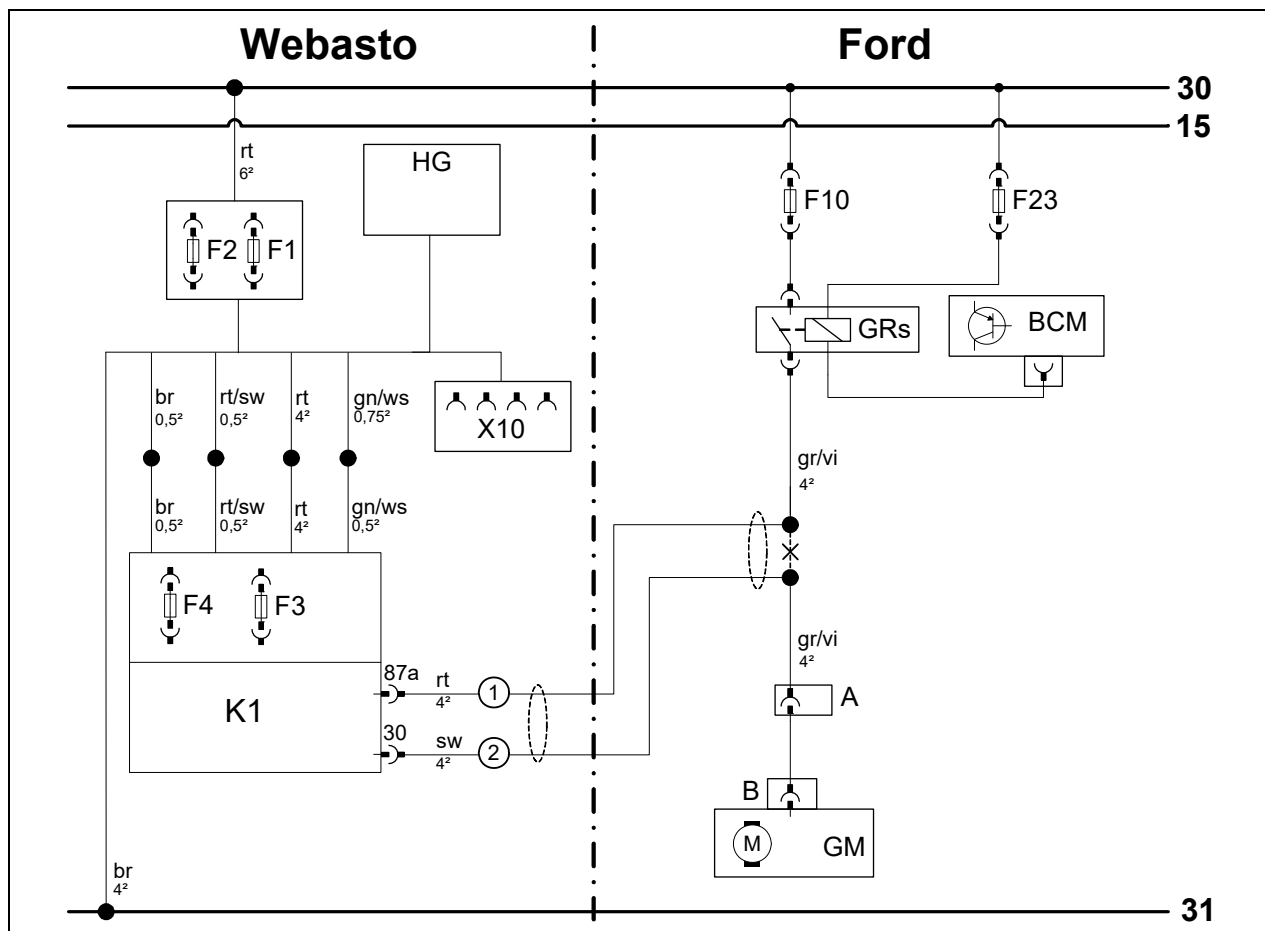
Earth wire

- 1 Earth wire, 8 mm dia. cable lug at original vehicle earth support point





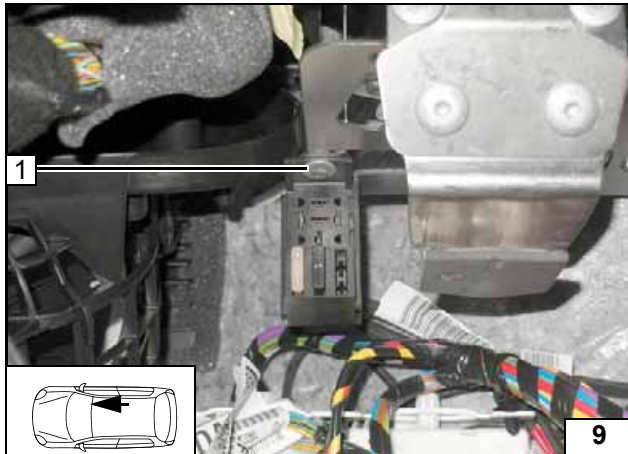
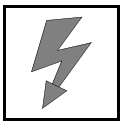
Manual Air-Conditioning System Wiring Diagram



System wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F10	40A fuse	rt	red
F1	20A fuse	F23	5A fuse	sw	black
F2	30A fuse	BCM	Body control unit	gn	green
X10	4-pin socket of heater control	GRs	Fan relay	ws	white
F3	1A fuse	A	Connector	br	brown
F4	25A fuse	GM	Fan motor	gr	grey
K1	Fan relay	B	Fan motor connector	vi	violet
				X	Cutting point
				Wiring colours may vary.	

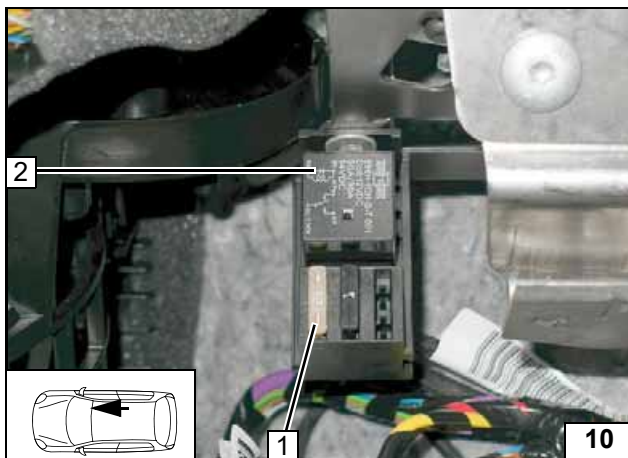
Legend



Manual Air-Conditioning Fan Controller

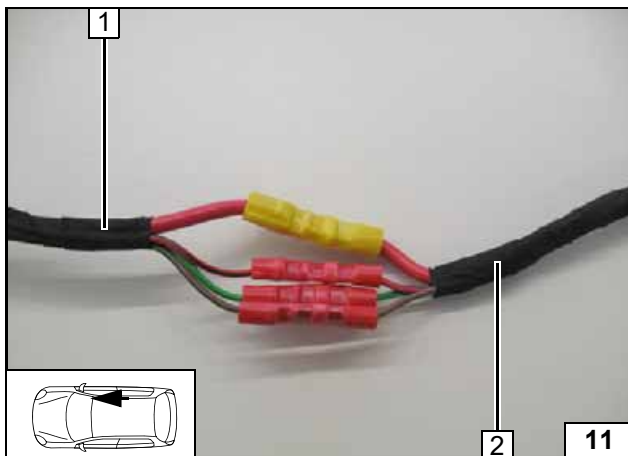
- 1 M5x16 bolt, large diameter washer, passenger compartment relay and fuse holder tab, original vehicle hole, large diameter washer, nut

Installing passenger compartment relay and fuse holder



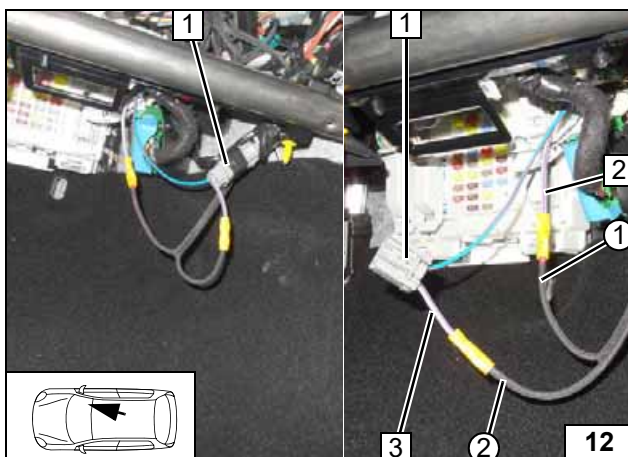
- 1 25A fuse F4
- 2 Relay K1

Inserting fuse F4 and relay K1



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

Connecting same colour wires of wiring harnesses



- 1 Connector A
- 2 Grey/violet (gr/vi) wire of GRs
- 3 Grey/violet (gr/vi) wire of connector A
- ① Red (rt) wire of K1/87a, fan wiring harness
- ② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor



Automatic Air-Conditioning Fan Controller

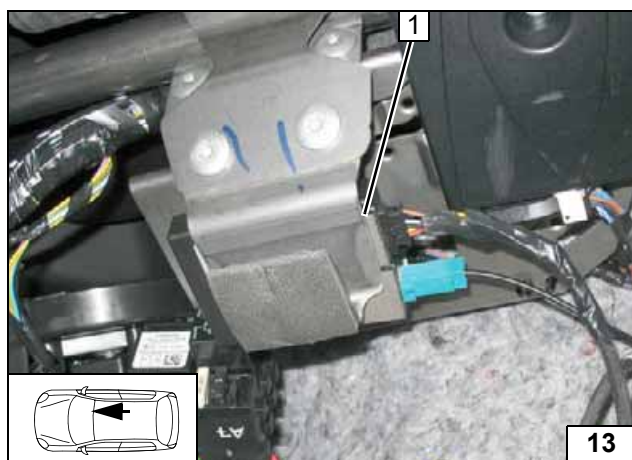


Connect the A/C control in accordance with the separate installation documentation:

Installation documentation of **'Webasto Standard'** A/C control for Ford Focus / C-Max / Grand C-Max / Kuga with AC and AAC

or

Installation documentation of **'Webasto Comfort'** A/C control for Ford Focus / C-Max / Grand C-Max / Kuga with AAC

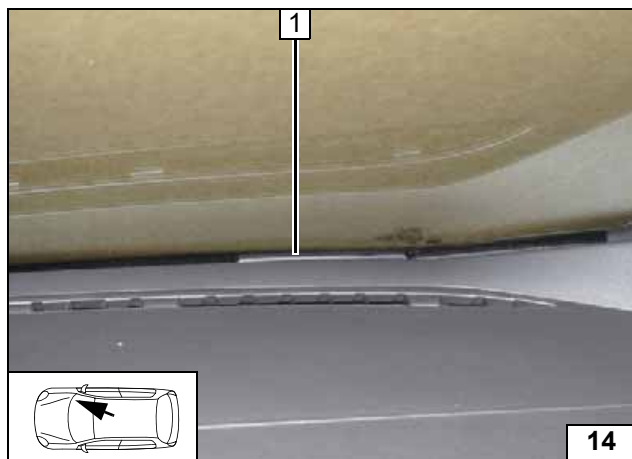


Heater Controls

Remote Option (Telestart)

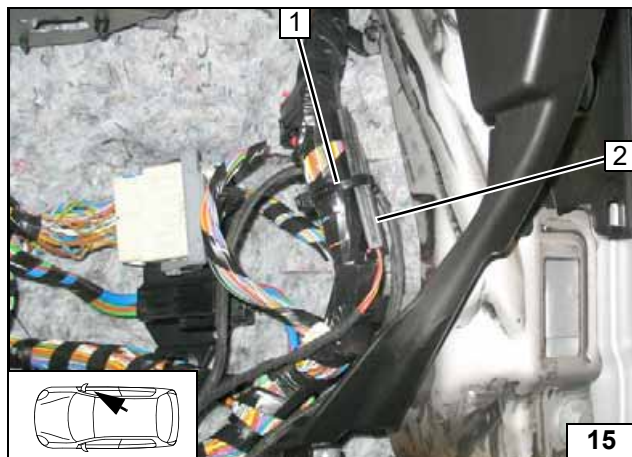
Fasten receiver 1 with double-sided adhesive tape.

Installing receiver



1 Aerial

Installing aerial

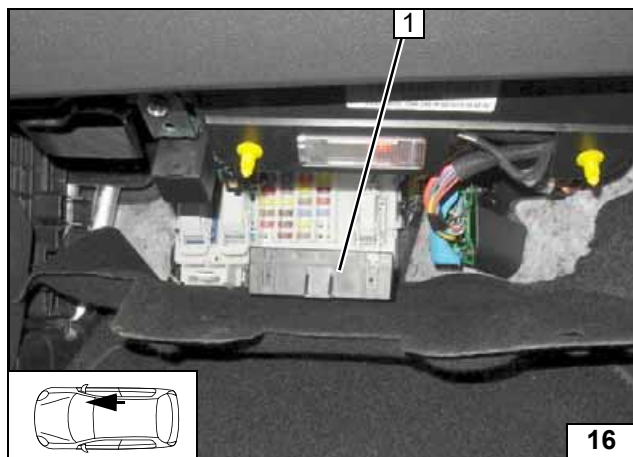


Temperature sensor T100 HTM

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



Installing temperature sensor

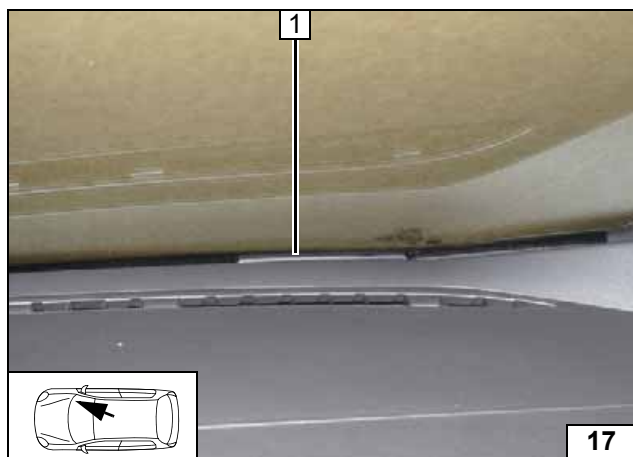


ThermoCall Option

Fasten receiver 1 with double-sided adhesive tape onto the footwell trim.

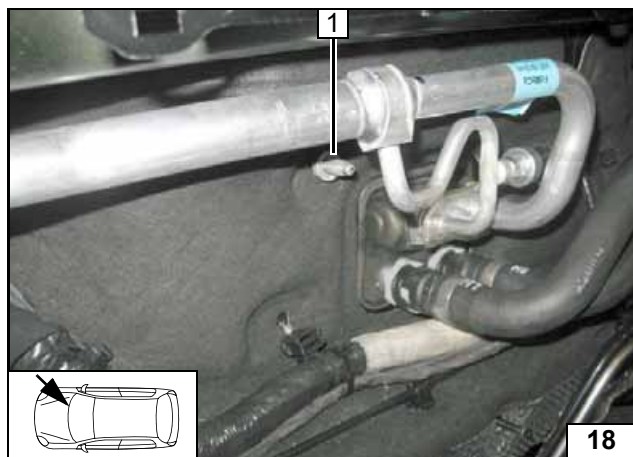


Installing receiver



1 Aerial (optional)

Installing aerial



Preparing Installation Location

Screw M8 flanged nut **1** (nut is shown in the engine compartment) approx. 15mm on the original vehicle stud bolt.



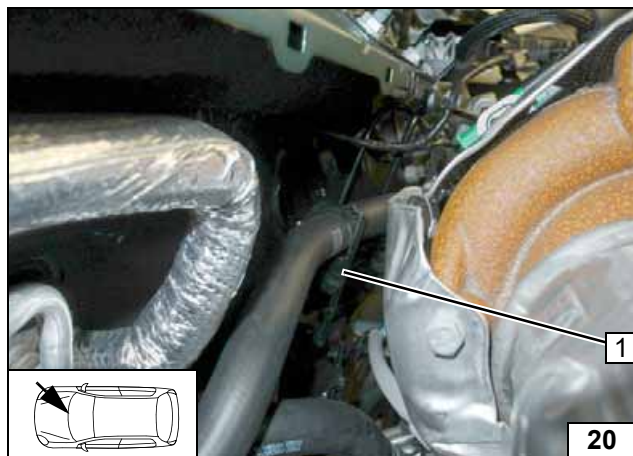
Premounting flanged nut



Screw M8 flanged nut **1** (nut is shown in the engine compartment) by max. 15mm on the original vehicle stud bolt.
Screw M8 flanged nut **2** (nut is shown in the engine compartment) approx. 25mm on the original vehicle stud bolt.

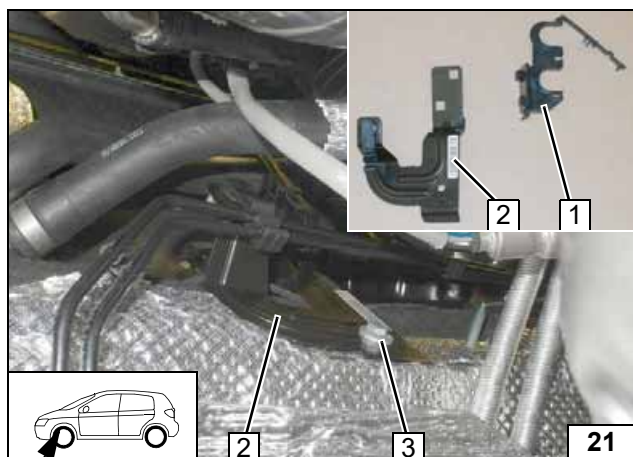


Premounting flanged nut



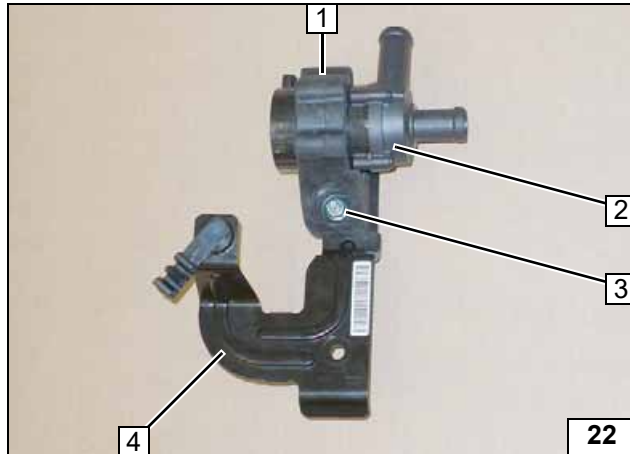
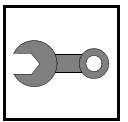
1 Original vehicle hose bracket

Opening locking device of original vehicle hose bracket



- 1** Discard original vehicle hose bracket
- 2** Original vehicle bracket
- 3** Remove original vehicle bolt, will be reused

Removing original vehicle bracket



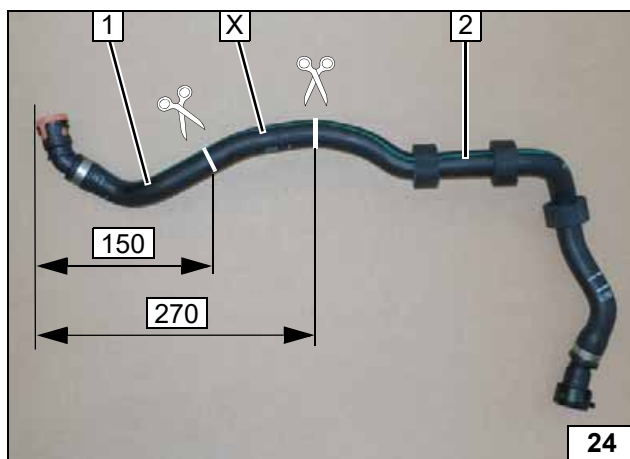
- 1 Metering pump mount
- 2 Metering pump
- 3 M6x25 bolt, flanged nut
- 4 Original vehicle bracket

Premounting circulating pump



- 1 Remove original vehicle engine outlet / heat exchanger inlet hose

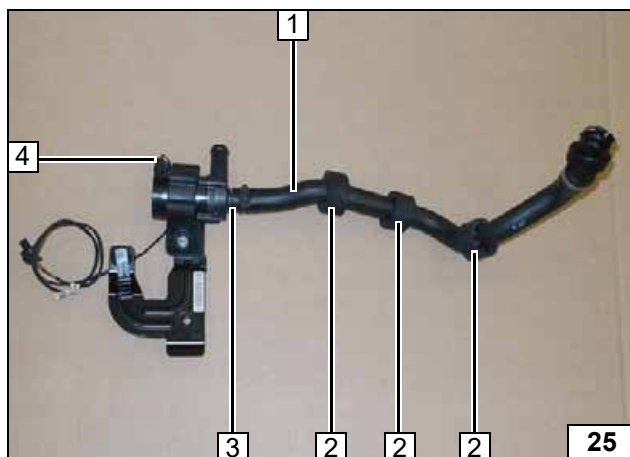
Cutting point for integration in coolant circuit



- 1 Heat exchanger inlet hose section
- 2 Engine outlet hose section

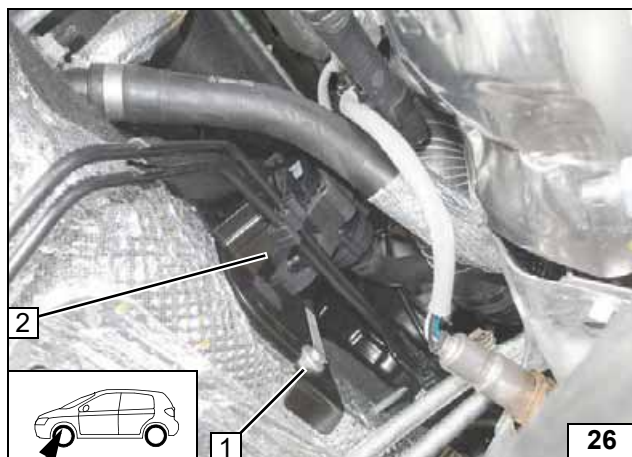
X =

Preparing original vehicle engine outlet / heat exchanger inlet hose



- 1 Engine outlet hose section
- 2 Original vehicle rubber isolator [3x]
- 3 Circulating pump inlet
- 4 Connector of circulating pump wiring harness

Premounting circulating pump



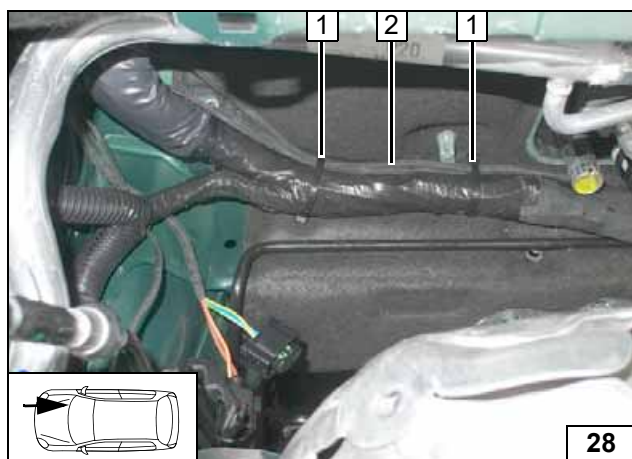
- 1 Original vehicle bolt
- 2 Original vehicle bracket with circulating pump

Installing circulating pump



- 1 Engine outlet hose section

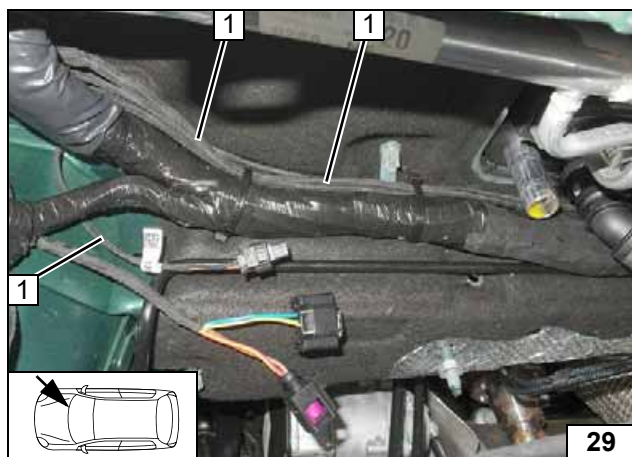
Connecting engine outlet



Route heater wiring harness **2** as shown along original vehicle wiring harness and secure using cable tie **1**.

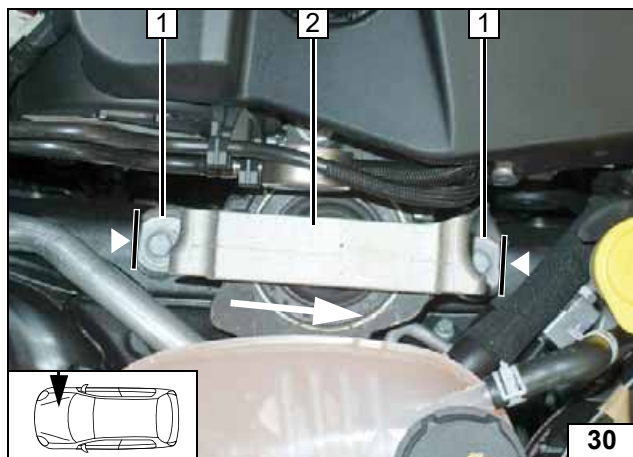


Heater wiring harness routing



- 1 Circulating pump wiring harness

Circulating pump wiring harness routing

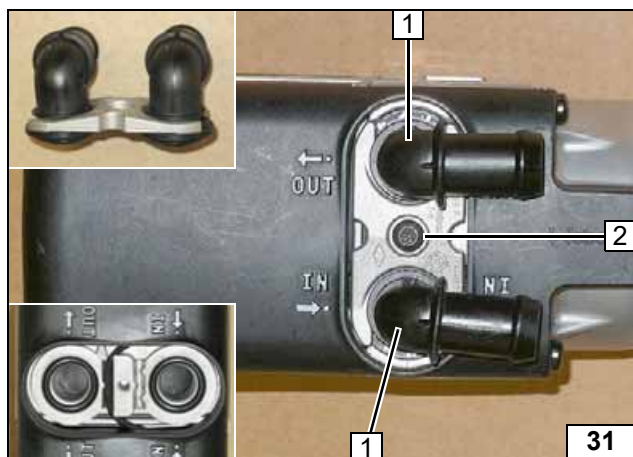


Mark original position of engine mount **2** on frame side member as shown. Remove bolts **1** [2x].

Move the engine towards the front of the vehicle.



Detaching engine mount

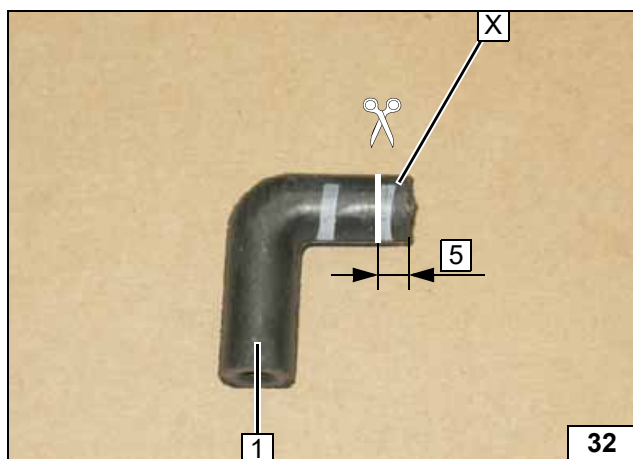


Preparing Heater

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



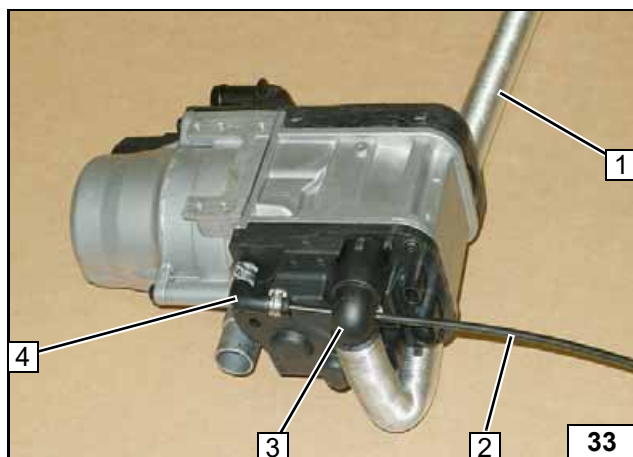
Installing water connection piece



- 1 90° moulded hose

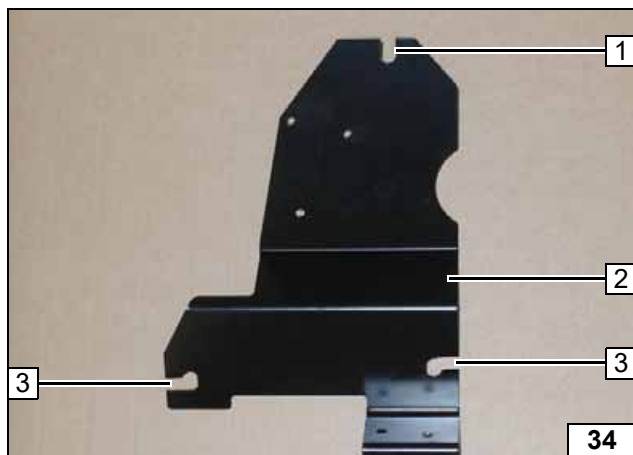
X =

Cutting moulded hose to length



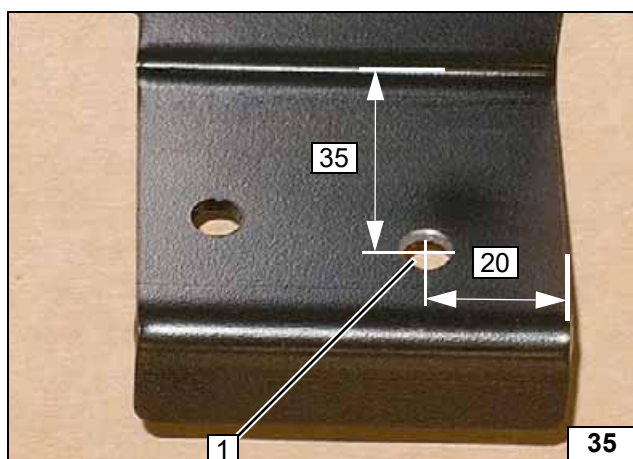
- 1 Combustion air pipe
- 2 Fuel line
- 3 Air-intake manifold
- 4 90° moulded hose, 10 mm dia. clamp [2x]

Premounting heater



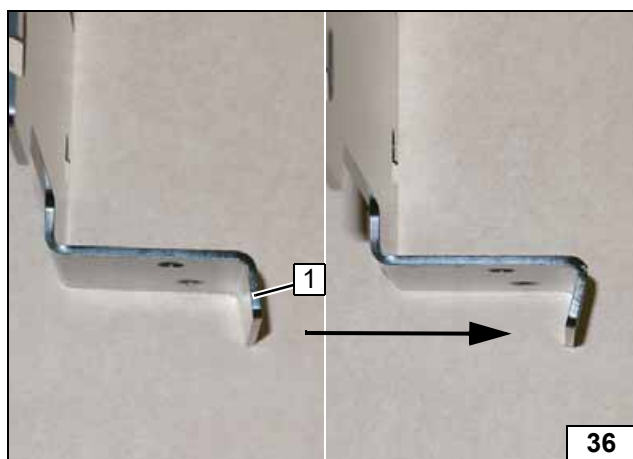
- 1 Adapt existing 10mm dia. hole as shown
- 2 Bracket
- 3 Adapt existing oblong hole as shown [2x]

Preparing bracket



- 1 Copy hole pattern, drill 7mm dia.hole

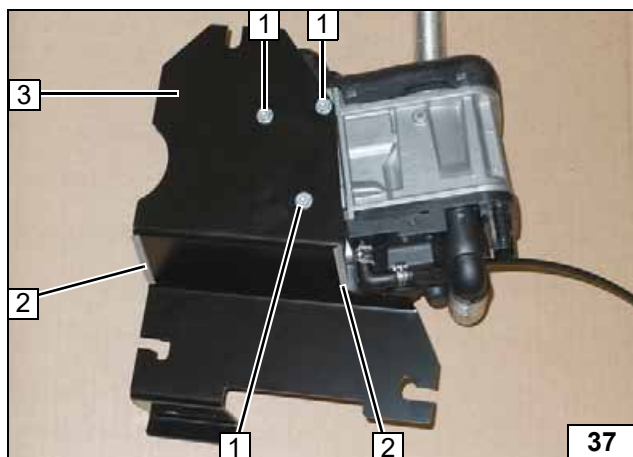
Preparing bracket



Bend bracket at position 1 by approx. 15° as shown.

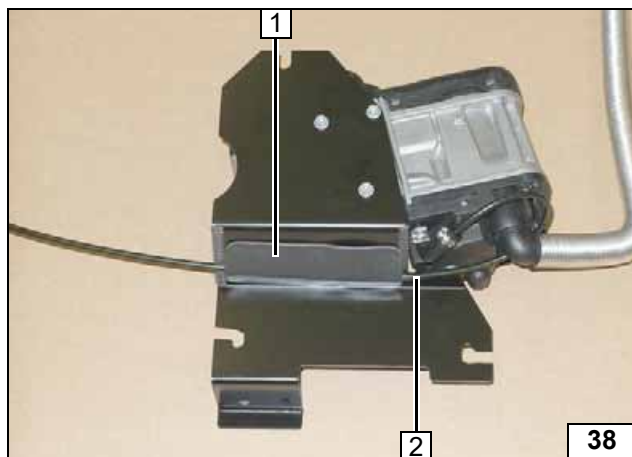
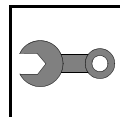


Preparing bracket



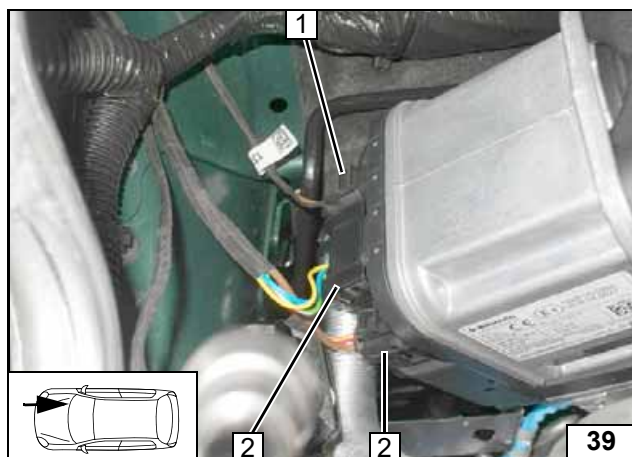
- 1 5x13 self-tapping bolt [3x]
- 2 Edge protection cut in half, 50mm each [2x]
- 3 Bracket

Installing bracket



- 1 Insulation strips
- 2 Fuel line

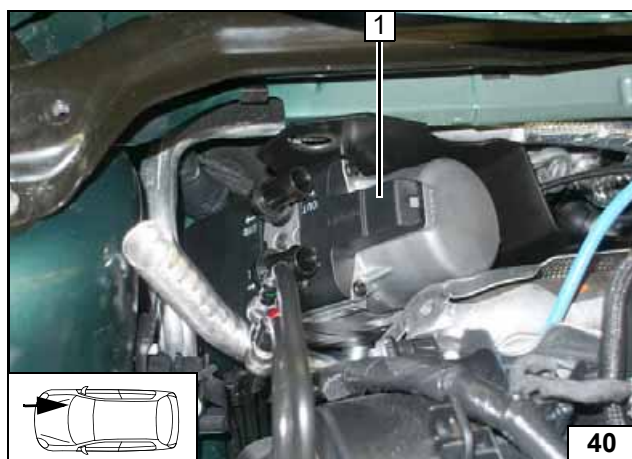
Mounting fuel line



Preassembled Heater Installation

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

Mounting wiring harnesses



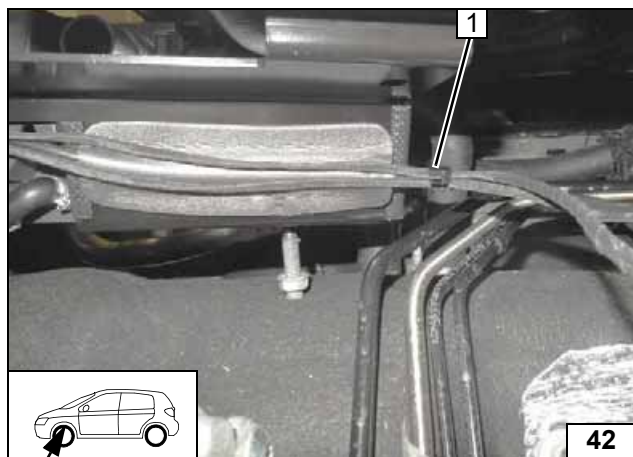
Install assembly 1 from above on firewall.



Installing assembly

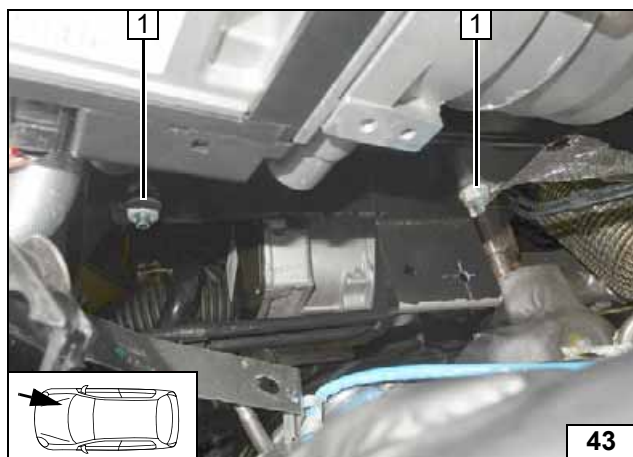


Installing assembly



1 Cable tie around circulating pump wiring harness and metering pump as well as fuel line

Fixing wiring harnesses

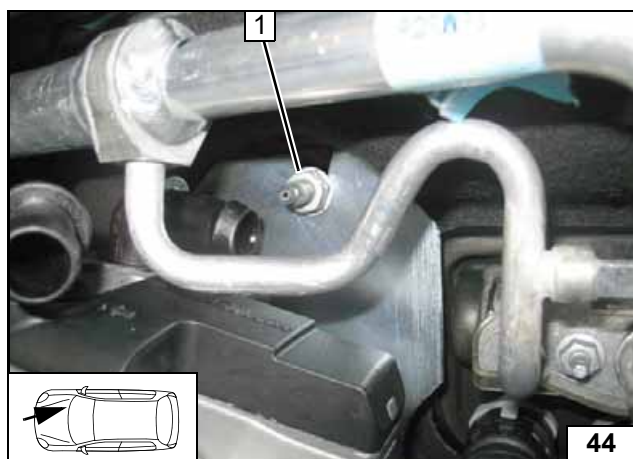


Mount heater with bracket on original vehicle stud bolt [3x].

1 M8 flanged nut [2x]

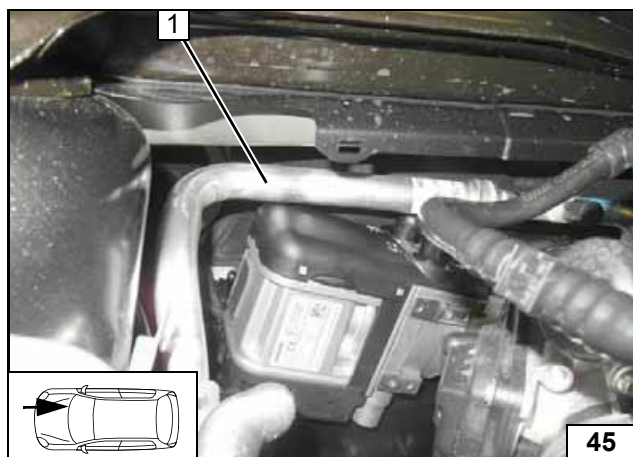


Installing heater



1 M8 flanged nut

Installing heater



Align heater as shown. Ensure sufficient distance from neighbouring components, especially from A/C line 1, correct if necessary.



Installing heater



Fuel



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

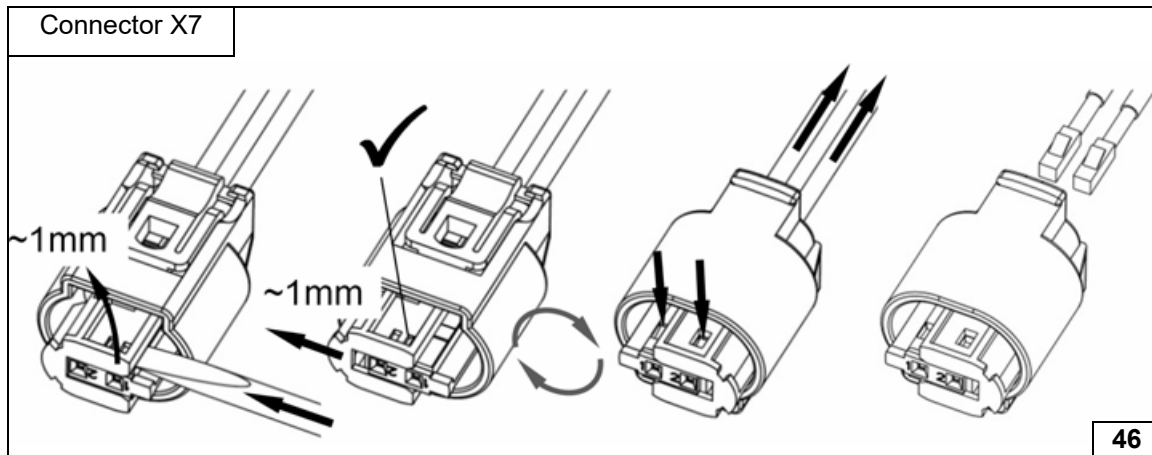
Catch any fuel running off in an appropriate container.



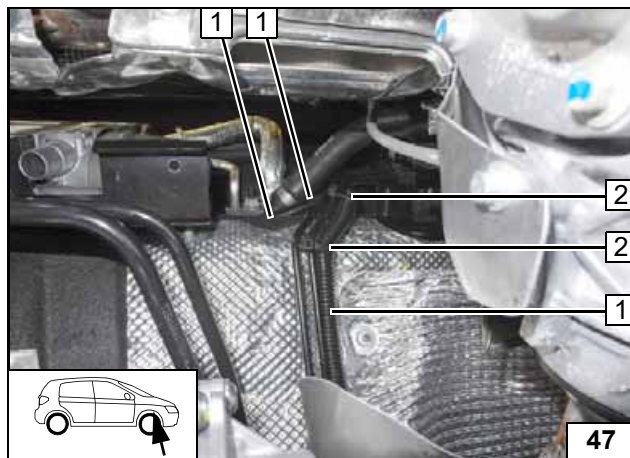
Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

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.



Dismantling metering pump connector



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

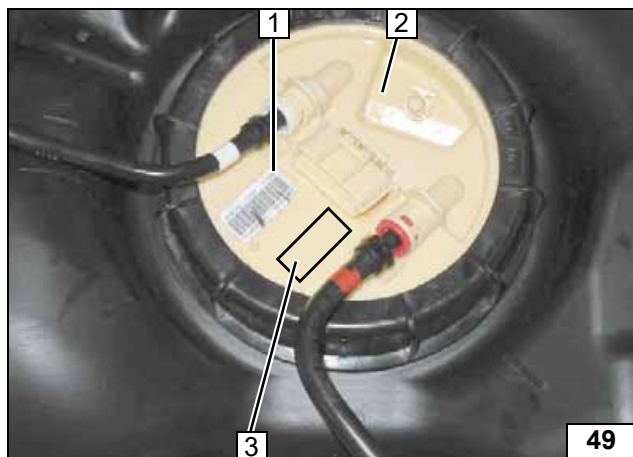
2 Cable tie [2x]

Routing lines



Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube 1 along original vehicle fuel lines to installation location of metering pump.

Routing lines



Installing FuelFix

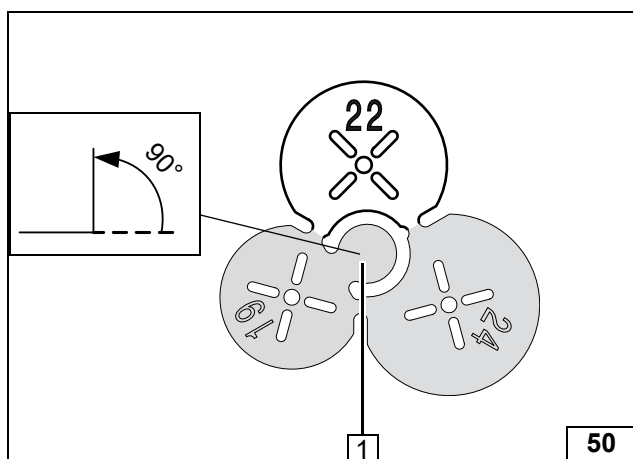
Remove the fuel tank according to the manufacturer's instructions.

Move sticker 1 to marked area 3 .

- 2 Fuel tank sending unit

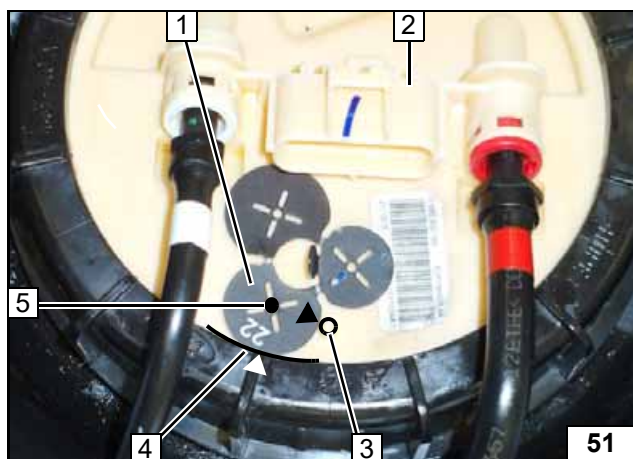


Preparing fuel tank sending unit



- 1 Lug

Preparing drilling template



Work steps F1 and F2.

- 1 Template dia. = 22mm
- 2 Fuel tank sending unit
- 3 Contact point with raised part
- 4 Contact point with union nut
- 5 Hole pattern



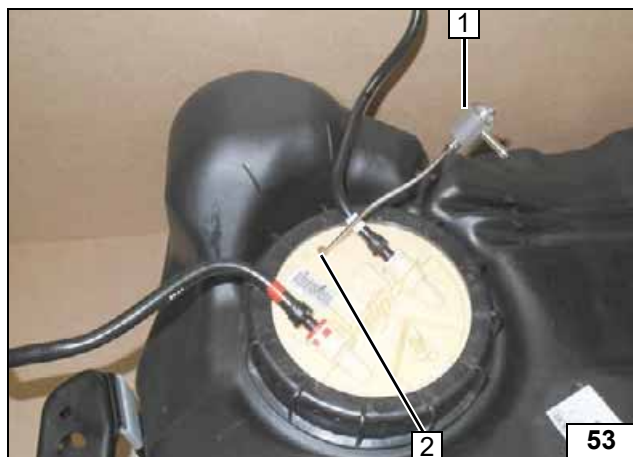
Copying hole pattern



Work step F3.

- 1 Hole made with provided drill

Hole for FuelFix



Work steps F4 and F5.

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



Inserting FuelFix

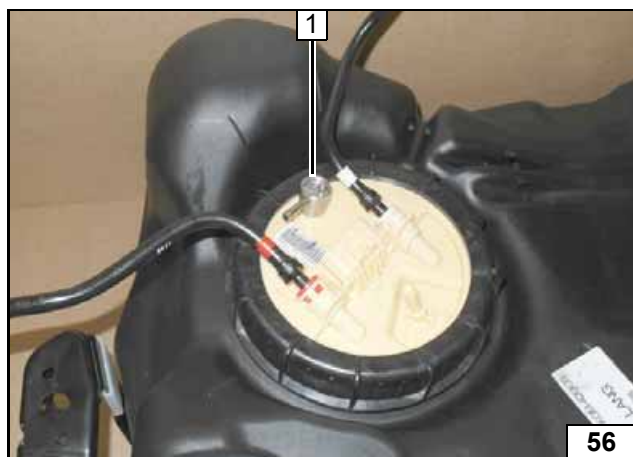


Work step F5.

Inserting FuelFix



Inserting FuelFix

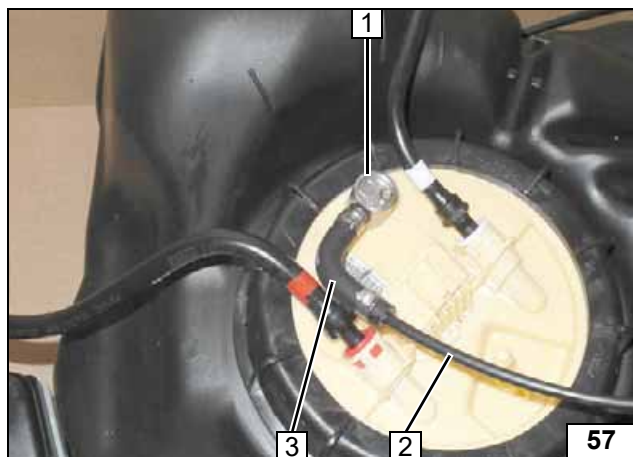


Work steps F5.3 and F5.4.

Align FuelFix 1 as shown.



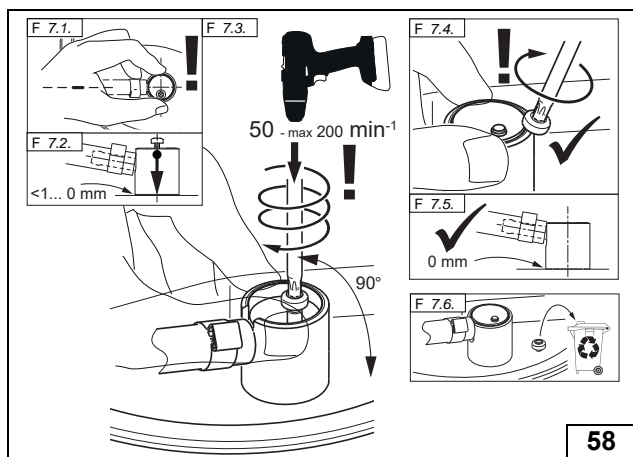
Aligning FuelFix



Work step F6.

- 1 FuelFix
- 2 Fuel line
- 3 90° moulded hose, 10 mm dia. clamp [2x]

Connect-
ing fuel line



Work step 7.

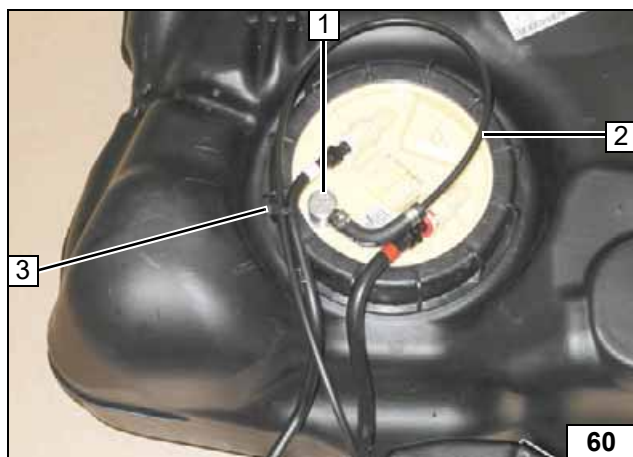


Installing
FuelFix



Work step F8.

Ensuring
firm seating
of FuelFix



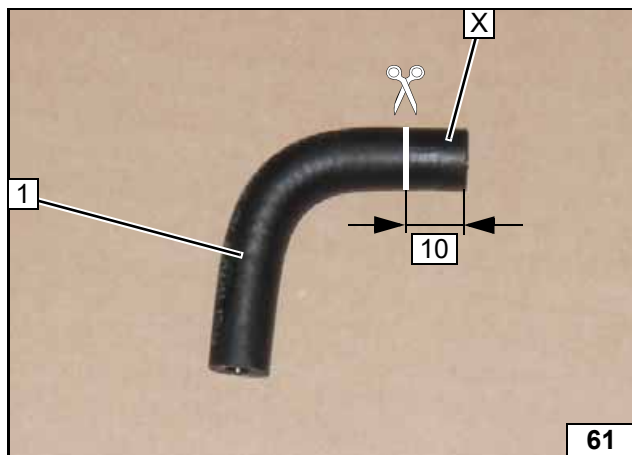
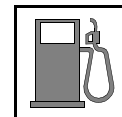
- 1 FuelFix mounted
- 2 Fuel line of FuelFix
- 3 Cable tie as tension relief



Securing
fuel line



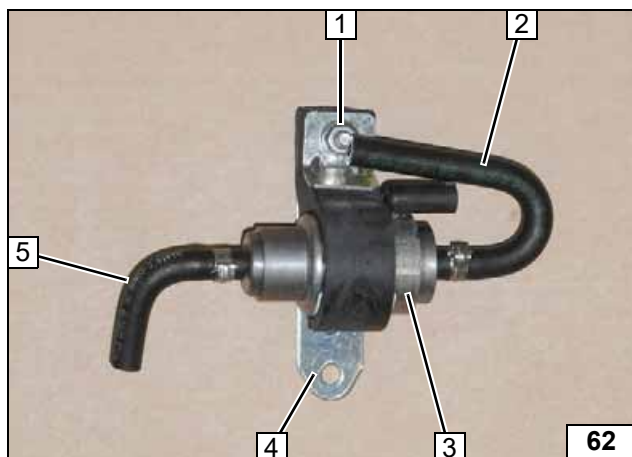
Install fuel tank in accordance with manufacturer's instructions.



1 90° moulded hose

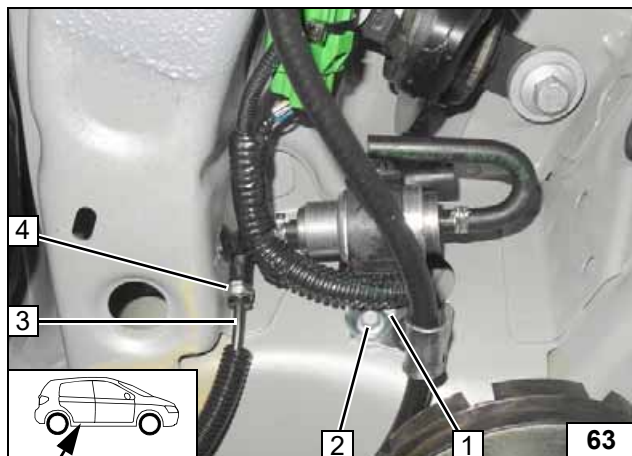
X =

Cutting moulded hose to length



- 1 M6x25 bolt, perforated bracket 4, mounting of metering pump, support angle bracket, flanged nut
- 2 180° moulded hose, 10 mm dia. clamp
- 3 Metering pump
- 4 Perforated bracket
- 5 90° moulded hose (shortened side to metering pump), 10 mm dia. clamp

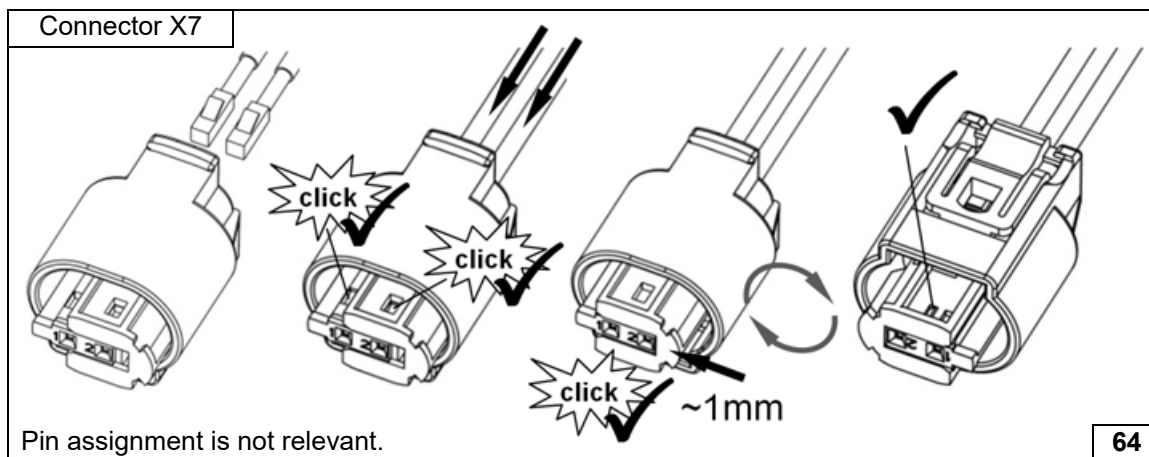
Premounting metering pump



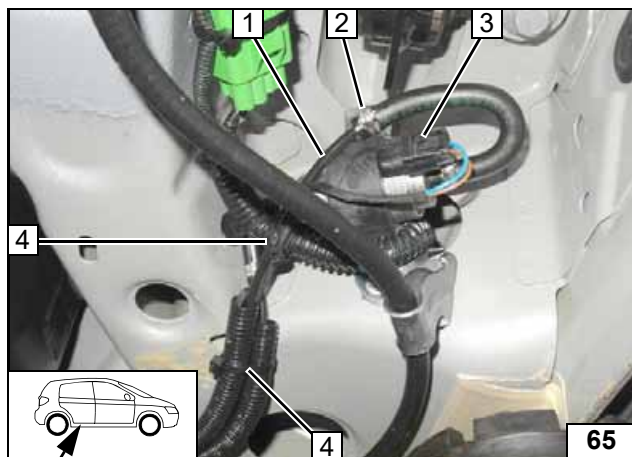
- 1 Premounted perforated bracket
- 2 Original vehicle bolt
- 3 FuelFix fuel line in corrugated tube
- 4 10 mm dia. clamp



Installing metering pump



Completing metering pump connector

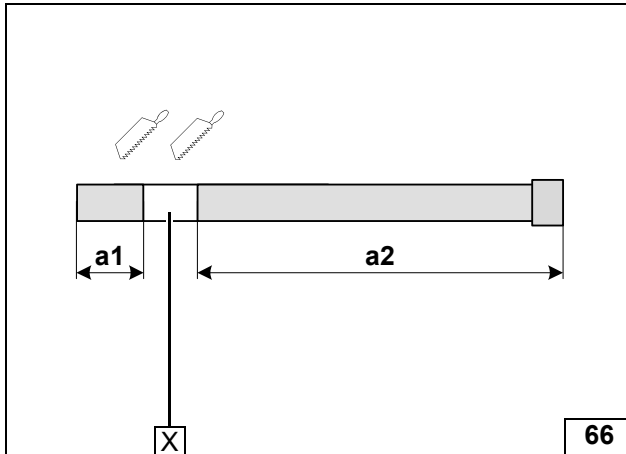
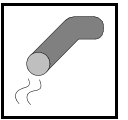


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

- 1 Heater fuel line
- 2 10 mm dia. clamp
- 3 Metering pump wiring harness, connector X7 mounted
- 4 Cable tie [2x]



**Connect-
ing meter-
ing pump**

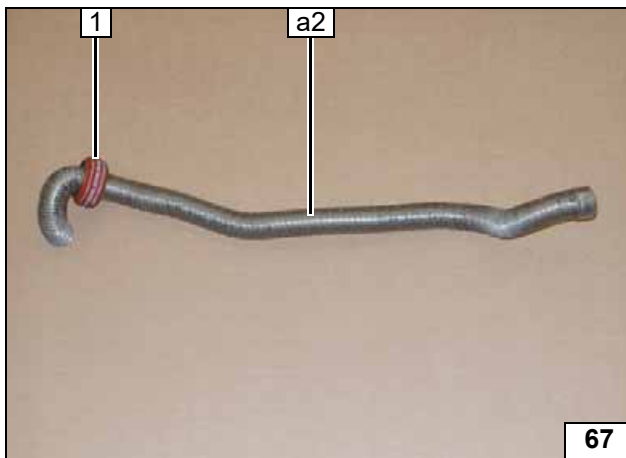


Exhaust Gas

a1 = 110
a2 = 600

X =

Cutting to length / assigning exhaust pipes

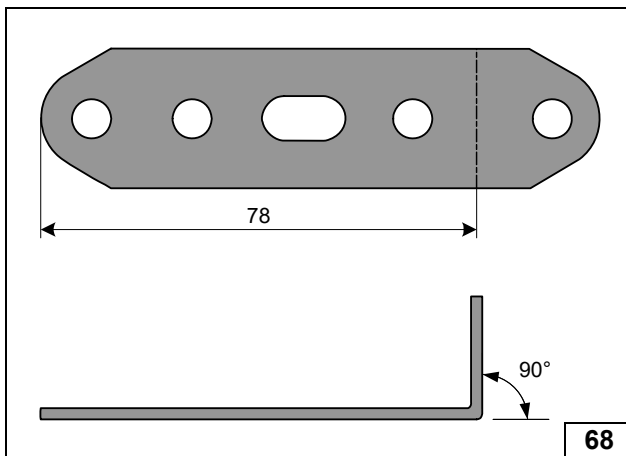


Bend exhaust pipe **a2** as shown.

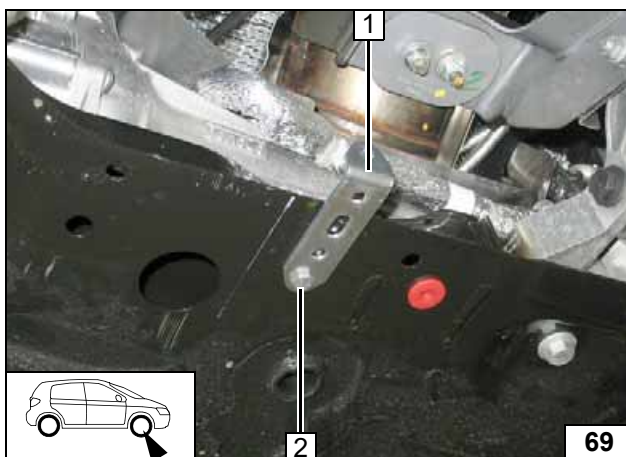
1 Spacer bracket



Preparing exhaust pipe a2

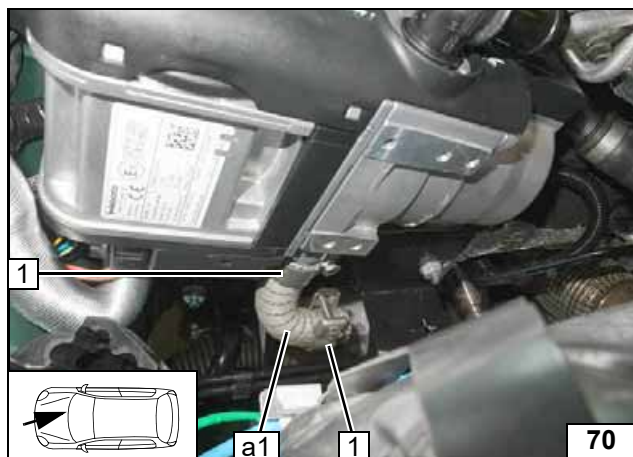
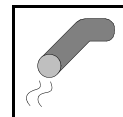


Angling down perforated bracket



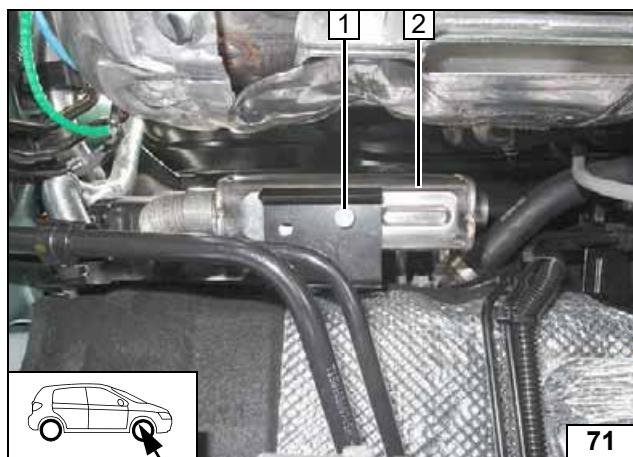
1 Perforated bracket
2 M6x20 bolt, flanged nut, existing hole

Installing perforated bracket



- 1 Hose clamp [2x]

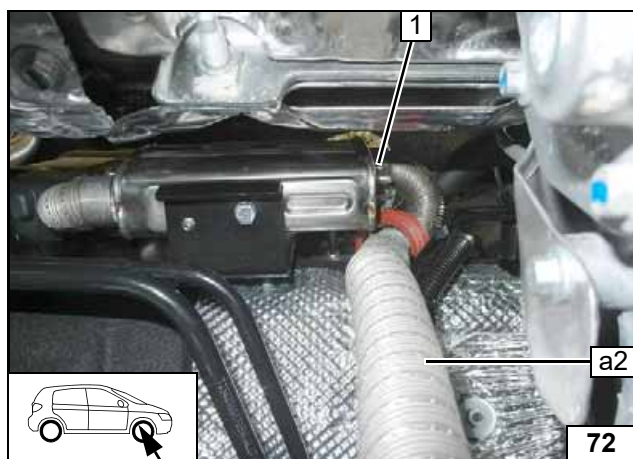
Installing exhaust pipe a1



- 1 M6x16 bolt, spring lockwasher
- 2 Exhaust silencer

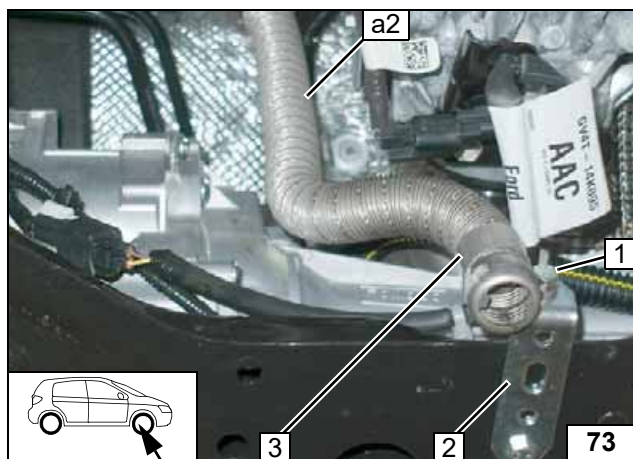


Installing exhaust silencer



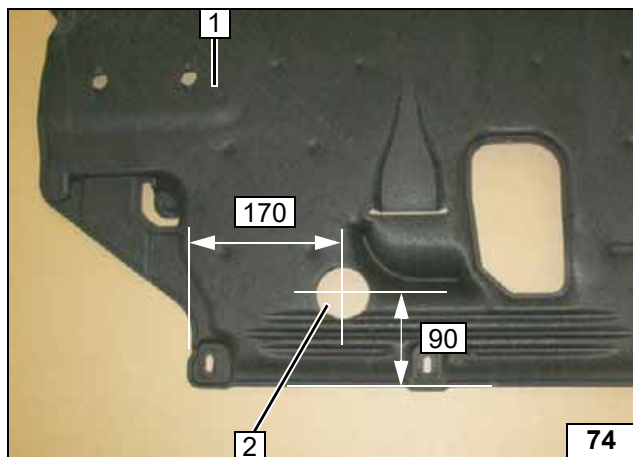
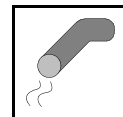
- 1 Hose clamp

Installing exhaust pipe a2



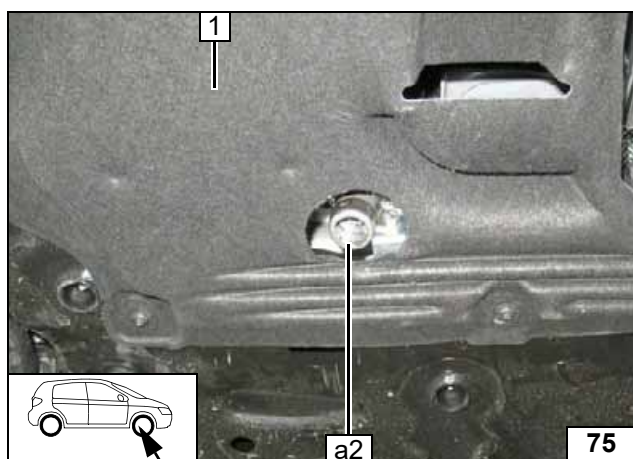
- 1 M6x20 bolt, flanged nut
- 2 Perforated bracket
- 3 P-clamp

Attaching exhaust pipe a2



- 1 Underride protection
- 2 60 mm dia. hole

**Cutting out
underride
protection**



Mount underride protection of engine 1.
Align exhaust pipe a2 flush with underride protection 1.
Ensure sufficient distance from neighbouring components.



**Aligning
exhaust
pipe a2**

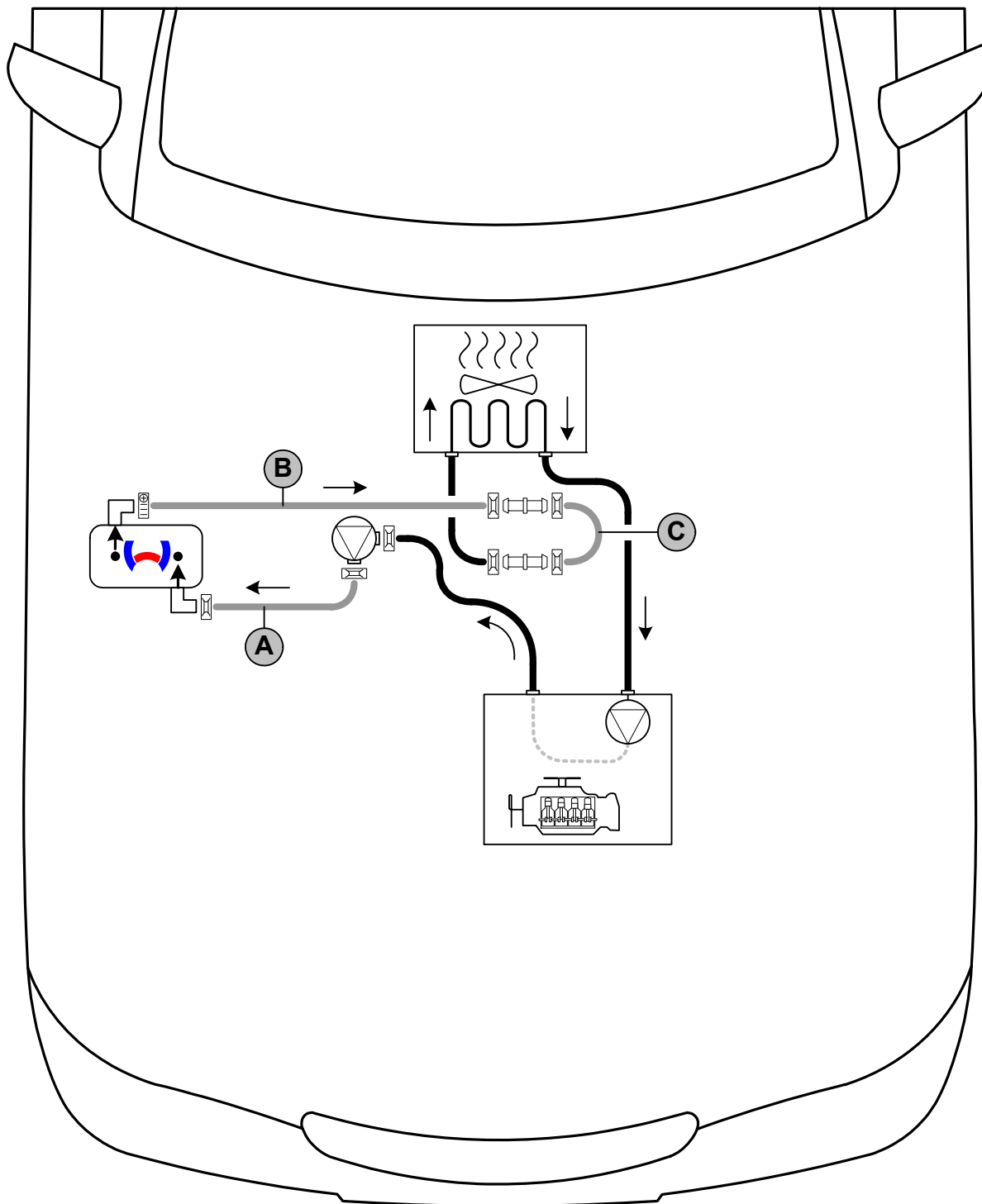


Coolant Circuit






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

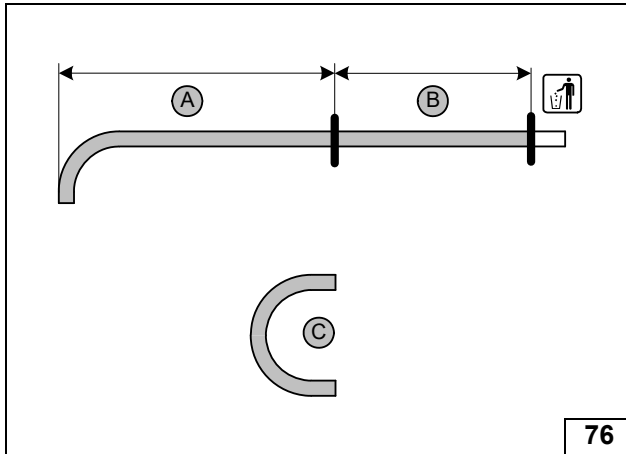
The connection should be modelled on an 'inline' circuit and based on the following diagram:



Hose routing diagram

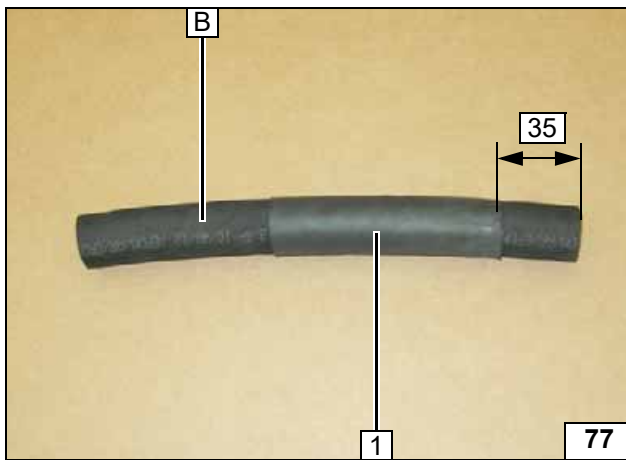
All spring clips =  25 mm dia. All connecting pipes  = 18x18mm dia.
Hose clamp  = 20-27 mm dia.





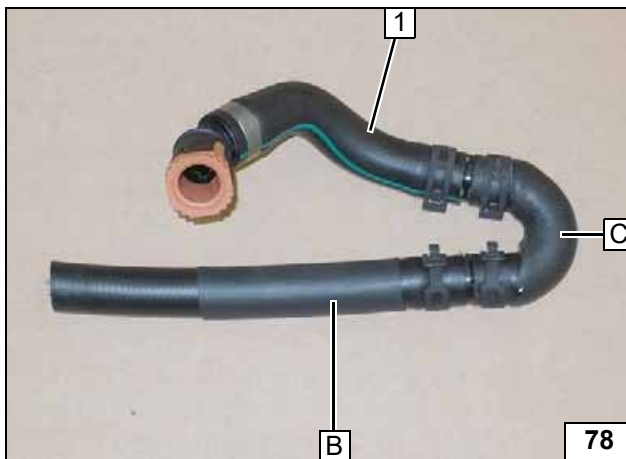
- A = 360
- B = 200
- C = 180°, 18mm dia.

Cutting hoses to length



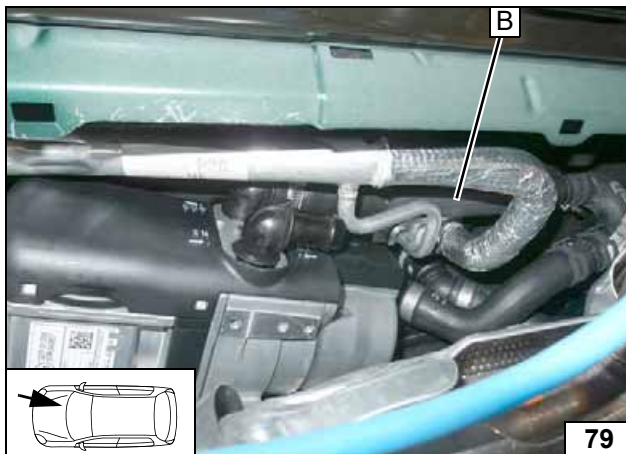
- 1 100 mm long heat shrink plastic tubing

Preparing Hose B

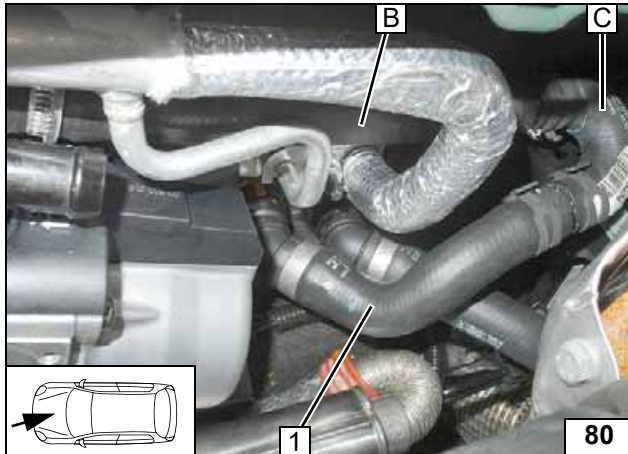


- 1 Heat exchanger inlet hose section

Premounting hose sections B and C

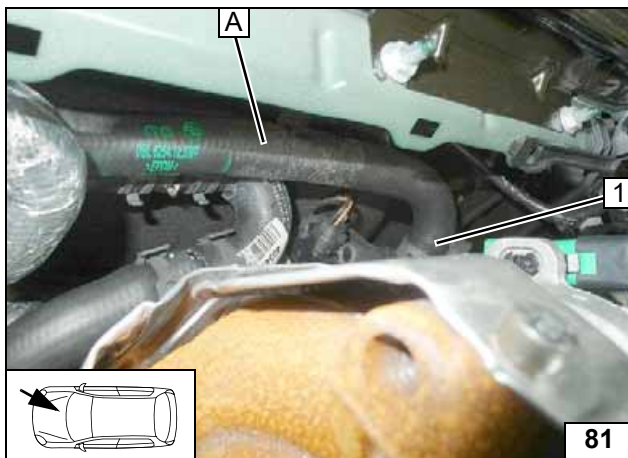


Connecting heater outlet



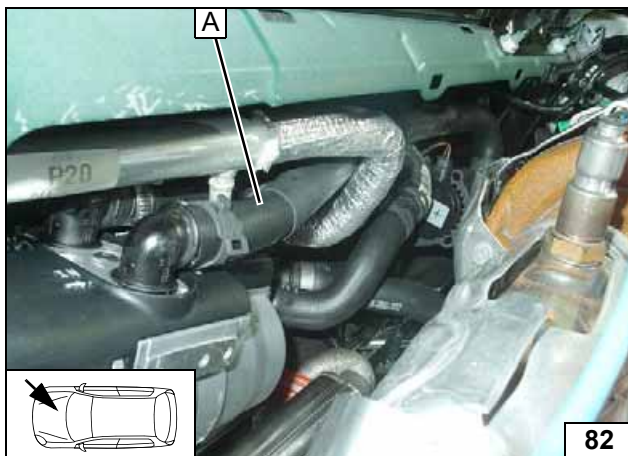
1 Heat exchanger inlet hose section

Connect-
ing heat ex-
changer
inlet



1 Circulating pump outlet

Connect-
ing
circulating
pump outlet



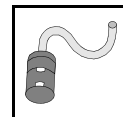
Connect-
ing heater
inlet



Align hoses.
Ensure sufficient distance from neighbour-
ing components.



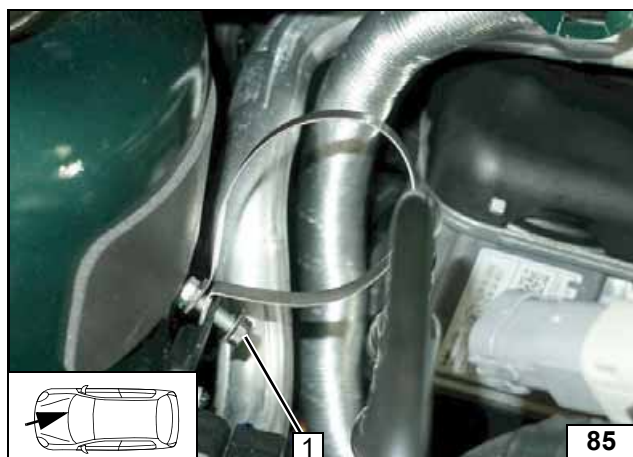
Aligning
hoses



Combustion Air

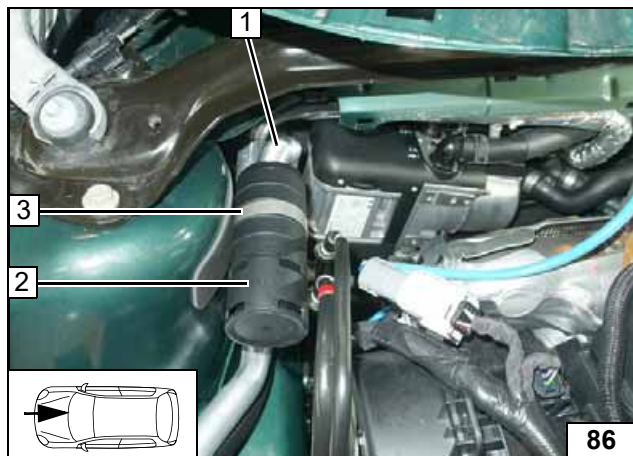
- 1 Insulation strips

Sticking on insulation strip



- 1 M5x16 bolt, large diameter washer, existing hole, 51mm clamp, flanged nut

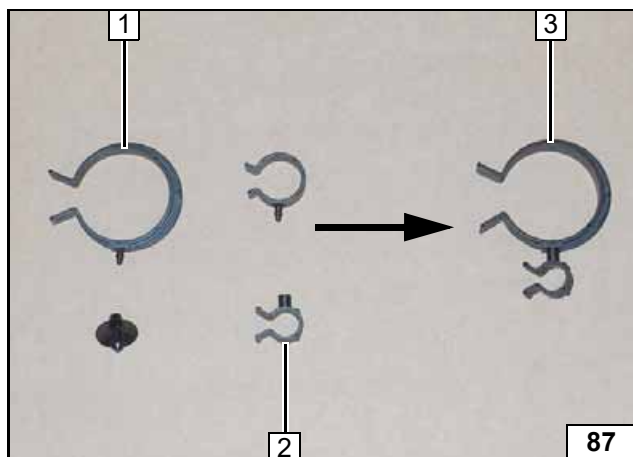
Installing 51mm dia. clamp loosely



- 1 Combustion air pipe
- 2 Silencer
- 3 51mm dia. clamp tightened

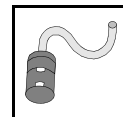


Installing silencer



- 1 48 - 53mm dia. hose bracket, base dismantled
- 2 13mm dia. rotatable part of hose and cable holder, 22mm dia. part dismantled
- 3 Assembled hose bracket made of parts 1 and 2

Preparing hose bracket



- 1 Hose bracket between silencer and original vehicle hose

Installing
hose bracket

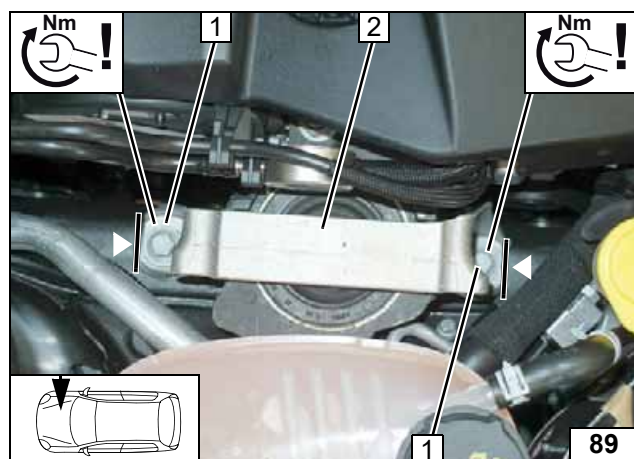


Final Work



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

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Manual air-conditioning:**
Make settings on the A/C control panel according to the 'operating instructions'.
- **Automatic air-conditioning:**
If the fan function or A/C control panel settings need to be checked, see the installation documentation in the additional 'Webasto Standard' or 'Webasto Comfort' A/C control kit, section 'Final Work'.
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**
- **For initial start-up and function check, please see installation instructions.**

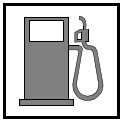


Return engine mount **2** to its original position. Apply a tightening torque of 90 Nm.

- 1 Original vehicle bolt [2x]

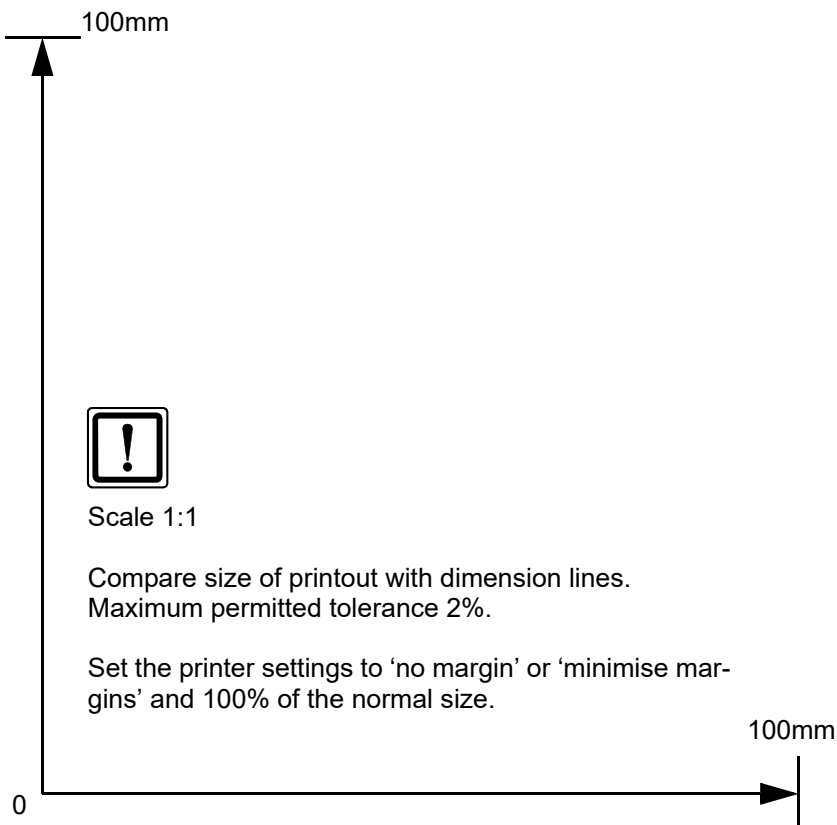
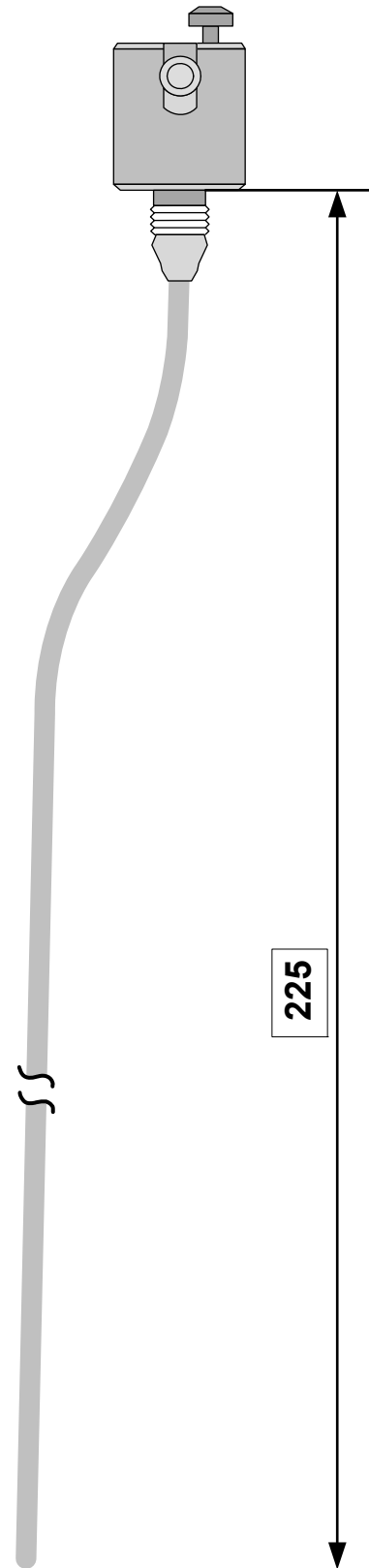
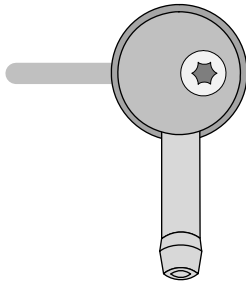


Returning engine mount to original position



FuelFix Template

Top view



Scale 1:1

Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.

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

225

Operating Instructions for Manual A/C

Please remove page and add to the vehicle operating instructions.

Note:

We recommend matching the heating time to the driving time.

Heating time = driving time

Example:

For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

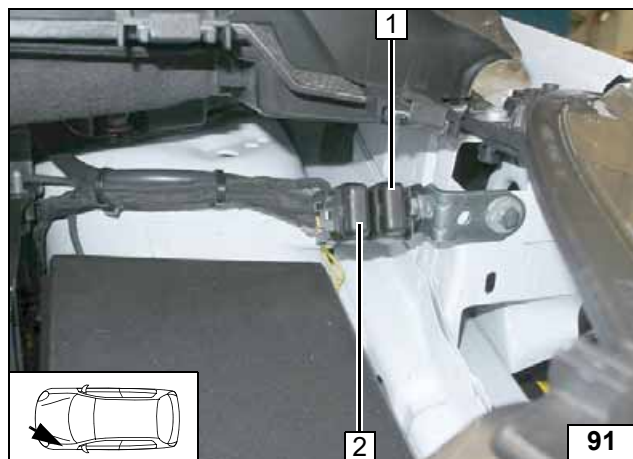
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

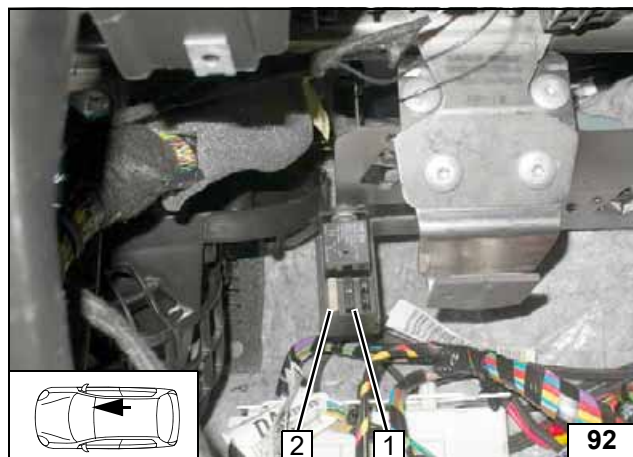
Before parking the vehicle, make the following settings:



- 1 Set fan to level '1', or max. '2'
- 2 Air outlet to windscreen
- 3 Set temperature to 'max.'



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



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



A/C control panel for manual air-conditioning

Engine compartment fuses

Passenger compartment fuses