Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Ford EcoSport

Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Ford	EcoSport	JK8	e9 * 2007 / 46 * 0092 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.0 EcoBoost	Petrol	5-speed SG	92	998	M1JC
1.5 Duratec	Petrol	5-speed SG	82	1500	UEJB

SG = manual transmission

From Model Year 2014
Left-hand drive vehicle

Verified equipment variants: Automatic air-conditioning
Front fog light
Euro 5

Not verified: Alarm system with passenger compartment monitoring

Total installation time: approx. 7 hours

Ford EcoSport

Table of Contents

Necessary Components

- Basic delivery scope *Thermo Top Evo* in accordance with price list
- Installation kit for Ford B-Max / EcoSport 2013 Petrol: **1319091C**
- To be ordered additionally: Kit for automatic air-conditioning **1323562A**
- Heater control in accordance with price list and upon consultation with end customer
- To be ordered additionally when using MultiControl CAR:
  wiring harness extension: **1319724A**
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

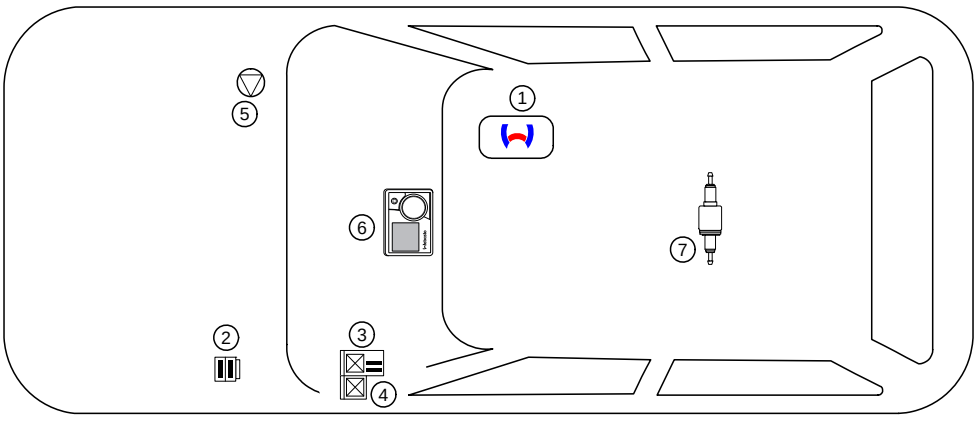
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. PWM GW
5. Circulating pump
6. MultiControl CAR
7. 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	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

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

Important

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

Note

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

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

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to Ford EcoSport Petrol vehicles - for validity, see page 1 - from model year 2014 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 specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Information

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

Dimensions
- All dimensions are in mm

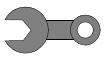
Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-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

Explanatory Notes on Document

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

Special features are highlighted using the following symbols:

Mechanical system



Electrical system

Coolant circuit

Combustion air

Fuel

Exhaust gas

Software

Specific risk of injury or fatal accidents

Specific risk due to electrical voltage

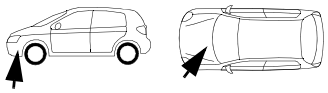
Specific risk of damage to components

Specific risk of fire or 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

Ford EcoSport

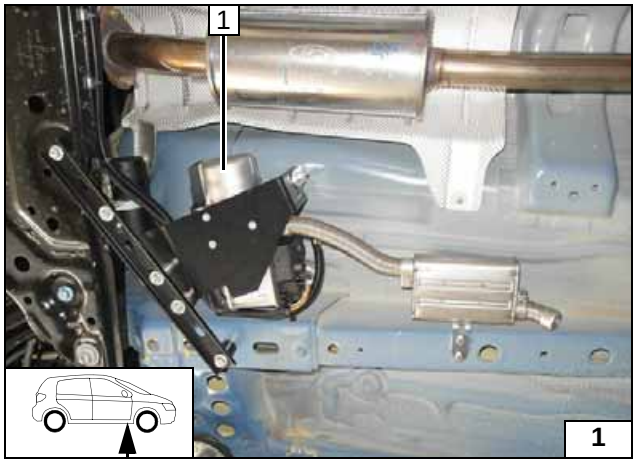
Preliminary Work

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 battery trim.
- Remove the lower engine cover (if present).
- Remove the footwell trim on the driver's and front passenger's sides.
- Remove the storage compartment of the instrument panel on the driver's side.
- Remove the lateral instrument panel trim on the left side.
- Fold back the floor covering on the front passenger's side.

Heater

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



Heater Installation Location

1 Heater

Installation location

Preparing Electrical System

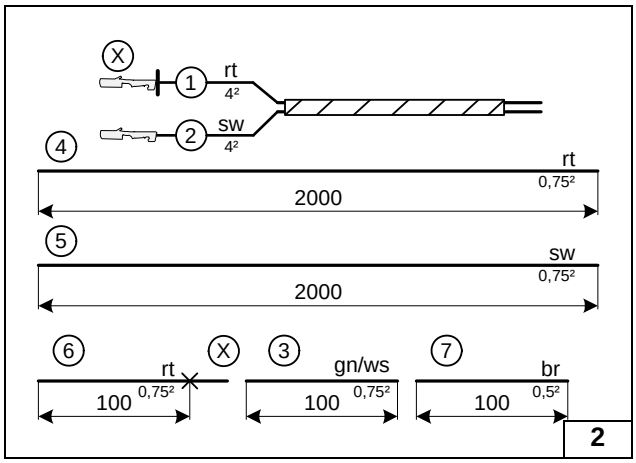
Wire sections retain their numbering in the entire document.

Produce all following electrical connections as shown in wiring diagram.

Discard section **X**.
Pull wires ④ and ⑤ into a protective sleeving.

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

Assigning / preparing wires



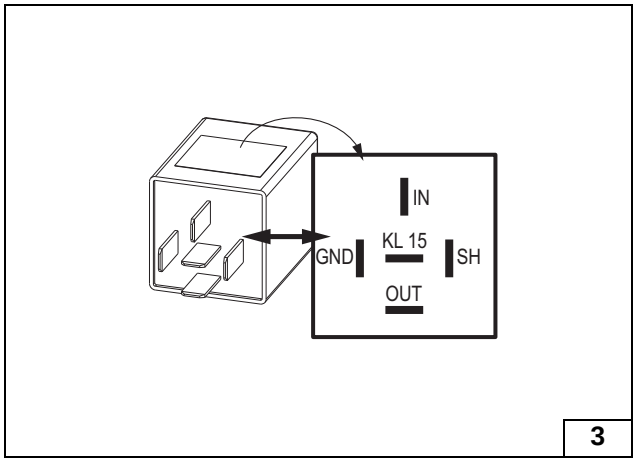
2

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

Settings:

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

View of PWM GW



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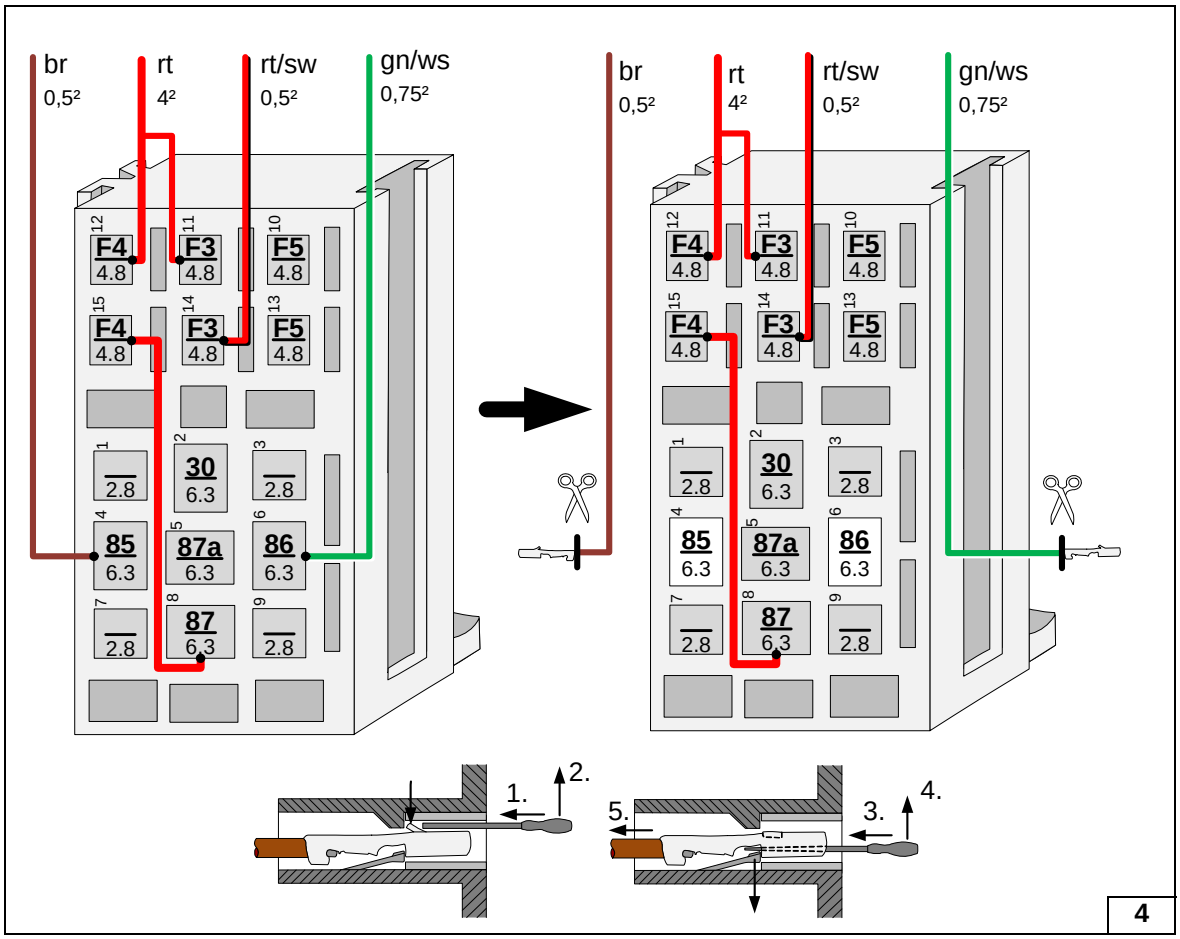
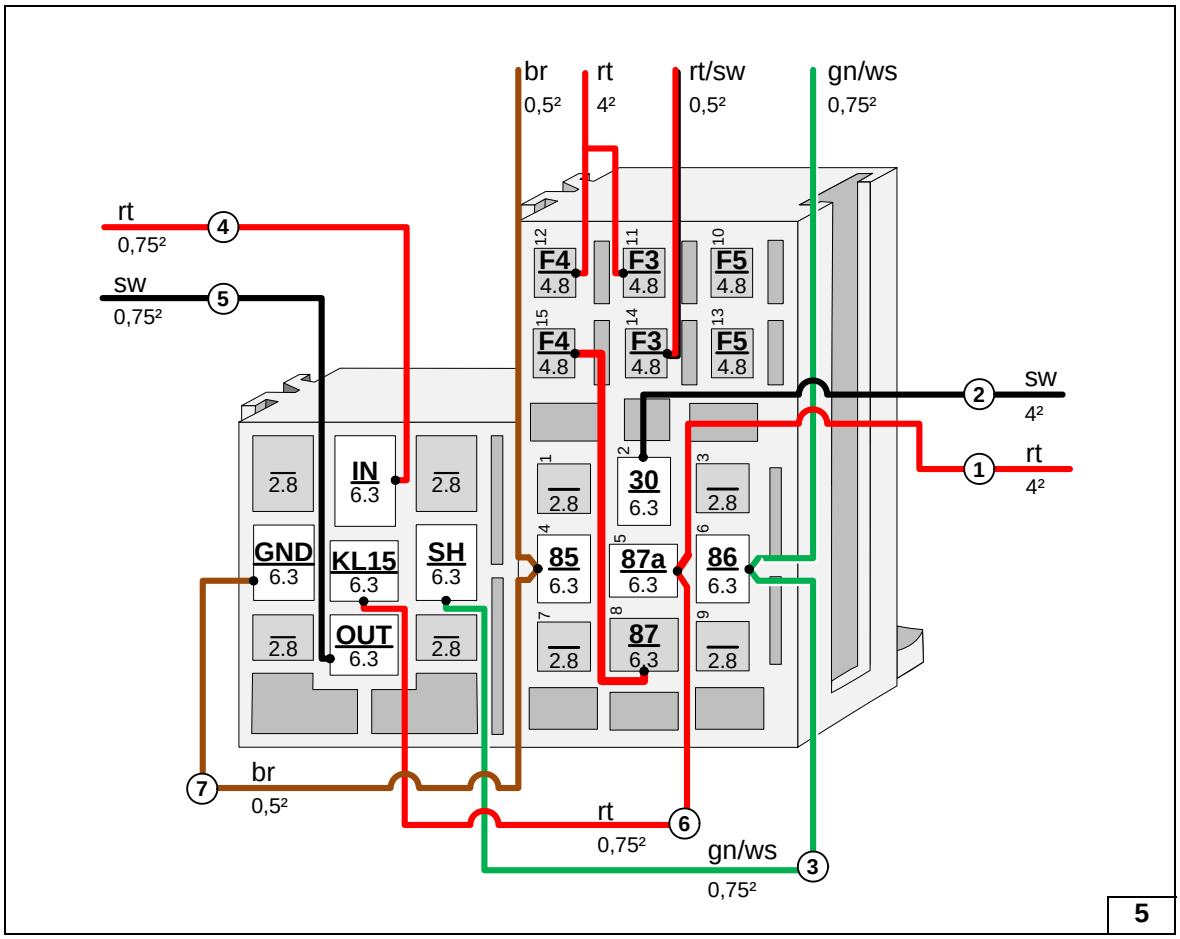


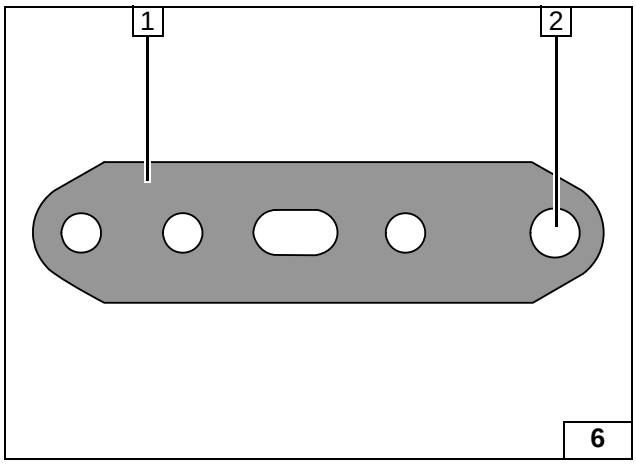
4

Preparing relay and fuse holder of passenger compartment



5

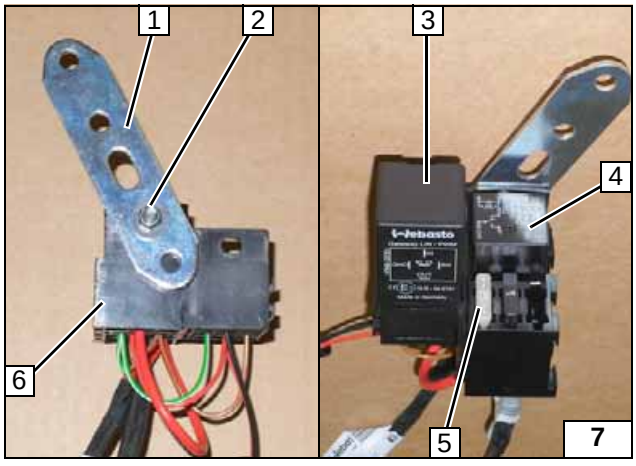
Interlocking socket of PWM GW and passenger compartment relay and fuse holder and connecting wires



6

1 Perforated bracket
2 Drill out hole to 8.5mm dia.

Drilling out perforated bracket



7

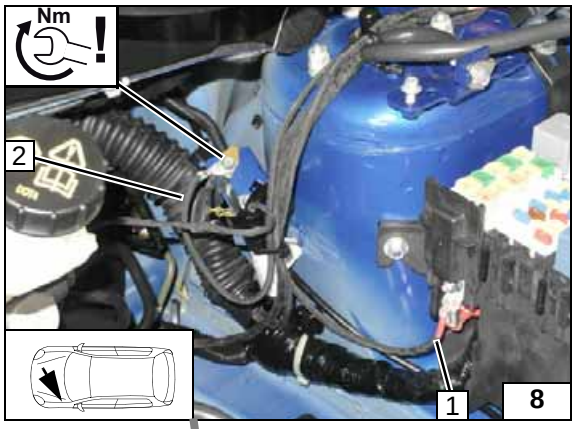
1 Perforated bracket
2 M5x16 bolt, large diameter washer [2x], nut
3 PWM GW
4 K1 relay
5 25A fuse F4
6 Passenger compartment relay and fuse holder

Installing perforated bracket, mounting PWM-GW and K1 relay

Electrical System

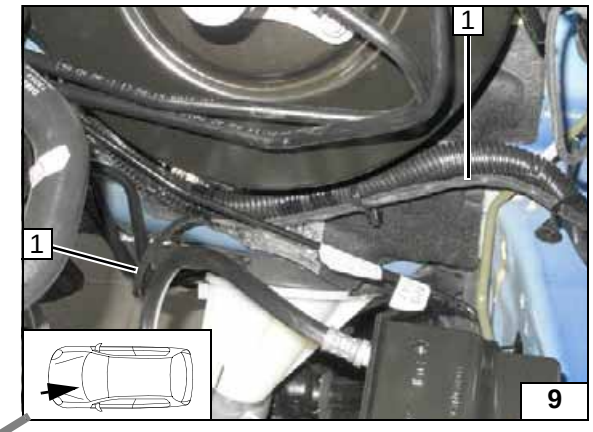
Plus and earth wire

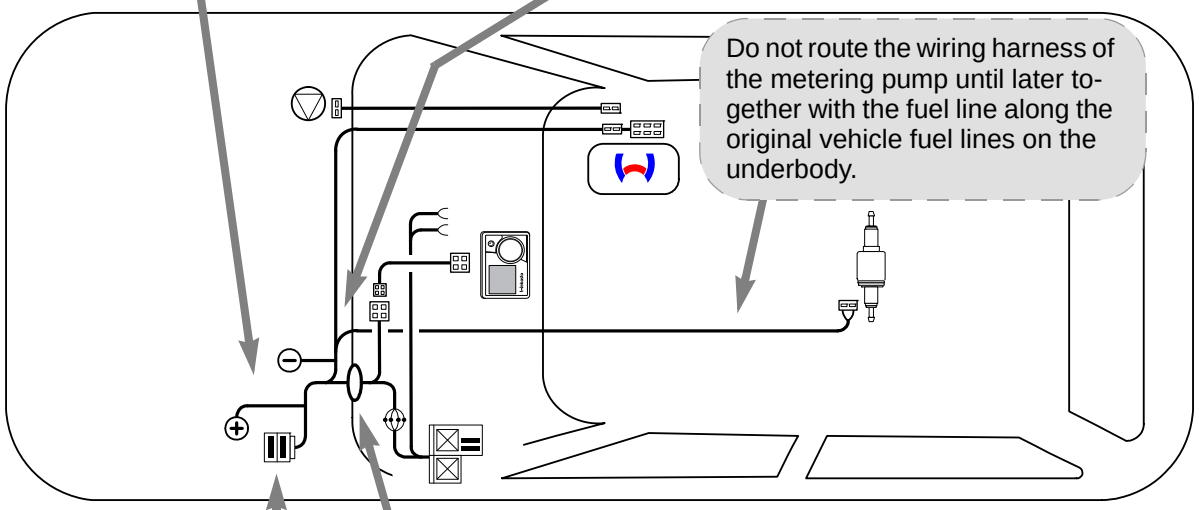
1 Positive wire on positive battery distributor
2 Earth wire on original vehicle earth support point



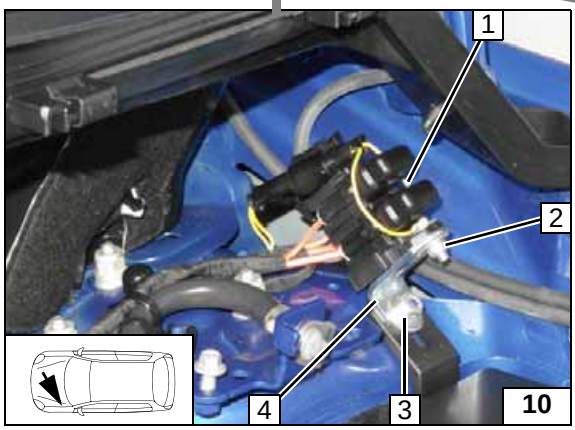
Wiring harness routing

Route wiring harness of heater **1** along original vehicle lines to the underbody and secure using cable ties.



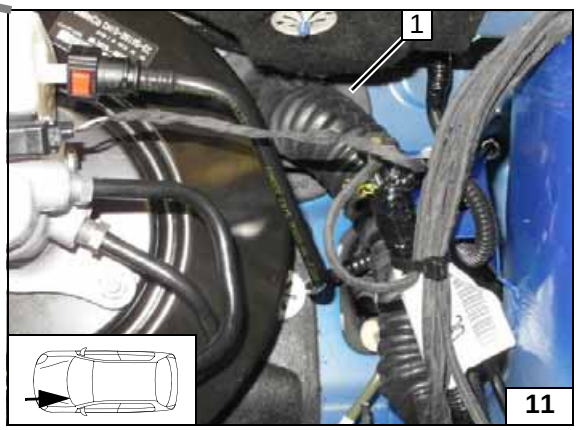


Wiring harness routing diagram



Fuse holder of engine compartment

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

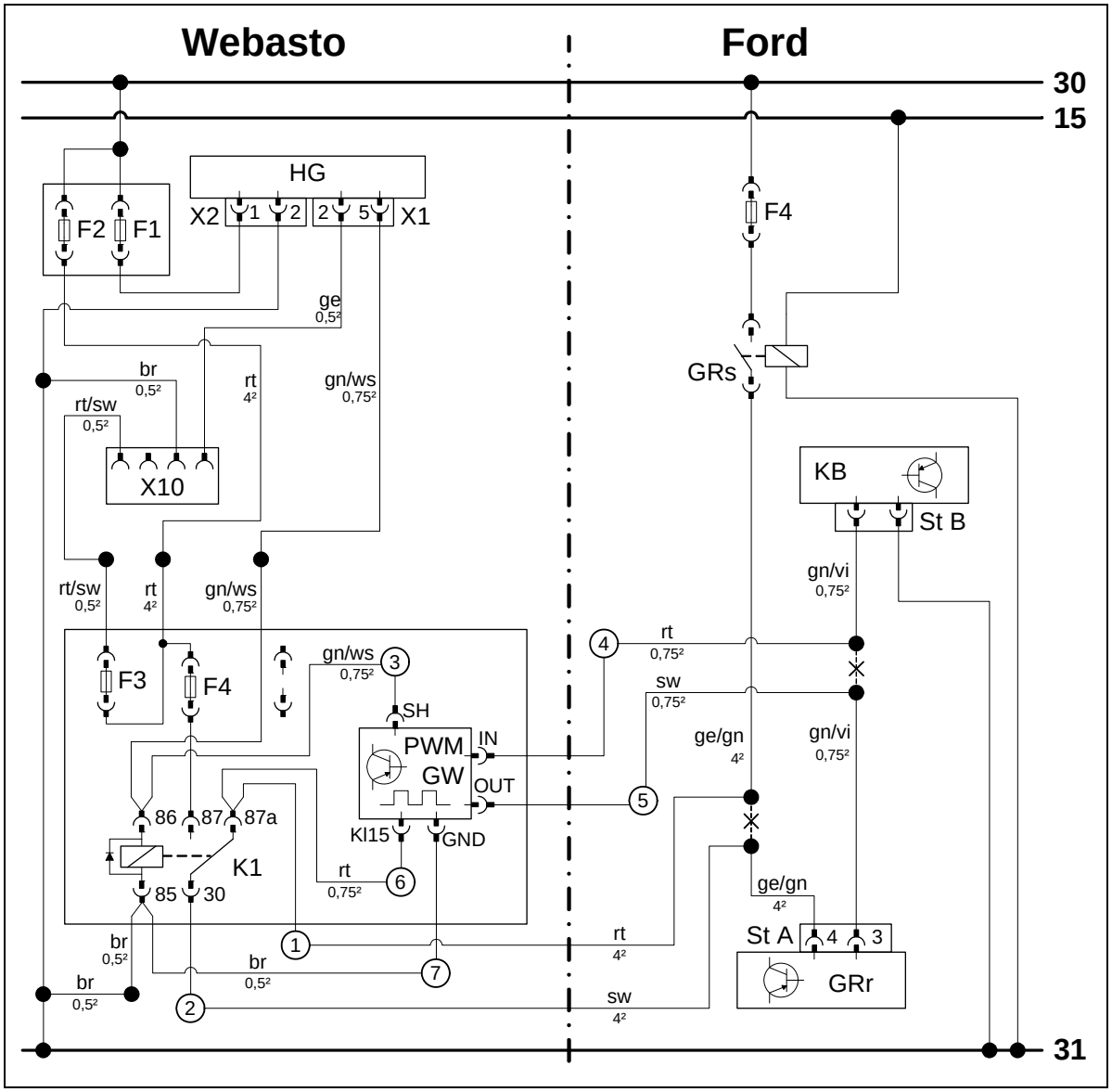


Wiring harness pass through

1 Protective rubber plug

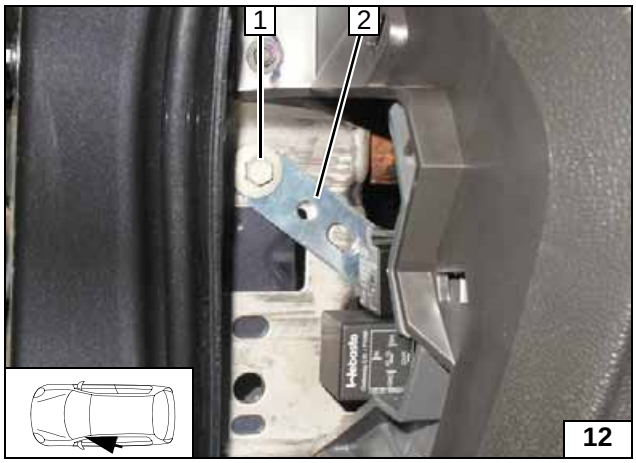
Fan Controller

Wiring diagram



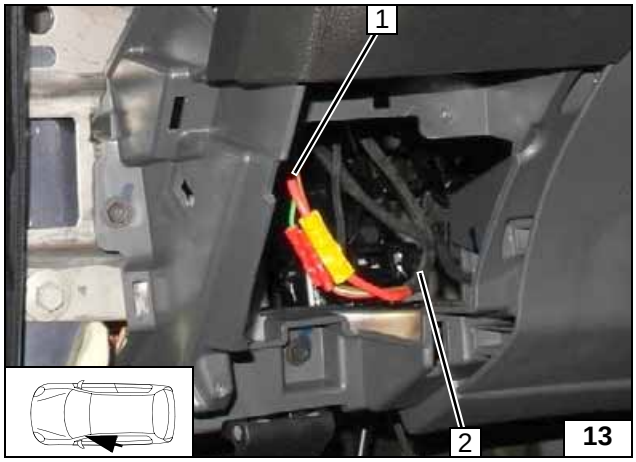
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	F4	30A fuse	rt	red
X1	6-pin heater connector	GRs	Fan relay	sw	black
X2	2-pin heater connector	KB	A/C control unit	ge	yellow
F1	20A fuse	St B	KB connector	gn	green
F2	30A fuse	GRr	Fan controller	vi	violet
X10	4-pin connector of heater control	St A	4-pin connector GRr	ws	white
				br	brown
F3	1A fuse				
F4	25A fuse				
PWM GW	Pulse width modulator				
K1	Fan relay				
PWM GW settings:					
Duty cycle:	70%				
Frequency:	400Hz				
Voltage:	not relevant			**X**	Cutting point
Function:	Low side			Wiring colours may vary.	

Legend



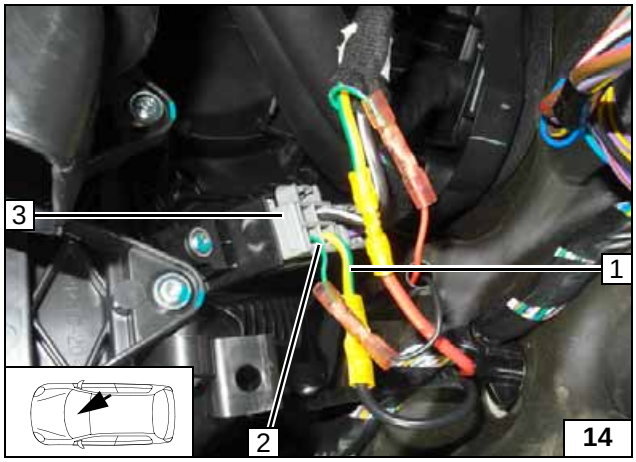
1 Original vehicle M8 bolt
2 Perforated bracket

Installing relay and fuse holder of passenger compartment



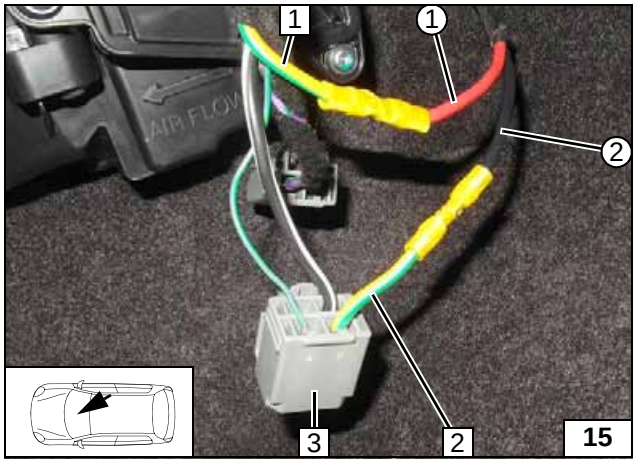
1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting wiring harnesses using same colour wires



1 Yellow/green (ge/gn) wire of fan controller connector, Pin 4
2 Green/violet (gn/vi) wire of fan controller connector, Pin 3
3 4-pin connector ST A of fan controller

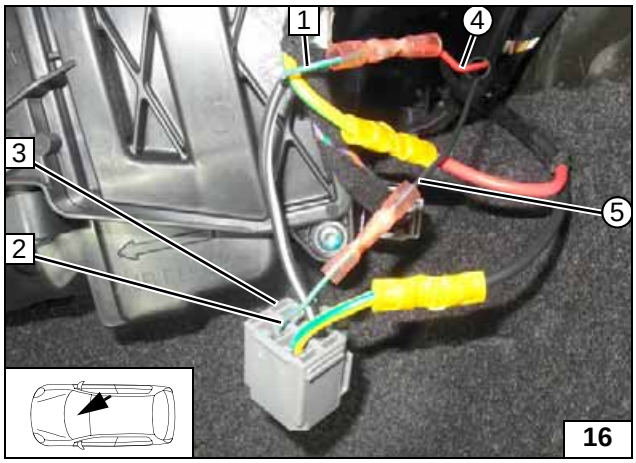
View of fan controller connector



Connection of K1 relay with 4-pin connector ST A **3** of fan controller.

1 Yellow/green (ge/gn) wire of fan relay
2 Yellow/green (ge/gn) wire of fan controller connector, Pin 4
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

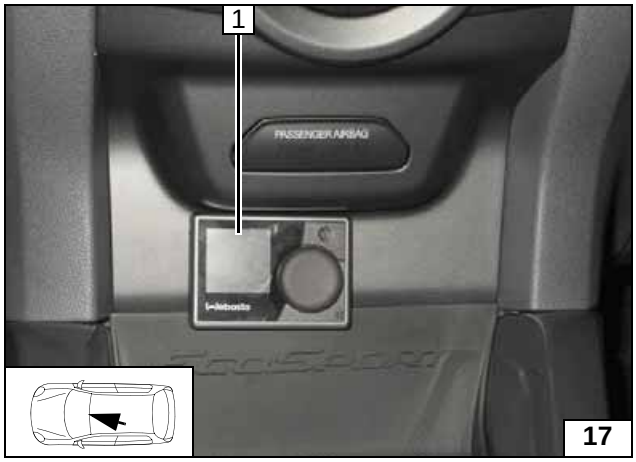
Connecting fan controller



Connection of PWM GW with 4-pin connector ST A **3** of fan controller.

1 Green/violet (gn/vi) wire of A/C control unit
2 Green/violet (gn/vi) wire of fan controller connector, Pin 3
④ Red (rt) wire of PWM GW/IN
⑤ Black (sw) wire of PWM GW/OUT

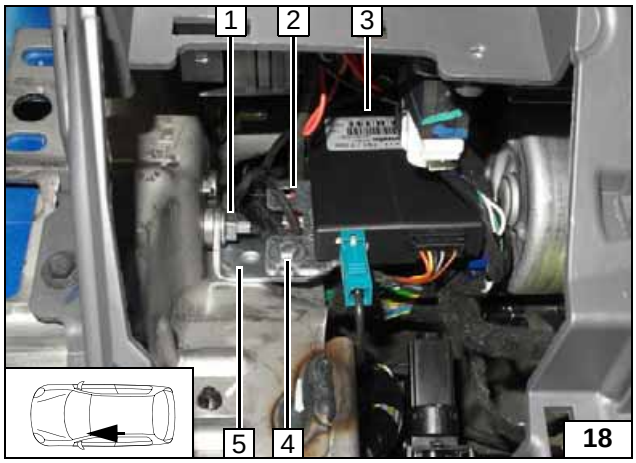
Connecting fan controller



MultiControl CAR Option

1 MultiControl CAR

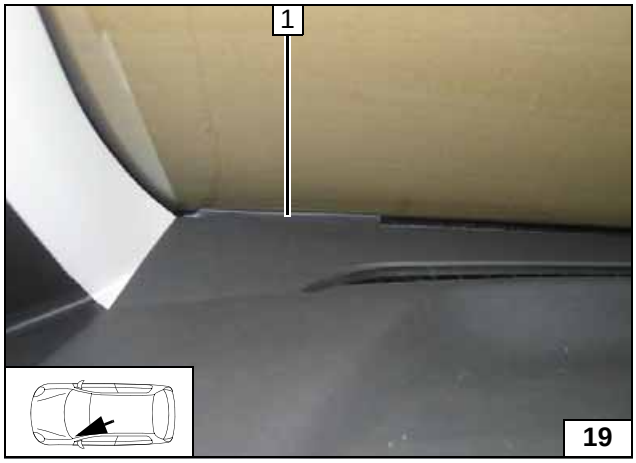
Installing MultiControl CAR



Remote Option (Telestart)

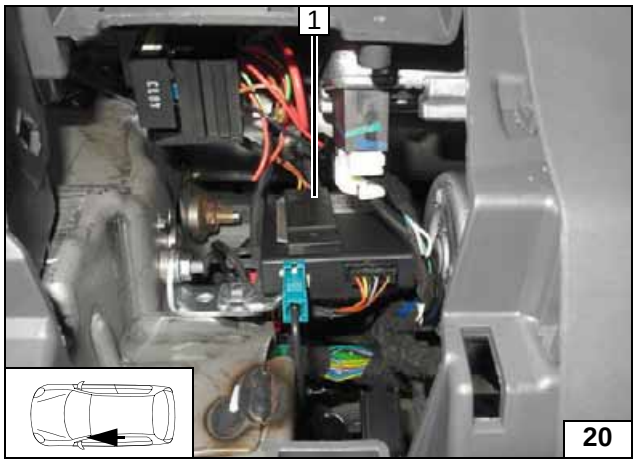
1 Original vehicle stud bolt, flanged nut
2 Receiver bracket
3 Receiver
4 M5x16 bolt, large diameter washer [2x], nut
5 Angle bracket

Mounting receiver



1 Antenna

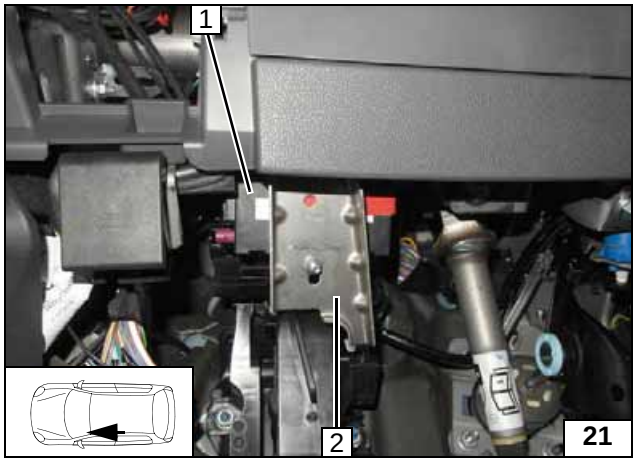
Mounting antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** with adhesive tape.

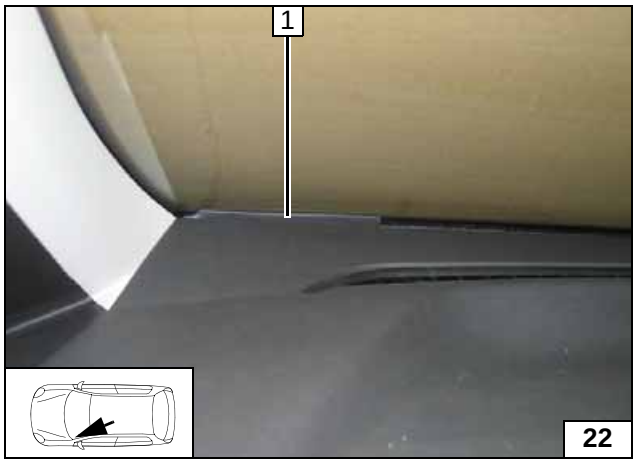
Mounting temperature sensor



Thermo Call Option

Secure receiver **1** behind original vehicle strut **2** using adhesive tape.

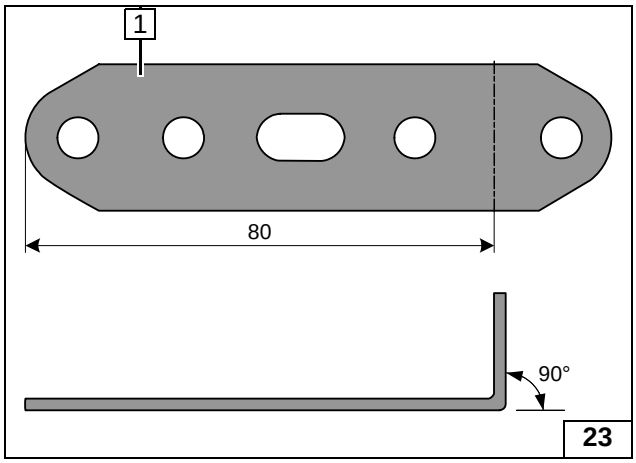
Mounting receiver



1 Antenna

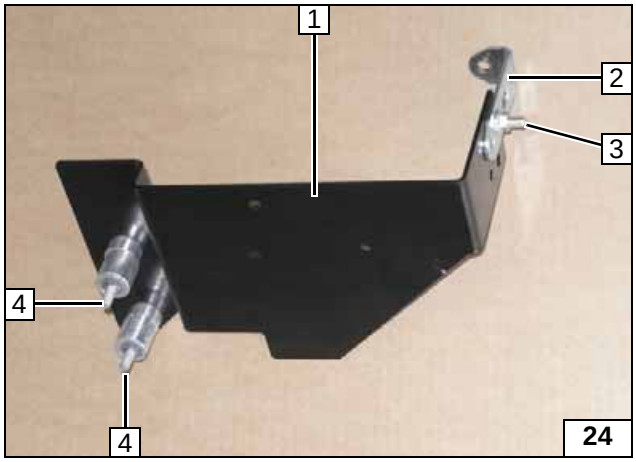
Mounting antenna

Preparing Installation Location



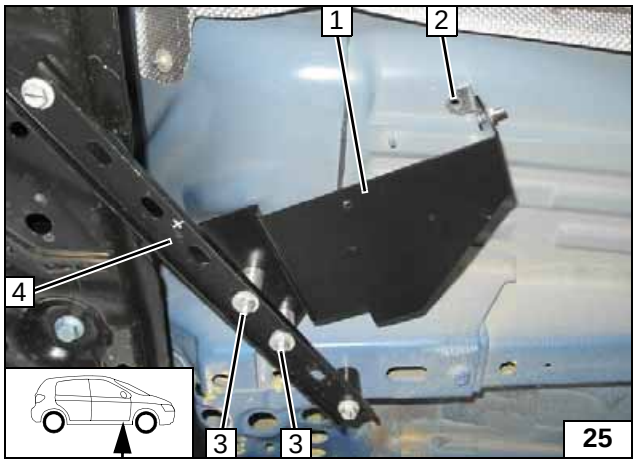
1 Perforated bracket

Preparing perforated bracket



1 Bracket
2 Perforated bracket
3 M6x20 bolt, flanged nut
4 M6x50 bolt, 10mm shim, 20mm shim, pin lock [2x each]

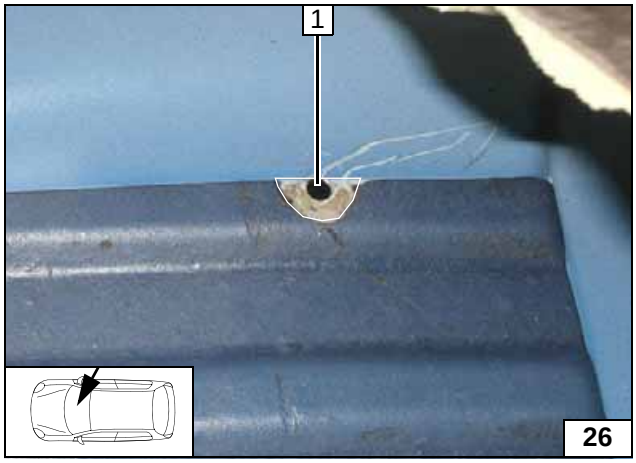
Preparing bracket



Fold back floor covering on the front passenger's side. Install bracket **1** loosely, copy hole pattern **2** of perforated bracket, remove bracket **1** and 7mm hole at position **2**!

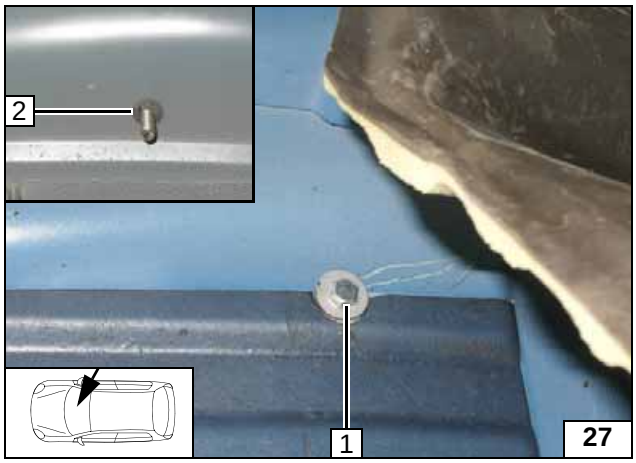
3 Large diameter washer, flanged nut [2x each], existing holes in cross member
4 Original vehicle cross member

Hole in underbody



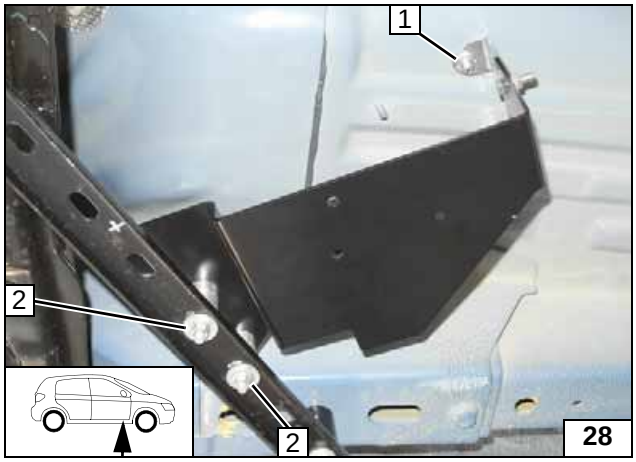
Cut out marked area of the sound insulation mat in position **1** as shown!

Cutting out sound insulation mat



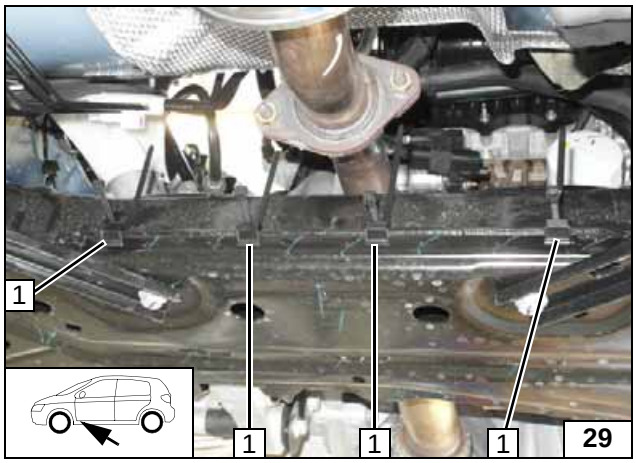
Top left figure shows underbody!
Install M6x20 bolt with large diameter washer **1** and secure from below using pin lock **2**!

Inserting bolt



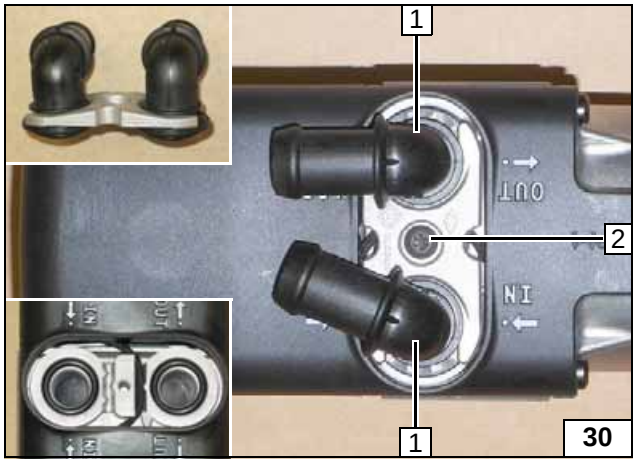
1 Flanged nut
2 Large diameter washer, flanged nut [2x each]

Mounting bracket



Install clip-type cable ties **1** [4x] on the side of the cross member. Cable ties will be closed later!

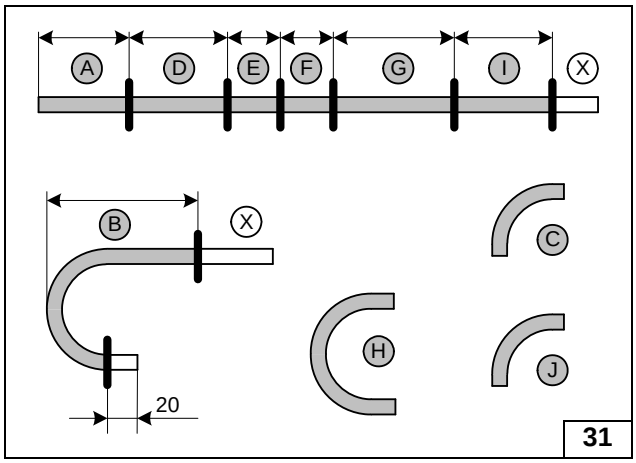
Installing clip-type cable ties



Preparing Heater

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

Mounting water connection pieces

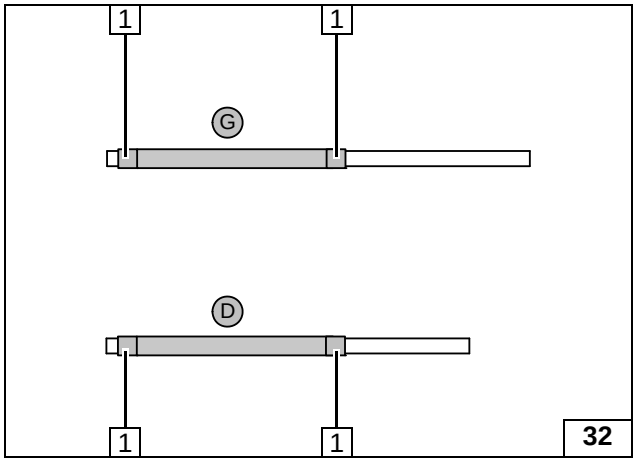


31

Discard section **X**.
Hose **B** = 180°, 18x18 mm dia. moulded hose, shorten
Hose **H** = 180°, 18x18 mm dia. moulded hose
Hose **C** / **J** = 90°, 18x18mm dia. moulded hose

	1.0 P	1.5P
A =	220	250
B =	330	330
D =	370	370
E =	60	60
F =	80	80
G =	680	680
I =	280	300

Preparing hoses

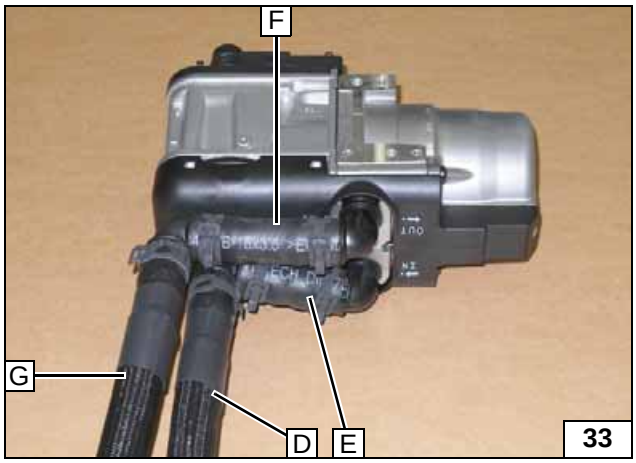


32

Slide one 300mm long braided protection hose each onto hoses **D** and **G**. Cut heat shrink plastic tubing to length.

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

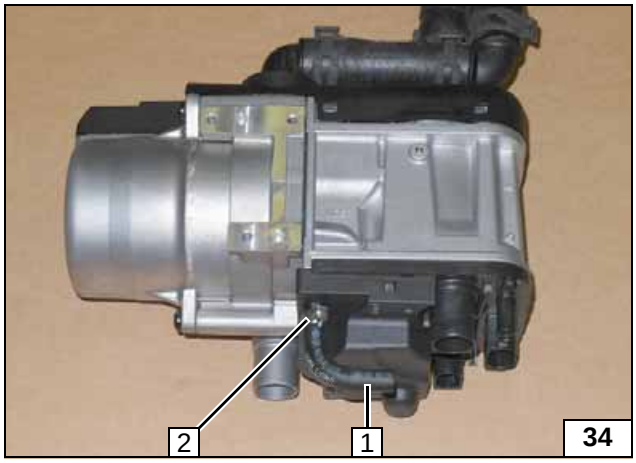
Preparing hoses



33

All spring clips = 25 mm dia.
All 90° connecting pipes = 18x18mm dia.

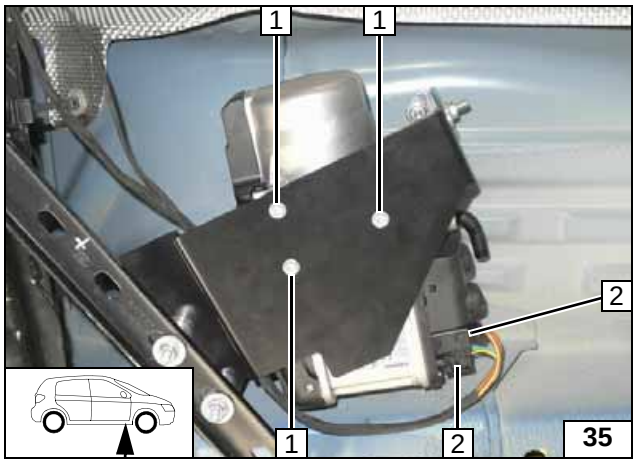
Premounting hoses



34

1 90° moulded hose
2 10 mm dia. clamp

Installing moulded hose



Installing Heater

1 5x13 self-tapping bolt [3x]
2 Connector of heater wiring harness [2x]

Mounting heater

Fuel

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

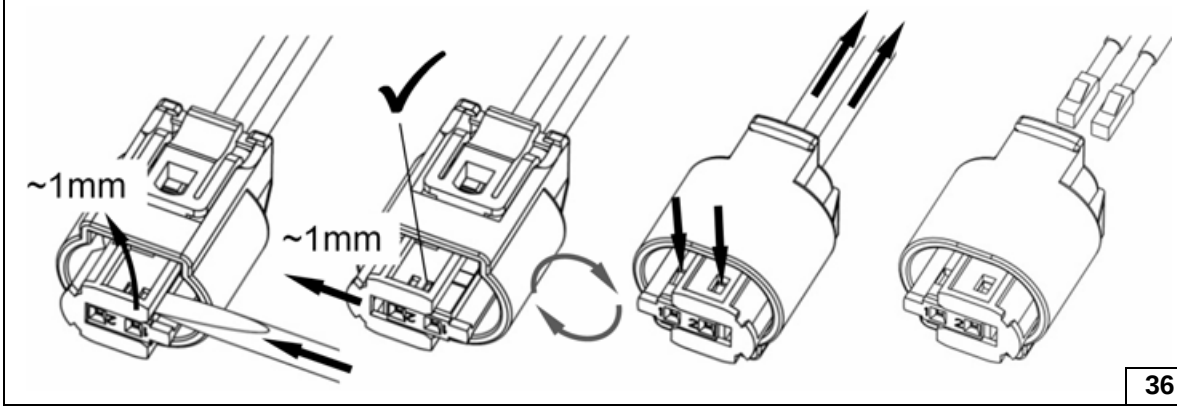
Any fuel running off should be collected in an appropriate container.

Install 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.

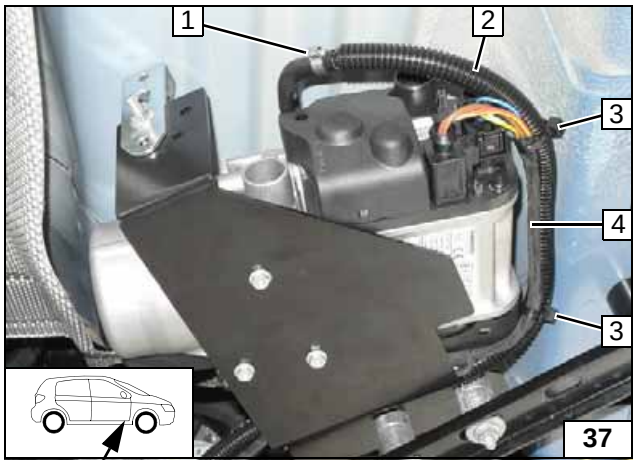
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

Dismantling connector of metering pump

Connector X7



36

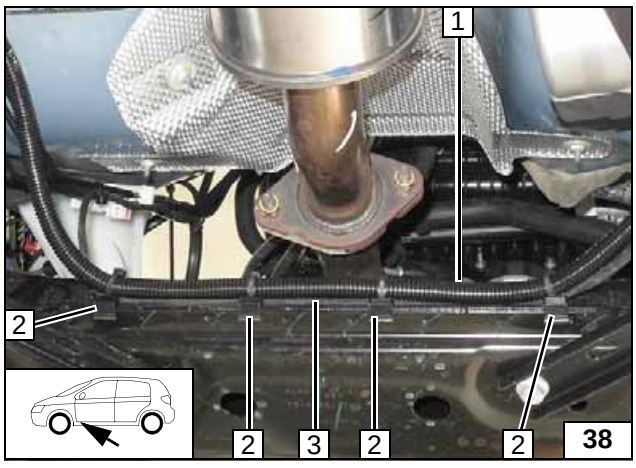


37

Pull wiring harness of metering pump and fuel line into 10mm dia, 2100mm long corrugated tube **2**.
Secure wiring harness of heater **4** and corrugated tube **2** using cable ties **3** [2x]!

1 Fuel line, 10mm dia. clamp

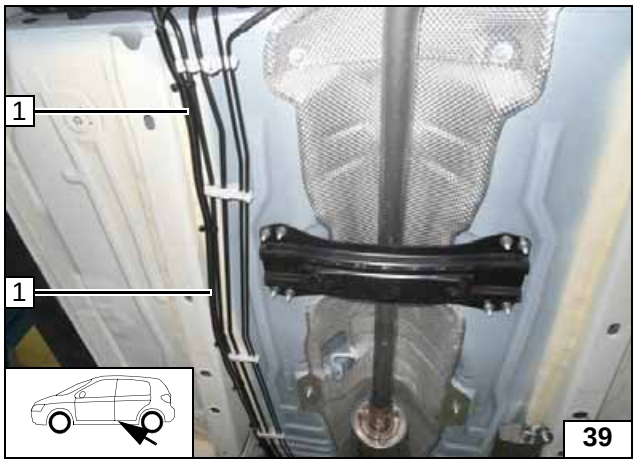
Connecting heater



38

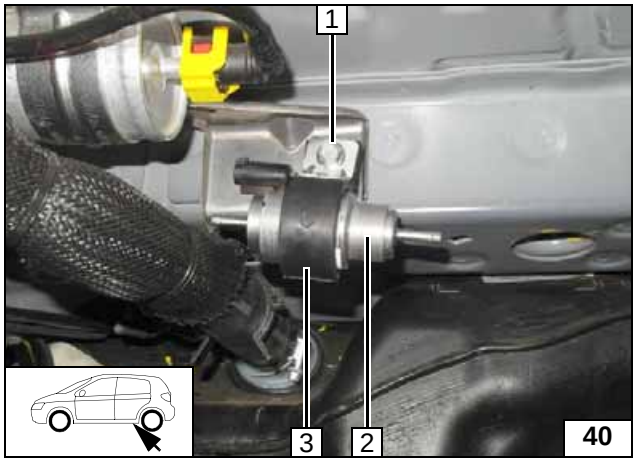
Attach wiring harness of metering pump and fuel line in 10mm dia. corrugated tube **1** as well as wiring harness of heater **3** using clip-type cable ties **2** [4x]!

Routing lines



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

Routing lines

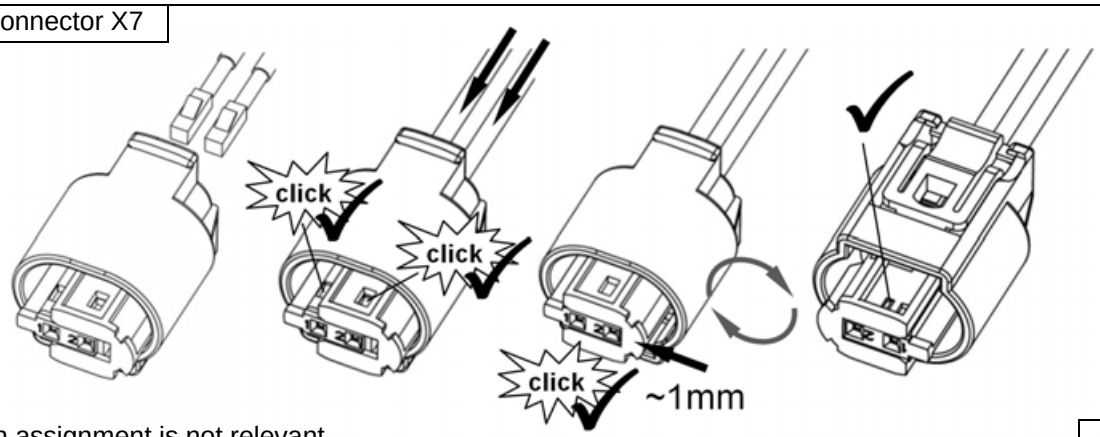


Remove and discard original vehicle bolt at position **1**.

1 M6x25 bolt, support angle bracket, existing threaded hole
2 Metering pump
3 Mounting of metering pump

Mounting metering pump

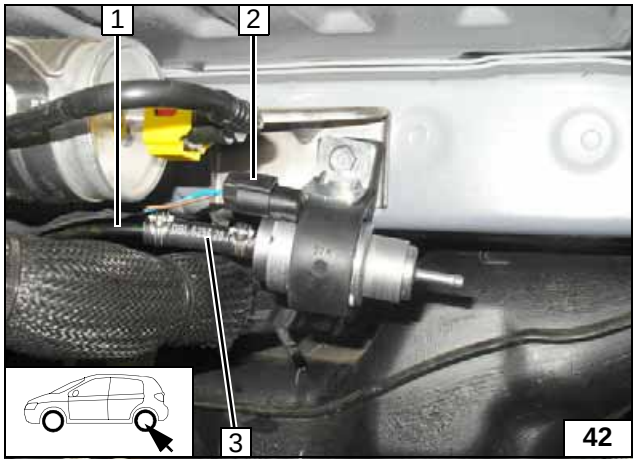
Connector X7



Pin assignment is not relevant.

41

Completing connector of metering pump

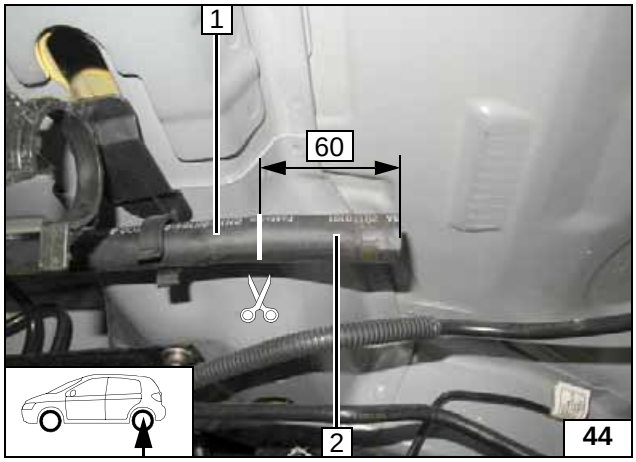


1 Fuel line of heater
2 Wiring harness of metering pump, connector X7 mounted
3 Hose section, 10 mm dia. clamp [2x]

Connecting metering pump

Pull fuel-tank vent line **1** from fuel tank connection piece. Original vehicle hose clamp will be reused!

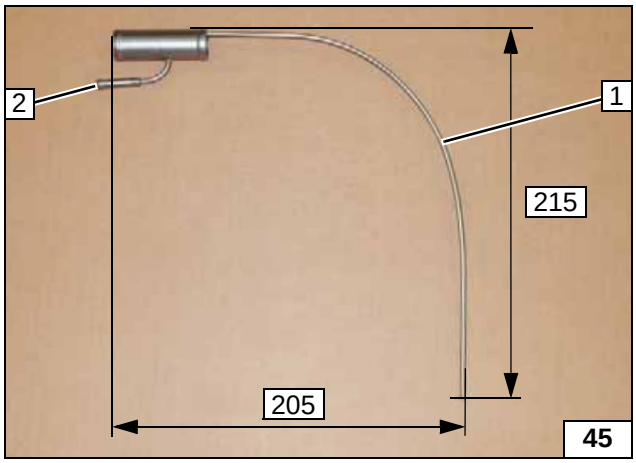
Fuel extraction



Fuel tank removed for demonstration purposes only.

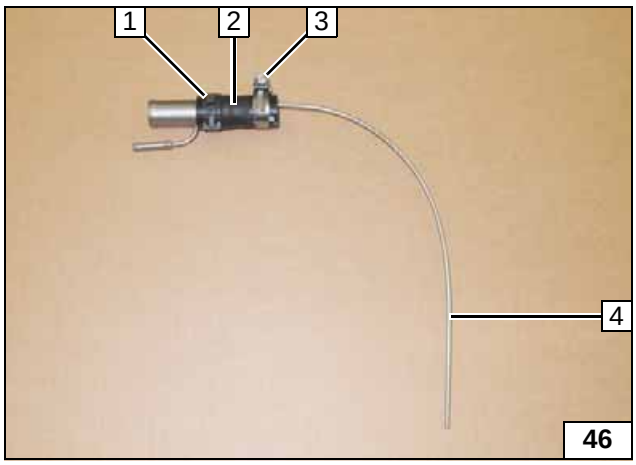
1 Fuel-tank vent line
2 60mm hose section will be reused.

Cutting point



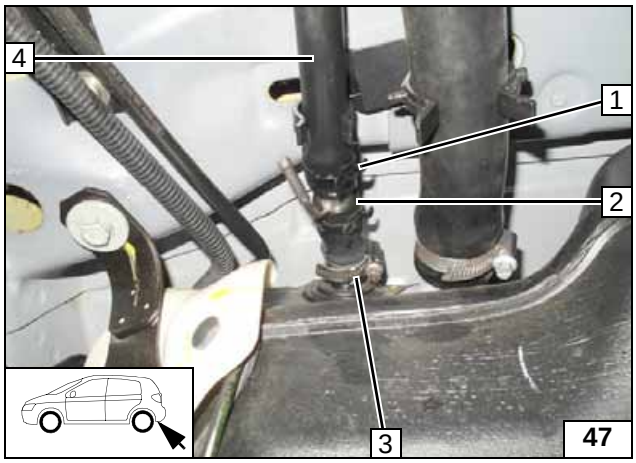
Shape and cut fuel standpipe **1** to length. Angle down connection piece of fuel standpipe **2** by about 90°.

Preparing fuel standpipe



1 25 mm dia. spring clip
2 60mm hose section
3 Slide on original vehicle hose clamp
4 Fuel standpipe

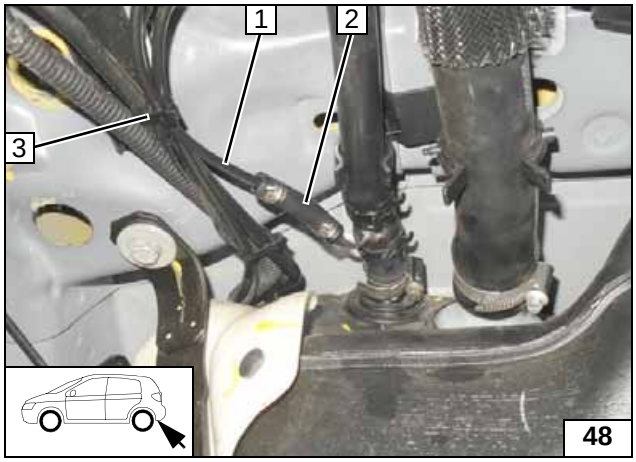
Premounting fuel standpipe



Align standpipe of fuel standpipe with tank bottom.

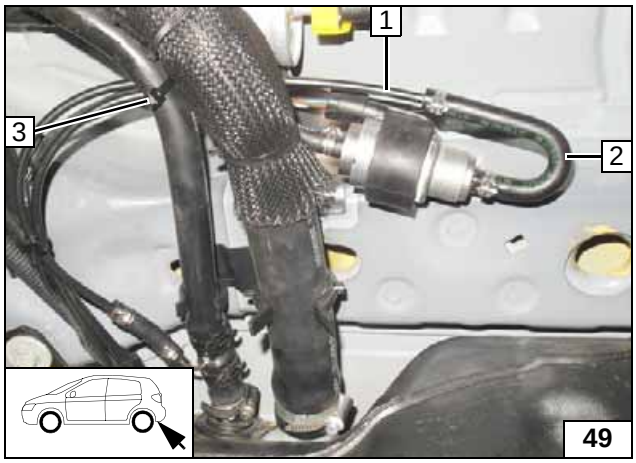
1 25 mm dia. spring clip
2 Fuel standpipe
3 Secure original vehicle hose clamp
4 Fuel-tank vent line

Installing fuel standpipe



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

Connection of fuel standpipe

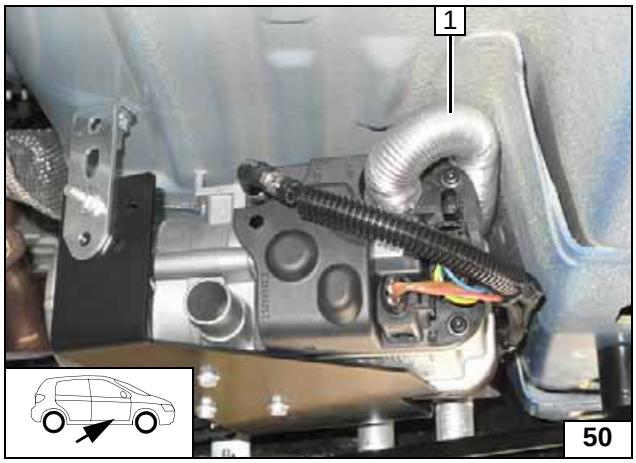


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

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

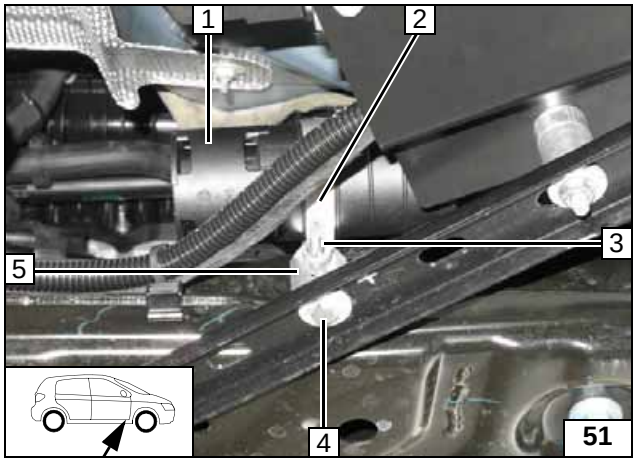
Connecting metering pump

Combustion Air



1 Combustion air pipe

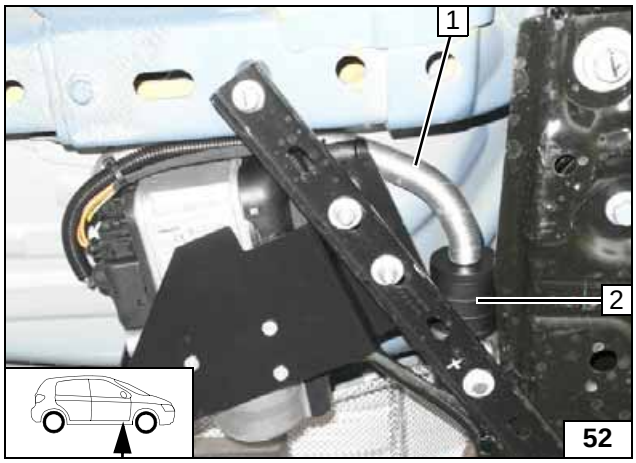
Mounting combustion air pipe



Install angle bracket **5** on existing hole of cross member at position **4** !

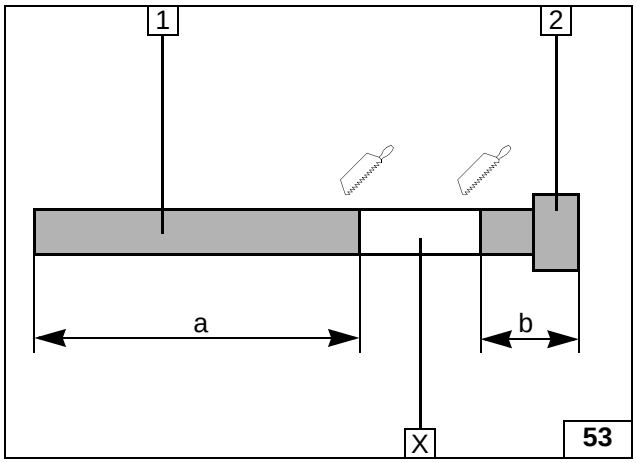
1 Silencer
2 51 mm dia. clamp
3 M5x16 bolt, large diameter washer, flanged nut
4 M6x20 bolt, large diameter washer, flanged nut

Mounting silencer



1 Combustion air pipe
2 Silencer

Connecting combustion air pipe

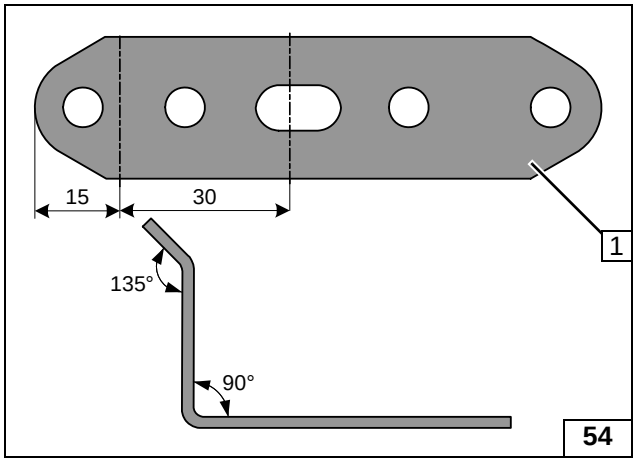


Exhaust Gas

Discard section **X**.

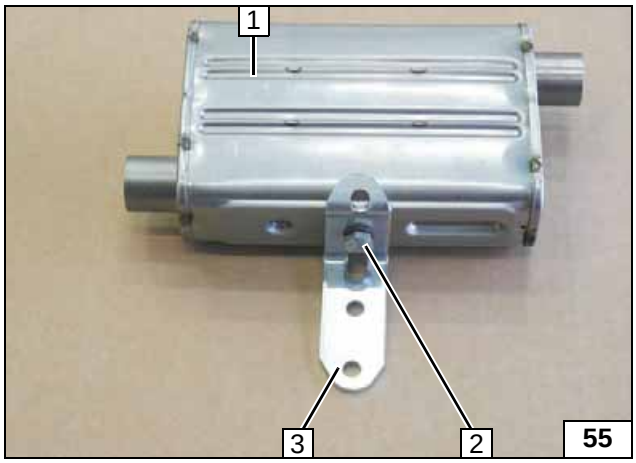
1 Exhaust pipe
a = 210
2 Exhaust end section
b = 70

Preparing exhaust pipe



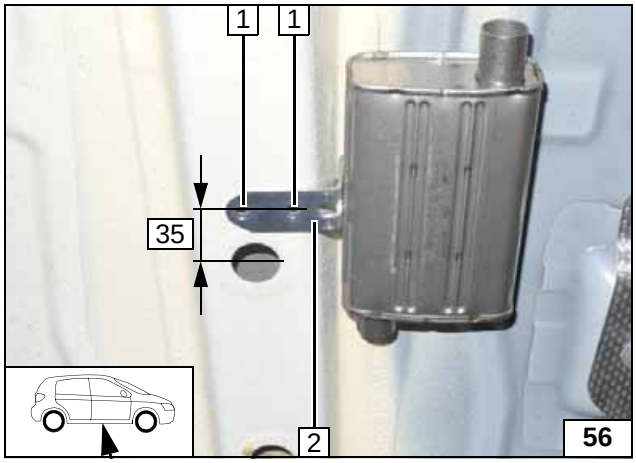
1 Perforated bracket

Angling down perforated bracket



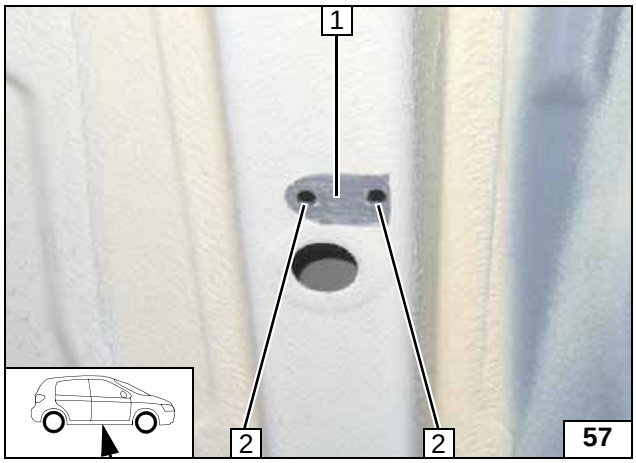
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Perforated bracket

Premounting silencer



1 Copy hole pattern [2x]
2 Perforated bracket

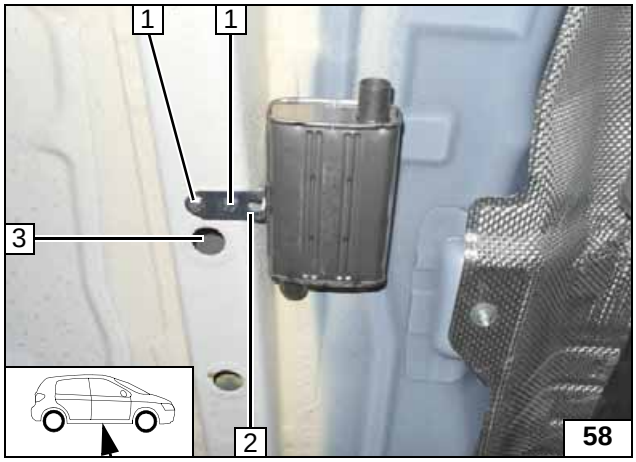
Copying hole pattern



Remove underbody protection in the area of the perforated bracket at position **1**.

2 7 mm dia. hole [2x]

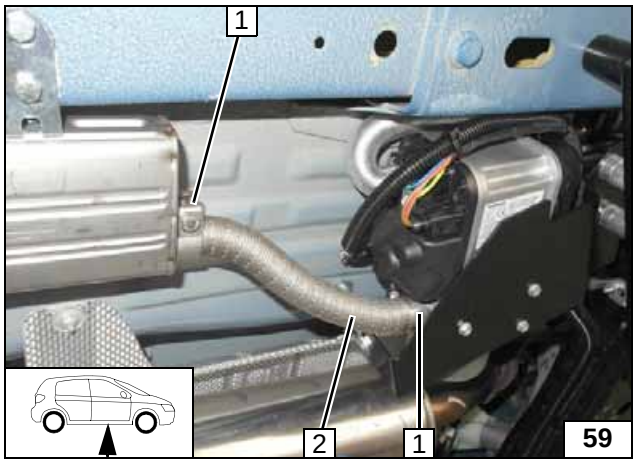
Holes in underbody



Insert flanged nut [2x] into existing hole **3**.

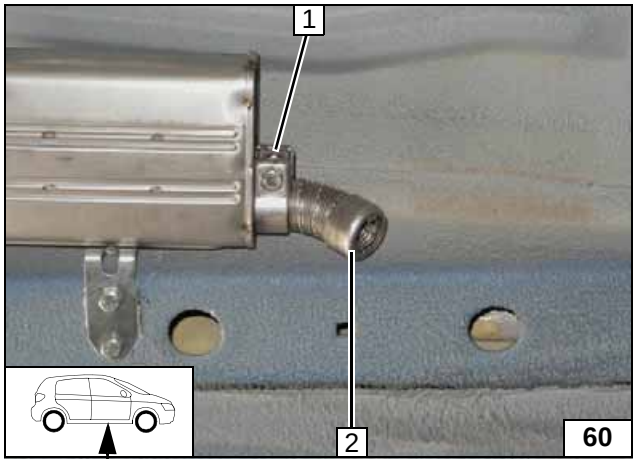
1 M6x20 bolt, flanged nut [2x each]
2 Perforated bracket

Mounting silencer



1 Hose clamp [2x]
2 Exhaust pipe

Mounting exhaust pipe



Ensure sufficient distance from neighbouring components, or correct.

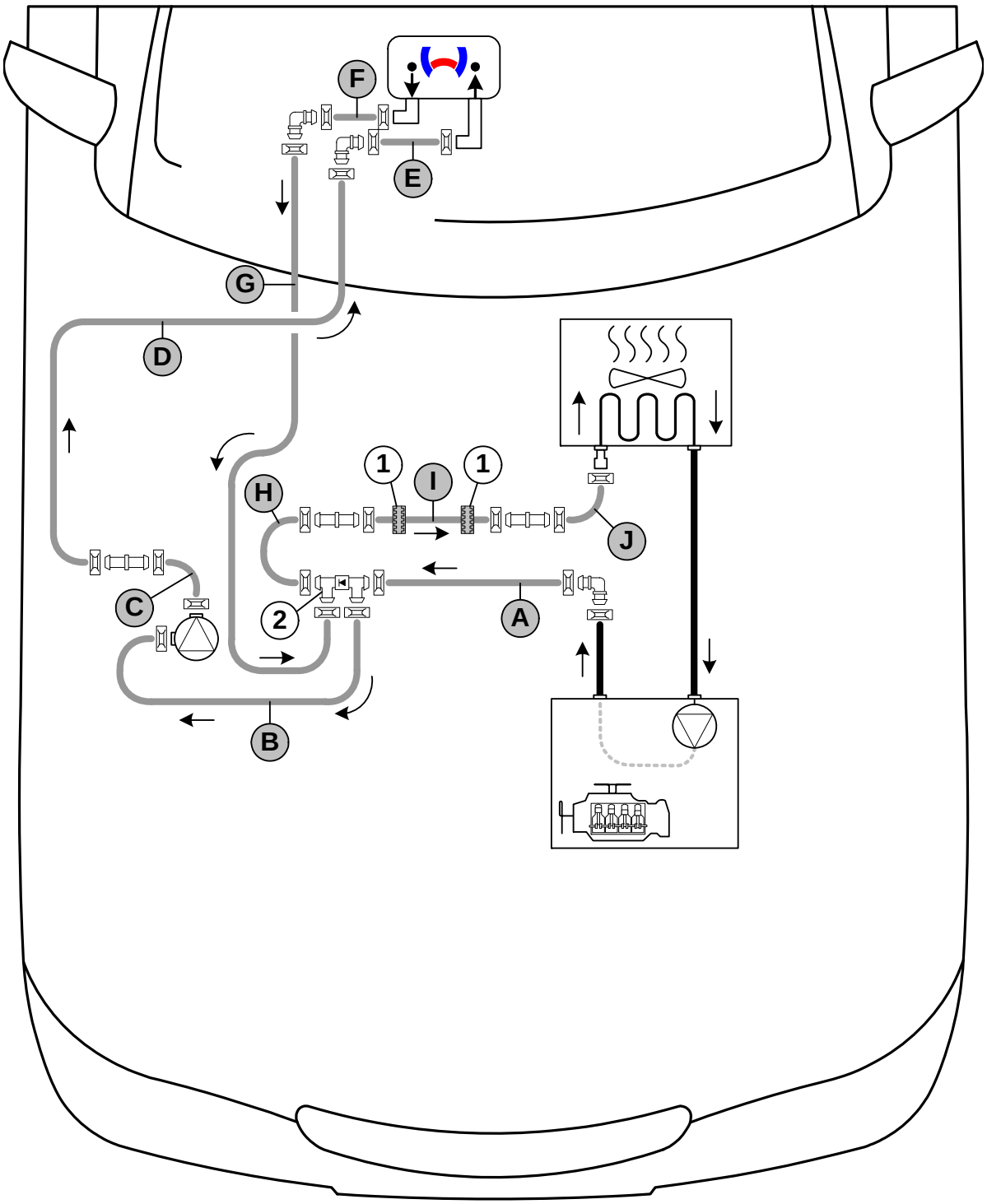
1 Hose clamp
2 Exhaust end section

Mounting exhaust end section

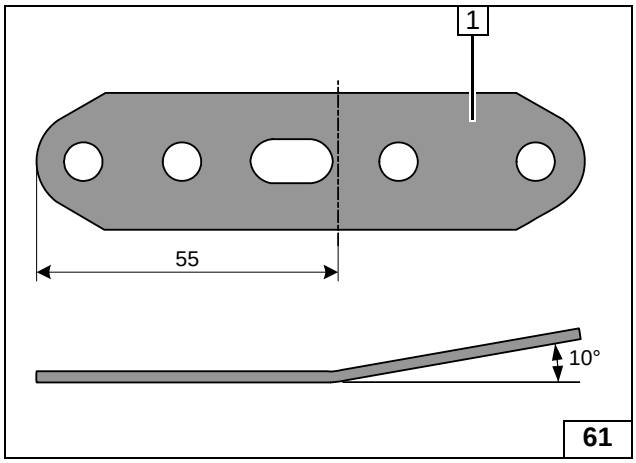
Coolant Circuit

WARNING!
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. When installing the hoses, the heater must be filled with coolant.
The connection should be modelled on a "parallel" circuit and based on the following diagram:

Hose routing diagram

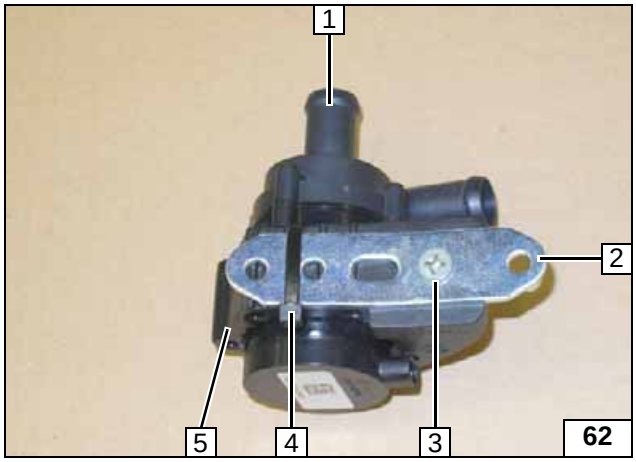


All spring clips = 25 mm dia. All connecting pipes and = 18x18 dia.
1 = Black (sw) rubber isolator (only in case of 1.0 l)!
2 = check valve !



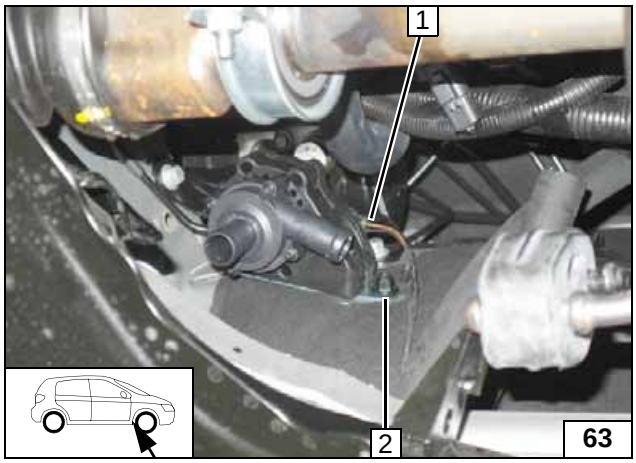
1 Perforated bracket

Angling down perforated bracket



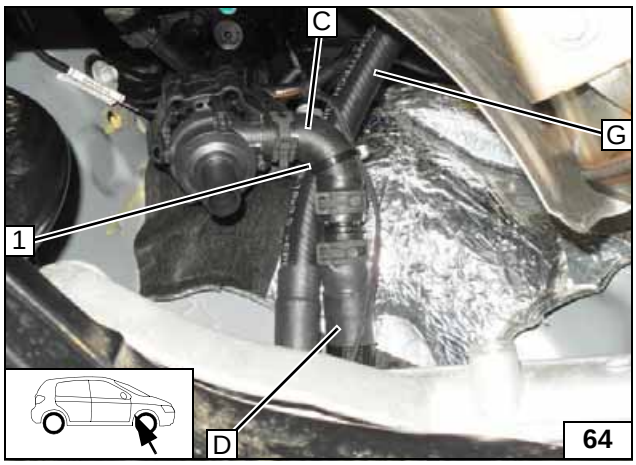
1 Circulating pump
2 Perforated bracket
3 M6x25 countersunk head screw, flanged nut
4 Cable tie
5 Circulating pump mounting

Premounting circulating pump



1 Connector of circulating pump wiring harness
2 Original vehicle stud bolt, perforated bracket, plastic nut

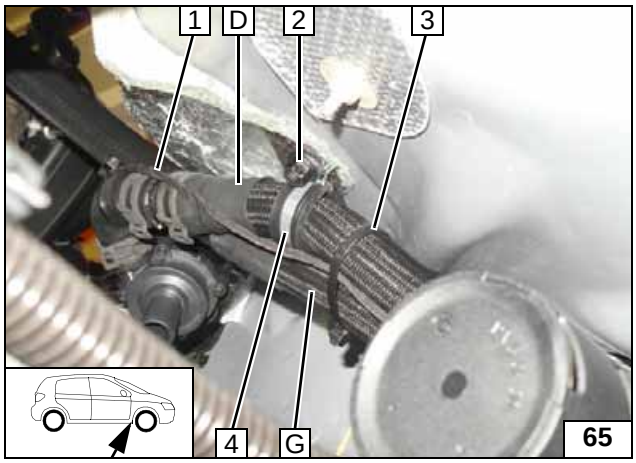
Mounting circulating pump



Route hose **G** upwards on the firewall.

1 Cable tie

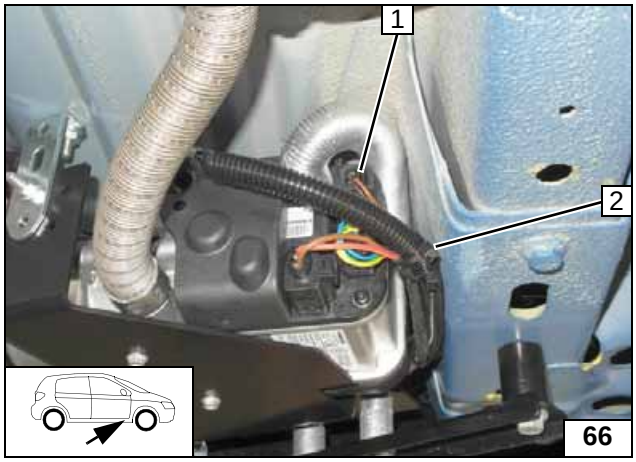
Connecting circulating pump



Route wiring harness of circulating pump **1** along the hoses to the heater!

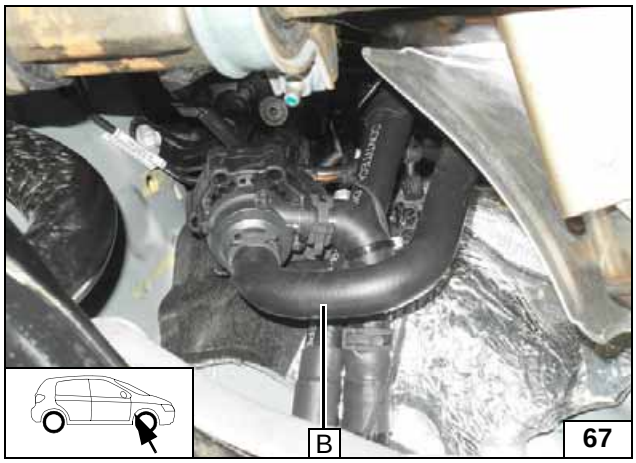
2 Original vehicle stud bolt, plastic nut
3 Cable tie
4 25 mm dia. rubber-coated p-clamp

Installing rubber-coated p-clamp



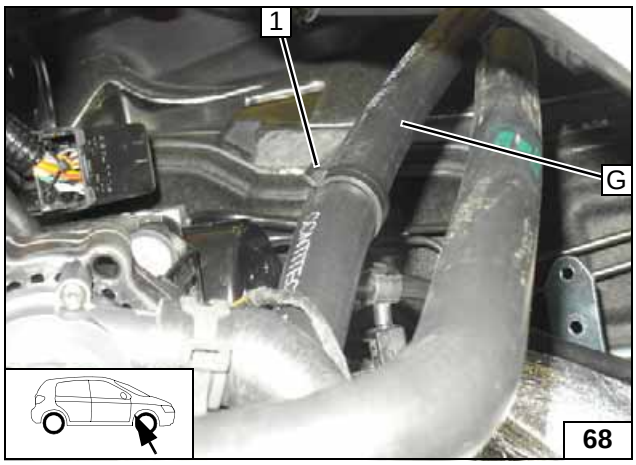
1 Connector of circulating pump wiring harness
2 Cable tie

Connecting heater



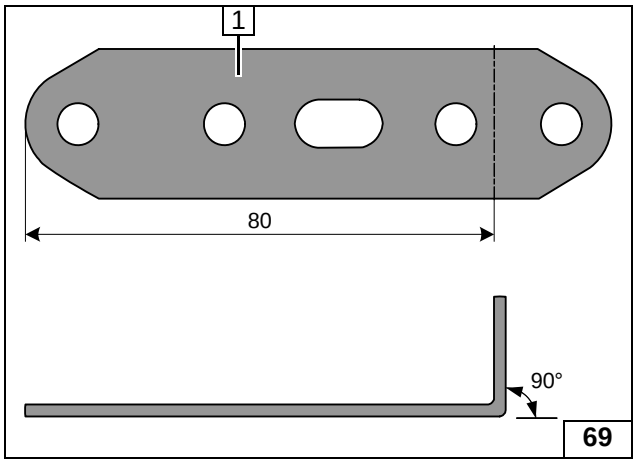
Route hose **B** upwards on the firewall.

Connecting circulating pump



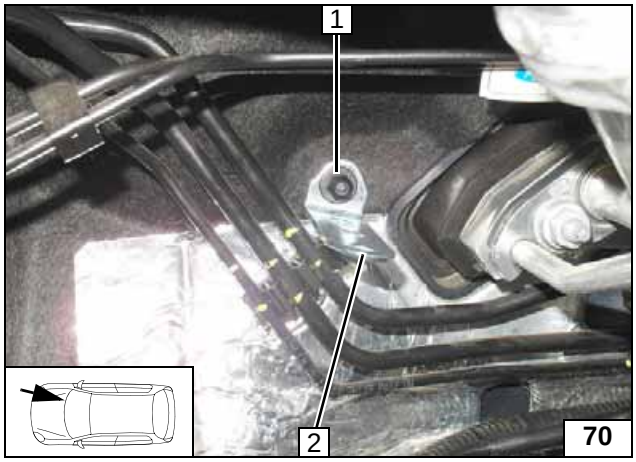
1 Hose bracket between hose **G** and line of activated charcoal filter!

Inserting hose bracket



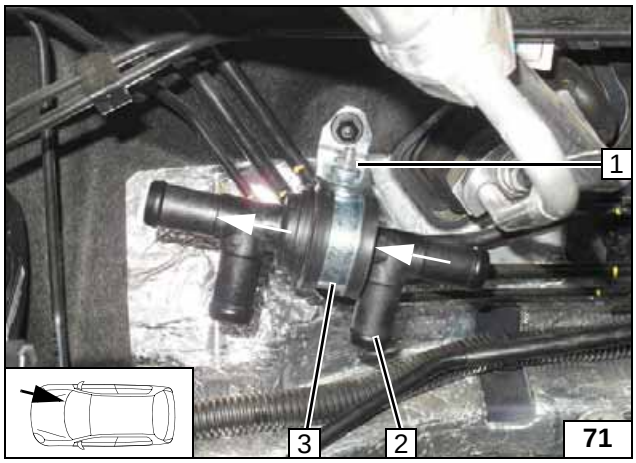
1 Perforated bracket

Angling down perforated bracket



1 Original vehicle stud bolt, plastic nut
2 Perforated bracket

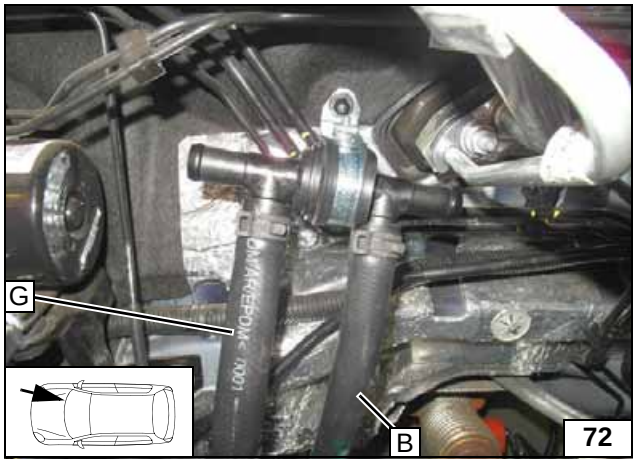
Mounting perforated bracket



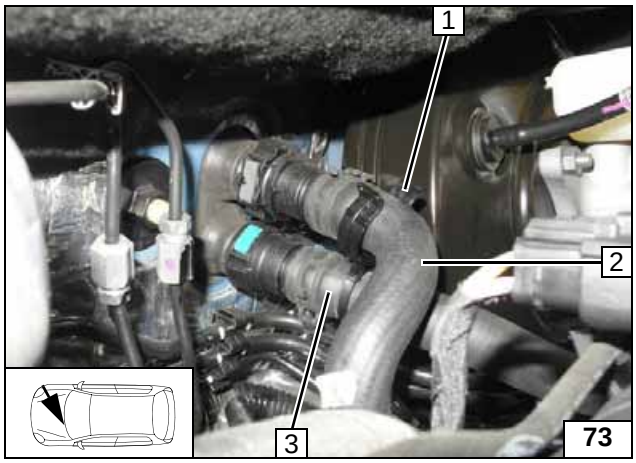
Mind flow direction of check valve **2**.

1 M6x20 bolt, large diameter washer, flanged nut
3 35 mm dia. rubber-coated p-clamp

Mounting check valve



Connecting check valve

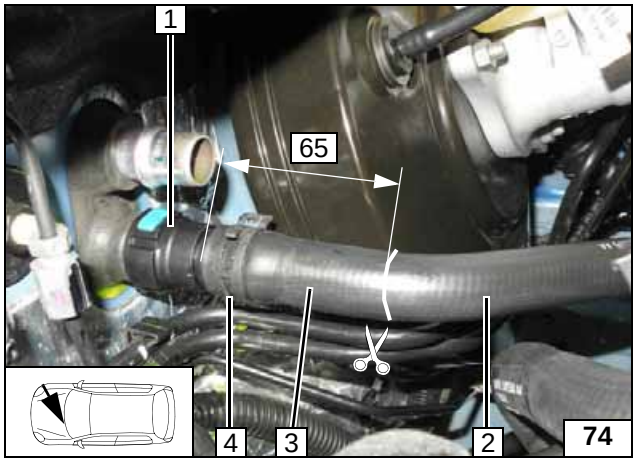


1.0 P

Remove hose of heat exchanger outlet / engine inlet **2** to achieve a better assembly.

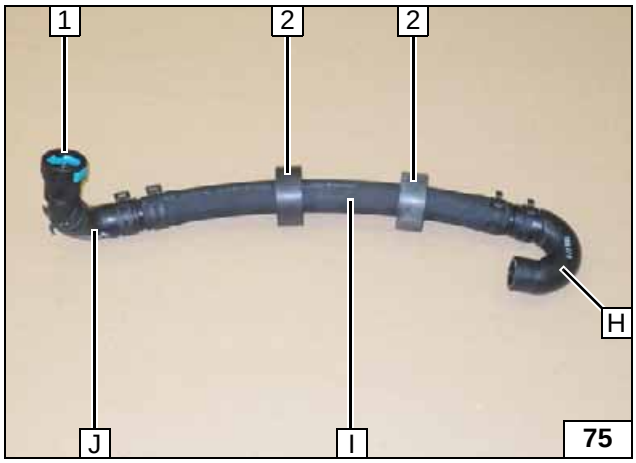
Preparing cutting point

1 Remove original vehicle hose bracket, will be reused
3 Hose on engine outlet/heat exchanger inlet



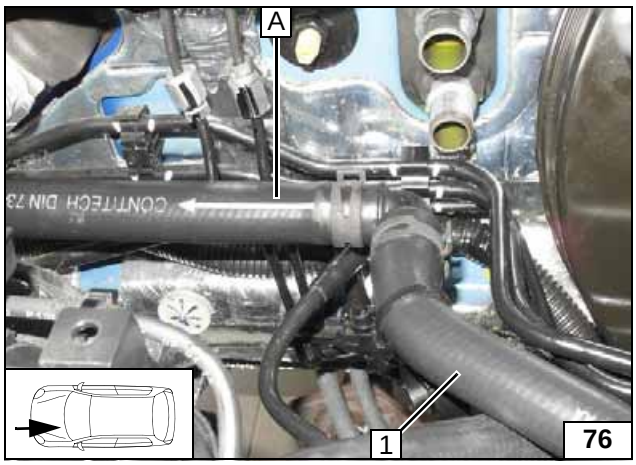
Cutting point

1 Remove coupling piece of heat exchanger inlet, will be re-used
2 Hose of engine outlet
3 Remove hose section, discard
4 Discard spring clip



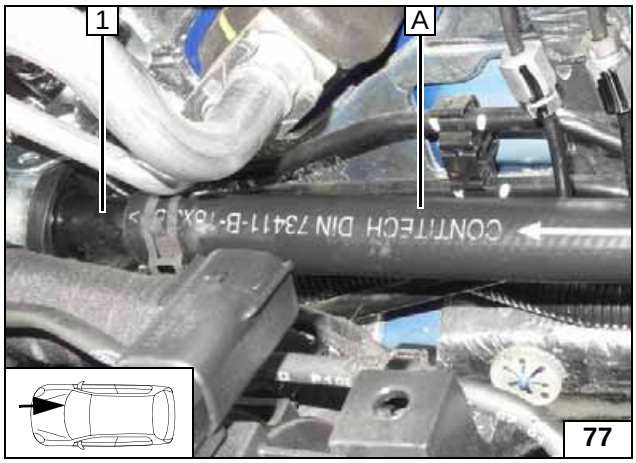
Premounting hoses

1 Coupling piece of heat exchanger inlet
2 Push on black (sw) rubber isolator [2x]



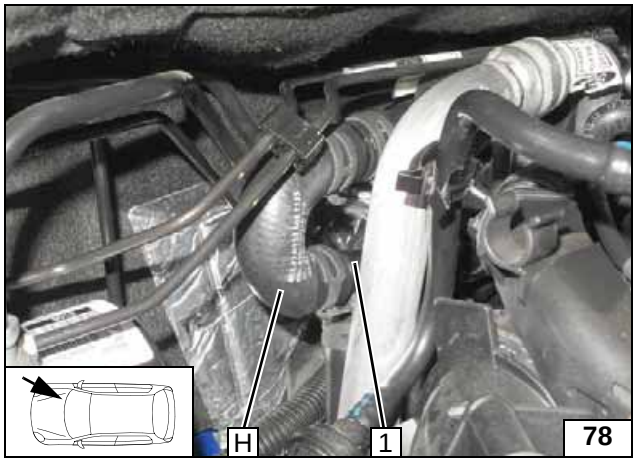
Connecting engine outlet

1 Hose of engine outlet



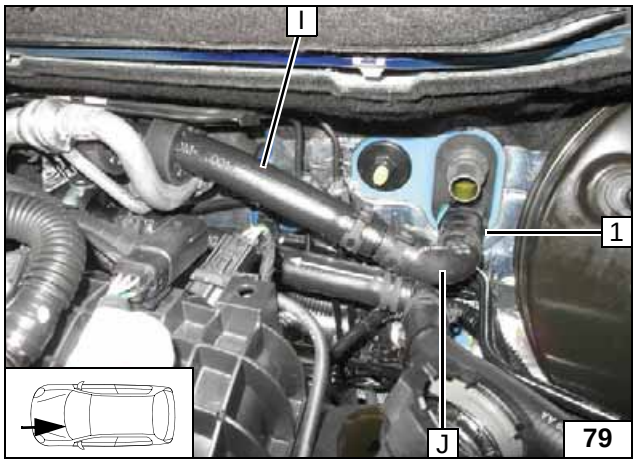
1 Check valve

Connecting check valve



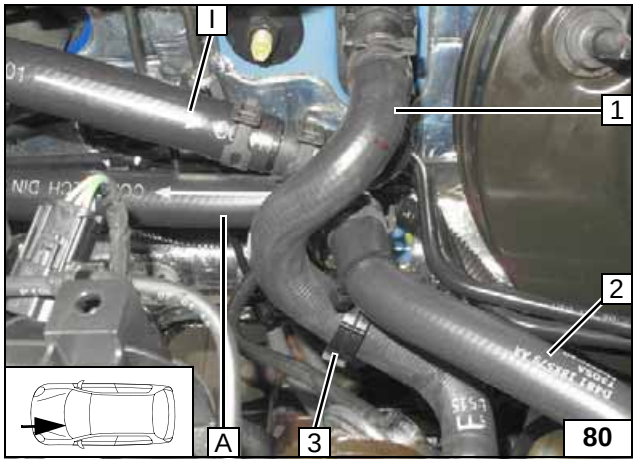
1 Check valve (hidden by A/C line)

Connecting check valve



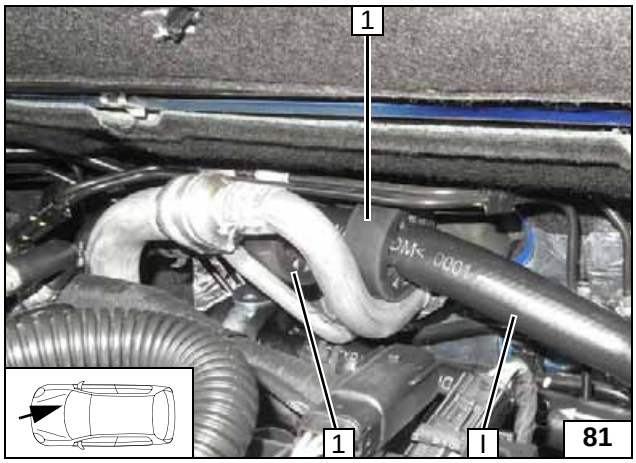
1 Coupling piece of heat exchanger inlet attached

Connecting heat exchanger inlet



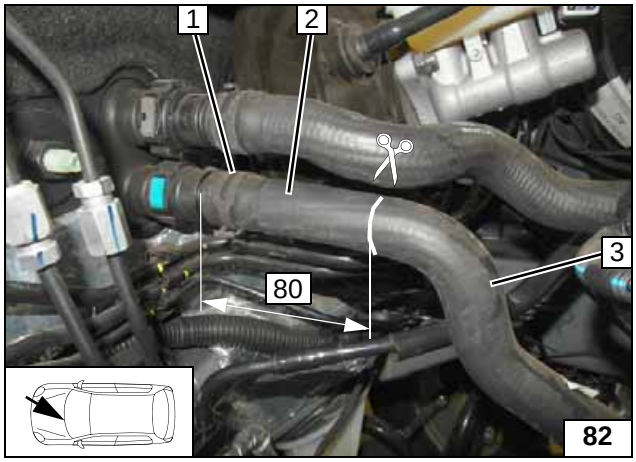
3 Original vehicle hose bracket between hose of engine outlet **2** and hose of heat exchanger outlet **1**

Installing hose bracket



Aligning hoses

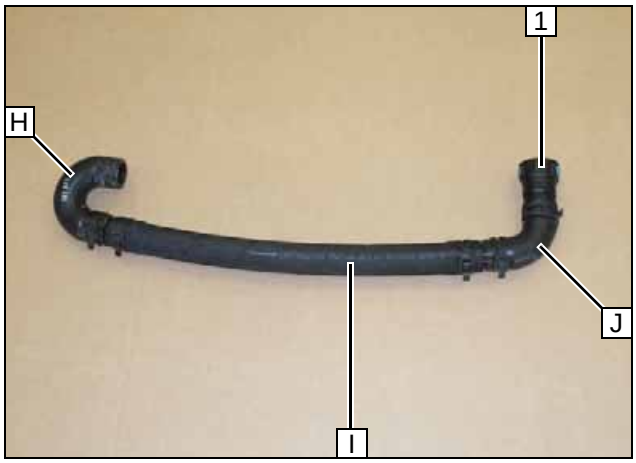
Align black (sw) rubber isolator **1** [2x] of hose **I** with A/C lines.



Cutting point

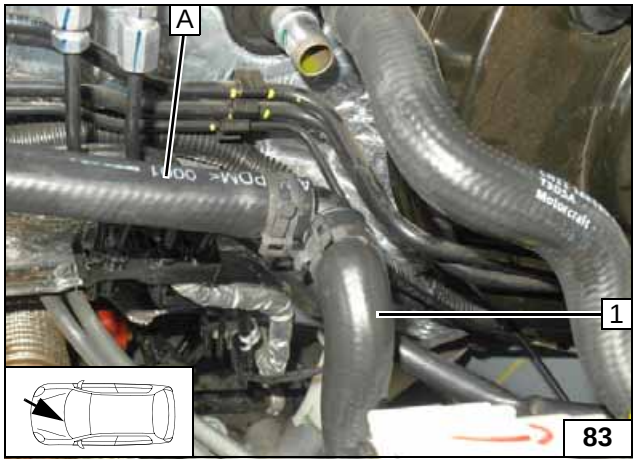
1.5 P

1 Discard spring clip
2 Discard hose section
3 Hose of engine outlet



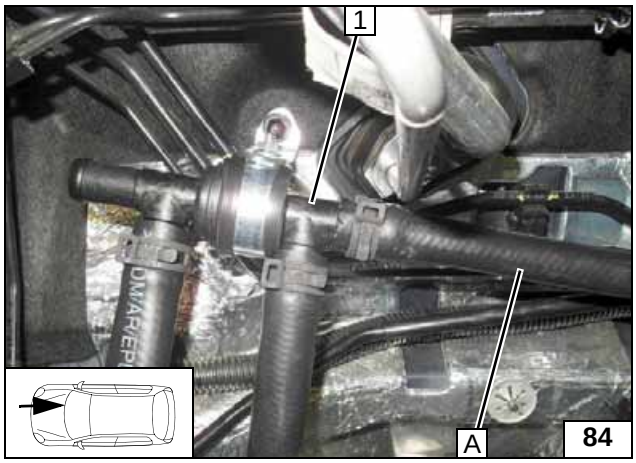
Premounting hoses

1 Coupling piece of heat exchanger inlet



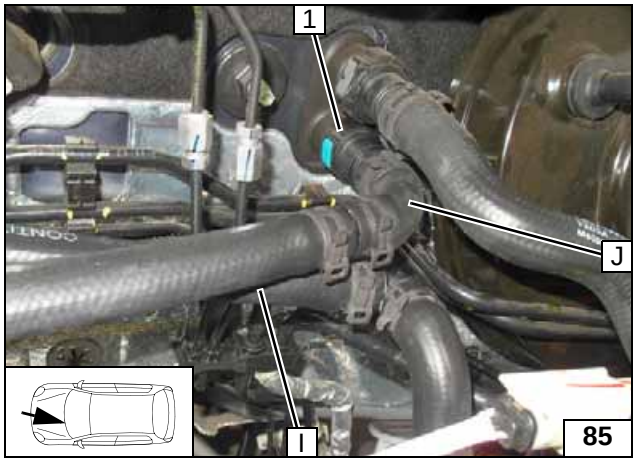
Connecting engine outlet

1 Hose of engine outlet



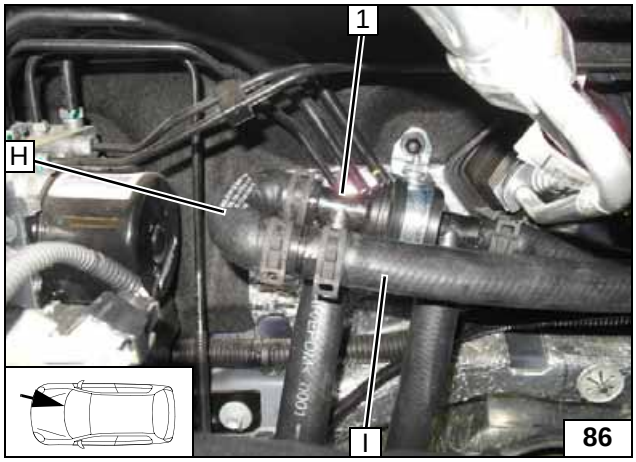
1 Check valve

Connecting check valve



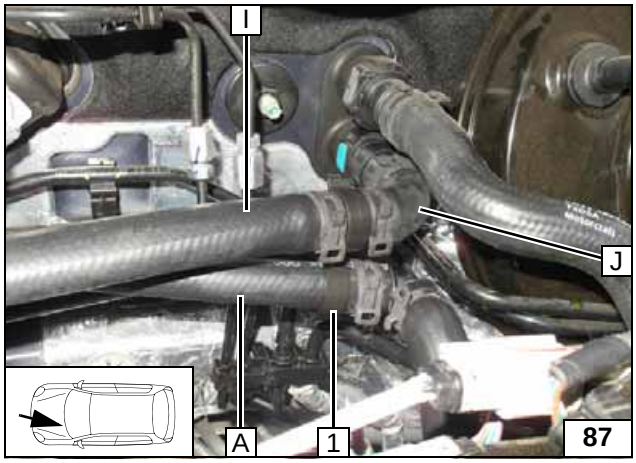
1 Coupling piece of heat exchanger inlet attached

Connecting heat exchanger inlet



1 Check valve

Connecting check valve



Ensure sufficient distance from neighbouring components, or correct.

1 Hose bracket between hoses **A** and **I**

Aligning hoses

Final Work

WARNING!
Mount removed parts 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 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.**
- **Program MultiControl, 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 in the area of the filler neck.**
- **See installation instructions for initial startup and function check.**

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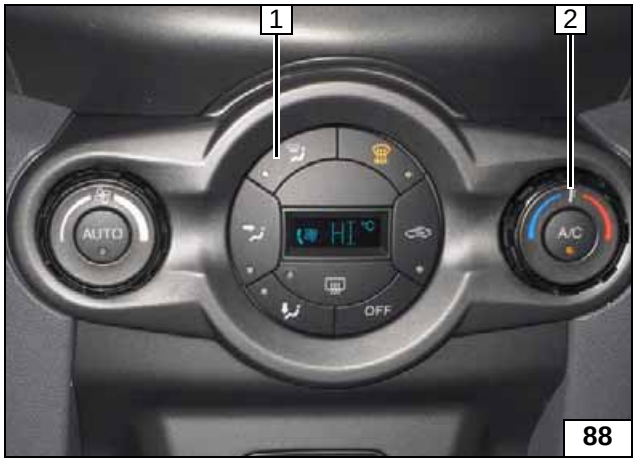
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Operating Instructions for End Customer

Please remove page and add to the vehicle operating instructions.

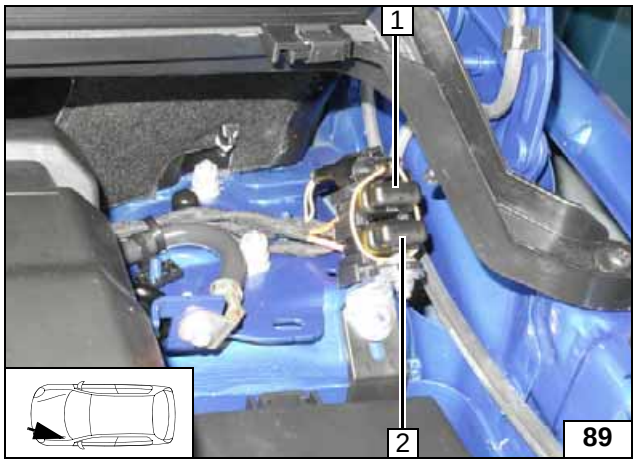
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Before parking the vehicle, make the following settings:



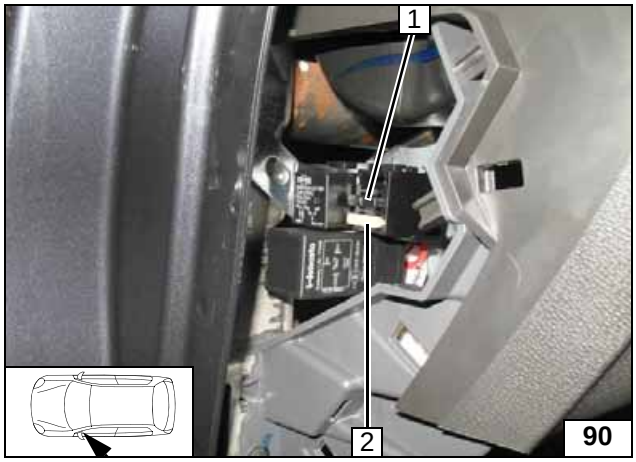
1 Air outlet to windscreen
2 Set temperature to "HI"

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment