Water Heater

Webasto
Feel the Drive

***Thermo Top Evo* Parking Heater**

E1
00 0258

Installation Documentation
Ford B-Max and Transit / Tourneo Courier

Validity

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

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.0 EcoBoost	Petrol	SG	74	998	SFJA / SFJB
1.0 EcoBoost	Petrol	SG	88	998	MIJA
1.4 Duratec	Petrol	SG	66	1388	SPJD
1.6 Duratorq	Diesel	SG	70	1560	T3JB

SG = manual transmission

Left-hand drive vehicle from Model Year 2013

Verified equipment variants: Automatic air-conditioning
Front fog light

Not verified: Alarm system with passenger compartment monitoring
Manual air-conditioning

Total installation time: approx. 6.5 hours

Manufacturer	Model	Type	EG-BE-No. / ABE
Ford	Transit / Tourneo Courier	FCD	e1 * 2007 / 46 * 1349 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.5 Duratorq	Diesel	5-speed SG	56	1499	T3CB
1.6 Duratorq	Diesel	SG	70	1560	T3CB

SG = manual transmission

Left-hand drive vehicle from Model Year 2014

Verified equipment variants: Manual air-conditioning
Front fog light
Start - Stop

Not verified: Passenger compartment monitoring
Automatic air-conditioning

Total installation time: approx. 6 hours

Ford B-Max and Transit / Tourneo Courier

Table of Contents

Necessary Components

- Basic delivery scope *Thermo Top Evo* in accordance with price list
- Installation kit for Ford B-Max and Transit / Tourneo Courier: **1319091C**
- Required additionally with automatic air-conditioning: A/C kit **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

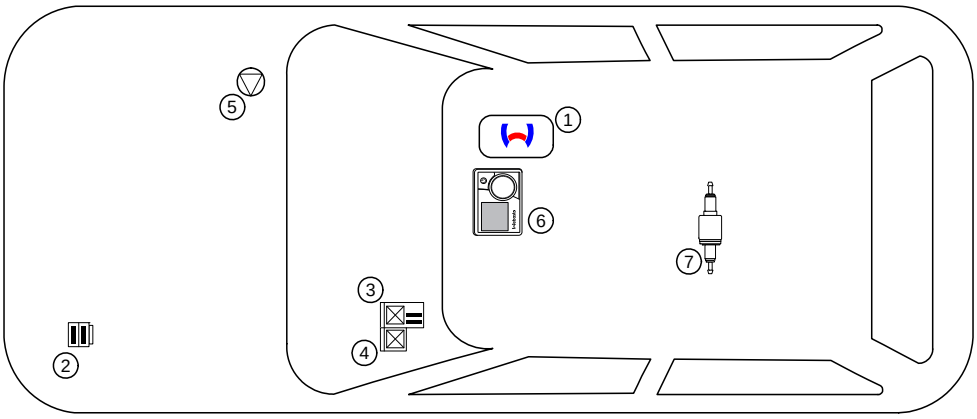
Installation instructions:

- 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 (only in case of B-Max automatic air-conditioning)
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.

Ford B-Max and Transit / Tourneo Courier

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.

Ford B-Max and Transit / Tourneo Courier

Information on Validity

This installation documentation applies to Ford B-Max petrol and diesel vehicles from model year 2013 and later as well as Ford Transit / Tourneo Courier Diesel vehicles from model year 2014 and later - for validity, see page 1 - 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

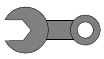
Tightening torque values
- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-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

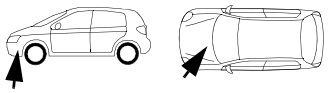
Specific risk of damage to components

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 B-Max and Transit / Tourneo Courier

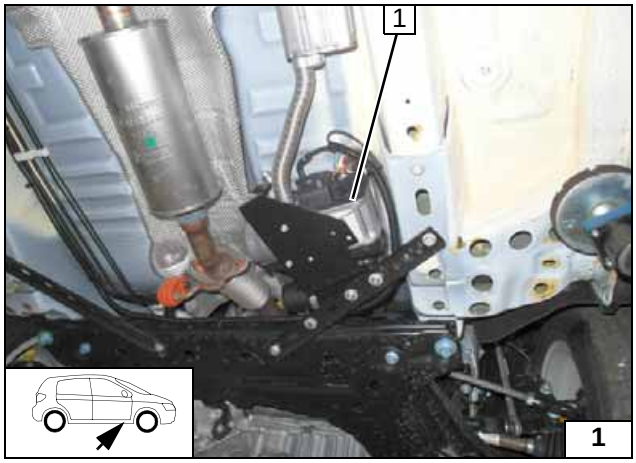
Preliminary Work

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 completely together with the engine control unit.
- Remove the windscreen wipers (all except 1.4 petrol).
- Remove the coolant reservoir completely (all except 1.4 petrol).
- Remove the lower engine cover (only for B-Max).
- 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 lower A-pillar trim on the driver's side (only for Transit / Tourneo Courier).
- 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.

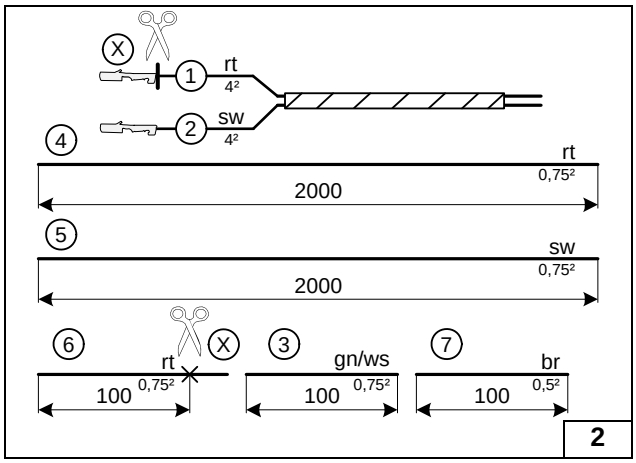
Produce all following electrical connections as shown in wiring diagram.

Automatic air-conditioning for B-Max

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



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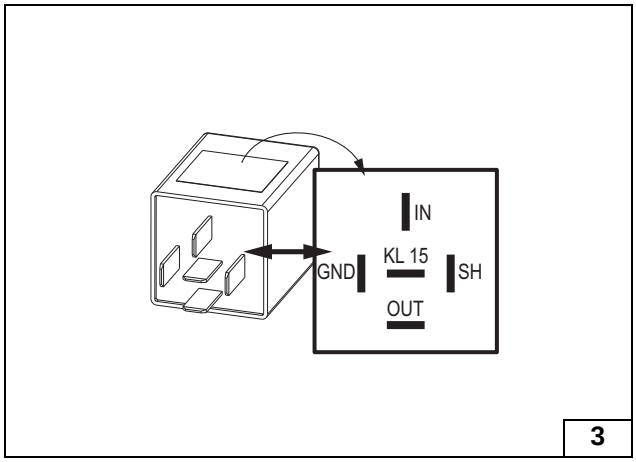
Check the PWM Gateway settings when starting up the heater and adjust if necessary.

Settings:

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

View of PWM GW



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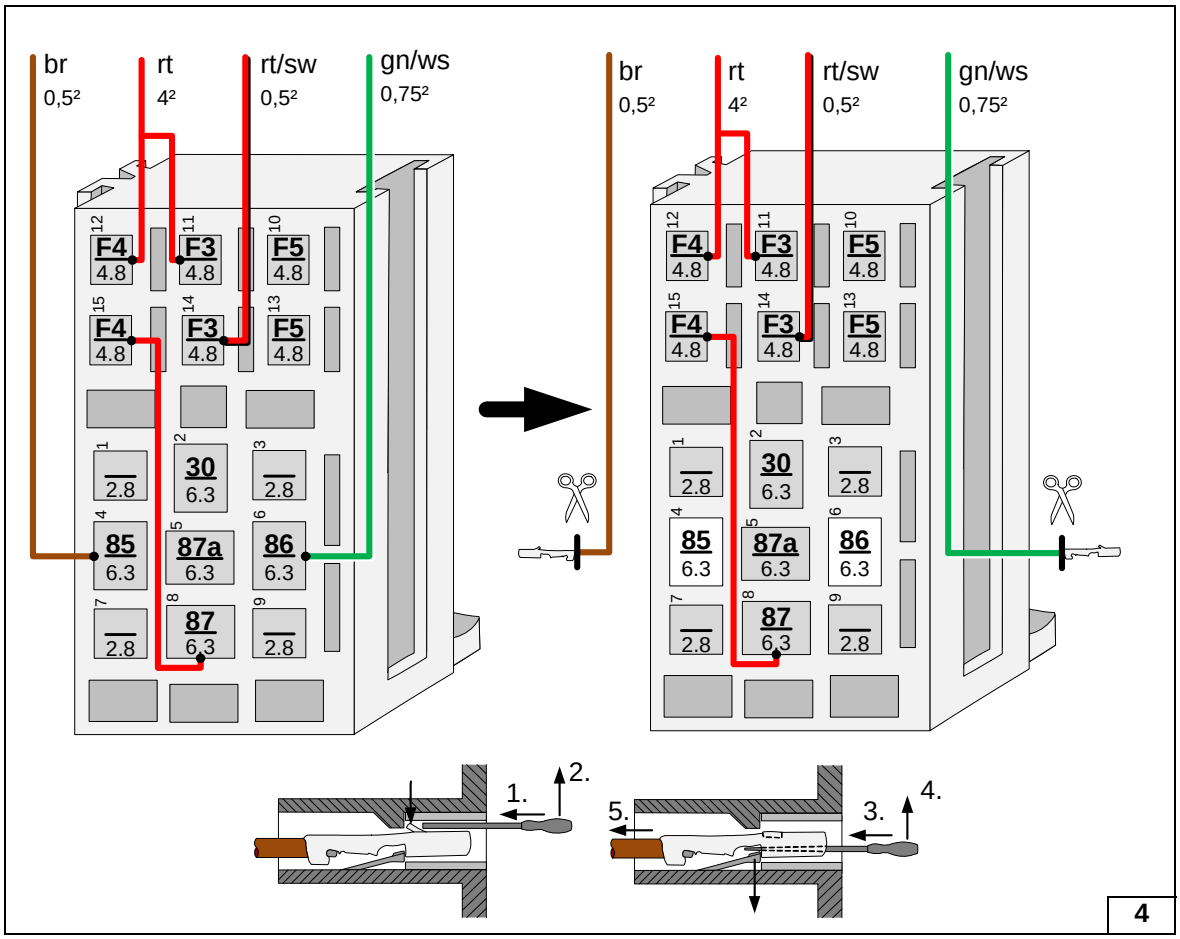

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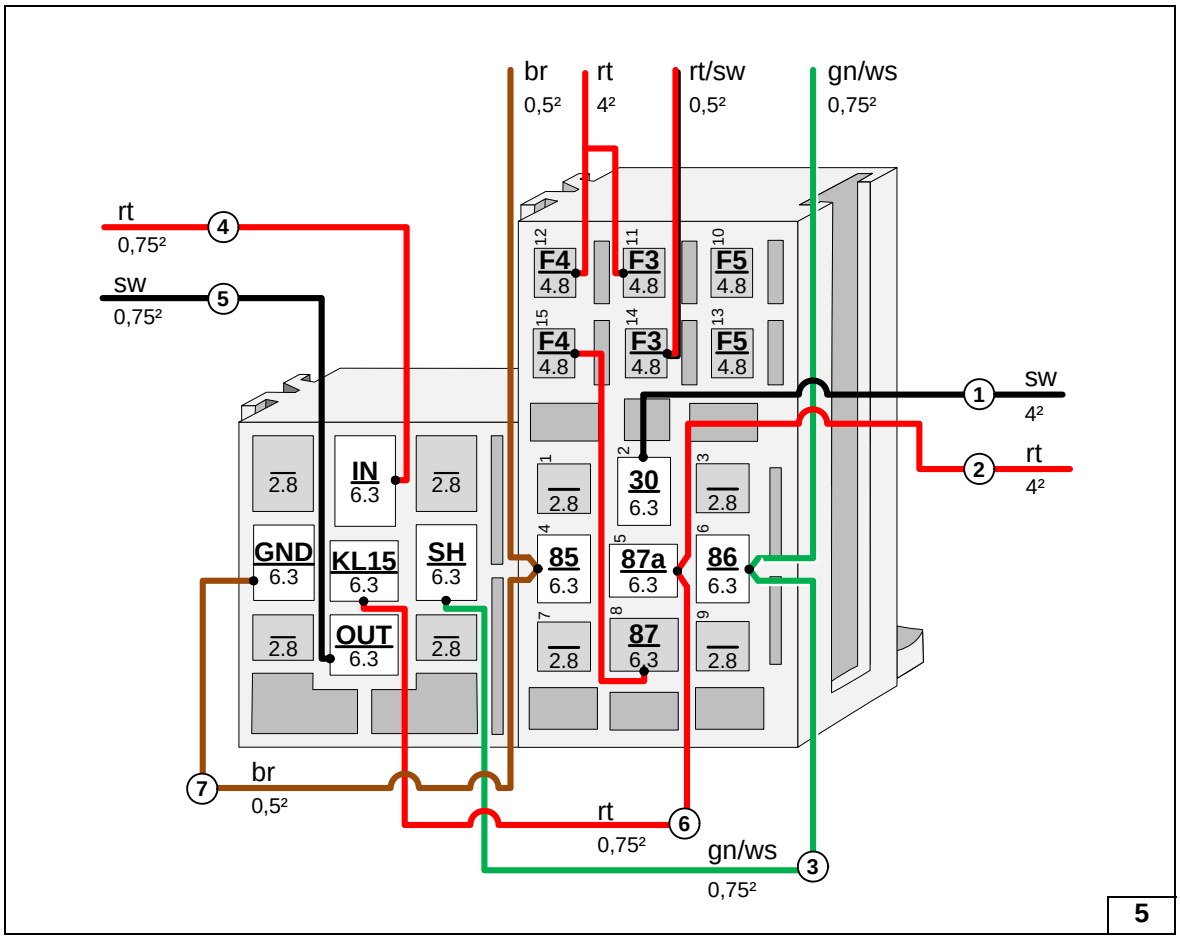
Preparing relay and fuse holder of passenger compartment



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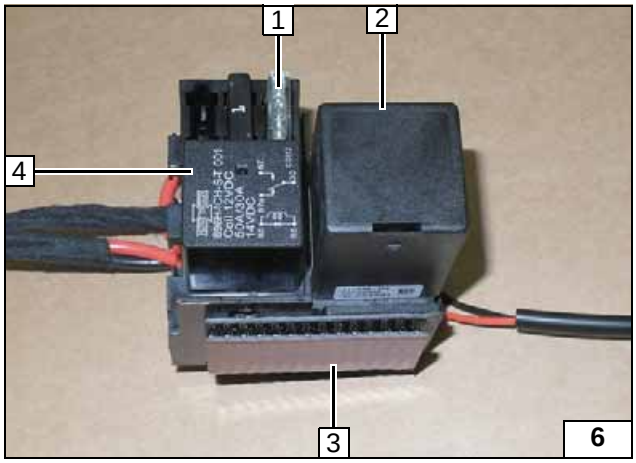
Interlocking socket of PWM GW and passenger compartment relay and fuse holder and connecting wires



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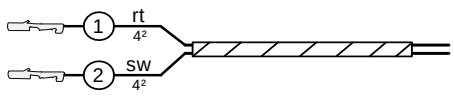
Degrease bonding surface!

1 25A fuse F4
2 PWM Gateway
3 Self-adhesive hook and loop fastening
4 K1 relay

Premounting relay and fuse holder of passenger compartment



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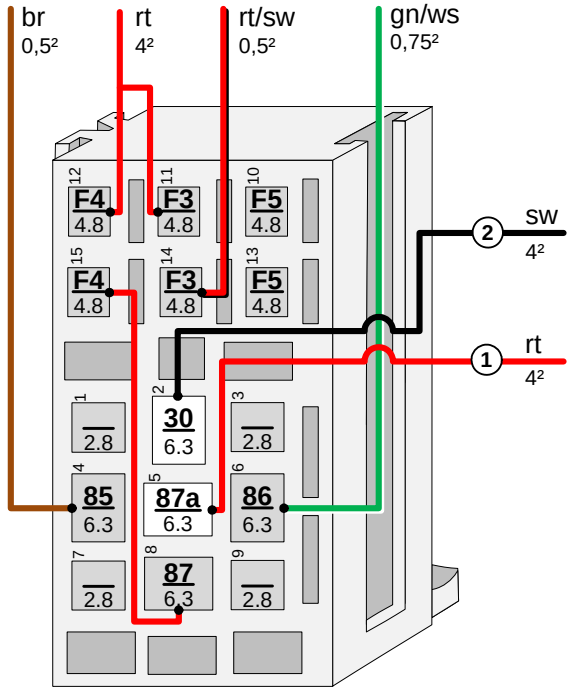
Manual air-conditioning for Transit / Tourneo Courier

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

Assigning wires

Connecting wires to relay and fuse holder of passenger compartment



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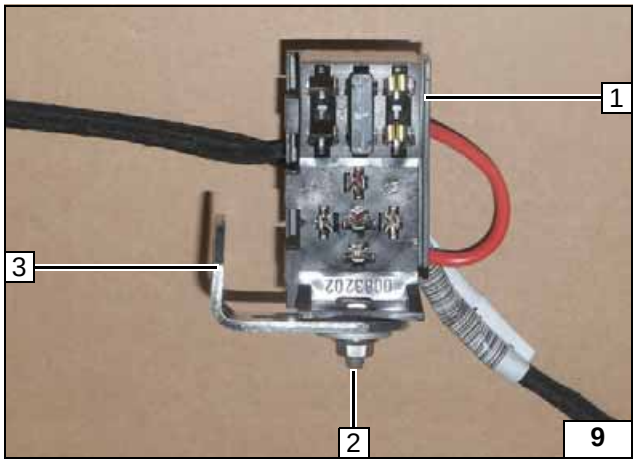
Mounting angle bracket



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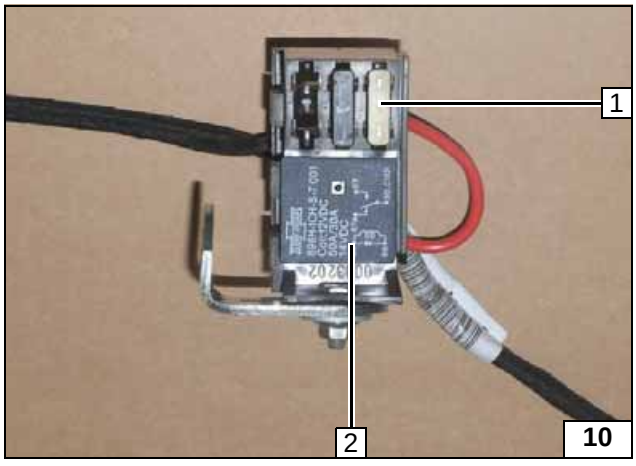
1 Passenger compartment relay and fuse holder
2 M5x16 bolt, large diameter washer [2x], self-locking nut
3 Angle bracket

Inserting K1 relay anf F4



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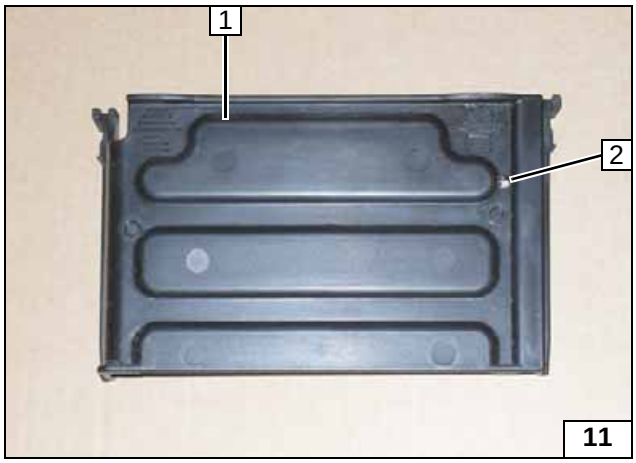
1 25A fuse F4
2 K1 relay

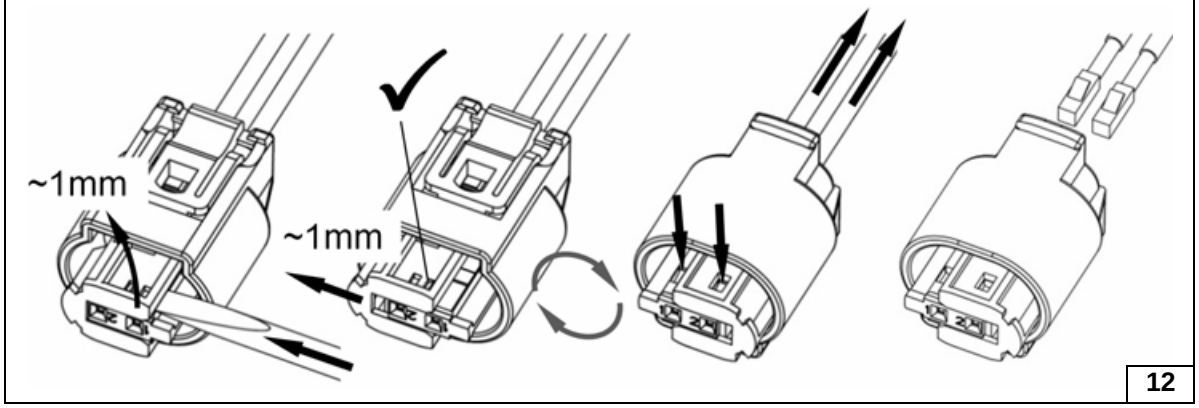


All vehicles

1 Battery trim
2 5.5 mm dia. hole

Hole in battery trim

Connector X7

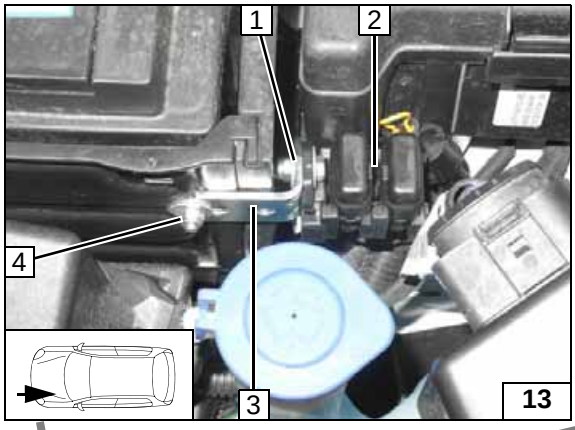


Dismantling connector of metering pump

Electrical System

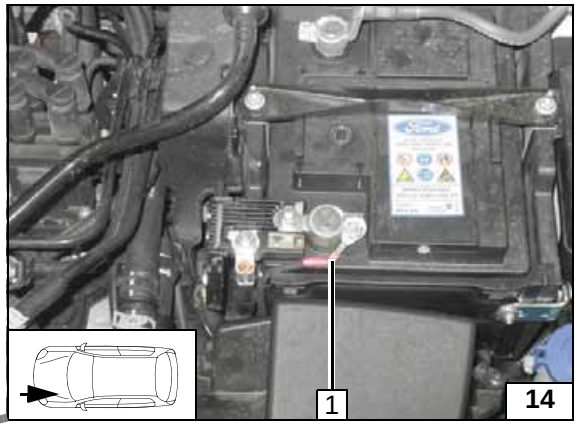
Fuse holder of engine compartment

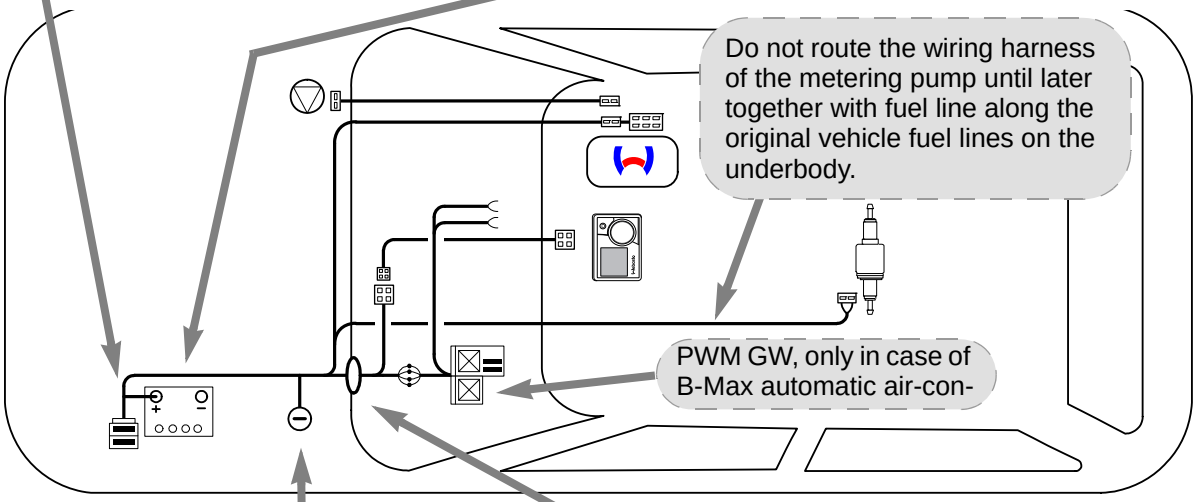
1 M5x12 bolt, large diameter washer [2x], retaining plate of fuse holder, self-locking nut
2 Fuses F1-2
3 Angle bracket
4 M5x16 bolt, large diameter washer [2x], self-locking nut



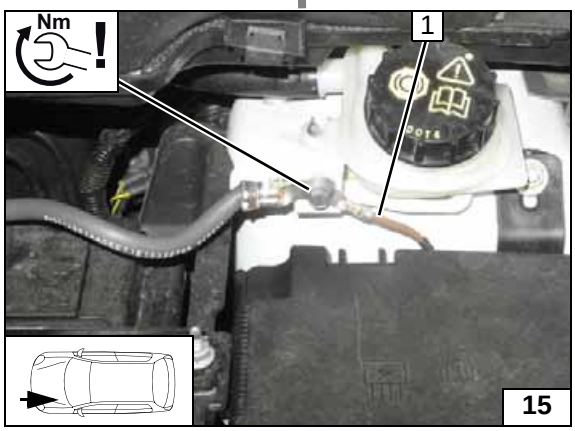
Positive wire

1 Positive wire on positive battery terminal



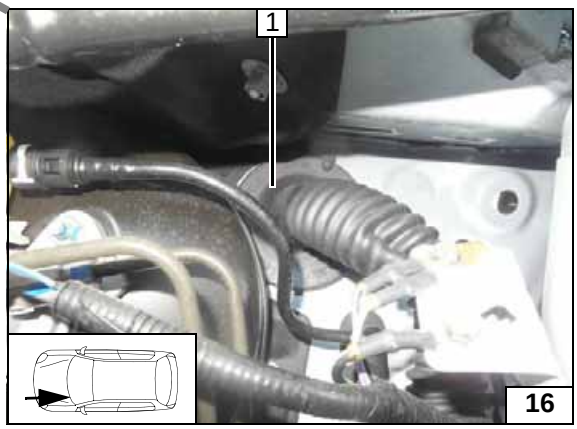


Wiring harness routing diagram



Earth wire

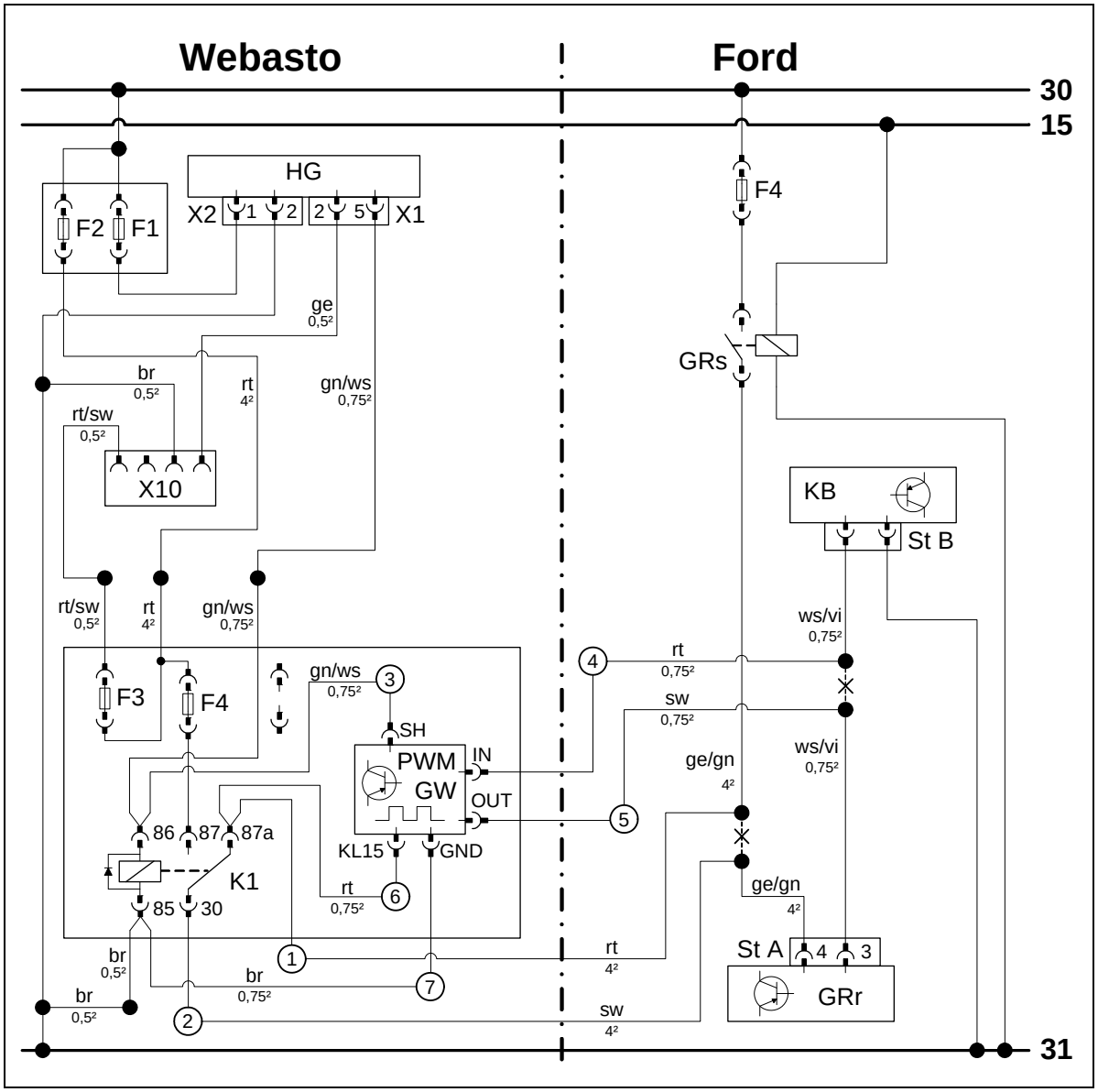
1 Earth wire on original vehicle earth support point



Wiring harness pass through

1 Protective rubber plug

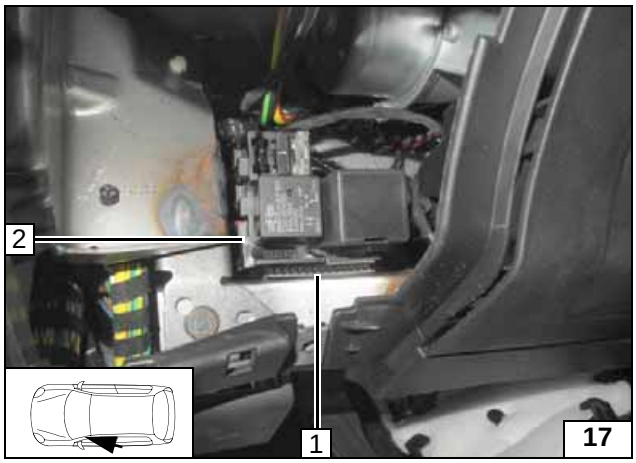
Fan Controller for B-Max



Wiring diagram for automatic air-conditioning

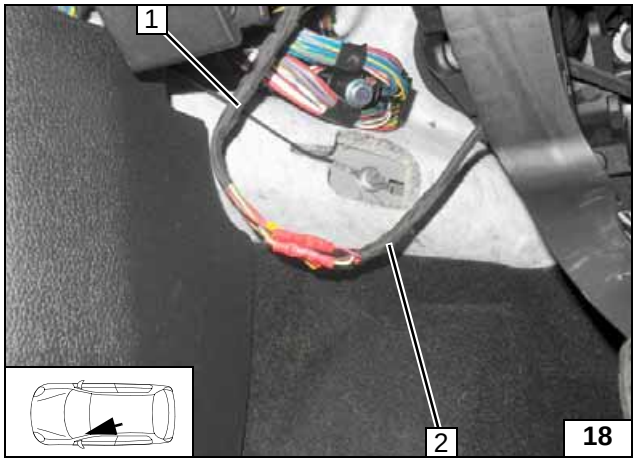
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	F4	30A fuse	rt	red
X1	6-pin heater connector	GRs	Fan relay	sw	black
X2	2-pin heater connector	KB	A/C control unit	ge	yellow
F1	20A fuse	St B	KB connector	gn	green
F2	30A fuse	GRr	Fan controller	vi	violet
X10	4-pin connector of heater control	St A	Connector of 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



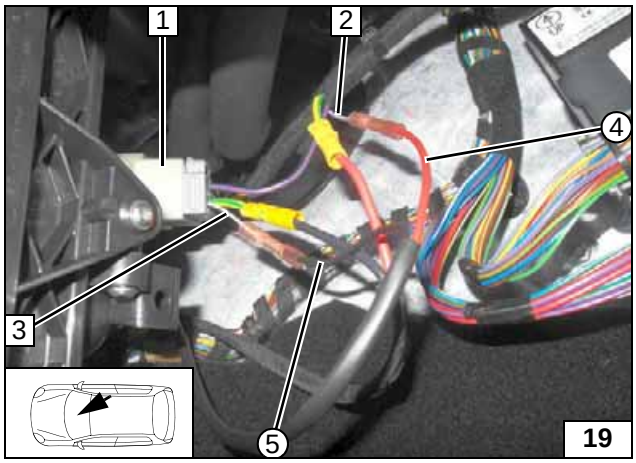
Degrease bonding surface! Secure passenger compartment relay and fuse holder **2** using self-adhesive hook and loop fastening at position **1**. Check storage compartment assembly, correct if necessary!

Installing relay and fuse holder of passenger compartment



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

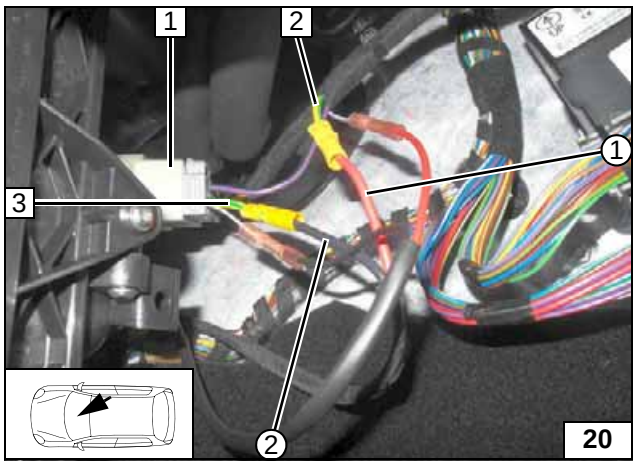
Connecting wiring harnesses using same colour wires



Connection of PWM GW to connector ST A **1** of fan controller.

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

Connecting fan controller

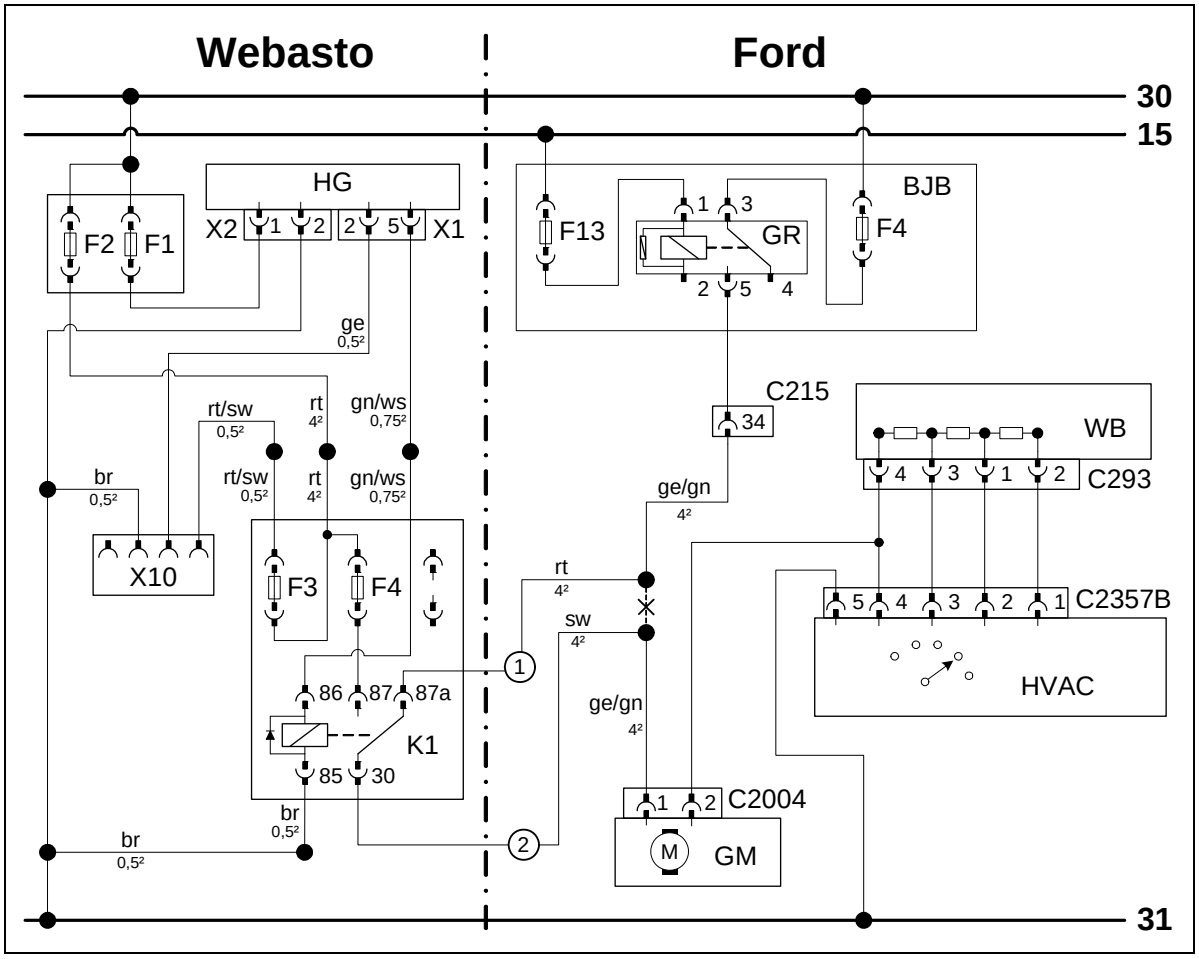


Connection of K1-relay to connector ST A **1** of fan controller.

2 Yellow/green (ge/gn) wire of fan relay
3 Yellow/green (ge/gn) wire of fan controller connector ST A, 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

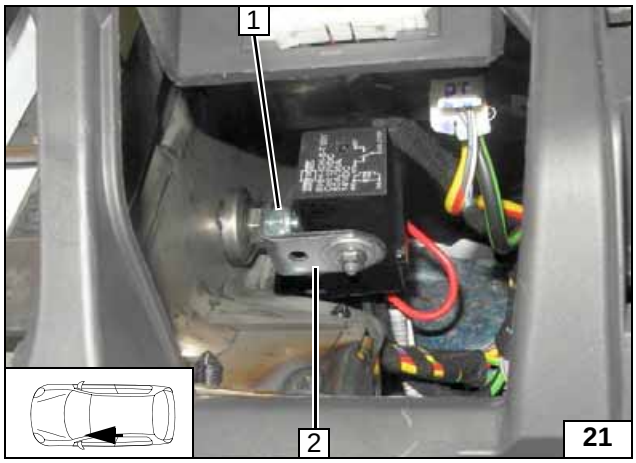
Fan Controller for Transit / Tourneo Courier



Wiring diagram for manual air-conditioning

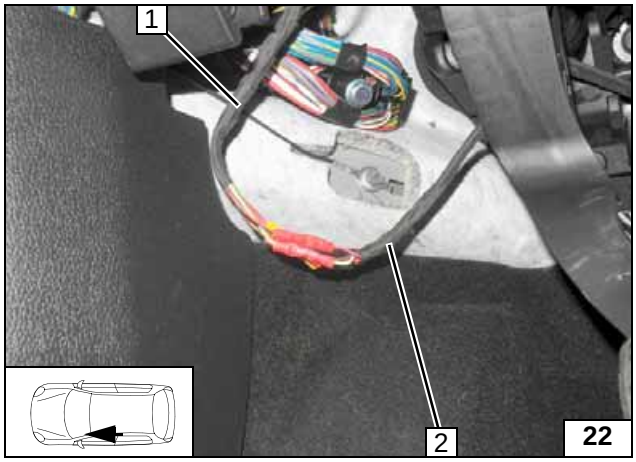
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	BJB	Battery junction box	rt	red
X1	6-pin heater connector	F4	30A fuse	sw	black
X2	2-pin heater connector	F13	10A fuse	ge	yellow
F1	20A fuse	GR	Fan relay	gn	green
F2	30A fuse	C215	Intermediate connector	br	brown
X10	4-pin connector of heater control	WB	Resistor group	ws	white
		C293	Connector WB		
F3	1A fuse	HVAC	Heater, ventilation and A/C control module		
F4	25A fuse				
K1	Fan relay	C2357B	HVAC connector		
		GM	Fan motor		
		C2004	GM connector		
				X	Cutting point
				Wiring colours may vary.	

Legend



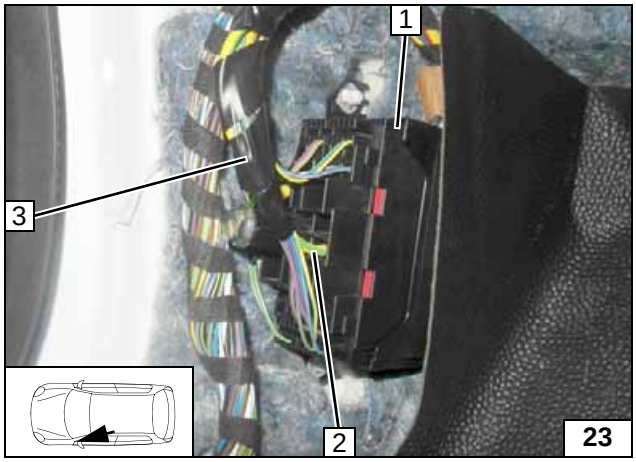
1 M8 flanged nut on original vehicle stud bolt
2 Angle bracket (drill out hole in angle bracket to 8.5mm dia.)

Installing relay and fuse holder of passenger compartment



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

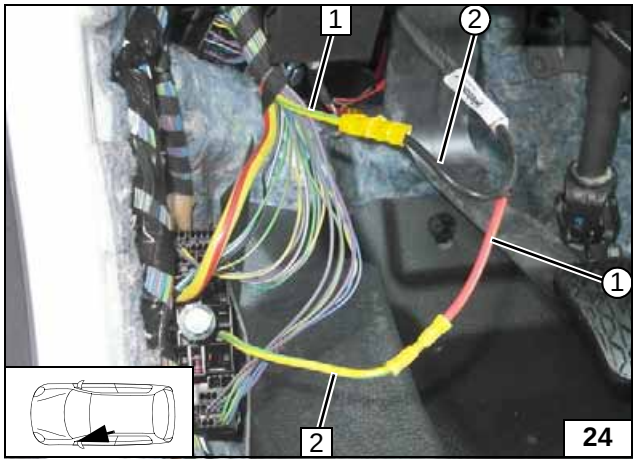
Connecting wiring harnesses using same colour wires



Remove the insulation of original vehicle wiring harness in position **3**!

1 Intermediate connector C215
2 Yellow/green (ge/gn) wire of intermediate connector C215/ 34

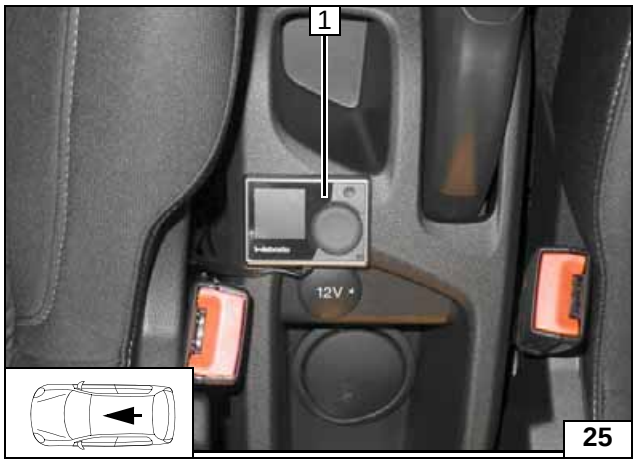
Preparing connection on intermediate connector C215



Connection with intermediate connector C215 of fan motor wiring harness!

1 Yellow/green (ge/gn) wire of fan motor
2 Yellow/green (ge/gn) wire of intermediate connector C215
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor

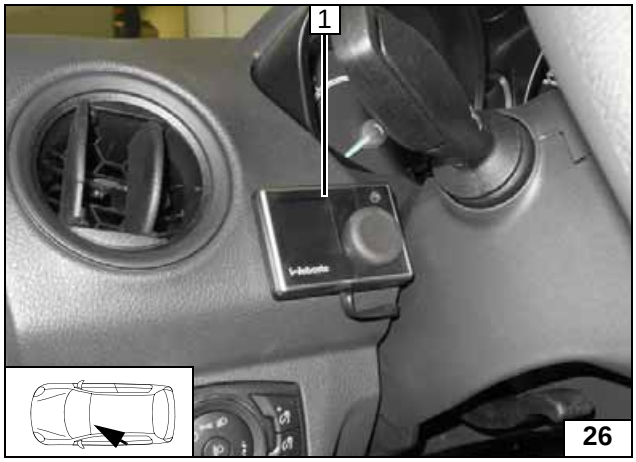


MultiControl CAR

B-Max

1 MultiControl CAR

Installing MultiControl CAR



Transit / Tourneo Courier

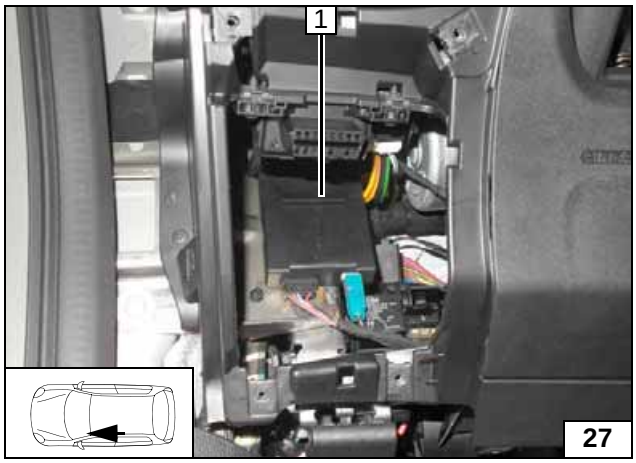
1 MultiControl CAR

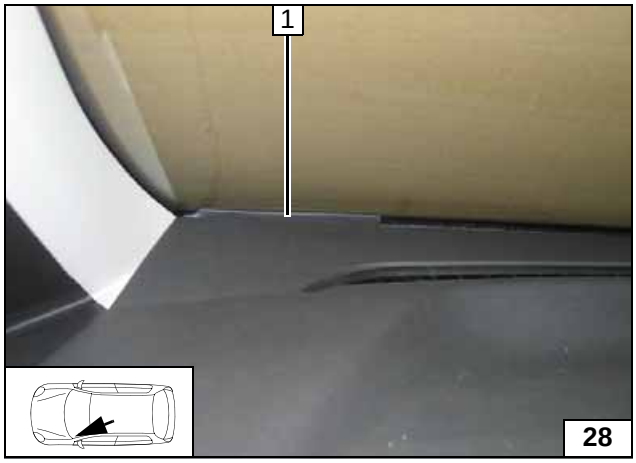
Installing MultiControl CAR

Remote Option (Telestart)

Figure shows B-Max.
Fasten receiver **1** with adhesive tape.

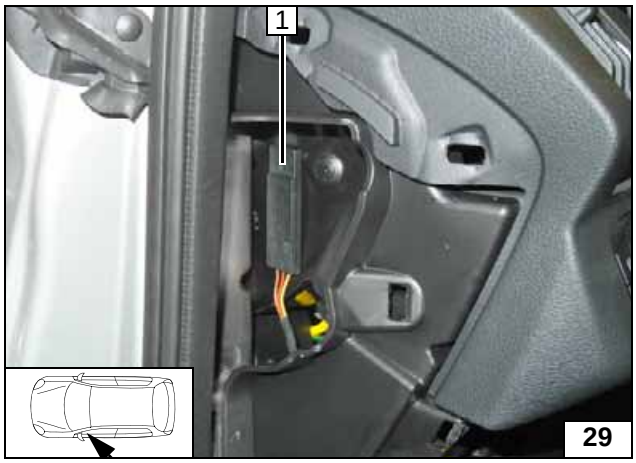
Mounting receiver





1 Antenna

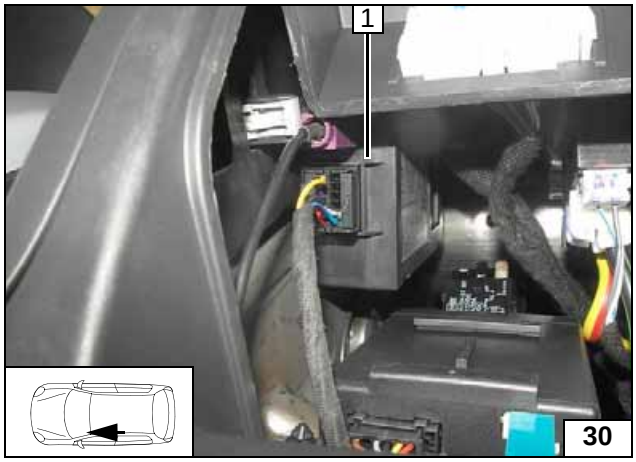
Mounting antenna



Temperature sensor T100 HTM

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

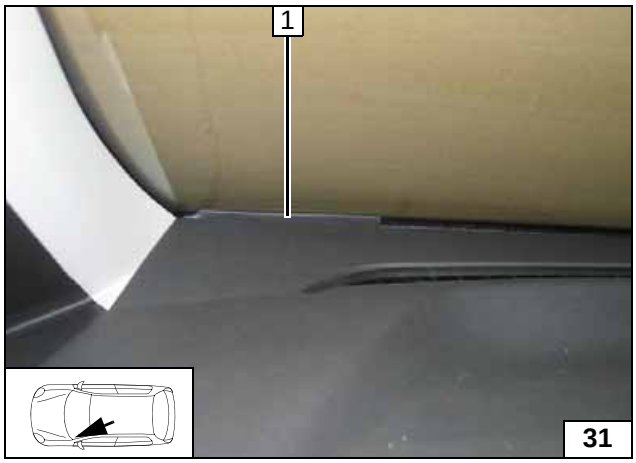
Mounting temperature sensor



Thermo Call Option

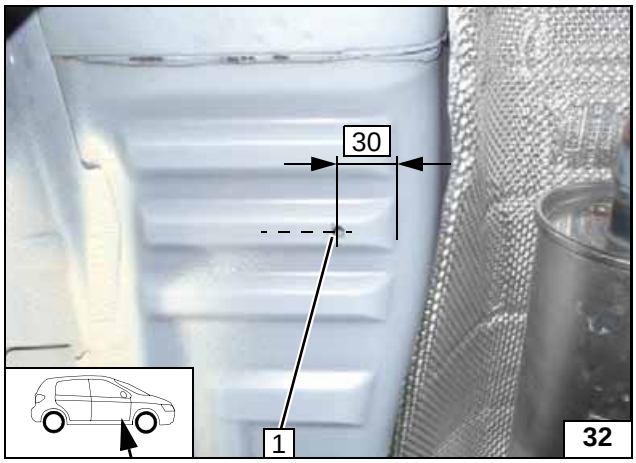
Figure shows Transit / Tourneo Courier.
Fasten receiver **1** with double-sided adhesive tape.

Mounting receiver



1 Antenna

Mounting antenna

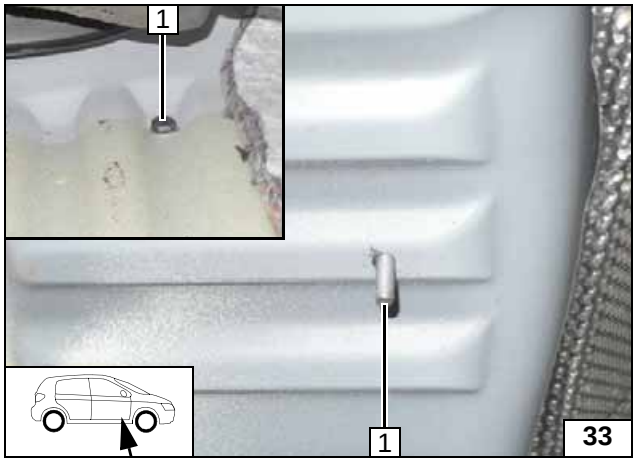


Preparing Installation Location

Fold back footwell trim on the front passenger's side.

1 7mm dia. hole in centre of beading

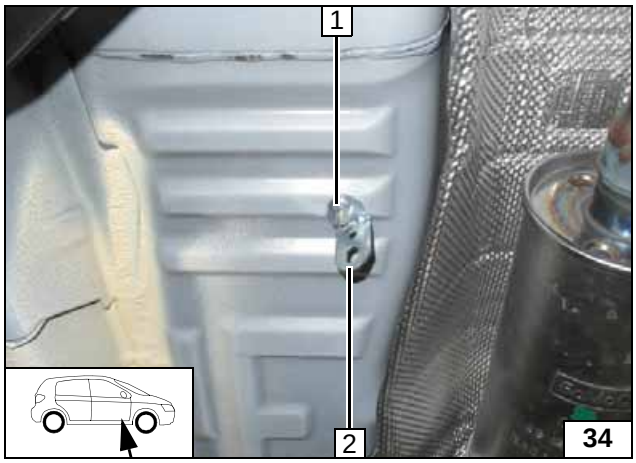
Hole in underbody



The top left figure shows the view of the footwell on the front passenger's side from the passenger compartment!

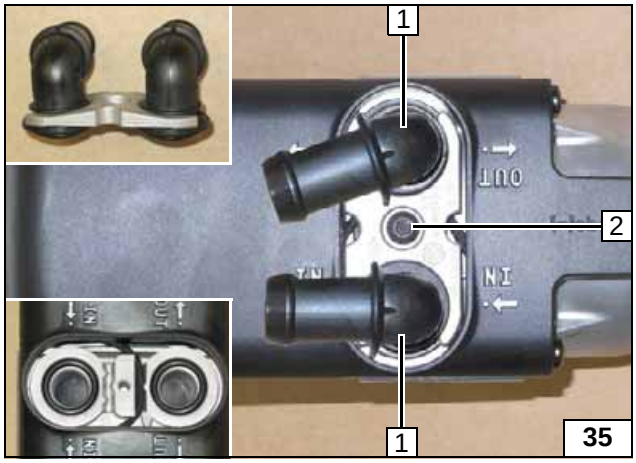
1 M6x20 bolt, washer

Inserting bolt



1 Flanged nut
2 Loosely mount angle bracket

Loosely installing angle bracket

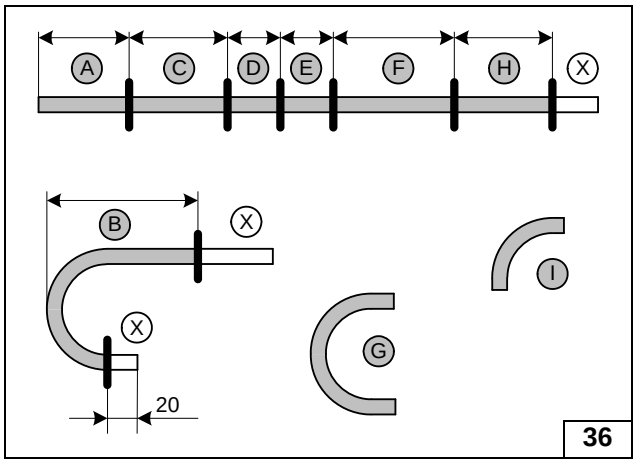


Preparing Heater

B-Max

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

Mounting water connection pieces

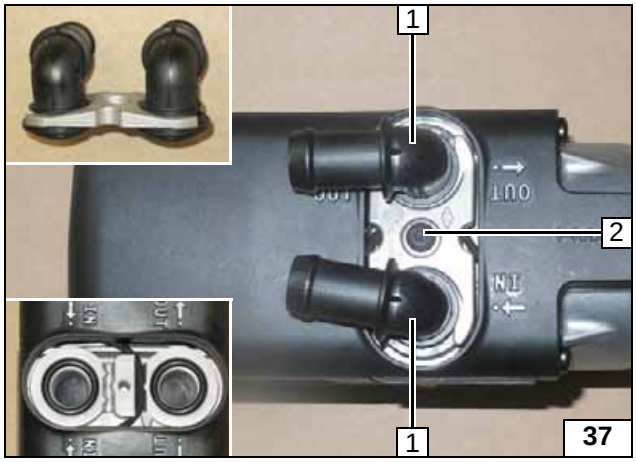


36

Discard section **X**.
Hose **B** = 180°, 18 mm dia. moulded hose, shorten
Hose **G** = 180°, 18 mm dia. moulded hose
Hose **I** = 90°, 18 mm dia. moulded hose

Preparing hoses

	1.0 P	1.4 P	1.6 D
A =	220	260	220
B =	330	330	330
C =	460	460	460
D =	60	60	60
E =	80	80	80
F =	610	610	610
H =	280	300	280

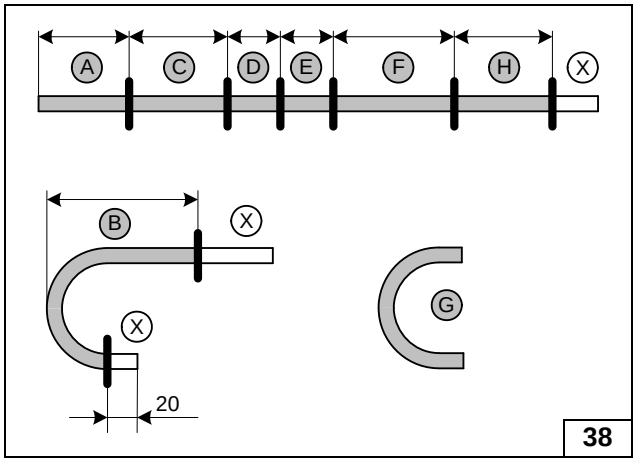


37

Transit / Tourneo Courier

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

Mounting water connection pieces



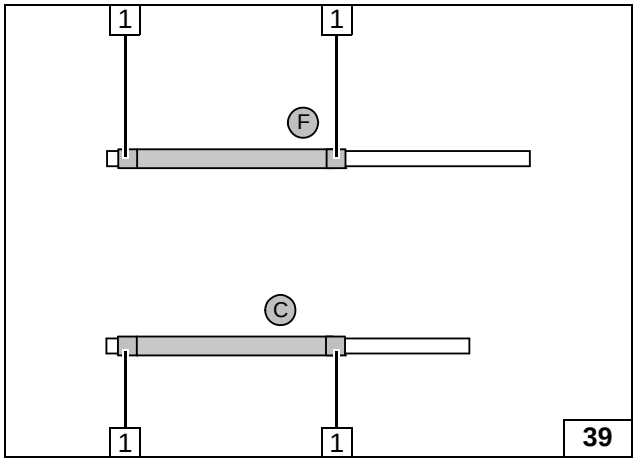
38

Discard section **X**.
Hose **B** = 180°, 18mm dia. moulded hose,
Hose **G** = 180°, 18mm dia. moulded hose

1.5 Duratorq and 1.6 Duratorq

A = 180
B = 370
C = 460
D = 60
E = 80
F = 610
H = 290

Preparing hoses



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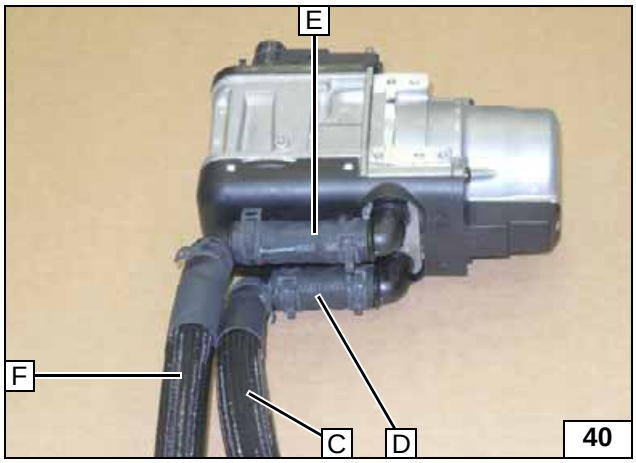
All vehicles

Push one 300mm long braided protection hose each onto hoses **C** and **F**. Cut heat shrink plastic tubing to length.

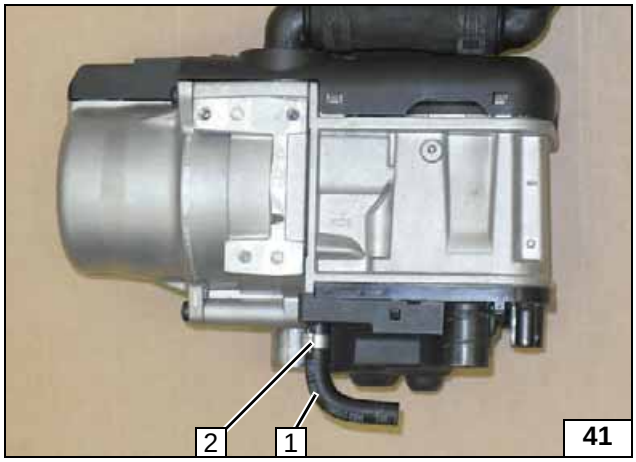
1 50 mm long heat shrink plastic tubing [4x]

Preparing hoses



All spring clips = 25 mm dia.

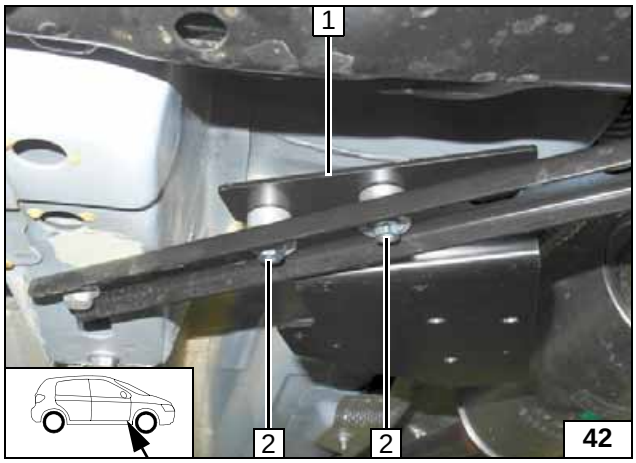
Installing hoses



1 90° moulded hose
2 10 mm dia. clamp

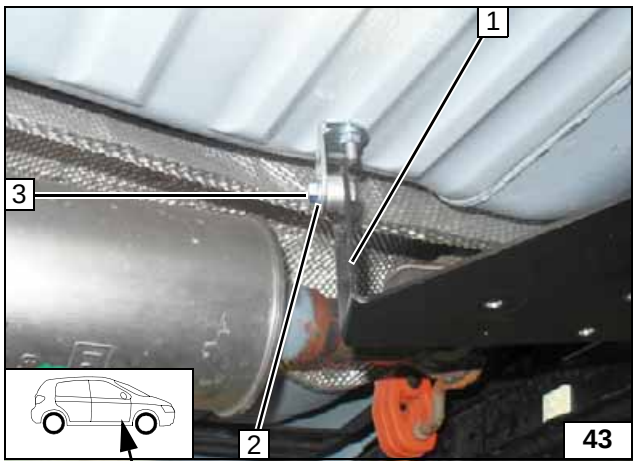
Installing moulded hose

Mounting Bracket



1 Bracket
2 M6x25 bolt, large diameter washer, existing hole, 10mm shim, large diameter washer, flanged nut [2x each]

Loosely installing bracket

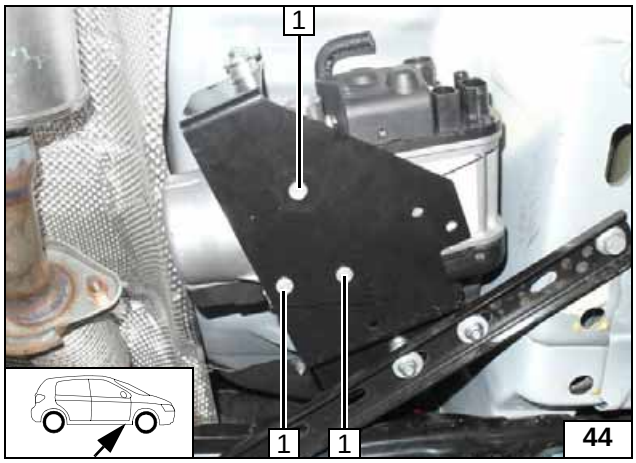


1 Bracket
2 Angle bracket
3 M6x20 bolt, 8mm shim, flanged nut

Align bracket **1** and tighten all loose screws.

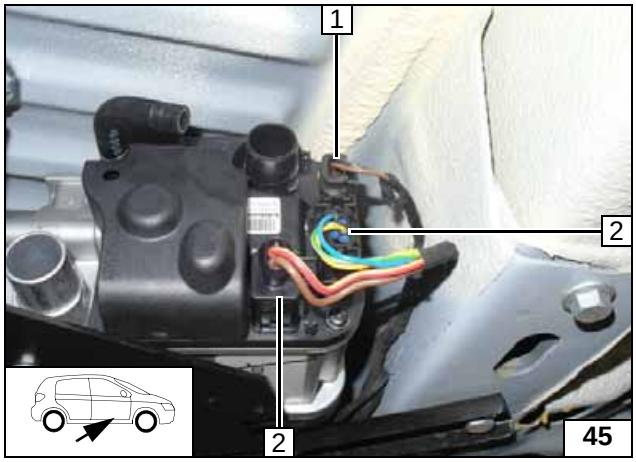
Mounting bracket

Installing Heater



1 5x13 self-tapping bolt [3x]

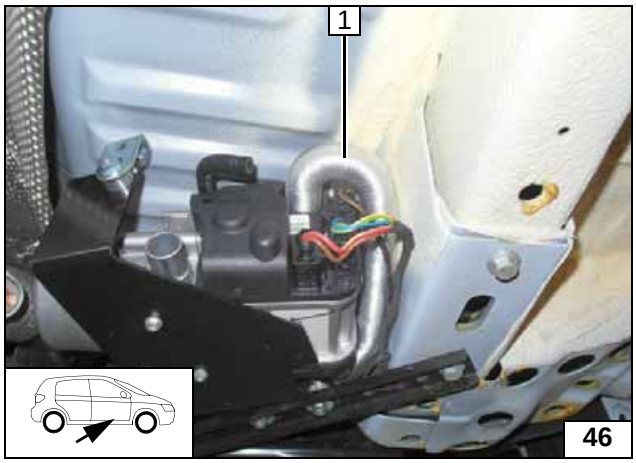
Mounting heater



1 Connector of circulating pump wiring harness
2 Connector of heater wiring harness [2x]

Mounting wiring harnesses

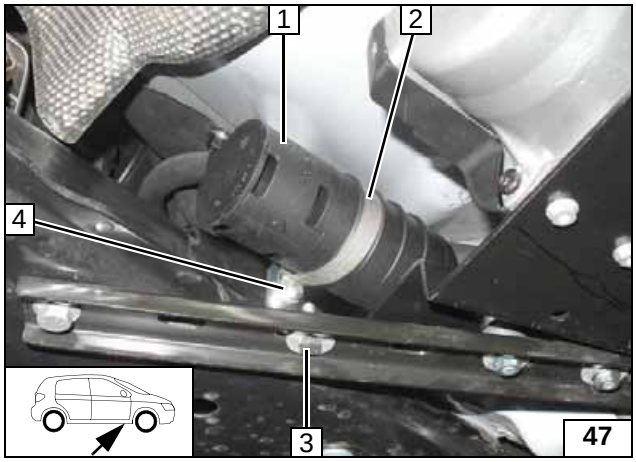
Combustion Air



1 Combustion air pipe

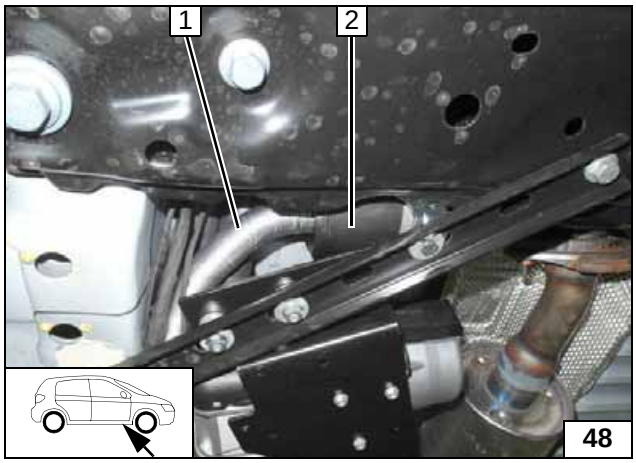
Mounting combustion air pipe

Install angle bracket on existing hole of cross member at position **3** .



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

Mounting silencer



1 Combustion air pipe
2 Silencer

Connecting combustion air pipe

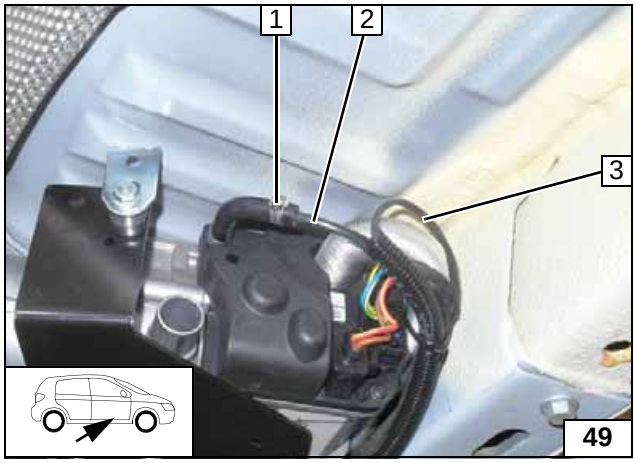
Fuel

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.

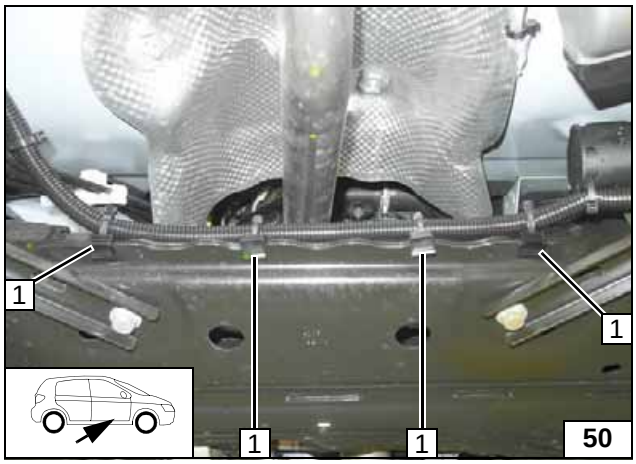
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Pull wiring harness of metering pump **3** and fuel line **2** into 10mm dia., 2100mm long corrugated tube.

1 10 mm dia. clamp

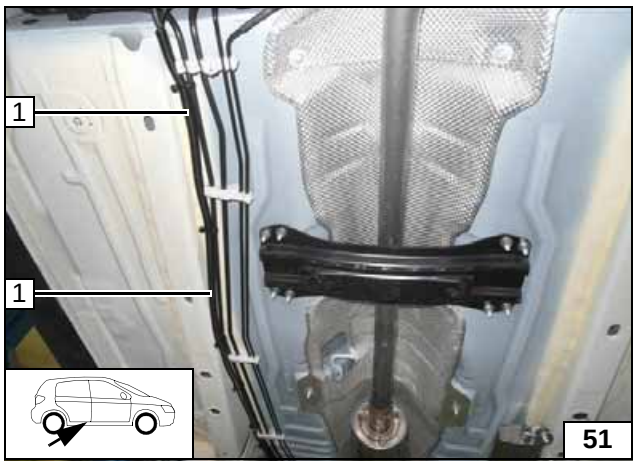
Connecting heater



Route wiring harness of metering pump and fuel line in 10mm dia. corrugated tube to the left side of the vehicle.

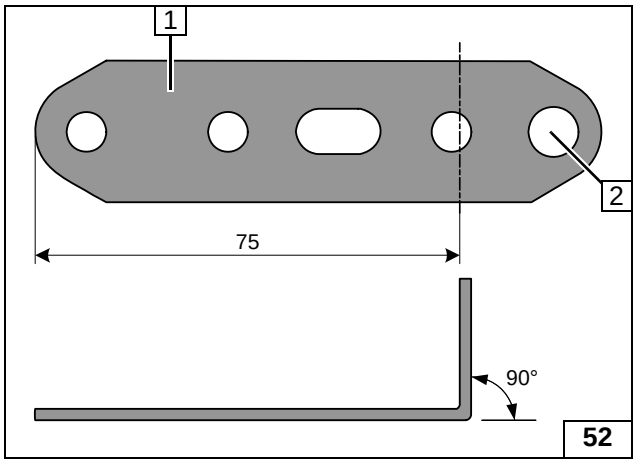
1 Clip-type cable tie [4x]

Routing lines



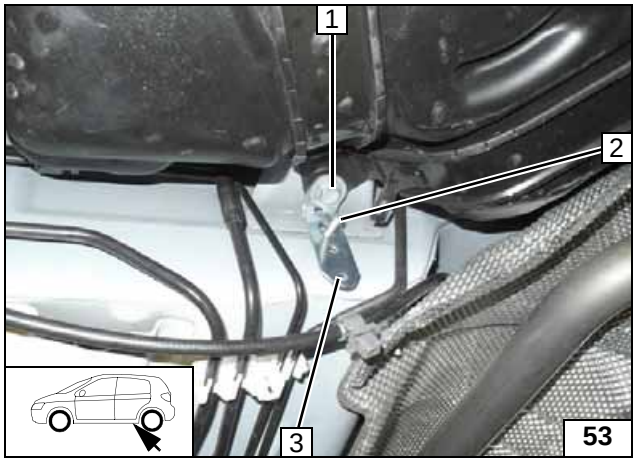
Route wiring harness of metering pump and fuel line in 10mm dia. corrugated tube **1** to the installation location of the metering pump along original vehicle fuel lines.

Routing lines



1 Perforated bracket
2 Drill out 8.5 mm dia. hole

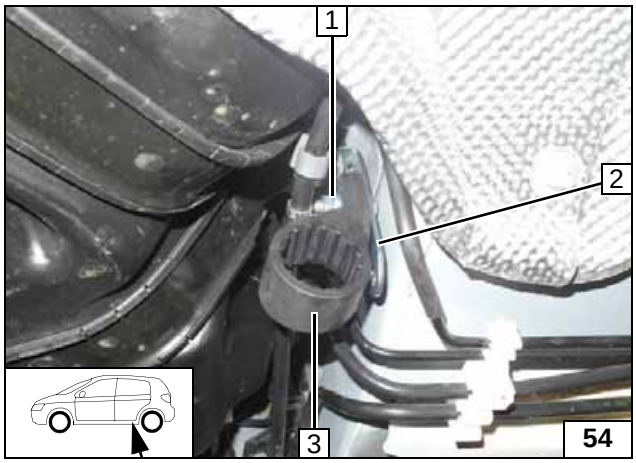
Angling down perforated bracket



Insert M6x25 bolt **2** into perforated bracket **3** prior to installation.

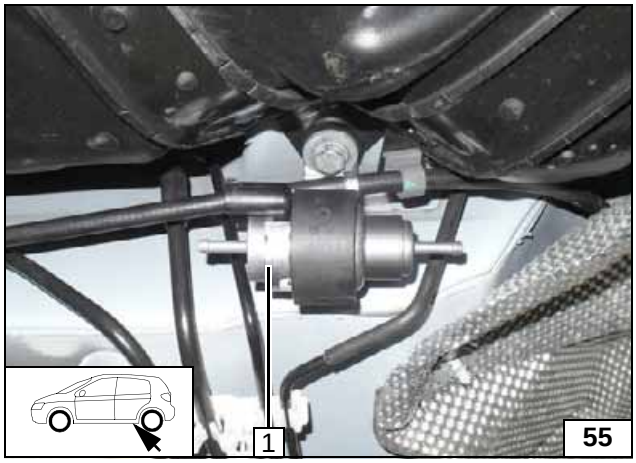
1 Original vehicle bolt

Mounting perforated bracket



1 Support angle bracket, M6 flanged nut
2 Perforated bracket
3 Mounting of metering pump

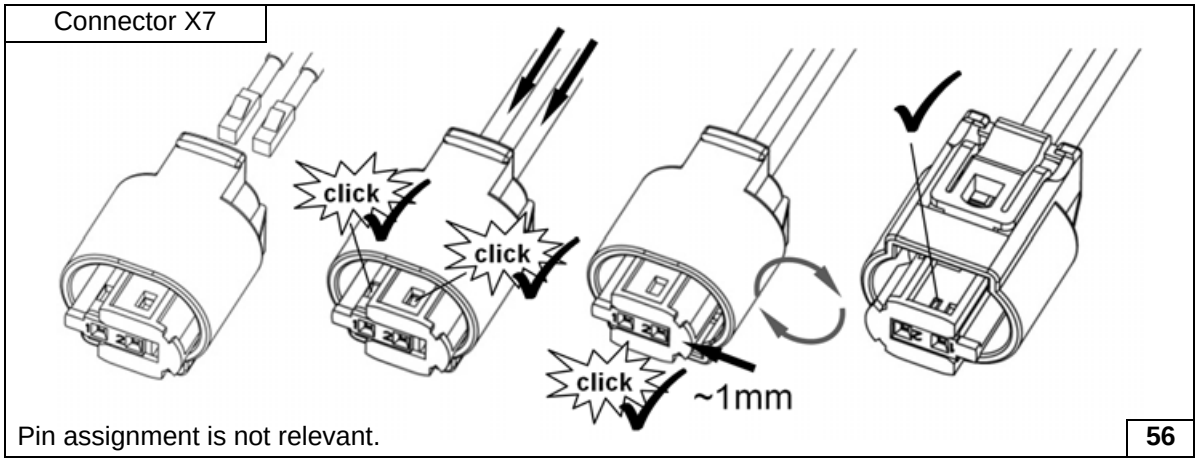
Installing mount



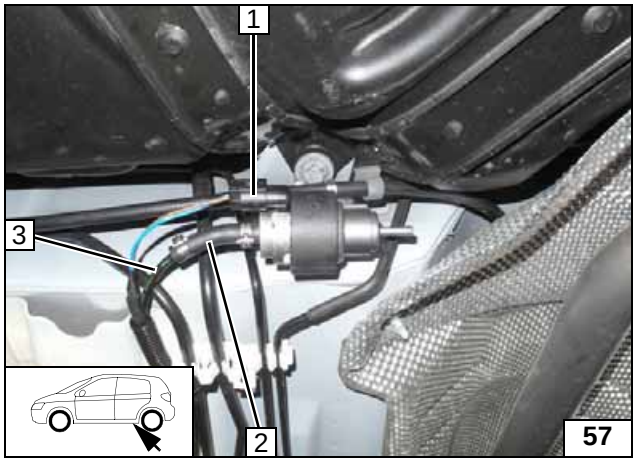
1 Metering pump

Inserting metering pump

Completing connector of metering pump

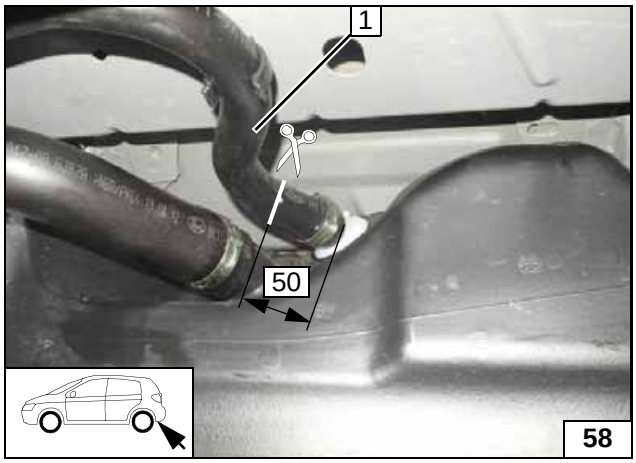


Connecting metering pump



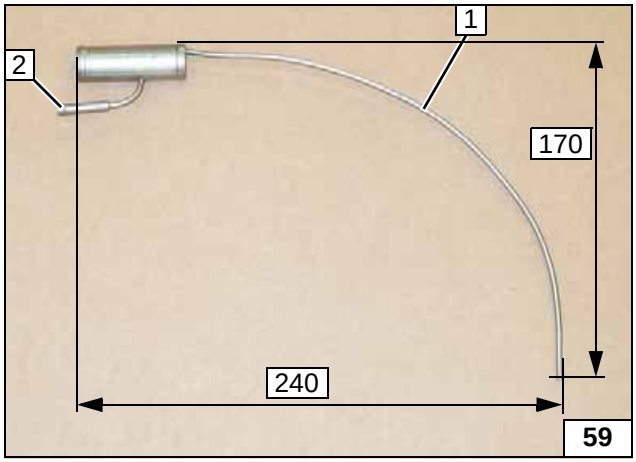
1 Wiring harness of metering pump, connector X7 mounted
2 Hose section, 10 mm dia. clamp [2x]
3 Fuel line of heater

Fuel extraction

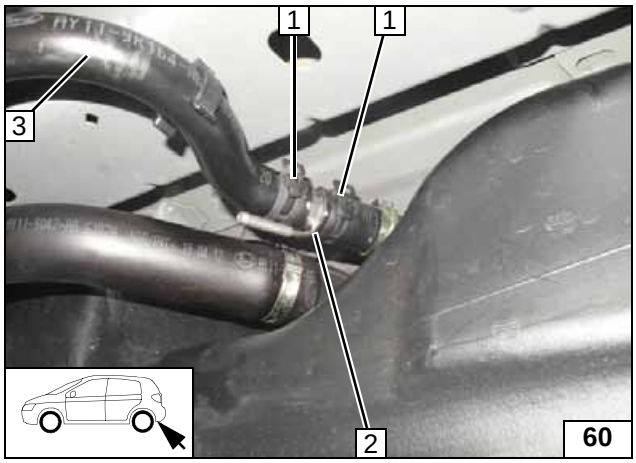


Separate fuel-tank vent line **1** approx. 50mm before fuel tank connection piece.

Preparing fuel standpipe



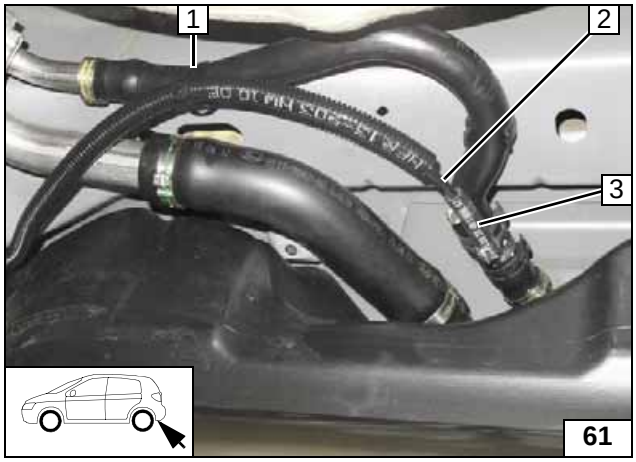
Shape and cut fuel standpipe **1** to length. Angle down connection piece of fuel standpipe **2** by about 90°.



Align standpipe of fuel standpipe with tank bottom.

1 25mm dia. clamp [2x]
2 Fuel standpipe
3 Fuel-tank vent line

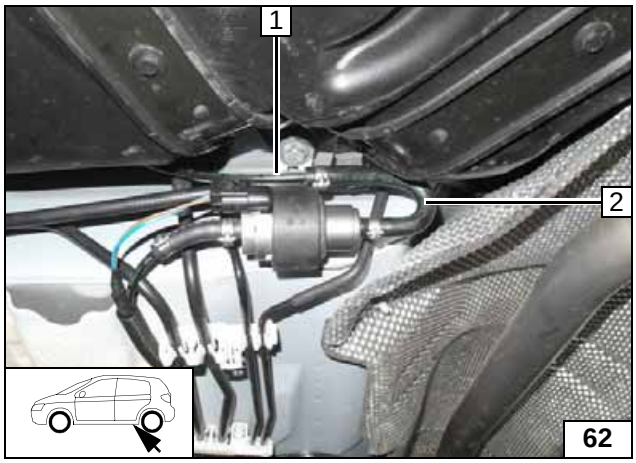
Installing fuel stand-pipe



Pull fuel line **2** into 10mm dia., 1130mm long corrugated tube and route to the metering pump over the fuel tank.

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

Installing fuel stand-pipe



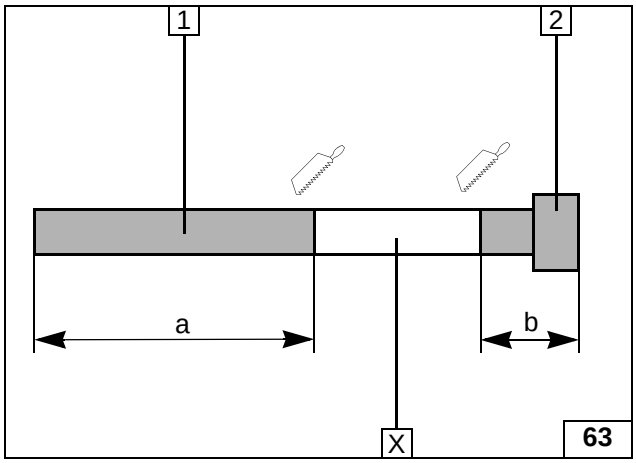
Check the position of the components; adjust if necessary. Check that they have freedom of movement.

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

Connecting metering pump

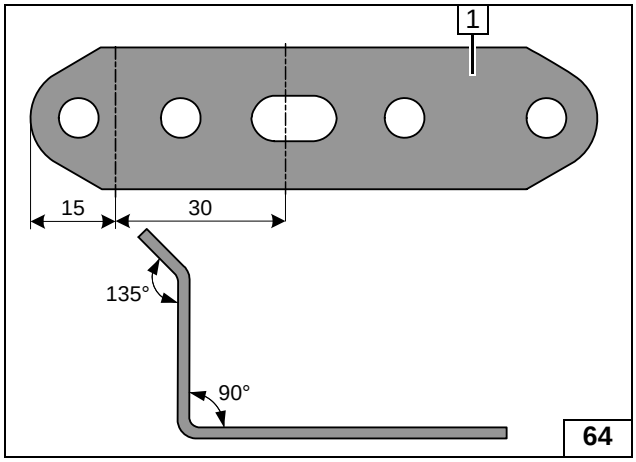
Exhaust Gas

Discard section **X**.



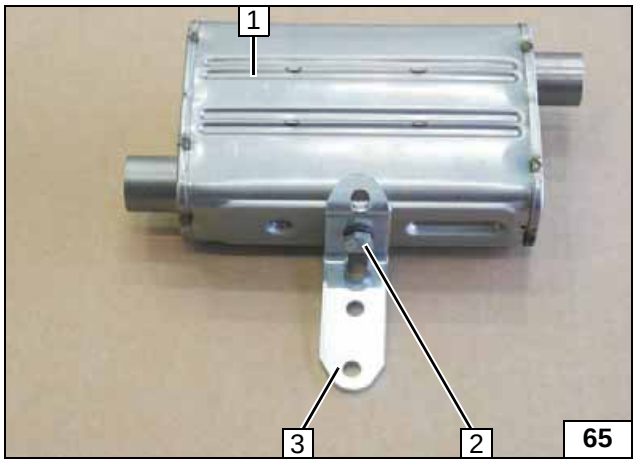
1 Exhaust pipe
a = 230
2 Exhaust end section
b = 70

Preparing exhaust pipe



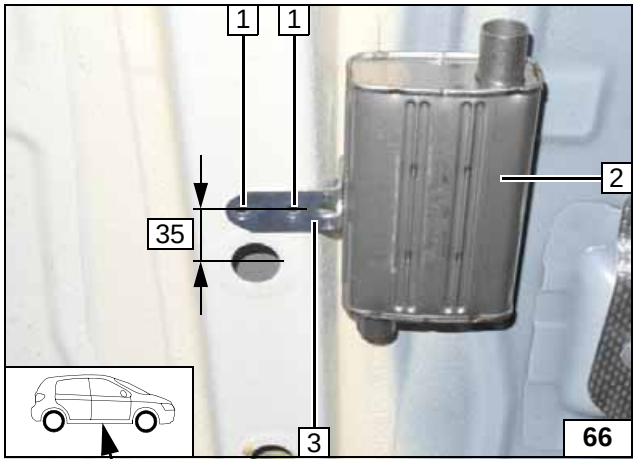
1 Perforated bracket

Angling down perforated bracket



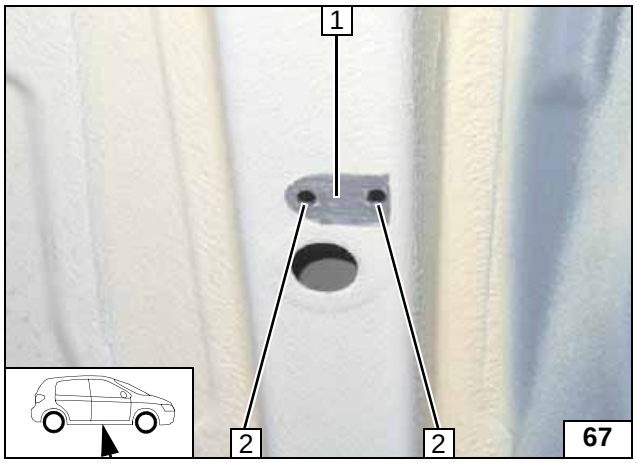
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Perforated bracket

Premounting silencer



1 Copy hole pattern [2x]
2 Silencer
3 Perforated bracket

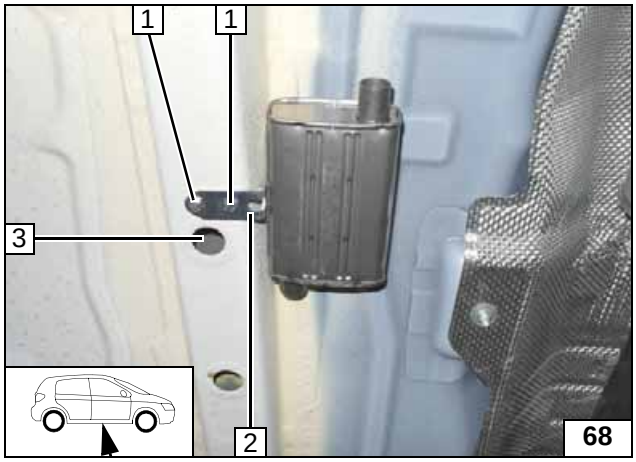
Copying hole pattern



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

2 7 mm dia. hole [2x]

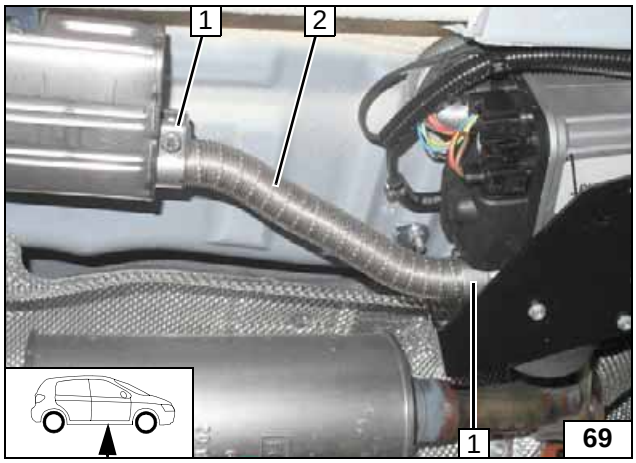
Holes in underbody



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

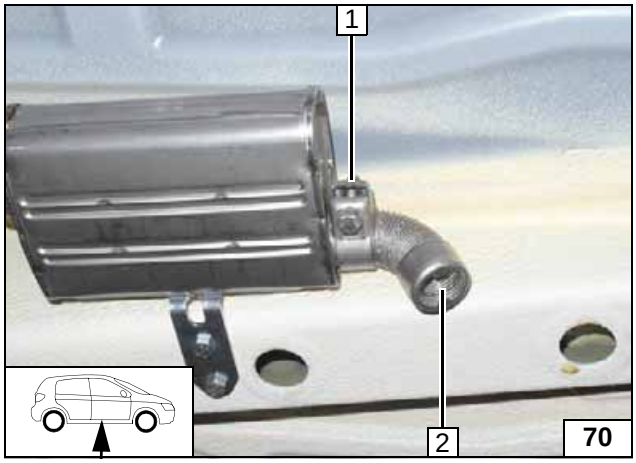
1 M6x20 bolt, flanged nut [2x each]
2 Perforated bracket

Mounting silencer



1 Hose clamp [2x]
2 Exhaust pipe

Mounting exhaust pipe



Ensure sufficient distance from neighbouring components, or correct.

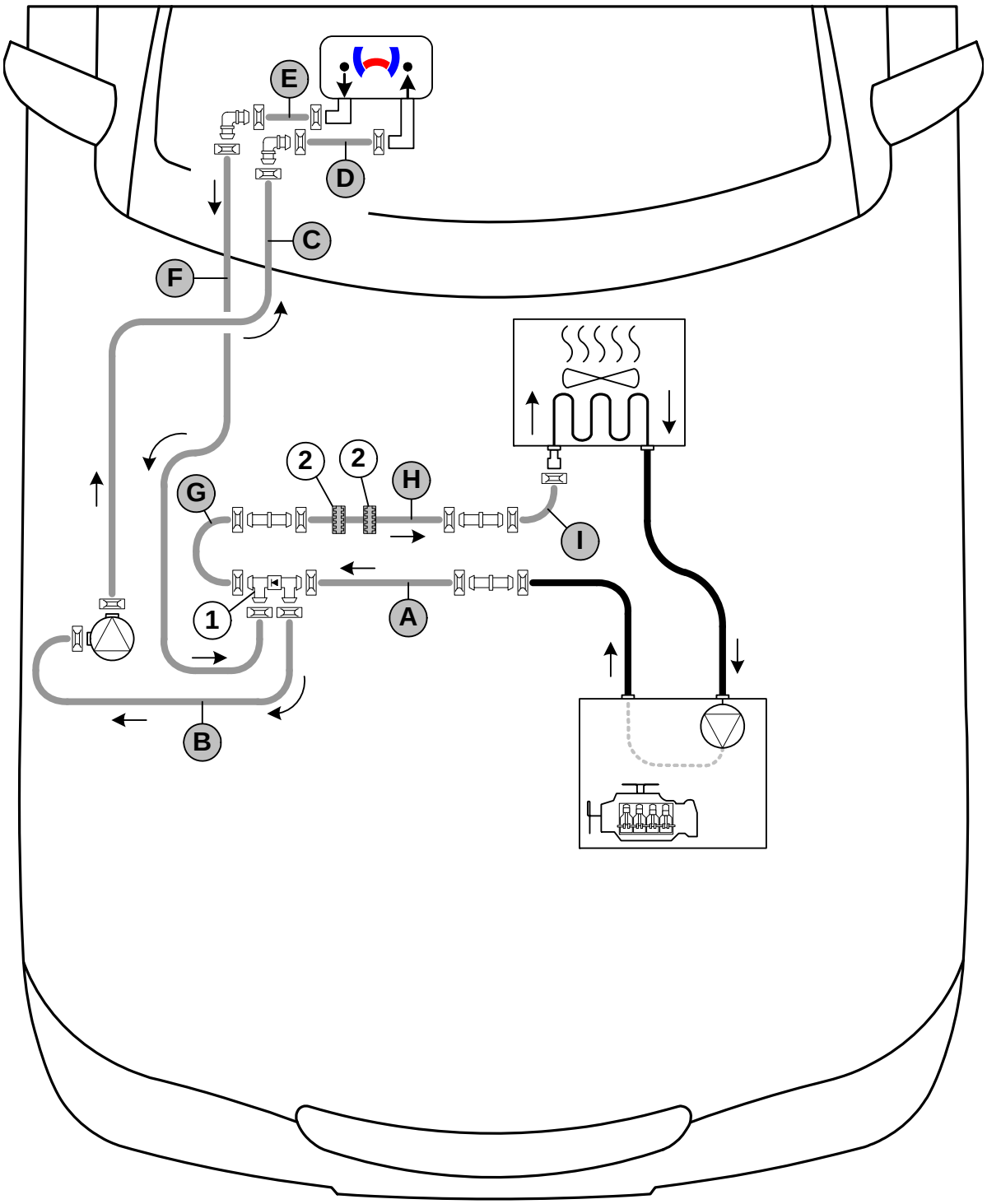
1 Hose clamp
2 Exhaust end section

Mounting exhaust end section

Coolant Circuit for 1.0 P and 1.6 D B-Max

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 an "inline" circuit and based on the following diagram:

Hose routing diagram

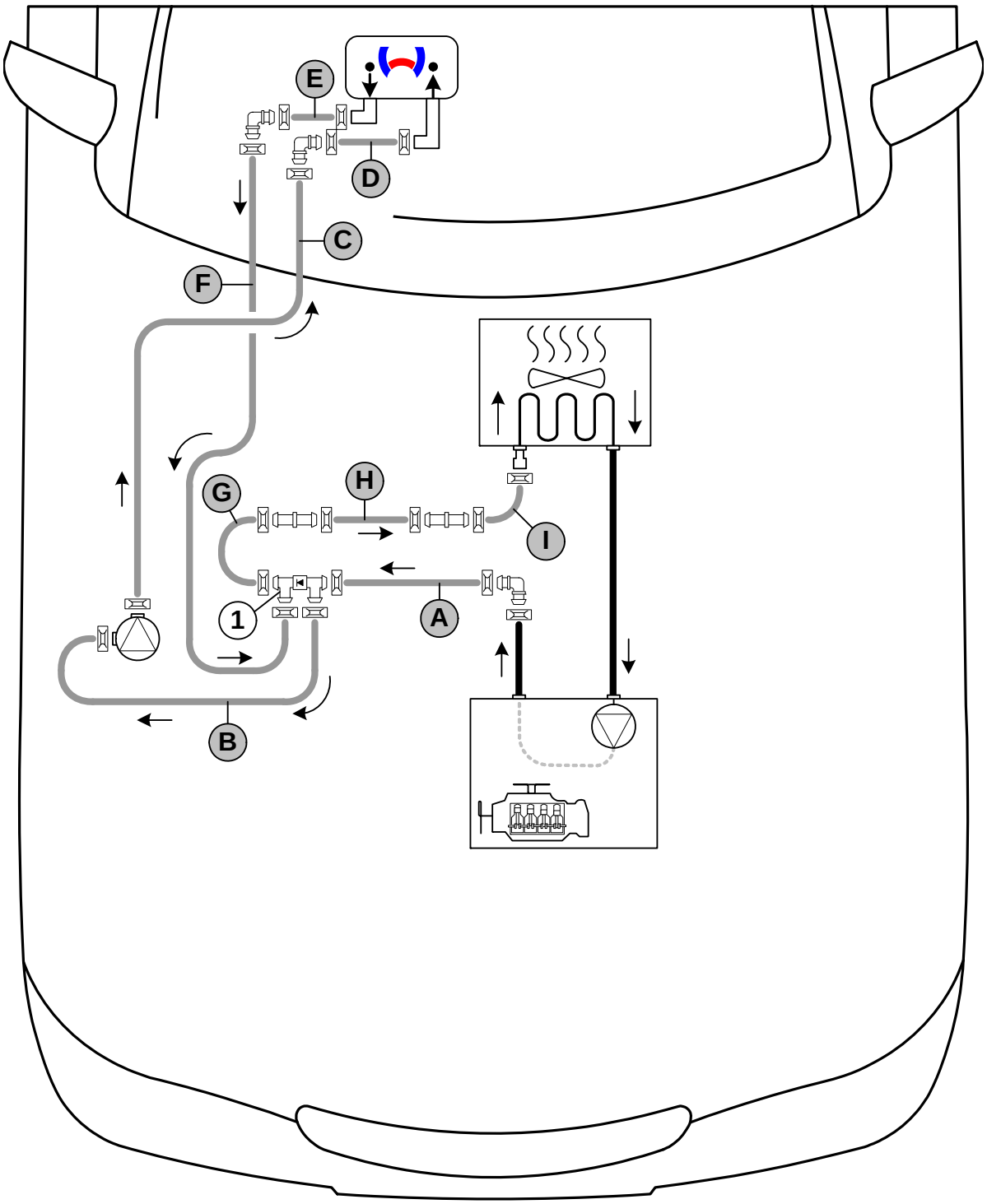


All spring clips = 25 mm dia. All connecting pipes and = 18x18 dia.
2 = Black (sw) rubber isolator **1** = Check valve.

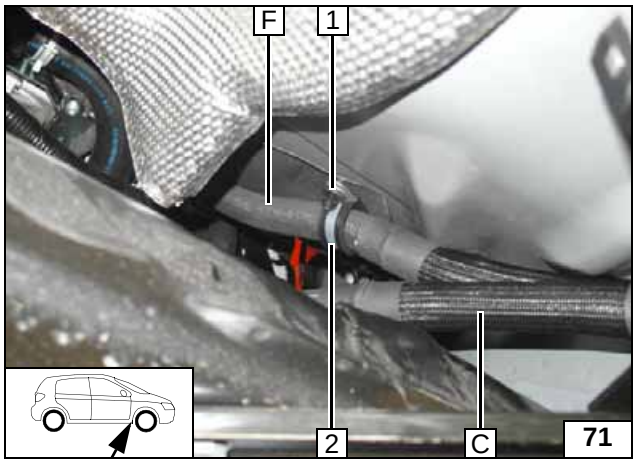
Coolant Circuit for 1.4 P B-Max

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 an "inline" circuit and based on the following diagram:

Hose routing diagram

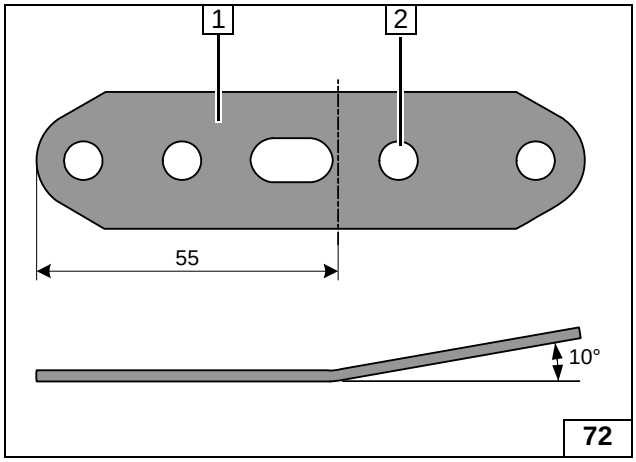


All spring clips = 25 mm dia. All connecting pipes and = 18x18 dia.
1 = Check valve .



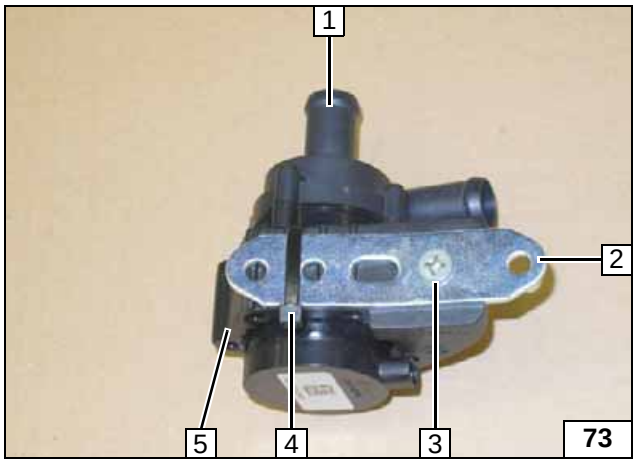
1 Original vehicle stud bolt, plastic nut
2 25 mm dia. rubber-coated p-clamp

Installing rubber-coated p-clamp



1 Perforated bracket
2 Countersink hole

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

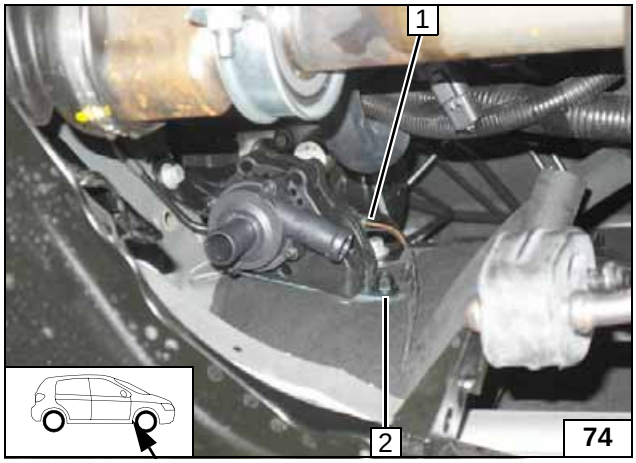
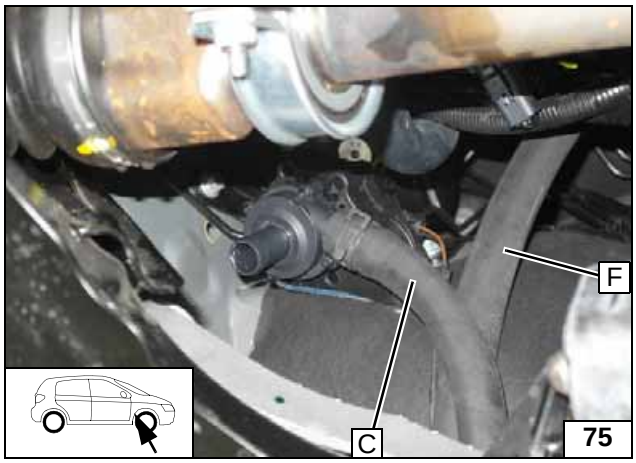


Figure shows diesel vehicle.

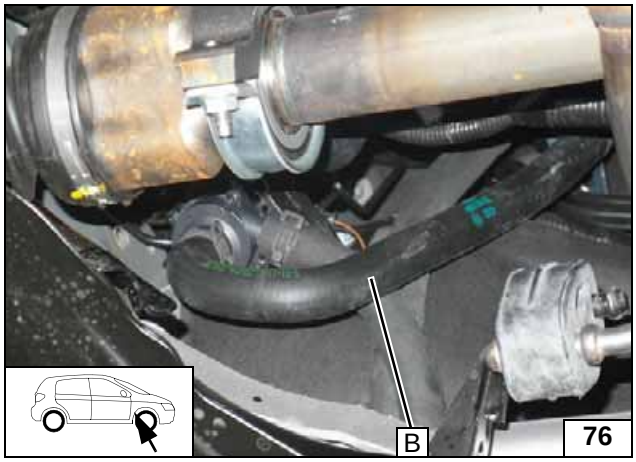
1 Mount wiring harness of circulating pump
2 Original vehicle stud bolt, perforated bracket, plastic nut

Mounting circulating pump



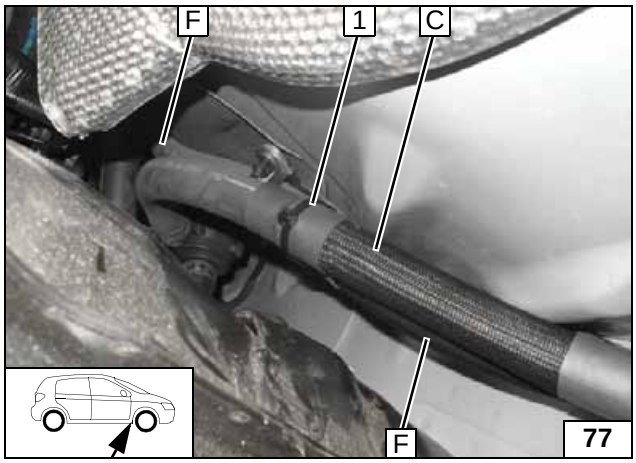
Route hose **F** upwards on the firewall.

Connecting circulating pump



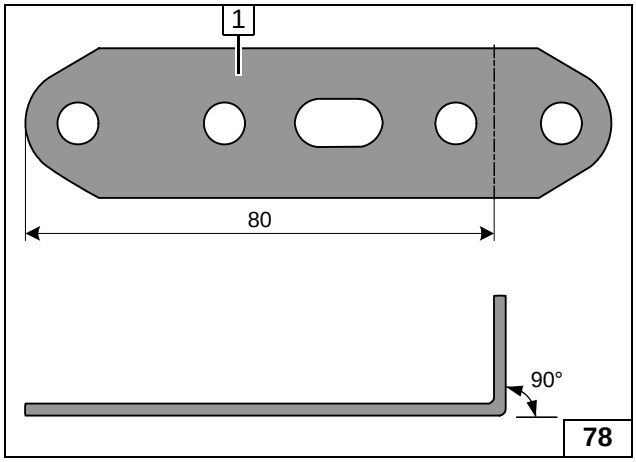
Route hose **B** upwards on the firewall.

Connecting circulating pump



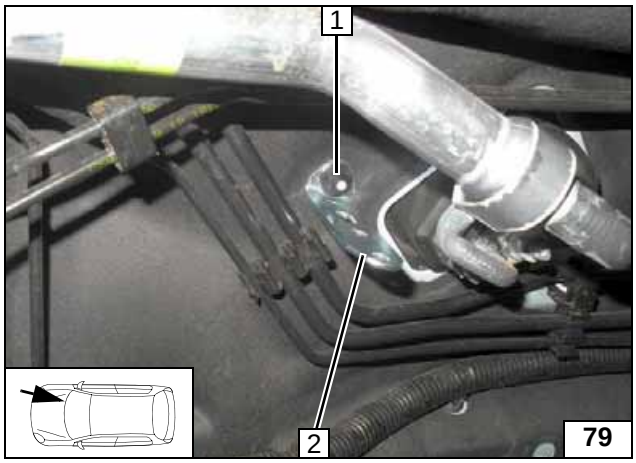
1 Cable tie

Underbody routing



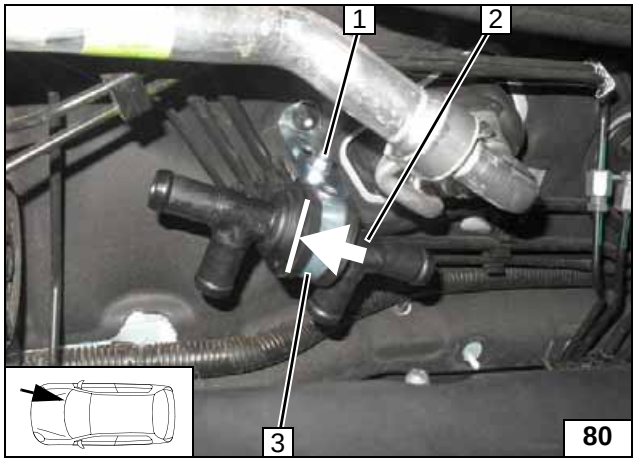
1 Perforated bracket

Angling down perforated bracket



1 Original vehicle stud bolt, plastic nut
2 Perforated bracket

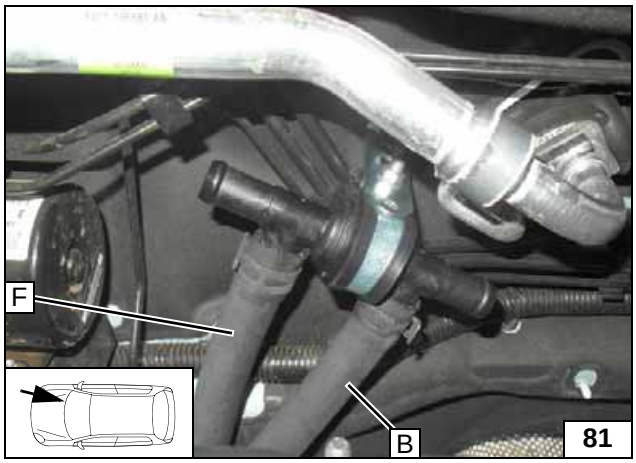
Mounting perforated bracket



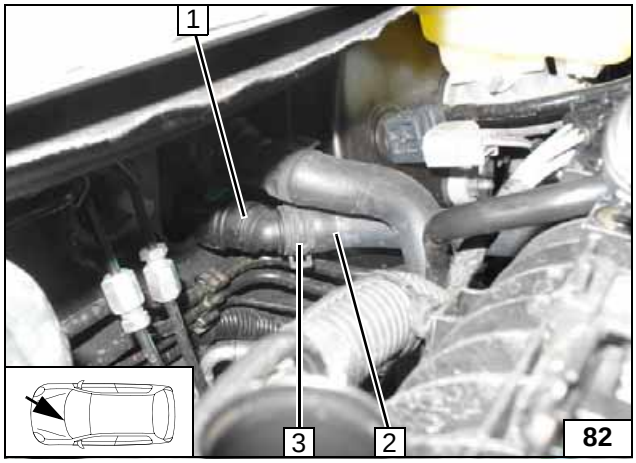
Mind flow direction of check valve **2**.

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

Mounting check valve



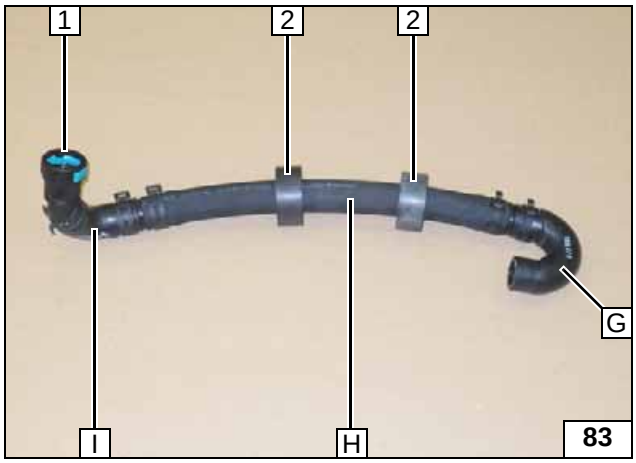
Connecting check valve



1.0 P

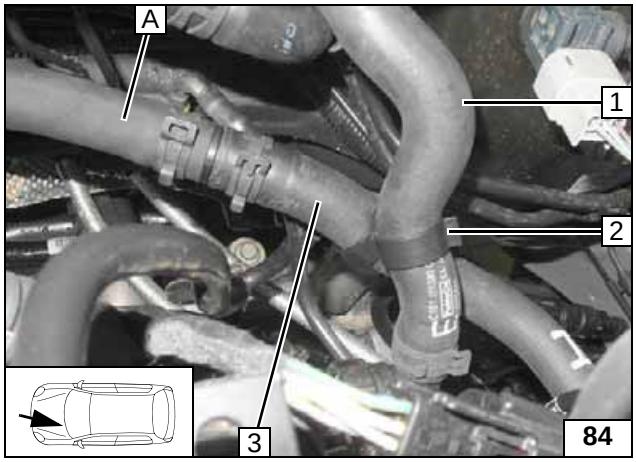
1 Remove coupling piece of heat exchanger inlet, will be re-used
2 Pull off hose on engine outlet / heat exchanger inlet
3 Discard spring clip

Cutting point



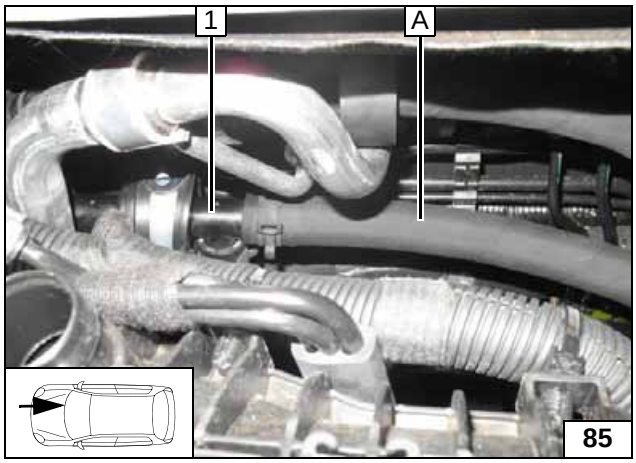
1 Coupling piece of heat exchanger inlet
2 Push on black (sw) rubber isolator [2x]

Premounting hoses



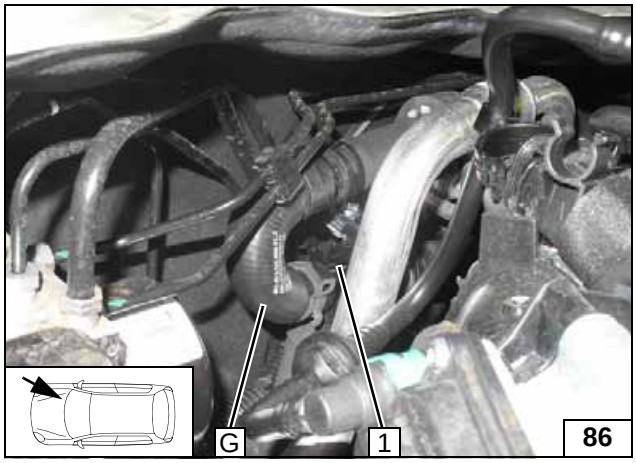
1 Hose on heat exchanger outlet
2 Insert hose bracket
3 Hose of engine outlet

Connecting engine outlet



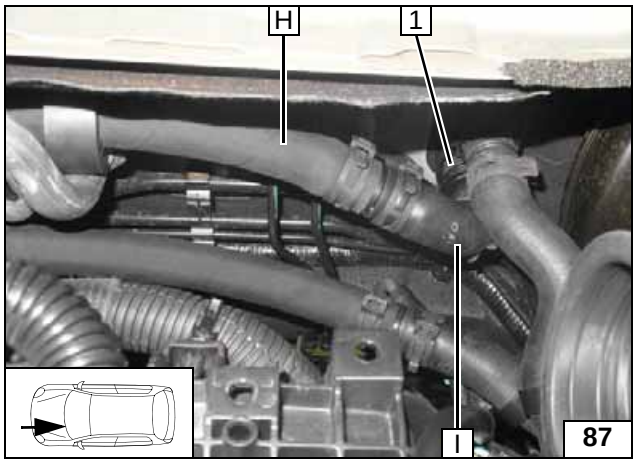
1 Check valve

Connecting check valve



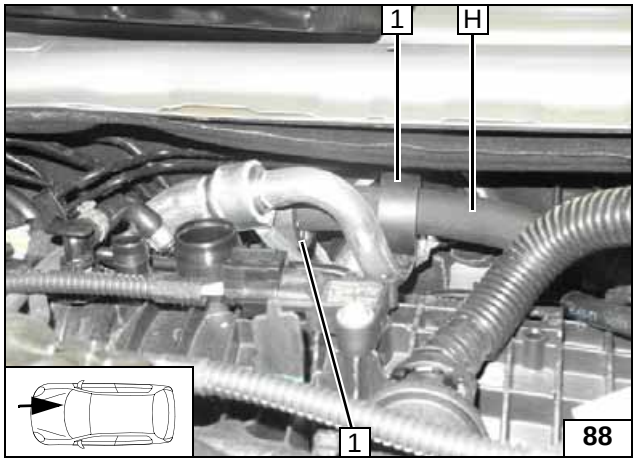
1 Check valve (hidden by A/C line)

Connecting check valve



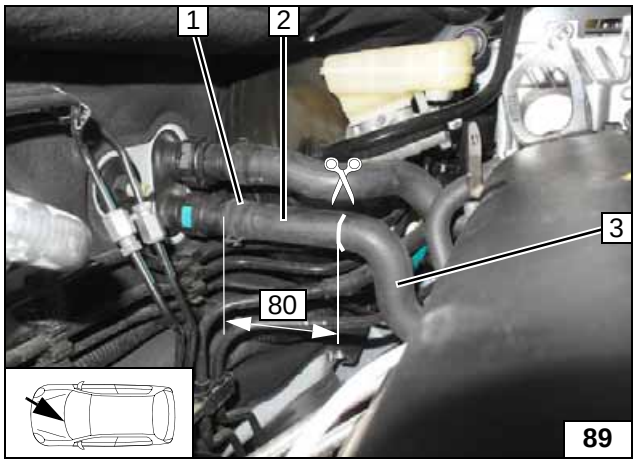
1 Coupling piece of heat exchanger inlet attached

Connecting heat exchanger inlet



Align black (sw) rubber isolator **1** [2x] with A/C lines. Ensure sufficient distance from neighbouring components, or correct.

Aligning hoses

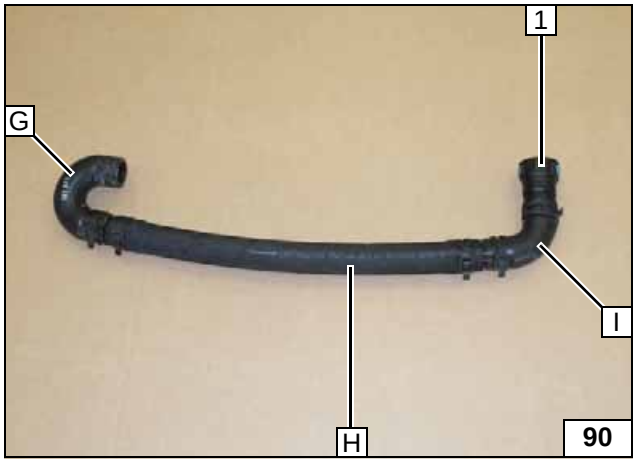


1.4 P

Pull off and separate hose on engine outlet / heat exchanger inlet.

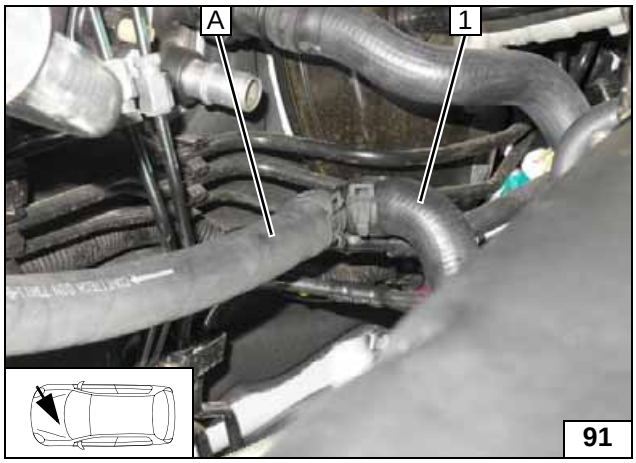
1 Discard spring clip
2 Discard hose section
3 Hose of engine outlet

Cutting point



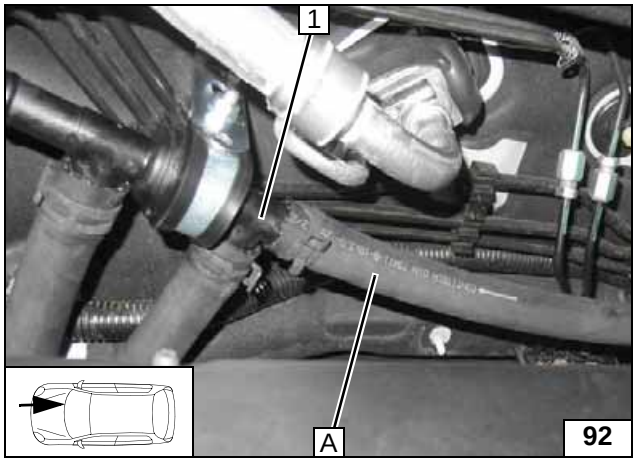
1 Coupling piece of heat exchanger inlet

Premounting hoses



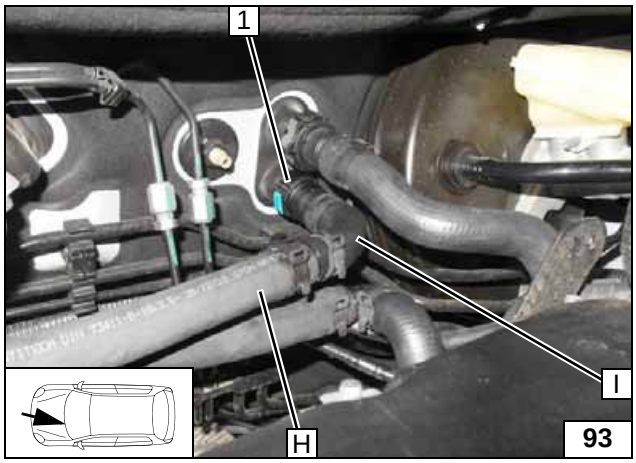
1 Hose of engine outlet

Connecting engine outlet



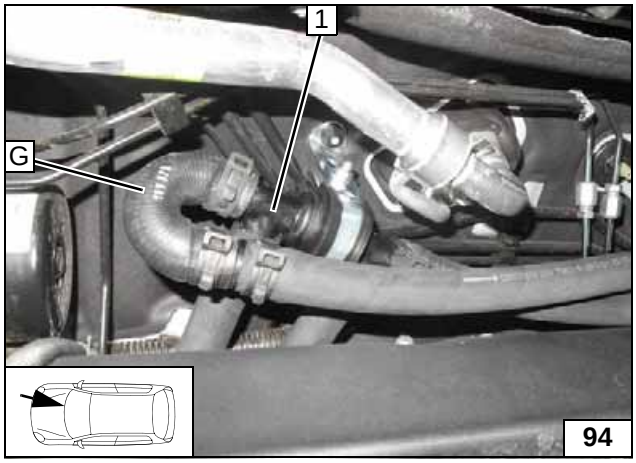
1 Check valve

Connecting check valve



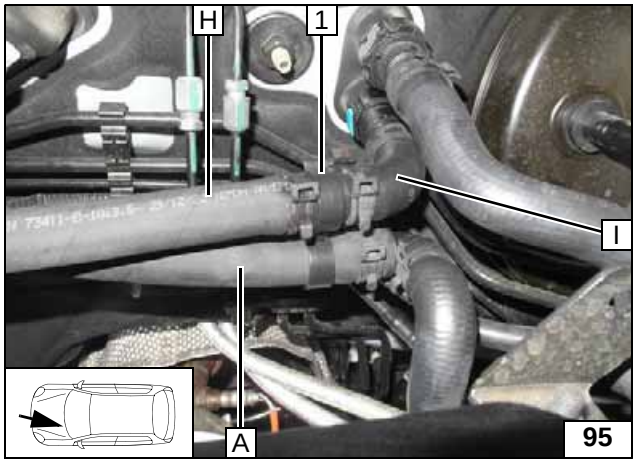
1 Coupling piece of heat exchanger inlet attached

Connecting heat exchanger inlet



1 Check valve

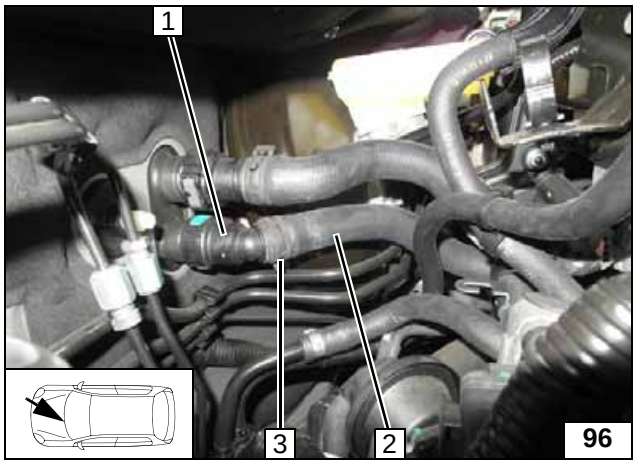
Connecting check valve



Ensure sufficient distance from neighbouring components, or correct.

1 Insert hose bracket

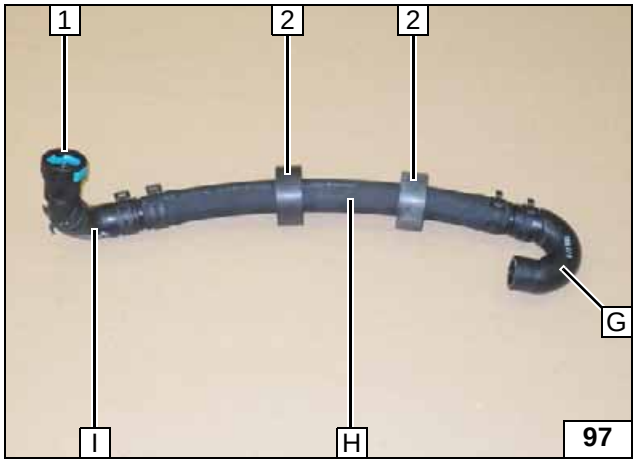
Aligning hoses



1.6 D

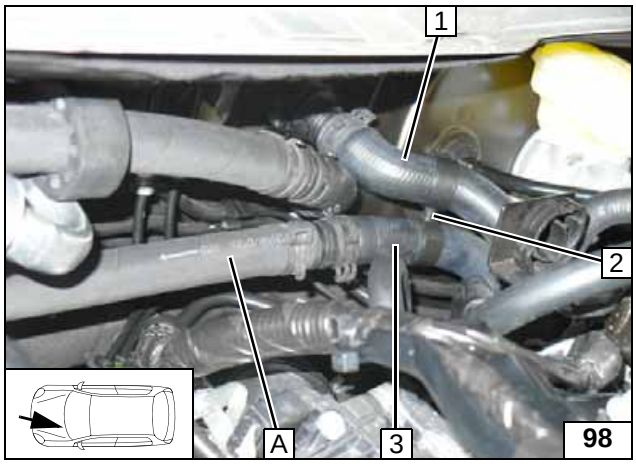
1 Remove coupling piece of heat exchanger inlet, will be re-used
2 Pull off hose on engine outlet / heat exchanger inlet
3 Discard spring clip

Cutting point



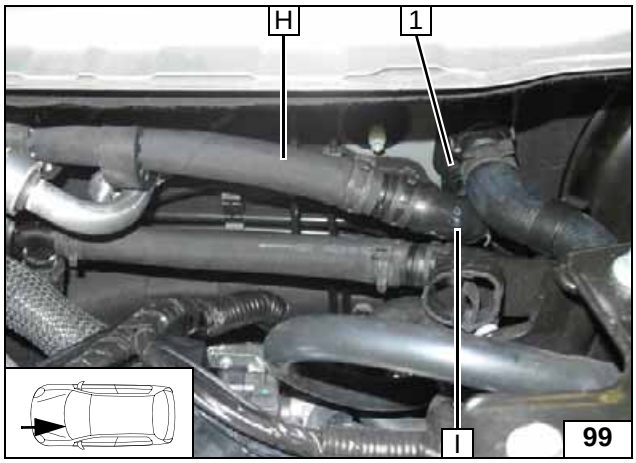
1 Coupling piece of heat exchanger inlet
2 Push on black (sw) rubber isolator [2x]

Premounting hoses



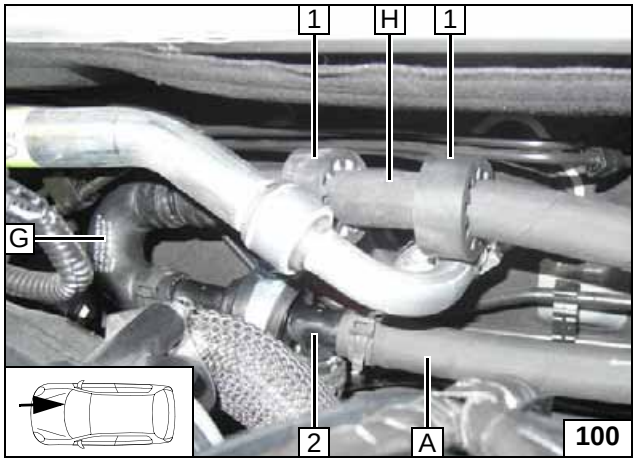
1 Hose on heat exchanger outlet
2 Insert hose bracket
3 Hose of engine outlet

Connecting engine outlet



1 Coupling piece of heat exchanger inlet attached

Connecting heat exchanger inlet



Align black (sw) rubber isolator **1** [2x] with A/C lines. Align hoses. Ensure sufficient distance from neighbouring components, or correct.

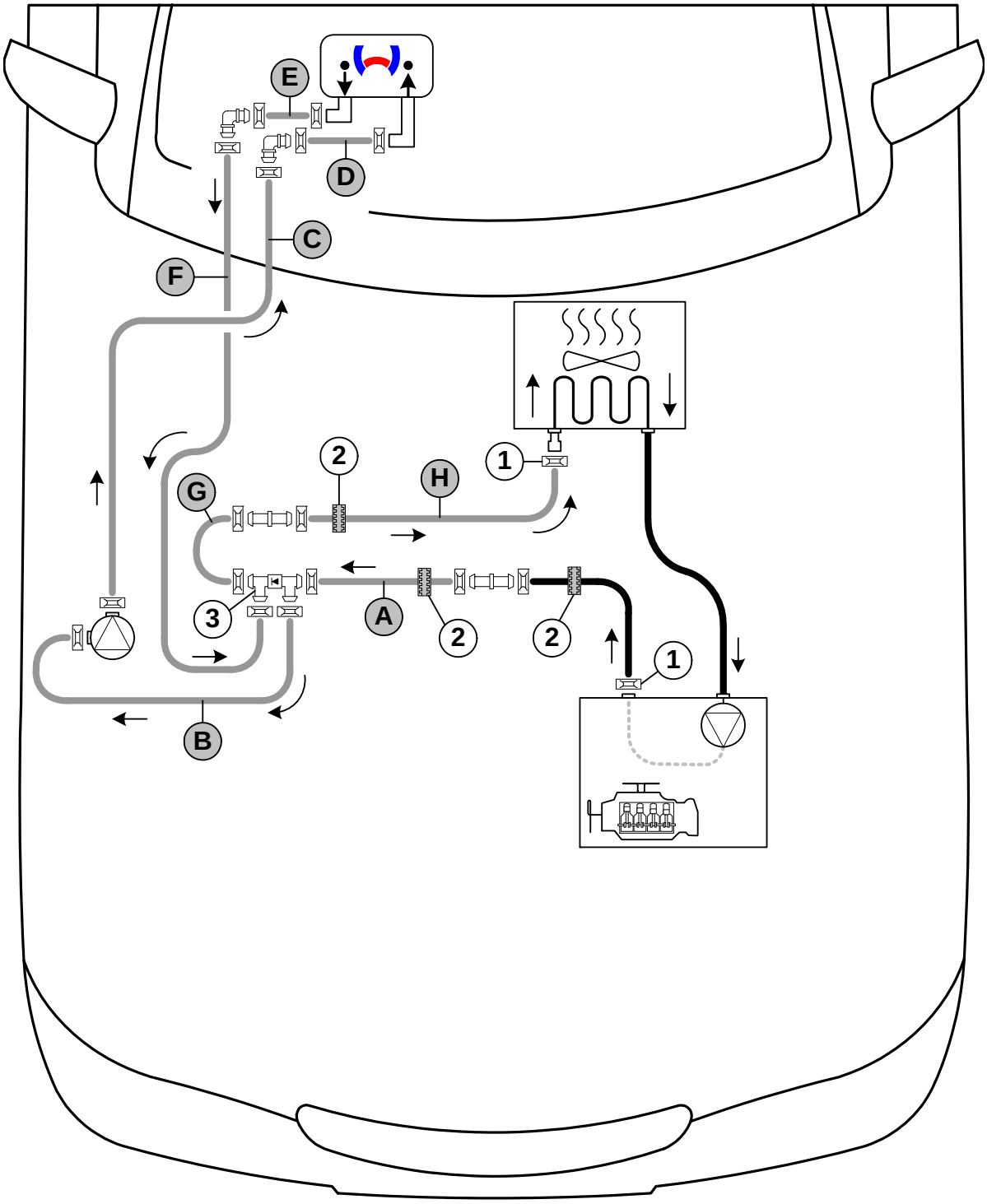
2 Check valve

Connecting check valve

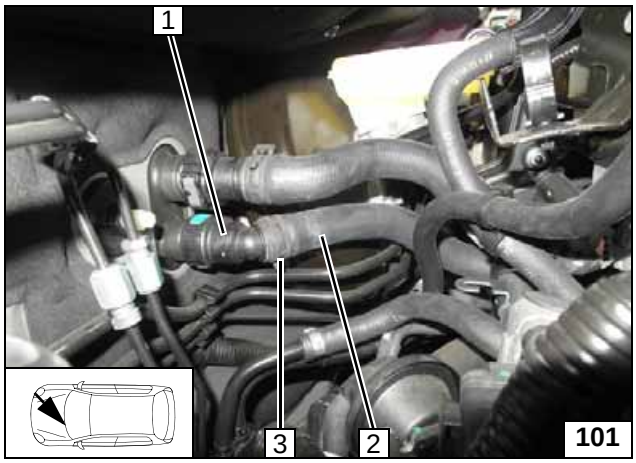
Coolant Circuit for 1.5/1.6D Transit/Tourneo Courier

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 an "inline" circuit and based on the following diagram:

Hose routing diagram

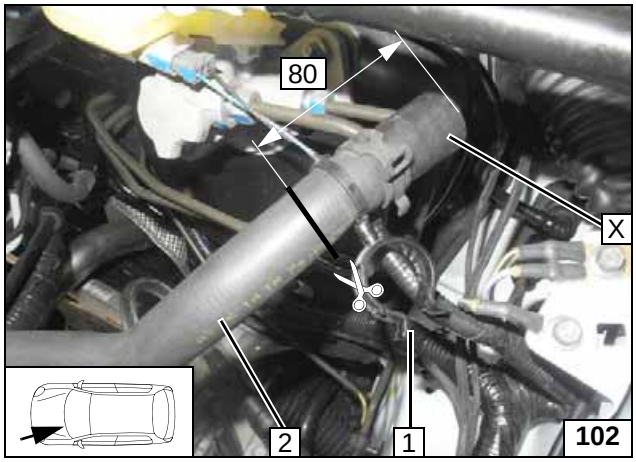


All spring clips = 25 mm dia. All connecting pipes and = 18x18 dia.
2 = Black (sw) rubber isolator **1** = Check valve.



1 Remove coupling piece of heat exchanger inlet, will be re-used
2 Pull off hose section on engine outlet / heat exchanger inlet
3 Spring clip will be reused.

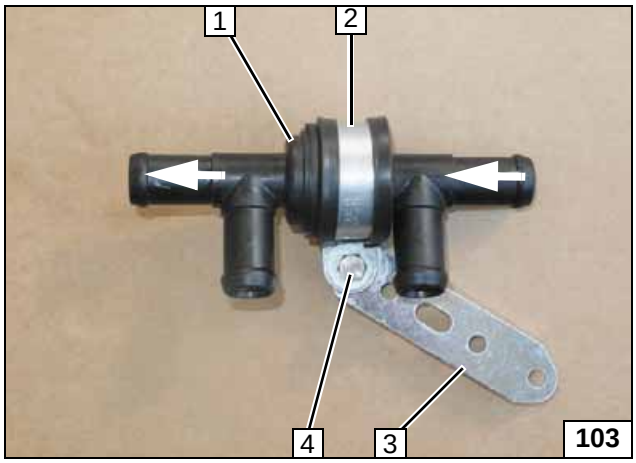
Cutting point



1 Remove and discard hose bracket
2 Remove hose of engine outlet (the spring clip on the engine outlet connection piece will be reused)

Discard section **X**.

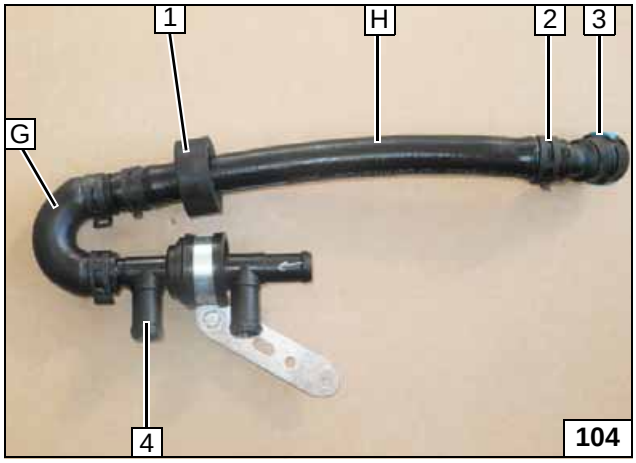
Cutting point



Mind flow direction of check valve **1**.

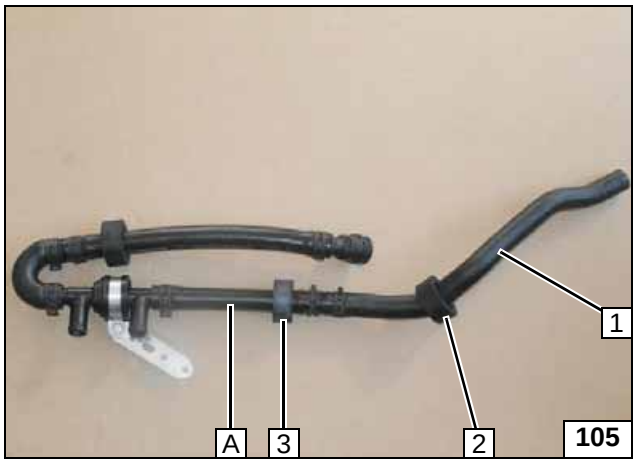
2 35 mm dia. rubber-coated p-clamp
3 Perforated bracket
4 M6x20 bolt, large diameter washer, flanged nut

Premounting check valve



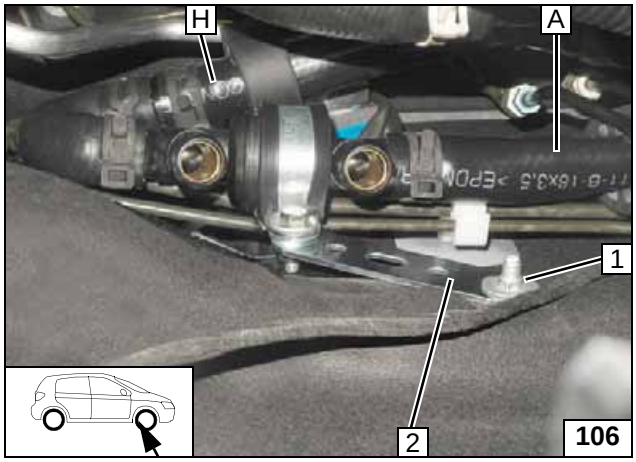
1 Slide black (sw) rubber isolator onto hose **H**
2 Original vehicle spring clip
3 Coupling piece of heat exchanger inlet
4 Check valve

Premounting hoses G and H



1 Hose of engine outlet
2 Slide black (sw) rubber isolator onto hose of engine outlet
3 Slide black (sw) rubber isolator onto hose **A**

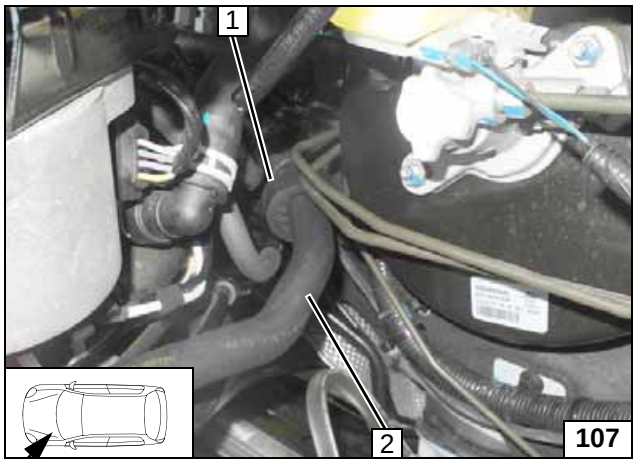
Installing hose of engine outlet and hose A



During the installation, route hose **A** in the direction of the engine outlet and hose **H** in the direction of the heat exchanger inlet!

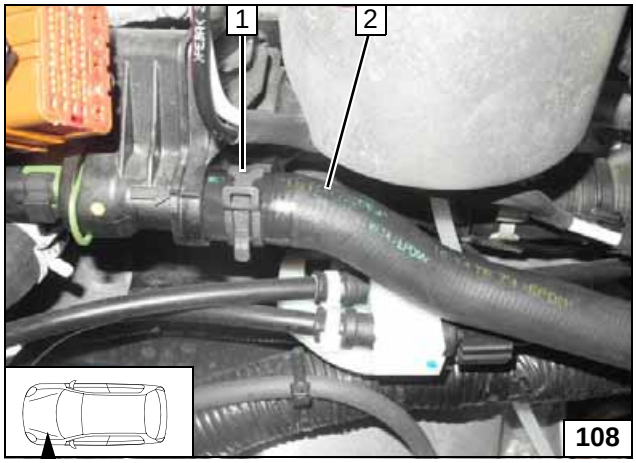
1 Plate nut on original vehicle stud bolt
2 Perforated bracket

Mounting check valve



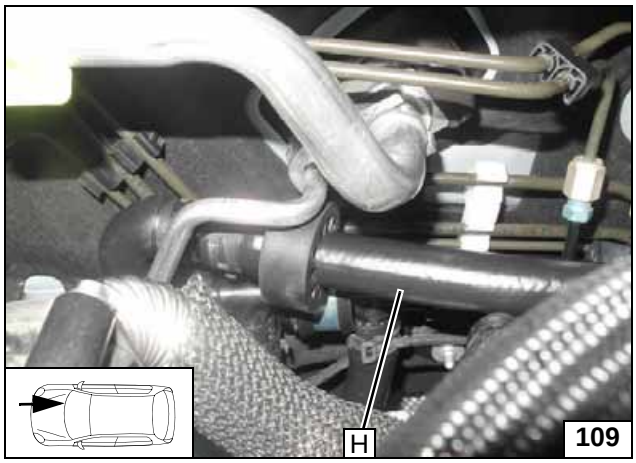
1 Align black (sw) rubber isolator with original vehicle brake line
2 Hose of engine outlet

Routing hose of engine outlet

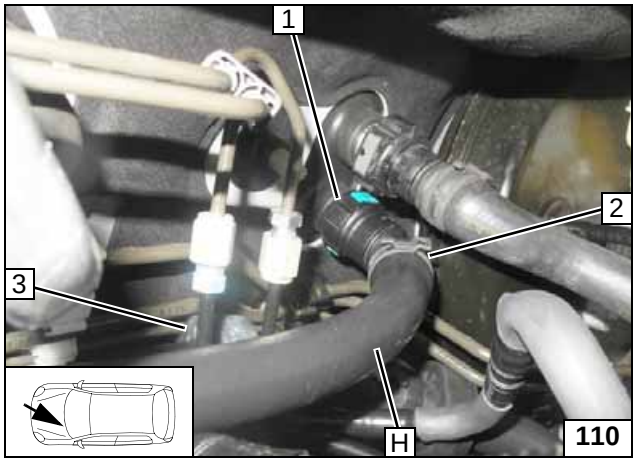


1 Original vehicle spring clip
2 Hose of engine outlet

Connecting engine outlet

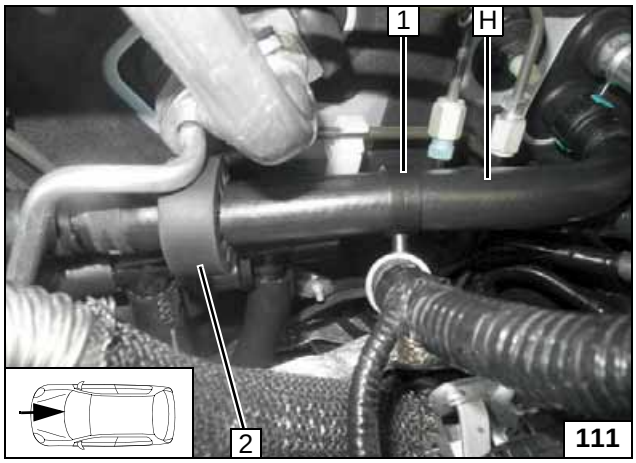


Routing hose H



1 Coupling piece of heat exchanger inlet attached
2 Original vehicle spring clip
3 Align black (sw) rubber isolator of hose **A** with original vehicle lines

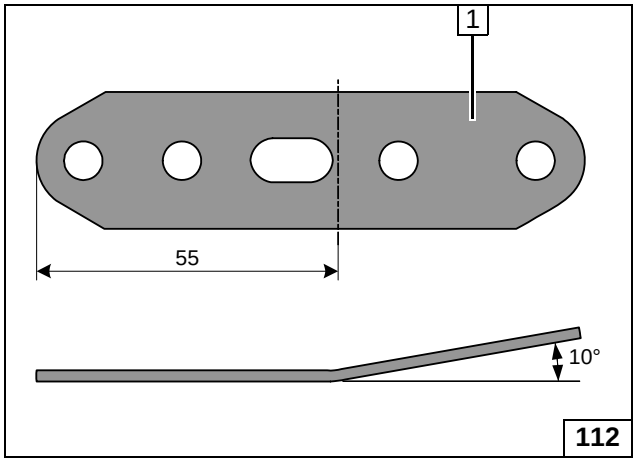
Connecting heat exchanger inlet



Align hoses. Ensure sufficient distance from neighbouring components, or correct.

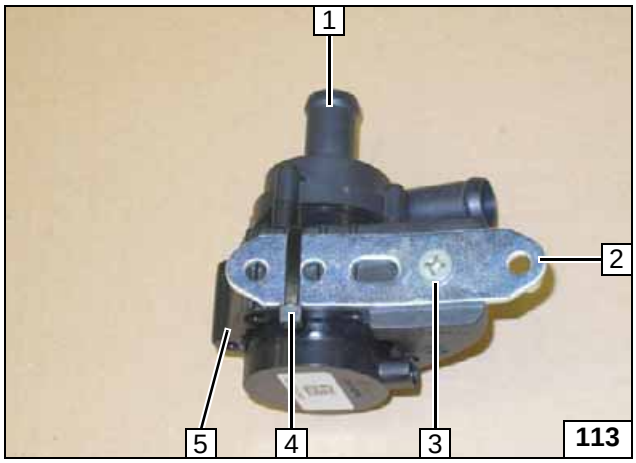
1 Hose bracket between hose **H** and original vehicle wiring harness
2 Align black (sw) rubber isolator **1** with original vehicle A/C line!

Inserting hose bracket



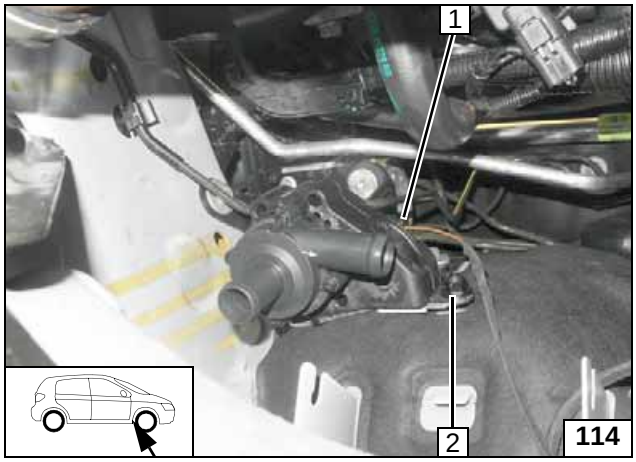
1 Perforated bracket

Angling down perforated bracket



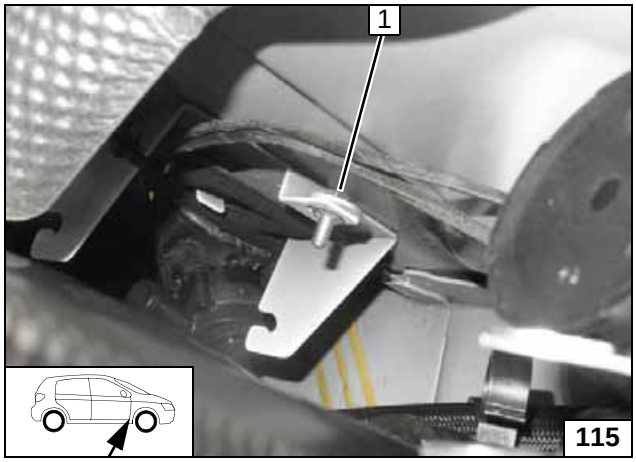
1 Circulating pump
2 Perforated bracket
3 M6x25 countersunk head screw, flanged nut
4 Cable tie
5 Circulating pump mounting

Premounting circulating pump



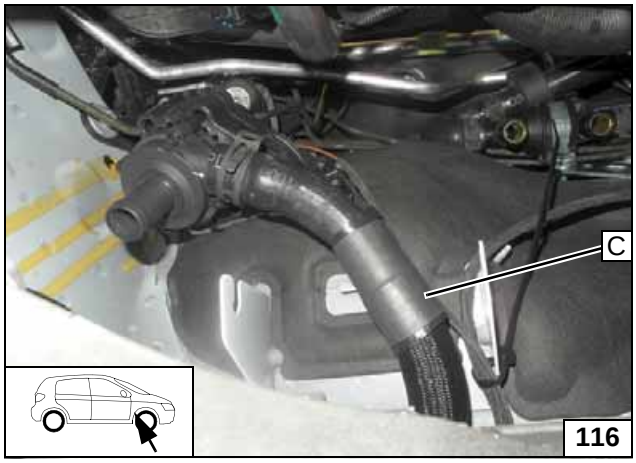
1 Connector of circulating pump wiring harness
2 Original vehicle stud bolt, perforated bracket, plastic nut

Mounting circulating pump

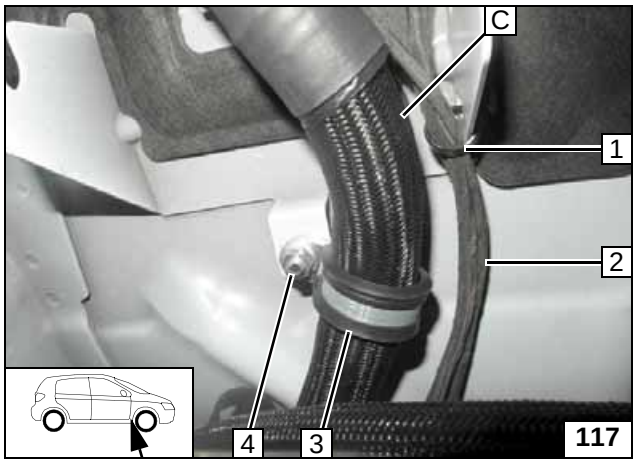


1 M6x20 bolt, large diameter washer, pin lock on existing hole

Installing bolt

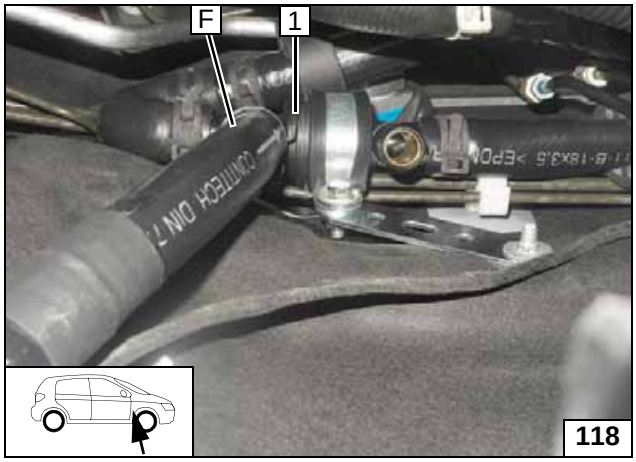


Connecting circulating pump



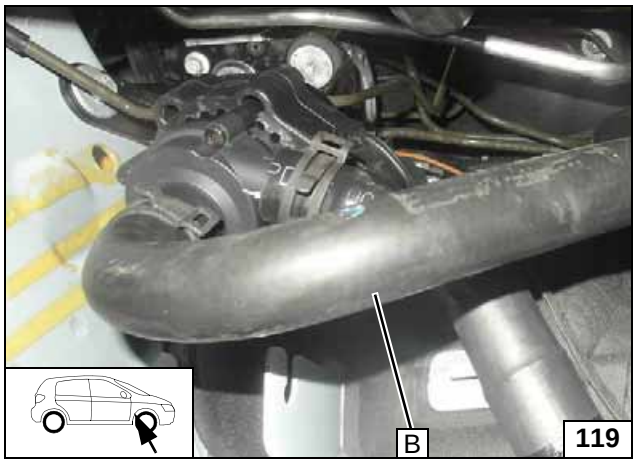
1 Cable tie
2 Wiring harnesses of circulating pump, heater
3 25 mm dia. rubber-coated p-clamp
4 M6 flanged nut on premounted bolt

Underbody routing

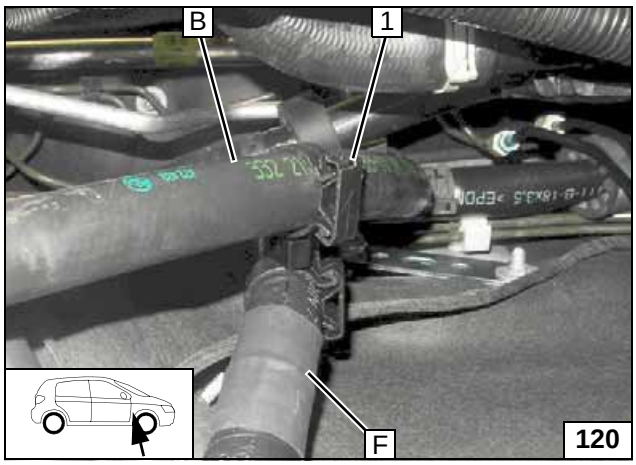


1 Check valve

Connecting check valve



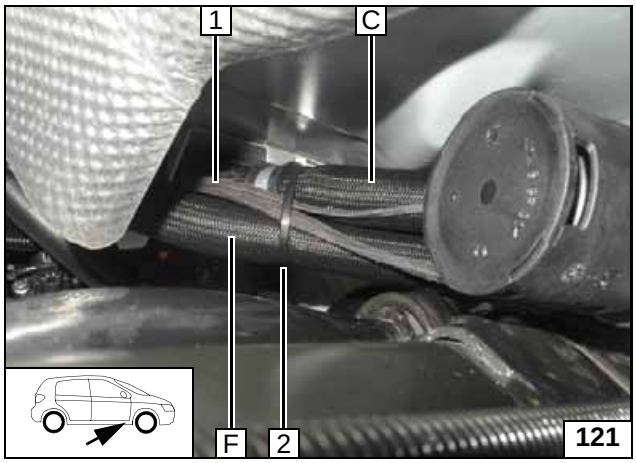
Connecting circulating pump



Install hose **B** on check valve (hidden by hose **B**)!

1 Twistable hose bracket between hoses **B** and **F**

Connecting check valve



Ensure sufficient distance from neighbouring components, or correct.

1 Wiring harnesses of circulating pump, heater
2 Cable tie

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 CAR, 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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Webasto
Feel the Drive

Operating Instructions for Automatic Air-Conditioning

Please remove page and add to the vehicle operating instructions.

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

Passenger compartment monitoring , if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

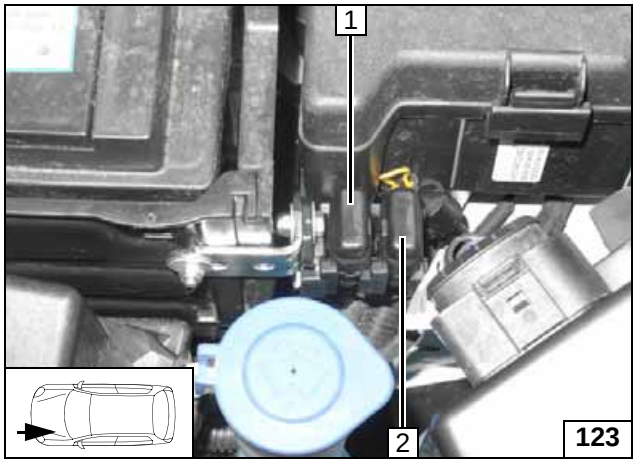
Before parking the vehicle, make the following settings:

A/C control panel

B-Max

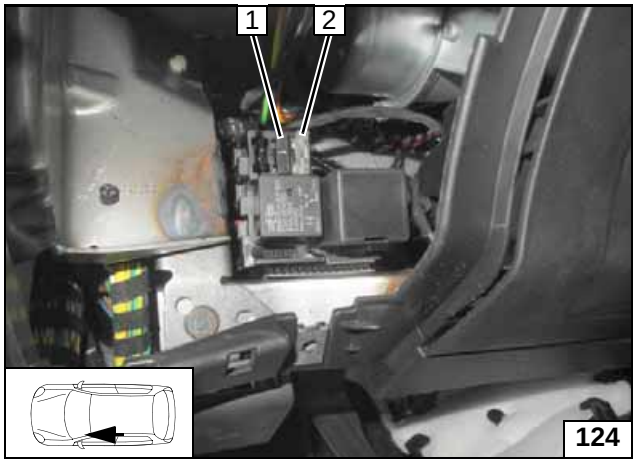
1 Air outlet to windscreen
2 Set temperature to "HI"

Fuses of engine compartment



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

Fuses of passenger compartment



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

Webasto
Feel the Drive

Operating Instructions for Manual Air-Conditioning

Please remove page and add to the vehicle operating instructions.

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

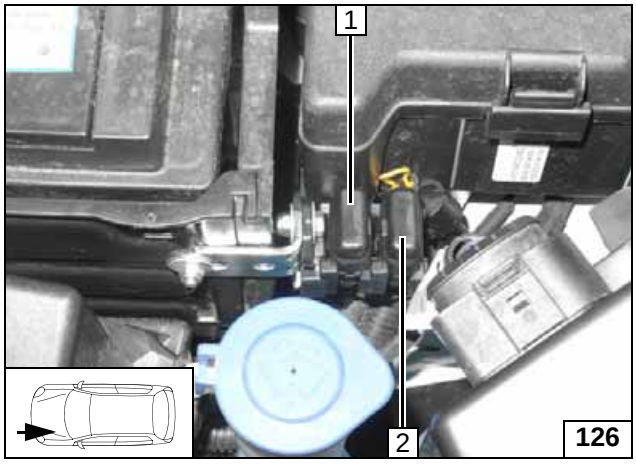
Passenger compartment monitoring , if installed, must be deactivated in addition to the vehicle settings for the heating operation.
Instructions for deactivation can be taken from the operating instructions manual of the vehicle.

Before parking the vehicle, make the following settings:

Transit / Tourneo Courier

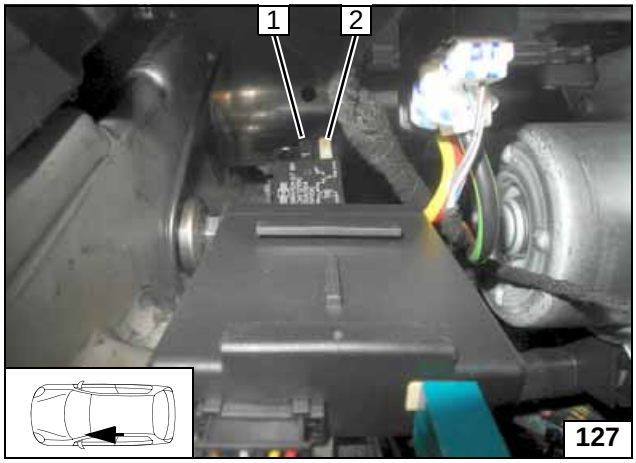
1 Air outlet to windscreen
2 Set temperature to "max."
3 Set fan to level "1", or max. "2"

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment