Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Ford Focus / C-Max / Grand C-Max

Validity

Manufacturer	Model	Type	EG BE No. / ABE
Ford	Focus	DYB	e13 * 2007 / 46 * 1138 * ...
Ford	C-Max	DXA	e13 * 2007 / 46 * 1103 * ...
Ford	Grand C-Max	DXA	e13 * 2007 / 46 * 1103 * ...

Ford Focus

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.0 EcoBoost	Petrol	SG	74	998	M2DA
1.0 EcoBoost	Petrol	SG	92	998	M1DA
1.6 Duratec	Petrol	SG	77	1560	IQ
1.6 Duratec	Petrol	SG	92	1560	PN
1.6 Duratec	Petrol	SG	110	1560	JQ

Ford C-Max / Grand C-Max

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.6 Duratec	Petrol	SG	77	1560	IQ
1.6 Duratec	Petrol	SG	92	1560	PN
1.6 Duratec	Petrol	SG	110	1560	JQ

SG = manual transmission

from model year 2011 until model year 2014
Left-hand drive vehicle

Verified equipment variants: Manual air-conditioning
Automatic air-conditioning
Front fog lights
Headlight washer system
Automatic Start-Stop system

Not verified: Passenger compartment monitoring

Exclusion: Not for 1.6 EcoBoost from model year 2012!

Total installation time: approx. 9.5 hours

Ford Focus / C-Max / Grand C-Max

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix for Ford Focus / C-Max / Grand C-Max 2011 Petrol: **1316972B**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer
- In case of MultiControl CAR installation: Timer cable extension: **1319724**_
- For MultiControl CAR installation in case of Focus: MultiControl installation frame: **9030077**_

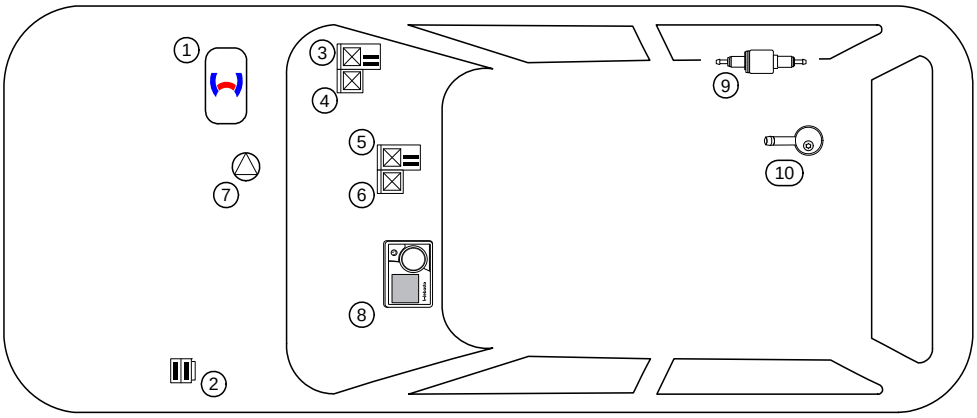
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Relay and fuse holder for passenger compartment, manual and automatic A/C **Focus**
4. PWM GW, automatic A/C **Focus**
5. Passenger compartment relay and fuse holder, manual air-conditioning and automatic A/C **C-Max / Grand C-Max**
6. PWM GW, automatic A/C **C-Max / Grand C-Max**
7. Circulating pump
8. MultiControl CAR
9. Metering pump
10. FuelFix



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

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

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

1.3 Please note

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

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

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

Important

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

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

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

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

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 Focus / C-Max / Grand C-Max

Information on Validity

This installation documentation applies to Ford Focus / C-Max / Grand C-Max Petrol vehicles - for validity, see page 1 - from model year 2011 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this ‘installation documentation’.

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

Technical Information

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

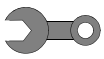
Dimensions
- All dimensions are in mm.

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

Explanatory Notes on Document

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

Mechanical System



Electrical System

Coolant Circuit

Combustion Air

Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of damage to components.

Specific risk due to electrical voltage.

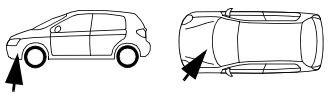
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

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

Reference to a special technical feature.

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



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

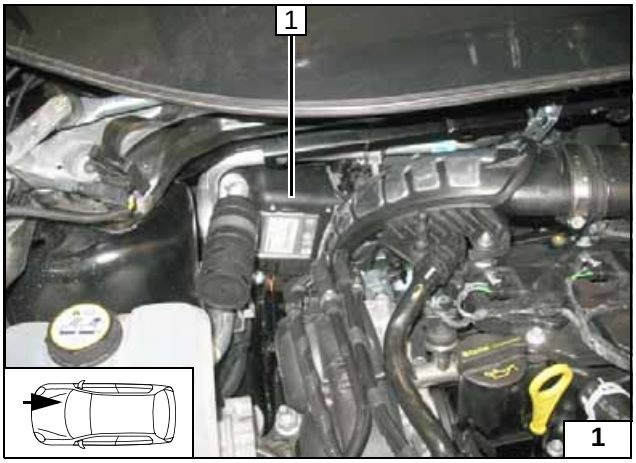
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the engine cover.
- Remove the windscreen wiper.
- Remove the upper cover of the coolant reservoir.
- Remove the cover of the coolant reservoir for the engine compartment.
- Drain the coolant according to the manufacturer's instructions.
- Remove the intake hose.
- Remove the engine underride protection.
- Remove the underbody trim on the right next to the tank.
- Detach the heat protection trim of the exhaust system in the area of the tank.
- Remove the fuel tank according to the manufacturer's instructions.
- Remove the footwell trim on the front passenger's side.
- Remove the glove box.
- Remove the shift lever trim (only in case of automatic air-conditioning).
- Remove the centre console trim (only in case of automatic air-conditioning).
- Remove the A/C control panel according to the manufacturer's instructions (only in case of automatic air-conditioning).
- Remove the A-pillar trim of the footwell on the front passenger's side (only in case of Telestart).

Heater

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



Heater Installation Location

1 Heater

Installation location

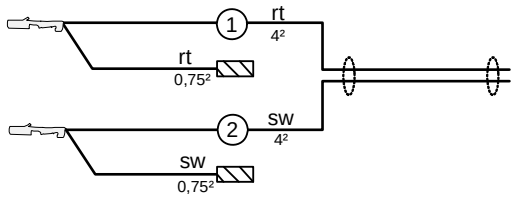
Preparing Electrical System

Wire sections retain their numbering in the entire document.

Manual air-conditioning

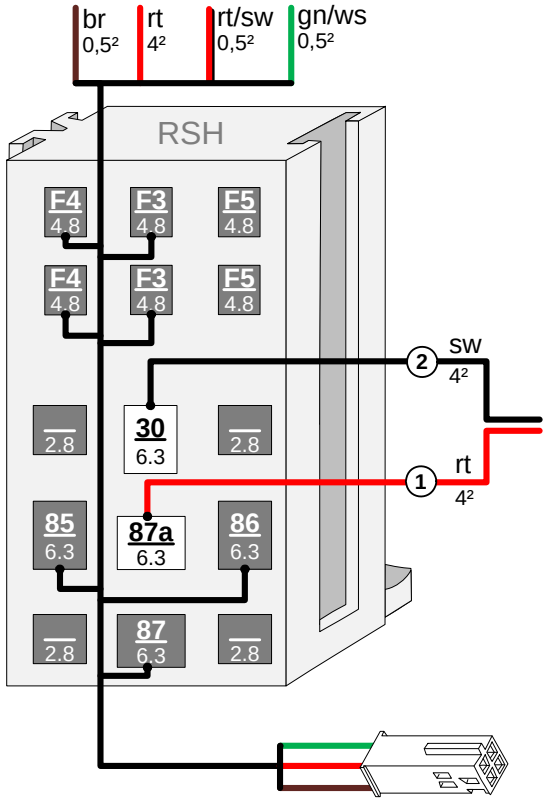
① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness

Assigning wires



2

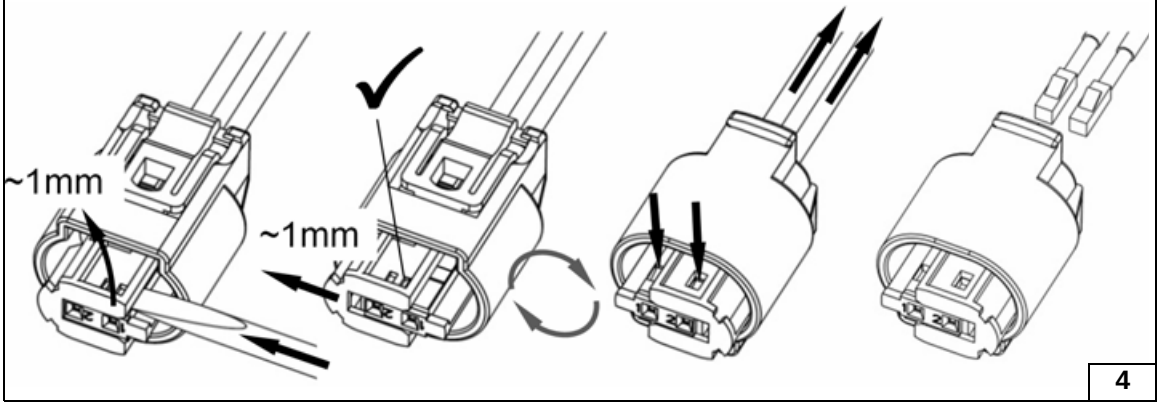
Connecting wires to passenger compartment relay and fuse holder



3

Dismantling metering pump connector

Connector X7



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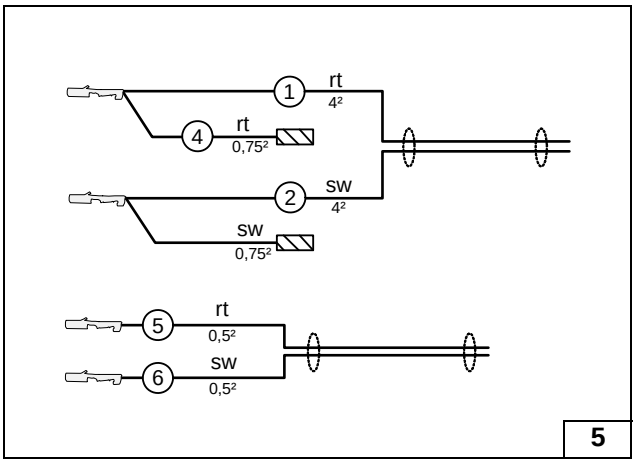
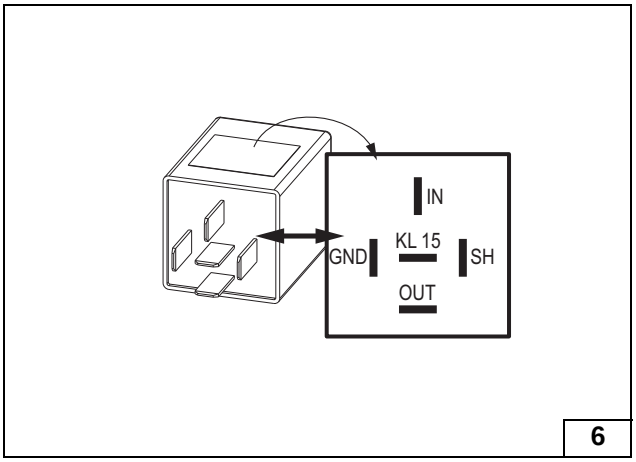


5

Automatic air-conditioning

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness
⑤ Red (rt) wire from wiring harness of PWM control
⑥ Black (sw) wire from wiring harness of PWM control

Preparing / assigning wiring harnesses



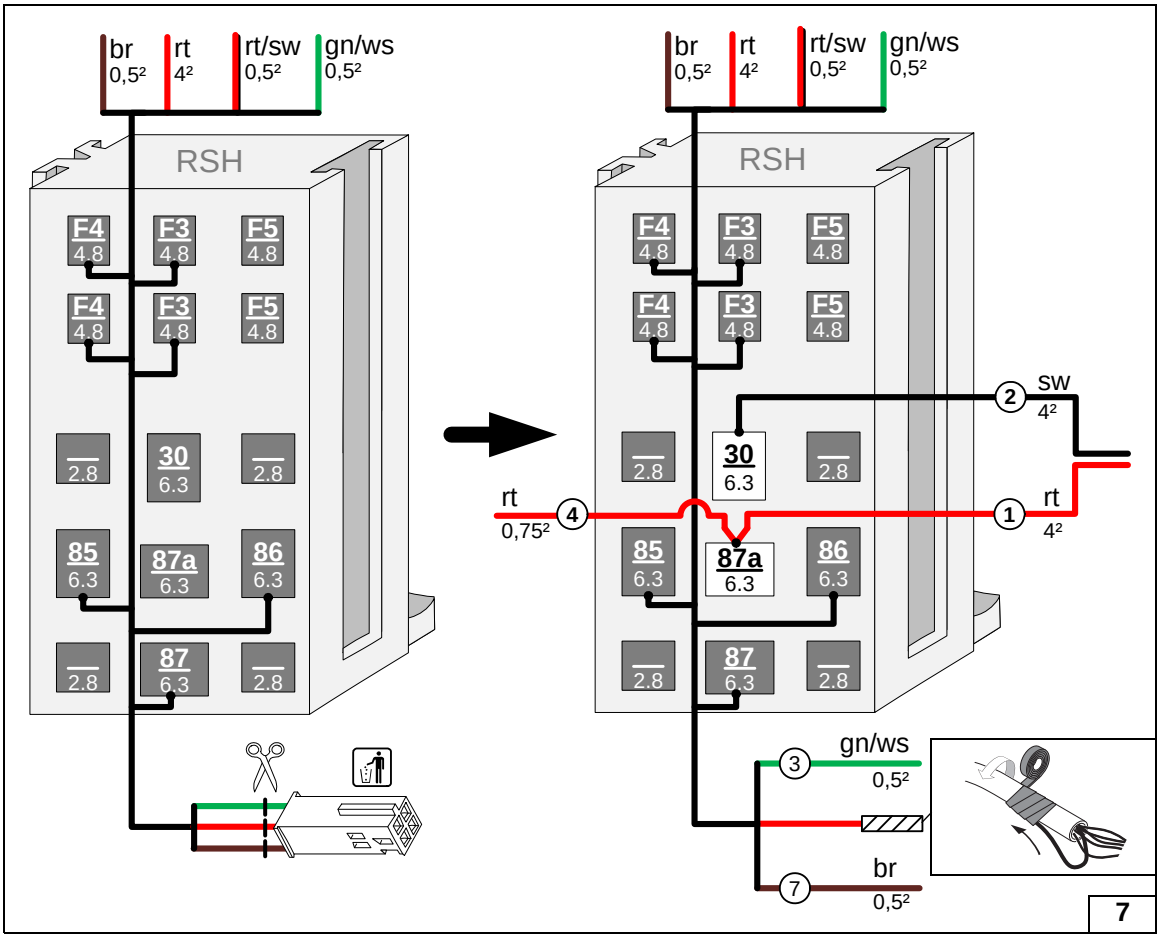
6

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

Settings:

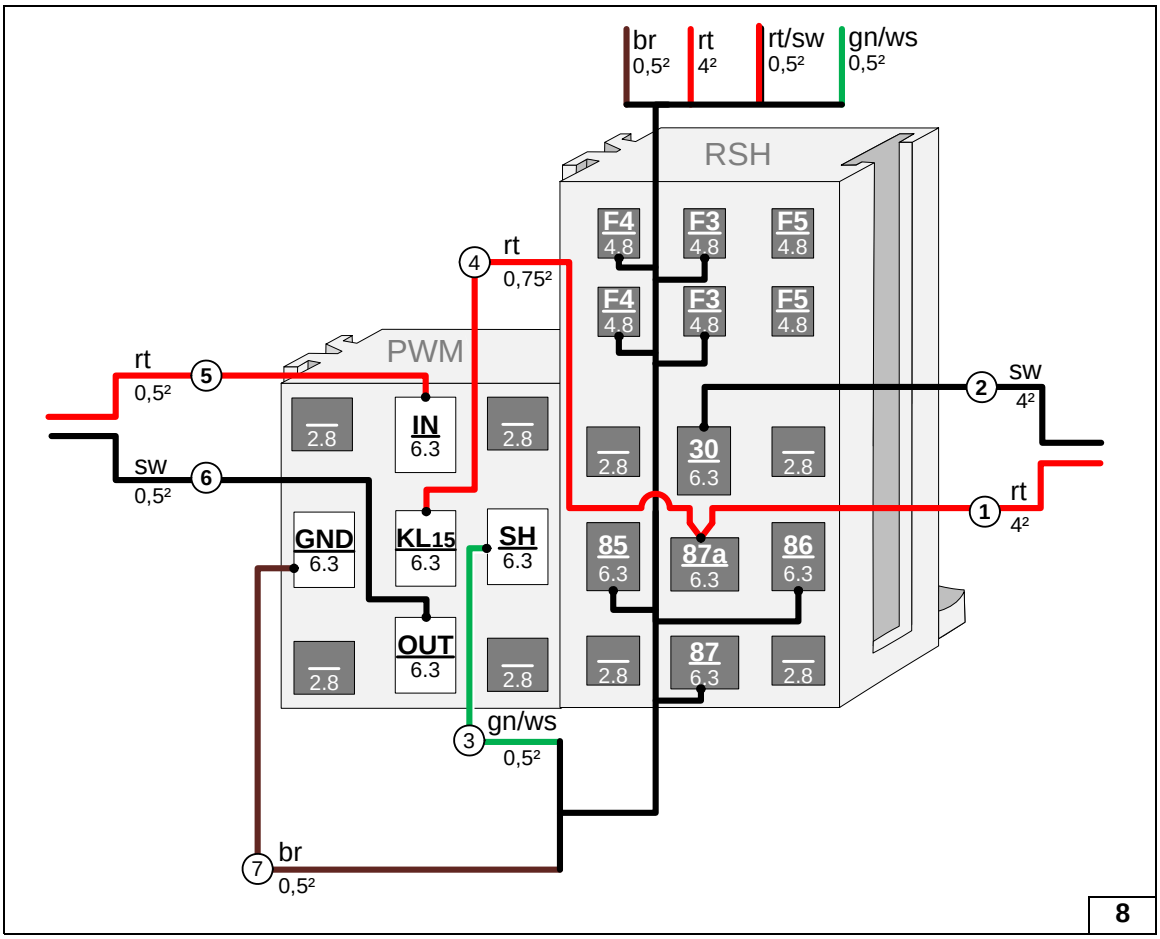
Duty cycle: 37%
Frequency: 400Hz
Voltage: not relevant
Function: Low side

View of PWM GW



7

Preparing passenger compartment relay and fuse holder / connecting / assigning wires



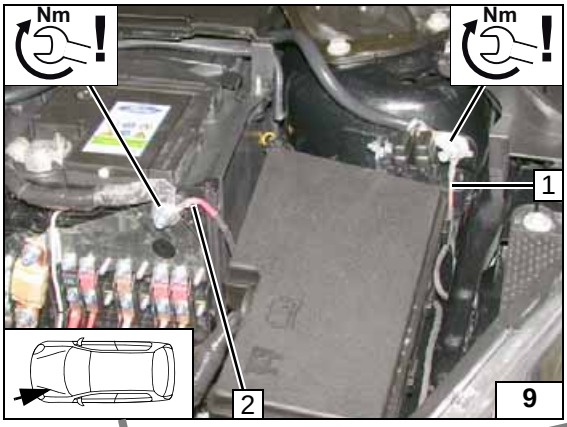
Interlocking PWM GW socket and passenger compartment relay and fuse holder, connecting wires

Electrical System

Wiring Harness Routing for Focus (up to MY 14)

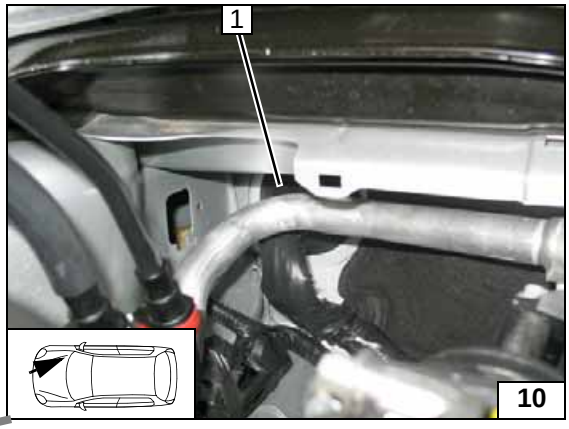
Positive and earth wire

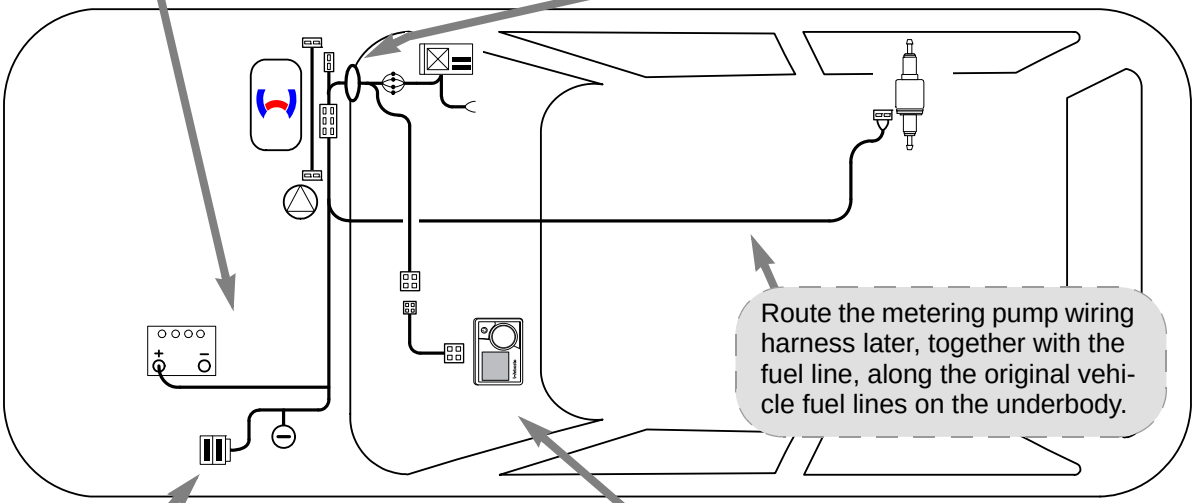
1 Earth wire, 8 mm dia. cable lug at original vehicle earth support point
2 Positive wire on positive battery terminal



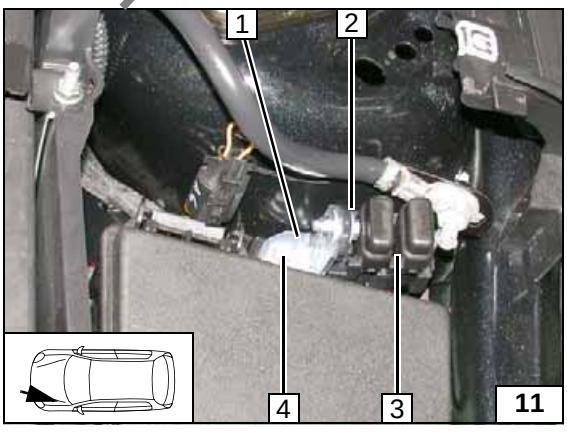
Wiring harness pass through

1 Protective rubber plug



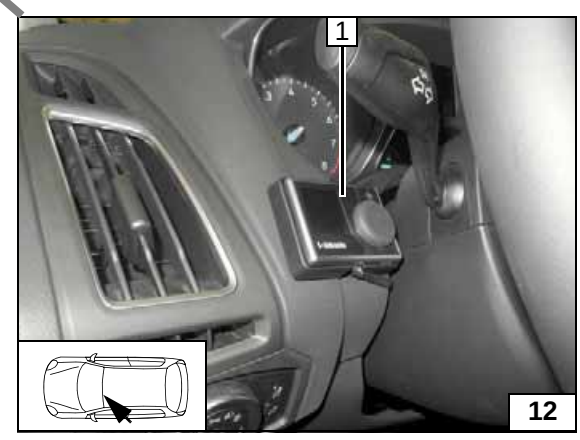


Wiring harness routing diagram



Engine compartment fuse holder

1 Angle bracket
2 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut
3 Fuses F1-2
4 M6x20 bolt, flanged nut, existing hole



MultiControl CAR Focus Option

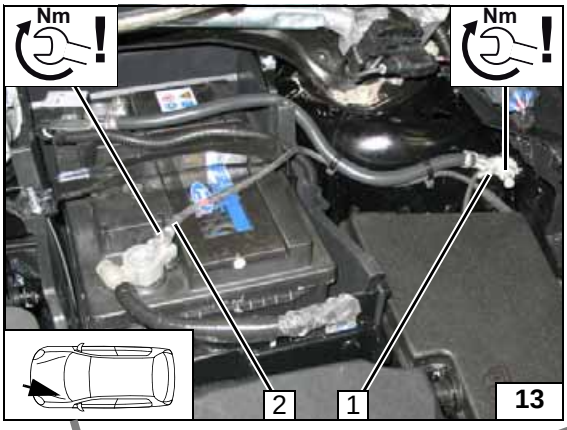
Use timer cable extension when installing MultiControl CAR.

1 MultiControl CAR with installation frame

Wiring Harness Routing for C-Max / Grand C-Max

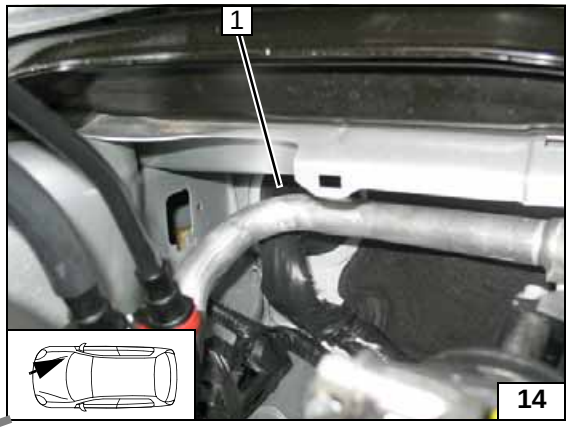
Positive and earth wire

1 Earth wire, 8 mm dia. cable lug at original vehicle earth support point
2 Positive wire on positive battery terminal

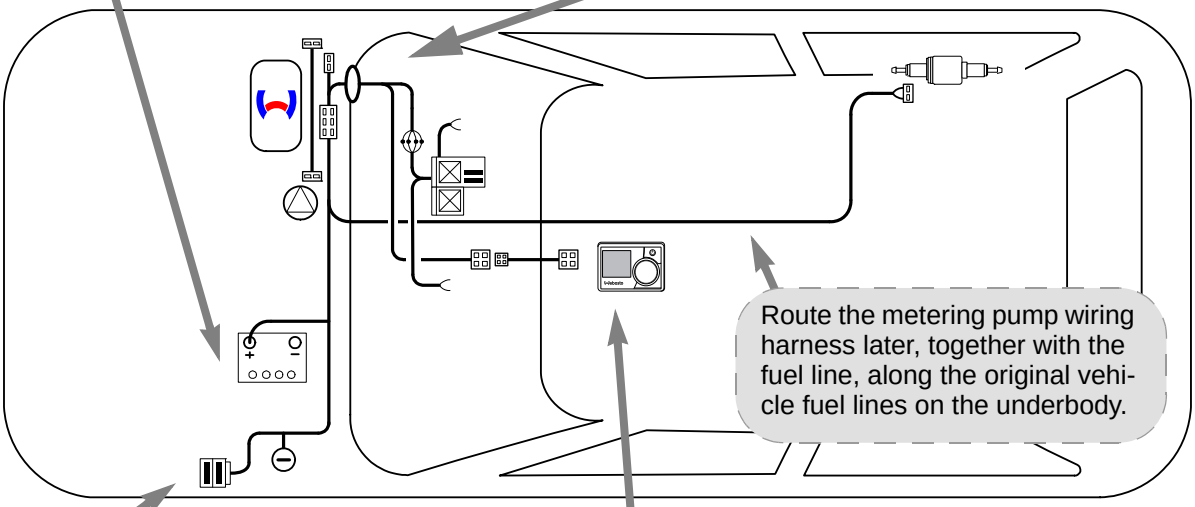


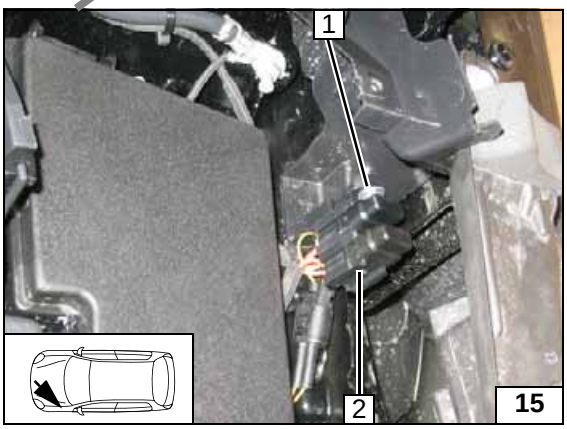
Wiring harness pass through

1 Protective rubber plug



Wiring harness routing diagram

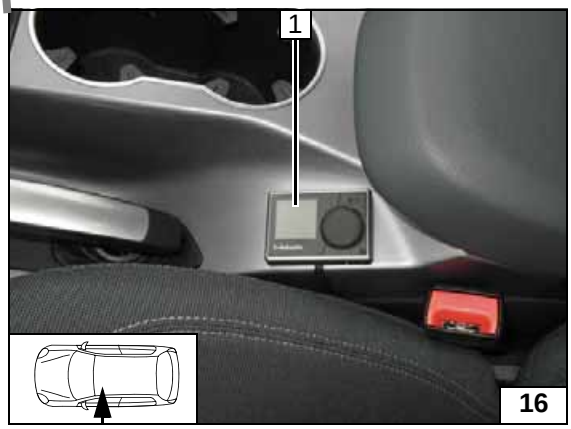




Engine compartment fuse holder

When drilling, be careful of components located behind!

1 5.5mm dia. hole, M5x16 bolt, large diameter washer, retaining plate of fuse holder, nut
2 Fuses F1-2

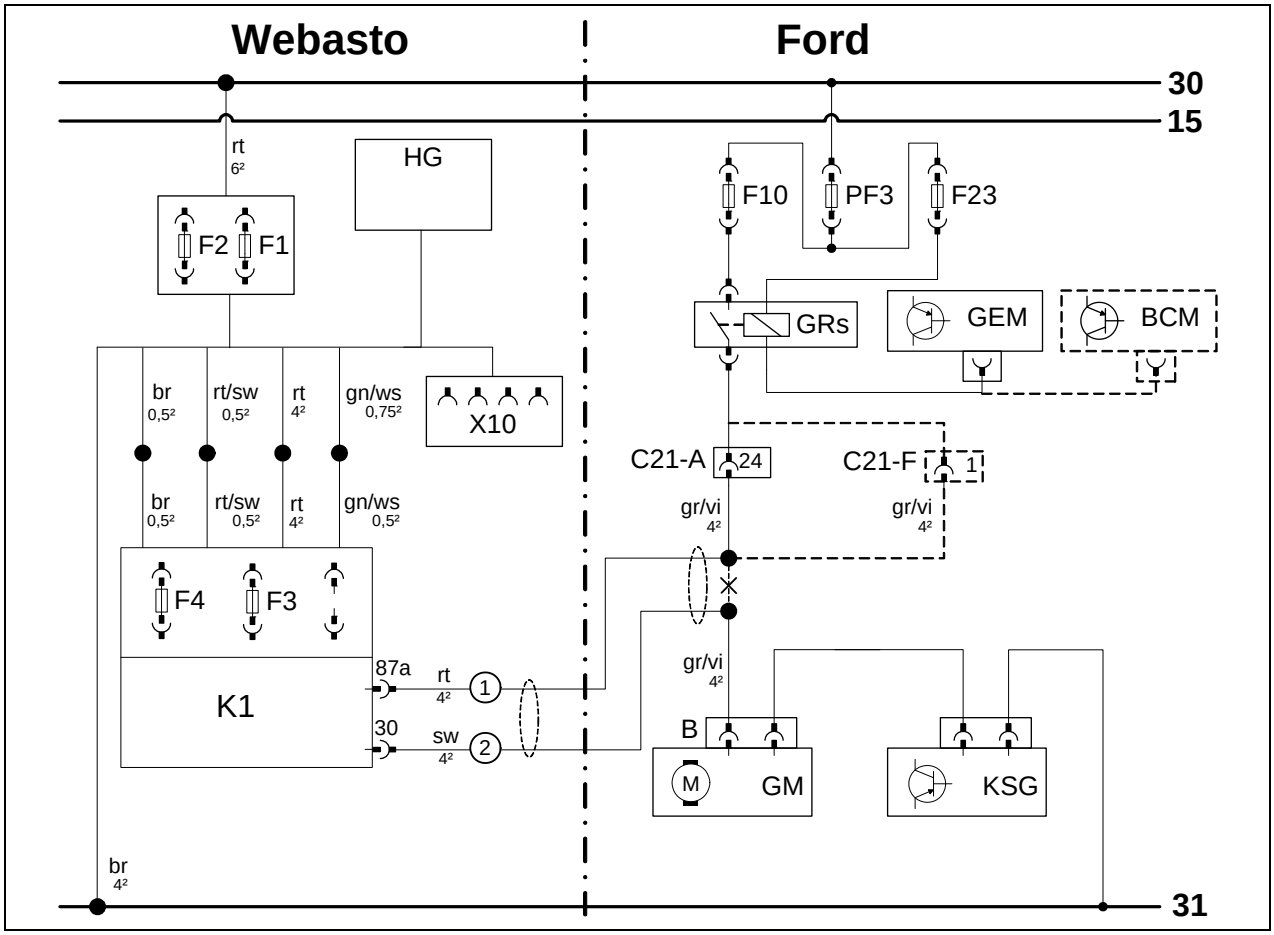


MultiControl CAR C-Max / Grand C-Max

Use timer cable extension when installing MultiControl CAR.

1 MultiControl CAR

Wiring Diagram for Manual Air-Conditioning



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F10	40A fuse	rt	red
F1	20A fuse	PF3	100A fuse	sw	black
F2	30A fuse	F23	5A fuse	gn	green
X10	4-pin connector of heater control	BCM	Body control unit (Focus)	ws	white
		GEM	Central electrical box module (C-Max / Grand C-Max)	br	brown
F3	1A fuse			gr	grey
F4	25A fuse	GRs	Fan relay	vi	violet
K1	Fan relay	C21-F	Connector (Focus)		
		C21-A	Connector (C-Max / Grand C-Max)		
		KSG	A/C control unit		
		GM	Fan motor	**X**	Cutting point
		B	Fan motor connector	Wiring colours may vary.	

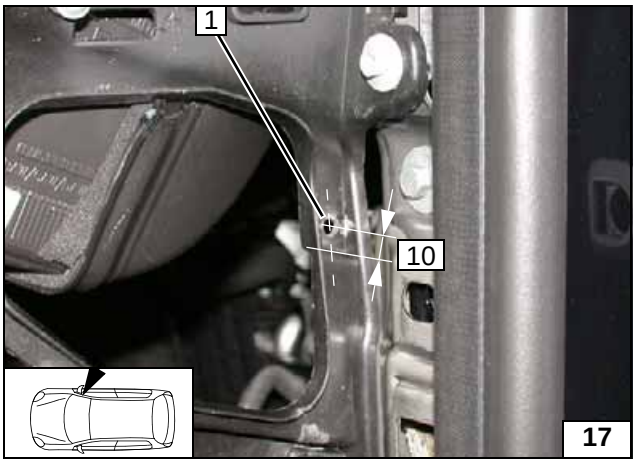
System wiring diagram

Legend

Manual Air-Conditioning Fan Controller

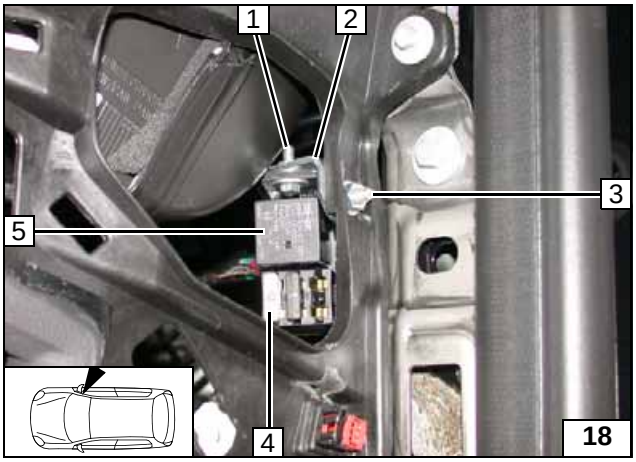
Produce all following electrical connections as shown in the wiring diagram.

Focus up to MY 2014



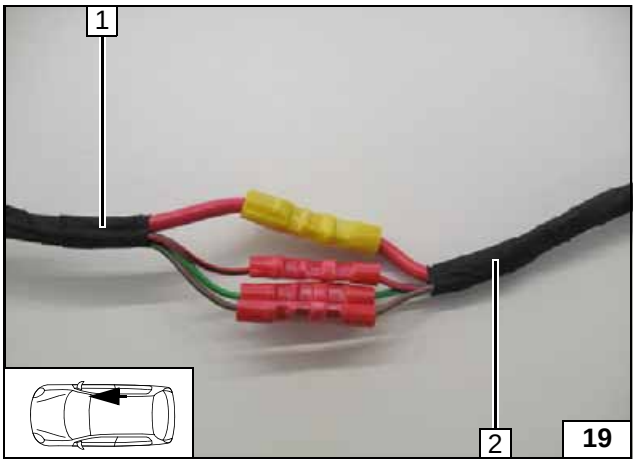
Hole for passenger compartment relay and fuse holder

1 6.5 mm dia. hole



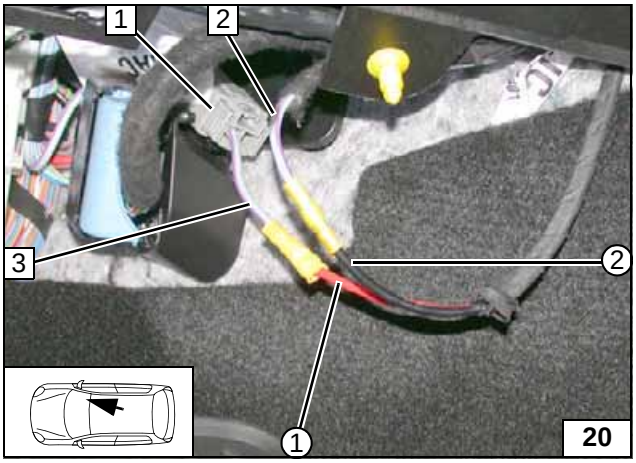
Installing passenger compartment relay and fuse holder

1 M5x16 bolt, large diameter washer, passenger compartment relay and fuse holder, large diameter washer, nut
2 Angle bracket
3 M6x20 bolt, flanged nut
4 25A fuse F4
5 Relay K1



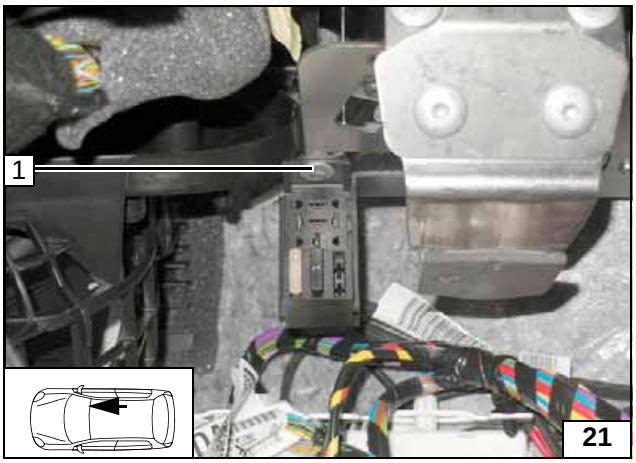
Connecting same colour wires of wiring harnesses

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



Connecting fan motor

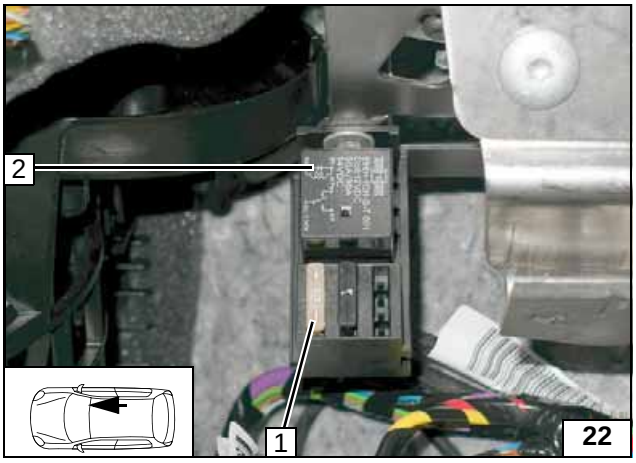
1 Connector C21-F
2 Grey/violet (gr/vi) wire of fan motor
3 Grey/violet (gr/vi) wire of connector C21-F / pin 1
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness



C-Max / Grand C-Max

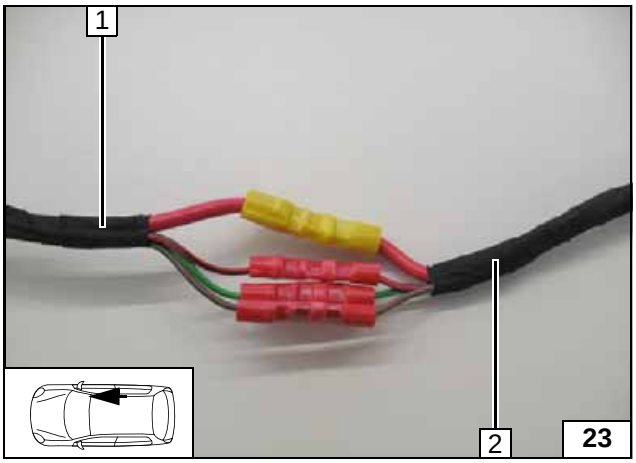
1 M5x16 bolt, large diameter washer, passenger compartment relay and fuse holder tab, original vehicle hole, large diameter washer, nut

Installing passenger compartment relay and fuse holder



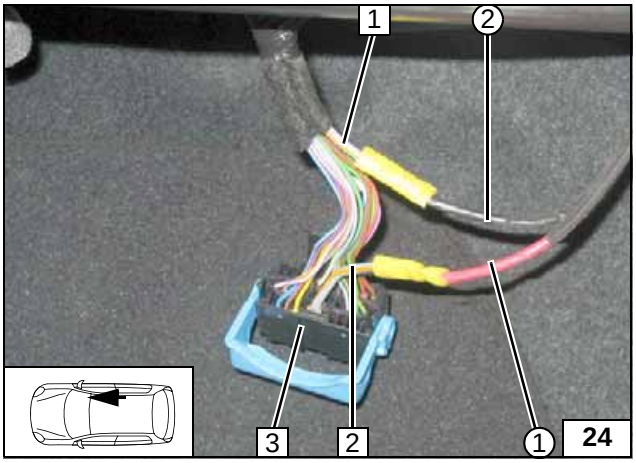
1 25A fuse F4
2 Relay K1

Inserting fuse F4 and relay K1



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

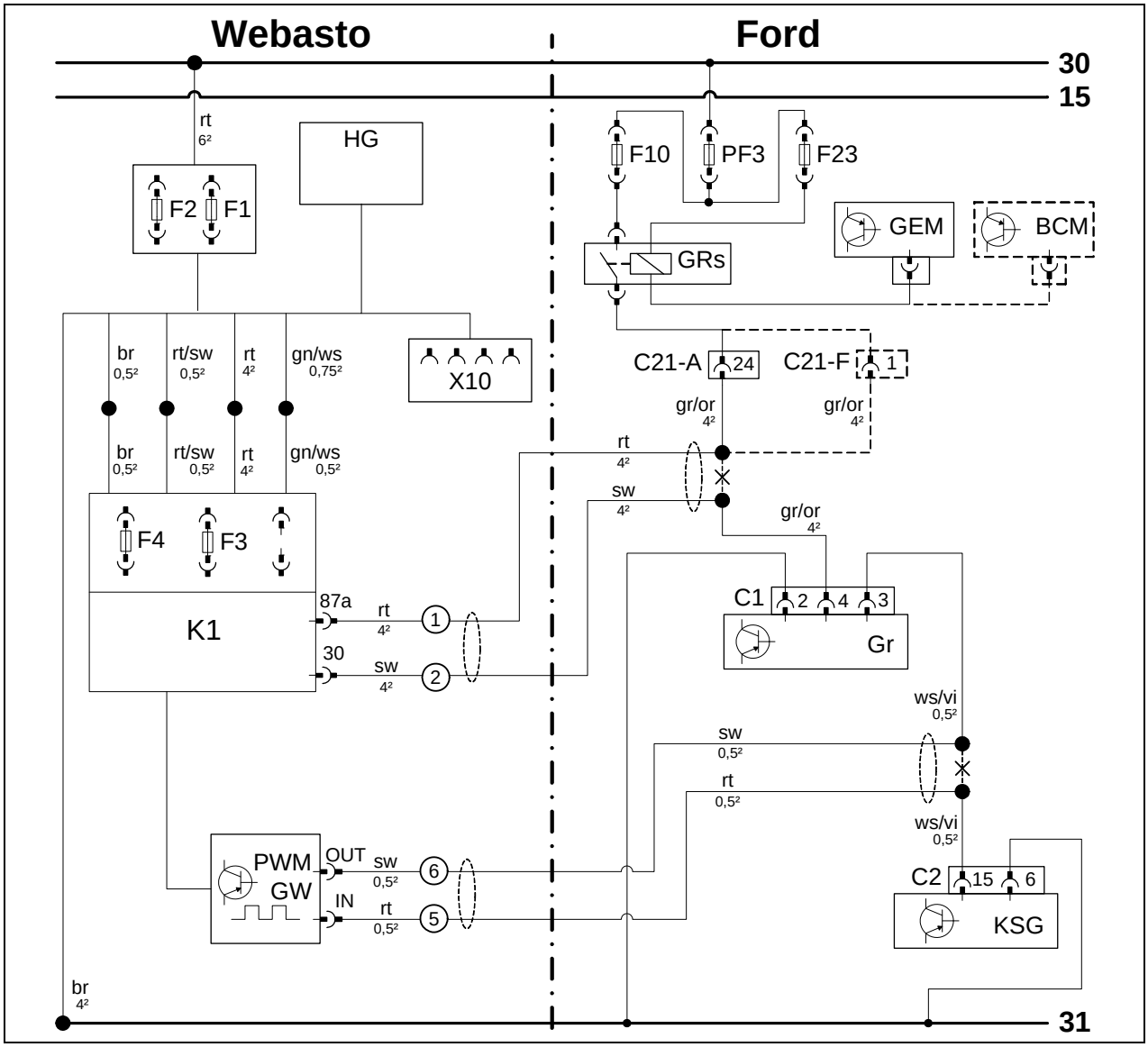
Connecting same colour wires of wiring harnesses



1 Grey/violet (gr/vi) wire of fan motor
2 Grey/violet (gr/vi) wire of connector C21-A / pin 24
3 Connector C21-A
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan motor

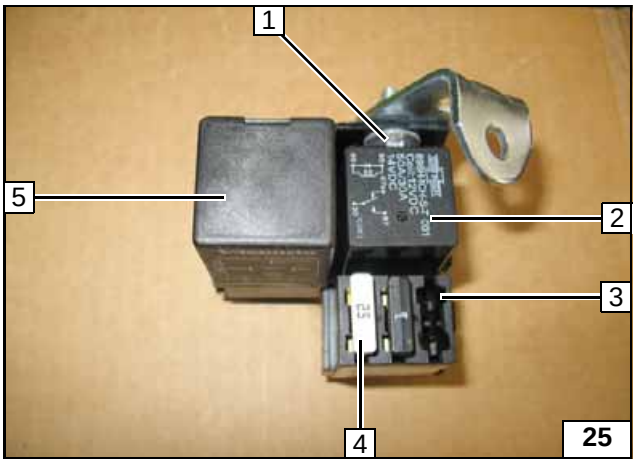
Automatic Air-Conditioning Wiring Diagram



System wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F23	5A fuse	rt	red
F1	20A fuse	F10	40A fuse	sw	black
F2	30A fuse	PF3	100A fuse	gn	green
X10	4-pin connector of heater control	GEM	Central electrical box module (C-Max / Grand C-Max)	br	brown
				ws	white
F3	1A fuse	BCM	Body control unit (Focus)	gr	grey
F4	25A fuse			vi	violet
K1	Fan relay	GRs	Fan relay	or	orange
PWM GW	Pulse width modulator	C21-A	Connector (C-Max / Grand C-Max)		
PWM GW settings:		C21-F	Connector (Focus)		
Duty cycle:	37%	Gr	Fan controller		
Frequency:	400Hz	C1	Fan controller connector		
Voltage:	not relevant	KSG	A/C control unit	**X**	Cutting point
Function:	Low side	C2	Connector of KSG	Wiring colours may vary.	

Legend



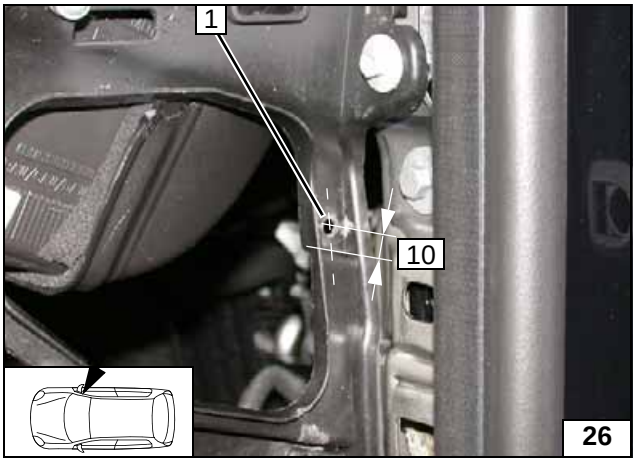
Automatic A/C Fan Controller

Produce all following electrical connections as shown in the wiring diagram.

Focus

1 M5x16 bolt, large diameter washer, passenger compartment relay and fuse holder, angle bracket, large diameter washer, nut
2 Relay K1
3 Passenger compartment relay and fuse holder
4 25A fuse F4
5 PWM GW

Premounting passenger compartment relay and fuse holder

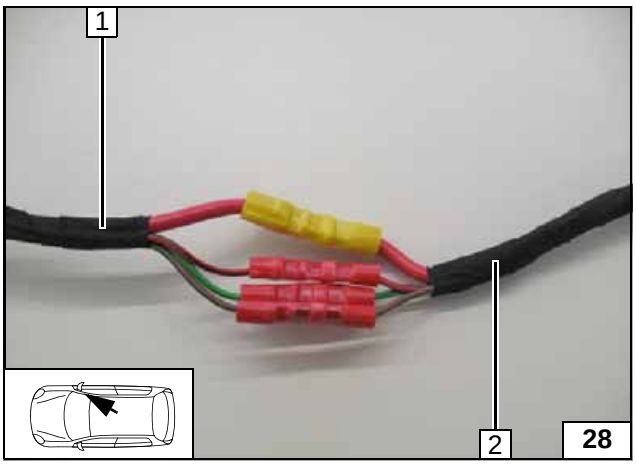


1 6.5 mm dia. hole

Hole for passenger compartment relay and fuse holder

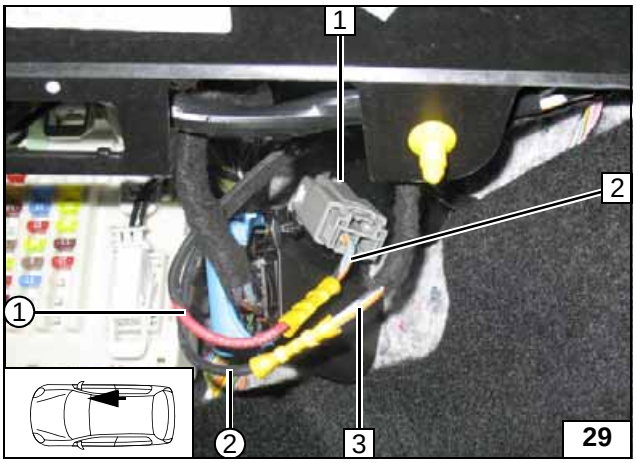
1 M6x20 bolt, premounted angle bracket, flanged nut

Installing passenger compartment relay and fuse holder



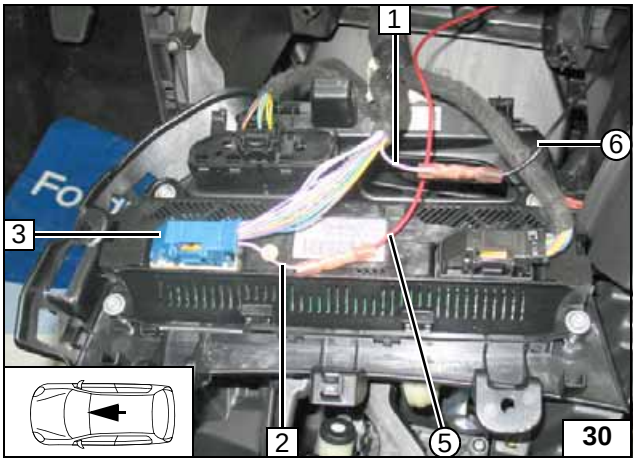
1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



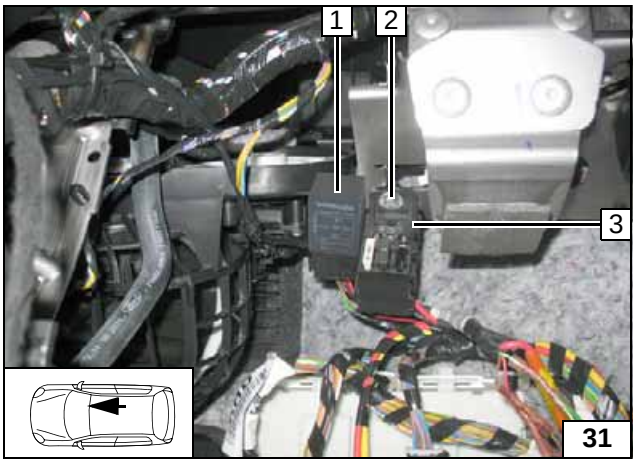
1 Connector C21-F
2 Grey/orange (gr/or) wire of connector C21-F/ pin 1
3 Grey/orange (gr/or) wire from connector C1/ pin 4 of fan controller
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan controller



1 White/violet (ws/vi) wire from connector C1/ pin 3 of fan controller
2 White/violet (ws/vi) wire from connector C2/ pin 15 of A/C control unit
3 Connector C2 of A/C control unit
⑤ Red (rt) wire from PWM GW/ IN of PWM control wiring harness
⑥ Black (sw) wire from PWM GW/ OUT of PWM control wiring harness

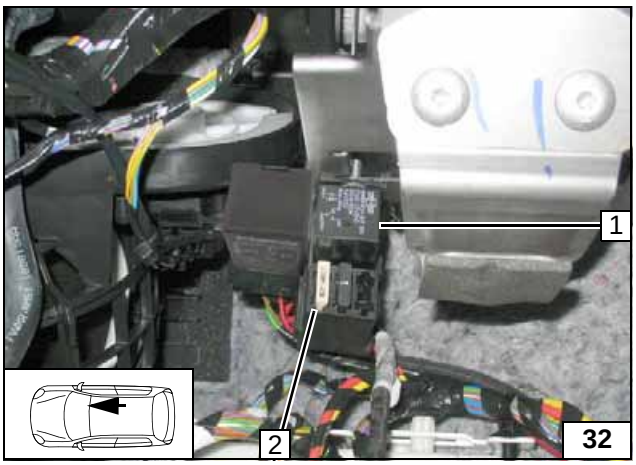
Connecting A/C control unit



C-Max / Grand C-Max

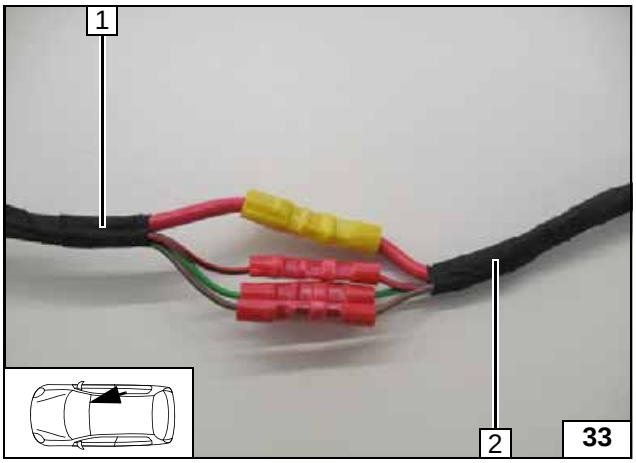
1 PWM GW
2 M5x16 bolt, large diameter washer, existing threaded hole
3 Passenger compartment relay and fuse holder

Installing passenger compartment relay and fuse holder



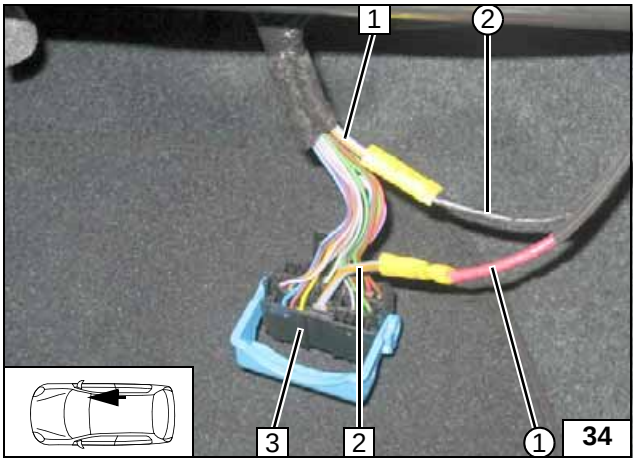
1 Relay K1
2 25A fuse F4

Installing relay K1 and fuse F4



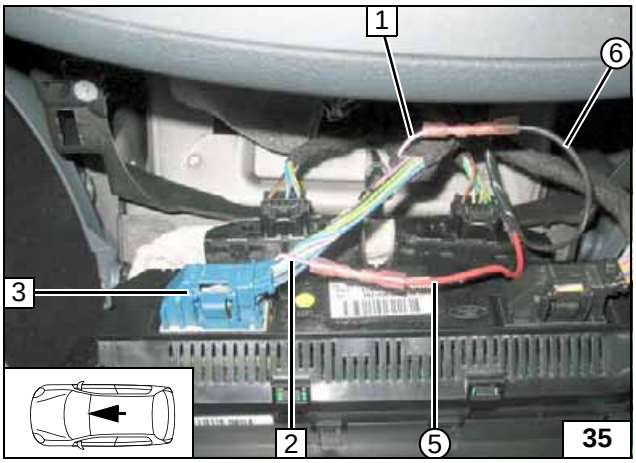
1 Passenger compartment relay and fuse holder wiring harness
2 Heater wiring harness

Connecting same colour wires of wiring harnesses



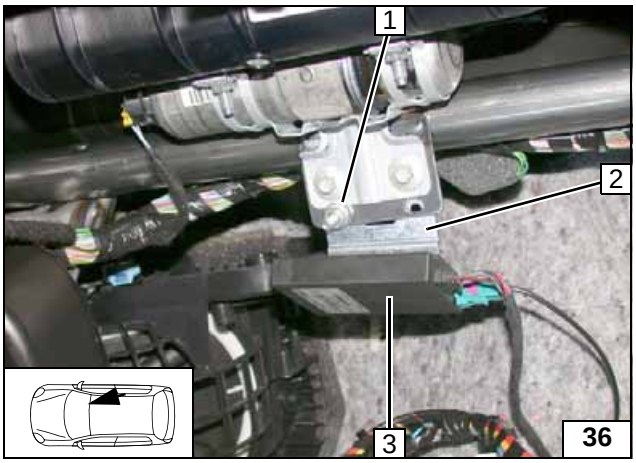
1 Grey/orange (gr/or) wire from connector C1/ pin 4 of fan controller
2 Grey/orange (gr/or) wire of connector C21-A/ pin 24
3 Connector C21-A
① Red (rt) wire of K1/87a, fan wiring harness
② Black (sw) wire of K1/30, fan wiring harness

Connecting fan controller



1 White/violet (ws/vi) wire from connector C1/ pin 3 of fan controller
2 White/violet (ws/vi) wire from connector C2/ pin 15 of A/C control unit
3 Connector C2 of A/C control unit
⑤ Red (rt) wire from PWM GW/ IN of PWM control wiring harness
⑥ Black (sw) wire from PWM GW/ OUT of PWM control wiring harness

Connecting A/C control unit

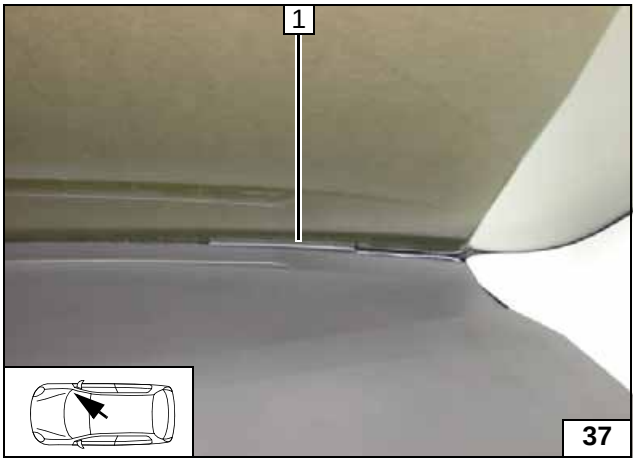


Telestart Focus Option

Angle down bracket of receiver **2** as shown.

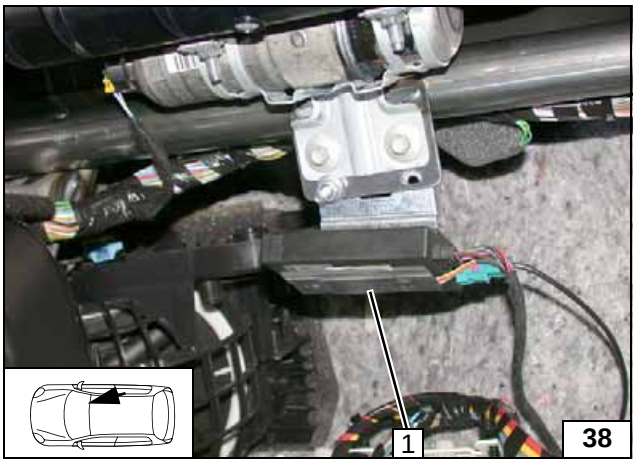
1 M6x20 bolt, flanged nut, existing hole
3 Receiver

Installing receiver



1 Aerial

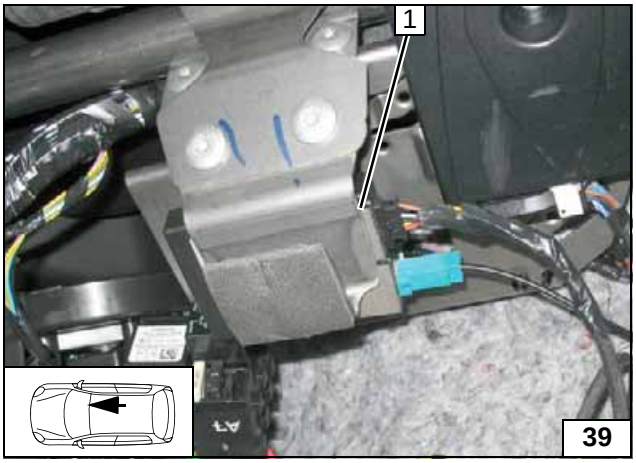
Installing aerial



Temperature sensor T100 HTM

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

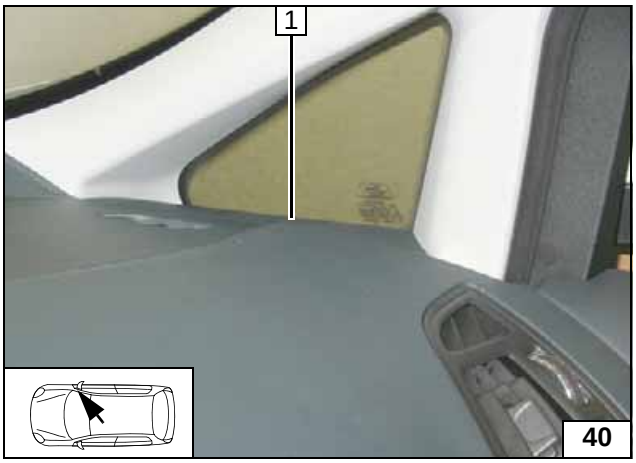
Installing temperature sensor



Telestart C-Max / Grand C-Max Option

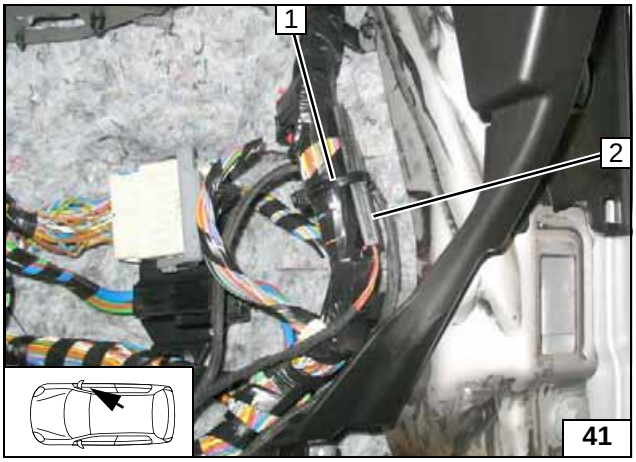
Fasten receiver **1** with double-sided adhesive tape.

Installing receiver



1 Aerial

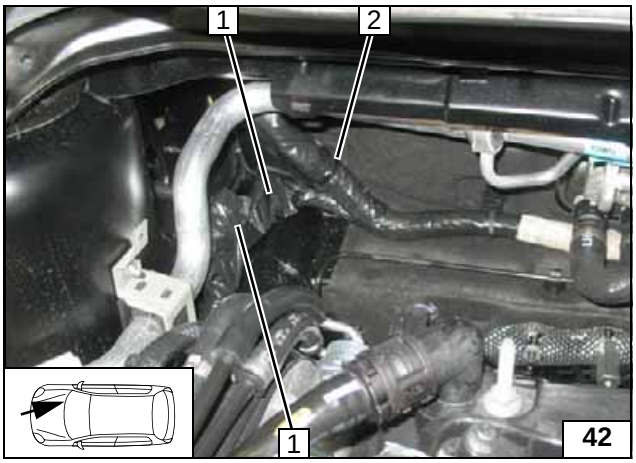
Installing aerial



Temperature sensor T100 HTM

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

Installing temperature sensor



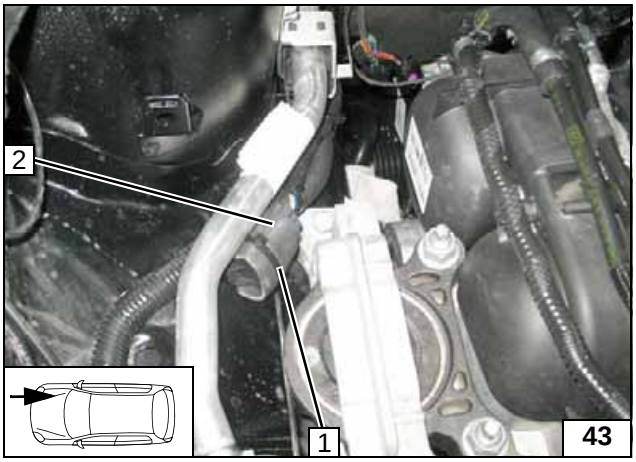
Preparing Installation Location

C-Max / Grand C-Max

Remove insulating tape **1** from original vehicle wiring harness, uncover connector.

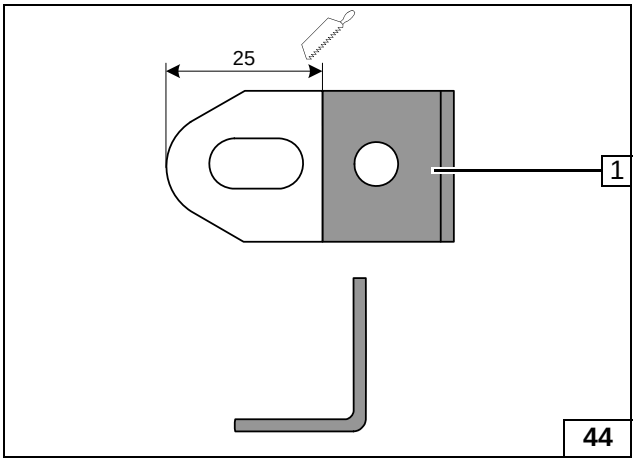
2 Remove cable tie (cable holder)

Preparing installation location



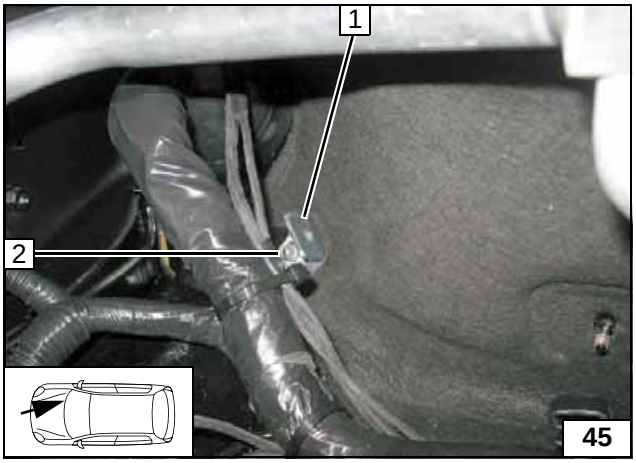
Wind connector **2** with insulation strips and fasten with cable tie **1** to original vehicle wiring harness.

Tying back connector



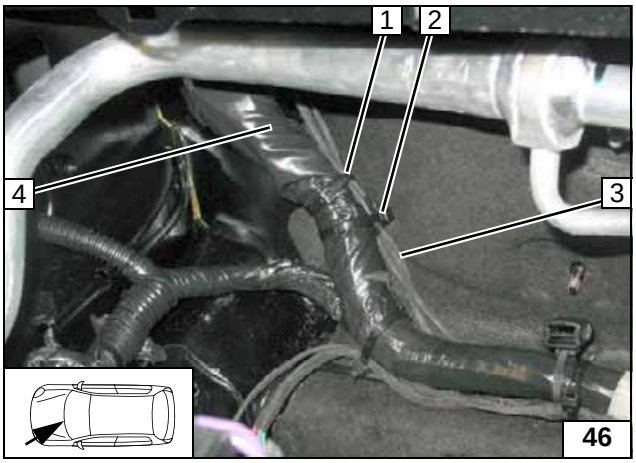
1 Angle bracket

Cutting angle bracket to length



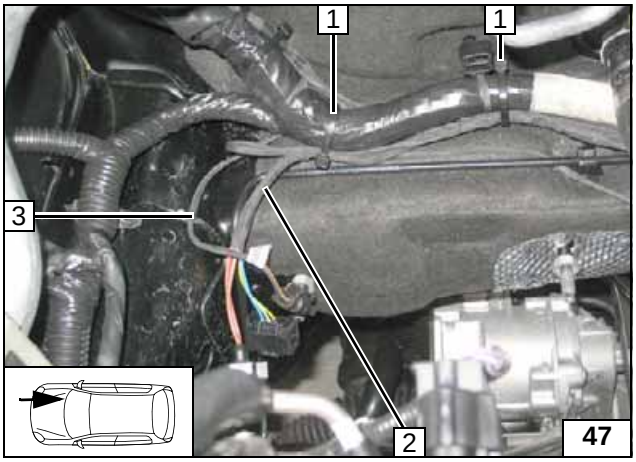
1 Angle bracket
2 Original vehicle stud bolt, plate nut

Installing angle bracket



1 Cable tie, angle bracket
2 Cable tie
3 Passenger compartment wiring harness, heater control
4 Original vehicle wiring harness

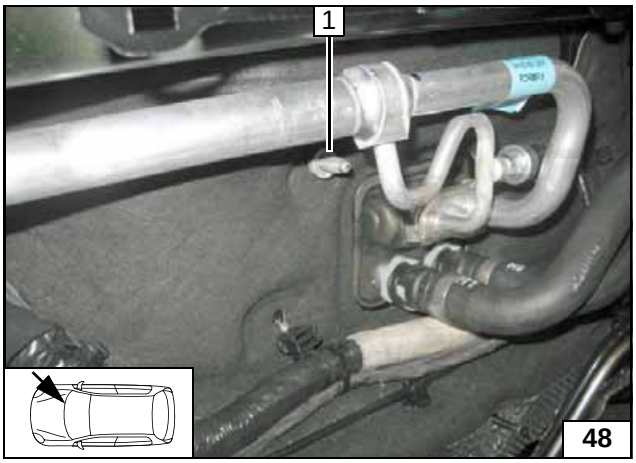
Attaching wiring harnesses



Position circulating pump wiring harness **3** and route on the firewall to the centre.

1 Cable tie
2 Heater wiring harness

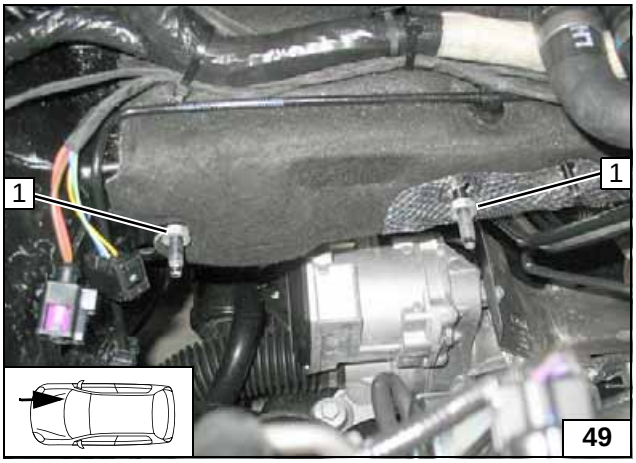
Routing wiring harnesses



All vehicles

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

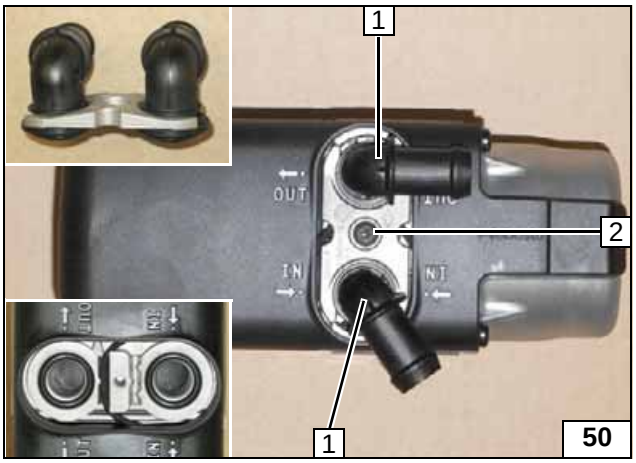
Premounting flanged nut



Screw one M8 flanged nut each **1** (nut is shown in the engine compartment) approx. 25mm on the original vehicle stud bolt.

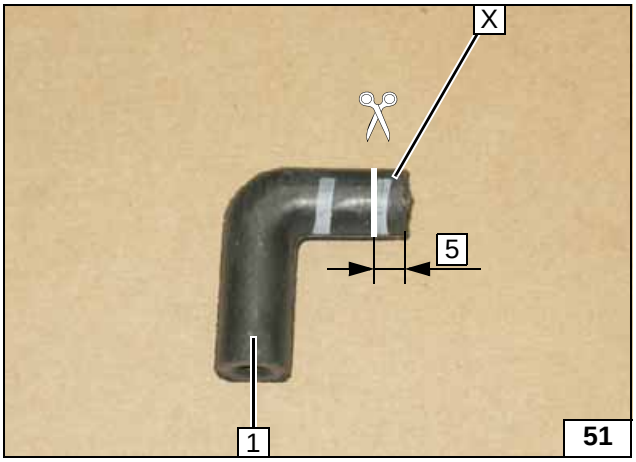
Premounting flanged nut

Preparing Heater



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

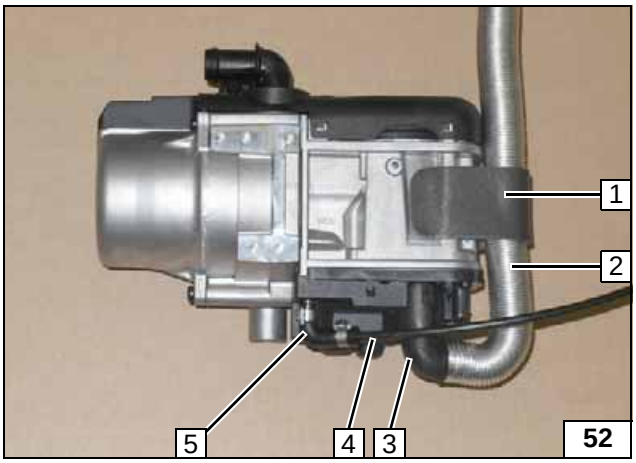
Installing water connection piece



1 90° moulded hose

X = 

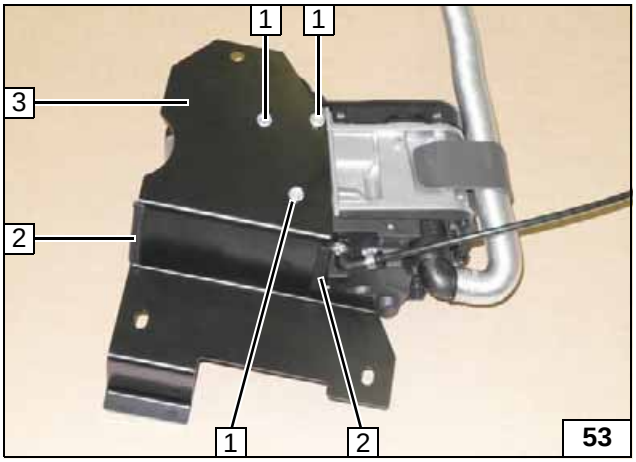
Cutting 90° moulded hose to length



Mount combustion air pipe **2** on heater with insulation strip **1** as installation aid.

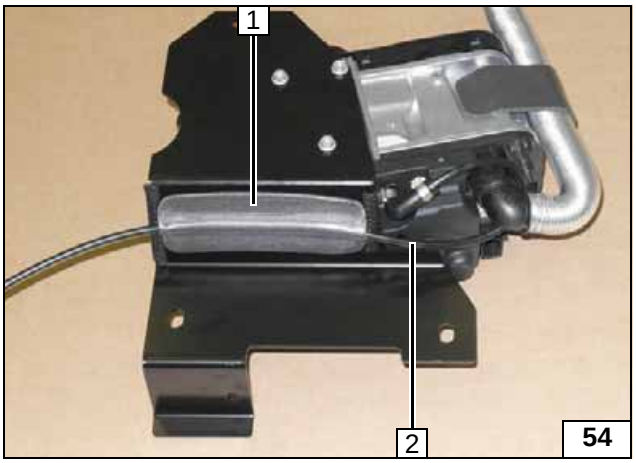
3 Air-intake manifold
4 Fuel line
5 90° moulded hose, 10 mm dia. clamp [2x]

Premounting heater



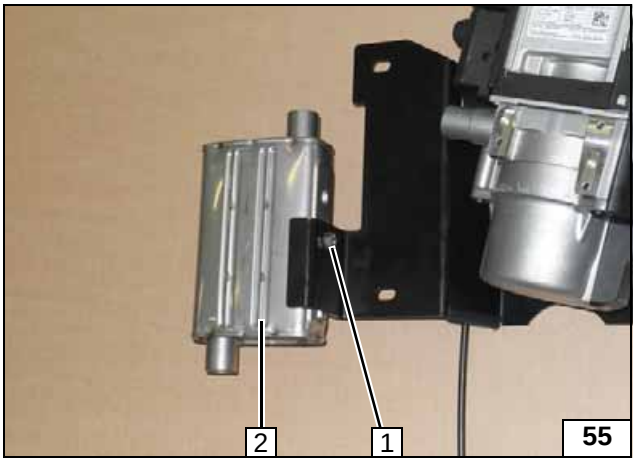
1 5x13 self-tapping bolt [3x]
2 50 mm edge protection [2x], divide at centre
3 Bracket

Installing bracket



1 Insulation strips
2 Fuel line

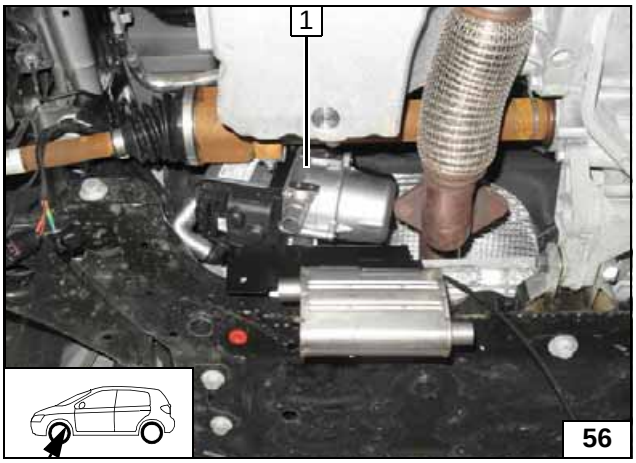
Mounting fuel line



74 / 92 / 110 kW Focus, C-Max and Grand C-Max

1 M6x16 bolt, spring lockwasher
2 Exhaust silencer

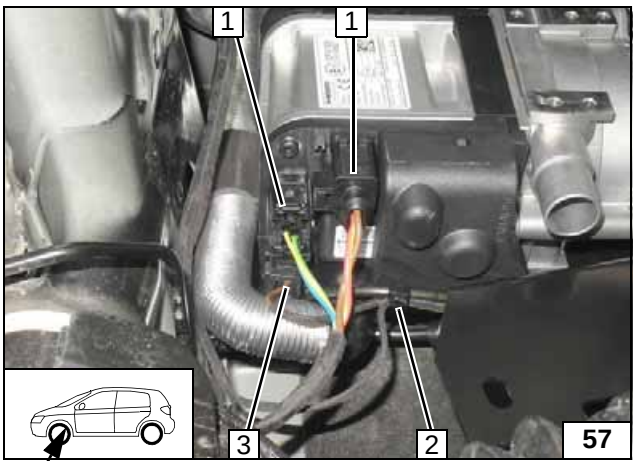
Installing exhaust silencer



Installing Heater

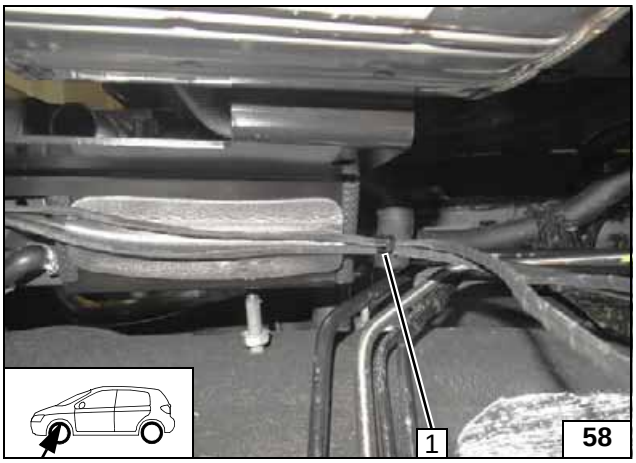
Install heater **1** from below on firewall.

Installing heater



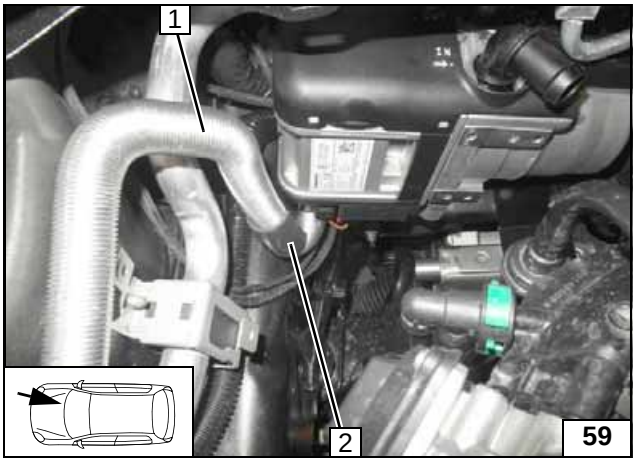
1 Heater wiring harness connector [2x]
2 Cable tie around circulating pump and metering pump wiring harnesses as well as fuel line
3 Connector of circulating pump wiring harness

Installing/ fixing wiring harnesses



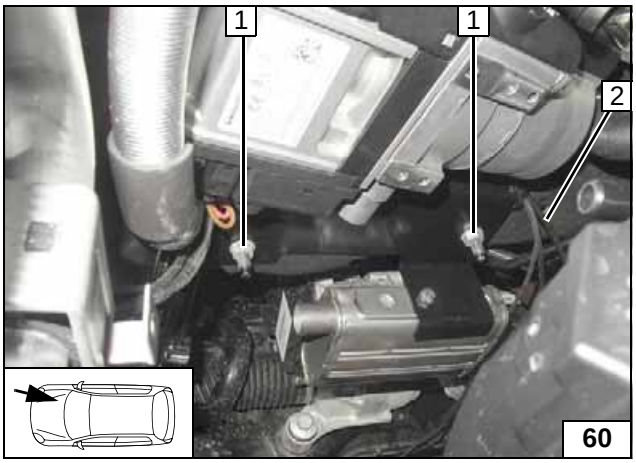
1 Cable tie around circulating pump and metering pump wiring harnesses as well as fuel line

Fixing wiring harnesses



Loosen combustion air pipe **1** from insulation strip **2** and turn forwards.

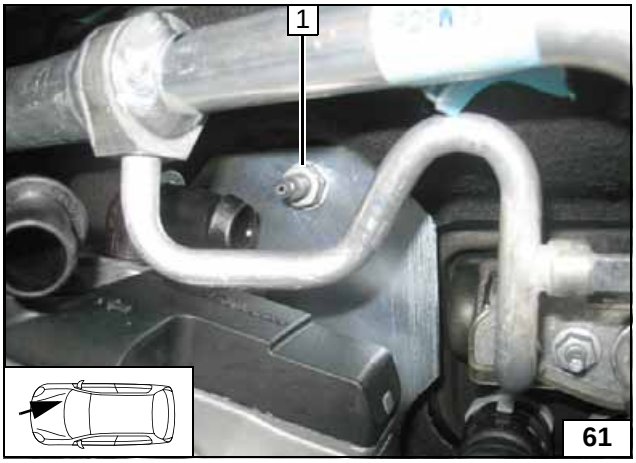
Routing combustion air pipe



Mount heater with bracket on original vehicle stud bolt [3x]. Pull fuel line **2** with wiring harness of metering pump into 10 mm dia., 2100 mm long corrugated tube and route to the underbody along original vehicle lines.

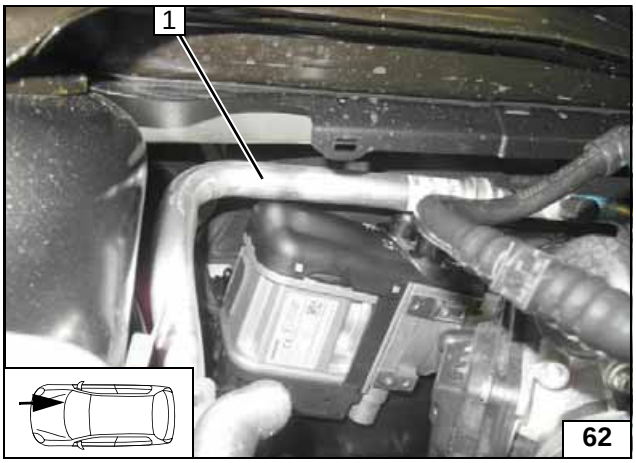
1 M8 flanged nut [2x]

Installing heater



1 M8 flanged nut

Installing heater



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

Installing heater

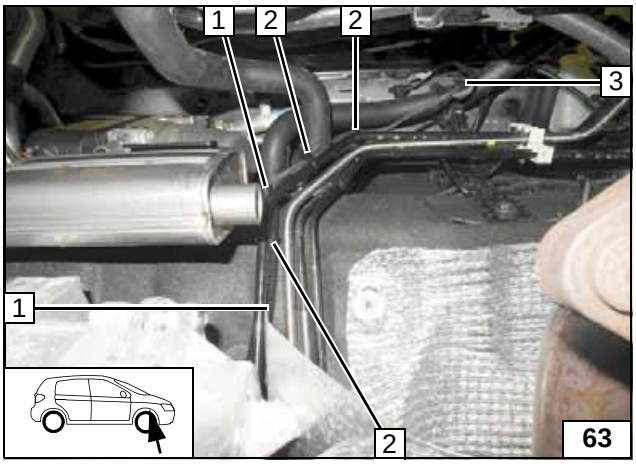
Fuel

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

Catch any fuel running off in an appropriate container.

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

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



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

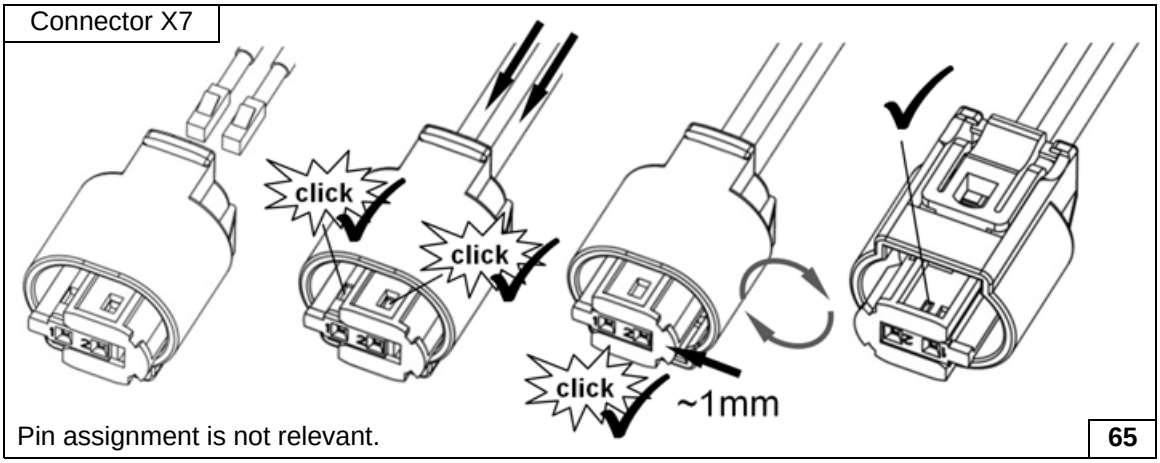
2 Cable tie [3x]
3 Circulating pump wiring harness

Routing lines

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

Routing lines

Connector X7



Pin assignment is not relevant.

65

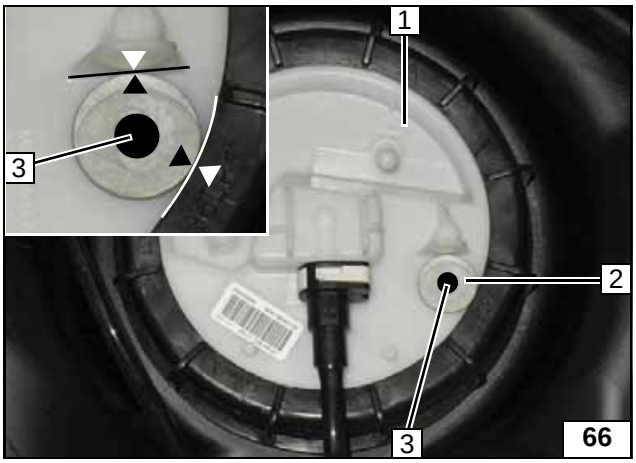
Completing metering pump connector

Installing FuelFix

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

Work steps F1, F2 and F3.

Copying hole pattern, drilling hole



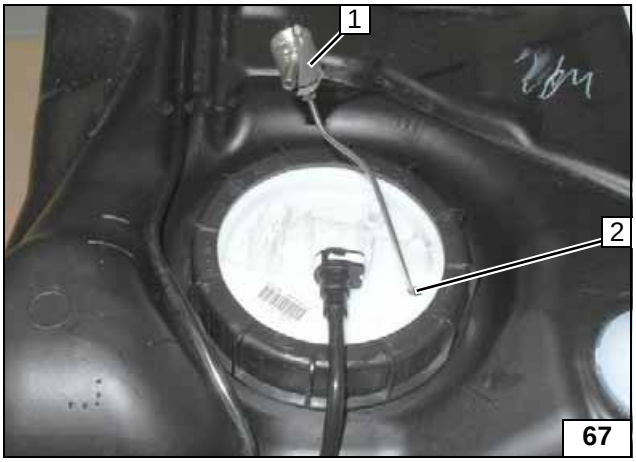
66

1 Fuel tank sending unit
2 Position washer with outer dia. d_a = 21.6 mm as template against the raised parts
3 Hole pattern, hole made with provided drill

Work steps F4 and F5.

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

Inserting FuelFix



67

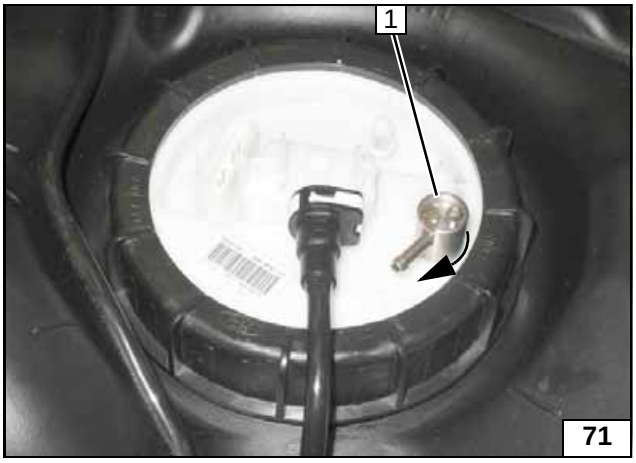
Inserting FuelFix


68

Inserting FuelFix


69

Inserting FuelFix



Work steps F5.3 and F5.4.

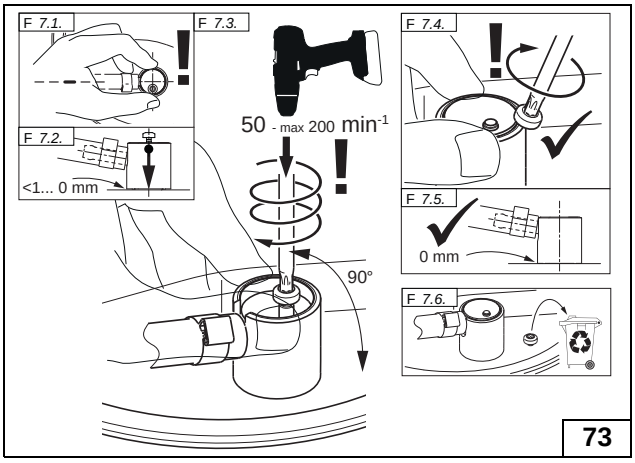
Align FuelFix **1** as shown.

Aligning FuelFix

Work step F6.

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

Connecting fuel line

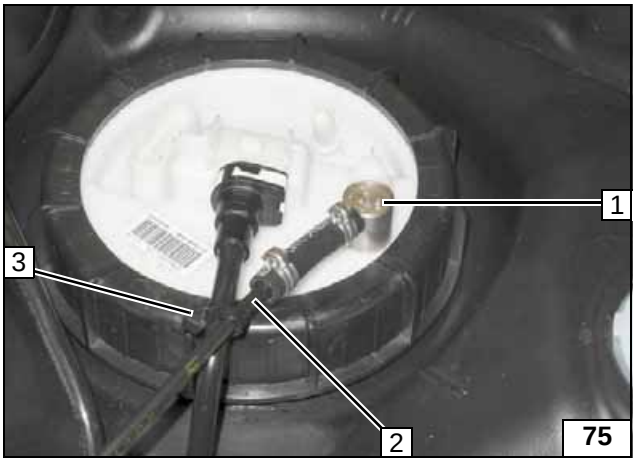


Work step F7.

Installing FuelFix

Work step F8.

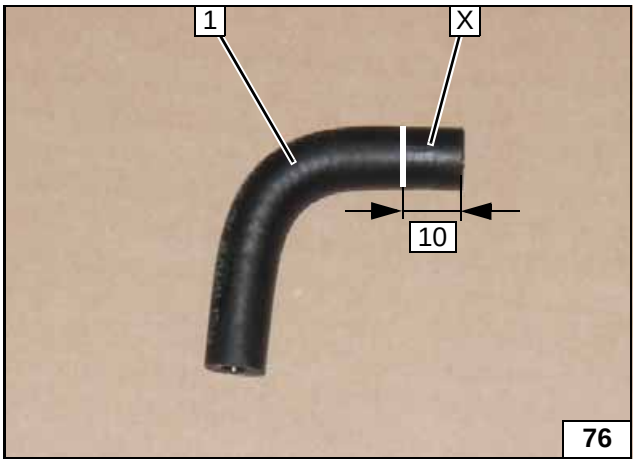
Ensuring firm seating of FuelFix



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

Securing fuel line

Install fuel tank in accordance with manufacturer's instructions.

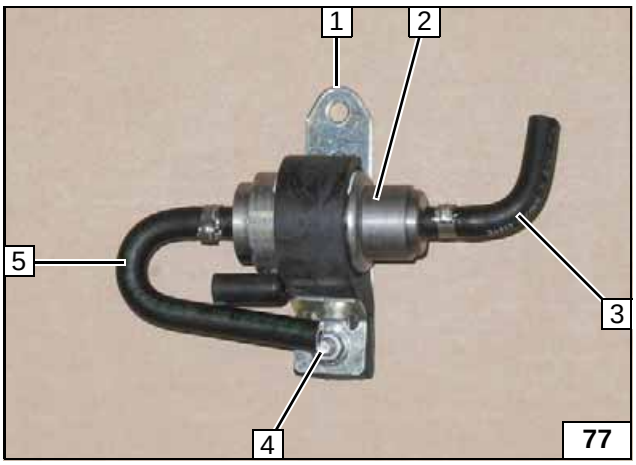


Focus / C-Max

1 90° moulded hose

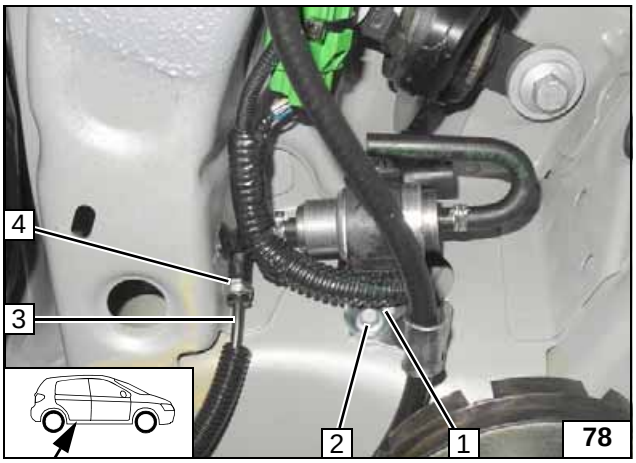
X =

Cutting moulded hose to length



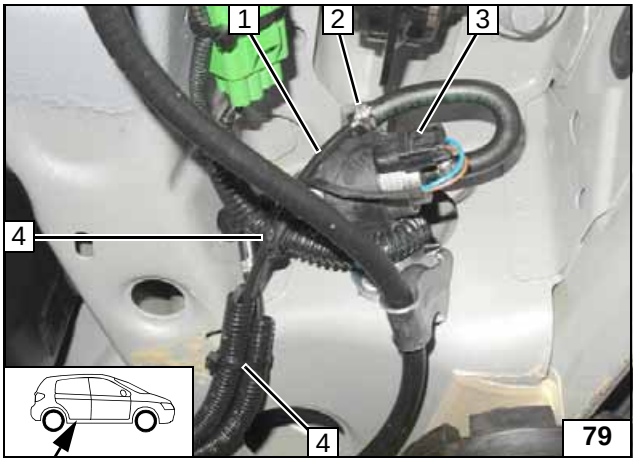
1 Perforated bracket
2 Metering pump
3 90° moulded hose (shortened side to metering pump), 10 mm dia. clamp
4 M6x25 bolt, perforated bracket **1,** mounting of metering pump, support angle bracket, flanged nut
5 180° moulded hose, 10 mm dia. clamp

Premounting metering pump



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

Installing metering pump

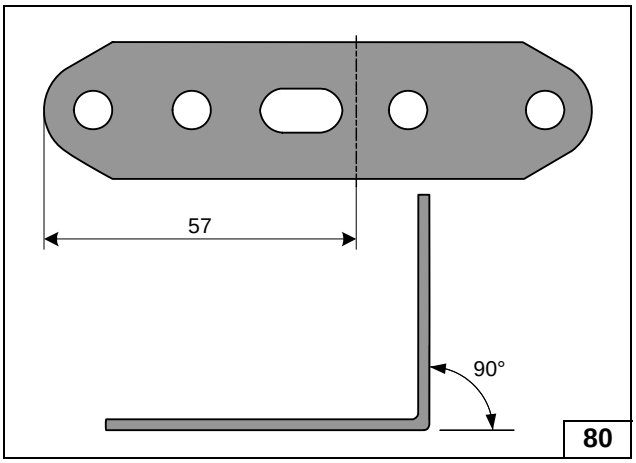


Check the position of the components; adjust if necessary. Check that they have freedom of movement.

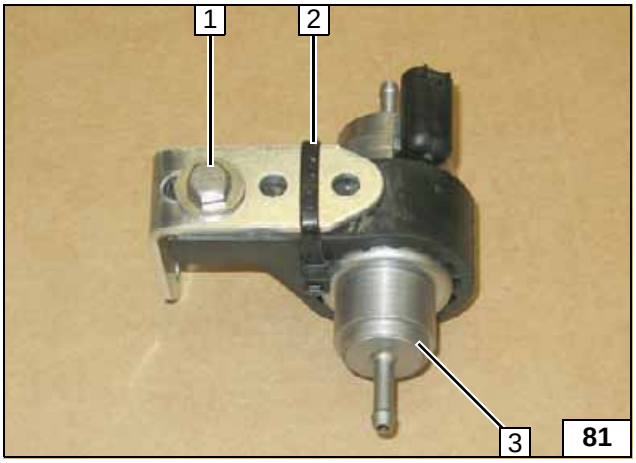
1 Heater fuel line
2 10 mm dia. clamp
3 Metering pump wiring harness, connector X7 mounted
4 Cable tie [2x]

Connecting metering pump

Grand C-Max

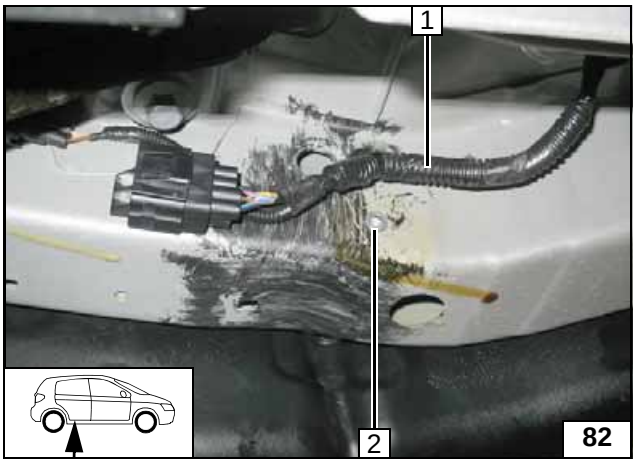


Angling down perforated bracket



1 M6x25 bolt, washer, prepared perforated bracket, mounting of metering pump, support angle bracket, flanged nut
2 Cable tie
3 Metering pump

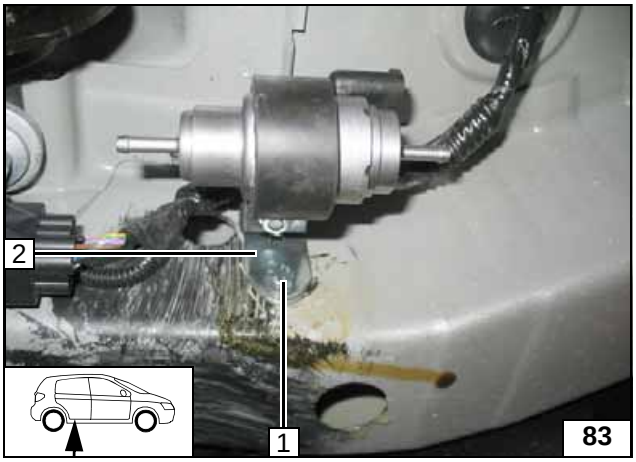
Premounting metering pump



Detach retaining clip of original vehicle wiring harness **1** at position **2**.

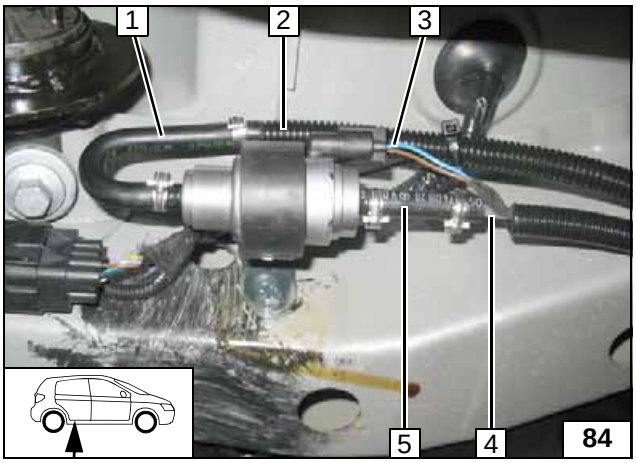
2 Drill out 9.1 mm dia. holel, rivet nut

Installing rivet nut



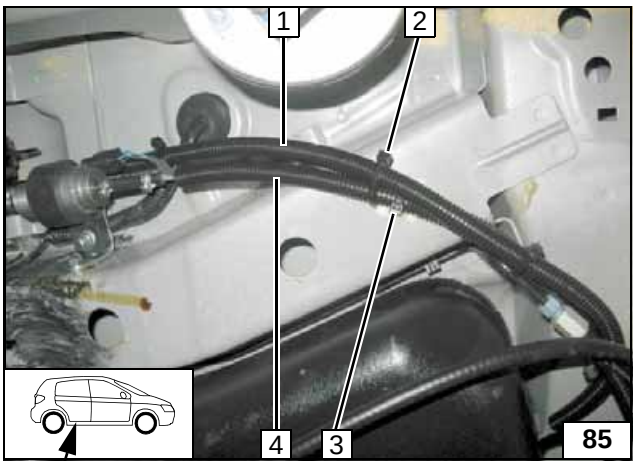
1 M6x20 bolt, spring lockwasher
2 Perforated bracket

Installing metering pump



1 180° moulded hose, 10 mm dia. clamp [2x]
2 Fuel line of fuel standpipe in corrugated tube
3 Metering pump wiring harness, connector X7 mounted
4 Heater fuel line
5 Hose section, 10mm dia. clamp [2x]

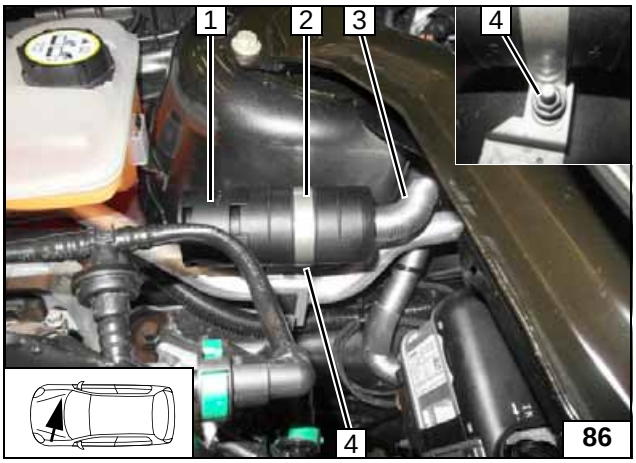
Connecting metering pump



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

1 FuelFix fuel line in corrugated tube
2 Cable tie
3 Adhesive base, cable tie
4 Heater fuel line and metering pump wiring harness in corrugated tube

Routing lines



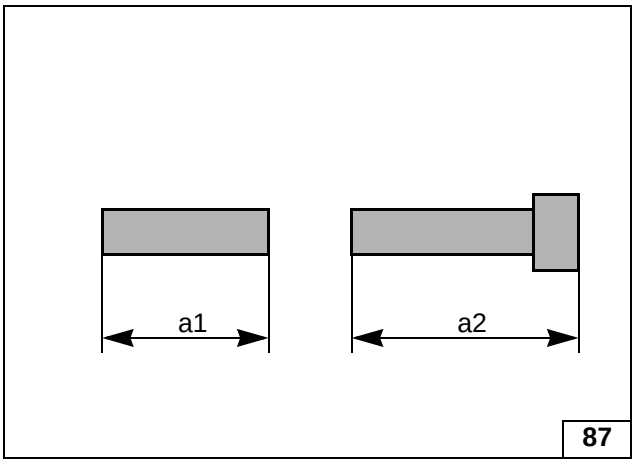
Combustion Air

1 Silencer
2 51 mm dia. clamp
3 Combustion air pipe
4 M5x16 bolt, washer, existing hole, clamp **2**, flanged nut

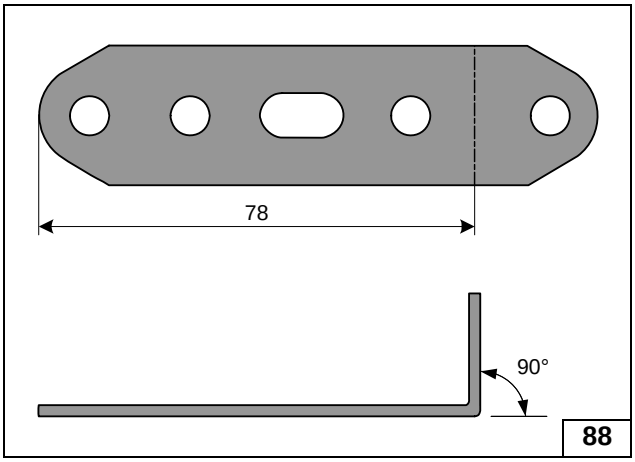
Installing silencer

Exhaust Gas

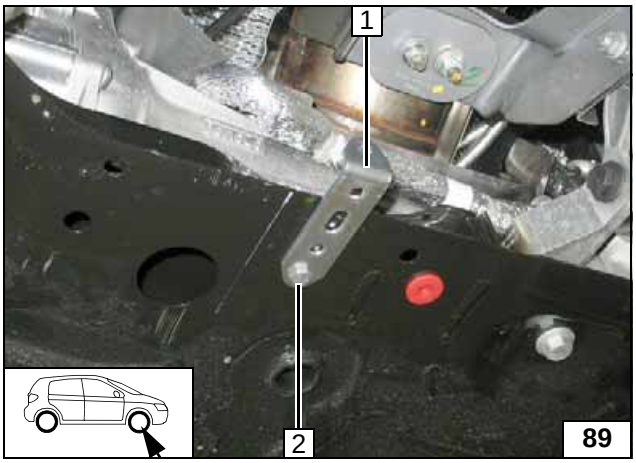
a1 = 190
a2 = 350



Assigning exhaust pipes

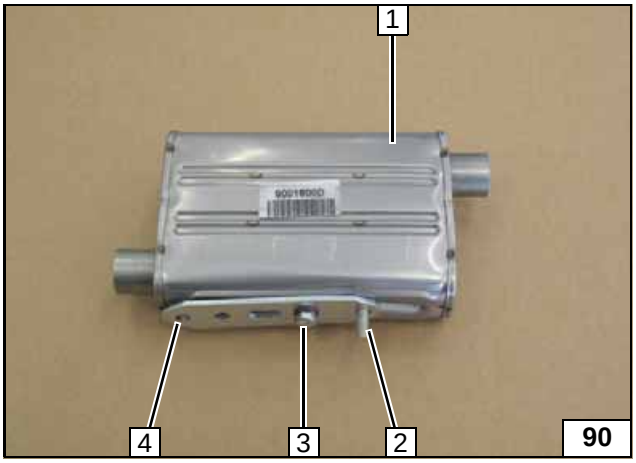


Angling down perforated bracket



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

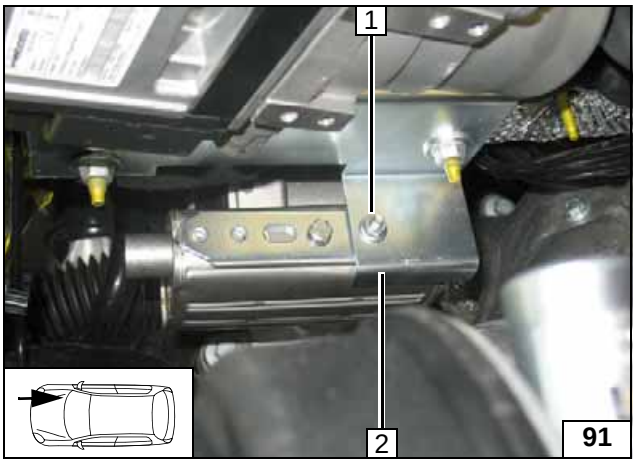
Installing perforated bracket



77kW Focus

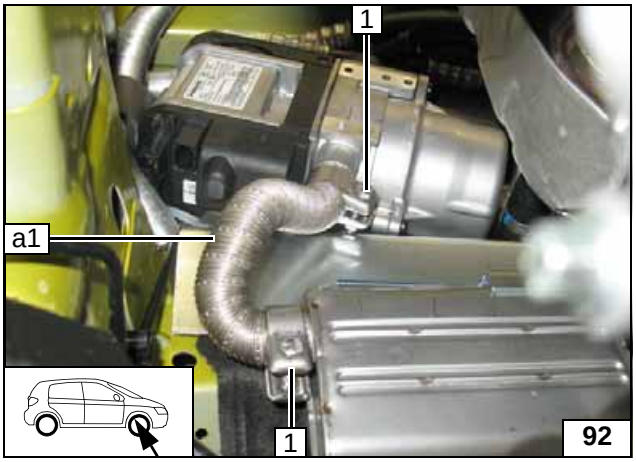
1 Silencer
2 M6x16 bolt
3 M6x16 bolt, spring lockwasher
4 Perforated bracket

Premounting silencer



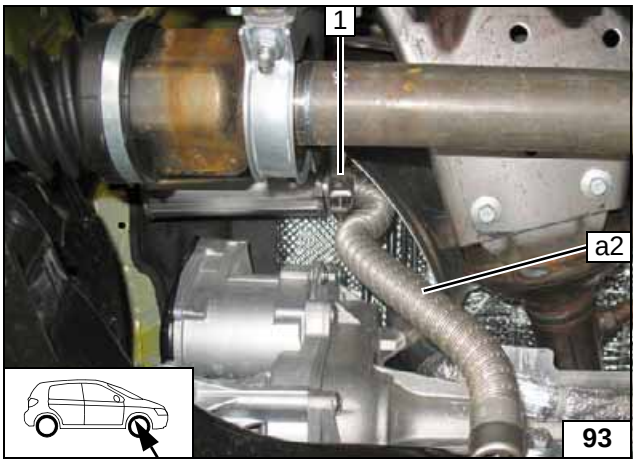
1 Flanged nut
2 Bracket

Installing silencer



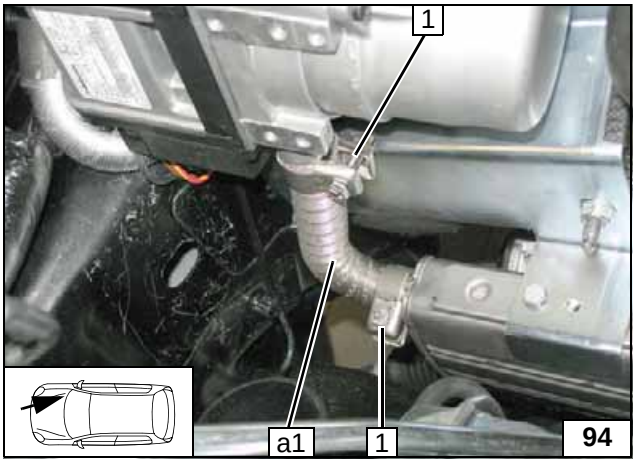
1 Hose clamp [2x]

Installing exhaust pipe a1



1 Hose clamp

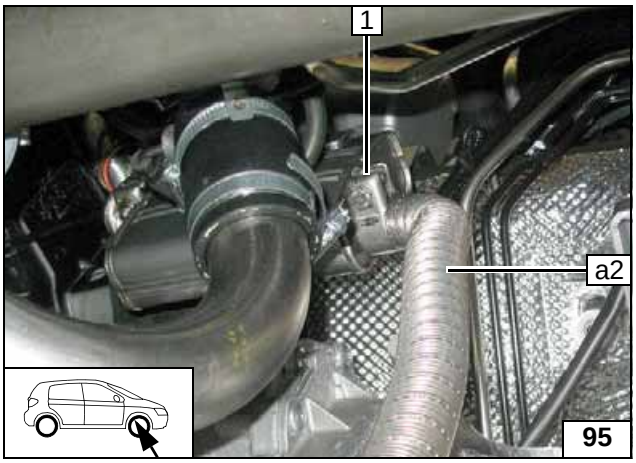
Installing exhaust pipe a2



74 / 92 / 110 kW Focus, C-Max and Grand C-Max

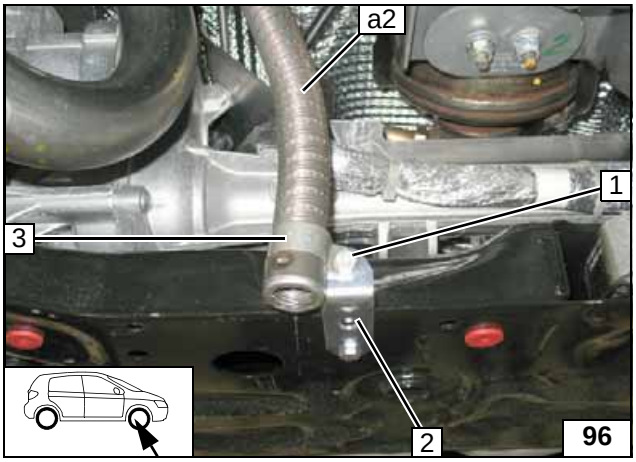
1 Hose clamp [2x]

Installing exhaust pipe a1



1 Hose clamp

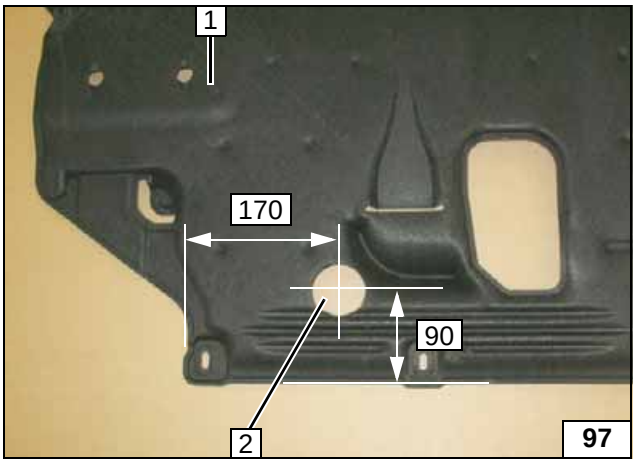
Installing exhaust pipe a2



All vehicles

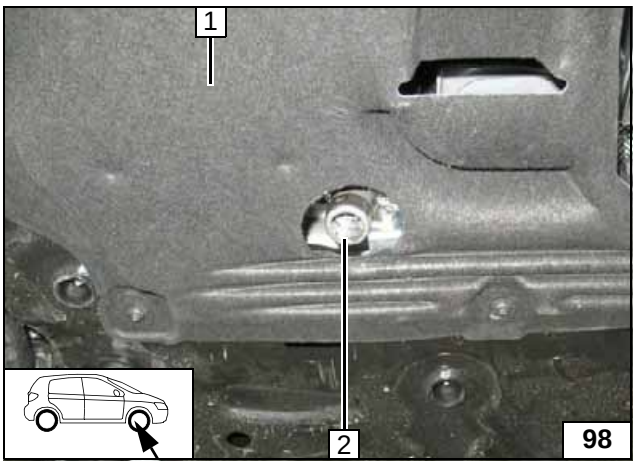
1 M6x20 bolt, flanged nut
2 Perforated bracket
3 P-clamp

Attaching exhaust pipe a2



1 Underride protection
2 60 mm dia. hole

Cutting out underride protection



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

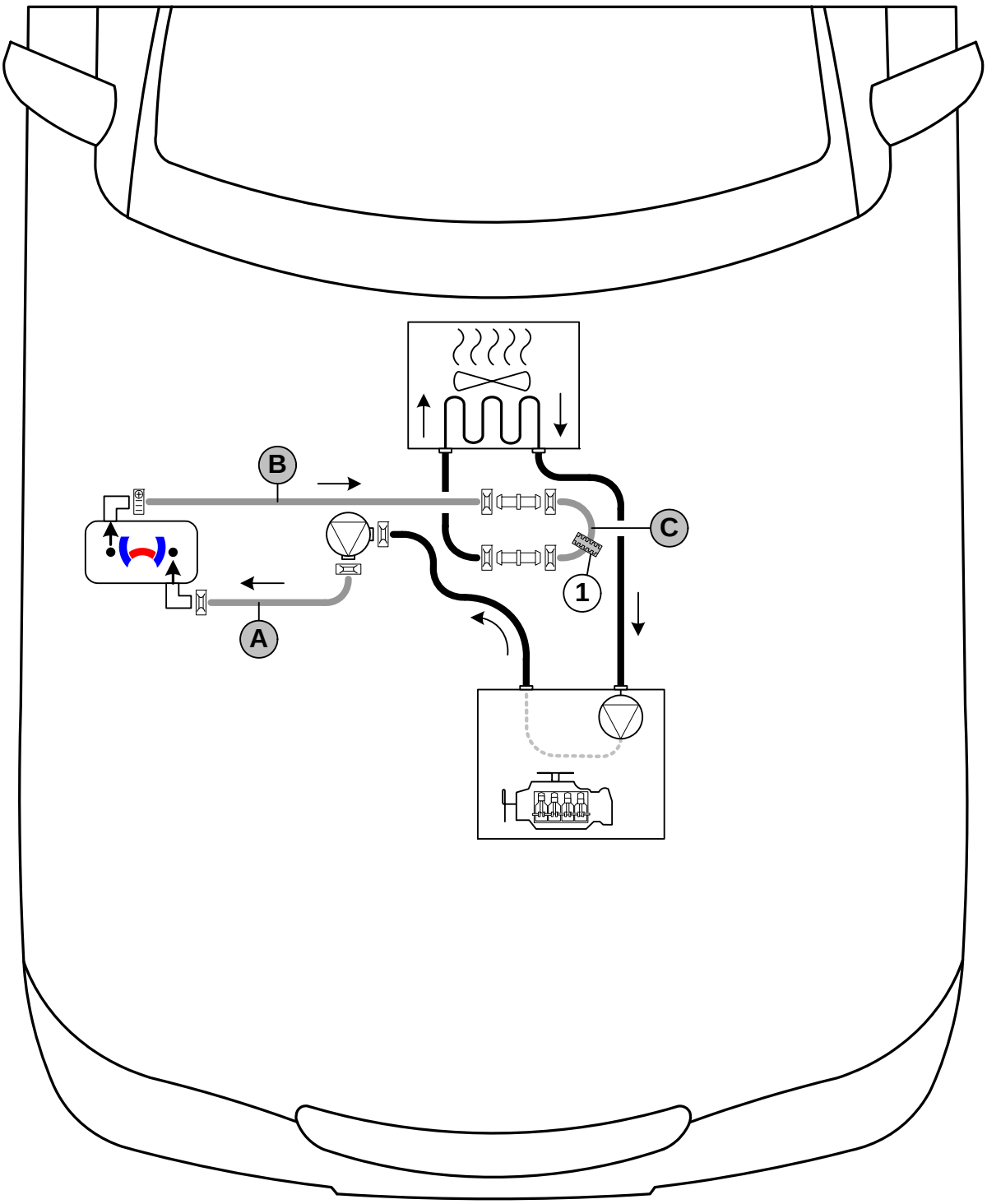
Aligning exhaust pipe a2

Coolant Circuit

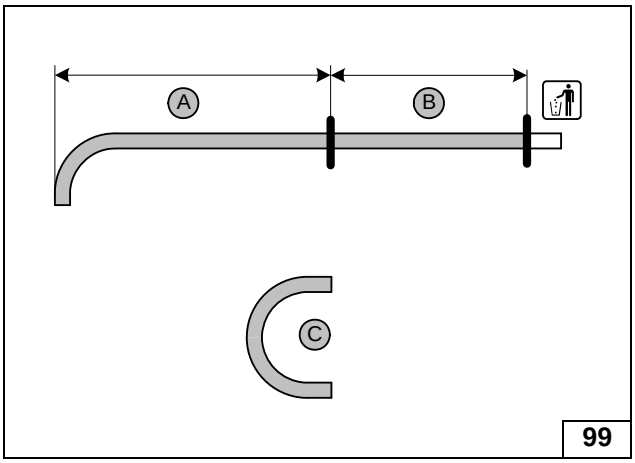
Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

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

Hose routing diagram



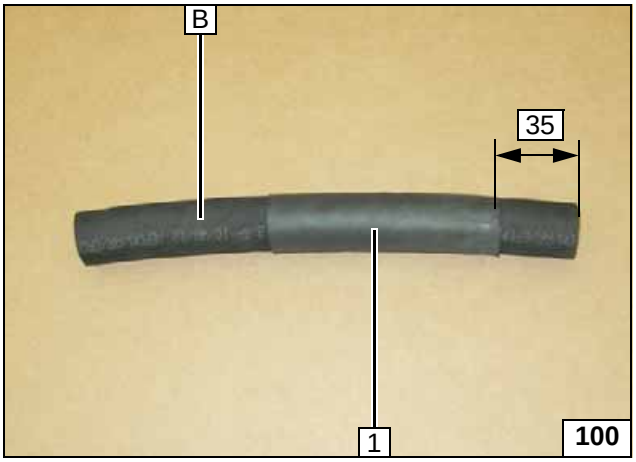
All spring clips = 25 mm dia. Hose clamp = 20-27 mm dia.
All connecting pipes = 18x18 mm dia.
1 = Black (sw) rubber isolator



Hose **C** = 180°, 18 mm dia. moulded hose.

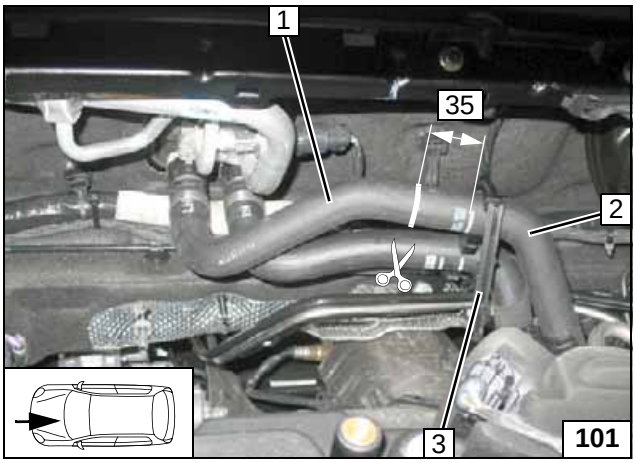
A = 260
B = 225

Cutting hoses to length



1 100 mm long heat shrink plastic tubing

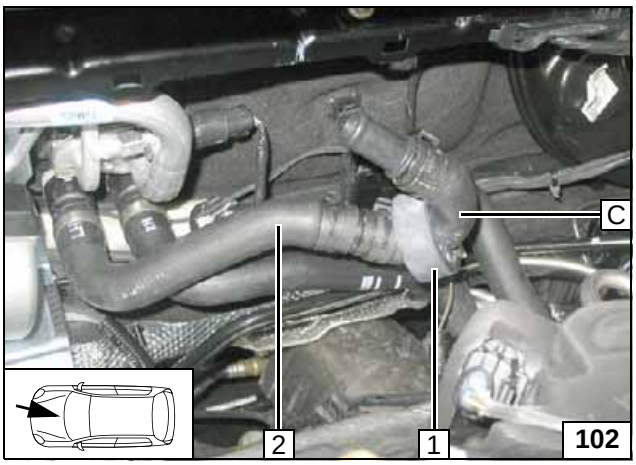
Preparing Hose B



Cut hose of engine outlet / heat exchanger inlet at the marking.
Open lock of original vehicle hose bracket **3**, will be relocked later.

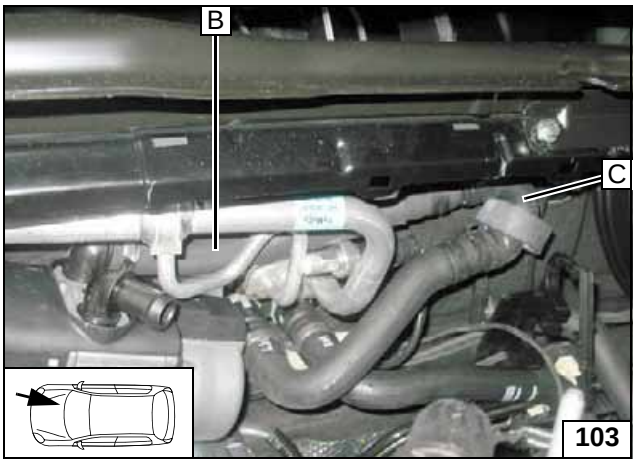
1 Heat exchanger inlet hose section
2 Engine outlet hose section

Cutting point

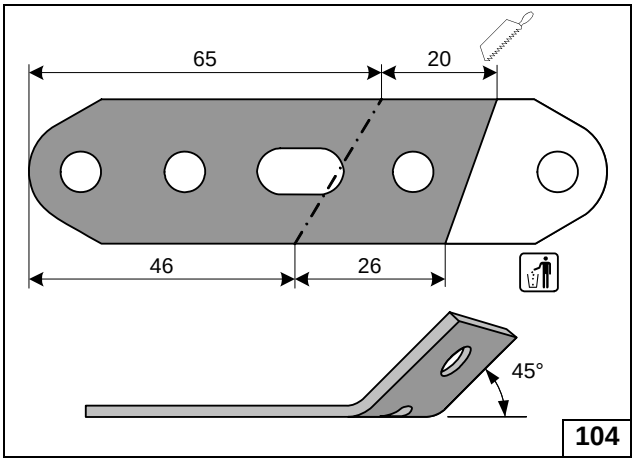


1 Black (sw) rubber isolator
2 Heat exchanger inlet hose section

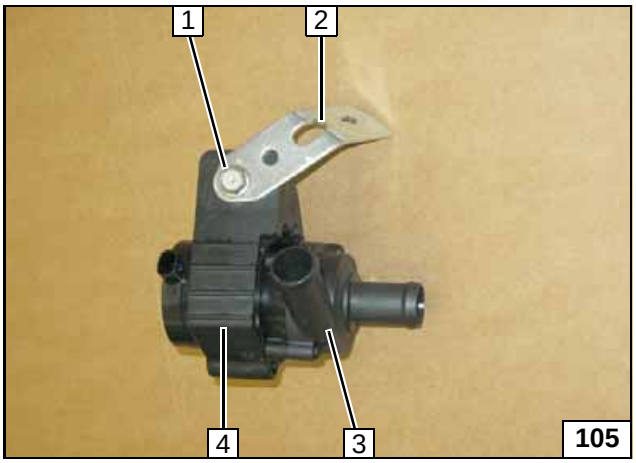
Connecting heat exchanger inlet



Connecting heater outlet

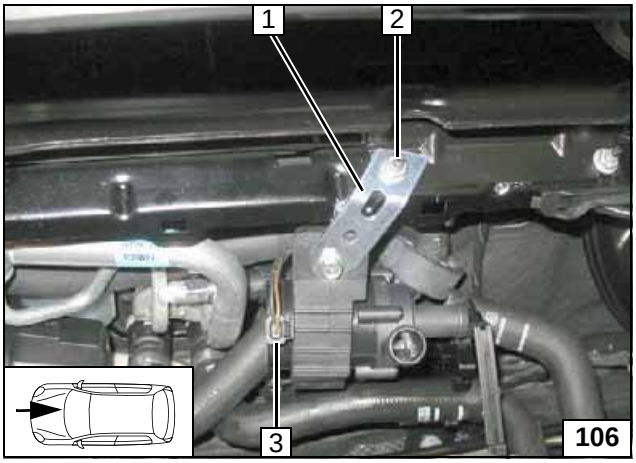


Cutting to length and bending perforated bracket



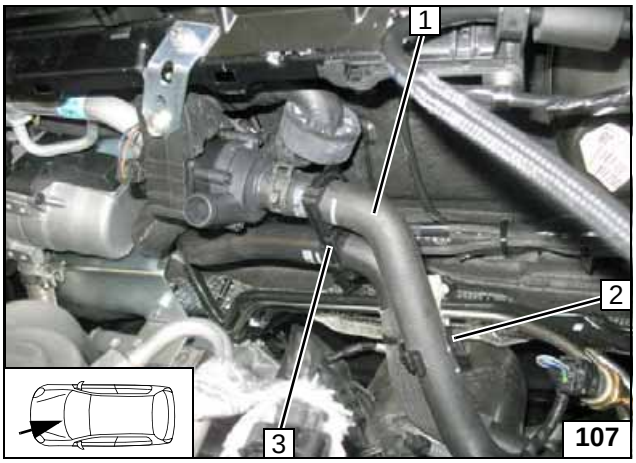
1 M6x25 bolt, flanged nut
2 Perforated bracket
3 Circulating pump
4 Circulating pump mount

Premounting circulating pump



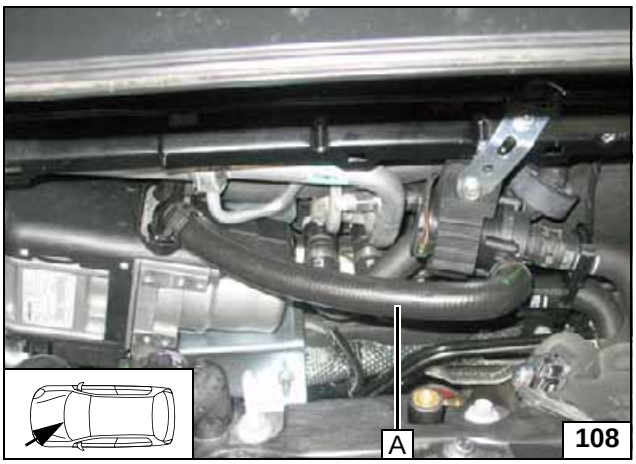
1 Perforated bracket
2 Original vehicle stud bolt, with nut
3 Connector of circulating pump wiring harness

Installing circulating pump



1 Engine outlet hose
2 Hose bracket
3 Close lock of hose bracket

Connecting engine outlet



Align hoses.
Ensure sufficient distance from neighbouring components.

Connecting heater inlet

Final Work

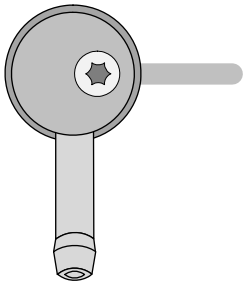
Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

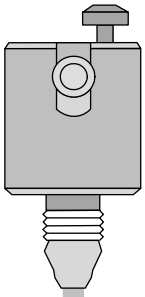
- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**
- **For initial startup and function check, please see installation instructions.**

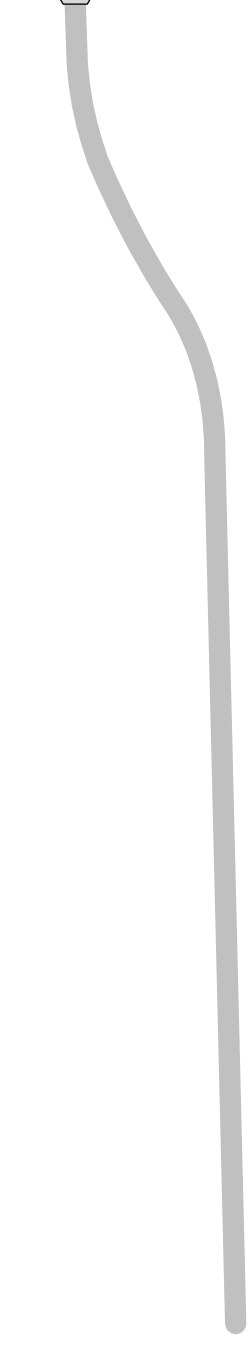
Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

FuelFix Template

Top view







100mm

Scale 1:1

Compare size of printout with dimension lines.
Allowed tolerance a maximum of 2%.

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

100mm

0

Webasto
Feel the Drive

Operating Instructions for Manual A/C for Focus up to MY 14

Please remove page and add to the vehicle operating instructions.

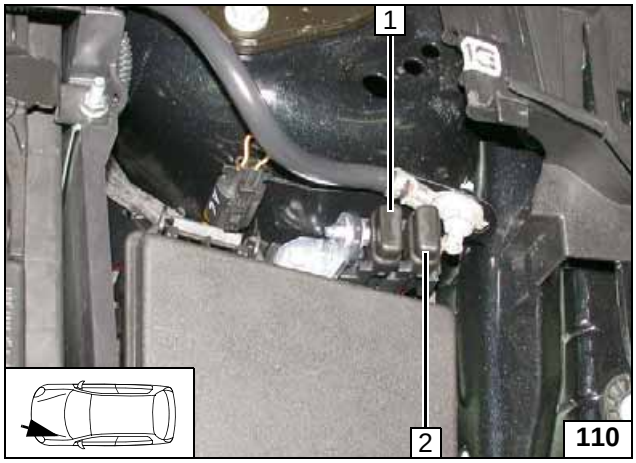
Note:
We recommend matching the heating time to the driving time.
Heating time = driving time
Example:
For a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

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

Before parking the vehicle, make the following settings:

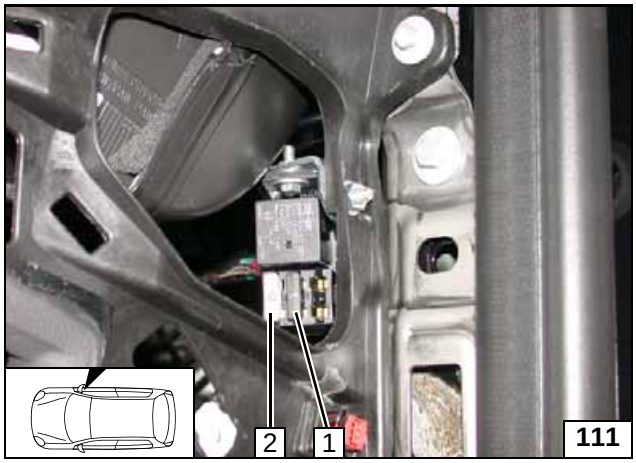
1 Set fan to level ‘1’, or max. ‘2’
2 Air outlet to windscreen
3 Set temperature to ‘max.’

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses

Webasto
Feel the Drive

Operating Instructions for Manual C-Max/Grand C-Max A/C

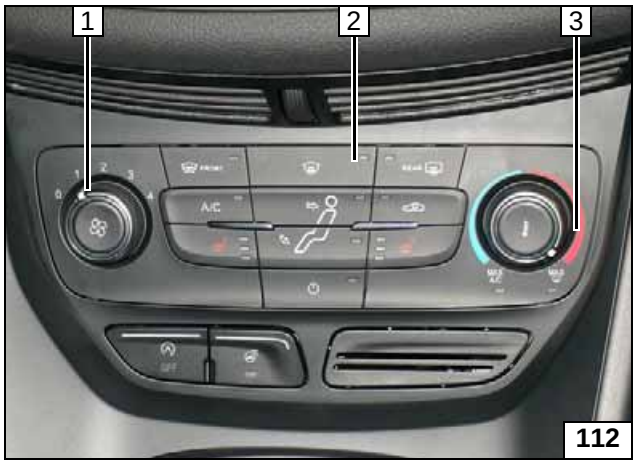
Please remove page and add to the vehicle operating instructions.

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

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

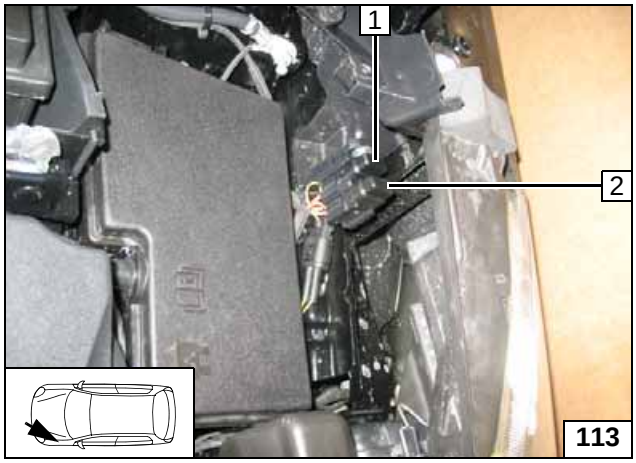
Before parking the vehicle, make the following settings:

A/C control panel



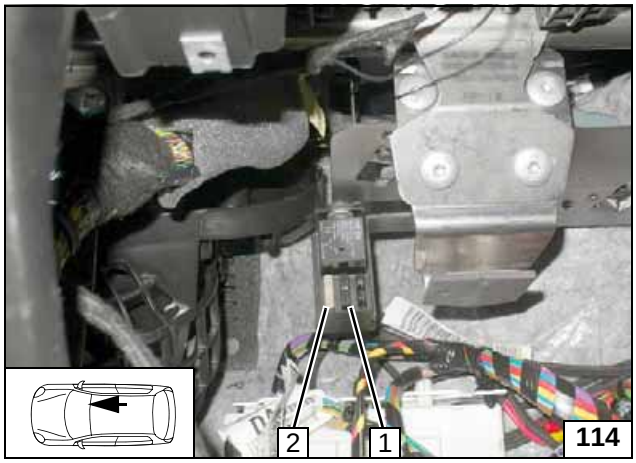
1 Set fan to level ‘1’, or max. ‘2’
2 Air outlet to windscreen
3 Set temperature to ‘max.’

Engine compartment fuses



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

Passenger compartment fuses



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

Webasto
Feel the Drive

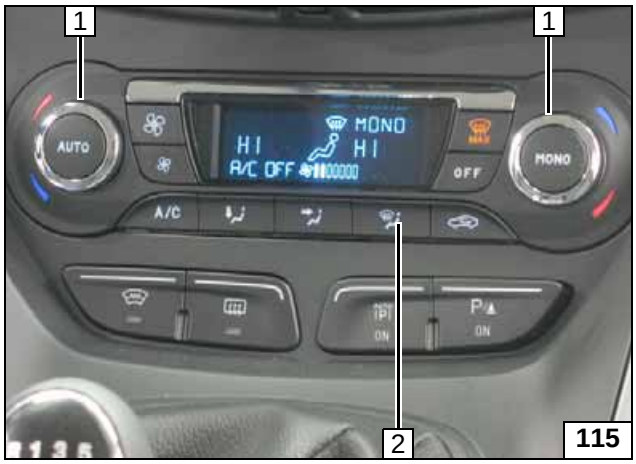
Operating Instructions for Automatic A/C Focus up to MY 14

Please remove page and add to the vehicle operating instructions.

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

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

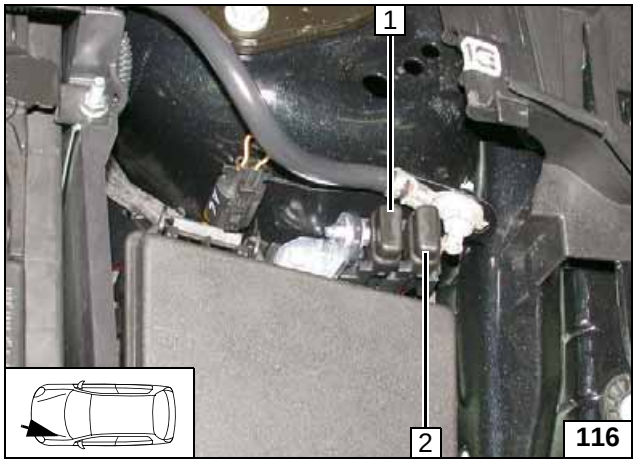
Before parking the vehicle, make the following settings:



Fan speed need not be pre-set.

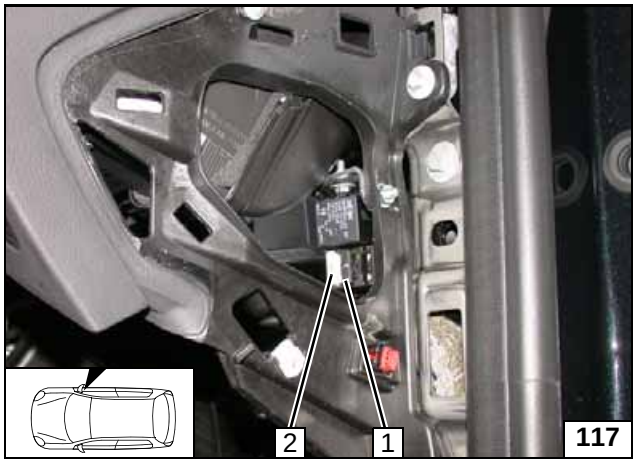
1 Set temperature on both sides to ‘HI’
2 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses

Webasto
Feel the Drive

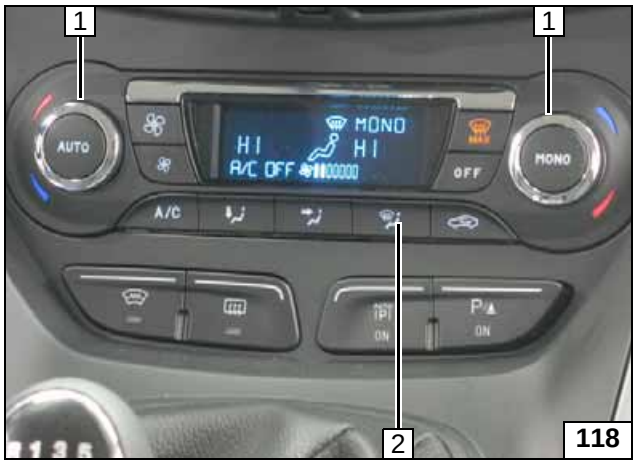
Operating Instructions for Automatic A/C C-Max/Grand C-Max

Please remove page and add to the vehicle operating instructions.

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

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

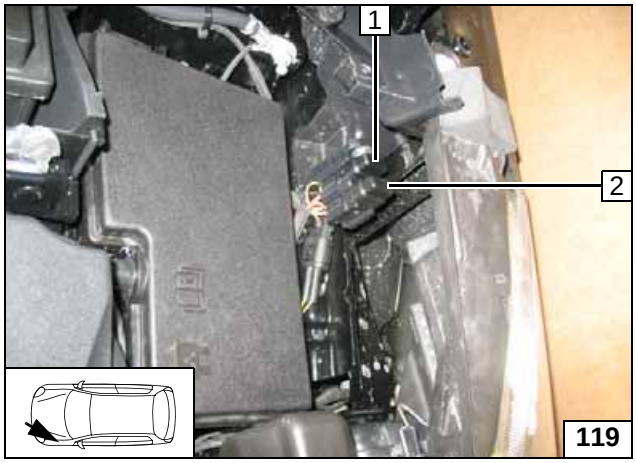
Before parking the vehicle, make the following settings:



Fan speed need not be pre-set.

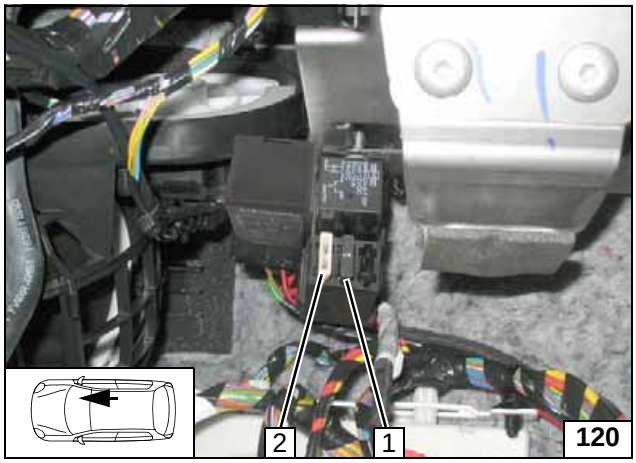
1 Set temperature on both sides to ‘HI’
2 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



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

Passenger compartment fuses