

# K Installation documentation

for Thermo Top Evo water heater

Ford EcoSport

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE		
Ford	EcoSport	JK8	from 2018	e9* 2007/46* 0092*...		
Motorisation	Fuel	Emission standard	Transmission type	Out-put[kW]	Displace-ment[cm <sup>3</sup> ]	Engine code
1.0 EcoBoost	Petrol	Euro 6	SG	92	998	M1JJ
1.0 EcoBoost	Petrol	Euro 6	SG	103	998	YYJD

Validity	Equipment variants	Model
		EcoSport
Verified equipment variants	Automatic air-conditioning	X
	Xenon main headlights	X
	LED daytime running lights	X
	Halogen front fog lights	X
	Keyless Go	X
Unverified equipment variants	Alarm system	X
	Manual air-conditioning	X

Total installation time	Note
6.9 hours	

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# 1 List of abbreviations

DP	Fuel pump
HG	Heater
MCC	MultiControl (control element)
PWM	Pulse width modulator
RSH	Relay and fuse holder of passenger compartment
SG	Manual transmission
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

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## 2 Installation notes

### 2.1 Information on Validity

This installation documentation applies to vehicles listed on 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 other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

### 2.2 Components used

Designation	Order number
Basic delivery scope of Thermo Top Evo in accordance with price list	In accordance with price list
Installation kit for Ford EcoSport petrol	1326722A
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list

### 2.3 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.

### 2.4 Installation Recommendations

Arrange for the vehicle to be delivered with the tank only about  $\frac{1}{4}$  full.

For the MultiControl CAR option, the recommended installation locations for the Telestart or ThermoCall push button 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.

We recommend installing a Thermo Top Evo 4. The heater is integrated into the coolant circuit as an 'island' and heats up the vehicle passenger compartment. There is no engine pre-heating.

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## 3 About this document

### 3.1 Purpose of the document

This installation documentation is part of the product and contains all the information required to ensure professional vehicle specific installation of the:

Thermo Top Evo heater
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### 3.2 Warranty and liability

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 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.

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 start-up 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.

#### 3.2.1 Statutory regulations governing installation

The Thermo Top Evo heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). 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.

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

### 3.3 Safety

#### Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training
- Corresponding qualification for working on technical systems

#### Regulations and legal requirements

The regulations from the heater's general installation and operating instructions must be observed.

#### 3.3.1 Safety information on installation

##### Danger posed by live parts

- ▶ Prior to installation, disconnect the vehicle from the voltage supply.
- ▶ Make sure the electrical system is earthed correctly.
- ▶ Always comply with legal requirements.
- ▶ Observe data on type label.

##### Danger of fire and leaking toxic gases due to improper installation

- ▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:
  - ⇒ Maintain minimum safety distances.
  - ⇒ Ensure adequate ventilation.
  - ⇒ Use fire-resistant materials or heat shields.

##### Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage
- ▶ Fit protectors on sharp edges.

### 3.4 Using this document

Before installing and operating the heater, read this installation documentation, the installation instructions of the heater, the operating instructions and supplementary sheets provided.

#### 3.4.1 Explanatory Notes on the Document

There is an identification mark near the respective work step to allow you to quickly allocate the other applicable documents to the Webasto components to be installed:

Generally valid Webasto documentation	
Vehicle-specific installation documentation	
Webasto Comfort A/C control	
Webasto Standard A/C control	
Tank extracting device (e.g. FuelFix)	
Exhaust end fastener (EFIX)	
Combustion air intake silencer	
Spacer bracket (ASH)	

#### 3.4.2 Use of symbols



#### DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

► Actions to protect yourself against risks.



#### WARNING

Type and source of the risk

Consequences: Failure to follow the instructions can lead to serious or even fatal injuries

► Actions to protect yourself against risks.



#### CAUTION

Type and source of the risk

Consequences: Failure to follow the instructions can lead to minor injuries

► Actions to protect yourself against risks.



Type and source of the risk

Consequences: Failure to follow the instructions can lead to material damage

► Actions to protect yourself against risks.



Reference to the vehicle manufacturer's specific documents.



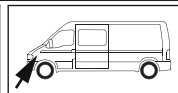
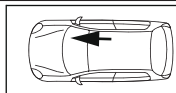
a note on a special technical feature

#### 3.4.3 Work step identification marks

The ongoing work step is indicated on the outside top corner of the page:

Mechanical system	Electrical System	High-voltage	Coolant
Combustion air	Fuel	Exhaust gas	Software

#### 3.4.4 Orientation aid



The arrow indicates the position on the vehicle and the viewing angle

#### 3.4.5 Use of highlighting

Highlight	Explanation
►	Necessary action
⇒	Result of an action
<b>1</b> / <b>12</b> / <b>a1</b> / <b>A</b>	Position numbers for the image descriptions
① / ⑫	Position numbers for the image descriptions for electrical wires and wiring harnesses and coolant hose sections

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## 4 Technical Information

### Dimension specifications

- All dimensions specified in mm

### Tightening torque specifications

- 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
- 5x12 bolt tightening torque of 2-part heater bracket = 6Nm
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology

### Specified temperature for fabric heat shrink plastic tubing

- Shrink temperature max. 230°C

### Necessary special tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Hose clamping pliers
- Hose cutter
- Automatic wire stripper 0.2 - 6 mm<sup>2</sup>
- Crimping pliers for cable lugs 0.5 – 10 mm<sup>2</sup>
- Crimping pliers for tab connector 0.14 – 6 mm<sup>2</sup>
- Crimping pliers for connector 0.25 – 6 mm<sup>2</sup>
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

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## 5 Preparing measures

### 5.1 Vehicle preparation



Further information can be found in the vehicle manufacturer's technical documentation.

- ▶ Open the fuel tank cap
- ▶ Ventilate the fuel tank
- ▶ Close the fuel tank cap again
- ▶ Depressurise the cooling system
- ▶ Disconnect the battery and remove it
- ▶ Remove battery trim
- ▶ Remove the air filter box with intake hoses
- ▶ Remove the lower engine cover
- ▶ Remove the lower footwell trim on the front passenger's side
- ▶ Remove lower footwell trim on driver's side
- ▶ Remove storage compartment on driver's side instrument panel
- ▶ Remove the side instrument panel trim on the left
- ▶ Remove A/C control panel (see removal notes)

### 5.2 Heater preparation



Observe the general installation instructions of the heater.

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



## 6 Installation overview

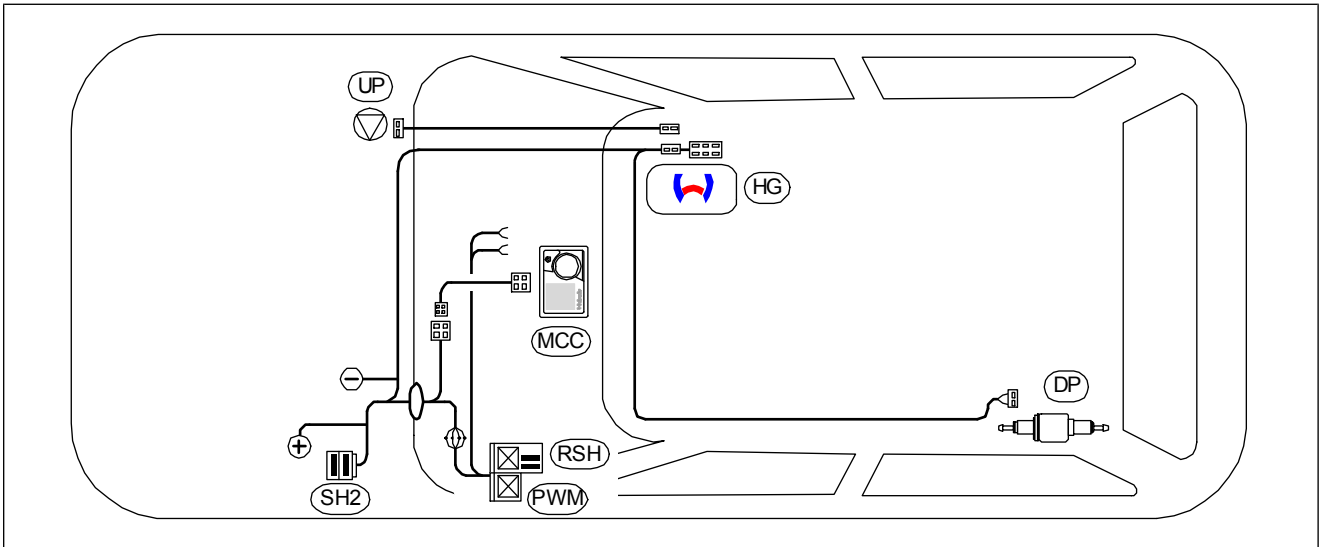
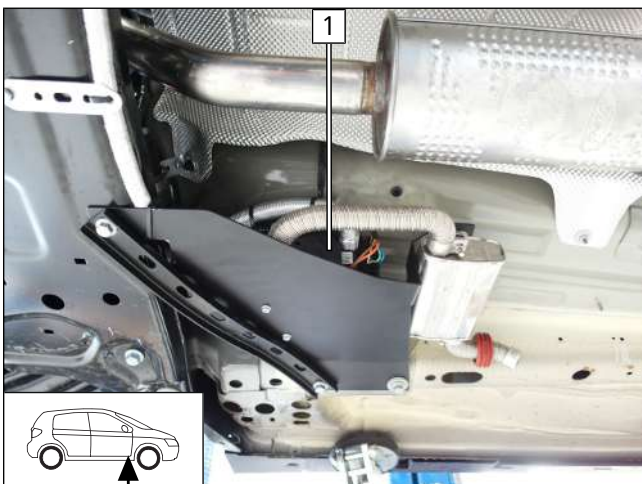


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
HG	Heater
MCC	MultiControl CAR
PWM	Pulse width modulator
RSH	Relay and fuse holder of passenger compartment
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

Heater installation location



1 Heater

Fig. 2



## 7 Electrical system of engine compartment

### Mounting SH2

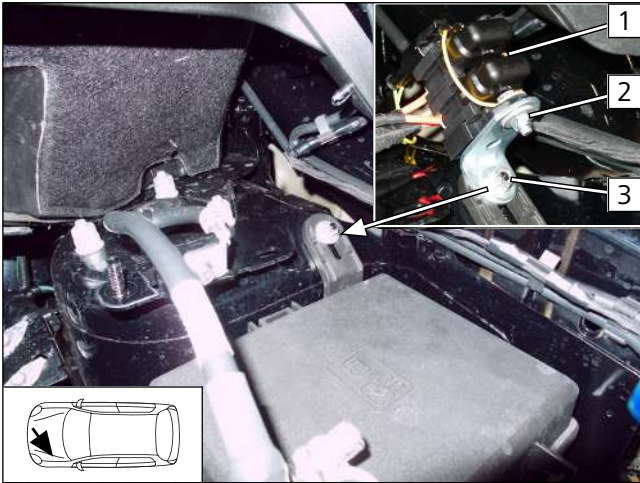


Fig. 3

- 1 Fuses F1 and F2
- 2 M5x16 bolt, large diameter washer, retaining plate of SH2, angle bracket, large diameter washer, nut
- 3 Original vehicle stud bolt, angle bracket, original vehicle nut

### Earth wire connection

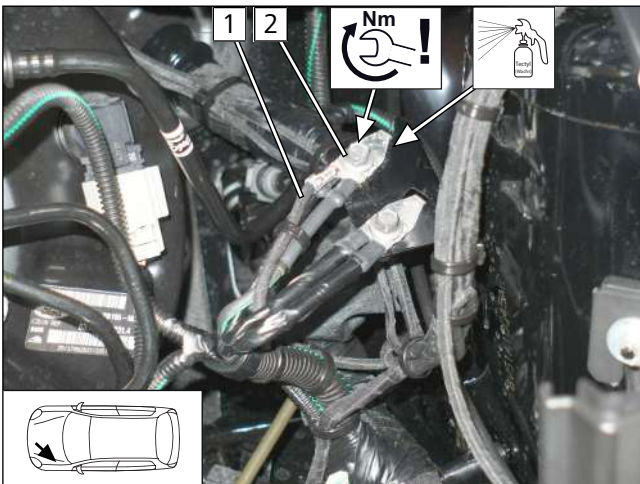


Fig. 4



### DANGER

Fire hazard due to insufficient tightening torque

► Observe tightening torque

- 1 Earth wire
- 2 Original vehicle earth point

### Positive wire connection

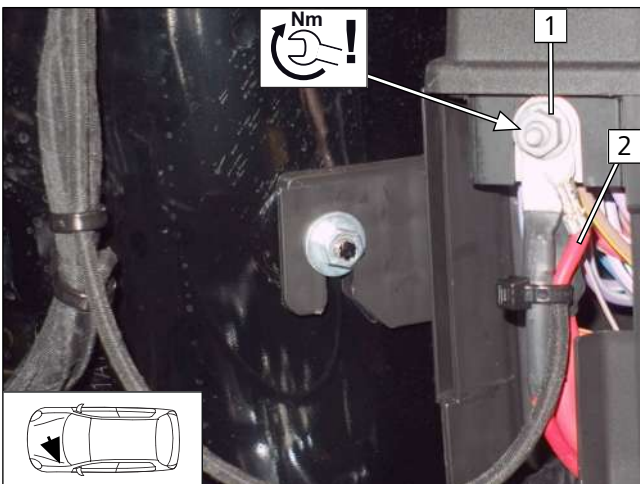


Fig. 5



### DANGER

Fire hazard due to insufficient tightening torque

► Observe tightening torque

- 1 Original vehicle positive point
- 2 Positive wire



## Passenger compartment wiring harness pass through

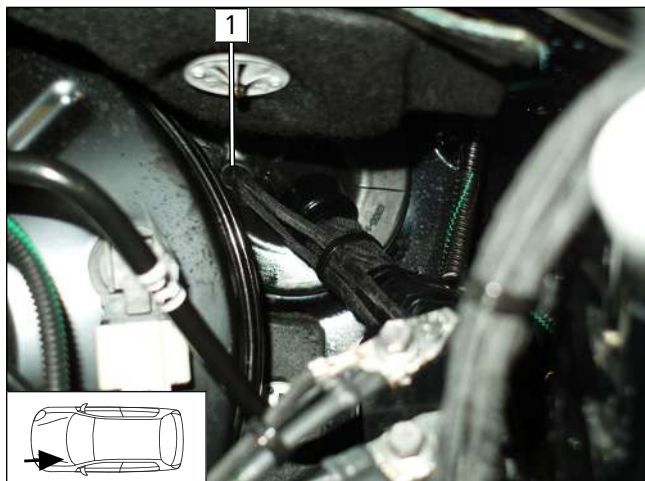


Fig. 6

**1** Protective rubber plug

## Routing heater wiring harness

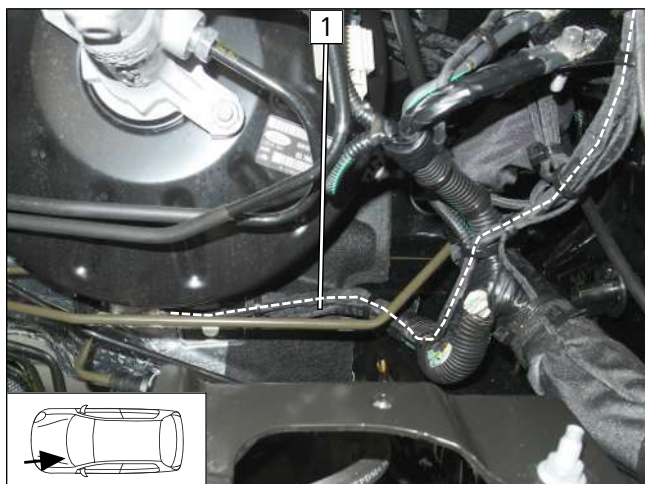


Fig. 7

- ▶ Route heater wiring harness **1** along original vehicle wiring harness to the front passenger's side and then to the underbody up to the heater installation location and attach using cable ties.



## 8 Mechanical system

### 8.1 Preparing installation location

#### Removing strut

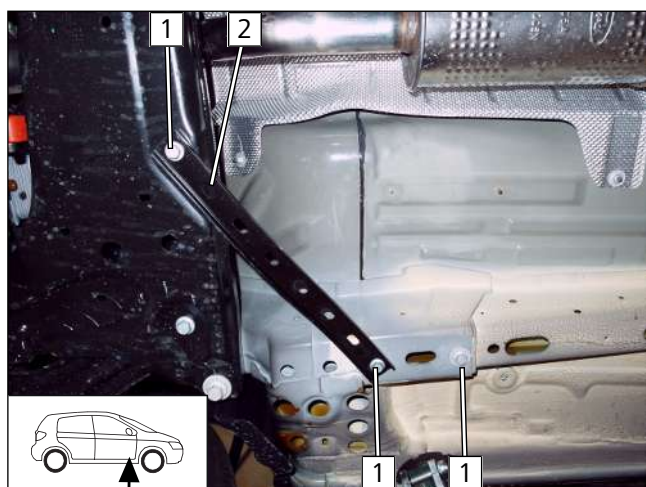


Fig. 8

- ▶ Remove original vehicle bolt **1** and strut **2**, they will be reused.

### 8.2 Premounting heater

#### Mounting water connection piece

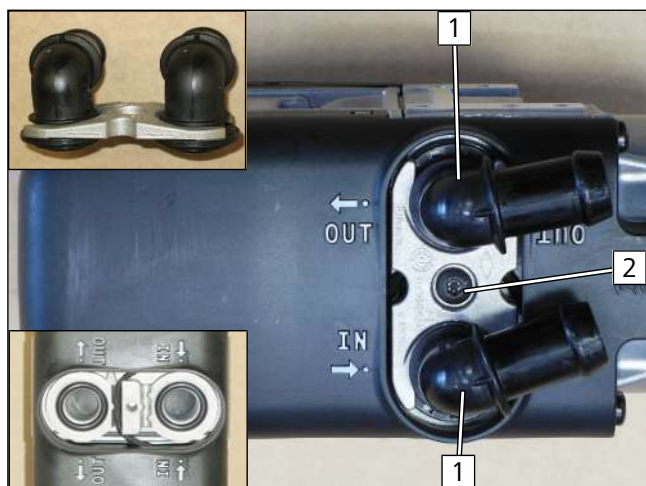


Fig. 9

- Observe the general installation instructions of the heater.

- 1** Water connection piece, sealing ring
- 2** 5x15 self-tapping bolt, water connection piece retaining plate

#### Premounting fuel hose

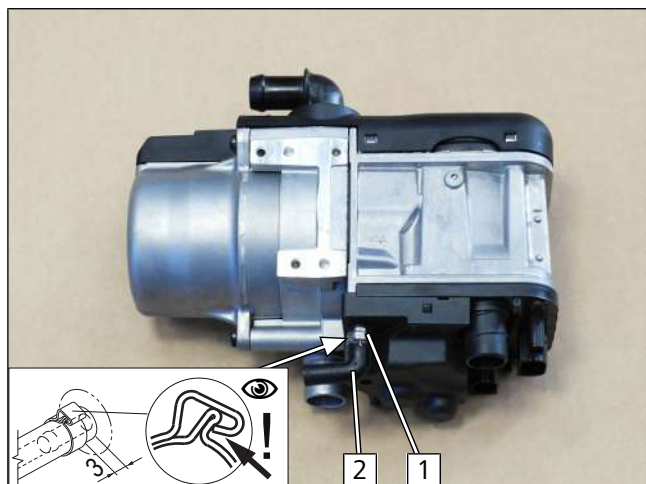


Fig. 10

- 1** 10mm dia. clamp
- 2** 90° moulded hose



### Mounting bracket on heater

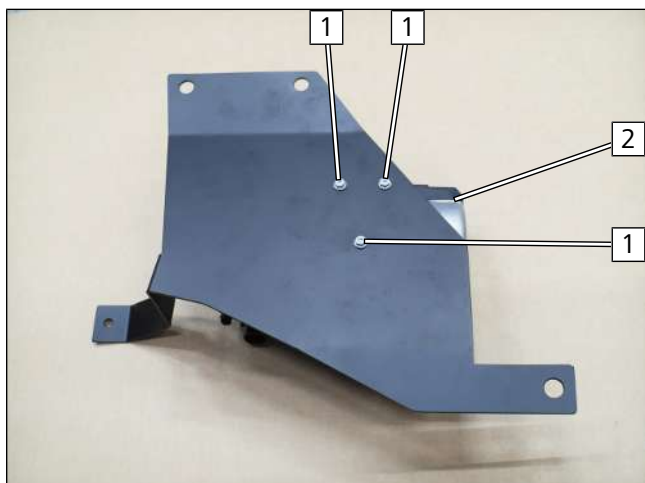


Fig. 11

- 1** 5x13 self-tapping bolt
- 2** Heater

### Mounting exhaust silencer on bracket

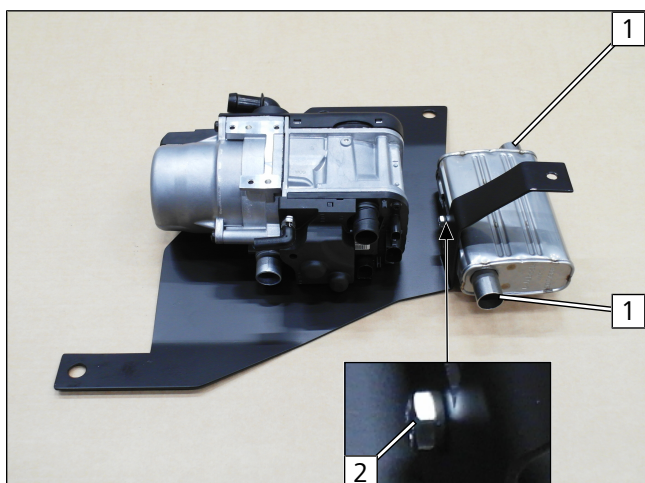


Fig. 12



Observe the position of the exhaust connection piece **1**.

- 2** M6x16 bolt, spring lockwasher, bracket, exhaust silencer

### Cutting exhaust pipes to length

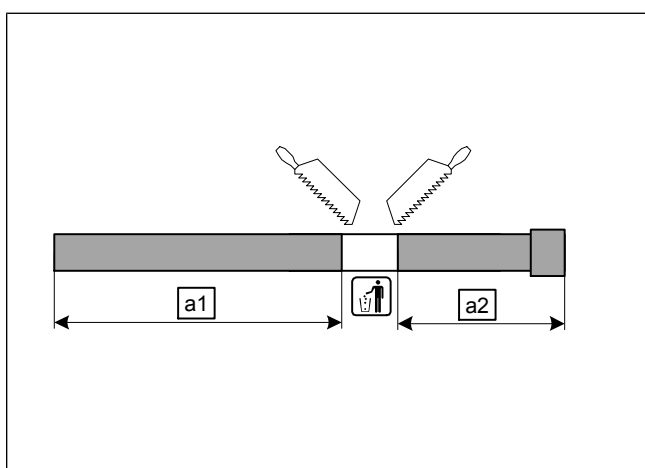


Fig. 13

- a1** 290
- a2** 130



## Preparing exhaust pipes

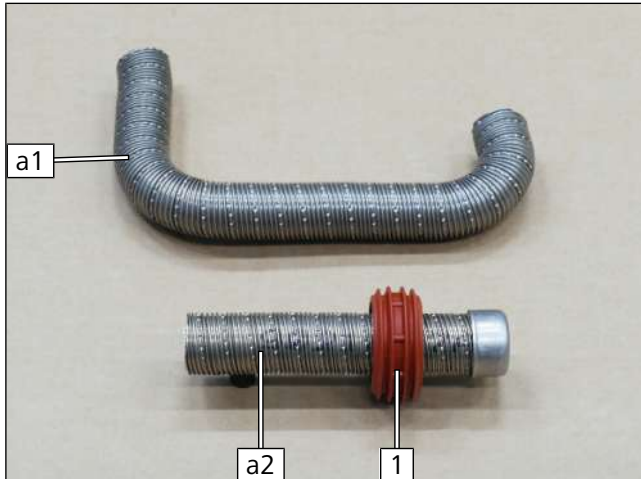


Fig. 14

► Bend exhaust pipe **a1** as shown.

**1** Spacer bracket

## Mounting exhaust pipes

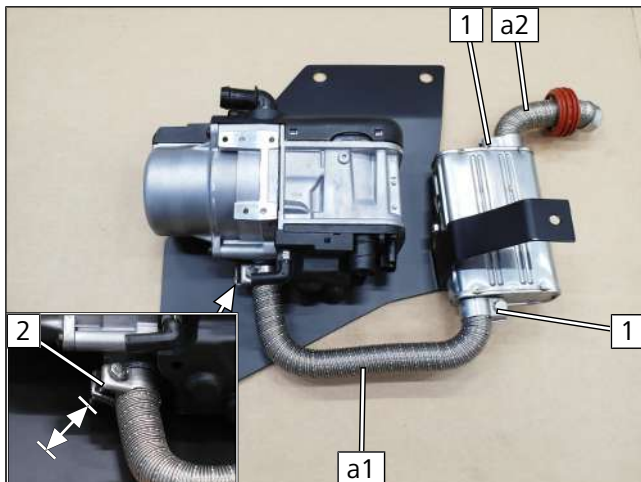


Fig. 15



Danger of damage to components

► Ensure sufficient distance between hose clamp **2** and bracket, correct if necessary.

**1** Hose clamp

## Cutting hoses to length

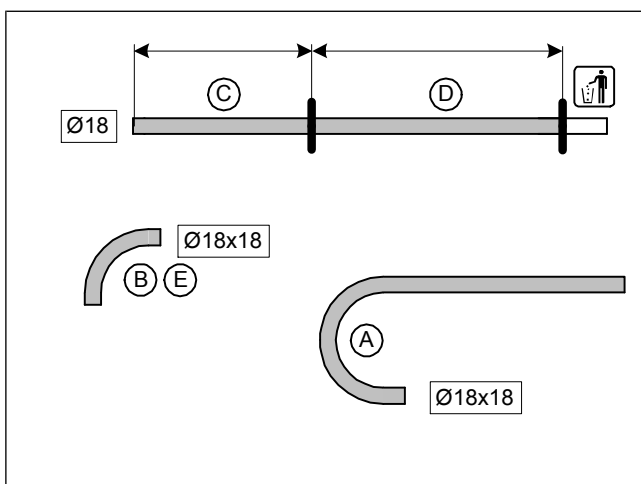


Fig. 16

<b>A</b>	180°
<b>B / E</b>	90°
<b>C</b>	400
<b>D</b>	770



## Preparing hoses

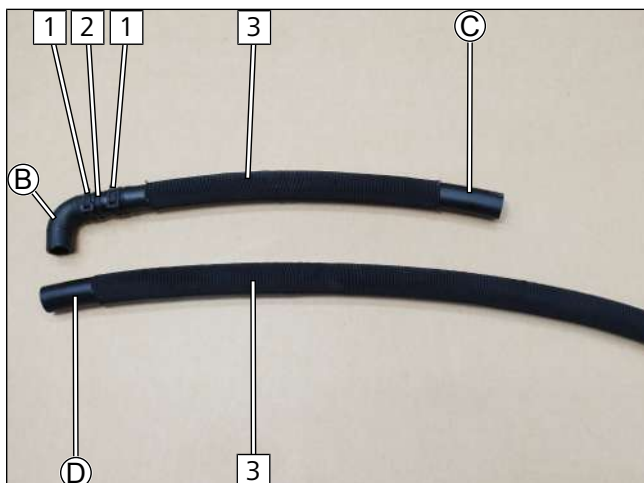


Fig. 17

► Slide fabric protective **3** onto hoses **C** and **D**, cut to length and shrink.

- 1** 25mm dia. spring clip
- 2** 18x18mm dia. 180° connecting pipe

## Mounting hoses on heater

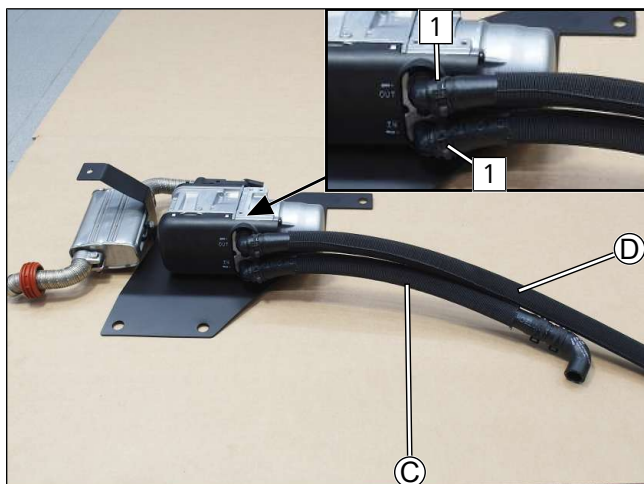


Fig. 18

- 1** 25mm dia. spring clip

## 8.3 Heater installation

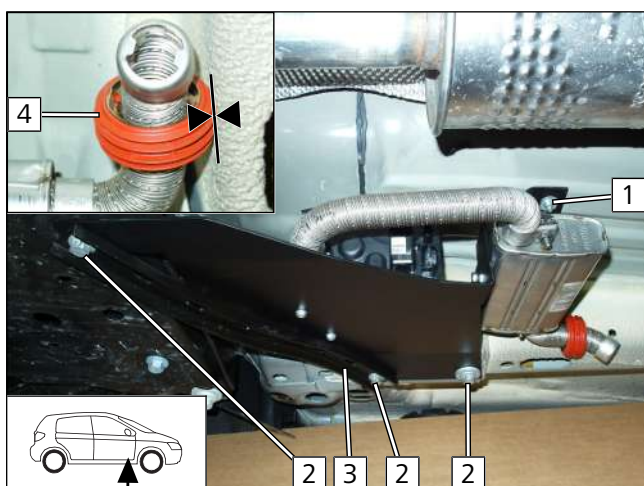
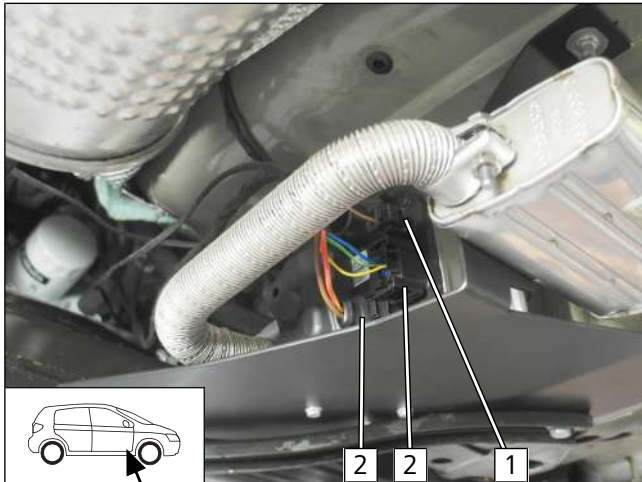


Fig. 19

- 1** Original vehicle stud bolt, bracket, plate nut
- 2** Original vehicle bolt
- 3** Original vehicle strut
- 4** Attach and align spacer bracket



## Mounting wiring harnesses



- 1 Coolant pump wiring harness connector
- 2 Heater wiring harness connector

Fig. 20





## 9 Fuel



### DANGER

**Risk of fire and explosion due to leaking fuel and escaping fuel vapours.**

The Incorrect installation of the fuel extractor can cause damage and fire.

- ▶ Avoid electrostatic discharges and open fire.
- ▶ When working on the fuel system, ensure sufficient ventilation and bleeding.
- ▶ Open the fuel tank cap of the vehicle.
- ▶ Ventilate the fuel tank
- ▶ Re-close the tank lock.
- ▶ Catch any fuel running off with an appropriate container.



### Danger of damage to components

- ▶ Install fuel line and fuel pump wiring harness so that they are protected against stone impact.
- ▶ Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

### Dismantling fuel pump connector

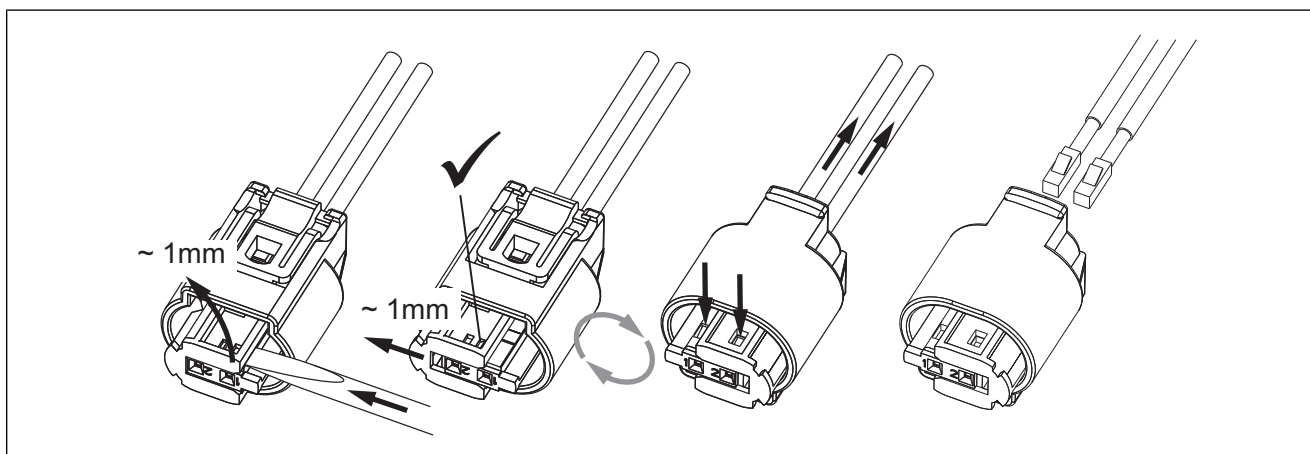


Fig. 21

## 9.1 Mounting fuel pump, connecting and routing lines

### Preparing perforated bracket

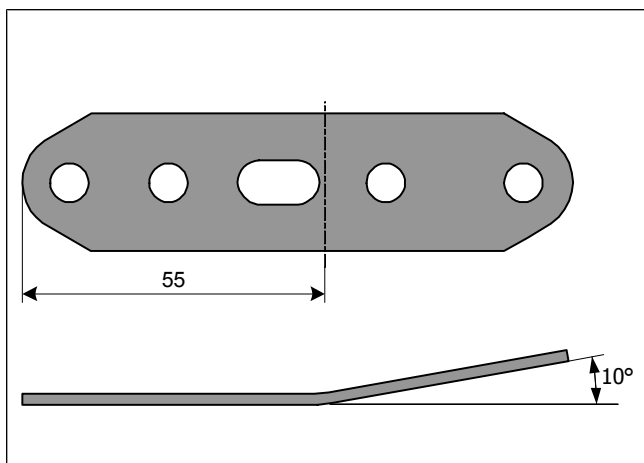


Fig. 22



## Premounting fuel pump

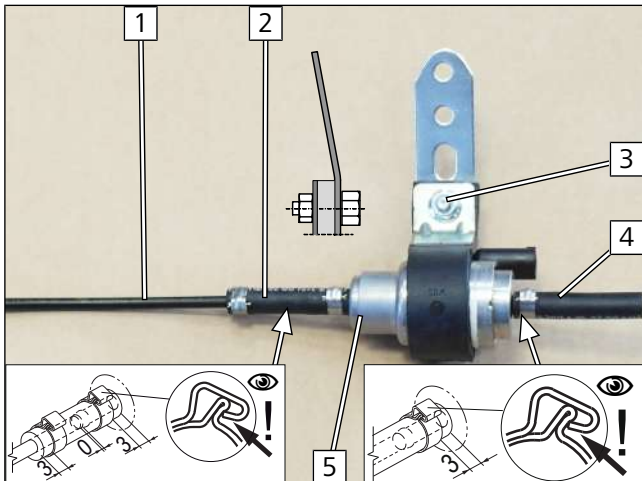


Fig. 23

- 1 Fuel line, approx. 300 lg.
- 2 Hose section, 10mm dia. clamp [2x]
- 3 M6x25 bolt, perforated bracket, fuel pump mount, support angle bracket, flanged nut
- 4 Hose section, 10mm dia. clamp
- 5 Fuel pump

## Mounting fuel pump

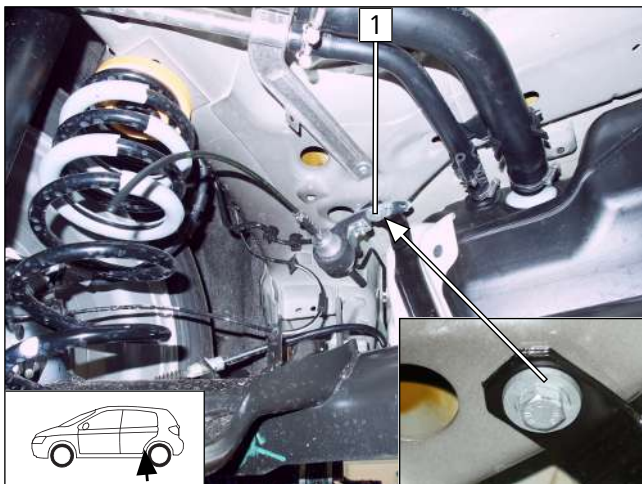


Fig. 24

- 1 Original vehicle bolt

## Inserting rivet nut

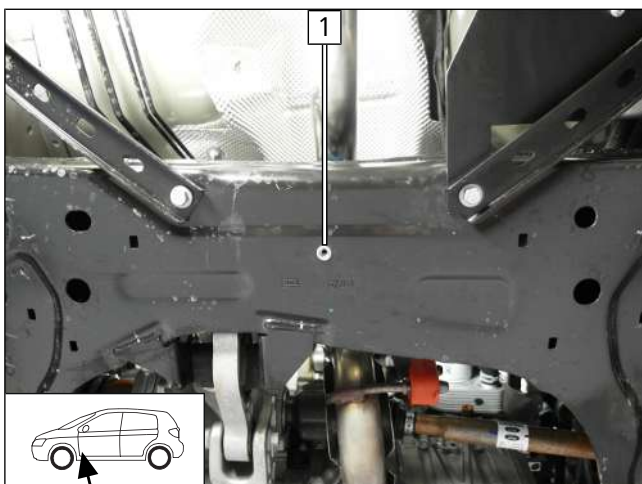


Fig. 25

- 1 M6 rivet nut in original vehicle hole



## Mounting perforated bracket



Fig. 26

- 1 M6x20 bolt, spring lockwasher, perforated bracket, rivet nut

## Connecting fuel line to heater

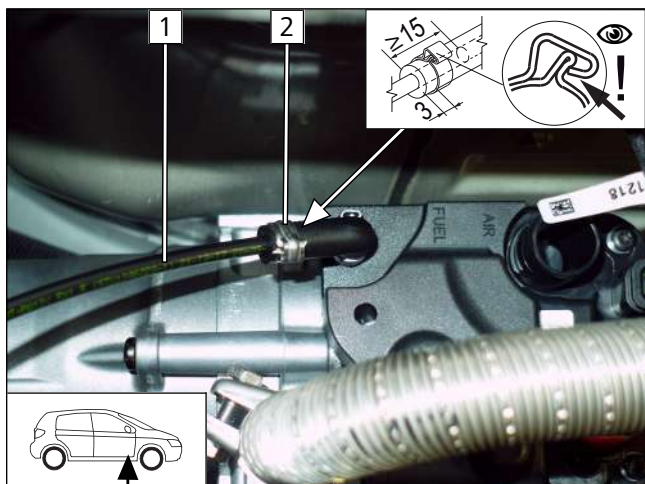


Fig. 27

- 1 Fuel line
- 2 10mm dia. clamp

## Installing lines

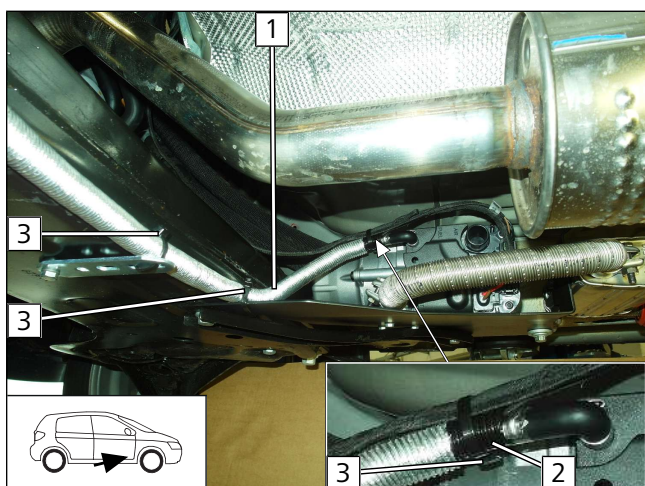


Fig. 28

- ▶ Draw fuel line and fuel pump wiring harness into corrugated tube 2.
- ▶ Push on heat protection hose 1.
- 3 Cable tie

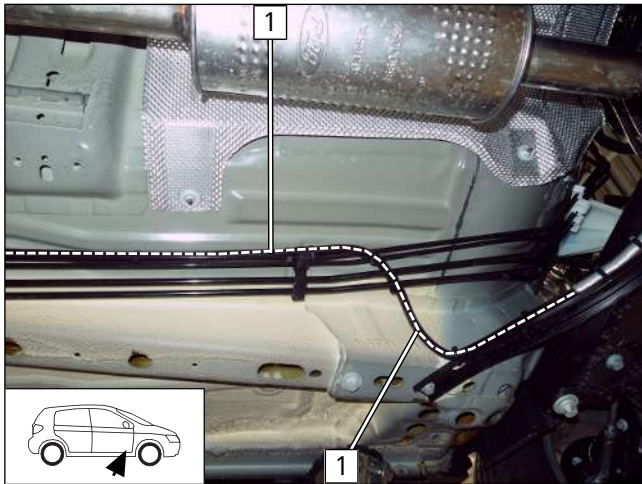


Fig. 29

► Route fuel line and fuel pump wiring harness in corrugated tube **1** on the original vehicle lines to the installation location of the fuel pump.

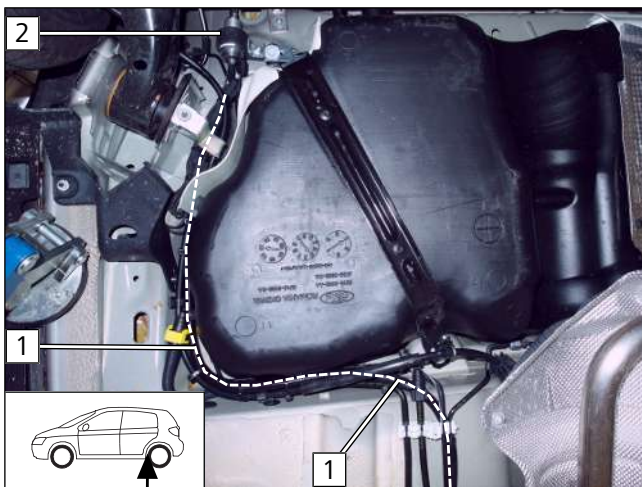


Fig. 30

► Route fuel line and fuel pump wiring harness in corrugated tube **1** on the original vehicle lines to fuel pump **2**.

### Mounting fuel pump connector

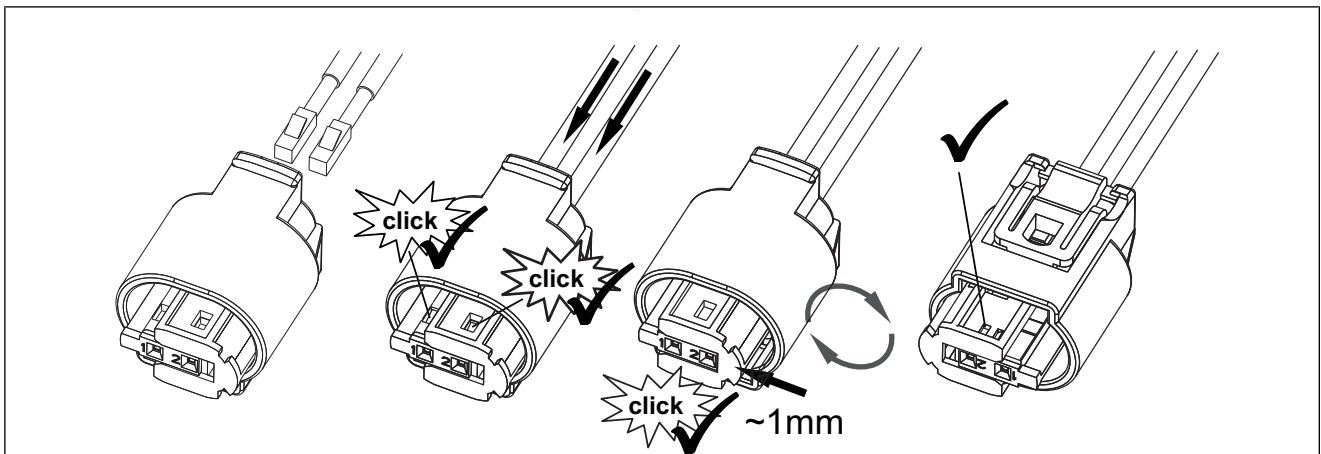


Fig. 31



## Connecting fuel pump

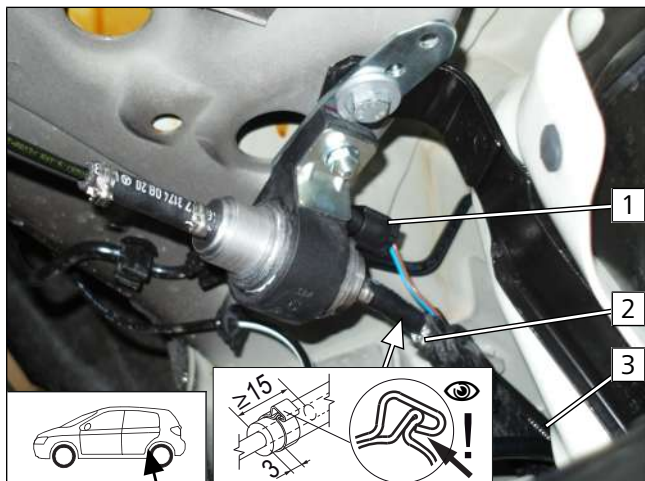


Fig. 32

- 1 Fuel pump wiring harness, connector X7 mounted
- 2 10mm dia. clamp
- 3 Heater fuel line

## 9.2 Mounting and connecting tank extracting device

### Cutting point

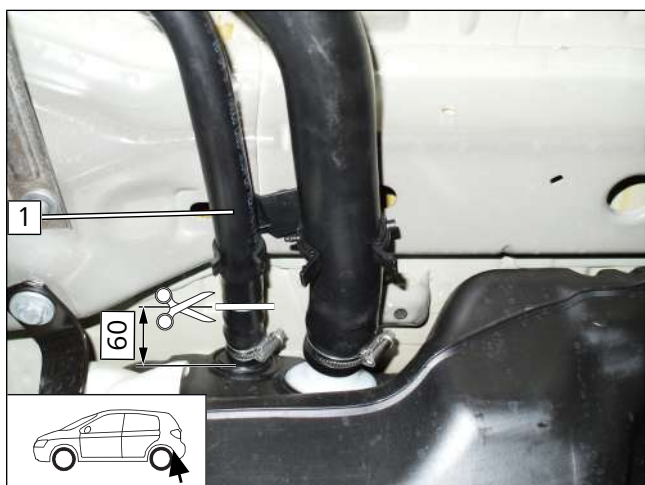


Fig. 33



### **DANGER**

Risk of fire and explosion due to leaking fuel and escaping fuel vapours.

- 1 Fuel tank ventilation line

### Preparing tank extracting device

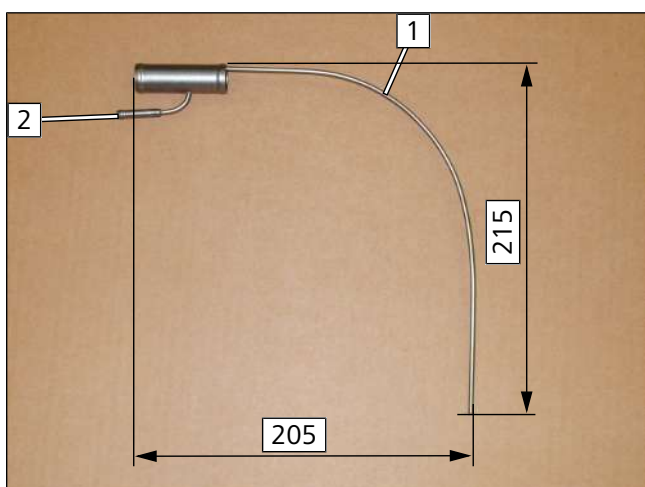


Fig. 34

- Bend tank extracting device **1** and cut to length.
- Bend connection piece for tank extracting device **2** at an angle of approx. 90°.



## Installing tank extracting device



Fig. 35



### DANGER

Risk of fire and explosion due to leaking fuel and escaping fuel vapours.

- 1 25mm dia. spring clip
- 2 Tank extracting device



Fig. 36

- 1 25mm dia. spring clip
- 2 Fuel tank ventilation line

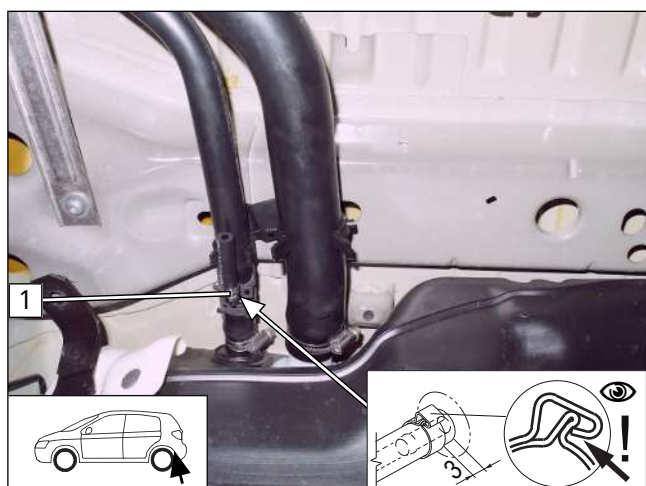
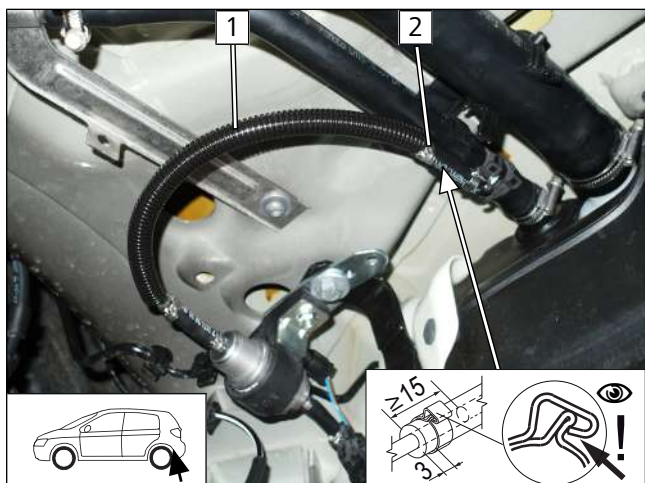


Fig. 37

- 1 Hose section, 10mm dia. clamp



## Connecting tank extracting device



- 1 Fuel line of tank extracting device in corrugated tube
- 2 10mm dia. clamp

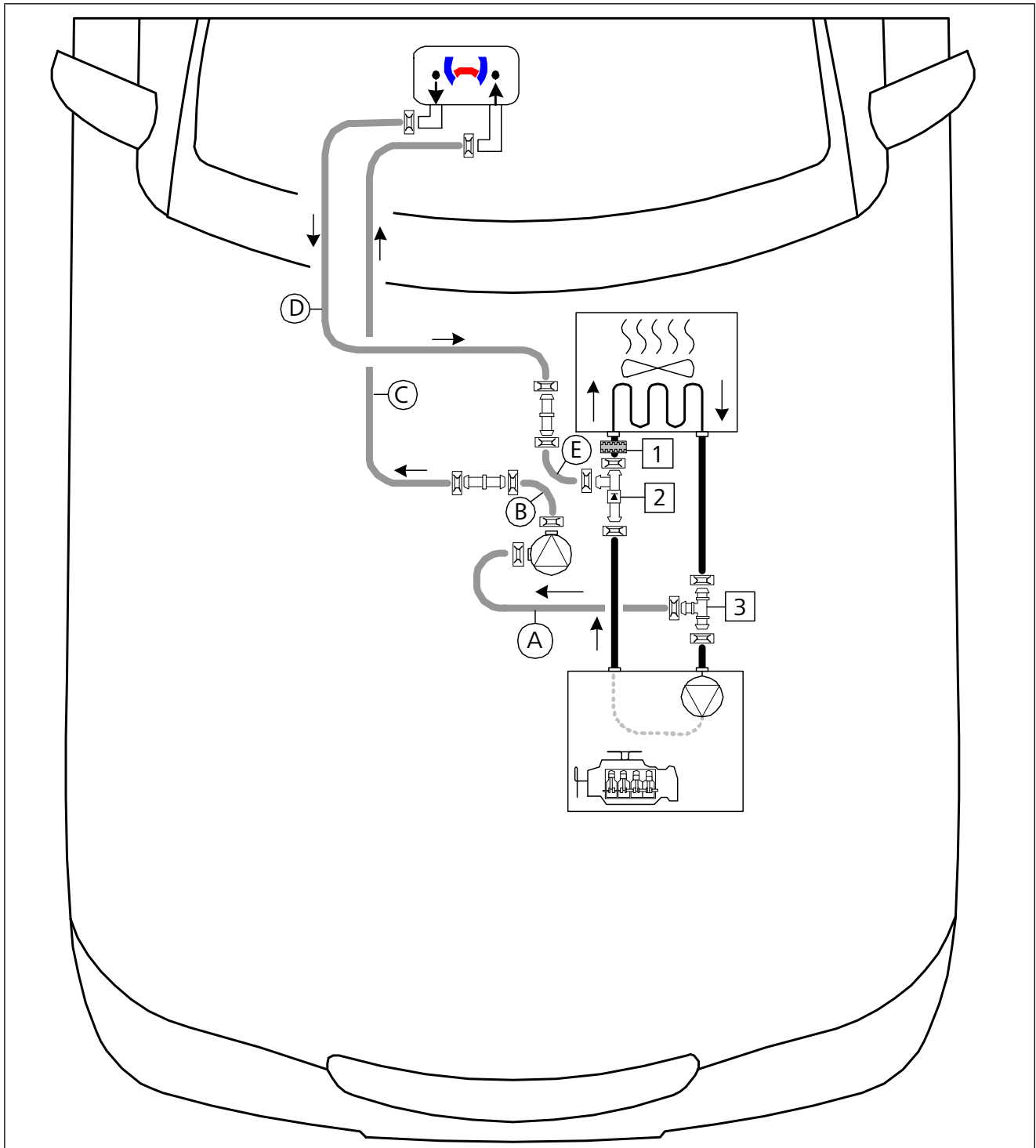
Fig. 38



## 10 Coolant

### 10.1 Hose routing diagram


'Island' coolant circuit



▶ All spring clips  = 25mm dia.

▶ All connecting pipes  = 18x18mm dia.

**1** Black rubber isolator 

**2** Non-return valve 

**3** T-piece 





## 10.2 Coolant circuit installation

Bending perforated bracket, drilling counterbore

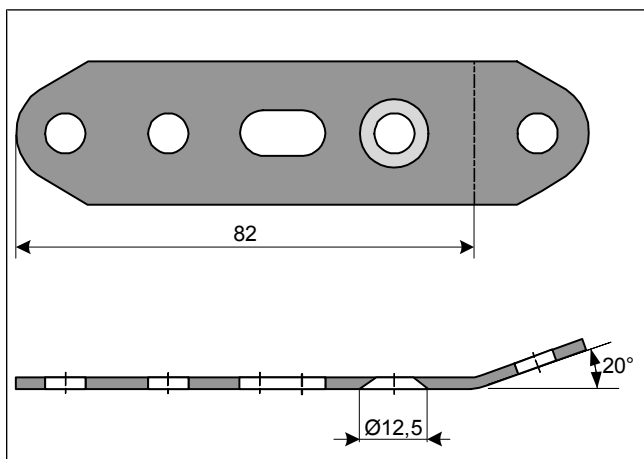


Fig. 39

Premounting coolant pump

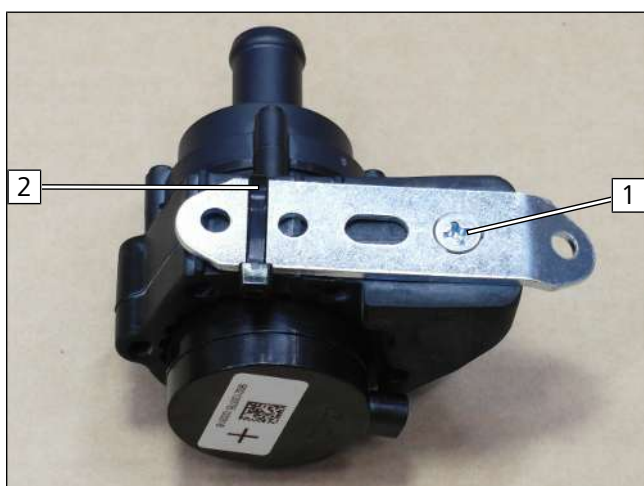


Fig. 40

- 1 Countersunk head screw, M6x25 bolt, perforated bracket, coolant pump mount, flanged nut
- 2 Cable tie

Mounting coolant pump

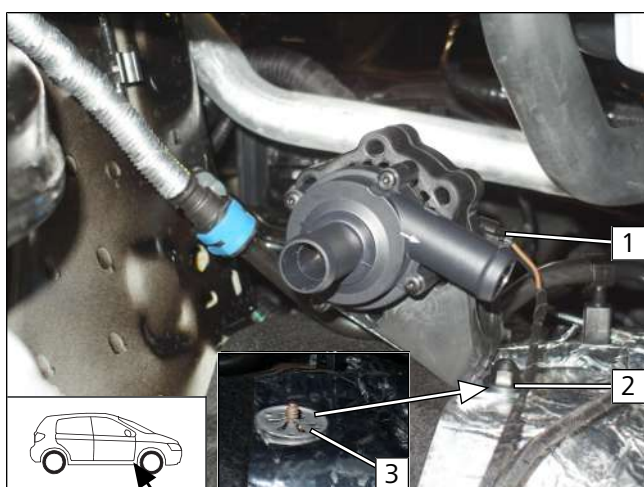


Fig. 41

► Remove metal ring 3.

- 1 Coolant pump wiring harness connector
- 2 Original vehicle stud bolt, premounted perforated bracket, plastic nut



## Connecting hose **B** to coolant pump

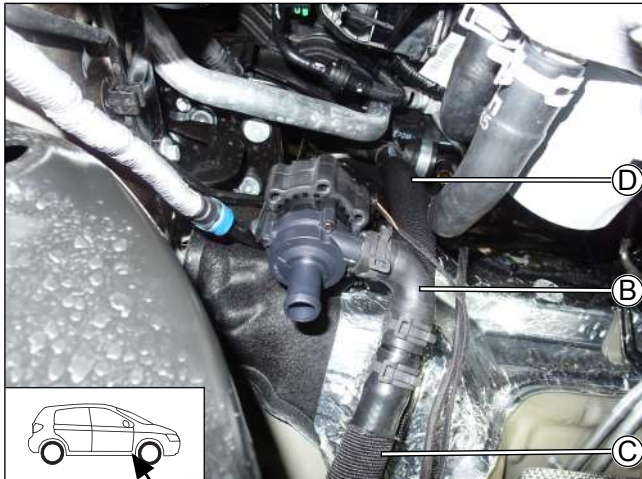


Fig. 42

## Fastening hose **D**

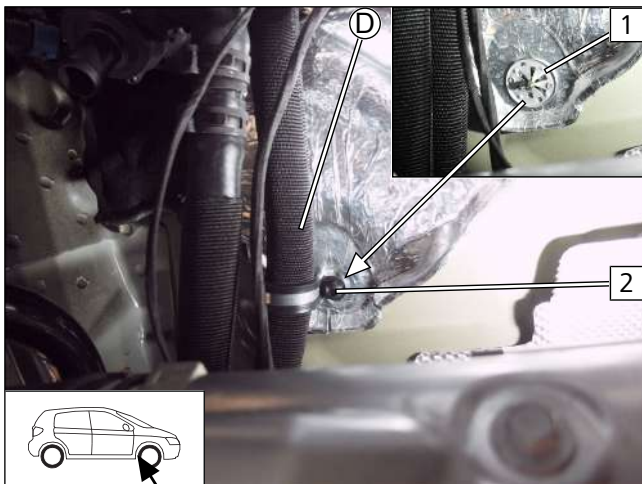


Fig. 43

► Remove metal ring **1**.

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

## Fastening hoses and wiring harnesses

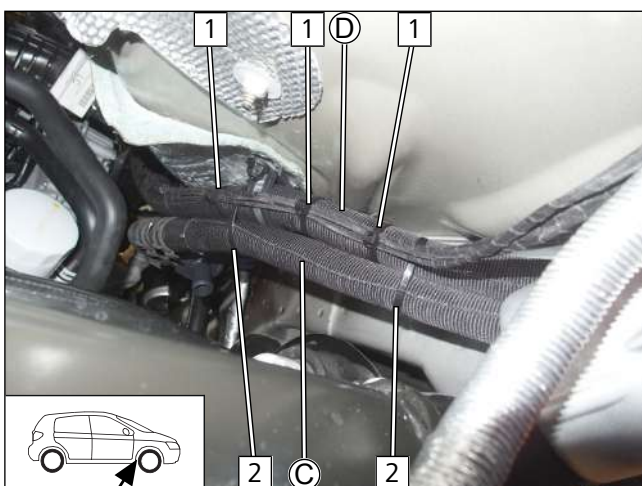


Fig. 44

**1** Cable tie around hoses and heater/coolant pump wiring harnesses

**2** Cable tie



## Connecting hose **A** to coolant pump

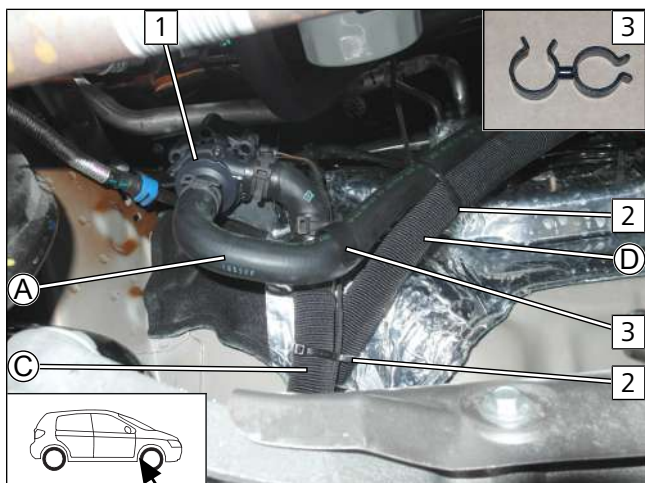


Fig. 45

- 1 Coolant pump
- 2 Cable tie
- 3 20x22 hose bracket

## Mounting angle bracket, fastening hoses

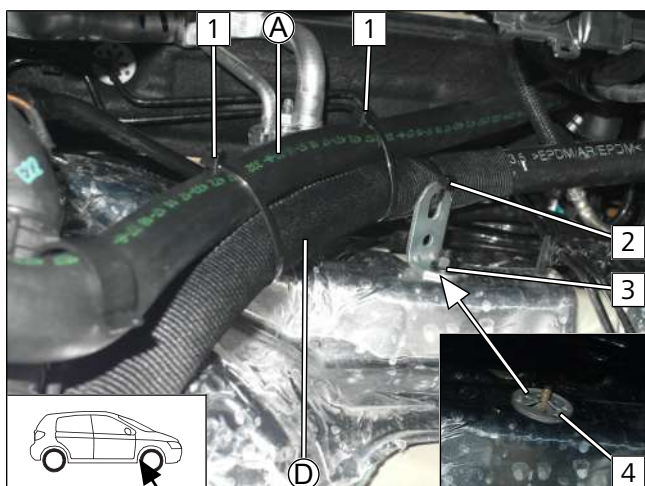


Fig. 46

► Remove metal ring **4**.

- 1 Cable tie around hoses **A** and **D**
- 2 Cable tie through angle bracket and around hose **D**
- 3 Original vehicle stud bolt, angle bracket, plastic nut

## Cutting point 1



Fig. 47

► Remove heat exchanger outlet hose section **1**, engine inlet hose section **4** with coupling piece.

- 2 Heat exchanger outlet / engine inlet hose
- 3 Cutting point



## Premounting T-piece



Fig. 48

- 1 Heat exchanger outlet hose section
- 2 T piece
- 3 Engine inlet hose section

## Cutting point 2

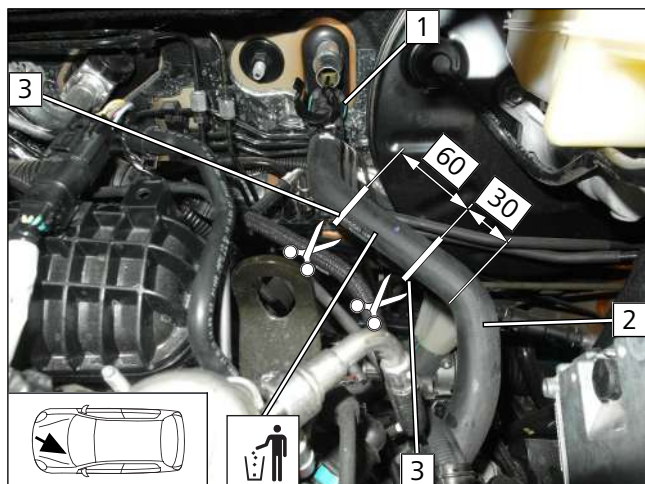


Fig. 49

- Remove heat exchanger inlet hose section 1 from connection piece with coupling piece.

- 2 Heat exchanger inlet / engine outlet hose
- 3 Cutting point

## Premounting non-return valve

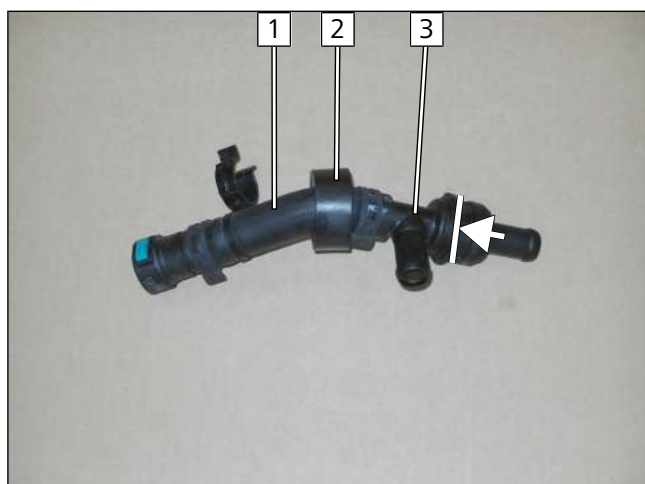


Fig. 50

- 1 Heat exchanger inlet hose section
- 2 Black rubber isolator
- 3 Non-return valve



## Non-return valve connection

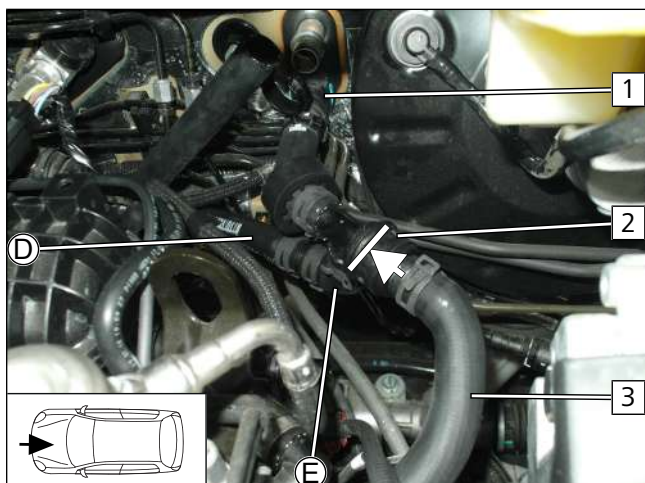


Fig. 51

- 1 Heat exchanger inlet hose section
- 2 Non-return valve
- 3 Engine outlet hose section

## T-piece connection

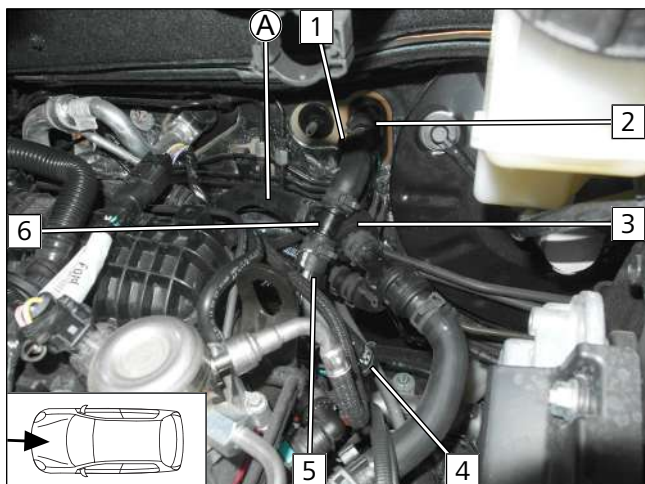


Fig. 52

- 1 Original vehicle hose bracket
- 2 Heat exchanger outlet hose section
- 3 Aligning black rubber isolator to T-piece
- 4 Engine inlet hose section
- 5 Original vehicle hose bracket
- 6 T piece



## 11 Combustion air

### Mounting angle bracket

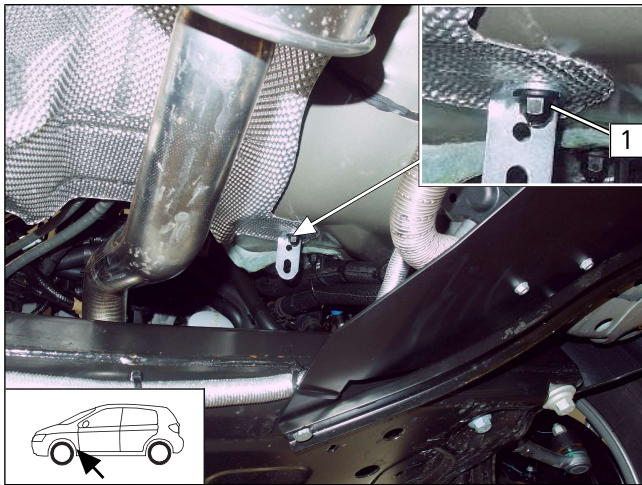


Fig. 53

- 1 Original vehicle stud bolt, angle bracket, plastic nut

### Preparing combustion air intake silencer

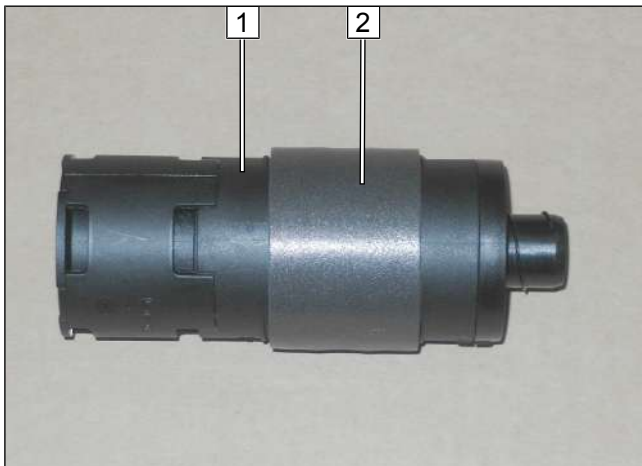


Fig. 54

- 1 Combustion air intake silencer
- 2 Self-adhesive foam

### Mounting combustion air intake silencer

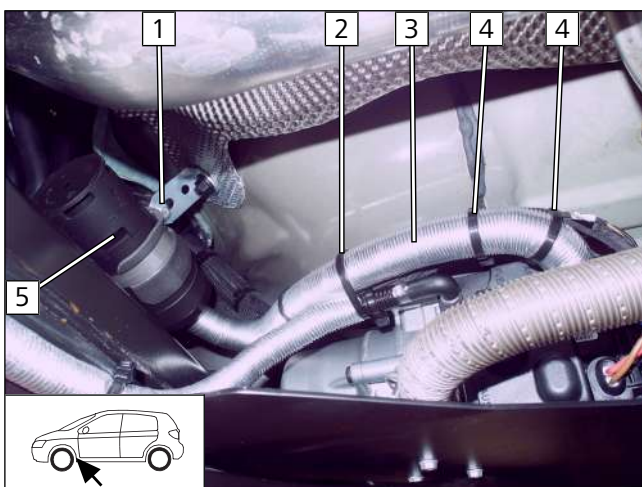


Fig. 55



Observe the installation instructions of the combustion air intake silencer.



Ensure sufficient distance between wiring harnesses and exhaust pipe, correct if necessary.

- Fasten combustion air pipe **3** to fuel line using cable tie **2**.
- Fasten heater and coolant pump wiring harness to combustion air pipe using cable tie **4**.

- 1 M5x16 bolt, washer, angle bracket, 51 mm dia. pipe clamp, flanged nut
- 5 Combustion air intake silencer



## 12 Electrical system of passenger compartment

### 12.1 Removal notes

Loosening frame with A/C control panel

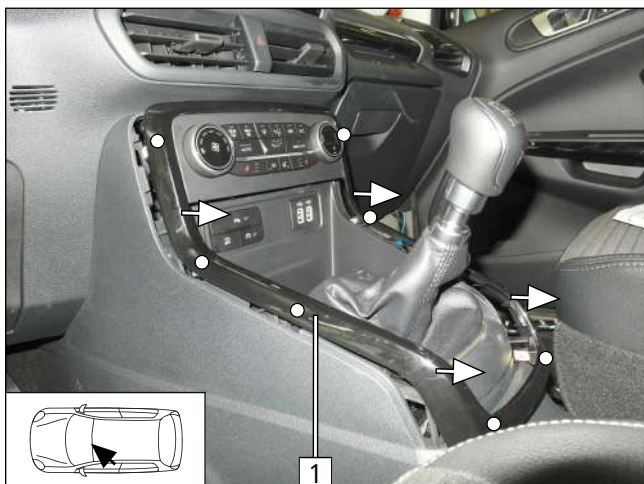


Fig. 56



Further information can be found in the vehicle manufacturer's technical documentation.

- 1 Frame with A/C control panel (see figure below)
- Fastening points, attached with clips (1x covered behind the shift lever)

View of A/C control panel frame



Fig. 57

- 1 Back of frame with A/C control panel
- Fastening clips

### 12.2 Preliminary work

Preparing / assigning wires

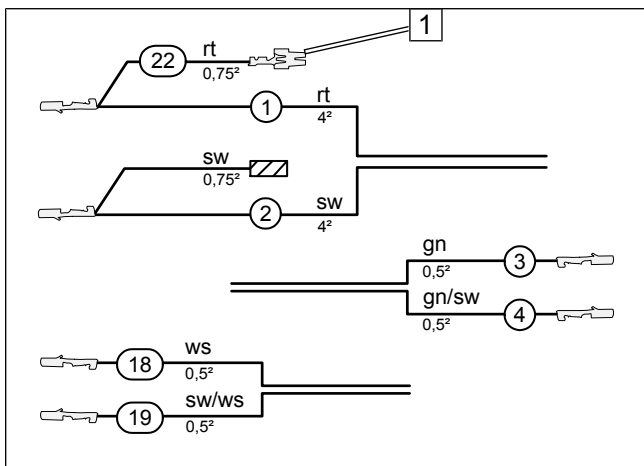


Fig. 58

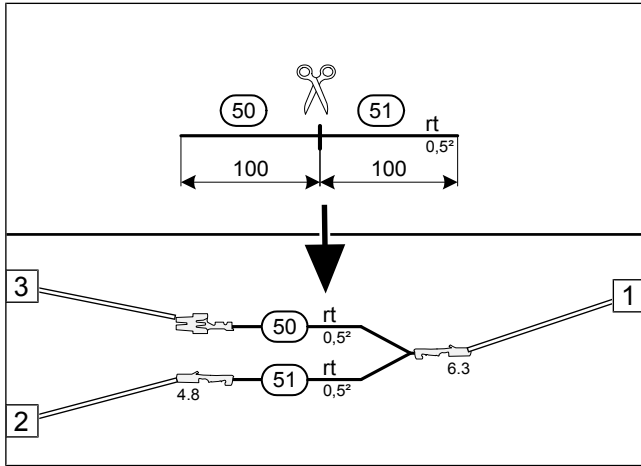


Wire sections retain their numbering in the entire document.

- 1 Flat spring contact
- 1 Red (rt) wire of fan wiring harness
- 2 Black (sw) wire of fan wiring harness
- 3 Green (gn) wire from wiring harness of PWM control
- 4 Green/black (gn/sw) wire from wiring harness of PWM control
- 18 White (ws) wire of additional relay wiring harness
- 19 Black/white (sw/ws) wire of additional relay wiring harness



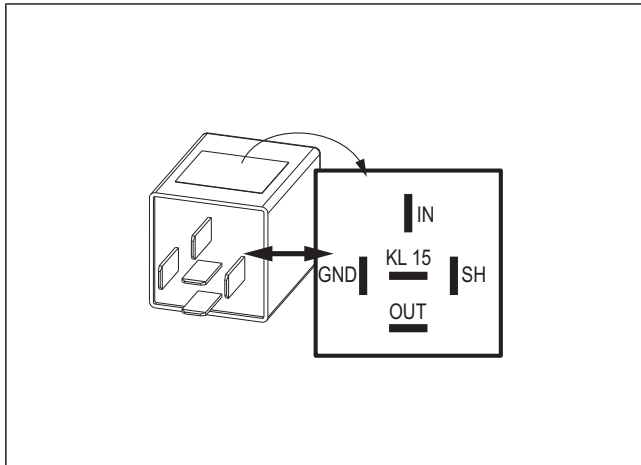
## Preparing / assigning line



- 1 6.3mm blade receptacle
- 2 4.8mm blade receptacle
- 3 Flat spring contact

Fig. 59

## View of PWM Gateway



► Check PWM Gateway settings when starting-up the heater, adjust if necessary.

Parameters	Setting
Duty cycle	62%
Frequency	100Hz
Voltage	not relevant
Function	Low side

Fig. 60

## Mounting lines on PWM gateway socket

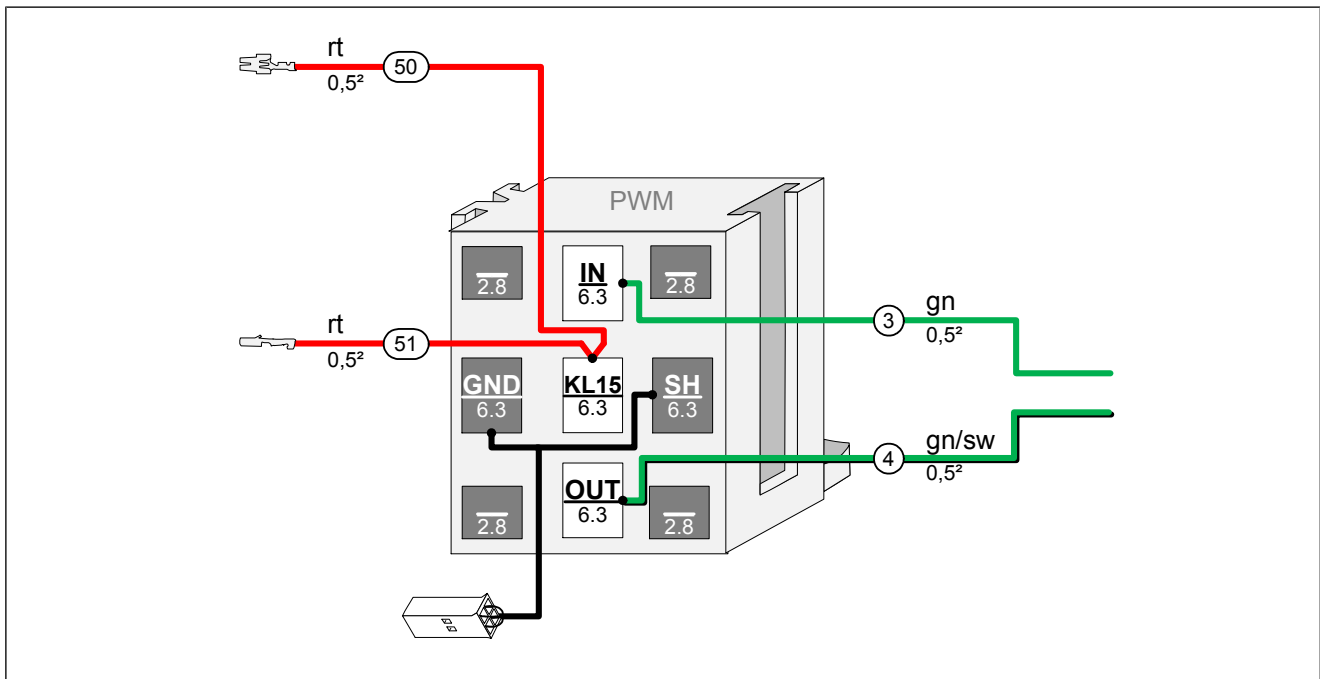


Fig. 61





## Connecting lines to RSH

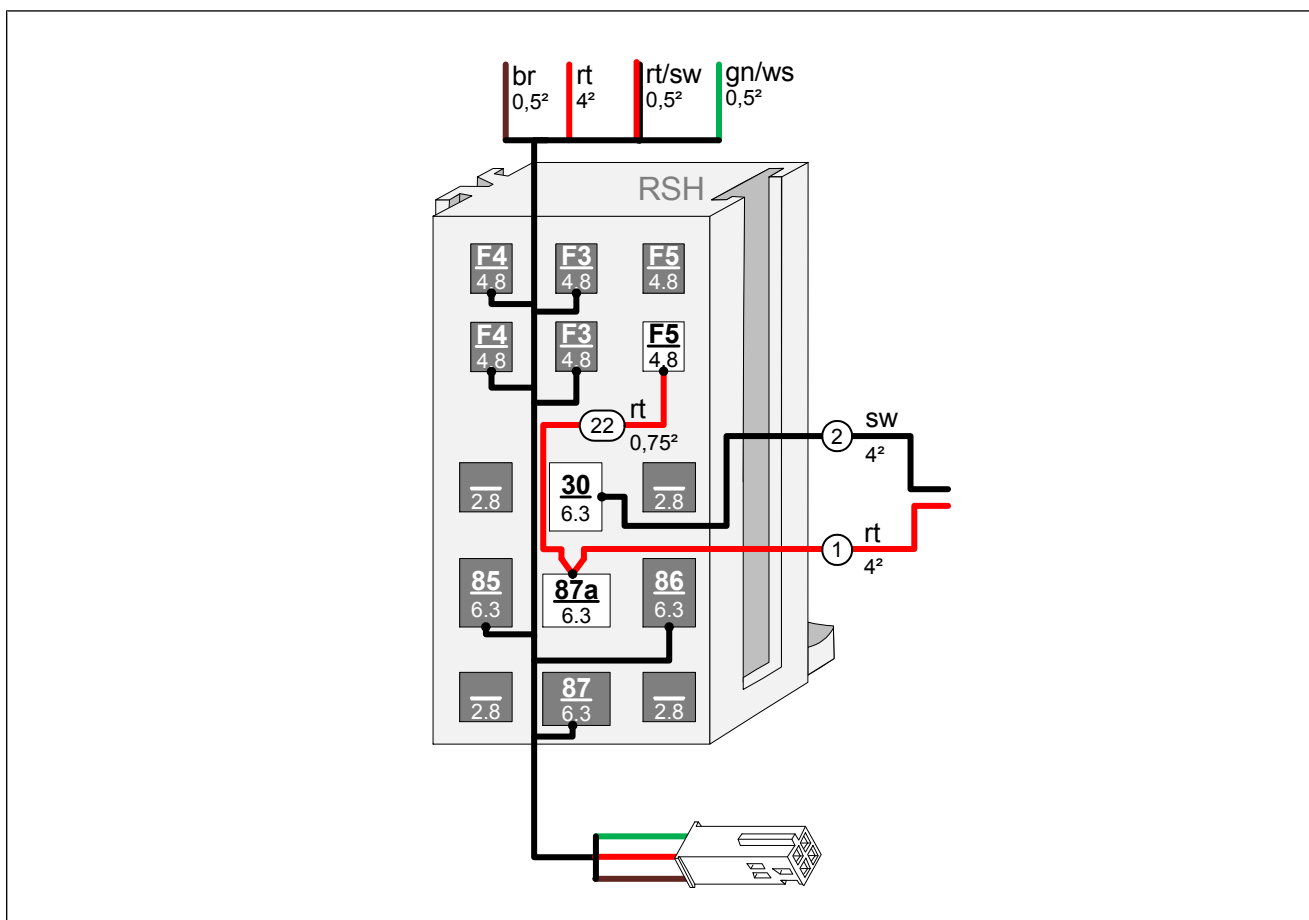


Fig. 62



## Preparing relay K2 socket

- Uncrimp blue (bl) wire from K2 socket and insulate all blade receptacles as shown.

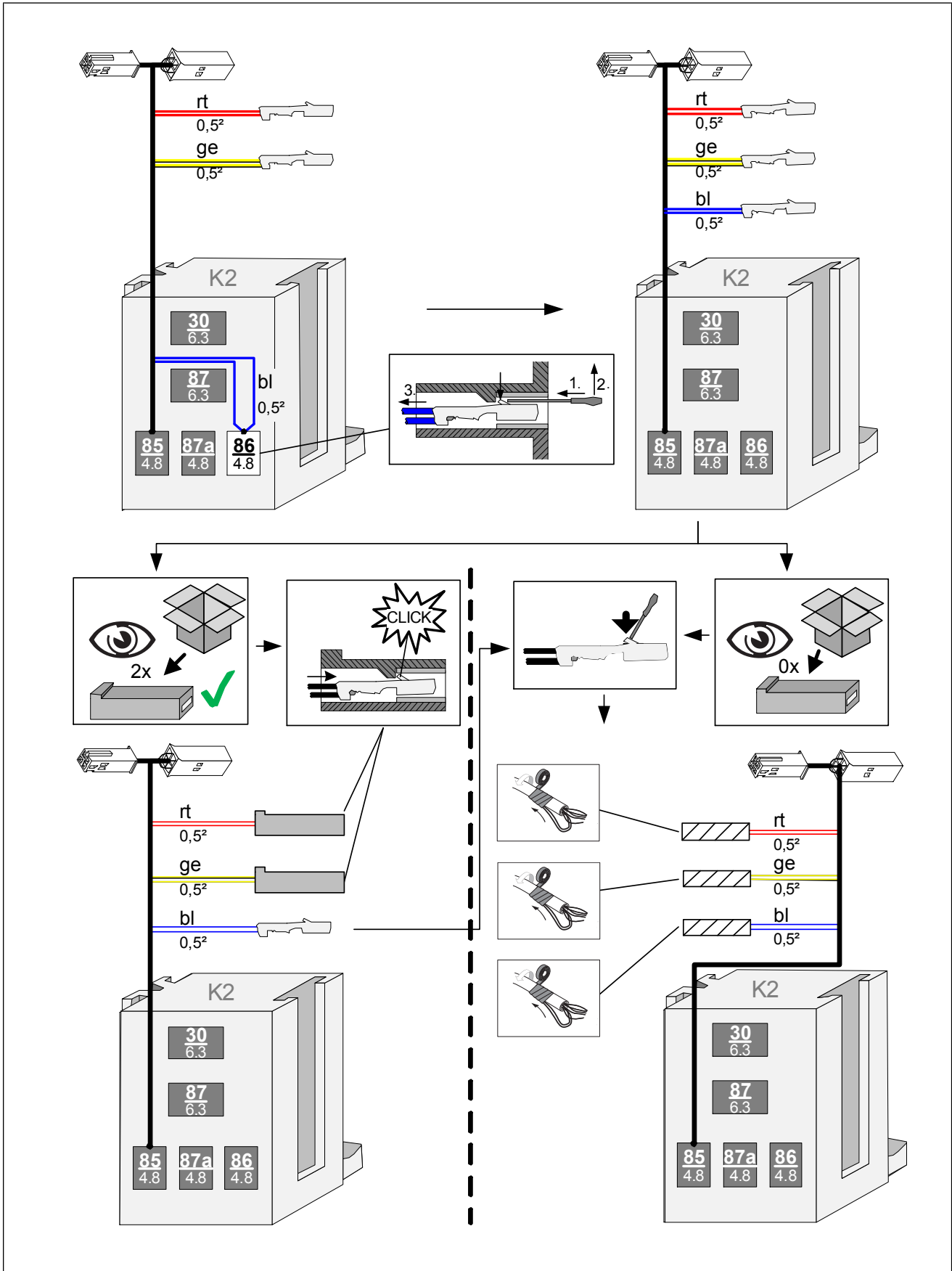


Fig. 63



### Assembling / preparing RSH, PWM GW socket and K2 relay

- ▶ Connect wires.
- ▶ Connect connectors and sockets.

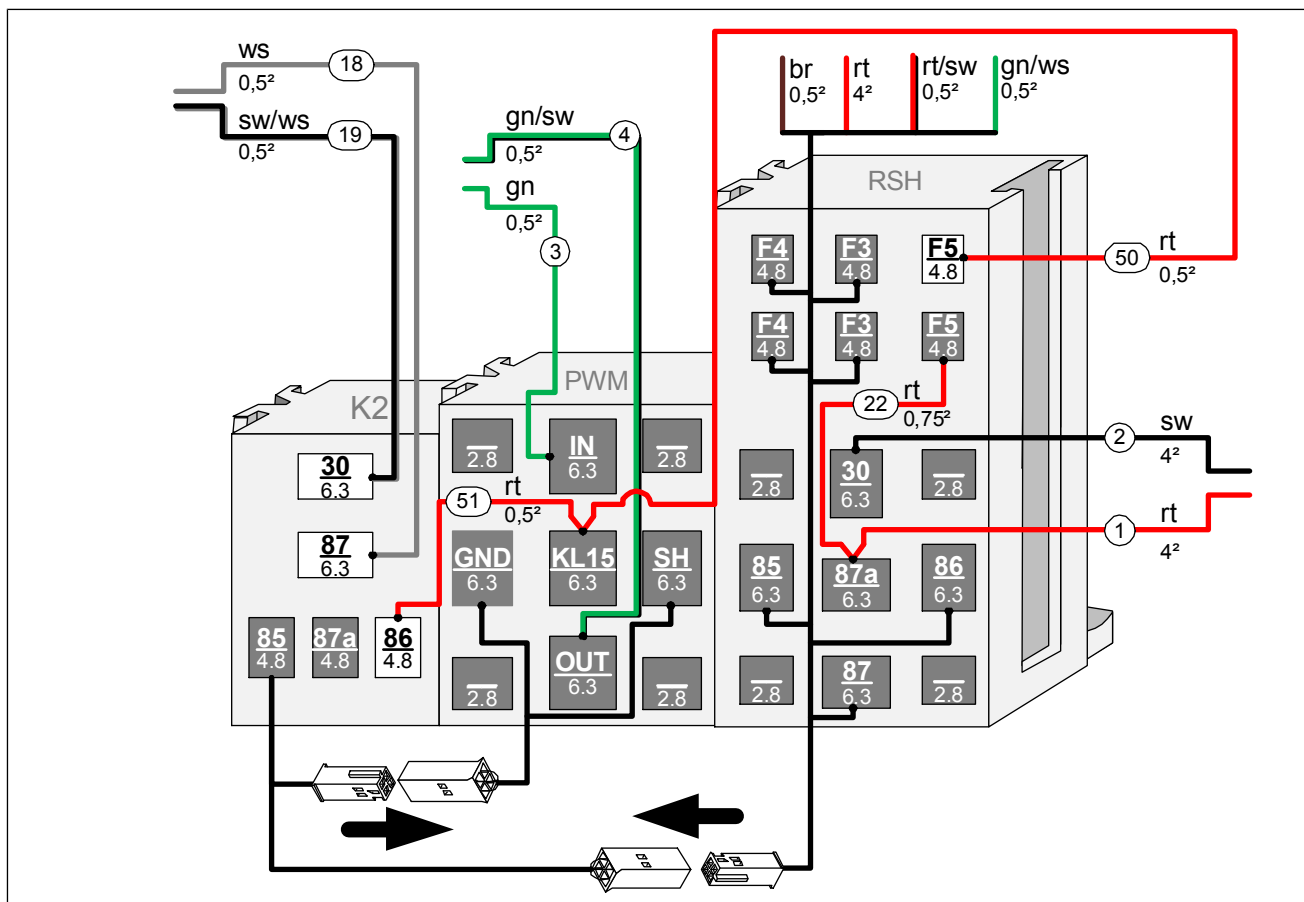


Fig. 64



### 12.3 Wiring diagram

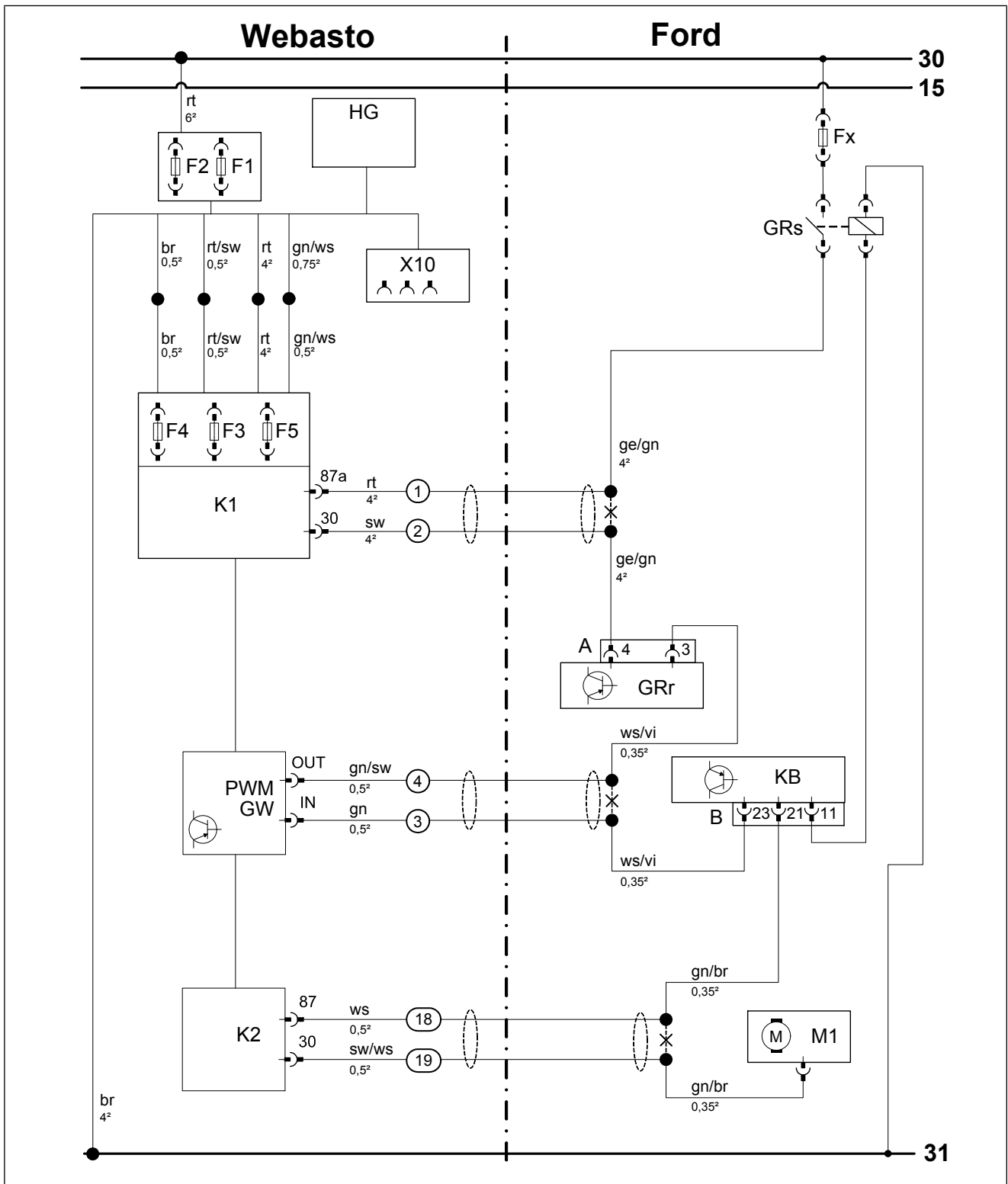


Fig. 65



## Legend to wiring diagram

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Designation
GRs	Fan relay	X	Cutting point
GRr	Fan controller		
A	4-pin GRr connector		
Fx	40A fan fuse		
KB	A/C control panel		
B	26-pin connector of KB		
M1	Flap positioning motor		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Connector of CLR module wiring harness	br	brown
B	Socket of CLR module wiring harness	bg	beige
CCL GW	CAN CAN LIN Gateway	dbl	dark blue
CL GW	CAN LIN Gateway	dgn	dark green
CLR	Cold start module	ge	yellow
D1	Diode	gn	green
D2	Diode group	gr	grey
F0	Additional fuse for power supply	hbl	light blue
F1	Heater main fuse	hgn	light green
F2	Passenger compartment fan controller main fuse	or	orange
F3	Heater control fuse	pk	pink
F4	Fan controller fuse	rt	red
F5	Additional fuse	sw	black
HG	Heater TT-Evo	vi	violet
K1	Relay K1	ws	white
K2	Relay K2		
K3	Relay K3		
LIN GW	LIN Gateway		
PWM GW	Pulse width modulator gateway		
RSH	Relay and fuse holder of passenger compartment		
RTD	Temperature sensor		
X10	4-pin socket of heater control		



## 12.4 Fan controller

### Bending perforated bracket

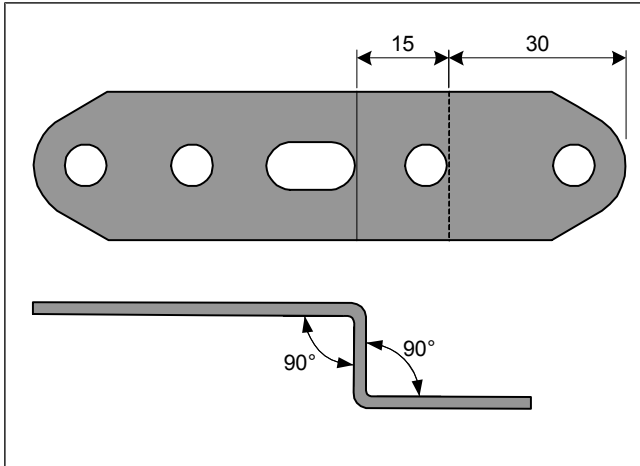


Fig. 66

### Premounting RSH

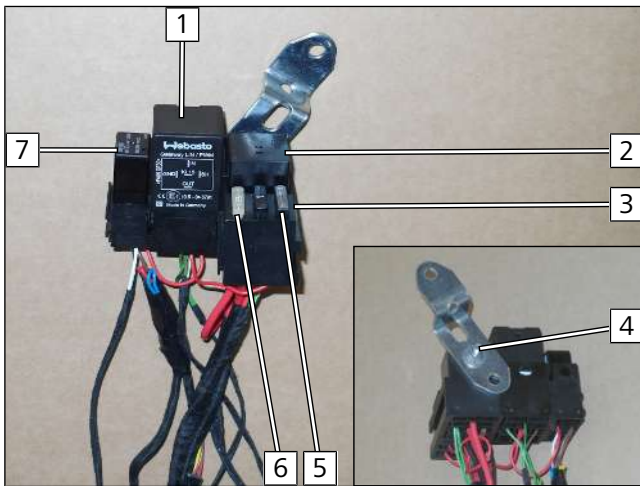


Fig. 67



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

- 1 PWM GW
- 2 Relay K1
- 3 RSH
- 4 M5x16 bolt, large diameter washer, RSH, perforated bracket, large diameter washer, nut
- 5 1A fuse F5
- 6 25A fuse F4
- 7 Relay K2

### PWM GW connection

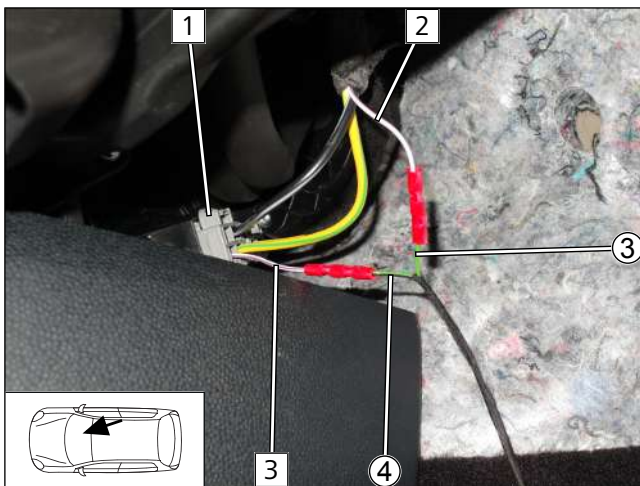


Fig. 68

- 1 Connector A GRr
- 2 White/violet (ws/vi) wire of connector B KB
- 3 White/violet (ws/vi) wire of pin 3 from connector A GRr
- 3 Green (gn) wire of PWM/IN wiring harness from PWM control
- 4 Green/black (gn/sw) wire of PWM/OUT wiring harness from PWM control



## Relay K1 connection

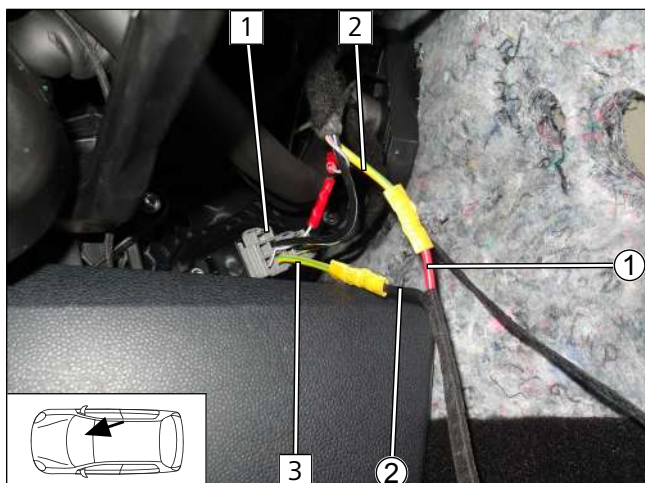


Fig. 69

- 1 Connector A GRr
- 2 Yellow/green (ge/gn) wire of fuse Fx
- 3 Yellow/green (ge/gn) wire of pin 2 from connector A GRr
- ① Red (rt) wire of K1/87a fan wiring harness
- ② Black (sw) wire of K1/30 fan wiring harness

## View of connector B for A/C control panel

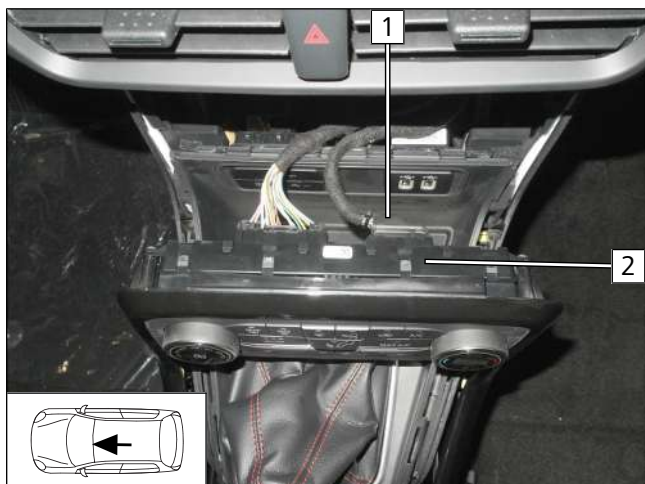


Fig. 70

- 1 Connector B for A/C control panel
- 2 A/C control panel

## Relay K2 connection

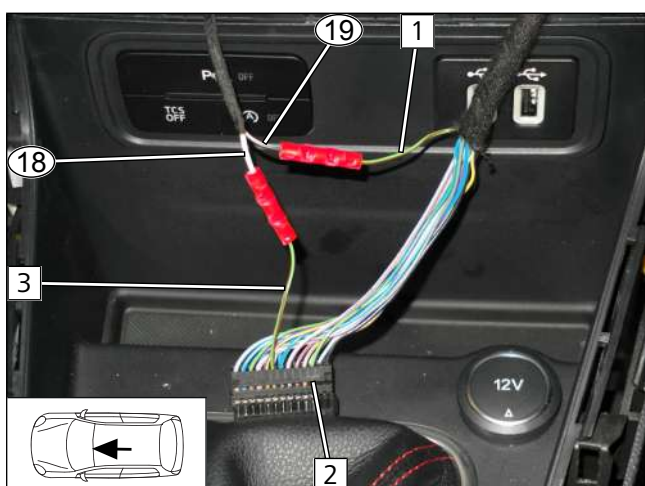
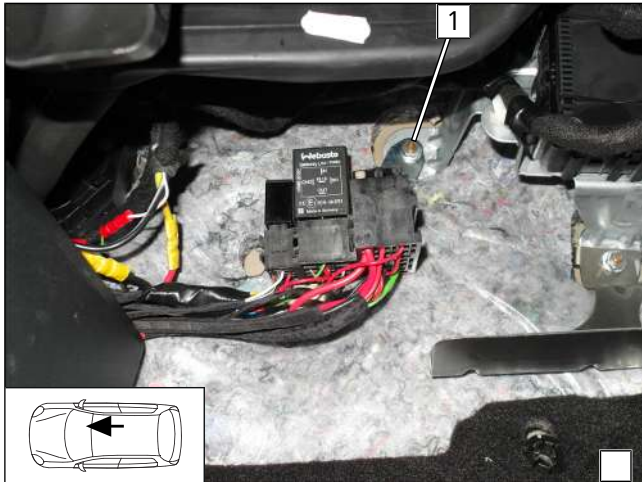


Fig. 71

- 1 Green/brown (gn/br) wire of positioning motor M1
- 2 Connector B for A/C control panel
- 3 Green/brown (gn/br) wire of pin 21 connector B for A/C control panel
- ⑱ White (ws) wire of K2/87 from additional relay wiring harness
- ⑲ Black/white (sw/ws) wire of K2/30 from additional relay wiring harness



## Mounting RSH



- 1 Original vehicle stud bolt, RSH perforated bracket, original vehicle nut

Fig. 72





## 13 Electrical system of control elements

### 13.1 Telestart option

#### Mounting receiver

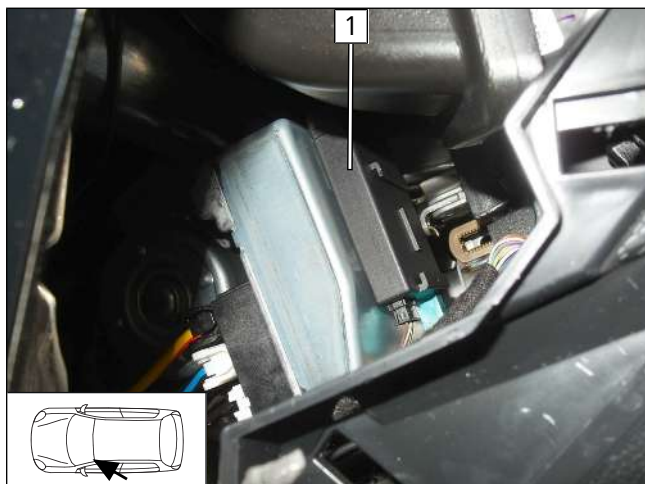


Fig. 73



Observe the Telestart installation documentation.

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

#### Mounting temperature sensor T100 HTM

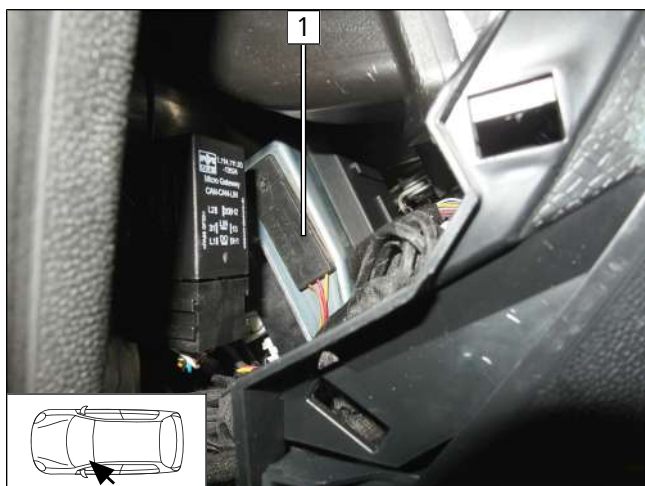


Fig. 74

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

#### Mounting aerial

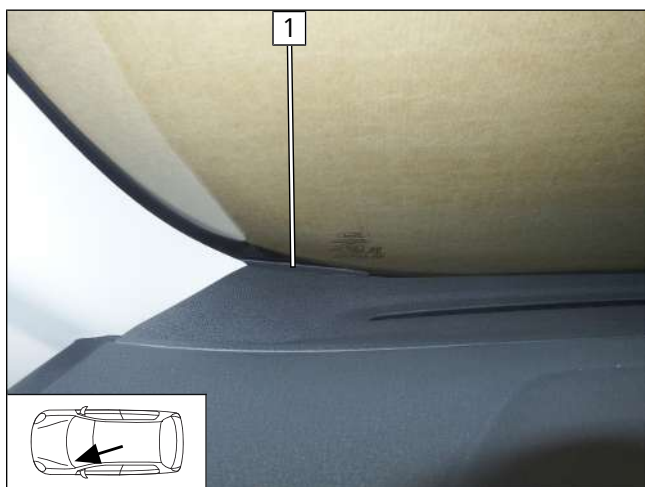


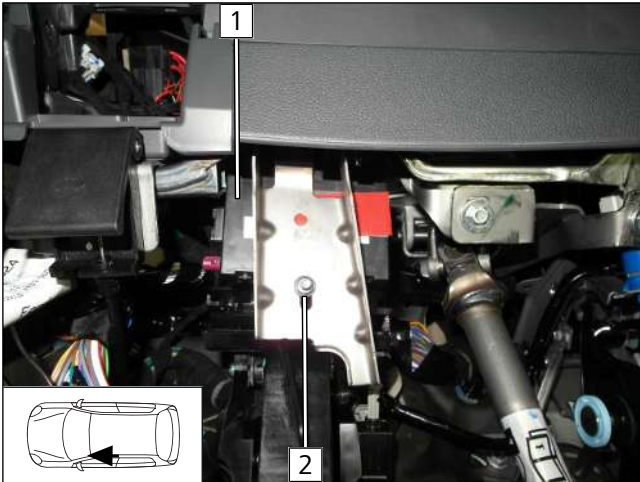
Fig. 75

- 1** Aerial



## 13.2 ThermoCall option

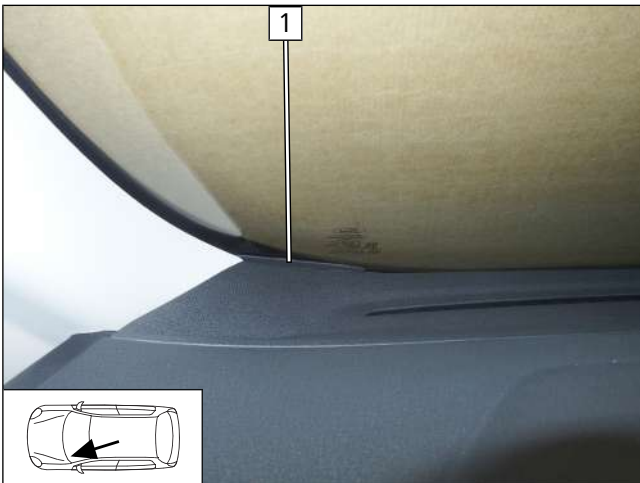
### Mounting receiver



Observe the ThermoCall installation documentation.

- 1 Receiver
- 2 M5x16 bolt, flanged nut on original vehicle hole

### Mounting aerial (optional)



- 1 Aerial

Fig. 76



## 14 Final Work



Further information can be found in the vehicle manufacturer's technical documentation.

- ▶ Mount removed parts in reverse order.



- ▶ Check all hoses, clamps and all electrical connections for firm seating.
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).
- ▶ Connect the battery.



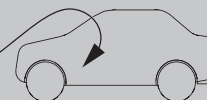
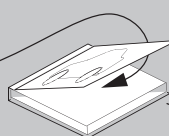
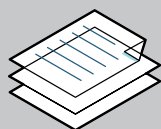
**Only use manufacturer-approved coolant.**

- ▶ Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.



Further information can be found in the general installation and operating instructions of the Webasto components.

- ▶ Program MultiControl CAR, teach Telestart transmitter
- ▶ Make settings on A/C control panel according to the 'Operating Instructions'.
- ▶ Initial operation and functional test
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck



These are the original instructions. The German language is binding.  
You can request your language if it is missing. The telephone number of each country can be found in the Webasto service centre leaflet or the website of the respective Webasto representative of your country.

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[WWW.WEBASTO.COM](http://WWW.WEBASTO.COM)

## 15 Operating instructions for automatic air-conditioning

### Information regarding the heating time:

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.



### Vehicles with passenger compartment monitoring:

Further information can be found in the vehicle operating instructions.

- ▶ Deactivate passenger compartment monitoring for the heating operation



### Note for parking heater function


Your vehicle is equipped with a passenger compartment preheating unit. There is **no** engine pre-heating.

### 15.1 A/C control panel settings

Automatic A/C control panel



Fig. 77

 Before parking the vehicle, make the following settings:

- ▶ The fan speed must not be preset.

- 1 Air outlet to windscreen
- 2 Set temperature to 'HI'

### 15.2 Installation location of fuses

Fuses in engine compartment

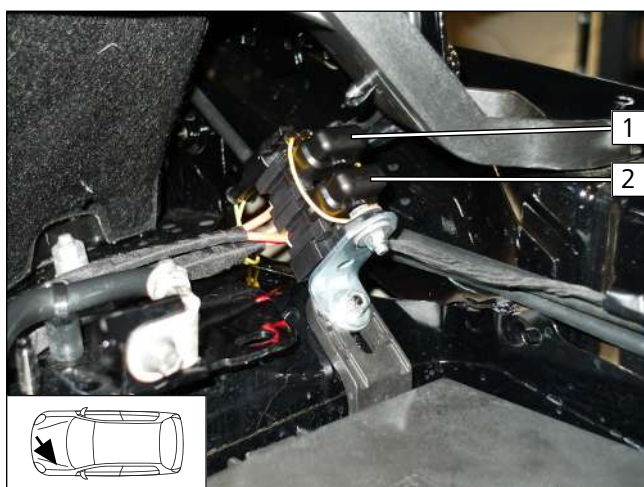
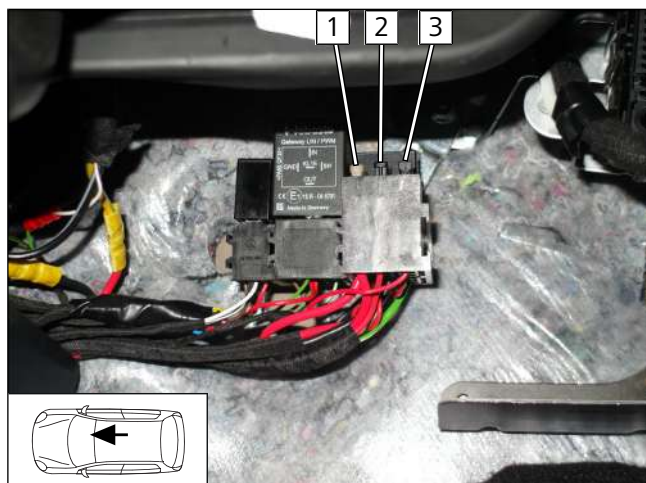


Fig. 78

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

## Fuses in passenger compartment



The fuses are in the footwell on the front passenger's side behind the footwell trim.

- 1 F4 - 25A fan controller fuse
- 2 F3 - 1A control element fuse
- 3 F5 - 1A additional fuse

Fig. 79