EN

K

Installation documentation

for Thermo Top Evo water heater

'Inline' coolant circuit with engine preheating

Peugeot 508

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Peugeot	508	F	2018	e2* 2007/46* 0628*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
1.6 PureTech	Petrol	Euro 6d Temp	AG	165	1598	5G06

Validity	Equipment variants	Model
		508
Verified equipment variants	2 zone automatic air-conditioning	x
	LED main headlights	x
	LED daytime running lights	x
	Keyless Go	x
	Start button	x
Unverified equipment variants	Passenger compartment monitoring	x
	Static cornering light	x
	Halogen main headlights	x

Total installation time	Note
10.5 hours	

Contents

1 List of abbreviations

DP	Fuel pump
EFIX	Exhaust end fastener
FF	FuelFix (tank extracting device)
Fig.	Figure
HG	Heater
K2	Additional relay
MCC	MultiControl (control element)
PWM	Pulse width modulator
RSH	Relay and fuse holder of passenger compartment
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

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.

2.2 Components used

Designation	Order number
Basic delivery scope of Thermo Top Evo	In accordance with price list
Installation kit incl. cold start system for Peugeot 508 petrol 2018	1327339A
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 ¼ 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.

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

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	K
Vehicle-specific installation documentation of the cold start kit	M
Webasto Comfort A/C control	H
Webasto Standard A/C control	G
Tank extracting device (e.g. FuelFix)	F
Exhaust end fastener (EFIX)	E
Combustion air intake silencer	L
Spacer bracket (ASH)	S

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.

Note on a special technical feature

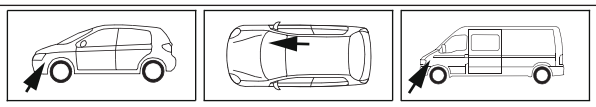
3.4.3 Work step identification marks

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	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
✓	Action
▶	Necessary action
⇨	Result of an action
1 / 12 / a1	Position numbers for the image descriptions
① / ⑫ / Ⓐ	Position numbers for the image descriptions for electrical wires and wiring harnesses and coolant hose sections

4 Technical Information

Dimension specifications
– All dimensions specified in mm
– Perforated brackets and mounting angles are shown to scale
– Observe data regarding scale on the templates

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

Temperature specification for heat shrink plastic tubings
– Fabric heat shrink tubing: shrink temperature max. 230°C
– Standard heat shrink plastic tubing: shrink temperature max. 300°C

Necessary special tools
– Hose clamp pliers for auto-tightening hose clamps
– Hose clamp pliers for Clic hose clamps of type W
– Hose clamping pliers
– Hose cutter
– Automatic wire stripper 0.2 - 6 mm^2
– Crimping pliers for cable lugs 0.5 – 10 mm^2
– Crimping pliers for male connector 0.14 – 6 mm^2
– Crimping pliers for connector 0.25 – 6 mm^2
– Torque wrench for 2.0 - 10 Nm
– Deep-hole marker
– Metric thread-setter kit
– Webasto Thermo Test Diagnosis with current software

5 Preparations

5.1 Vehicle preparation

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

Vehicle area	Components to be removed	Other applicable documents
General	▶ Open the fuel tank cap ▶ Ventilate the fuel tank ▶ Close the fuel tank cap again ▶ Depressurise the cooling system	
Engine compartment and body	▶ Battery and battery carrier ▶ Air filter box air duct ▶ Air filter box ▶ Engine control unit ▶ Front wheel on the driver's side ▶ Front wheel well trim on the driver's side ▶ Underride protection on the driver's side ▶ Underride protection at the back on the driver's side	
Passenger compartment	▶ Middle A-pillar trim on the driver's side ▶ Footwell trim of the centre tunnel on the driver's side ▶ A/C control unit (centre tunnel on the driver's side) ▶ Rear bench seat ▶ Tank fitting service lid	

5.2 Heater preparation

Engine compartment	▶ 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

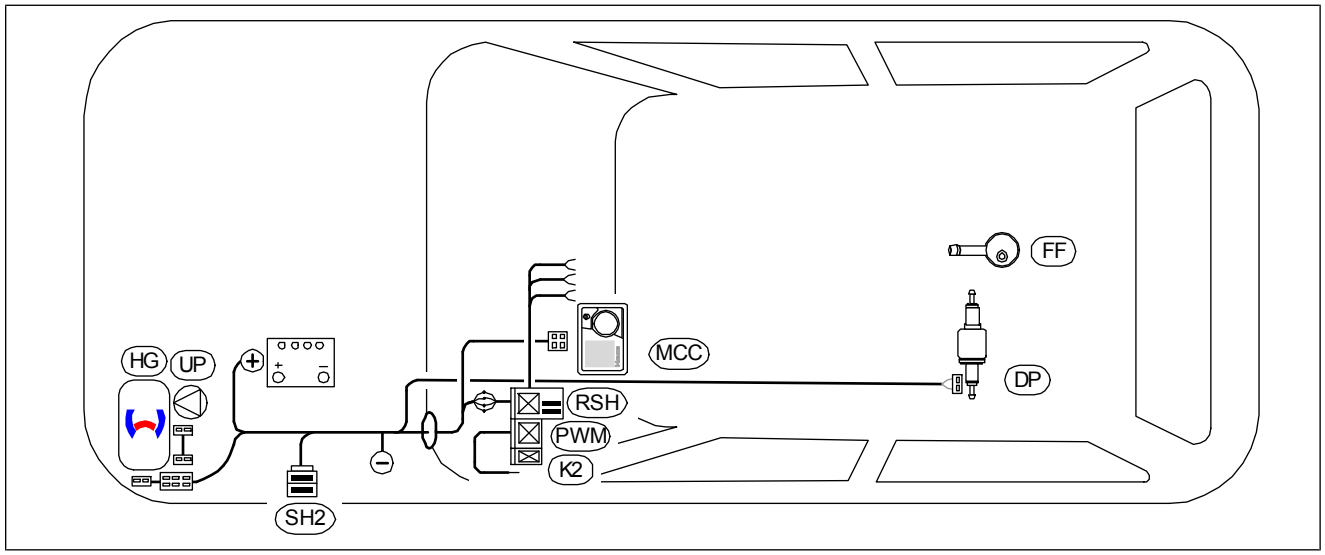


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
FF	FuelFix
HG	Heater
K2	Additional relay
MCC	MultiControl CAR
PWM	PWM Gateway
RSH	Relay and fuse holder of passenger compartment
SH2	Fuse holder of engine compartment
UP	Coolant pump

Heater installation location

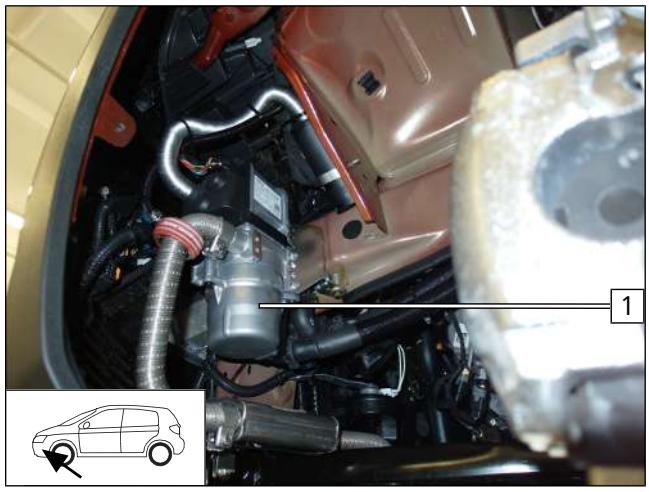


Fig. 2

1 Heater

7 Electrical system of engine compartment

Premounting engine compartment fuse holder

Fig. 3

1 M5x16 bolt, large diameter washer, retaining plate of SH2, angle bracket, large diameter washer, nut

Mounting engine compartment fuse holder

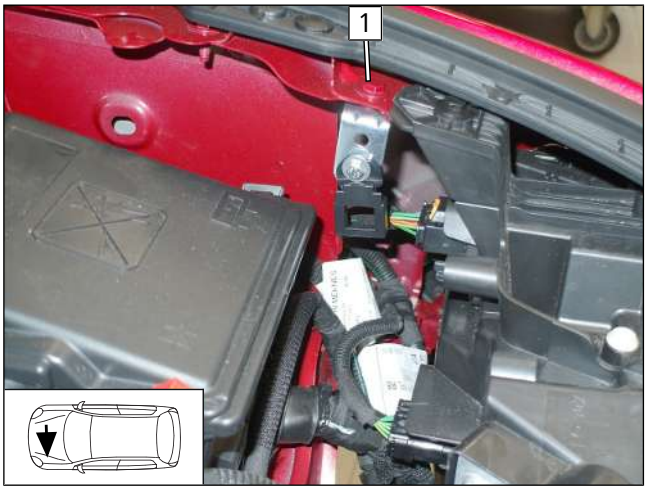


Fig. 4

1 Original vehicle stud bolt, angle bracket, flanged nut

Heater wiring harness routing

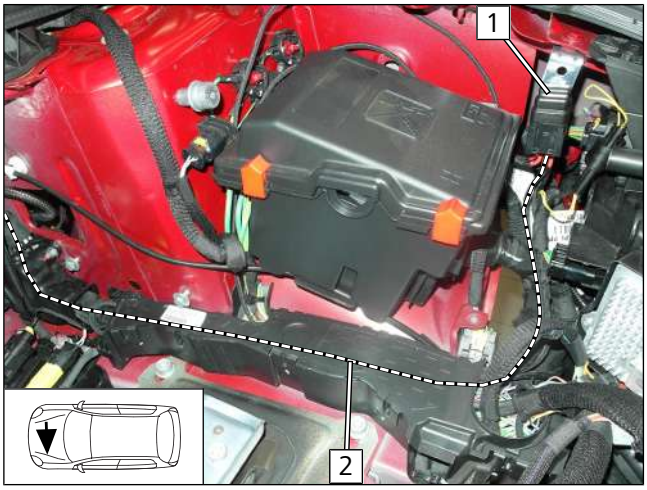


Fig. 5

▶ Route heater and control element wiring harness **2** in original vehicle cable duct.

1 SH2 with fuse F1/F2

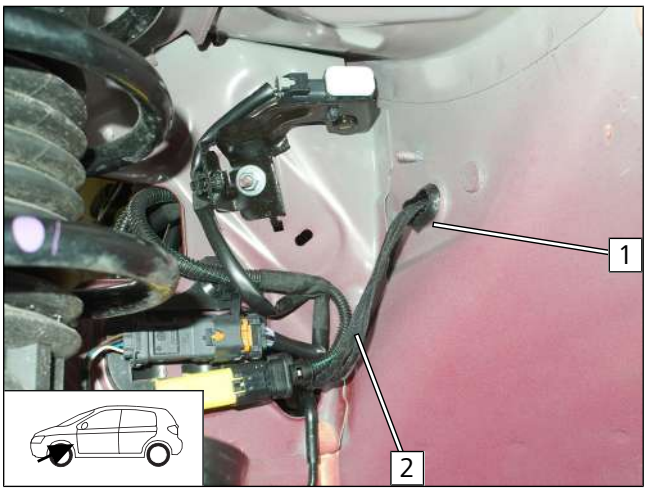


Fig. 6

▶ Route passenger compartment and control element wiring harness **2** in the wheel-well inner panel through protective rubber plug **1** into the passenger compartment.

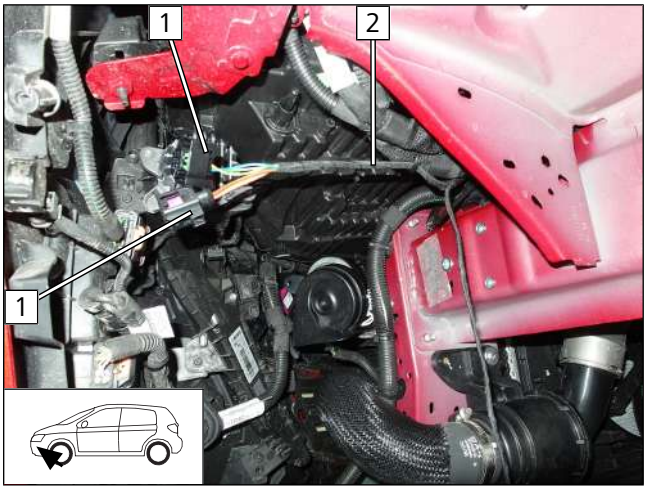


Fig. 7

▶ Route heater wiring harness **2** out of the engine compartment to the installation location of the heater.

1 Heater wiring harness connector

8 Mechanical system

8.1 Installation location preparation

Removing horns

Fig. 8

1 Horn [2x] with bracket

Bending perforated bracket, enlarging hole

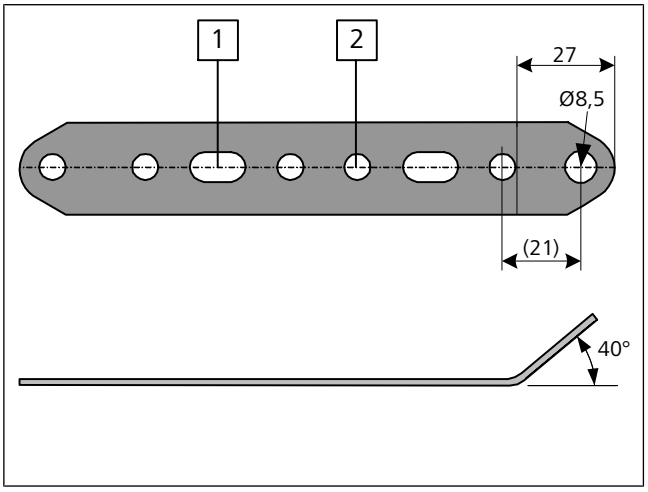


Fig. 9

1 Fastening point of horn with connector

2 Fastening point of horn without connector

Preparing horns

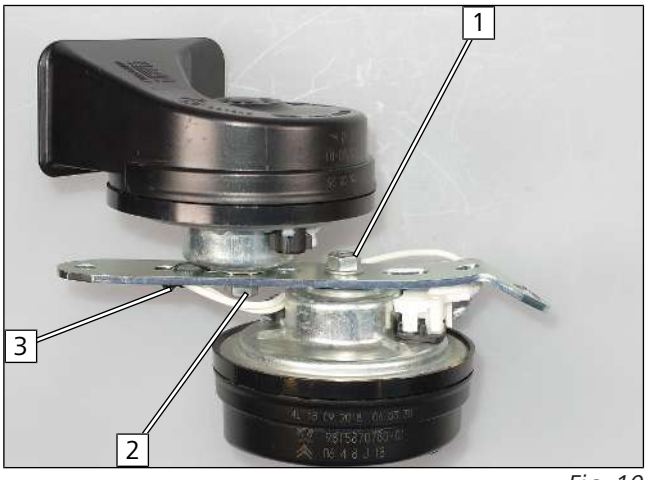


Fig. 10

▶ Thread cable tie 3 through the perforated bracket hole and use it to secure the wire.

1 Horn without connector, perforated bracket, original vehicle nut

2 Horn with connector, perforated bracket, original vehicle nut

Installing horns

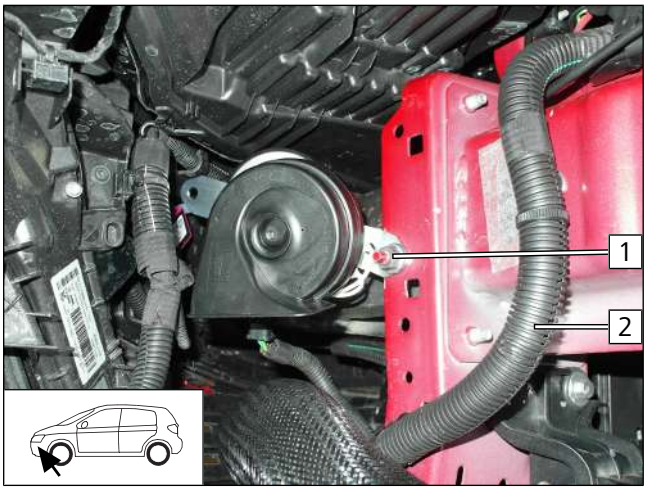


Fig. 11

▶ Detach original vehicle wiring harness 2.

1 Original vehicle stud bolt, perforated bracket, flanged nut

Fastening wiring harnesses

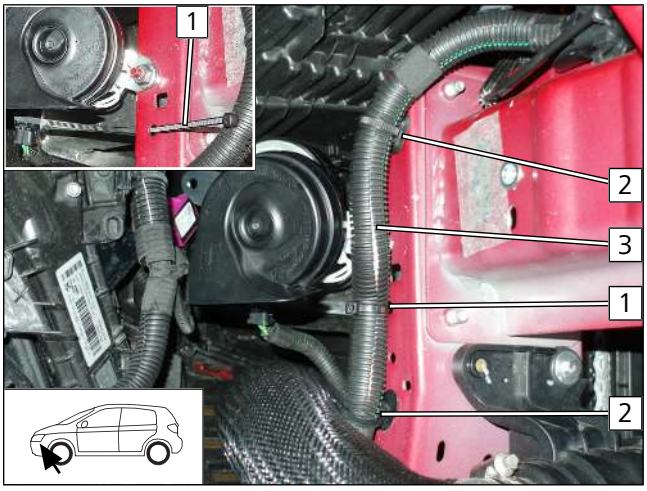


Fig. 12

▶ Fasten original vehicle wiring harness 3.

1 Cable tie

2 Original vehicle retaining clips

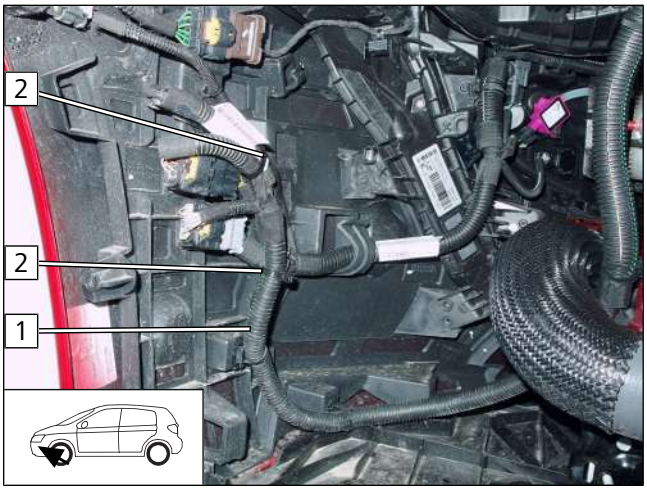


Fig. 13

▶ Fasten original vehicle wiring harness 1 using cable tie 2.

Creating an opening in underride protection

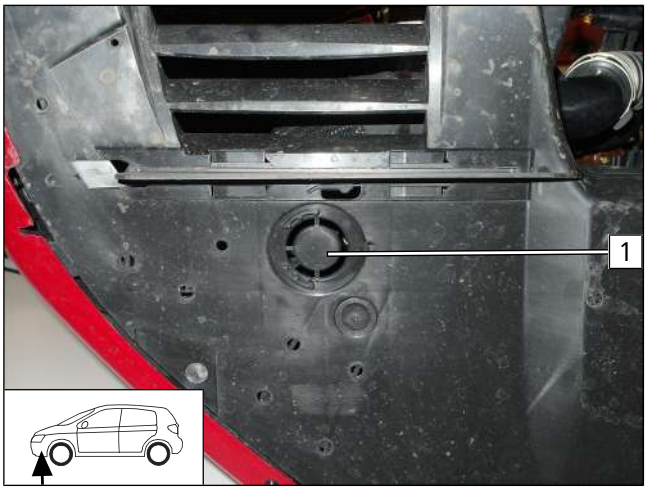


Fig. 14

▶ Punch out cap **1**.

Cutting EFIX to length

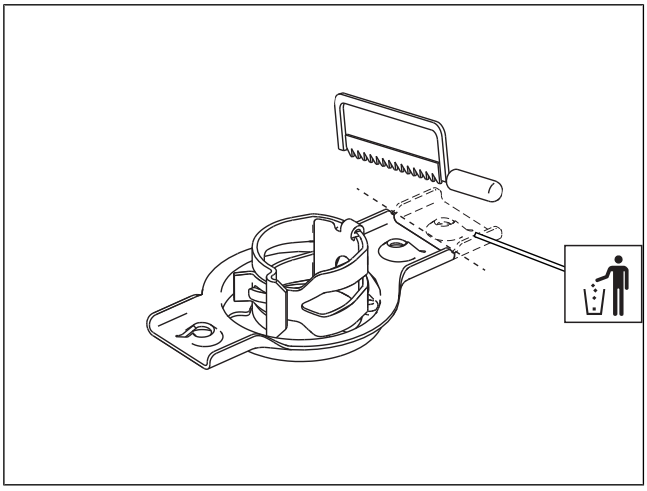


Fig. 15

Observe the EFIX installation instructions.

Work steps E3, E4

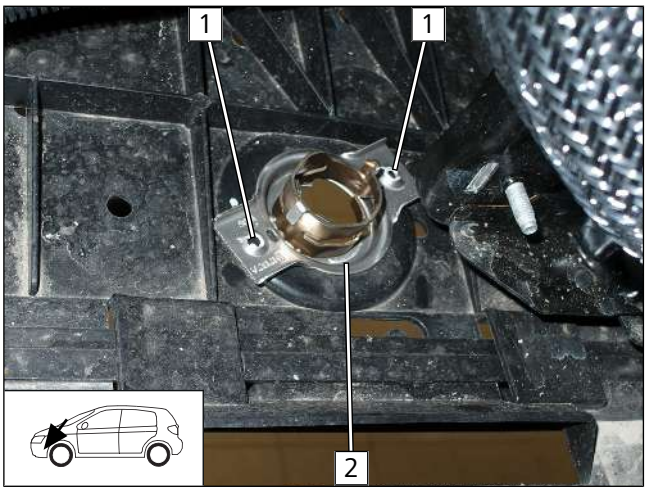


Fig. 16

▶ Position EFIX **2** as shown.

1 Hole pattern, hole

Work step E5

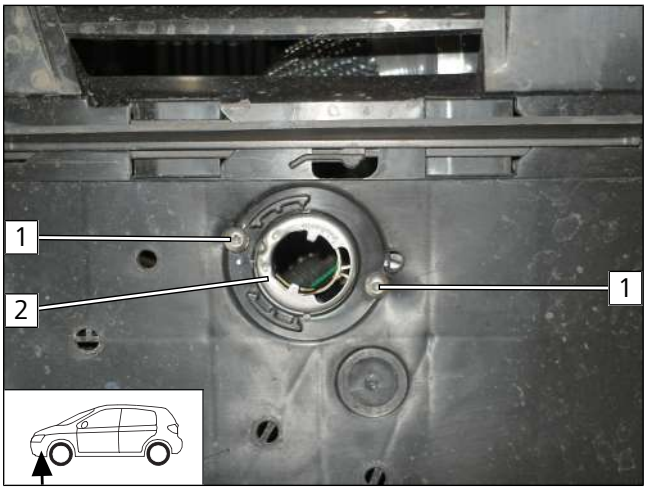


Fig. 17

1 5x13 self-tapping screw
2 EFIX

Drilling hole, inserting rivet nut

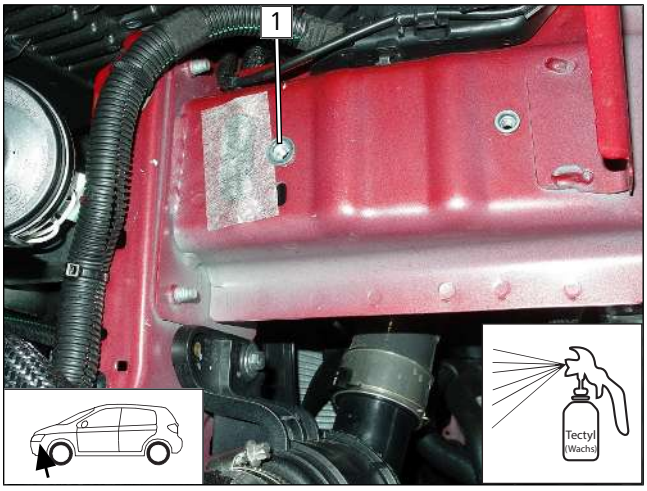


Fig. 18

1 Ø12.5 hole; M8 rivet nut

Adapting HG bracket

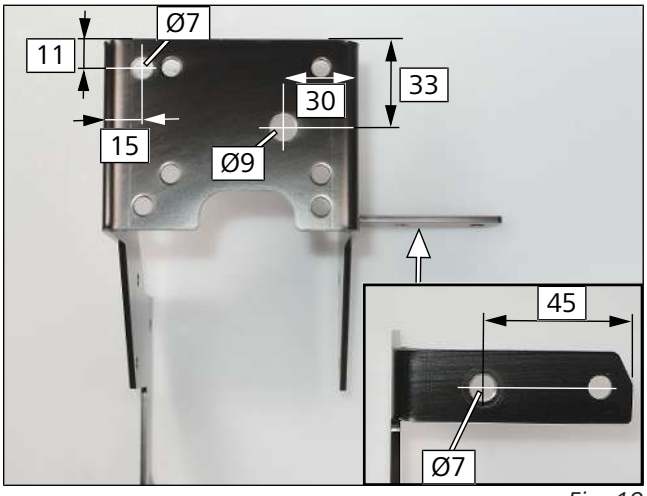


Fig. 19

Copy hole pattern

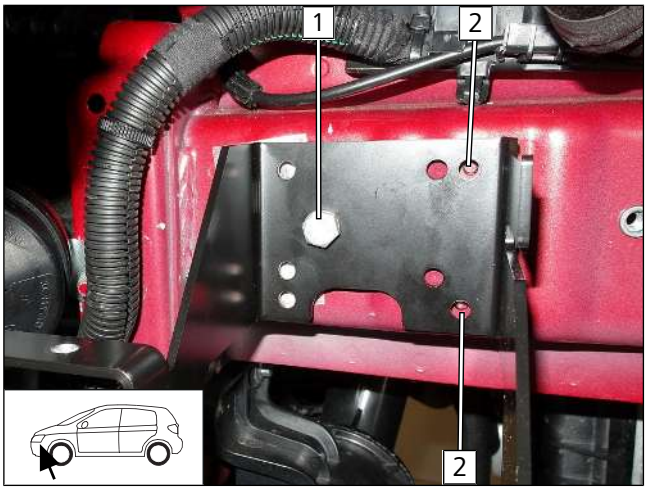


Fig. 20

▶ Align and mount bracket as shown.

1 M8x25 bolt, spring lock washer, HG bracket, rivet nut

2 Copy hole pattern

Drilling hole, inserting rivet nut

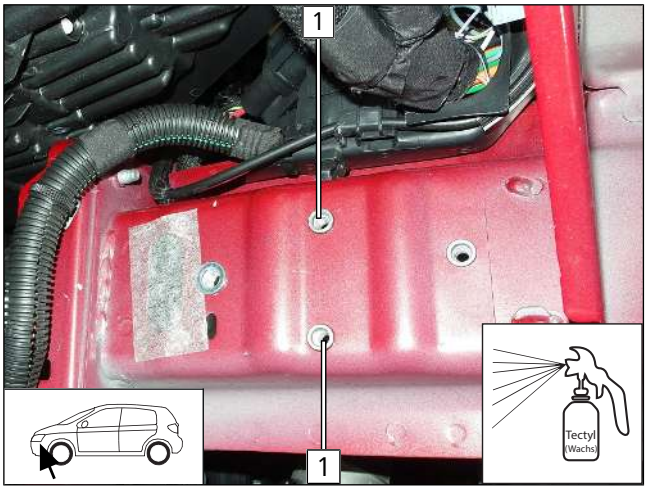


Fig. 21

1 Ø9 hole, M6 rivet nut

8.2 Premounting heater

Mounting water connection piece

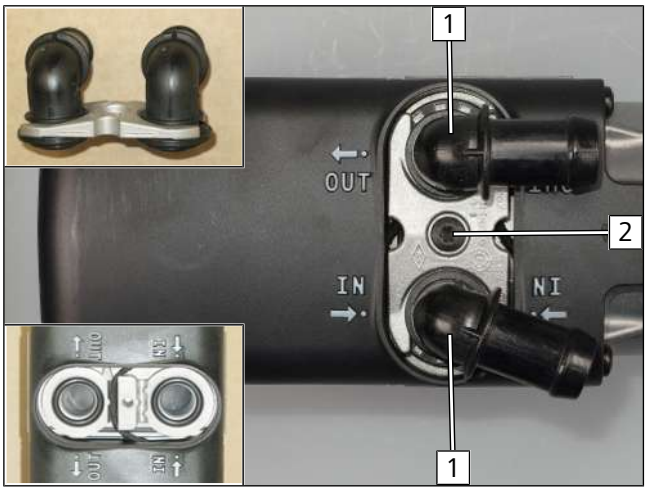


Fig. 22

Observe the general installation instructions of the heater.

1 Water connection piece, sealing ring

2 5x15 self-tapping bolt, water connection piece retaining plate

Mounting exhaust silencer on bracket

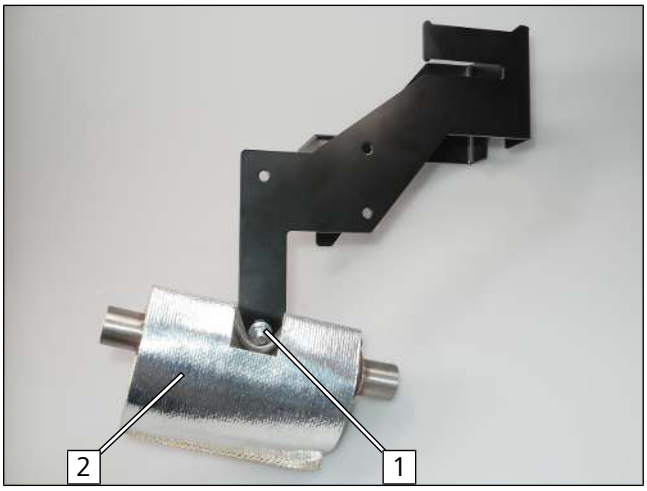


Fig. 23

1 M6x16 bolt, spring lock washer, exhaust silencer, HG bracket, flanged nut

2 Insulating sleeve

Mounting bracket

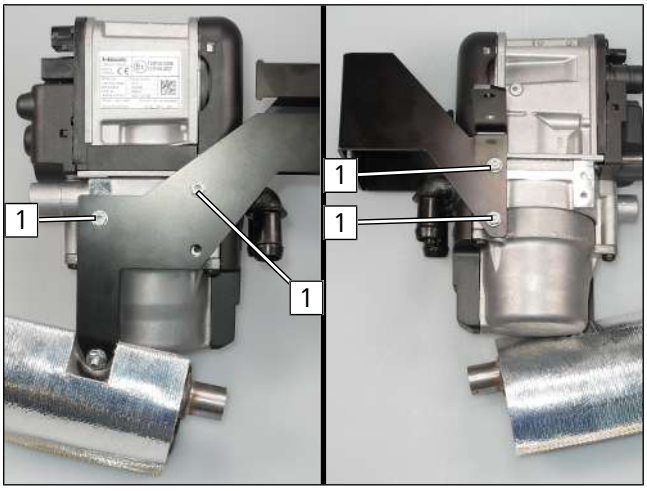


Fig. 24

1 5x15 self-tapping bolt

Cutting combustion air intake pipe to length

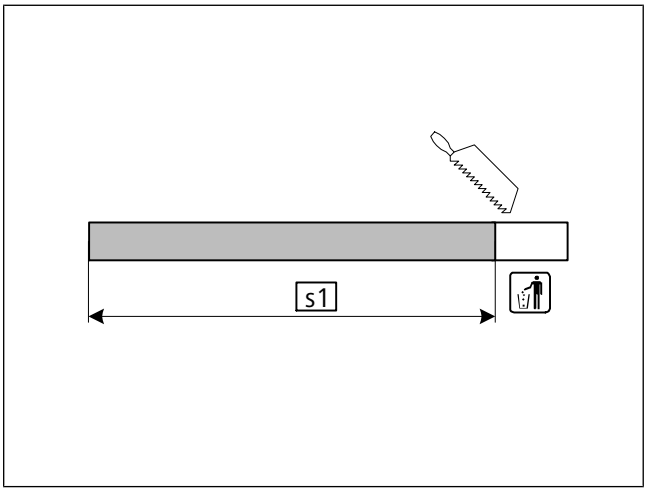


Fig. 25

s1 180

Premounting combustion air intake silencer

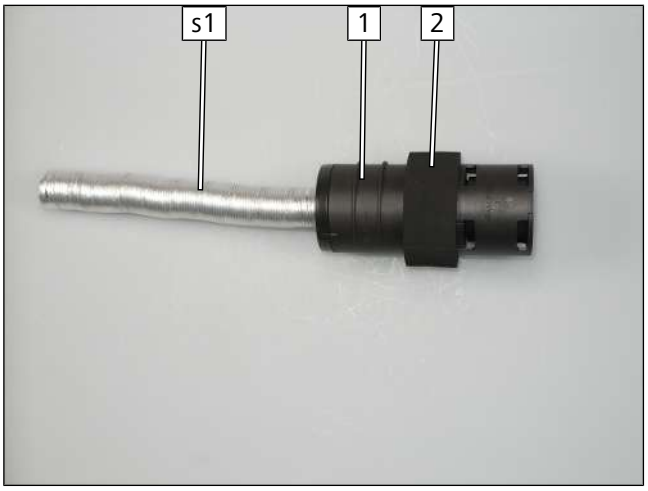


Fig. 26

1 Combustion air intake silencer
2 Foam profile

Mounting combustion air intake silencer

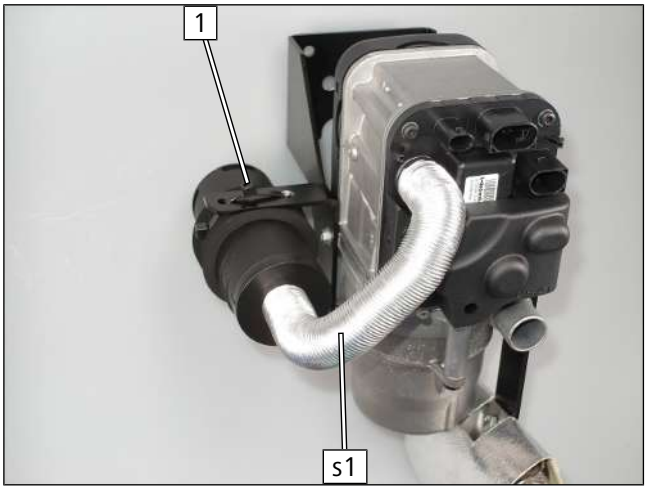


Fig. 27

Observe the installation instructions of the combustion air intake silencer.

▶ Attach combustion air intake silencer by threading cable ties 1 [2x] through the bracket hole.

Cutting hoses to length

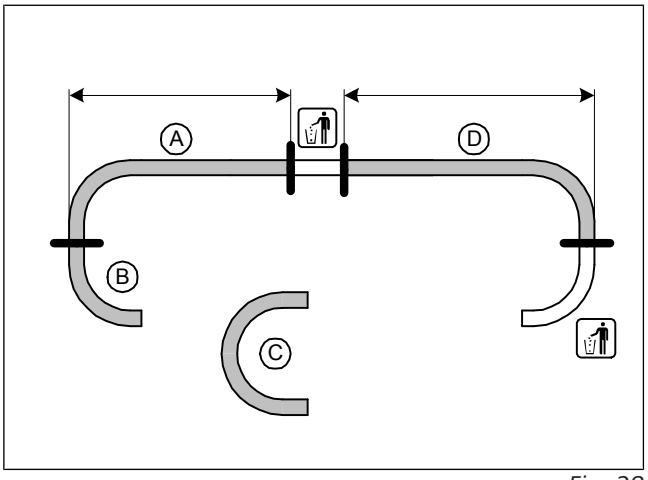


Fig. 28

Ⓐ	790
Ⓑ	90°
Ⓒ	180° moulded hose
Ⓓ	970

Mounting fabric heat shrink tubing

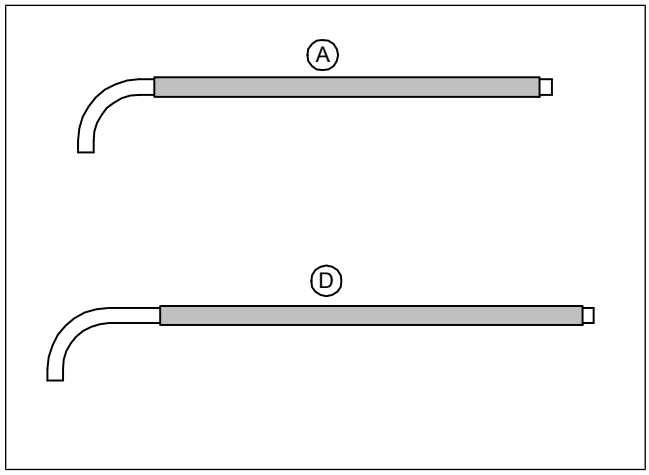


Fig. 29

▶ 1. Slide on and cut to length
▶ 2. Shrink, use at most 230 °C

Premounting coolant pump

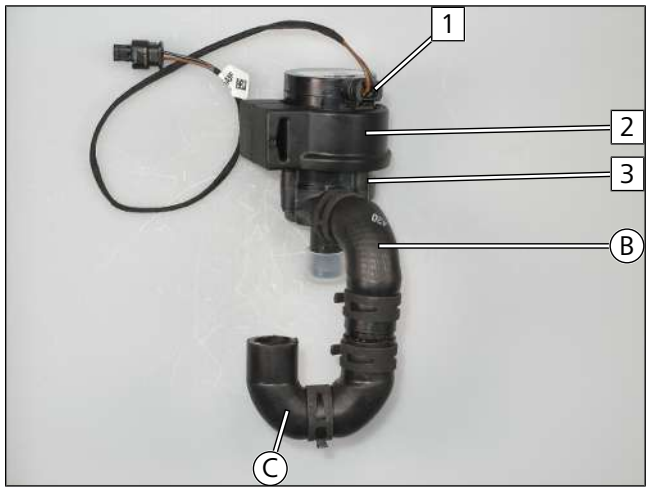


Fig. 30

All spring clips Ø25, Ø18x18 connecting pipe

1 Coolant pump wiring harness connector
2 Coolant pump mount
3 Coolant pump

Mounting coolant pump

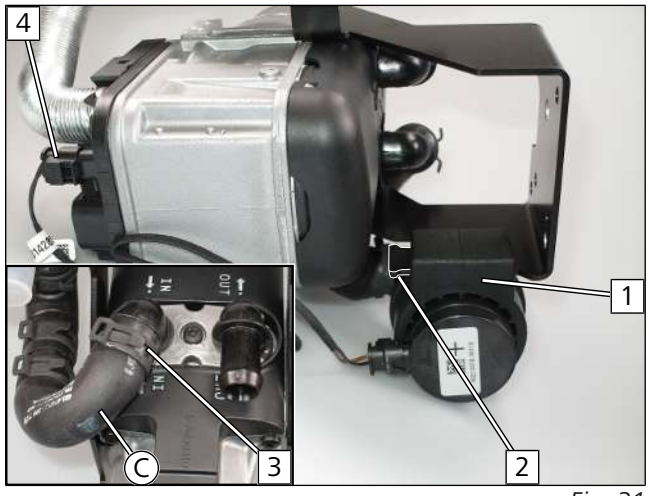


Fig. 31

▶ Push coolant pump mount **1** onto HG bracket **2**.

3 Ø25 spring clip
4 Coolant pump wiring harness connector

Mounting fuel line

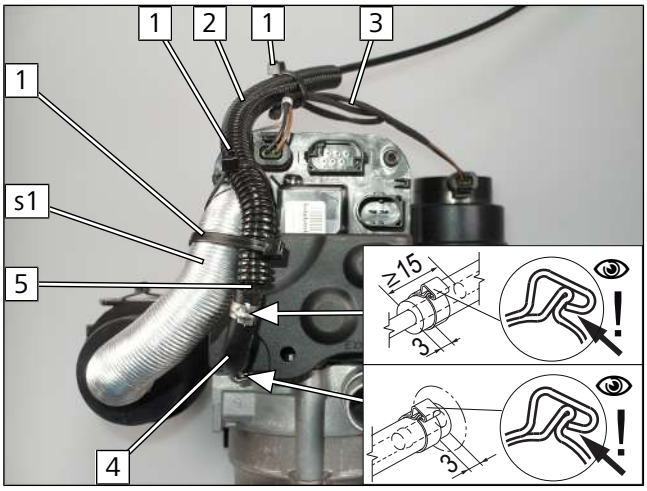


Fig. 32

- ▶ Draw fuel line [5] into Ø10 corrugated tube [2].
- ▶ Attach coolant pump wiring harness [3] and combustion air intake pipe [s1] with cable tie [1] to corrugated tube [2].

[4] 90° moulded hose, Ø10 clamp [2x]

Cutting exhaust pipe to length

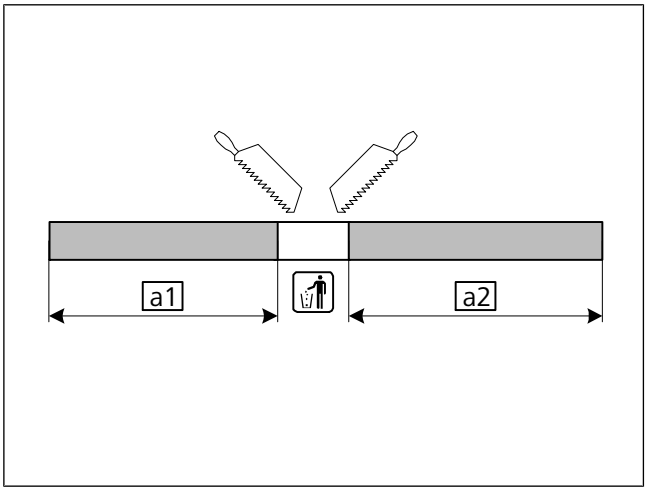


Fig. 33

[a1] 160
[a2] 250

Mounting exhaust pipe

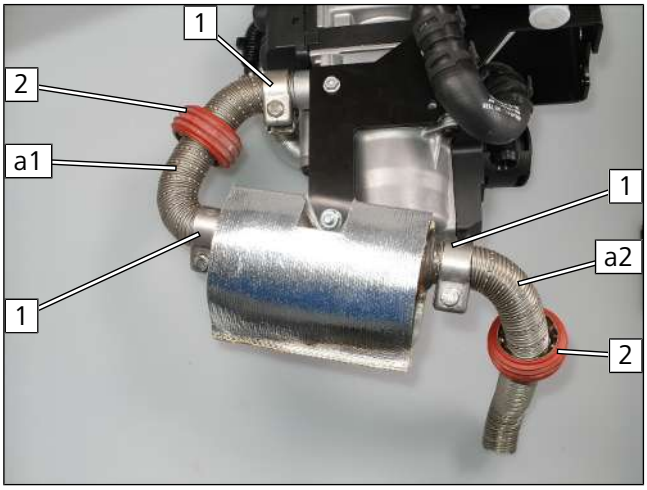


Fig. 34

[1] Hose clamp
[2] Spacer bracket

8.3 Heater mounting

Heater mounting

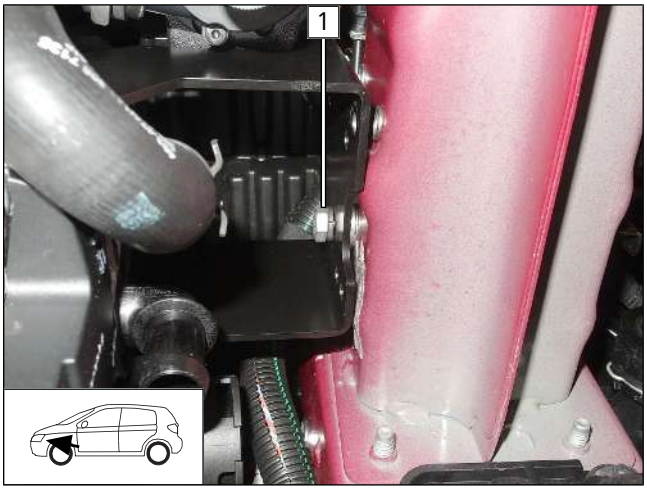


Fig. 35

Observe the general installation instructions of the heater.

1 Mount M8x25 bolt, spring lock washer, spacer (5), bracket, rivet nut loosely

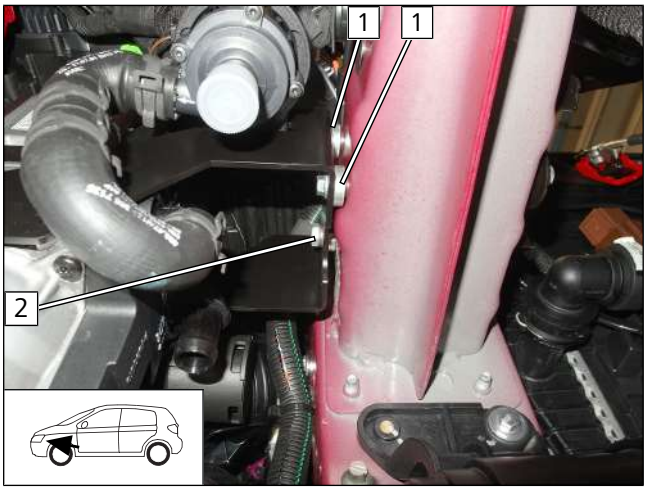


Fig. 36

1 M6x25 bolt, spring lock washer, bracket, spacer (5), rivet nut

2 Tighten M8x25 bolt

Mounting HG wiring harness

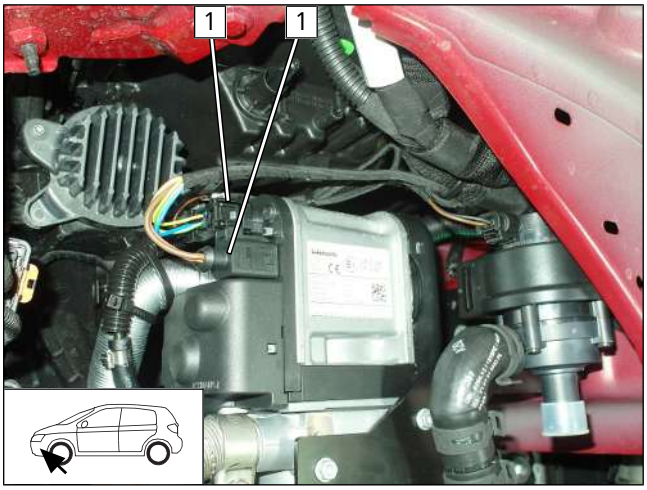


Fig. 37

1 Heater wiring harness connector

Mounting exhaust pipe **a2**

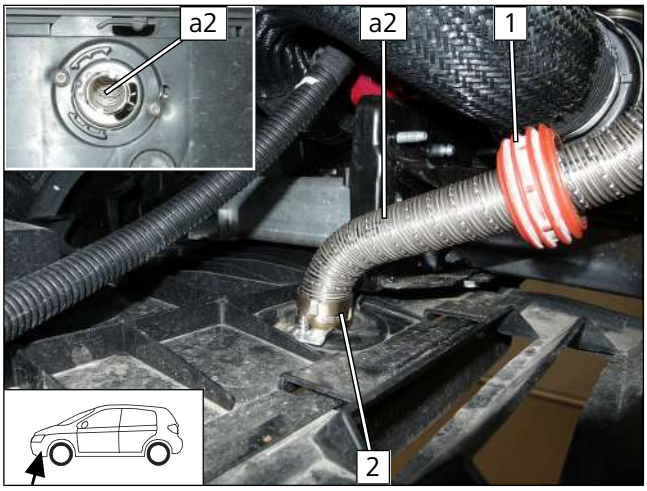


Fig. 38

Danger of damage to components

▶ Ensure sufficient distance from neighbouring components, correct if necessary.

1 Aligning spacer bracket

2 EFIX

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 X7

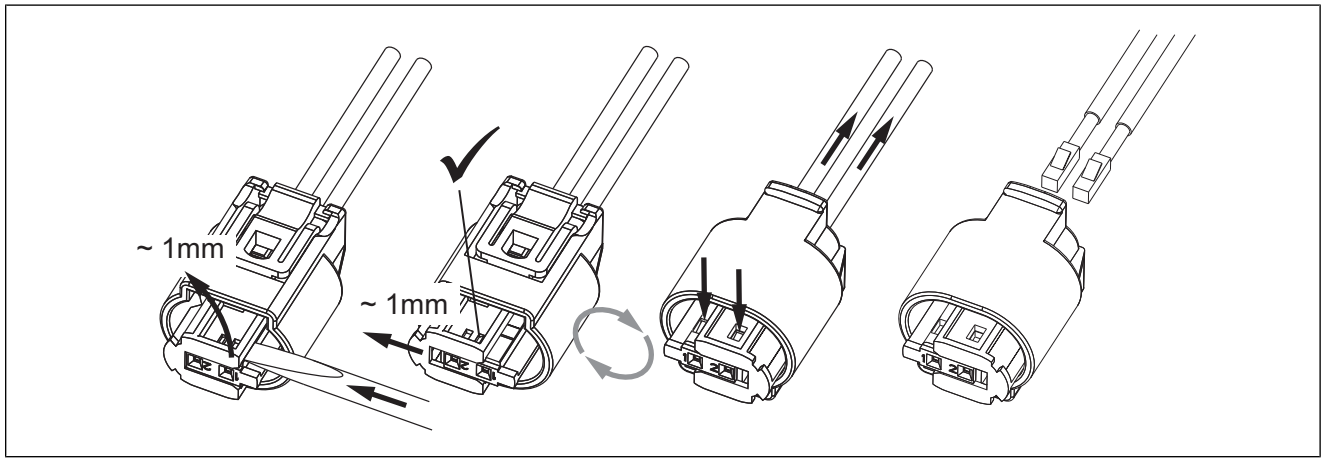


Fig. 39

9.1 Routing fuel line

Mounting edge clip cable tie

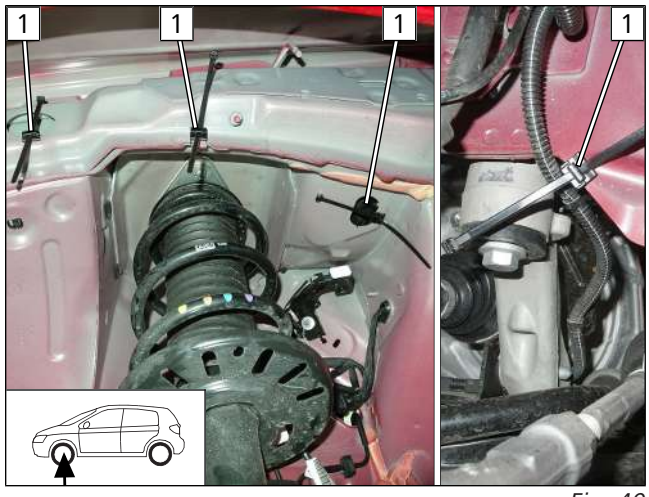


Fig. 40

1 Edge clip cable tie

Mounting fastening clips

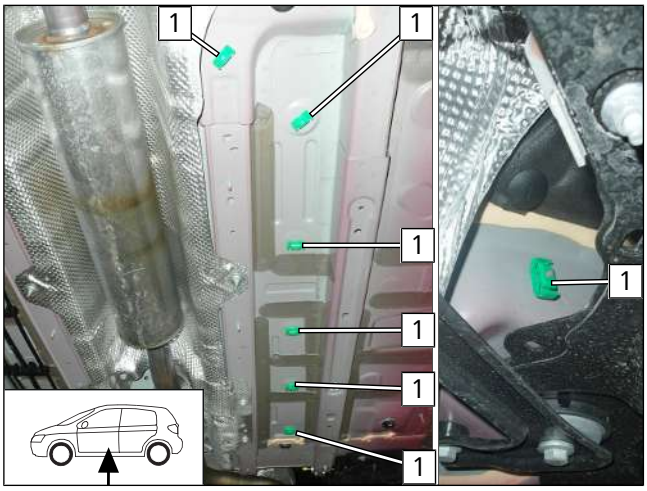


Fig. 41

1 Fastening clip

Bending perforated bracket

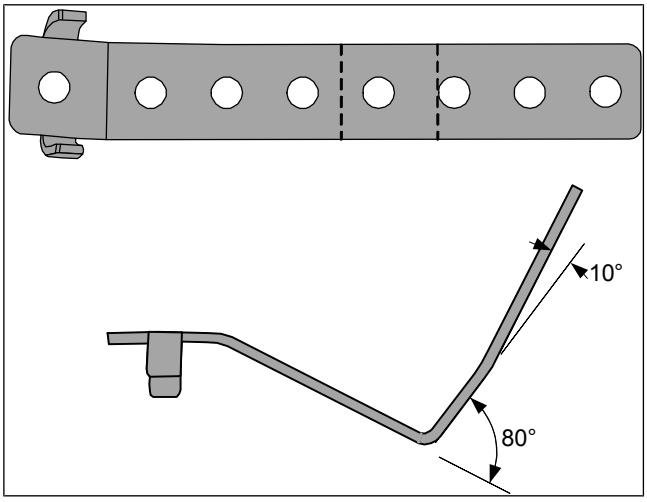


Fig. 42

Premounting fuel pump

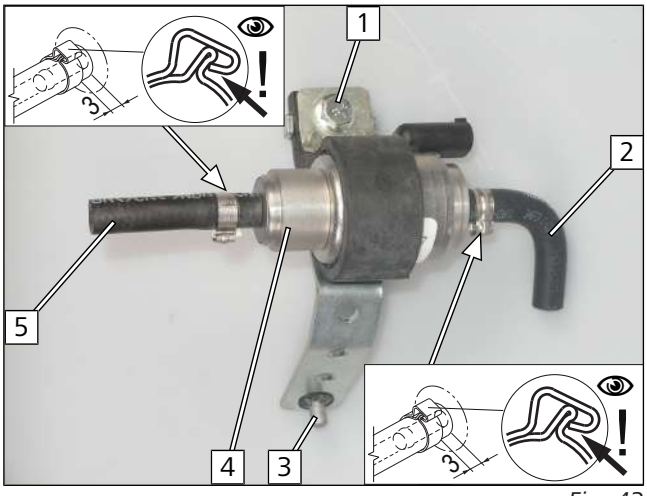


Fig. 43

1 M6x25 bolt, support angle bracket, fuel pump mount, perforated bracket, flanged nut
2 Moulded hose, Ø10 clamp
3 M6x12 bolt, perforated bracket, lock washer
4 Fuel pump
5 Hose section, Ø10 clamp

Mounting fuel pump

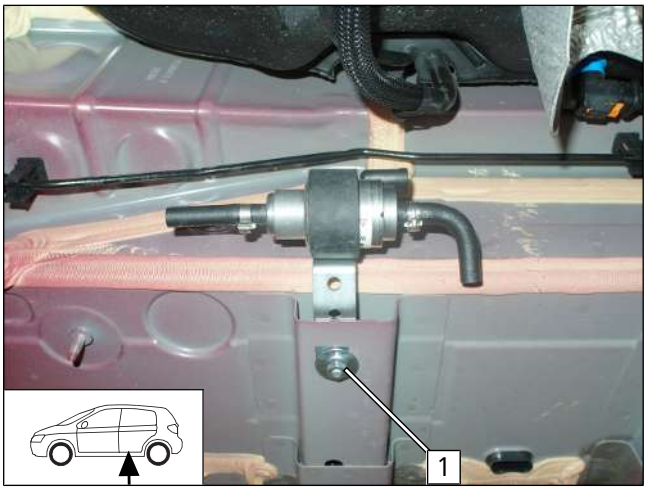


Fig. 44

[1] Premounted fuel pump, original vehicle hole, large diameter washer, flanged nut

Installing lines

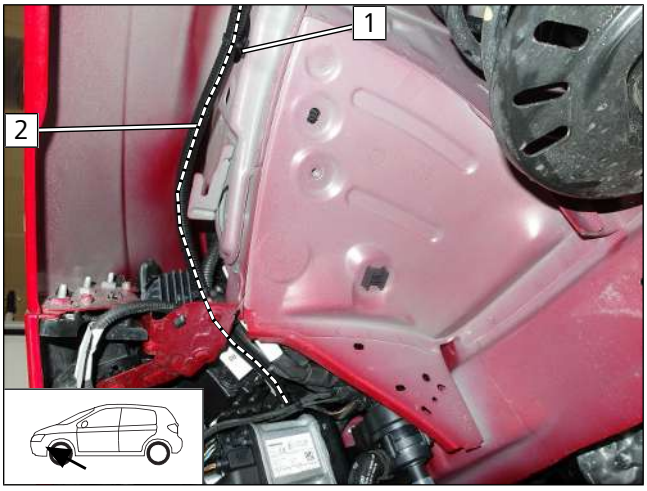


Fig. 45

▶ Draw fuel line and fuel pump wiring harness into Ø10 corrugated tube [2], fasten using edge clip cable tie [1] and route to wheel well.

Routing in wheel well

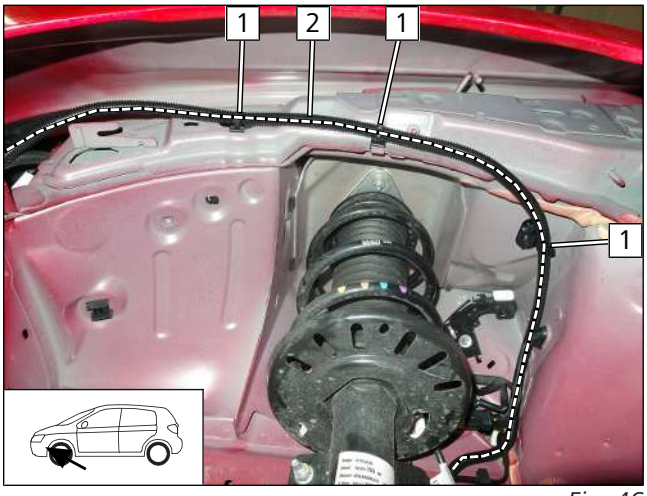


Fig. 46

[1] Edge clip cable tie

[2] Fuel line and fuel pump wiring harness in corrugated tube

Routing to the underbody

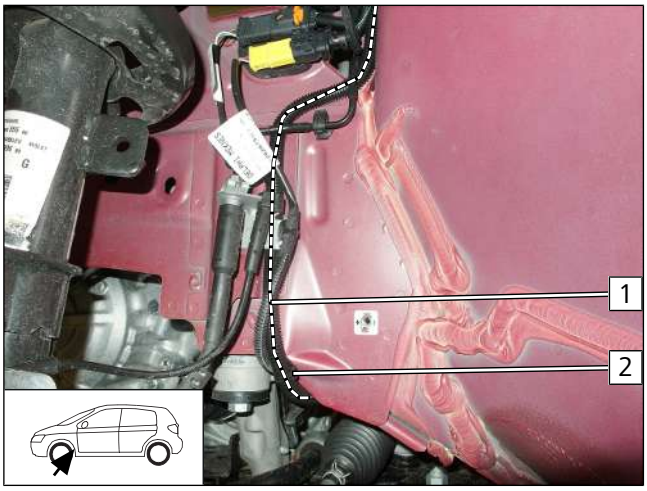


Fig. 47

1 Fuel line and fuel pump wiring harness in corrugated tube

2 Edge clip cable tie

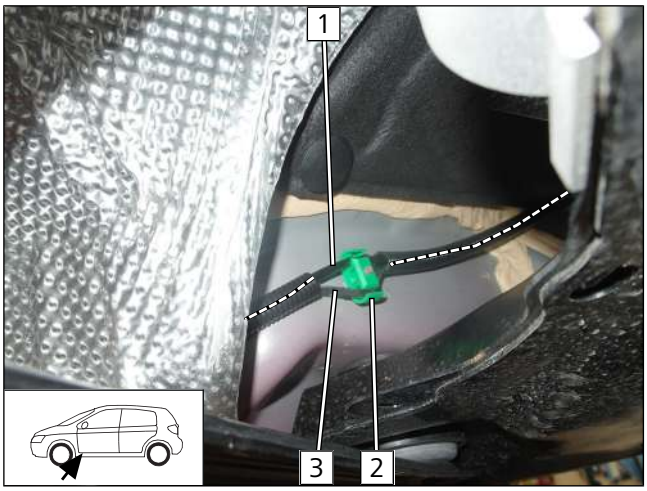


Fig. 48

▶ Mount fuel line 1 and fuel pump wiring harness 3 in fastening clip 2 and route further to the underbody.

Routing on underbody

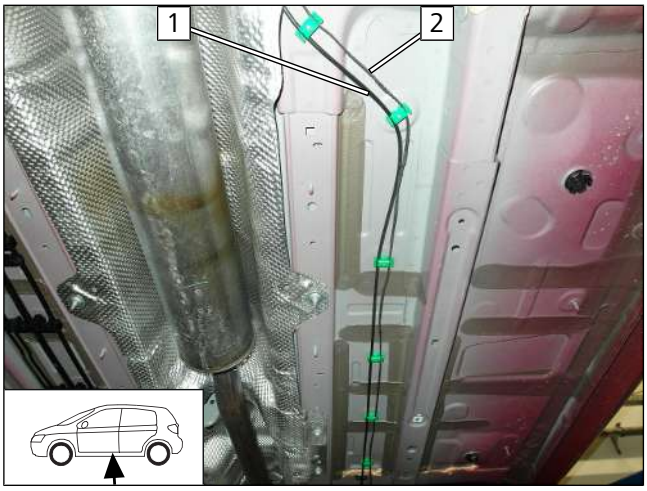


Fig. 49

▶ Mount fuel line 1 and fuel pump wiring harness 2 along the underbody in fastening clips and route to the fuel pump installation location.

Assembling fuel pump connector X7

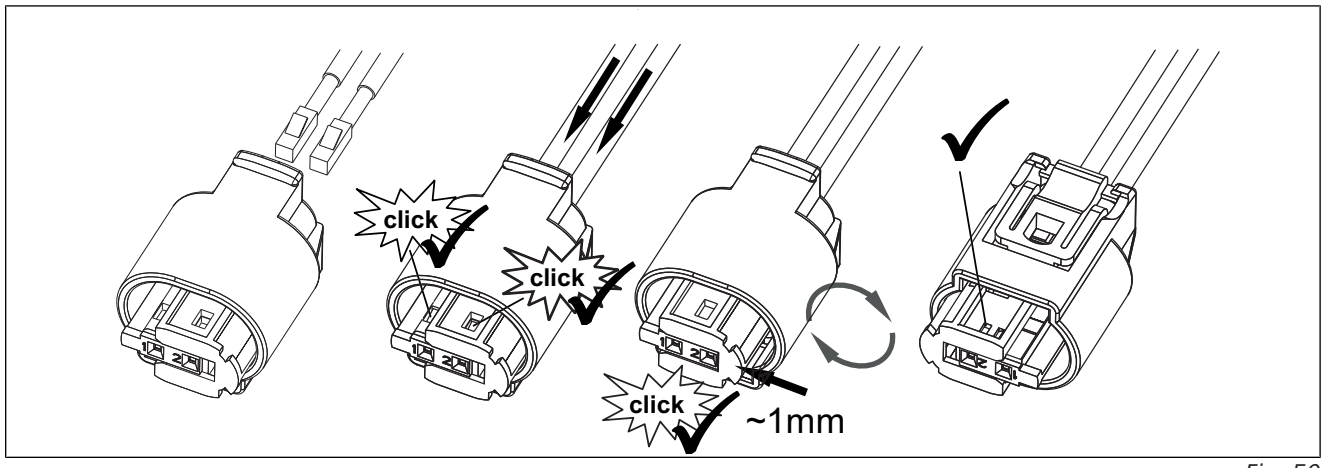


Fig. 50

Fuel pump connection

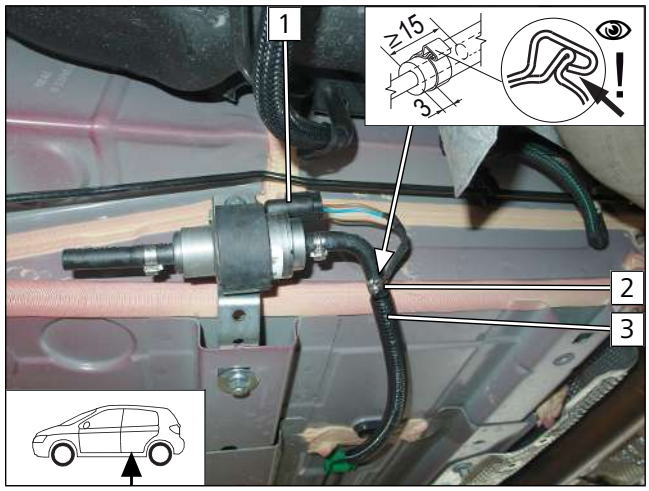


Fig. 51

1 Ø10 clamp
2 Heater fuel line
3 DP wiring harness, X7 connector mounted

9.2 Installing FuelFix

Preparing drilling template

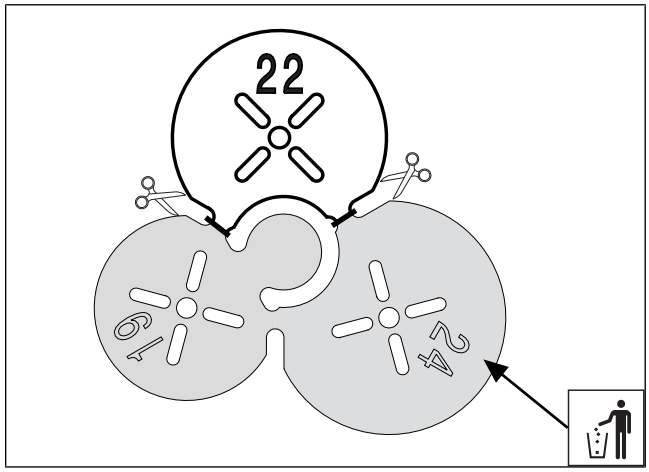


Fig. 52

Work steps F1, F2

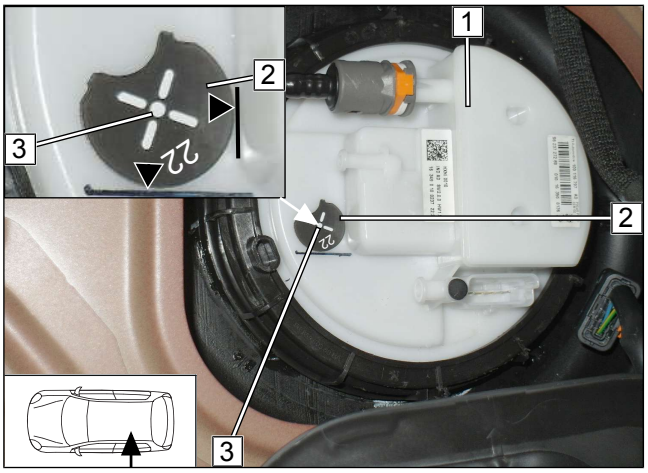


Fig. 53

Observe the installation instructions of the tank extracting device.

1 Tank fitting
2 Position Ø22 drilling template as shown in fig.
3 Hole pattern

Work step F3

Fig. 54

DANGER

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

1 Hole made with provided drill

Work steps F4, F5

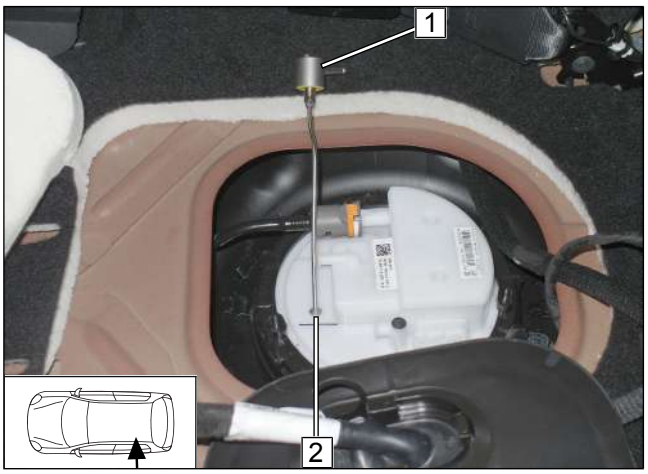


Fig. 55

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

Fig. 56

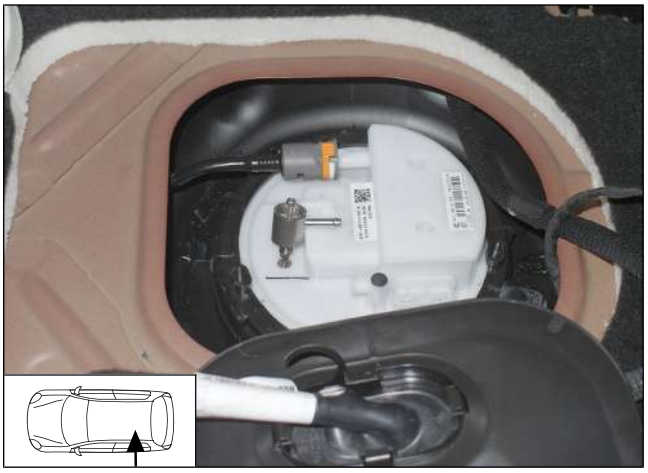


Fig. 57

Work steps F5.3, F5.4

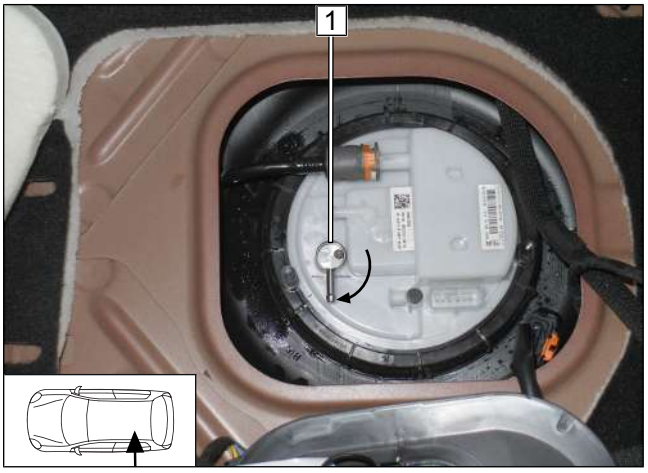


Fig. 58

▶ Align FuelFix 1 as shown in Fig.

Work step F6

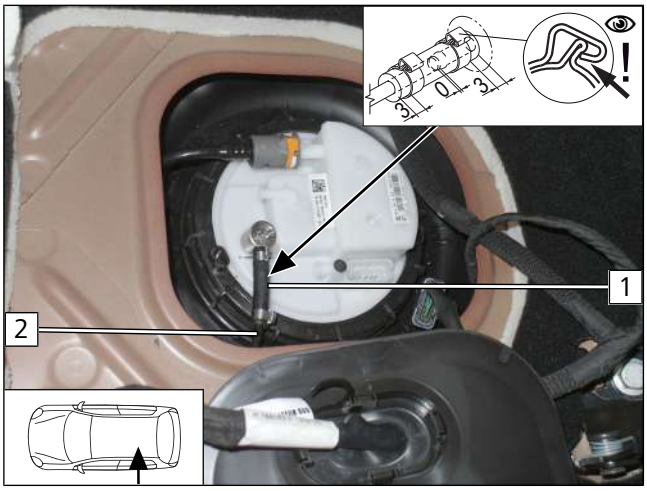


Fig. 59

1 Hose section, Ø10 clamp [2x]
2 Fuel line

Work step F7

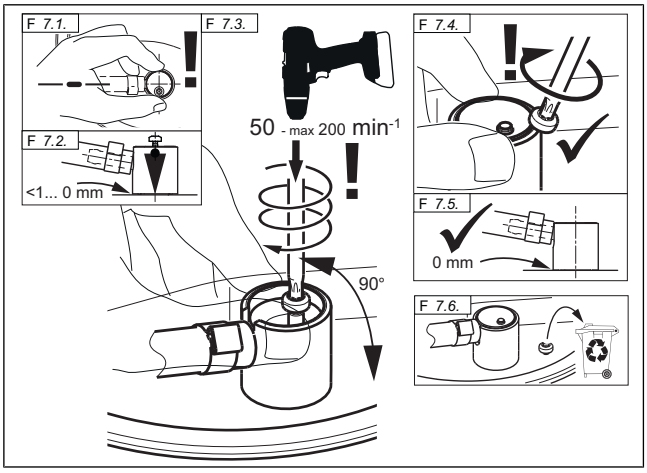


Fig. 60

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

Work step F8

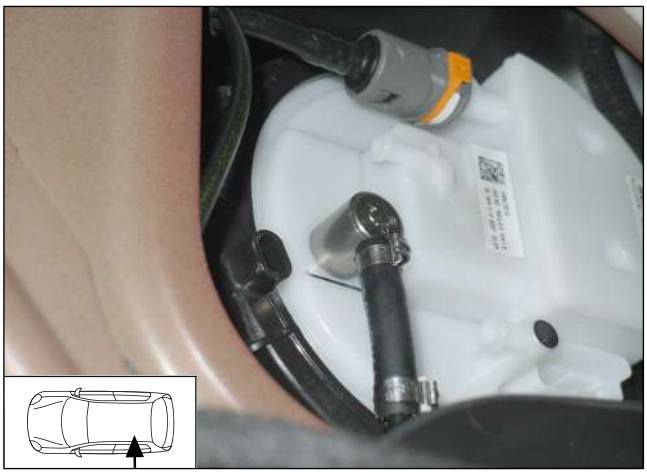


Fig. 61

Securing fuel line

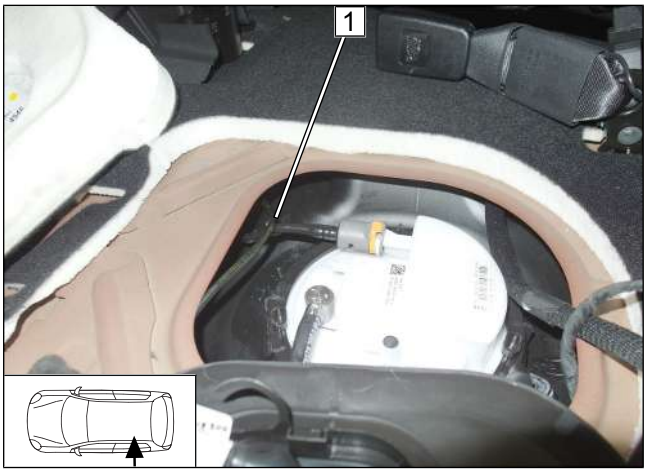


Fig. 62

[1] Cable tie for tension relief

9.3 Fuel pump connection

Routing fuel line

Fig. 63

▶ Fasten FuelFix [1] to original vehicle line and route to the fuel pump.

Connecting fuel line of FuelFix

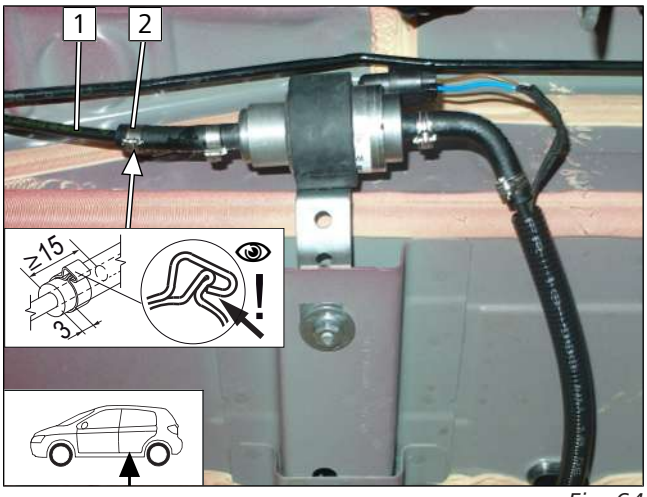


Fig. 64

[1] Fuel line of FuelFix
[2] Ø10 clamp

10 Coolant

10.1 Hose routing diagram

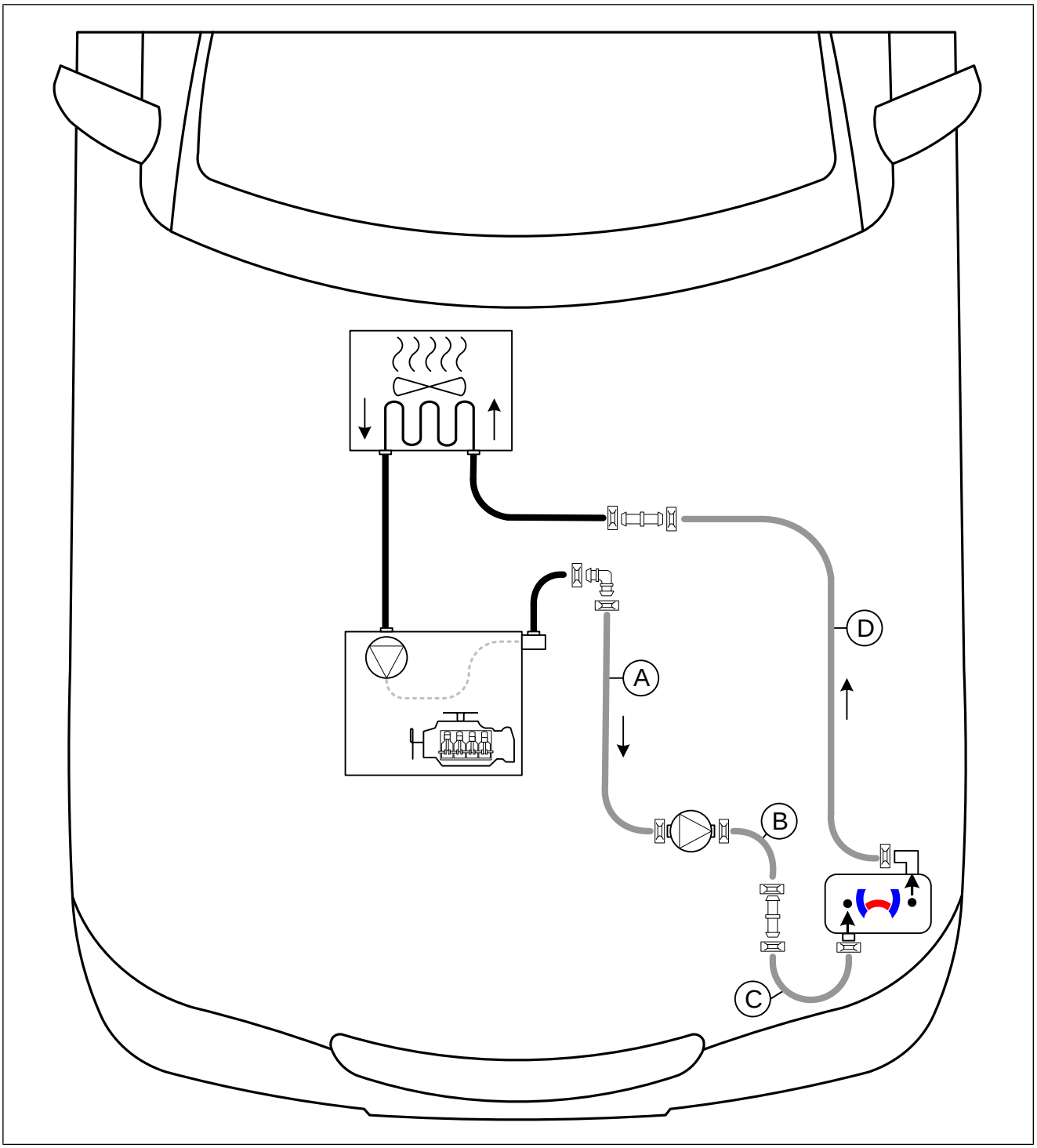


Fig. 65

All spring clips = Ø25

All connecting pipe or = Ø18x18

10.2 Coolant circuit installation

Cutting point

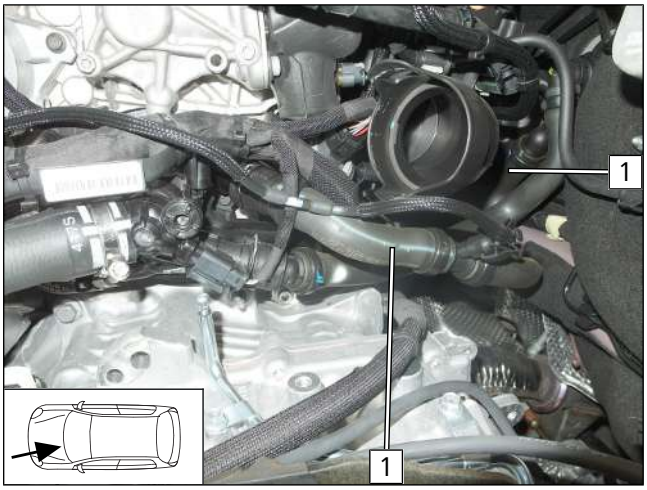


Fig. 66

▶ Disconnect engine outlet/heat exchanger inlet hose **1**.

Fitting edge protection

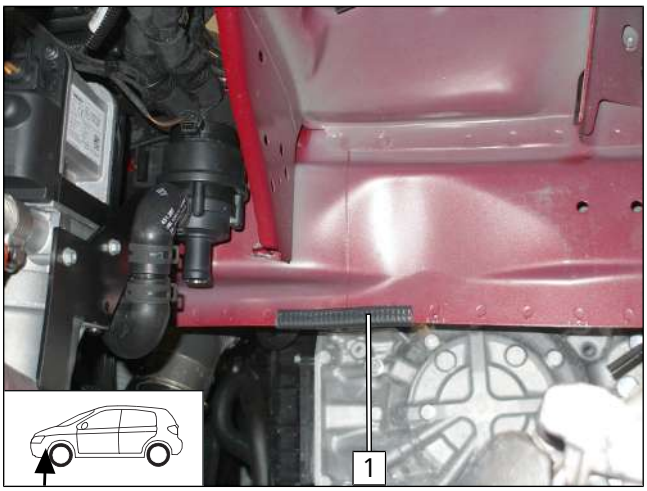


Fig. 67

1 100 edge protection

Preparing hose

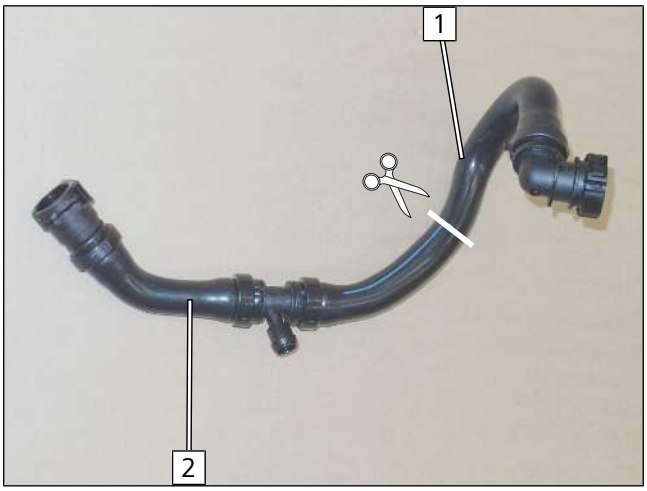


Fig. 68

1 Heat exchanger inlet hose section
2 Engine outlet hose section

Preparing perforated bracket 1

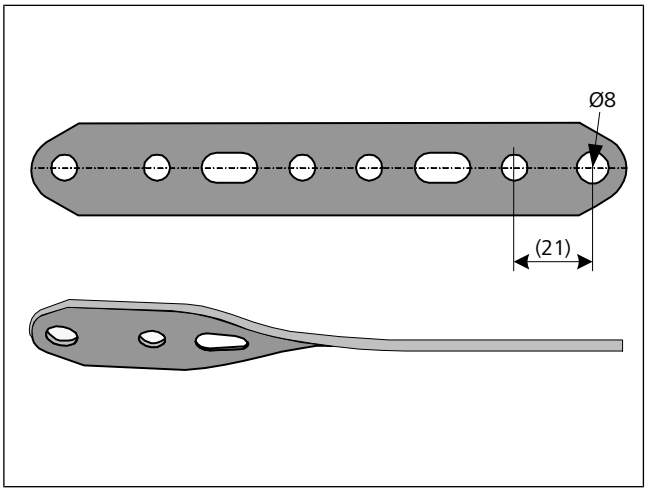


Fig. 69

▶ Turn perforated bracket by 35°.

Preparing perforated bracket 2

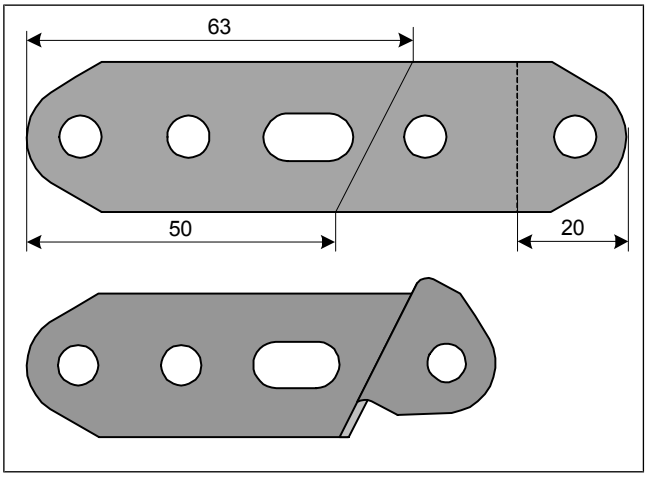


Fig. 70

▶ Bend perforated bracket 2x by 90°.

Premounting hoses Ⓐ and Ⓓ

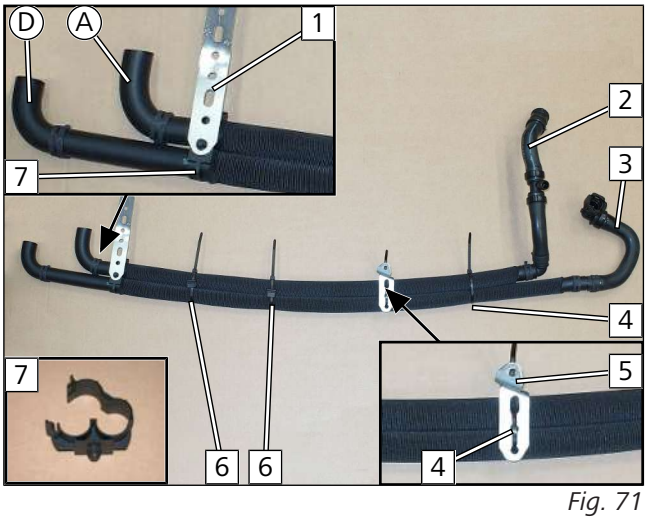


Fig. 71

1 Perforated bracket 1
2 Engine outlet hose section
3 Heat exchanger inlet hose section
4 Cable tie
5 Perforated bracket 2
6 Edge clip cable tie
7 Lockable hose bracket

Connecting hoses Ⓐ and Ⓓ, mounting perforated bracket 1

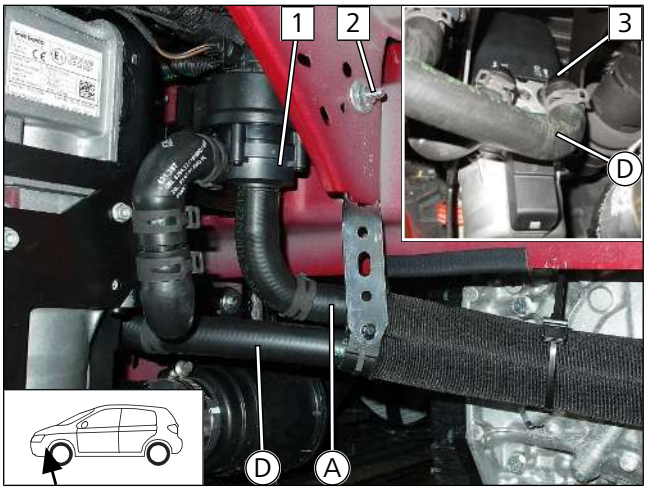


Fig. 72

▶ Connect hose Ⓐ to coolant pump inlet 1.

▶ Connect hose Ⓓ to HG/OUT 3.

2 M6x20 bolt, perforated bracket 1, original vehicle hole, large diameter washer, flanged nut

Routing hoses Ⓐ and Ⓓ

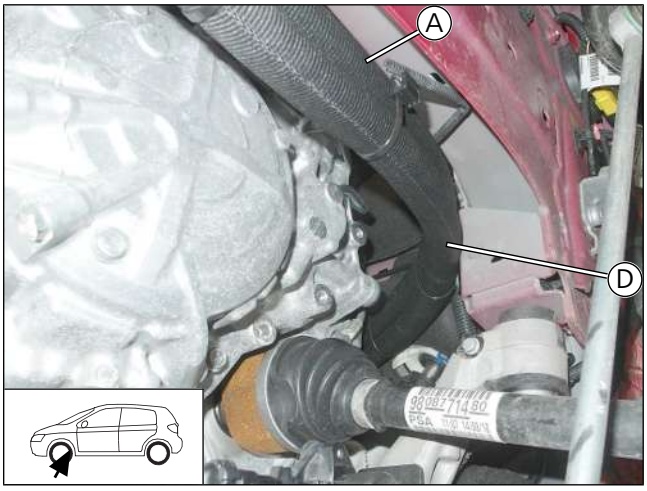


Fig. 73

Mounting perforated bracket 2

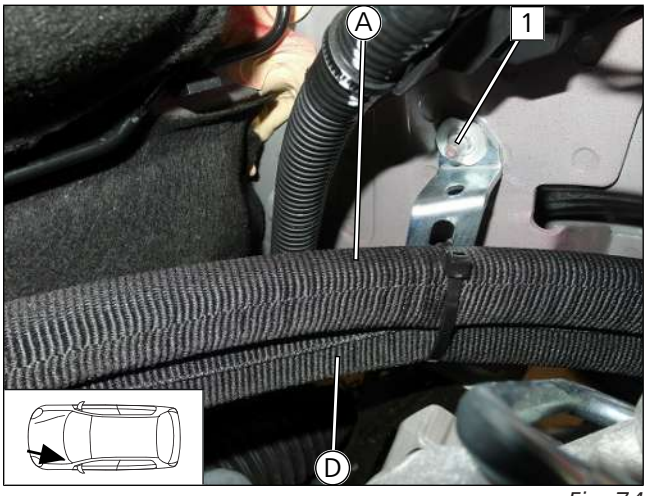


Fig. 74

1 Original vehicle stud bolt, perforated bracket 2, plate nut

Heat exchanger inlet connection

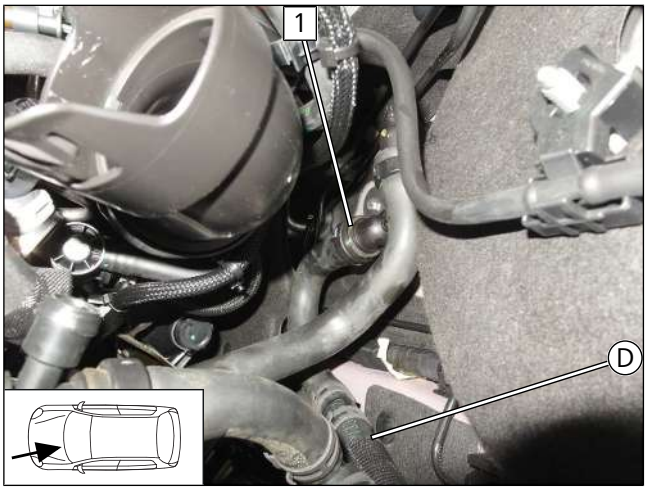


Fig. 75

1 Heat exchanger inlet hose section

Engine outlet connection

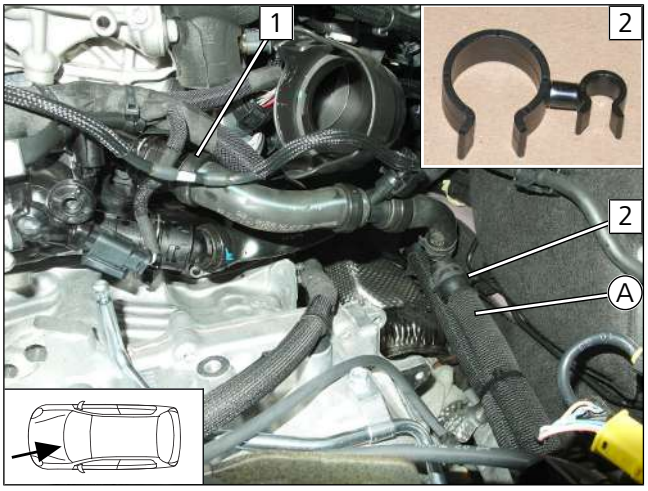


Fig. 76

1 Engine outlet hose section

2 Hose bracket between hose Ⓐ and original vehicle brake line

Fastening hoses Ⓐ and Ⓓ

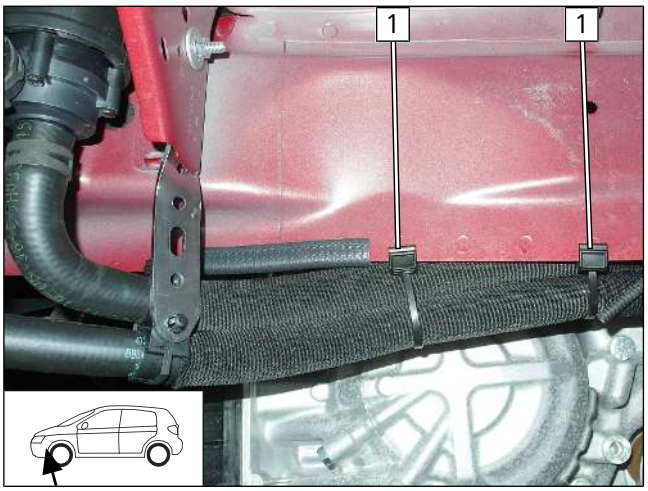


Fig. 77

1 Mounting edge clip cable tie

11 Electrical system of passenger compartment

11.1 Installing cold start system

Integrate the cold start system as per the separate installation documentation **'Cold start for Peugeot 508 petrol'**.

11.2 Preparing electrical system

Assigning wires

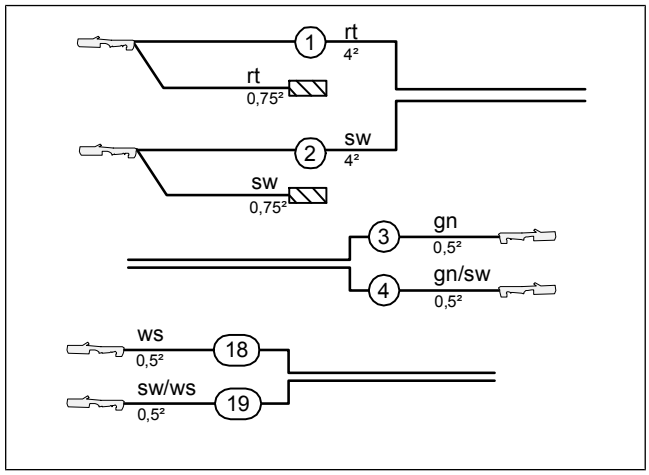


Fig. 78

Wire sections retain their numbering in the entire document.

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 isolating relay wiring harness
⑲ Black/white (sw/ws) wire of isolating relay wiring harness

Cutting to length/preparing wires

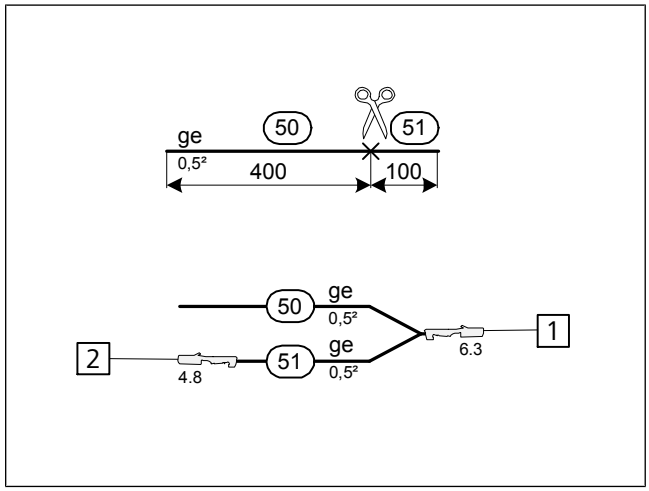


Fig. 79

[1] 6.3 female connector
[2] 4.8 female connector

Connecting wires in RSH

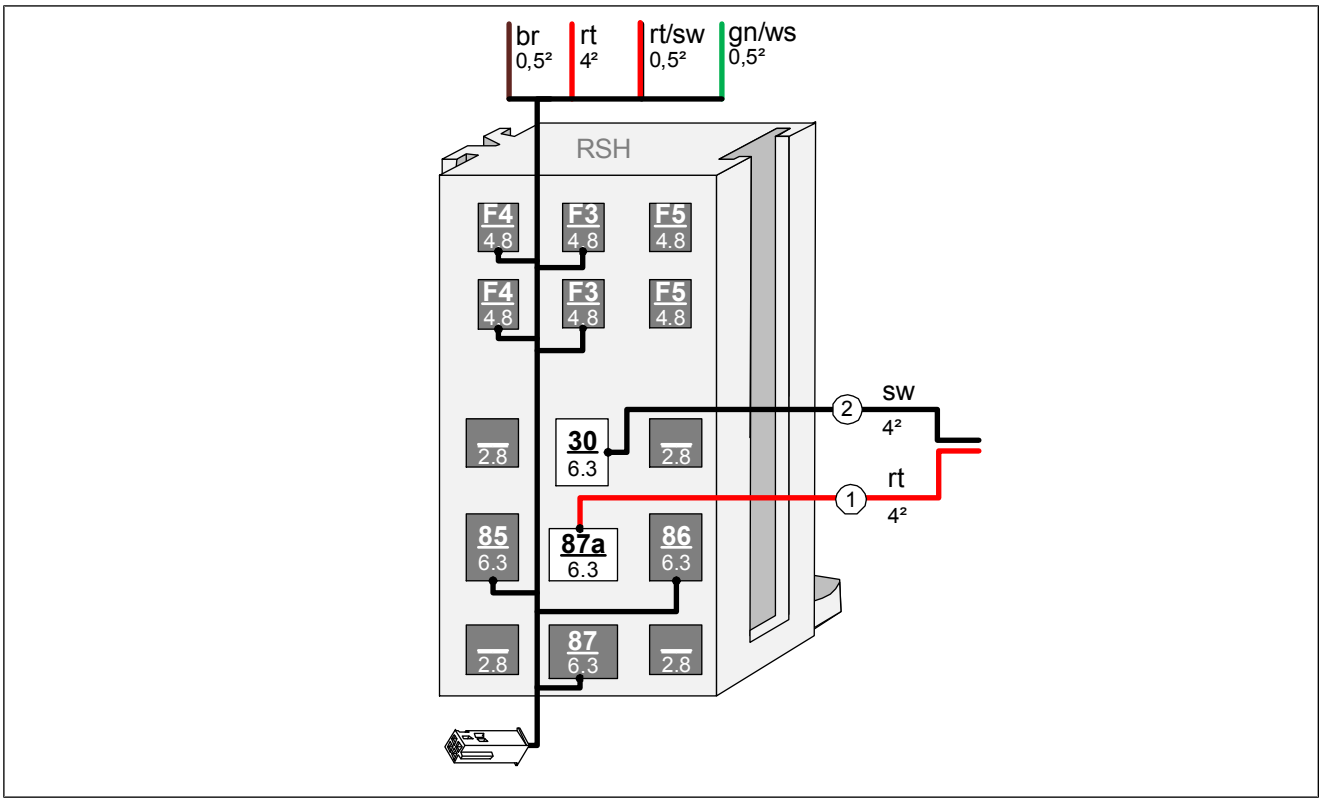


Fig. 80

View of PWM GW

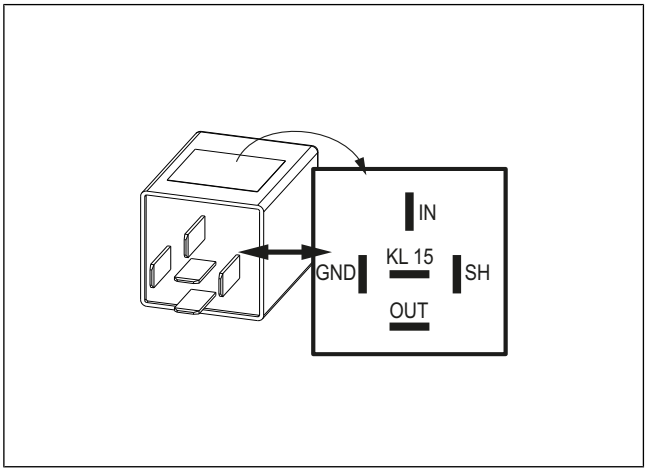


Fig. 81

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

Parameter	Setting
Duty cycle	75%
Frequency	500Hz
Voltage	not relevant
Function	Low side

Connecting wires to PWM GW socket

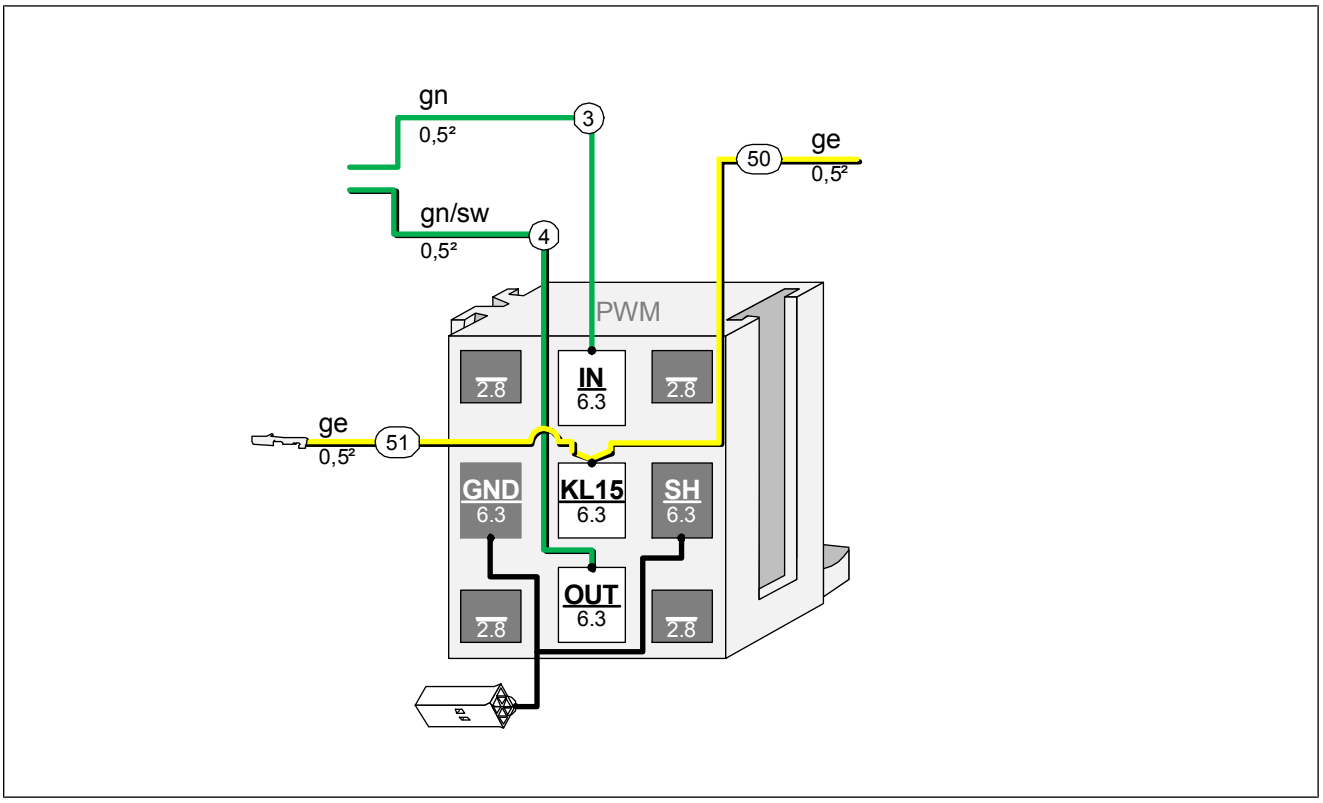


Fig. 82

Connecting wires to K2 relay socket

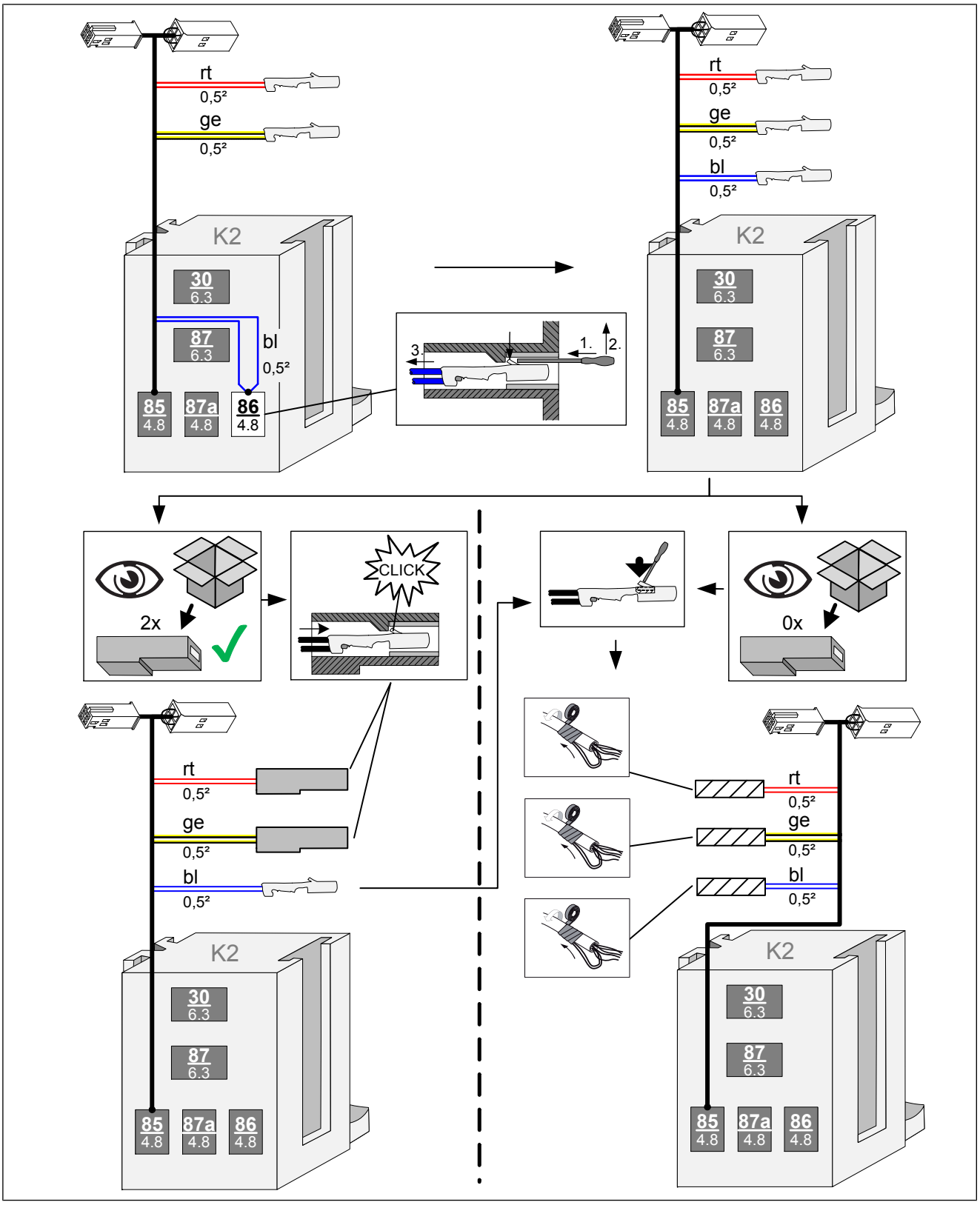


Fig. 83

Assembling RSH, relay K2 and PWM GW sockets, connecting wires

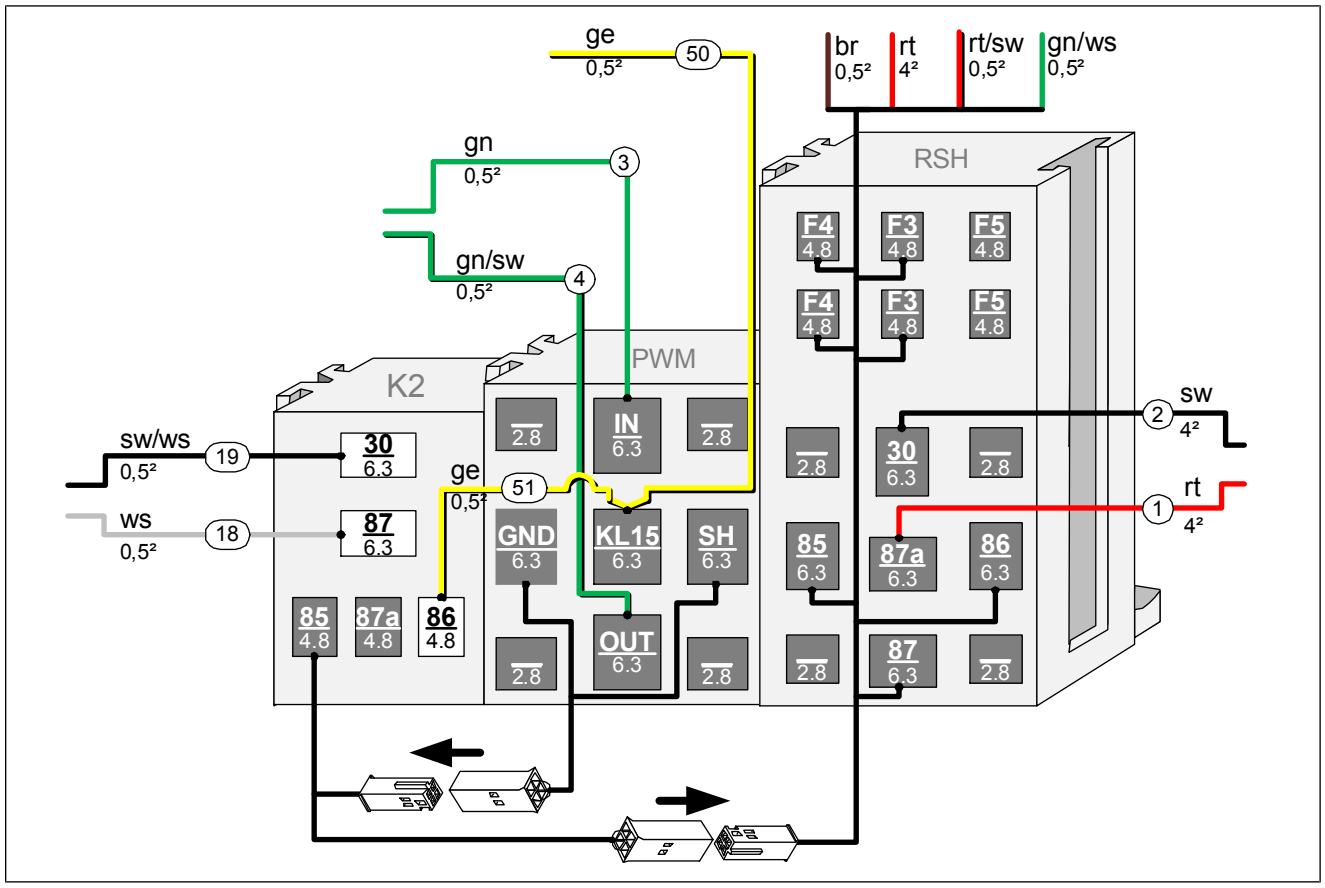


Fig. 84

Assembling CLR module and RSH sockets

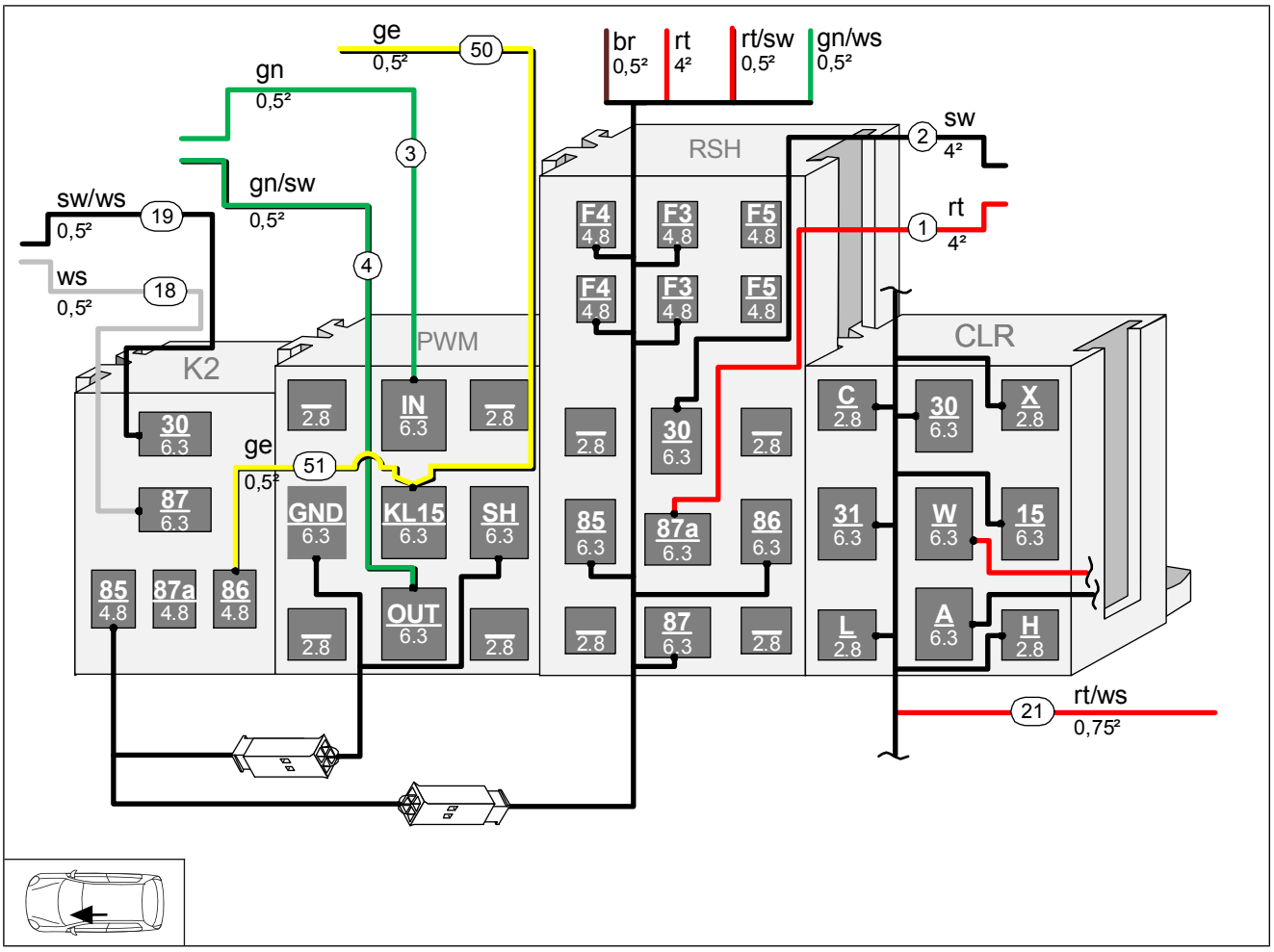


Fig. 85

Connecting same colour wires of wiring harnesses

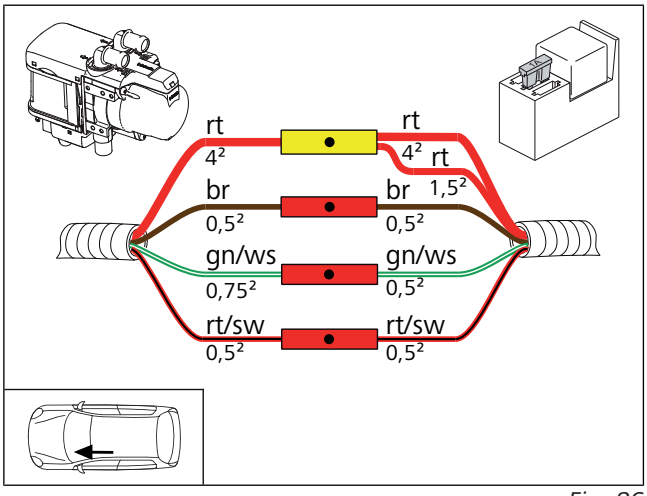


Fig. 86

Copying hole pattern, drilling hole

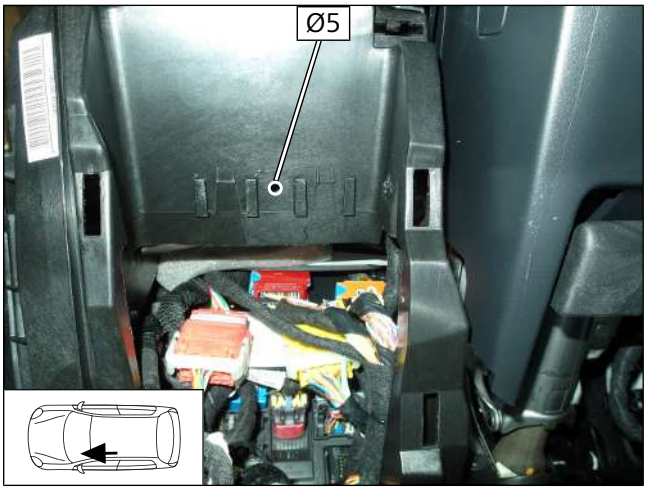


Fig. 87

Danger of damage to components

▶ When drilling, be careful of components located behind.

Mounting socket

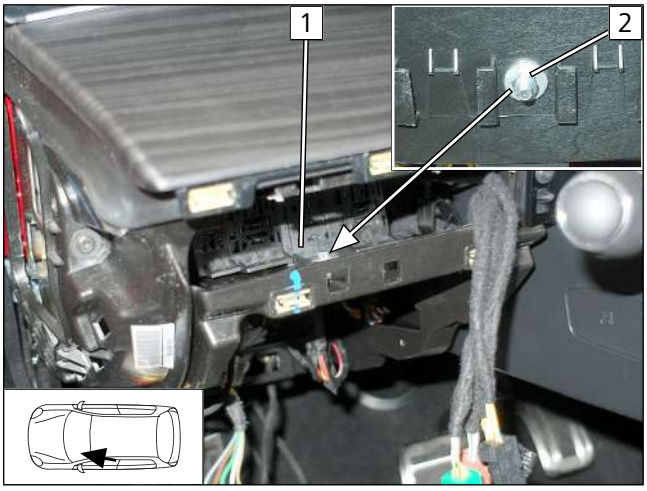


Fig. 88

1 RSH socket, relay K2, PWM GW and CLR

2 M5x16 bolt, large diameter washer, socket, original vehicle hole, large diameter washer, nut

Mounting relay and fuse F4

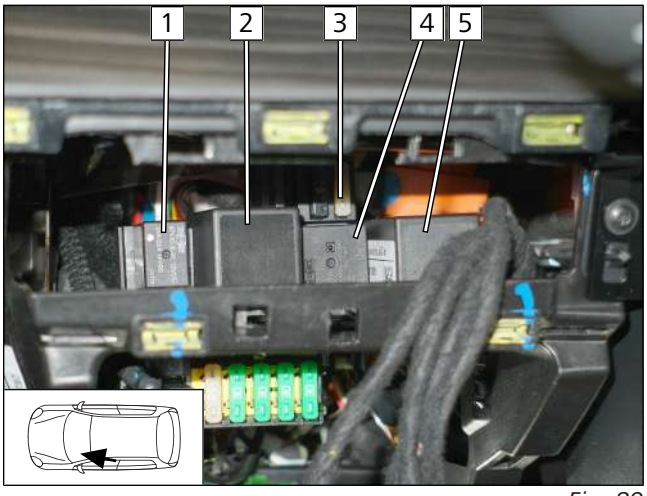


Fig. 89

1 Relay K2

2 PWM GW

3 25A fuse F4

4 Relay K1

5 CLR module

11.3 Wiring diagram

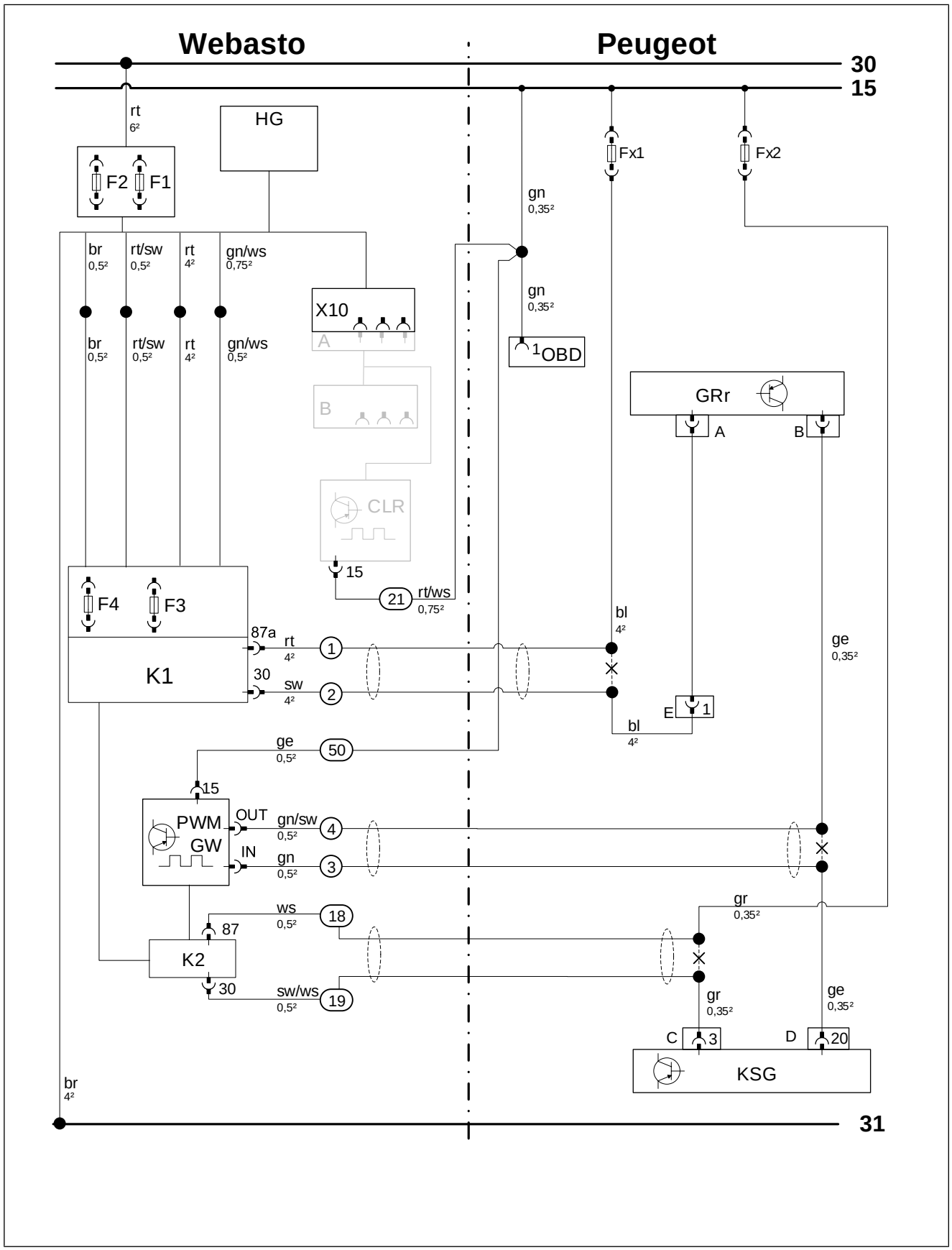


Fig. 90

Legend to wiring diagram

The vehicle connector and component designations are freely chosen by Webasto.
Cable colours may vary.

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Designation
Fx1	Fuse	X	Cutting point
Fx2	Fuse		
GRr	Fan controller		
A	GRr connector		
B	GRr connector		
KSG	Air-conditioning control unit		
C	6-pin KSG connector		
D	40-pin KSG connector		
E	2-pin connector		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Male plug for CLR module wiring harness	bg	beige
B	Female plug for CLR module wiring harness	bl	blue
C	Male plug for adapter wiring harness	br	brown
D	Female plug for adapter wiring harness	dbl	dark blue
E	Male plug for Plug&Play wiring harness	dgn	dark green
F	Female plug for Plug&Play wiring harness	ge	yellow
CCL GW	CAN CAN LIN Gateway	gn	green
CL GW	CAN LIN Gateway	gr	grey
CLR	Cold start module	hbl	light blue
D1	Diode	hgn	light green
D2	Diode group	la	salmon
F0	Additional fuse for power supply	or	orange
F1	Heater main fuse	pk	pink
F2	Passenger compartment fan controller main fuse	rt	red
F3	Control element fuse	sw	black
F4	Fan controller fuse	vi	violet
F5	Additional fuse	ws	white
HG	Heater TT-Evo		
K1	Relay K1		
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	Female plug for control element		
Y	Power adapter		

11.4 Fan controller

Connecting fan controller

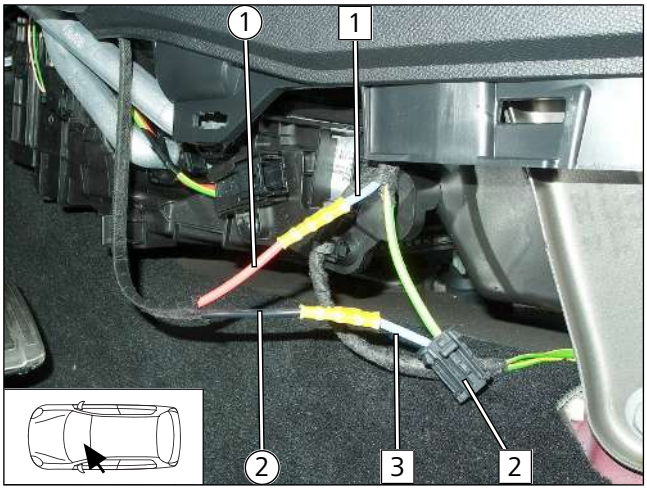


Fig. 91

1 Blue (bl) wire of fuse Fx1
2 2-pin connector E
3 Blue (bl) wire of connector E/pin 1
① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness

Locating A/C control unit

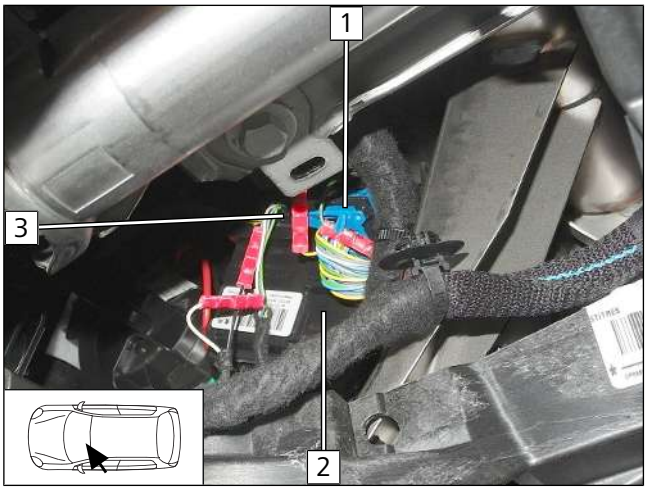


Fig. 92

1 40-pin connector D
2 Air-conditioning control unit
3 6-pin connector C

Connector C connection

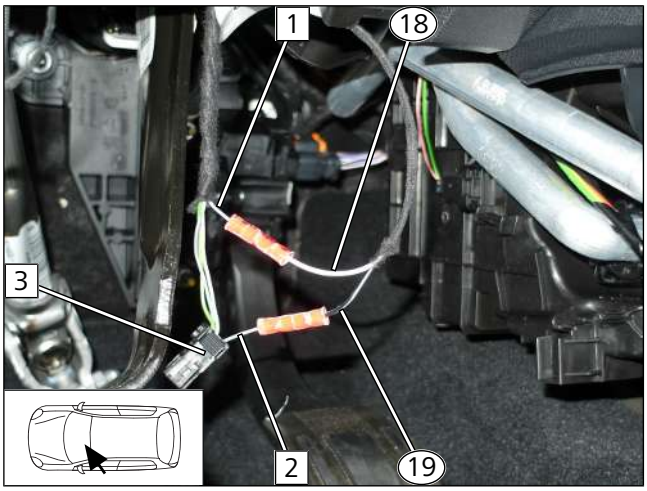


Fig. 93

1 Grey (gr) wire of fuse Fx2
2 Grey (gr) wire of connector C/pin 3
3 6-pin connector C of air-conditioning control unit
⑱ White (ws) wire of relay K2/87
⑲ Black/white (sw/ws) wire of relay K2/30

Connector D connection

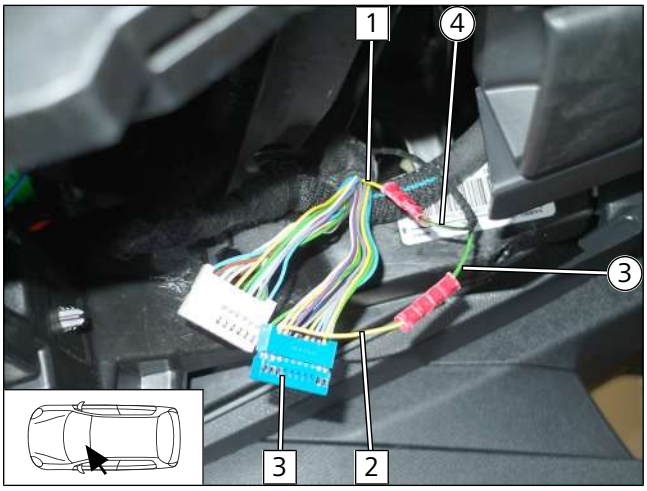


Fig. 94

1 Yellow (ge) wire of connector B
2 Yellow (ge) wire of connector D/pin 20
3 Connector D pin 1-20
③ Green (gn) wire from wiring harness of PWM control
④ Green/black (gn/sw) wire from wiring harness of PWM control

Connection to OBD socket outlet

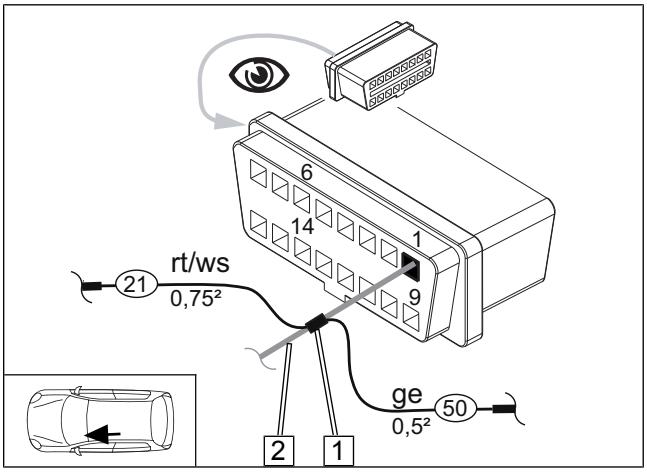


Fig. 95

▶ Remove OBD socket outlet from bracket.

1 Crimp and shrink butt connector
2 Green (gn) wire of OBD/pin1
21 Red/white (rt/ws) wire from CLR module/ 15
50 Yellow (ge) wire of PWM GW/15

12 Electrical system of control elements

12.1 MultiControl CAR option

Mounting MultiControl CAR

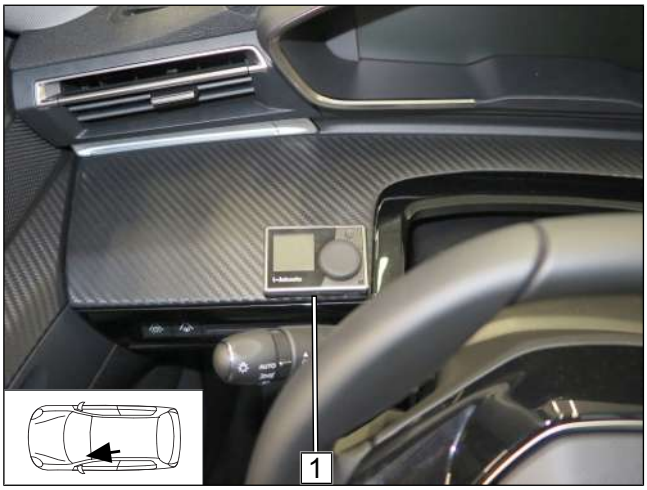


Fig. 96

Observe the MultiControl CAR installation documentation.

1 Installation frame

12.2 Telestart option

Mounting receiver

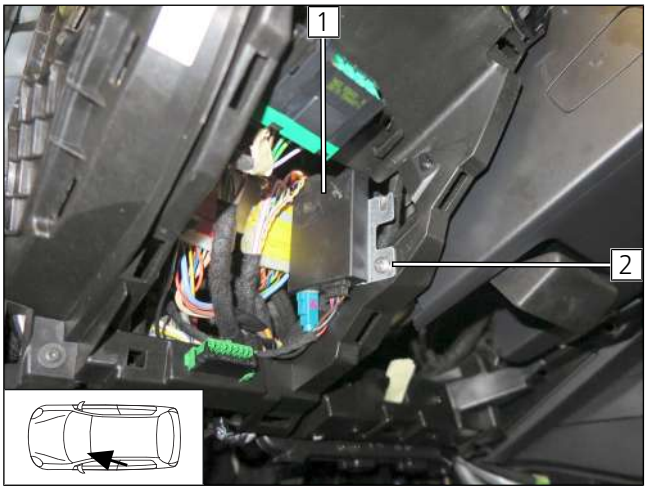


Fig. 97

Observe the Telestart installation documentation.

▶ Fasten receiver bracket 2 to plastic frame using suitable means (e.g. self-tapping screw) as shown.

1 Receiver

Mounting temperature sensor, only in case of T100 HTM

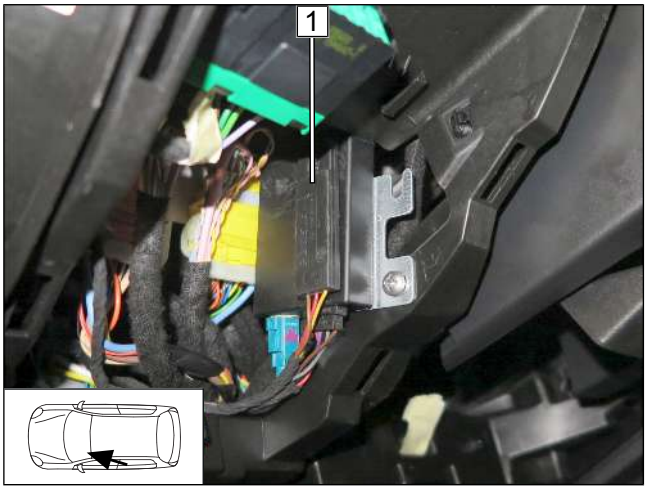


Fig. 98

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

Mounting aerial

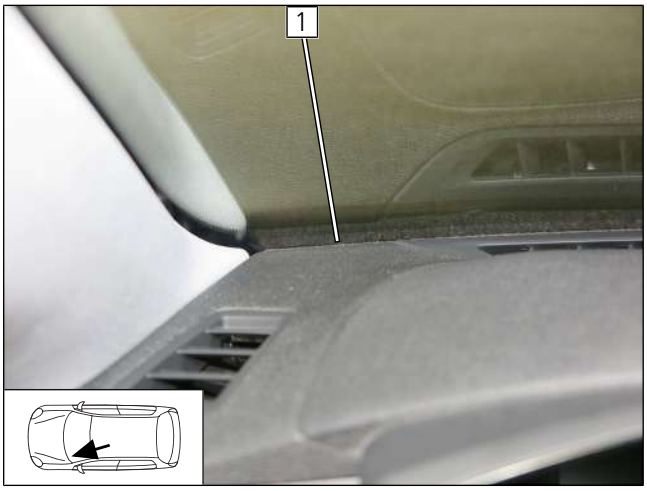


Fig. 99

1 Aerial

12.3 ThermoCall option

Mounting receiver

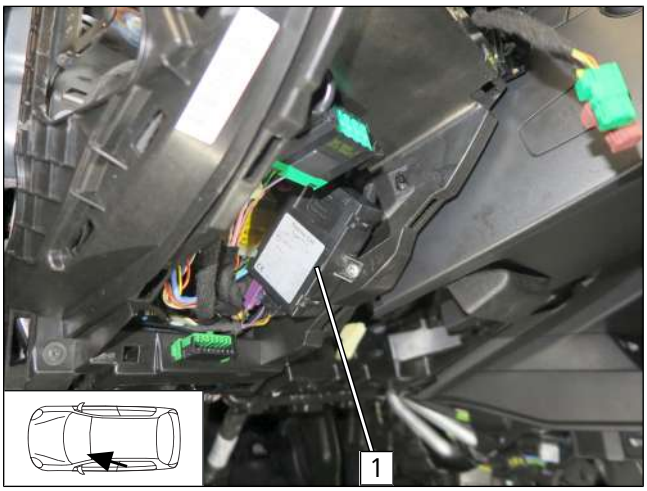


Fig. 100

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 to plastic frame using suitable means (e.g. self-tapping screw) as shown.

Mounting aerial (optional)

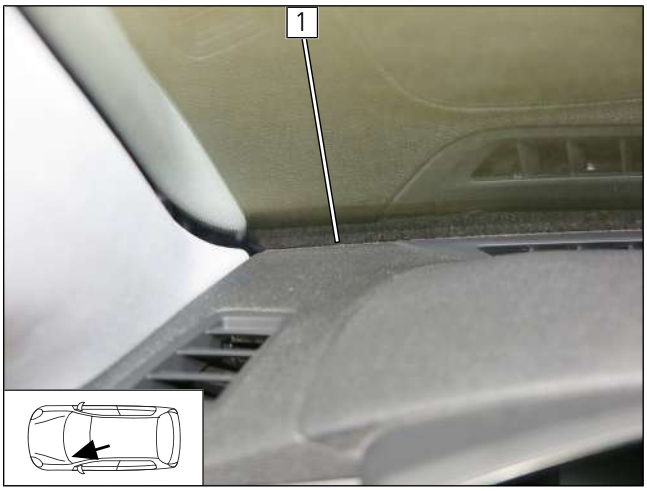


Fig. 101

1 Aerial

13 Final work in engine compartment

Installing the positive wire

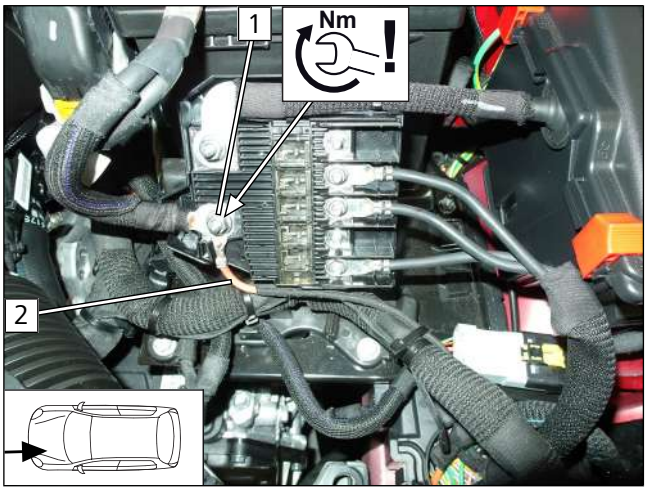


Fig. 102

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

[1] Original vehicle positive point

[2] Positive wire

Earth connection

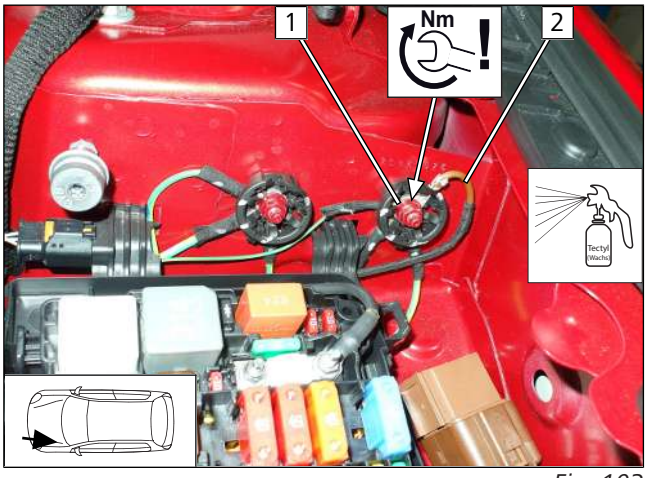


Fig. 103

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

[1] Original vehicle earth point

[2] Earth wire

Checking distance

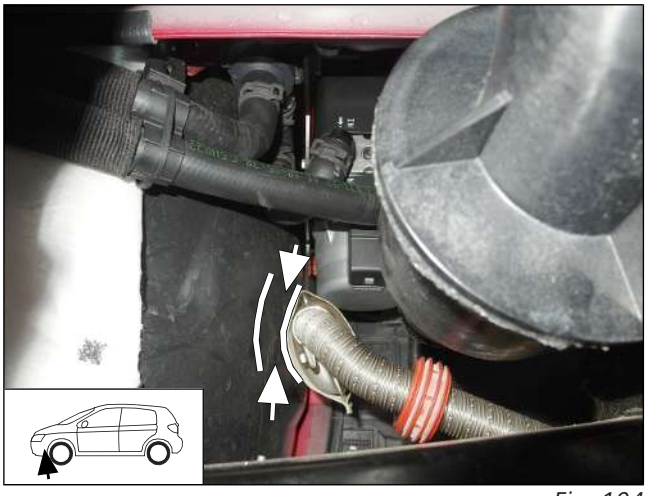


Fig. 104

▶ Align the spacer bracket.

Danger of damage to components

▶ Ensure sufficient distance from neighbouring components, correct if necessary.

14 Final work

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

- ▶ Mount removed parts in reverse order.

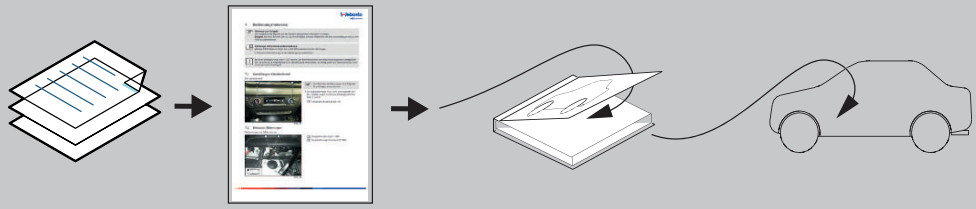
- ▶ Check all hoses, clamps and all electrical connections for firm seating.
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).
- ▶ Connect the battery.

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
- ▶ See general heater installation instructions for notes on initial start-up and function check
- ▶ Make settings on A/C control panel according to the 'Operating Instructions'
- ▶ Affix 'Switch off parking heater before refuelling' caution label in area of filler point



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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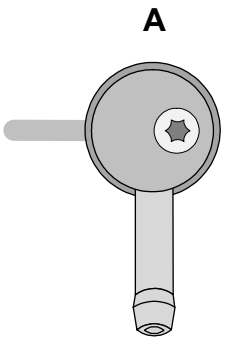
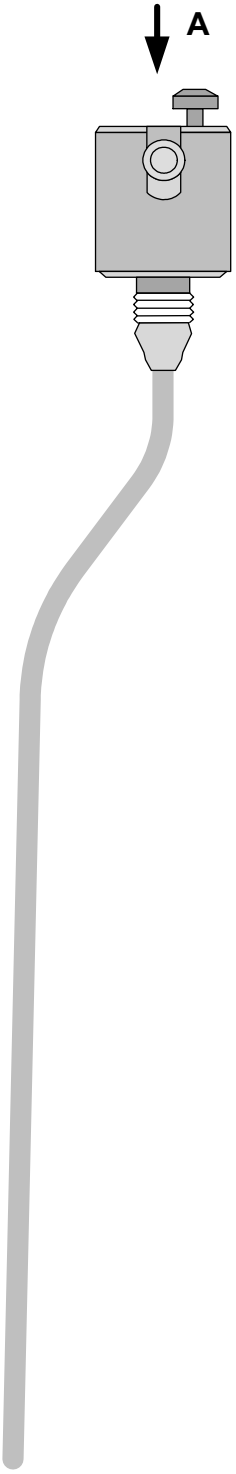
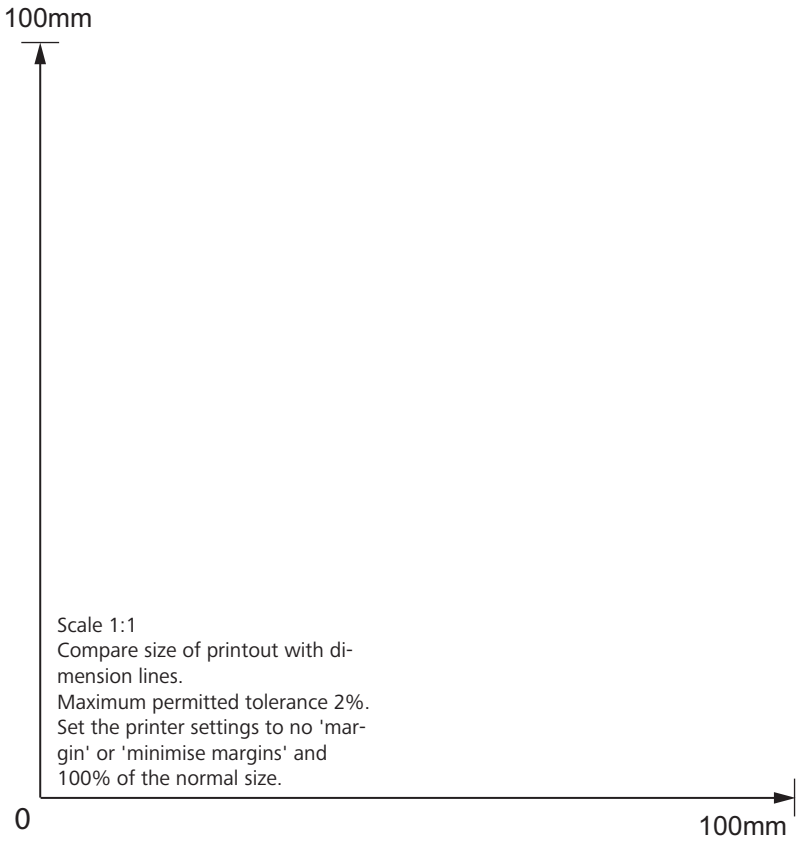
15 FuelFix template







Scale 1:1
Compare size of printout with dimension lines.
Maximum permitted tolerance 2%.
Set the printer settings to no 'margin' or 'minimise margins' and 100% of the normal size.

16 Operating instructions

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:

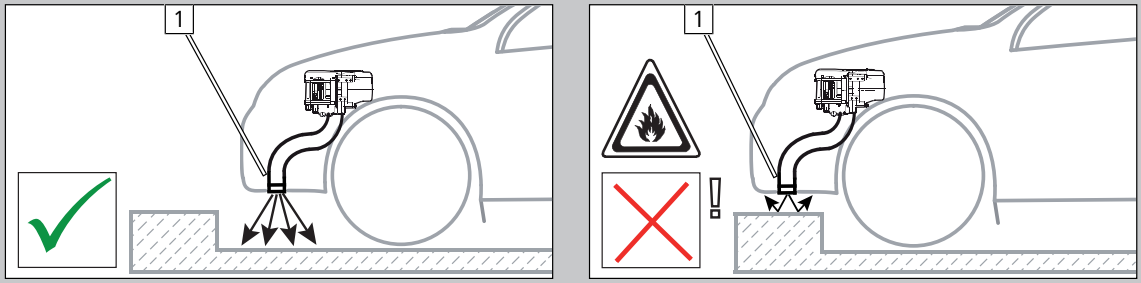
Further information can be found in the vehicle operating instructions.

▶ Deactivate passenger compartment monitoring for the heating operation

Note for parking heater function

Your vehicle is equipped with a passenger compartment and engine preheating unit.

Notes on parking heater exhaust outlet 1



16.1 A/C control panel settings

Automatic A/C control panel

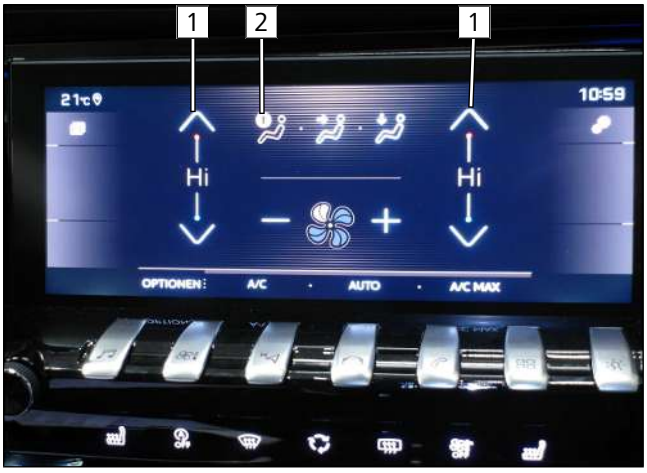


Fig. 105

Before parking the vehicle, make the following settings:

▶ The fan speed must not be preset.

1 Temperature on both sides to 'HI'
2 Air outlet to 'upwards'

16.2 Installation location of fuses

Fuses in engine compartment

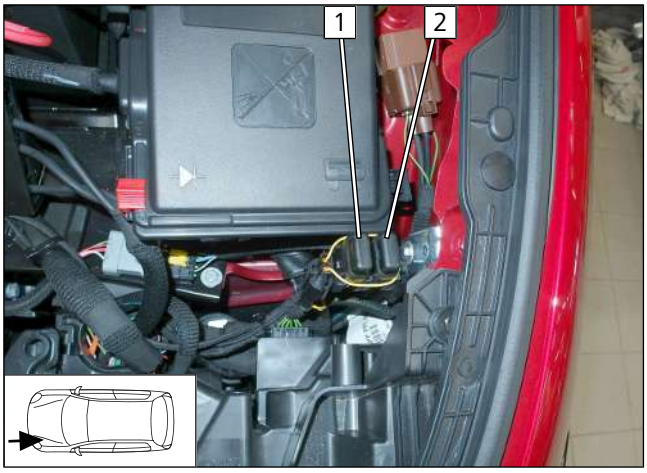


Fig. 106

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

Fuses in passenger compartment

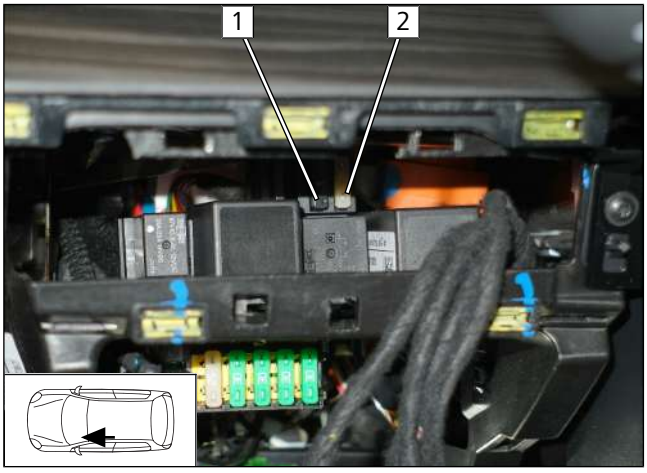


Fig. 107

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