

K Installation documentation

for Thermo Top Evo water heater

'Inline' coolant circuit with engine preheating

Audi Q3

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Audi	Q3	F3	from 2019	e1* 2007/46* 1900*...

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displacement [cm ³]	Engine code
35 TSi	Petrol	Euro 6d Temp	6-speed SG	110	1498	DADA
35 TSi	Petrol	Euro 6d Temp	S tronic	110	1498	DADA
40 TSi	Petrol	Euro 6d Temp	S tronic	140	1984	DKTC
45 TSi	Petrol	Euro 6d Temp	S tronic	169	1984	DKTA
35 Tdi	Diesel	Euro 6d Temp	S tronic	110	1968	DFGA

Validity	Equipment variants	Model
		Q3
Verified equipment variants	2 zone automatic A/C	x
	LED main headlights	x
	Matrix LED main headlights	x
	Headlight washer system	x
	Start - Stop push button	x
	Comfort key	x
	Sport chassis, S-Line	x
	4 WD	x
2 WD	x	
Unverified equipment variants	Manual air-conditioning	x
	Alarm system	x

Total installation time	Note
7.9 hours	

Contents

1	List of abbreviations	3	11	Coolant for diesel vehicles	46
2	Installation notes	4	11.1	Hose routing diagram	46
2.1	Information on Validity	4	11.2	Coolant circuit installation	47
2.2	Components used	4	12	Final work in engine compartment	51
2.3	Information on Total Installation Time	4	13	Electrical system of passenger compartment	52
2.4	Installation recommendations	4	13.1	Electrical system preparation	52
3	About this document	5	13.2	Wiring diagram	53
3.1	Purpose of the document	5	13.3	Fan controller	55
3.2	Warranty and liability	5	14	Electrical system of control elements	57
3.3	Safety	5	14.1	Remote option (Telestart)	57
3.4	Using this document	6	14.2	ThermoCall option	58
4	Technical Information	7	15	Final work	59
5	Preparing measures	8	16	FuelFix template, 2WD petrol vehicles	61
5.1	Vehicle preparation	8	17	FuelFix template, 4WD petrol vehicles	63
5.2	Heater preparation	8	18	FuelFix template, 2WD diesel vehicles	65
6	Installation overview	9	19	Operating instructions	67
7	Electrical system of engine compartment	10	19.1	Installation location of fuses	67
8	Mechanical system	14			
8.1	Installation location preparation	14			
8.1.1	Adapting charge-air hose, only in case of 40 TFSi and 45 TFSi	14			
8.2	Heater assembly installation	15			
9	Fuel	18			
9.1	Routing fuel line	18			
9.2	Rear seat dismantling instructions	22			
9.3	Installing FuelFix, 2WD petrol vehicles	22			
9.4	Installing FuelFix, 4WD petrol vehicles	26			
9.5	Installing FuelFix, 2WD diesel vehicles	30			
9.6	Fuel pump connection, all vehicles	35			
10	Coolant for petrol vehicles	36			
10.1	Hose routing diagram, all petrol vehicles	36			
10.2	Preparing hoses, all petrol vehicles	37			
10.3	Heat exchanger inlet connection, 35 TFSi	39			
10.4	Heat exchanger inlet connection, 40 TFSi and 45 TFSi	41			
10.5	Moving and connecting heater, all petrol vehicles	43			

1 List of abbreviations

2 WD	Front wheel drive
4 WD	All-wheel drive
DP	Fuel pump
EPT	Telestart receiver
FF	FuelFix (tank extracting device)
HG	Heater
MY	Model year
S tronic	Dual clutch transmission
SG	Manual transmission
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. However, installation according to this installation documentation may be possible.

2.2 Components used

Designation	Order number
Delivery scope for Audi Q3 petrol MY. 2019 TT-Evo	1325804D
Delivery scope for Audi Q3 diesel MY 2019 TT-Evo	1325774D
Additional AAC kit for Audi Q3 MY 2019	1327414_
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.

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	
Vehicle-specific installation documentation of the cold start kit	
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.



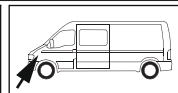
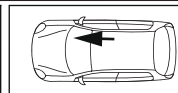
Note on a special technical feature

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 mm²
- Crimping pliers for cable lugs 0.5 – 10 mm²
- Crimping pliers for male connector 0.14 – 6 mm²
- Crimping pliers for connector 0.25 – 6 mm²
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

5 Preparing measures

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
Engine compartment and body	<ul style="list-style-type: none"> ▶ Disconnect the battery ▶ Complete battery with battery carrier ▶ Complete air filter ▶ Front wheel on the front passenger's side ▶ Front passenger's side wheel well trim ▶ Engine underride protection ▶ Underbody underride protection on the front passenger's side ▶ Engine design cover ▶ Intercooler pressure hose (only in case of 40/45 TFSi) 	
Passenger compartment	<ul style="list-style-type: none"> ▶ Side instrument panel trim on the driver's side ▶ Footwell trim on the driver's side ▶ Rear seat on the front passenger's side ▶ Rear seat on the driver's side (only in case of 2WD) ▶ Open the tank fitting service lid on the driver's side 	

5.2 Heater preparation

Engine compartment	<ul style="list-style-type: none"> ▶ 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

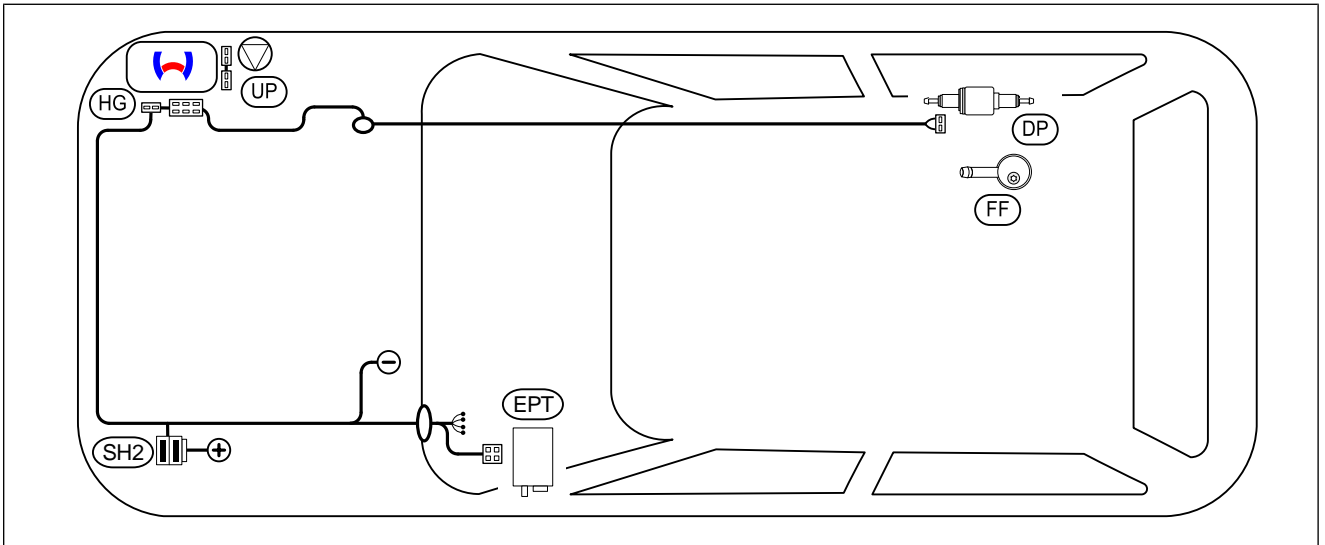
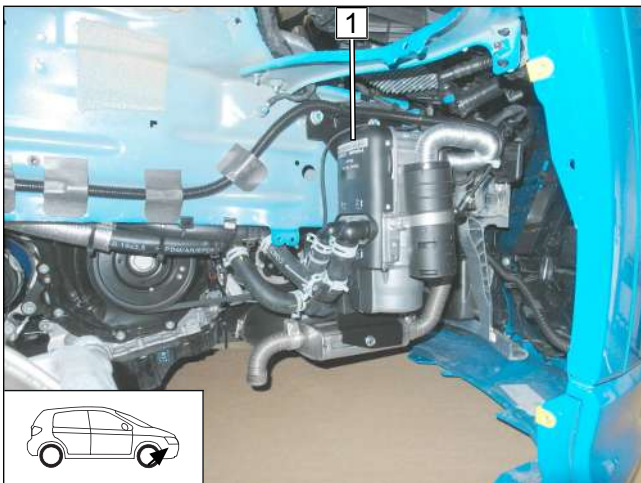


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
EPT	Telestart receiver
FF	FuelFix
HG	Heater assembly
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

Heater assembly installation location



1 Heater assembly

Fig. 2



7 Electrical system of engine compartment

Removing cover

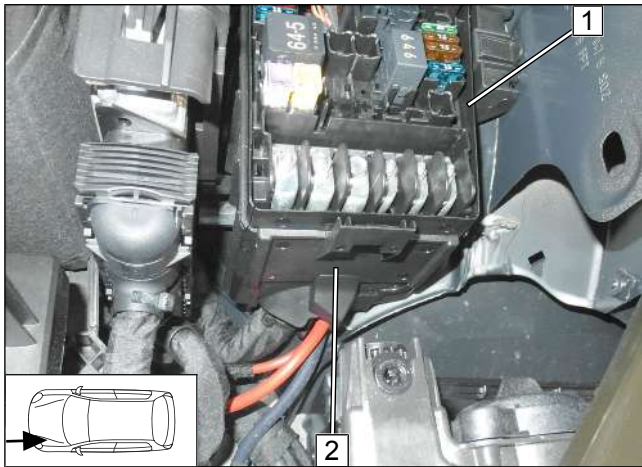


Fig. 3

- ▶ Remove original vehicle cover **2** from engine compartment fuse and relay box **1**.

Copying hole pattern, drilling hole

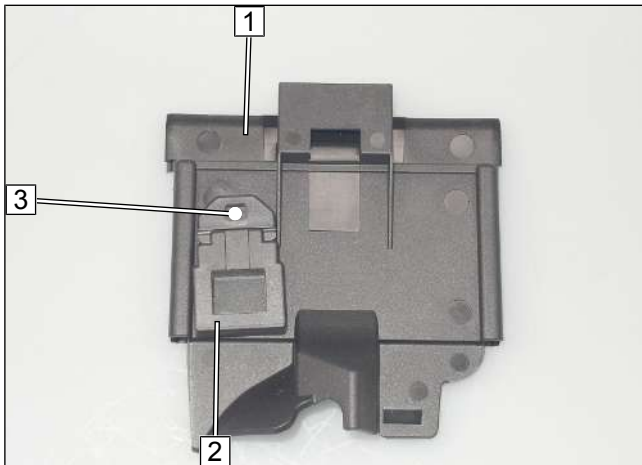


Fig. 4

- ▶ Position retaining plate of SH2 **2** onto cover **1**, copy hole pattern **3** and drill a Ø6 hole.

Premounting retaining plate of SH2

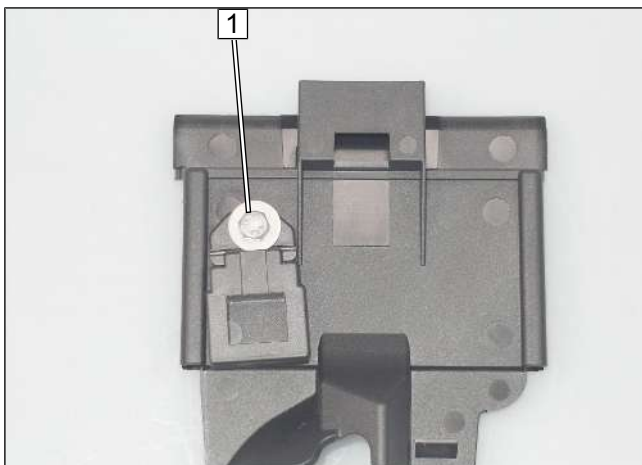


Fig. 5

- 1** M5x12 bolt, large diameter washer, retaining plate of SH2, original vehicle cover, large diameter washer, flanged nut



Mounting fuses F1 and F2

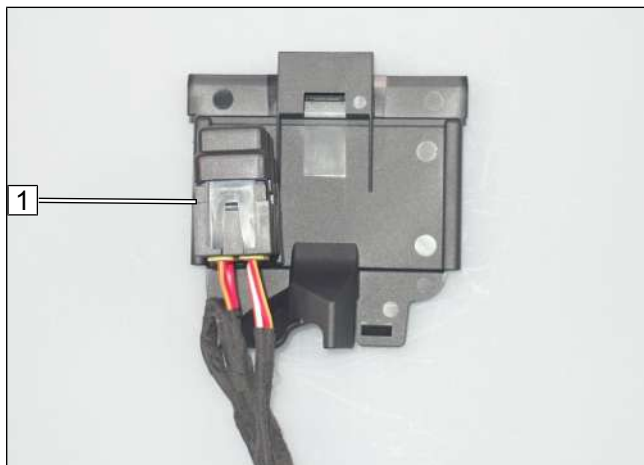


Fig. 6

- 1 Fuse F1 and F2

Positive wire connection

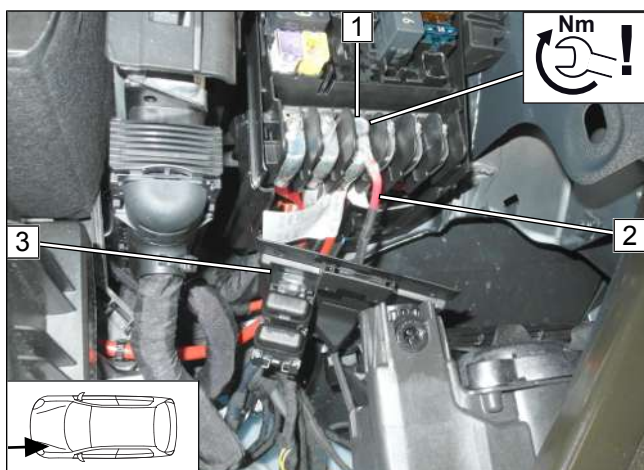


Fig. 7



DANGER

Fire hazard due to insufficient tightening torque

- Observe tightening torque

- Position premounted original vehicle cover **3** as shown.

- 1 Original vehicle positive point
- 2 Positive wire

Mounting cover



Fig. 8

- Mount original vehicle cover **1** of engine compartment fuse and relay box.



Routing passenger compartment, control element and earth wiring harnesses

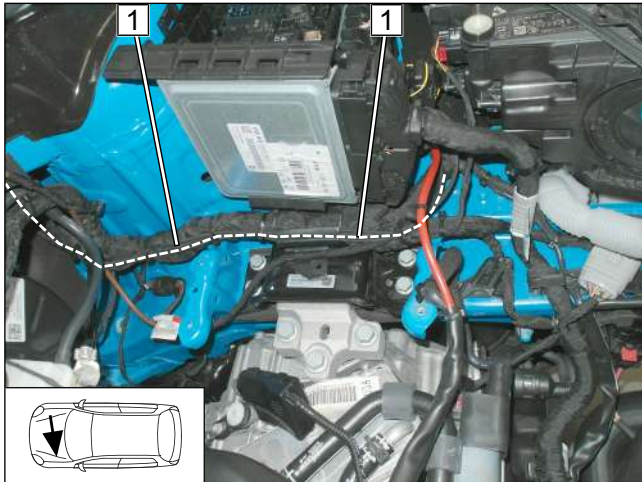


Fig. 9

- ▶ Route wiring harnesses **1** along original vehicle wiring harness as shown.

Passenger compartment wiring harness pass through, routing earth wire

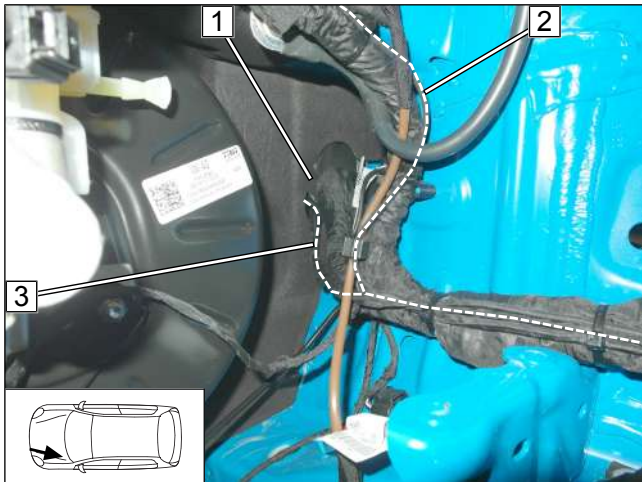


Fig. 10

- 1** Protective rubber plug
- 2** Earth wire
- 3** Passenger compartment and control element wiring harnesses

Earth wire connection

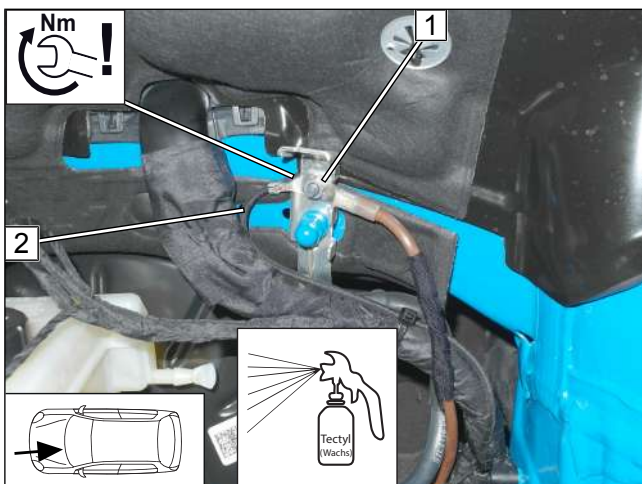


Fig. 11



DANGER

Fire hazard due to insufficient tightening torque.

- ▶ Observe tightening torque

- 1** Original vehicle earth point
- 2** Earth wire



Heater wiring harness routing

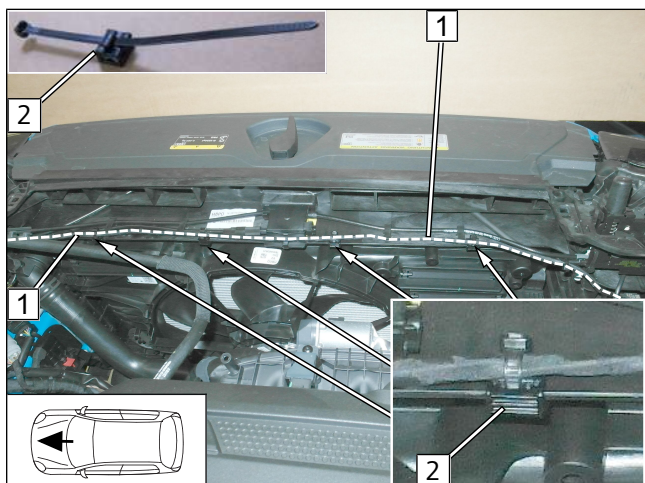


Fig. 12

- ▶ Route HG wiring harness **1** as shown and secure with edge clip cable ties **2**.

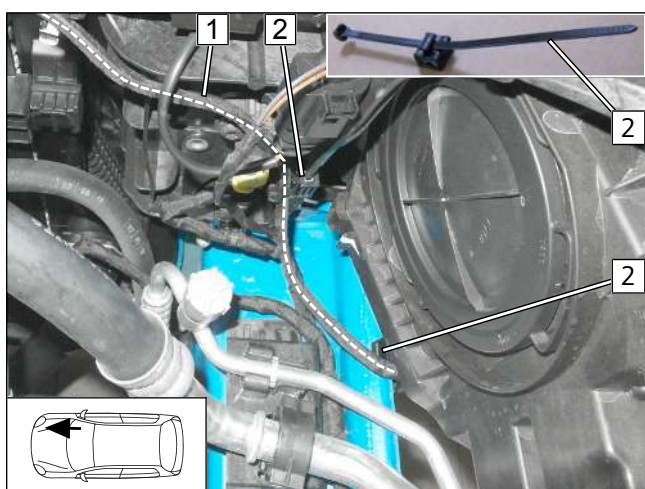


Fig. 13

- ▶ Route wiring harness **1** as shown and secure with edge clip cable ties **2**.

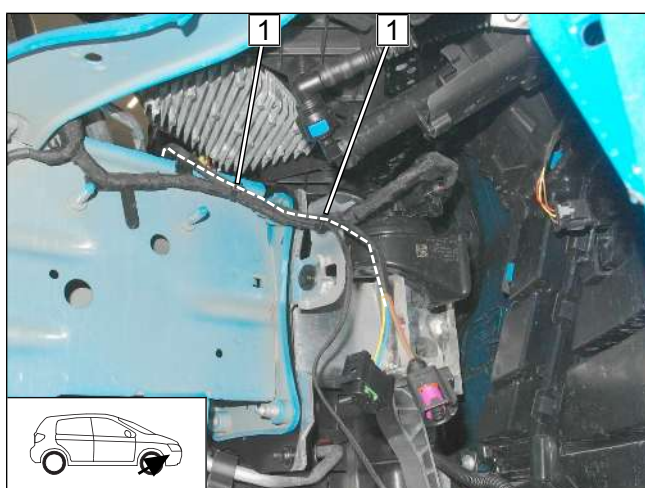


Fig. 14

- ▶ Route wiring harness as shown and secure with cable ties **1**.



8 Mechanical system

8.1 Installation location preparation

Positioning distance washer

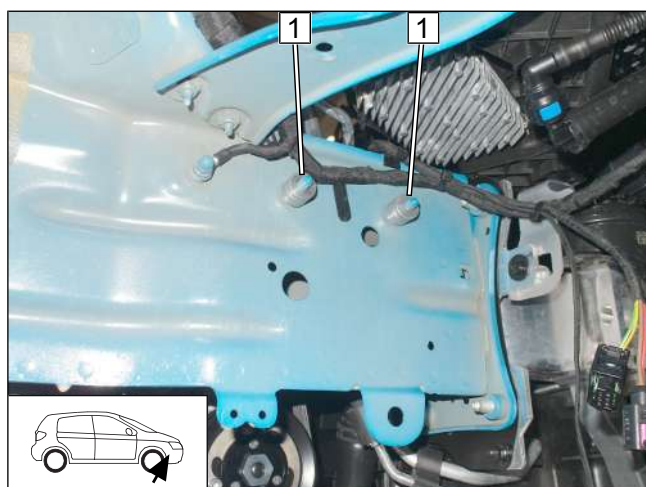


Fig. 15

- 1 Spacer (5), spacer (10) on original vehicle stud bolt

8.1.1 Adapting charge-air hose, only in case of 40 TSFi and 45 TSFi

Removing original vehicle charge-air hose

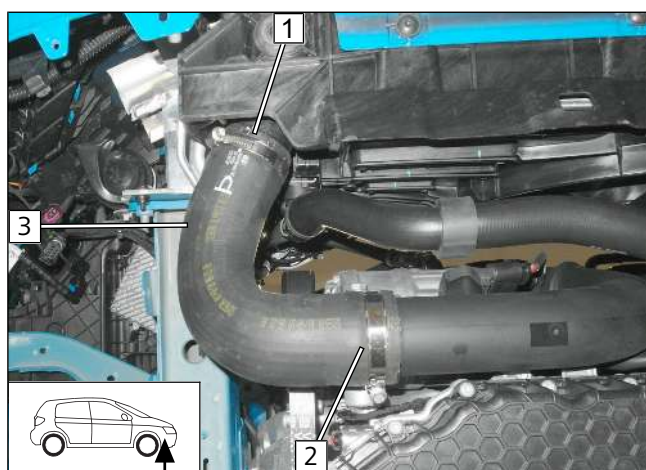


Fig. 16

- 1 Intercooler side
- 2 Charge-air tube (engine) side
- 3 Original vehicle charge-air hose

Shortening original vehicle charge-air hose

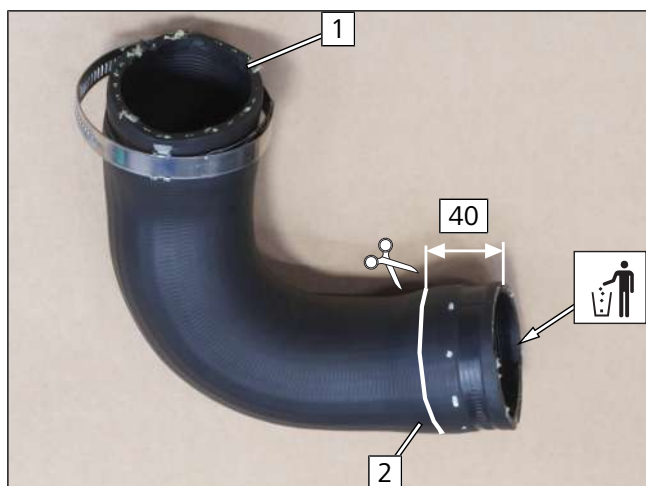


Fig. 17

► Shorten charge-air tube as shown.

- 1 Intercooler side
- 2 Charge-air tube (engine) side



Mounting original vehicle charge-air hose

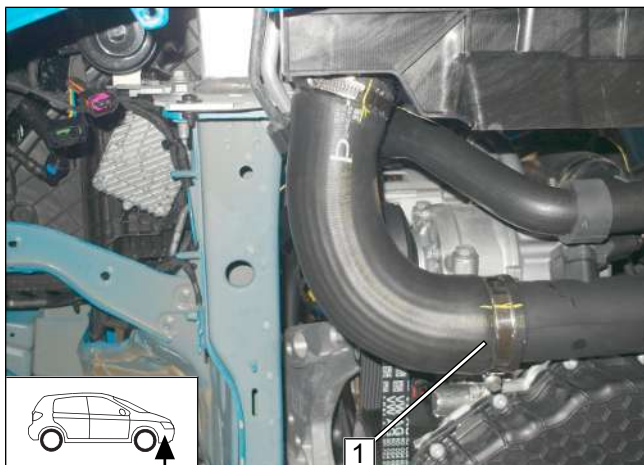


Fig. 18

► Mount charge-air hose.

- 1 Shortened side on charge-air tube (engine)

8.2 Heater assembly installation

Heater assembly

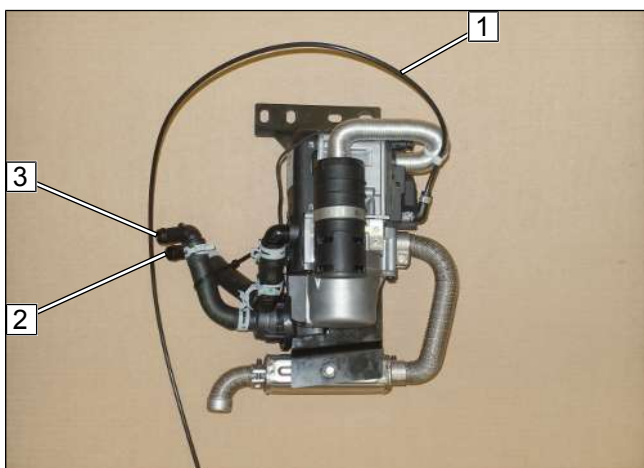


Fig. 19

- 1 Fuel line
- 2 Heater outlet connection
- 3 Heater inlet connection

Assigning heater assembly hoses

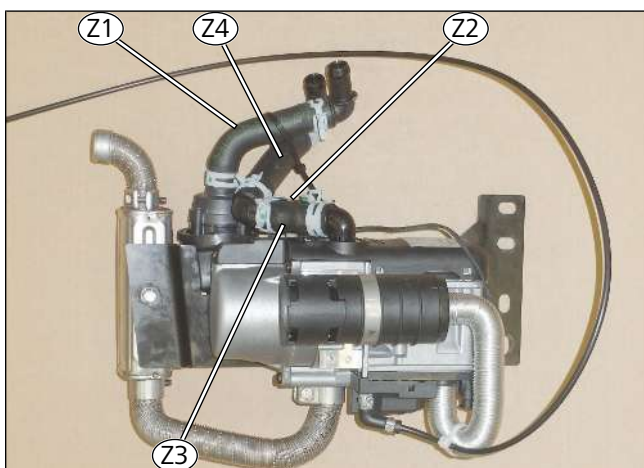


Fig. 20

- Z1 Coolant pump inlet hose section
- Z2 Coolant pump outlet/heater inlet hose section (covered)
- Z3 Heater outlet hose section
- Z4 Hose section on hose Z3 (heater outlet)



Mounting HG wiring harness

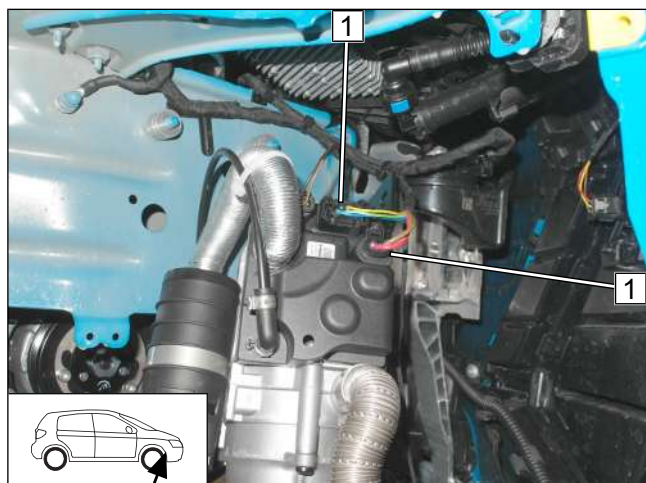


Fig. 21

- 1 Heater wiring harness connector

Heater assembly installation

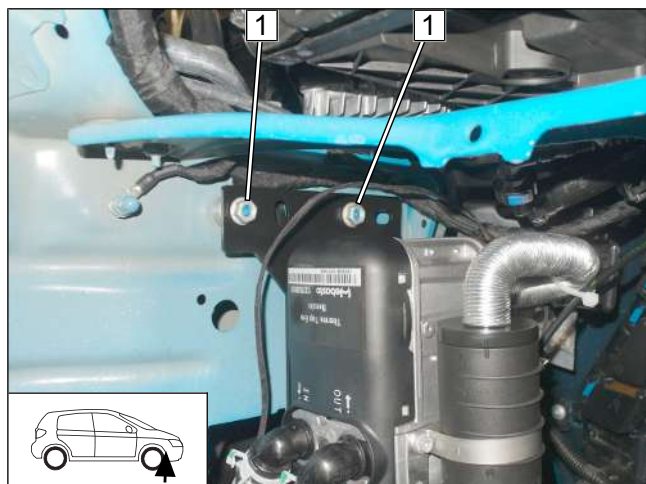


Fig. 22

- Mount flanged nut 1 loosely.

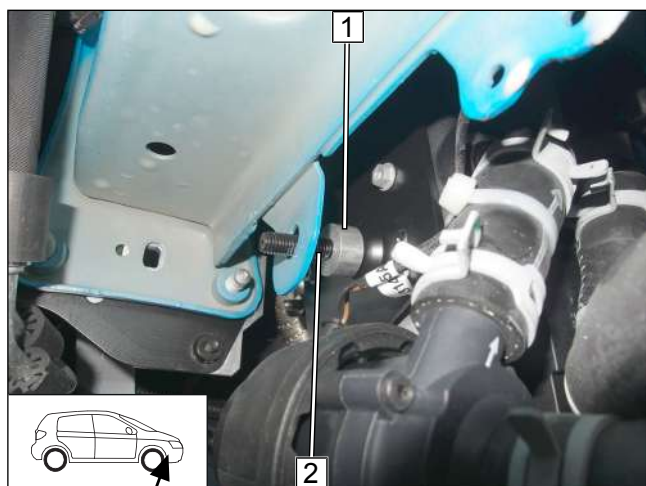


Fig. 23

- 1 Spacer (10)
- 2 Heater bracket stud bolt

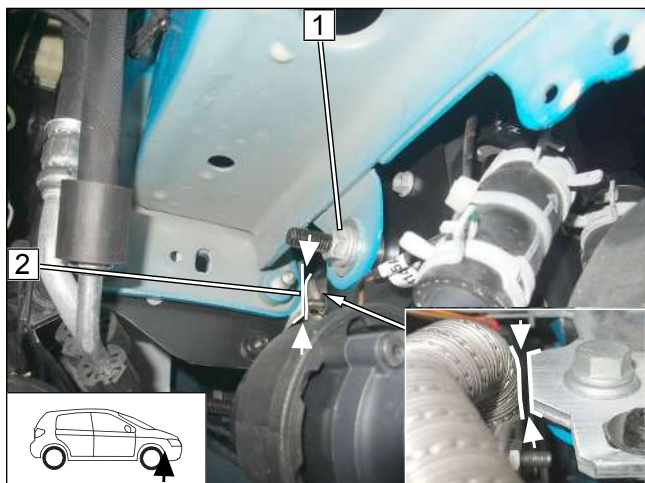


Fig. 24



Ensure sufficient distance from neighbouring components at position **2**, correct if necessary.

1 Large diameter washer, flanged nut

Checking distance

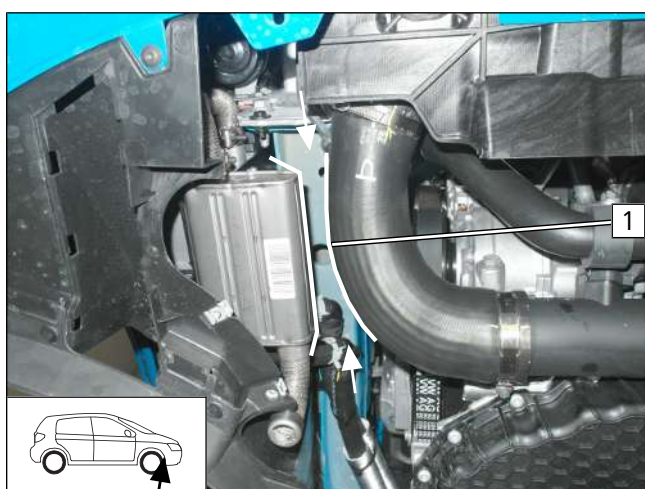


Fig. 25



Only necessary for 40 TFSi and 45 TFSi



Ensure sufficient distance at position **1** between exhaust silencer and charge-air hose, correct if necessary.

Fastening heater assembly

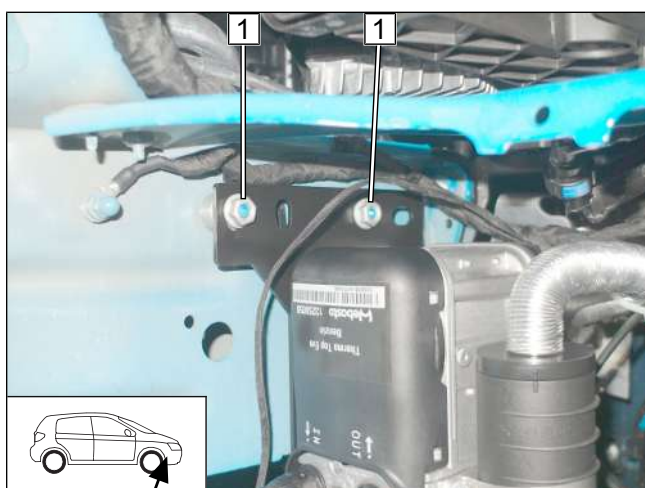


Fig. 26

► Tighten flanged nut **1**.



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

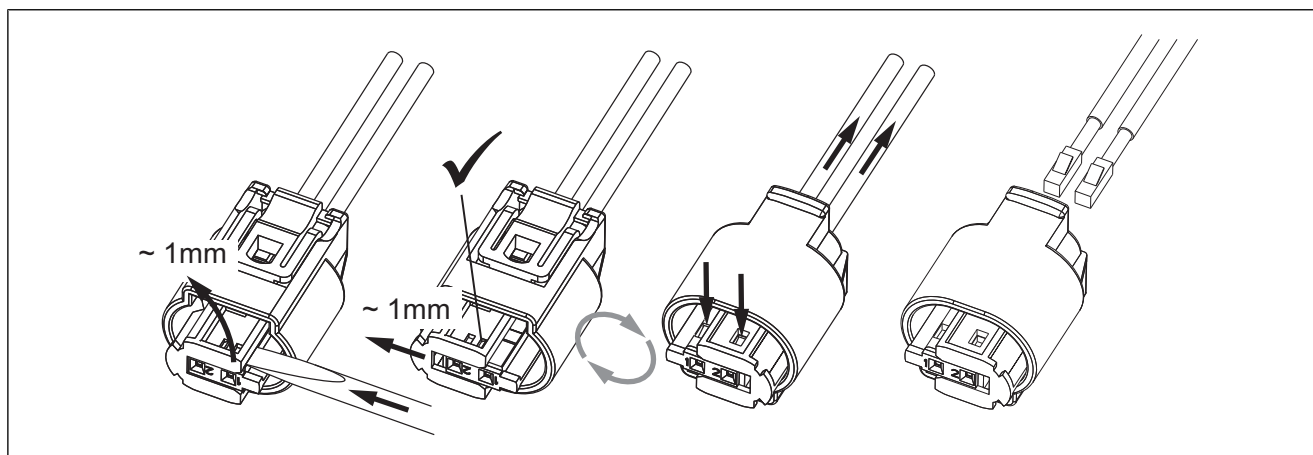


Fig. 27

9.1 Routing fuel line

Routing fuel line in wheel well

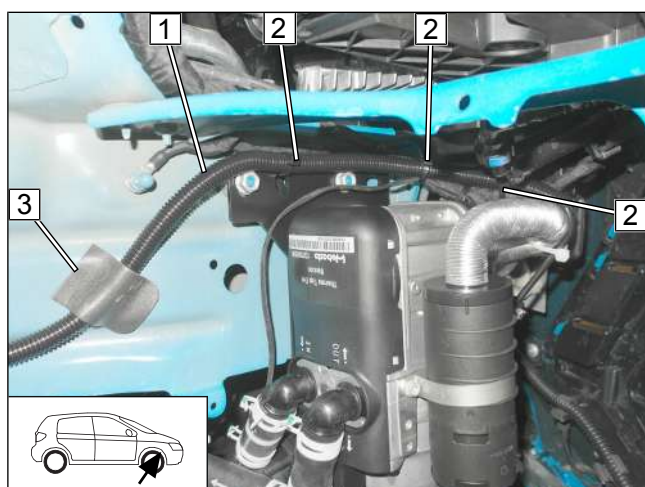


Fig. 28

- 1 Fuel line and fuel pump wiring harness in corrugated tube
- 2 Cable tie
- 3 Self-adhesive foam cut in half

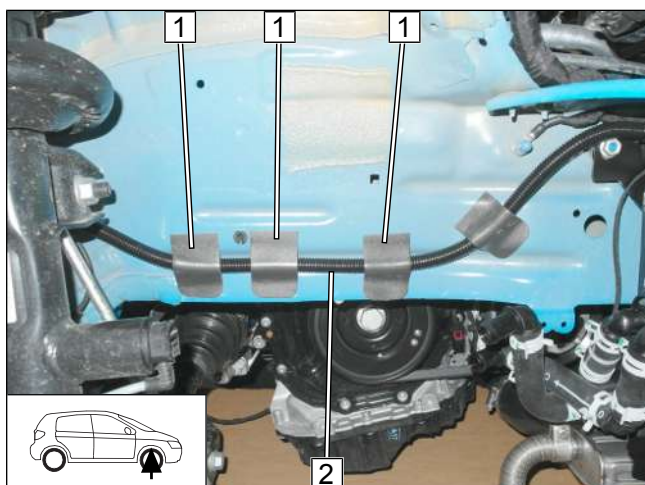


Fig. 29

- 1 Self-adhesive foam cut in half
- 2 Fuel line and fuel pump wiring harness in corrugated tube

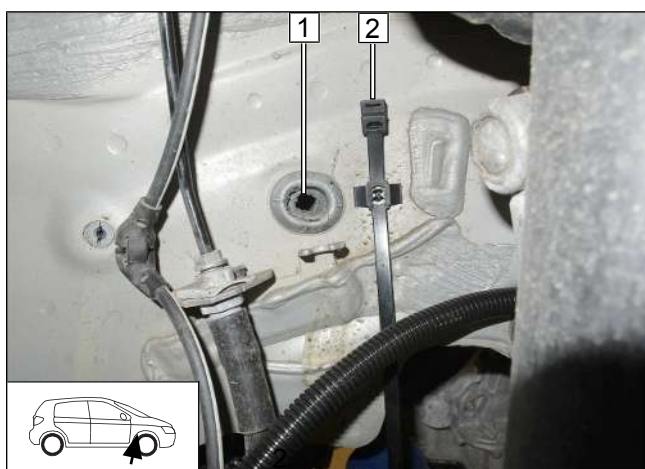


Fig. 30

- Pierce original vehicle pass through **1** in the middle as shown.
- 2** Eyelet cable tie in original vehicle hole

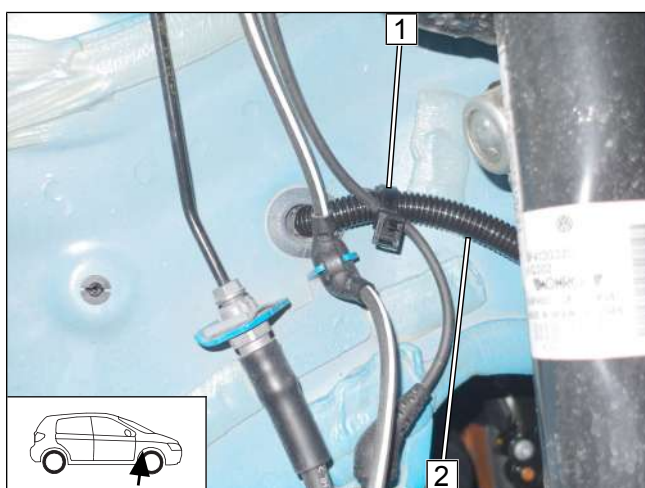


Fig. 31

- 1** Close cable tie
- 2** Fuel line and fuel pump wiring harness in corrugated tube



Premounting fuel pump

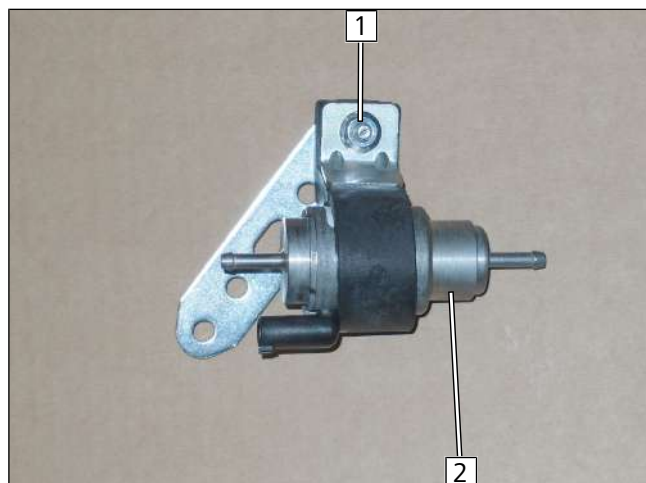


Fig. 32

- 1 M6x25 bolt, perforated bracket, fuel pump mount, support angle bracket, flanged nut
- 2 Fuel pump

Preparing fuel pump installation location

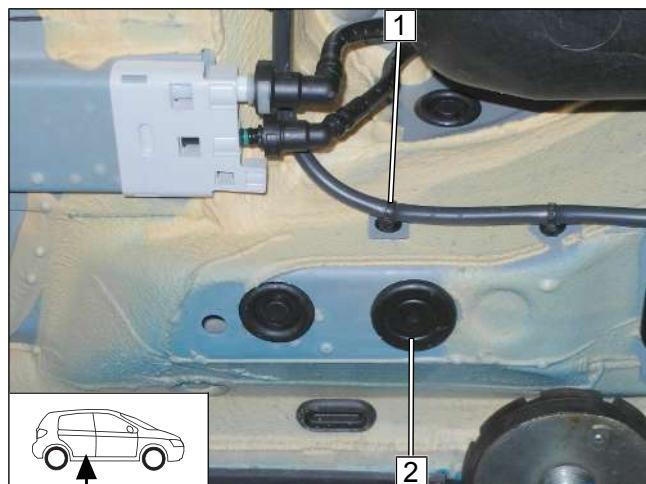


Fig. 33

- Remove clip-type cable tie 1 and plug 2. Plug 2 will be reused.

Premounting bolts

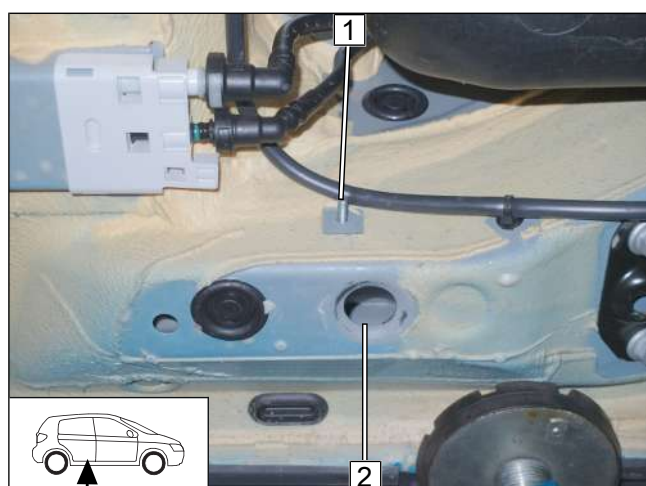


Fig. 34

- Insert M6x20 bolt 1 through opening 2 using flat nose pliers.



Mounting fuel pump

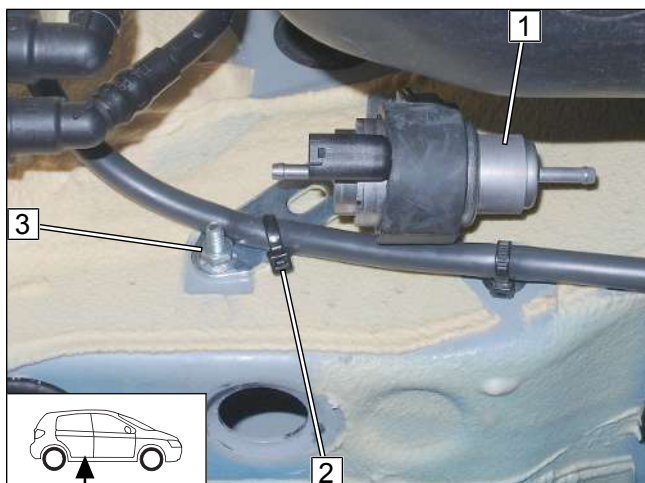


Fig. 35

- 1 Fuel pump
- 2 Cable tie
- 3 Premounted M6x20 bolt, premounted perforated bracket, flanged nut

Assembling fuel pump connector

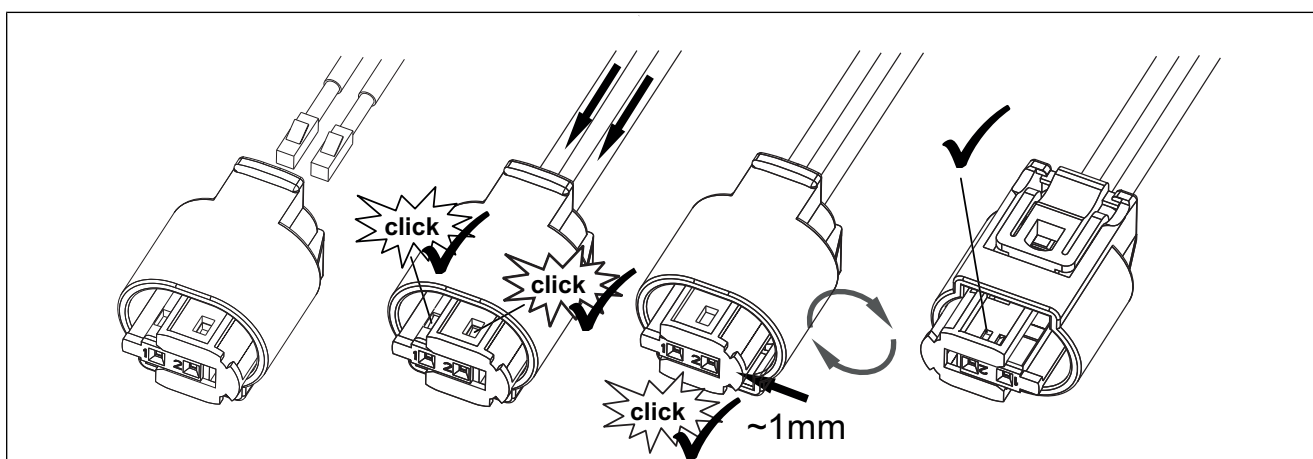


Fig. 36

Fuel pump connection

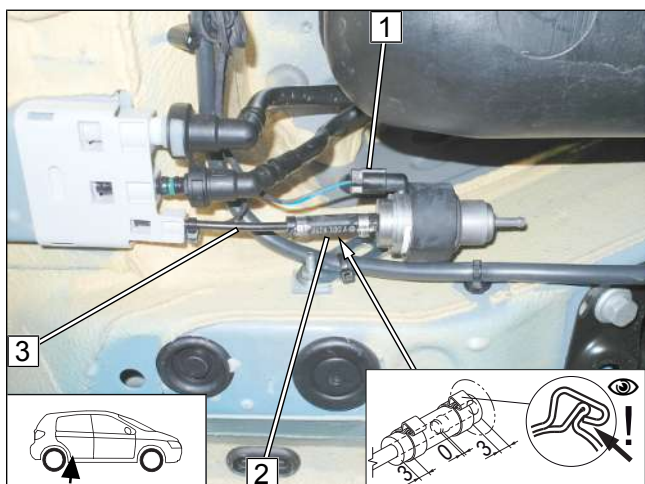


Fig. 37

- 1 Fuel pump wiring harness, connector X7 mounted
- 2 Hose section, Ø10 clamp [2x]
- 3 Heater fuel line



9.2 Rear seat dismantling instructions

Removing rear seat

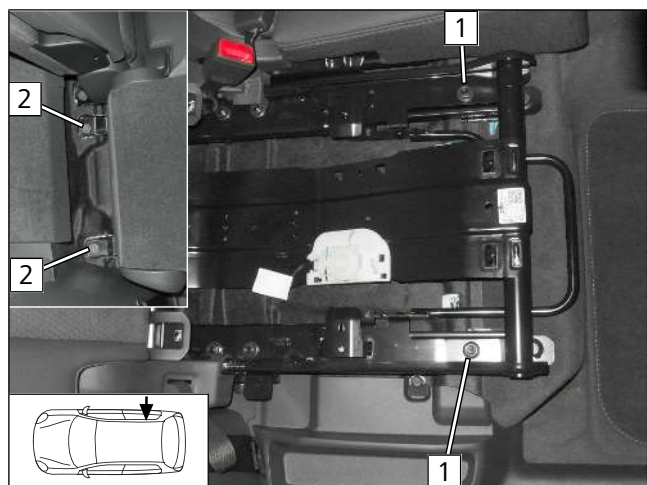


Fig. 38

In case of 2WD vehicles, both rear seats need to be dismantled.

- ▶ Detach the seat from the clips.
- ▶ Unscrew bolts **1** at the front of the seat frame.
- ▶ Unscrew bolts **2** at the back of the seat frame (back-rest folded forwards) and take out the seat.

9.3 Installing FuelFix, 2WD petrol vehicles

Preparing drilling template

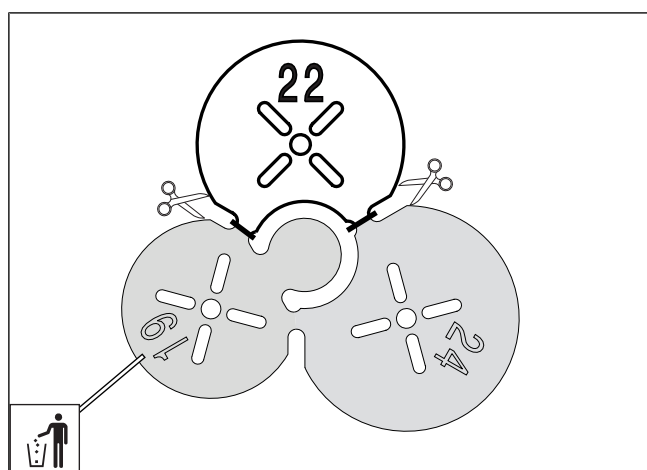


Fig. 39

Detaching label

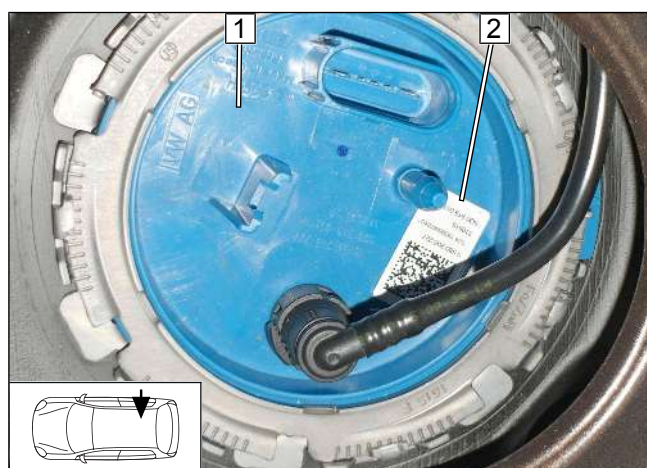


Fig. 40

The colour of the tank fitting may vary.

- 1** Tank fitting
- 2** Label



Work steps F1, F2

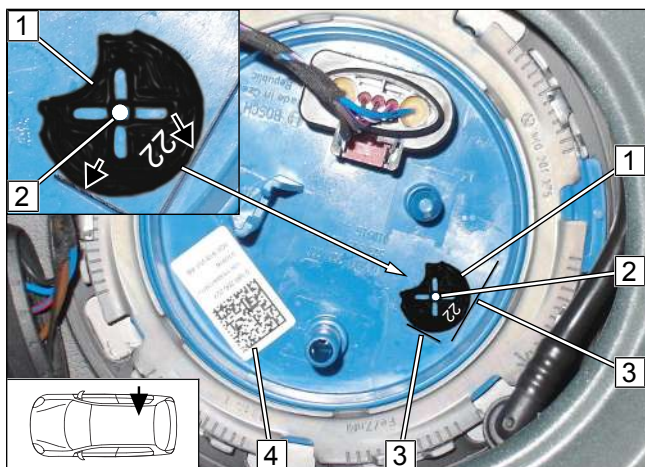


Fig. 41



Observe the installation instructions of the tank extracting device.

- ▶ Affix label **4** as shown.
- ▶ Draw guide line **3** on existing embossing.
 - 1** Position Ø22 drilling template as shown in fig.
 - 2** Hole pattern

Work step F3



Fig. 42



DANGER

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

- 1** Hole made with provided drill

Work steps F4, F5

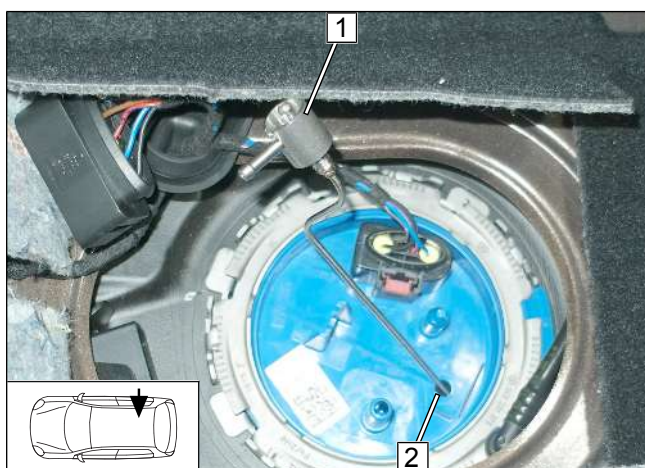


Fig. 43

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



Fig. 44

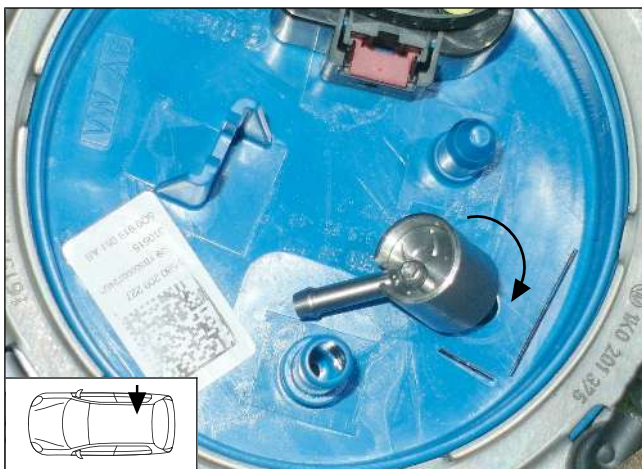


Fig. 45

Work steps F5.3, F5.4

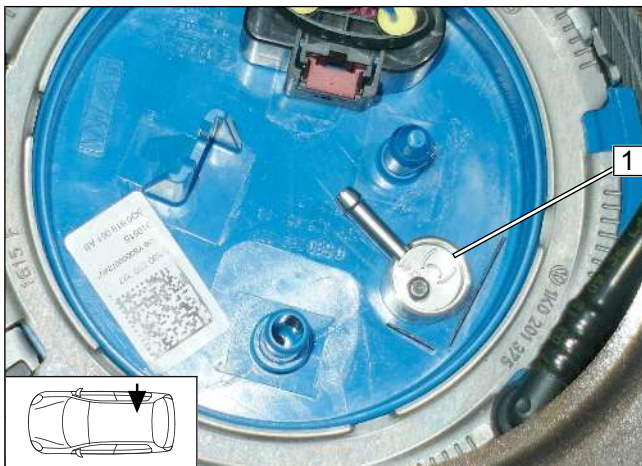


Fig. 46

► Align FuelFix **1** as shown.



Work step F6

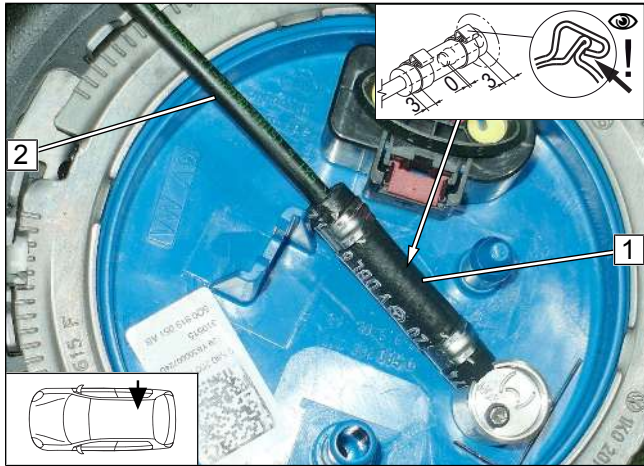


Fig. 47

- 1 Hose section, $\varnothing 10$ clamp [2x]
- 2 Fuel line

Work step F7

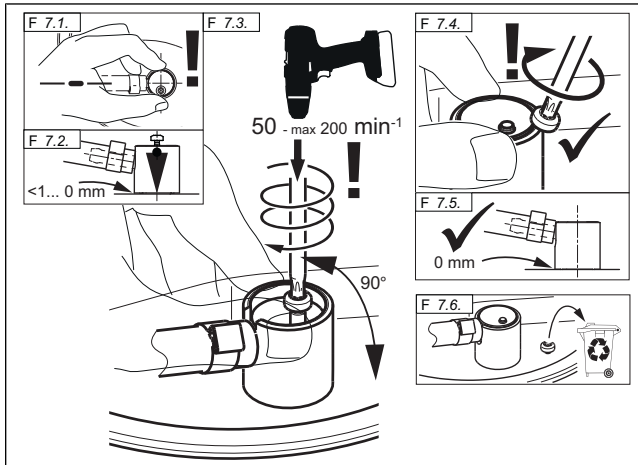


Fig. 48



DANGER

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

Work step F8

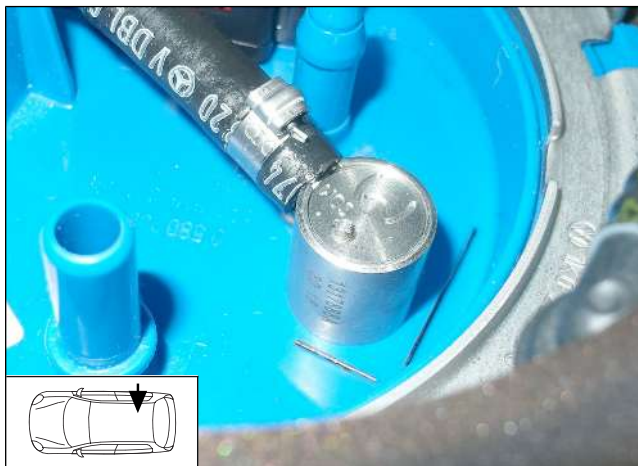


Fig. 49



Fig. 50

- ▶ Secure fuel line **1** using a cable tie in a suitable location for tension relief.

9.4 Installing FuelFix, 4WD petrol vehicles

Preparing drilling template

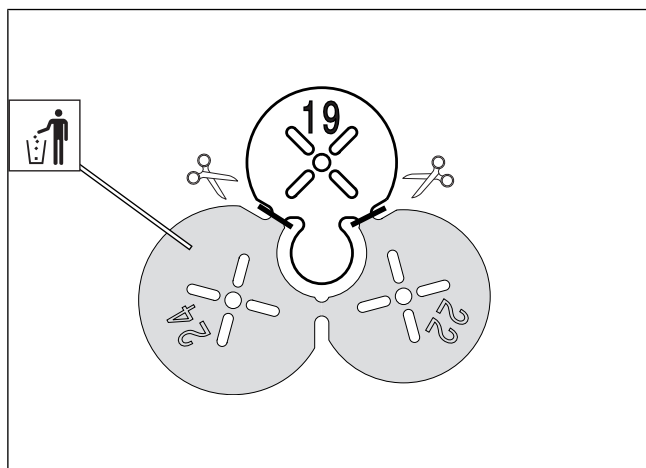


Fig. 51

Work steps F1, F2

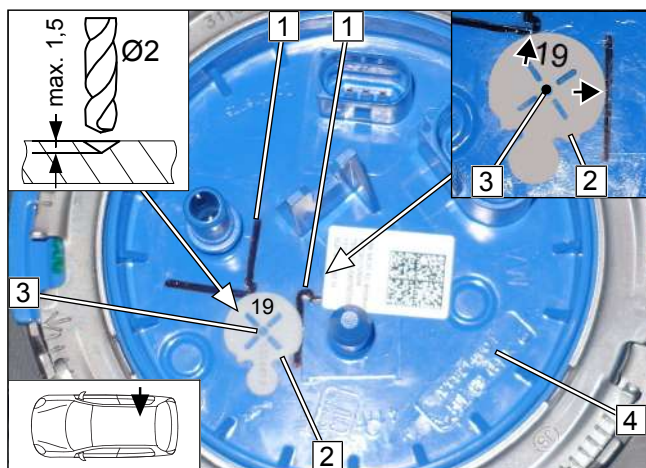


Fig. 52



Observe the installation instructions of the tank extracting device.

- ▶ Draw guide line **1** on existing embossing.
- 2** Position Ø19 drilling template as shown in fig.
- 3** Ø2 centring hole
- 4** Tank fitting



Work step F3

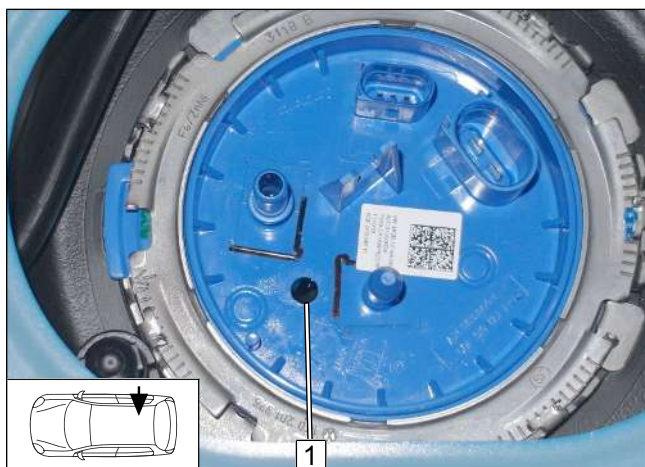


Fig. 53



DANGER

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

- 1 Hole made with provided drill

Work steps F4, F5

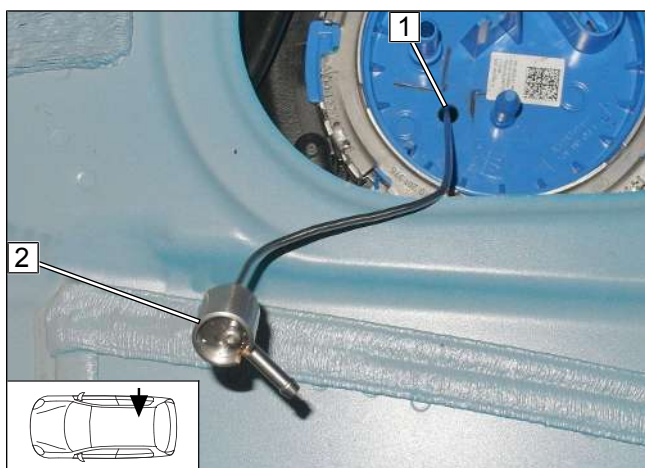


Fig. 54

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

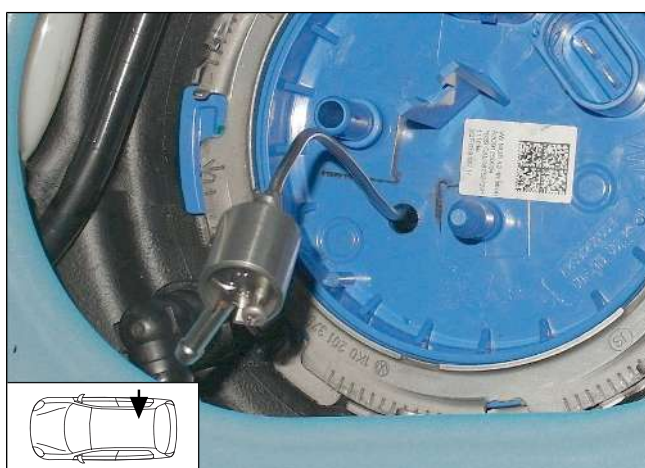


Fig. 55

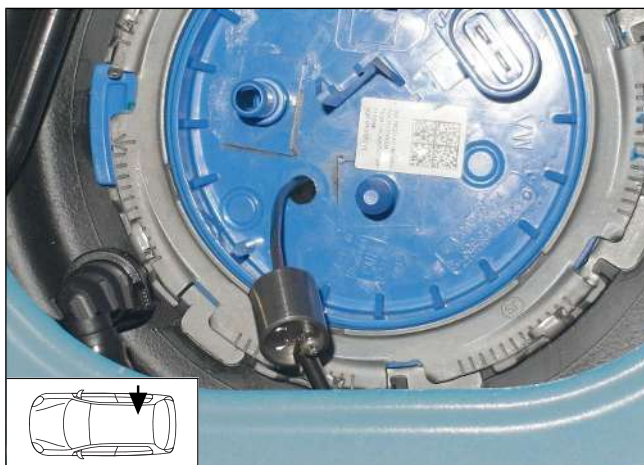


Fig. 56



Fig. 57

Work steps F5.3, F5.4

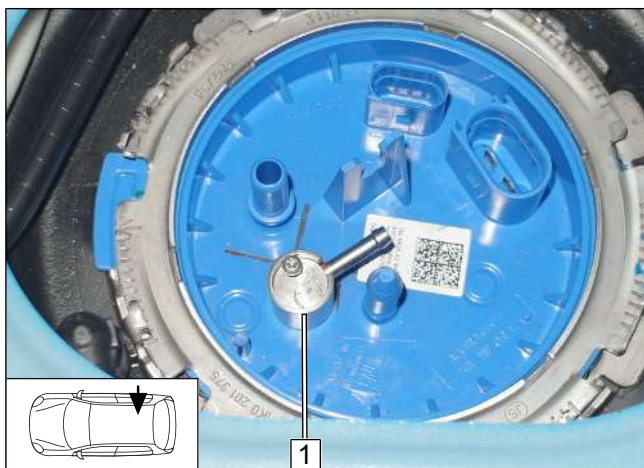
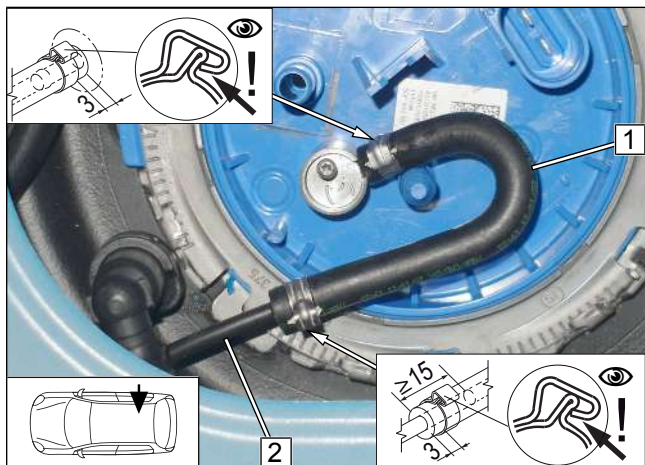


Fig. 58

► Align FuelFix **1** as shown.



Work step F6



- 1 180° moulded hose, Ø10 clamp [2x]
- 2 Fuel line

Fig. 59

Work step F7

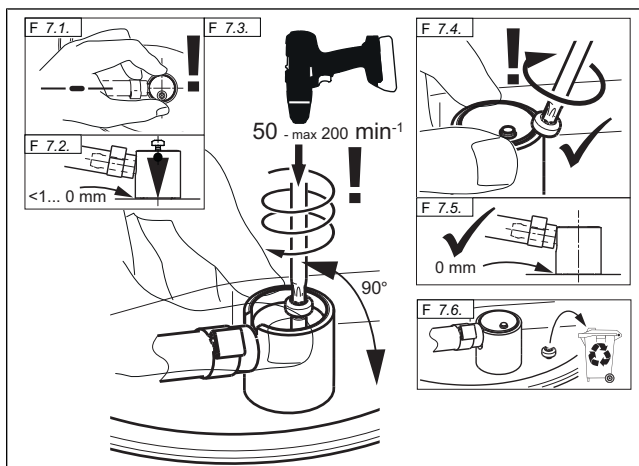


Fig. 60



DANGER

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

Work step F8

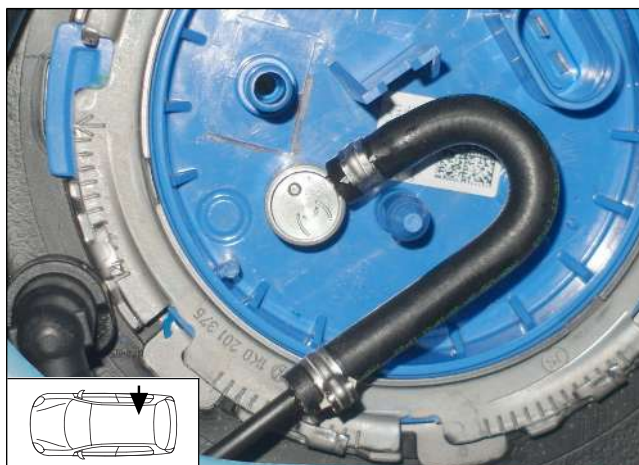
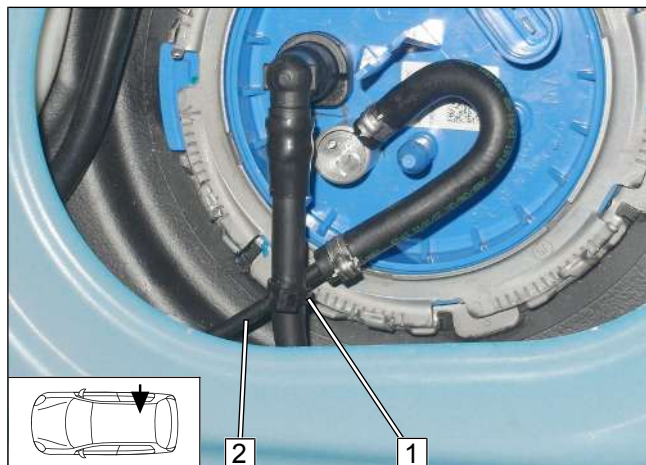


Fig. 61



Securing fuel line



- 1 Cable tie for tension relief
- 2 Fuel line of FuelFix

Fig. 62

9.5 Installing FuelFix, 2WD diesel vehicles

Preparing drilling template

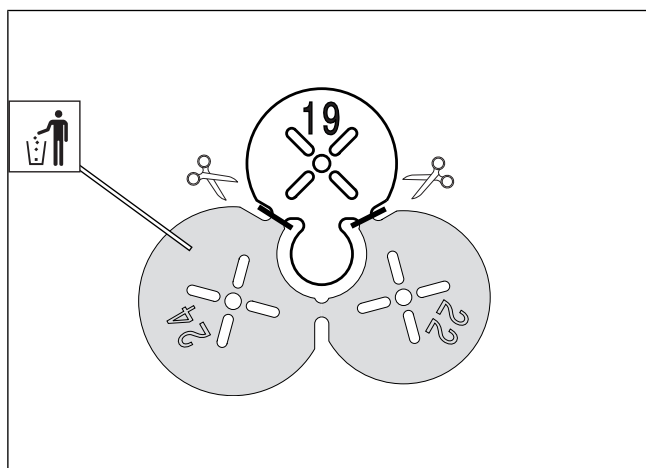
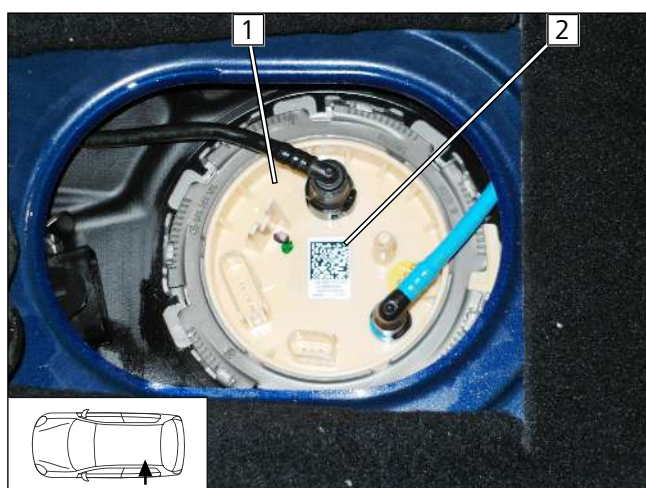


Fig. 63

Detaching label



► Detach label **2**, will be fixed again later.

- 1 Tank fitting

Fig. 64



Work steps F1, F2

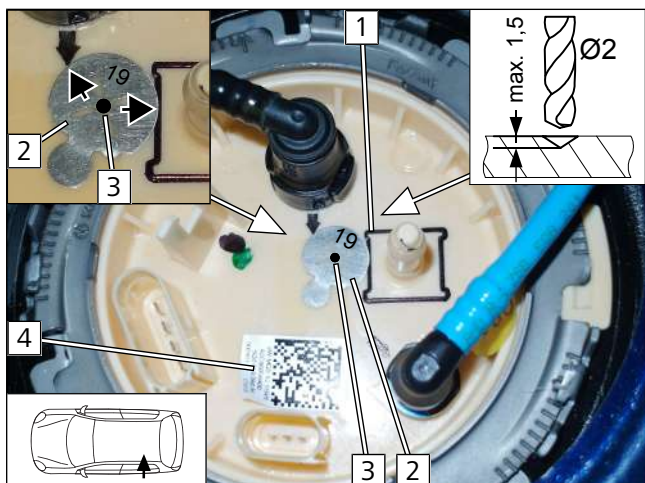


Fig. 65



Observe the installation instructions of the tank extracting device.

- ▶ Glue label **4** onto tank fitting.
- ▶ Draw guide line **1** on existing embossing.
 - 2** Position Ø19 drilling template as shown in fig.
 - 3** Ø2 centring hole

Work step F3

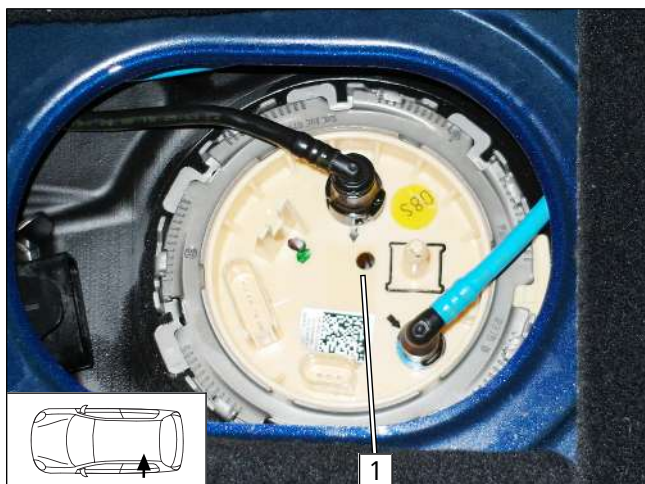


Fig. 66



DANGER

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

- 1** Hole made with provided drill

Work steps F4, F5

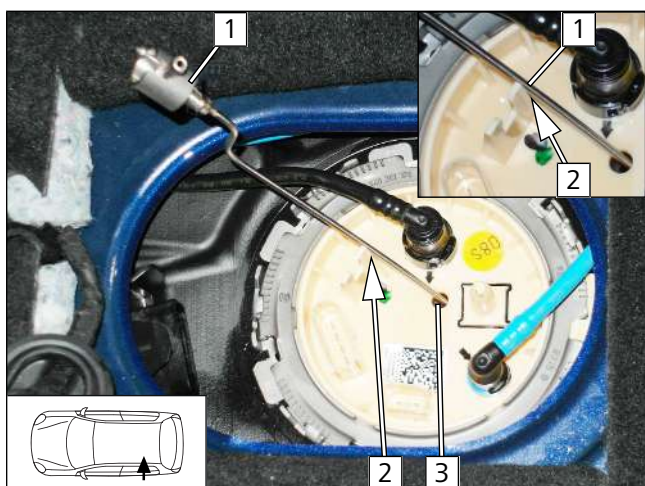


Fig. 67

- ▶ Bend FuelFix **1** as shown in template, cut to length and, while positioning it against original vehicle raised part **2**, insert the FuelFix into hole **3**.



Fig. 68



Fig. 69



Fig. 70



Fig. 71

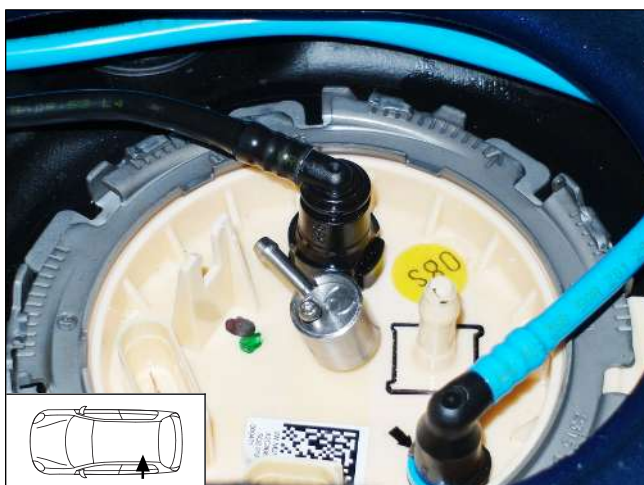


Fig. 72

Work steps F5.3, F5.4

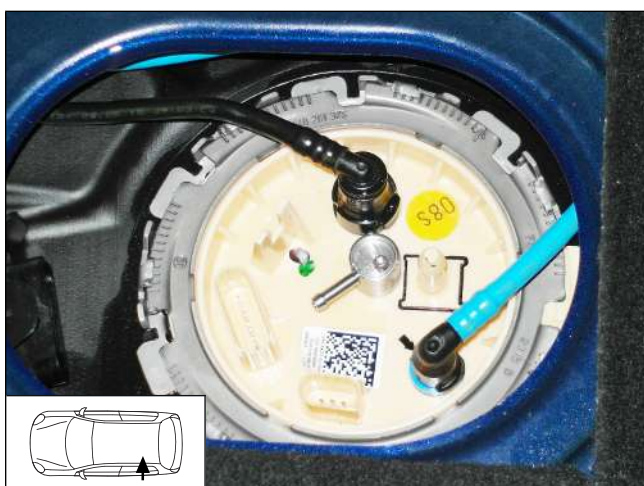


Fig. 73

► Align FuelFix as shown.



Shortening moulded hose

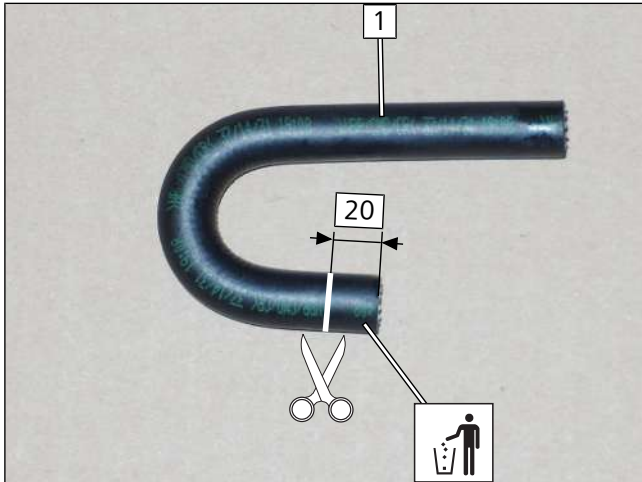


Fig. 74

- 1 180° moulded hose

Work step F6

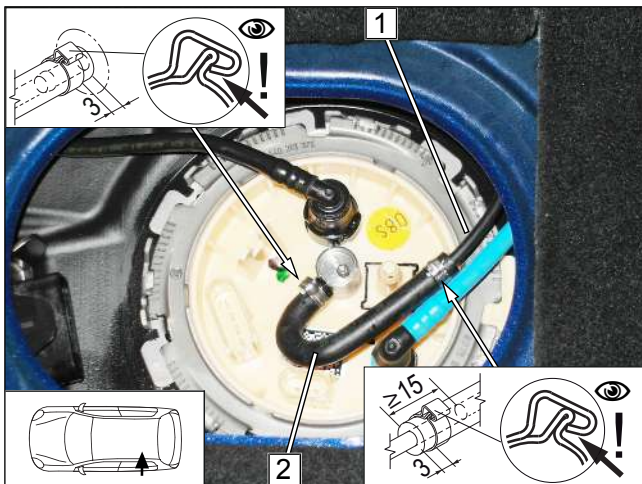


Fig. 75

- 1 Fuel line
- 2 180° moulded hose, Ø10 clamp [2x]

Work step F7

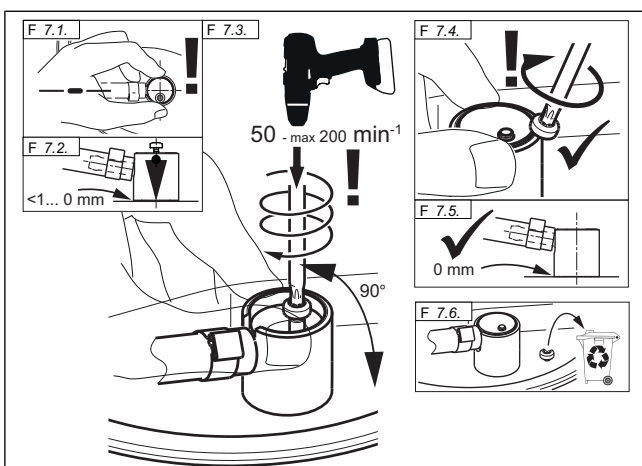


Fig. 76



DANGER

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



Work step F8



Fig. 77

Securing fuel line

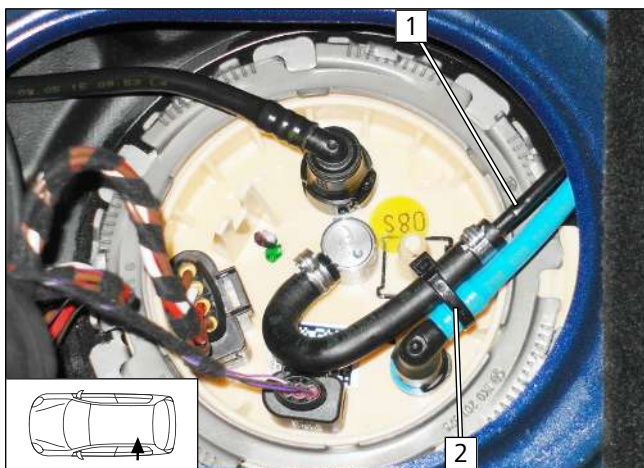


Fig. 78

- 1 Fuel line of FuelFix
- 2 Cable tie for tension relief

9.6 Fuel pump connection, all vehicles

Connecting fuel line of FuelFix

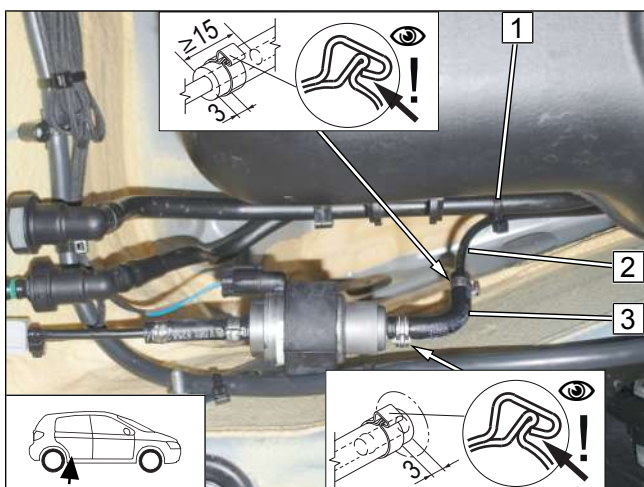


Fig. 79

- 1 Cable tie
- 2 Fuel line of FuelFix
- 3 90° moulded hose, Ø10 clamp [2x]



10 Coolant for petrol vehicles

10.1 Hose routing diagram, all petrol vehicles

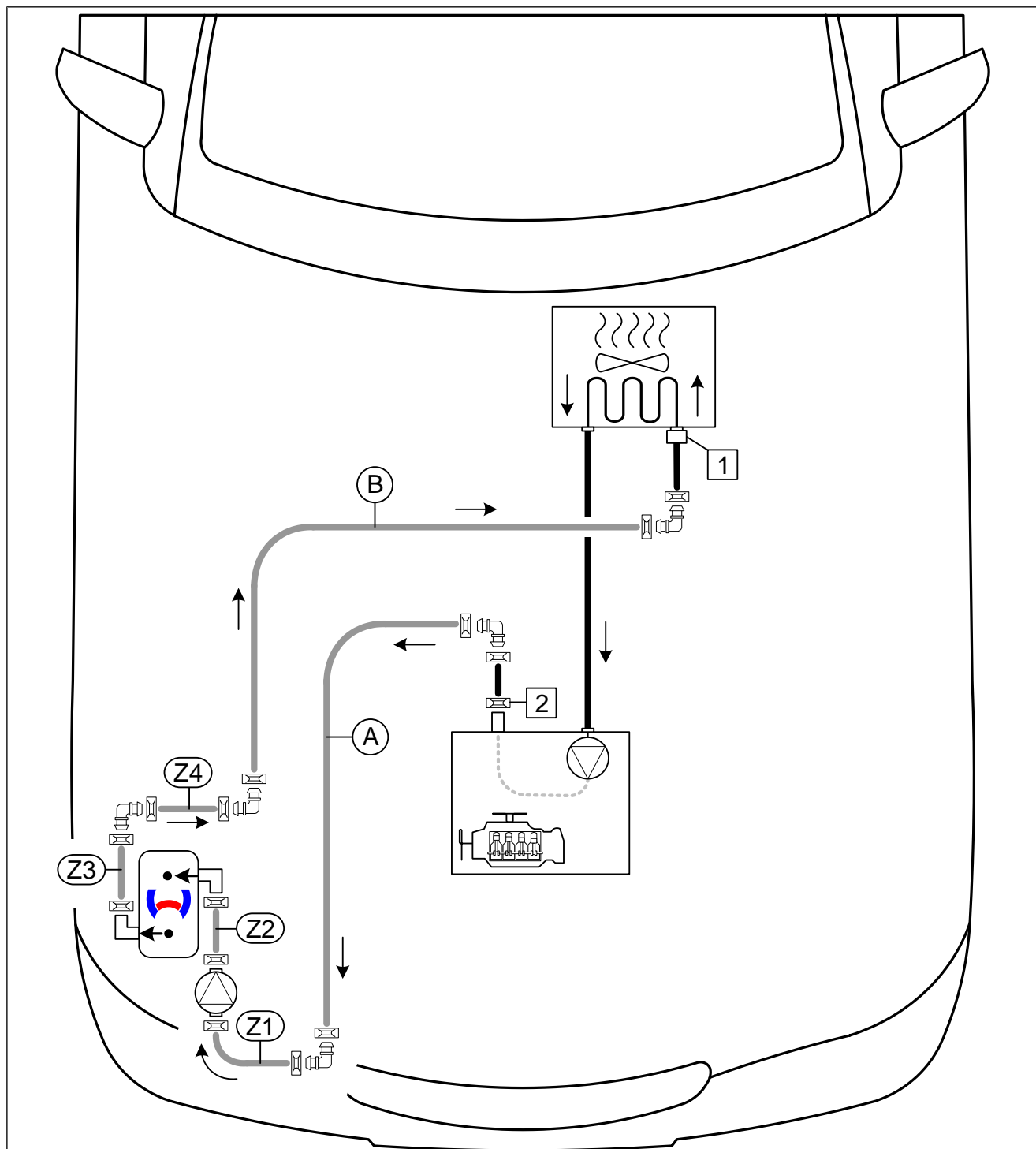


Fig. 80

All spring clips without a specific designation  = Ø25; All connecting pipes  = Ø18x18

1 Original vehicle quick-release coupling; **2** Original vehicle spring clip



10.2 Preparing hoses, all petrol vehicles

Cutting the hose to length

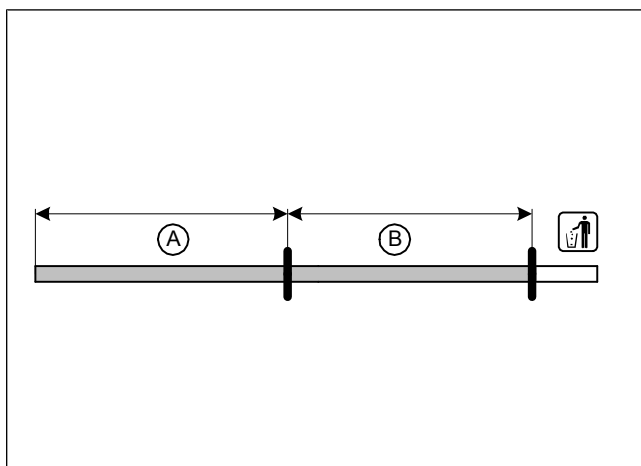


Fig. 81

	35 TSi	40/45 TSi
(A)	1000	920
(B)	980	950

Preparing hoses

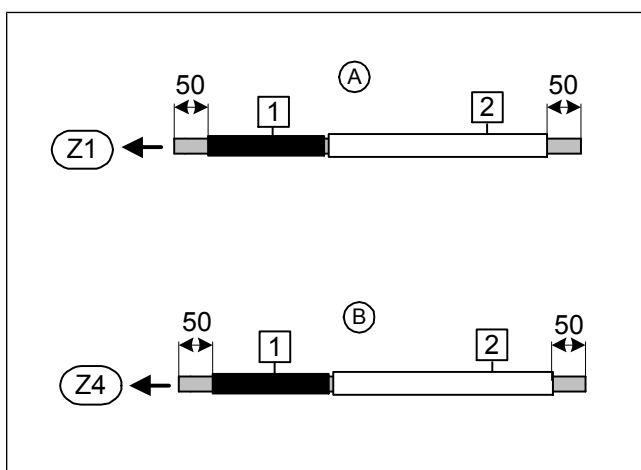


Fig. 82



Slide on fabric heat shrink tubing **1** as shown and use 230°C at most to shrink it.

► Slide on 600 long heat protection hose **2** as shown.

Shortening hose section

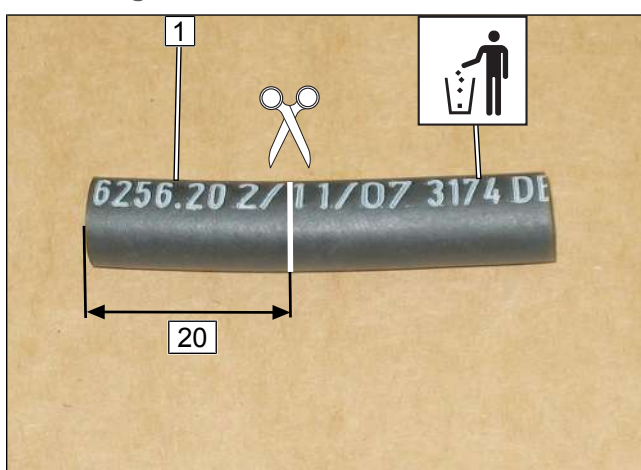


Fig. 83

1 Hose section Ø_i 4.5



Mounting hose section

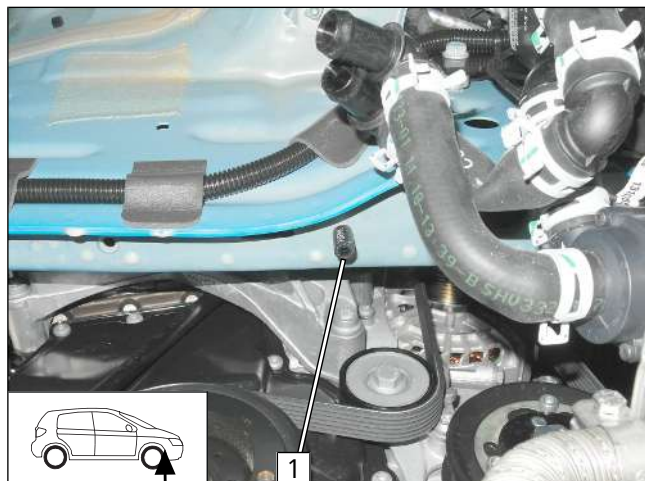


Fig. 84

- 1 Hose section, original vehicle stud bolt

Perforated bracket installation

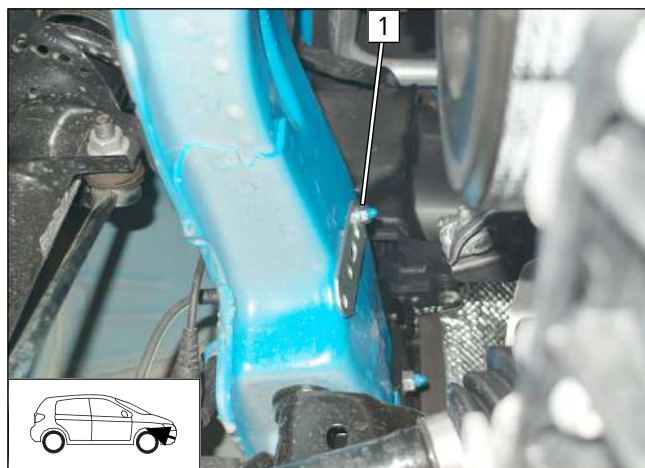


Fig. 85

- 1 Original vehicle stud bolt, perforated bracket, flanged nut

Spacer nut installation

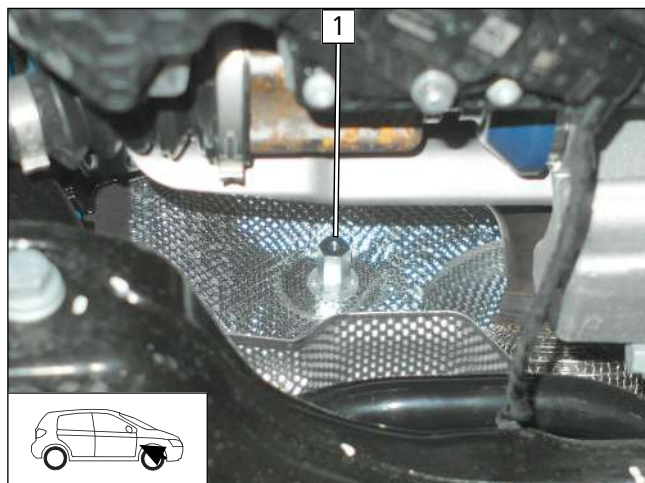


Fig. 86

- 1 M6x30 spacer nut, original vehicle stud bolt



10.3 Heat exchanger inlet connection, 35 TFSi

Removing engine outlet / heat exchanger inlet hose

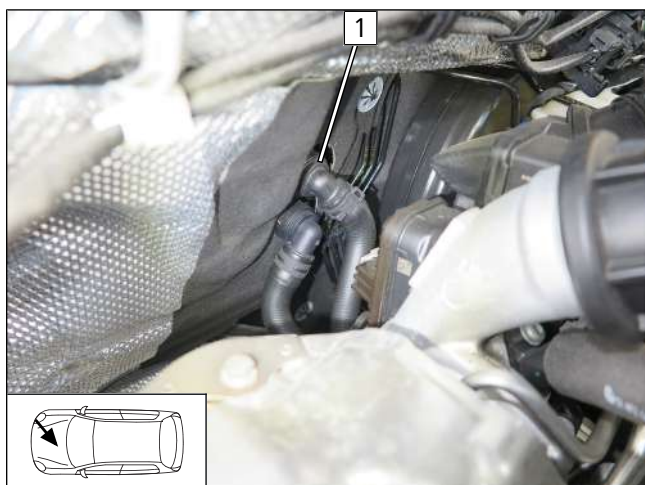


Fig. 87

- ▶ Disconnect engine outlet/heat exchanger inlet hose **1** at the heat exchanger inlet connection piece.

Cutting point

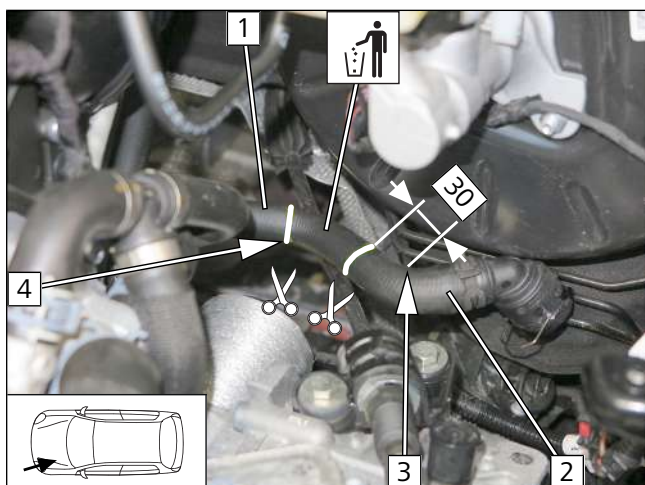


Fig. 88

- 1** Engine outlet hose section
- 2** Heat exchanger inlet hose section
- 3** End of the first hose bend
- 4** End of the second hose bend

Engine outlet connection

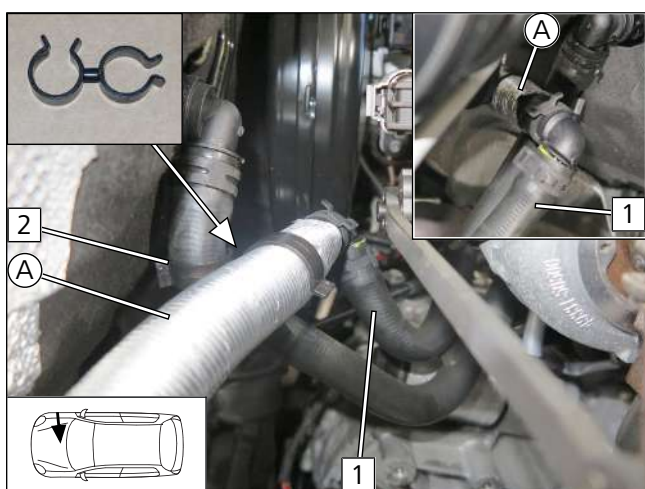


Fig. 89

- 1** Engine outlet hose section
- 2** 25x28 spacer bracket between hose (A) and heat exchanger outlet/engine inlet hose



Premounting hose **(B)**

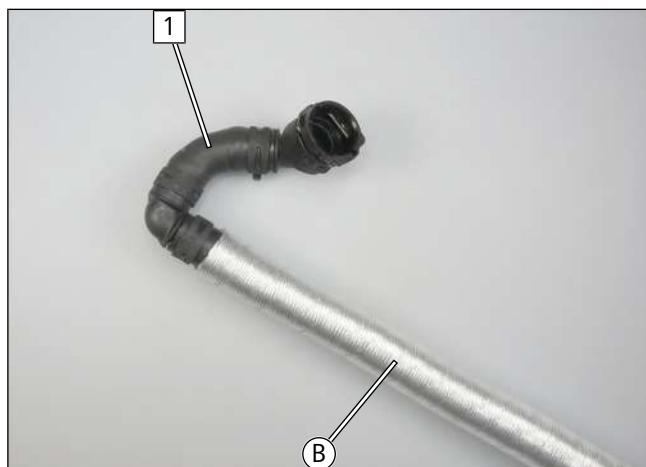


Fig. 90

- 1 Heat exchanger inlet hose section

Heat exchanger inlet connection

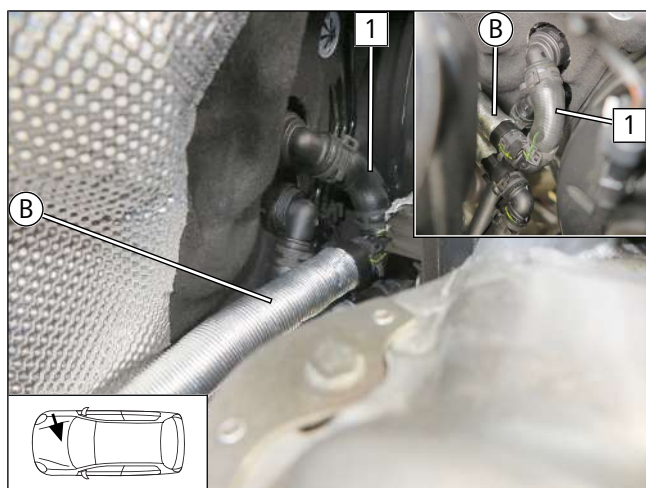


Fig. 91

- 1 Heat exchanger inlet hose section with original vehicle quick-release coupling

Routing hoses

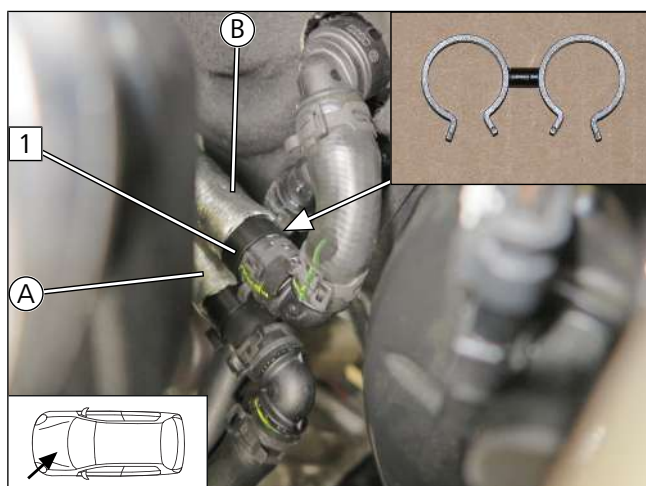


Fig. 92

- 1 25x28 spacer bracket between hose **(A)** and hose **(B)**



10.4 Heat exchanger inlet connection, 40 TFSi and 45 TFSi

Removing engine outlet / heat exchanger inlet hose

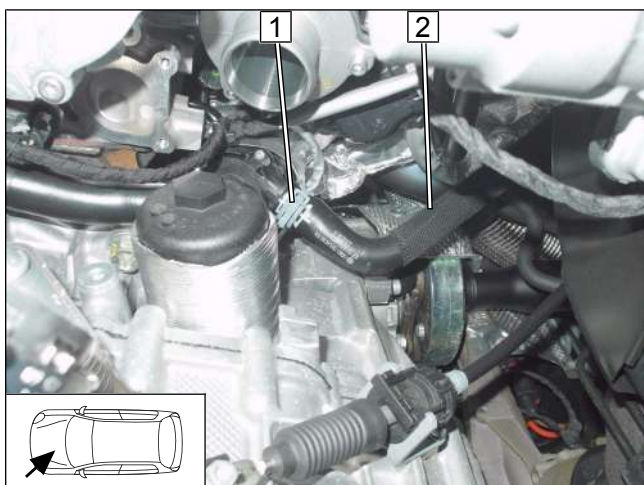


Fig. 93

- 1 Original vehicle spring clip
- 2 Engine outlet / heat exchanger inlet hose

Preparing hose of engine outlet / heat exchanger inlet

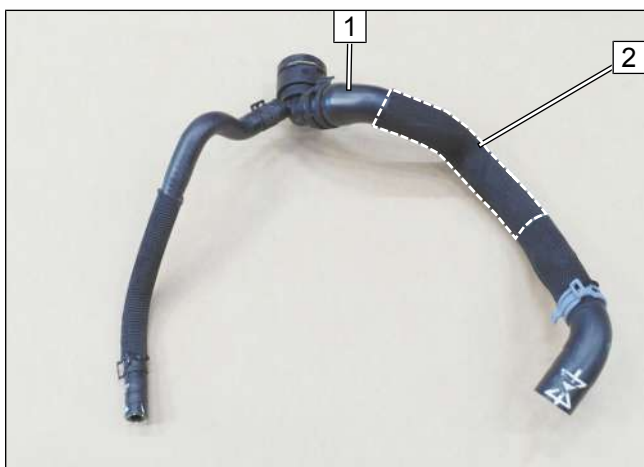


Fig. 94

- Remove heat-shrink hose 2 from engine outlet/heat exchanger inlet hose 1 as shown.

Cutting point

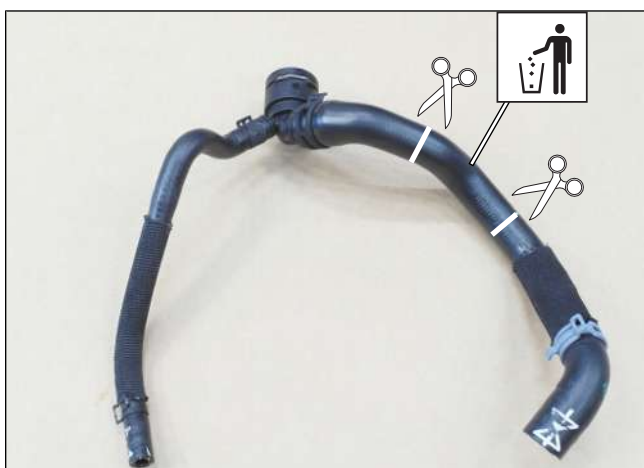


Fig. 95

- Cut original vehicle hose as shown.



Premounting engine outlet and heat exchanger inlet hose sections

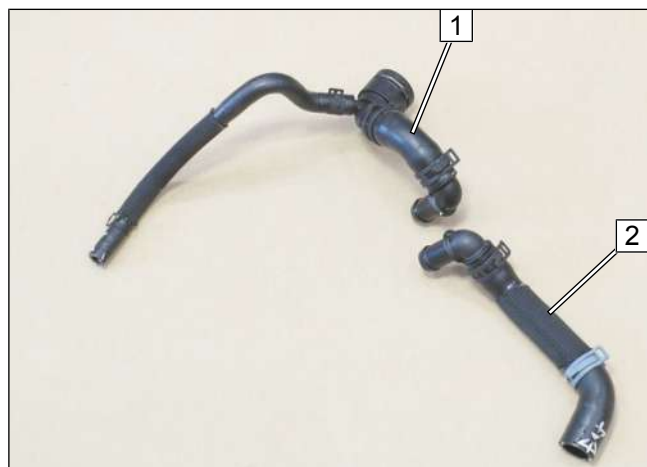


Fig. 96

- 1 Heat exchanger inlet hose section
- 2 Engine outlet hose section

Premounting hoses (A) and (B)

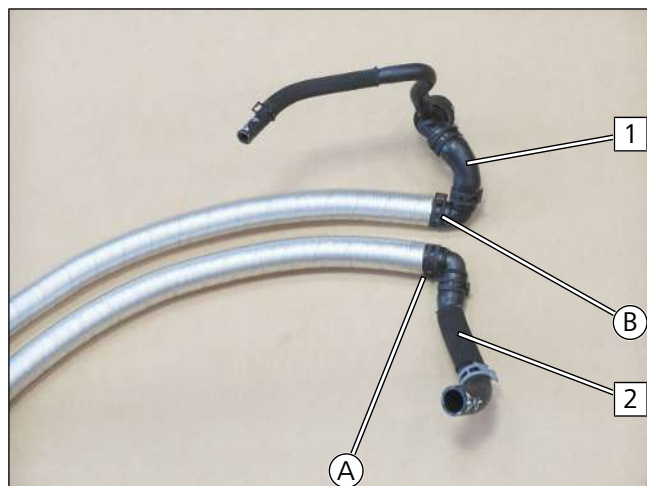


Fig. 97

- 1 Heat exchanger inlet hose section
- 2 Engine outlet hose section

Engine outlet connection

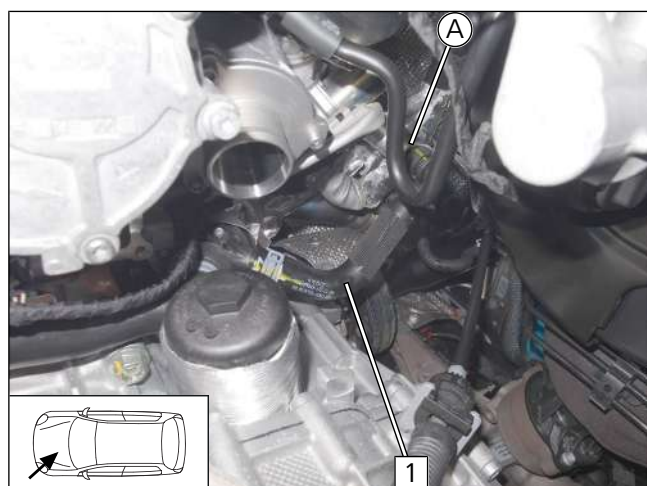
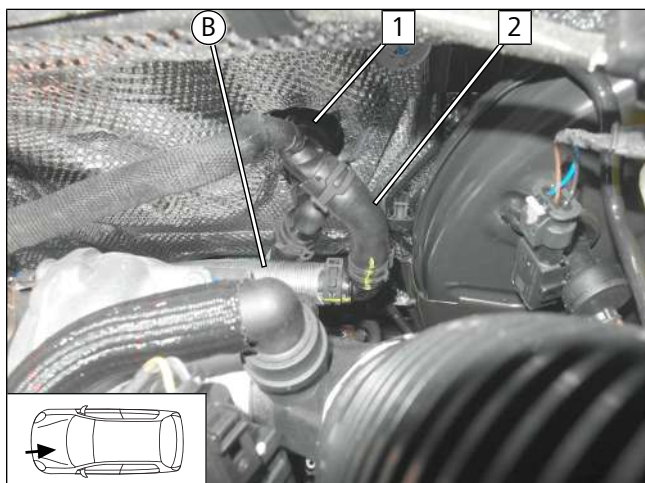


Fig. 98

- 1 Engine outlet hose section



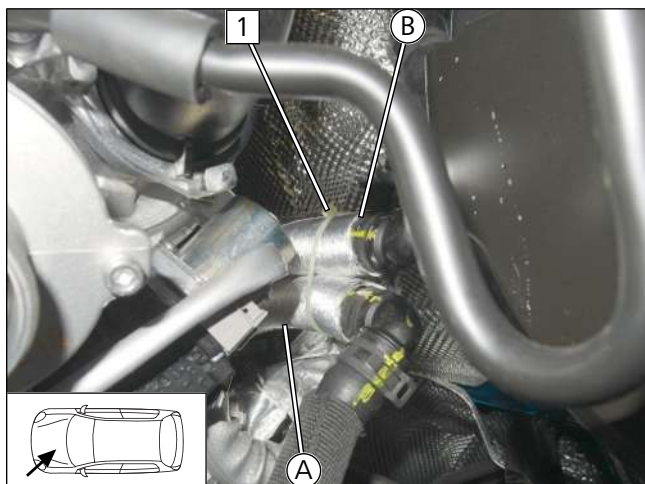
Heat exchanger inlet connection



- 1** Original vehicle quick-release coupling
- 2** Heat exchanger inlet hose section

Fig. 99

Routing hoses

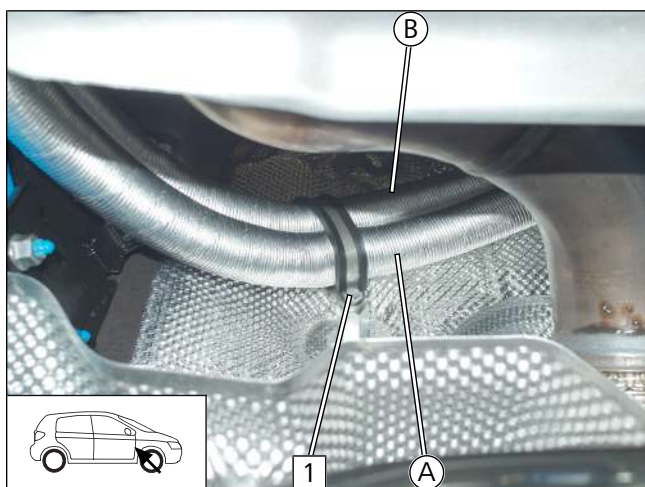


- 1** White cable tie

Fig. 100

10.5 Moving and connecting heater, all petrol vehicles

Routing hoses



- 1** Mount M6x20 bolt, spring lock washer, Ø48 rubber-coated p-clamp, spacer nut loosely

Fig. 101

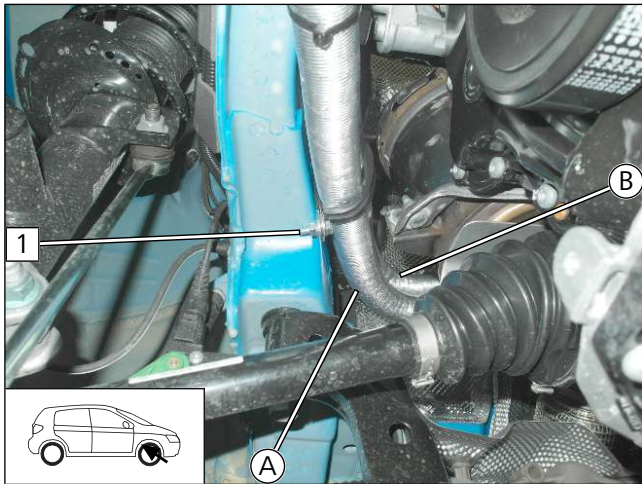


Fig. 102

- 1 Mount M6x20 bolt, Ø48 rubber-coated p-clamp, perforated bracket, flanged nut loosely

Connecting hoses **A** and **B**

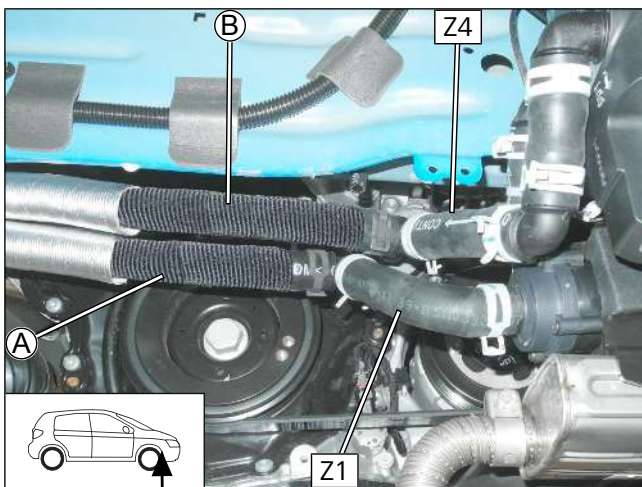


Fig. 103

Fastening hose **B**

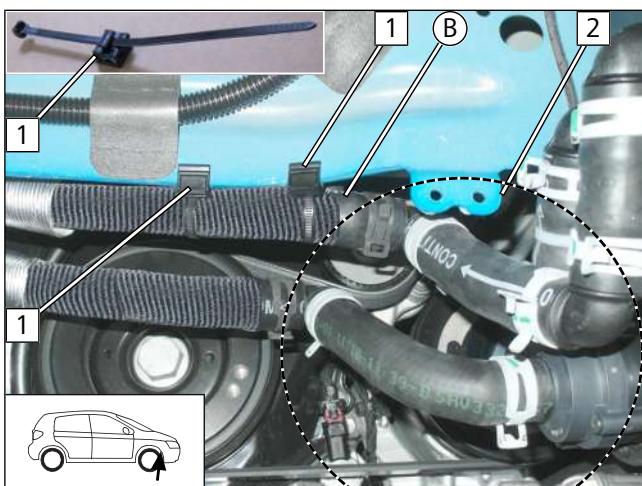


Fig. 104



Risk of engine damage due to loss of coolant

- Turn all spring clips in marked area **2** in such a way that there can be no chafing.

- 1 Edge clip cable tie



Fastening hose **A**

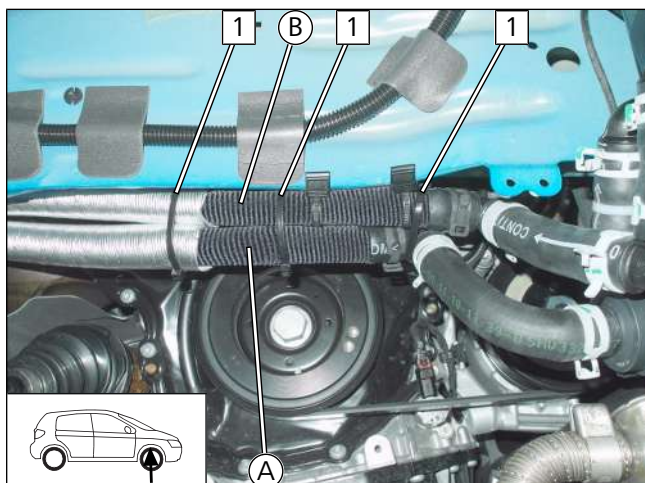


Fig. 105

► Align hoses and tighten screw connection of the Ø48 rubber-coated p-clamps.

1 Cable tie

Checking the distance from hoses **A** and **B**

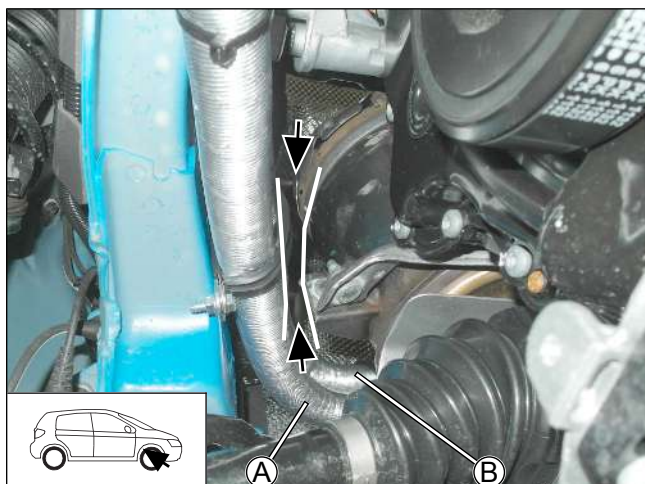


Fig. 106



Ensure sufficient distance from neighbouring components, correct if necessary.

>20



11 Coolant for diesel vehicles

11.1 Hose routing diagram

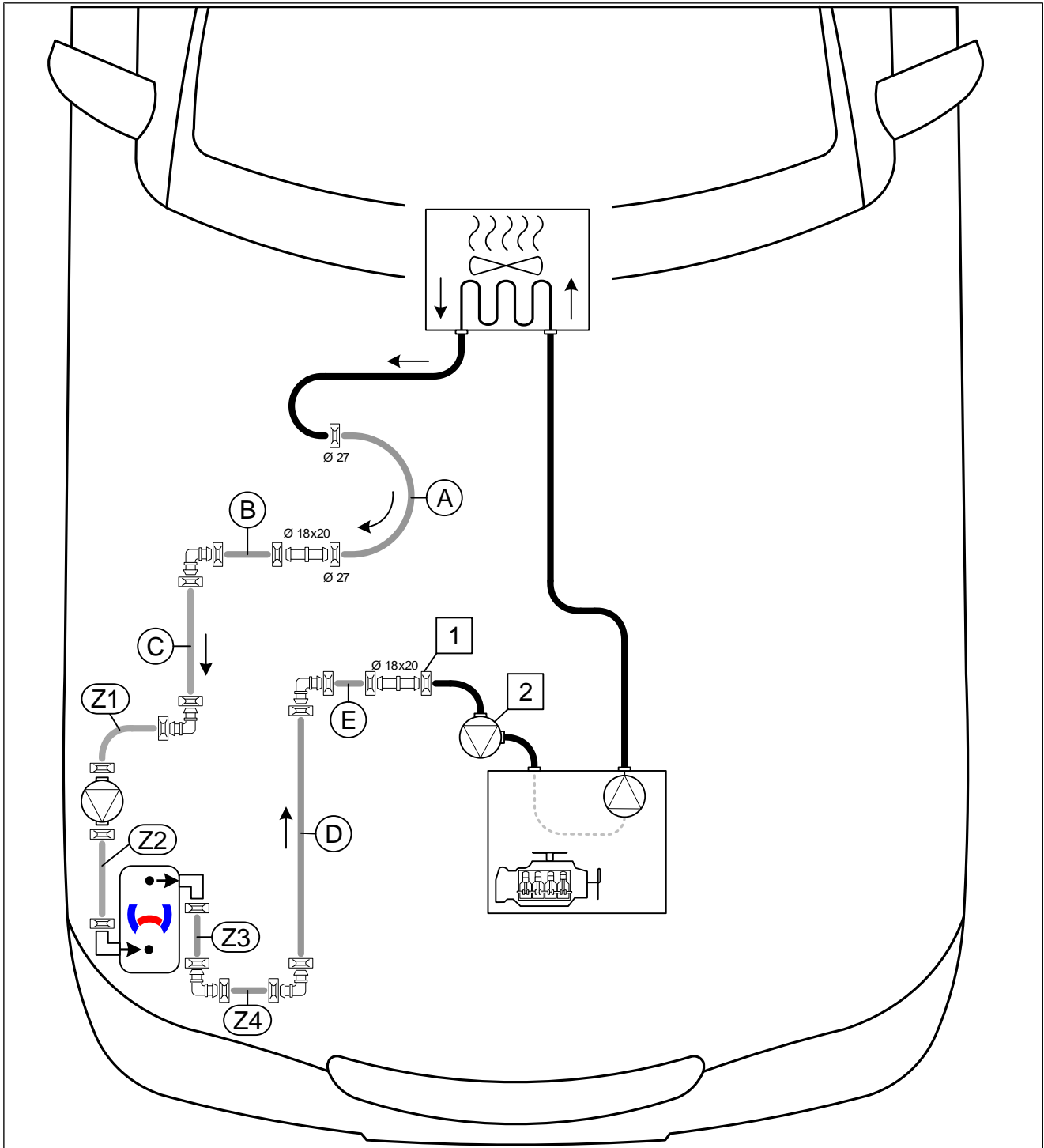


Fig. 107

All spring clips without a specific designation  = Ø25

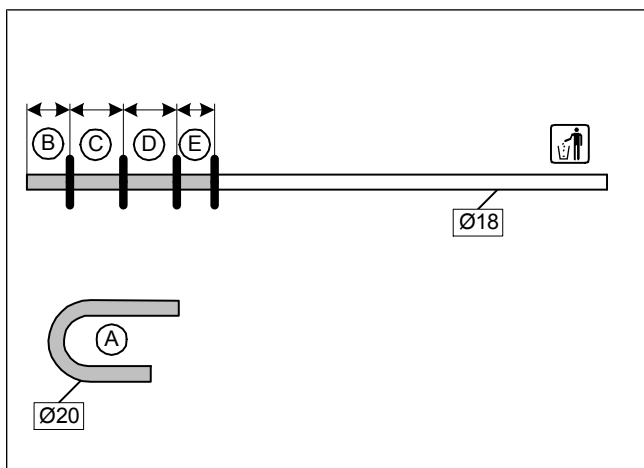
All connecting pipes without a specific designation  or  = Ø18x18

1 Original vehicle spring clip; **2** Original vehicle residual heat pump



11.2 Coolant circuit installation

Cutting hoses to length

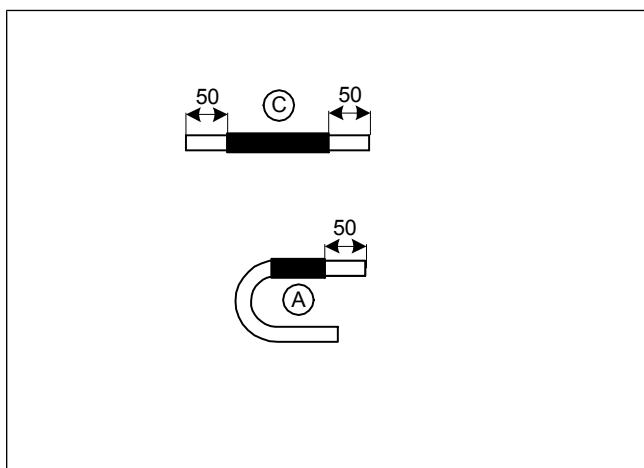


► Hose **A** = 180° moulded hose

B	100
C	230
D	220
E	120

Fig. 108

Mounting fabric heat shrink tubing



Slide on fabric heat shrink tubing as shown, cut to length and use 230°C at most to shrink it.

Fig. 109

Premounting hoses **A**, **B** and **C**

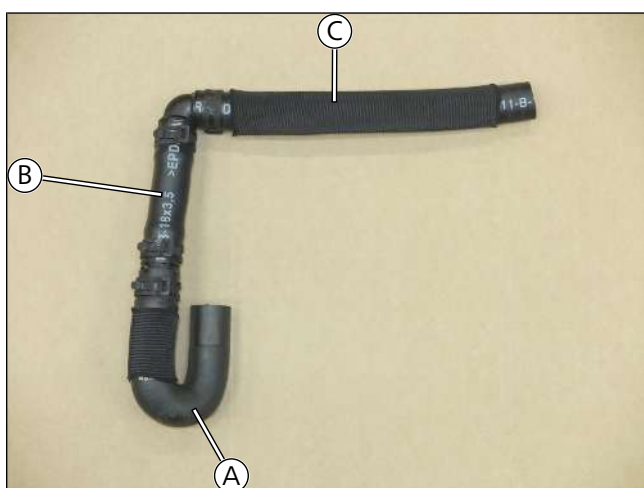


Fig. 110



Premounting hoses **D** and **E**

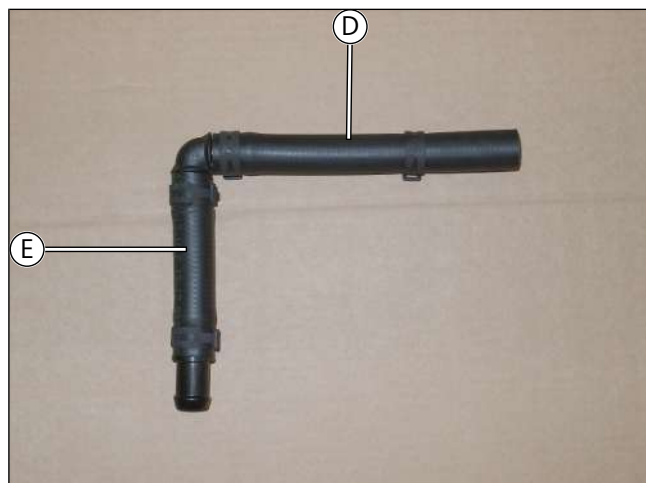
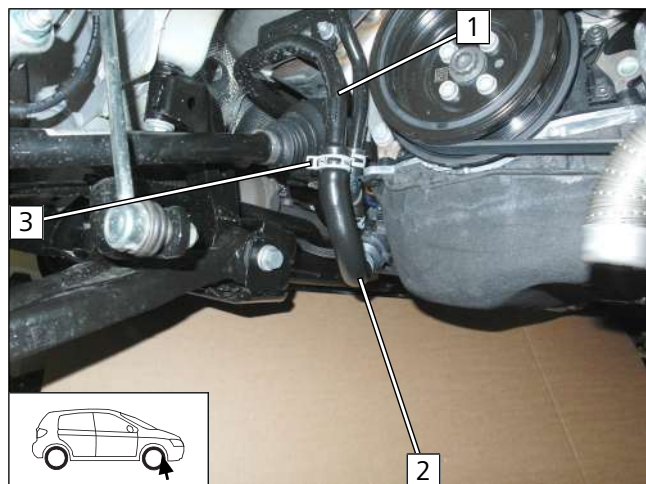


Fig. 111

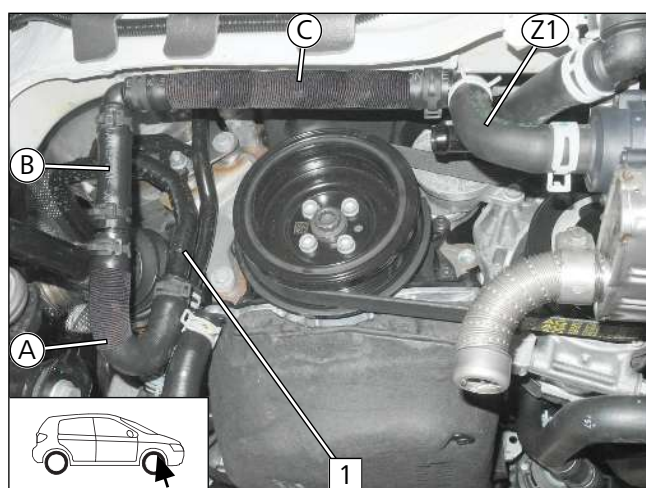
Cutting point



- ▶ Disconnect hose of heat exchanger outlet / engine inlet **2** at position **3** from heat exchanger outlet line **1**. Original vehicle spring clip **3** will be reused.

Fig. 112

Heat exchanger outlet connection



- 1** Heat exchanger outlet line

Fig. 113



Engine inlet connection

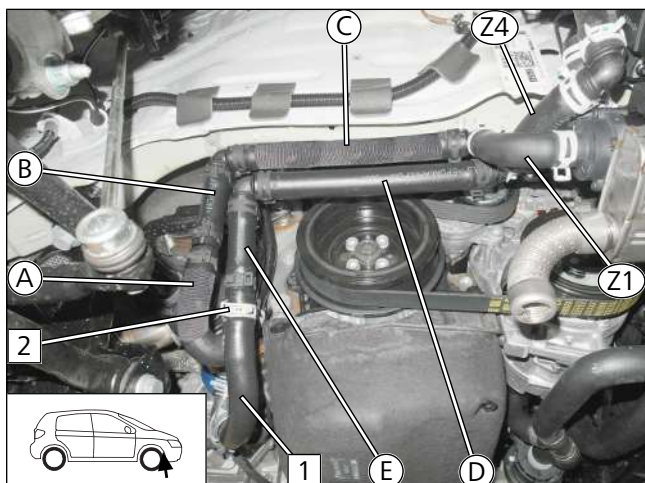


Fig. 114

- 1 Engine inlet hose section
- 2 Original vehicle spring clip

Fastening hose C

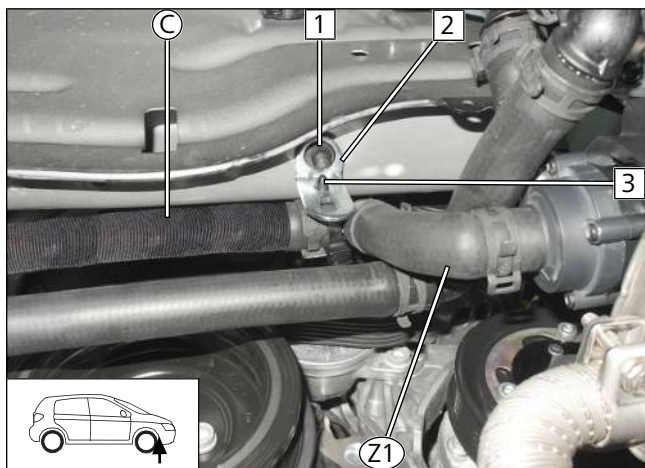


Fig. 115

- 1 Original vehicle stud bolt, plastic nut
- 2 Angle bracket
- 3 Clip-type cable tie around hose C

Fastening hose D

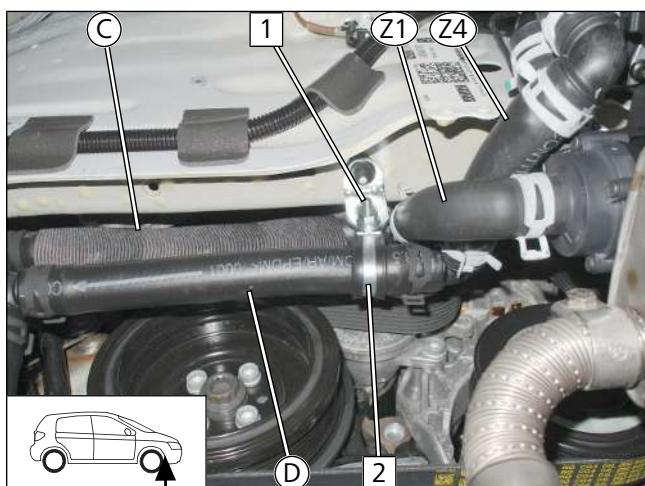
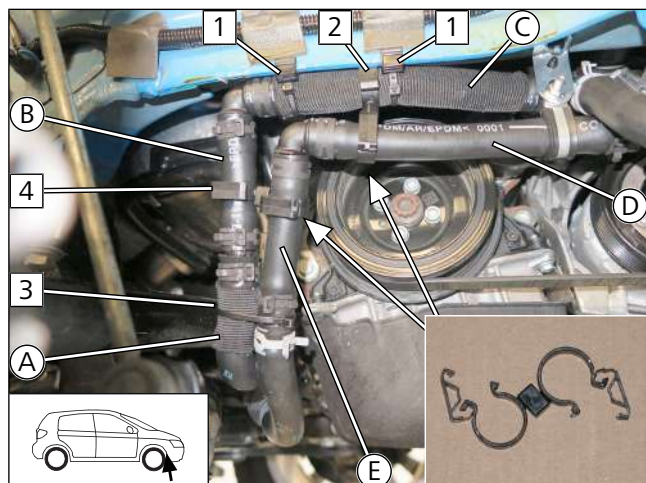


Fig. 116

- 1 M6x20 bolt, flanged nut
- 2 Ø25 rubber-coated p-clamp



Fastening hoses



- 1 Edge clip cable tie around hose **C**
- 2 Closable hose bracket around hoses **C** and **D**
- 3 Cable tie around hoses **A** and **E**
- 4 Closable hose bracket around hoses **B** and **E**

Fig. 117



12 Final work in engine compartment

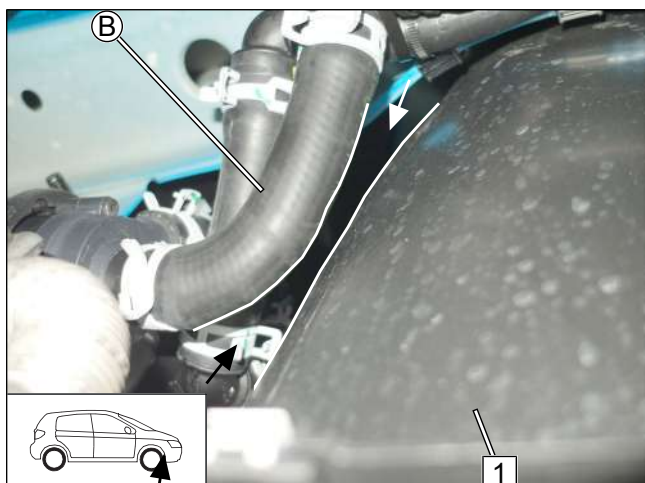


Fig. 118



Ensure sufficient distance from neighbouring components, correct if necessary.



- Mount wheel-well inner panel **1**.

Aligning exhaust outlet

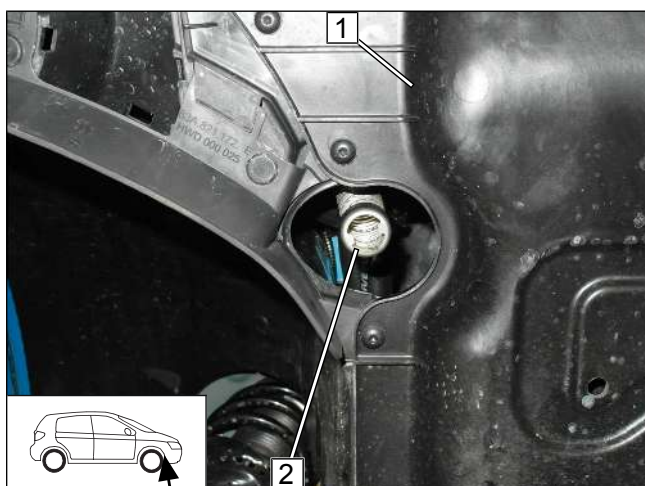


Fig. 119

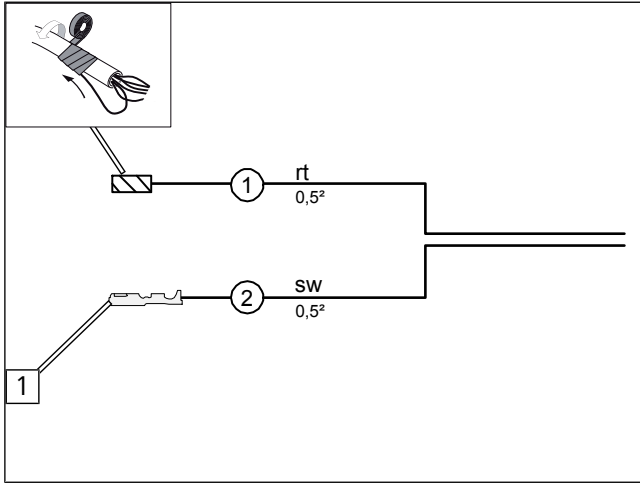
- Mount underside protection **1**, align exhaust outlet **2** with the centre of the pass through.



13 Electrical system of passenger compartment

13.1 Electrical system preparation

Preparing / assigning wires



Wire sections retain their numbering in the entire document.

- ① Insulate red (rt) wire of fan wiring harness
- ② Black (sw) wire of fan wiring harness
- ① Female connector

Fig. 120

Connecting lines to RSH

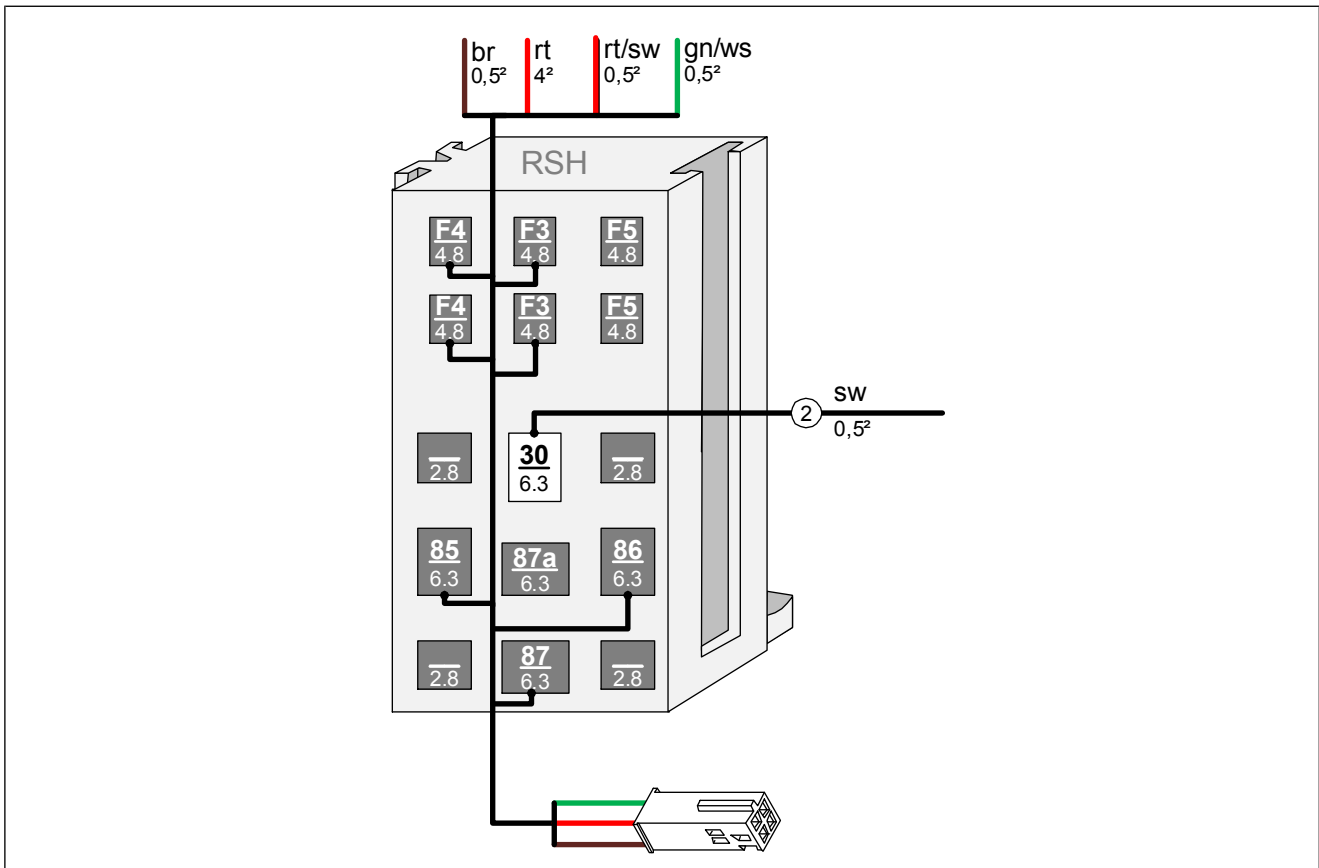
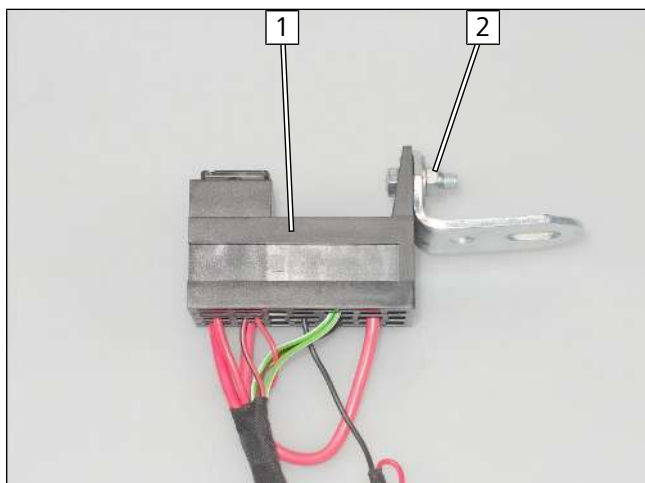


Fig. 121



Mounting angle bracket



- 1 RSH
- 2 M5x16 bolt, large diameter washer, RSH, angle bracket, large diameter washer, nut

Fig. 122

13.2 Wiring diagram

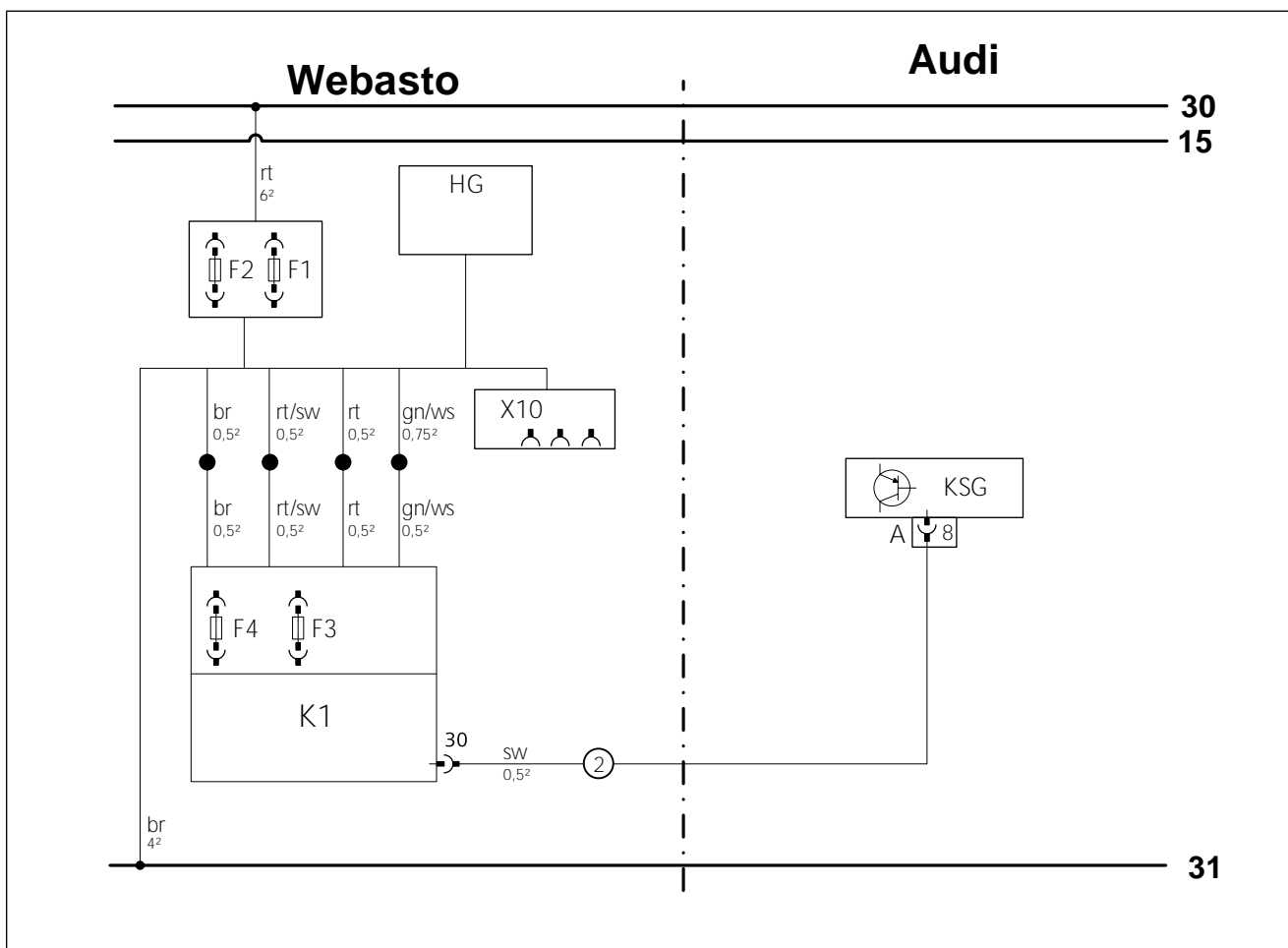


Fig. 123



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
KSG	Air-conditioning control unit		
A	20-pin KSG 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		



13.3 Fan controller

Mounting RSH

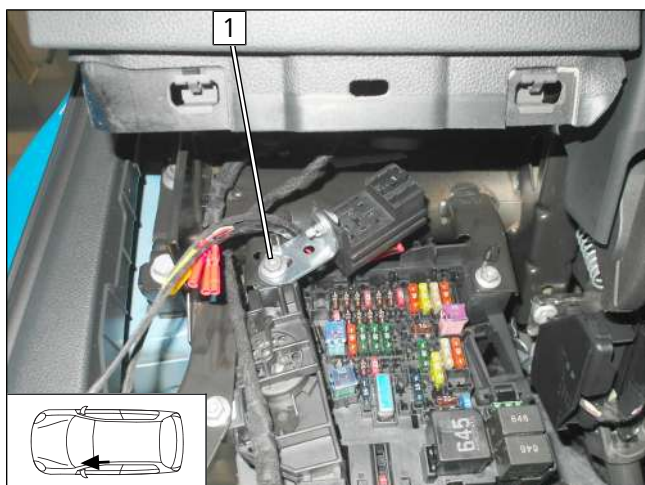


Fig. 124

- 1 Original vehicle bolt, angle bracket, original vehicle thread

Connecting same colour wires of wiring harnesses

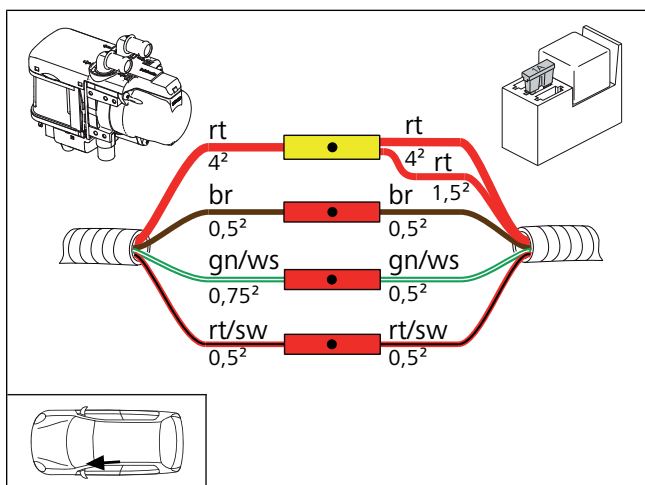


Fig. 125

Mounting relay K1 and fuses F1 and F2

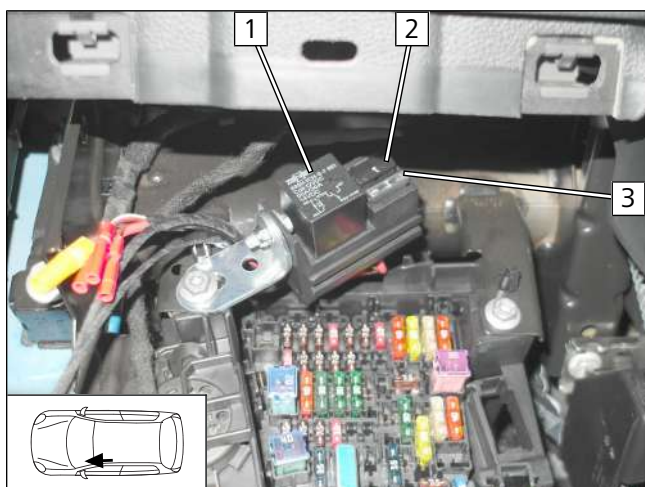


Fig. 126

- 1 Relay K1
- 2 1A fuse F1
- 3 1A fuse F2



Routing wire ②/view of connector A

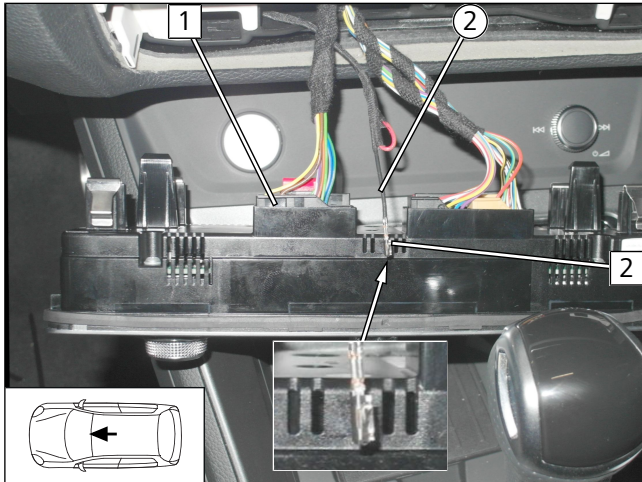


Fig. 127

► Route fan wiring harness ② with female connector ② to the A/C control unit (KSG).

- ① 20-pin KSG connector A

Connecting wire ②

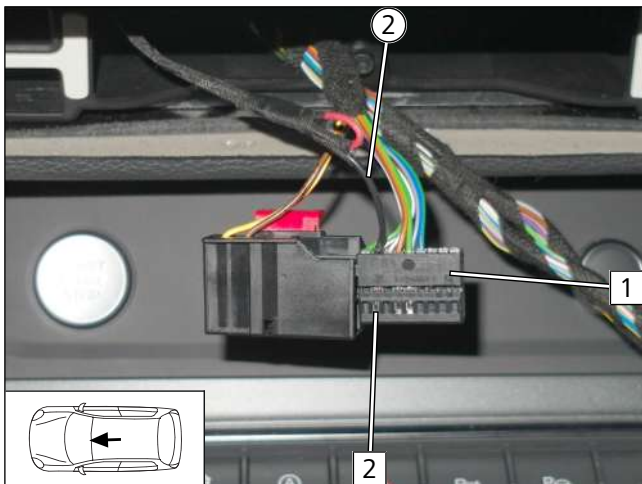


Fig. 128

- ① KSG connector A
- ② Slot of pin 8
- ② Black (sw) wire of fan wiring harness



14 Electrical system of control elements

14.1 Remote option (Telestart)

Preparing receiver bracket

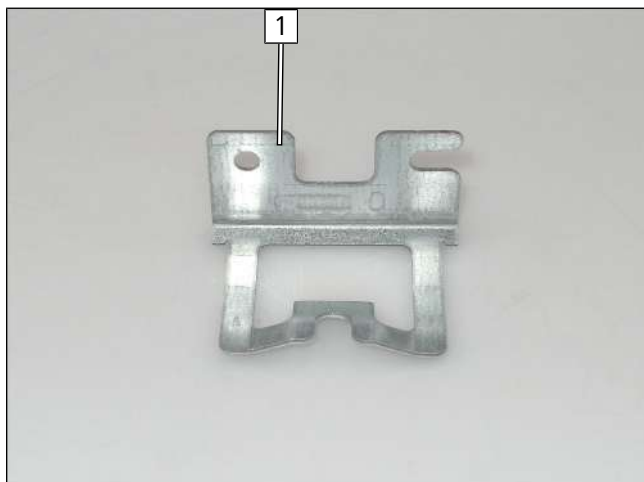


Fig. 129



Observe the Telestart installation documentation.

- 1 Bend receiver bracket by 90°

Mounting receiver

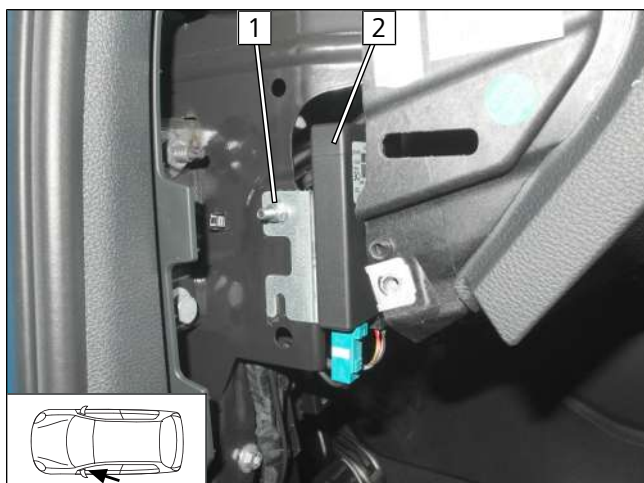


Fig. 130

► Assemble Telestart bracket and receiver **2**.

- 1 M5x16 bolt, large diameter washer, original vehicle hole, Telestart bracket, nut

Mounting temperature sensor, only in case of T100 HTM

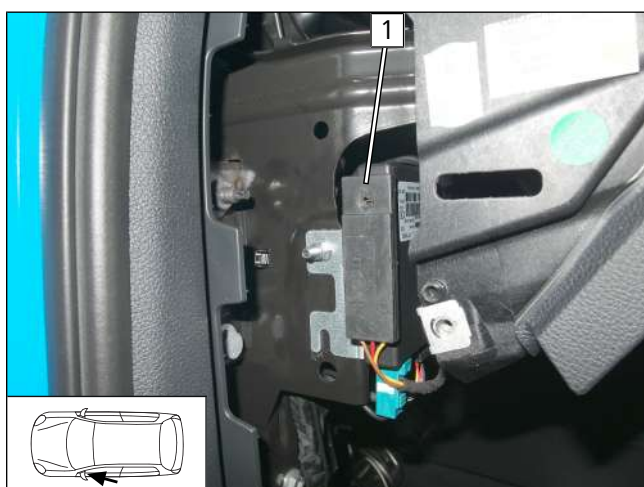


Fig. 131

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



Mounting aerial

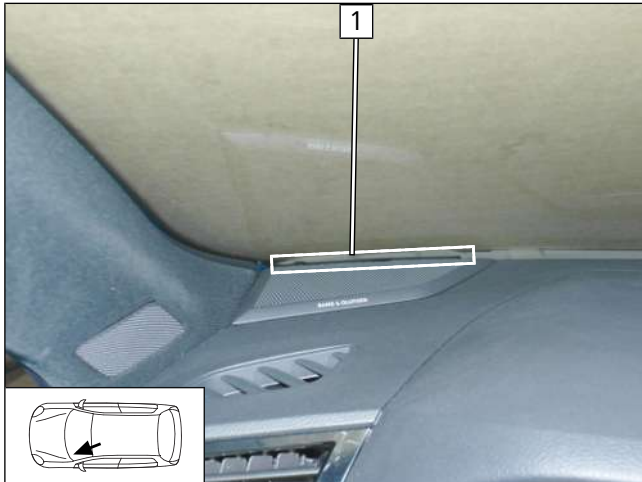


Fig. 132

1 Aerial

14.2 ThermoCall option

Mounting receiver



Fig. 133



Observe the ThermoCall installation documentation.

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

Mounting aerial (optional)

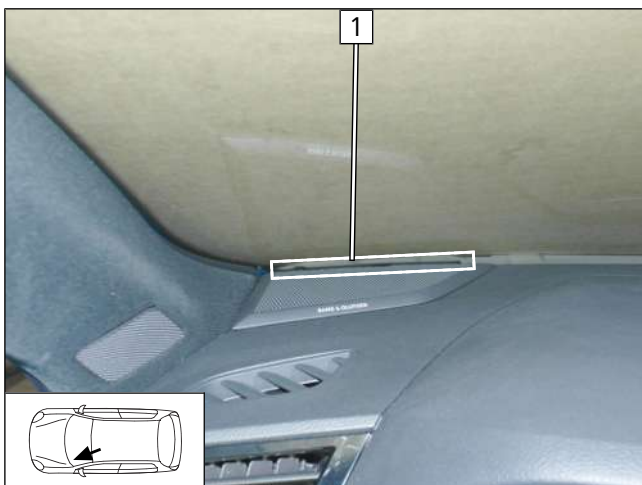


Fig. 134

1 Aerial



15 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.



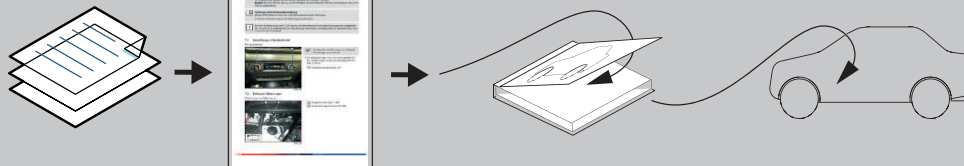
Only use manufacturer-approved coolant.

- ▶ 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



Vehicle-specific work



Further information can be found in the operating instructions of the vehicle manufacturer's diagnosis software.

- ▶ Adjust the Climatronic J255 control unit by enabling 'activate retrofit parking heater without CAN' using a suitable diagnosis tool



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.

Ident No. 1327413A_EN • 10/19 • Errors and omissions excepted • © Webasto Thermo & Comfort SE • 2019

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany

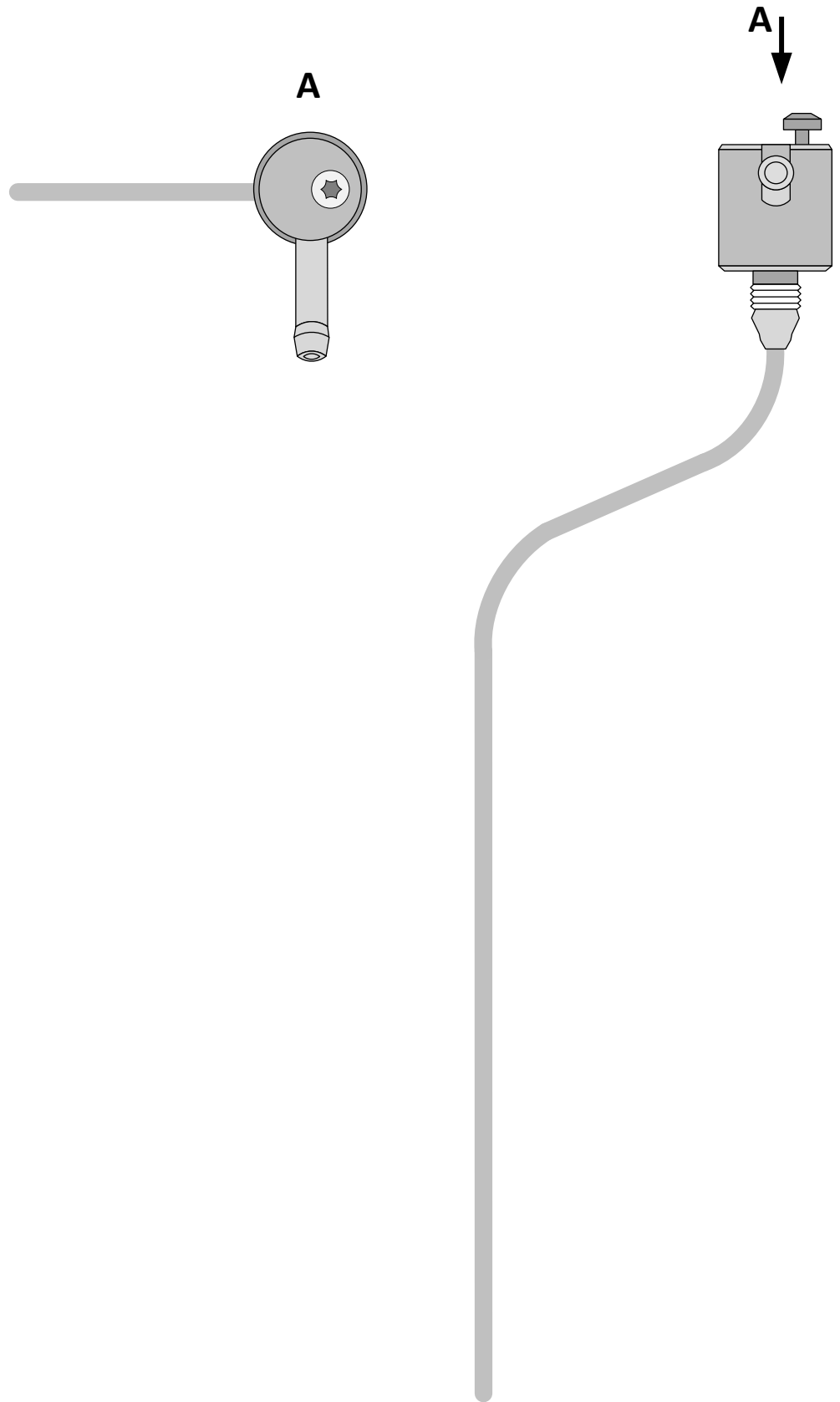
Company address:
Friedrichshafener Str. 9
82205 Gilching
Germany

Technical Extranet: <https://dealers.webasto.com>



WWW.WEBASTO.COM

16 FuelFix template, 2WD petrol vehicles



100mm

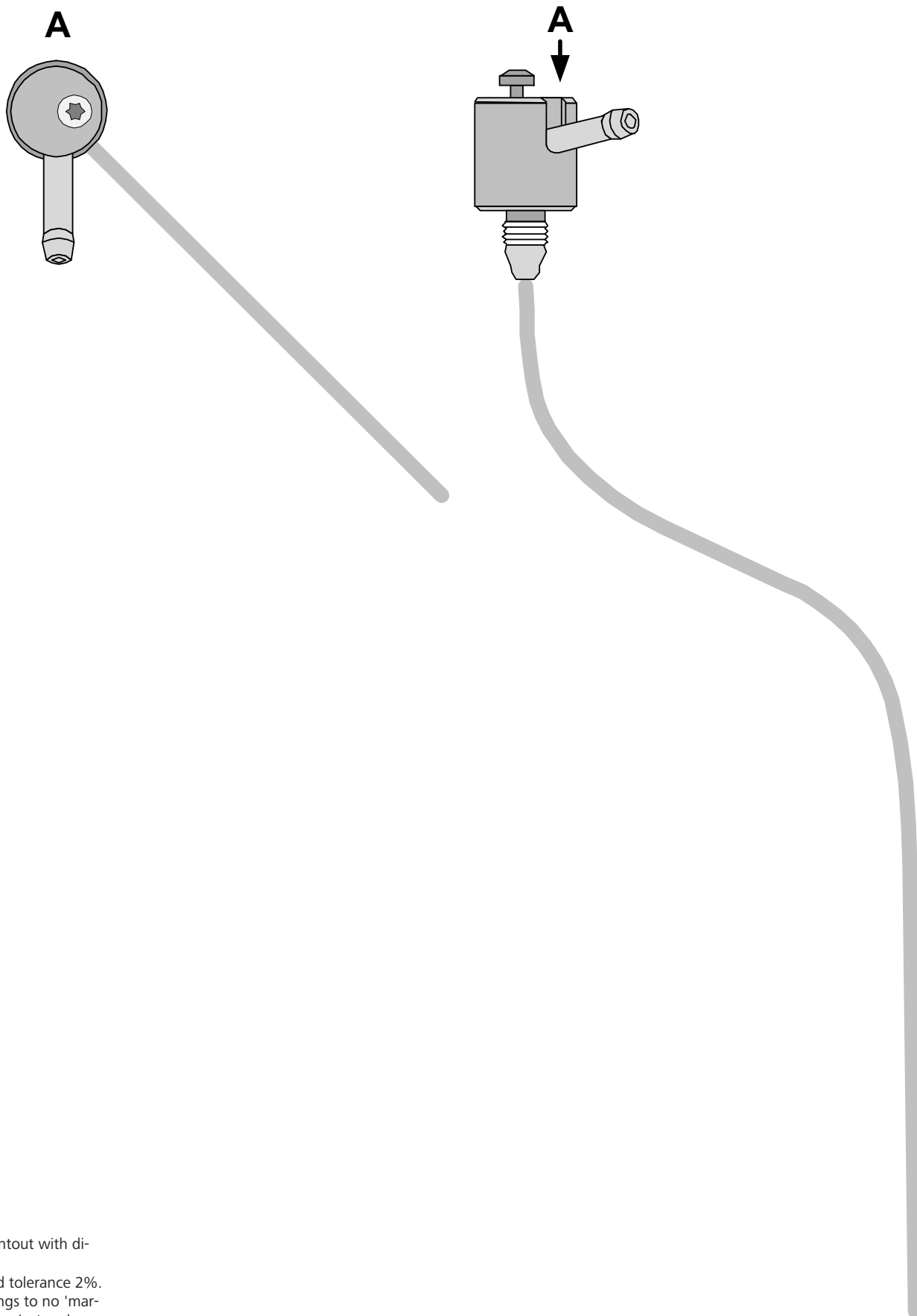
0

100mm

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.



17 FuelFix template, 4WD petrol vehicles



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.

0

100mm

18 FuelFix template, 2WD diesel vehicles



100mm

0

100mm

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.

19 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.

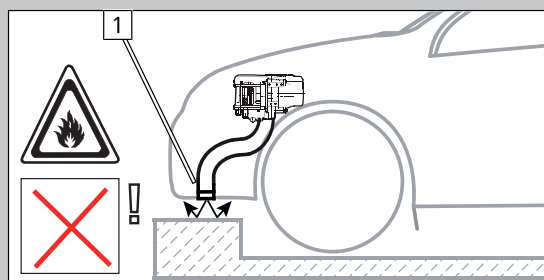
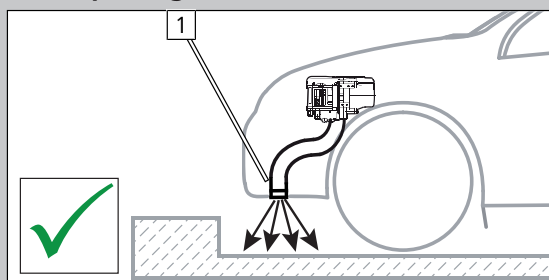


Notes about the A/C control panel presets

Your vehicle is equipped with a comfort air-conditioning control. As a result, **no** settings are required on the A/C control panel when switching off the vehicle. All necessary presets, such as fan speed, temperature and flap positions are set automatically.

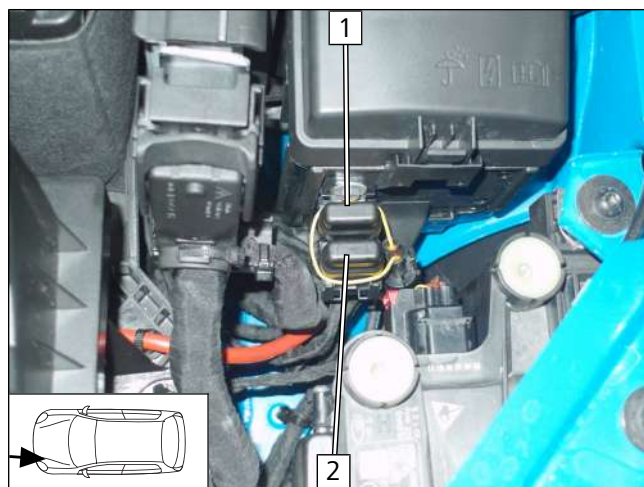


Notes on parking heater exhaust outlet ¹



19.1 Installation location of fuses

Fuses in engine compartment

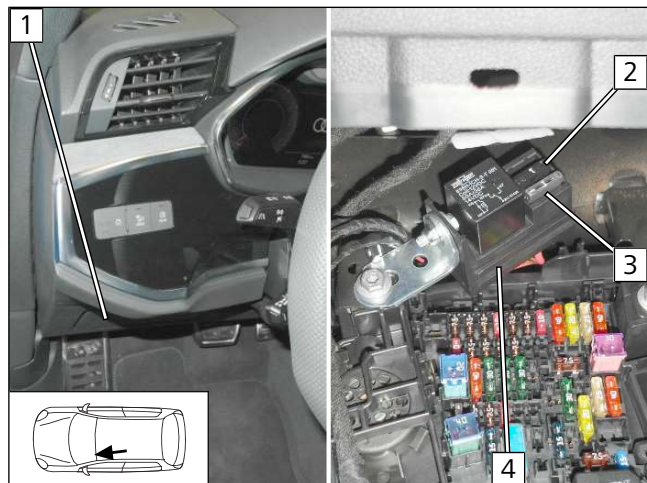


1 F2 - 30A main fuse of passenger compartment

2 F1 - 20A heater fuse

Fig. 135

Fuses in passenger compartment



The fuses of the parking heater for the passenger compartment are positioned behind the trim at position **1** near the original vehicle passenger compartment fuses.

- 2** F3 - 1A control element fuse
- 3** F4 - 1A fan controller fuse
- 4** Relay and fuse holder of passenger compartment

Fig. 136