

K Installation documentation

for water heater Thermo Top Evo

'Inline' coolant circuit with engine preheating

VW Caddy

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
VW	Caddy	SK	from 2021	e13* 2018/858* 00002*...

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displacement [cm ³]	Engine code
2.0TDi	Diesel	EURO6;WLTP;AP...	SG	75	1968	DTRE
2.0TDi	Diesel	EURO6;WLTP;AP...	SG	90	1968	DTRC
2.0TDi	Diesel	EURO6;WLTP;AP...	DSG	90	1968	DTRC

Validity	Equipment variants	Model
		Caddy
Verified equipment variants	Manual air conditioning	x
	2 zone automatic air-conditioning	x
	LED main headlights	x
	LED daytime running lights	x
	Halogen main headlights	x
	Automatic Start-Stop system	x
	FWD	x

Total installation time	Note
11.2 hours	

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1 List of abbreviations

CR	Cronus (passenger compartment control unit)
DP	Fuel pump
DSG	Direct gear transmission
FF	FuelFix (tank extracting device)
FWD	Front wheel drive
HG	Heater
KSG	Air-conditioning control unit
MY	Model year
SG	Manual transmission
SH2	Engine compartment fuse holder for F1/F2/F3
UP	Coolant pump
Veh.	Vehicle

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 of VW Golf VIII MY 2020 / Caddy MY 2021 diesel Cronus TT-Evo	1328391C
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list
The following must also be ordered for the ThermoConnect option: retrofitting Y adapter wiring harness	1319820_

2.3 Necessary software

Designation	Download via
9040790_Software Update - Cronus VW MQB ► For information about the download see section 'Preparing measures'	Dealer portal

2.4 Notes on installation, in coordination with the end customer

- Arrange for the vehicle to be delivered with the tank only about ¼ full.
- The installation location of the following elements should be chosen in coordination with the end customer:
 - the Cronus push button as well as the push button in case of the Telestart and/or ThermoConnect options
 - the MultiControl CAR option

2.5 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.

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.



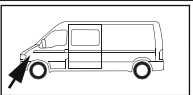
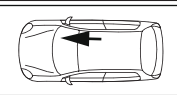
Note on a special technical feature

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 components as well as 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 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	▶ Disconnect the battery ▶ Engine design cover ▶ Air filter complete with intake box above the radiator ▶ Battery ▶ Battery carrier ▶ Engine compartment relay and fuse box cover ▶ Front wheel on the front passenger's side ▶ Wheel well trim on the front passenger's side ▶ Engine underride protection ▶ Underbody underride protection on the front passenger's side ▶ Rear wheel on the driver's side ▶ Rear wheel well trim on the driver's side ▶ Rear exhaust system ▶ Tank trim on the driver's side	
Passenger compartment	▶ Side instrument panel trim on the front passenger's side ▶ Observe the dismantling instructions in section 'Electrical system of passenger compartment'	



Carry out the following work only during the corresponding installation sequence:



DANGER

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

Vehicle body	▶ Tank in accordance with the manufacturer's instructions	
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5.2 Preparations for Cronus

Engine compartment	▶ Download the software specified in section 'Necessary software' from the Dealer portal at https://dealers.webasto.com/: ⇒ Dealer Portal ▶ Product Services ▶ Software & Tools ▶ Cronus Software The software will be used according to section 'Final work' under the item 'Downloading software to Cronus'.	
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5.3 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	
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6 Installation overview

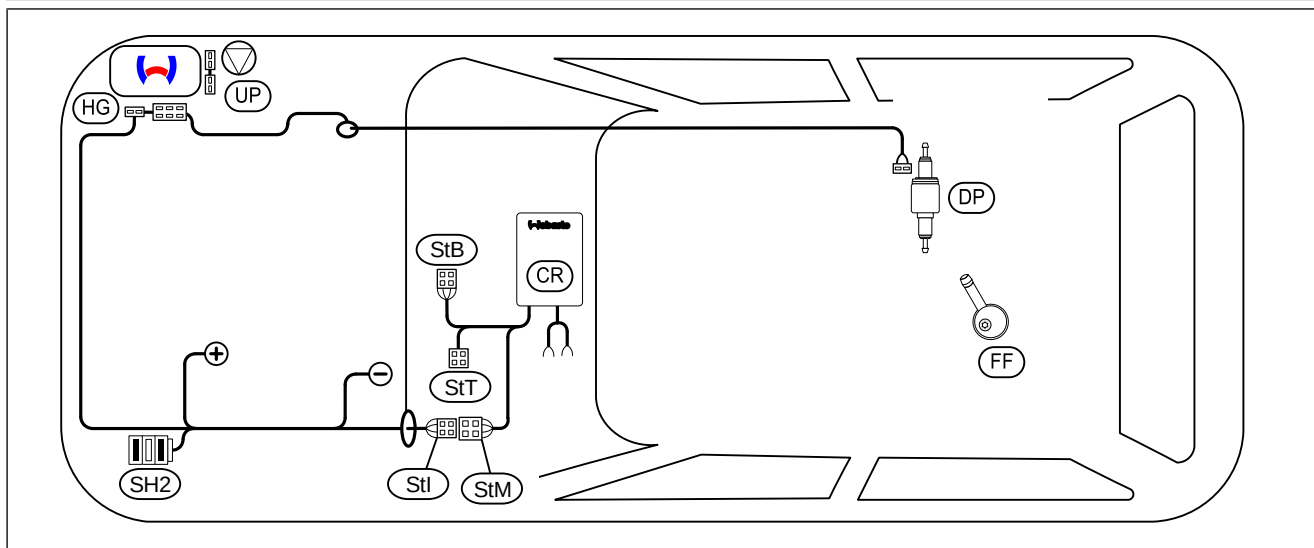
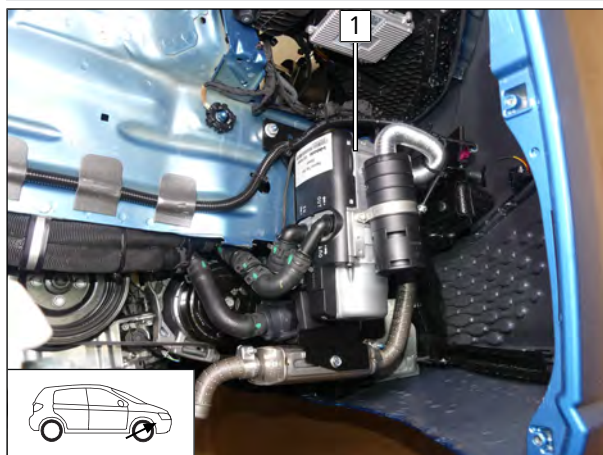


Fig. 1

Legend to installation overview

Abbreviation	Component
CR	Cronus (passenger compartment control unit)
DP	Fuel pump
FF	FuelFix
HG	Heater assembly
SH2	Engine compartment fuse holder for F1/F2/F3
StB	Female plug for control element wiring harness
StI	Female plug for passenger compartment wiring harness
StM	Male plug for engine compartment wiring harness
StT	Male plug for push button wiring harness
UP	Coolant pump

Heater assembly installation location



1 Heater assembly

Fig. 2



7 Electrical system of engine compartment

Removing cover

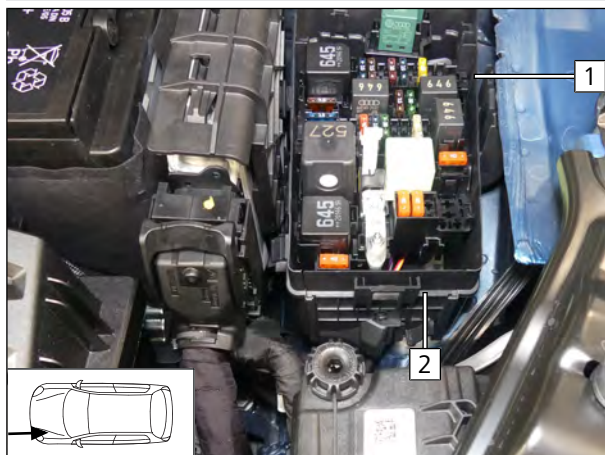


Fig. 3

- 1 Fuse and relay box
- 2 Remove front cover

Copying hole pattern, drilling hole

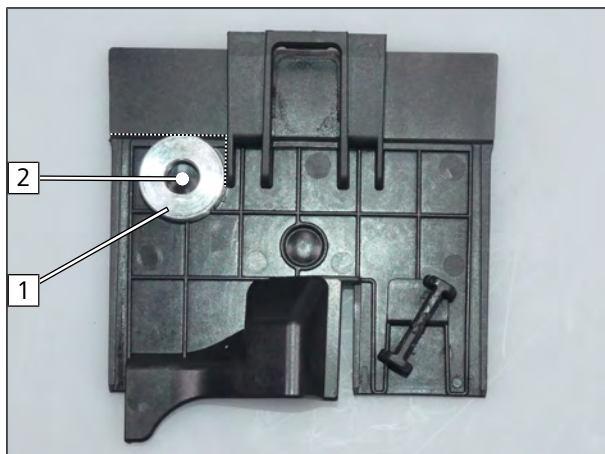


Fig. 4

- Position spacer (5) 1 on front cover, copy hole pattern 2 and drill Ø6 hole.

Premounting retaining plate of SH2

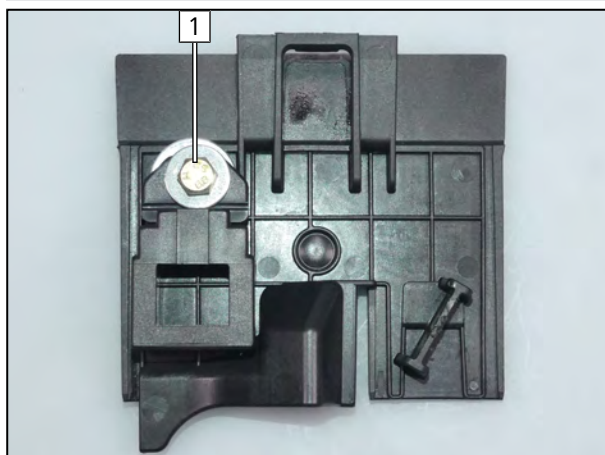


Fig. 5

- 1 M5x20 bolt, large diameter washer, SH2 retaining plate, spacer (5), front cover, retaining plate, nut



Preparing wiring harness

Preparing SH2

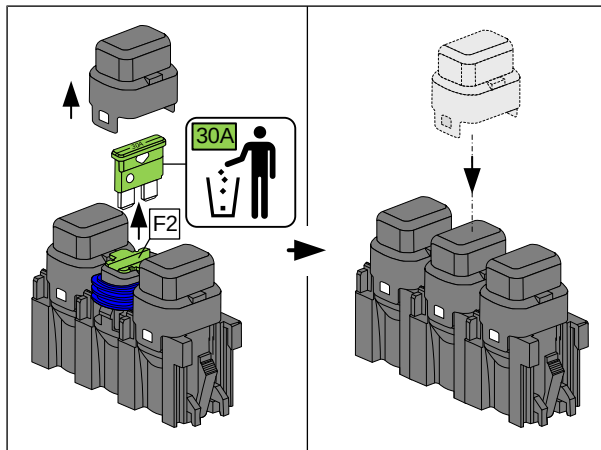


Fig. 6

► Remove 30A fuse F2 from SH2 and discard.

Preparing wiring harness

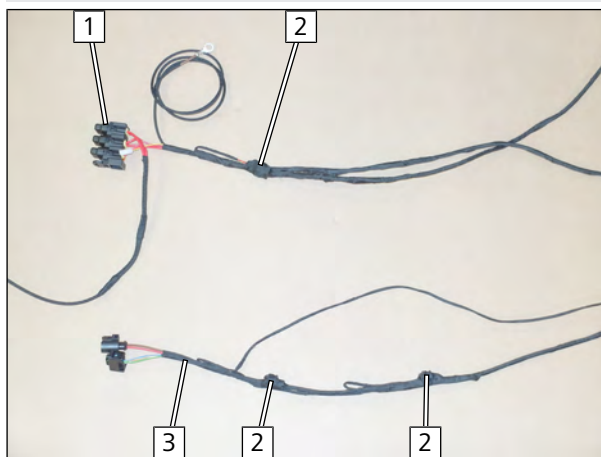


Fig. 7

Tie back connectors **2** using insulating tape, they will not be reused.

- 1** SH2
- 3** Heater wiring harness

Mounting cover and SH2

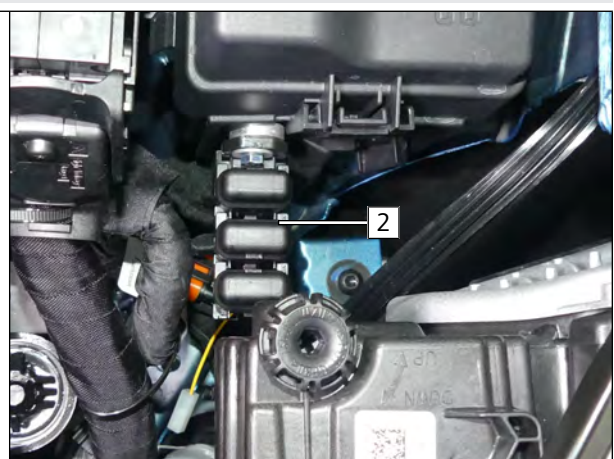


Fig. 8

1 Mount front cover

2 Insert SH2 with F1, F2 (empty) and F3



Routing wiring harnesses

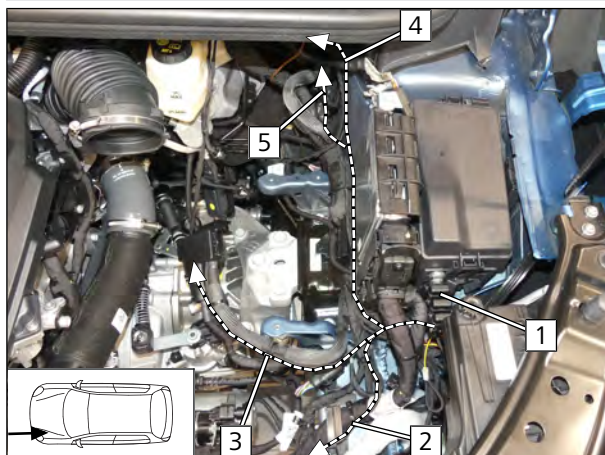


Fig. 9

- 1 SH2
- 2 Heater wiring harness to HG installation location
- 3 Positive wire to original vehicle positive support point
- 4 Earth wire to original vehicle earth support point
- 5 Passenger compartment and control element wiring harnesses to the passenger compartment pass through

Earth wire connection

Earth wire connection

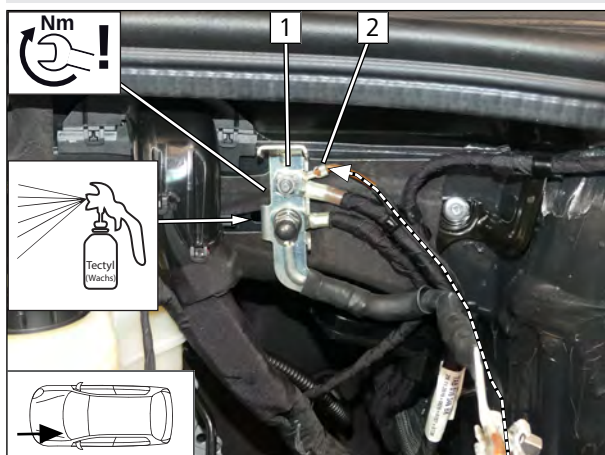


Fig. 10



DANGER

Observe tightening torque

- 1 Original vehicle earth point
- 2 Earth wire

Passenger compartment wiring harness pass through

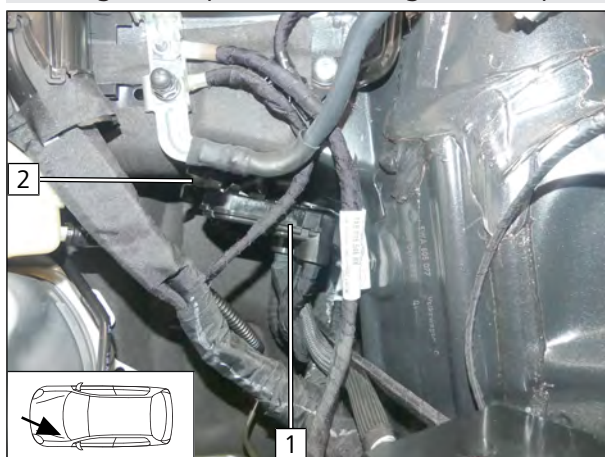


Fig. 11

- Remove positive distributor 1 from bracket 2.

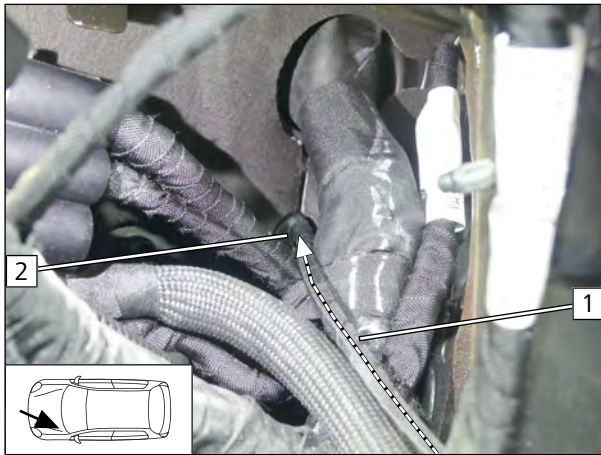


Fig. 12



To prevent water seeping into the passenger compartment, the wiring harness must be routed upwards to the protective rubber plug and this plug must then be sealed with a suitable sealing compound.

- 1 Passenger compartment wiring harness
- 2 Pass through in protective rubber plug (open using suitable means)

Positive wire connection

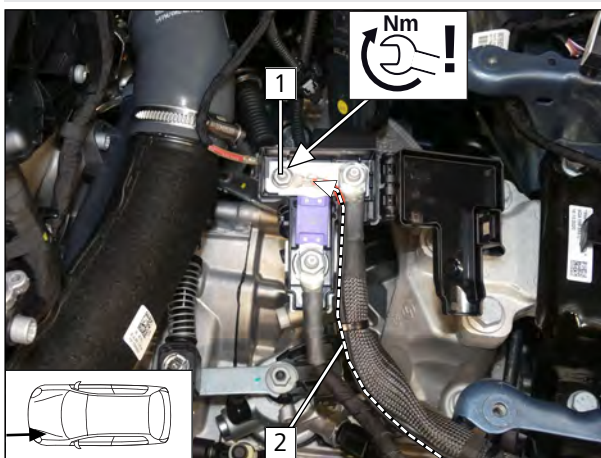


Fig. 13



DANGER

Observe tightening torque

- 1 Original vehicle positive point
- 2 Positive wire

Routing heater wiring harness to HG installation location

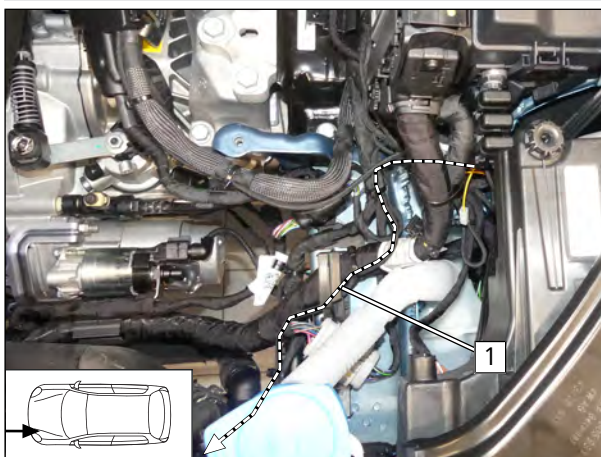


Fig. 14

- 1 Heater wiring harness

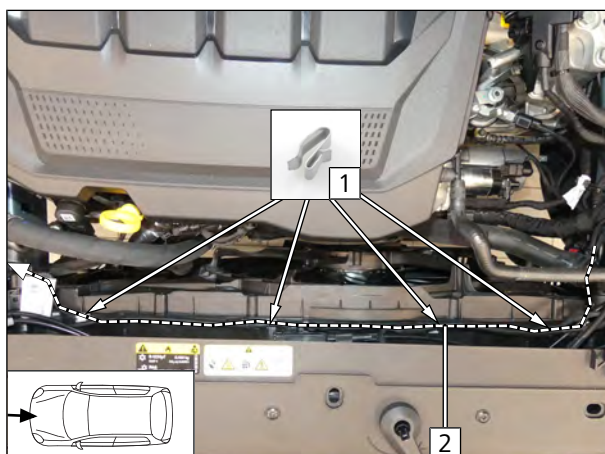


Fig. 15

- 1 Edge clip
- 2 Heater wiring harness

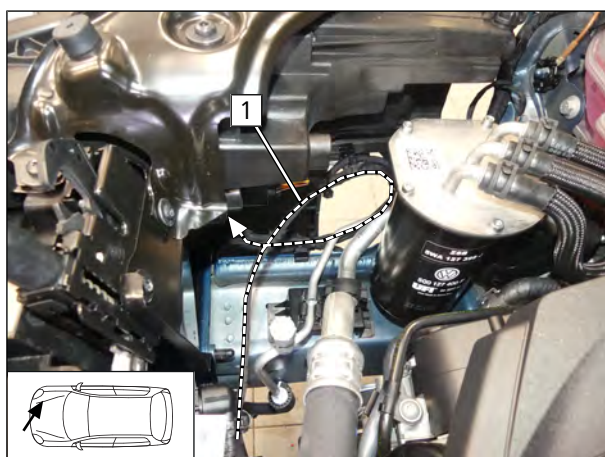


Fig. 16

- 1 Heater wiring harness



8 Mechanical system

8.1 Installation location preparation

Loosening original vehicle wiring harness

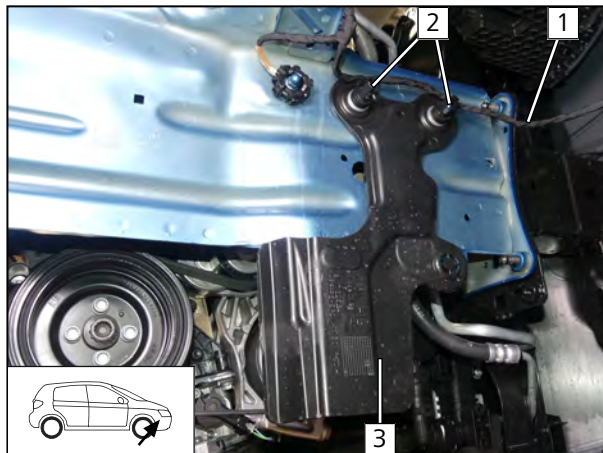


Fig. 17

- 1 Original vehicle wiring harness
- 2 Remove and discard original vehicle wiring harness bracket.
- 3 Remove and discard deflector.

Fastening original vehicle wiring harness

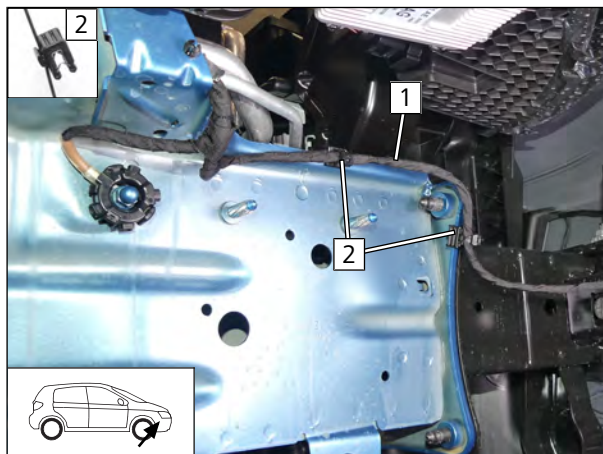


Fig. 18

- 1 Original vehicle wiring harness
- 2 Edge clip cable tie

Aligning original vehicle tab

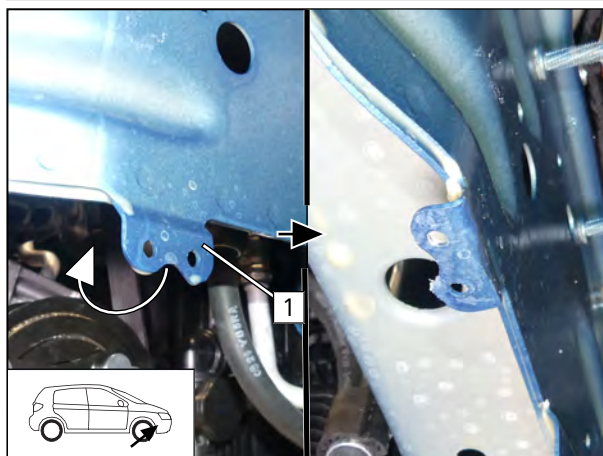


Fig. 19

- 1 Bend original vehicle tab as shown.



Positioning spacer, fastening HG wiring harness

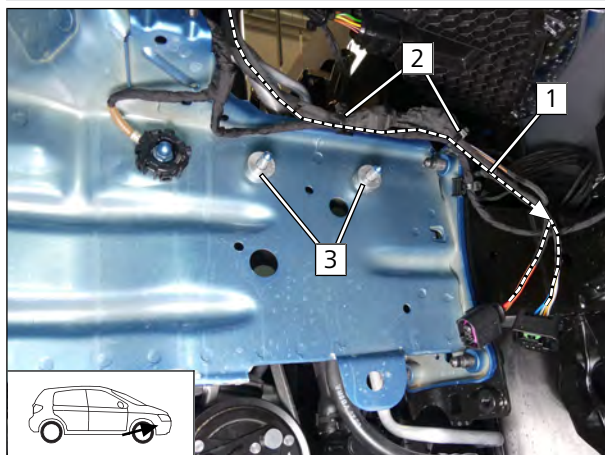


Fig. 20

- 1 Fasten HG wiring harness with cable tie 2 to original vehicle wiring harness.
- 3 Original vehicle stud bolt, spacer (10)

8.2 Heater assembly installation

View of heater assembly

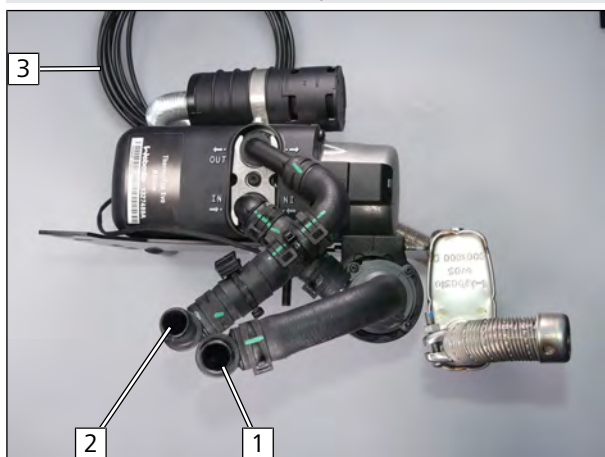


Fig. 21

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

Assigning heater assembly hoses

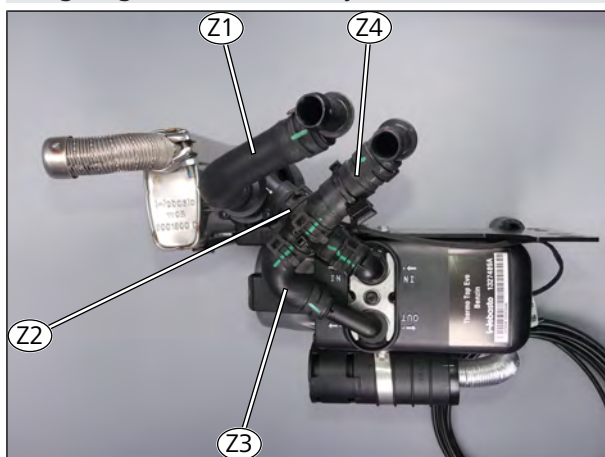


Fig. 22

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



Turning edge clip cable tie

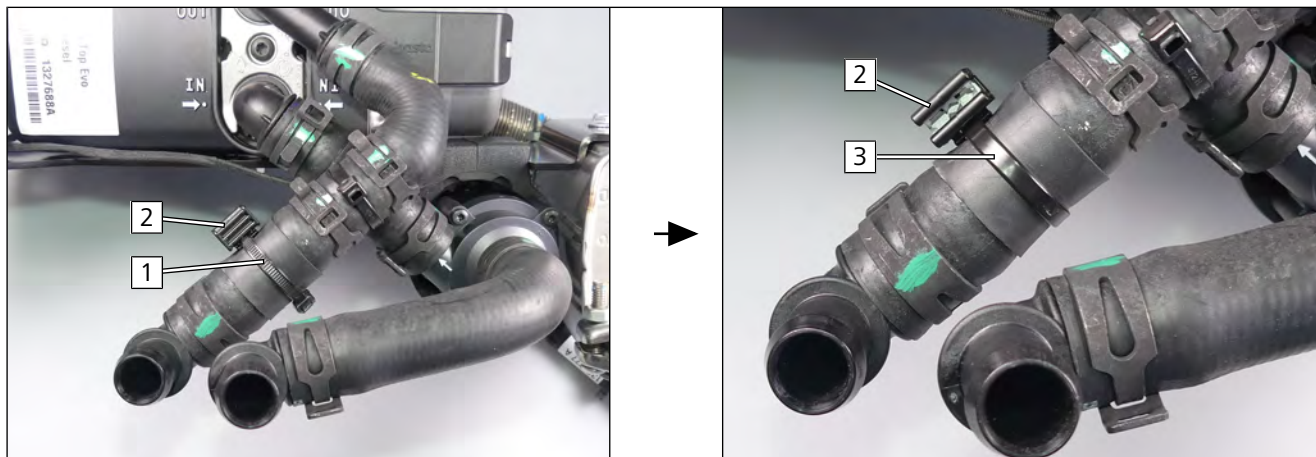


Fig. 23

- 1 Carefully cut off the cable tie.
- 2 The clip will be reused.
- 2 Turn the clip by 180°, fasten with new cable tie
- 3.

Premounting spacer

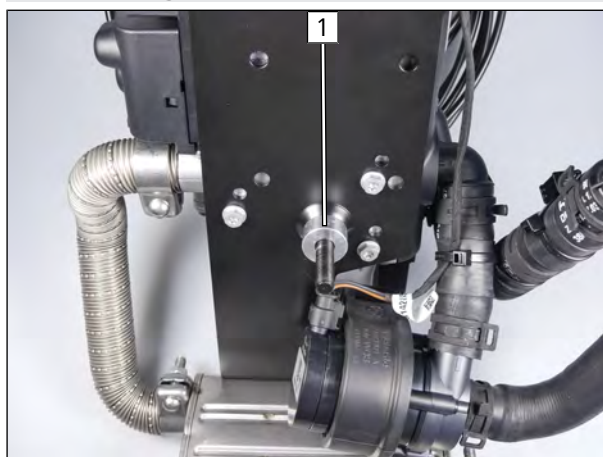


Fig. 24

- 1 10 spacer

Mounting HG wiring harness

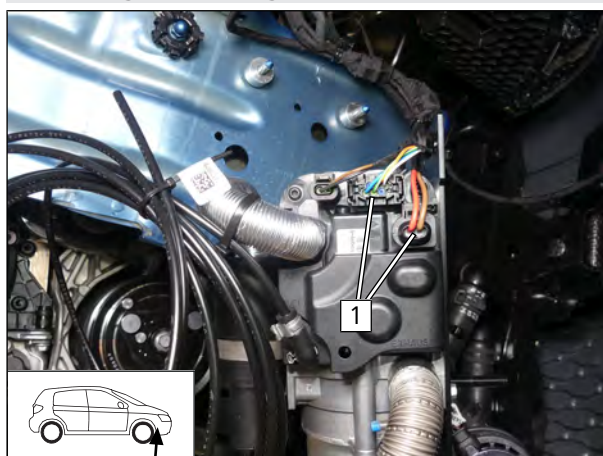


Fig. 25

- 1 Heater wiring harness connector



Heater assembly installation

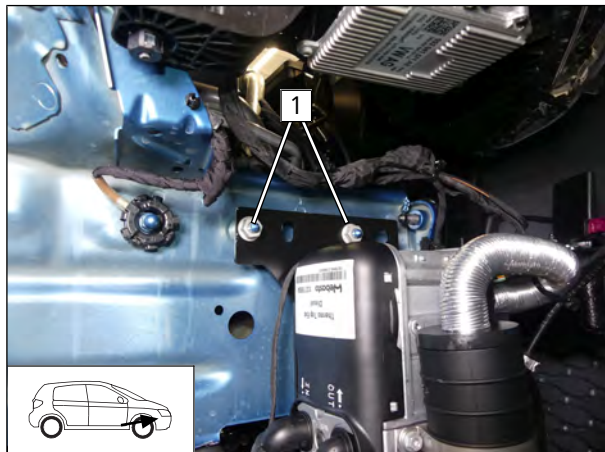


Fig. 26

► Mount flanged nut **1** loosely.

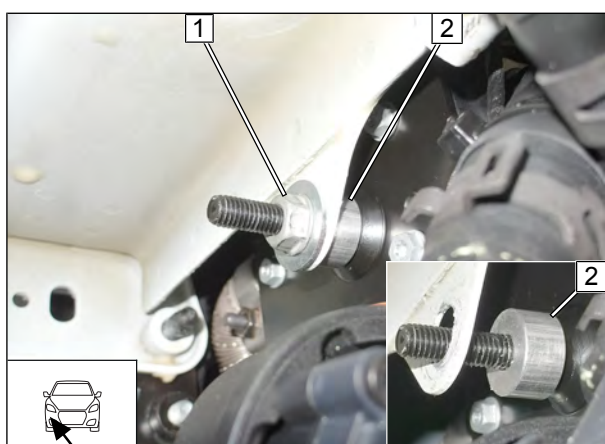


Fig. 27

1 Mount heater bracket stud bolt, spacer (10), original vehicle tab, large diameter washer, flanged nut loosely

2 10 spacer

Checking distance

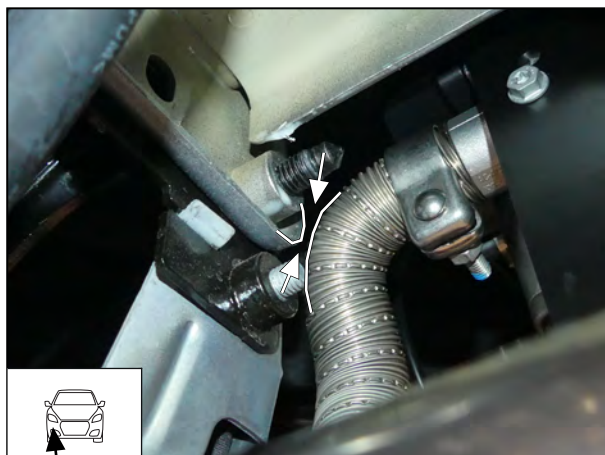


Fig. 28



Danger of damage to components

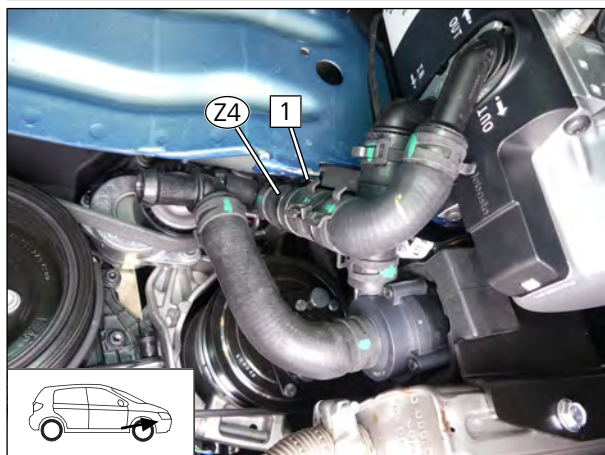
► Ensure sufficient distance from neighbouring components, correct if necessary.



Tighten all the screw connections of the heater assembly.



Fastening hose **Z4**



- 1 Attach edge clip cable tie to folded edge.

Fig. 29



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

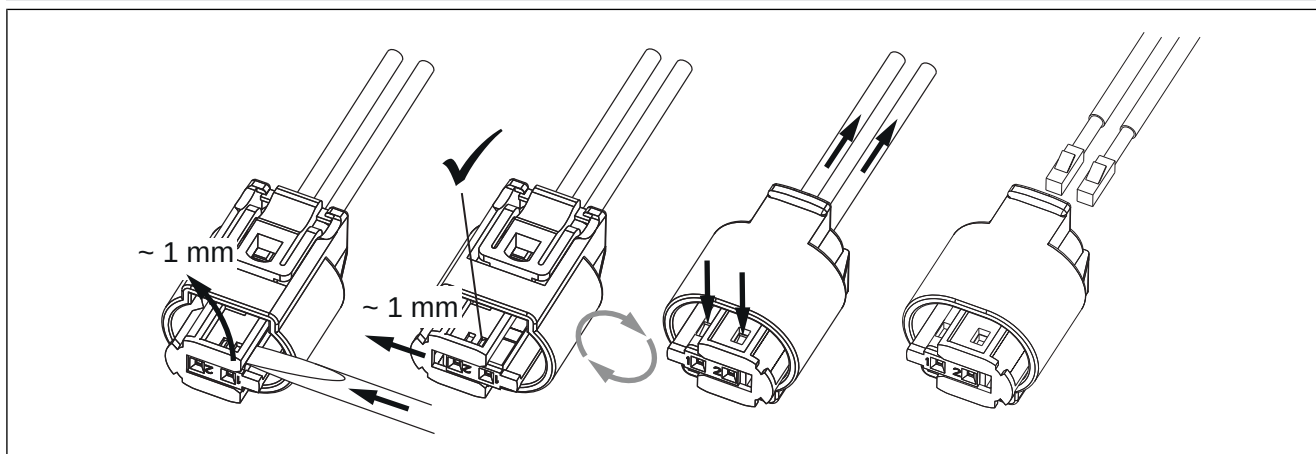


Fig. 30

9.1 Routing fuel line

Cutting to length/assigning corrugated tubes

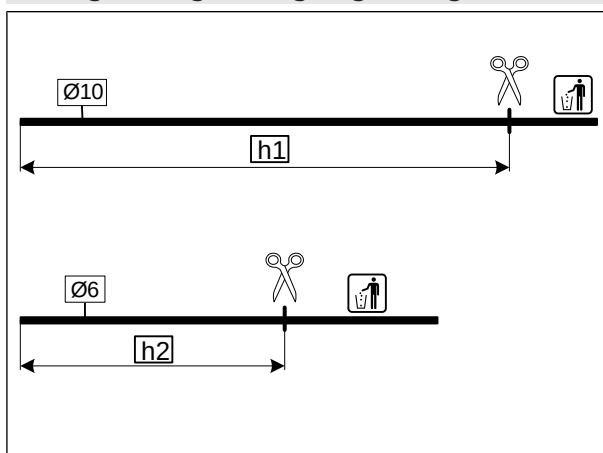


Fig. 31

h1 900

h2 400



Routing fuel line in wheel well

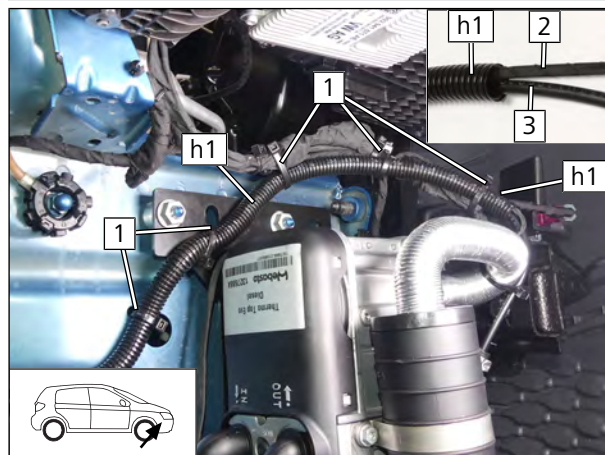


Fig. 32

► Draw fuel line **3** and fuel pump wiring harness **2** into corrugated tube **h1**.

1 Cable tie

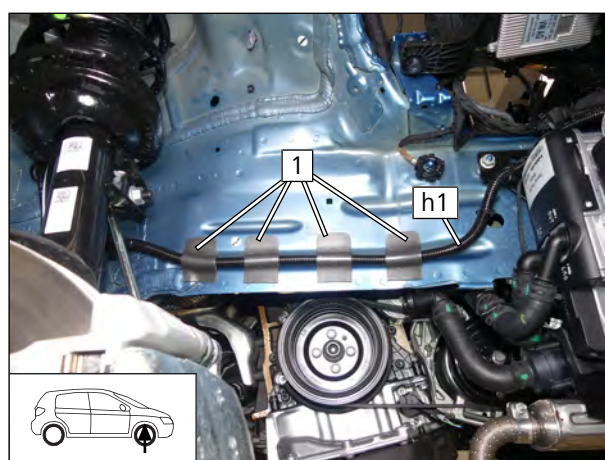


Fig. 33

1 Self-adhesive foam cut in half

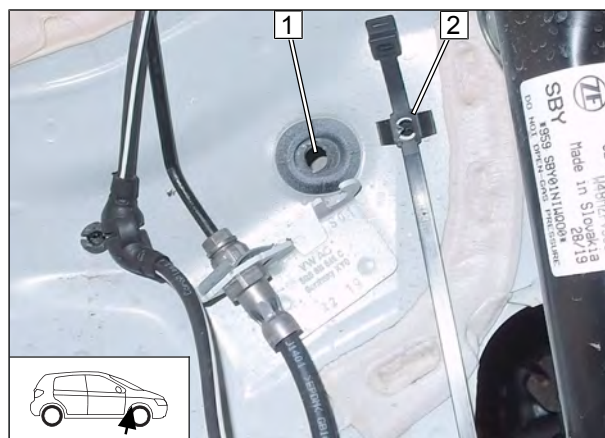


Fig. 34

► Pierce original vehicle pass through **1** in the middle as shown.

2 Eyelet cable tie in original vehicle hole



Routing fuel line to underbody

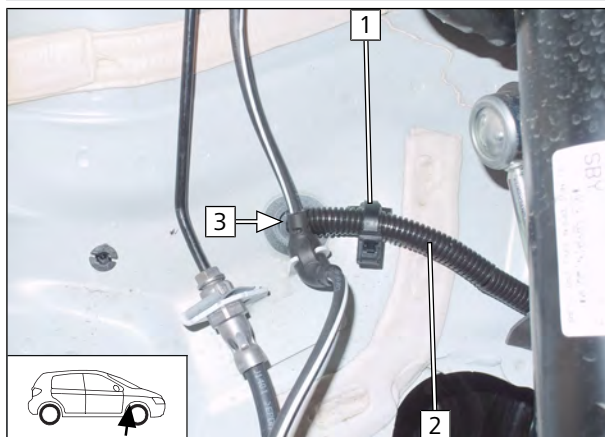


Fig. 35

► Route the fuel line and the fuel pump wiring harness through the crossbeam of the vehicle to the fuel pump installation location (see next fig.). Corrugated tube [2] ends at pass through [3].

- [1] Close eyelet cable tie
- [2] Fuel line and fuel pump wiring harness in corrugated tube [h1]

Routing fuel line and fuel pump wiring harness to fuel pump installation location

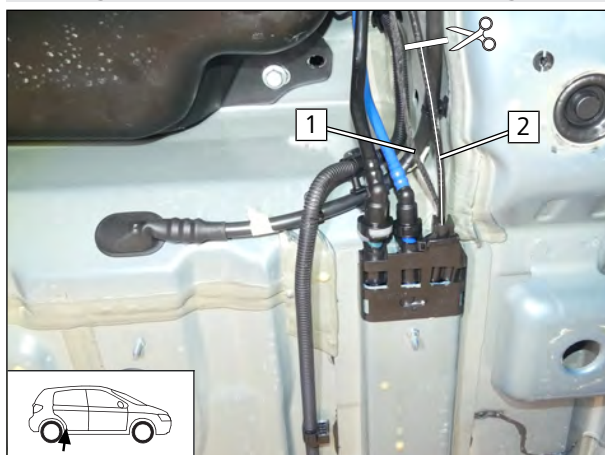


Fig. 36



Locate fuel pump installation location (see 'Mounting and connecting fuel pump'). Cut fuel line [2] after it exits the line duct in accordance with the installation conditions (approx. 250mm).

- [1] Fuel pump wiring harness

Premounting fuel pump

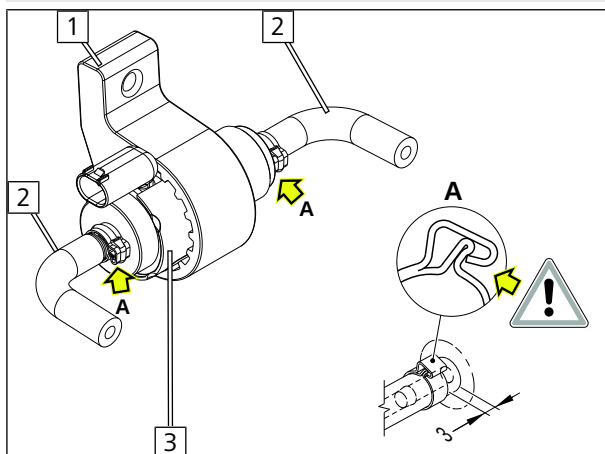


Fig. 37



The alignment of the fuel pump and fuel hoses will be carried out afterwards, during the installation.

- [1] Fuel pump mount
- [2] 90° moulded hose, Ø10 clamp
- [3] Fuel pump



Preparing perforated bracket

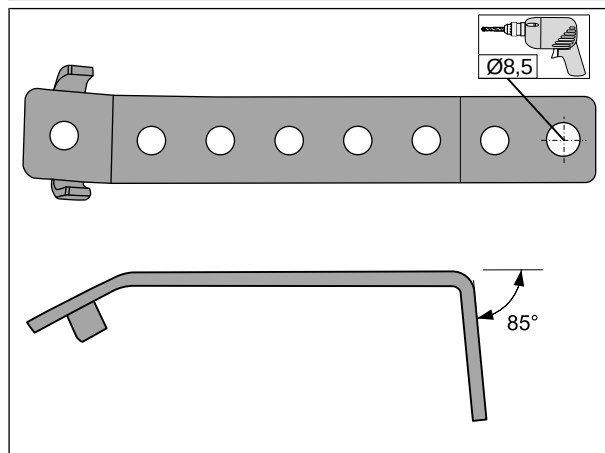
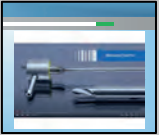


Fig. 38

9.2 Installing FuelFix

Video tutorial for the standard FuelFix installation on Smartphone/Tablet or as a link on the PC:

   DE EN	   
DE: https:// Videoanleitung zum FuelFix-Standard-einbau	EN: https:// Video instructions for FuelFix standard installation

Detaching original vehicle fuel line **1**

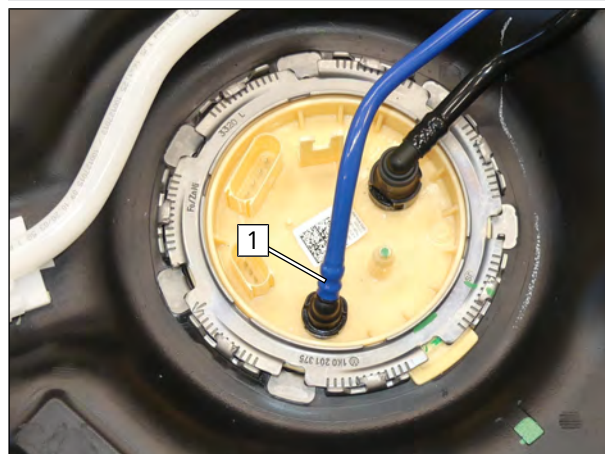


Fig. 39



Dismantle the tank in accordance with the manufacturer's instructions.



Moving label

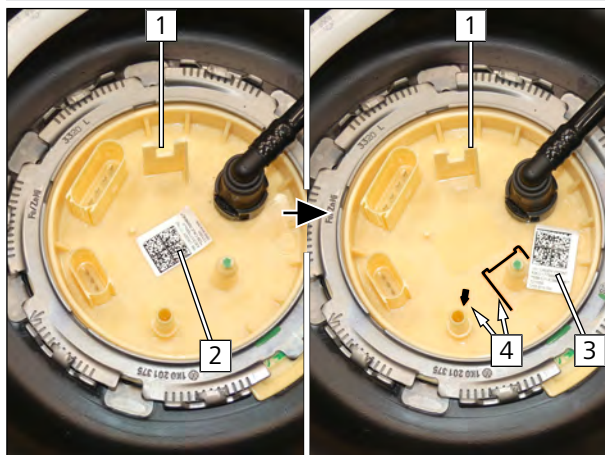


Fig. 40

- 1 Tank fitting
- 2 Original position of label
- 3 New position of label
- 4 Draw guide line on existing embossing.

Preparing drilling template

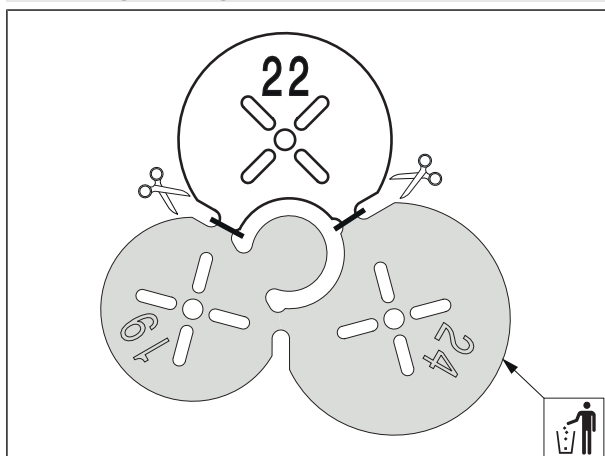


Fig. 41

Work steps F1, F2

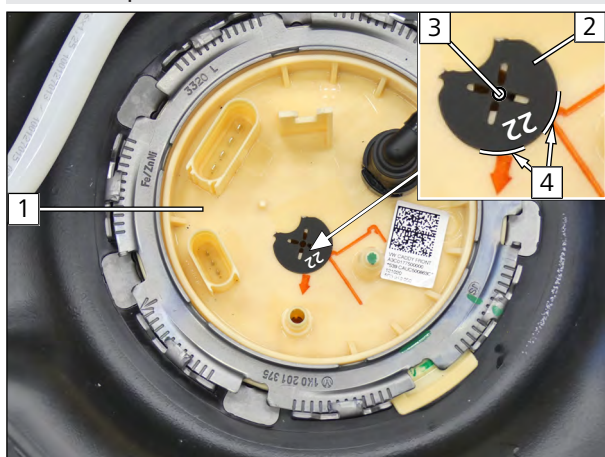


Fig. 42



Observe the installation instructions of the tank extracting device.

- 1 Tank fitting
- 2 Position Ø22 drilling template at guide line 4 as shown.
- 3 Hole pattern



Work step F3



Fig. 43



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. 44

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



Fig. 45

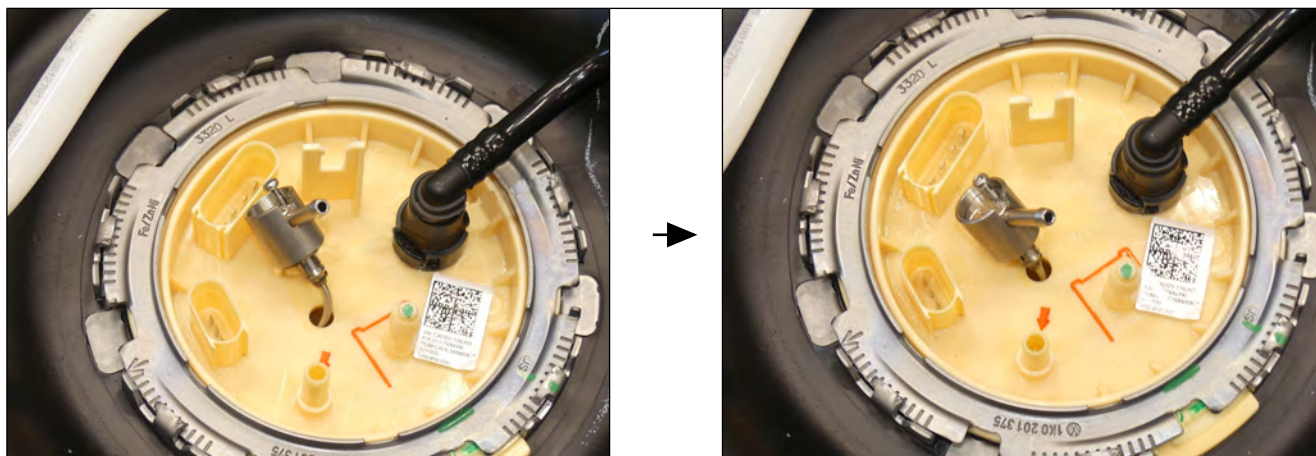


Fig. 46

Work steps F5.3, F5.4



Fig. 47

► Align FuelFix **1** as shown.

Work step F6

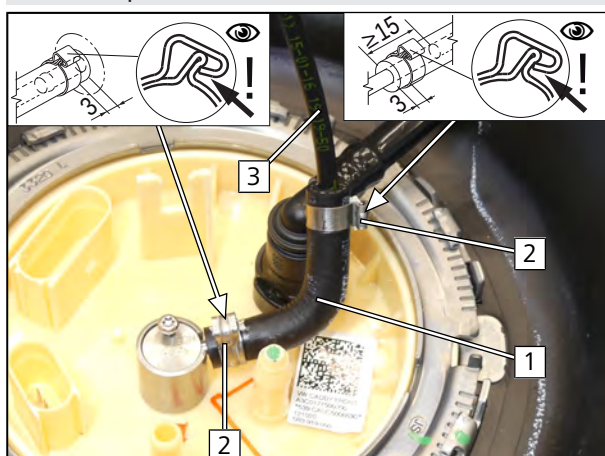


Fig. 48

- 1** 90° moulded hose
- 2** Ø10 clamp
- 3** Fuel line of FuelFix



Work step F7

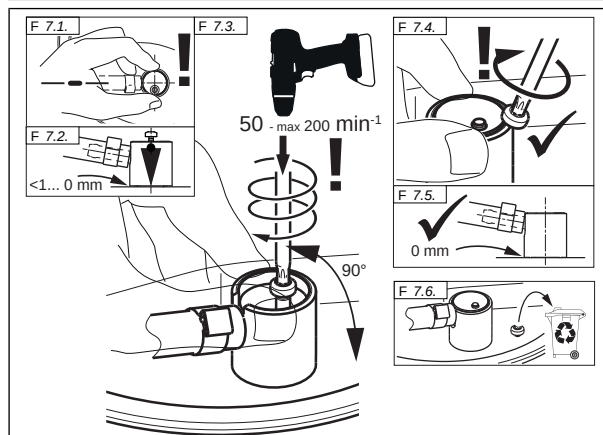


Fig. 49



DANGER

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

Work step F8



Fig. 50

Securing, routing on tank and fastening fuel line

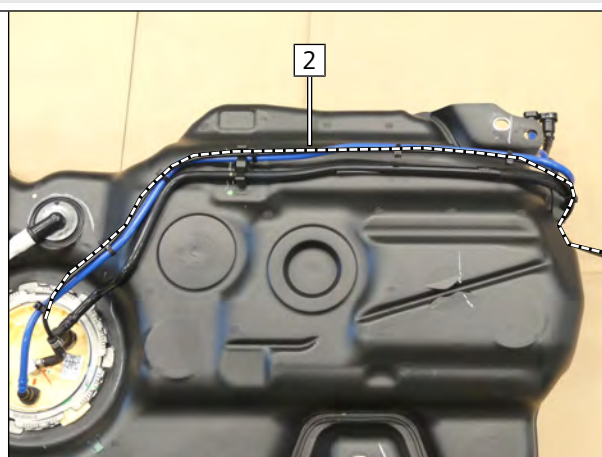
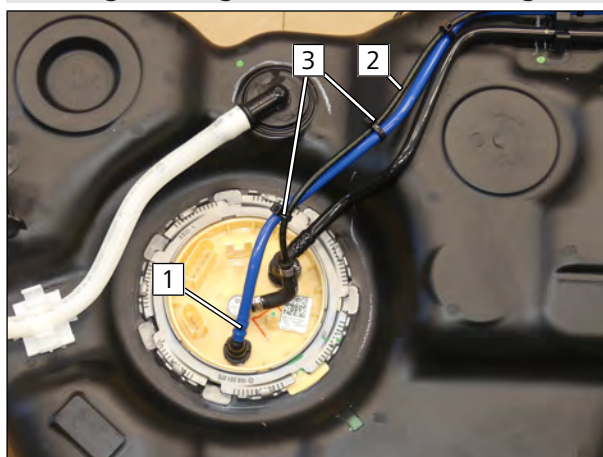


Fig. 51

- 1 Mount original vehicle line.
 - 2 Fuel line of FuelFix
 - 3 Cable tie for tension relief
- 2 Route the fuel line along the tank and fasten it on the original vehicle line with cable ties.



9.3 Mounting and connecting fuel pump



Mount the tank as per the manufacturer's instructions.

Mounting tank and fuel pump perforated bracket

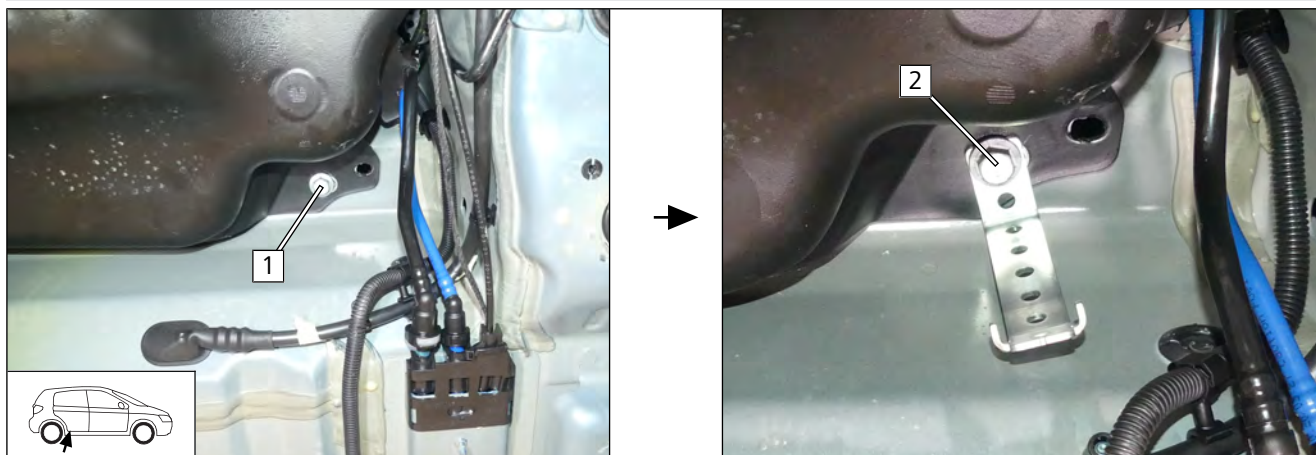


Fig. 52

1 Fastening point for fuel pump

2 Original vehicle bolt, perforated bracket, tank, original vehicle thread

Mounting fuel pump



Fig. 53

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

Assembling fuel pump connector X7

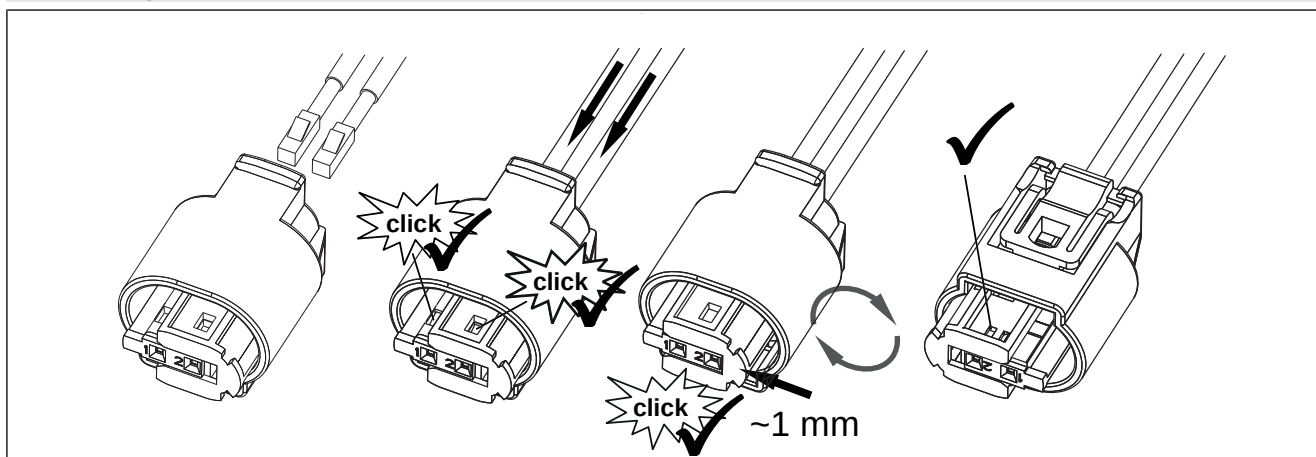


Fig. 54



Connecting fuel pump

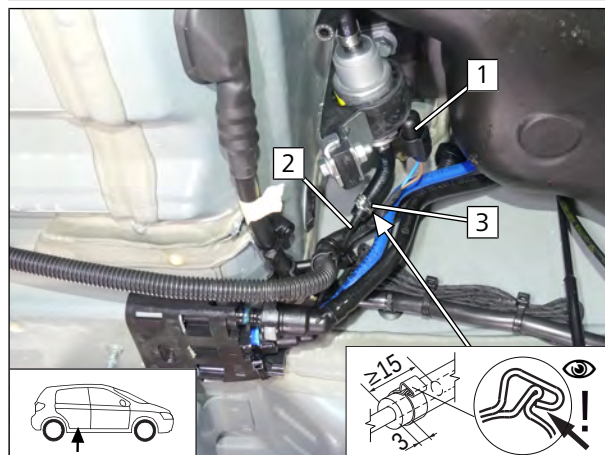


Fig. 55

- 1 Fuel pump wiring harness, connector X7 mounted
- 2 HG fuel line
- 3 Ø10 clamp

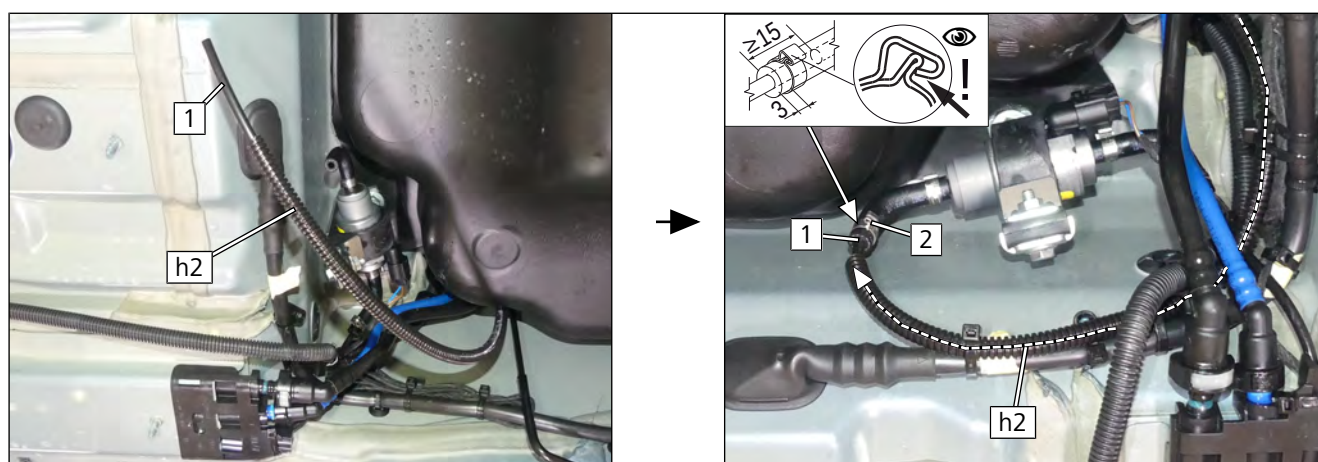


Fig. 56

► Draw fuel line of FuelFix **1** into corrugated tube **h2**, route as shown, fasten with cable ties and connect.

- 2 Ø10 clamp



10 Coolant

10.1 Preliminary work on vehicle

Shortening and mounting hose section

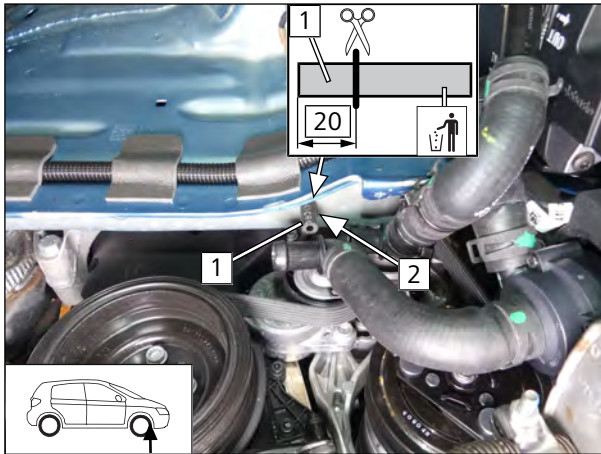


Fig. 57

- 1 Shortened hose section with 4.5 inner $\varnothing_i$
- 2 Original vehicle stud bolt, shortened hose section with 4.5 inner $\varnothing_i$ 1

Drilling hole

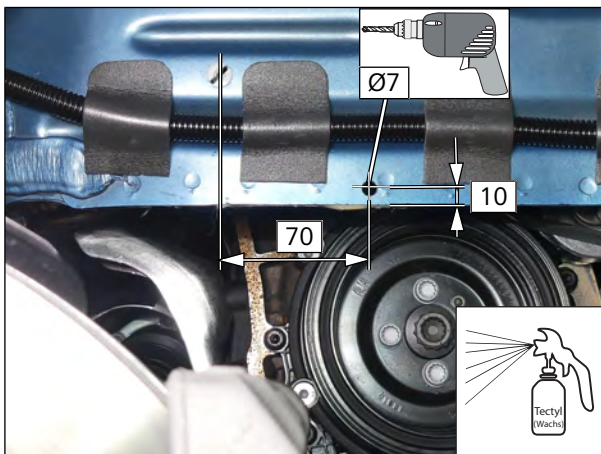


Fig. 58

Perforated bracket 1 installation

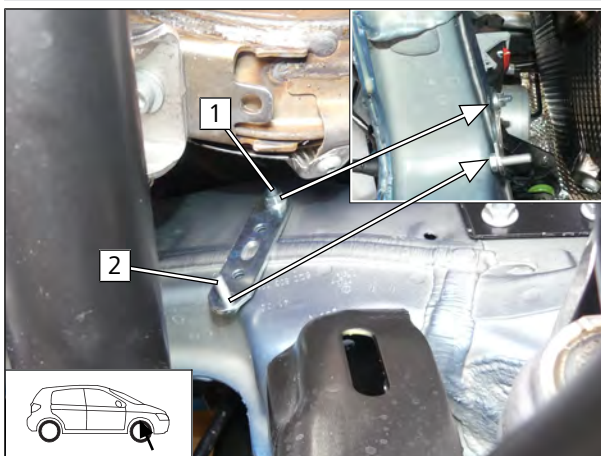


Fig. 59

- 1 Original vehicle stud bolt, perforated bracket 1, flanged nut
- 2 M6x20 bolt, perforated bracket 1



Preparing perforated bracket 2

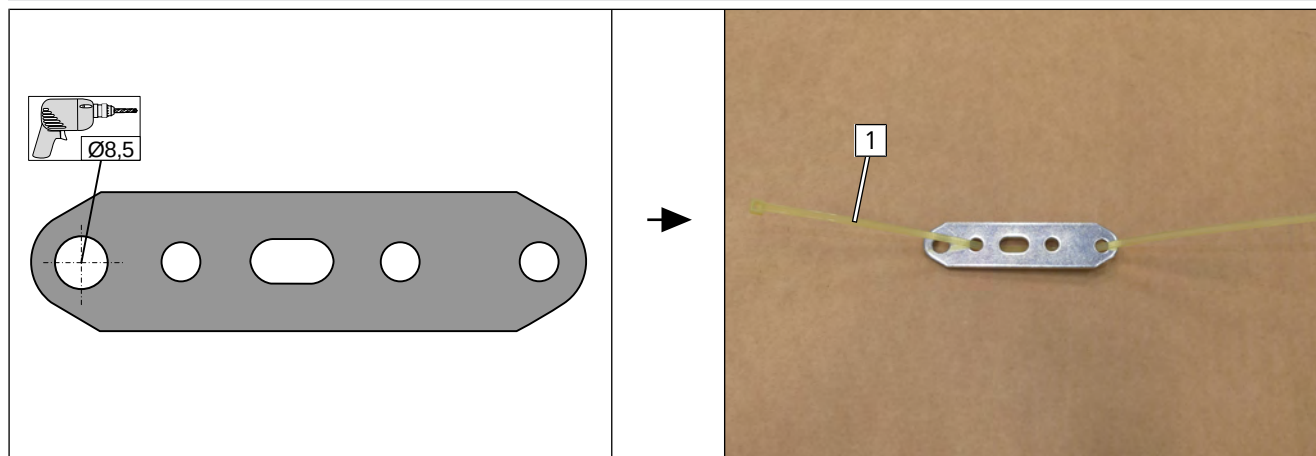


Fig. 60

- 1 Premount 300 long cable tie as shown.

Mounting perforated bracket 2

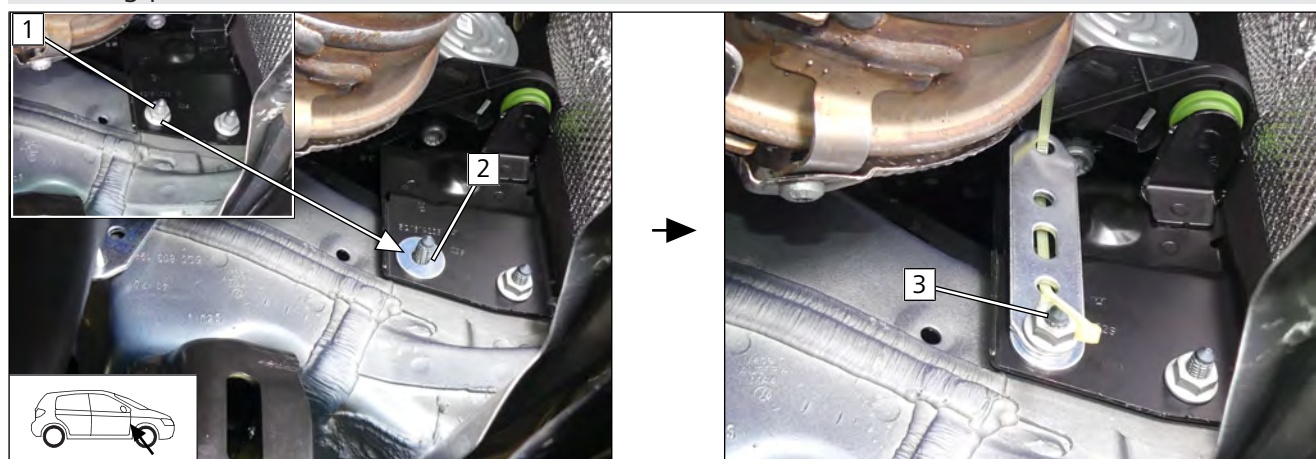


Fig. 61

- 1 Remove original vehicle nut, it will be reused.
Position large diameter washer onto original vehicle stud bolt.
- 3 Original vehicle stud bolt, perforated bracket 2, original vehicle nut

Spacer nut installation

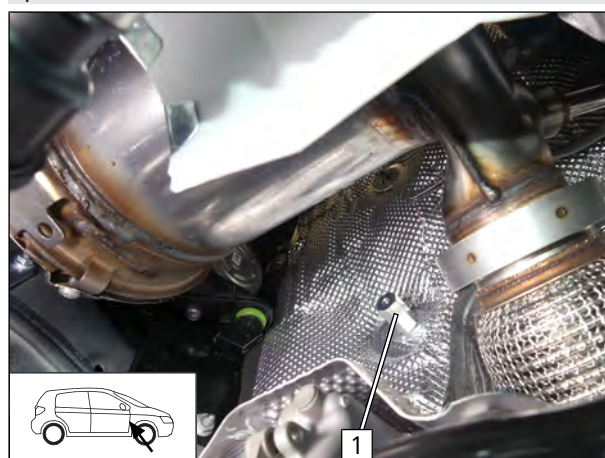


Fig. 62

- 1 Original vehicle stud bolt, M6x30 spacer nut



Removing hose of engine outlet/heat exchanger inlet

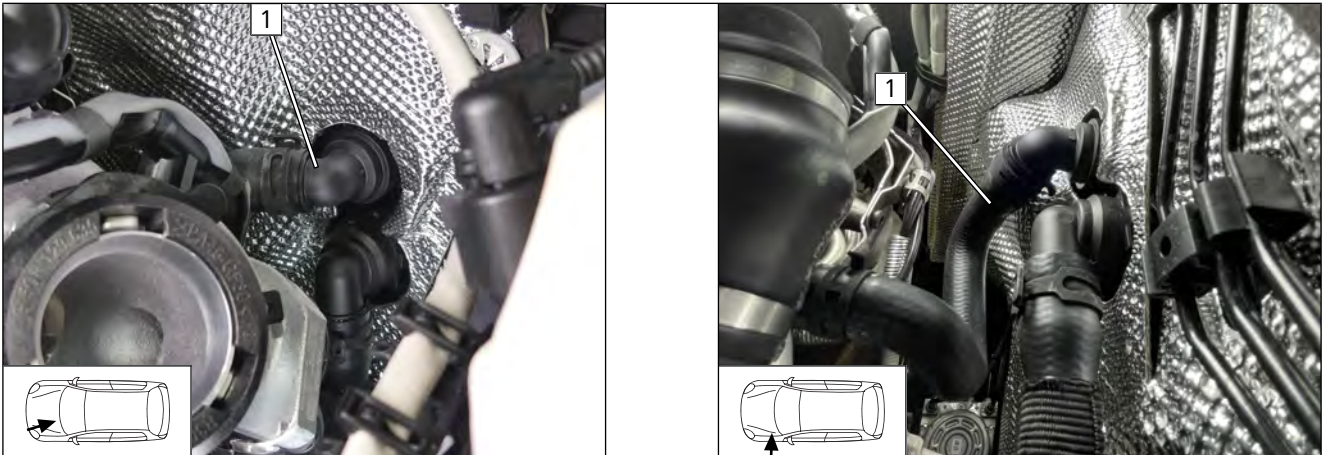


Fig. 63

- Remove hose of engine outlet/heat exchanger inlet **1**, original vehicle quick-release coupling and spring clips will be reused.

10.2 Preparing hoses

Cutting hoses to length

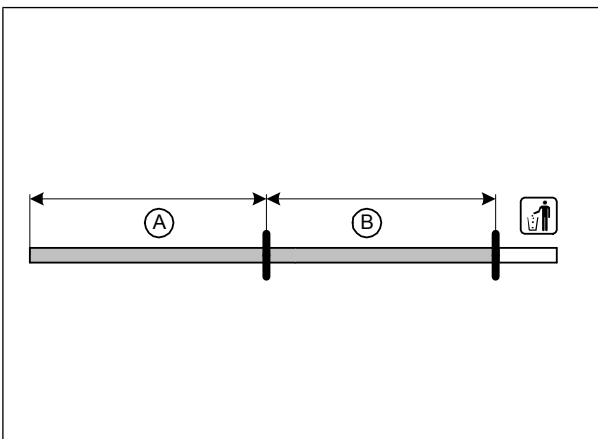


Fig. 64

Ⓐ 930

Ⓑ 940

Preparing hoses Ⓐ and Ⓑ

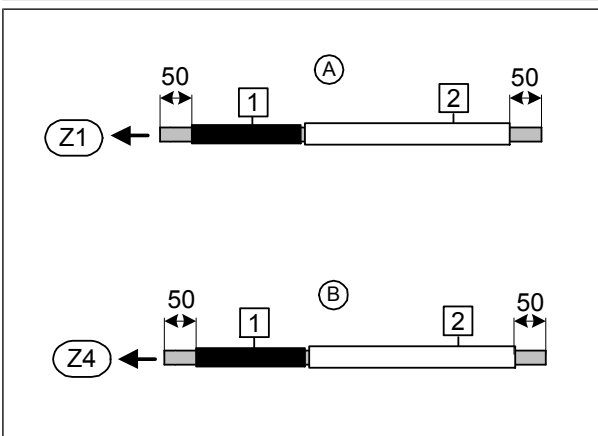


Fig. 65



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.



Cutting point

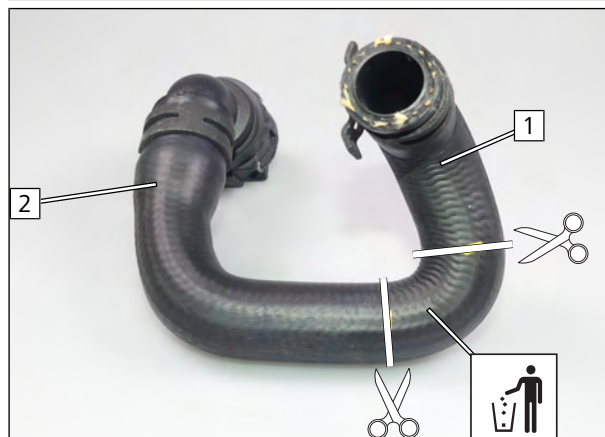


Fig. 66

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

Preparing hose section



Fig. 67

☞ Ø18x18 or Ø18x18/90° connecting pipes

- 1 Engine outlet hose section with original vehicle spring clip
- 2 Heat exchanger inlet hose section with quick-release coupling and spring clip

Preparing hose group with hoses (A) and (B)

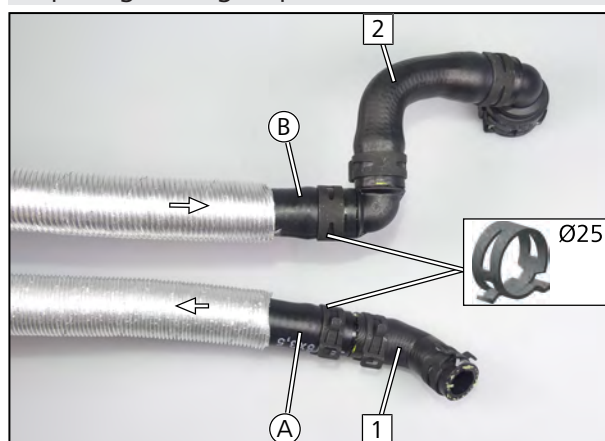


Fig. 68

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



10.3 Hose routing diagram

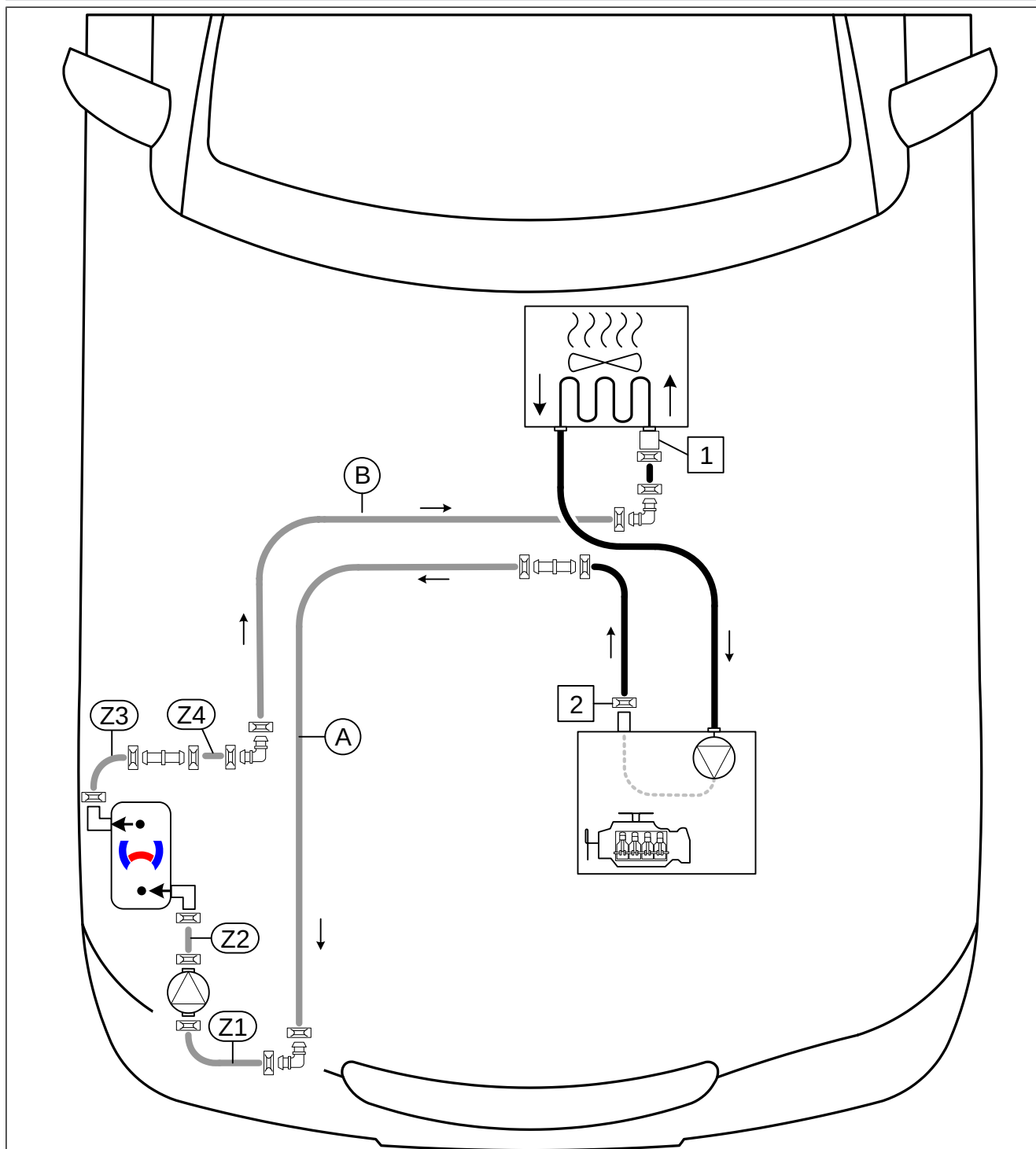


Fig. 69

All spring clips without a specific designation  = Ø25;

All connecting pipes  and  = Ø18x18

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



10.4 Coolant circuit installation

Engine outlet connection

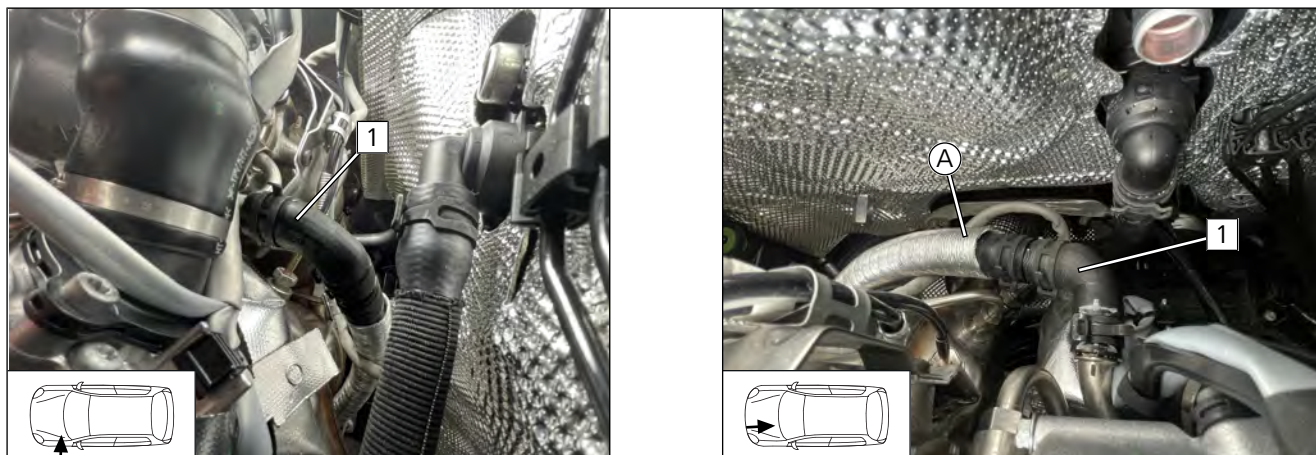


Fig. 70

- 1 Connect hose section with original vehicle spring clip on engine outlet.

Heat exchanger inlet connection

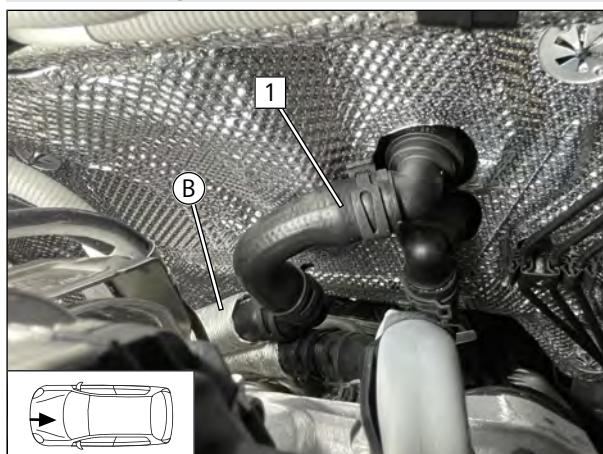


Fig. 71

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

Routing and fastening hoses (A) and (B)

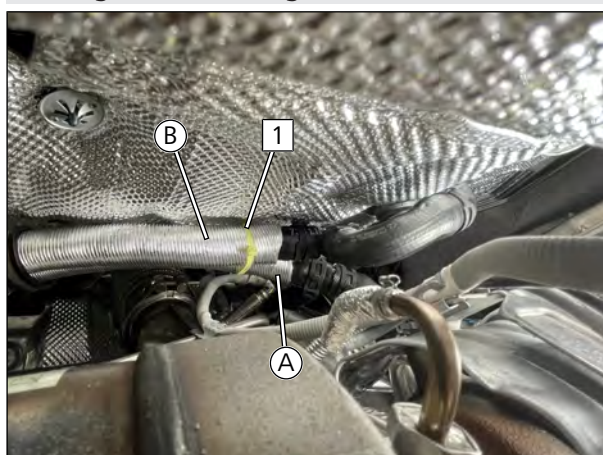


Fig. 72

- Fix hoses (A) and (B) with 300 long cable tie 1.

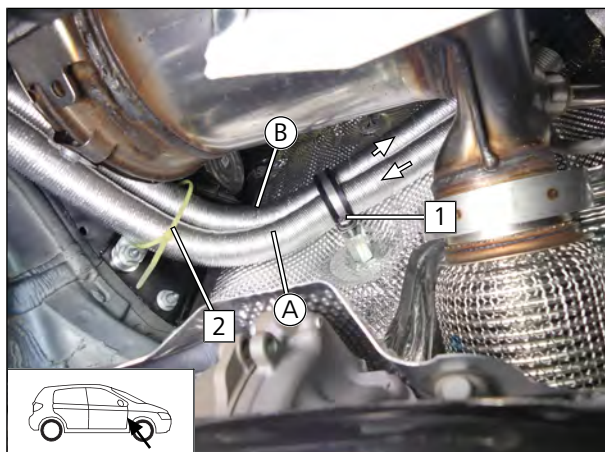


Fig. 73

- 1 Mount M6x16 bolt, spring lockwasher, Ø48 rubber-coated p-clamp loosely
- 2 Close premounted loose cable tie.

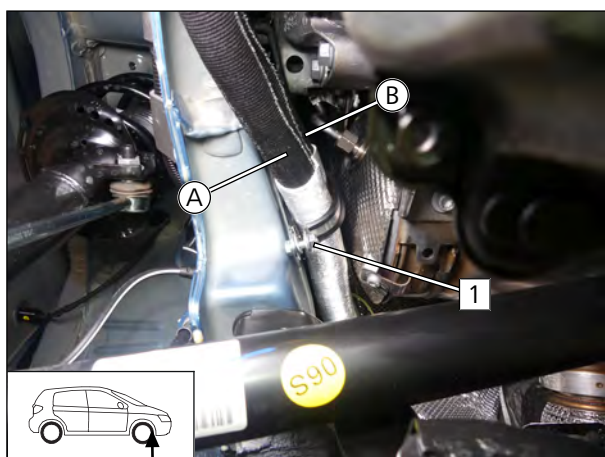


Fig. 74

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

Connecting hoses (B) and (Z4)

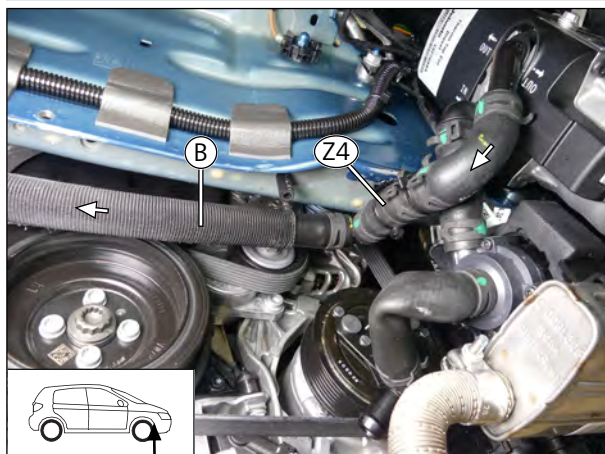


Fig. 75



Connecting hoses (A) and (Z1)

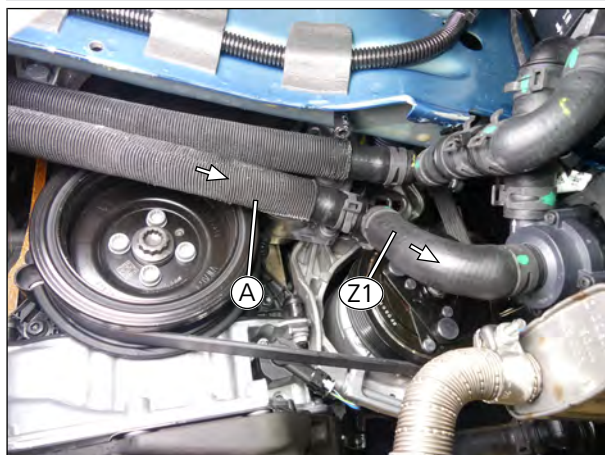


Fig. 76

Preparing perforated bracket

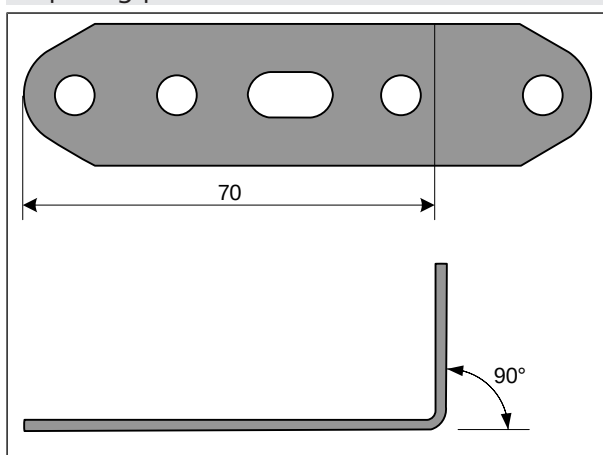


Fig. 77

Mounting perforated bracket, fastening hoses (A) and (B)

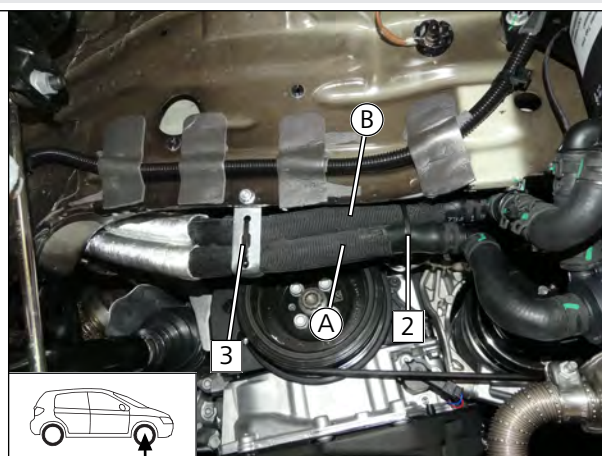


Fig. 78

 The hoses were dismantled for demonstration purposes.

1 M6x16 bolt, drilled hole, perforated bracket, flanged nut

2 Cable tie

3 Cable tie, perforated bracket, hoses (A) and (B)



Tightening screw connections and cable tie

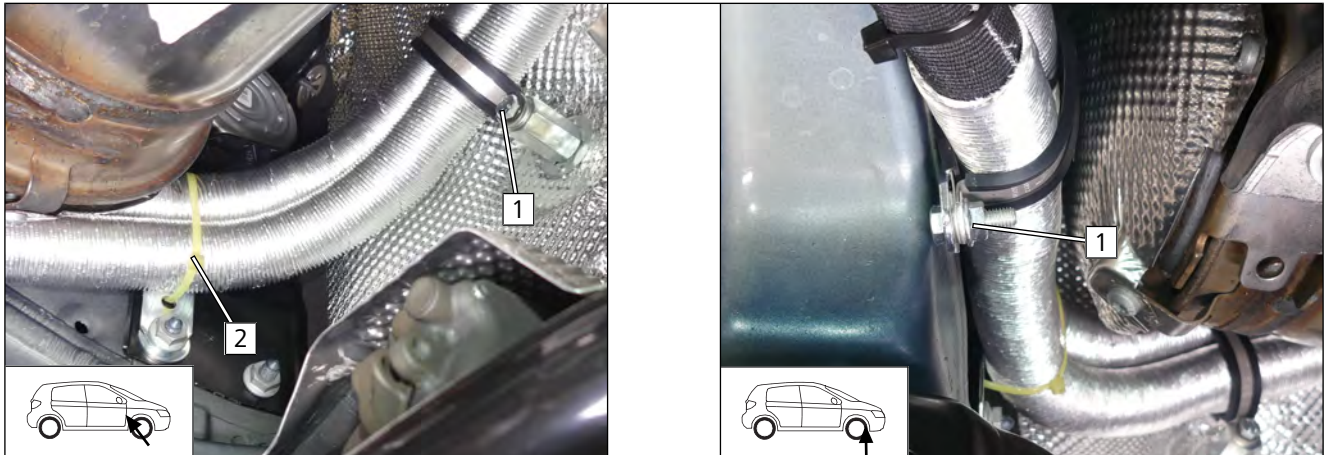


Fig. 79



Tighten all loose screw connections of rubber-coated p-clamps **1** and cable tie **2**.

Aligning hoses, checking distances

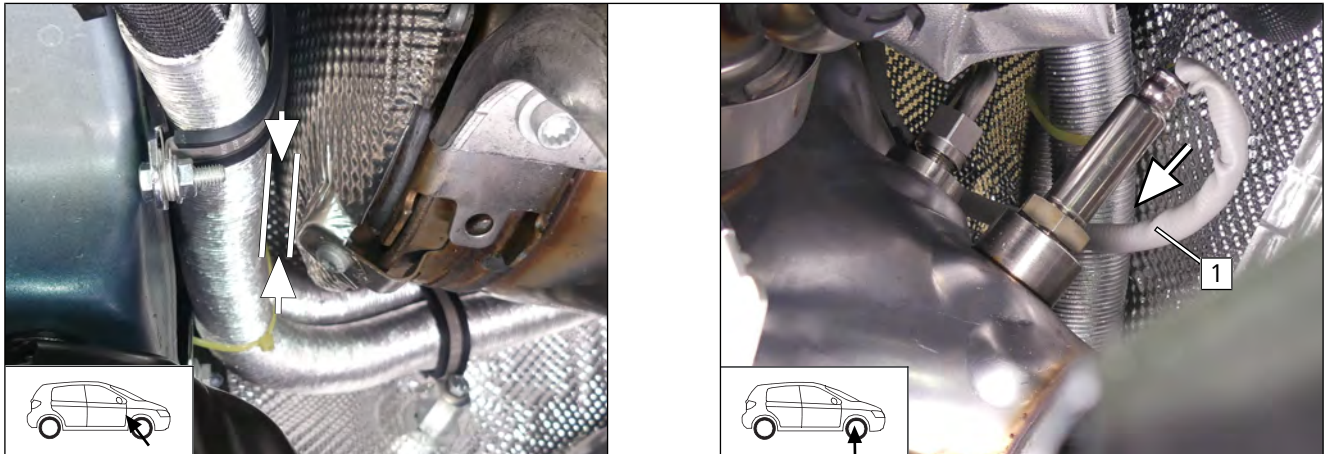


Fig. 80



Ensure sufficient distance from neighbouring components, correct if necessary.



Ensure sufficient distance from probe cable **1**, correct if necessary.





11 Final work for underbody

Adapting engine underride protection

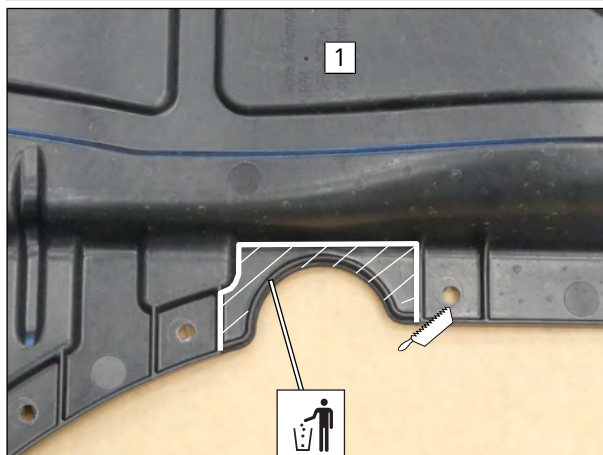


Fig. 81

- Cut engine underride protection **1** as shown.

Preparing wheel-well inner panel

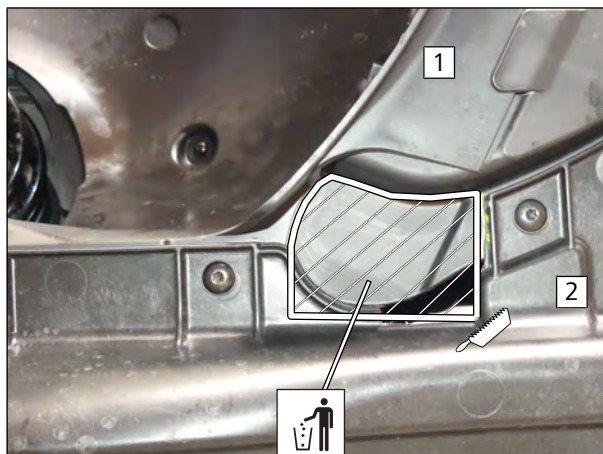


Fig. 82

- Mount wheel-well inner panel **1**.
- Mount engine underride protection **2**.
- Mark wheel-well inner panel **1** as shown, dismantle and cut.

Checking wheel-well inner panel distance

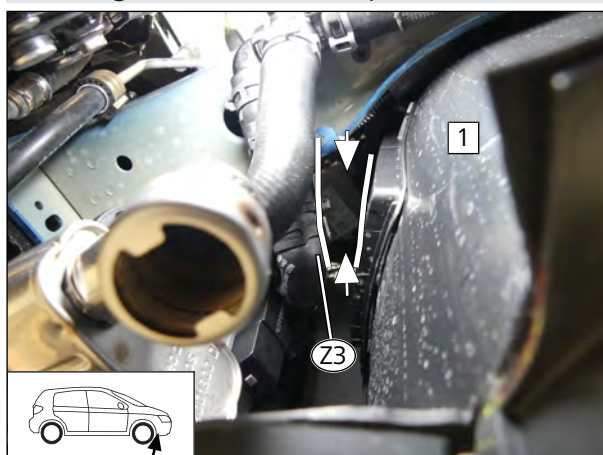


Fig. 83

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



Ensure sufficient distance from neighbouring components, correct if necessary.





Aligning exhaust pipe **a2**



Fig. 84

- Mount underside protection **1** and align exhaust pipe **a2** with the centre of the created opening.



12 Electrical system of passenger compartment

12.1 Dismantling Instructions

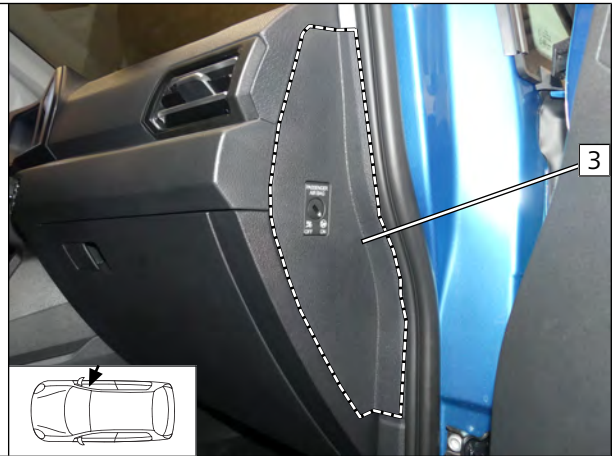
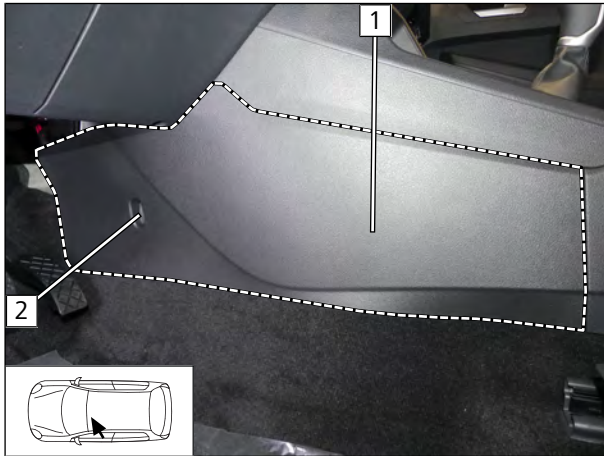


Fig. 85

1 Centre console trim

2 Removing bolt

3 Instrument panel trim (outside)

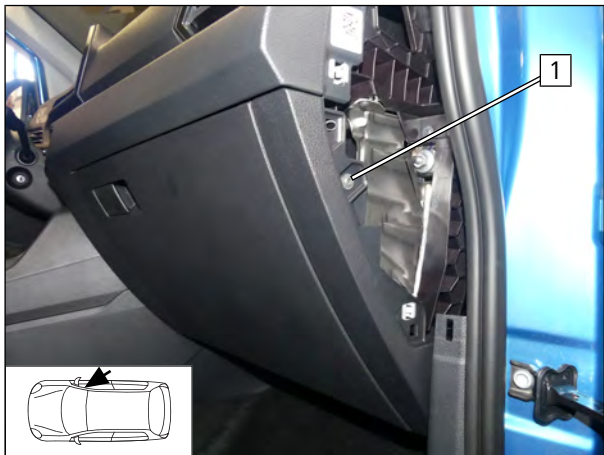


Fig. 86

1 Removing bolt

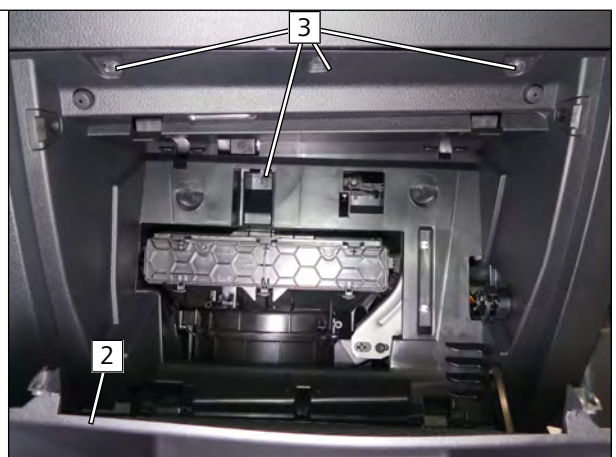
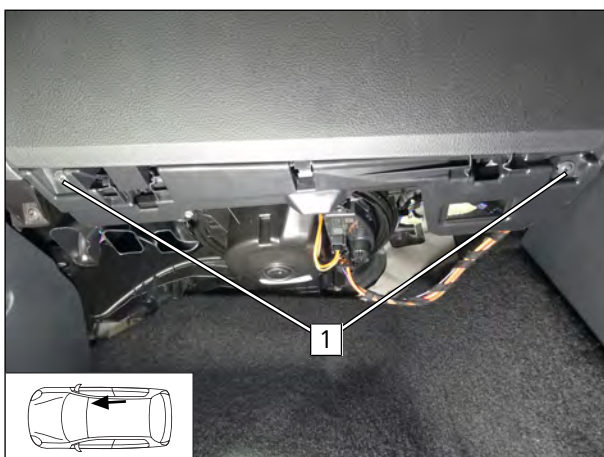


Fig. 87

1 Remove bolts

2 Open the glove box cover to the service position

3 Unscrew bolts, remove glove box



► Detach instrument panel trim piece **1** and tilt it backwards.

Fig. 88



Fig. 89

1 Display trim piece

2 Removing bolt

3 Unscrew bolts, remove Display

Unplugging KSG connector **1**

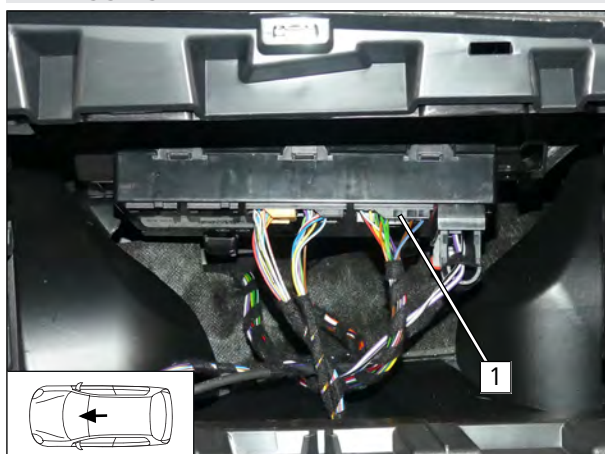


Fig. 90



Preparing Cronus wiring harnesses 1 and 2, assigning only connectors **StT**, **StB** and **StM**

► Insulate components, wires and connectors individually as shown and tie back.



Legend

VW Caddy



Preparing Cronus bracket

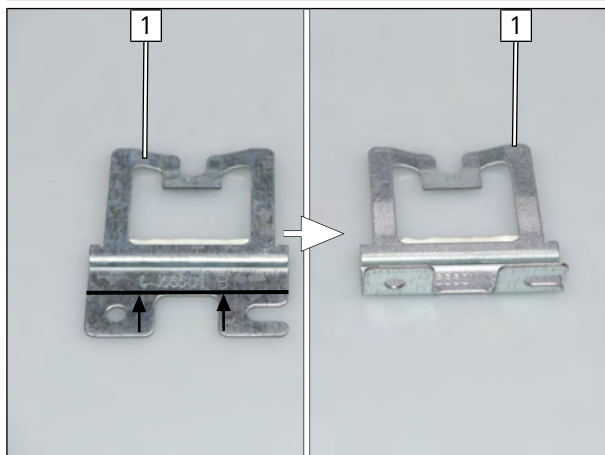


Fig. 92

► Bend bracket **1** as shown.

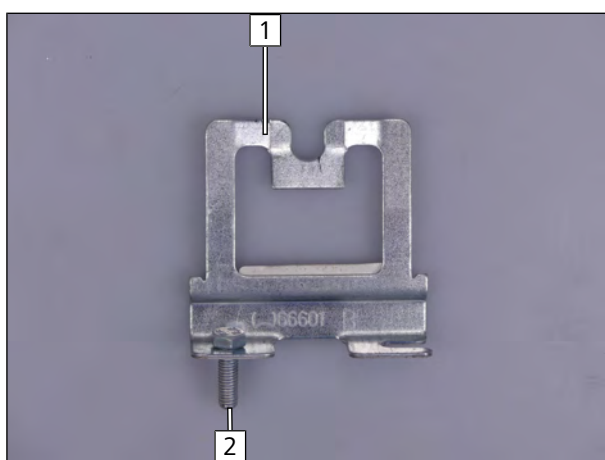


Fig. 93

- 1** Bracket
- 2** M5x16 bolt

Premounting Cronus

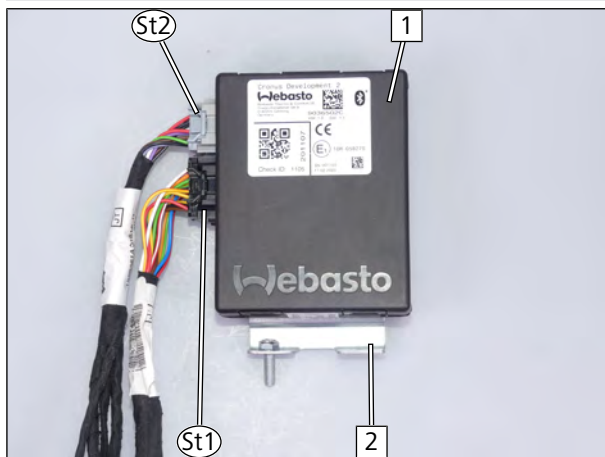


Fig. 94

- 1** Cronus
- 2** Bracket



Routing fan controller wiring harness

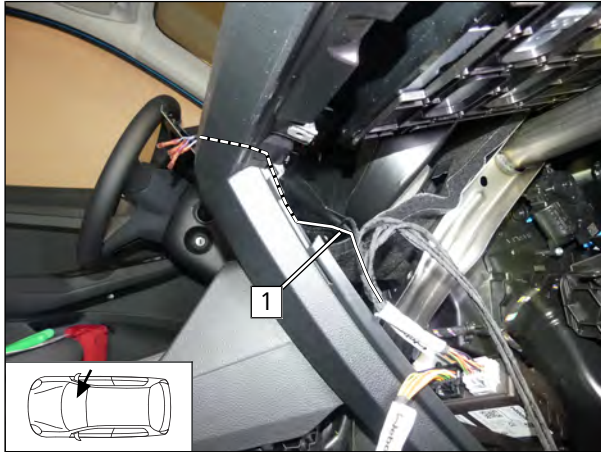


Fig. 95

- 1 Route black (sw) wire **11** and white (ws) wire **12** as well as violet (vi) wire **13** and grey (gr) wire **14** of Cronus wiring harness to KSG.





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

Webasto components	
Abbreviation	Component
CLR	Cold start module
CR	Cronus (passenger compartment control unit)
D1	Diode
D2	Diode group
Dia	Diagnosis connection
F0	Additional fuse for power supply
F1	Heater main fuse
F2	Fan main fuse
F3	Cronus main fuse
HG	Heater TT-Evo
LA	Power adapter
PWM GW	Pulse width modulator gateway
RTD	Temperature sensor
St1	16-pin, black connector of Cronus wiring harness 1
St2	14-pin, grey connector of Cronus wiring harness 2
StA	Male plug for Plug&Play wiring harness
StB	4-pin female plug for control element wiring harness
StF	Female plug for Plug&Play wiring harness
StI	Female plug for passenger compartment wiring harness
StM	Male plug for engine compartment wiring harness
StT	Male plug for push button wiring harness
StZ	Male plug for additional relay

Symbols	
Graphic	Designation
X	Cutting point
●	existing electrical connection
●	new electrical connection
	Wiring harness section or protective sleeving
	Insulate and tie back wire
	The connection is carried out as described in the heater installation documentation
Wire colours	
Abbreviation	Colour
bg	beige
bl	blue
br	brown
dbl	dark blue
dgn	dark green
ge	yellow
gn	green
gr	grey
hbl	light blue
hgn	light green
la	salmon
or	orange
pk	pink
ro	Pink
rt	red
sw	black
vi	violet
ws	white



12.4 Fan controller

Cutting point

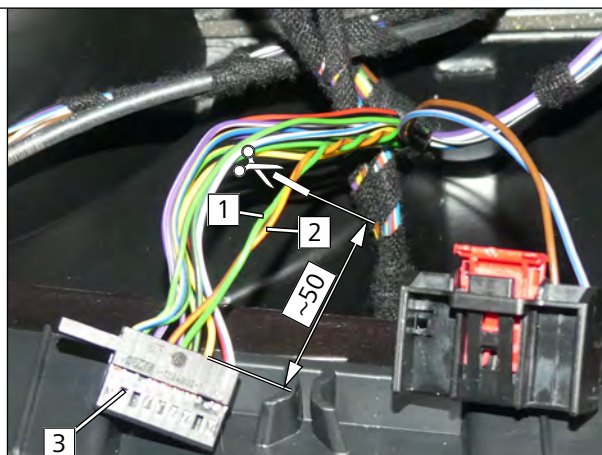


Fig. 97



Remove connector housing from KSG connector A.

- 1 Green (gn) wire of KSG connector A / pin 5
- 2 Orange/brown (or/br) wire of KSG connector A / pin 6
- 3 20-pin KSG connector A

Connection to air-conditioning control unit

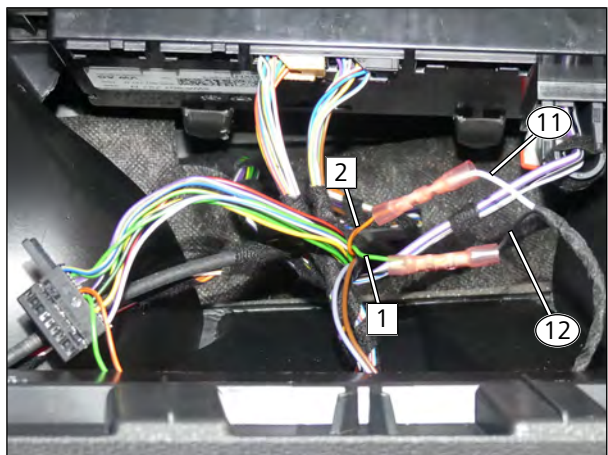


Fig. 98



Produce all the following electrical connections only with shrinkable butt connectors.

- 1. crimp
- 2. shrink

- 1 Green (gn) wire of CAN High
- 2 Orange/brown (or/br) wire of CAN Low
- 11 White (ws) wire of Cronus wiring harness 2
- 12 Black (sw) wire of Cronus wiring harness 2

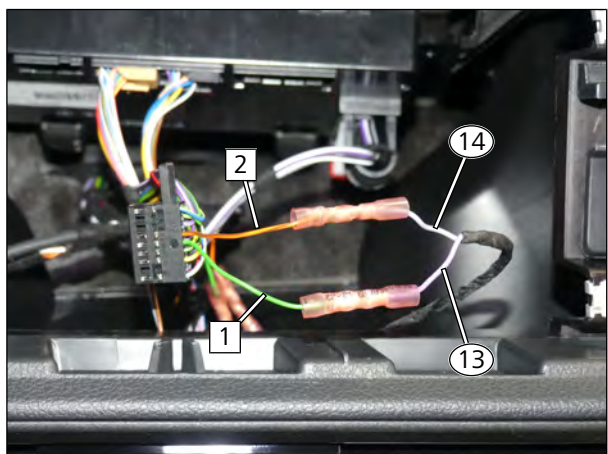


Fig. 99

- 1 Green (gn) wire of KSG connector A / pin 5
- 2 Orange/brown (or/br) wire of KSG connector A / pin 6
- 13 Violet (vi) wire of Cronus wiring harness 2
- 14 Grey (gr) wire of Cronus wiring harness 2



Mounting KSG connector A, fastening wiring harness

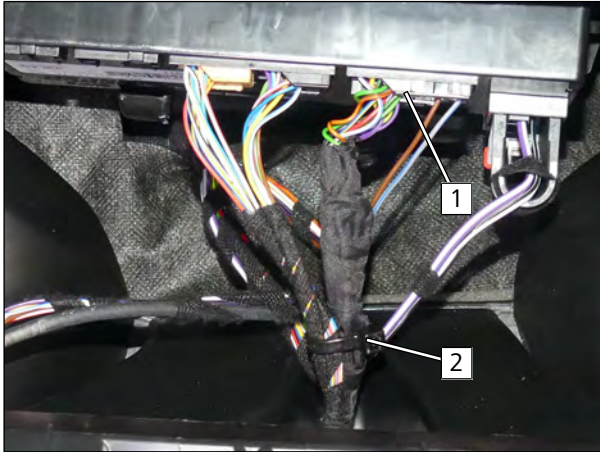


Fig. 100



Reinstall KSG.

- 1 KSG connector A
- 2 Cable tie

Mounting Cronus

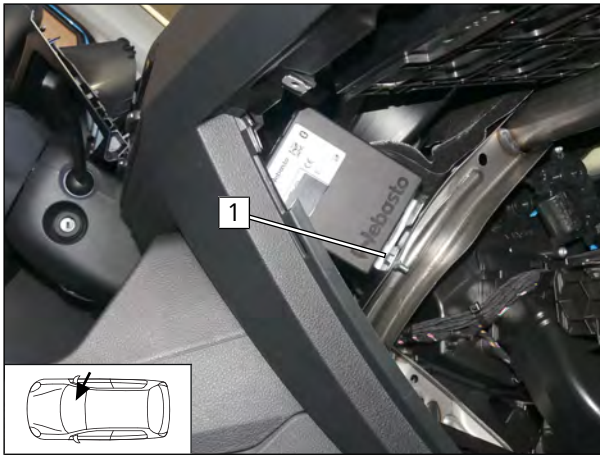


Fig. 101

- 1 Premounted M5x16 bolt in Cronus bracket, original vehicle hole, large diameter washer, nut



12.5 Connection of Cronus to push button



The installation location of the Cronus push button should be confirmed with the end customer and should comply with the installation conditions.

- Mount the push button and connect male plug **StT** of Cronus wiring harness 1 with the connection plug of the Cronus push button as shown.
- When using the push button only as control element, it is necessary at this point to connect connection plug **StI** of the engine compartment wiring harness with female plug **StM** of Cronus wiring harness 1.

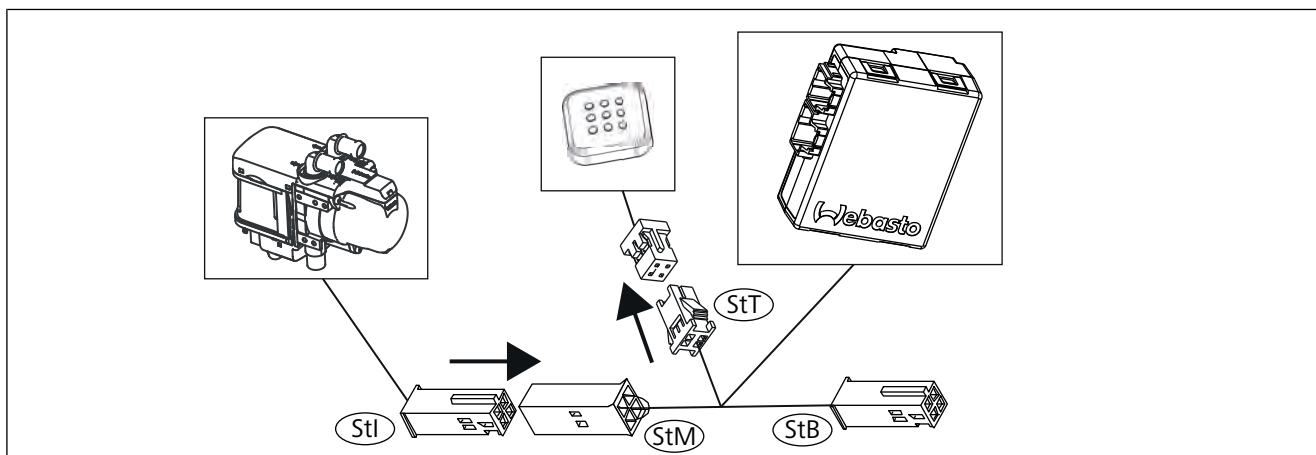


Fig. 102

12.6 Heater connection and installation of Telestart or MultiControl AM control element



Install the control element in accordance with the provided relevant general installation documentation. The installation location of the optional control element MultiControl should be confirmed with the end customer and should comply with the installation conditions. Ensure sufficient wire length for the following connections.

- Connect female plug **StM** of Cronus wiring harness 1 with connection plug **StI** of the engine compartment wiring harness as shown.
- Connect female plug **StB** of Cronus wiring harness 1 with connection plug **1** of the relevant control element as shown.

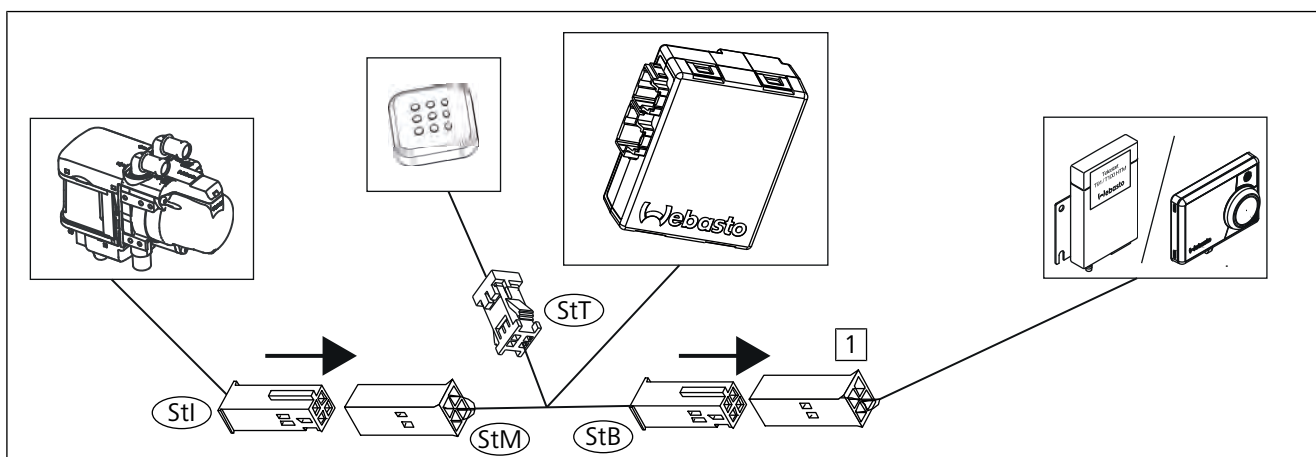
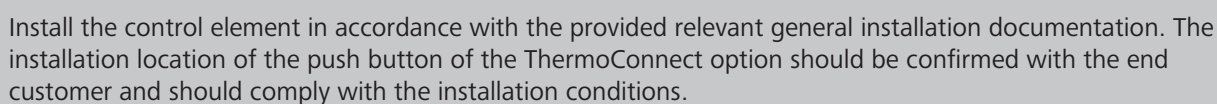
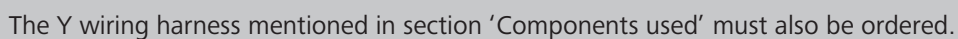


Fig. 103



Preparing Y wiring harness



-
- The diagram illustrates the connection of a cable to a connector in two steps. In the first step, a cable (labeled 1) is shown being inserted into a connector (labeled 2). The connector has four pins, each with a color-coded label: 'rt' (red), 'br' (blue), 'sw' (white), and 'vi' (violet). A legend box shows the color coding: red for 'rt', blue for 'br', white for 'sw', and violet for 'vi'. An eye icon indicates the direction of view. In the second step, the cable is shown secured to the connector with a crimp or solder (labeled 3). The legend box also shows a color-coded label for 'vi' (violet).

Fig. 104

Connecting wiring harnesses

-

Fig. 105



13 Final Work



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

- ▶ Reassemble the components 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).

- ▶ Activate the high-voltage system (if present) in accordance with the manufacturer's instructions.

- ▶ Connect the 12 V battery.



Only use manufacturer-approved coolant.

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



Downloading software to Cronus

- ✓ For more information, see the instructions in the 'Software Update Cronus – PKW.pdf' file in the relevant software download folder at:

<https://dealers.webasto.com>

- ▶ Connect Webasto Thermo Test Diagnosis as described in the instructions.
- ▶ Install the Cronus software downloaded as described in section 'Preparations for Cronus' according to the instructions.
- ⇒ Save this initial operation report and print it out for the customer or add it to the vehicle file (proof of successful initial operation and servicing work).



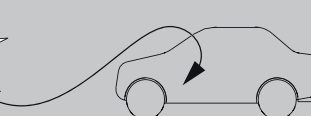
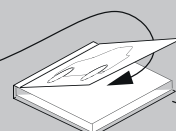
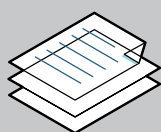
Further information can be found in the general installation and operating instructions of the Webasto components.

- ▶ Program control element and/or pair Telestart handheld transmitter.
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck.



Vehicle event log after parking heating mode

- ✓ Components of the original vehicle air conditioning system are activated during parking heating mode. Other vehicle components remain inactive, which in some circumstances may be interpreted as an error and can be filed as such in the event log. An increased power consumption (quiescent current) may also be registered for some vehicles.
- ▶ If an incorrect installation can be excluded, these entries are exclusively related to the parking heating mode situation and have no effect on the vehicle functions in driving mode.



This is a translation from the original German installation instructions.

To request this Installation Documentation in another language, please locate and contact your local Webasto dealer.

You can find your nearest dealer at: <https://dealerlocator.webasto.com/en-int>.

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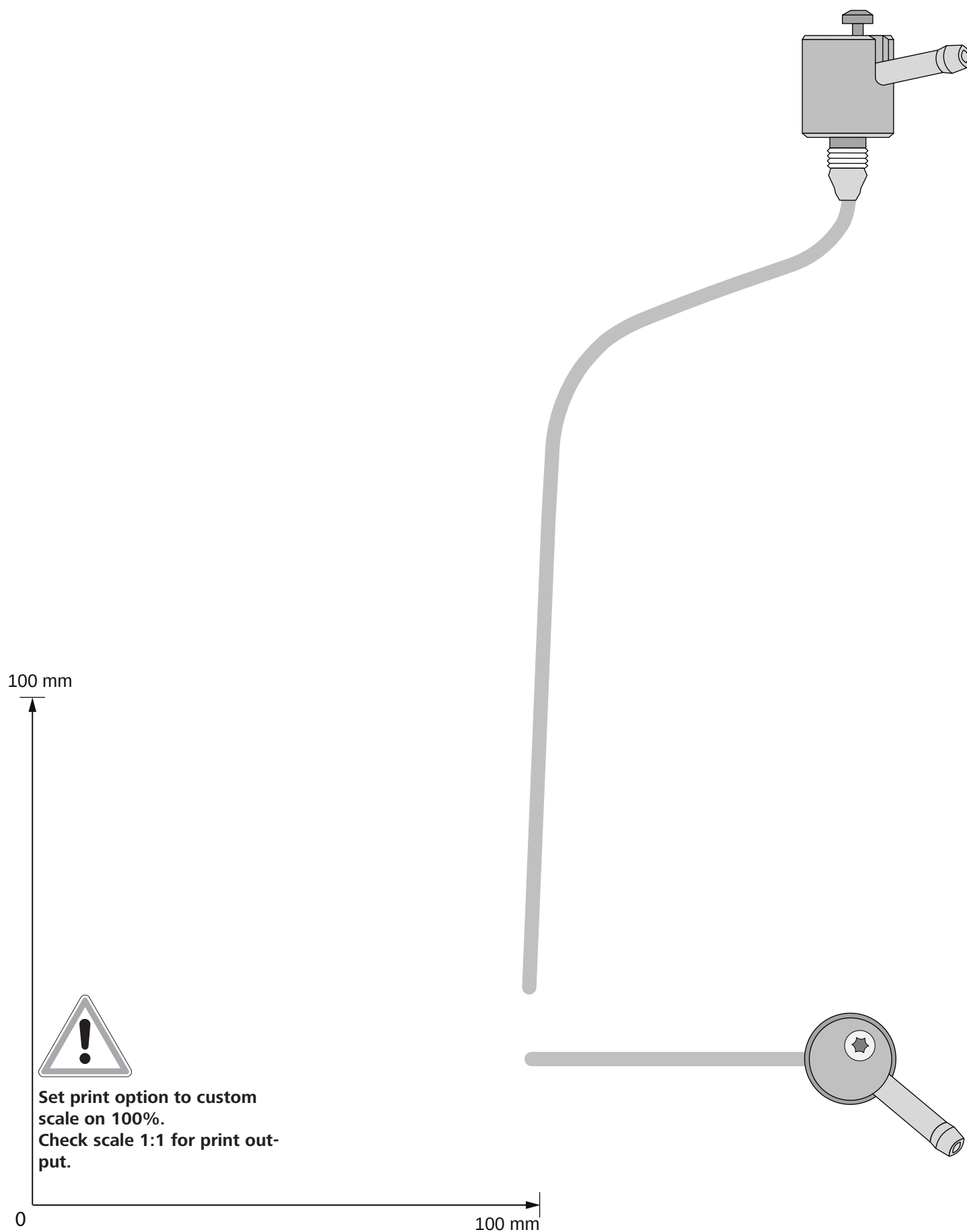
Technical Extranet: <https://dealers.webasto.com>



WWW.WEBASTO.COM



14 FuelFix template



15 Operating instructions



Vehicles with passenger compartment monitoring

Further information can be found in the vehicle operating instructions.

- Deactivate passenger compartment monitoring for the heating operation.



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.



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.

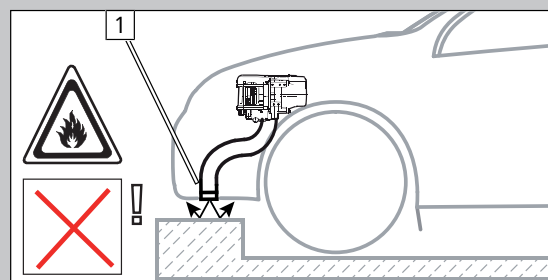
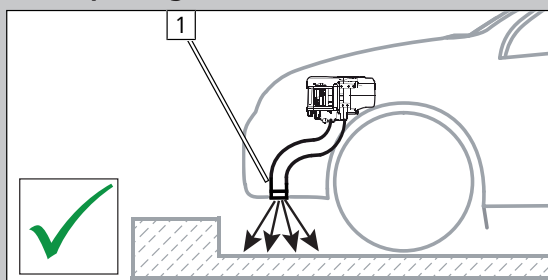


Note for parking heater function

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

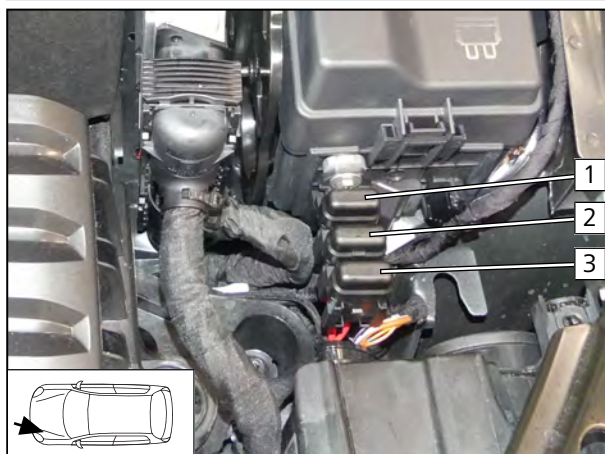


Notes on parking heater exhaust outlet ¹



15.1 Installation location of fuses

Fuses in engine compartment



- ¹ F3 - 5A Cronus main fuse
- ² F2 - not in use
- ³ F1 - 20A heater main fuse

Fig. 106

