EN

K

Installation documentation

for water heater Thermo Top Evo

'Inline' coolant circuit with engine preheating

Skoda Octavia

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Skoda	Octavia	NX	from 2020	E8*2007/46*0355*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
1.5P	Petrol	Euro 6d Temp	6-speed SG	110	1498	DPCA

Validity	Equipment variants	Model
		Octavia
Verified equipment variants	2 zone automatic air-conditioning	x
	3 zone automatic air-conditioning	x
	Matrix LED headlights	x
	LED daytime running lights	x
	Dynamic cornering light	x
	Keyless Go	x
	Automatic Start-Stop system	x
	Start button	x

Total installation time	Note
7.5 hours	

Contents

1 List of abbreviations

CR	Cronus (passenger compartment control unit)
DP	Fuel pump
FF	FuelFix (tank extracting device)
HG	Heater
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 for Skoda Octavia / Seat Leon 1.5 petrol Cronus MY 2020 TT-Evo	1328171A
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 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

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

3.4.2 Use of symbols

DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

▶ Actions to protect yourself against risks.

WARNING

Type and source of the risk

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

▶ Actions to protect yourself against risks.

CAUTION

Type and source of the risk

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

▶ Actions to protect yourself against risks.

Type and source of the risk

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

▶ Actions to protect yourself against risks.

Reference to the vehicle manufacturer's specific documents.

Note on a special technical feature

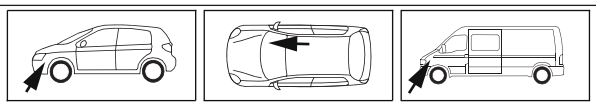
3.4.3 Work step identification marks

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

Mechanical system	Electrical system	High-voltage	Coolant

Combustion air	Fuel	Exhaust	Software

3.4.4 Orientation aid



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

3.4.5 Use of highlighting

Highlight	Explanation
✓	Action
▶	Necessary action
⇨	Result of an action
1 / 12 / a1	Position numbers for the image descriptions
① / ⑫ / Ⓐ	Position numbers for the image descriptions for electrical wires and 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 mm^2
– Crimping pliers for cable lugs 0.5 – 10 mm^2
– Crimping pliers for male connector 0.14 – 6 mm^2
– Crimping pliers for connector 0.25 – 6 mm^2
– Torque wrench for 2.0 - 10 Nm
– Deep-hole marker
– Metric thread-setter kit
– Webasto Thermo Test Diagnosis with current software

5 Preparations

5.1 Vehicle preparation

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

Vehicle area	Components to be removed	Other applicable documents
General	▶ Open the fuel tank cap ▶ Ventilate the fuel tank ▶ Close the fuel tank cap again ▶ Depressurise the cooling system	
Engine compartment and body	▶ Engine design cover ▶ Complete air filter ▶ Disconnect the battery ▶ Battery complete with 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	
Passenger compartment	▶ Side instrument panel trim on the front passenger's side ▶ Footwell trim on the front passenger's side ▶ Glove box ▶ Lower instrument panel trim in the middle ▶ Rear bench seat ▶ Open the tank fitting service lid on the front passenger's side	

5.2 Heater preparation

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

6 Installation overview

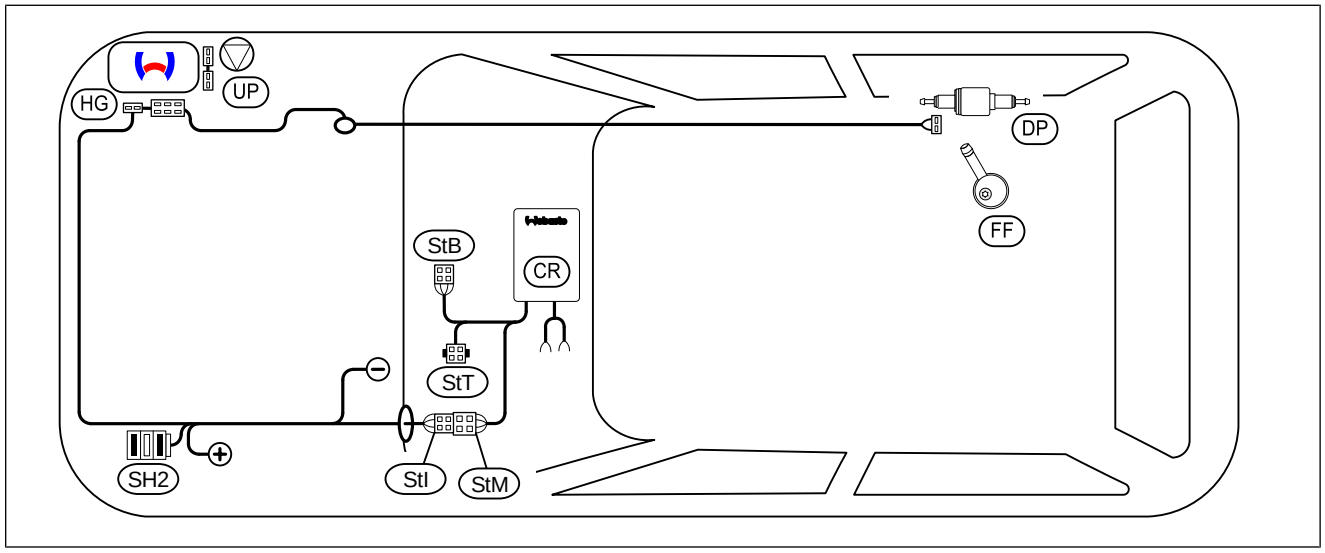


Fig. 1

Legend to installation overview

Abbreviation	Component
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

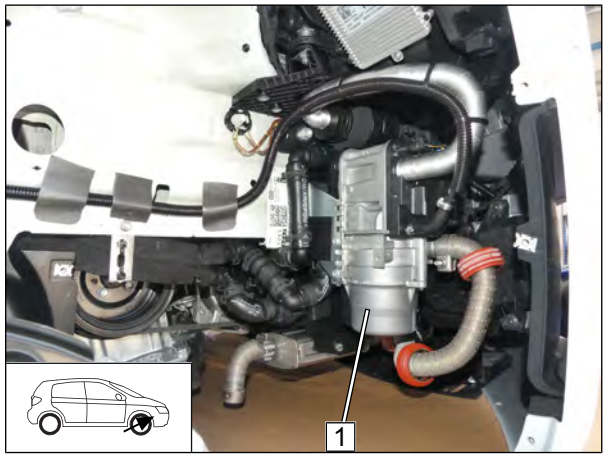


Fig. 2

1 Heater assembly

7 Electrical system of engine compartment

Removing cover

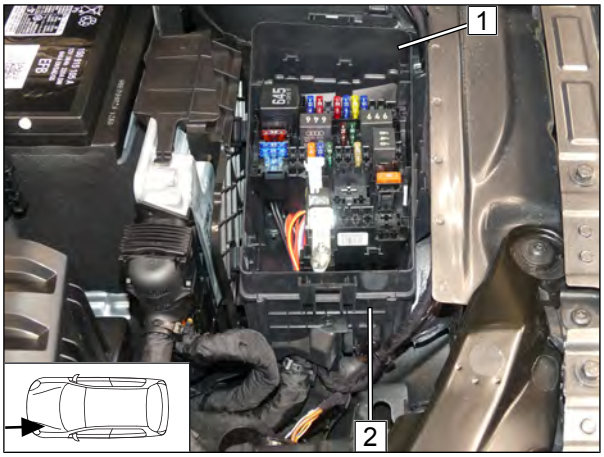


Fig. 3

▶ Remove front cover **2** of engine compartment fuse and relay box **1**.

Copying hole pattern, drilling hole

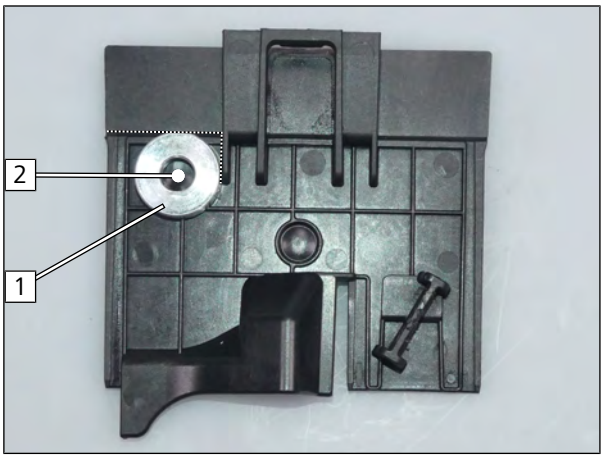


Fig. 4

▶ Position 10mm spacer **1** on front cover, copy hole pattern **2** and drill Ø6 hole.

Premounting retaining plate of SH2

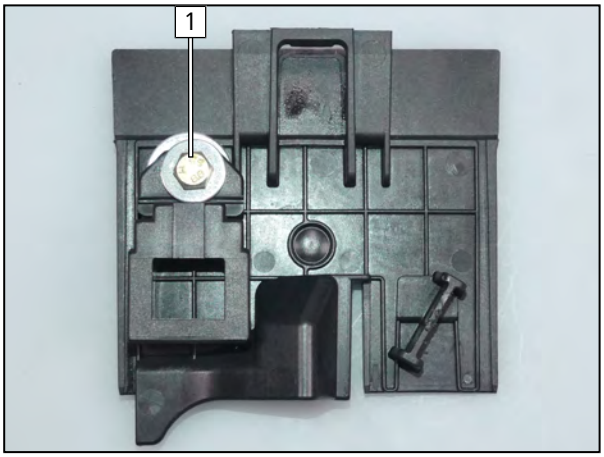


Fig. 5

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

Preparing wiring harness

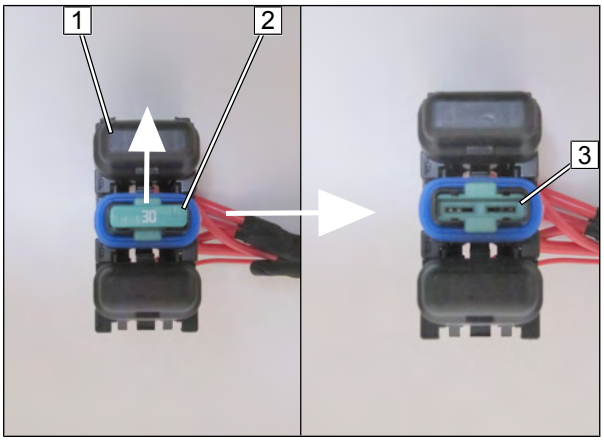


Fig. 6

Remove and discard 30A fuse 2 from SH2 1.

3 Fuse removed

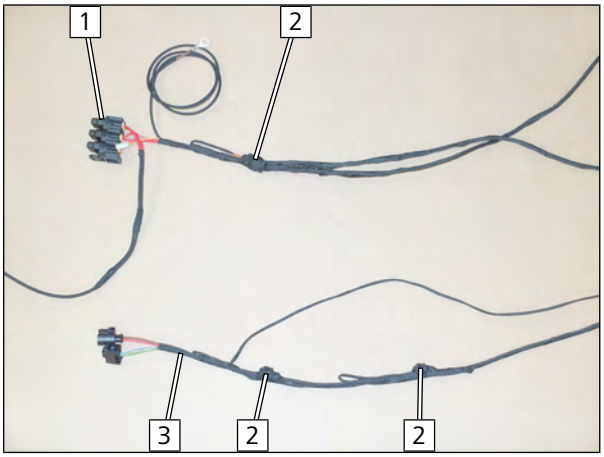


Fig. 7

Tie back connector 2 using insulating tape.

1 SH2

3 Heater wiring harness

Mounting cover and SH2

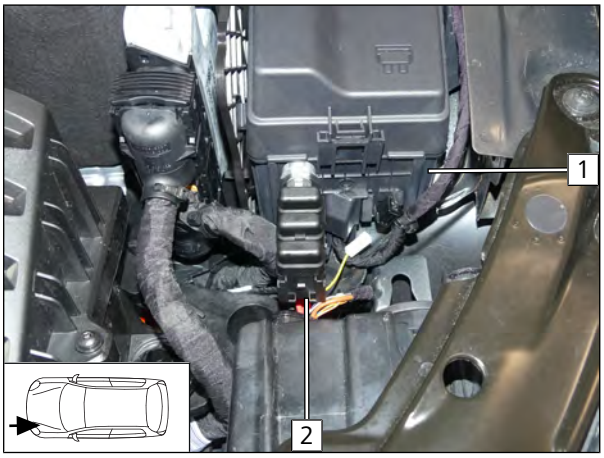


Fig. 8

1 Front cover

2 SH2 with F1, F2 (empty) and F3

Routing wiring harnesses

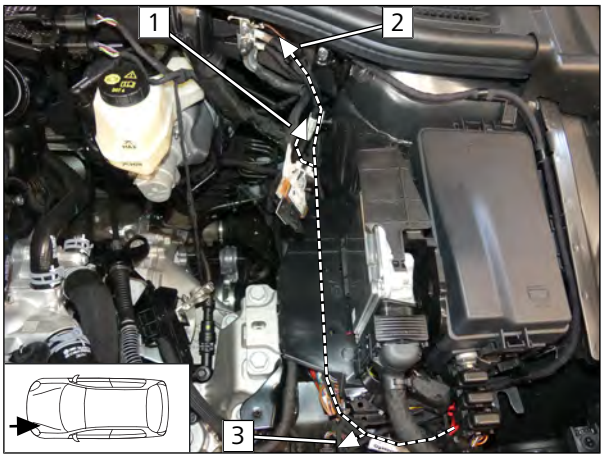


Fig. 9

1 Passenger compartment wiring harness
2 Earth wire
3 Heater wiring harness

Earth wire connection

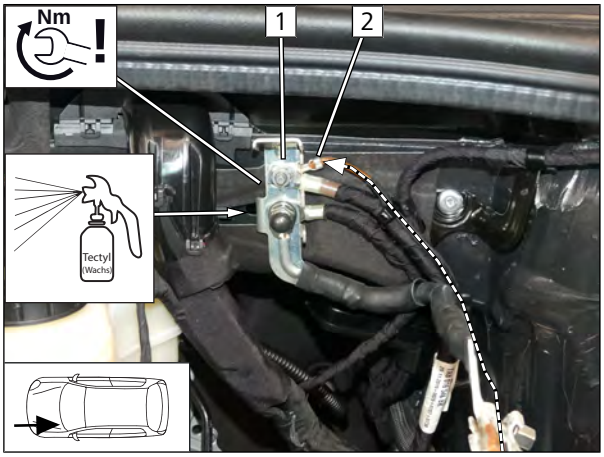


Fig. 10

DANGER

Observe tightening torque

1 Original vehicle earth point
2 Earth wire

Passenger compartment wiring harness pass through

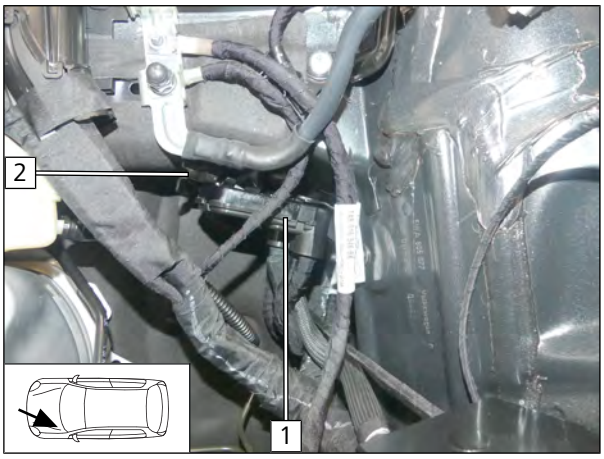


Fig. 11

▶ Remove positive distributor 1 from bracket 2.

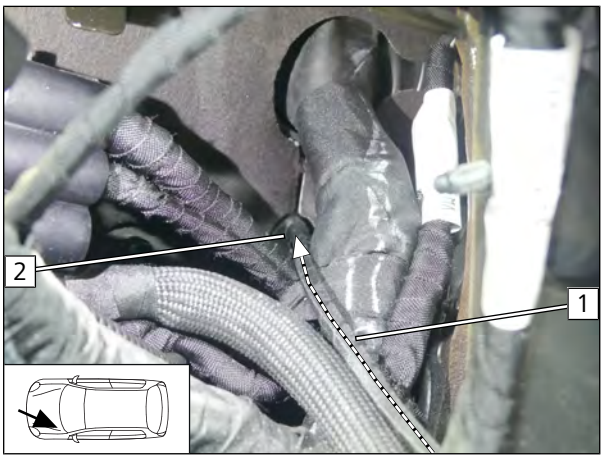


Fig. 12

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)

Heater wiring harness routing

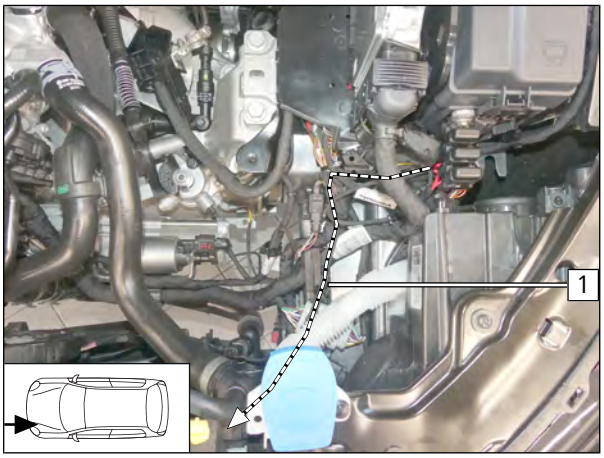


Fig. 13

1 Heater wiring harness

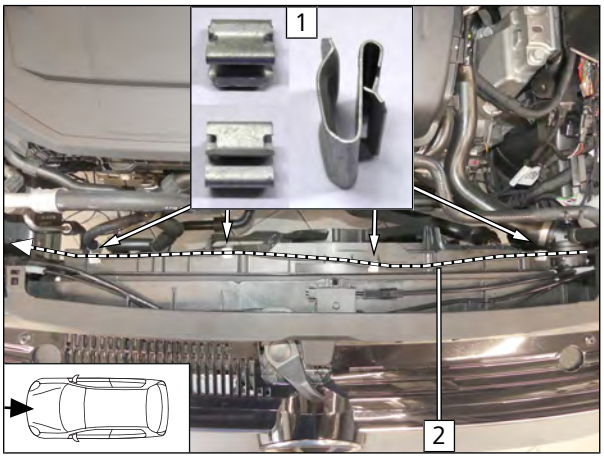


Fig. 14

1 Edge clip

2 Heater wiring harness

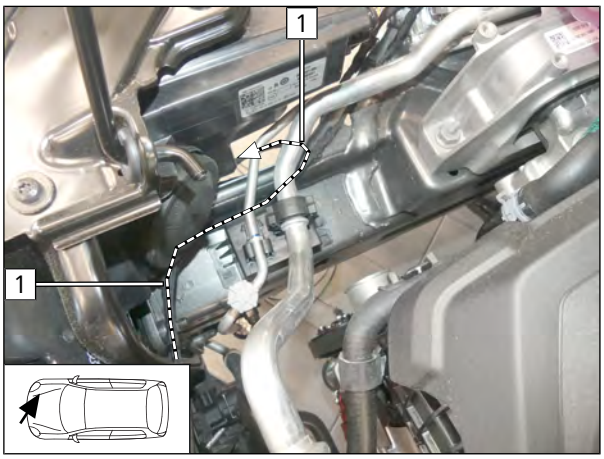


Fig. 15

1 Heater wiring harness

Positive wire connection

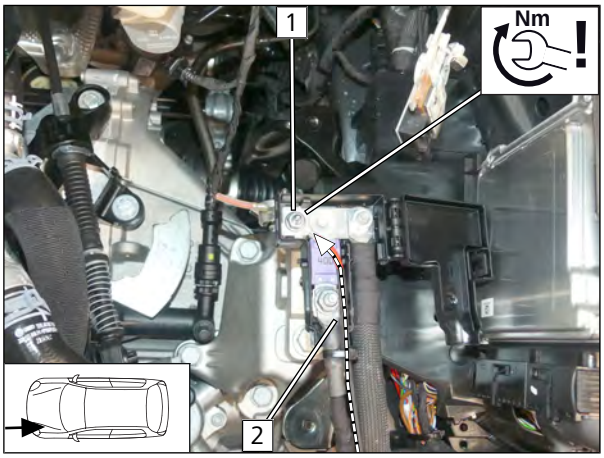


Fig. 16

DANGER

Observe tightening torque

1 Original vehicle positive point

2 Positive wire

8 Mechanical system

8.1 Installation location preparation

Loosening original vehicle wiring harness

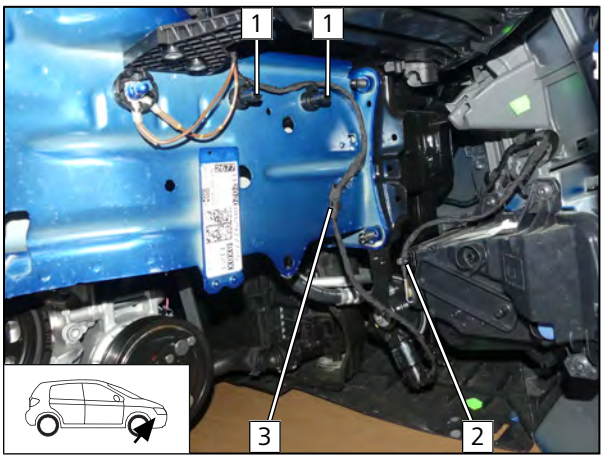


Fig. 17

▶ Remove and discard original vehicle wiring harness bracket 1.

2 Remove and discard original vehicle cable tie

3 Detach original vehicle wiring harness bracket

Routing original vehicle wiring harness again

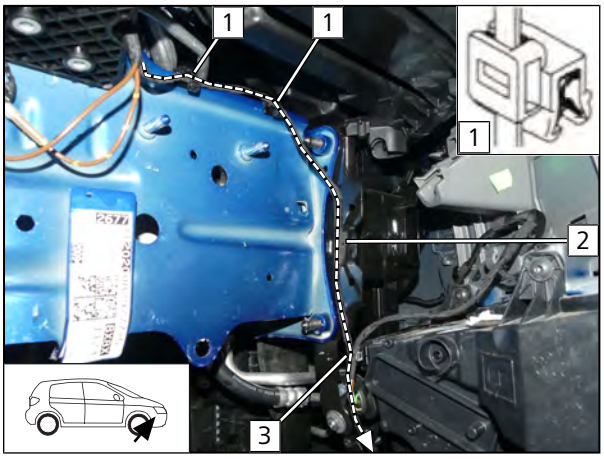


Fig. 18

▶ Attach original vehicle wiring harness bracket 2 again at new position.

1 Edge clip cable tie

3 Cable tie

Adapting original vehicle tab

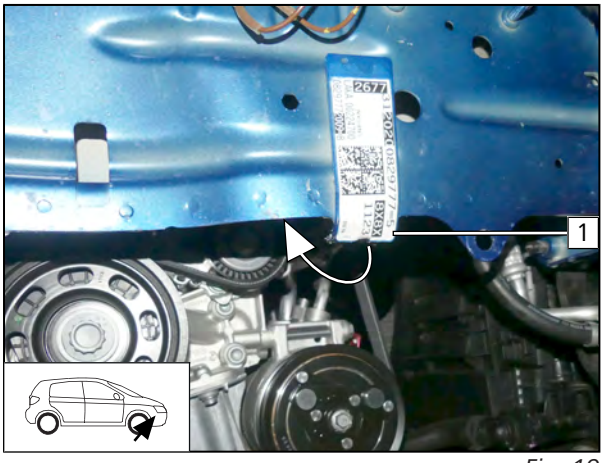


Fig. 19

▶ Bend original vehicle tab 1 by 90°as shown.

Routing and fastening heater wiring harness

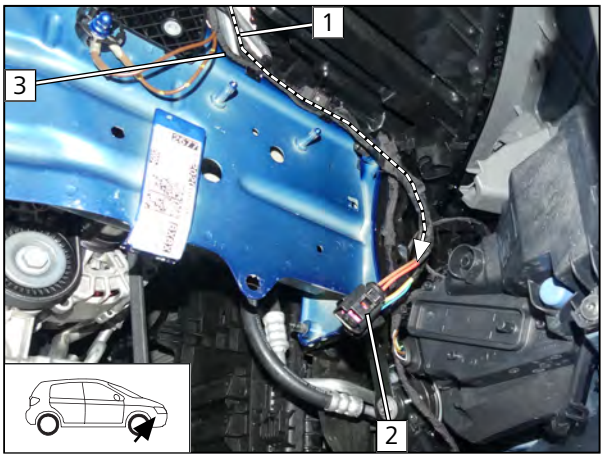


Fig. 20

1 Heater wiring harness
2 HG connector
3 Original vehicle wiring harness

Mounting spacer

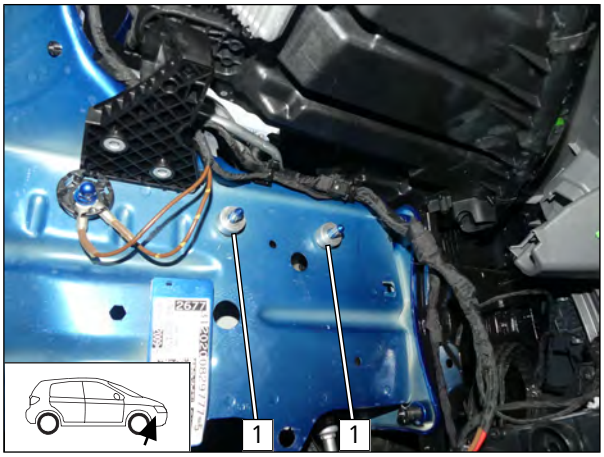


Fig. 21

1 10 spacer

8.2 Premounting heater assembly

Copying hole pattern

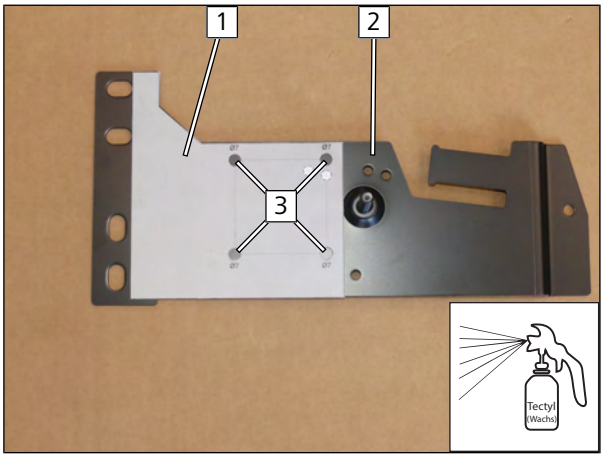


Fig. 22

- ▶ Cut out provided template 1.
- ▶ Position template 1 on bracket 2 as shown and copy hole pattern 3.

Drilling hole

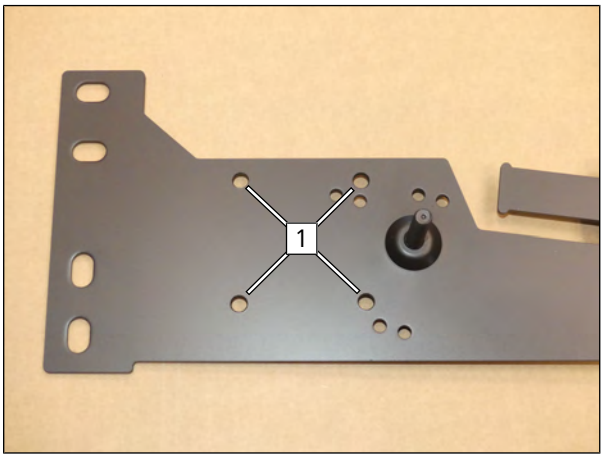


Fig. 23

1 Ø7 hole

Premounting HG bracket

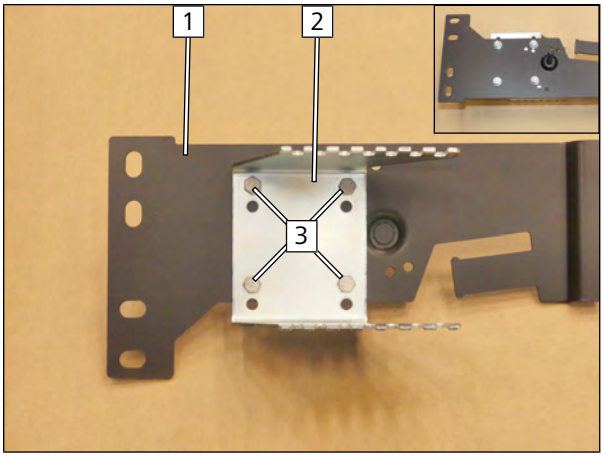


Fig. 24

1 Bracket part 1
2 Bracket part 2
3 M6x12 bolt, flanged nut

Cutting exhaust pipe to length

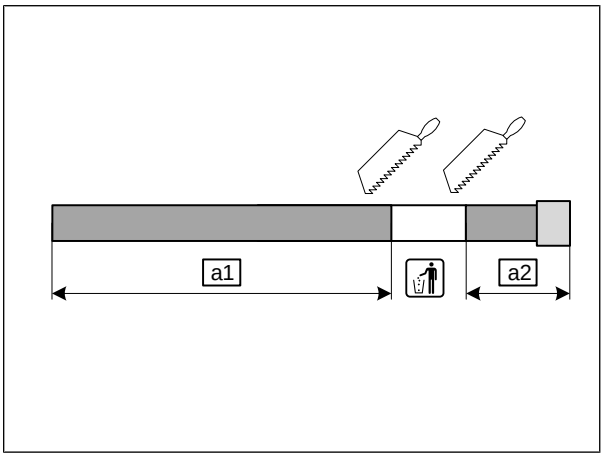


Fig. 25

a1 450
a2 100

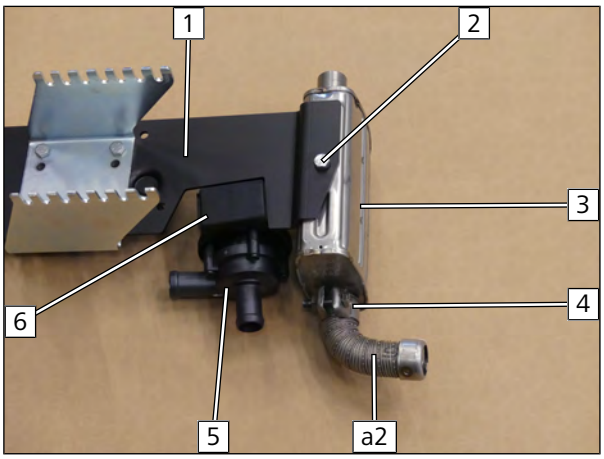


Fig. 26

1 Bracket part 1
2 M6x16 bolt, spring lockwasher
3 Exhaust silencer
4 Hose clamp
5 Coolant pump
6 Coolant pump mount

Cutting hoses to length

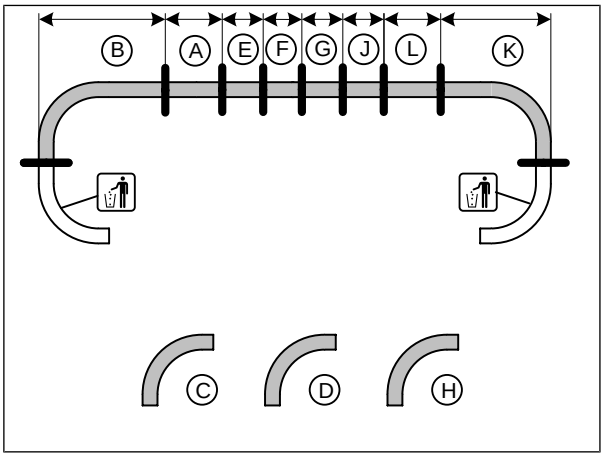


Fig. 27

A	320
B	570
C, D, H	90°
E	100
F	65
G	90
J	80
K	600
L	310

Mounting hose C

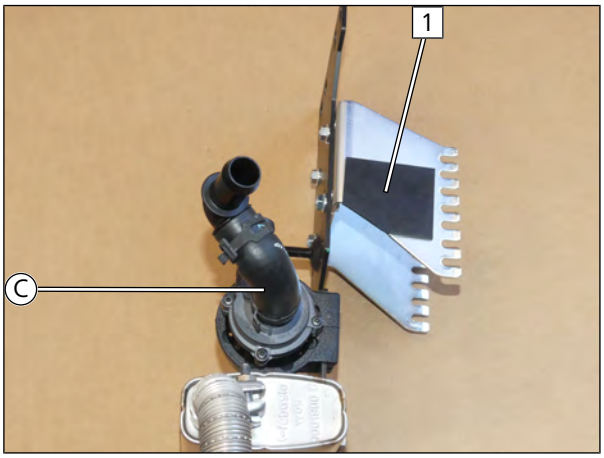


Fig. 28

1 Rub protection

Premounting M5x13 self-tapping bolts

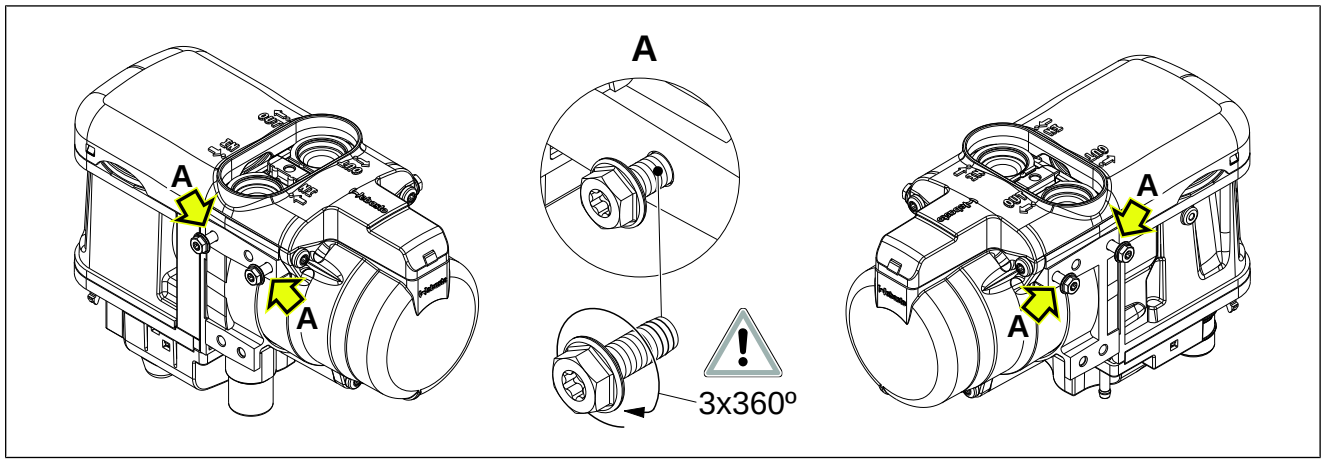


Fig. 29

Mounting, aligning and fastening with 7Nm water connection piece with sealing ring and retaining plate

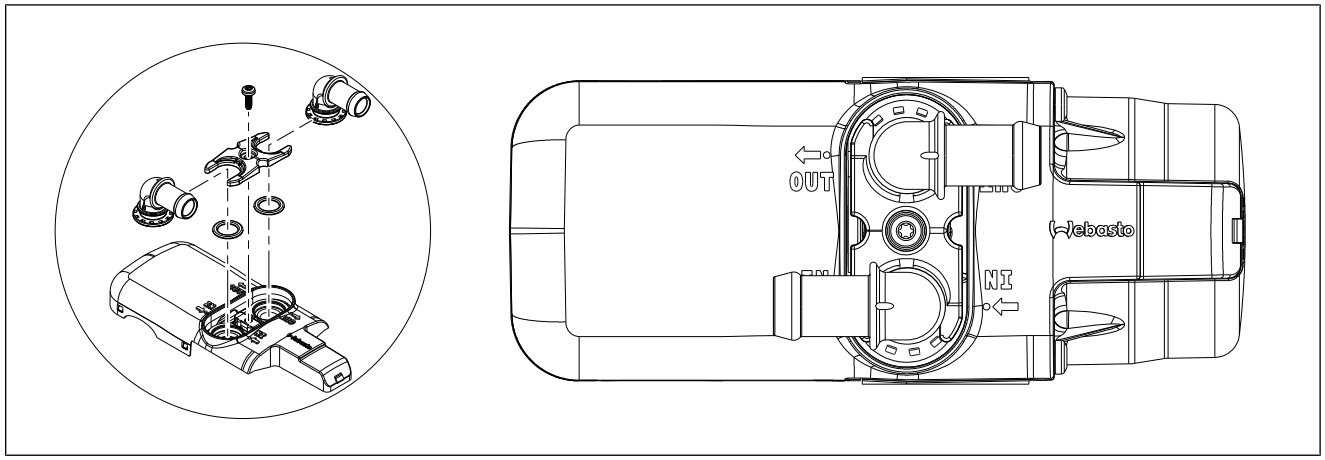


Fig. 30

Mounting hoses Ⓗ and Ⓙ

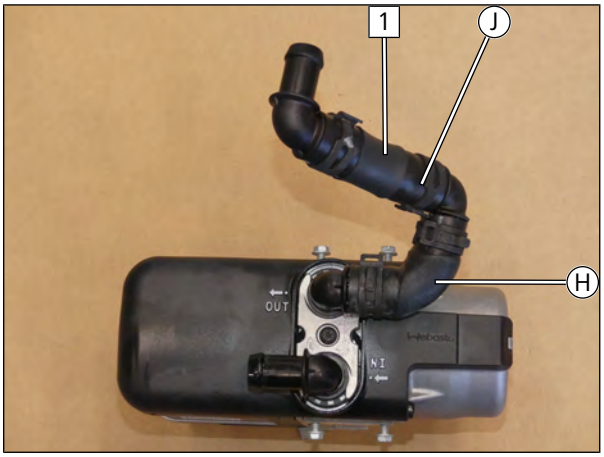


Fig. 31

- ▶ 1. Slide on heat shrink plastic tubing 1 as shown and cut to length
- ▶ 2. Shrink, use at most 300 °C

Mounting hoses Ⓓ, Ⓔ, Ⓕ, and Ⓖ

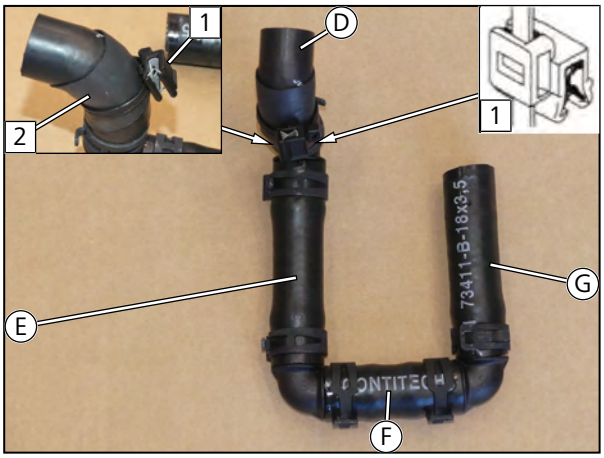


Fig. 32

▶ 1. Slide on heat shrink plastic tubing 2 as shown and cut to length

▶ 2. Shrink, use at most 300 °C

1 Edge clip cable tie

Mounting hose group

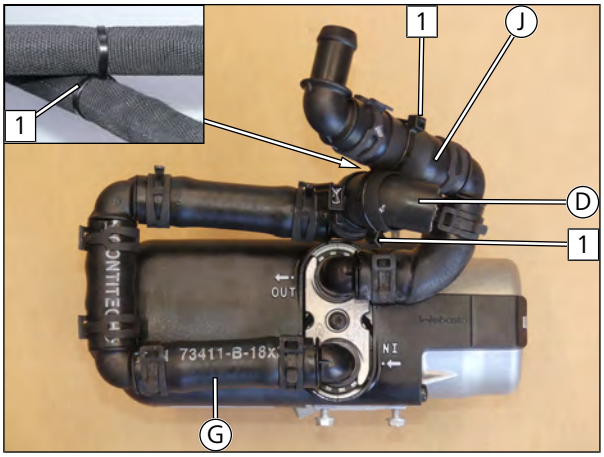


Fig. 33

▶ Loop cable ties 1 around hoses Ⓓ and Ⓙ and attach them together.

Premounting fuel line

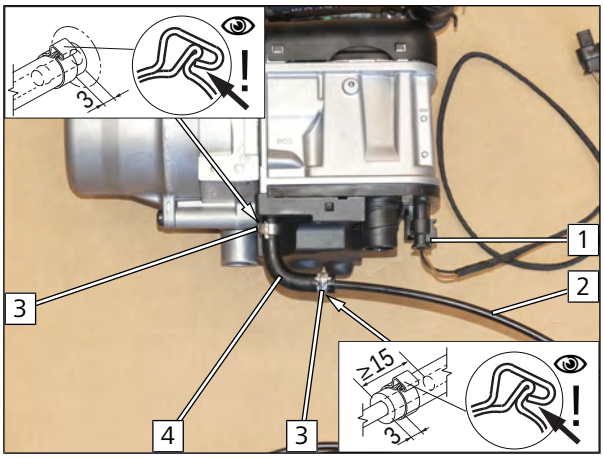


Fig. 34

1 Coolant pump wiring harness connector
2 Fuel line
3 Ø10 clamp
4 90° moulded hose

Mounting heater

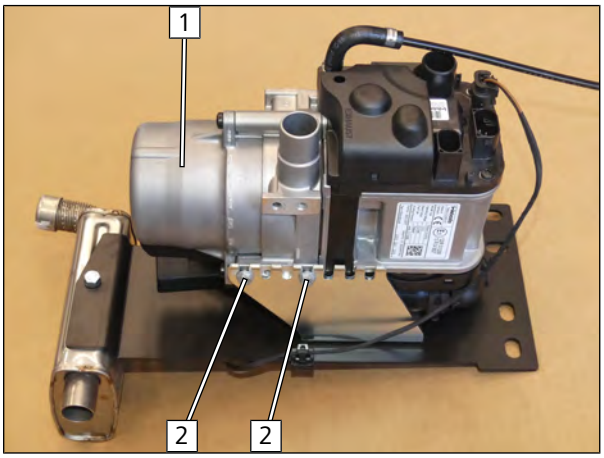


Fig. 35

1 Premounted HG
2 Tighten premounted bolts

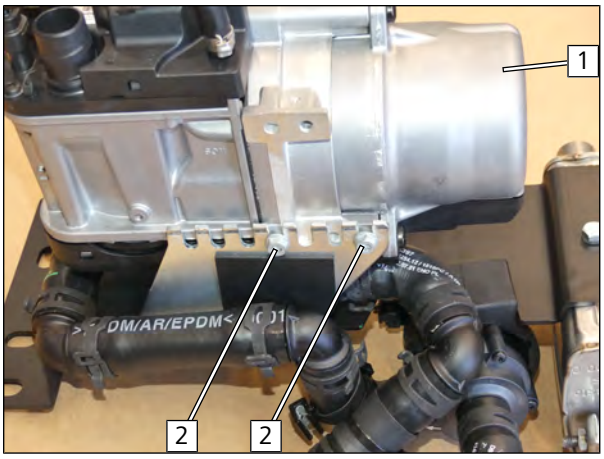


Fig. 36

1 Premounted HG
2 Tighten premounted bolts

Mounting coolant pump connector

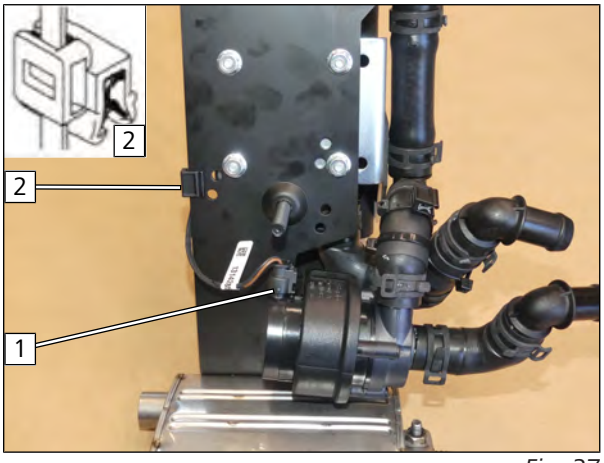


Fig. 37

1 Coolant pump wiring harness connector
2 Edge clip cable tie

Mounting exhaust pipe **a1**

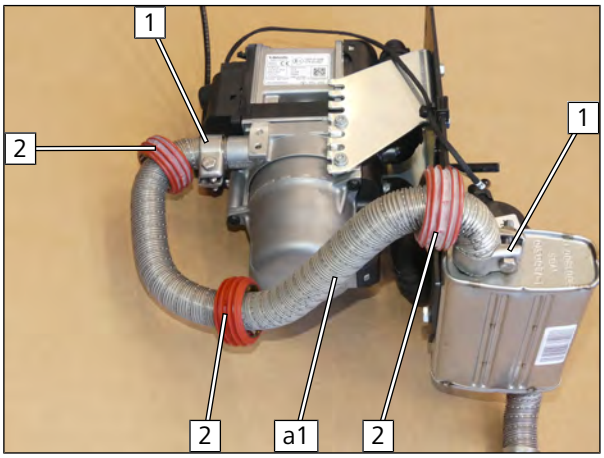


Fig. 38

1 Hose clamp
2 Spacer bracket

8.3 Heater assembly installation

Mounting heater

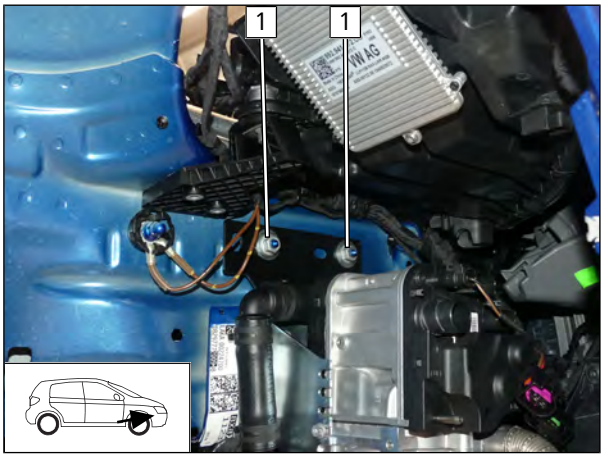


Fig. 39

1 Mount flanged nut loosely

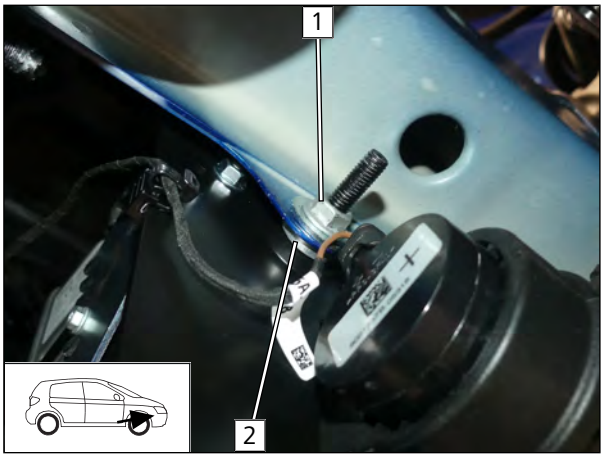


Fig. 40

1 Mount heater bracket stud bolt, spacer (5), original vehicle tab, large diameter washer, flanged nut loosely
2 5 spacer

Checking distance

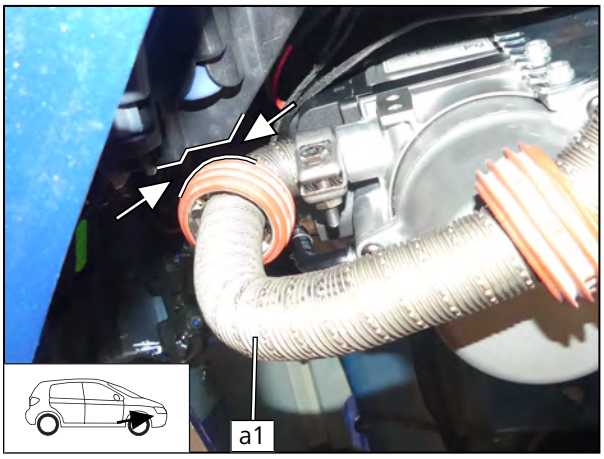


Fig. 41

Danger of damage to components

- Ensure sufficient distance between exhaust pipe **a1** and neighbouring components, correct if necessary.

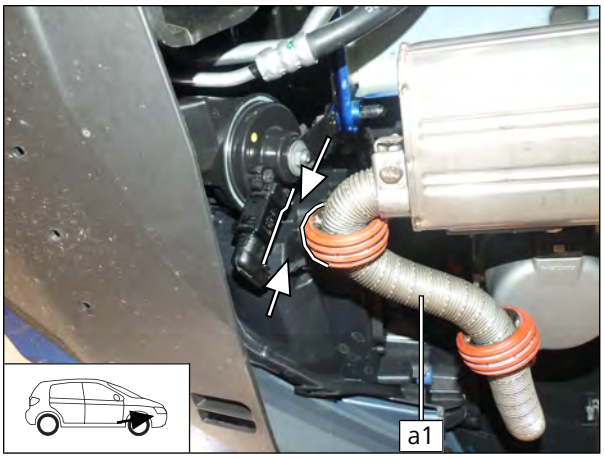


Fig. 42

Danger of damage to components

- Ensure sufficient distance between exhaust pipe **a1** and neighbouring components, correct if necessary.

Tighten all the screw connections of the heater assembly.

Mounting heater connector

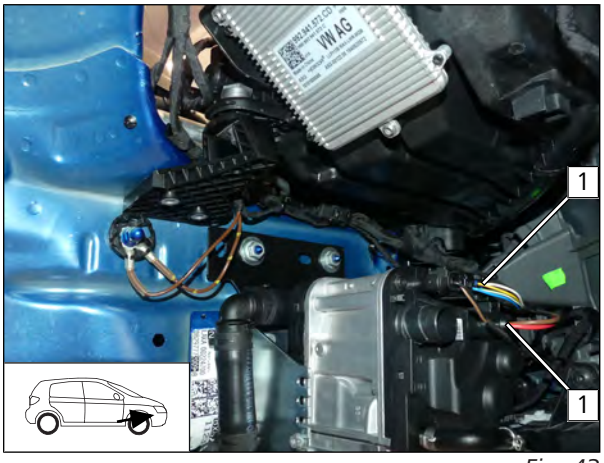


Fig. 43

1 HG connector

9 Combustion air

Preparing edge clip cable tie [2x]

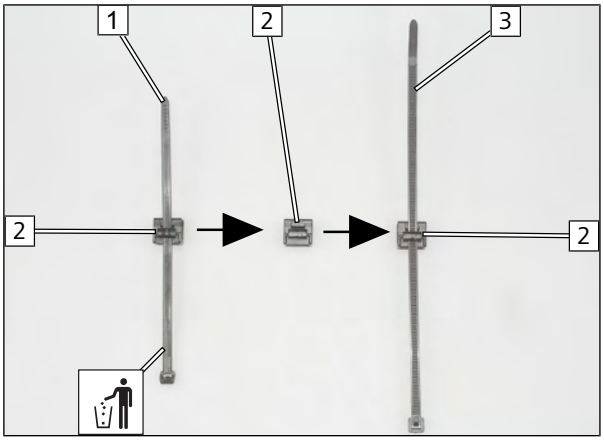


Fig. 44

1 Remove original cable tie
2 Clip
3 Reinstall cable tie

Mounting edge clip cable tie [2x]

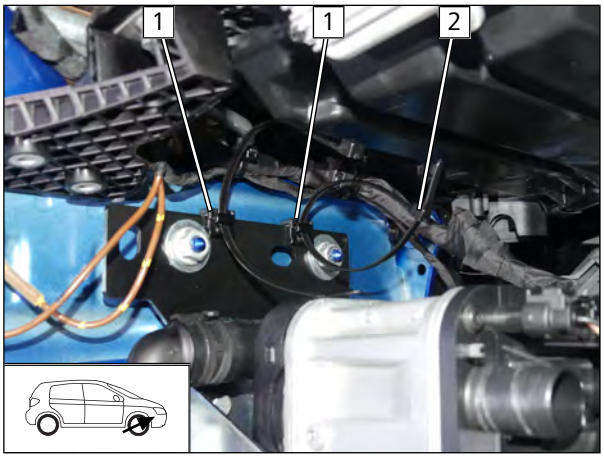


Fig. 45

▶ Position edge clip cable tie **1** as shown. Close cable tie **2** as shown.

Preparing combustion air intake silencer

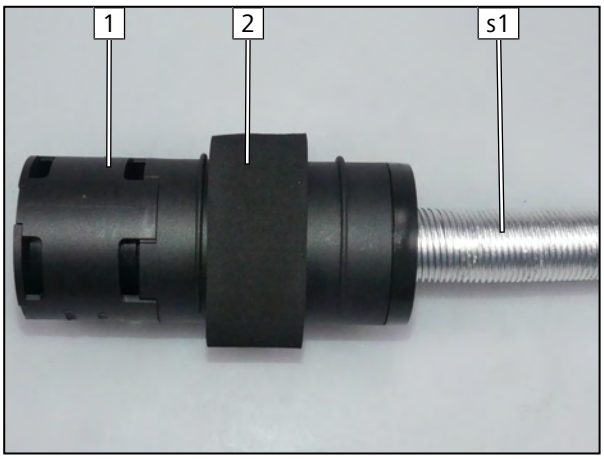


Fig. 46

Observe the installation instructions of the combustion air intake silencer.

1 Combustion air intake silencer
2 Foam ring
s1 Combustion air intake line

Mounting combustion air intake silencer

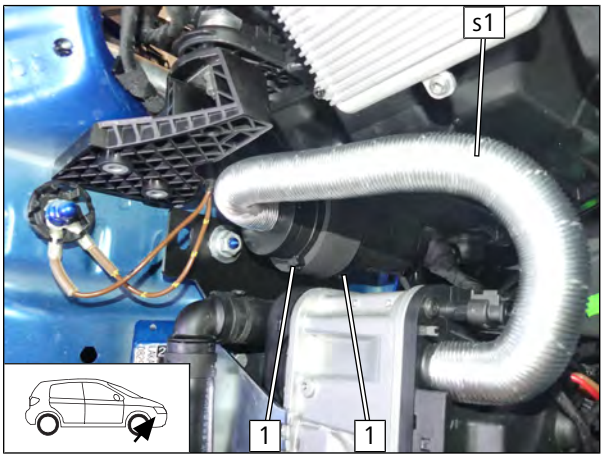


Fig. 47

1 Close cable tie

10 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

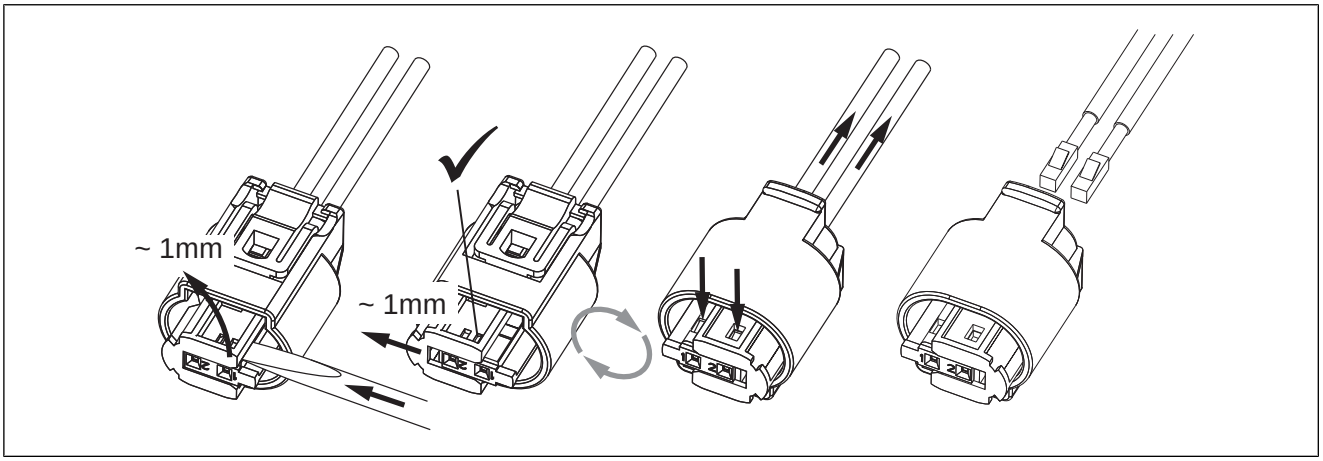


Fig. 48

10.1 Routing fuel line

Cutting corrugated tube to length

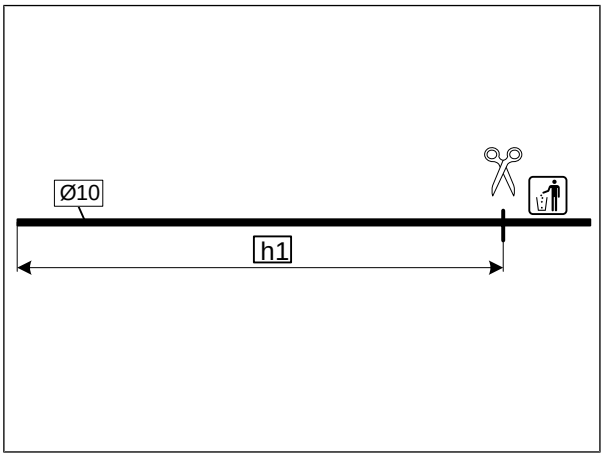


Fig. 49

h1 900

Routing fuel line in wheel well

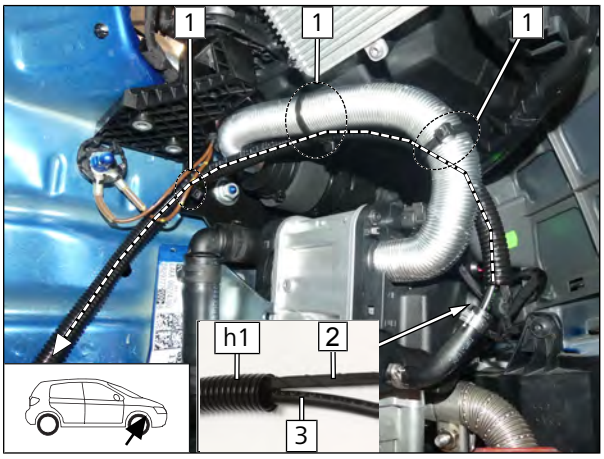


Fig. 50

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

1 Cable tie

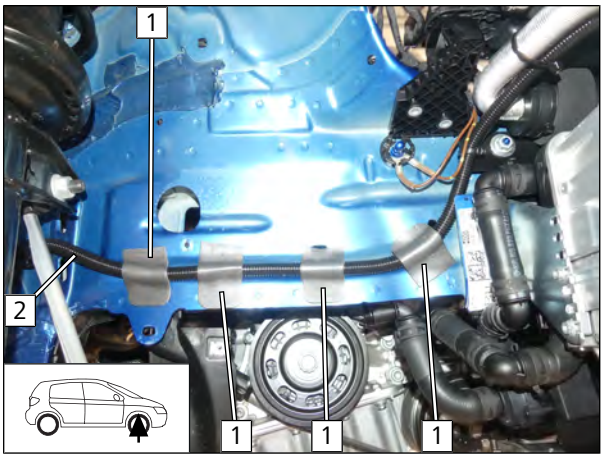


Fig. 51

1 Self-adhesive foam cut in half

2 Fuel line and fuel pump wiring harness in corrugated tube **h1**

Preparing pass through

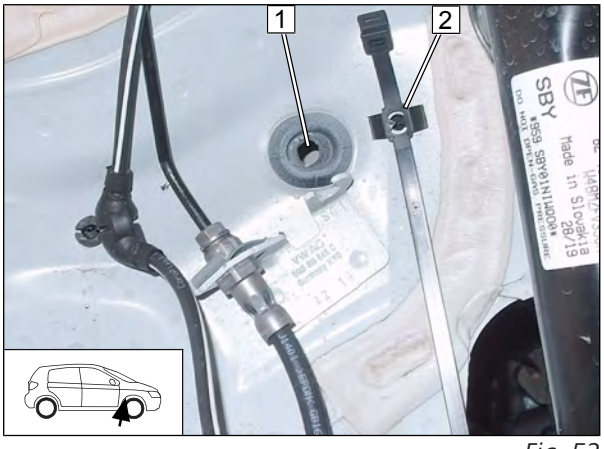


Fig. 52

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

2 Eyelet cable tie in original vehicle hole

Routing fuel line to underbody

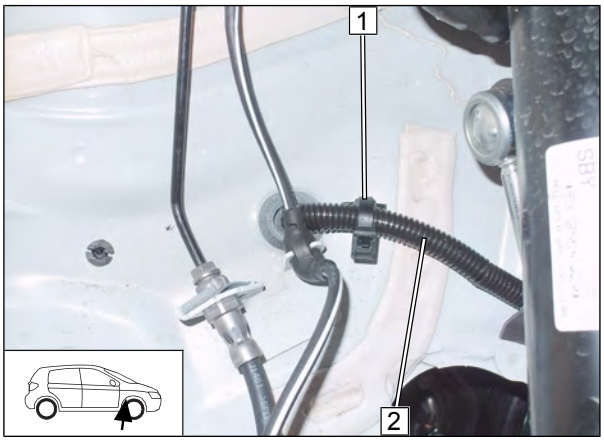


Fig. 53

1 Close eyelet cable tie

2 Fuel line and fuel pump wiring harness in corrugated tube **h1**

Preparing fuel pump installation location

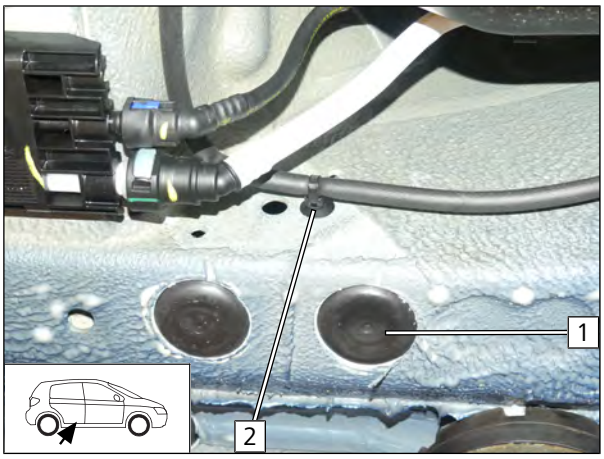


Fig. 54

▶ Remove clip-type cable tie **2** and plug **1**.

Premounting bolts

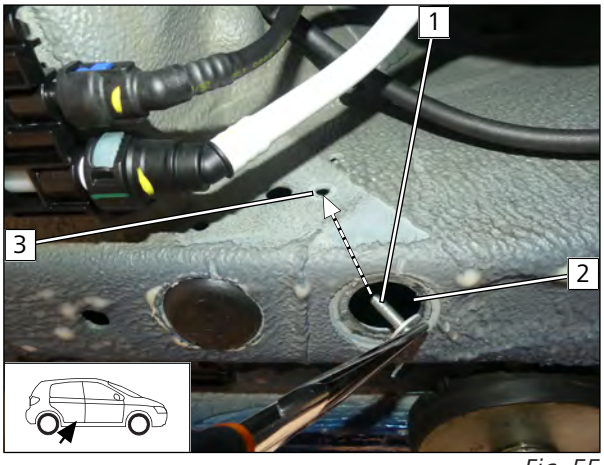


Fig. 55

1 M6x20 bolt, large diameter washer

2 Assembly opening

3 Original vehicle hole

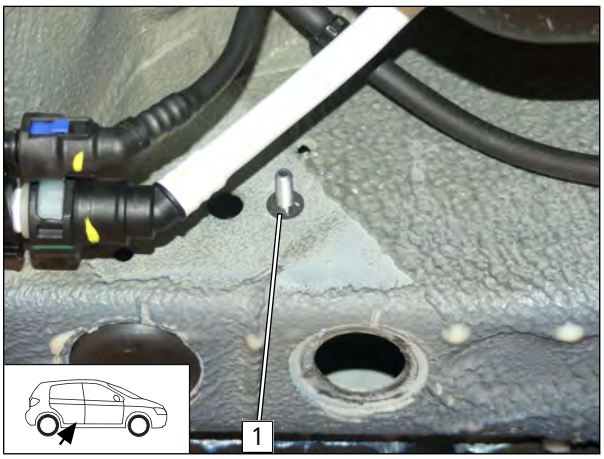


Fig. 56

1 Lock washer

Premounting fuel pump

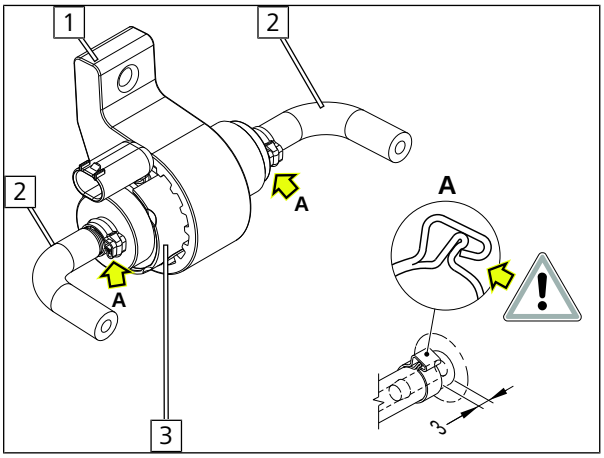


Fig. 57

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

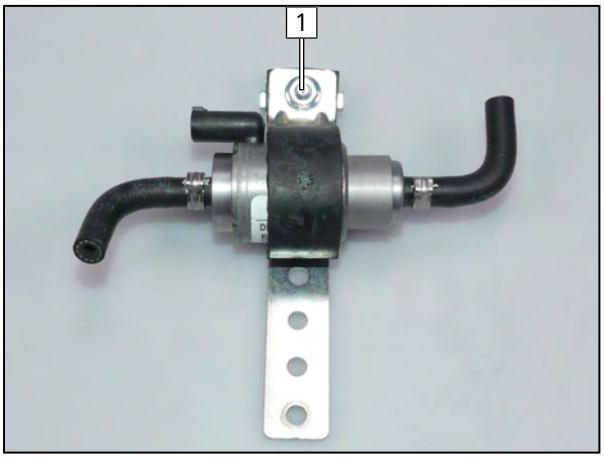


Fig. 58

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

Mounting fuel pump

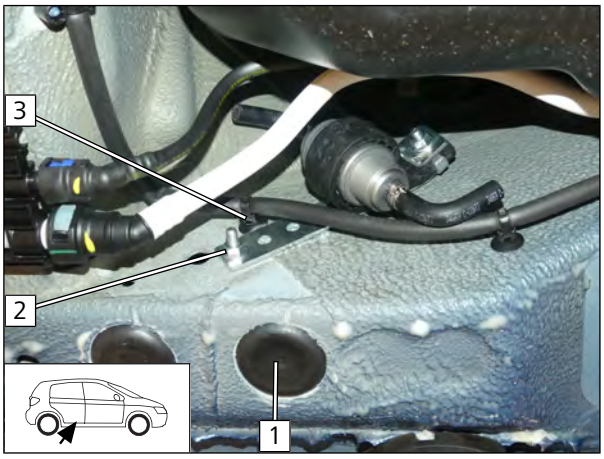


Fig. 59

1 Sealing plug, mounted
2 Premounted fuel pump, premounted M6x20 bolt, flanged nut
3 Installing clip-type cable tie

Assembling fuel pump connector X7

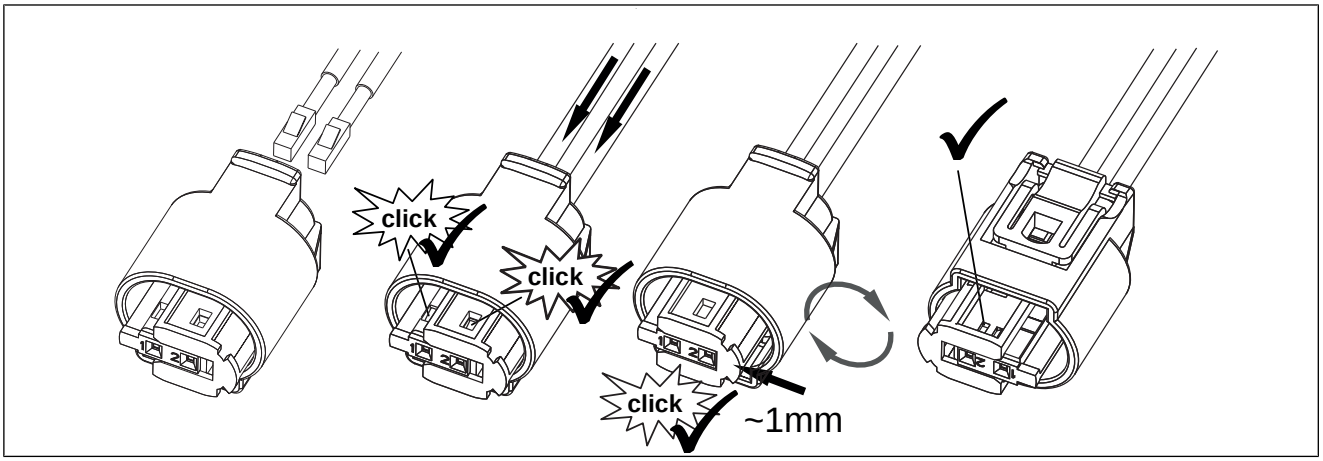


Fig. 60

Connecting fuel pump

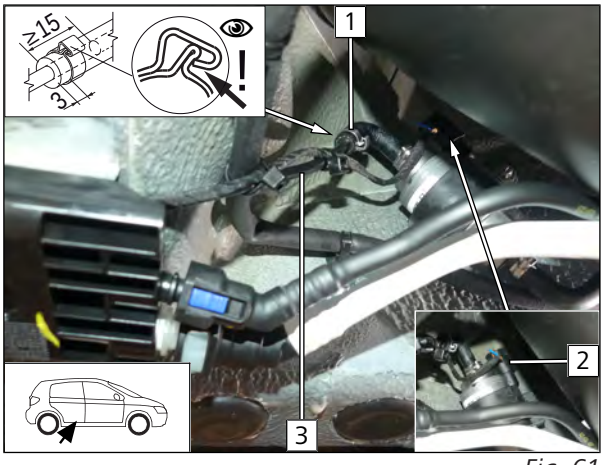


Fig. 61

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

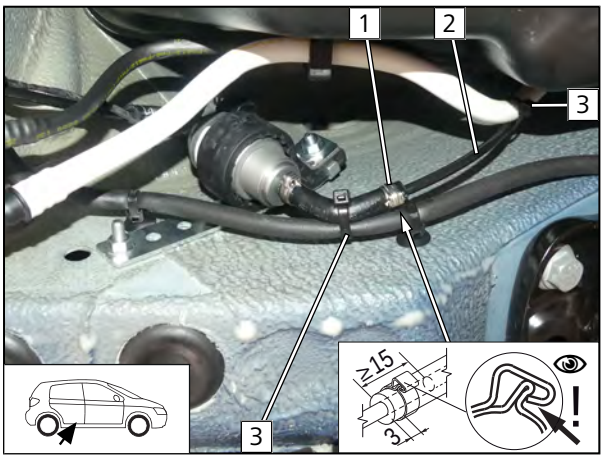


Fig. 62

1 Ø10 clamp
2 Fuel line
3 Cable tie

10.2 Installing FuelFix

Preparing drilling template

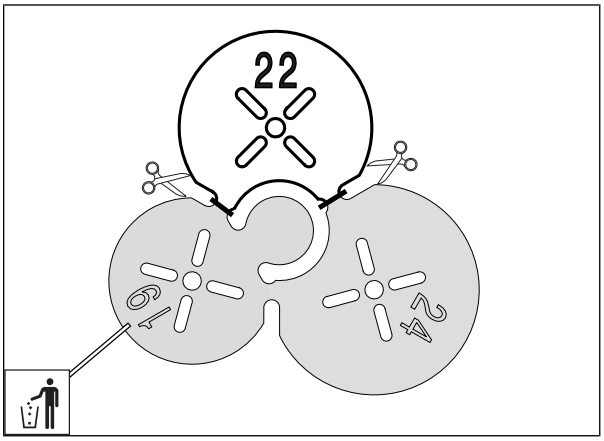


Fig. 63

Moving label

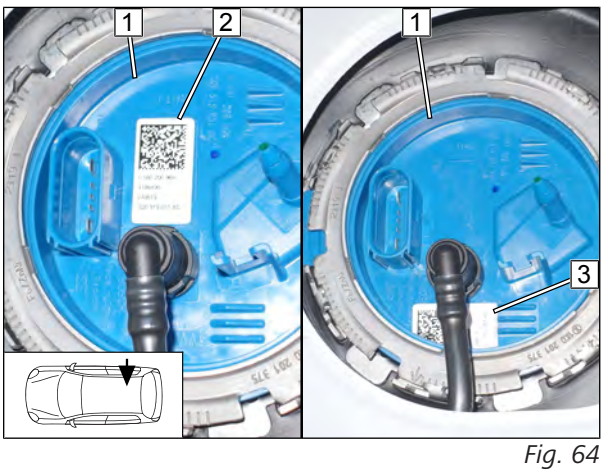


Fig. 64

1 Tank fitting
2 Original position of label
3 New position of label

Work steps F1, F2

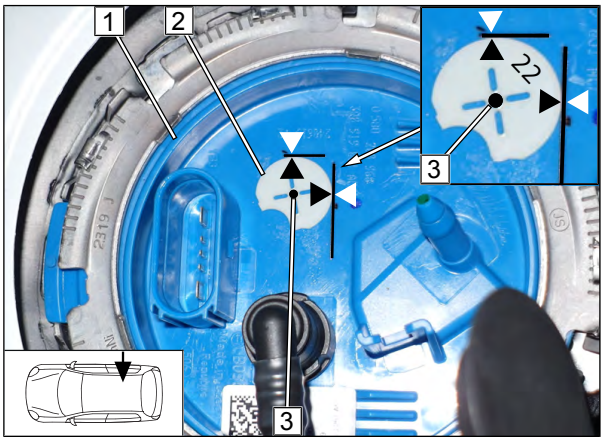


Fig. 65

Observe the installation instructions of the tank extracting device.

▶ Draw guide line on existing embossing.

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

Work step F3

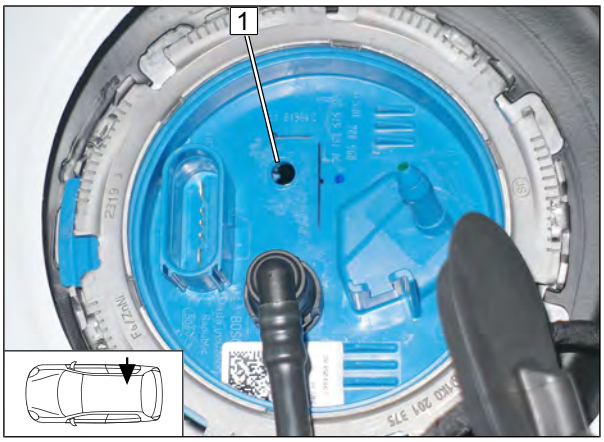


Fig. 66

DANGER

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

1 Hole made with provided drill

Work steps F4, F5

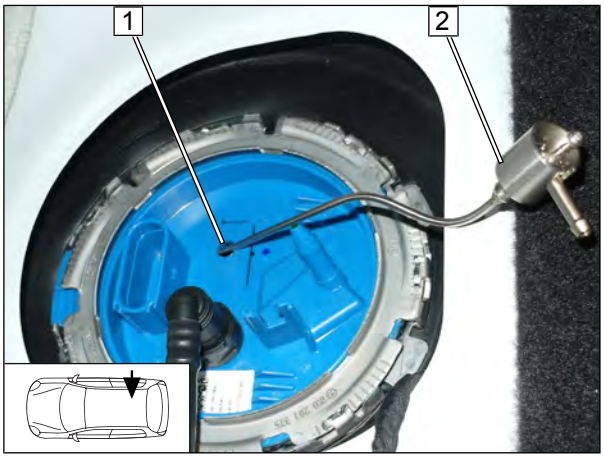


Fig. 67

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

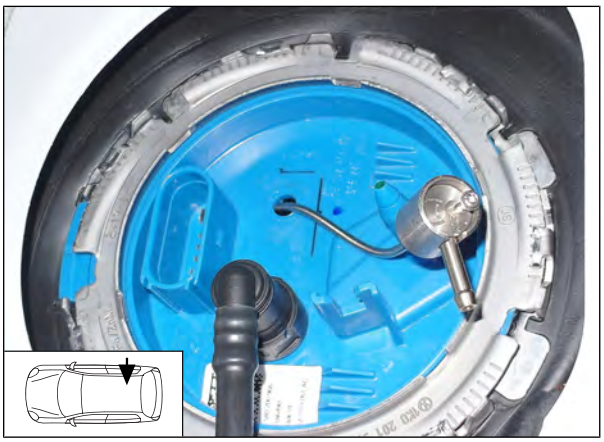


Fig. 68

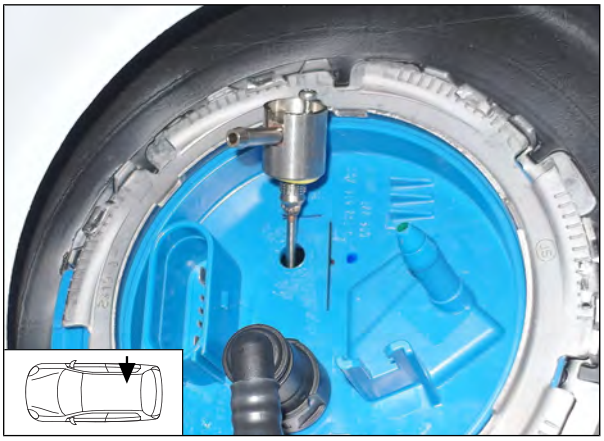


Fig. 69

Work steps F5.3, F5.4

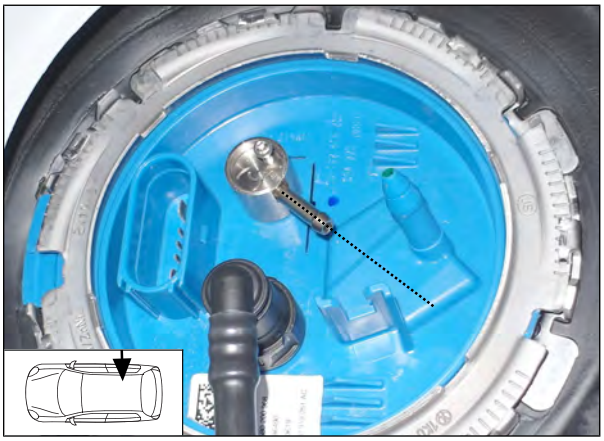


Fig. 70

▶ Align FuelFix [1] as shown.

Work step F6

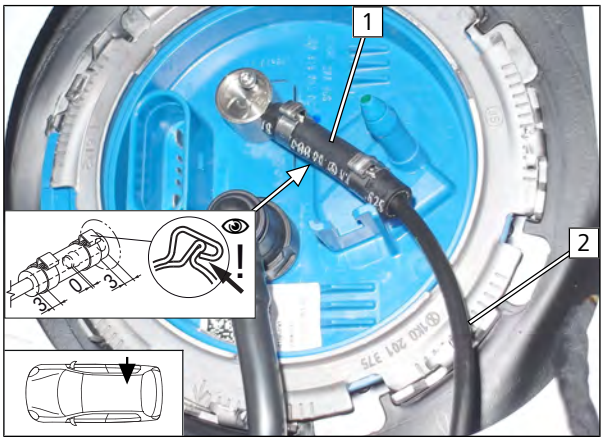


Fig. 71

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

Work step F7

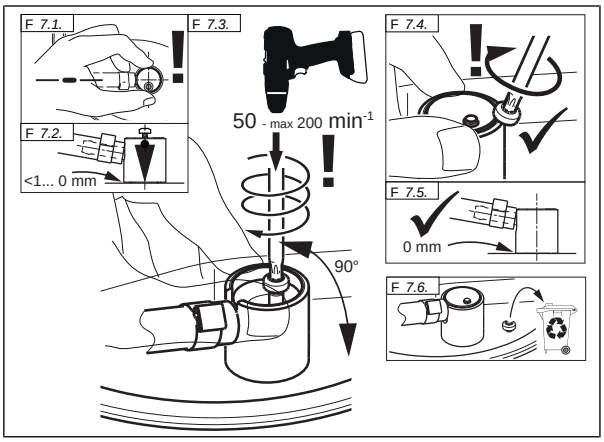


Fig. 72

DANGER

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

Work step F8

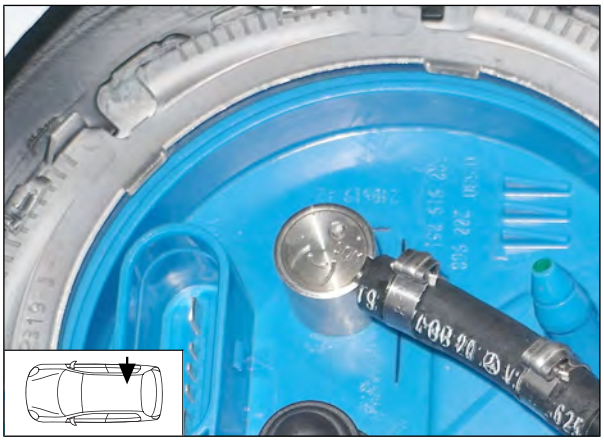


Fig. 73

Securing fuel line

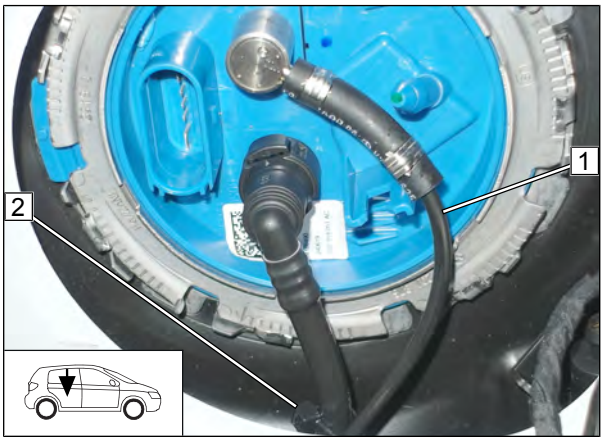


Fig. 74

▶ Secure fuel line 1 with cable tie 2 for tension relief.

11 Coolant

11.1 Preliminary work on vehicle

Shortening and mounting hose section

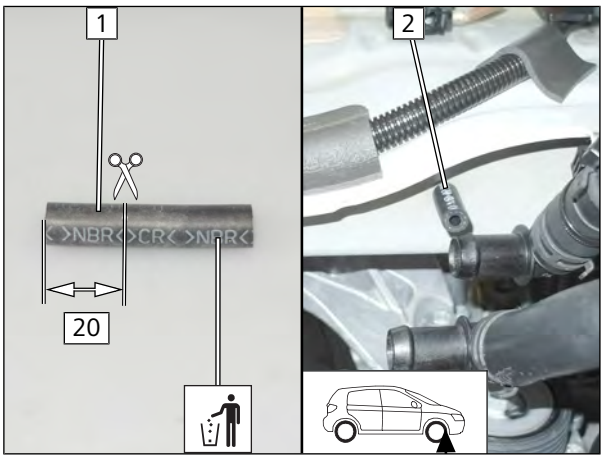


Fig. 75

1 Hose section Ø$_i$ 4.5
2 Hose section, original vehicle stud bolt

Removing splash guard

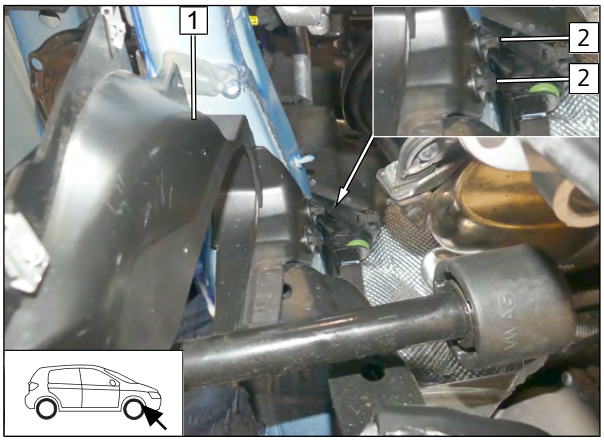


Fig. 76

1 Splash guard
2 Original vehicle plastic nut (will be reused)

Copying hole pattern and drilling hole

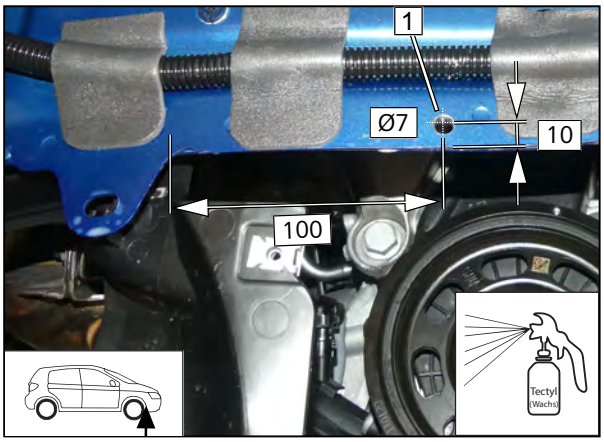


Fig. 77

1 Drill hole

Bending perforated bracket

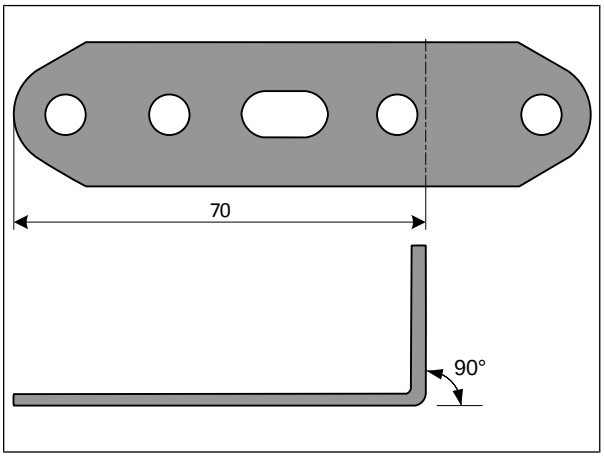


Fig. 78

Installing perforated bracket

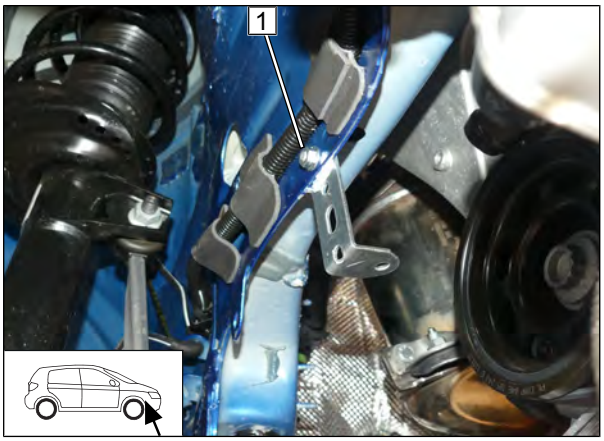


Fig. 79

1 M6x12 bolt, perforated bracket, drilled hole, flanged nut

Removing original vehicle flanged nut

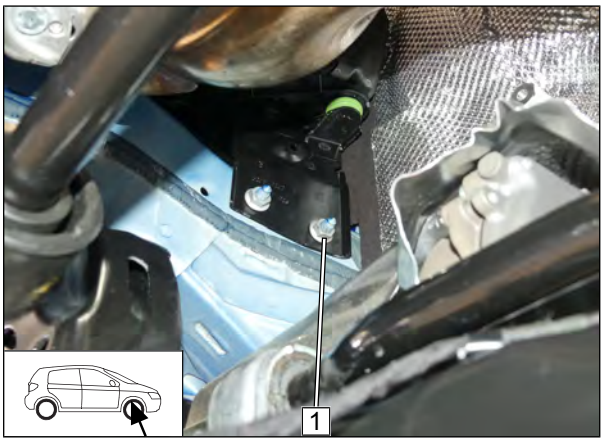


Fig. 80

1 Original vehicle flanged nut (will be reused)

Spacer nut installation

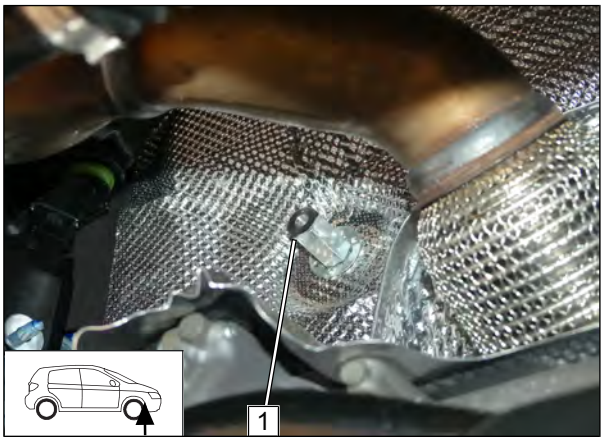


Fig. 81

1 M6x30 spacer nut, original vehicle stud bolt

Cutting point

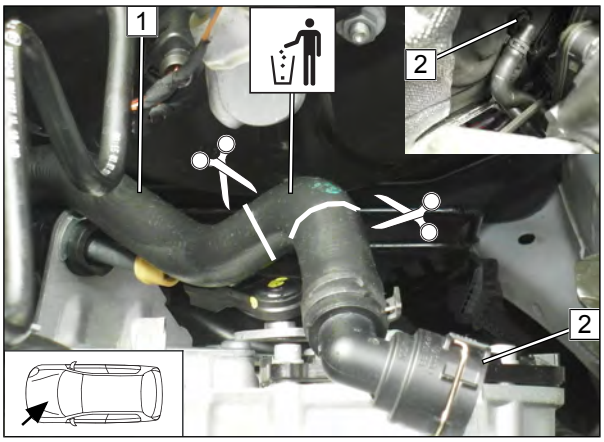


Fig. 82

1 Engine outlet hose section

2 Hose section with heat exchanger inlet coupling

11.2 Preparing hose group

Cutting heat protection hose to length

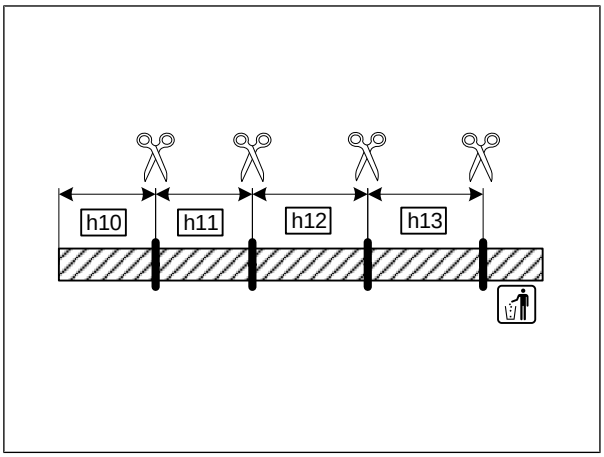


Fig. 83

h10 270

h11 260

h12 300

h13 300

Preparing hoses Ⓑ and Ⓚ

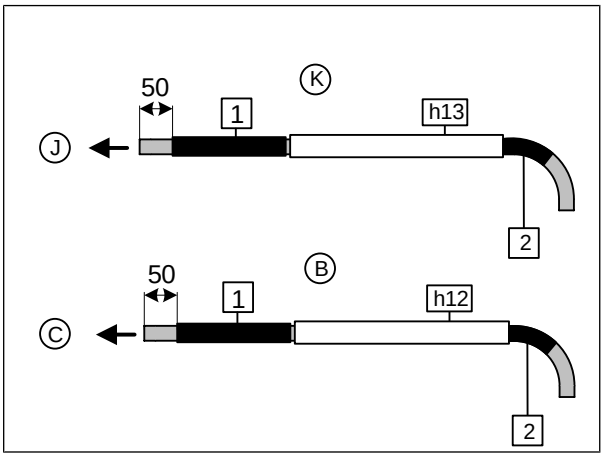


Fig. 84

Fabric heat shrink tubings 1.

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

Mount heat shrink plastic tubing 2.

- ▶ 1. Slide on and cut to length
- ▶ 2. Shrink, use at most 300 °C

Preparing hoses Ⓐ and Ⓛ

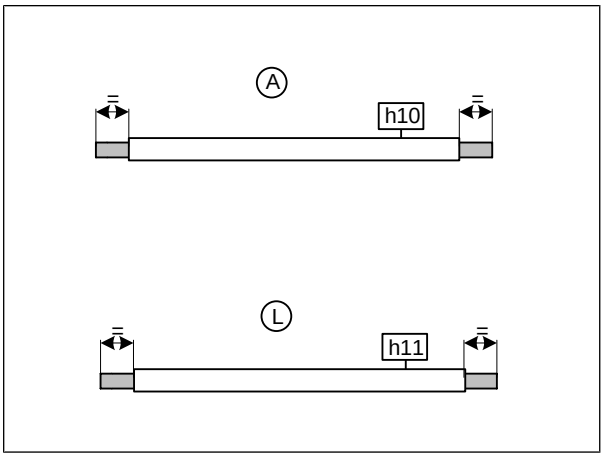


Fig. 85

Preparing hoses Ⓐ and Ⓛ

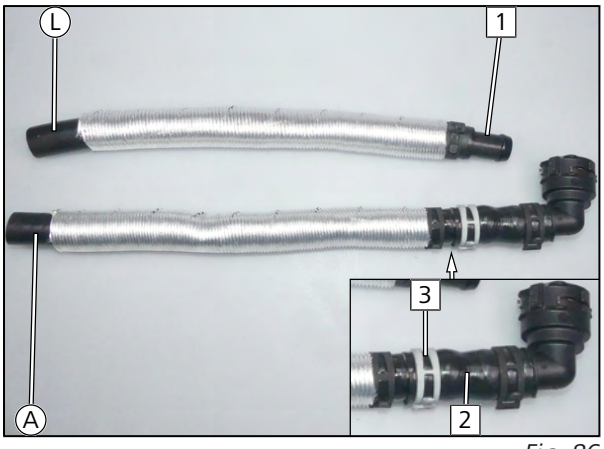


Fig. 86

All spring clips without a specific designation Ø25

1 Ø18/20 connecting pipe
2 Heat exchanger inlet hose section
3 18/20 connecting pipe, Ø27 spring clip

Preparing hose Ⓑ

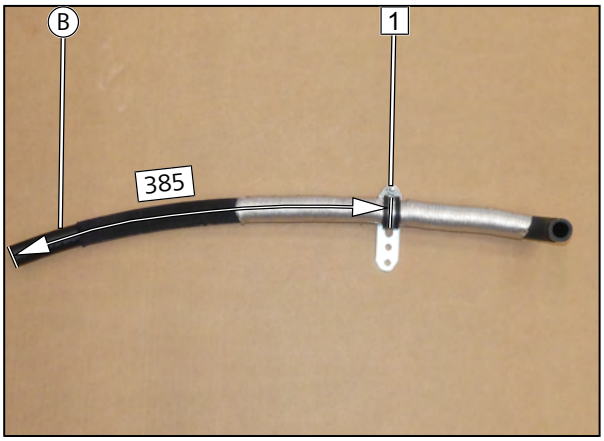


Fig. 87

1 M6x16 bolt, perforated bracket, Ø29 rubber-coated clamp, flanged nut

Shortening perforated bracket

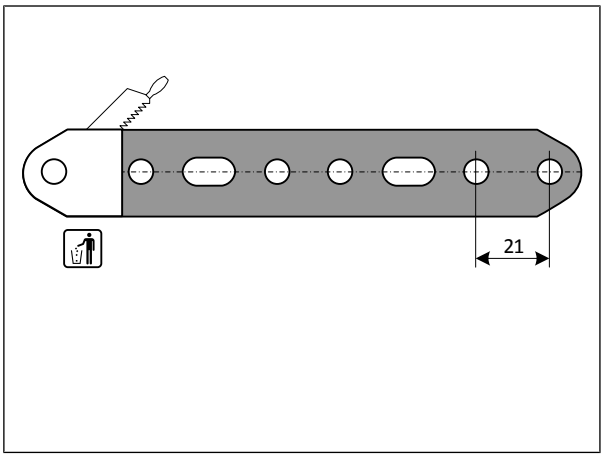


Fig. 88

Preparing hose Ⓚ

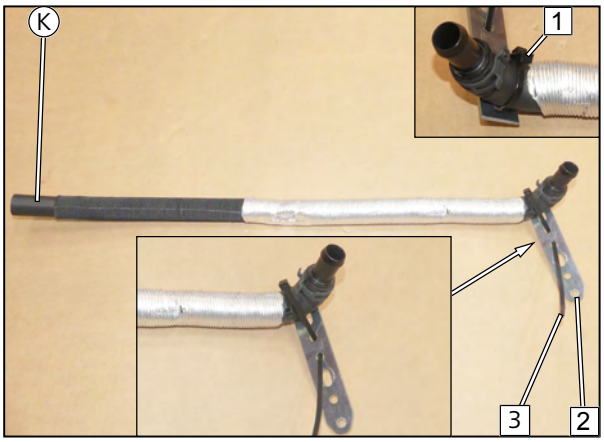


Fig. 89

1 Cable tie
2 Prepared perforated bracket

Creating hose group using hoses Ⓑ and Ⓚ

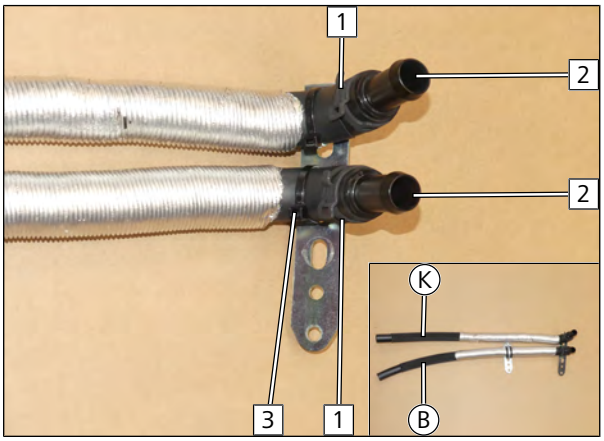


Fig. 90

1 Ø25 spring clip
2 Ø18/18 connecting pipe
3 Close cable tie

Premounting hoses Ⓐ, Ⓑ and Ⓚ, Ⓛ

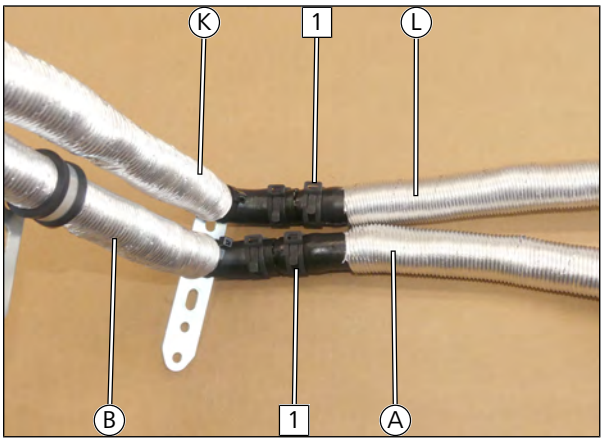


Fig. 91

1 Ø25 spring clip

11.3 Hose routing diagram

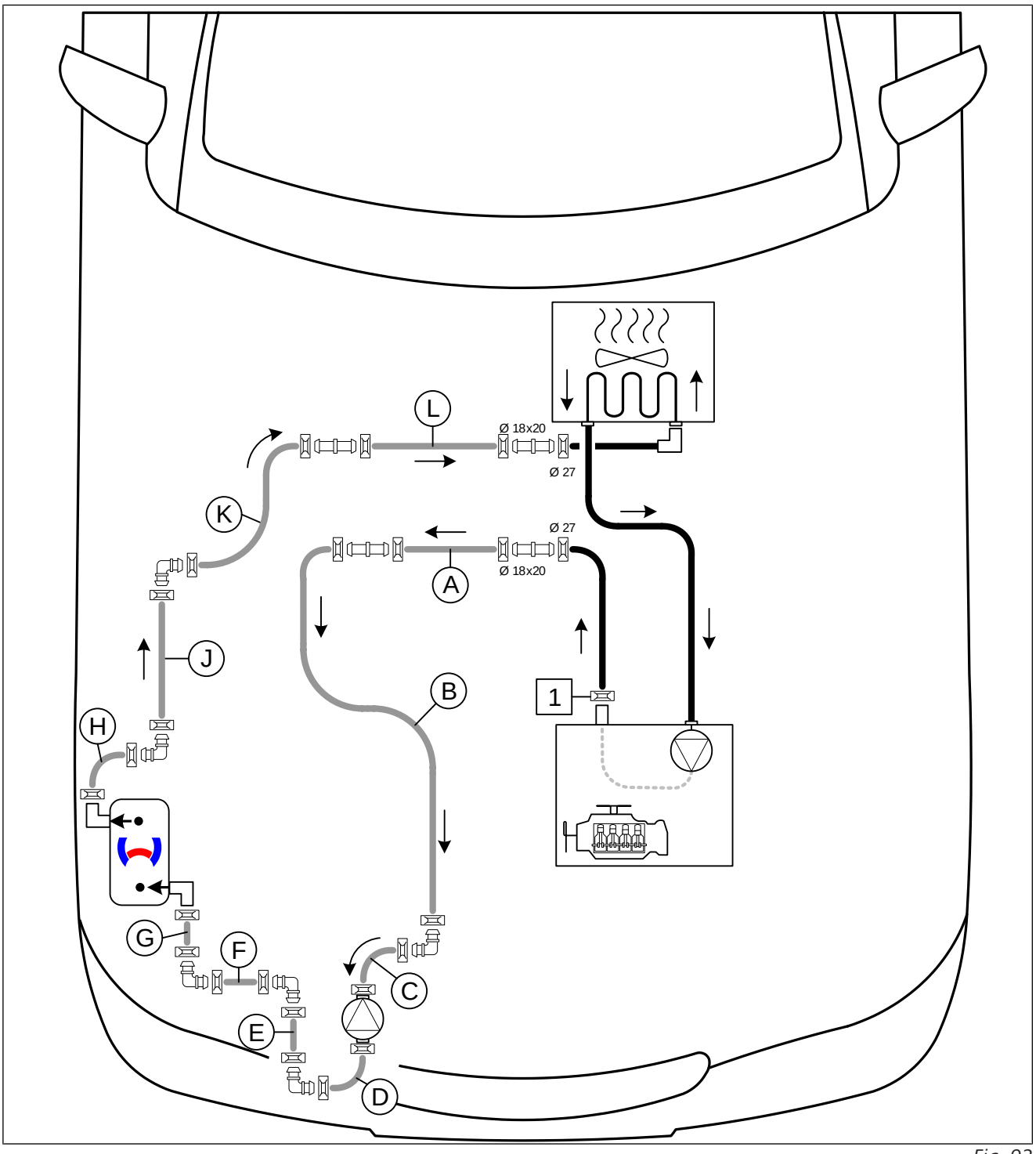


Fig. 92

All spring clips without a specific designation = Ø25;

All connecting pipes without a specific designation and = Ø18x18

1 Original vehicle spring clip

11.4 Coolant circuit installation

Mounting hose group

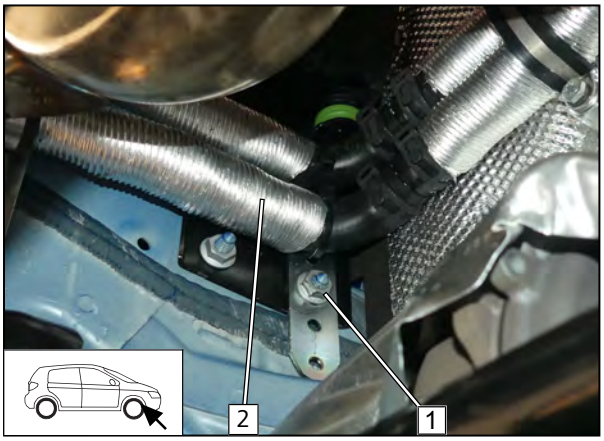


Fig. 93

1 Mount original vehicle stud bolt, large diameter washer, long perforated bracket, original vehicle flanged nut loosely

2 Hose group

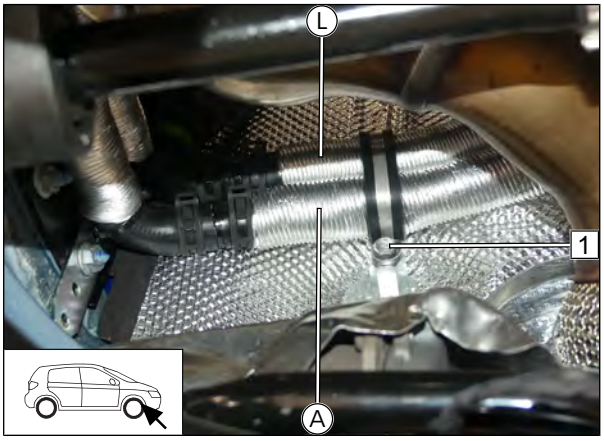


Fig. 94

1 Mount M6x20 bolt, spring lockwasher, Ø48 rubber-coated p-clamp loosely

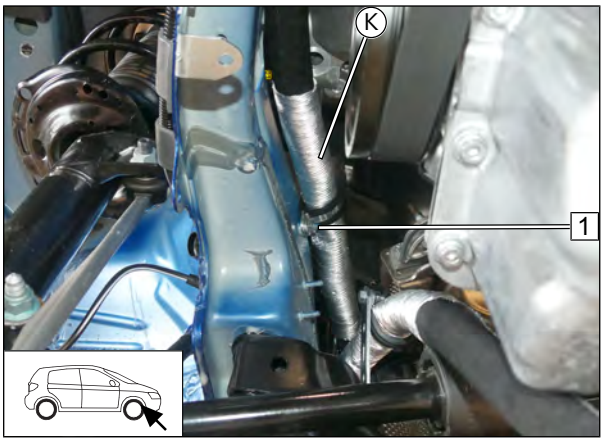


Fig. 95

1 Mount original vehicle stud bolt, Ø34 rubber-coated p-clamp, flanged nut loosely

Mounting splash guard

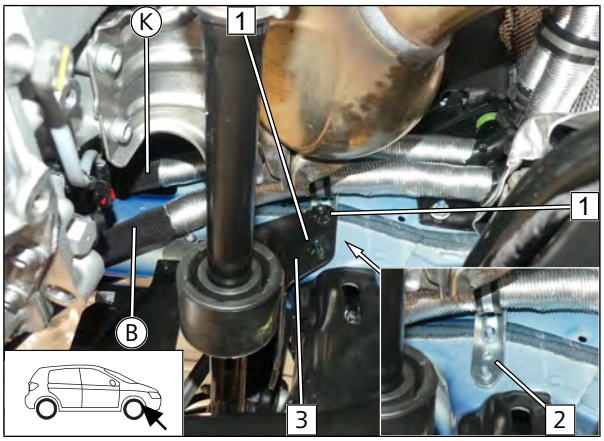


Fig. 96

- ▶ Attach perforated bracket 2 onto original vehicle stud bolt.
- ▶ Mount splash guard 3 with original vehicle plastic nuts 1.

Heat exchanger inlet connection

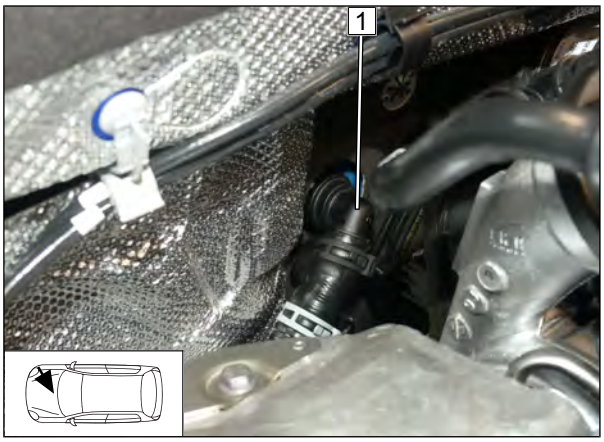


Fig. 97

1 Heat exchanger inlet hose section with coupling piece

Engine outlet connection

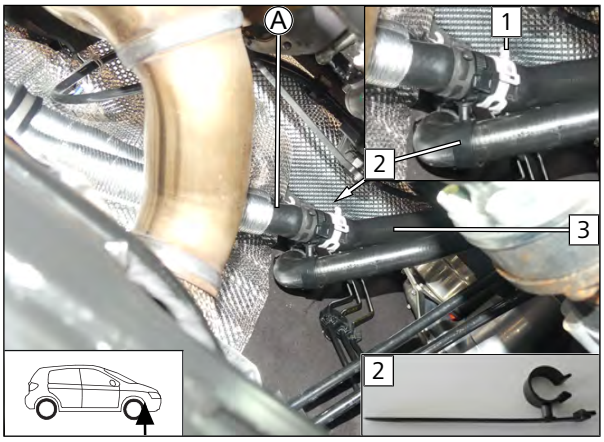


Fig. 98

1 Ø27 spring clip
2 Hose bracket
3 Engine outlet hose section

Connecting heater

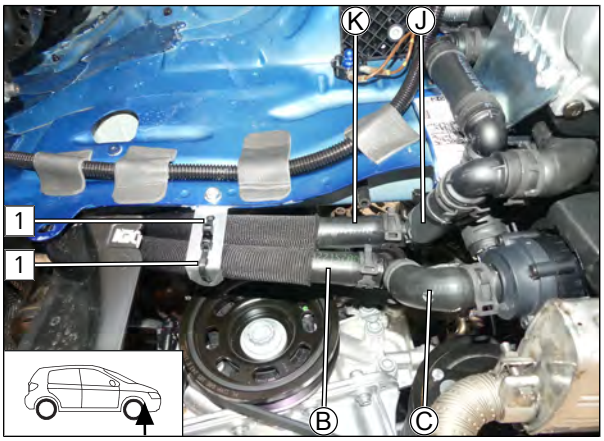


Fig. 99

Ensure sufficient distance from neighbouring components, correct if necessary.

>20

Tighten all loosely mounted screw connections.

1 Cable tie

Installing cable tie

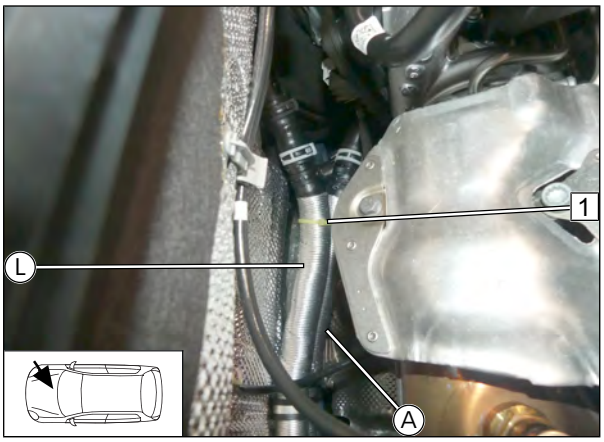


Fig. 100

▶ Fix hoses Ⓐ and Ⓛ with cable tie 1.

12 Final work in engine compartment

Checking wheel-wall inner panel distance

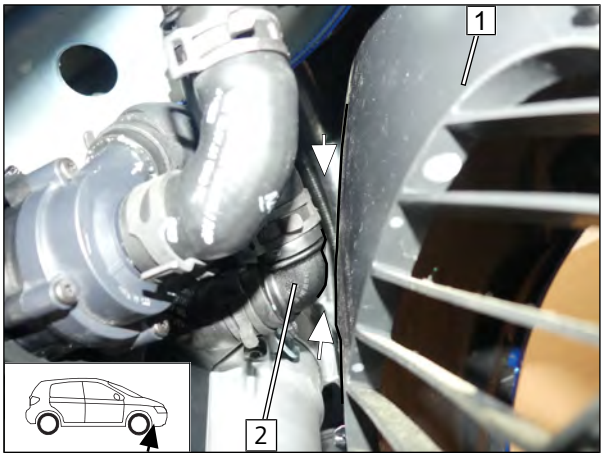
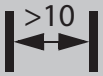


Fig. 101

Ensure sufficient distance from neighbouring components, correct if necessary.



▶ Mount wheel-well inner panel **1**.

2 Connecting pipe

13 Electrical system of passenger compartment

13.1 Preliminary Work

Preparing Cronus wiring harnesses 1 and 2, assigning wires

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

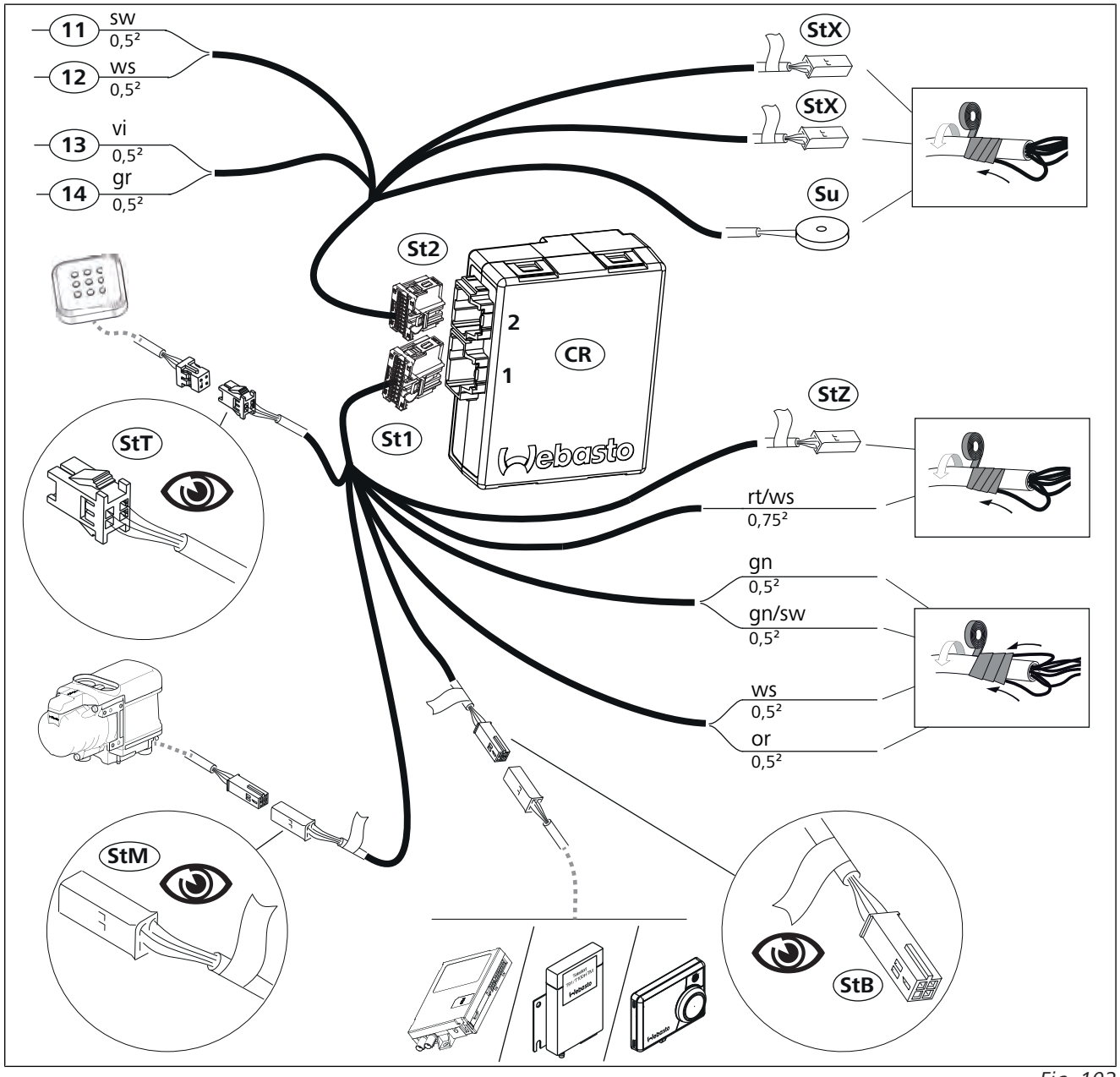


Fig. 102

Legend

Abbreviation	Component	Abbreviation	Component
CR	Cronus	StT	4-pin male plug for push button wiring harness
St1	16-pin, black connector of Cronus wiring harness 1	SU	Buzzer, will not be used
St2	12-pin, grey connector of Cronus wiring harness 2	StX	4-pin male plug, will not be used
StB	4-pin female plug for control element wiring harness	StZ	4-pin male plug for additional relay wiring harness, will not be used
StM	4-pin male plug for engine compartment wiring harness		

Preparing Cronus bracket

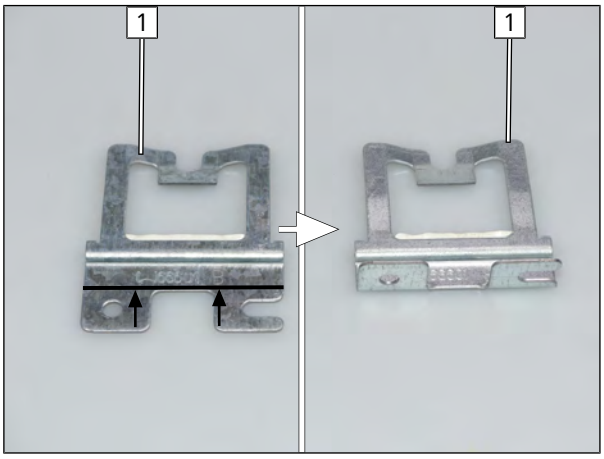


Fig. 103

▶ Bend bracket **1** as shown.

Premounting Cronus

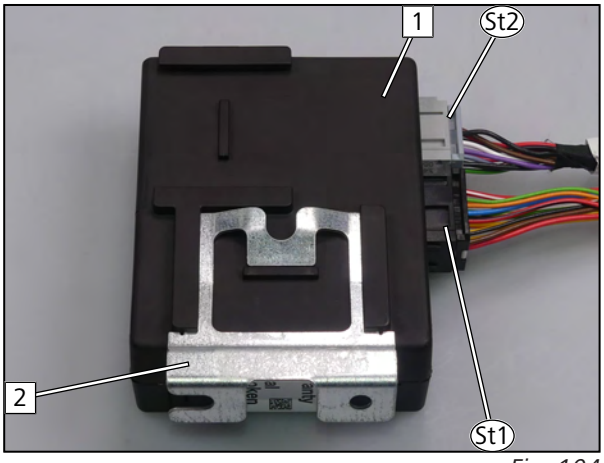


Fig. 104

1 Cronus
2 Bracket

Preparing installation location

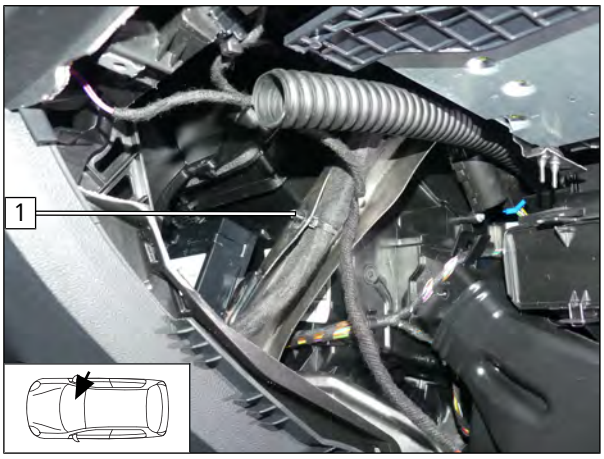


Fig. 105

1 Remove and discard original vehicle clip

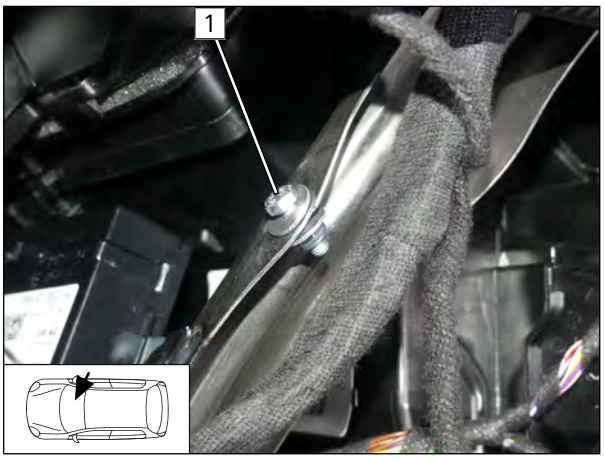


Fig. 106

1 Mount M5x16 bolt, large diameter washer, original vehicle hole, large diameter washer, locking nut loosely

Locating A/C control unit wiring harness

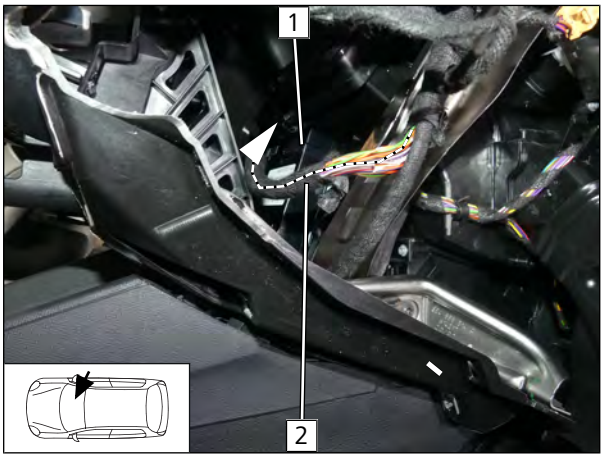


Fig. 107

▶ Strip insulation of original vehicle A/C wiring harness 2 carefully and locate wiring harness of A/C control unit 1.

Mounting Cronus

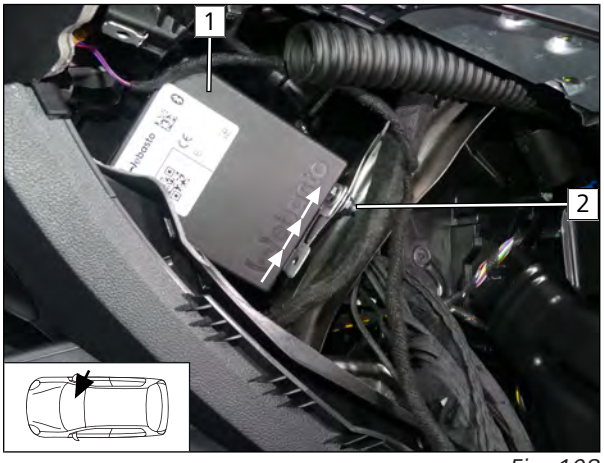


Fig. 108

1 Cronus

2 Tighten screw connections

13.2 Wiring diagram

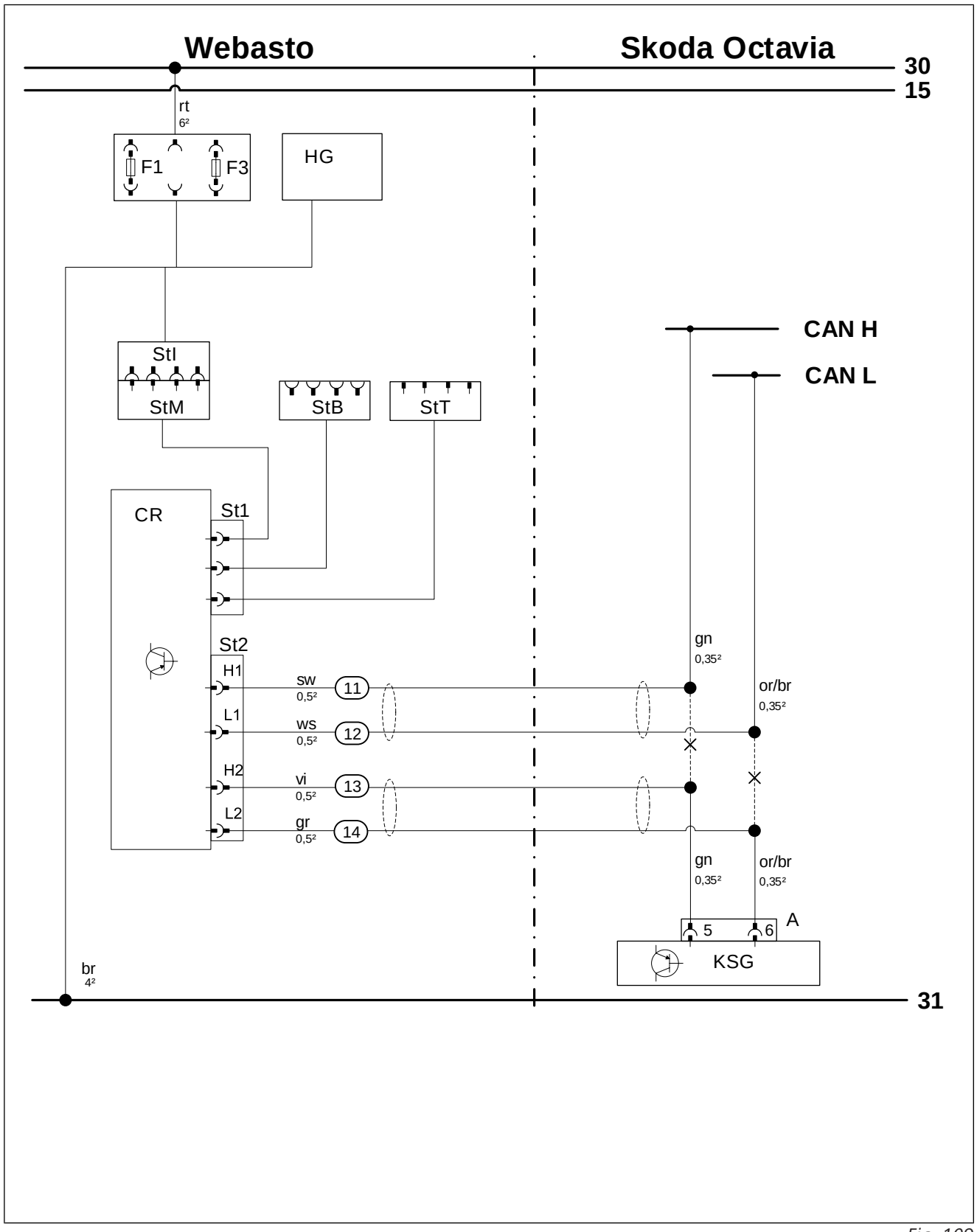


Fig. 109

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	Explanation
KSG	Air-conditioning control unit	X	Cutting point
A	20-pin connector of A/C control unit		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
CLR	Cold start module	bg	beige
CR	Cronus (passenger compartment control unit)	bl	blue
D1	Diode	br	brown
D2	Diode group	dbl	dark blue
Dia	Diagnosis connection	dgn	dark green
E	Male plug for Plug&Play wiring harness	ge	yellow
F	Female plug for Plug&Play wiring harness	gn	green
F0	Additional fuse for power supply	gr	grey
F1	Heater main fuse	hbl	light blue
F2	Fan main fuse	hgn	light green
F3	Cronus main fuse	la	salmon
HG	Heater TT-Evo	or	orange
LA	Power adapter	pk	pink
PWM GW	Pulse width modulator gateway	ro	Pink
RTD	Temperature sensor	rt	red
St1	16-pin, black connector of Cronus wiring harness 1	sw	black
St2	14-pin, grey connector of Cronus wiring harness 2	vi	violet
StB	4-pin female plug for control element wiring harness	ws	white
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		

13.3 Fan controller

Cutting point

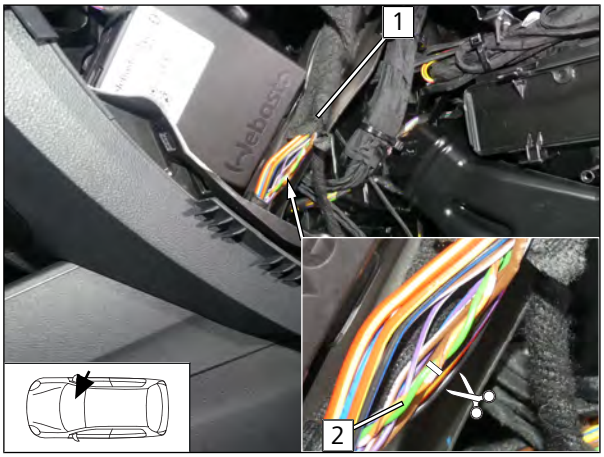


Fig. 110

> ▶ Detach part of the wiring harness wrapping carefully. Insulate and reinstall after completion.

▶ Locate green-orange/brown (gn-or/br) wires 2, separate and cut them.

1 Original vehicle wiring harness

Connection to air-conditioning control unit

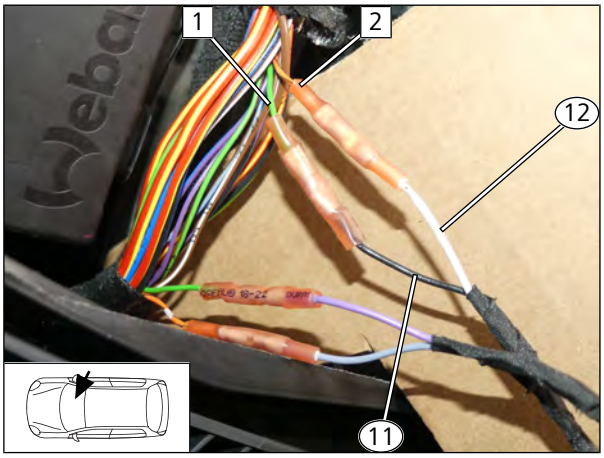


Fig. 111

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

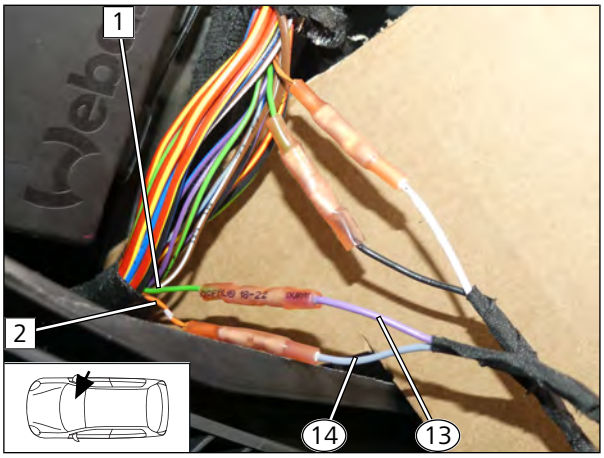


Fig. 112

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

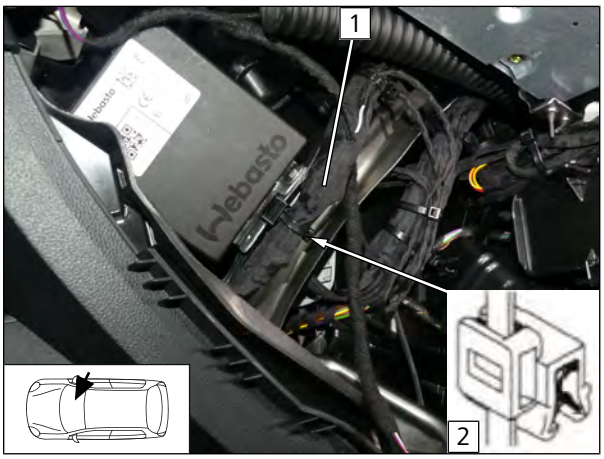


Fig. 113

▶ Insulate Cronus wiring harness 1 as well as butt connector with adhesive tape on original vehicle wiring harness. Attach wiring harness with edge clip cable tie 2.

13.4 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 the marked male plug of Cronus wiring harness 1 with the connection plug of the Cronus push button as shown.

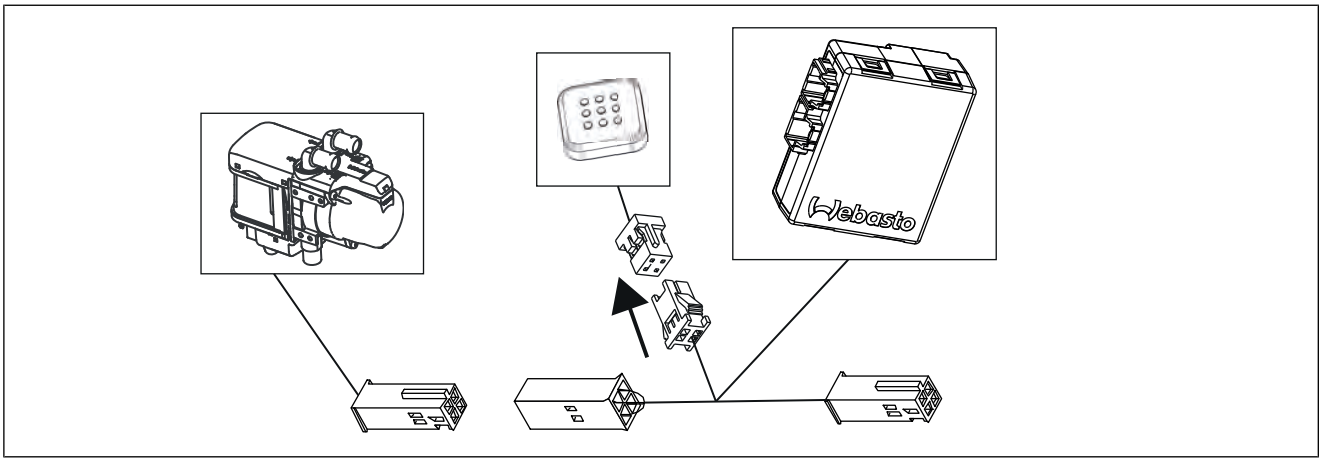


Fig. 114

13.5 Heater connection and installation of Telestart or MultiControll 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 or the push button of the Telestart option should be confirmed with the end customer and should comply with the installation conditions.

▶ Connect the marked male and female plugs of Cronus wiring harness 1 with the connection plug of the engine compartment wiring harness and the relevant control element as shown.

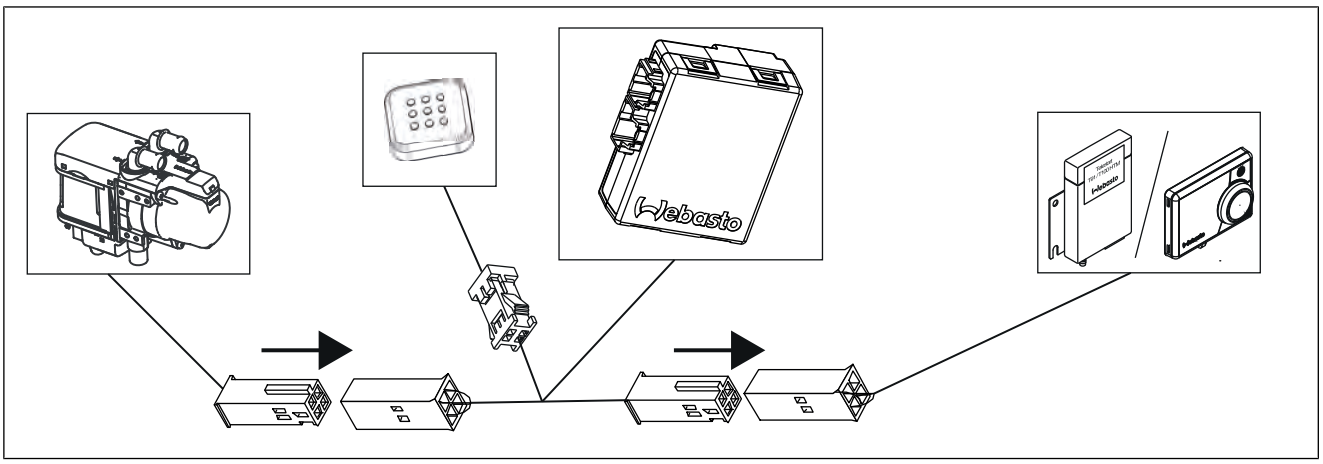


Fig. 115

13.6 Heater connection and installation of ThermoConnect control element

Install the control element in accordance with the provided relevant general installation documentation. The installation location of the push button of the ThermoConnect option should be confirmed with the end customer and should comply with the installation conditions.

Preparing Y wiring harness

The Y wiring harness mentioned in section 'Components used' must also be ordered.

- ▶ Locate connection plug [2] of ThermoConnect wiring harness on the wiring harness branch of Y wiring harness [1].
- ▶ Disconnect black (sw) wire [3] from connection plug [2], tie back and insulate.

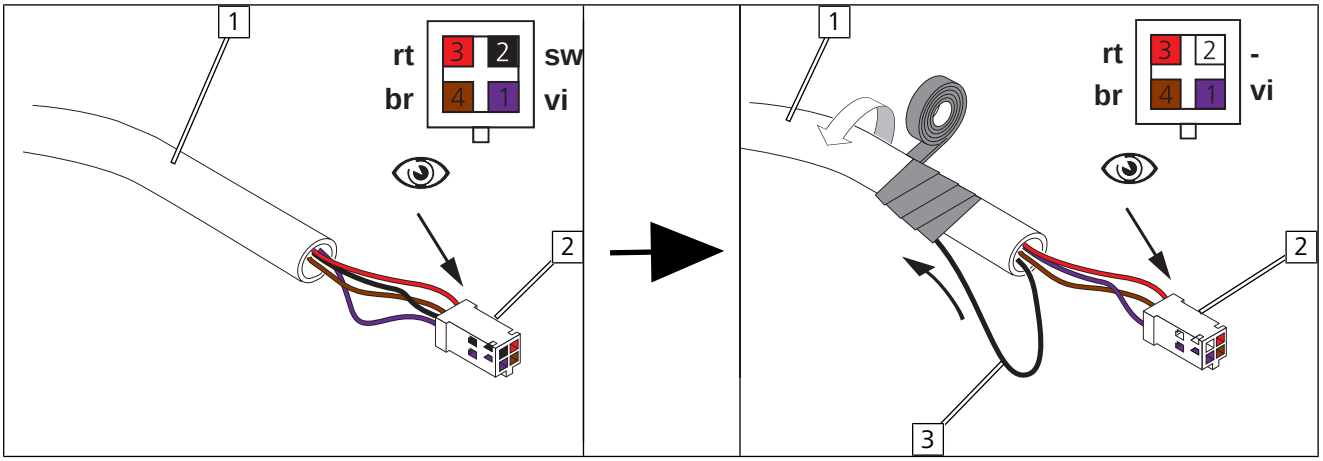


Fig. 116

Connecting wiring harnesses

- ▶ Connect the marked female plug [1] of Cronus wiring harness 1 and connection plug [2] of engine compartment wiring harness with Y wiring harness [3] and connect connection plug [4] of the ThermoConnect wiring harness with prepared connector [5] of Y wiring harness as shown.

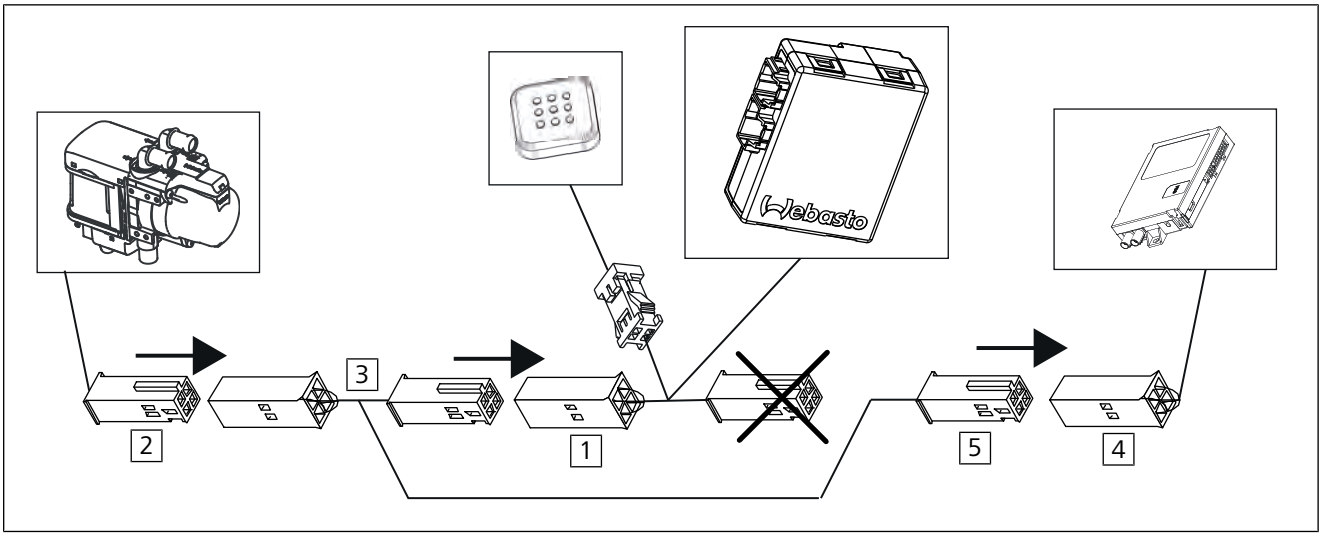


Fig. 117

14 Final Work

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

▶ Mount removed parts in reverse order.

▶ Check all hoses, clamps and all electrical connections for firm seating.

▶ Insulate and tie back loose lines

▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).

▶ Connect the battery.

Only use manufacturer-approved coolant.

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

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

▶ Initialisation of Cronus with the Webasto Thermo Test Diagnosis:

⇨ Activate the 'Cronus' application, initiate the start-up then follow and carry out the instructions in the indicated sequence

⇨ Save or print the final report

▶ Program MultiControl CAR, pair Telestart transmitter

▶ Make settings on A/C control panel according to the 'Operating Instructions'

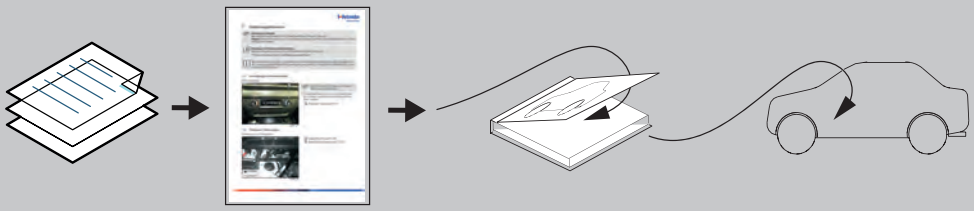
▶ Initial start-up and function check

▶ 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.



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

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CE

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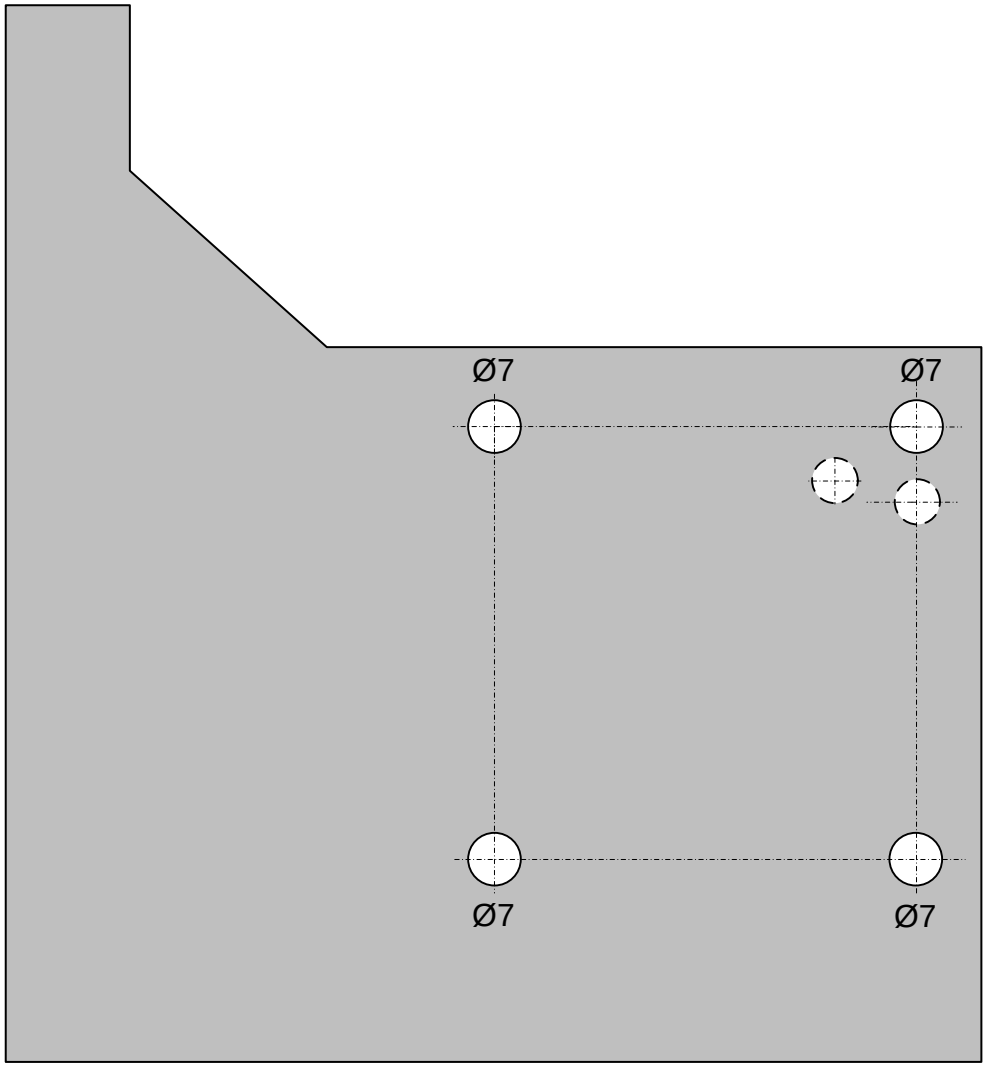
15 Template of bracket



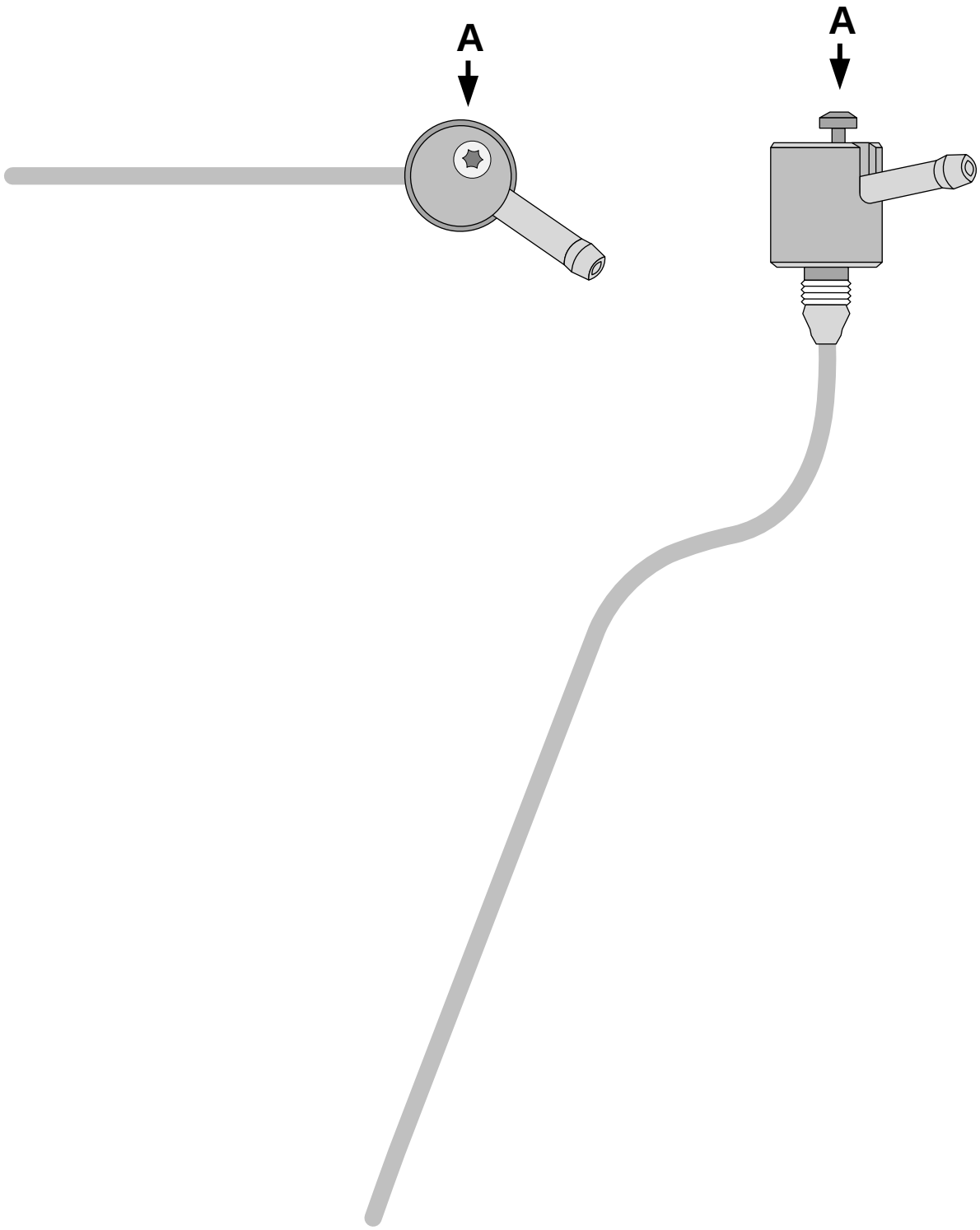
100mm

Set print option to custom scale on 100%.
Check scale 1:1 for print output.

0

100mm

16 FuelFix template



100mm

Set print option to custom scale on 100%.
Check scale 1:1 for print output.

0

100mm

17 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.

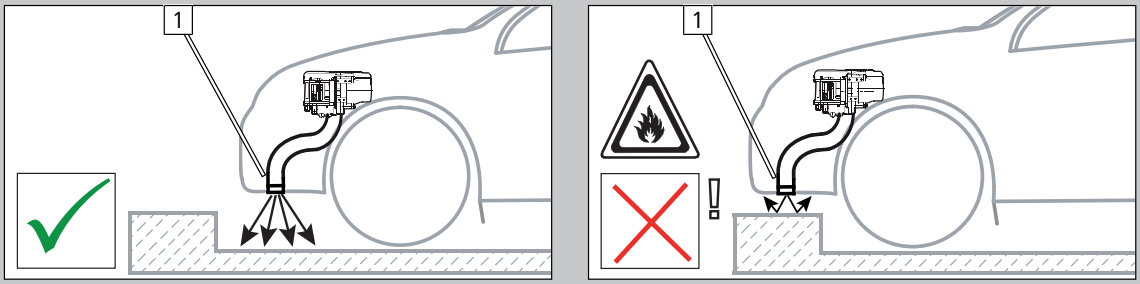
Notes about the A/C control panel presettings

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 presettings, 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



17.1 Installation location of fuses

Fuses in engine compartment

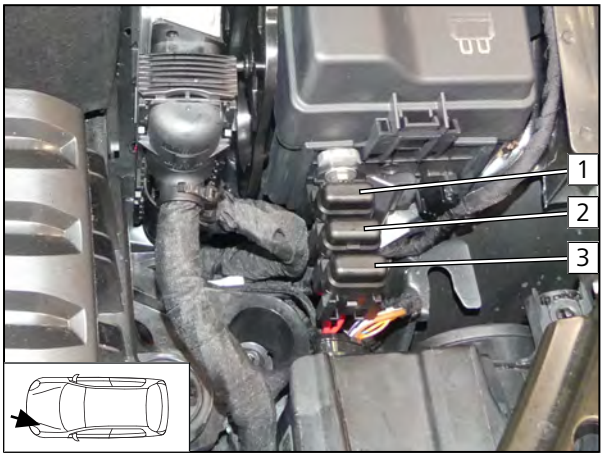


Fig. 118

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