EN

K Installation documentation

for Thermo Top Evo water heater

Skoda Karoq

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Skoda	Karoq	NU	from 2018	e8* 2007/46* 0272*…

Motorisation	Fuel	Emission standard	Transmission type	Out-put[kW]	Displace-ment[cm³]	Engine code
1.0P	Petrol	Euro 6	SG / AG	85	999	CHZJ
1.5P	Petrol	Euro 6	SG / AG	110	1498	DADA

Validity	Equipment variants	Model
		Karoq
Verified equipment variants	2 zone automatic A/C	x
	LED main headlights	x
	Halogen main headlights	x
	LED daytime running lights	x
	Halogen front fog lights	x
	LED front fog lights	x
	Headlight washer system	x
	Start button with keycard	x
	Automatic Start-Stop system	x
Unverified equipment variants	Manual air-conditioning	x
	Alarm system	x

Total installation time	Note
7.0 hours	

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1 List of abbreviations

AAC	Automatic air-conditioning
AC	Manual air-conditioning
AG	Automatic transmission
DP	Fuel pump
FF	FuelFix (tank extracting device)
HG	Heater
SG	Manual transmission
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

2 Installation notes

2.1 Information on Validity

This installation documentation applies to vehicles listed on page 1, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation. Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

2.2 Components used

Designation	Order number
Scope of delivery of Skoda Kodiaq / Skoda Karoq / VW T-Roc petrol TT-Evo	1325804C
The following must also be ordered for AAC : Additional kit for VW / Skoda / Seat 'Webasto Standard' A/C control or Additional kit for VW / Skoda / Seat 'Webasto Comfort' A/C control	 1325085_ 1325012_
In case of control element as well as Telestart indicator lamp in consultation with end customer	In accordance with price list
In case of MultiControl CAR installation - installation frame for MultiControl	9030077_

2.3 Information on Total Installation Time

The total installation time includes the time needed for mounting and demounting the vehicle-specific components, the heater specific installation time and all other times required for the system integration and initial start-up of the heater.
The total installation time may vary for vehicle equipment other than provided.

2.4 Installation recommendations

Arrange for the vehicle to be delivered with the tank only about ¼ full.
For the MultiControl CAR option, the recommended installation locations for the Telestart or ThermoCall push button should be confirmed with the end customer.
Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

3 About this document

3.1 Purpose of the document

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

Thermo Top Evo heater

3.2 Warranty and liability

Webasto shall assume no liability for defects, damage and injuries resulting from a failure to observe the installation, repair and operating instructions of the information contained in them.

This liability exclusion particularly applies to improper installations and repairs by untrained persons or in the case of a failure to use genuine spare parts.

The liability due to culpable disregard to life, limb or health and due to damage or injuries caused by a wilful or reckless breach of duty remain unaffected, as does the obligatory product liability.

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components must audibly snap into place during assembly.

Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

Observe the instructions and guidelines of the respective vehicle manufacturer for demounting and mounting vehicle specific components.

The initial start-up is to be executed with the Webasto Thermo Test Diagnosis.

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

3.2.1 Statutory regulations governing installation

The Thermo Top Evo heater has been type-tested and approved in accordance with ECE-R 10 (EMC) and ECE-R 122 (heater). The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

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

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

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

Regulations and legal requirements

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

3.3.1 Safety information on installation

Danger posed by live parts

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

Danger of fire and leaking toxic gases due to improper installation

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

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage

- ▶ Fit protectors on sharp edges.

3.4 Using this document

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

3.4.1 Explanatory Notes on the Document

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

Generally valid Webasto documentation	
Vehicle-specific installation documentation	K
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

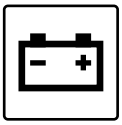
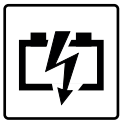
▶ Actions to protect yourself against risks.

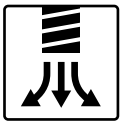
Reference to the vehicle manufacturer's specific documents.

a note on a special technical feature

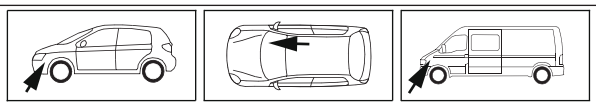
3.4.3 Work step identification marks

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

Mechanical system	Electrical System	High-voltage	Coolant
			

Combustion air	Fuel	Exhaust gas	Software
			

3.4.4 Orientation aid



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

3.4.5 Use of highlighting

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

4 Technical Information

Dimension specifications

- All dimensions specified in mm

Tightening torque specifications

- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm
- Tightening torque values of 5x15 retaining plate of water connection piece bolts = 7Nm
- 5x12 bolt tightening torque of 2-part heater bracket = 6Nm
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology

Specified temperature for fabric heat shrink plastic tubing

- Shrink temperature max. 230°C

Necessary special tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Hose clamping pliers
- Hose cutter
- Automatic wire stripper 0.2 - 6 mm^2
- Crimping pliers for cable lugs 0.5 – 10 mm^2
- Crimping pliers for tab 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 Preparing measures

5.1 Vehicle preparation



Further information can be found in the vehicle operating instructions.

- ▶ Open the fuel tank cap
- ▶ Ventilate the fuel tank
- ▶ Close the fuel tank cap again
- ▶ Depressurise the cooling system
- ▶ Remove the right front wheel
- ▶ Remove the front half of the wheel well trim on the right
- ▶ Remove the engine underride protection
- ▶ Remove the underbody trim on the right
- ▶ Disconnect the battery and remove it completely with the battery carrier
- ▶ Remove the air filter completely with the intake
- ▶ Remove the engine control unit with the bracket
- ▶ Drain and store the engine coolant
- ▶ Remove the side instrument panel trim on the left
- ▶ Remove the lower instrument panel trim on the left
- ▶ Remove the A-pillar trim on the left (only in case of Telestart)
- ▶ Remove the footwell trim on the driver's side
- ▶ Remove the rear seat
- ▶ Open the tank fitting service lid on the right

5.2 Heater preparation



Observe the general installation instructions of the heater.

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

6 Installation overview

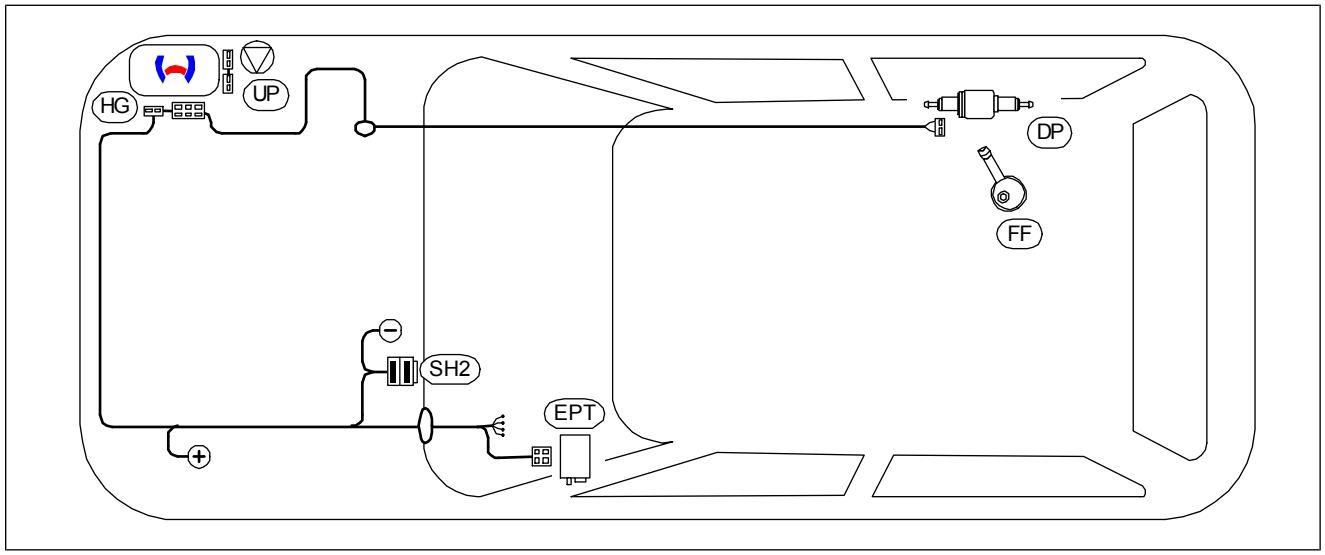


Fig. 1

Legend to installation overview

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

Heater assembly installation location

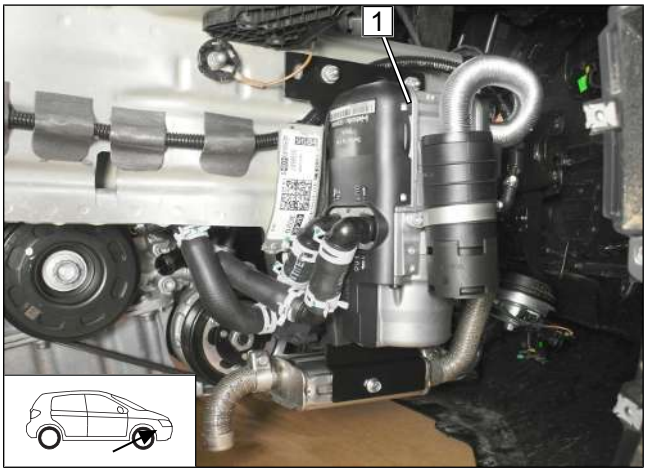


Fig. 2

1 Heater assembly

7 Electrical system of engine compartment

Pre-assembling engine compartment fuses

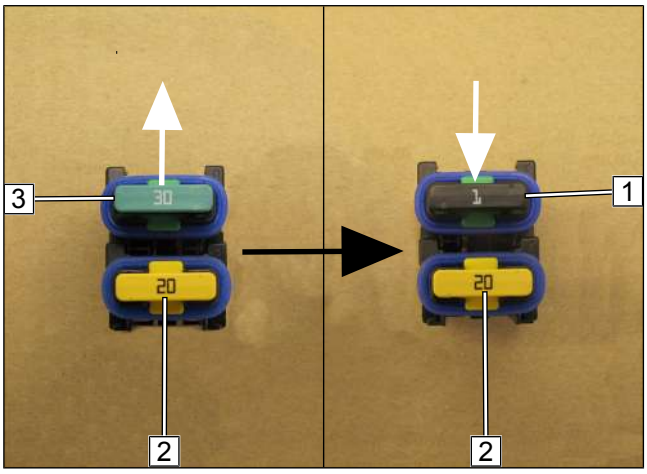


Fig. 3

▶ Replace 30A passenger compartment main fuse F2 [3] with 1A fuse [1].

[2] Fuse F1: 20A

Preparing perforated bracket of SH2

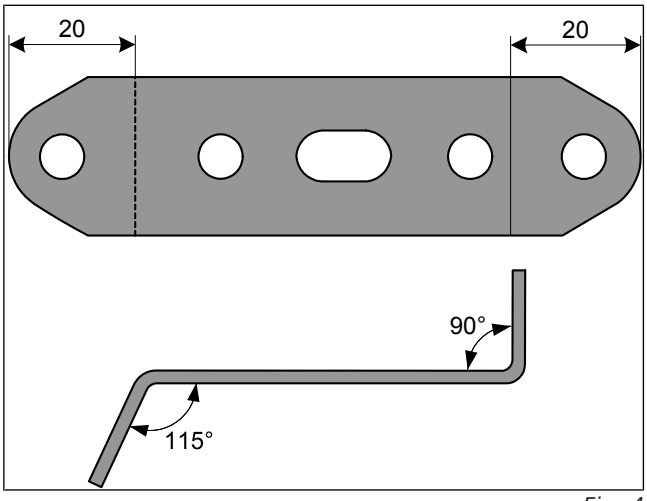


Fig. 4

Preparing SH2 installation

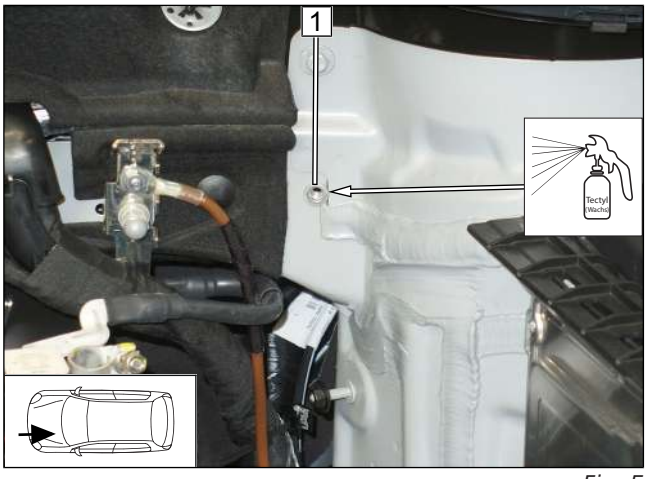


Fig. 5

[1] Drill out original vehicle hole to 9mm dia., insert rivet nut

Mounting SH2

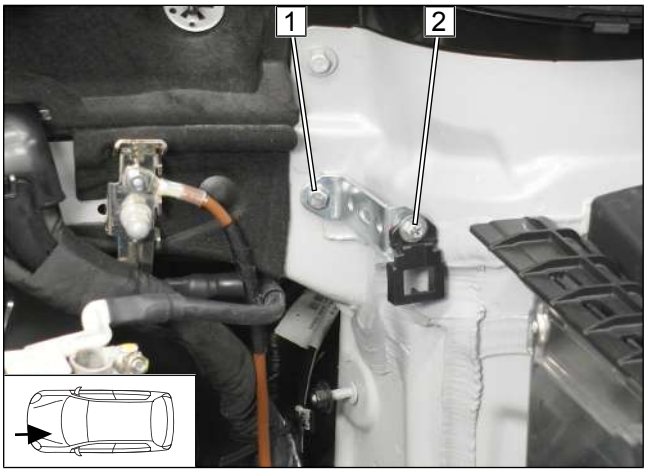


Fig. 6

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

2 M5x16 bolt, large diameter washer, retaining plate of SH2, perforated bracket, large diameter washer, nut

Mounting fuses F1 and F2

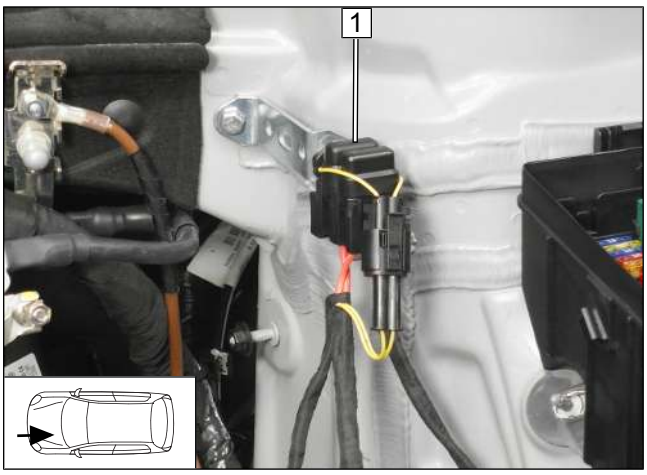


Fig. 7

1 Fuse F1: 20A and F2: 1A

Earth wire connection

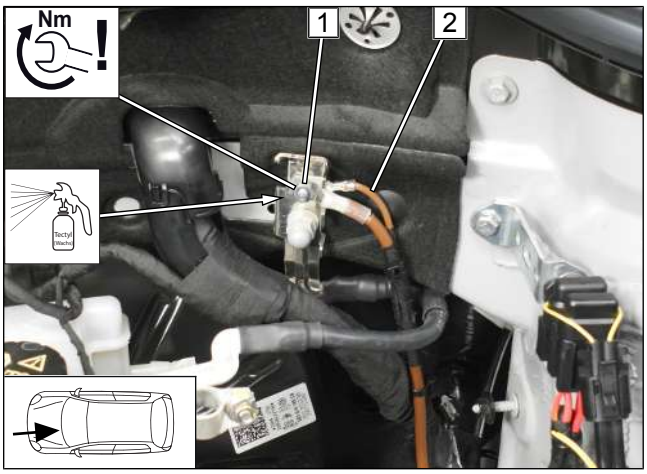


Fig. 8

DANGER

Fire hazard due to insufficient tightening torque.

▶ Observe tightening torque

1 Original vehicle earth point

2 Brown (br) earth wire

Passenger compartment wiring harness pass through

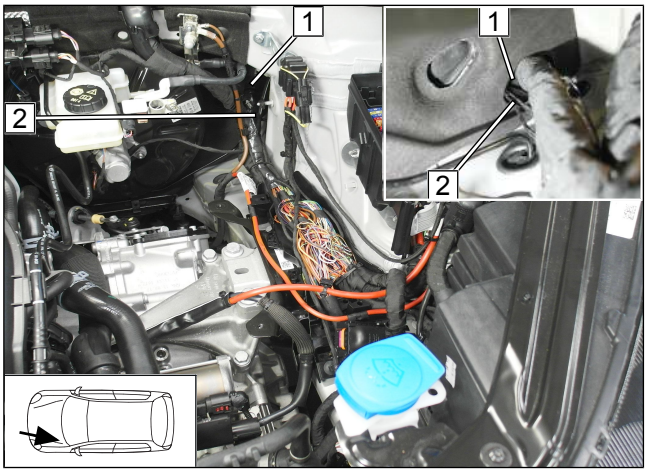


Fig. 9

1 Passenger compartment pass through

2 Passenger compartment and control element wiring harnesses

Routing heater wiring harness and positive wire

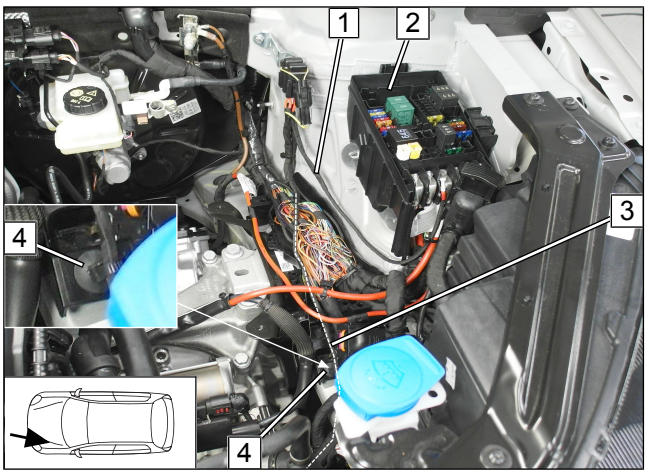


Fig. 10

▶ Route positive wire 1 to fuse and relay box 2 and heater wiring harness 3 to the radiator as shown.

4 Eyelet cable tie

Routing heater wiring harness

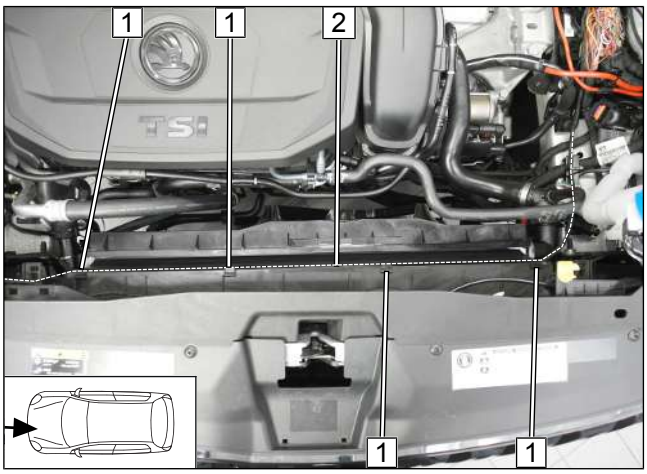


Fig. 11

1 Edge clip cable tie

2 Heater wiring harness

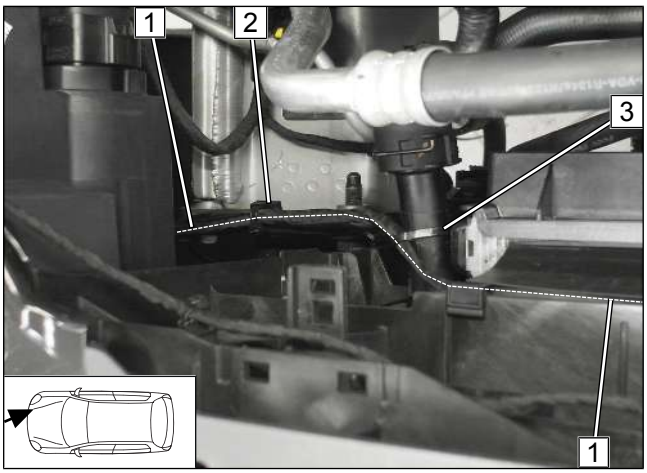


Fig. 12

1 Heater wiring harness
2 Edge clip cable tie
3 Cable tie

Positive wire connection

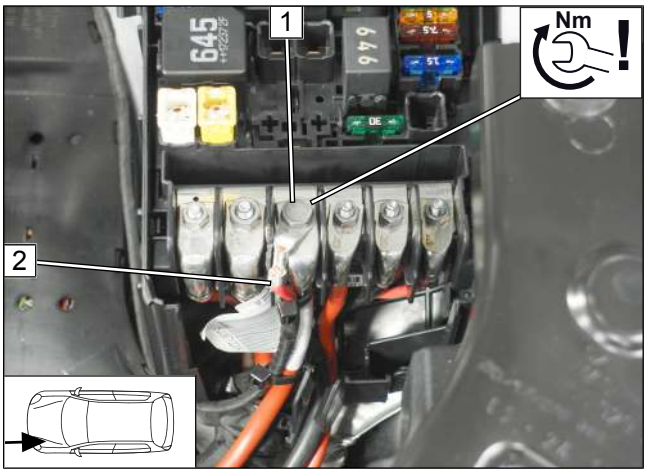


Fig. 13

DANGER

Fire hazard due to insufficient tightening torque.

▶ Observe tightening torque

1 Original vehicle positive point
2 Red (rt) positive wire

8 Mechanical system

8.1 Installation location preparation

Moving horn

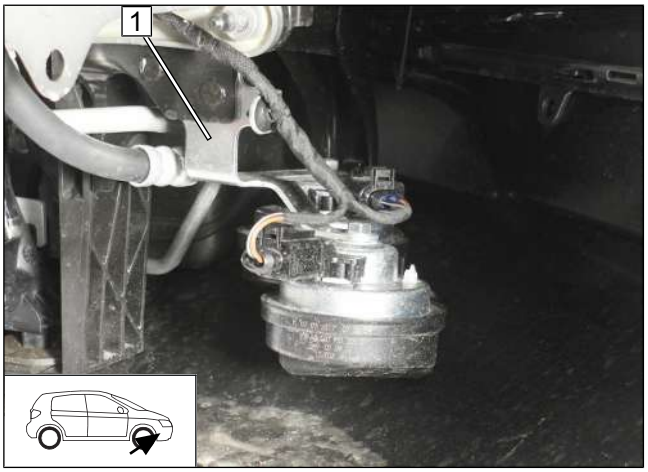


Fig. 14

1 Remove horn bracket

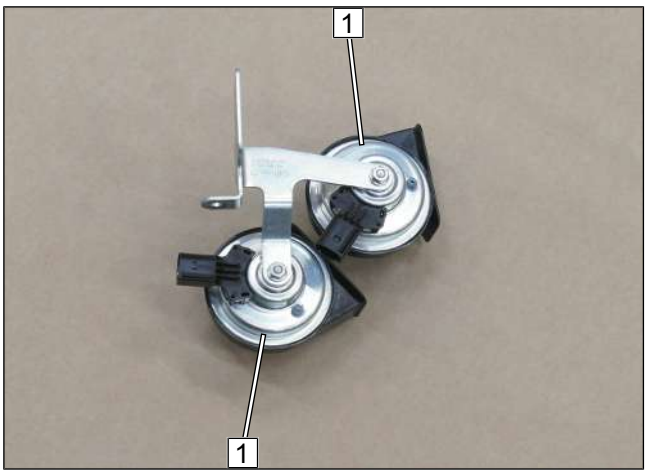


Fig. 15

1 Remove horn

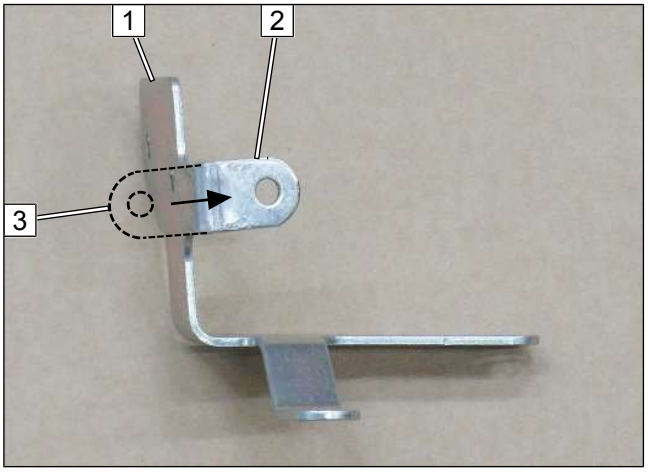


Fig. 16

1 Horn bracket
2 Bend tab as shown
3 Original position of tab

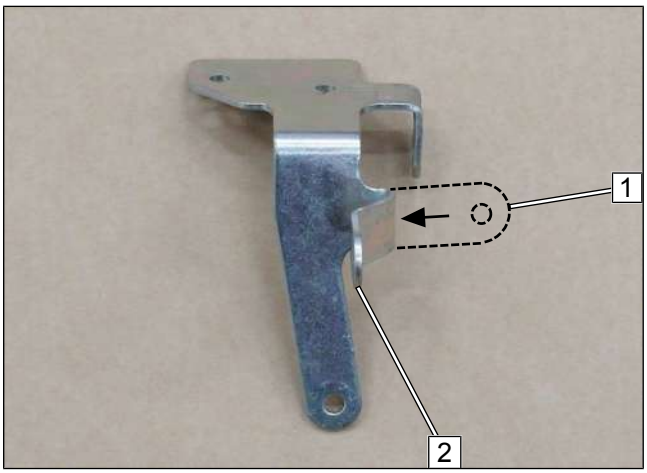


Fig. 17

1 Original position of tab
2 Bend tab as shown

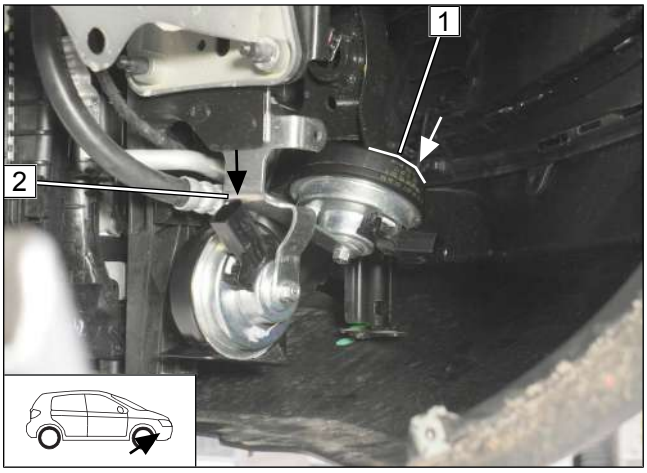


Fig. 18

▶ Mount horn and horn bracket as shown. Ensure sufficient distance at position 1 and 2.

Adapting horn wiring harness

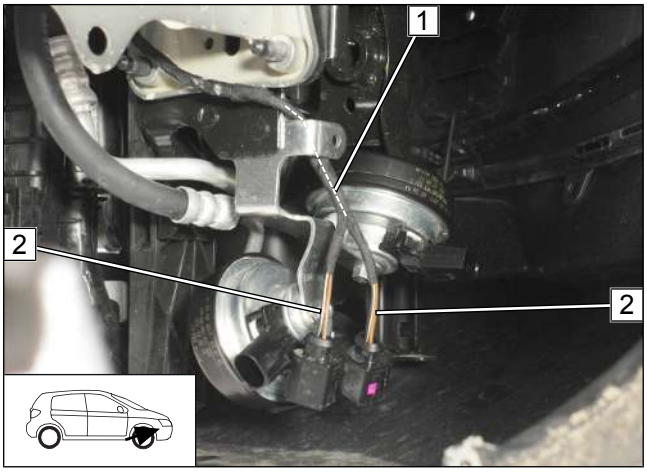


Fig. 19

Do not damage the insulation of the original vehicle lines.

▶ Remove the original vehicle wiring harness wrapping 2 in marked area 1.

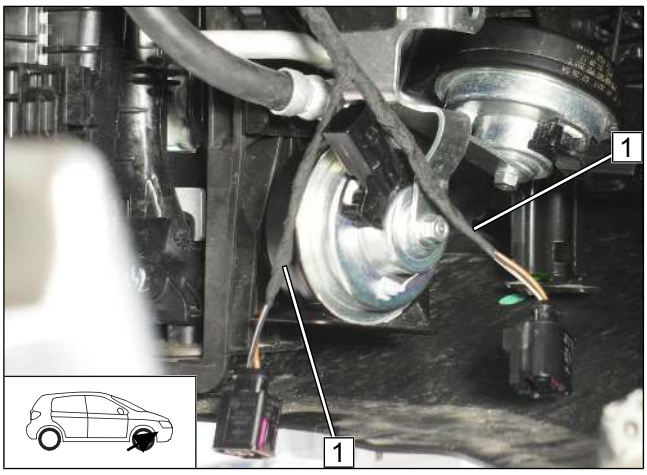


Fig. 20

▶ Reinsulate original vehicle wiring harness 1 as shown.

Mounting original vehicle wiring harness

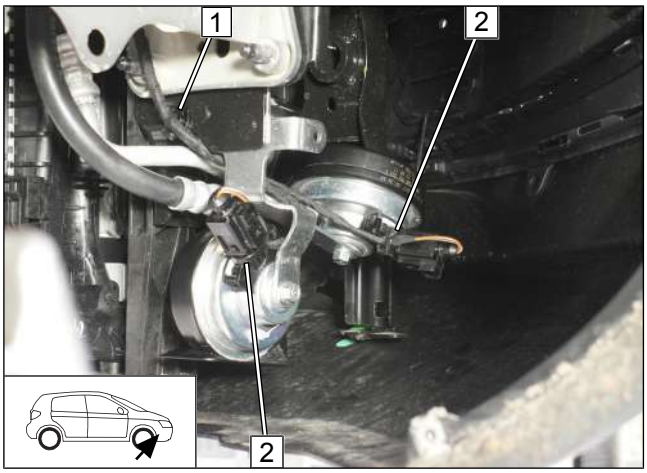


Fig. 21

1 Edge clip cable tie
2 Cable tie

Positioning spacer

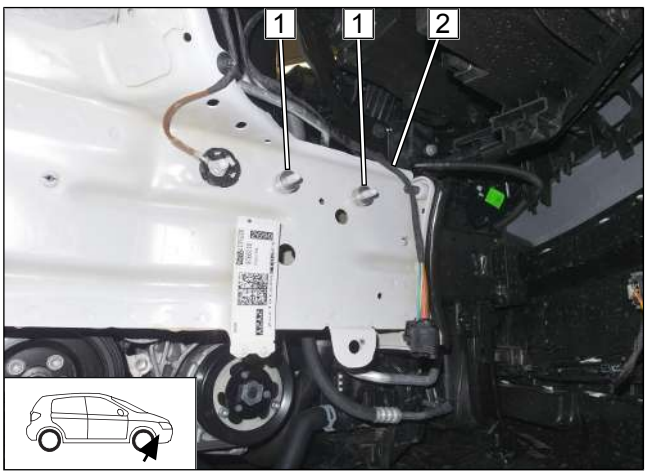


Fig. 22

1 10mm spacer on original vehicle stud bolt
2 Heater wiring harness

8.2 Heater assembly installation

Heater assembly

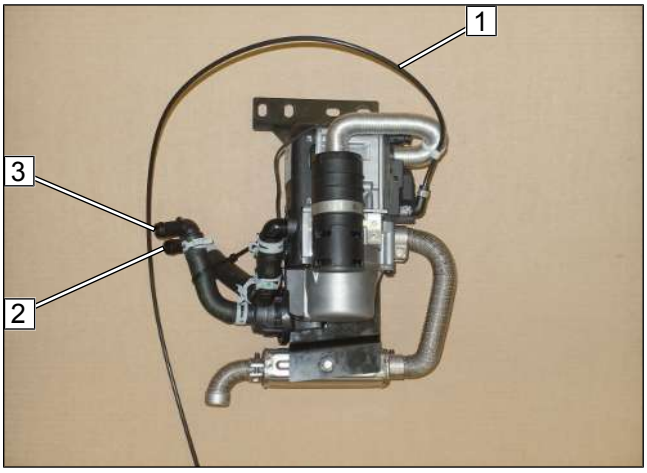


Fig. 23

1 Fuel line
2 Heater outlet connection
3 Heater inlet connection

Mounting wiring harness

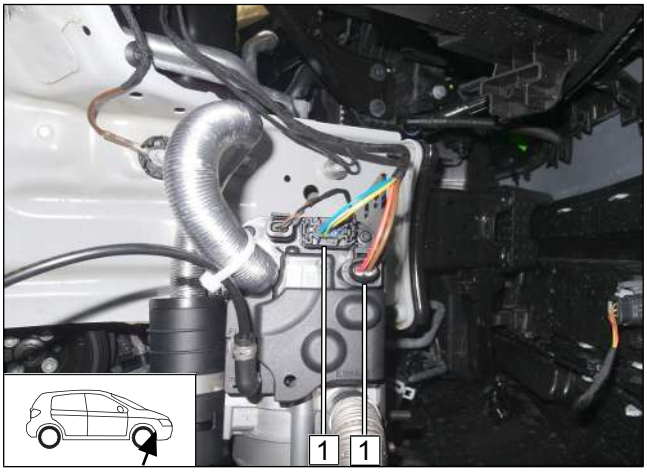


Fig. 24

1 Heater wiring harness connector

Heater assembly installation

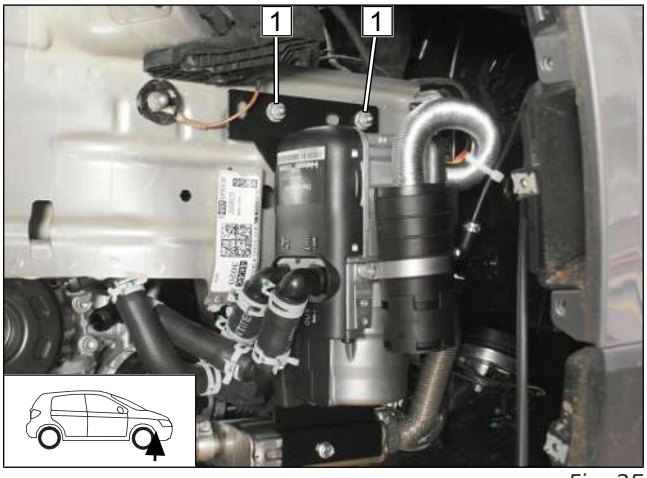


Fig. 25

▶ Mount flanged nut **1** loosely.

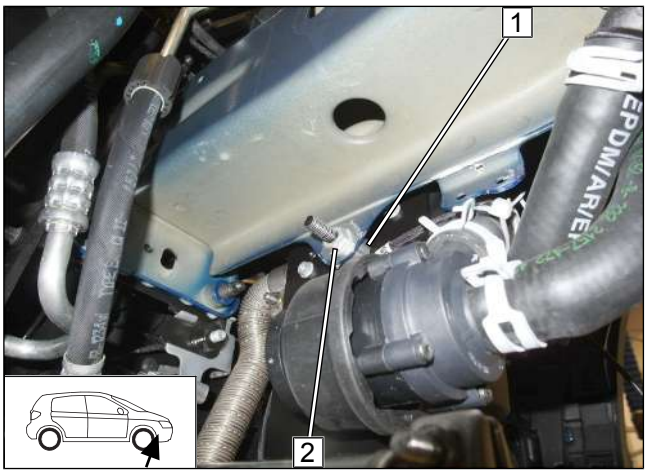


Fig. 26

▶ Position 10mm spacer 1 between bracket and frame side member. Tighten all screw connections.

2 Large diameter washer, flanged nut

Checking distance

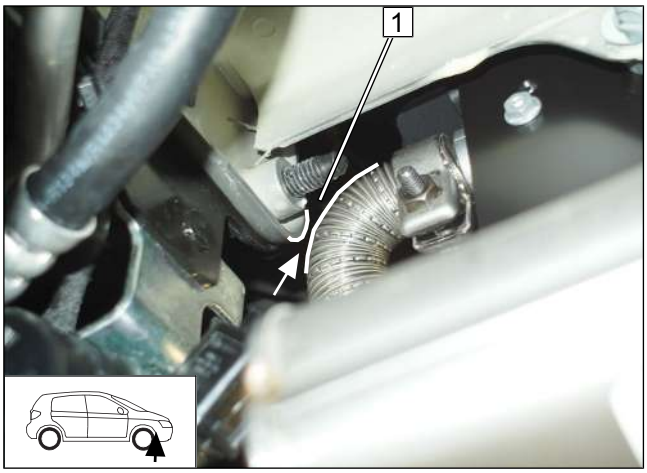


Fig. 27

Ensure sufficient distance from neighbouring components at position 1, correct if necessary.

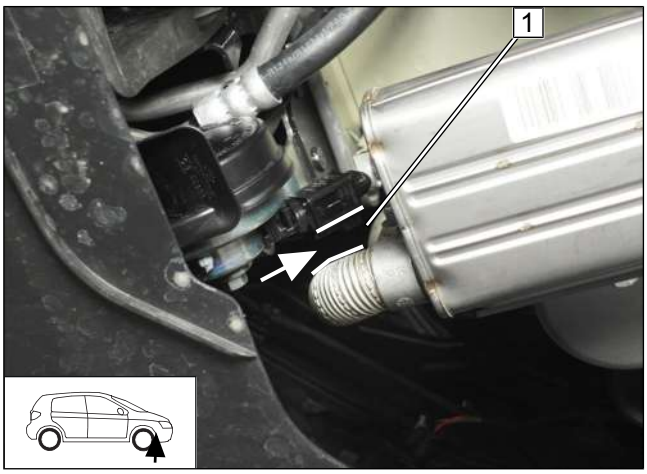


Fig. 28

Ensure sufficient distance from neighbouring components at position 1, correct if necessary.

9 Fuel

DANGER

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

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

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

Danger of damage to components

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

Dismantling fuel pump connector

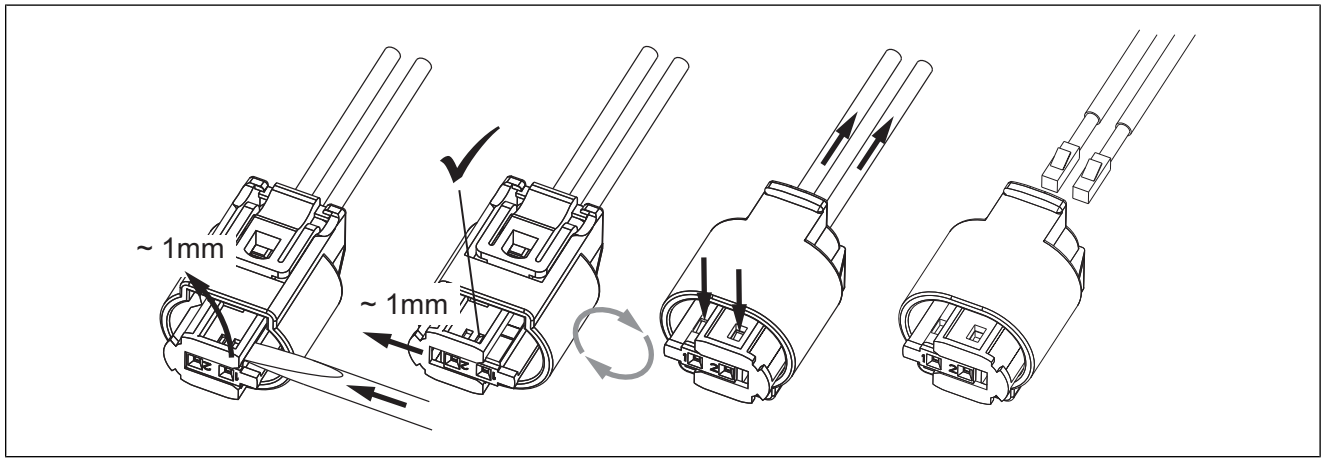


Fig. 29

9.1 Routing fuel line

Routing fuel line in wheel well

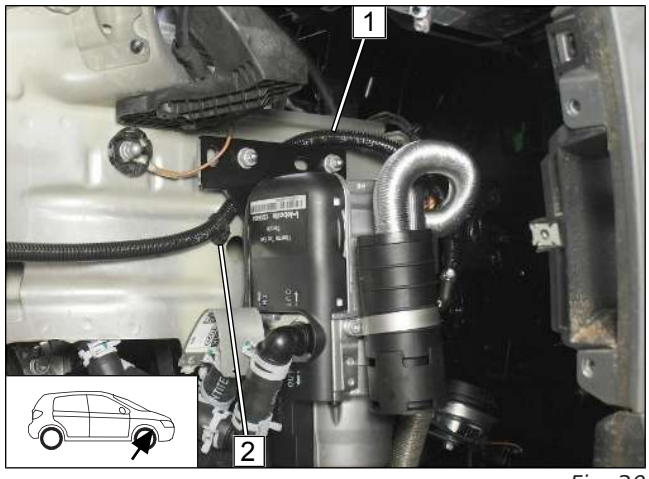


Fig. 30

1 Fuel line and fuel pump wiring harness in corrugated tube

2 Eyelet cable tie

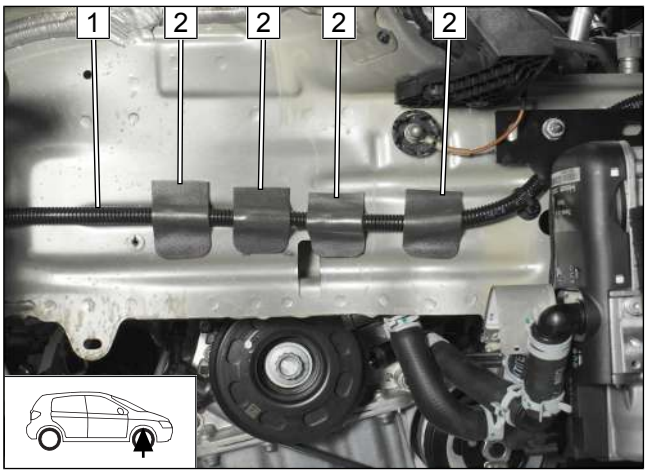


Fig. 31

1 Fuel line and fuel pump wiring harness in corrugated tube

2 Self-adhesive foam cut in half

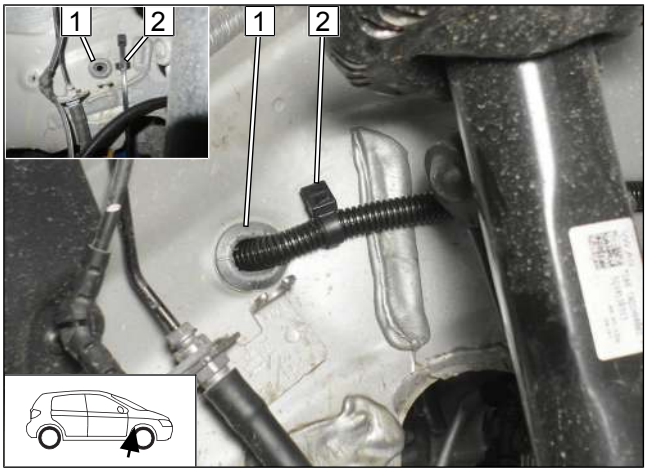


Fig. 32

▶ Open original vehicle pass through 1 in the centre as shown.

2 Eyelet cable tie in original vehicle hole

Preparing fuel pump installation location

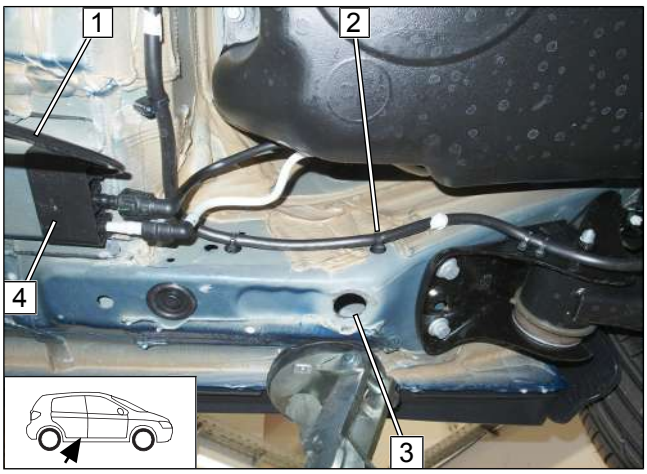


Fig. 33

1 Heater fuel line

2 Detach original vehicle eyelet cable tie

3 Remove plug as shown (it will be mounted again later)

4 Original vehicle pass through

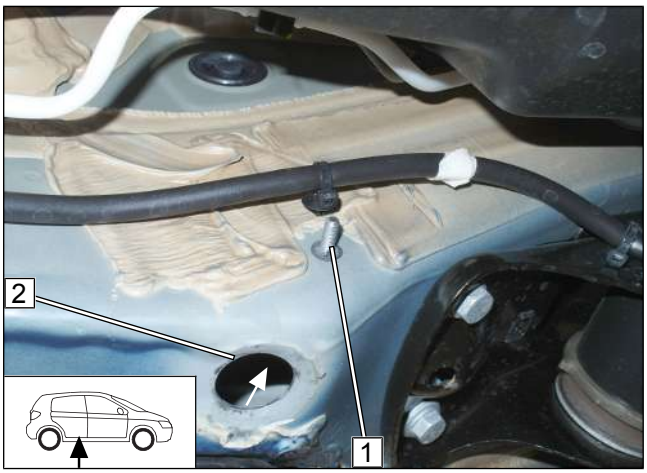


Fig. 34

▶ Insert M6x20 bolt 1 via opening 2 using suitable means.

1 M6x20 bolt, original vehicle hole, lock washer

Preparing perforated bracket

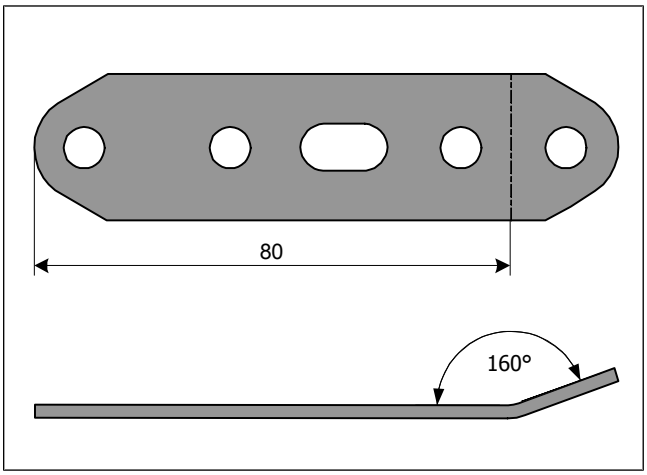


Fig. 35

Premounting fuel pump

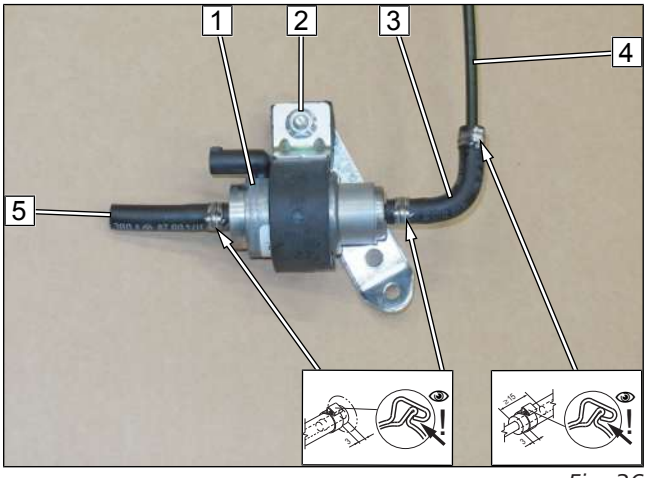


Fig. 36

1 Fuel pump
2 M6x25 bolt, perforated bracket, fuel pump mount, support angle bracket, flanged nut
3 90° moulded hose, 10mm dia. clamp [2x]
4 500mm long fuel line
5 Hose section, 10mm dia. clamp

Fuel pump installation



Fig. 37

1 Premounted bolt, premounted fuel pump, flanged nut

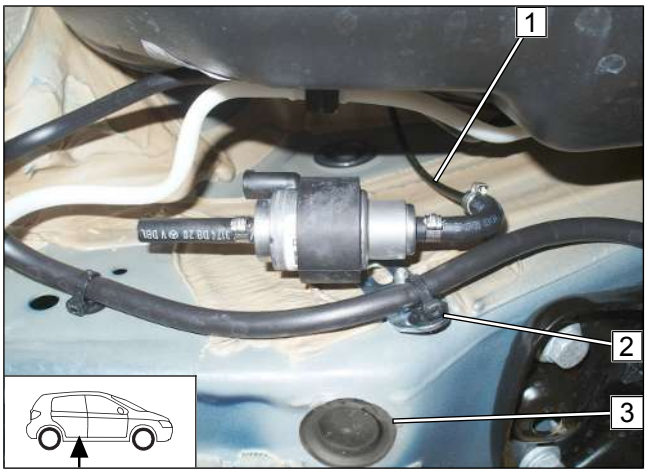


Fig. 38

1 Route 500mm long fuel line to tank fitting

2 Original vehicle eyelet cable tie in perforated bracket

3 Mount original vehicle plug

Mounting fuel pump connector

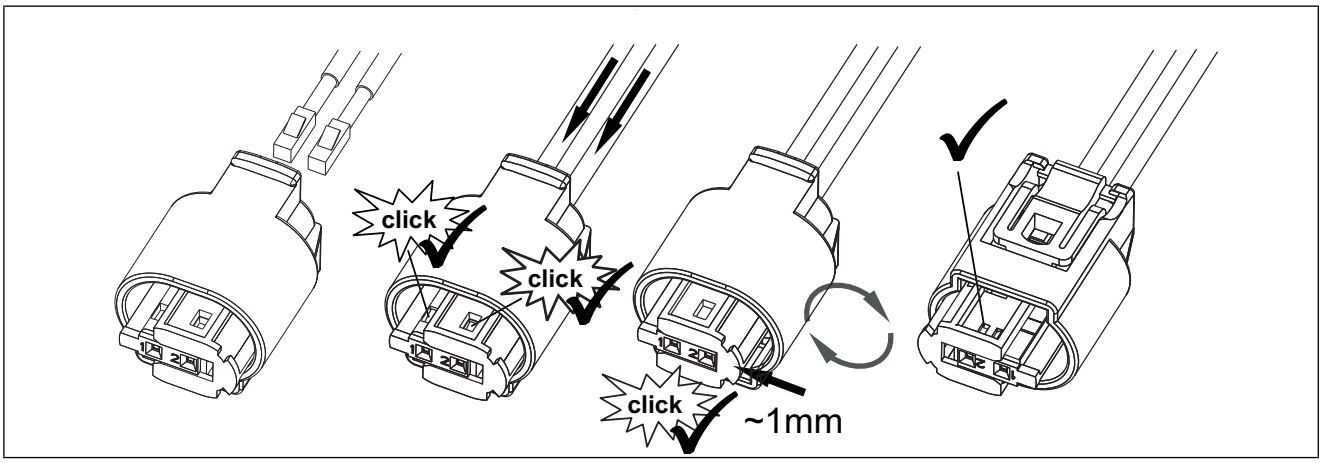


Fig. 39

Fuel pump connection

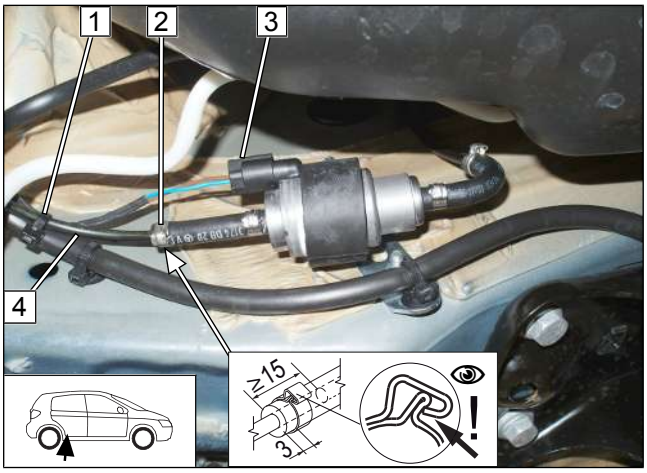


Fig. 40

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

9.2 Installing FuelFix

Moving label

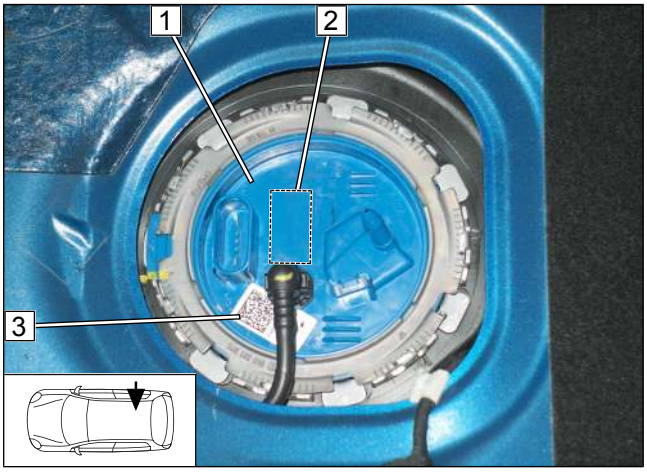


Fig. 41

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

Preparing drilling template

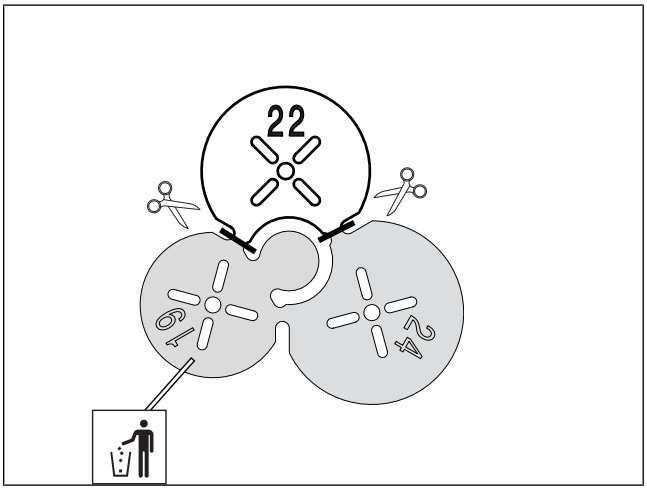


Fig. 42

Copying hole pattern

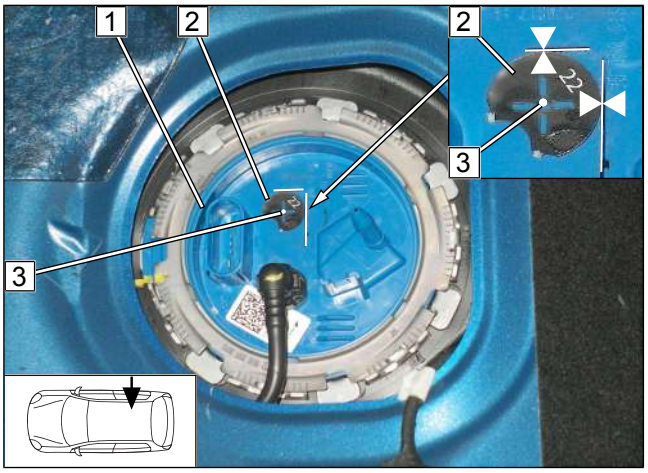


Fig. 43

Observe the installation instructions of the tank extracting device.

▶ Work steps F1, F2

1 Tank fitting
2 Position 22mm dia. drilling template as shown
3 Copying hole pattern

Hole for FuelFix

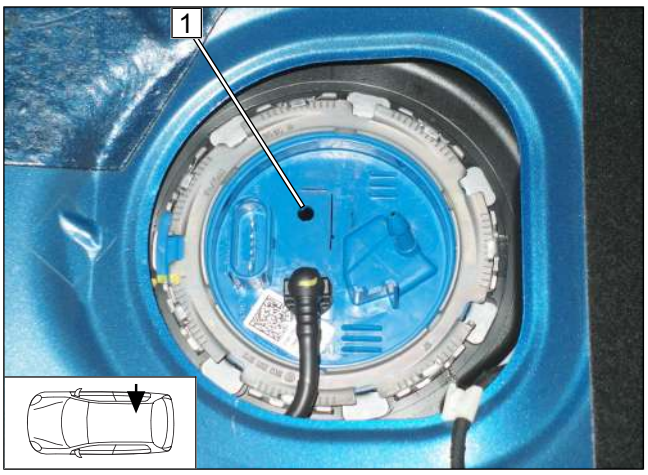


Fig. 44

DANGER

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

▶ Work step F3

1 Hole made with provided drill

Inserting FuelFix

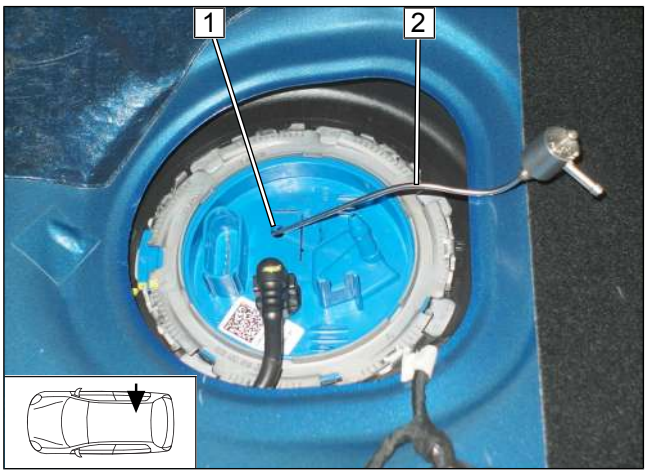


Fig. 45

▶ Work steps F4, F5

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

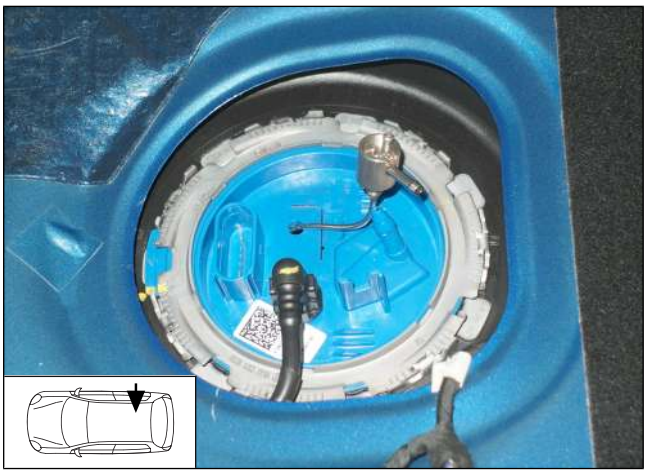


Fig. 46

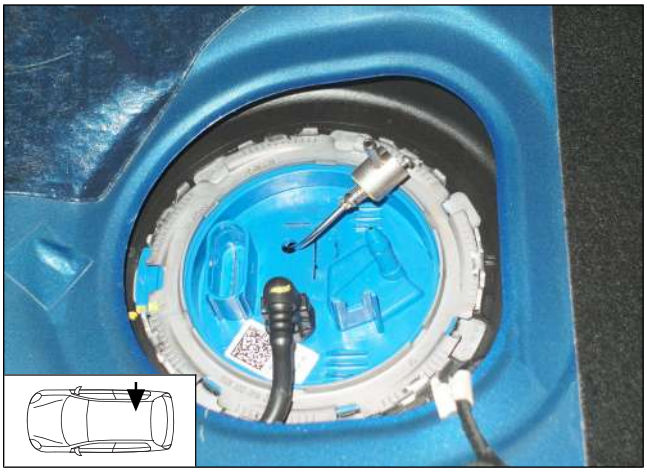


Fig. 47

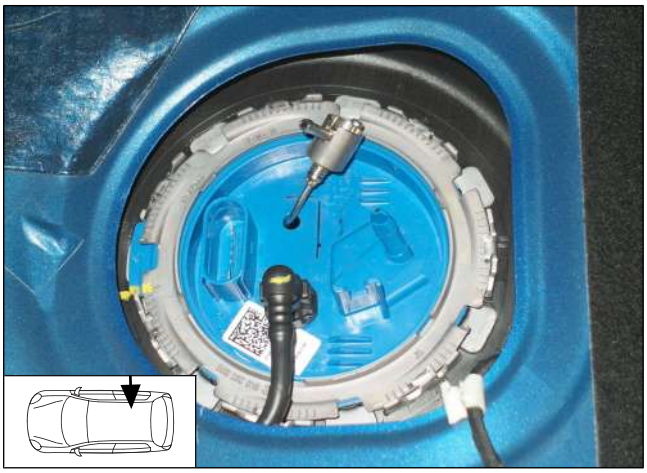


Fig. 48

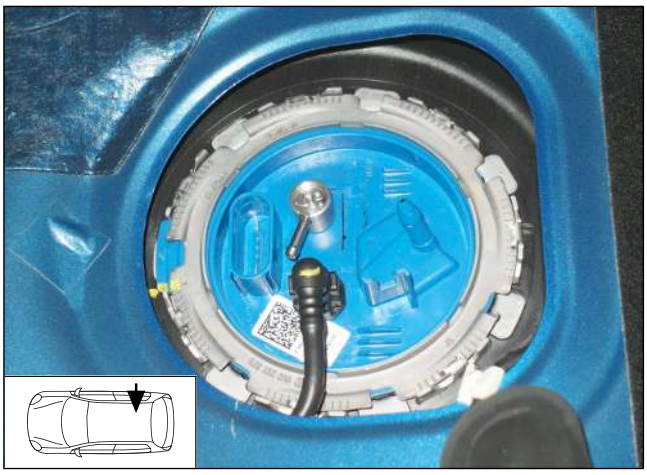


Fig. 49

Aligning FuelFix

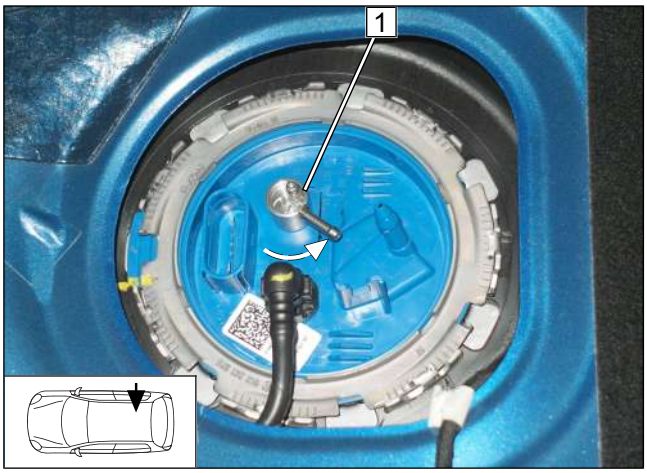


Fig. 50

▶ Work steps F5.3, F5.4

▶ Align FuelFix 1 as shown.

Connecting fuel line

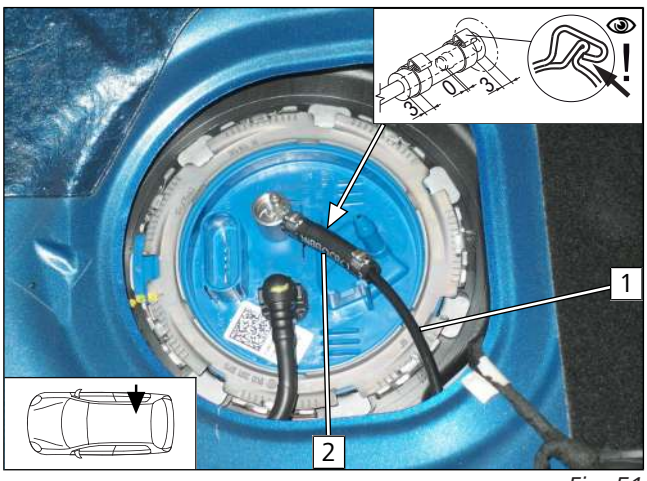


Fig. 51

▶ Work step F6

1 Fuel line

2 Hose section, 10mm dia. clamp [2x]

Mounting FuelFix

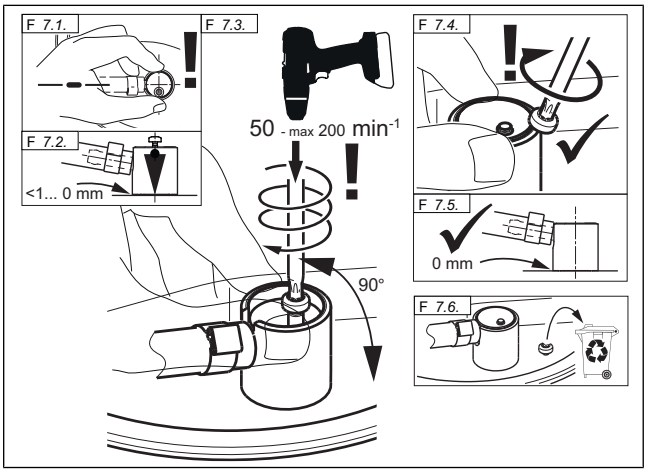


Fig. 52

DANGER

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

▶ Work step F7

Checking firm seating of FuelFix

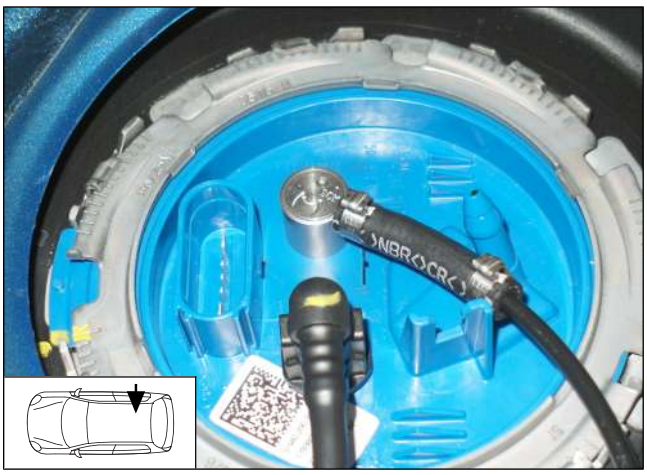


Fig. 53

▶ Work step F8

Securing fuel line

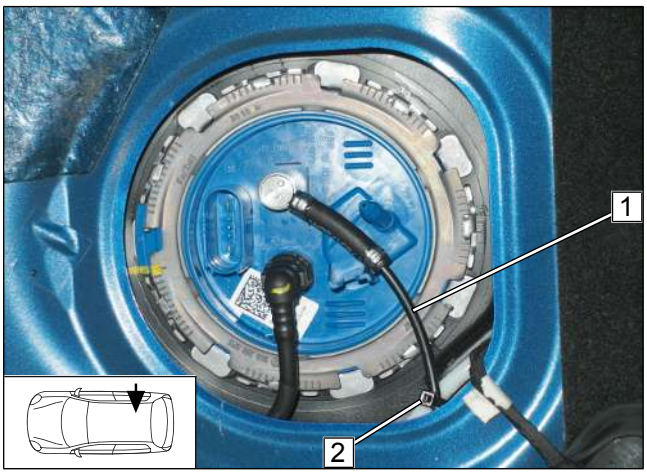


Fig. 54

1 Fuel line FuelFix

2 Cable tie for tension relief

10 Coolant 1.0P

10.1 Hose routing diagram

'Inline' coolant circuit

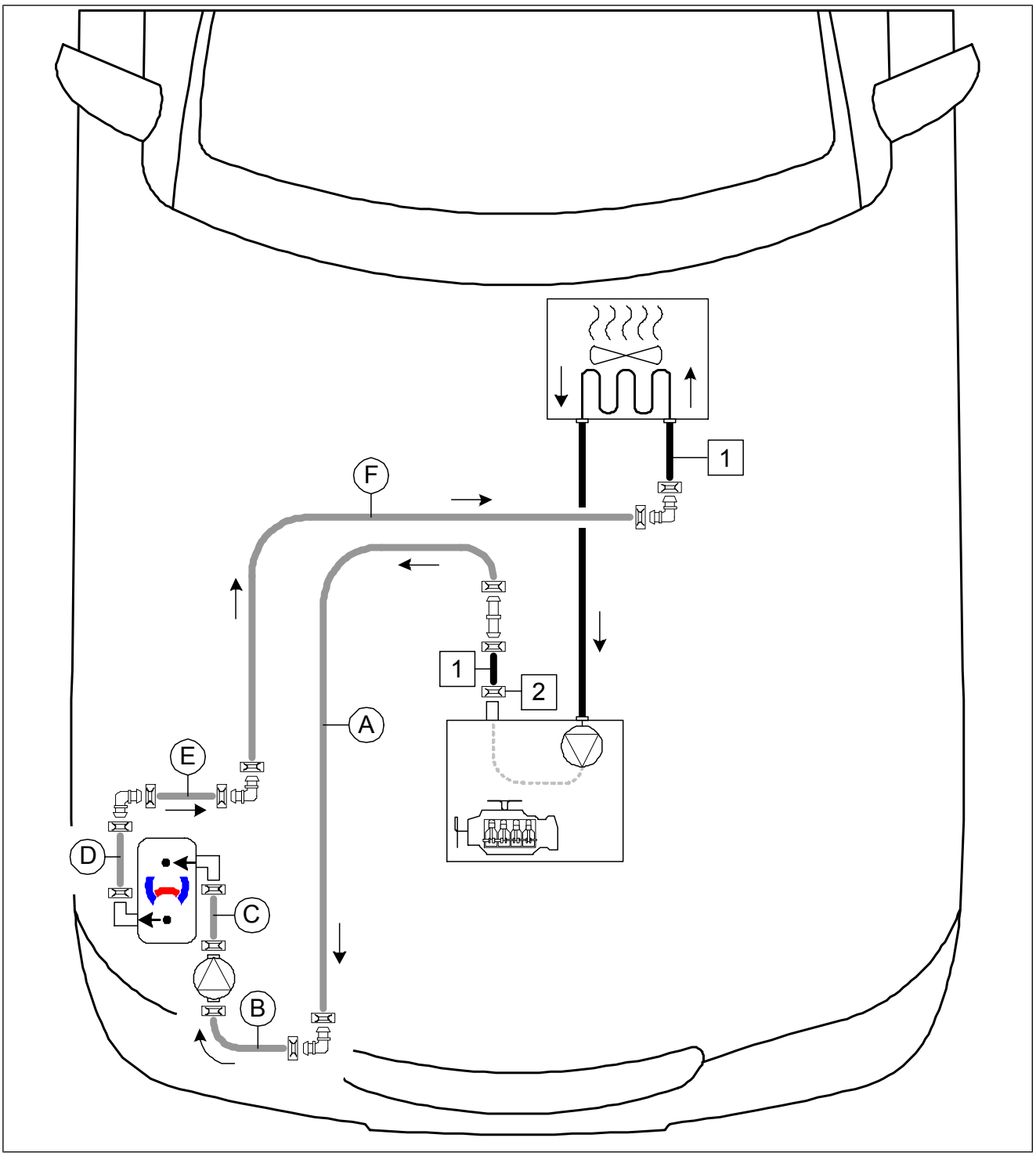


Fig. 55

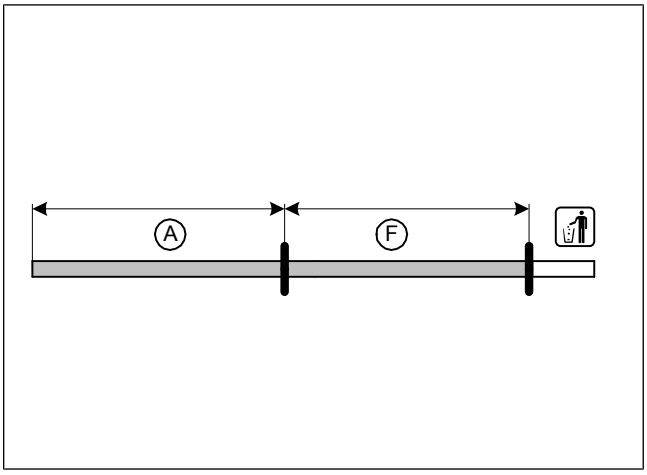
All spring clips without a specific designation = 25mm dia.

All connecting pipe or = 18x18mm dia.

1 Original vehicle coolant hose; 2 Original vehicle spring clip

10.2 Coolant circuit installation

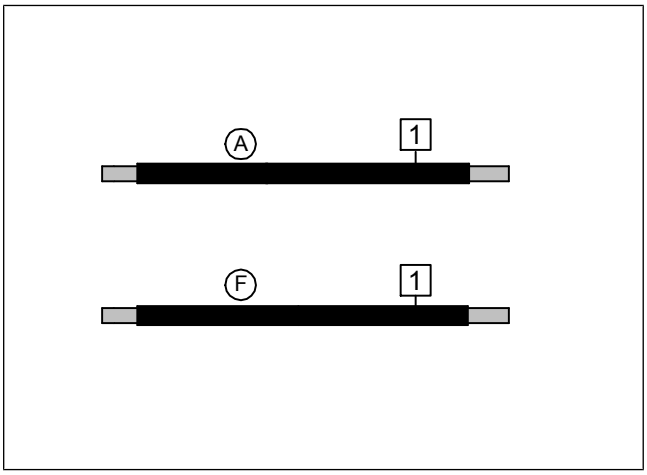
Cutting the hose to length



A	960
F	960

Fig. 56

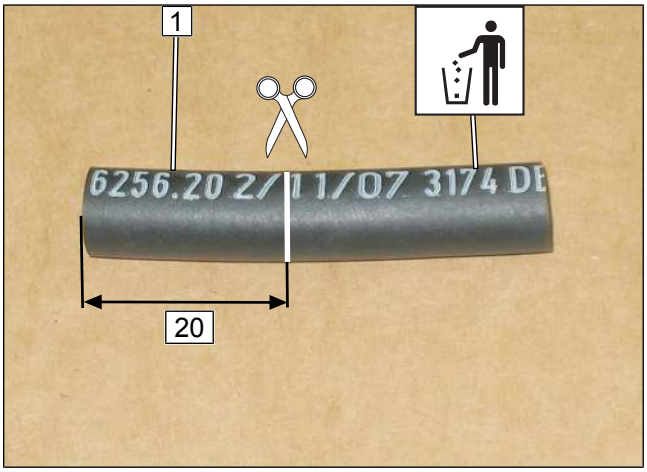
Preparing hoses



1 Heat protection hose

Fig. 57

Shortening hose section



1 Hose section 4.5mm dia.

Fig. 58

Mounting hose section

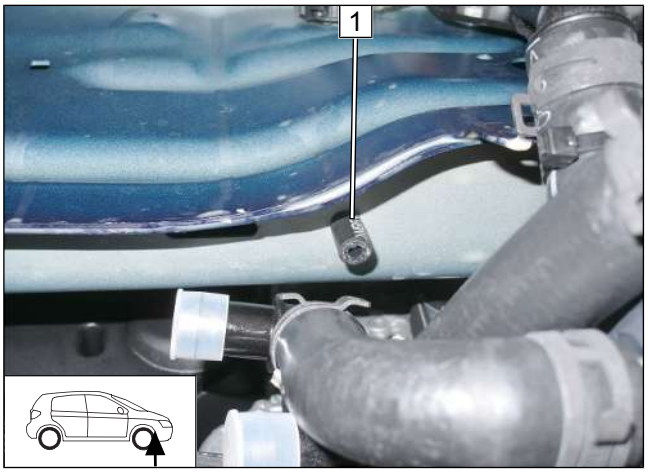


Fig. 59

1 Hose section, original vehicle stud bolt

Perforated bracket installation

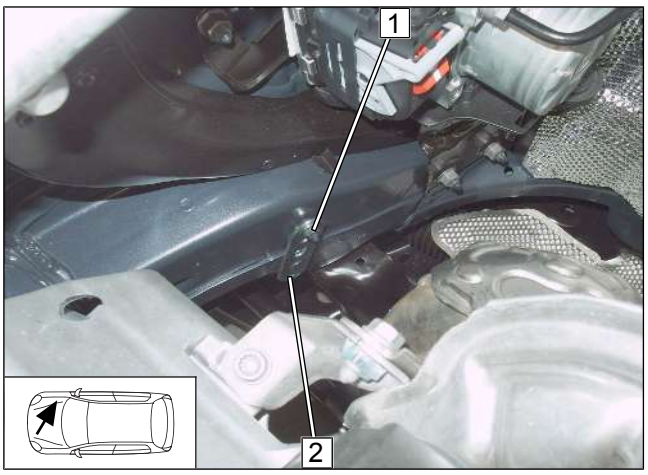


Fig. 60

1 Flanged nut, original vehicle stud bolt
2 Perforated bracket

Spacer nut installation

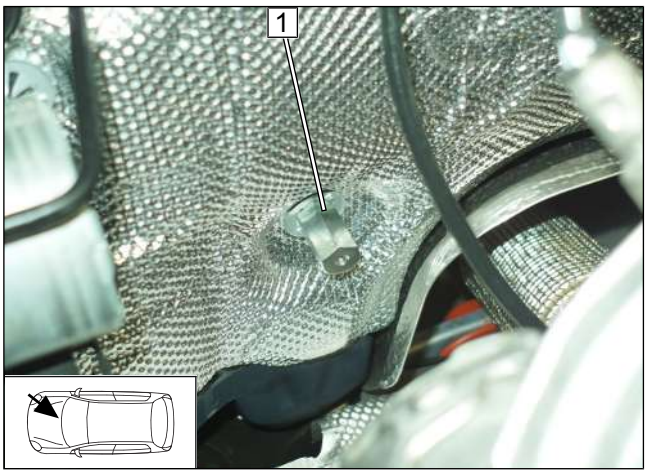


Fig. 61

1 M6x30 spacer nut, original vehicle stud bolt

Cutting point

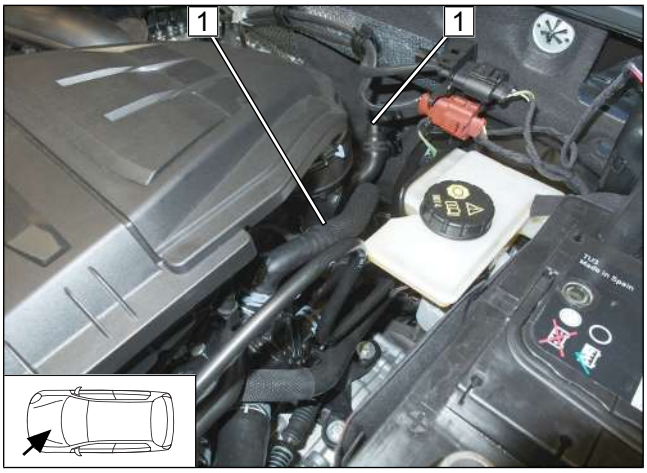


Fig. 62

▶ Remove hose of engine outlet / heat exchanger inlet **1**.

Preparing hose of engine outlet / heat exchanger inlet

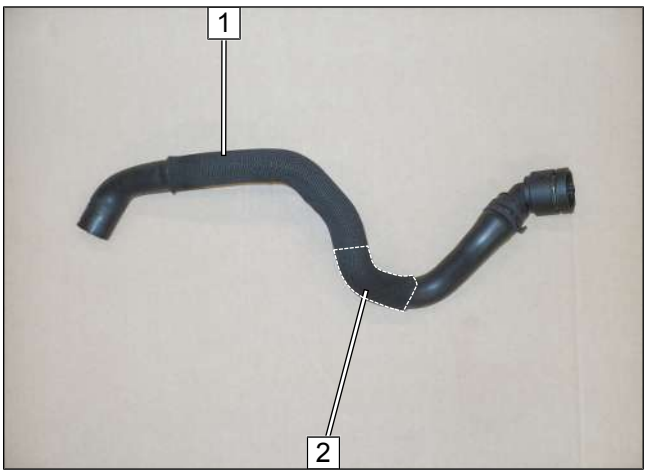


Fig. 63

1 Engine outlet / heat exchanger inlet hose

2 Remove fabric protective hose in the marked area as shown

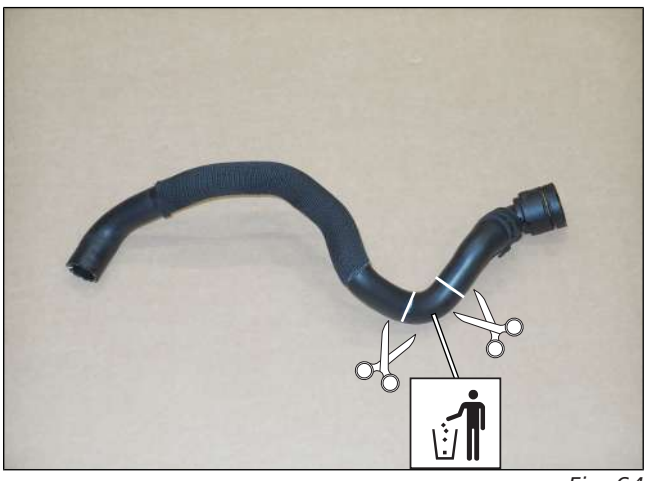


Fig. 64

Premounting hose sections

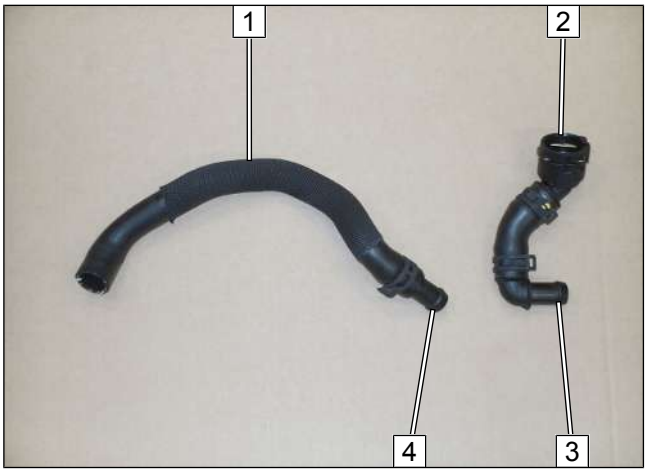


Fig. 65

1 Engine outlet hose section
2 Heat exchanger inlet hose section
3 90°, 18x18mm connecting pipe
4 18x18mm connecting pipe

Mounting hose sections

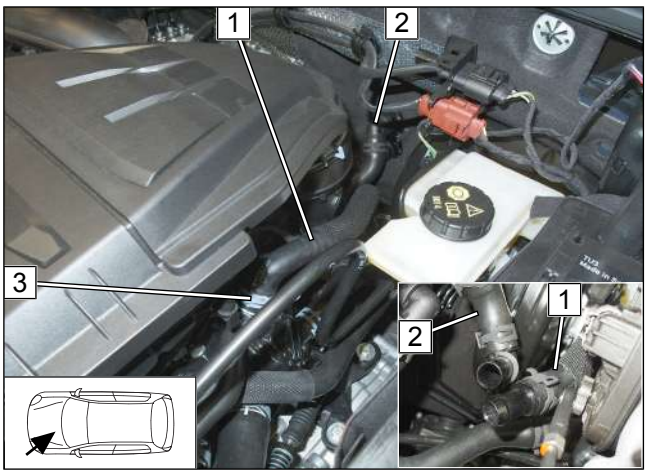


Fig. 66

1 Engine outlet hose section
2 Heat exchanger inlet hose section
3 Original vehicle spring clip

Connecting hoses Ⓐ and Ⓕ

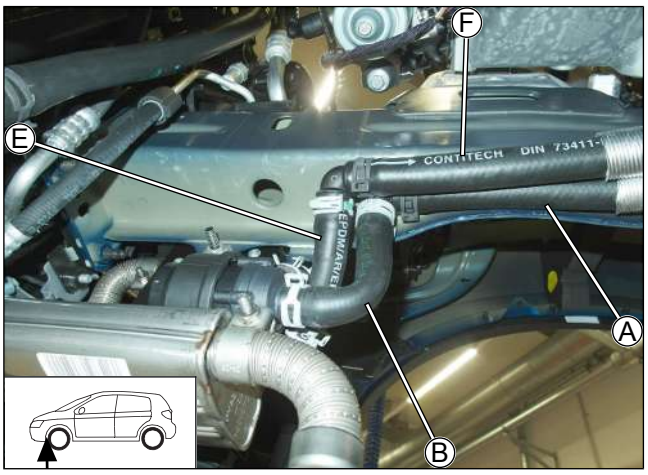


Fig. 67

Routing hoses Ⓐ and Ⓕ

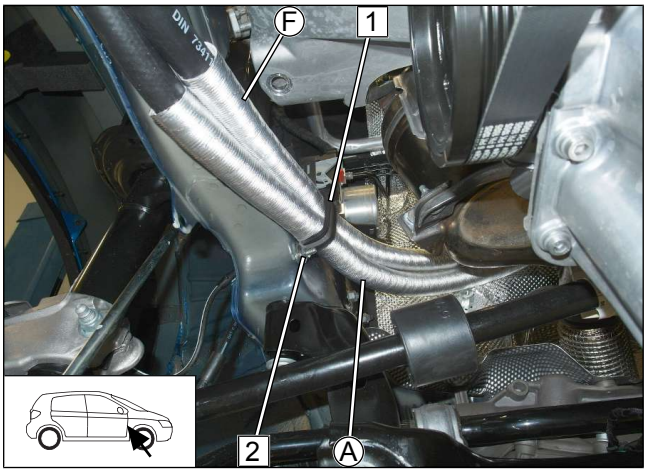


Fig. 68

1 48mm dia. rubber-coated p-clamp
2 M6x20 bolt, mount flanged nut loosely

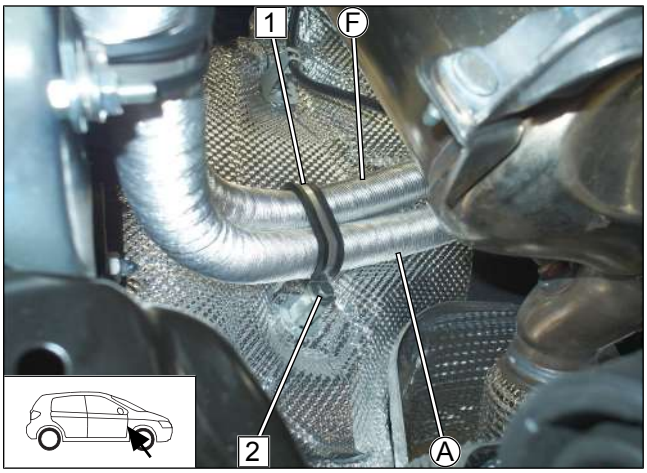


Fig. 69

1 48mm dia. rubber-coated p-clamp
2 Mount M6x20 bolt, spring lockwasher loosely

Engine outlet and heat exchanger inlet connection

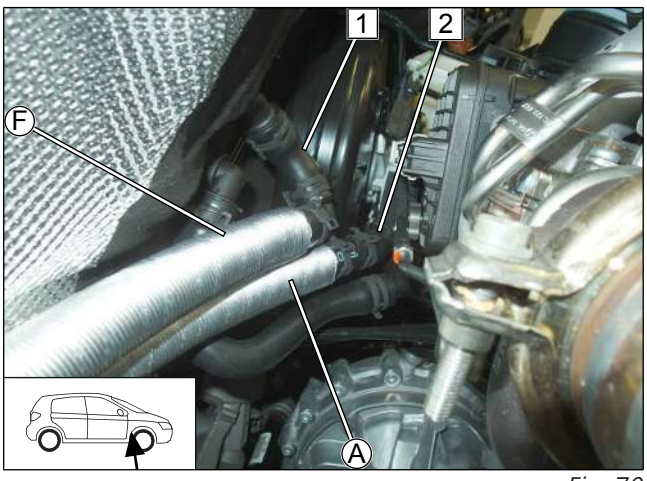


Fig. 70

1 Heat exchanger inlet hose section
2 Engine outlet hose section

Fastening hoses

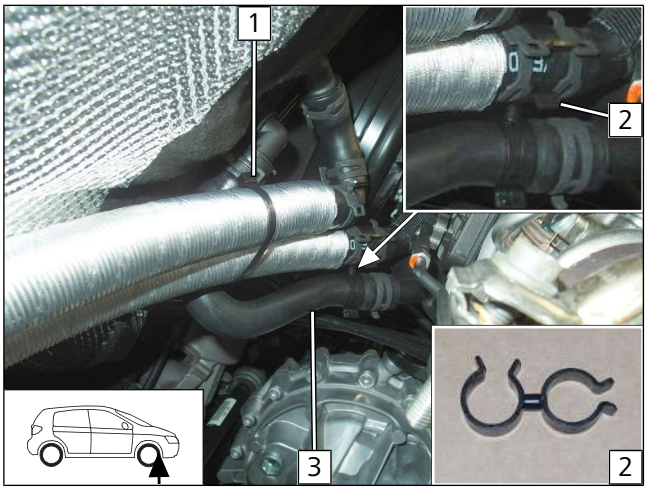


Fig. 71

1 Cable tie around hoses Ⓐ and Ⓕ
2 Hose bracket
3 Original vehicle hose

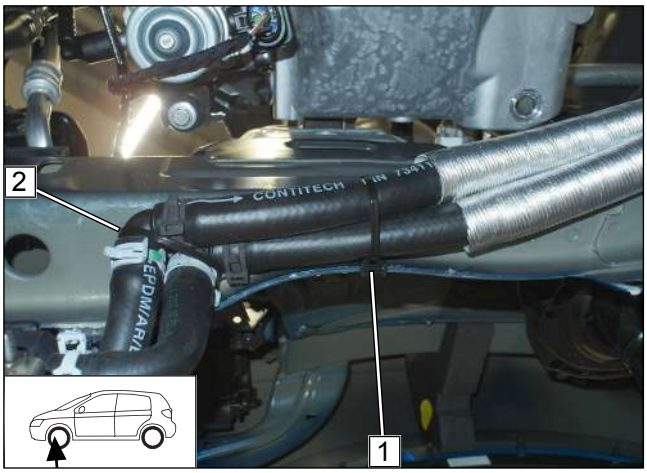


Fig. 72

1 Edge clip cable tie
2 Cable tie

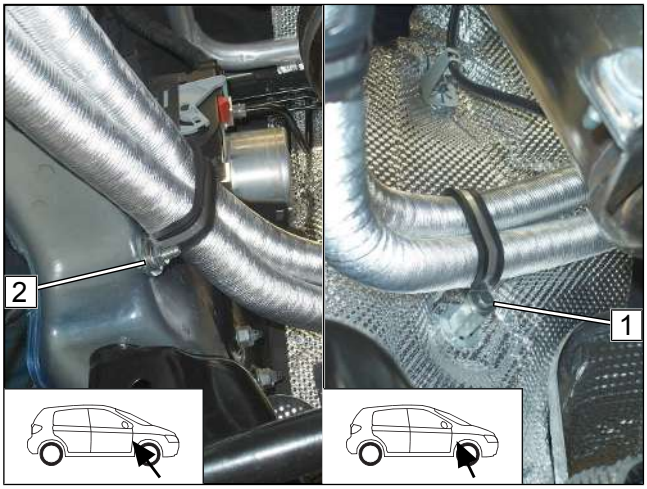


Fig. 73

▶ Align hoses and fasten all screw connections at positions 1 and 2.

11 Coolant 1.5P

11.1 Hose routing diagram

'Inline' coolant circuit

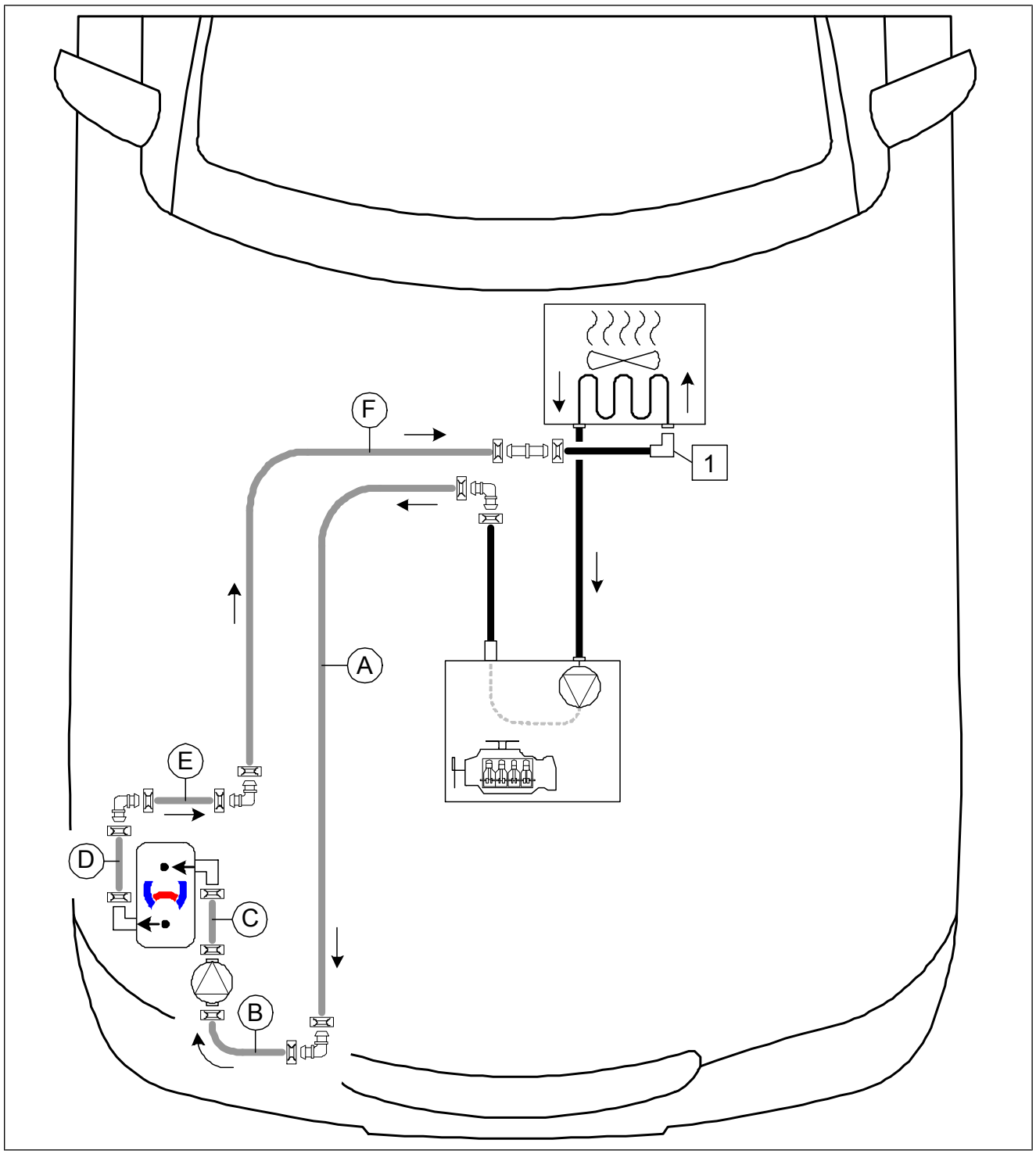


Fig. 74

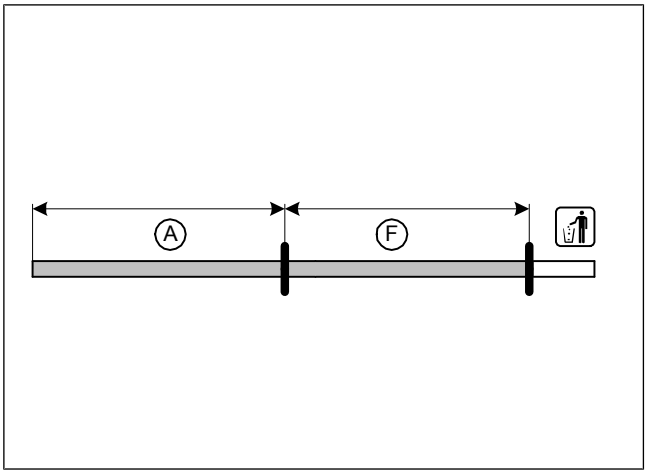
All spring clips = 25mm dia.

All connecting pipe or = 18x18mm dia.

1 Original vehicle hose coupling

11.2 Coolant circuit installation

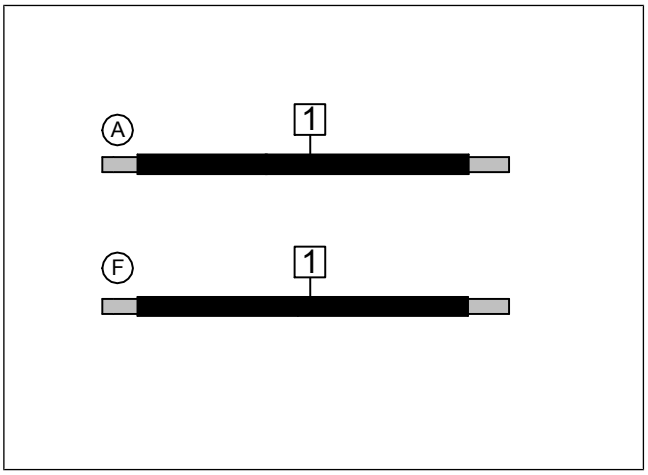
Cutting the hose to length



A	870
F	870

Fig. 75

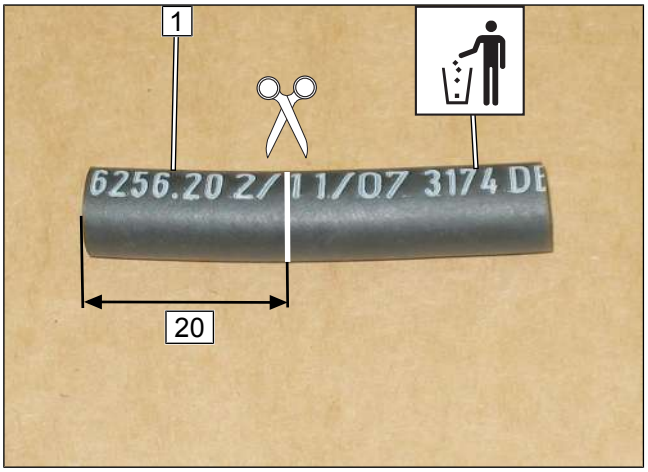
Preparing hoses



1 Heat protection hose

Fig. 76

Shortening hose section



1 Hose section 4.5mm dia.

Fig. 77

Mounting hose section

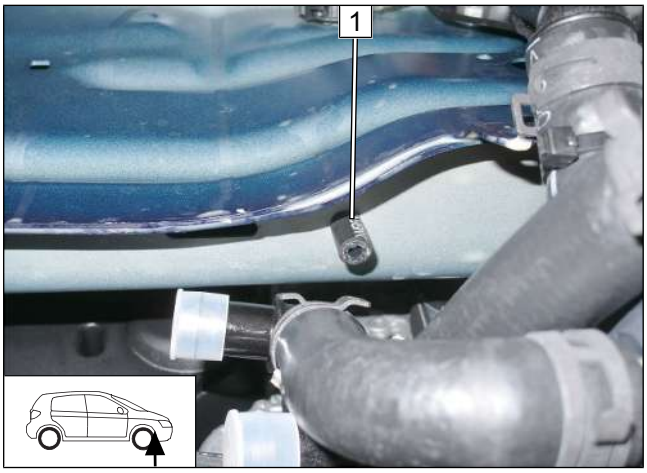


Fig. 78

1 Hose section, original vehicle stud bolt

Spacer nut installation

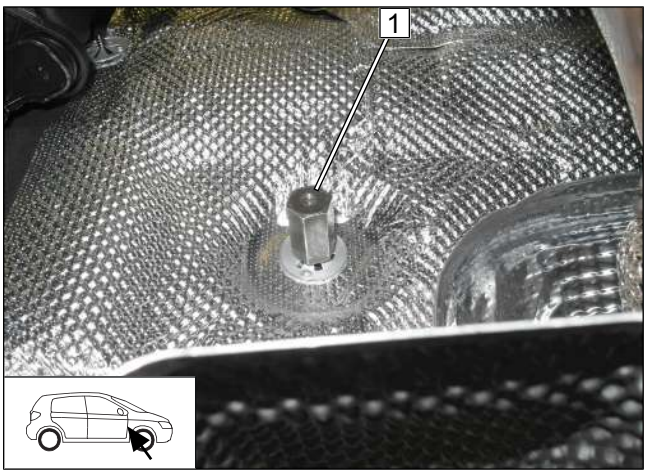


Fig. 79

1 M6x30 spacer nut, original vehicle stud bolt

Perforated bracket installation

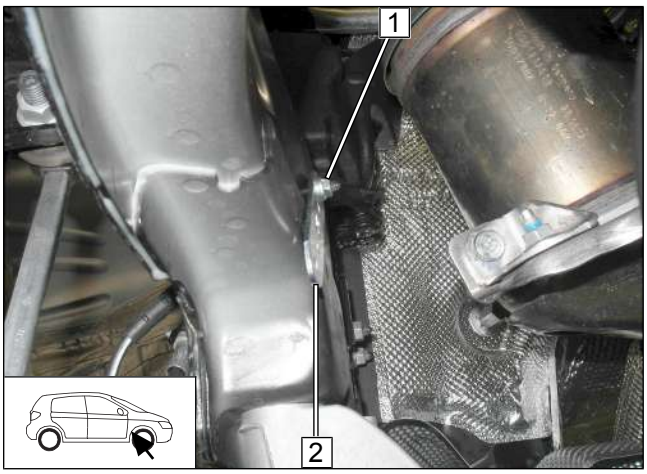


Fig. 80

1 Flanged nut, original vehicle stud bolt
2 Perforated bracket

Cutting point

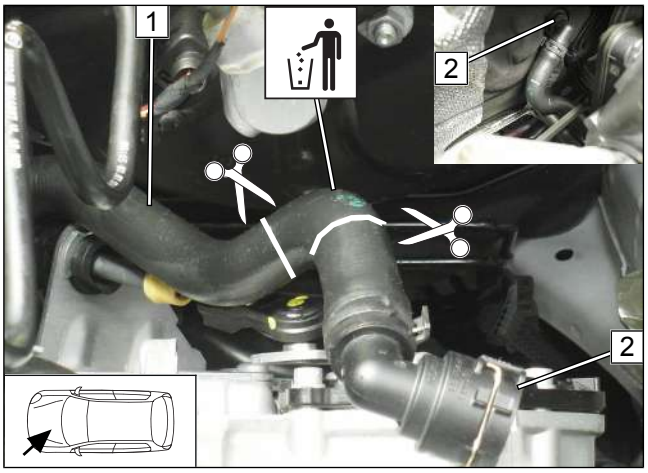


Fig. 81

▶ Remove engine outlet hose / heat exchanger inlet **1** with coupling piece **2** at the heat exchanger inlet and route into the engine compartment.

Preparing hose section of engine outlet

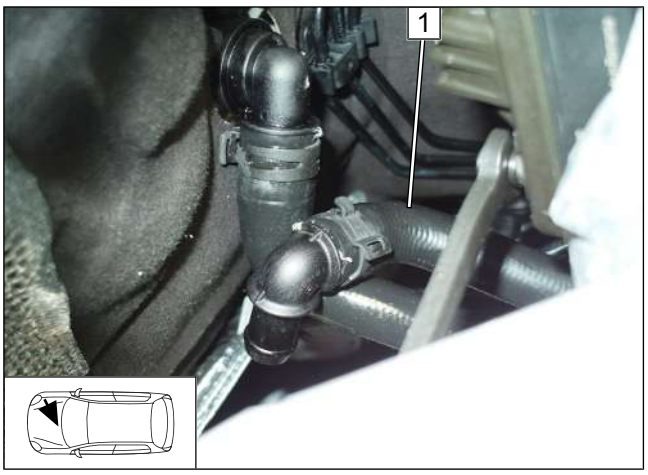


Fig. 82

1 Engine outlet hose section

Premounting hose F

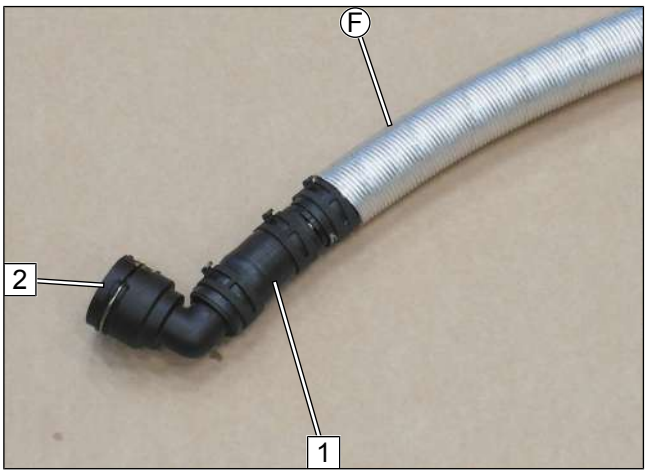


Fig. 83

1 Heat exchanger inlet hose section
2 Heat exchanger inlet coupling piece

Engine outlet and heat exchanger inlet connection

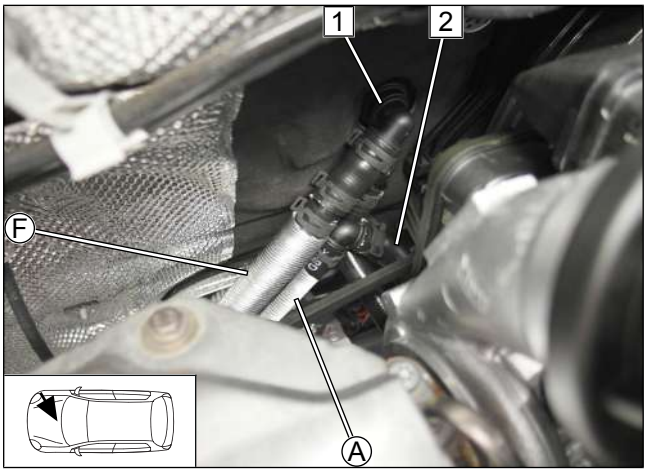


Fig. 84

1 Heat exchanger inlet coupling piece
2 Engine outlet hose section

Routing hoses

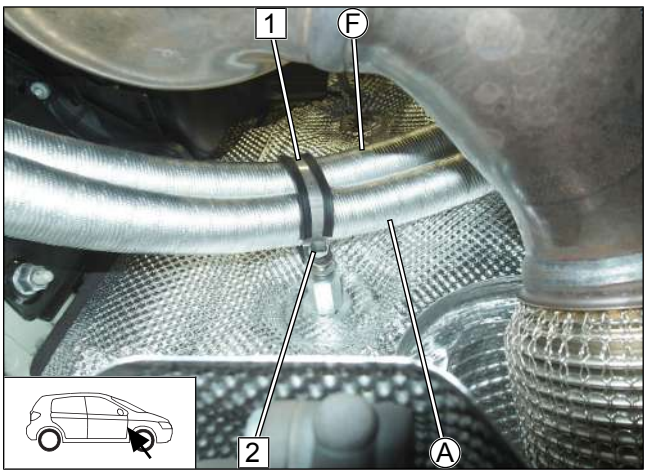


Fig. 85

1 48mm dia. rubber-coated p-clamp
2 Mount M6x20 bolt, spring lockwasher, 48 mm dia. rubber-coated p-clamp loosely

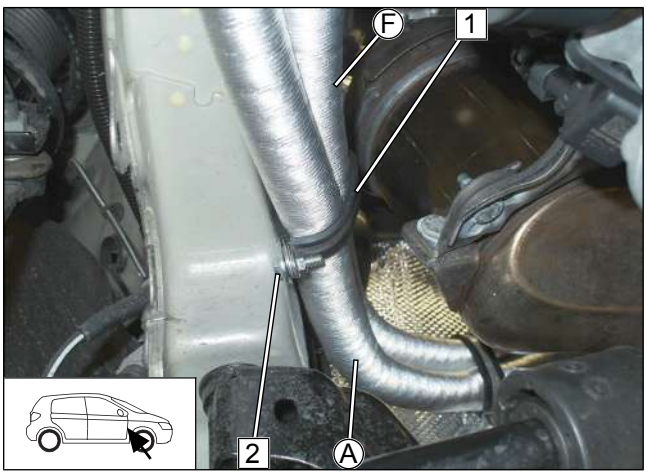


Fig. 86

1 48mm dia. rubber-coated p-clamp
2 M6x20 bolt, mount flanged nut loosely

Connecting hoses Ⓐ and Ⓕ

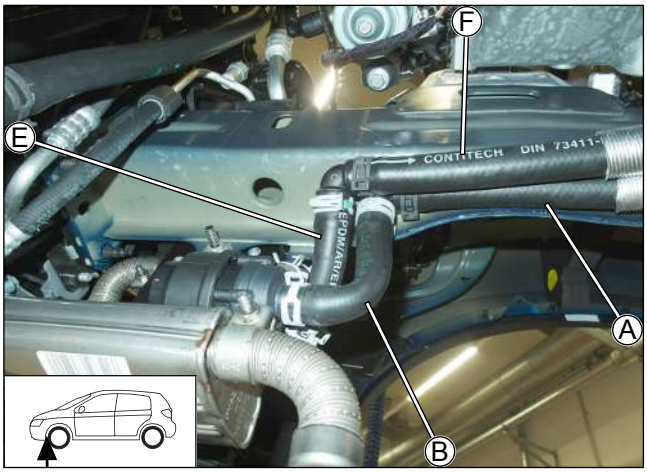


Fig. 87

Fastening hoses

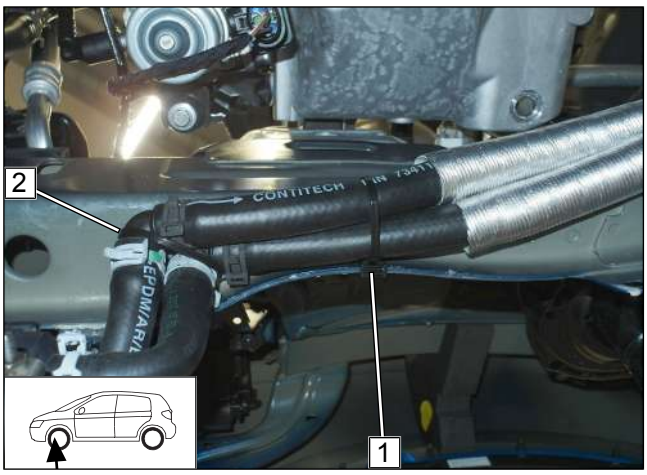


Fig. 88

1 Edge clip cable tie
2 Cable tie

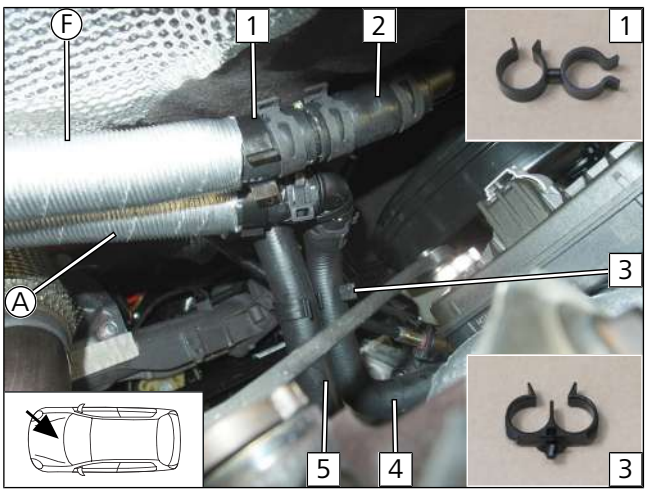


Fig. 89

▶ Align hoses and tighten screw connections of the rubber-coated p-clamps.

1 Hose bracket
2 Heat exchanger inlet hose section
3 Hose bracket
4 Engine outlet hose section
5 Heat exchanger outlet / engine inlet hose

12 Final work in engine compartment

Aligning exhaust outlet

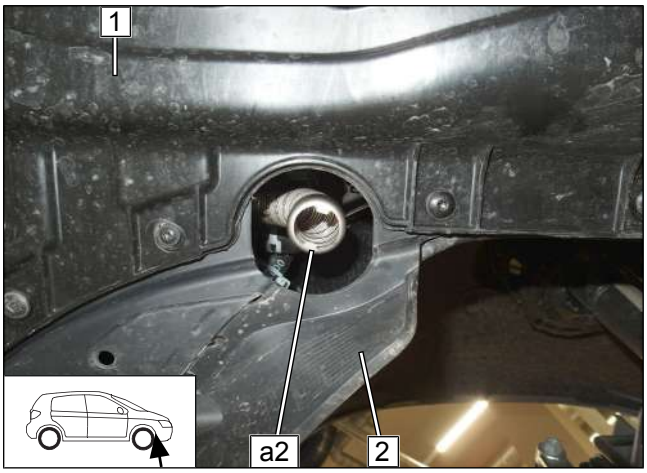


Fig. 90

- ▶ Mount underride protection **1** and wheel well trim **2**.
- ▶ Align exhaust outlet **a2** with the centre of the pass through.

13 Electrical system of passenger compartment

13.1 Air-conditioning control

Integrate the air-conditioning control as per the separate installation documentation:



'**Webasto Standard**' A/C control installation documentation for VW / Skoda / Seat MQB with AC and AAC

or



'**Webasto Comfort**' A/C control installation documentation for VW / Audi / Skoda / Seat MQB with AAC

14 Electrical system of control elements

14.1 Telestart option

Mounting receiver

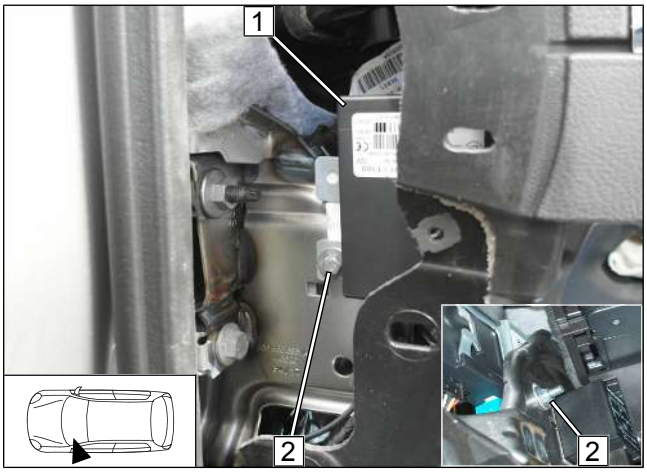


Fig. 91

Observe the Telestart installation documentation.

1 Receiver

2 M5x16 bolt, large diameter washer, receiver bracket, original vehicle hole, large diameter washer, nut

Mounting temperature sensor, only in case of T100 HTM

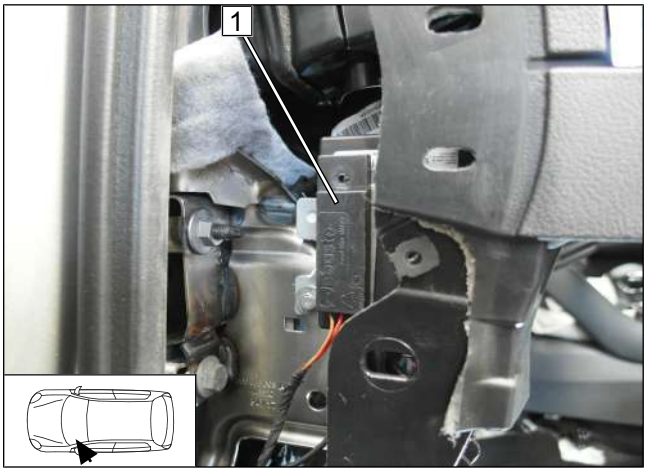


Fig. 92

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

Mounting aerial

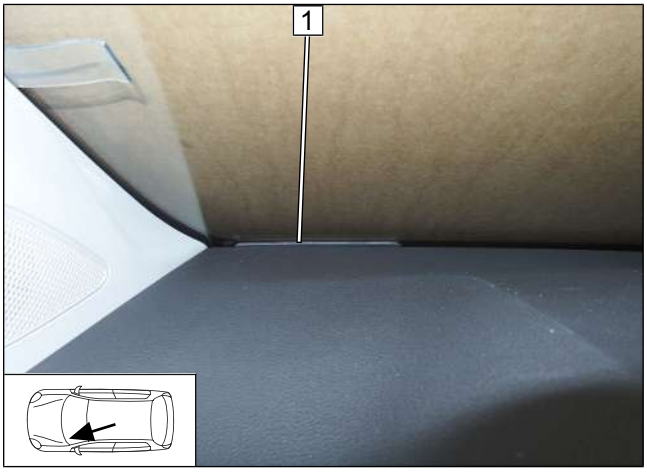


Fig. 93

1 Aerial

14.2 ThermoCall option

Mounting receiver

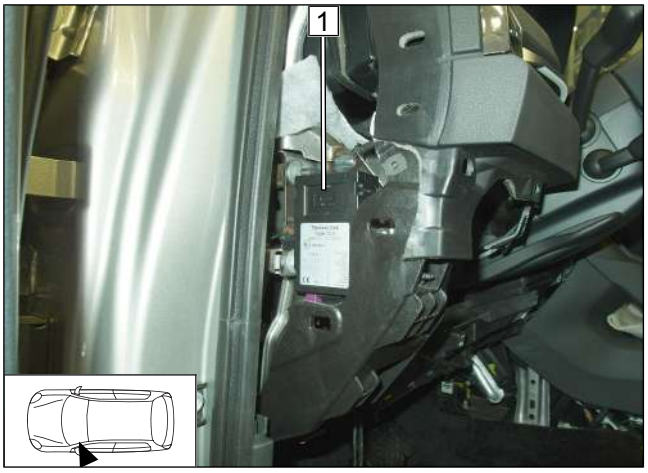


Fig. 94

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mounting aerial (optional)

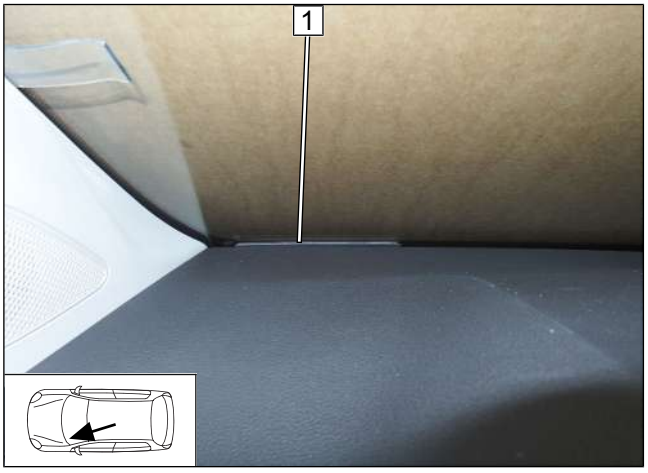


Fig. 95

1 Aerial

15 Final work

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

- ▶ Mount removed parts in reverse order.

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

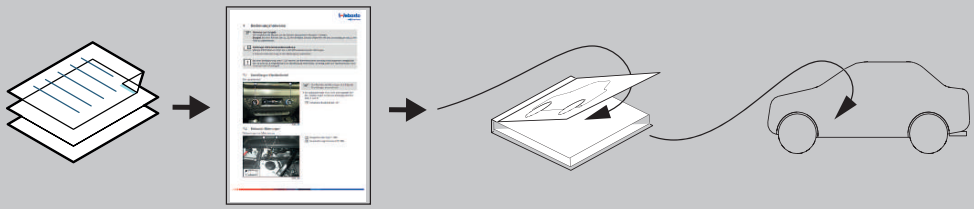


Only use manufacturer-approved coolant.

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

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

- ▶ Program MultiControl CAR, teach Telestart transmitter
- ▶ If the fan function or A/C control panel settings need to be checked, see the installation documentation in the additional 'Webasto Standard' A/C control or 'Webasto Comfort' kit, section Final work
- ▶ Initial start-up and function check
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck



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

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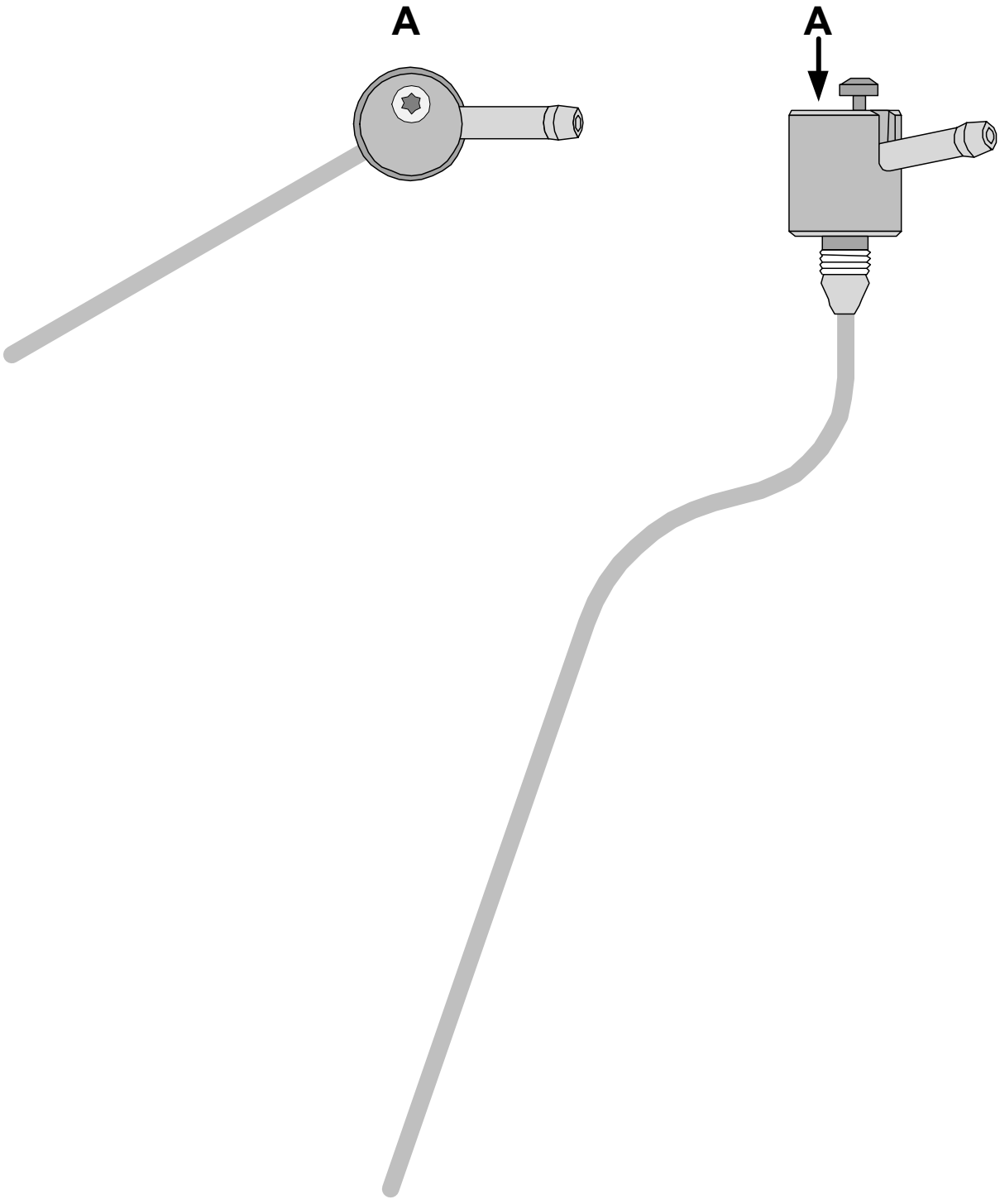

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Scale 1:1
Compare size of printout with dimension lines.
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