EN

K

Installation documentation

for water heater Thermo Top Evo

'Island' coolant circuit without engine preheating

BMW 3 Series G20 / G21

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
BMW	3 Series G20	G3L	from 2019	e1* 2007/46* 1947*…
BMW	3 Series G21	G3K	from 2019	e1* 2007/46* 2017*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
320i	Petrol	Euro 6d Temp	AG	135	1998	B48B20
320d	Diesel	Euro 6d Temp	AG	140	1995	B47D20

Validity	Equipment variants	Model
		3 Series G20 / G21
Verified equipment variants	2 zone automatic air-conditioning	x
	LED main headlights	x
	LED front fog lights	x
	Keyless Go	x

Note

- In case of vehicles with an installed trailer hitch, with an existing preliminary setup for a trailer hitch or in case of a 'Hot country' model, it may not be possible to carry out the installation as there may already be an additional radiator at the installation location of the heater. Please check this first.

Total installation time	Note
9.0 hours	

Contents

1 List of abbreviations

AAC	Automatic air-conditioning
AG	Automatic transmission
DP	Fuel pump
FF	FuelFix (tank extracting device)
Fig.	Figure
HG	Heater
SH	Fuse holder
SH2	Engine compartment fuse holder for F1/F2
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
Basic delivery scope of Thermo Top Evo (see 'Notes on installation')	In accordance with price list
Installation kit for BMW 3 Series 2019 petrol and diesel	1327568A
Additional 'Webasto Comfort' A/C control kit for BMW X3 / X4 / 3 Series / 5 Series	1326680_
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list

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 push button in case of the Telestart and/or ThermoCall and/or ThermoConnect options
- the MultiControl CAR option

We recommend:

- installing a Thermo Top Evo 4. The heater is integrated into the coolant circuit as an 'island' and heats up the vehicle passenger compartment. There is no engine pre-heating.
- depending on the space required and the veh. manufacturer's instructions, the use of a vehicle battery with a higher electrical capacity.

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

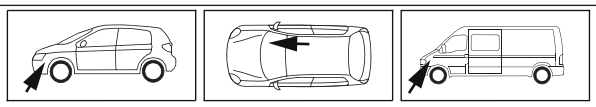
3.4.3 Work step identification marks

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	▶ Disconnect the battery ▶ Complete air filter with intake hose ▶ Water drain chamber cover ▶ Windscreen wiper cover ▶ Expansion tank ▶ Lower engine cover ▶ Front wheel on the driver's and front passenger's side ▶ Wheel well trim on the driver's and front passenger's side ▶ Underride protection on the front passenger's side ▶ Bumper trim	
Passenger compartment	▶ Rear bench seat on the front passenger's side ▶ 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

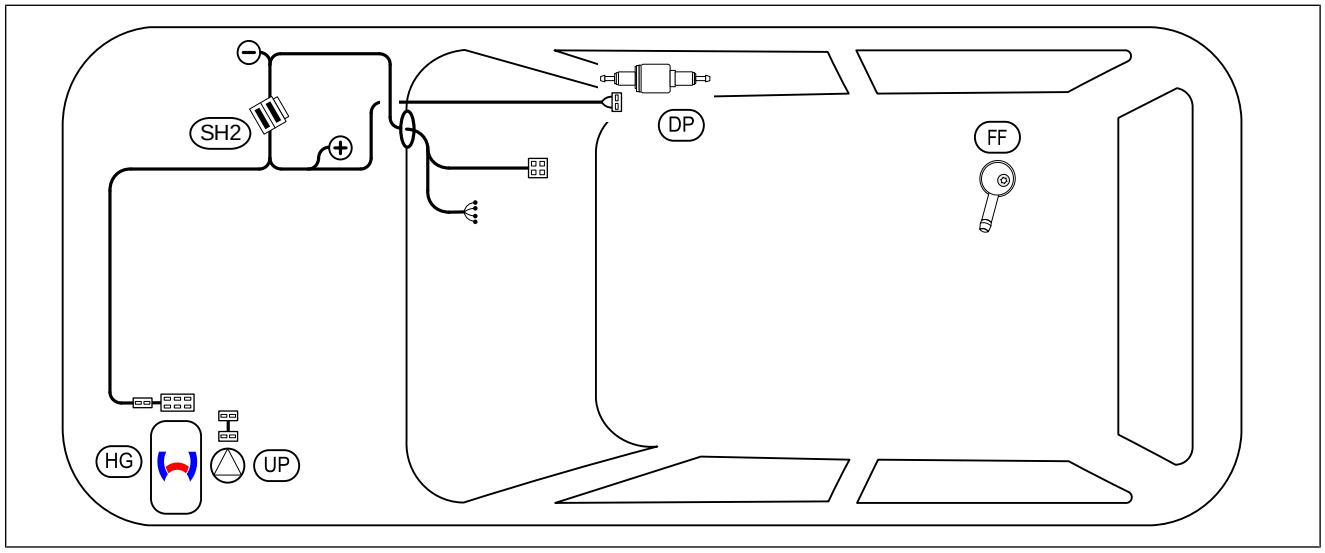


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
FF	FuelFix
HG	Heater
SH2	Fuse holder of engine compartment
UP	Coolant pump

The retrofitting of the parking heater is shown on petrol and diesel vehicles. If there is no separate note, the installation is identical. Special features are mentioned separately.

Heater installation location

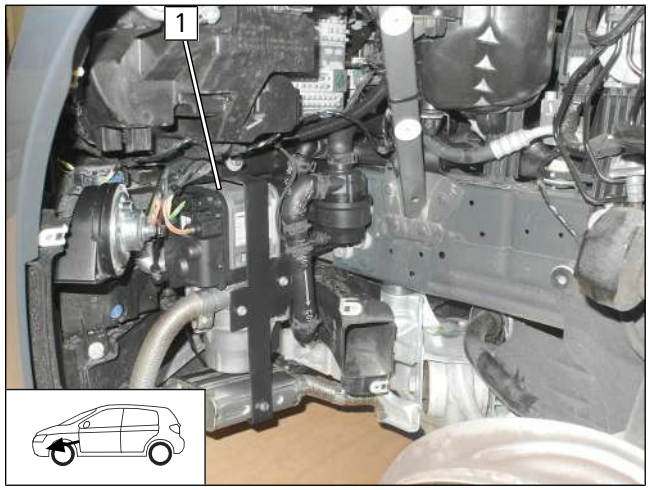


Fig. 2

1 Heater

7 Electrical system of engine compartment

Pre-assembling engine compartment fuses

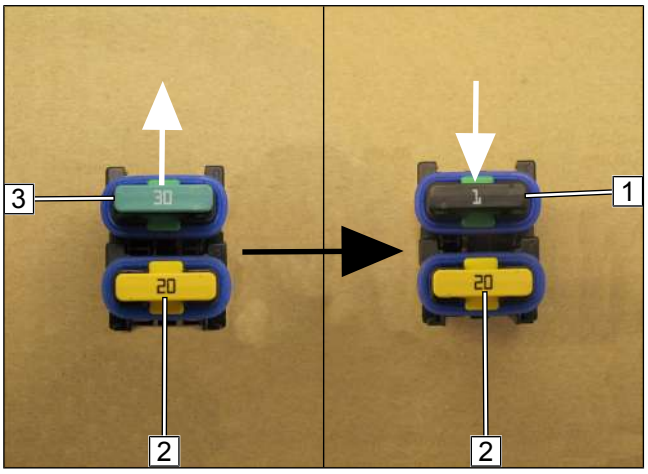


Fig. 3

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

[2] Fuse F1: 20A

Premounting SH2 retaining plate and angle bracket

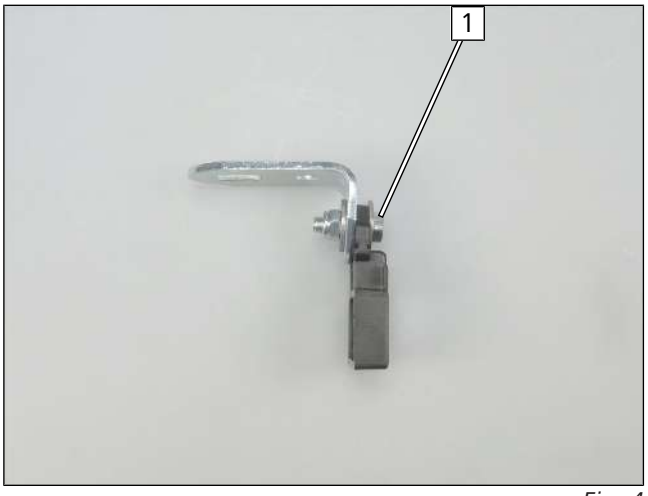


Fig. 4

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

Mounting angle bracket

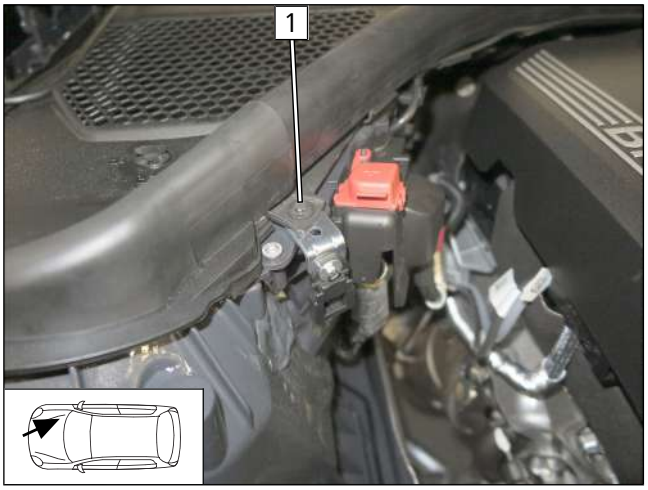


Fig. 5

[1] Original vehicle bolt

Installing SH2

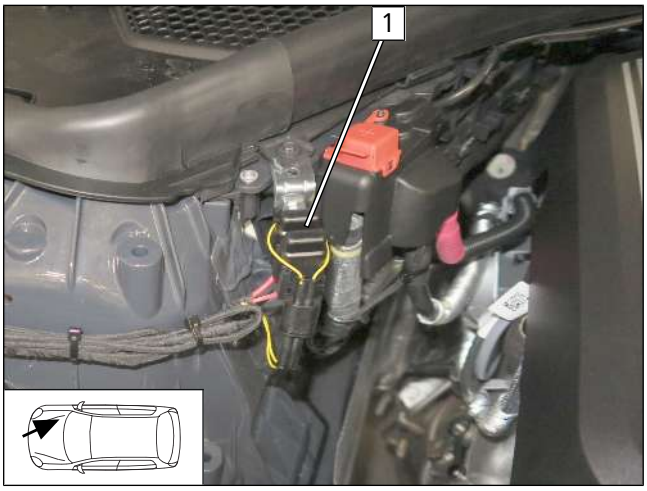


Fig. 6

1 Fuse holder SH2 with F1/F2

Routing wiring harnesses

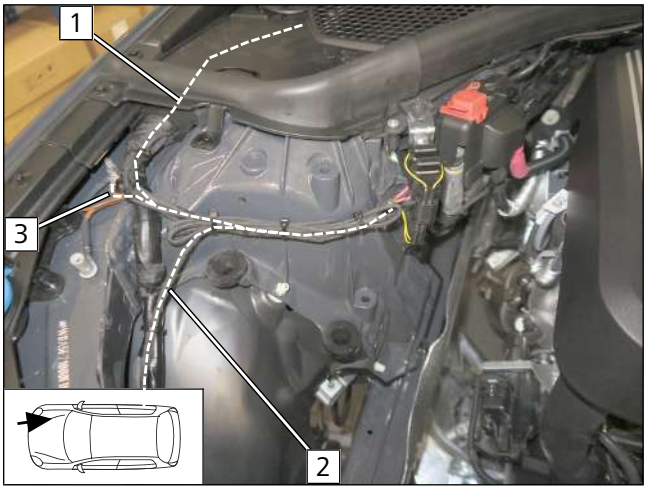


Fig. 7

1 Passenger compartment and control element wiring harnesses
2 Heater wiring harness
3 Earth wire

Passenger compartment wiring harness pass through

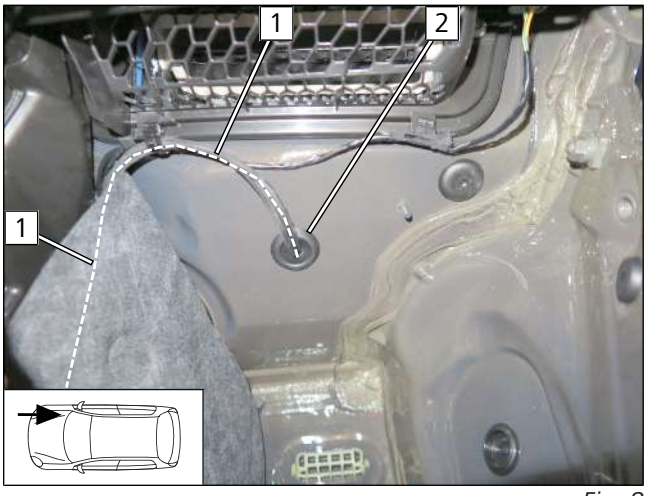


Fig. 8

▶ Route passenger compartment and control element wiring harnesses 1 through protective rubber plug 2 into the passenger compartment.

Mounting positive wire

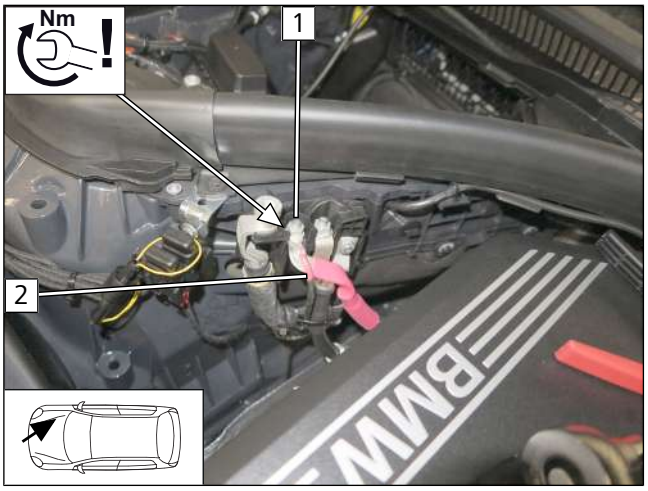


Fig. 9

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle positive support point

2 Positive wire

Mounting earth wire

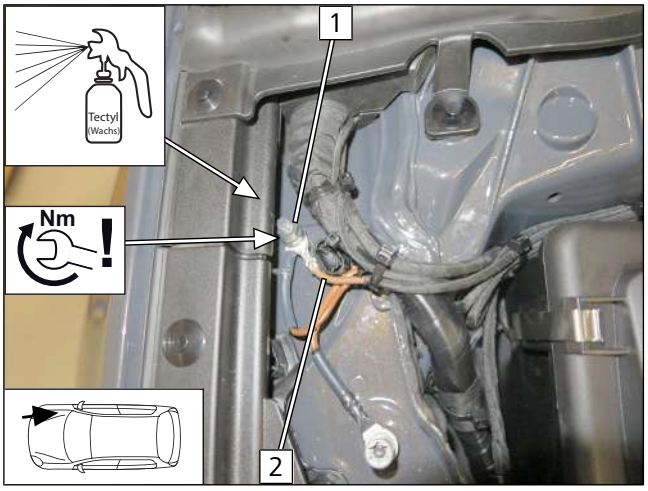


Fig. 10

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle earth point

2 Earth wire

Routing heater wiring harness

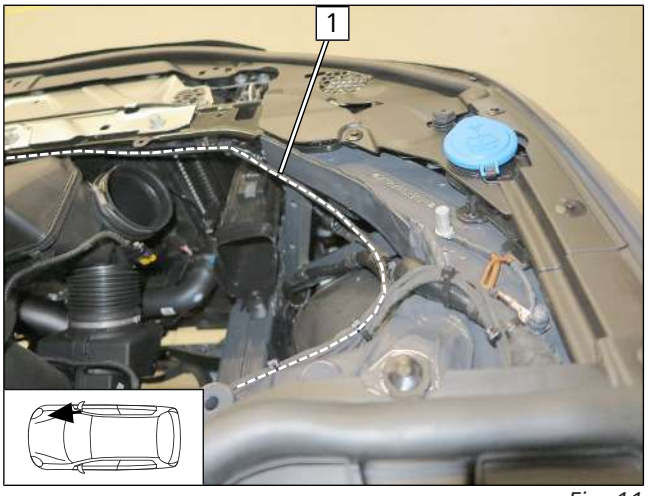


Fig. 11

▶ Route heater wiring harness 1 along original vehicle lines to the driver's side and fasten using cable ties.

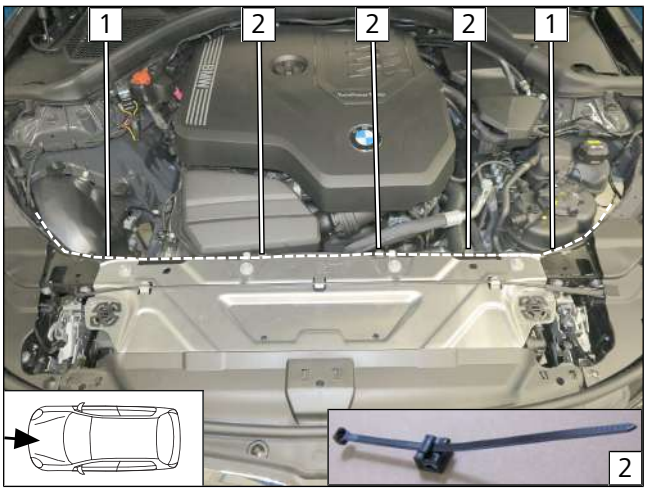


Fig. 12

1 Heater wiring harness
2 Edge clip cable tie

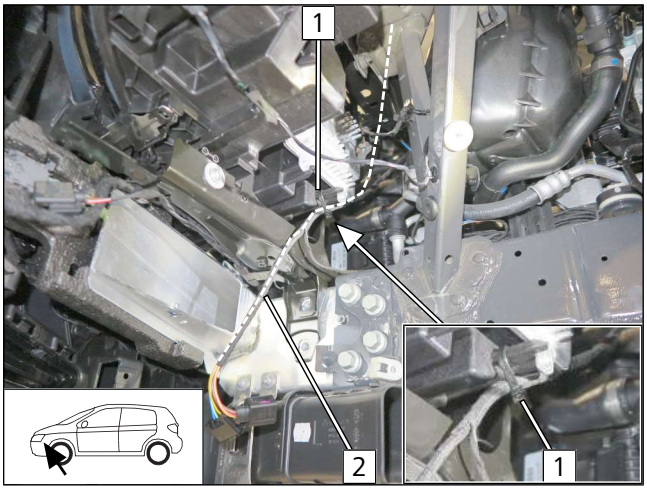


Fig. 13

▶ Route heater wiring harness 2 to the heater installation location and fasten it with cable tie 1 as shown.

8 Mechanical system

8.1 Preparing installation location

Removing horn

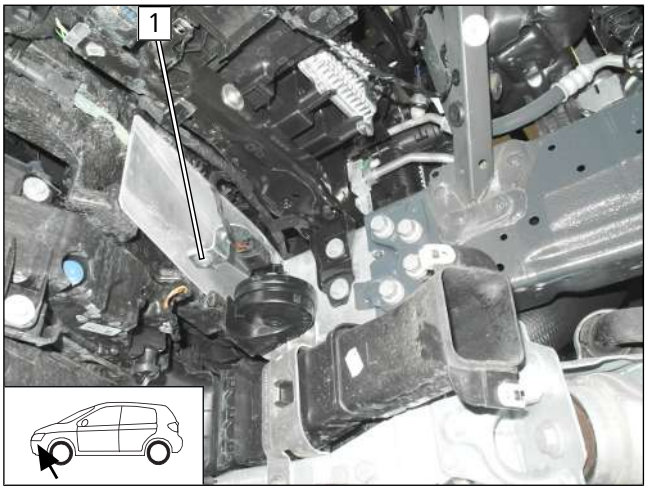


Fig. 14

1 Discard horn with bracket, original vehicle bolt

Removing original vehicle bolts

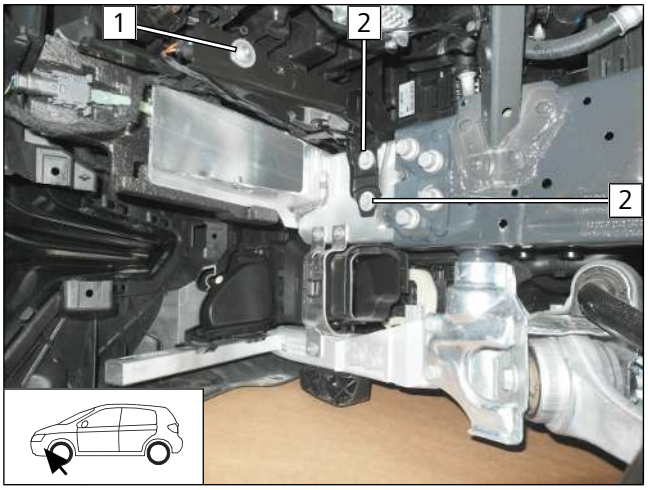


Fig. 15

- ▶ Remove original vehicle bolt 1, it will be reused for the installation of the horn.
- ▶ Remove and discard original vehicle bolts 2.

Fastening edge clip cable tie

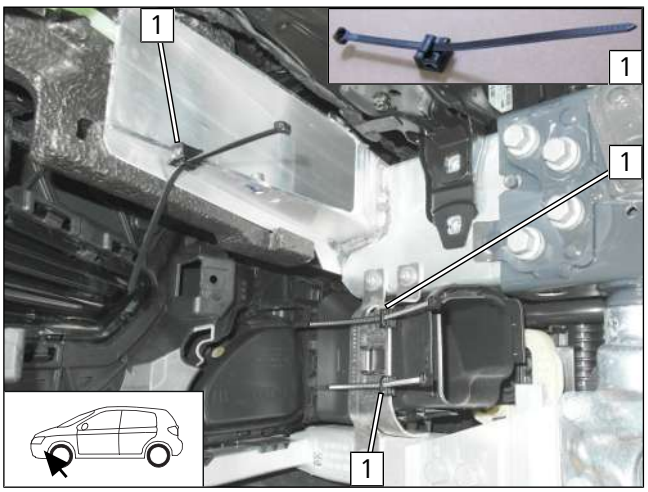


Fig. 16

1 Edge clip cable tie

Cutting combustion air intake pipe to length

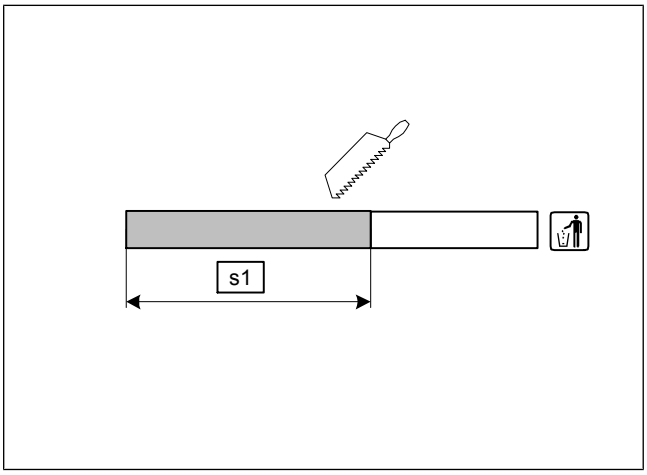


Fig. 17

s1 280

Premounting combustion air intake pipe and combustion air intake silencer

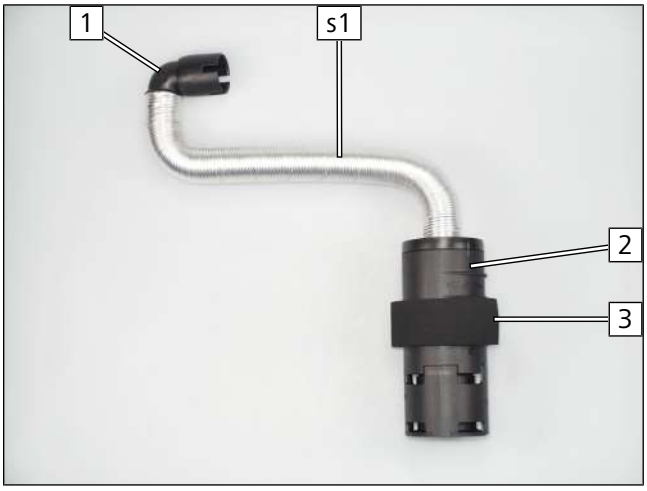


Fig. 18

Observe the installation instructions of the combustion air intake silencer.

1 90° elbow
2 Combustion air intake silencer
3 Foam profile

Mounting combustion air intake pipe

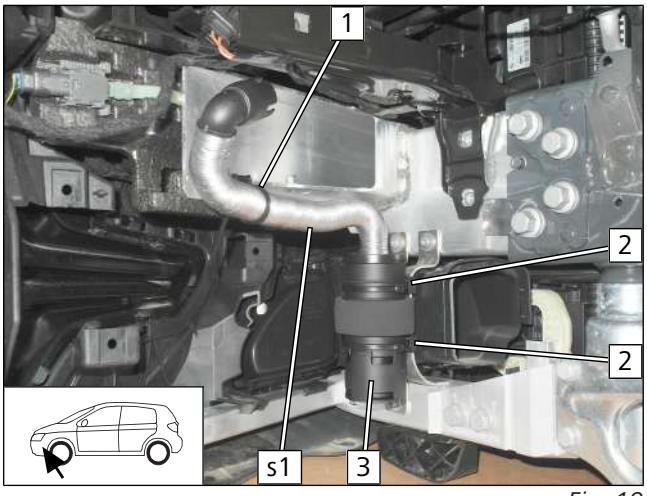


Fig. 19

▶ D not tighten the edge clip cable tie at position **1** nicht festziehen.

2 Tighten edge clip cable tie
3 Combustion air intake silencer

Mounting heater bracket

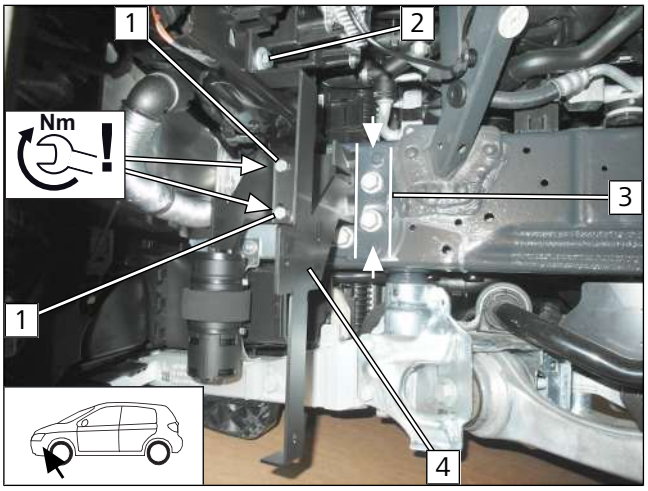


Fig. 20

- ▶ Align bracket 4 parallel with vehicle edge 3.
- ▶ Mount a spacer (20) at position 1 between bracket 4 and vehicle.

1 M8x40 bolt, spring lock washer, bracket, spacer (20), original vehicle thread

2 M6x20 bolt, spring lockwasher, bracket, original vehicle thread

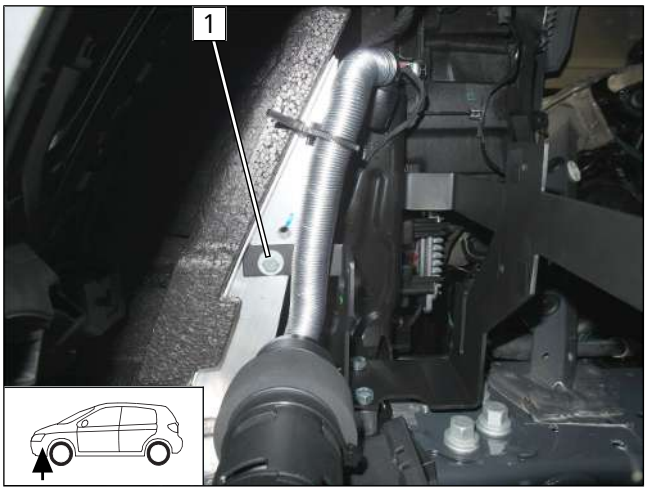


Fig. 21

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

8.2 Premounting heater

Mounting water connection piece

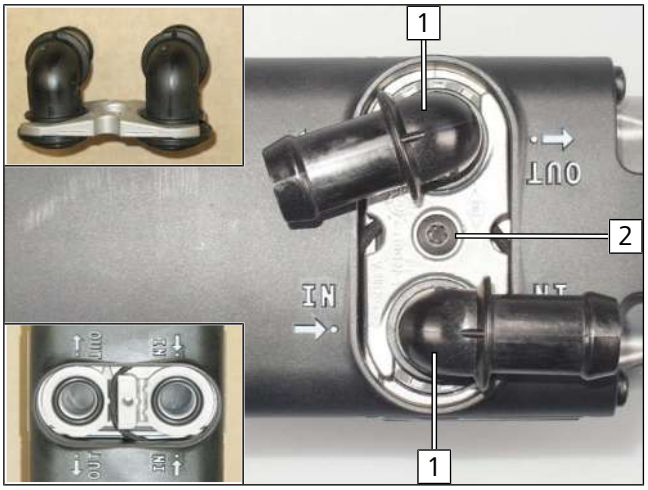


Fig. 22

Observe the general installation instructions of the heater.

1 90° water connection piece, seal

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

Mounting fuel hose

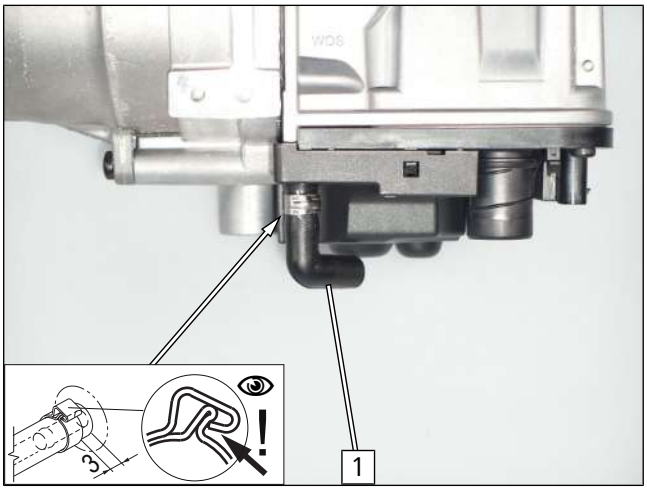


Fig. 23

1 90° moulded hose with a tight bending radius (short side on heater), Ø10 clamp

Cutting coolant hoses to length

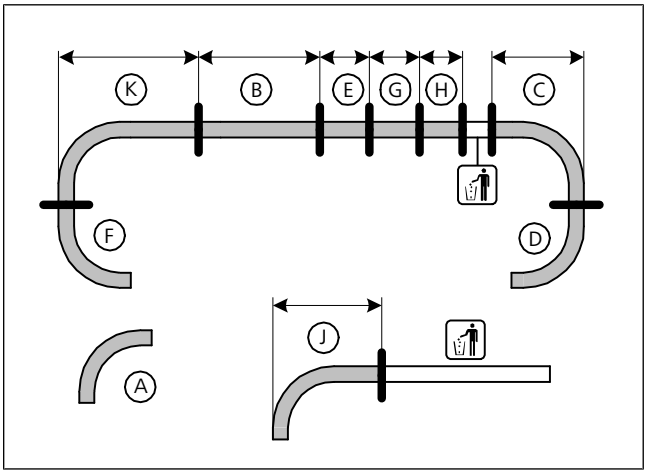


Fig. 24

Petrol only

A	90°	J	250
B	810	K	660
C	100		
D	90°		
E	110		
F	90°		
G	120		
H	65		

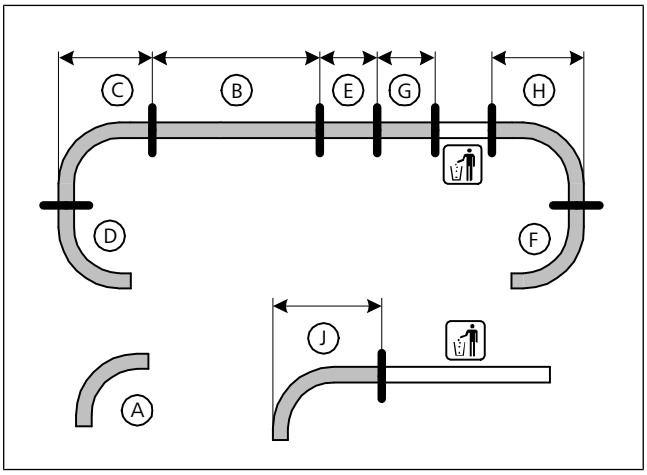


Fig. 25

Diesel only

A	90°
B	850
C	150
D	90°
E	110
F	90°
G	140
H	100
J	90

Mounting coolant hoses

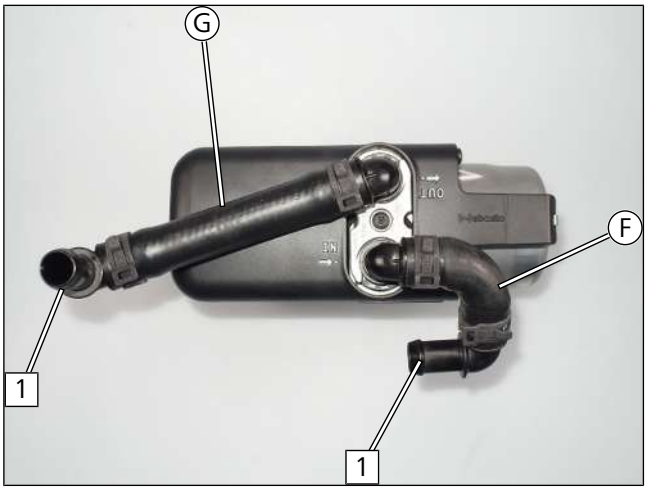


Fig. 26

All spring clips Ø25

1 90°, 18x18 connecting pipe

8.3 Heater mounting

Mounting heater

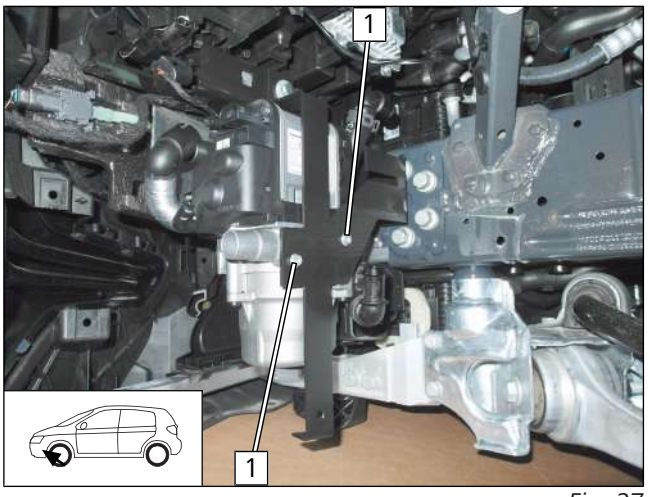


Fig. 27

1 5x13 self-tapping bolt

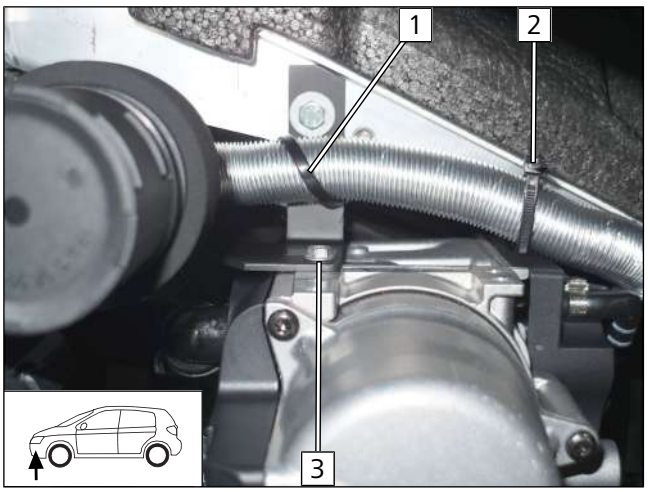


Fig. 28

▶ Tighten cable tie 2.

1 Cable tie around combustion air intake pipe and bracket

3 5x13 self-tapping bolt

Mounting combustion air intake pipe

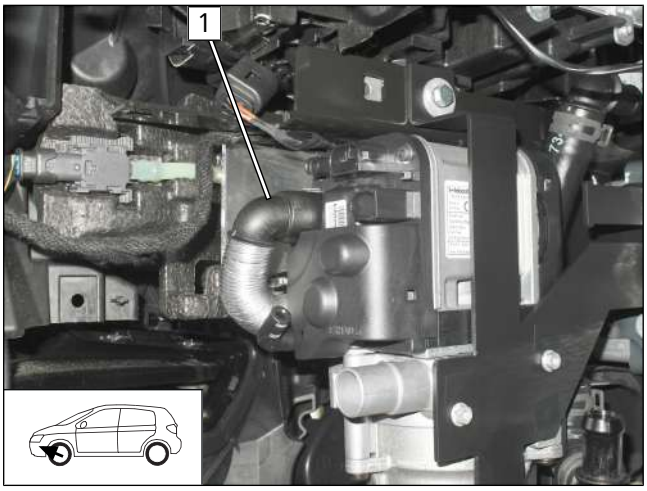


Fig. 29

▶ Mount premounted 90° elbow 1 as shown.

Mounting heater wiring harness

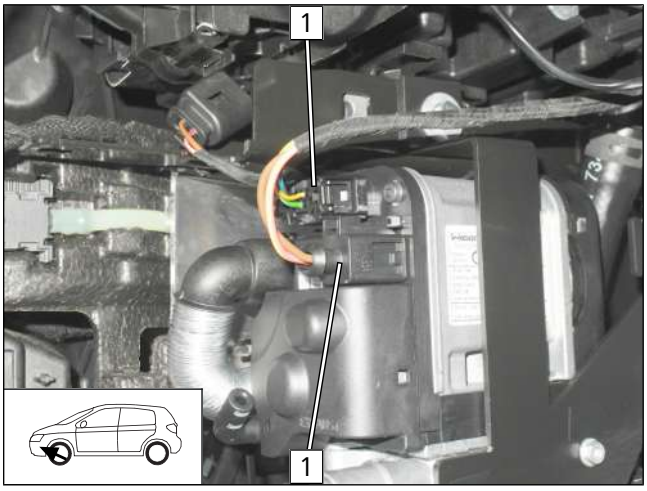


Fig. 30

1 Heater wiring harness connector

9 Fuel

DANGER

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

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

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

Danger of damage to components

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

Dismantling fuel pump connector X7

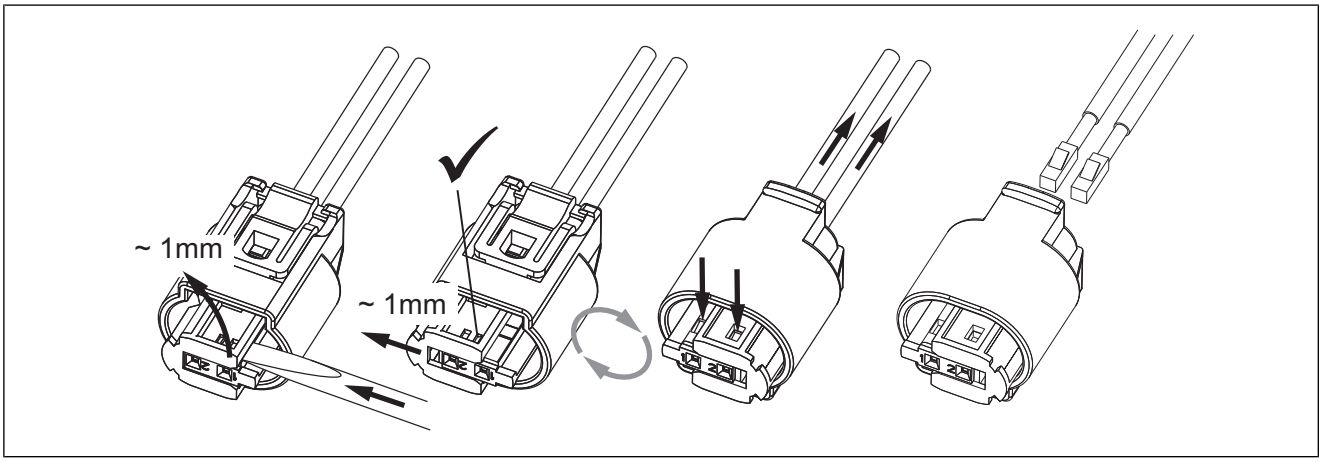


Fig. 31

9.1 Routing fuel line

Connection to heater

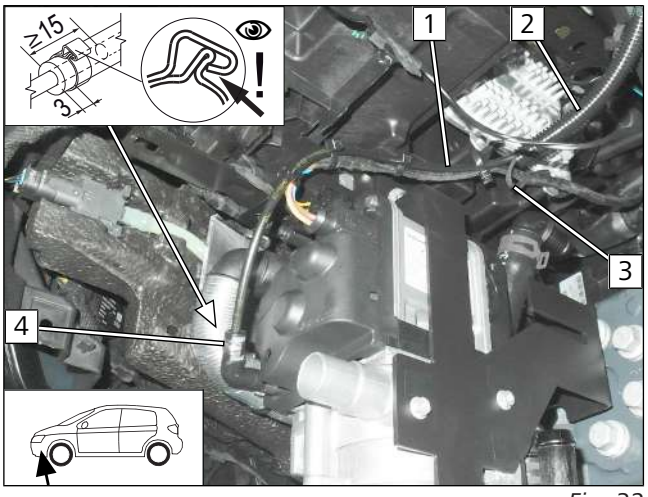


Fig. 32

- ▶ Draw fuel line [1] and fuel pump wiring harness [3] into 600 long corrugated tube [2].
- ▶ Attach fuel line with cable ties as shown.

  [4] Ø10 clamp

Routing line

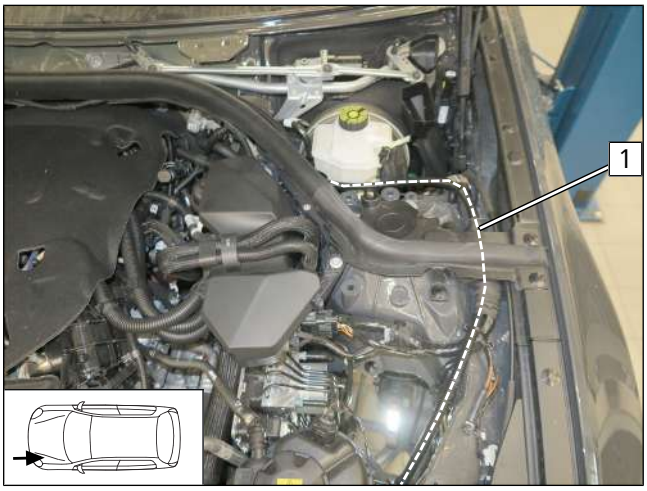


Fig. 33

▶ Route corrugated tube **1** with fuel line and fuel pump wiring harness in the water drain chamber as shown.

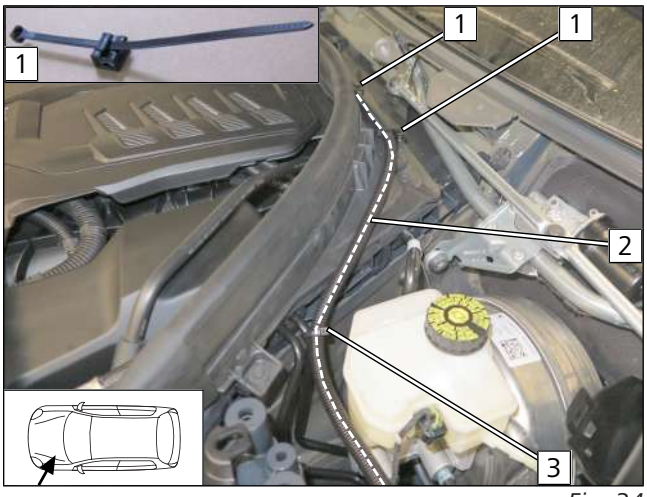


Fig. 34

▶ Route corrugated tube **2** with fuel line and fuel pump wiring harness in the water drain chamber.

1 Edge clip cable tie

3 Cable tie

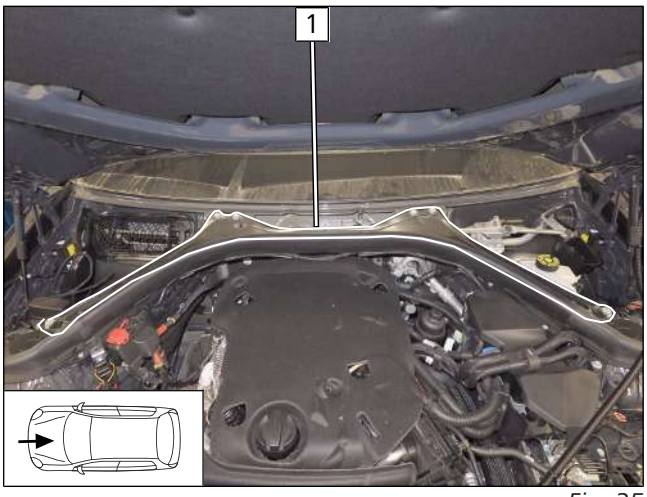


Fig. 35

Remove strut brace **1** (if present).

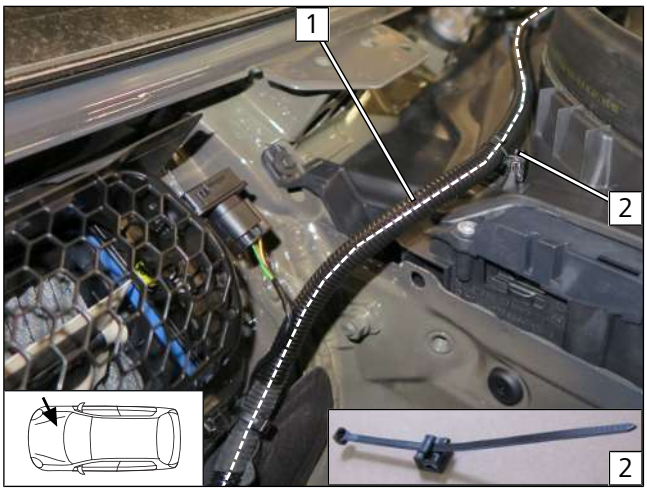


Fig. 36

- Route corrugated tube 1 with fuel line and fuel pump wiring harness in the water drain chamber.

  2 Edge clip cable tie

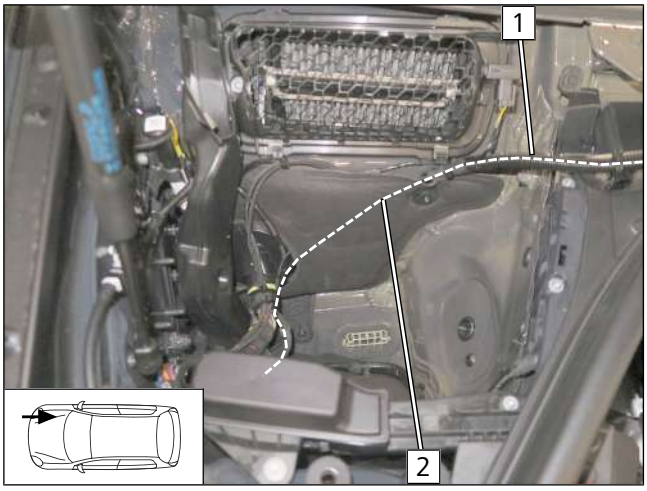


Fig. 37

- Route corrugated tube 1 with fuel line and fuel pump wiring harness 1 in the water drain chamber.
- Route fuel line and fuel pump wiring harness 2 to the wheel well.

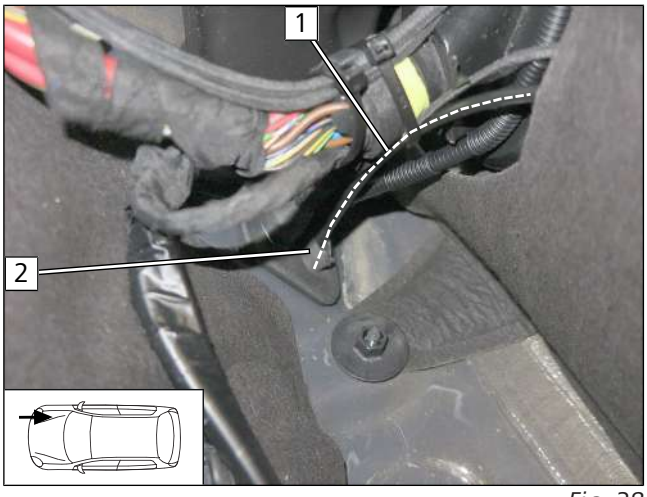


Fig. 38

- Route fuel line and fuel pump wiring harness 1 through protective rubber plug 2 into the wheel well.

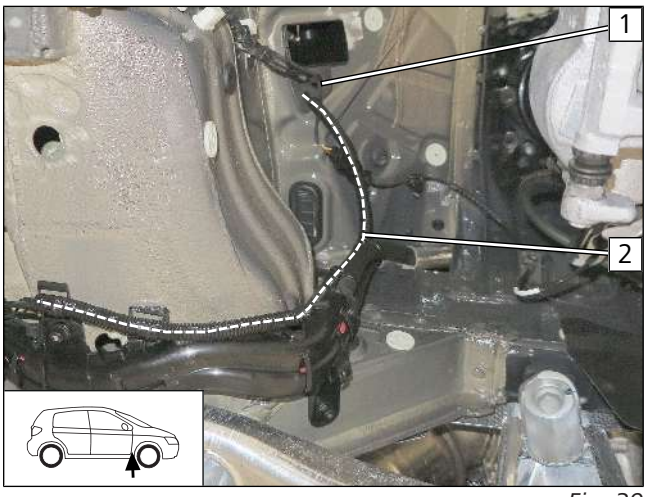


Fig. 39

▶ Draw fuel line and fuel pump wiring harness **1** into corrugated tube **2** and route them to the fuel pump installation location.

Copying hole pattern

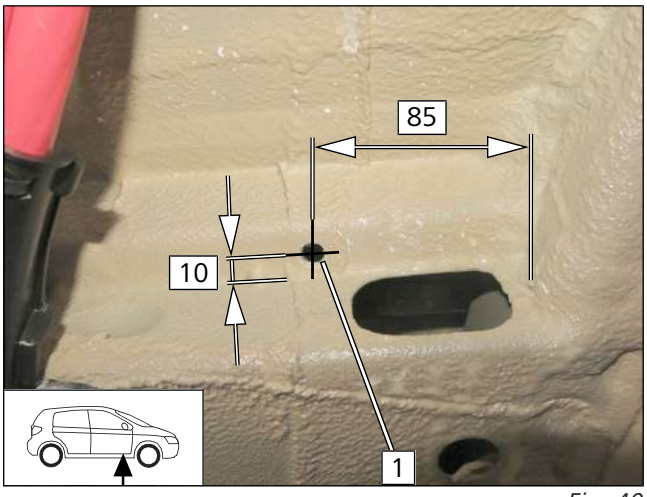


Fig. 40

Remove underbody protection an position **1**.

1 Hole pattern

Inserting rivet nut

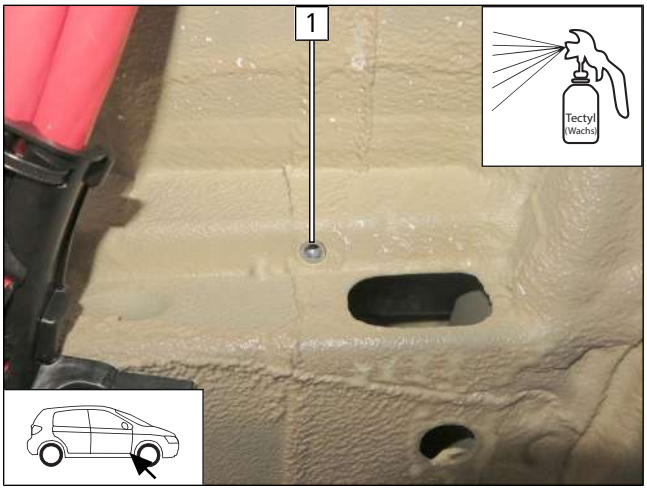


Fig. 41

1 Ø9 hole, rivet nut

Cutting fuel pump perforated bracket to length

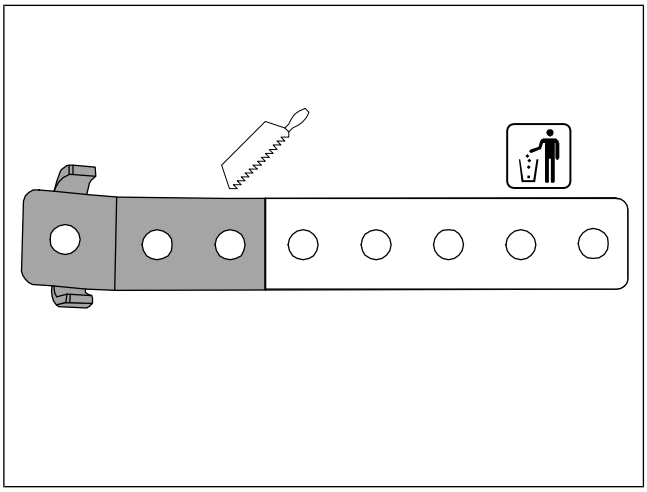


Fig. 42

Premounting fuel pump

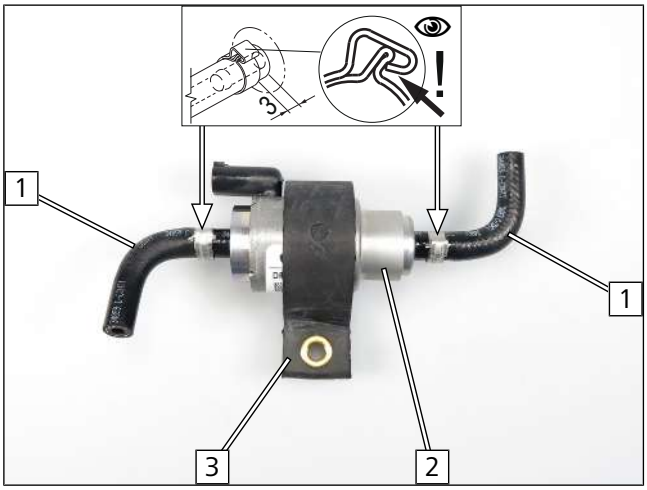


Fig. 43

1 Moulded hose, Ø10 clamp
2 Fuel pump
3 Fuel pump mount

Mounting fuel pump

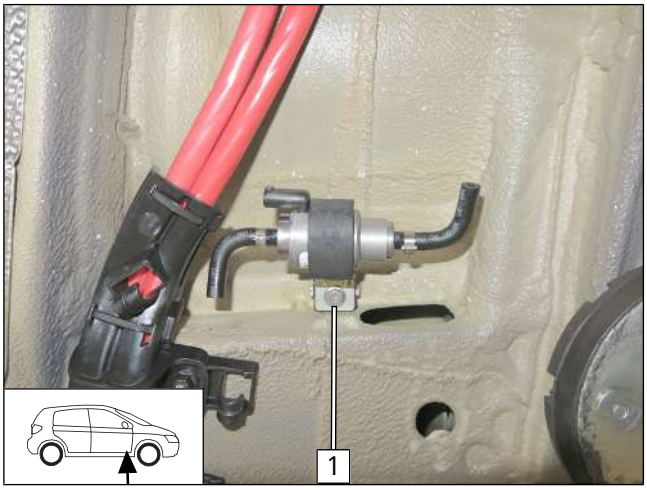


Fig. 44

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

Assembling fuel pump connector X7

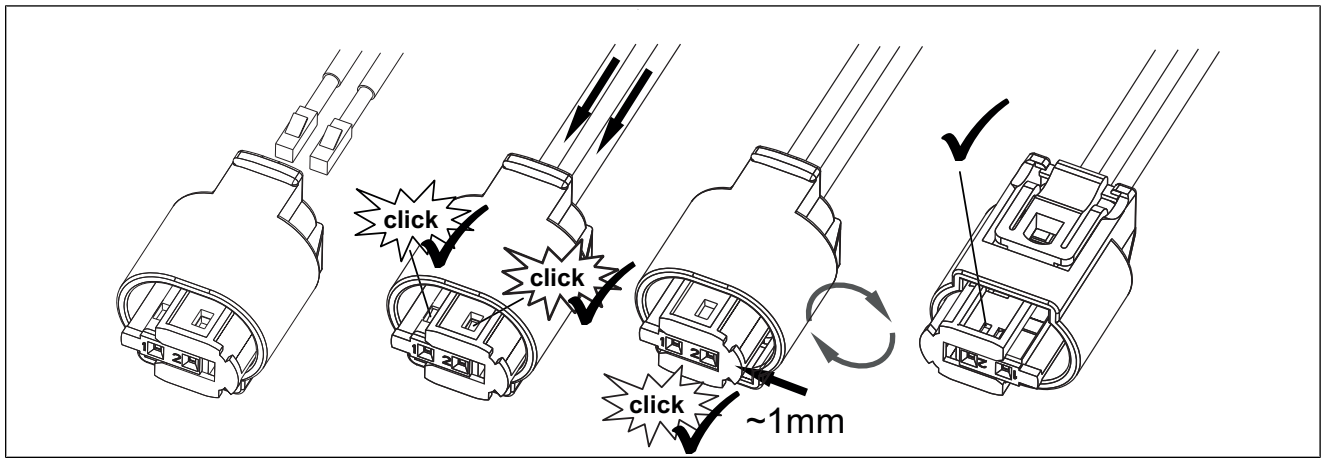


Fig. 45

Connecting fuel pump

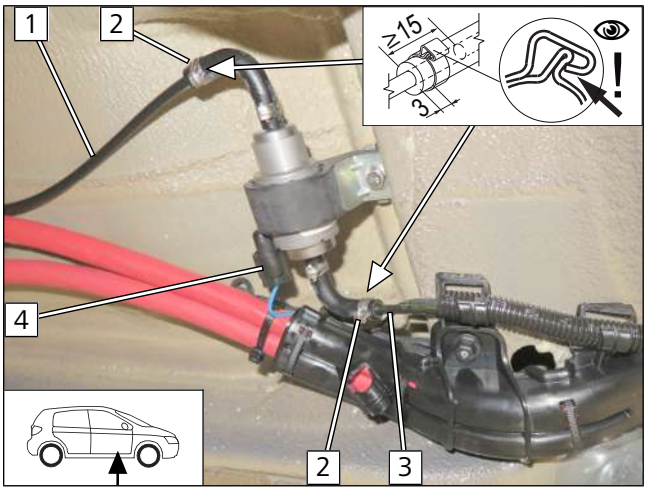


Fig. 46

1 Fuel line of FuelFix
2 Ø10 clamp
3 Heater fuel line
4 Fuel pump wiring harness, connector X7 mounted

Routing line on underbody

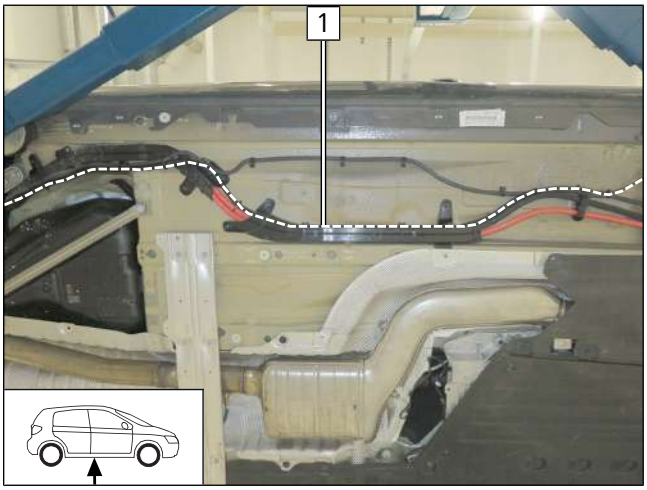


Fig. 47

▶ Route fuel line of FuelFix 1 along the original vehicle fuel line to the tank.

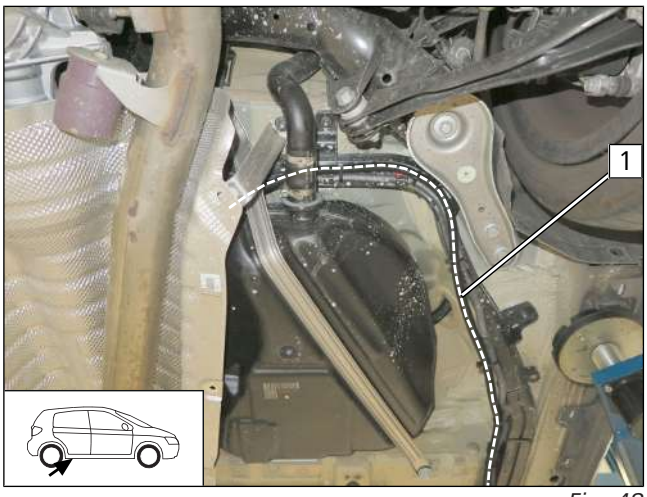


Fig. 48

▶ Route fuel line of FuelFix [1] along the original vehicle fuel line to the tank fitting.

9.2 Installing FuelFix

Moving label

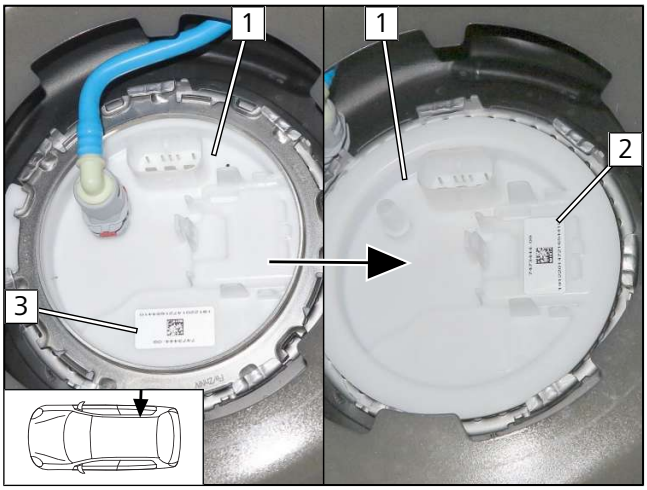


Fig. 49

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

View of drilling template

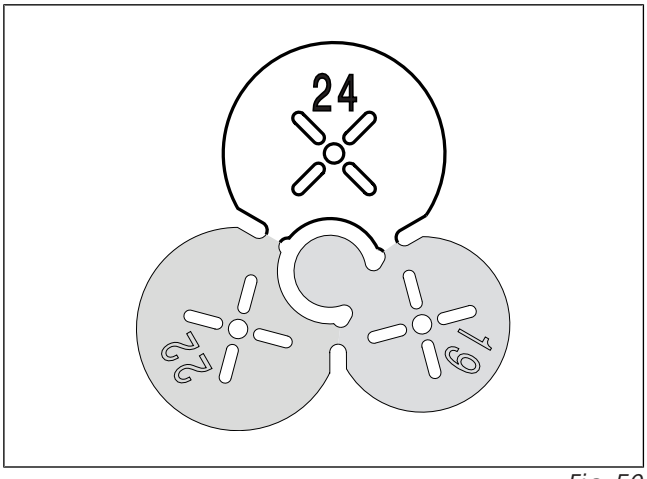


Fig. 50

Work steps F1, F2

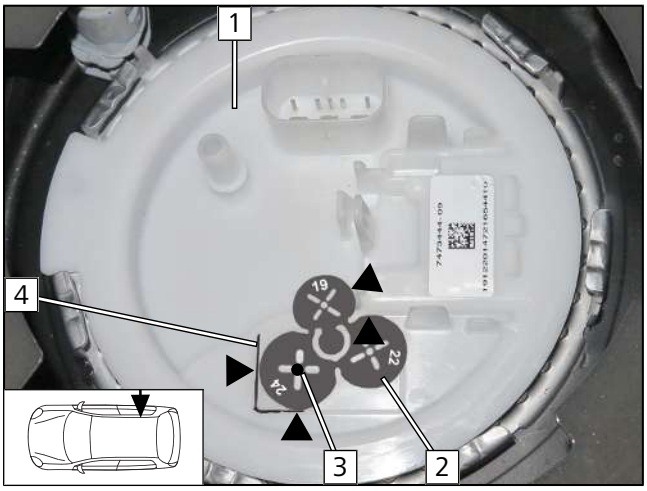


Fig. 51

Observe the installation instructions of the tank extracting device.

Connections on tank fitting may vary (1 or 2 connection pieces)

▶ Draw guide line 4 on existing embossing.

1 Tank fitting
2 Position Ø24 drilling template as shown in fig.
3 Hole pattern

Work step F3

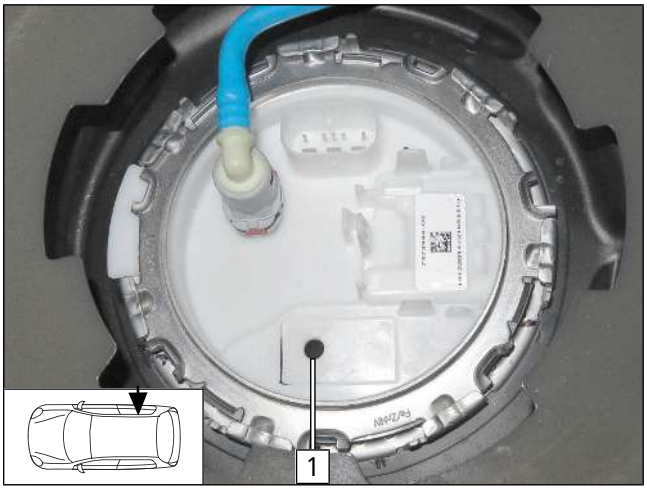


Fig. 52

DANGER

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

1 Hole made with provided drill

Work steps F4, F5

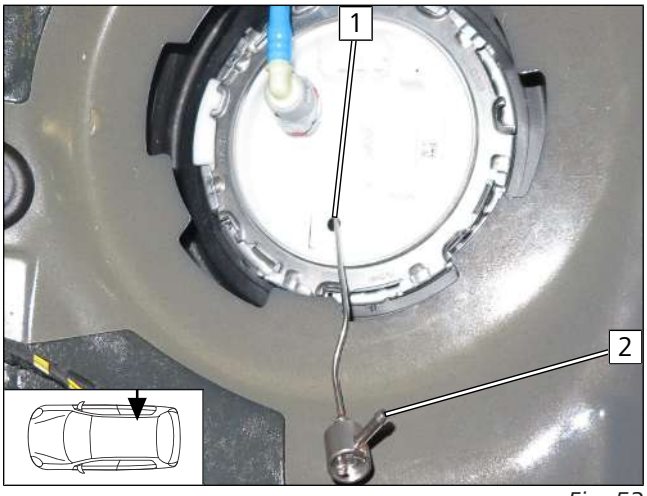


Fig. 53

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

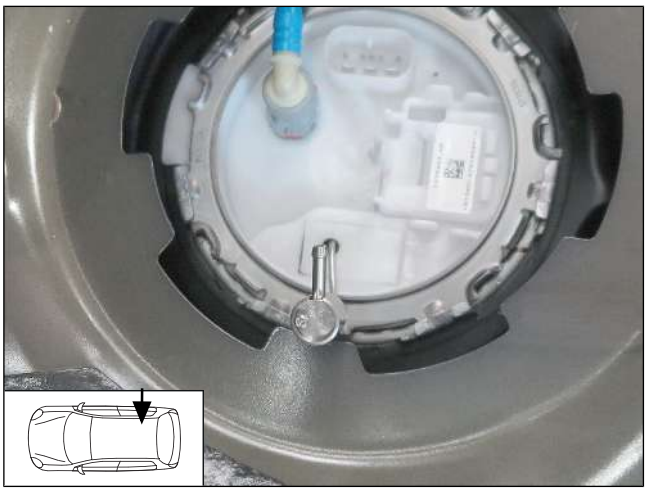


Fig. 54

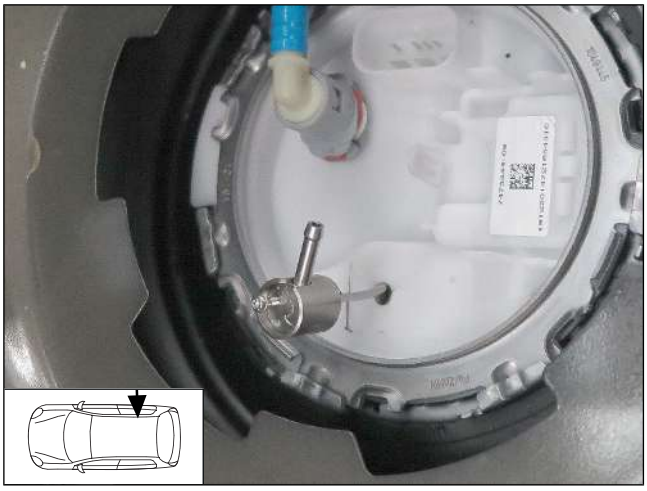


Fig. 55

Work steps F5.3, F5.4

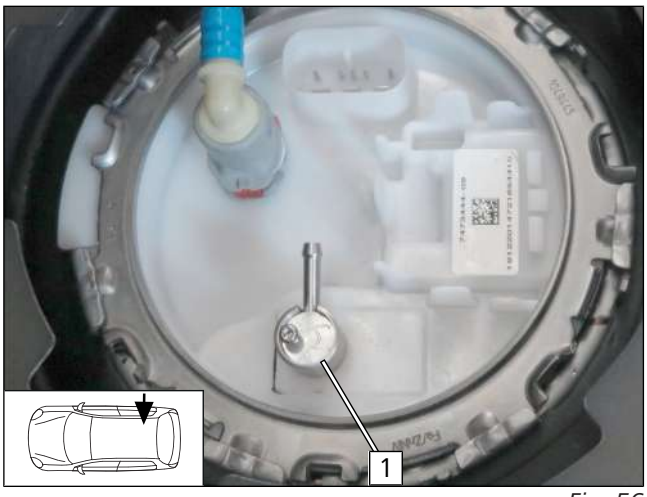


Fig. 56

▶ Align FuelFix 1 as shown in Fig.

Work step F6.2

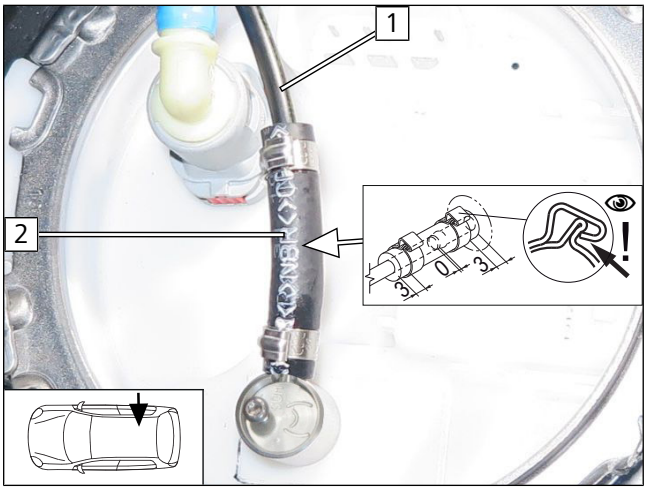


Fig. 57

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

Work step F7

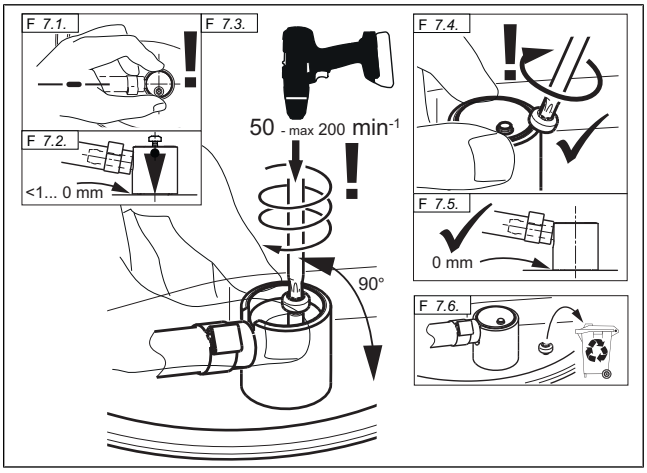


Fig. 58

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

Work step F8

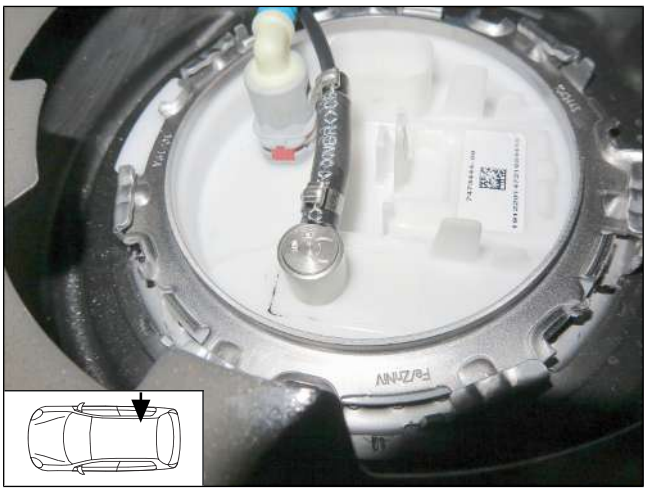


Fig. 59

Securing fuel line

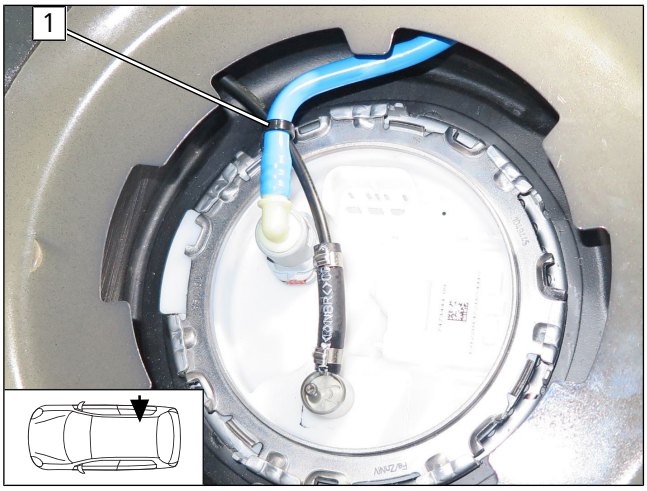


Fig. 60

1 Cable tie for tension relief

10 Exhaust

Cutting exhaust pipe to length

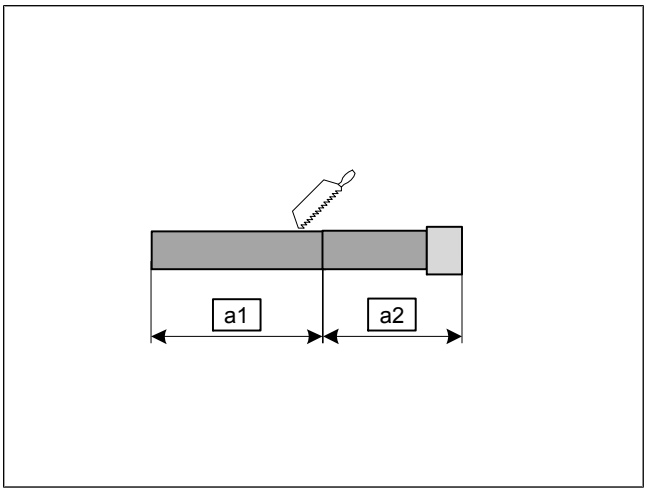


Fig. 61

a1 220
a2 180

Mounting exhaust silencer

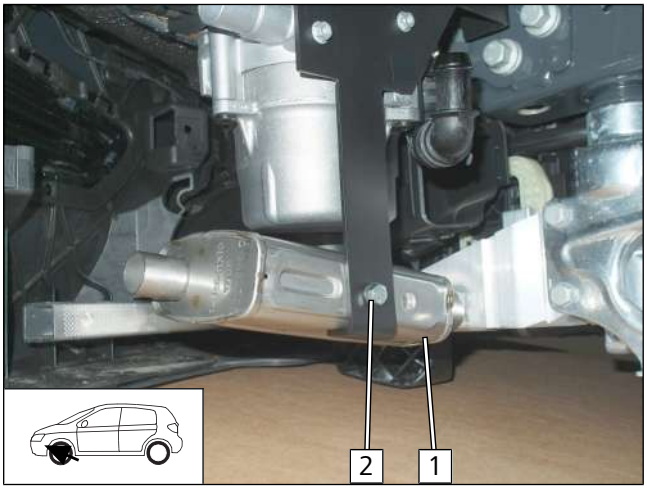


Fig. 62

1 Exhaust silencer
2 M6x16 bolt, spring lockwasher, bracket, exhaust silencer

Mounting exhaust pipe **a1**

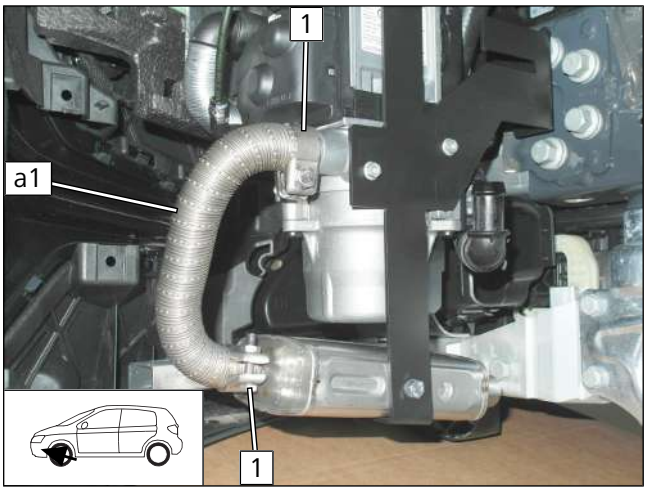


Fig. 63

1 Hose clamp

Premounting angle bracket

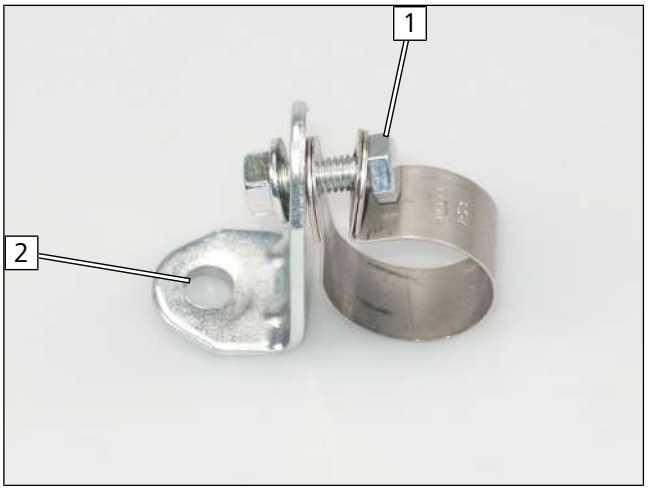


Fig. 64

1 M6x20 bolt, pipe clamp, angle bracket, flanged nut

2 Drill out hole to Ø8.5

Premounting exhaust pipe a2

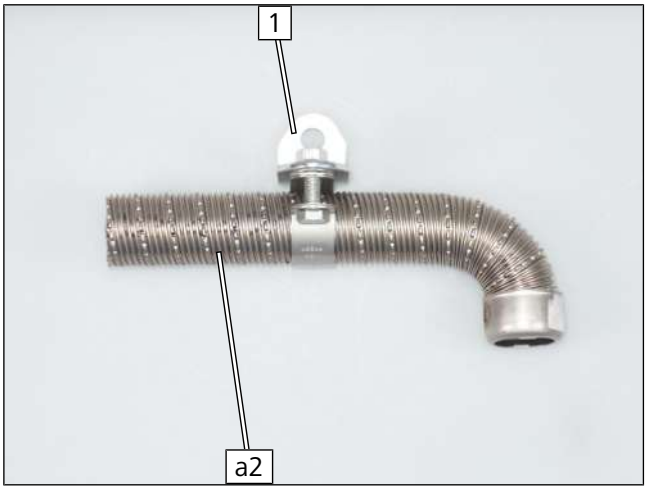


Fig. 65

1 Premounted angle bracket

Mounting exhaust pipe a2

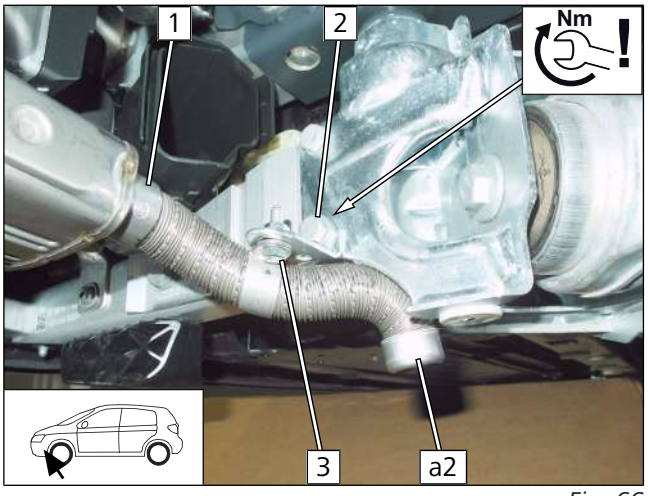


Fig. 66

Danger of damage to components

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

▶ Tighten screw connection at position 3.

1 Hose clamp

2 Original vehicle bolt, premounted angle bracket, original vehicle thread

11 Coolant for petrol vehicles

11.1 Hose routing diagram

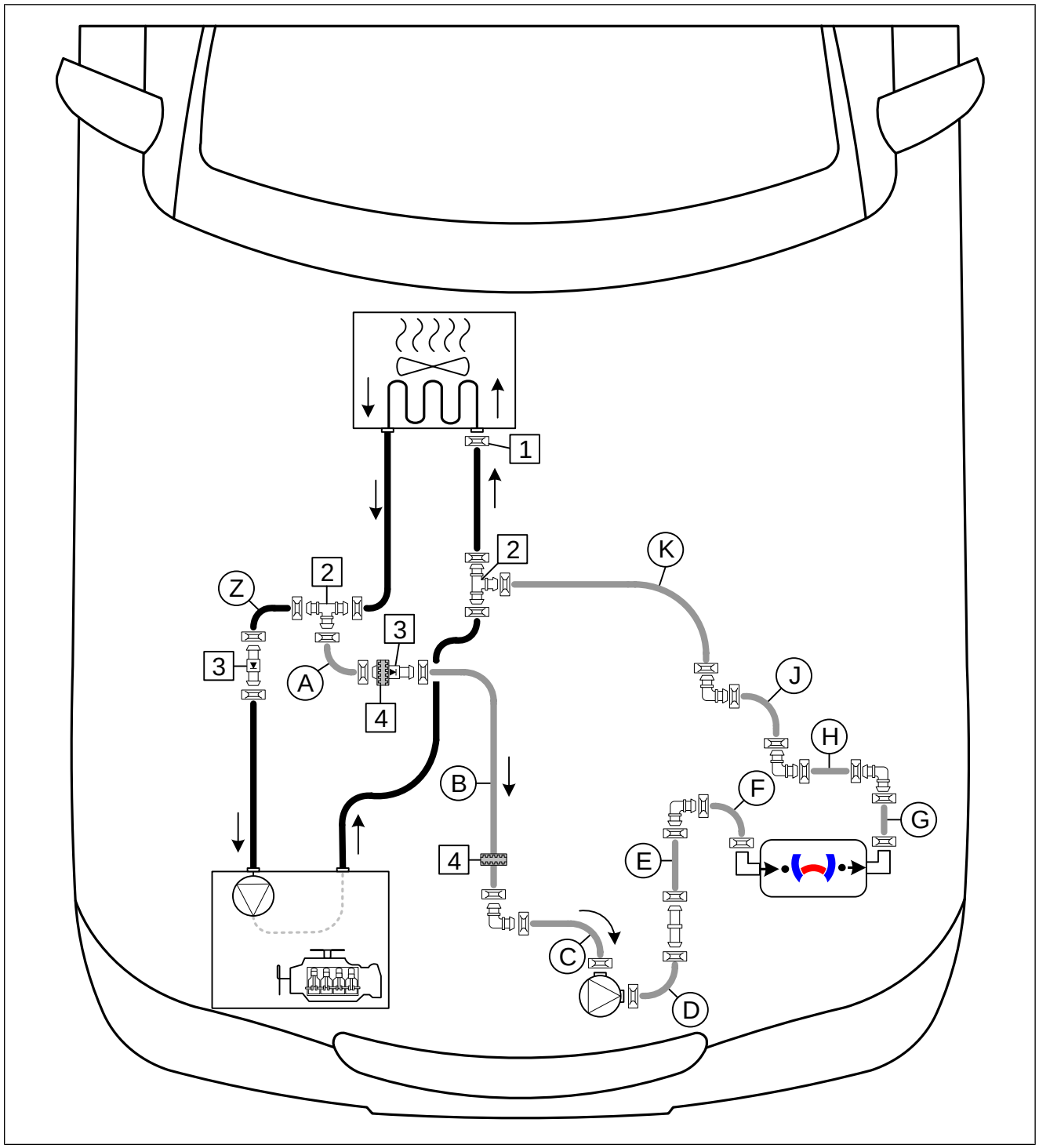


Fig. 67

All spring clips without a specific designation = Ø25

All connecting pipe or = Ø18x18

1 Original vehicle spring clip; 2 Ø18x18x18 T-piece; 3 Ø18x18 non-return valve; 4 Black (sw) rubber isolator

11.2 Coolant circuit installation

Mounting fabric heat shrink tubing

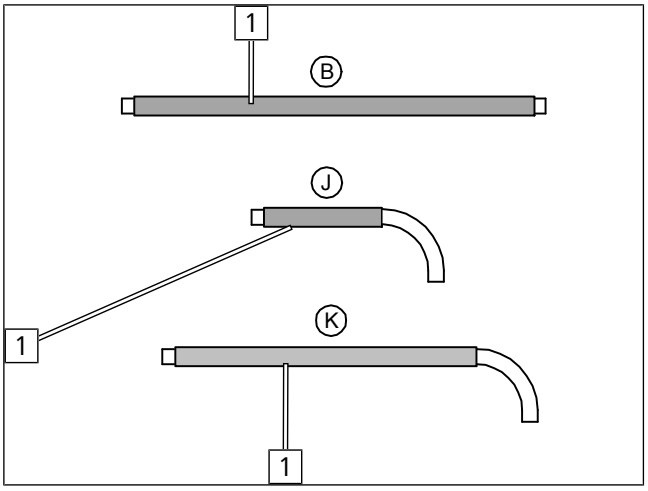


Fig. 68

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

1 Fabric heat shrink tubings

Mounting coolant pump

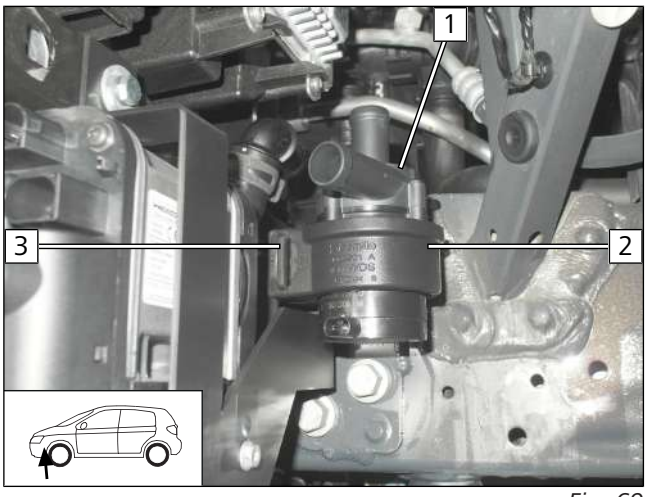


Fig. 69

1 Coolant pump
2 Coolant pump mount
3 Heater bracket

Connecting coolant pump wiring harness

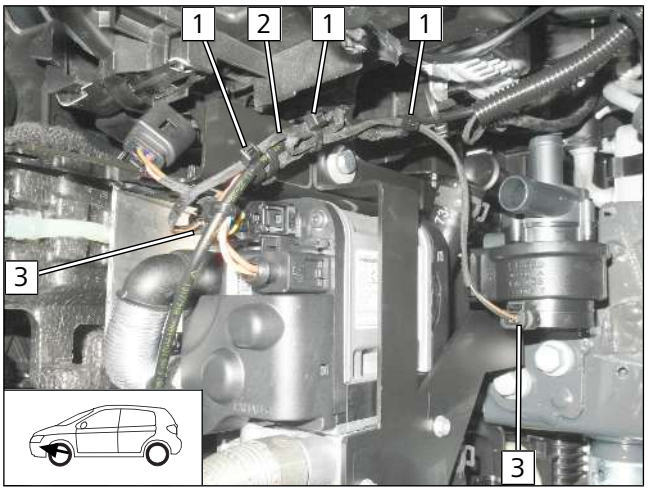


Fig. 70

▶ Route coolant pump wiring harness 2 as shown and fasten using cable tie 1.

3 Coolant pump wiring harness connector

Connection to heater inlet

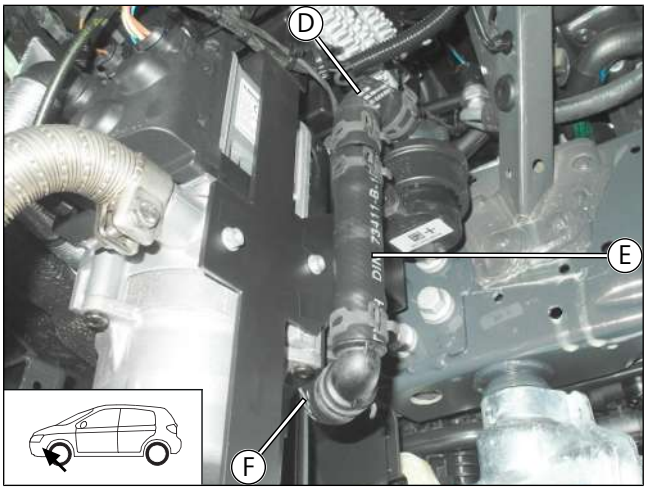


Fig. 71

Cutting point 1

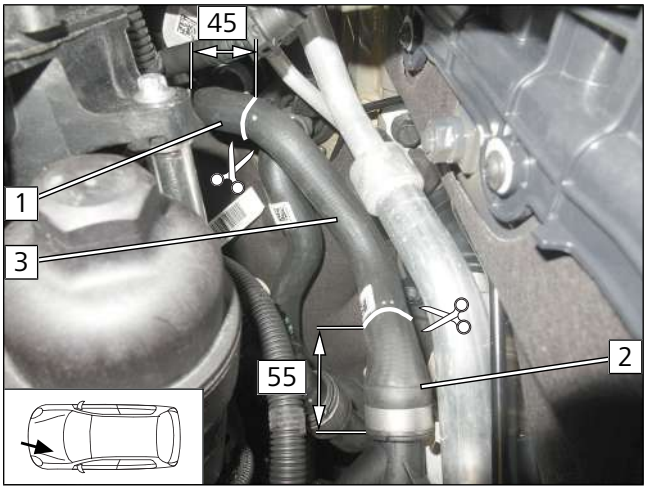


Fig. 72

- ▶ Cut the heat exchanger outlet / engine inlet hose as shown.
- ▶ Section 3 will be reused.

1 Heat exchanger outlet hose section
2 Engine inlet hose section

Cutting section

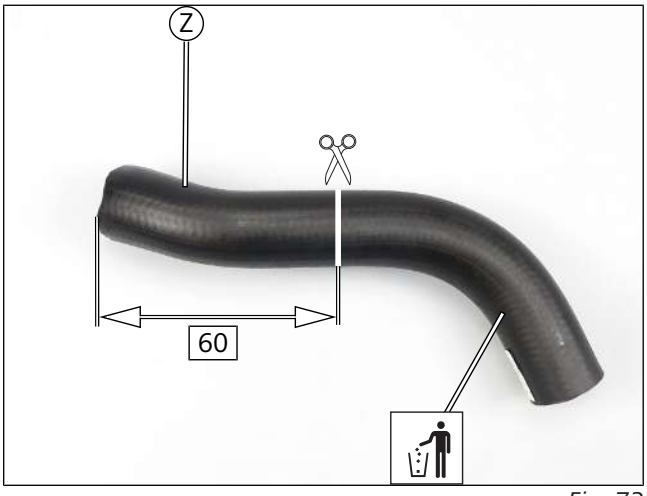


Fig. 73

Cutting point 2

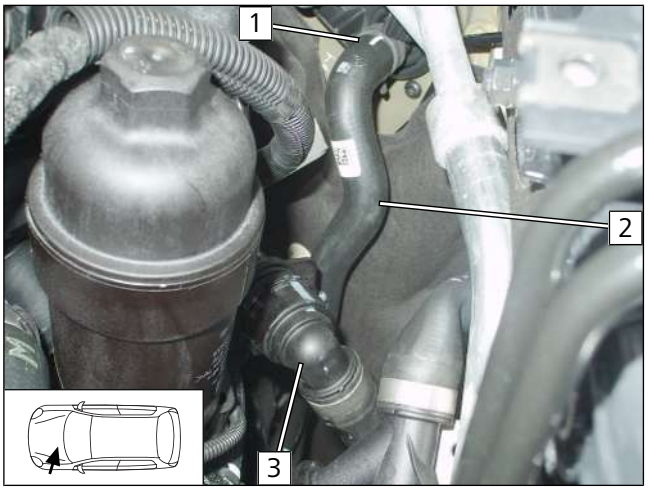


Fig. 74

▶ Disconnect engine outlet/heat exchanger inlet hose **2**.

1 Heat exchanger inlet connection

3 Engine outlet connection

Cutting hose

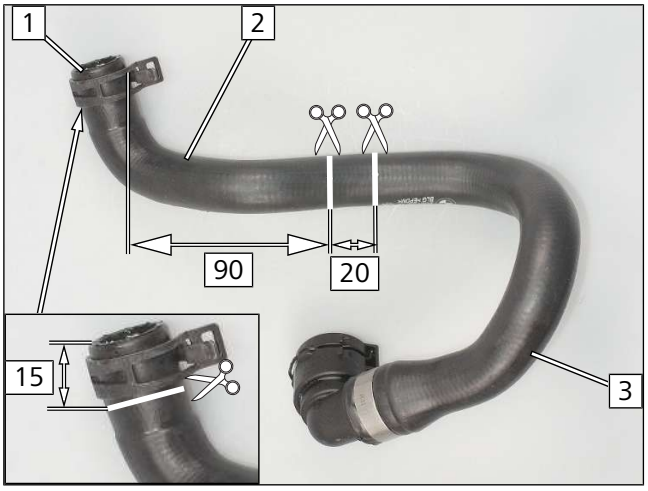


Fig. 75

▶ Cut engine outlet/heat exchanger inlet hose as shown.

▶ Shorten heat exchanger inlet hose section **2** at position **1** by 15mm. The original vehicle spring clip will be re-used.

3 Engine outlet hose section

Premounting hose group with T-piece

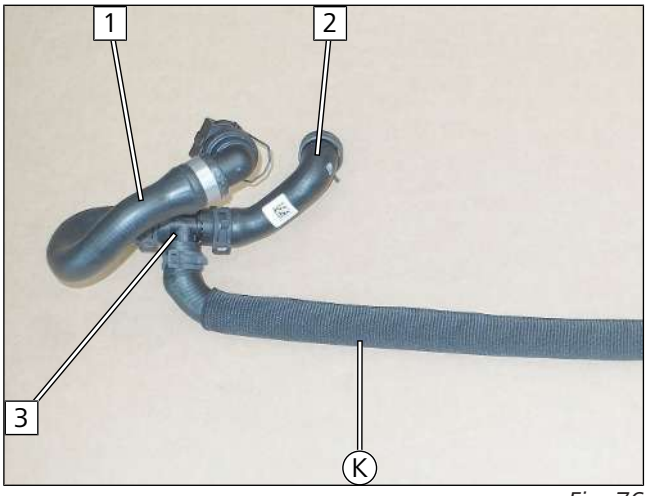


Fig. 76

1 Engine outlet hose section

2 Heat exchanger inlet hose section

3 T piece

Premounting hoses Ⓗ and Ⓙ

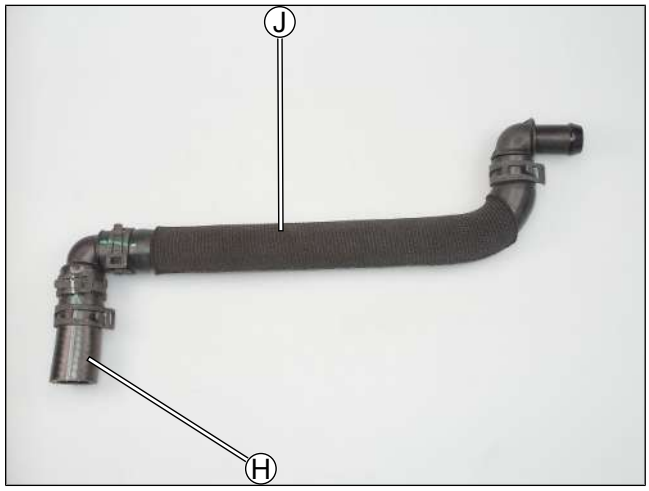


Fig. 77

Connecting premounted T-piece hose group

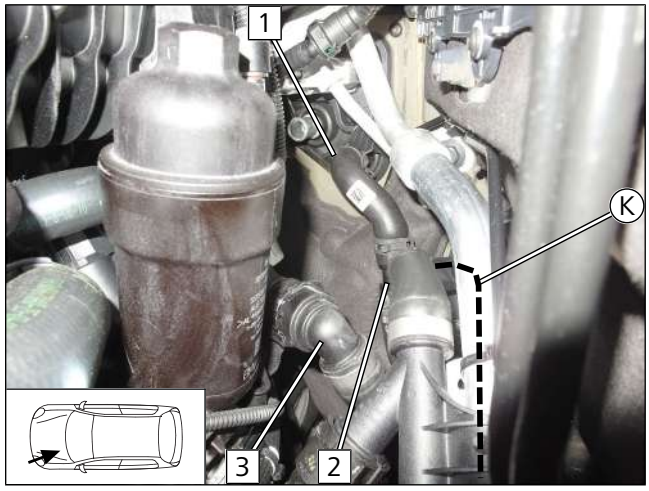


Fig. 78

▶ Route hose Ⓚ under the A/C line in the direction of the heater.

1 Heat exchanger inlet hose section
2 T piece
3 Engine outlet hose section

Routing and fastening hose Ⓚ

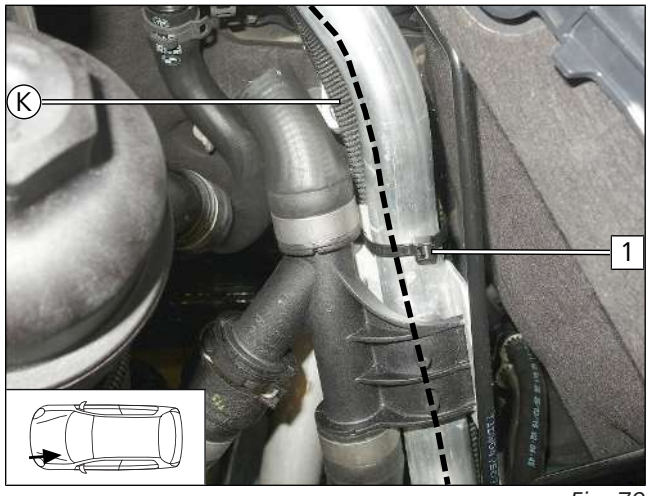


Fig. 79

1 Cable tie

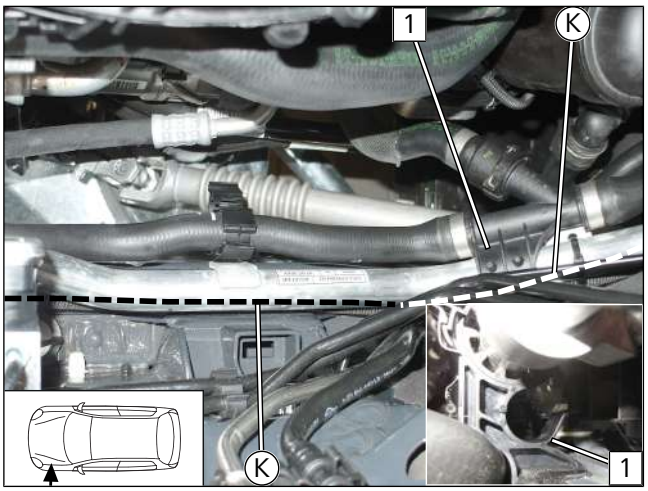


Fig. 80

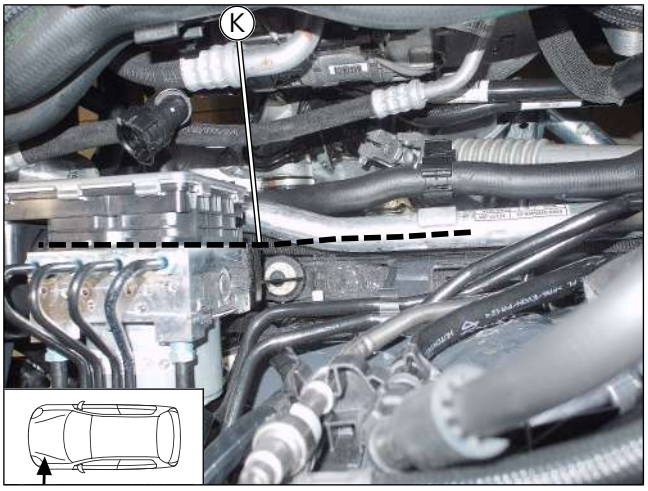


Fig. 81

Connecting hoses Ⓙ and Ⓚ

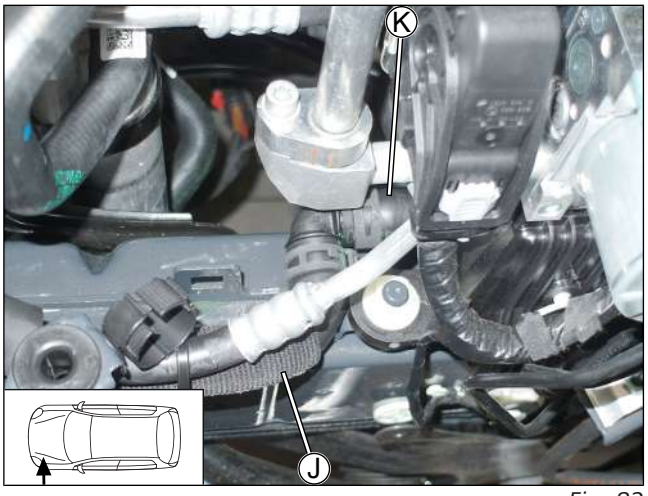


Fig. 82

[1] Original vehicle hose bracket

Routing hoses (H) and (J)

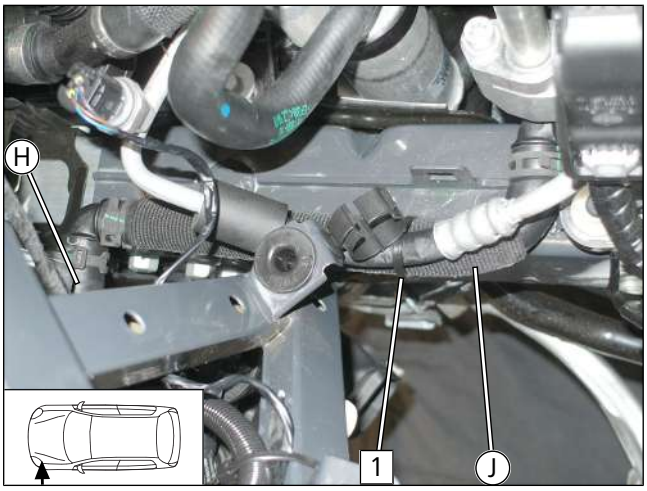


Fig. 83

1 Cable tie

Connecting hoses (G) and (H)

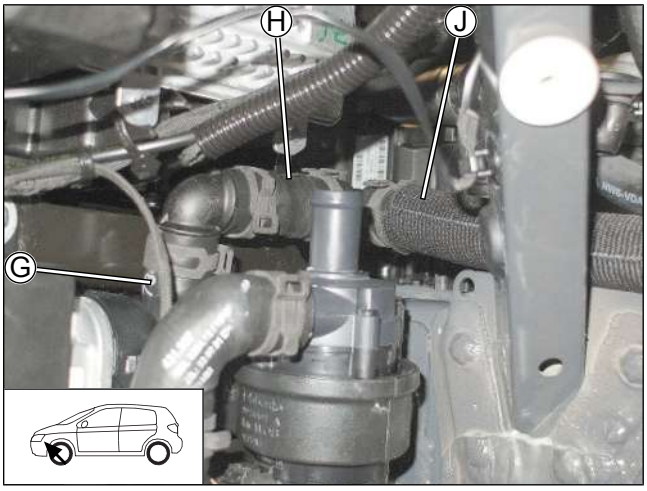


Fig. 84

Premounting hose group with non-return valve

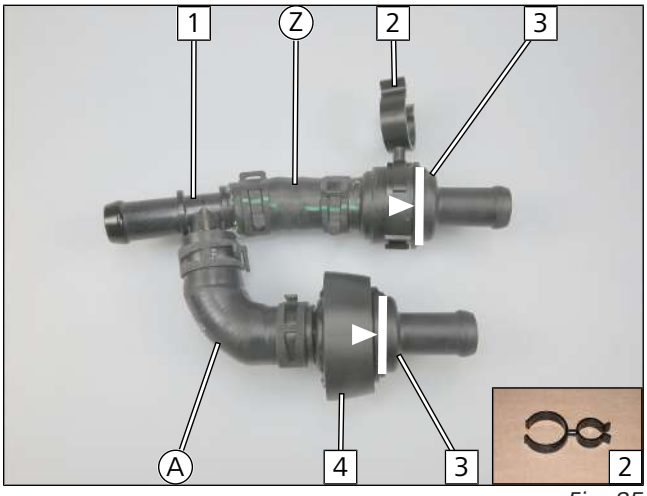


Fig. 85

1 18x18x18 T-piece
2 25x37 hose bracket
3 18x18 non-return valve
4 Black (sw) rubber isolator

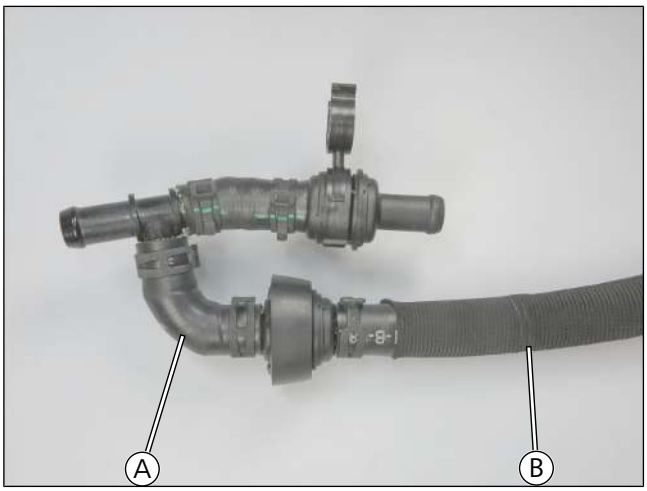


Fig. 86

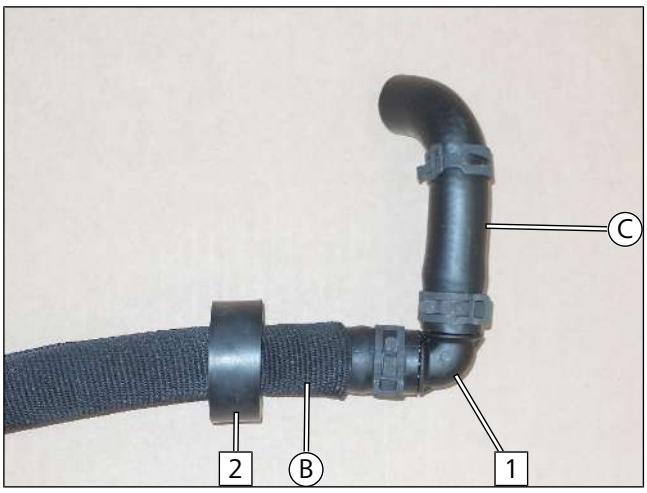


Fig. 87

1 90°, 18x18 connecting pipe
2 Black (sw) rubber isolator

Mounting premounted non-return valve hose group

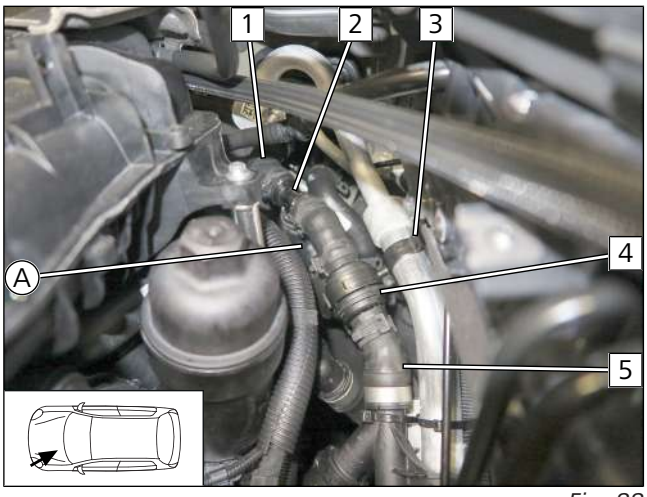


Fig. 88

1 Heat exchanger outlet hose section
2 18x18x18 T-piece
3 25x27 hose bracket on A/C line
4 18x18 non-return valve
5 Engine inlet hose section

Routing hose Ⓑ

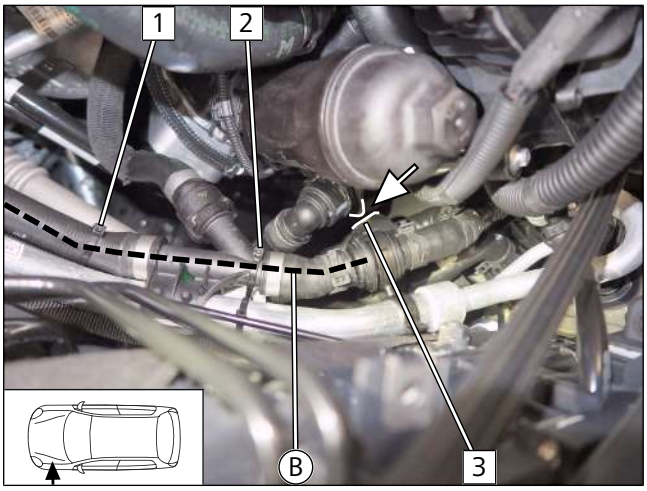


Fig. 89

Danger of damage to components

▶ Ensure sufficient distance from neighbouring components at position 3, correct if necessary.

1 Cable tie around hose B and original vehicle hose

2 Cable tie around hose B and original vehicle Y-piece

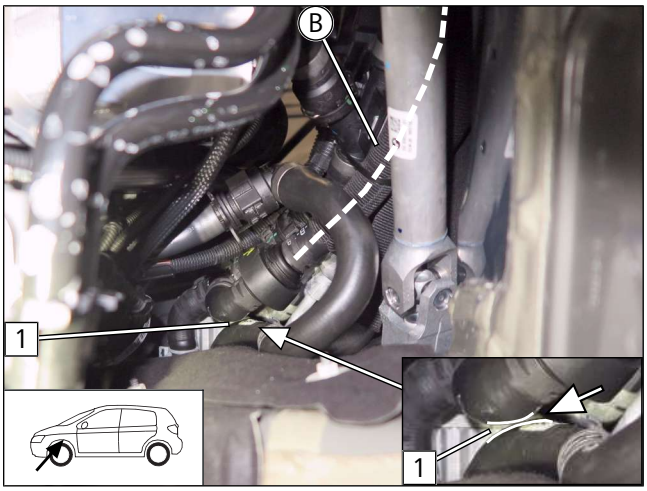


Fig. 90

Danger of damage to components

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

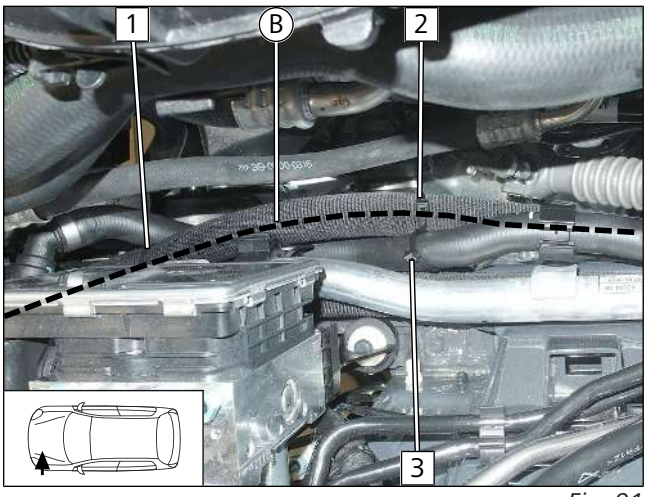


Fig. 91

▶ Fix hose Ⓑ and original vehicle hose using cable ties 2 and 3 (interlinked).

1 Cable tie

Connecting hoses Ⓑ and Ⓒ

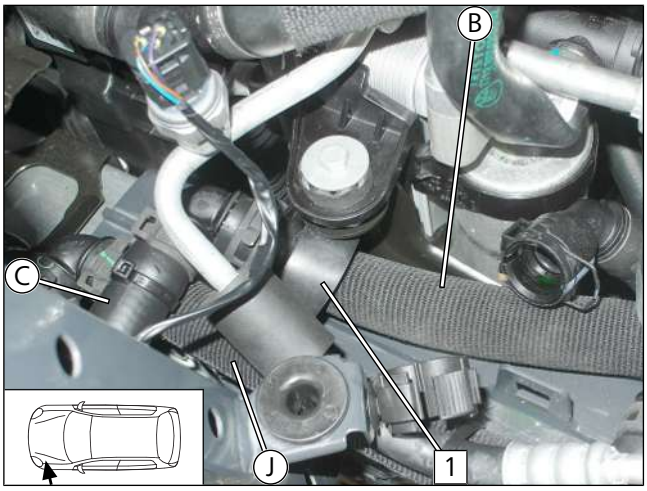


Fig. 92

1 Position black (sw) rubber isolator

Connecting coolant pump

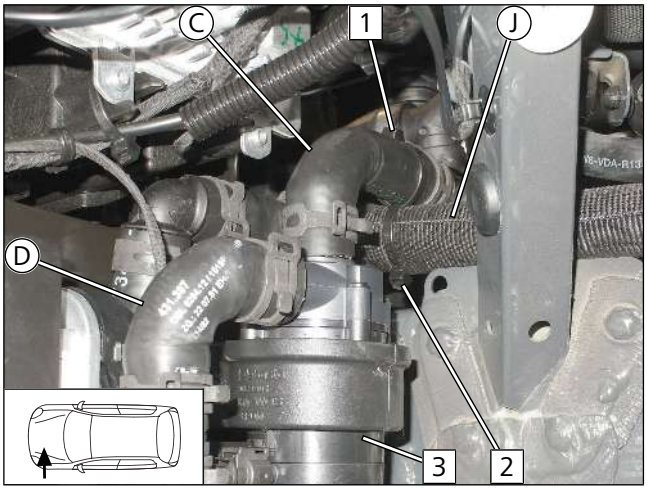


Fig. 93

▶ Fix hoses C and J using cable ties ① and ② (interlinked).

3 Coolant pump

12 Coolant for diesel vehicles

12.1 Hose routing diagram

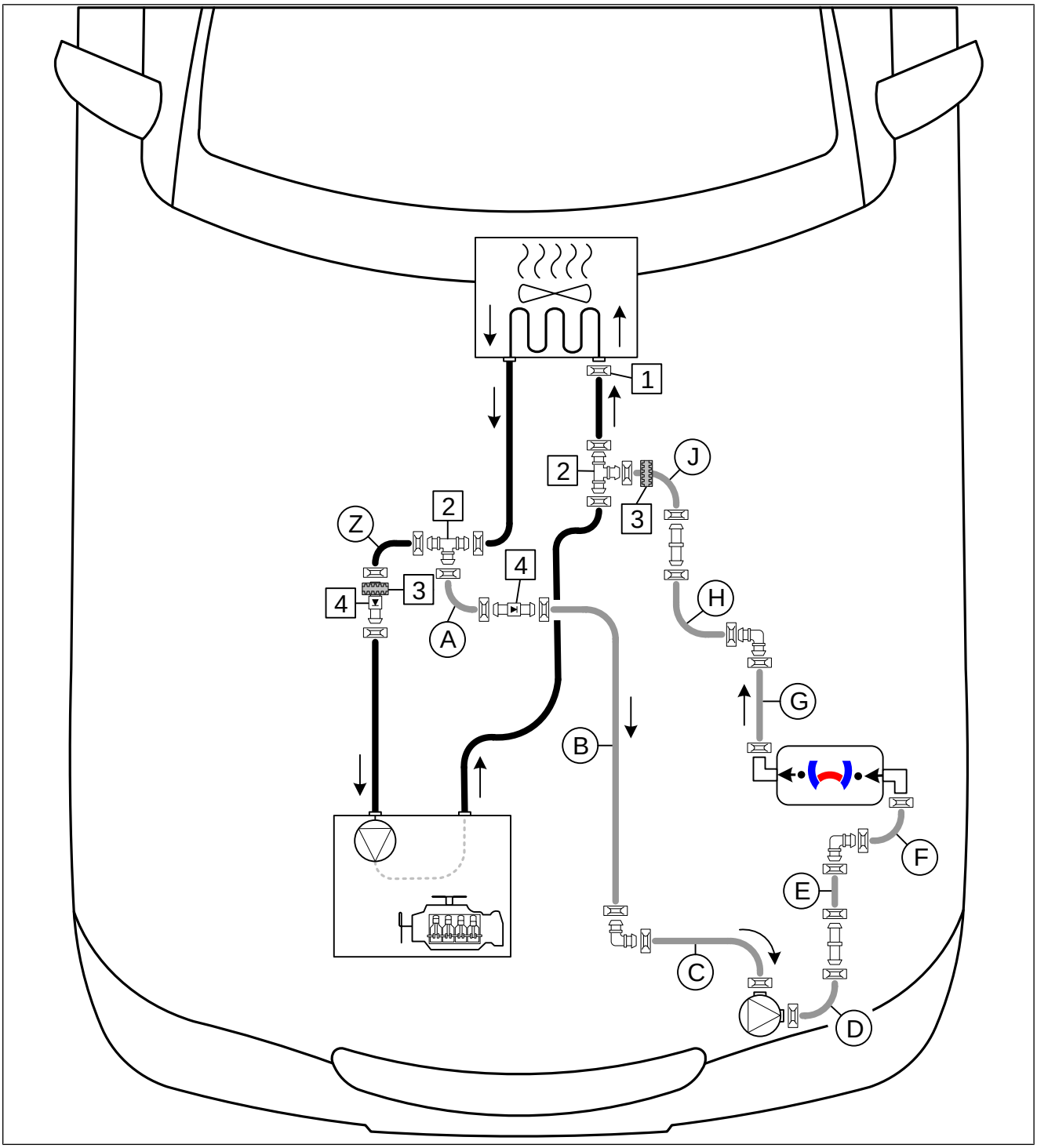


Fig. 94

All spring clips without a specific designation = Ø25

All connecting pipe or = Ø18x18

1 Original vehicle spring clip; 2 Ø18x18x18 T-piece; 3 Black (sw) rubber isolator; 4 Ø18x18 non-return valve

12.2 Coolant circuit installation

Mounting fabric heat shrink tubing

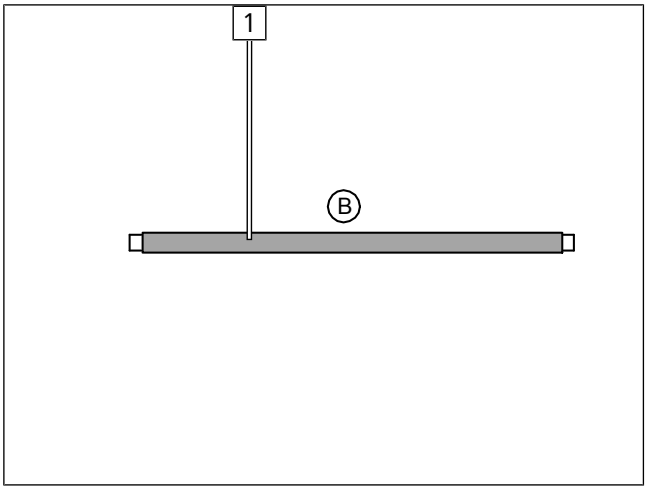


Fig. 95

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

1 Fabric heat shrink tubing

Mounting coolant pump

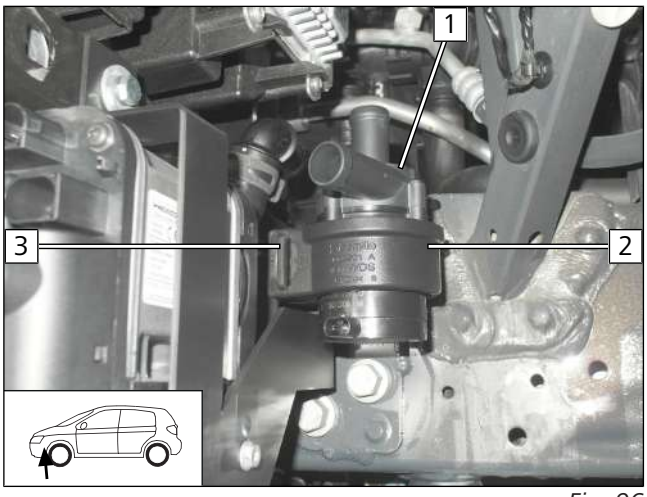


Fig. 96

1 Coolant pump
2 Coolant pump mount
3 Heater bracket

Connecting coolant pump wiring harness

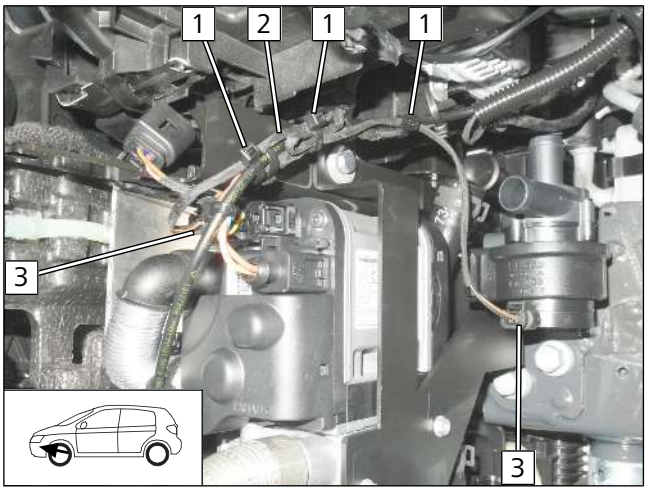


Fig. 97

▶ Route coolant pump wiring harness **2** as shown and fasten using cable tie **1**.

3 Coolant pump wiring harness connector

Connection to heater inlet

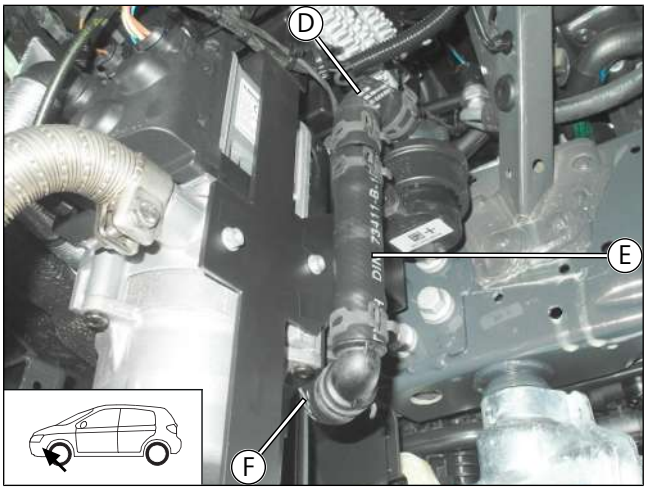


Fig. 98

Cutting point 1

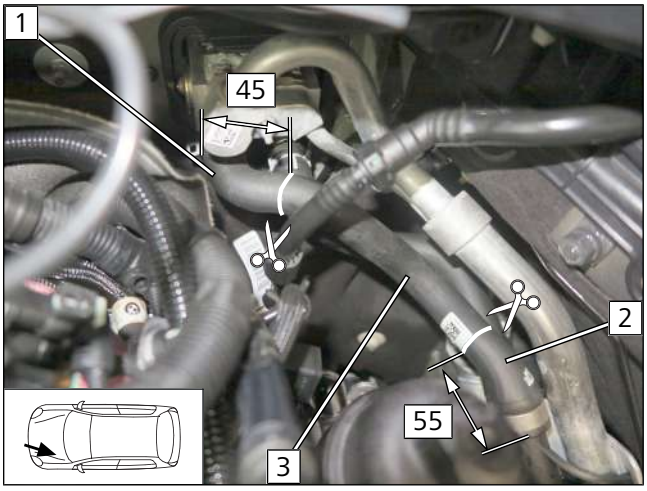


Fig. 99

- ▶ Cut the heat exchanger outlet / engine inlet hose as shown.
- ▶ Section **3** will be reused.

1 Heat exchanger outlet hose section
2 Engine inlet hose section

Cutting section

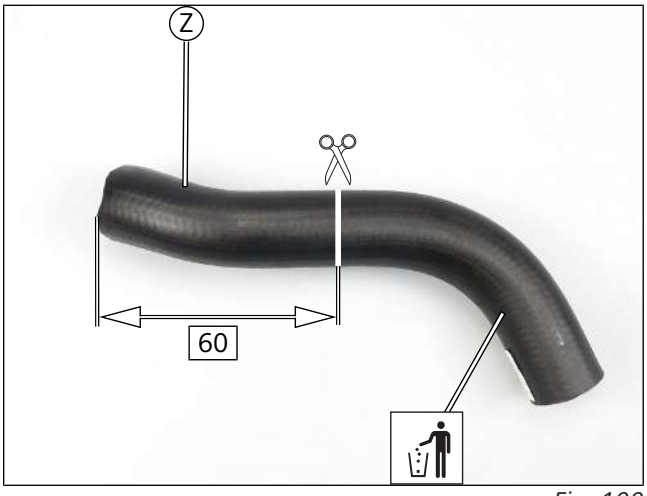


Fig. 100

Shortening engine outlet/heat exchanger inlet hose

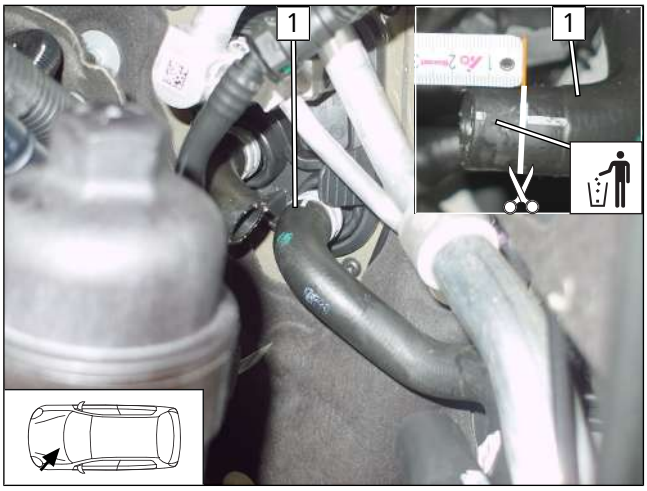


Fig. 101

- ▶ Disconnect engine outlet/heat exchanger inlet hose **1** from heat exchanger inlet and shorten by 15mm as shown.
- ▶ Reconnect engine outlet/heat exchanger inlet hose **1** at the connection point.

Cutting point 2

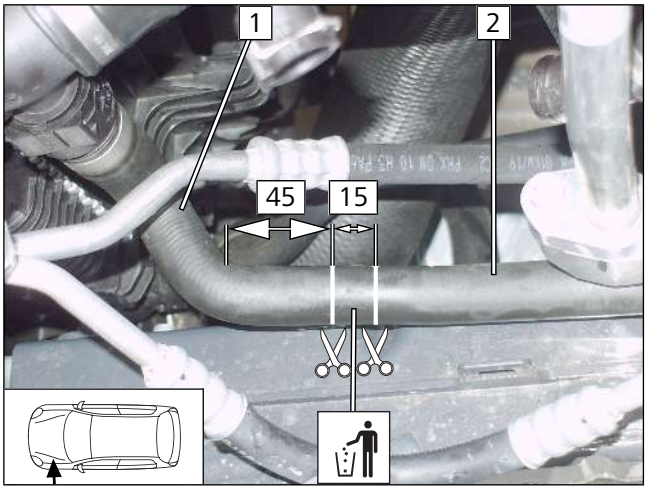


Fig. 102

- ▶ Cut engine outlet/heat exchanger inlet hose as shown.

1 Engine outlet connection

2 Heat exchanger inlet connection

Premounting hose group with T-piece

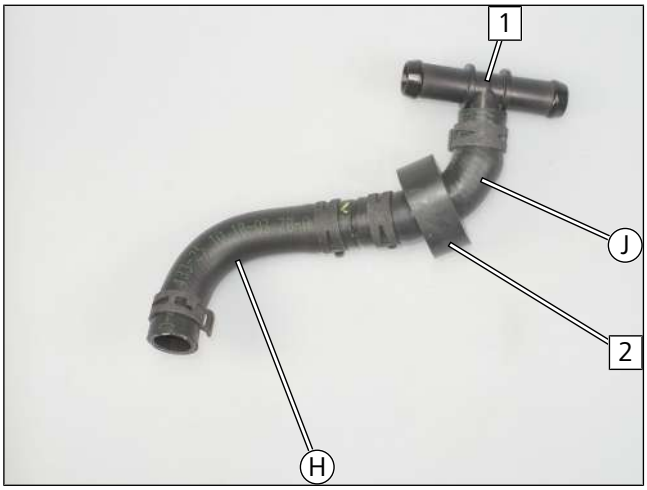


Fig. 103

1 T piece

2 Black (sw) rubber isolator

Connecting premounted T-piece hose group

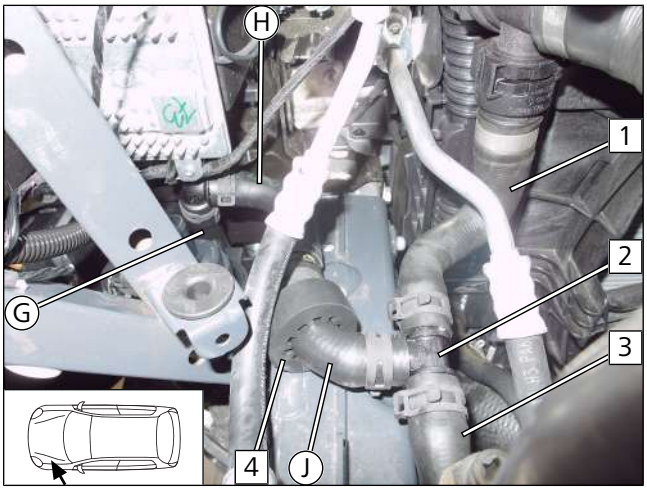


Fig. 104

▶ Position black (sw) rubber isolator 4 as shown.

1 Engine outlet hose section
2 T piece
3 Heat exchanger inlet hose section

Premounting hose group with non-return valve

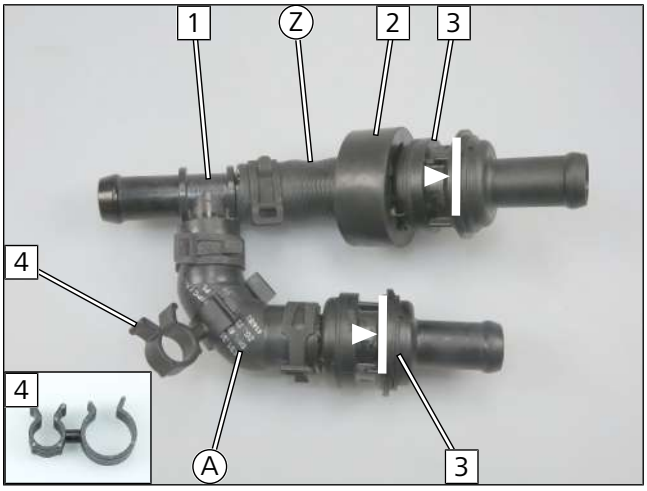


Fig. 105

1 18x18x18 T-piece
2 Black (sw) rubber isolator
3 18x18 non-return valve
4 13x22 hose bracket

Mounting hose Ⓑ onto hose group with non-return valve

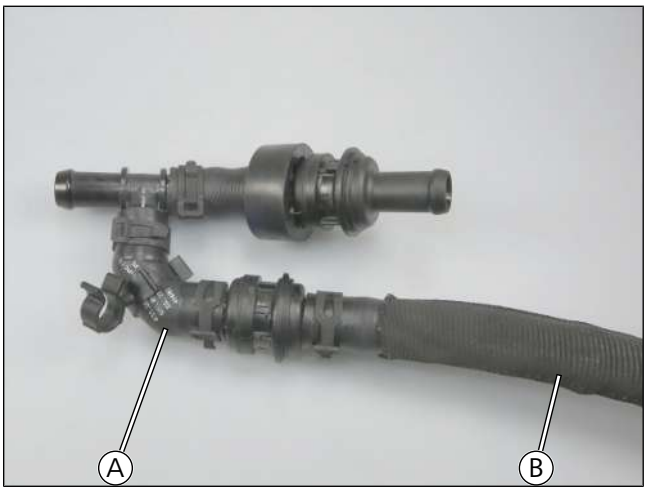


Fig. 106

Mounting premounted non-return valve hose group

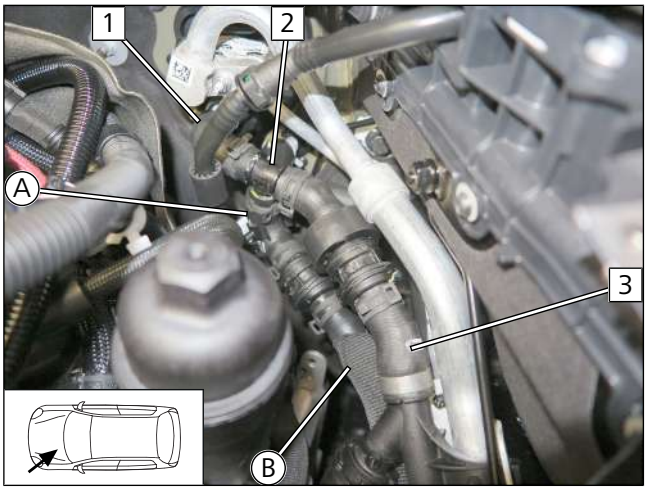


Fig. 107

1 Heat exchanger outlet hose section
2 18x18x18 T-piece
3 Engine inlet hose section

Fastening hose (A) to original vehicle vacuum line

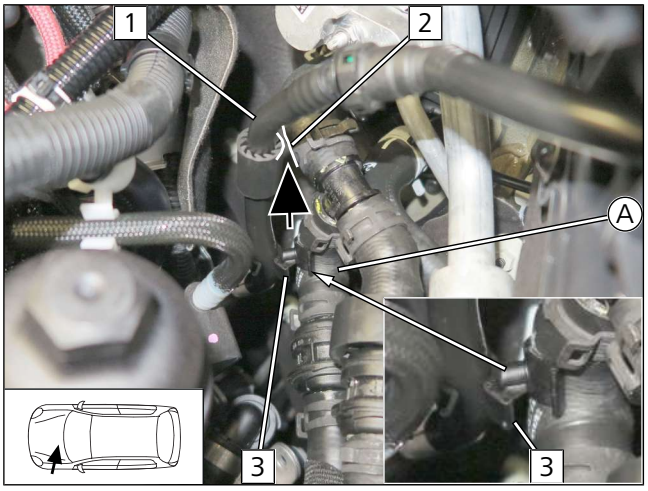


Fig. 108

Danger of damage to components

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

1 Original vehicle vacuum line
3 13x22 hose bracket between hose (A) and original vehicle vacuum line

Routing hose (B)

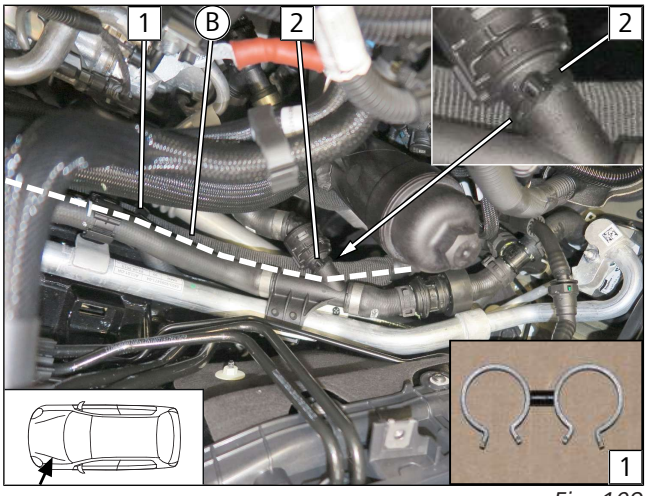


Fig. 109

1 23x25 hose bracket between original vehicle hose and hose (B)
2 Cable tie

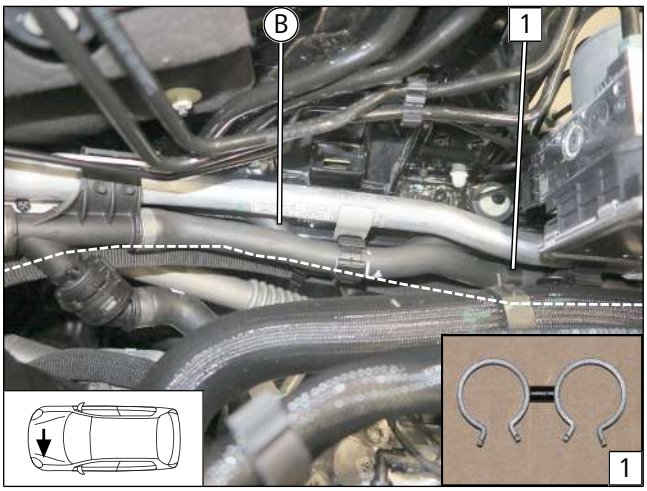


Fig. 110

▶ At position 1, mount 23x25 hose bracket 2 between hose (B) and original vehicle hose.

Connecting hoses (B) and (C)

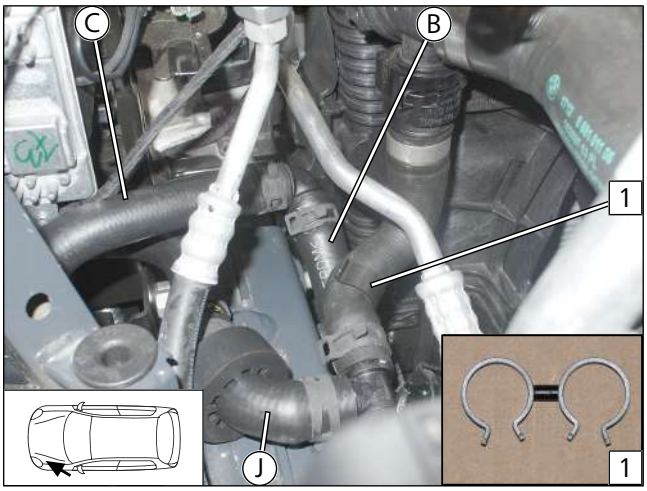


Fig. 111

1 23x25 hose bracket between hose (B) and engine outlet hose section

Connecting coolant pump

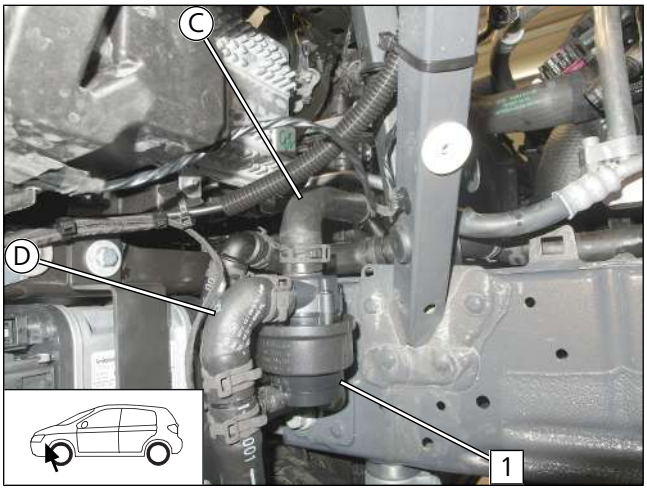


Fig. 112

1 Coolant pump

13 Final work in engine compartment

Preparing perforated bracket

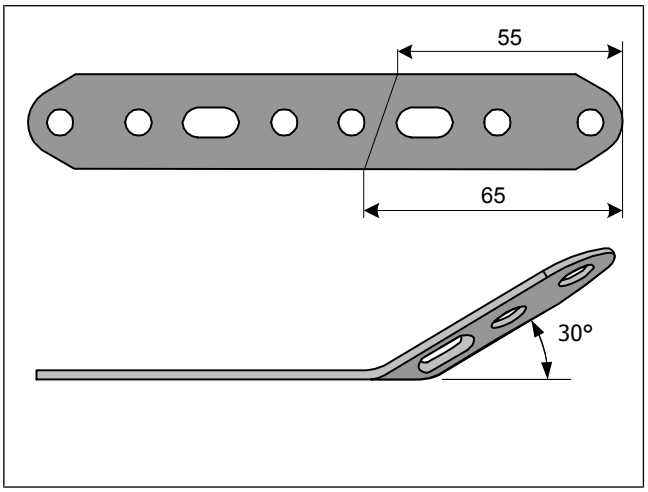


Fig. 113

Preparing horn

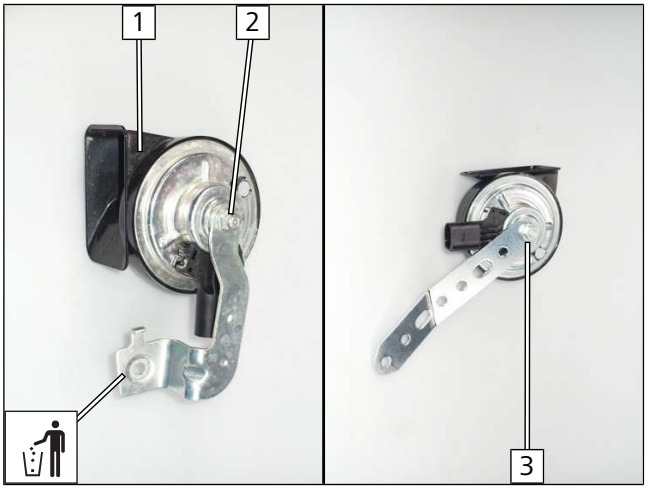


Fig. 114

1 Original horn
2 Remove nut, discard bracket
3 Horn, prepared perforated bracket, tighten nut

Mounting horn

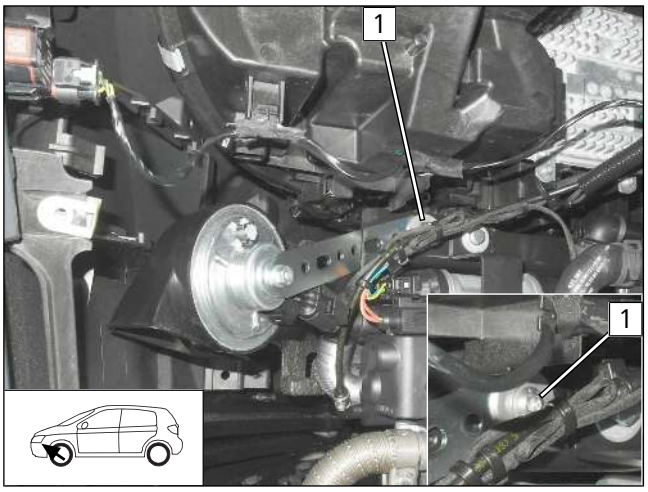


Fig. 115

1 Original vehicle bolt, premounted horn, original vehicle thread

Adapting wheel well trim

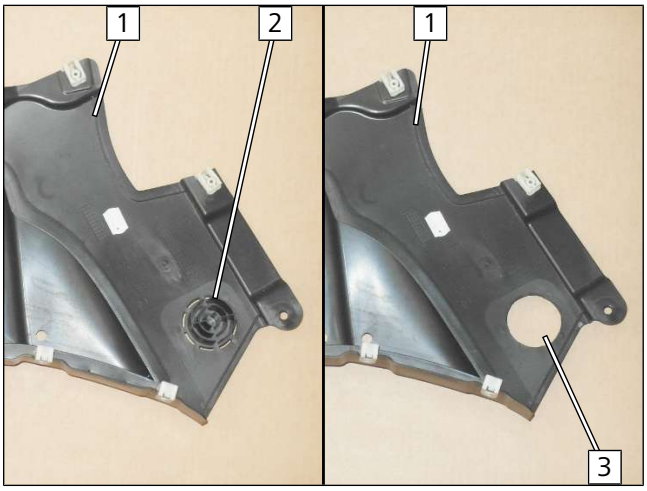


Fig. 116

1 Wheel-well inner panel
2 Remove perforated cover
3 Opening

- ▶ Mount wheel-well inner panel.
- ▶ Position exhaust pipe **a2** in the centre of original vehicle opening **3**.

Danger of damage to components

- ▶ Ensure sufficient distance between exhaust pipe **a2** and neighbouring components, correct if necessary.

14 Electrical system of passenger compartment

14.1 Air-conditioning control

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

'**Webasto Comfort**' air-conditioning control installation documentation for AAC of BMW 3 Series / 5 Series / X3 / X4

15 Electrical system of control elements

15.1 Remote option (Telestart)

Premounting receiver

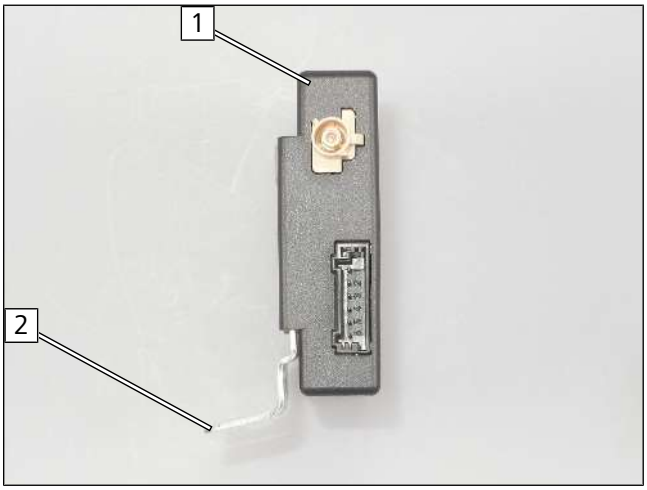


Fig. 117

Observe the Telestart installation documentation.

▶ Bend receiver bracket 2 as shown.

1 Receiver

Mounting receiver

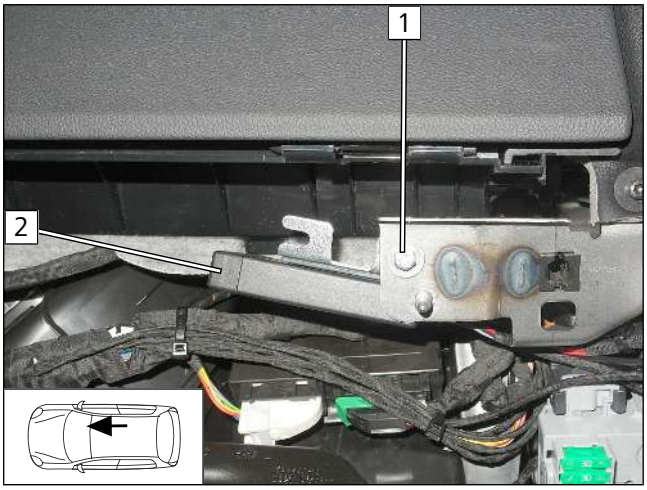


Fig. 118

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

2 Receiver

Mounting temperature sensor, only in case of T100 HTM

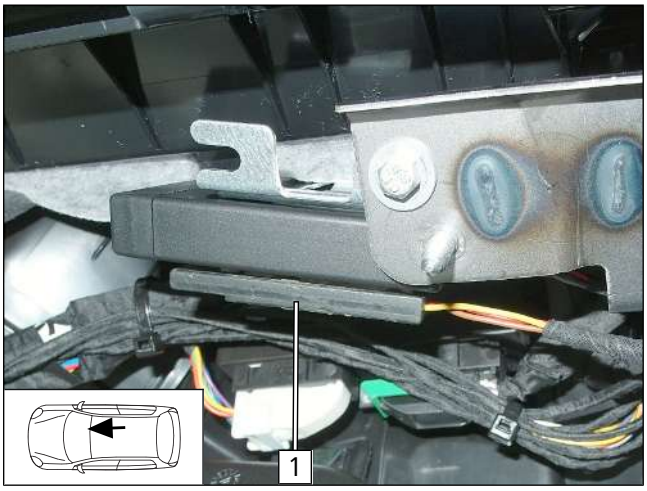


Fig. 119

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

Mounting aerial

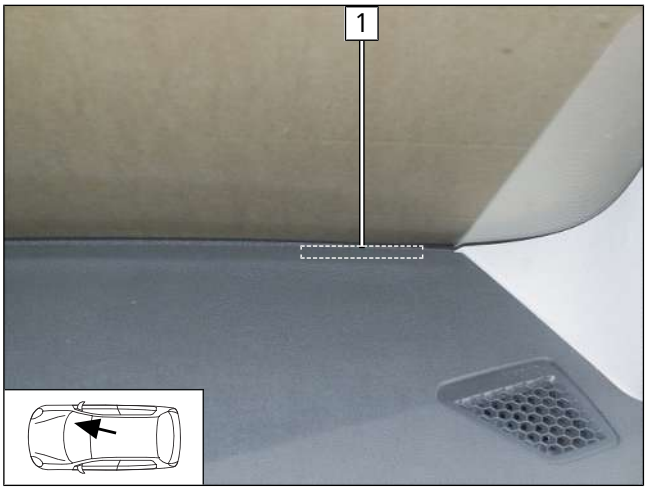


Fig. 120

1 Aerial

15.2 ThermoCall option

Mounting receiver

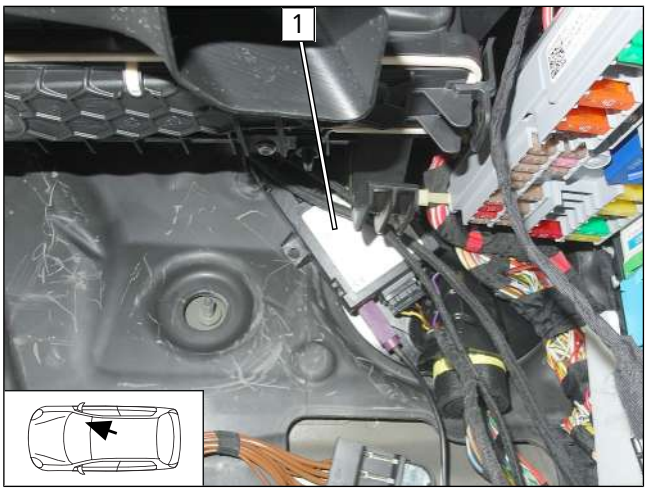


Fig. 121

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mounting aerial (optional)

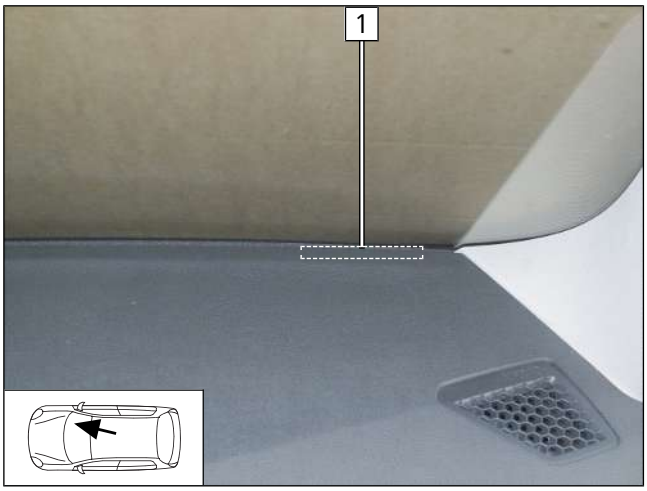


Fig. 122

1 Aerial

16 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 kit 'Webasto Comfort' A/C control, section 'Final work'

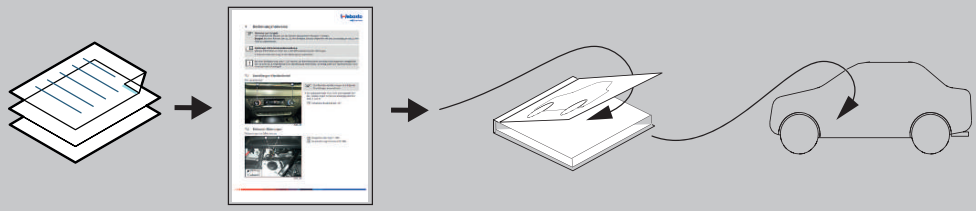
▶ Initial start-up and function check

▶ 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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Friedrichshafener Str. 9
82205 Gilching
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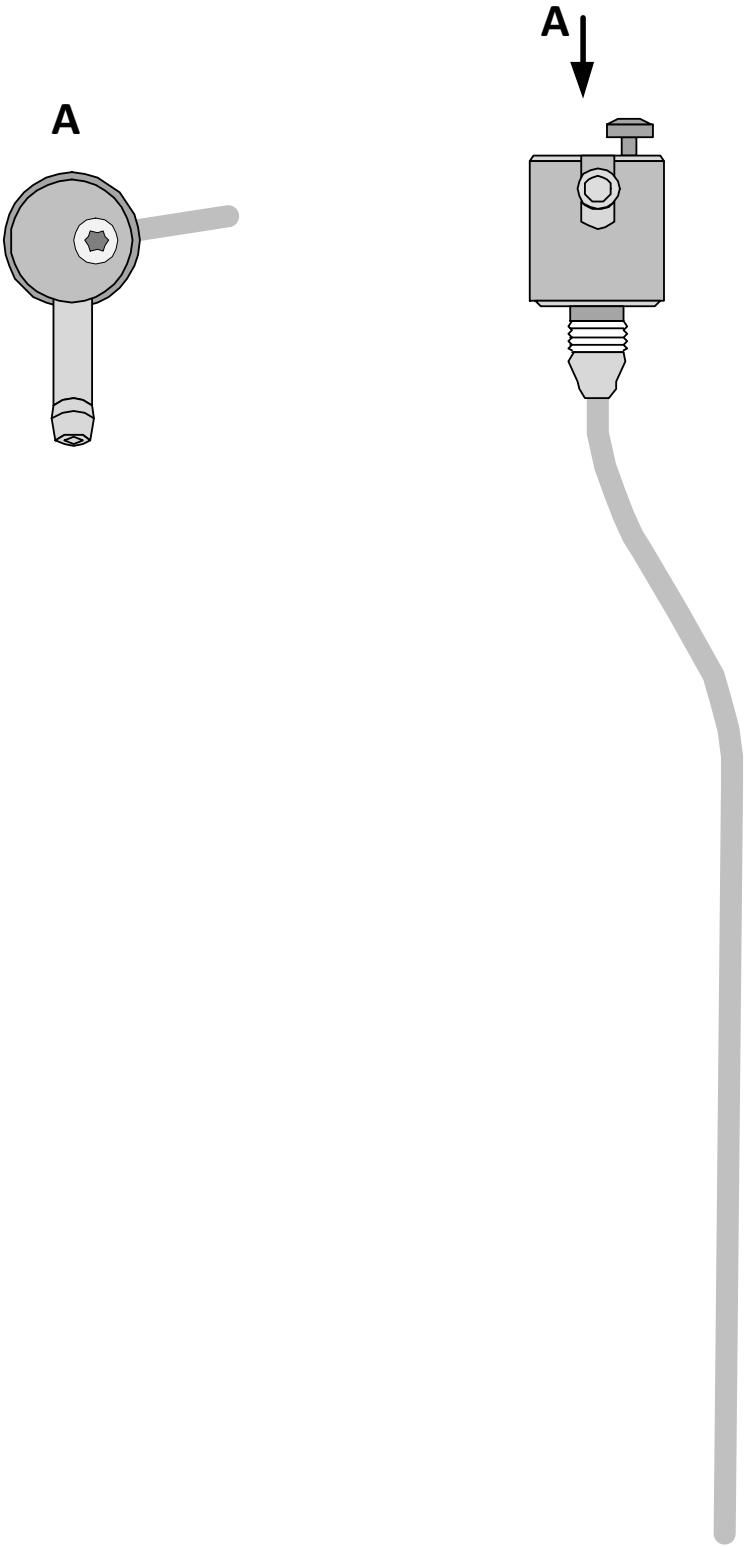
Technical Extranet: https://dealers.webasto.com

CE

WWW.WEBASTO.COM

17 FuelFix template



100mm

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

0

100mm