EN

K Installation documentation

for water heater Thermo Top Evo

Alfa Romeo Stelvio

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Alfa Romeo	Stelvio	949	from 2017	e3* 2007/46* 0435*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
2.0B	Petrol	Euro 6	8-speed AG	147	1995	55273835
2.0B	Petrol	Euro 6	8-speed AG	206	1995	55273835

Validity	Equipment variants	Model
		Stelvio
Verified equipment variants	2 zone automatic air-conditioning	x
	Xenon main headlights with headlight washer system	x
	LED front fog lights	x
	4 WD	x
Unverified equipment variants	Alarm system with passenger compartment monitoring	x

Total installation time	Note
9.9 hours	

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1 List of abbreviations

AG Automatic transmission

DP Fuel pump

EFIX Exhaust end fastener

FF Fuelfix (tank extracting device)

Fig. Figure

HG Heater

MCC MultiControl (control element)

PWM Pulse width modulator

RSH Relay and fuse holder of passenger compartment

SH1 Engine compartment fuse holder for F0

SH2 Engine compartment fuse holder for F1/F2

UP Coolant pump

Wire Cable

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 in accordance with price list	In accordance with price list
Installation kit for Alfa Romeo Stelvio petrol	1326281A
In case of Telestart, control element, as well as 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

Purpose of the document

This installation documentation is part of the product and contains information for the correct vehicle specific installation of the:

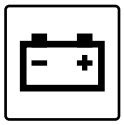
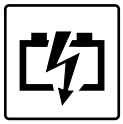
Thermo Top Evo heater

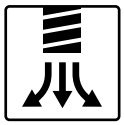
Using this document

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

Work step identification marks

You will find an identification mark on the outside top corner of the respective page in question to provide you with a quick overview of the individual working steps:

Mechanical system	Electrical system	High-voltage	Coolant
			

Combustion air	Fuel	Exhaust gas	Software
			

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	
Webasto Comfort A/C control	
Webasto Standard A/C control	
Fuel standpipe (e.g. FuelFix)	
Exhaust end fastener (EFIX	
Combustion air intake silencer	
Spacer bracket (ASH)	

Use of symbols

DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

▶ Action to protect yourself from the risk.

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

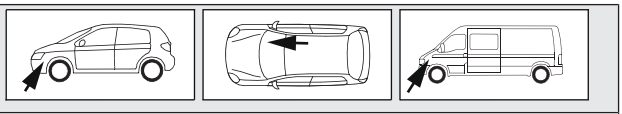
Consequences: Failure to follow the instructions can lead to material damage

▶ Actions to protect yourself against risks.

Reference to the vehicle manufacturer's specific documents.

a note on a special technical feature

Orientation aid



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

Use of highlighting

Highlight	Explanation
✓	Requirements for the necessary action
▶	Necessary action

Highlight	Explanation
⇨	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 from the installation kit

3.1 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.

3.1.1 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).

3.2 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.

3.2.1 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.

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

Necessary special tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- 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
- Hose clamping pliers
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

5 Preparing measures

5.1 Vehicle preparation

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

- ▶ Disconnect the battery.
- ▶ Open the fuel tank cap.
- ▶ Ventilate the fuel tank.
- ▶ Close the fuel tank cap again.
- ▶ Depressurise the cooling system.
- ▶ Detach the wheel well trim in the front area on the left and right, remove the bumper.
- ▶ Remove the lower engine cover.
- ▶ Remove the bumper and left retaining bracket from the headlight.
- ▶ Remove the underbody trim on the right.
- ▶ Remove the engine design cover.
- ▶ Remove the cowl on the left and right.
- ▶ Remove the coolant reservoir cover.
- ▶ Remove the strut brace on the left.
- ▶ Remove the headlight on the left.
- ▶ Drain and store the engine coolant.
- ▶ Remove the instrument panel cover on the left.
- ▶ Remove the footwell trim on the driver's and front passenger's side.
- ▶ Detach and remove the rear bench seat.
- ▶ Open the tank-fitting service lid on the left.

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

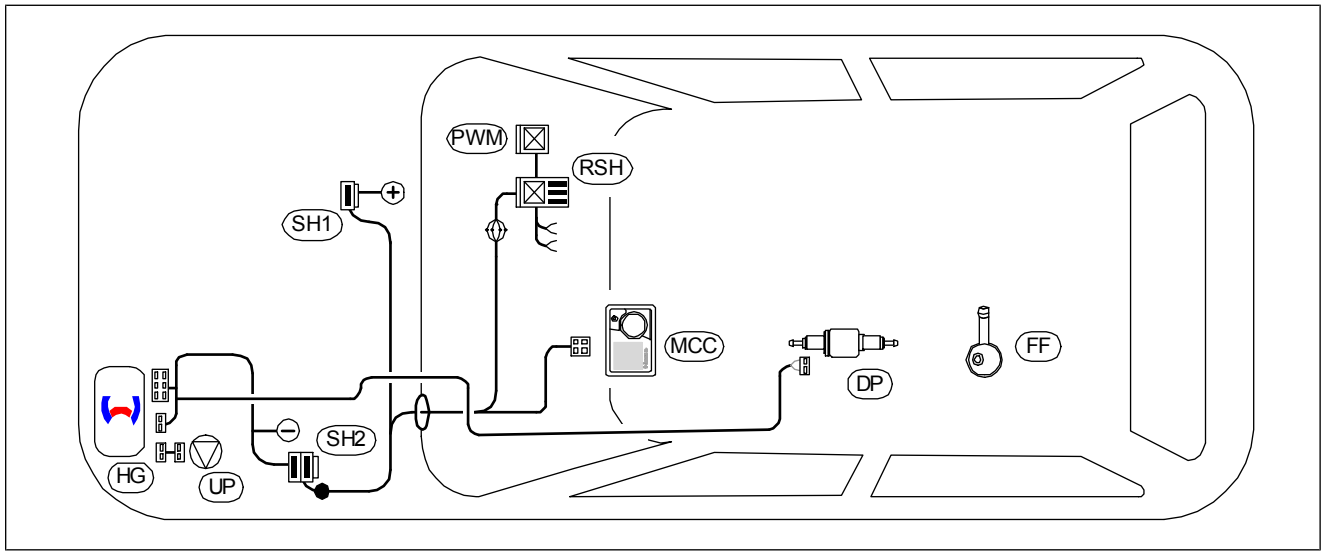


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
FF	FuelFix
HG	Heater
MCC	MultiControl CAR
PWM	PWM GW
RSH	Relay and fuse holder of passenger compartment
SH1	Engine compartment fuse holder for F0
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump

Heater installation location

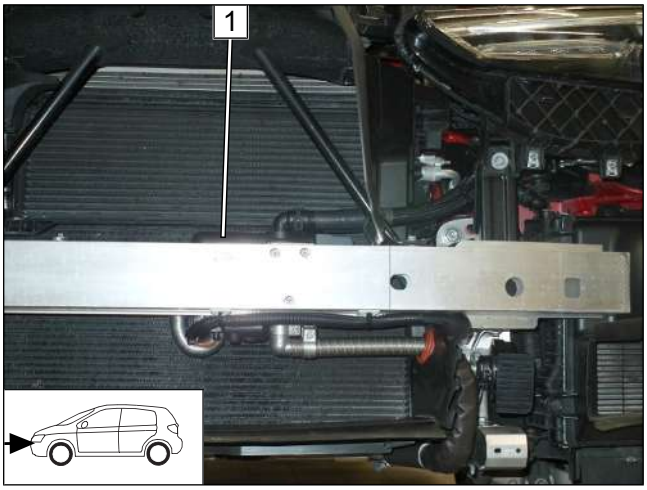


Fig. 2

1 Heater

7 Electrical System of Engine Compartment

Preparing positive extension wiring harness with fuse F0

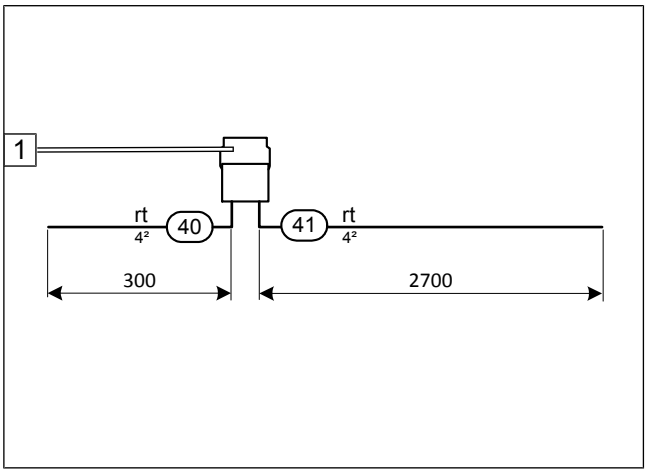


Fig. 3

1 Fuse F0: 30A

Premounting fuse holder for F0

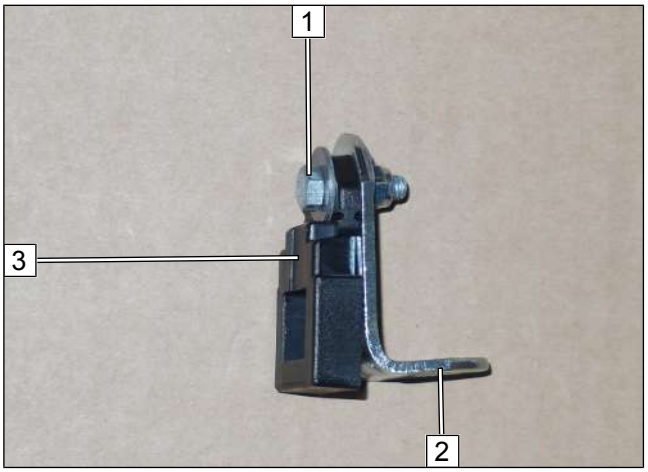


Fig. 4

1 M5x16 bolt, large diameter washer [2x], nut
2 Angle bracket
3 Fuse holder

Mounting fuse holder with fuse F0

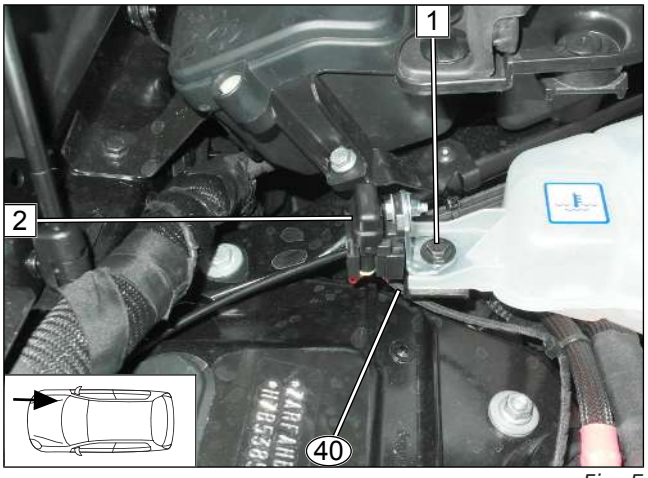


Fig. 5

1 Original vehicle bolt
2 Fuse F0: 30A

Installing positive wire **40**

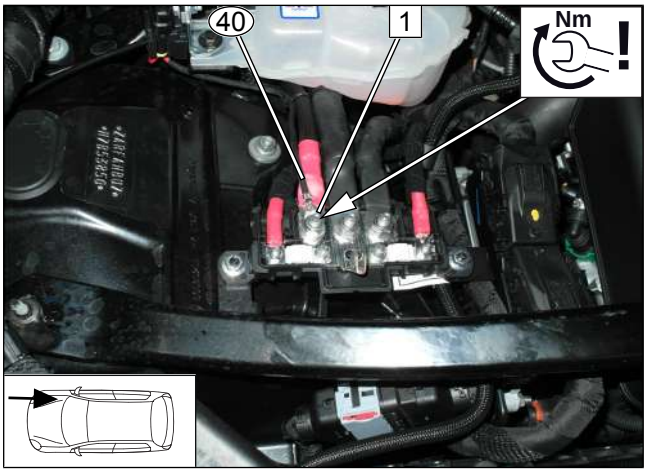


Fig. 6

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Battery positive support point

40 Red (rt) wire from fuse F0 of positive extension wiring harness

Premounting fuse holder for F1/F2

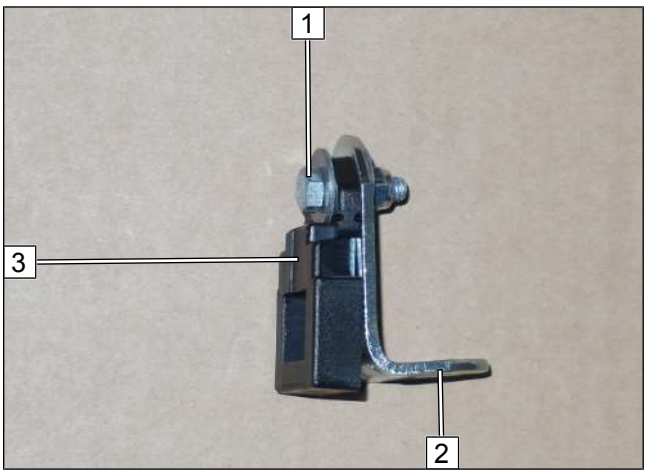


Fig. 7

1 M5x16 bolt, large diameter washer [2x], nut

2 Angle bracket

3 Fuse holder

Mounting fuses F1 and F2, earth connection

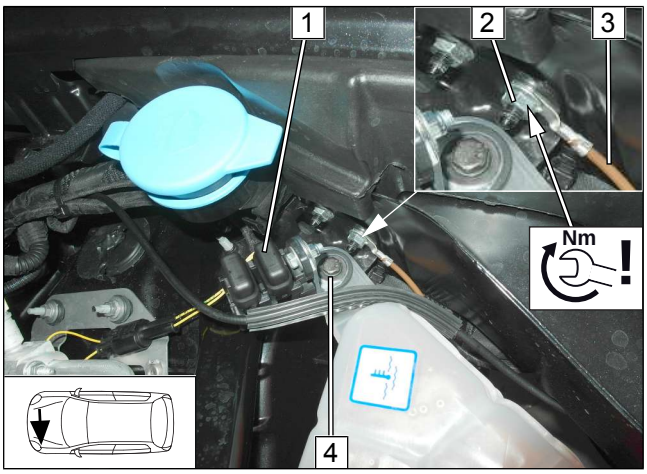


Fig. 8

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Fuse F1: 20A and F2: 30A

2 Original vehicle nut

3 Earth wire

4 Original vehicle bolt

Routing wire **41** to the heater fuse on the driver's side

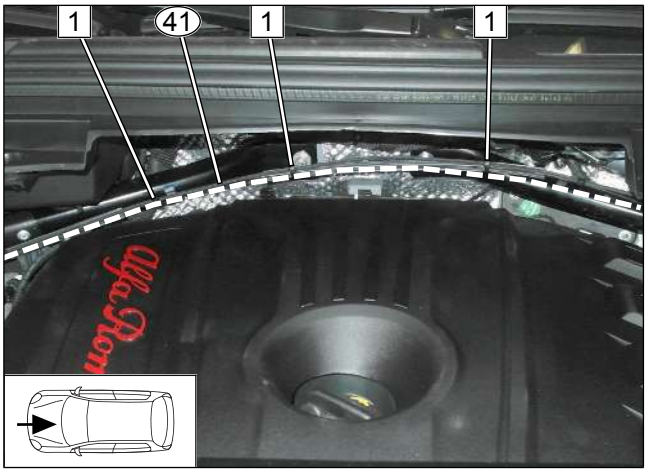


Fig. 9

▶ Fasten wire **41** to original vehicle Bowden cable using cable ties 1.

Connecting wire **41** to positive wire

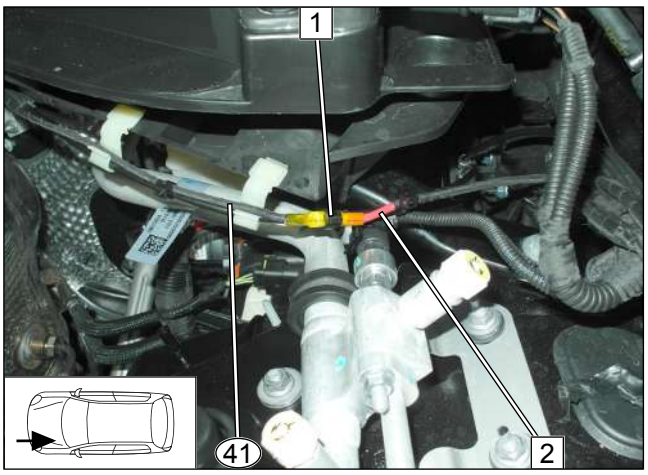


Fig. 10

▶ Crimp and shrink butt connector 1

2 Red (rt) positive supply

41 Red (rt) wire from fuse F0 of positive extension wiring harness

Passenger compartment wiring harness pass through

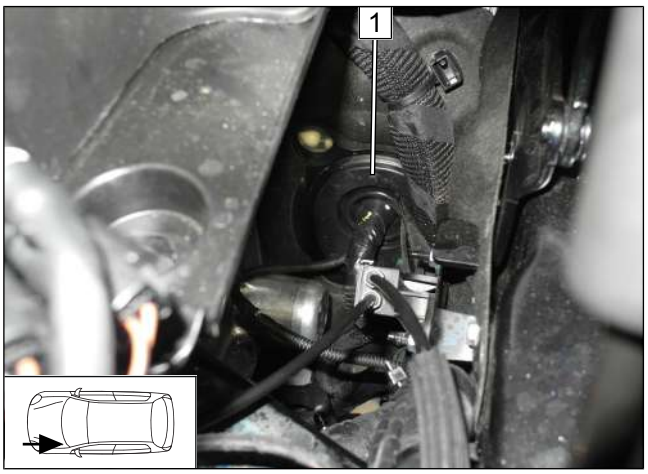


Fig. 11

1 Protective rubber plug

8 Mechanical system

8.1 Installation location preparation

Copying hole pattern, drilling hole

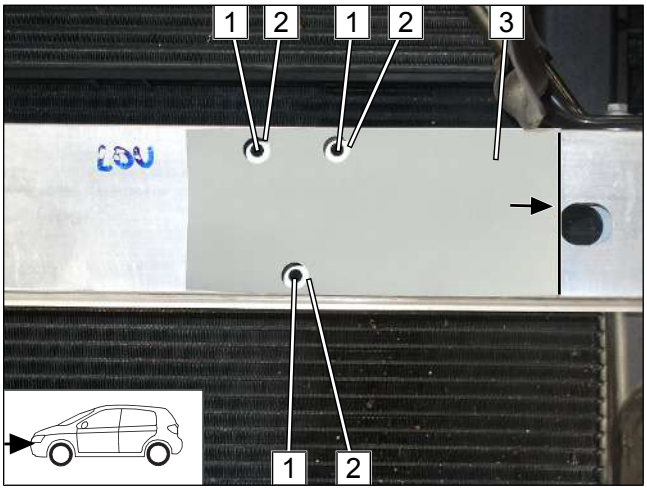


Fig. 12

- ▶ Position template [3] at the marking.
- ▶ Drill 6mm dia. hole at pos. [1] completely through the cross member.
- ▶ Then drill out hole [2] in the front section of the cross member to 13mm dia.

8.2 Premounting heater

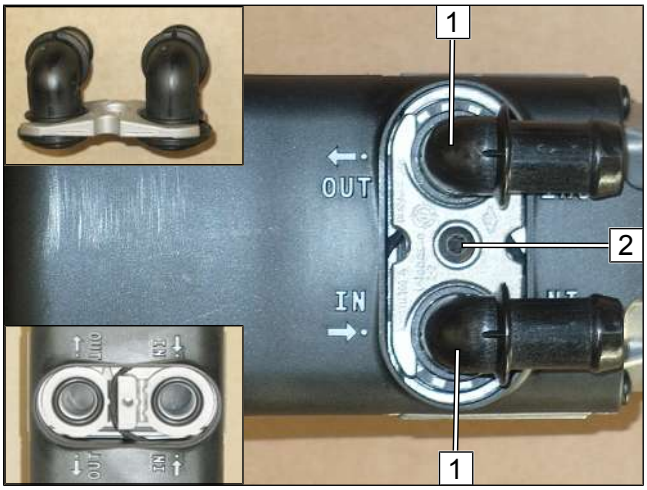


Fig. 13

Observe the general installation instructions of the heater.

[1] Water connection piece, sealing ring

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

Premouting hoses

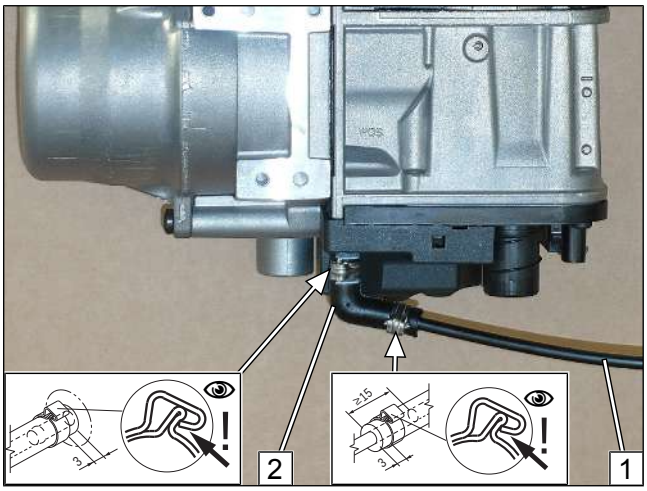


Fig. 14

[1] Fuel line

[2] 90° moulded hose, 10mm dia. clamp [2x]

8.3 Heater installation

Installing heater

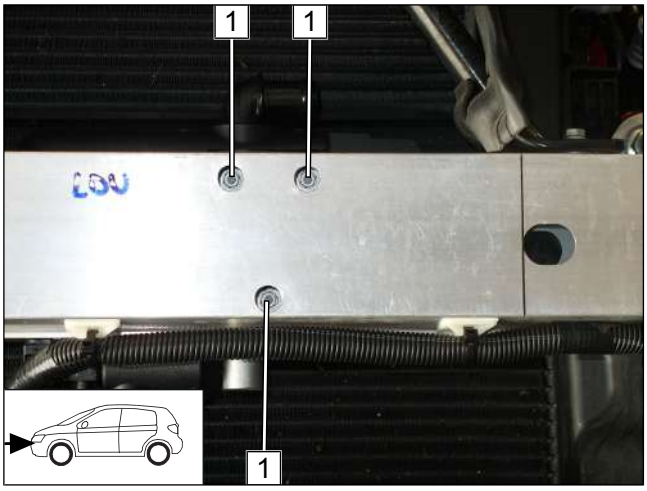


Fig. 15

Observe the general installation instructions of the heater.

▶ Align heater with hole pattern between radiator and cross member.

1 5x13 self-tapping bolt

Mounting wiring harnesses

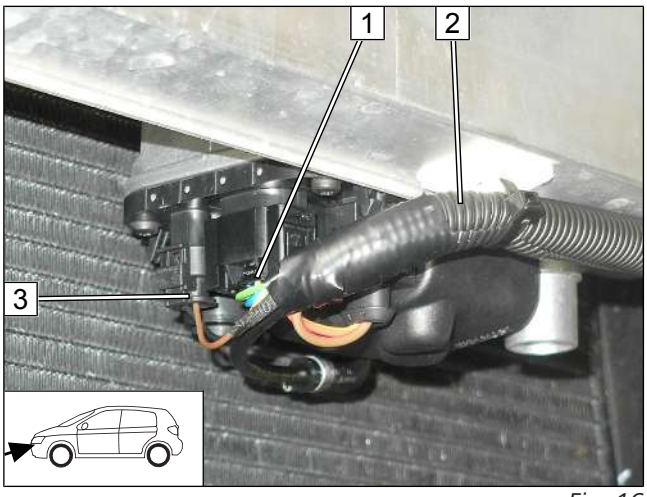


Fig. 16

▶ Draw fuel line, wiring harnesses of coolant pump / heater / fuel pump in 13mm dia. into cut open corrugated tube 2.

1 Heater wiring harness connector

3 Coolant pump 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

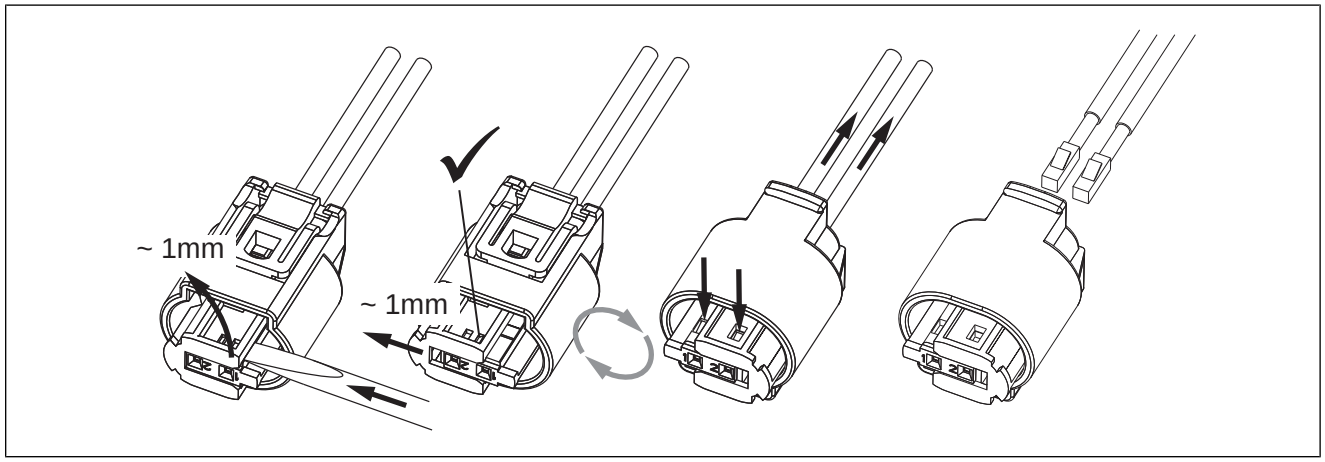


Fig. 17

9.1 Routing fuel line

Routing to driver's side

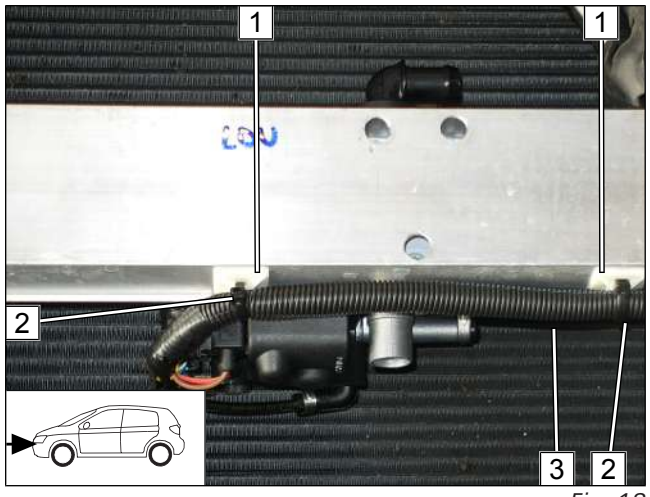


Fig. 18

1 Adhesive base
2 Cable tie
3 Corrugated tube with fuel line, wiring harnesses of coolant pump / heater / fuel pump

Routing to wheel well

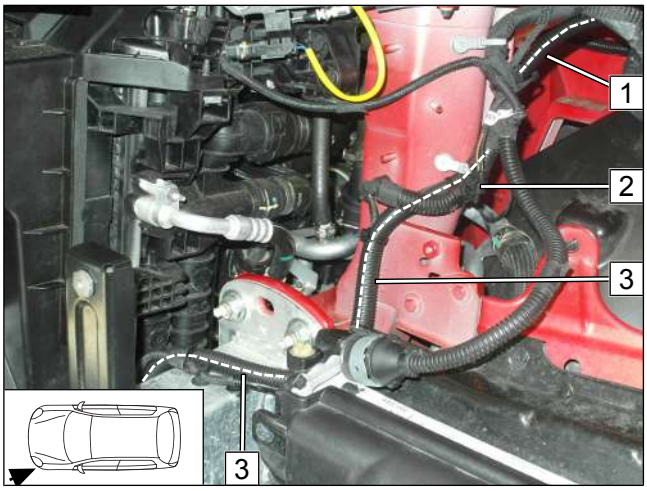


Fig. 19

- Fasten 13mm dia. 3 corrugated tube with fuel line, wiring harnesses of coolant pump / heater / fuel pump using a cable tie.
- Draw fuel line and fuel pump wiring harness into 10mm dia. corrugated tube 1.

2 Coolant pump wiring harness connector

Routing in wheel well

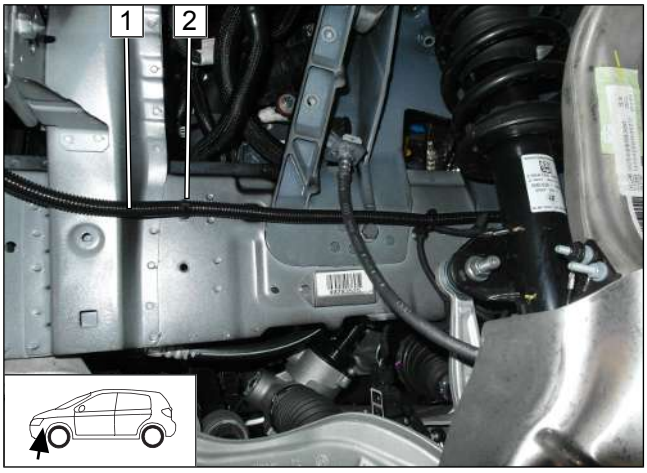


Fig. 20

- Fasten fuel line and fuel pump wiring harness in corrugated tube 1 with eyelet cable tie 2 in M8 threaded hole, route further to the brake line bracket and to the underbody.

Removing sticker

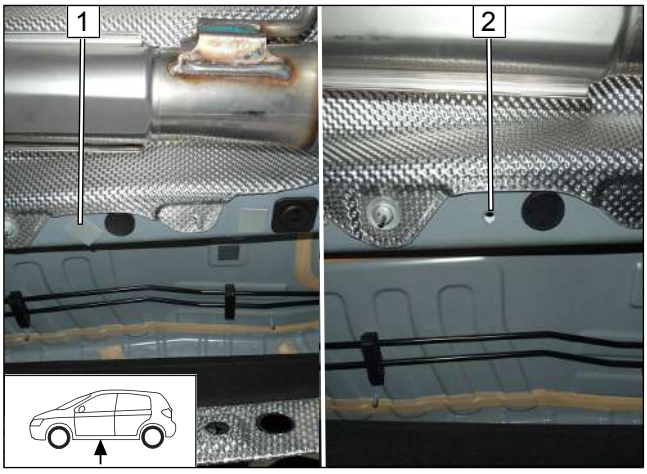


Fig. 21

1 Sticker
2 M8 threaded hole

Preparing perforated bracket

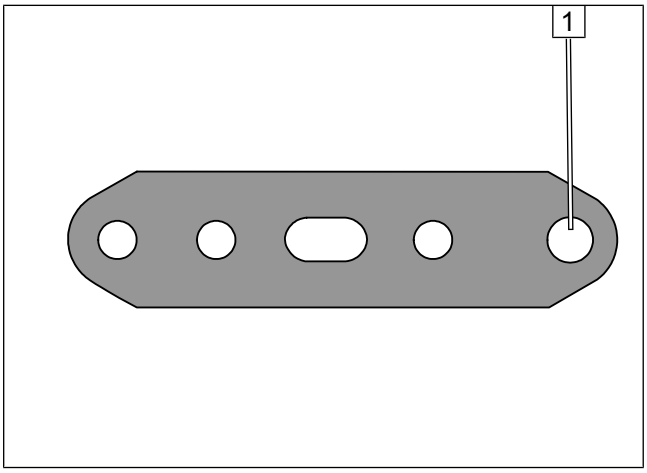


Fig. 22

▶ Drill out hole **1** to 8.5mm dia.

Premounting fuel pump

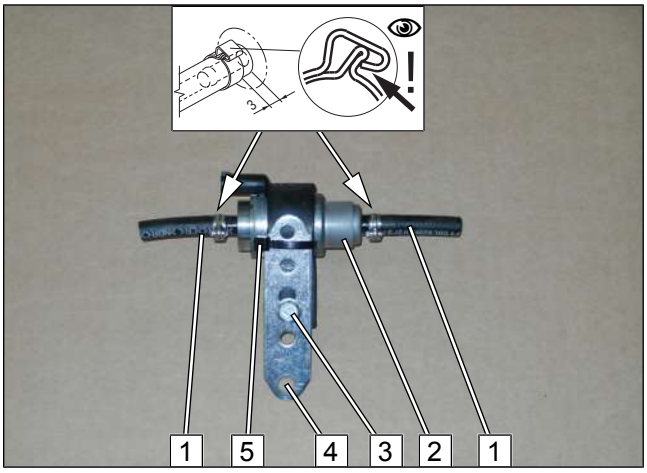


Fig. 23

1 Hose section, 10mm dia. clamp
2 Fuel pump
3 M6x25 bolt, perforated bracket, fuel pump mount, support angle bracket, flanged nut
4 8.5mm dia. hole
5 Cable tie, passed through mount of fuel pump

Mounting fuel pump

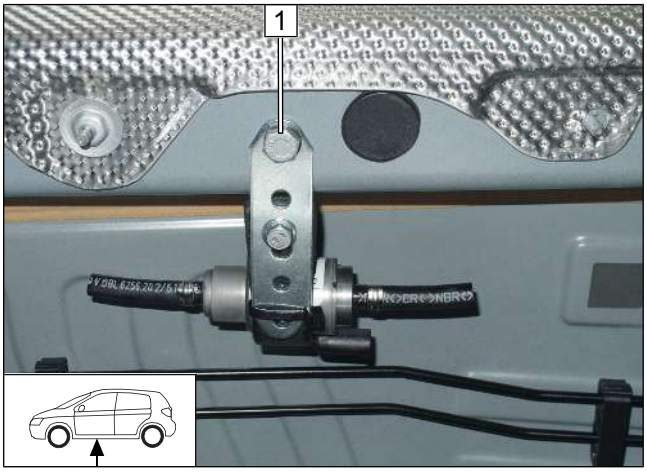


Fig. 24

1 M8x20 bolt, spring lockwasher

Mounting fuel pump connector

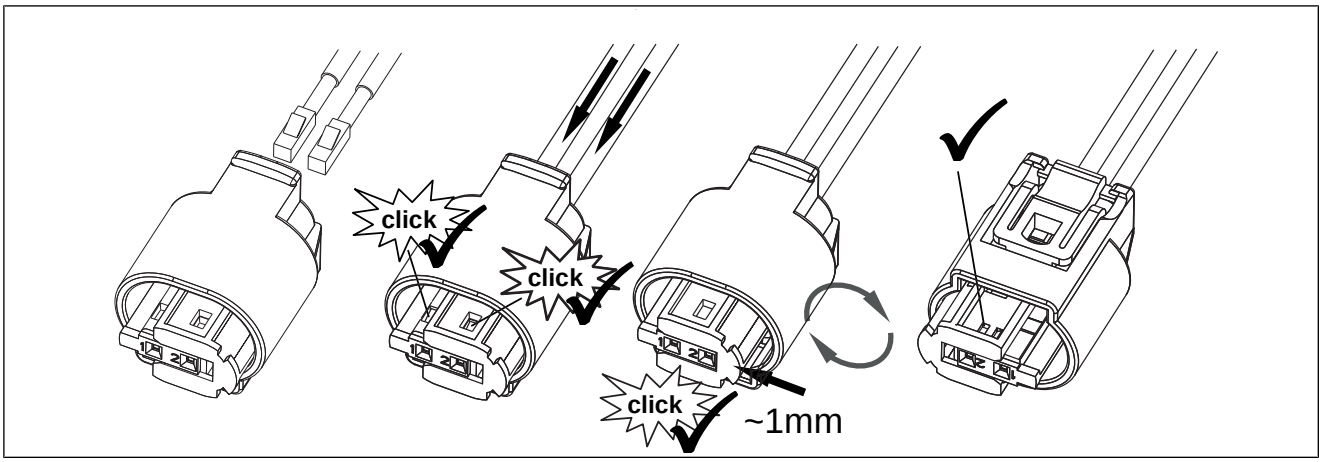


Fig. 25

Connecting fuel pump

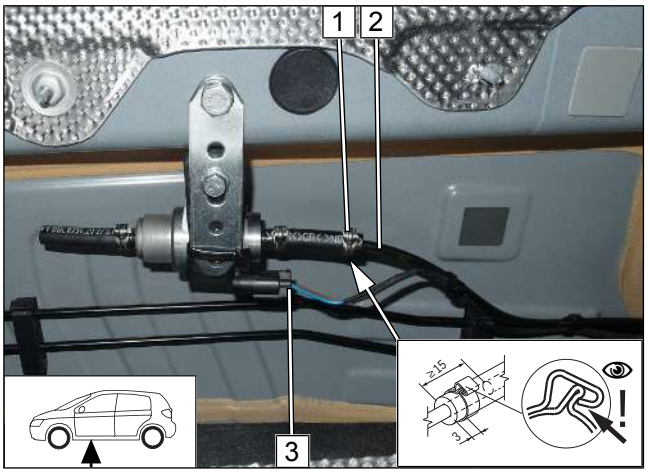


Fig. 26

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

9.2 Installing FuelFix

Copying hole pattern

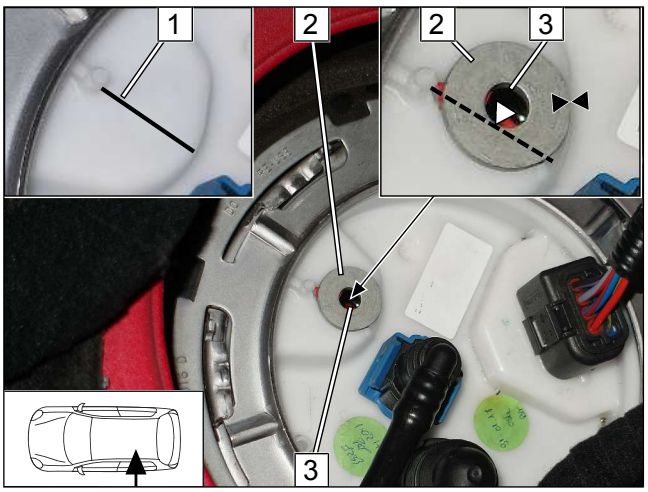


Fig. 27

Observe the installation instructions of the tank extracting device.

▶ Work steps F1, F2

▶ Draw marking 1 on the fuel tank sending unit as shown.

2 Position washer, with outer dia. d_a= 21.6mm at the marking as shown in Fig.

3 Hole pattern

Hole for FuelFix

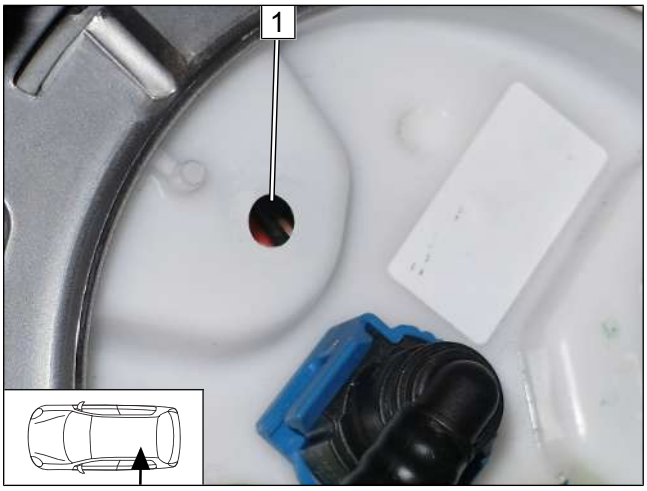


Fig. 28

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

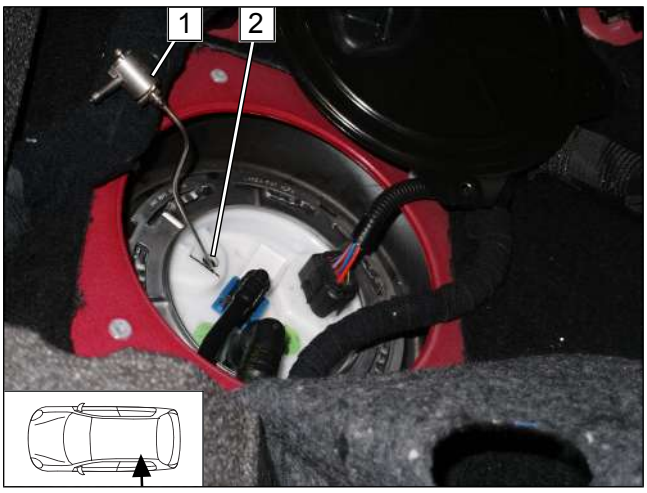


Fig. 29

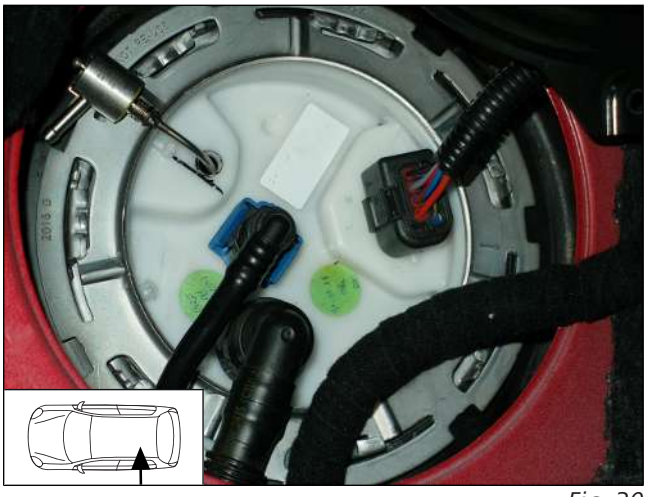


Fig. 30

▶ Work steps F4, F5

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

Fig. 31

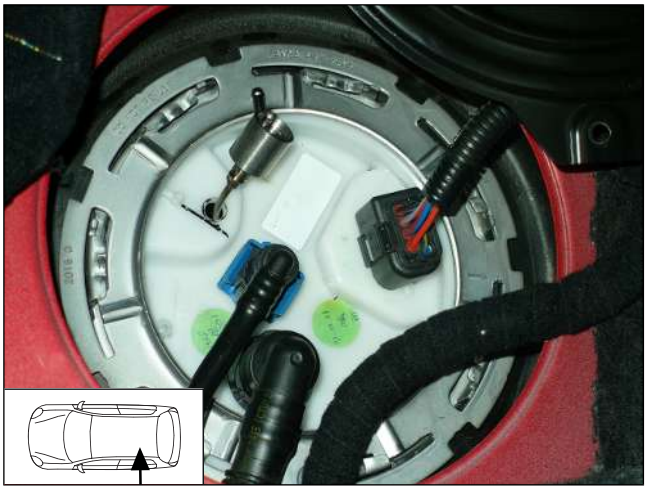


Fig. 32

Aligning FuelFix

Fig. 33

- ▶ Work steps F5.3, F5.4
- ▶ Align FuelFix **1** as shown.

Connecting fuel line

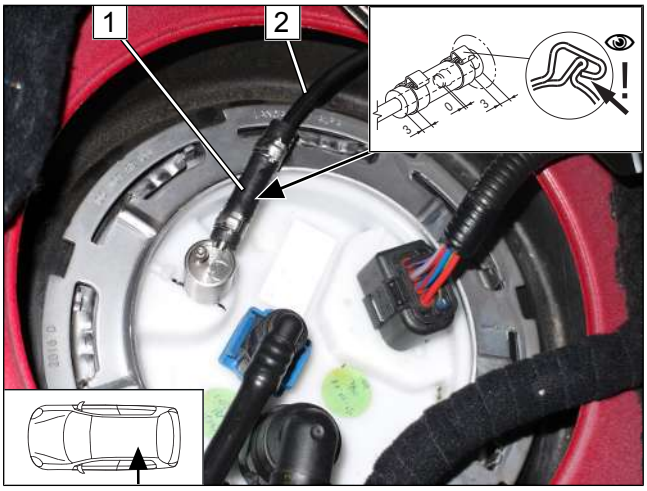


Fig. 34

▶ Work step F6

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

2 Fuel line

Mounting FuelFix

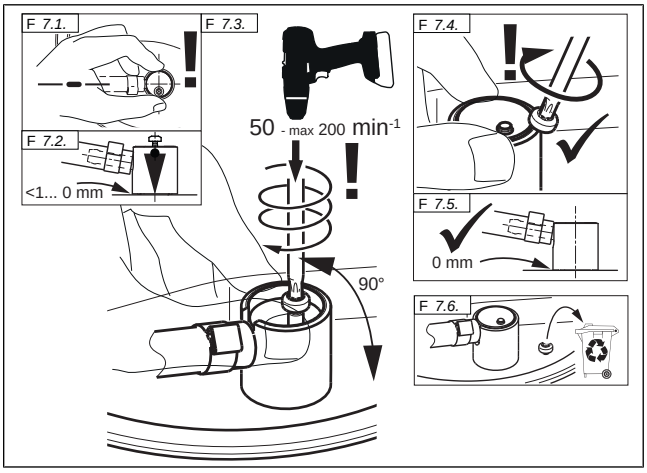


Fig. 35

DANGER

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

▶ Work step F7

Checking firm seating of FuelFix

Fig. 36

▶ Work step F8

Securing fuel line

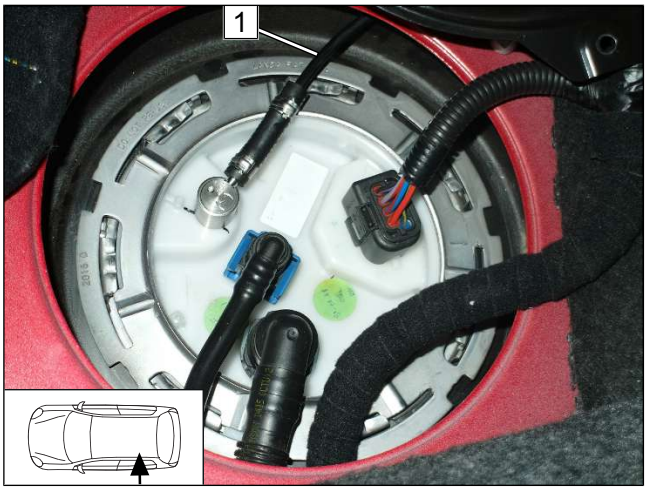


Fig. 37

▶ Attach fuel line 1 using a cable tie in a suitable location for tension relief.

9.3 Fuel pump connection

Connecting fuel line of FuelFix

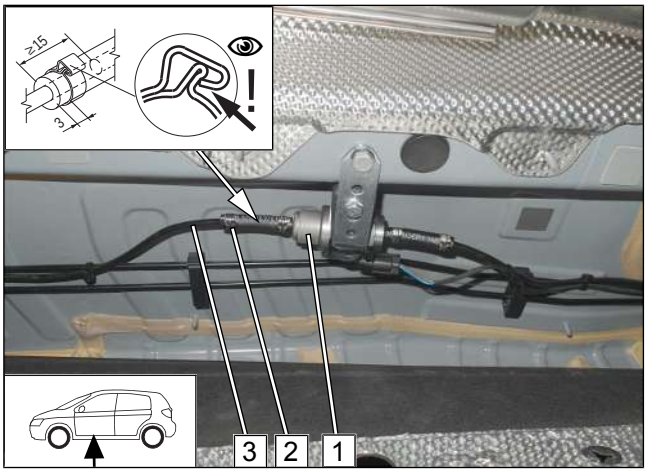


Fig. 38

1 Fuel pump
2 10mm dia. clamp
3 Fuel line FuelFix

10 Exhaust

Drilling a pass through

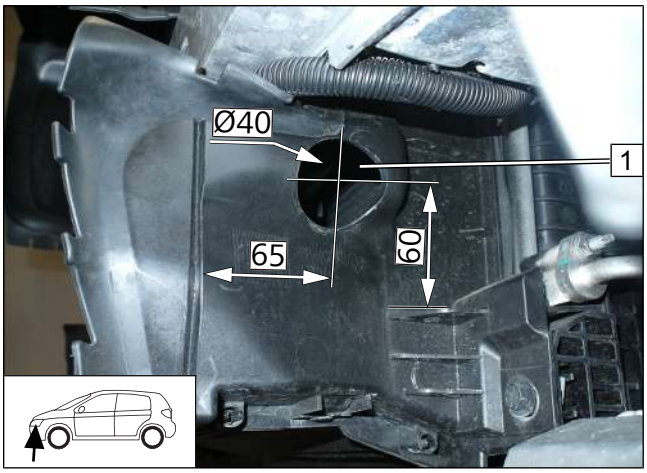


Fig. 39

1 Pass through

Mounting spacer bracket

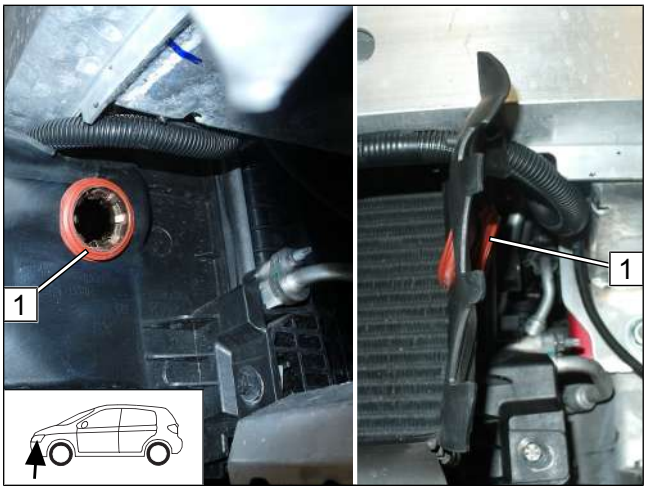


Fig. 40

1 Spacer bracket

Installing angle bracket

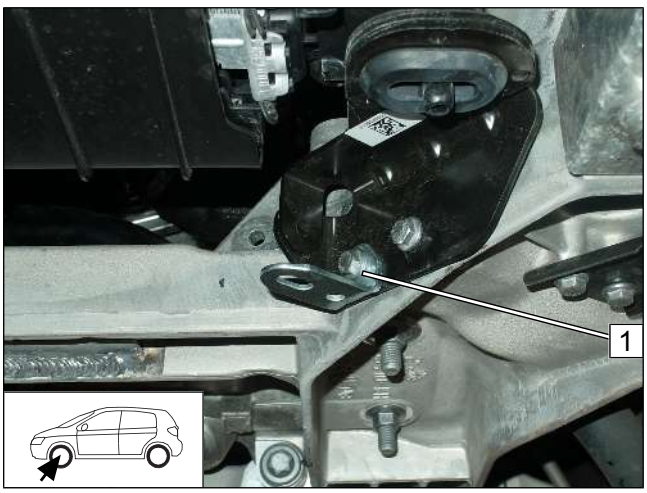


Fig. 41

1 Angle bracket, original vehicle bolt

Preparing perforated bracket

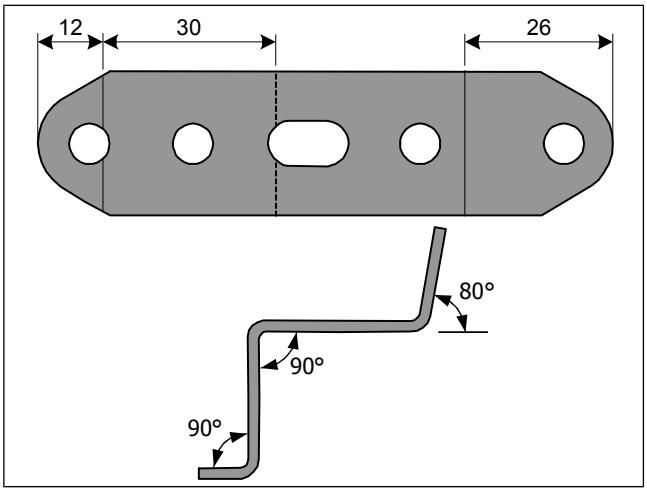


Fig. 42

Installing exhaust silencer

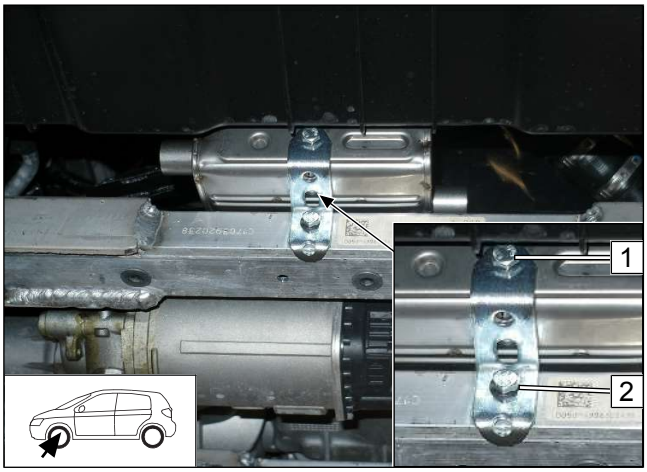


Fig. 43

1 M6x16 bolt, spring lockwasher, perforated bracket, exhaust silencer

2 M6x20 bolt, spring lockwasher, perforated bracket, original vehicle hole

Installing exhaust elbow

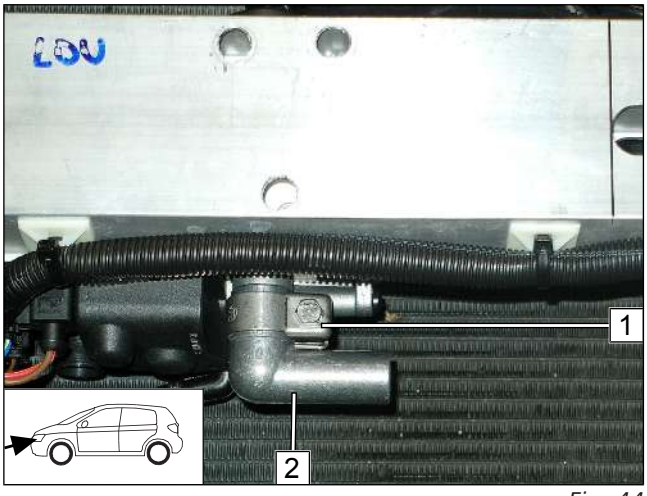
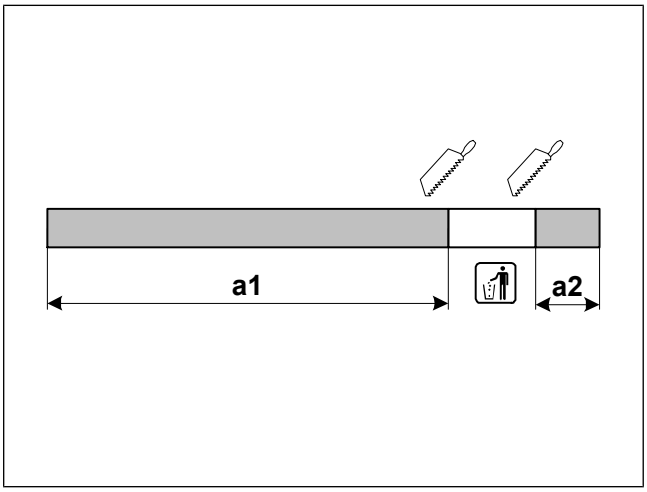


Fig. 44

1 Hose clamp

2 Exhaust elbow

Preparing exhaust pipe



a1	890
a2	170

Fig. 45

Mounting exhaust pipe a1

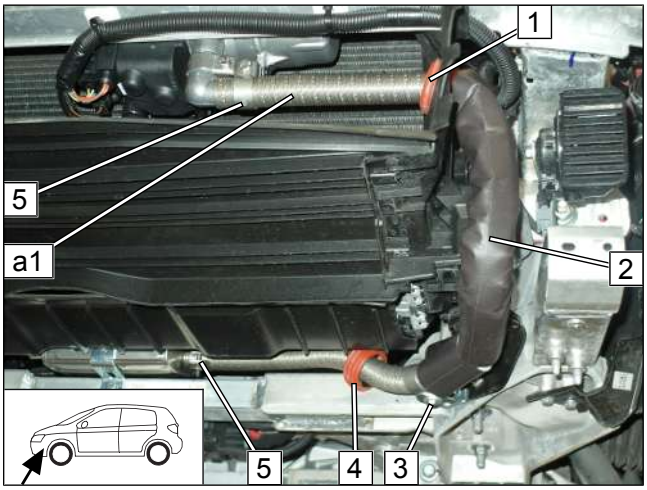


Fig. 46

1. Spacer bracket, premounted
2. Exhaust insulation
3. Pipe clamp, M6x20 bolt, flanged nut, angle bracket premounted
4. Spacer bracket
5. Hose clamp

Mounting exhaust pipe a2

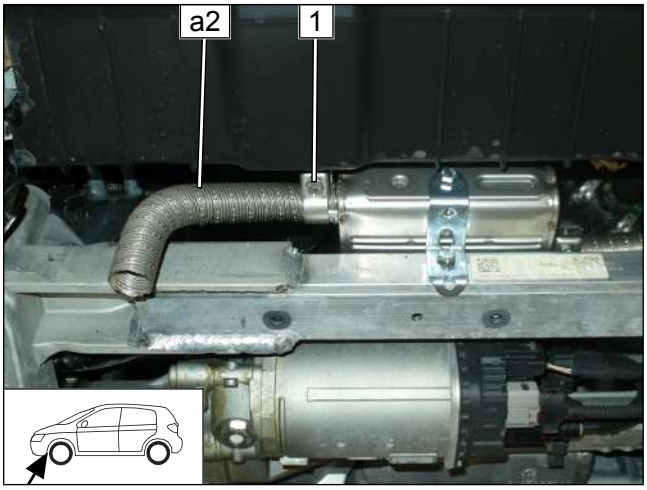


Fig. 47

1. Hose clamp

11 Combustion air

Drilling hole, inserting rivet nut

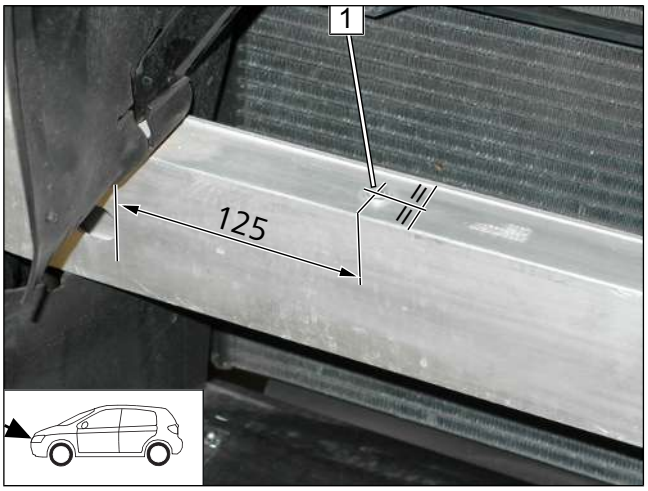


Fig. 48

1 9mm dia. hole, aluminium M6 rivet nut

Preparing combustion air intake silencer

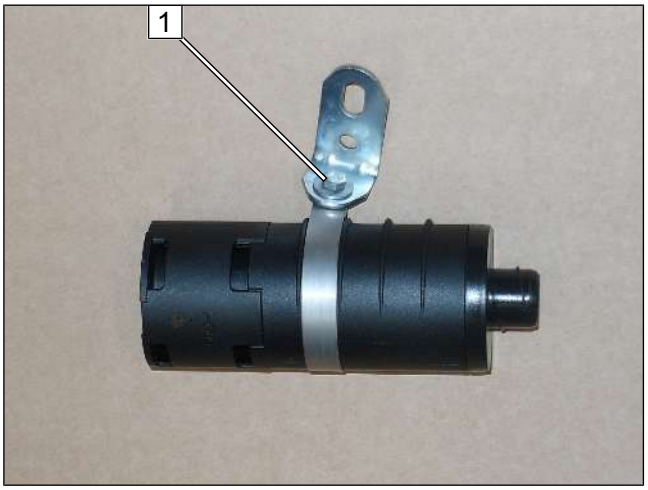


Fig. 49

1 M5x16 bolt, washer, angle bracket, 51mm dia. pipe clamp, flanged nut

Mounting combustion air intake silencer

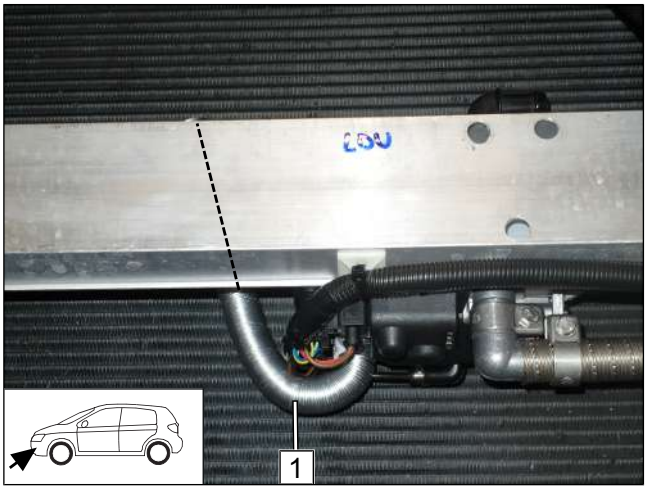


Fig. 50

Observe the installation instructions of the combustion air intake silencer.

1 Combustion air pipe

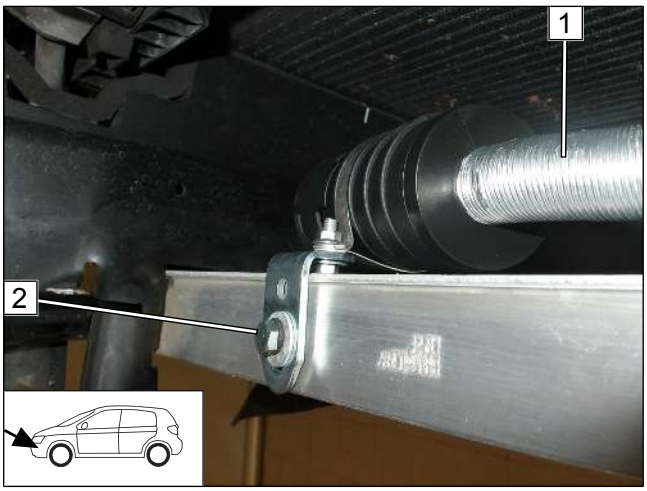


Fig. 51

1 Combustion air pipe

2 M6x20 bolt, spring lockwasher, large diameter washer, angle bracket

12 Coolant

12.1 Hose routing diagram

'Inline' coolant circuit

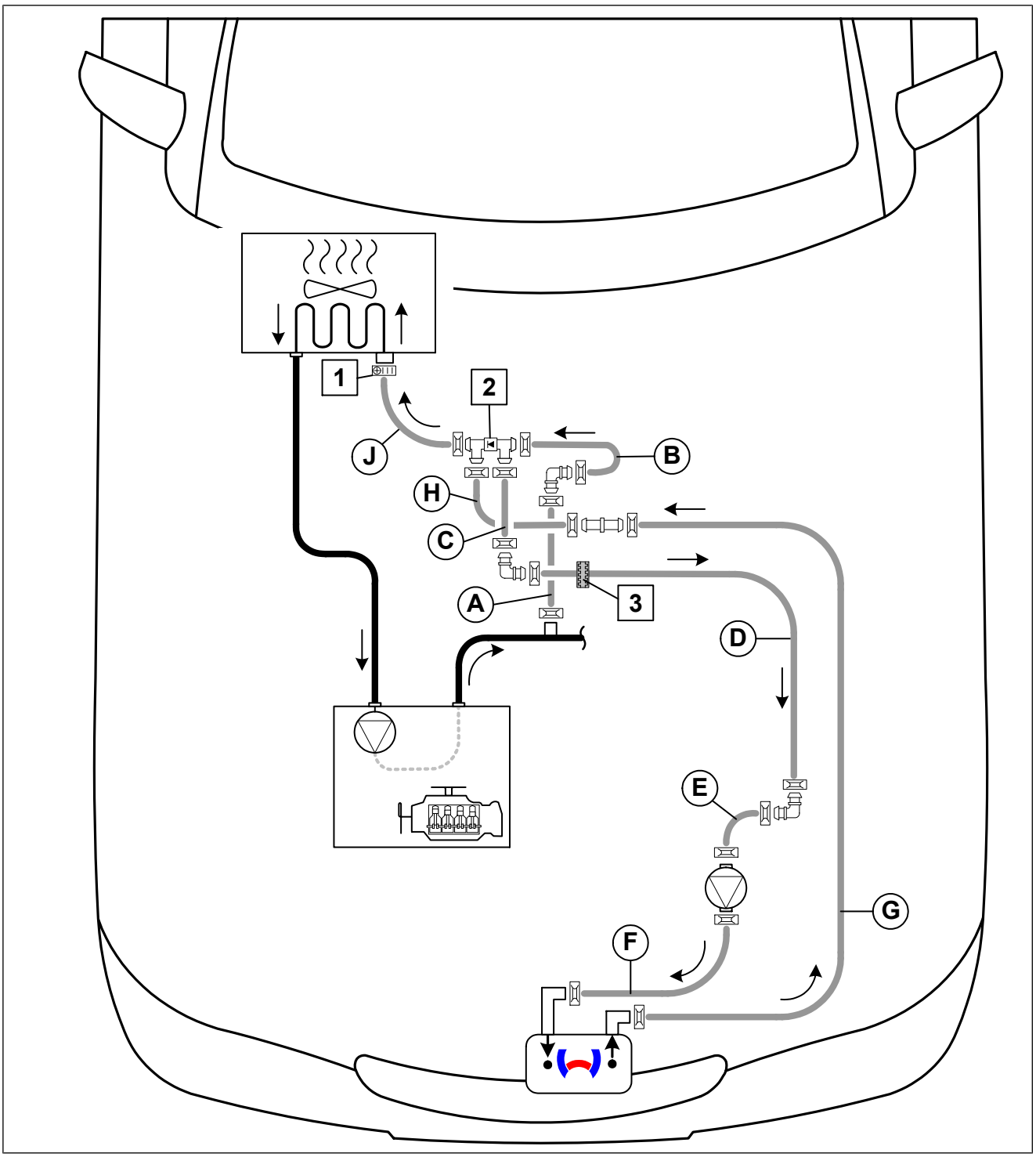


Fig. 52

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

All connecting pipes without a specific designation or = 18x18mm dia.

1 screw clamp, 2 non-return valve, 3 black rubber profile

12.2 Coolant circuit installation

Cutting hoses to length

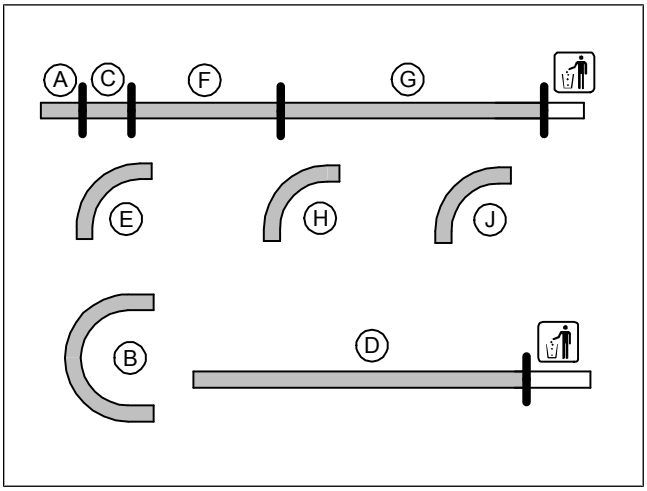


Fig. 53

A	60
B	18mm dia., 180°
C	60
D	900
E	18mm dia., 90°
F	490
G	1250
H	18mm dia., 90°
J	20mm dia. /18 90°

Preparing hoses

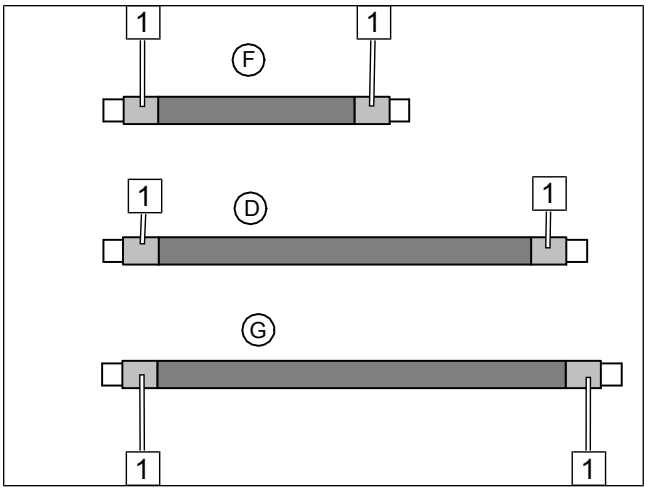


Fig. 54

▶ Slide on and cut to length braided protection hoses.

1 Cut heat shrink plastic tubing to length, 50mm long

Cutting point

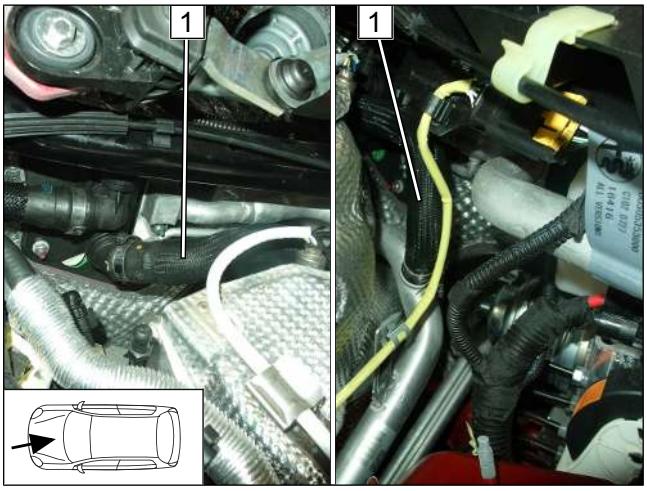


Fig. 55

▶ Disconnect engine outlet/heat exchanger inlet hose **1**.

Fig. 56

▶ Quick-release coupling 1 will be reused.

Premounting coolant pump

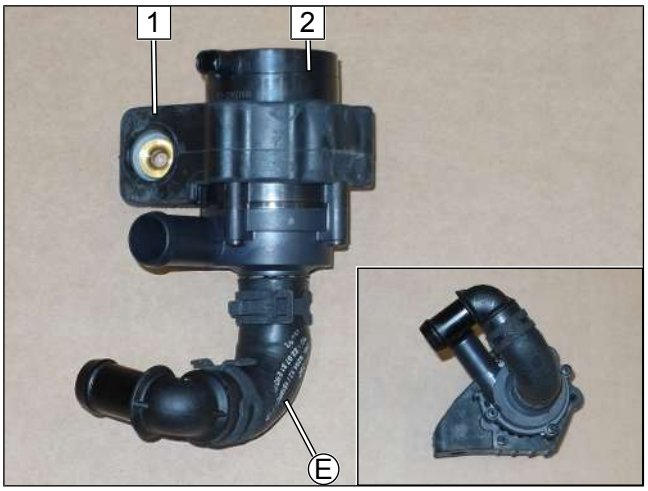


Fig. 57

1 Coolant pump
2 Coolant pump mount

Mounting coolant pump

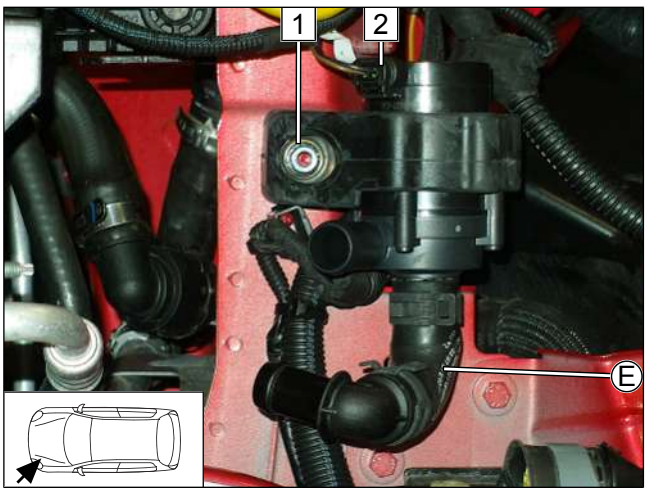


Fig. 58

1 Original vehicle stud bolt, coolant pump mount, flanged nut
2 Coolant pump wiring harness connector

Installing edge protection

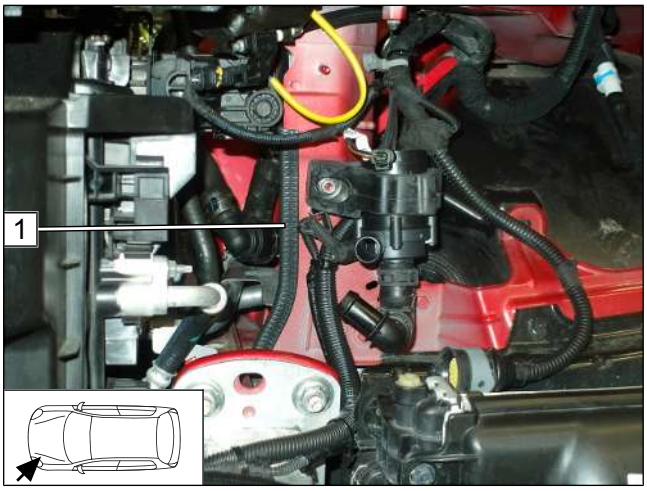


Fig. 59

1 100mm long edge protection

Drilling holes

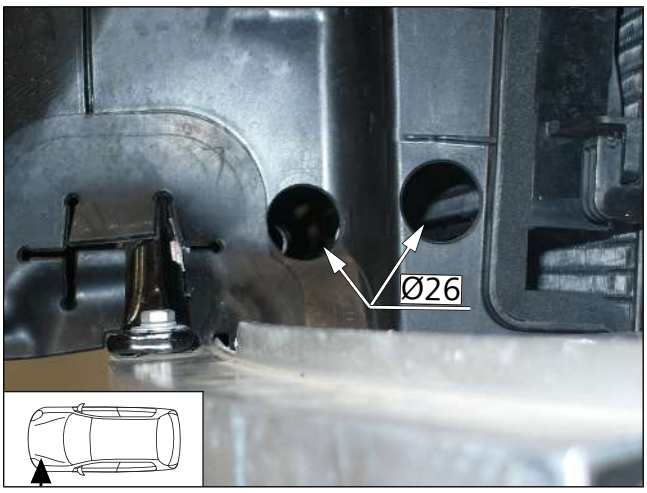


Fig. 60

Mounting hose bracket

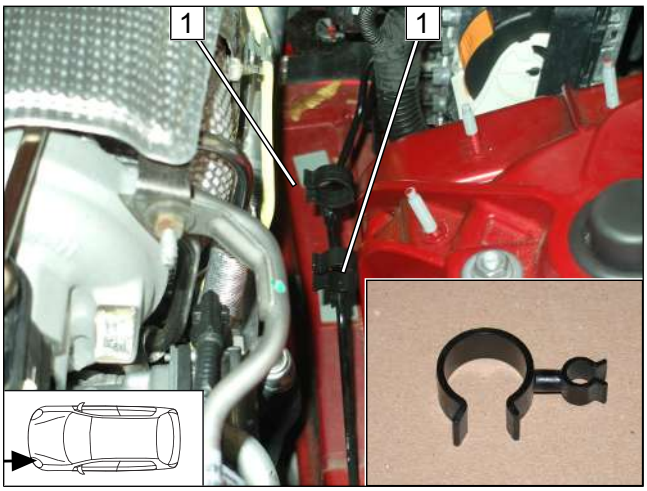


Fig. 61

1 4x22 hose bracket

Premounting non-return valve

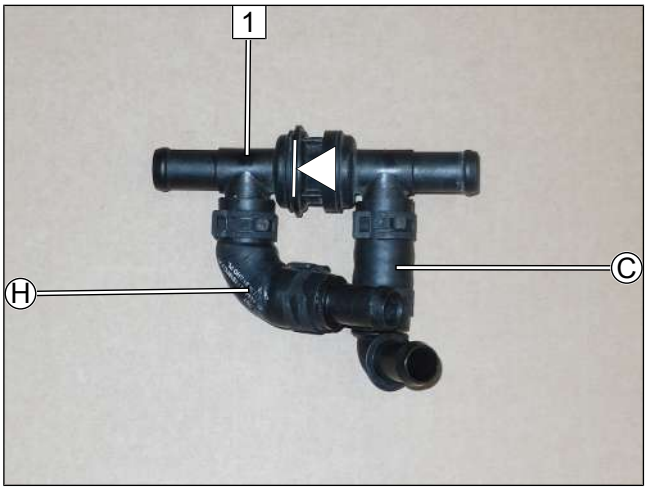


Fig. 62

Fig. 63

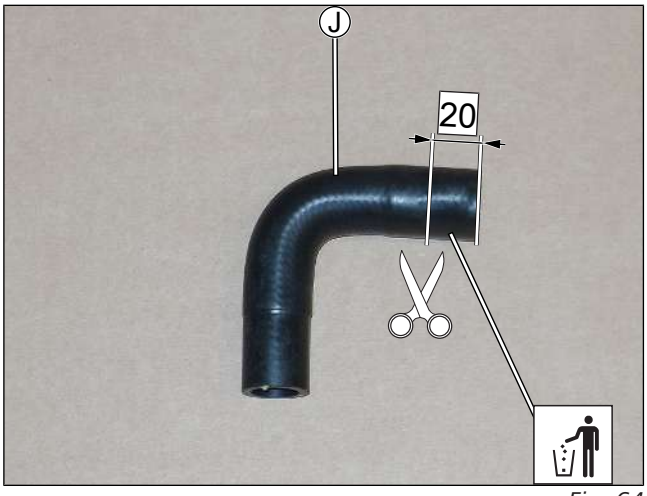


Fig. 64

1 Non-return valve

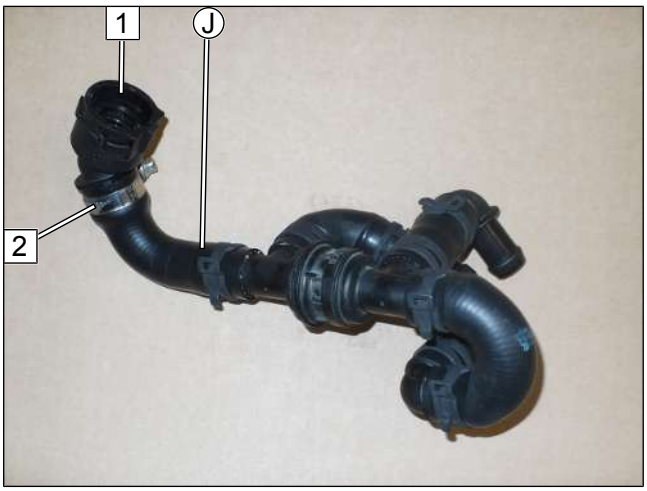


Fig. 65

Tighten screw clamp to 2.0±0.5Nm torque.

1 Quick-release coupling on shortened hose end
2 Screw clamp

Hoses **D** and **G** on premounted hose group

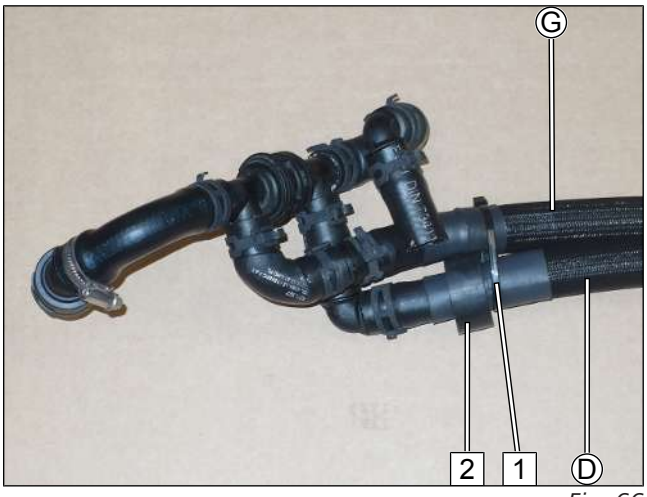


Fig. 66

1 Cable tie
2 Black rubber isolator

Mounting non-return valve

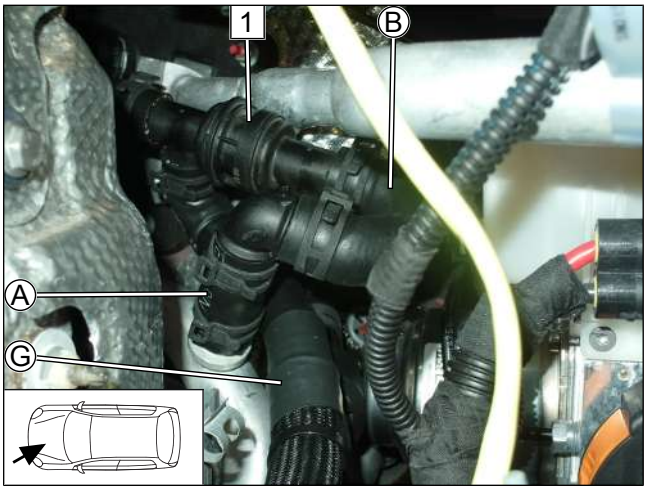


Fig. 67

1 Non-return valve

Connection to heat exchanger inlet

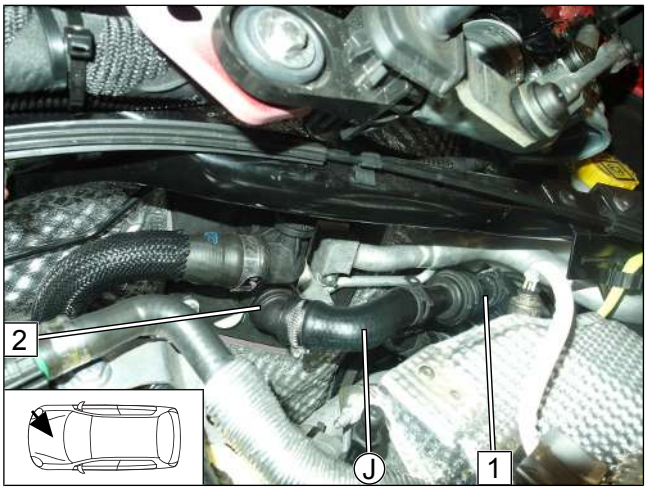


Fig. 68

1 Non-return valve
2 Quick-release coupling

Connecting and routing hose **D**

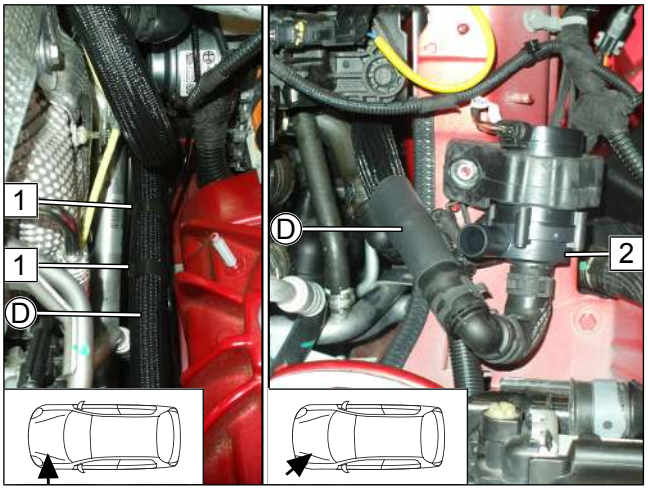


Fig. 69

1 4x22 hose bracket
2 Coolant pump

Routing hose **G** to check valve

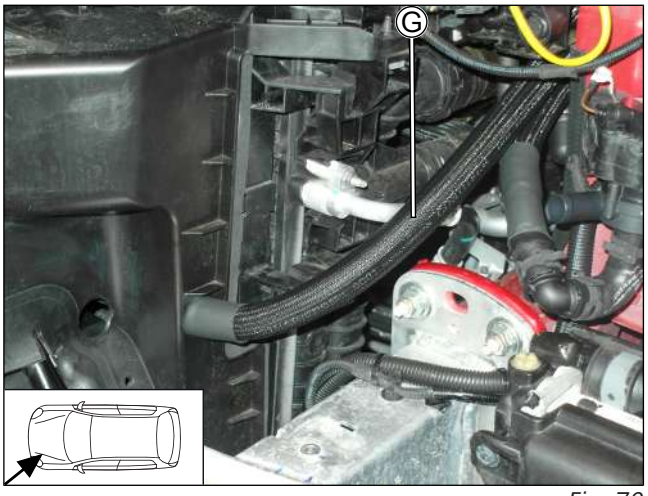


Fig. 70

Connecting hose **G** to heater outlet

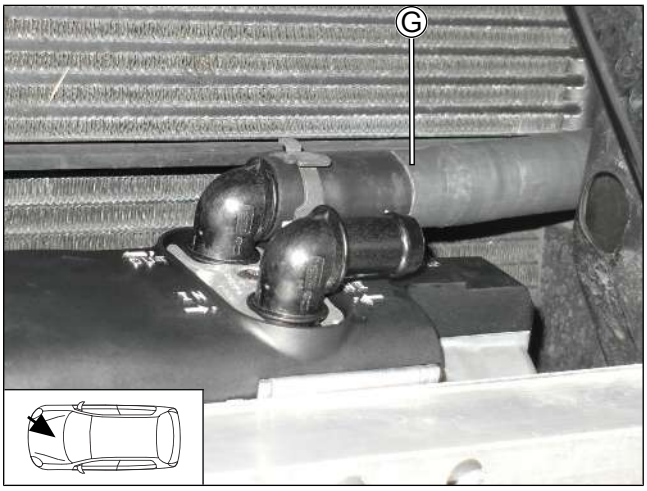


Fig. 71

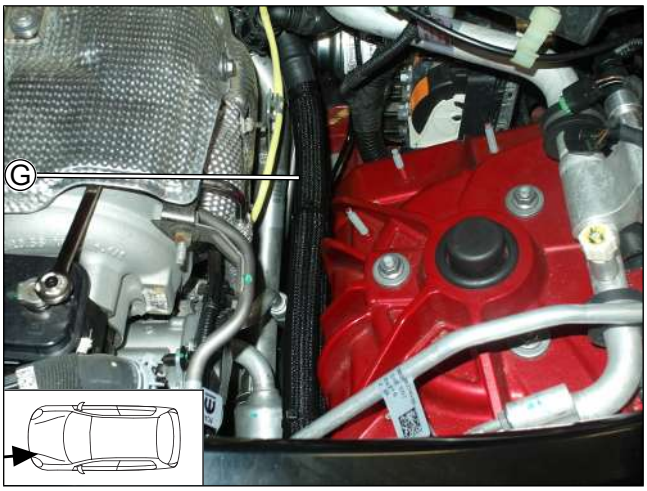


Fig. 72

▶ Fasten hose **G** to hose **D** using cable ties.

Connecting hose **F** to heater inlet

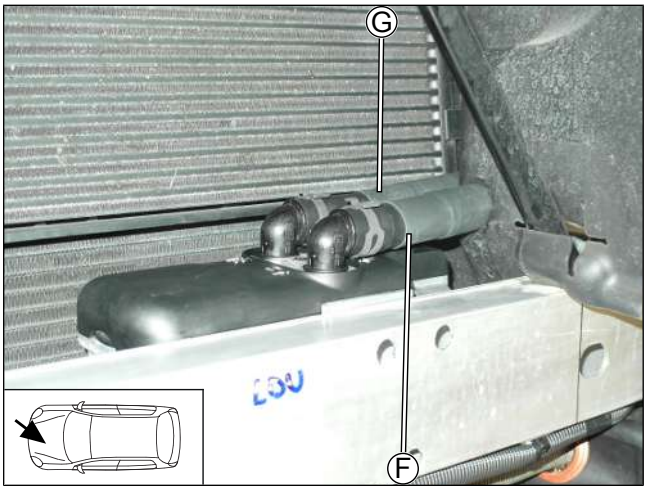


Fig. 73

Connecting hose **F** to coolant pump outlet

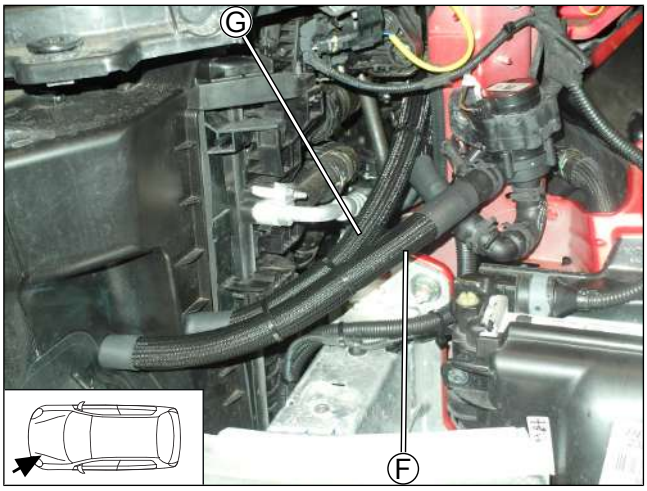


Fig. 74

▶ Fasten hose **F** to hose **G** using cable ties.

Installing edge protection

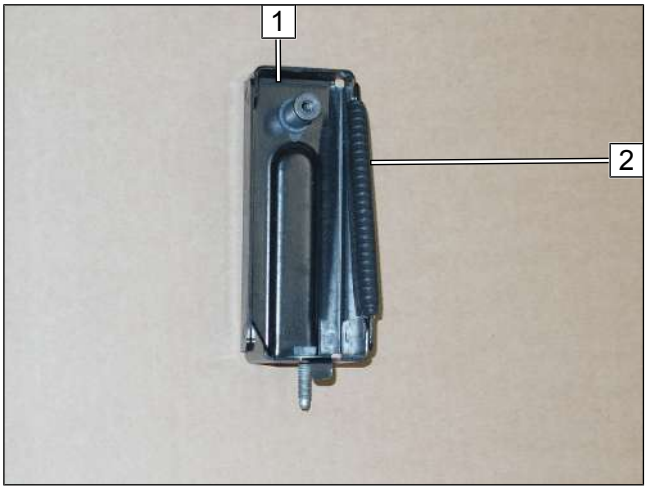


Fig. 75

1 Original vehicle bumper retaining bracket
2 100mm long edge protection

Mounting retaining bracket

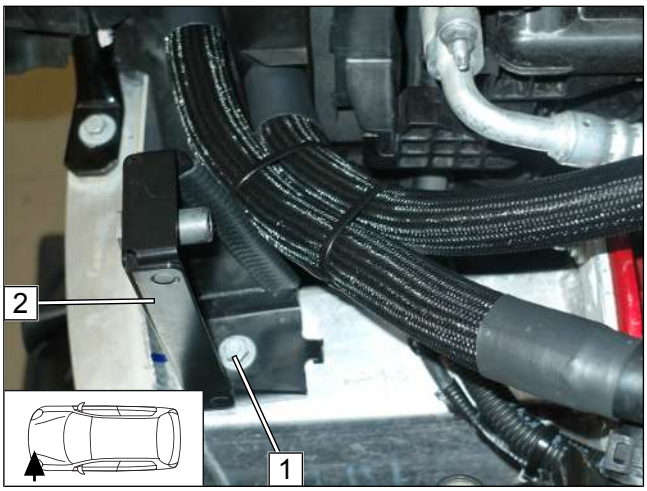


Fig. 76

1 Original vehicle bolt
2 Retaining bracket with edge protection

13 Electrical System of Passenger Compartment

13.1 Dismantling passenger compartment trim

Removing trims on driver's side

Fig. 77

1 Loosen screw

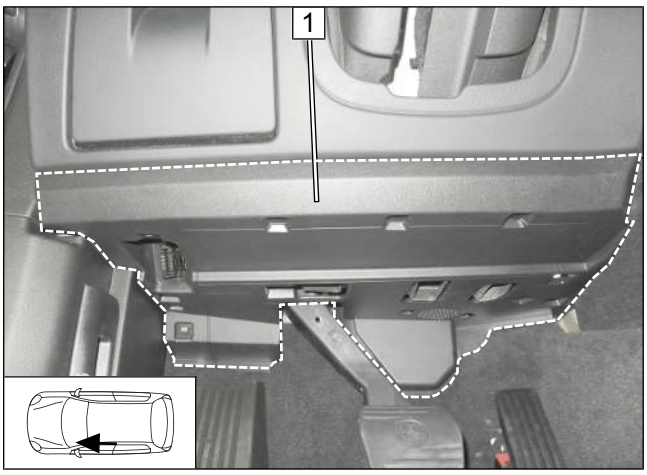


Fig. 78

1 Trim fastened with clips and screws [3x]

Dismantling trims on front passenger's side

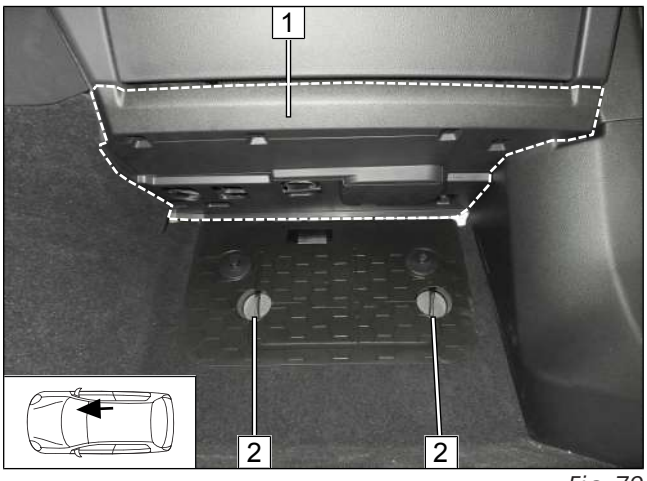


Fig. 79

1 Trim fastened with clips and screws [3x]

2 Remove central unit cover, loosen screws

13.2 Mounting cold start system

Integrate the cold start system as per the separate installation documentation:
'Cold start for Alfa Romeo Giulia / Stelvio petrol'.

13.3 Electrical System Preparation

Assigning wires

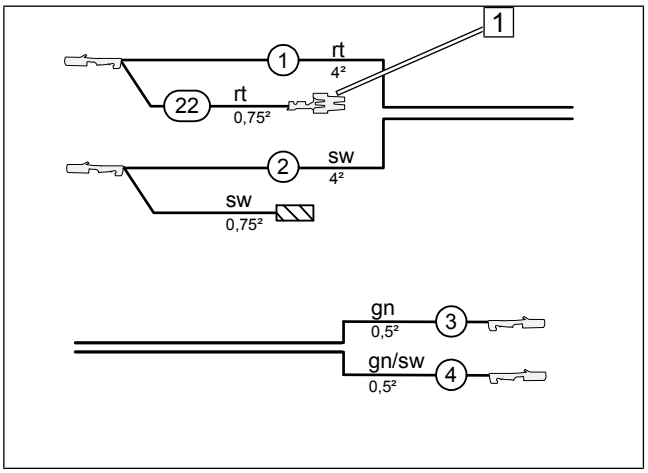


Fig. 80

Wire sections retain their numbering in the entire document.

1 Flat spring contact
- **1** Red (rt) wire of fan wiring harness
- **2** Black (sw) wire of fan wiring harness
- **3** Green (gn) wire from wiring harness of PWM control
- **4** Green/black (gn/sw) wire from wiring harness of PWM control

View of PWM-Gateway

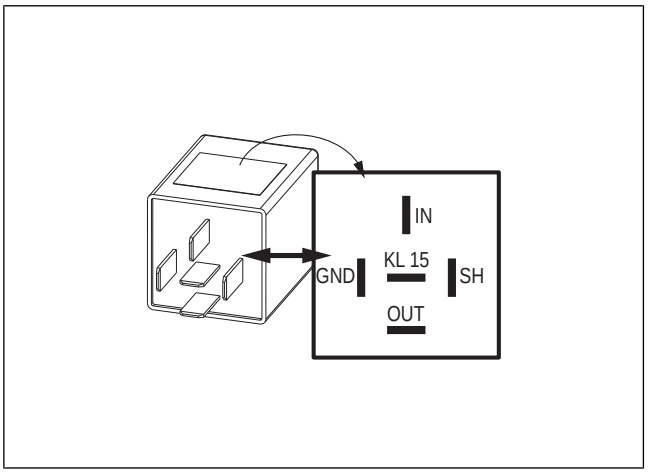


Fig. 81

▶ Check PWM Gateway settings when starting-up the heater, adjust if necessary.

Parameters	Setting
Duty cycle	30%
Frequency	1kHz
Voltage	5 V
Function	High side

Connecting wires to PWM Gateway socket

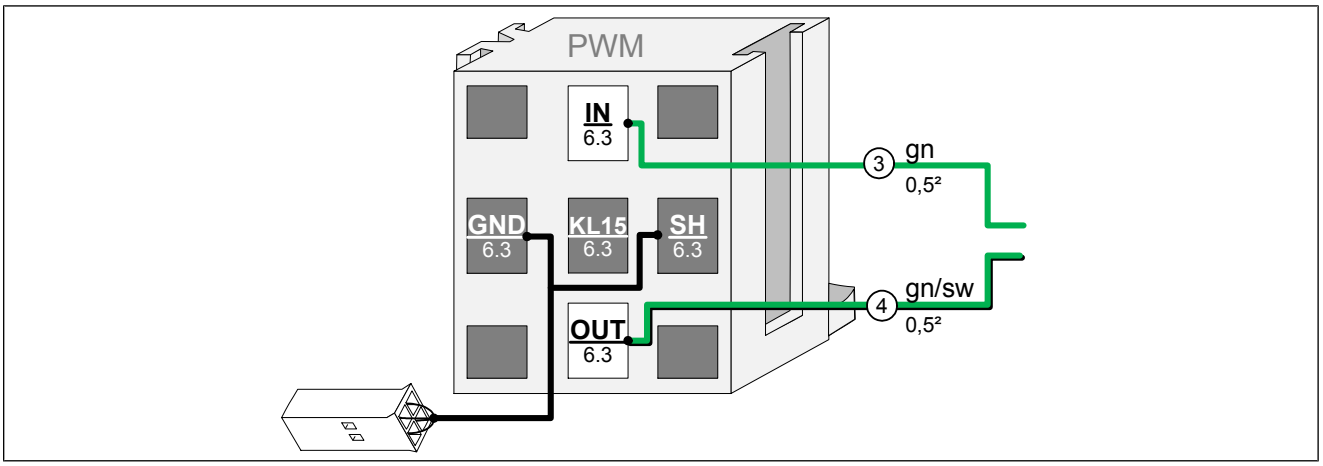


Fig. 82

Connecting wires to RSH

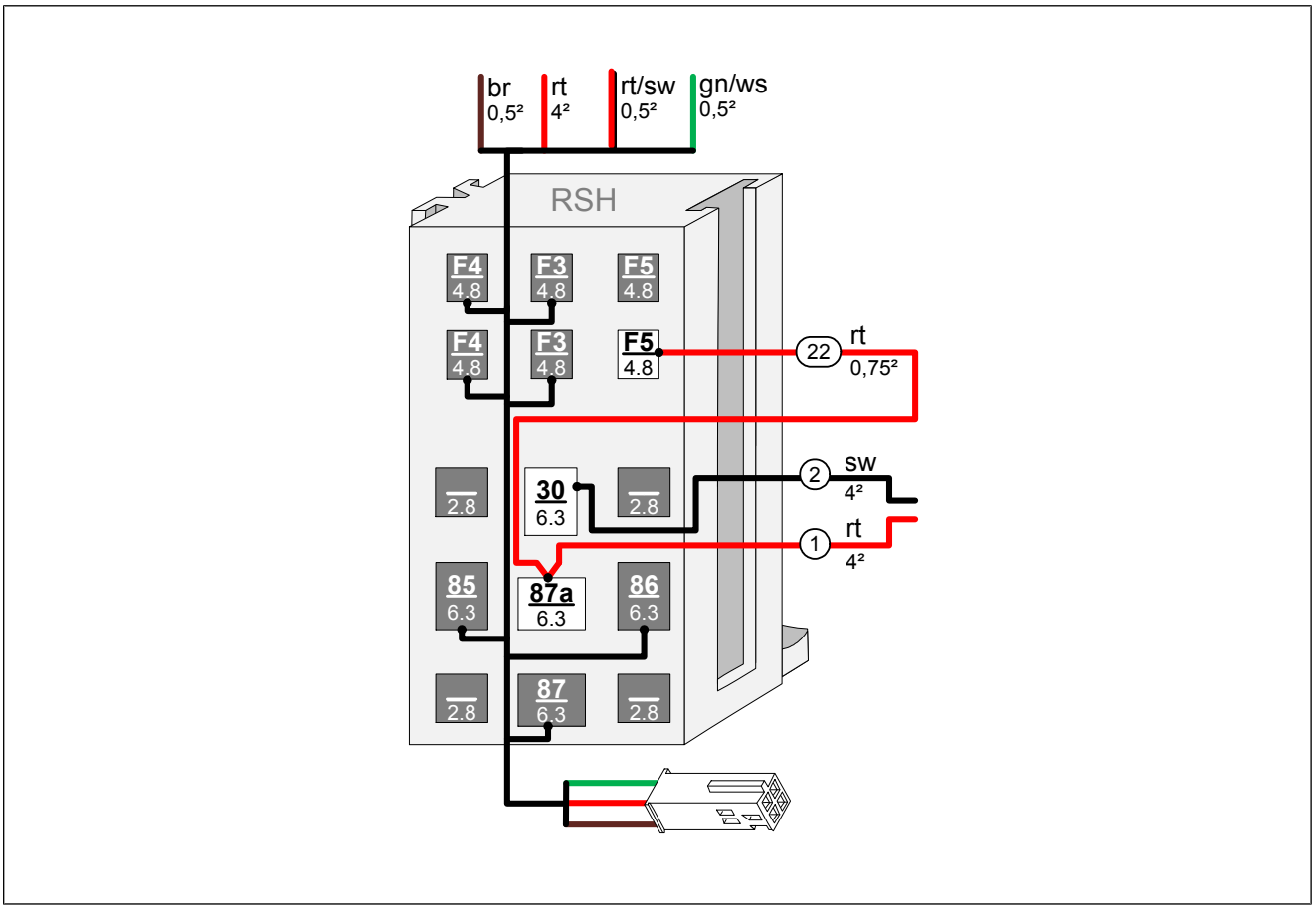


Fig. 83

13.4 Wiring diagram

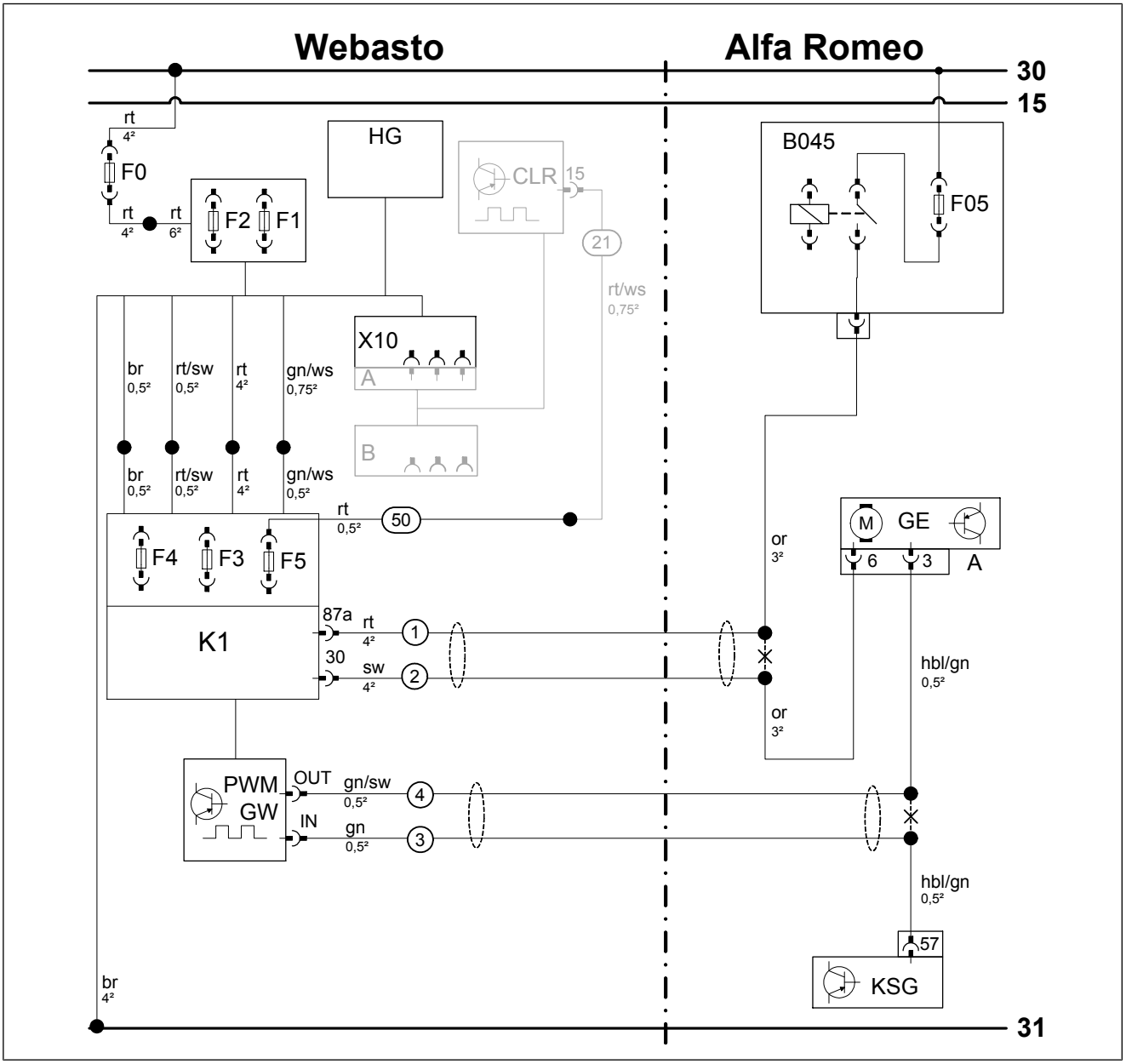


Fig. 84

Legend to wiring diagram

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Explanation
B045	Fuse and relay box	X	Cutting point
GE	Fan unit		
A	6-pin connector of GE		
KSG	Air-conditioning control unit		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Connector of CLR module wiring harness	br	brown
B	Socket of CLR module wiring harness	bg	beige
CCL GW	CAN CAN LIN Gateway	dbl	dark blue
CL GW	CAN LIN Gateway	dgn	dark green
CLR	Cold start module	ge	yellow
D1	Diode	gn	green
D2	Diode group	gr	grey
F0	Additional fuse for power supply	hbl	light blue
F1	Heater main fuse	hgn	light green
F2	Passenger compartment fan controller main fuse	or	orange
F3	Heater control fuse	pk	pink
F4	Fan controller fuse	rt	red
F5	Additional fuse	sw	black
HG	Heater TT-Evo	vi	violet
K1	Relay K1	ws	white
K2	Relay K2		
K3	Relay K3		
LIN GW	LIN Gateway		
PWM GW	Pulse width modulator gateway		
RSH	Relay and fuse holder of passenger compartment		
RTD	Temperature sensor		
X10	4-pin socket of heater control		

13.5 Fan controller

Preparing RSH and PWM Gateway socket

Produce all following electrical connections as shown in the system wiring diagram.

- ▶ Connecting wire **50** of CLR Module to RSH.
- ▶ Connect connector and socket.
- ▶ Assemble RSH and PWM Gateway socket.

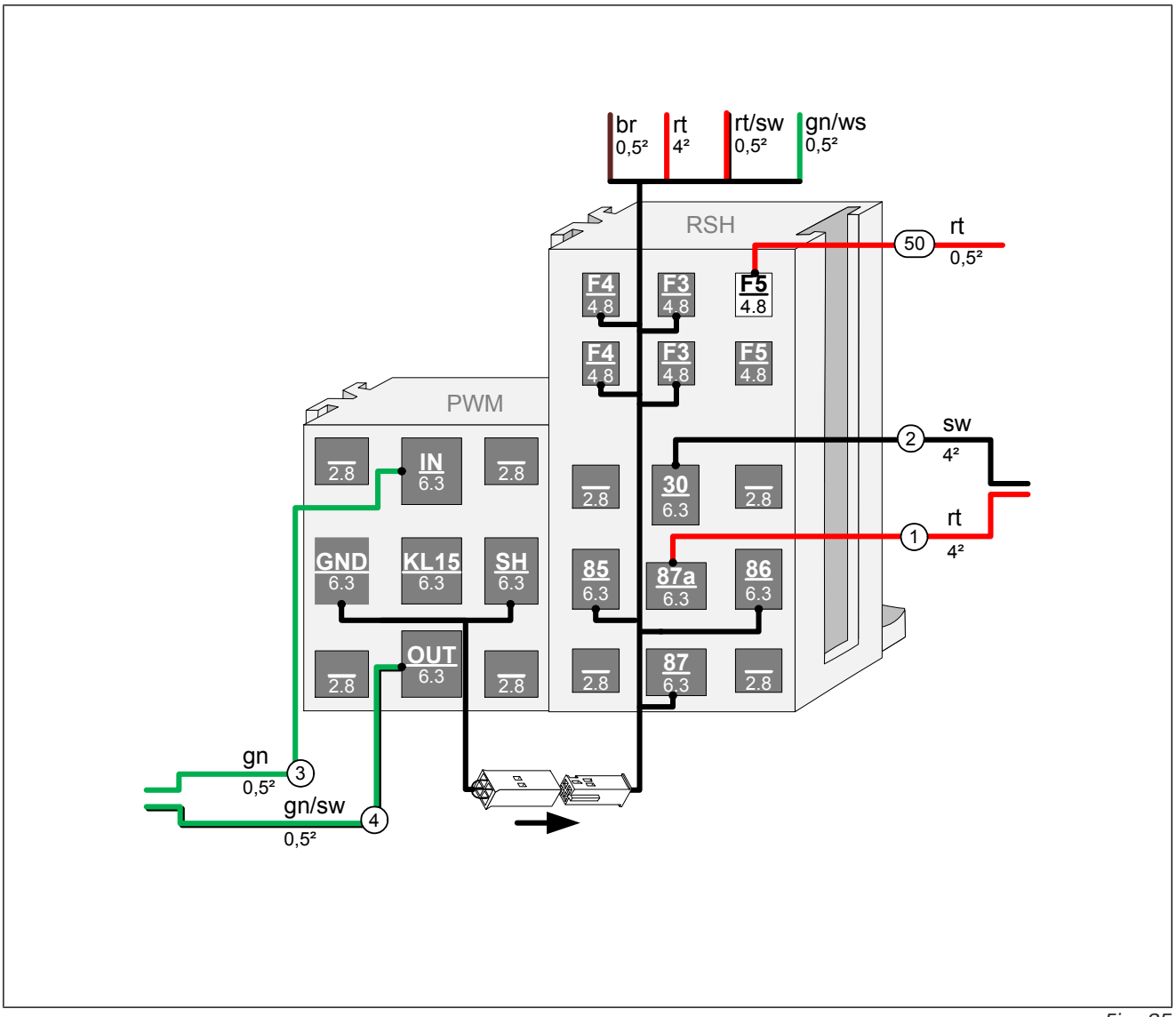


Fig. 85

Premounting RSH

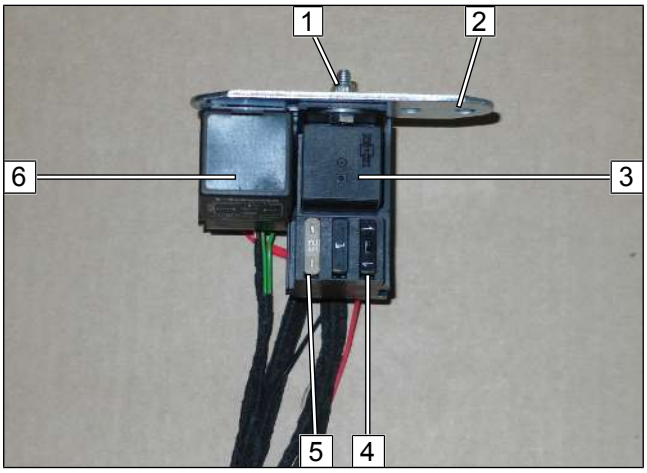


Fig. 86

1 M5x16 bolt, large diameter washer [2x], nut
2 Perforated bracket
3 Relay K1
4 Fuse F5: 1A
5 Fuse F4: 25A
6 PWM Gateway

Connecting same colour wires of wiring harnesses

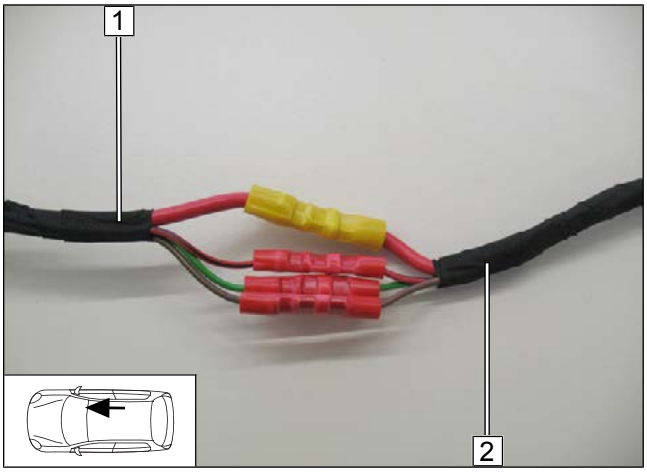


Fig. 87

1 Wiring harness of passenger compartment relay and fuse holder
2 Heater wiring harness

Mounting RSH

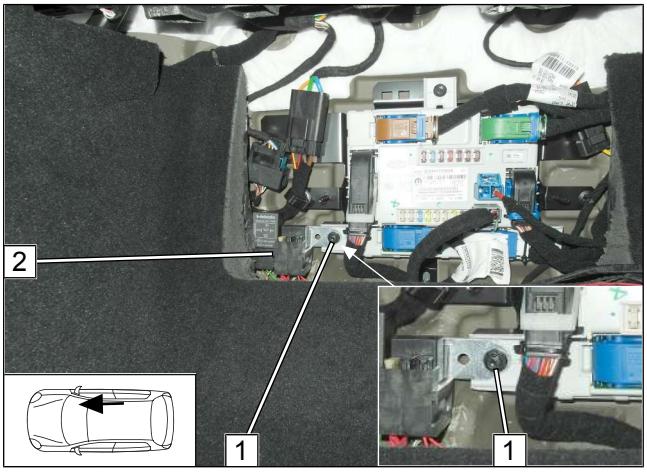


Fig. 88

1 Original vehicle flanged nut, stud bolt
2 RSH, premounted

Connection to fan unit

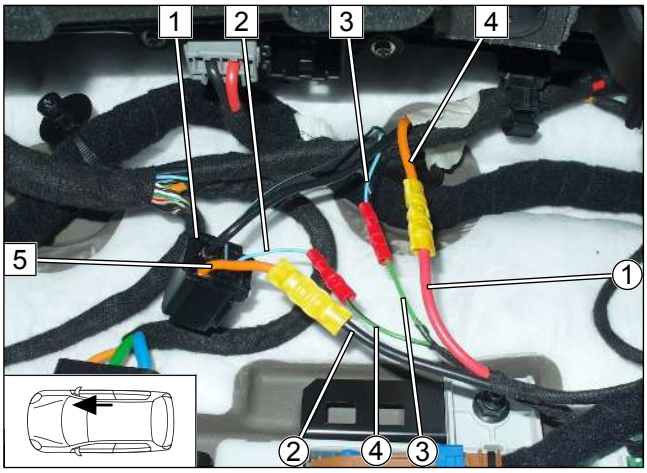


Fig. 89

[1] Fan unit connector
[2] Light blue/green (hbl/gn) wire of fan controller
[3] Light blue/green (hbl/gn) wire of A/C control unit
[4] Orange (or) wire of fuse and relay box
[5] Orange (or) wire of fan unit

1 Red (rt) wire of K1/87a fan wiring harness
2 Black (sw) wire of K1/30 fan wiring harness
3 Green (gn) wire of PWM Gateway/ INPWM controlwiring harness
4 Green/black (gn/sw) wire of PWM Gateway/ OUTPWM controlwiring harness

14 Electrical System of Control Element

14.1 MultiControl CAR option

Mounting MultiControl CAR

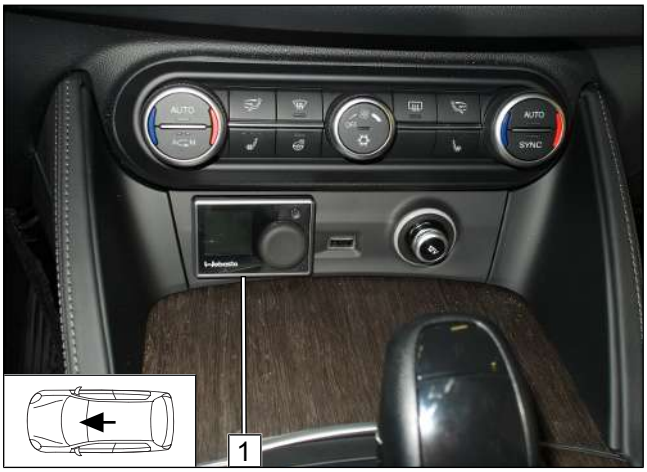


Fig. 90

Observe the MultiControl CAR installation documentation.

1 Installation frame

14.2 Telestart option

Installing receiver

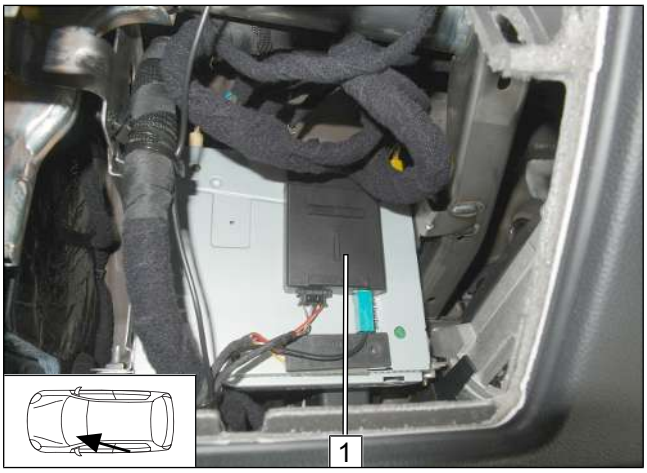


Fig. 91

Observe the Telestart installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mounting temperature sensor T100 HTM

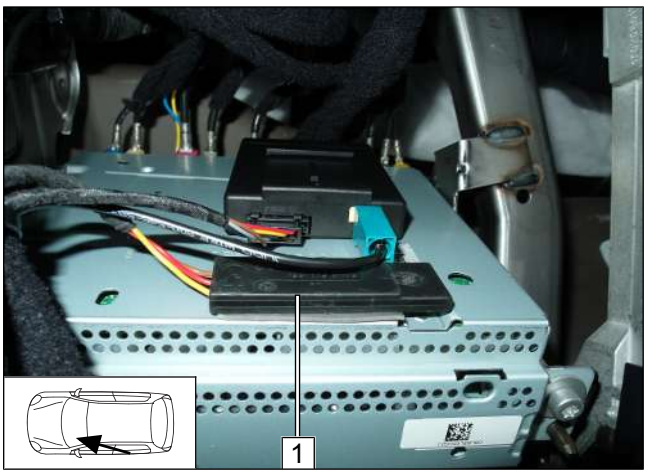


Fig. 92

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

Installing aerial

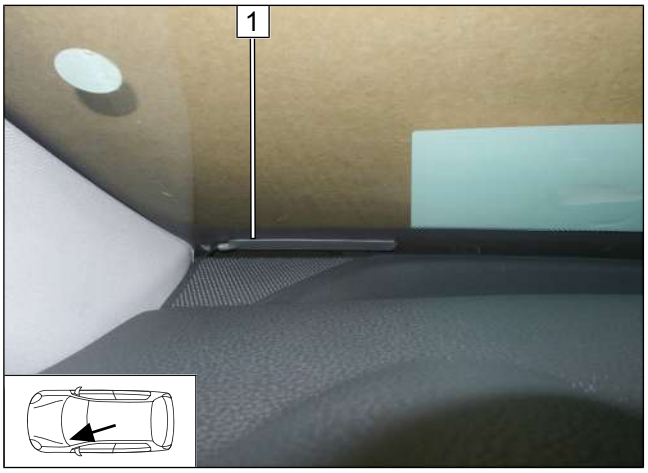


Fig. 93

1 Aerial

14.3 ThermoCall option

Installing receiver

Fig. 94

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mouting aerial (optional)

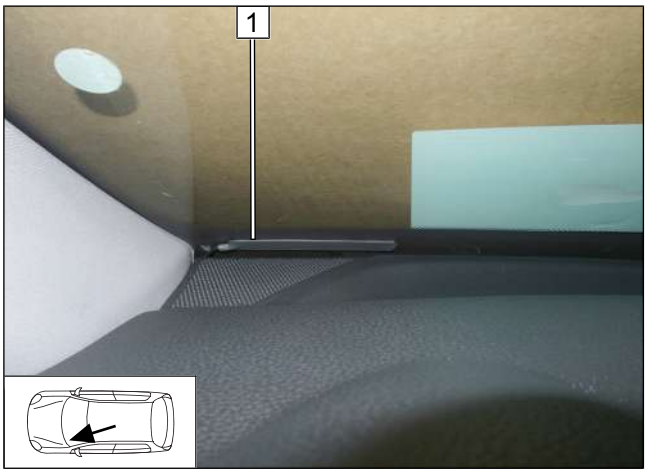


Fig. 95

1 Aerial

15 Final Work for underride protection

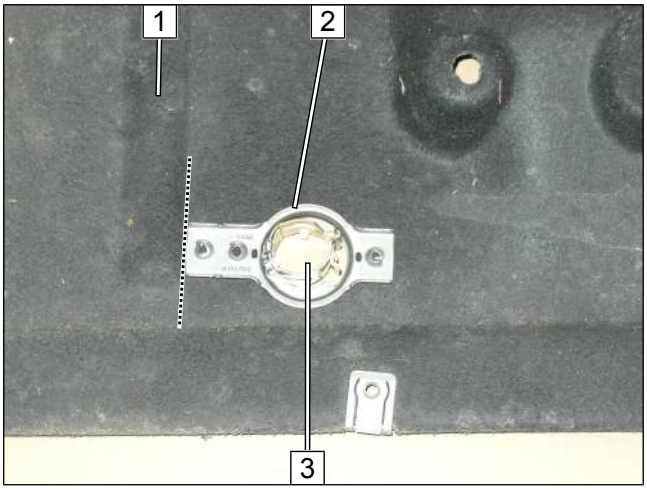


Fig. 96

Observe the EFIX installation instructions.

▶ Work step E1.1

▶ Position EFIX 2 as shown and copy hole pattern 3.

1 Underride protection

2 EFIX

Drilling hole

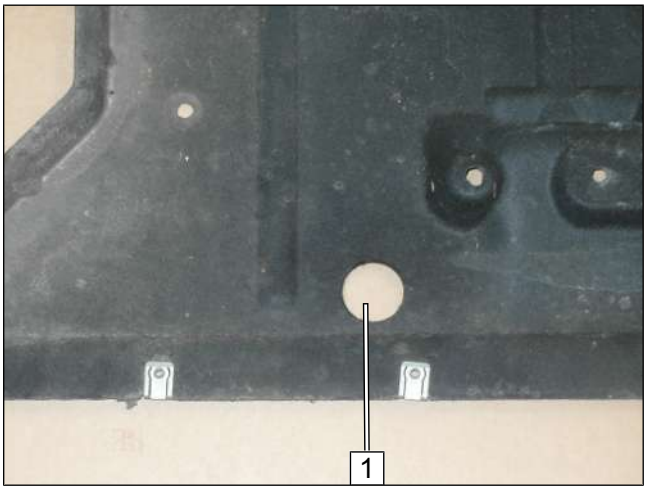


Fig. 97

▶ Work step E1.2

1 Hole

Copying hole pattern

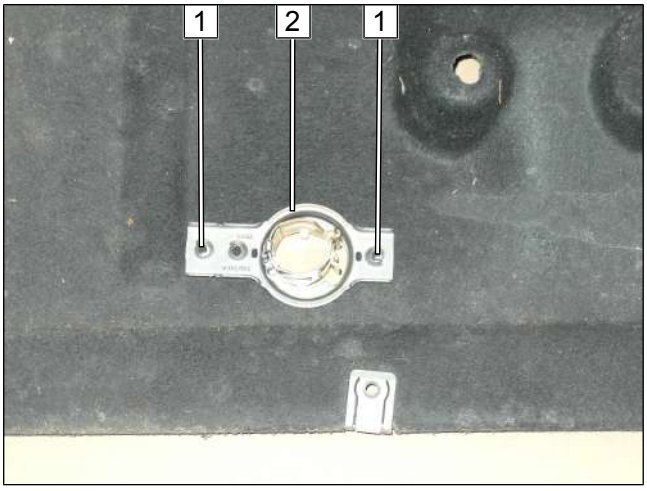


Fig. 98

▶ Work step E3

1 Hole pattern

2 EFIX

Drilling holes

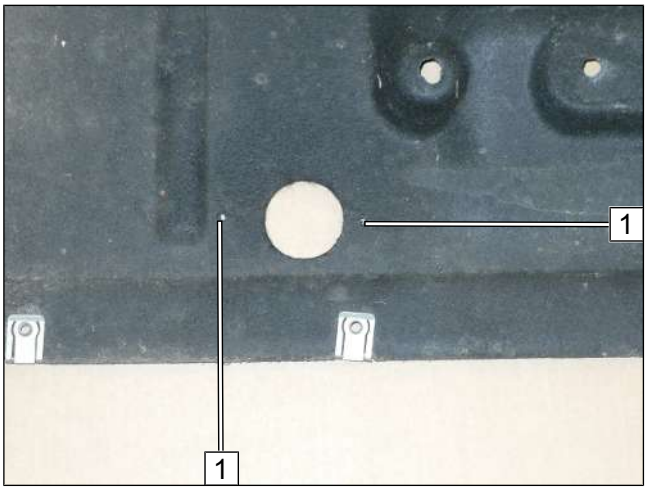


Fig. 99

▶ Work step E4

1 Hole

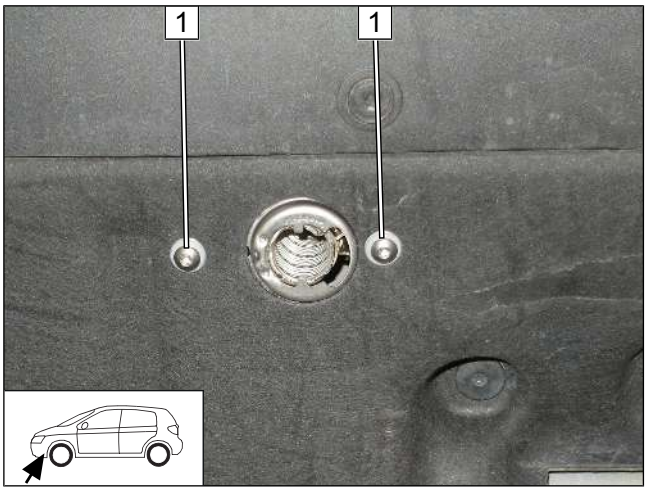


Fig. 100

▶ Work step E5

1 5x13 self-tapping screw

16 Final Work

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

- ▶ Mount removed parts in reverse order.

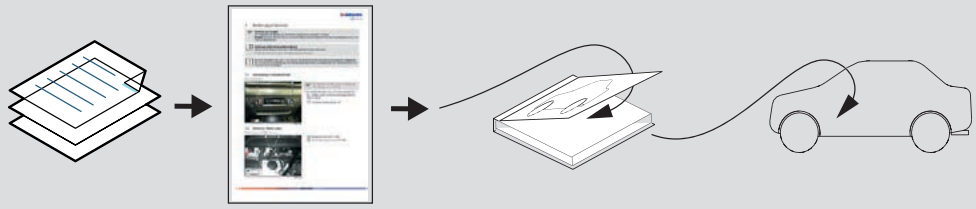
- ▶ Check all hoses, clamps and all electrical connections for firm seating.
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).
- ▶ Connect the battery.

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
- ▶ Make settings on A/C control panel according to the 'Operating Instructions'.
- ▶ Initial operation and functional test
- ▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck



These are the original instructions. The German language is binding.
You can request your language if it is missing. The telephone number of the respective country can be obtained from the Webasto service point flyer or the homepage of your respective Webasto country representative.

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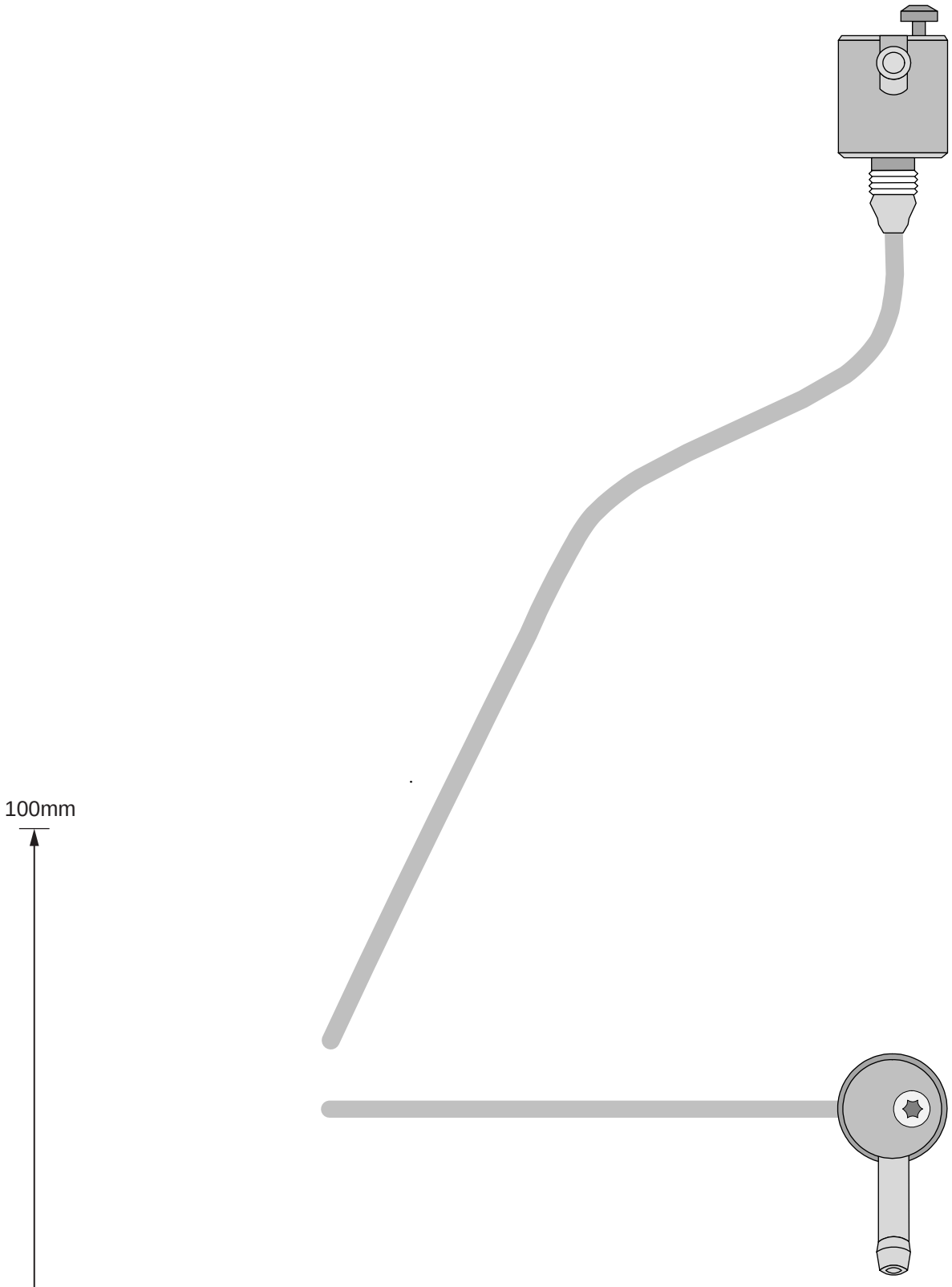
CE

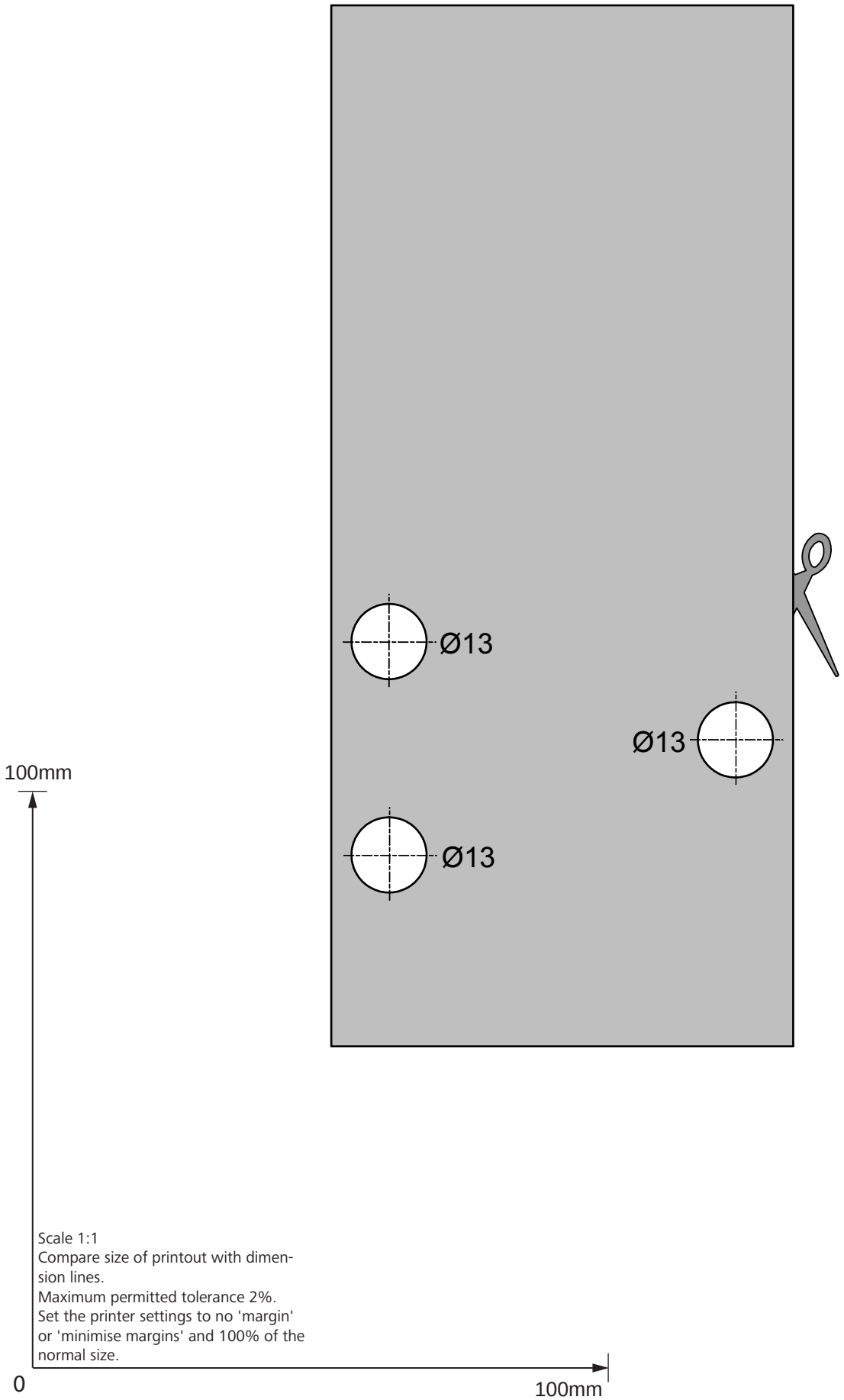
WWW.WEBASTO.COM

17 Fuelfix Template



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.

18 Drilling Template for Installation Location



19 Operating Instructions for Automatic Air-Conditioning

Information regarding the heating time:
We recommend matching the heating time to the driving time (Heating time = driving time).
Example: for a driving time of approx. 20 min. (in one direction), we recommend not exceeding a switch-on time of 20 min.

Vehicles with passenger compartment monitoring:
further information can be found in the vehicle operating instructions.

▶ Deactivate passenger compartment monitoring for the heating operation

19.1 A/C control panel settings

Automatic A/C control panel

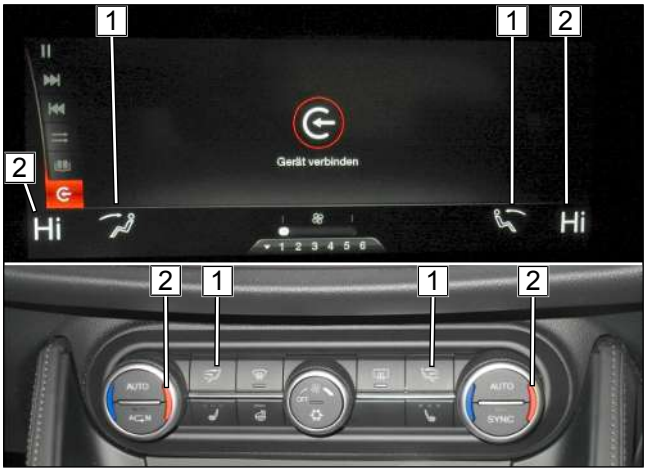


Fig. 101

Before parking the vehicle, make the following settings:

1 Air outlet on both sides ‘upwards’
2 Temperature on both sides to ‘HI’

19.2 Installation location of fuses

Fuses in engine compartment

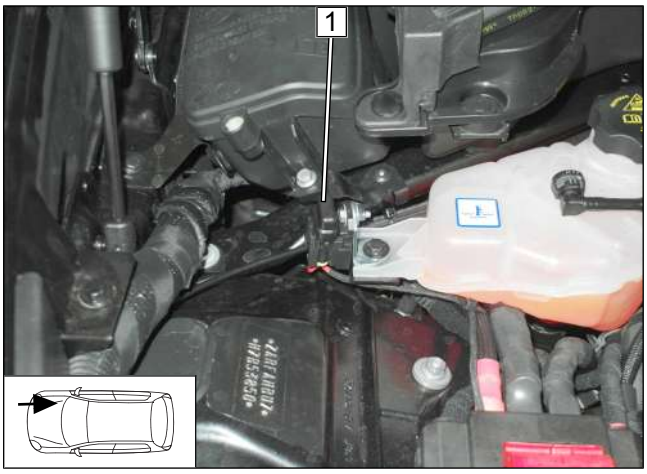


Fig. 102

1 F0 - Additional 30A fuse for power supply (light green)

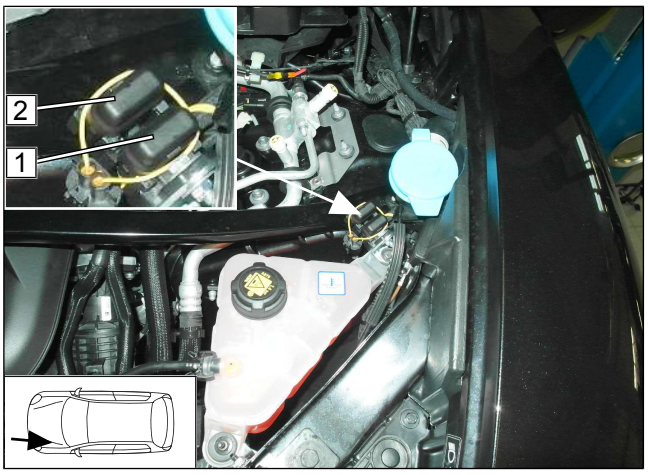


Fig. 103

1 F2 - 30A passenger compartment fan controller main fuse (light green)

2 F1 - 20A heater main fuse (yellow)

Fuses in passenger compartment

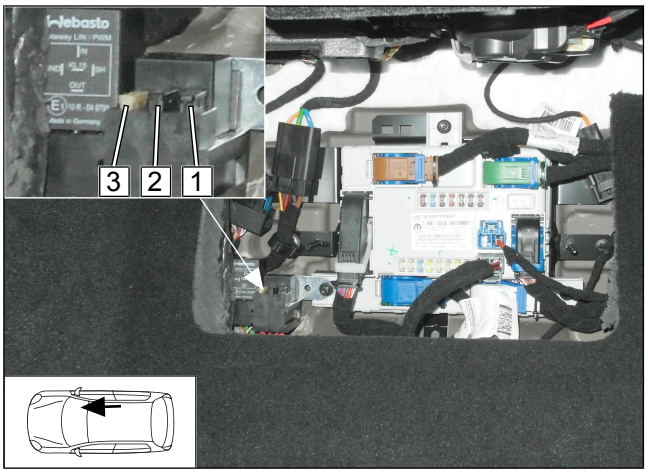


Fig. 104

1 F5 - Additional 1A fuse (black)

2 F3 - 1A control element fuse (black)

3 F4 - 25A fan controller fuse (white or transparent)