EN

K Installation documentation

for water heater Thermo Top Evo

Hyundai Kona

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Hyundai	Kona	YB	from 2018	e4* 2007/46* 1259*…

Motorisation	Fuel	Emission standard	Transmission type	Out-put[kW]	Displace-ment[cm³]	Engine code
1.0P	Petrol	Euro 6	SG	88	998	G3LC

Validity	Equipment variants	Model
		Kona
Verified equipment variants	Automatic air-conditioning	x
	Halogen main headlights	x
	Halogen front fog lights	x
	LED main headlights	x
	LED daytime running lights	x
	Start button with keycard	x
	Automatic Start-Stop system	x
Unverified equipment variants	Alarm system	x
	Manual air-conditioning	x

Total installation time	Note
8.4 hours	

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1 List of abbreviations

DP Fuel pump

FF Fuelfix (tank extracting device)

Fig. Figure

HG Heater

MCC MultiControl (control element)

RSH Relay and fuse holder of passenger compartment

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.

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 Hyundai Kona 1.0 petrol (incl. cold start system)	1326390A
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:

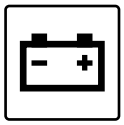
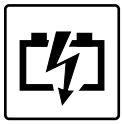
Thermo Top Evo heater

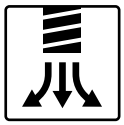
Using this document

- ▶ 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

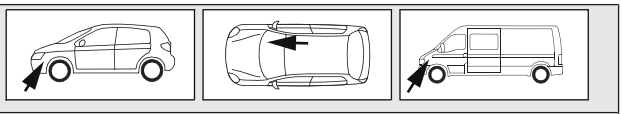
Consequences: Failure to follow the instructions can lead to material damage

▶ 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
- Hose clamping pliers
- Hose cutter
- Automatic wire stripper 0.2 - 6 mm^2
- Crimping pliers for cable lugs 0.5 – 10 mm^2
- Crimping pliers for tab connector 0.14 – 6 mm^2
- Crimping pliers for connector 0.25 – 6 mm^2
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

5 Preparing measures

5.1 Vehicle preparation

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

- ▶ Open the fuel tank cap
- ▶ Ventilate the fuel tank
- ▶ Close the fuel tank cap again
- ▶ Depressurise the cooling system
- ▶ Disconnect the battery and remove it together with the battery carrier
- ▶ Remove the air filter housing with the intake hose
- ▶ Remove the engine control unit with the bracket
- ▶ Remove the engine underride protection
- ▶ Remove the left front wheel
- ▶ Remove the left wheel well trim
- ▶ Remove the left underride protection
- ▶ Remove the right and left footwell trim
- ▶ Remove the side instrument panel trim on the left
- ▶ Remove the lower instrument panel trim on the left
- ▶ Remove the centre tunnel trim on the left and right
- ▶ Remove the rear bench seat
- ▶ Open the tank fitting service lid

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

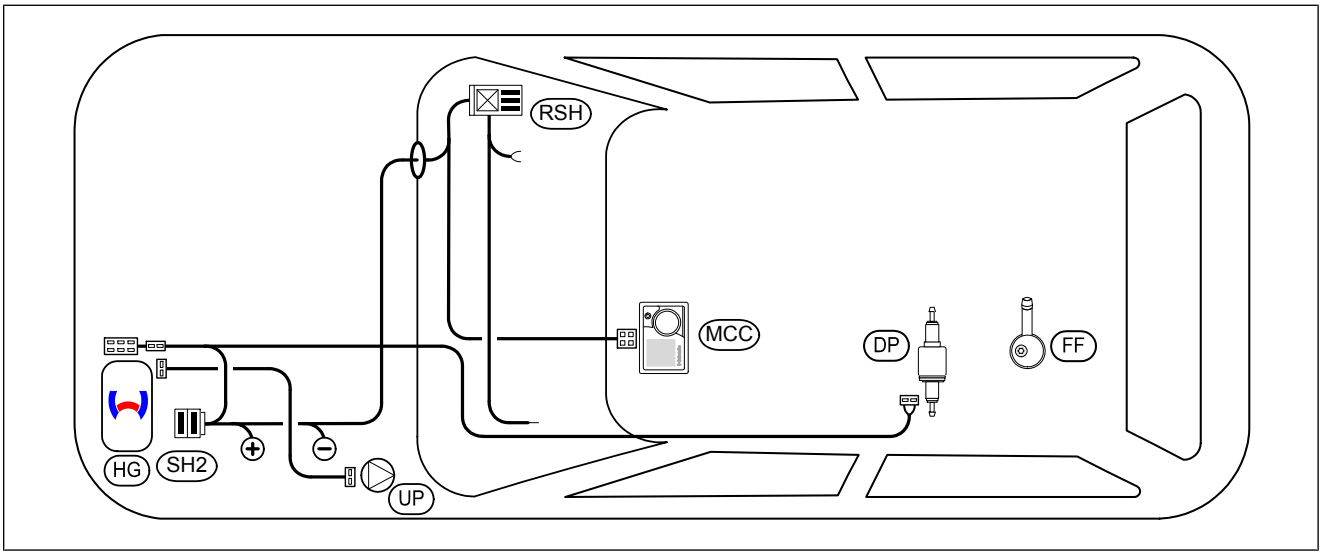


Fig. 1

Legend to installation overview

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

Heater installation location

Fig. 2

1 Heater

7 Electrical system of engine compartment

Bending perforated bracket

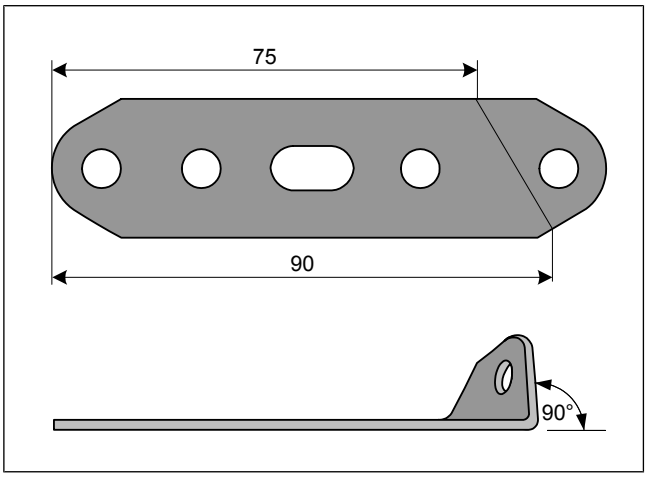


Fig. 3

Mounting perforated bracket and retaining plate of SH2

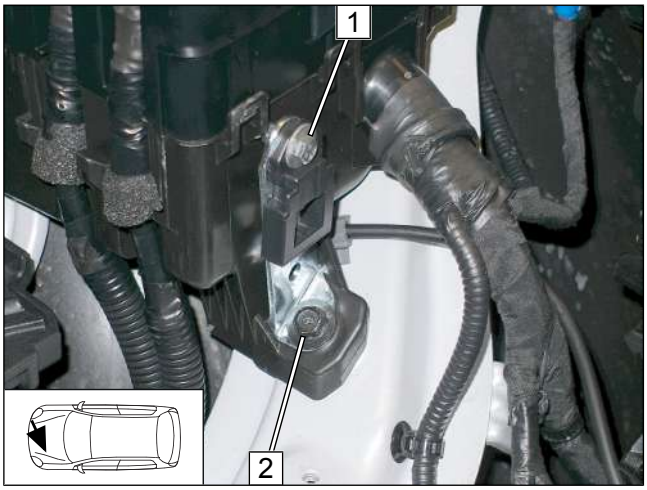


Fig. 4

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

2 Original vehicle bolt, perforated bracket

Mounting fuse holder

Fig. 5

1 Fuse F1/F2

Connecting positive wire

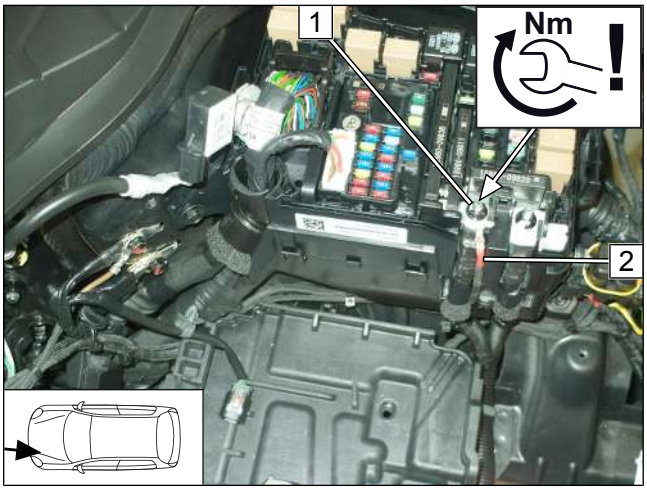


Fig. 6

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Positive support point

2 Positive wire

Connecting earth wire

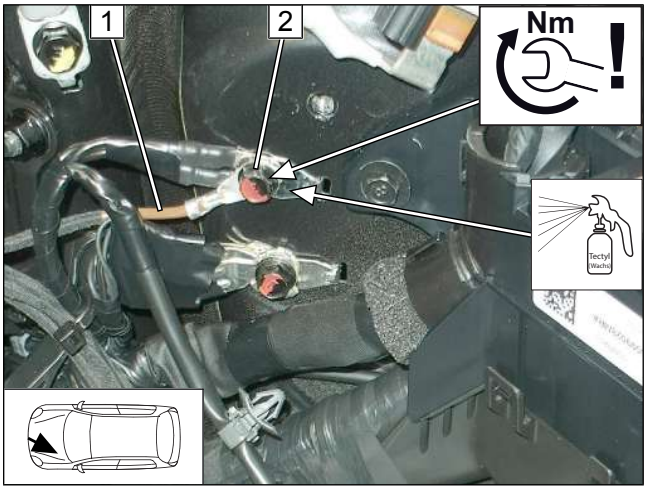


Fig. 7

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Earth wire

2 Earth support point

Routing wiring harnesses

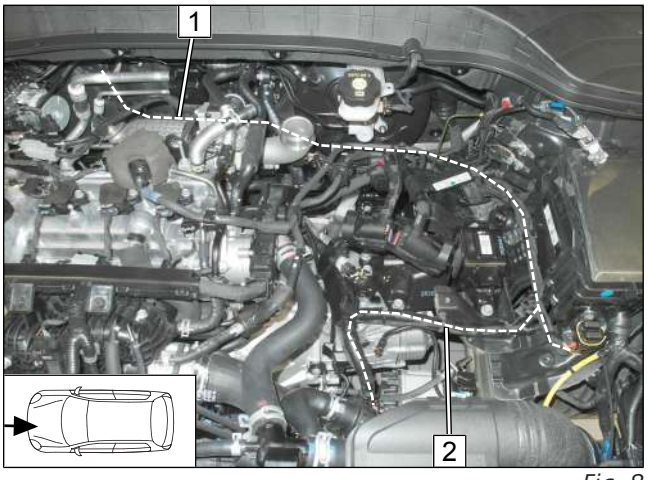


Fig. 8

▶ Route control element and passenger compartment wiring harness 1 on original vehicle wires to the passenger compartment pass through.

▶ Route heater wiring harness 2 on original vehicle lines to the heater installation location.

Passenger compartment wiring harness pass through

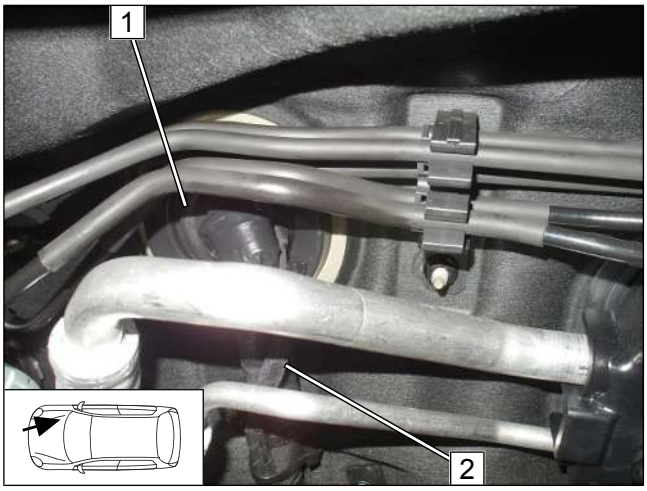


Fig. 9

1 Protective rubber plug

2 Control element and passenger compartment wiring harness

8 Mechanical system

8.1 Preparing bracket

Drilling holes

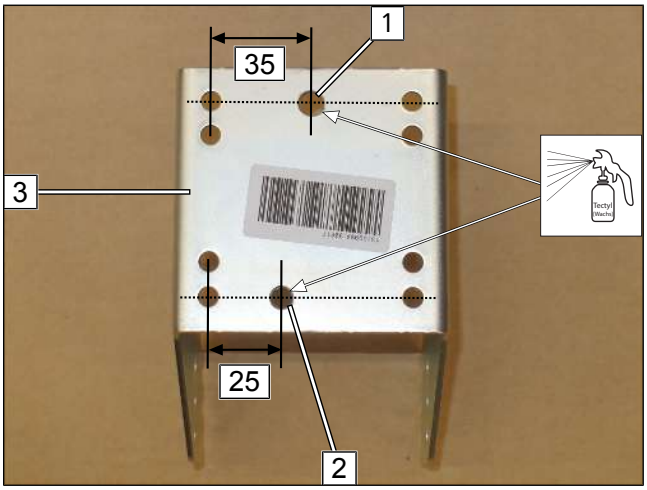


Fig. 10

1 9mm dia. hole
2 7mm dia. hole
3 Bracket

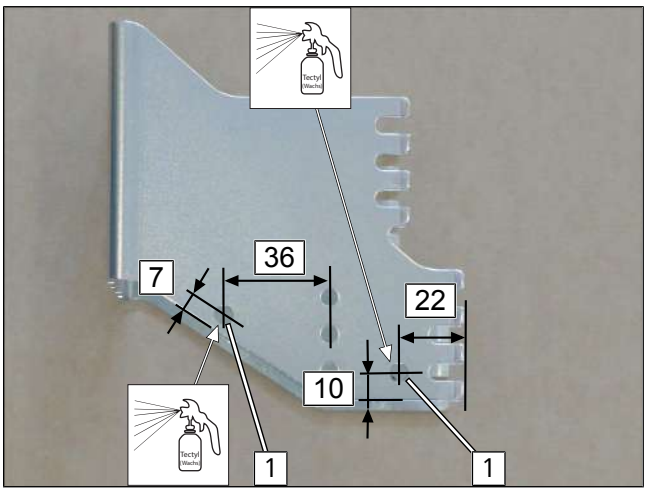


Fig. 11

1 7mm dia. hole

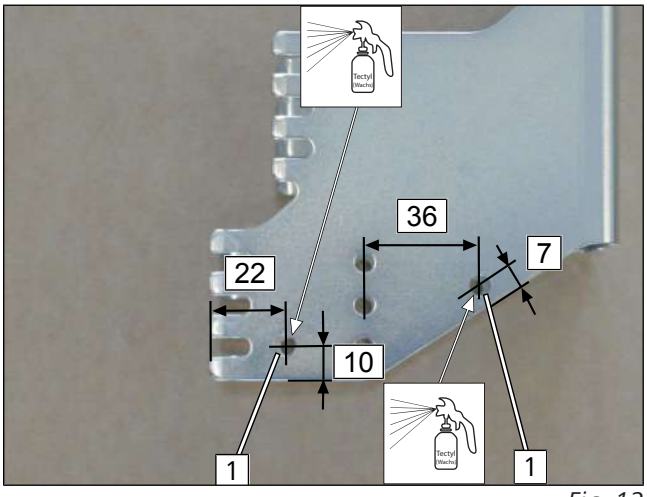


Fig. 12

1 7mm dia. hole

Preparing 2 perforated brackets

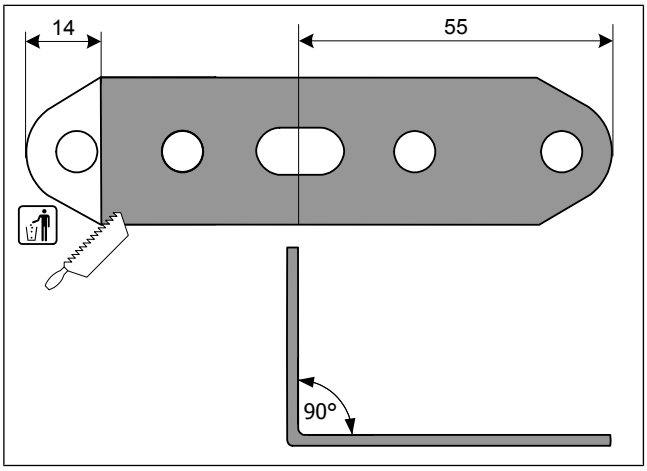


Fig. 13

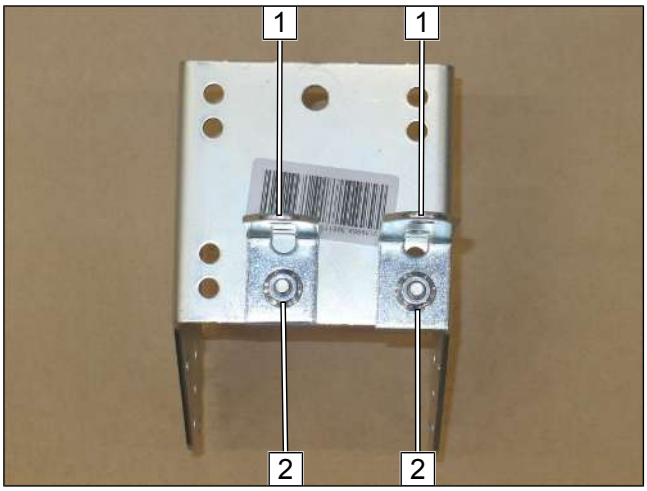


Fig. 14

1 Prepared perforated bracket

2 M6x16 bolt, bracket, perforated bracket, flanged nut

8.2 Installation location preparation

Removing original vehicle bolts

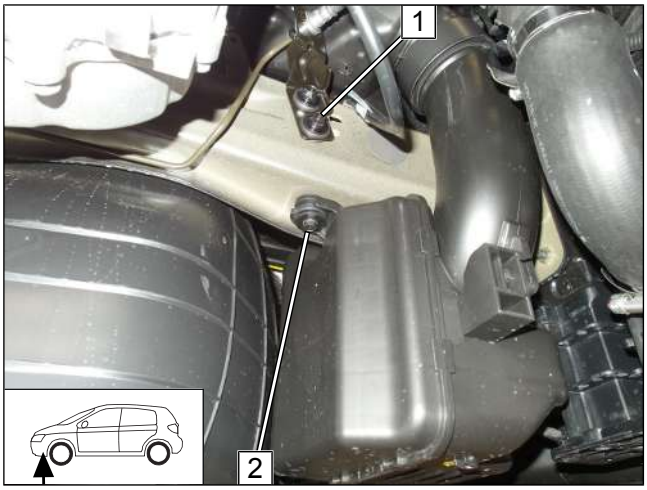


Fig. 15

1 Remove and discard original vehicle bolt

2 Remove original vehicle bolt (it will be reused)

Turning earth wire

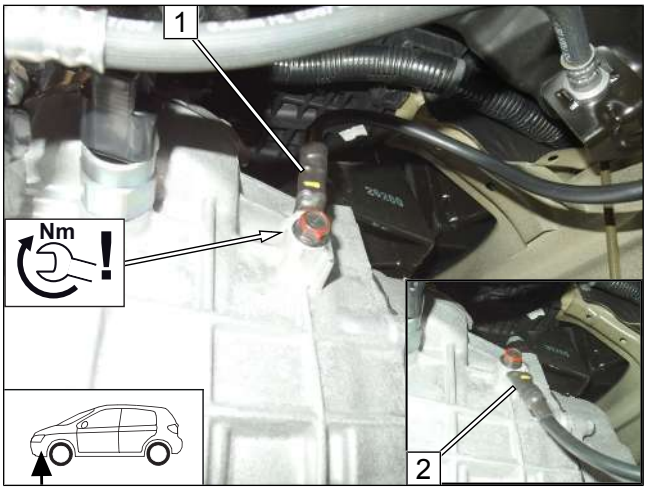


Fig. 16

▶ Mount earth wire [1] as shown in the figure.

[2] Earth wire position before

Shaping earth wire position

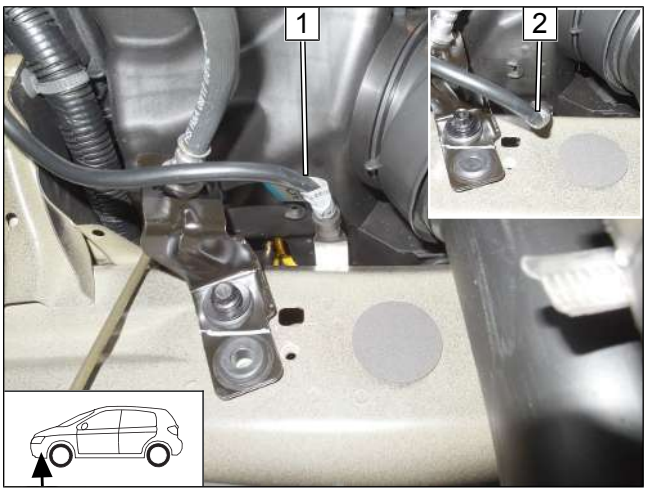


Fig. 17

▶ Bend earth wire [1] as shown in the figure.

[2] Earth wire position before

Mounting bracket

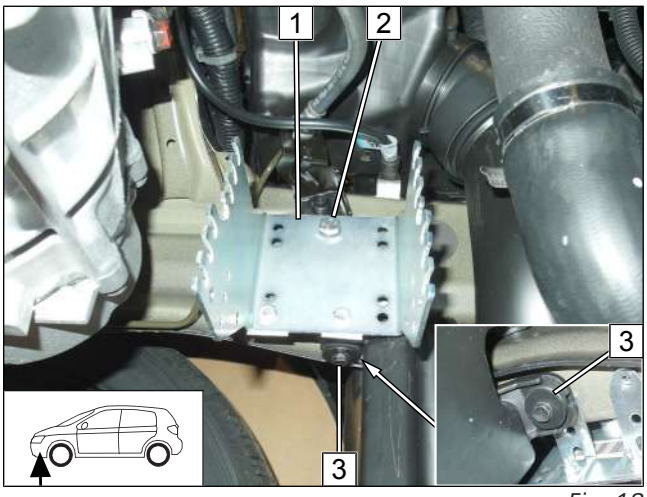


Fig. 18

▶ Position 8mm spacer at position [2] between bracket [1] and veh..

▶ Position perforated bracket at position [3] between vehicle and plastic housing.

[2] M8x40 bolt, spring lockwasher, bracket, 8mm spacer, original vehicle thread

[3] Original vehicle bolt

Copying hole pattern

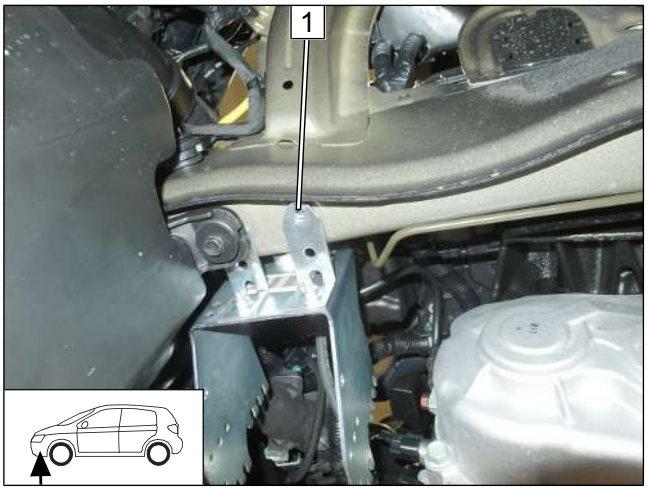


Fig. 19

1 Hole pattern

Inserting rivet nut

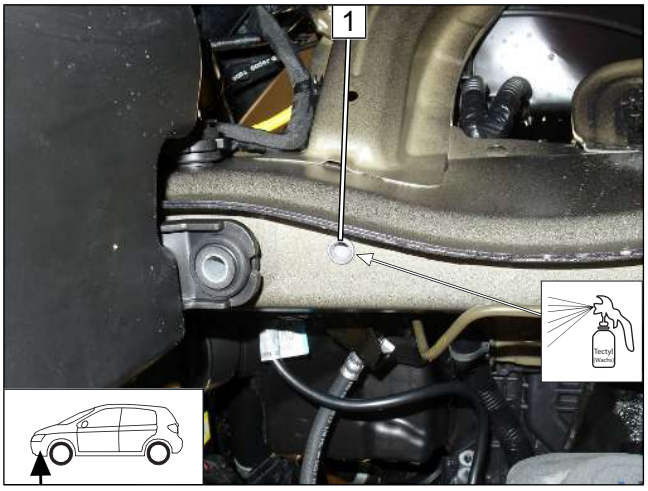


Fig. 20

1 Insert rivet nut into 9mm dia. hole

Preparing bracket

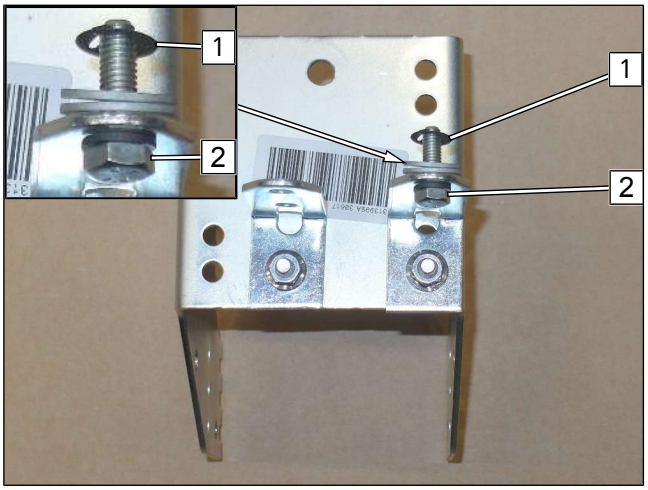


Fig. 21

1 Lock washer

2 M6x20 bolt, spring lockwasher, perforated bracket, [2] large diameter washers

Mounting bracket

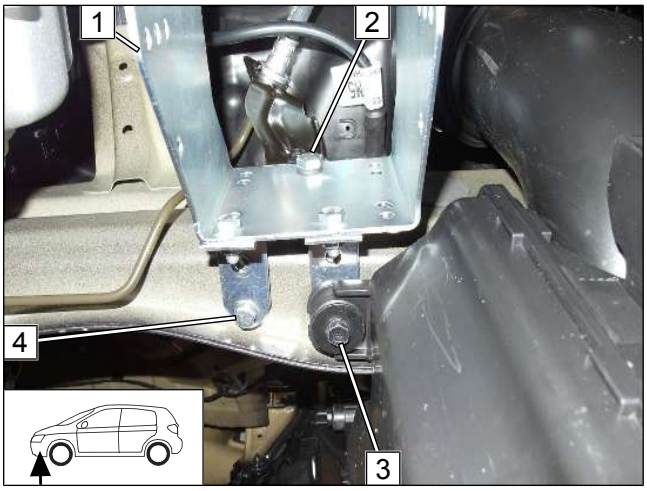


Fig. 22

- ▶ Position 8mm spacer at position 2 between bracket 1 and veh..
- ▶ Position perforated bracket at position 3 between vehicle and plastic housing.

2 M8x40 bolt, spring lockwasher, bracket, 8mm spacer, original vehicle thread

3 Original vehicle bolt

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

8.3 Premounting heater

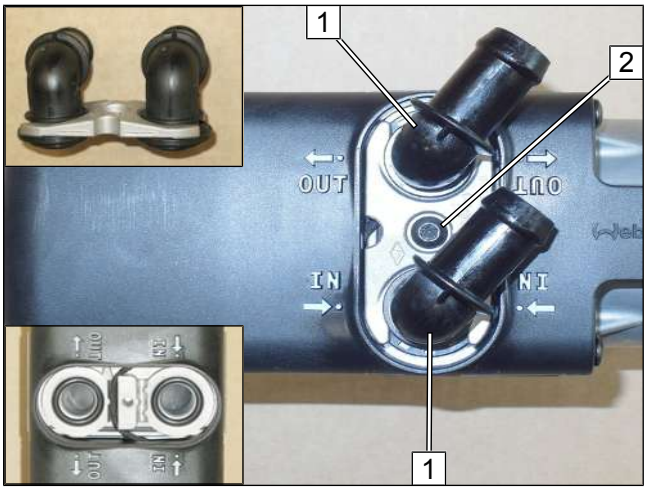


Fig. 23

Observe the general installation instructions of the heater.

1 Water connection piece 90°, sealing ring

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

Premounting bolts

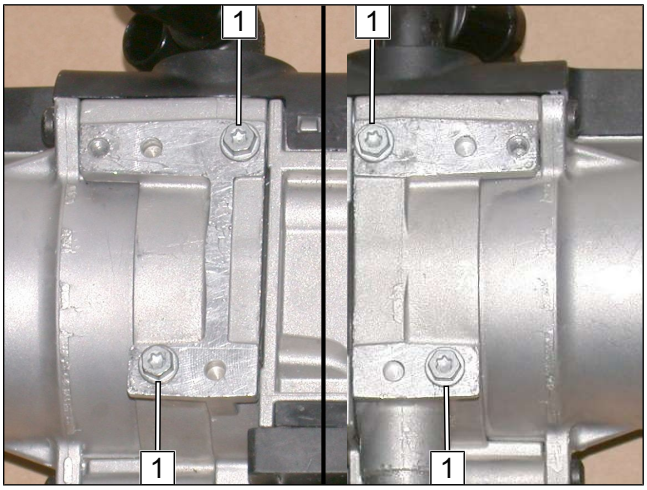


Fig. 24

- ▶ Screw M5x13 self-tapping bolt 1 in available holes by a max. of 3 thread turns. Remove bolts again.

8.4 Heater installation

Mounting heater

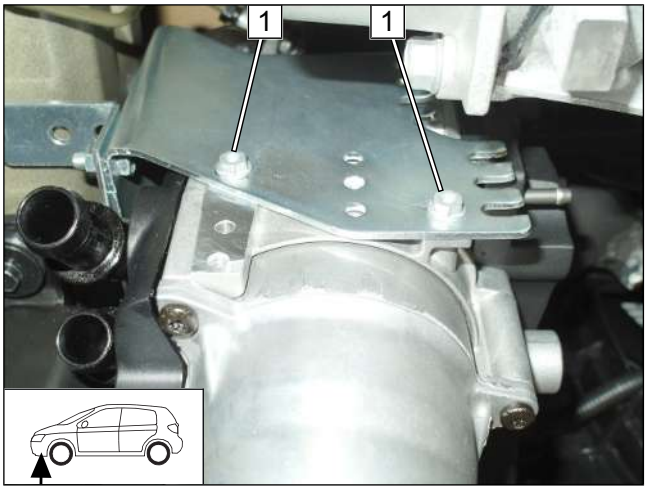


Fig. 25

Observe the general installation instructions of the heater.

1 M5x13 self-tapping bolt

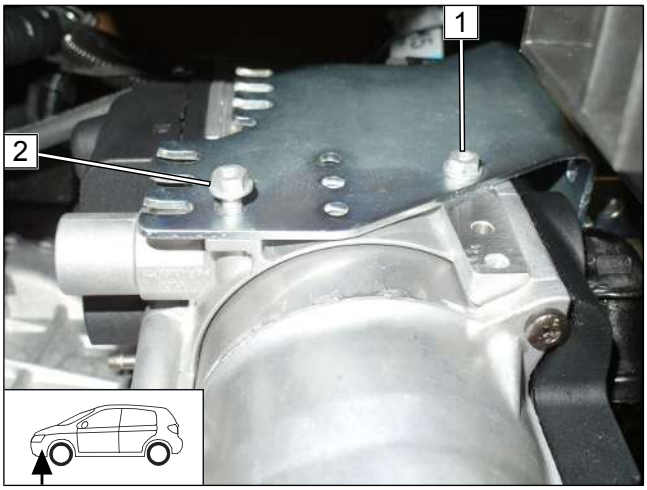


Fig. 26

▶ Start turning in M5x13 self-tapping bolt **2** by only 3 threads. It will be tightened later.

1 M5x13 self-tapping bolt

Mounting heater wiring harness

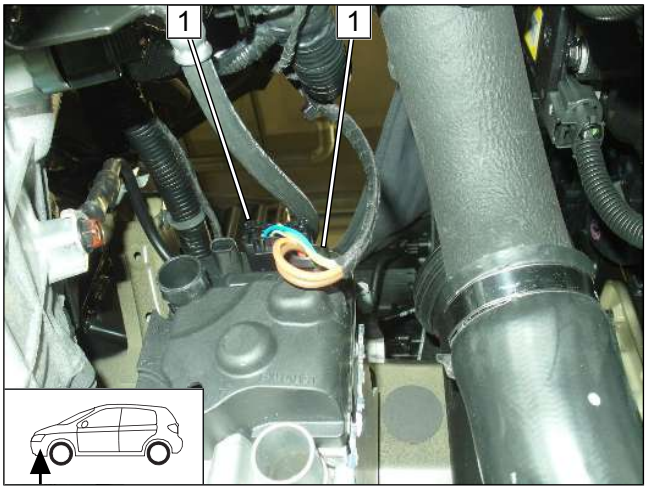


Fig. 27

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

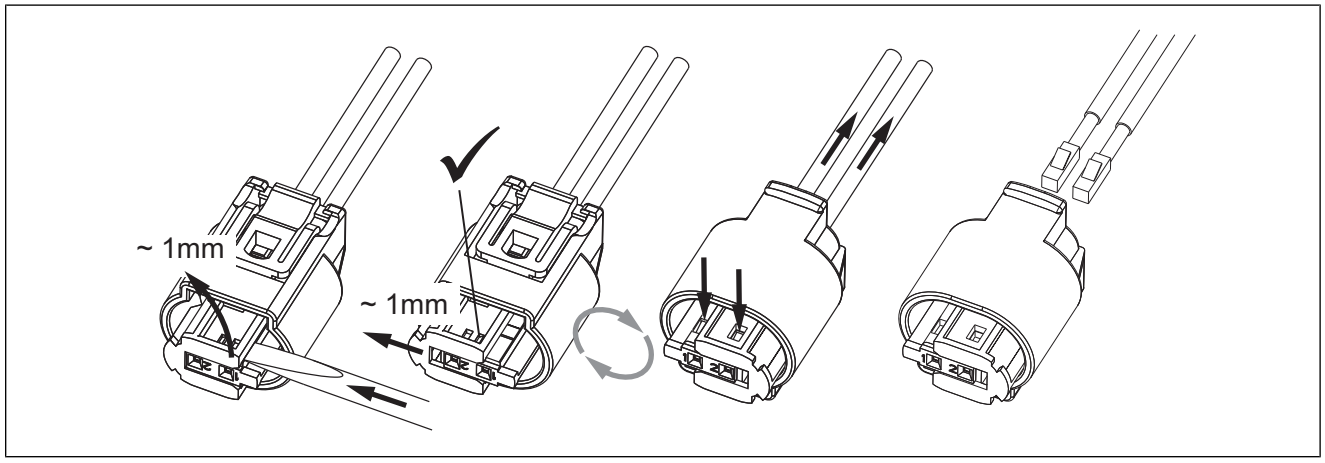


Fig. 28

9.1 Routing fuel line

Connection to heater

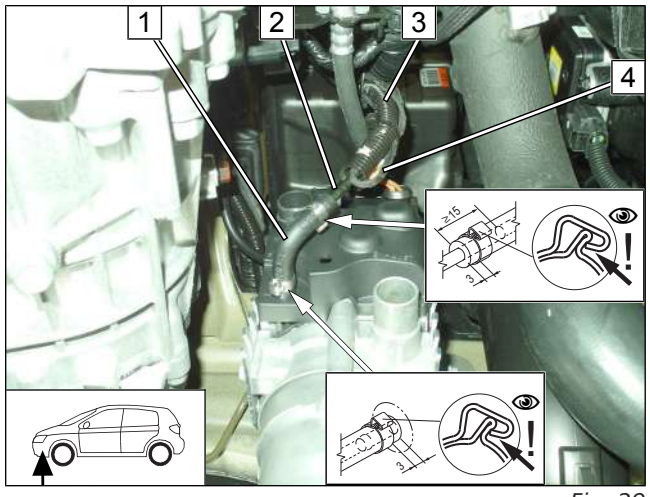


Fig. 29

- ▶ Draw fuel line [2] and fuel pump wiring harness [4] into corrugated tube [3] and route it into the engine compartment.

[1] 90° moulded hose, 10mm dia. clamp [2x]

Routing fuel line

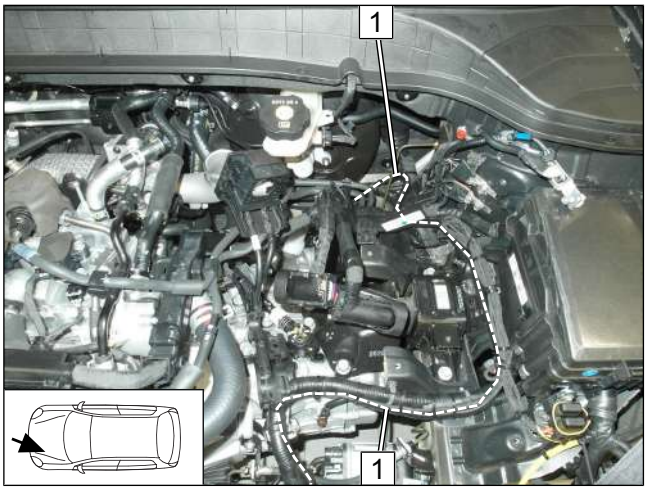


Fig. 30

▶ Route corrugated tube with fuel line and fuel pump wiring harness **1** to the underbody as shown in the fig..

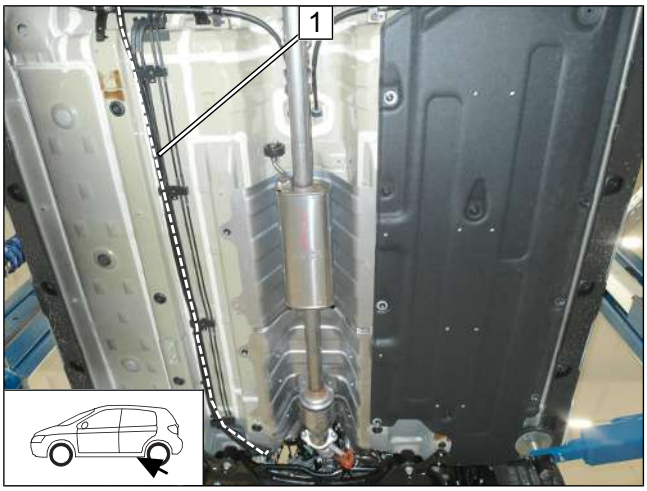


Fig. 31

▶ Route fuel line and fuel pump wiring harness **1** on the original vehicle lines to the installation location of the fuel pump.

Shortening perforated bracket

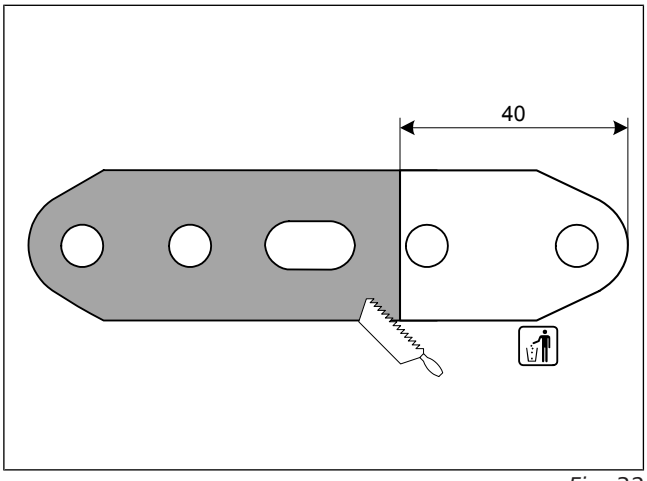


Fig. 32

Premounting fuel pump

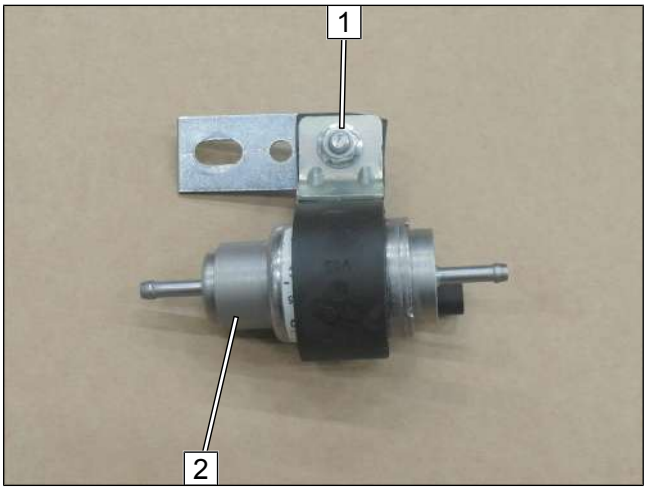


Fig. 33

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

2 Fuel pump

Mounting fuel pump

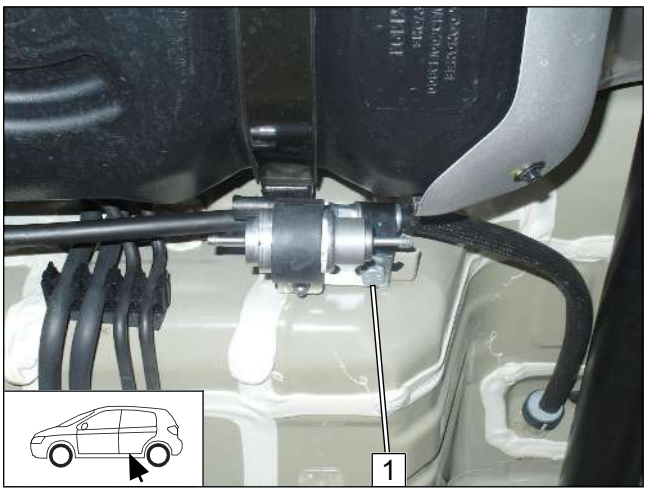


Fig. 34

▶ Remove and discard original vehicle bolt at position 1.

1 M8x20 bolt, spring lockwasher, large diameter washer

Mounting fuel pump connector

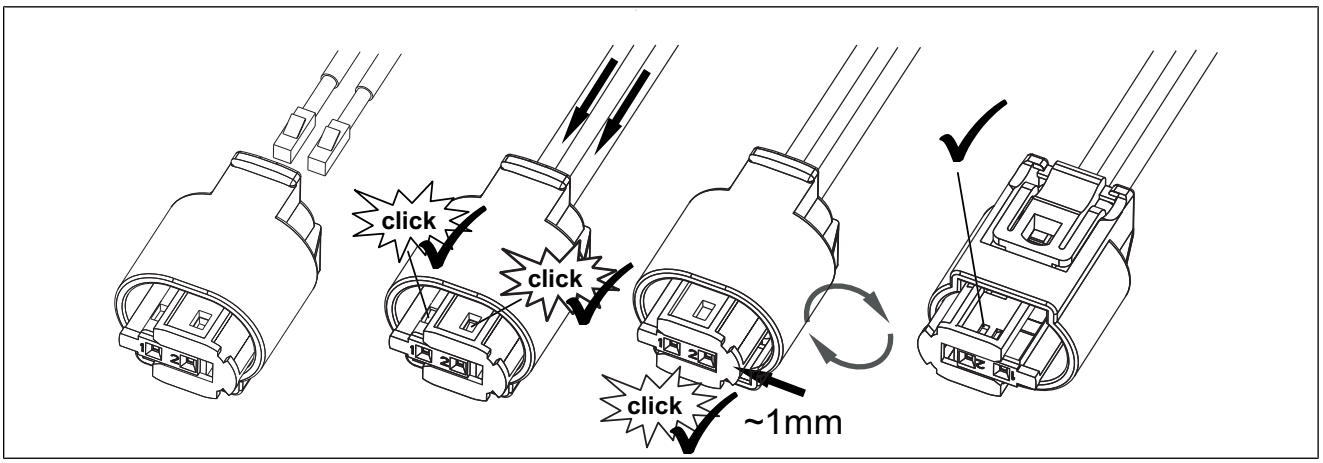


Fig. 35

Connecting fuel pump

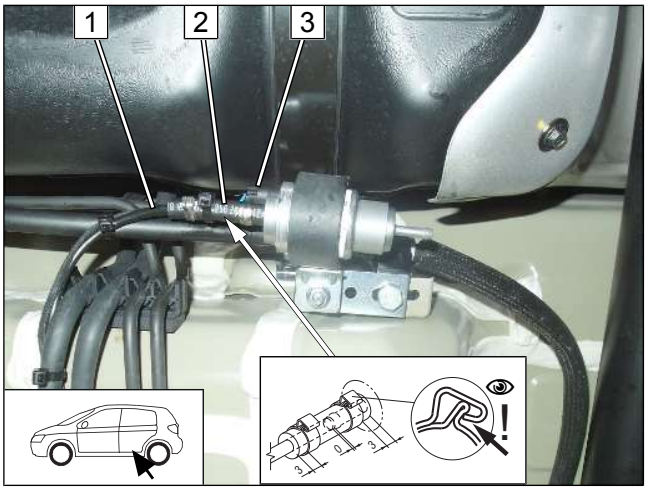


Fig. 36

1 Heater fuel line
2 Hose section, 10mm dia. clamp [2x]
3 Fuel pump wiring harness, connector X7 mounted

9.2 Installing FuelFix

Removing rear seat

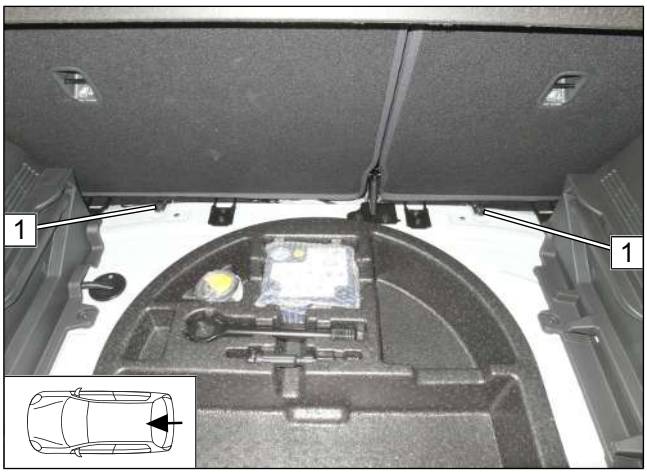


Fig. 37

▶ Unclip rear seat in the front area and remove original vehicle bolt at position 1.

Copying hole pattern

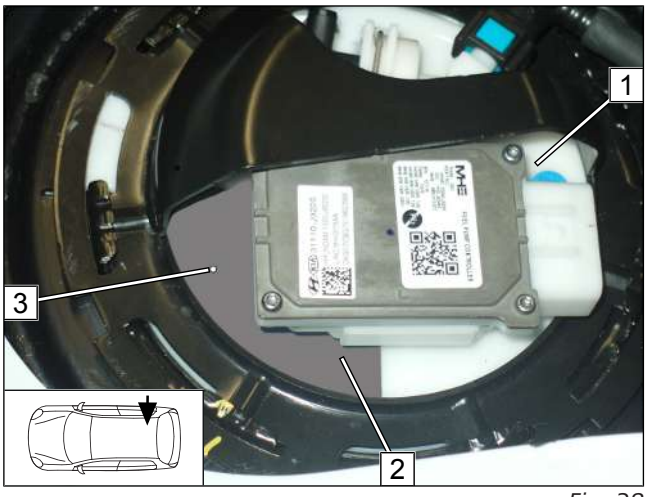


Fig. 38

Observe the installation instructions of the tank extracting device.

▶ Work steps F1, F2

1 Tank fitting
2 Cut out and position drilling template as shown in fig..
3 Copying hole pattern

Hole for FuelFix

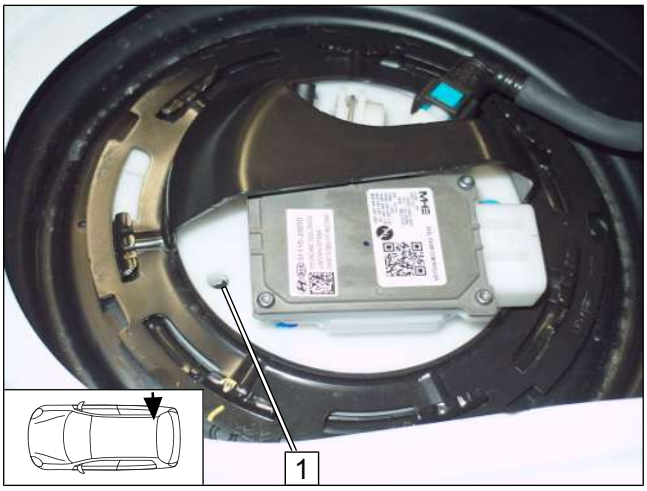


Fig. 39

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

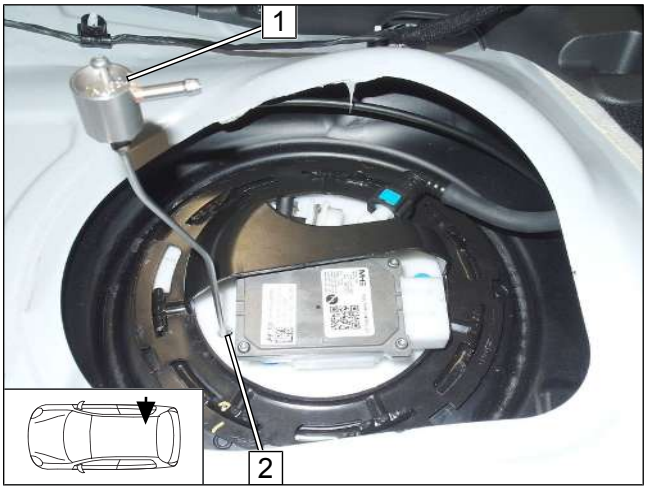


Fig. 40

Fig. 41

▶ Work steps F4, F5

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

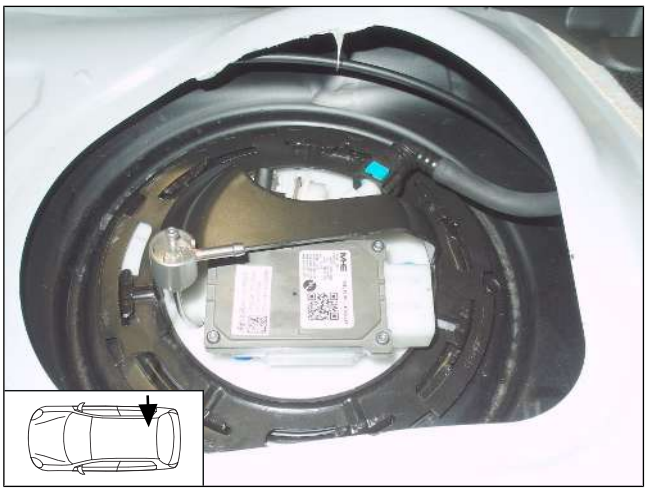


Fig. 42

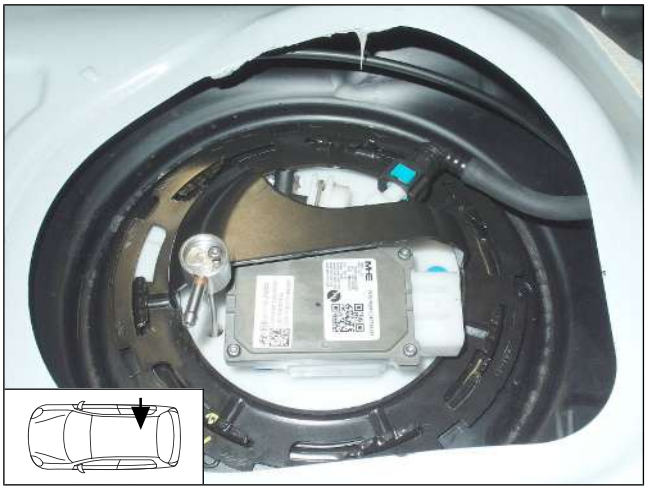


Fig. 43

Aligning FuelFix

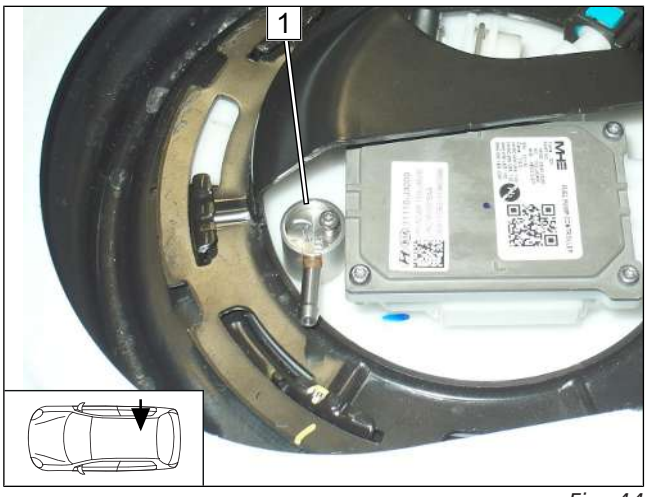


Fig. 44

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

Connecting fuel line

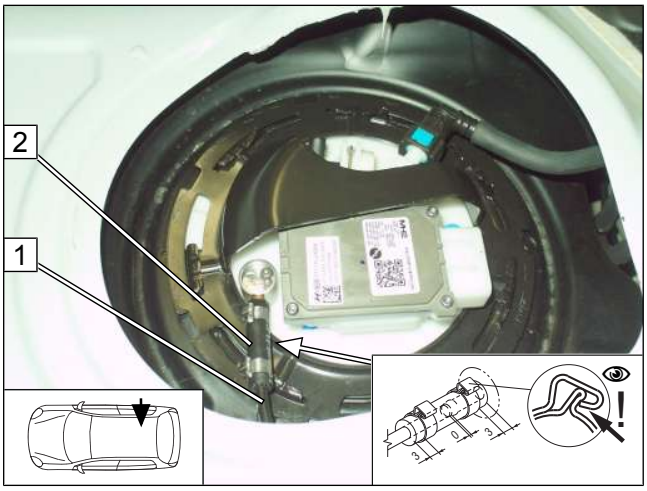


Fig. 45

▶ Work step F6

1 Fuel line

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

Mounting FuelFix

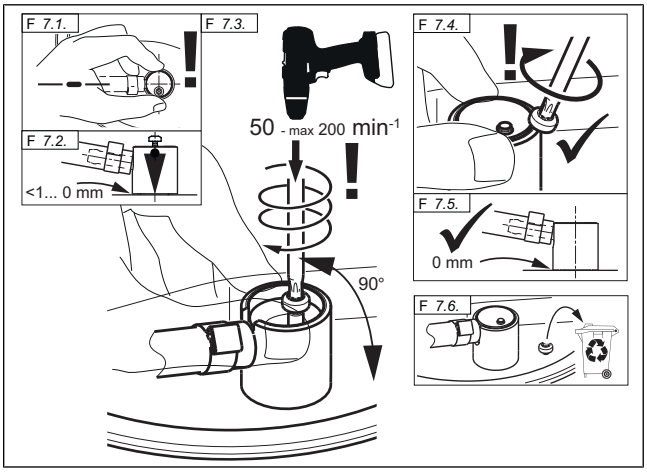


Fig. 46

DANGER

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

▶ Work step F7

Checking firm seating of FuelFix

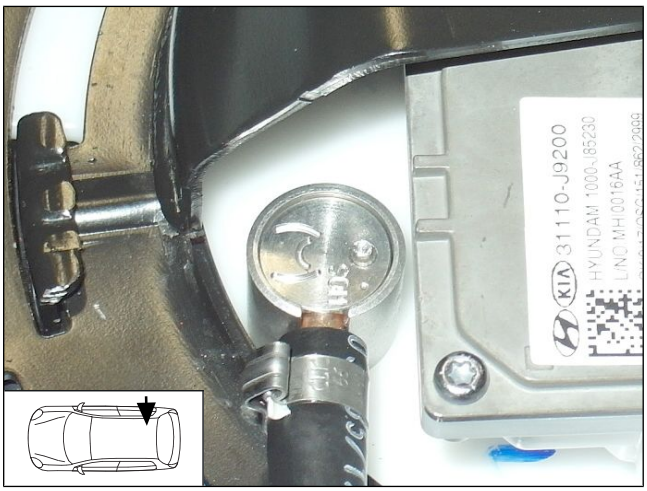


Fig. 47

▶ Work step F8

Securing fuel line

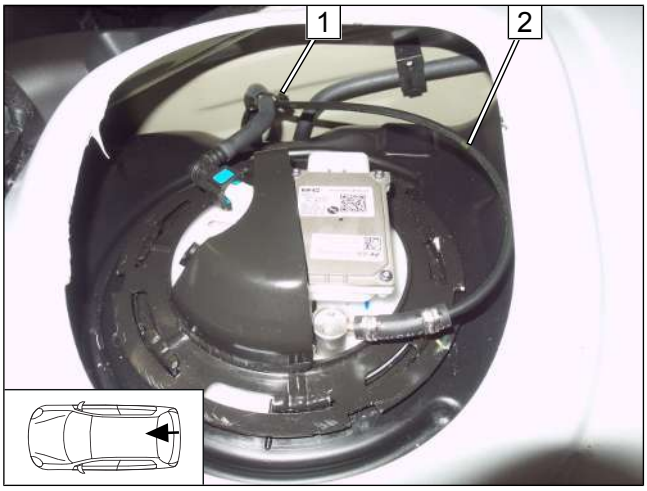


Fig. 48

▶ Attach fuel line 2 using cable tie 1 in a suitable location for tension relief.

9.3 Fuel pump connection

Connecting fuel line of FuelFix

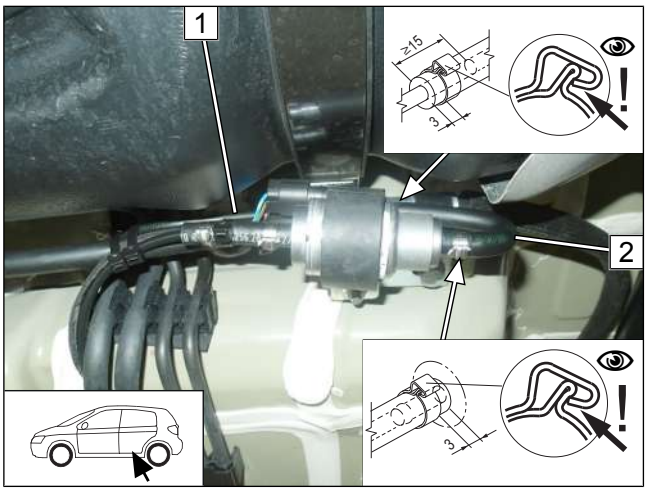


Fig. 49

1 Fuel line FuelFix
2 180° moulded hose, 10mm dia. clamp [2x]

10 Coolant

10.1 Hose routing diagram

'Inline' coolant circuit

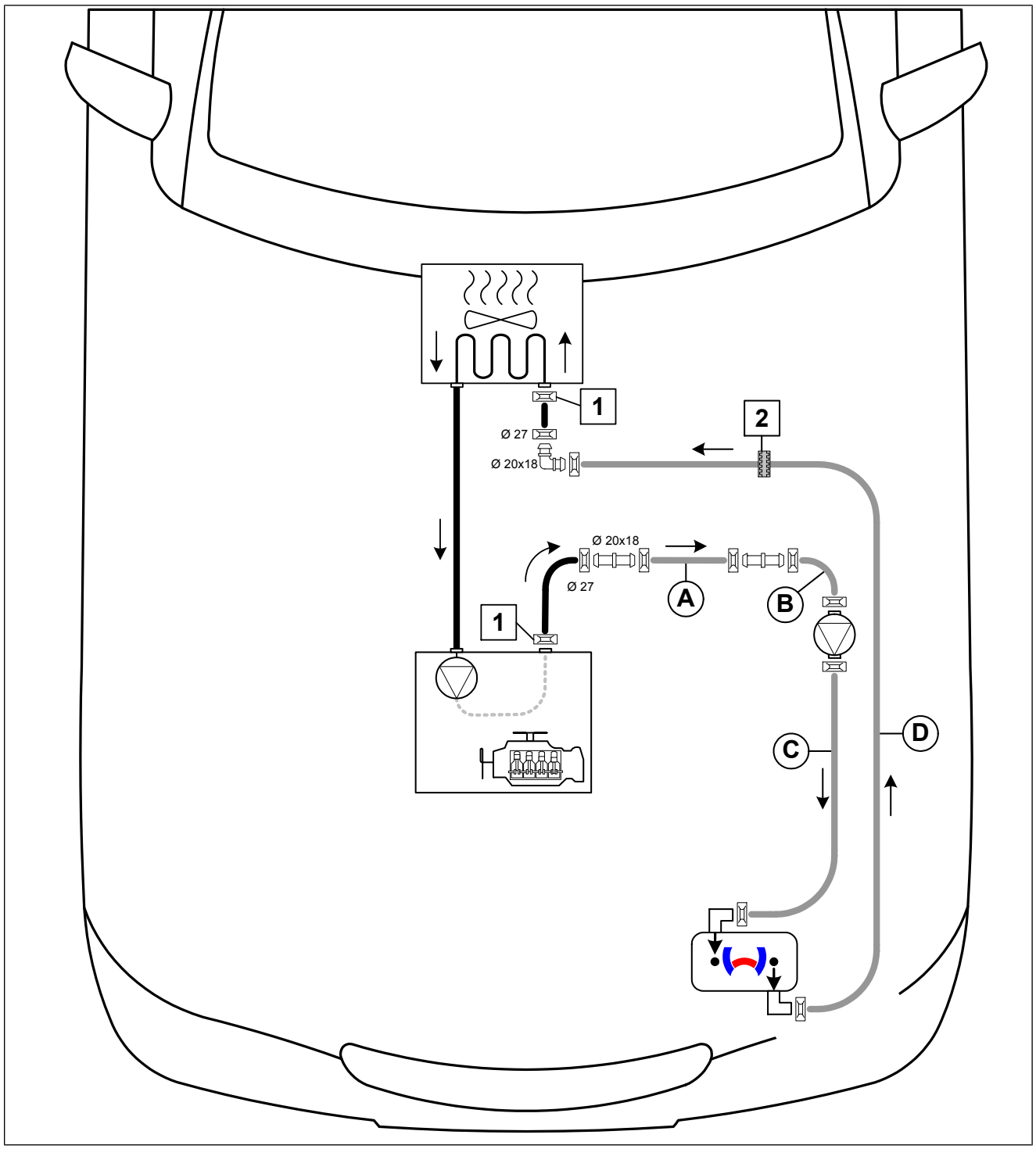


Fig. 50

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

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

1 original vehicle spring clip, 2 black (sw) rubber isolator

10.2 Coolant circuit installation

Preparing coolant pump installation location

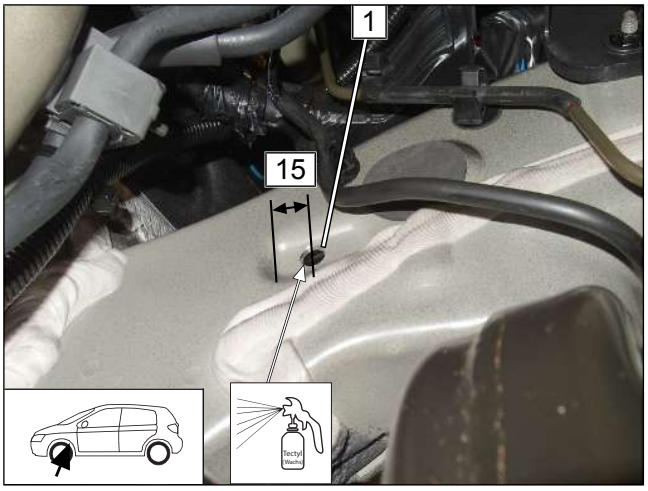


Fig. 51

▶ Copy hole pattern and drill 9mm dia. **1**.

Inserting rivet nut

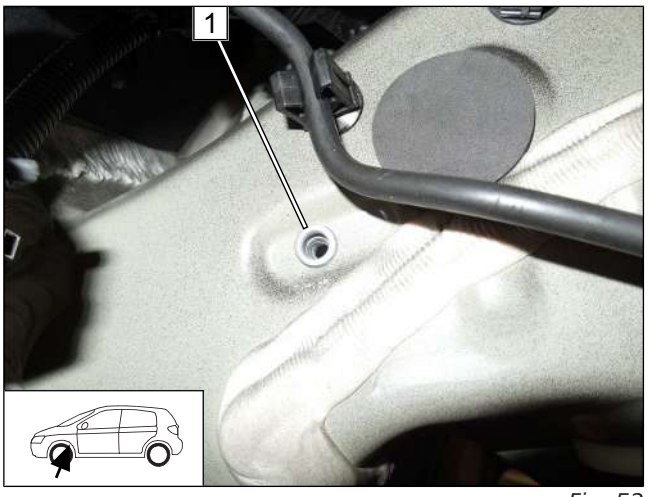


Fig. 52

1 Rivet nut

Preparing coolant pump

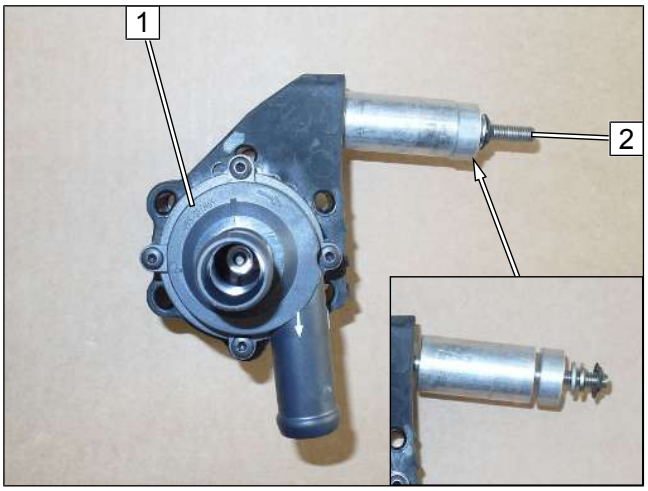


Fig. 53

1 Coolant pump

2 M6x90 bolt, spring lockwasher, large diameter washer, coolant pump mount, 40mm spacer, 8mm spacer, [2] washers, lock washer

Mounting coolant pump

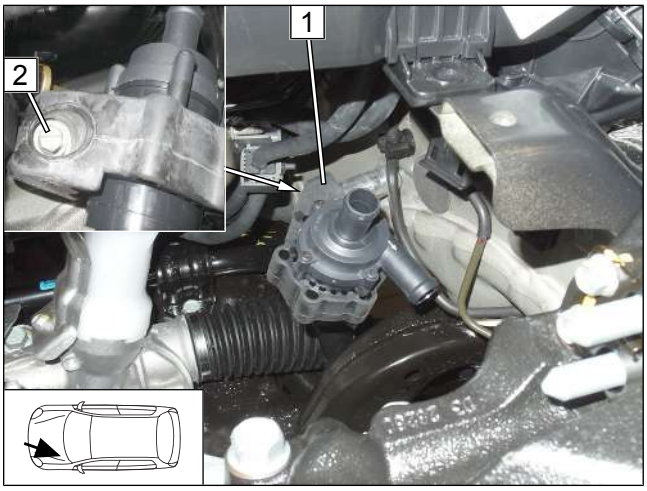


Fig. 54

1 Coolant pump
2 M6x85 bolt on premounted rivet nut

Removing original vehicle hose

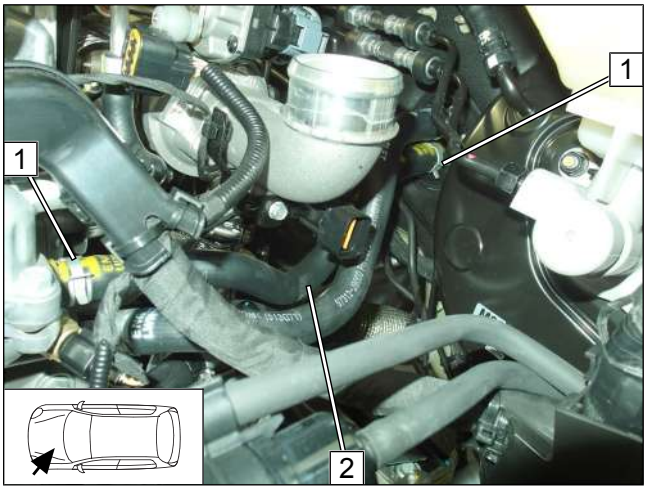


Fig. 55

1 Original vehicle spring clip
2 Engine outlet / heat exchanger inlet hose

Cutting point

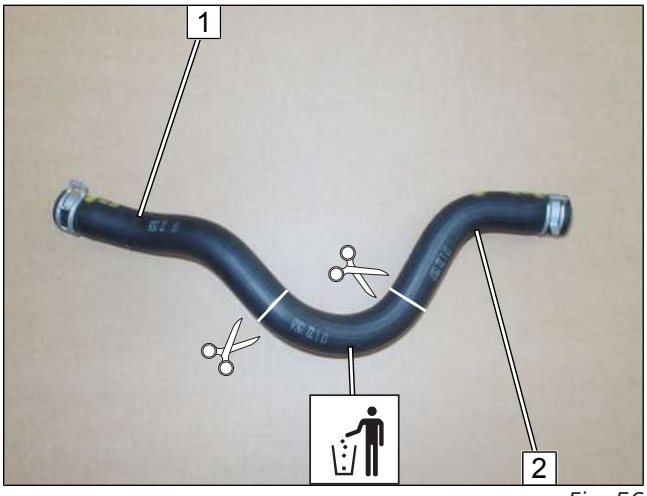
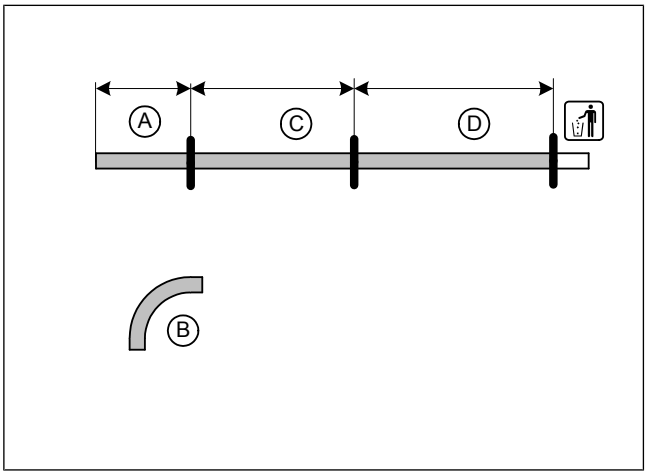


Fig. 56

1 Engine outlet hose section
2 Heat exchanger inlet hose section

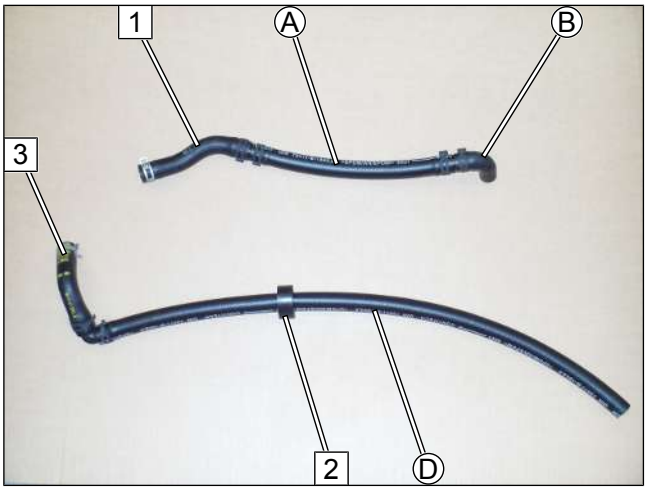
Preparing hoses



A	300
B	18mm dia., 90°
C	500
D	760

Fig. 57

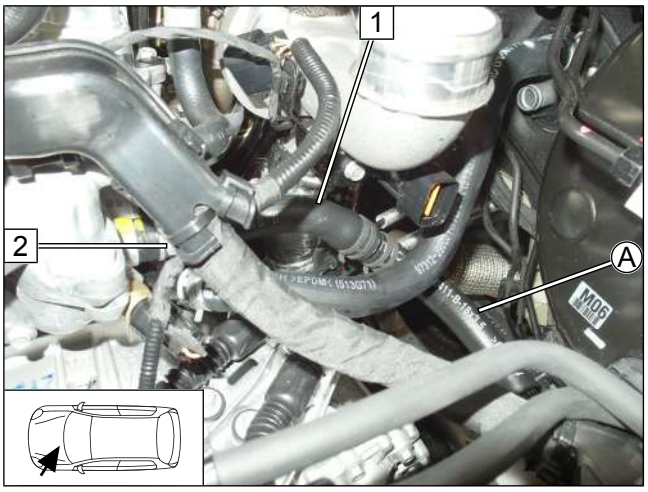
Preparing hoses **A** and **D**



1 Engine outlet hose section
2 Position black (sw) rubber isolator
3 Heat exchanger inlet hose section

Fig. 58

Connecting engine outlet



1 Engine outlet hose section
2 Original vehicle spring clip

Fig. 59

Connecting coolant pump

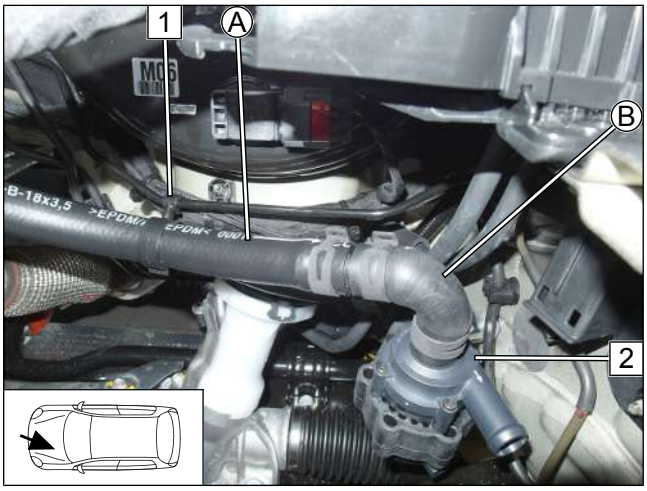


Fig. 60

1 Hose bracket between hose **A** and original vehicle brake line
2 Coolant pump

Mounting angle bracket

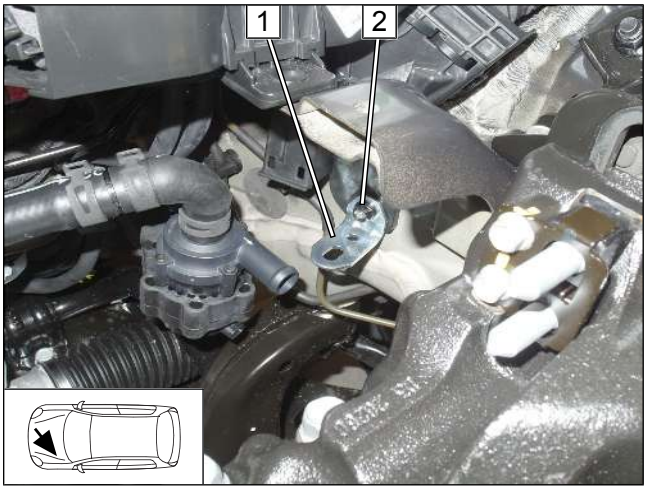


Fig. 61

1 Angle bracket
2 Original vehicle nut

Connecting hose **C**

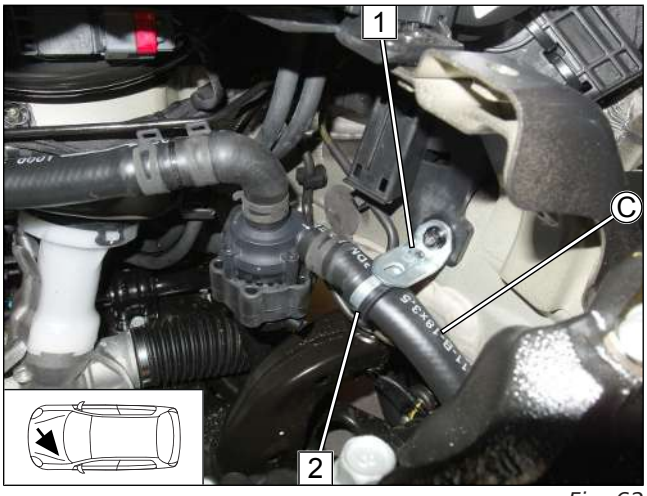


Fig. 62

1 M6x16 bolt, flanged nut
2 Rubber-coated p-clamp

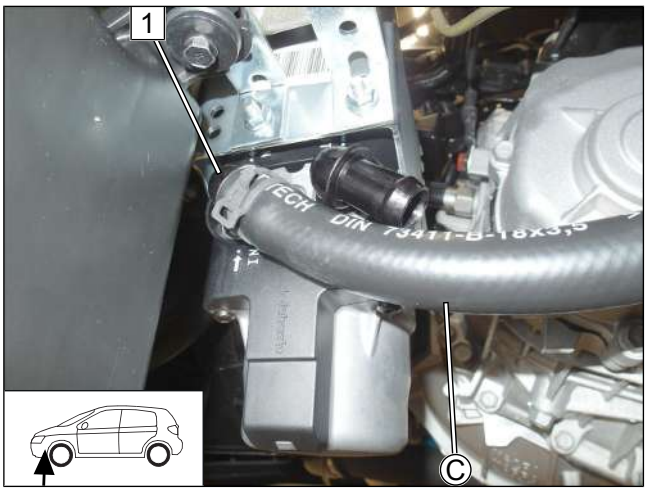


Fig. 63

1 Heater/IN connection piece

Connecting heat exchanger inlet

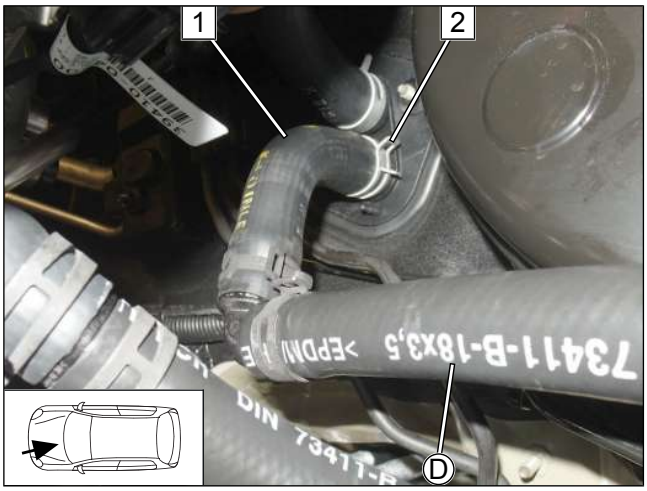


Fig. 64

1 Heat exchanger inlet hose section
2 Original vehicle spring clip

Routing hose **D**

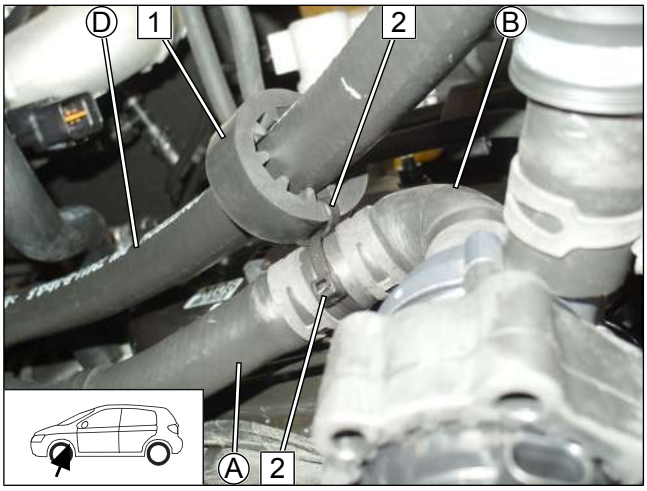


Fig. 65

1 Position black (sw) rubber isolator
2 Cable tie

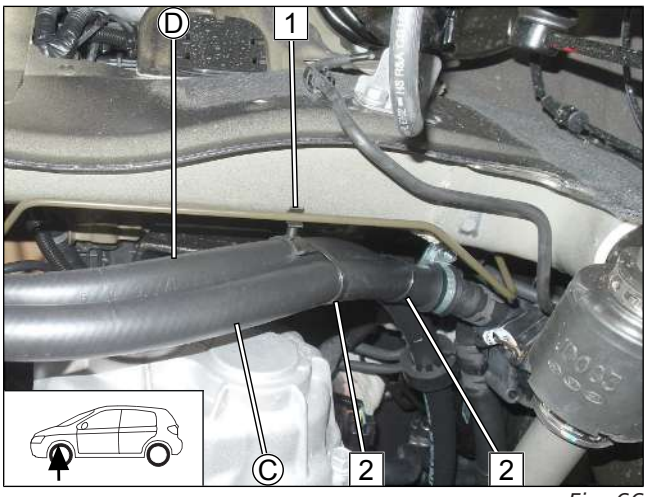


Fig. 66

1 Hose bracket between hose **D** and original vehicle brake line

2 Cable tie

Connecting hose **D**

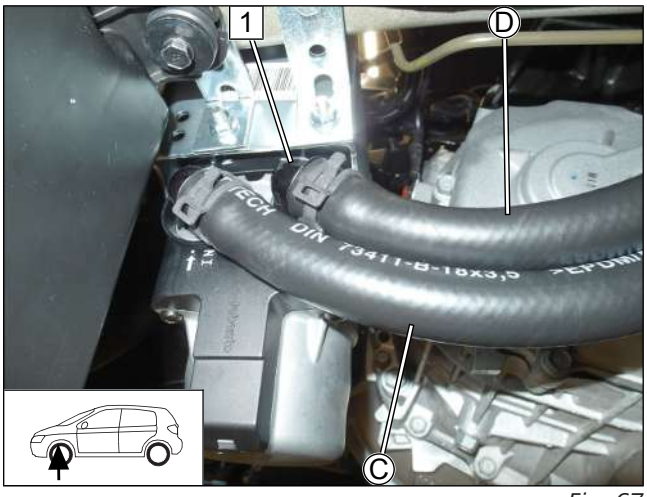


Fig. 67

1 Heater/OUT connection piece

Routing and connecting coolant pump wiring harness

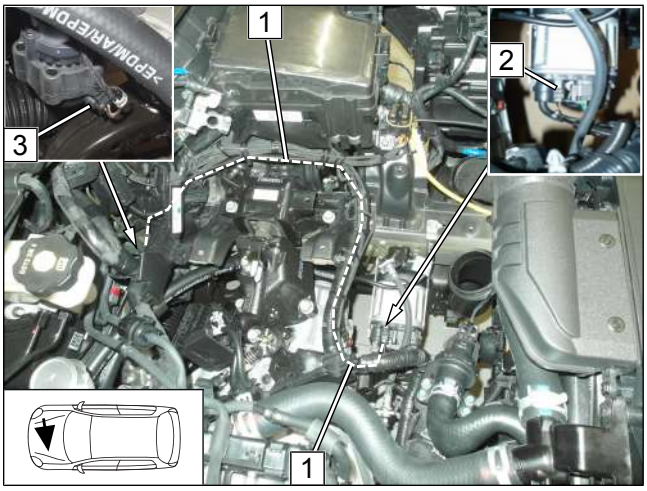


Fig. 68

▶ Route coolant pump wiring harness 1, as shown in the figure, along original vehicle lines to the heater installation location and attach using cable ties.

2 Connecting heater

3 Connecting coolant pump

11 Combustion air

Preparing combustion air pipe **s1**

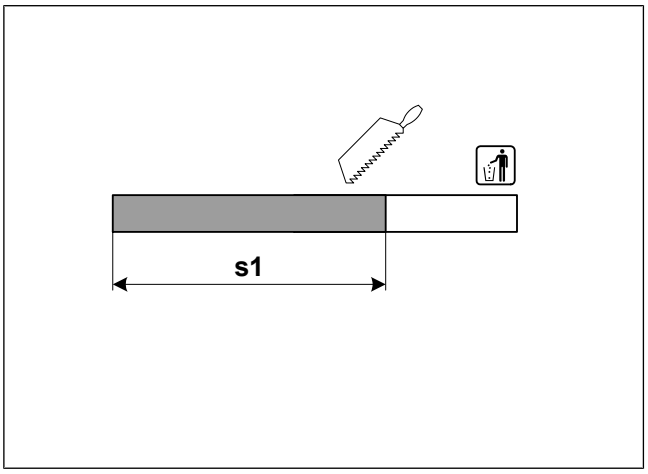


Fig. 69

s1	280

Mounting combustion air pipe **s1**

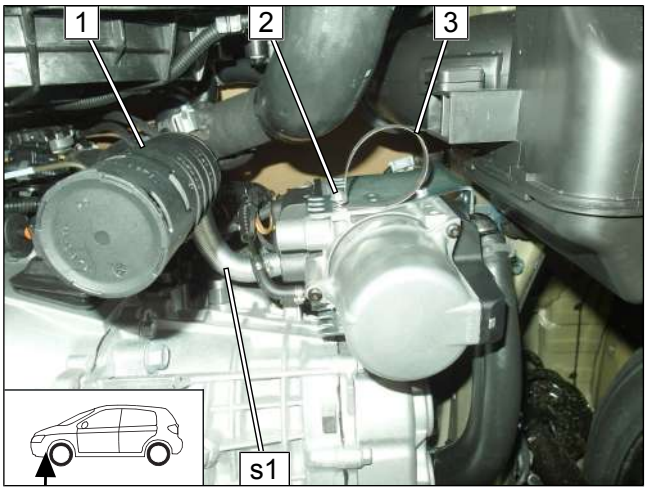


Fig. 70

1 Combustion air intake silencer
2 Mount M5x13 self-tapping bolt loosely
3 51mm dia. clamp

Mounting combustion air intake silencer

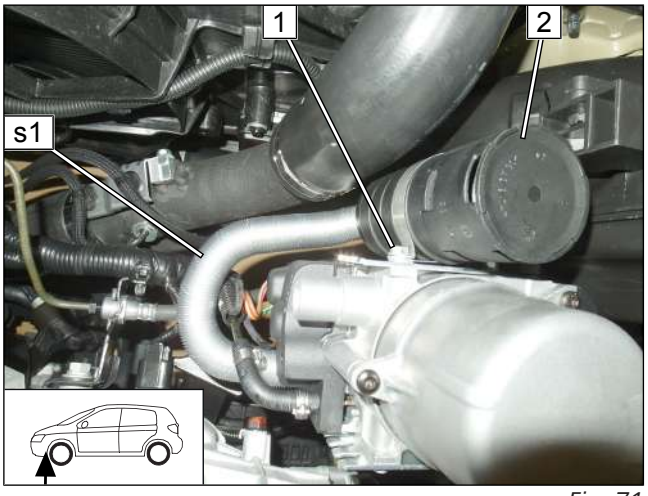


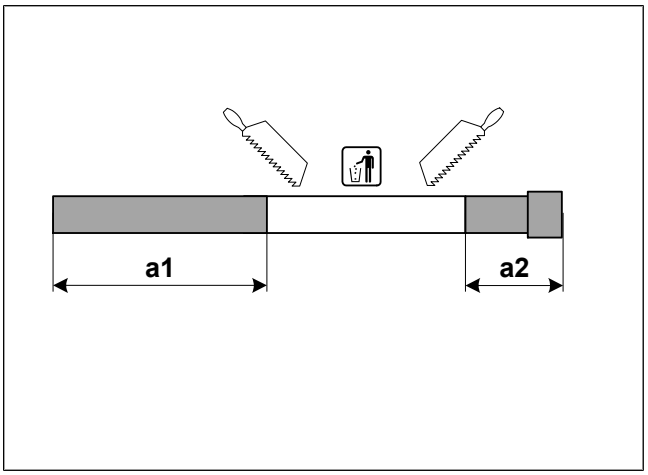
Fig. 71

Observe the installation instructions of the combustion air intake silencer.

1 Tighten 5x13 self-tapping bolt
2 Combustion air intake silencer

12 Exhaust

Preparing exhaust pipe



a1	100
a2	70

Fig. 72

Preparing perforated bracket

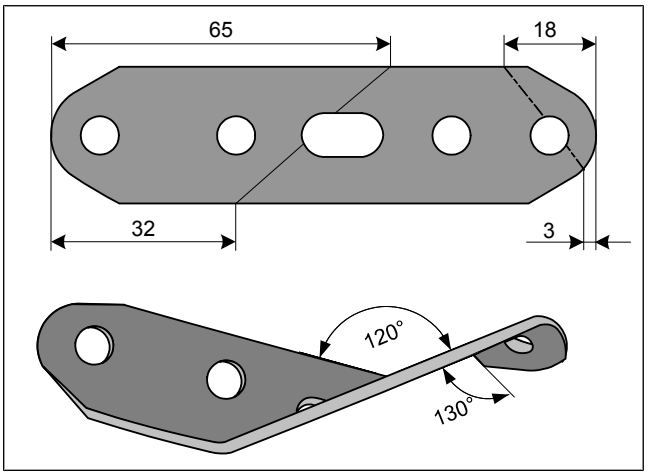


Fig. 73

Premounting exhaust silencer

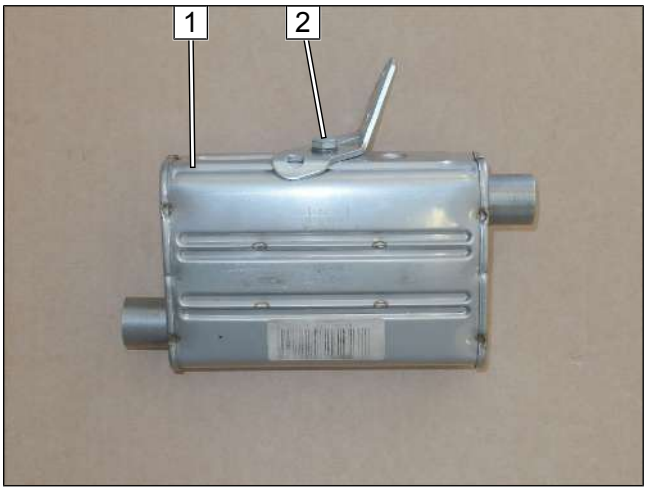


Fig. 74

1 Exhaust silencer

2 M6x16 bolt, spring lockwasher, perforated bracket

Mounting exhaust silencer

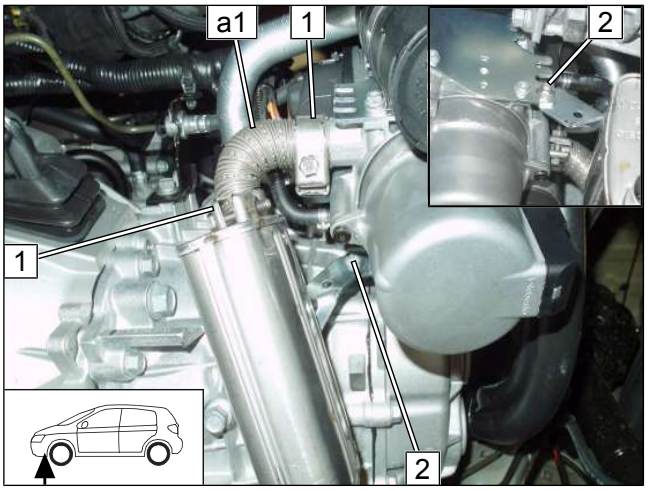


Fig. 75

1 Hose clamp

2 M5x13 bolt, perforated bracket, heater bracket, flanged nut

Mounting exhaust pipe a2

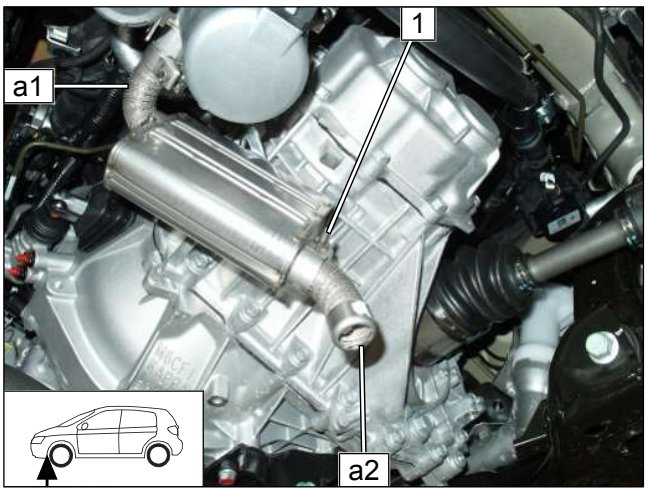


Fig. 76

1 Hose clamp

13 Final work in engine compartment

Drilling hole in wheel-well inner panel

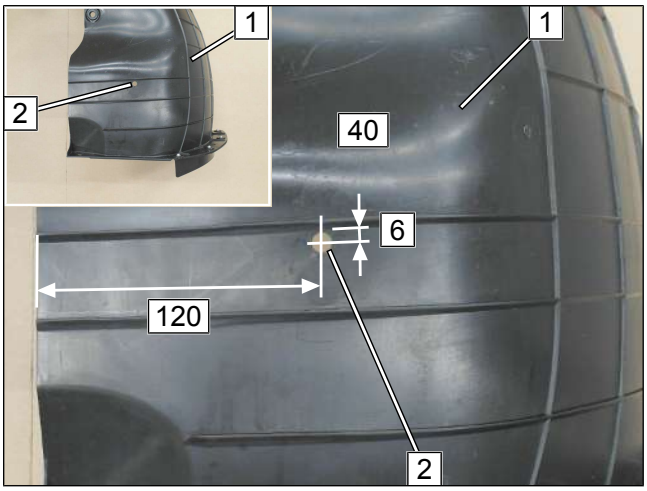


Fig. 77

1 Wheel-well inner panel
2 6mm dia. hole

Mounting wheel-well inner panel and hose bracket

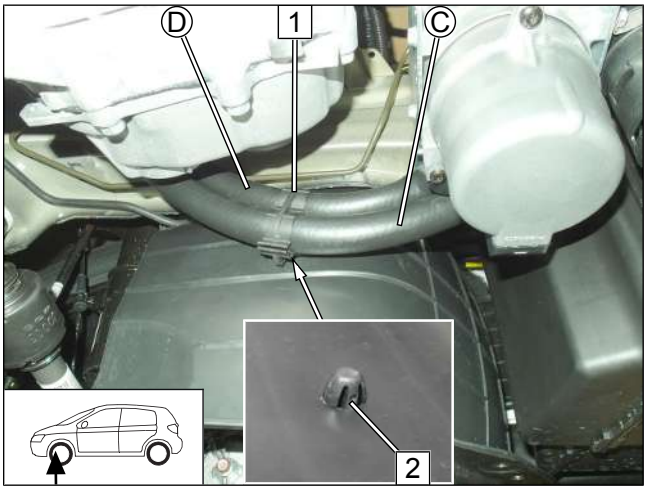


Fig. 78

▶ Check that the hose bracket is correctly assembled at position 2.

1 Hose bracket

Drilling hole in underride protection

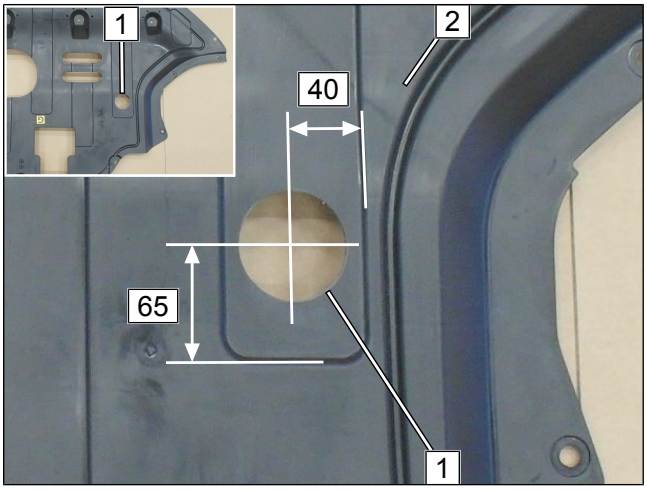


Fig. 79

1 60mm dia. hole
2 Underride protection

Aligning exhaust pipe a2

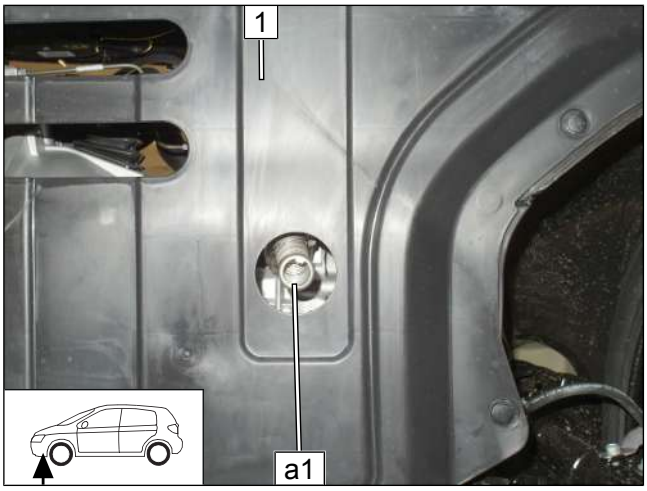


Fig. 80

▶ Align exhaust pipe **a2** with the centre of the hole as shown in the figure.

1 Underride protection

14 Electrical system of passenger compartment

14.1 Mounting cold start system

Integrate the cold start system as per the separate installation documentation 'Cold start for Hyundai Kona petrol'.

14.2 Electrical system preparation

Assigning wires

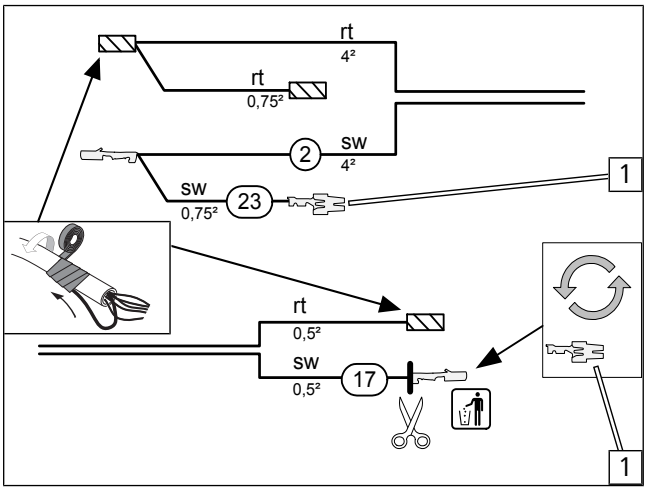


Fig. 81

Wire sections retain their numbering in the entire document.

1 Flat spring contact
2 Black (sw) wire of fan wiring harness
17 Black (sw) wire of power supply wiring harness

Connecting wires to RSH

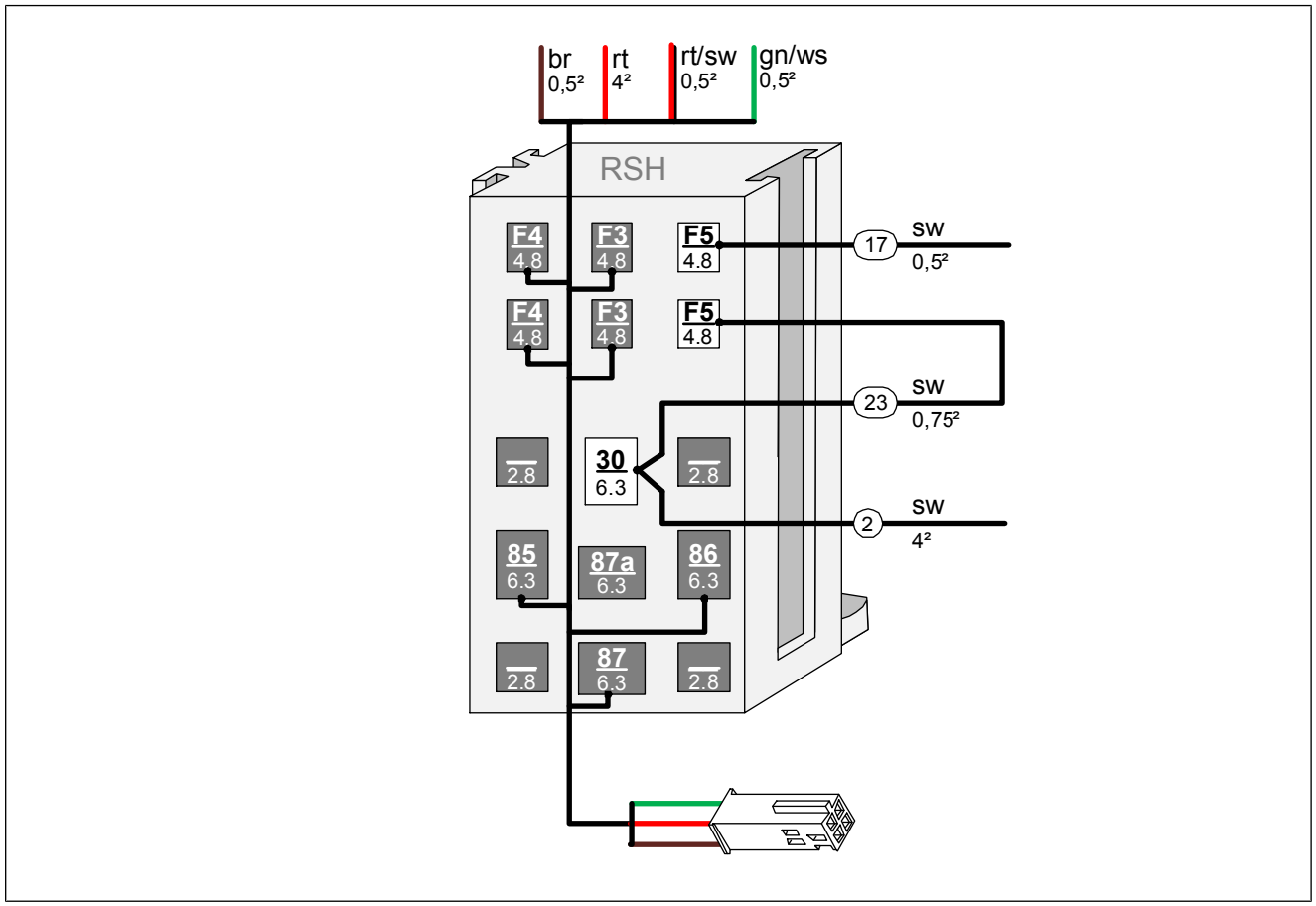


Fig. 82

Preparing angle bracket

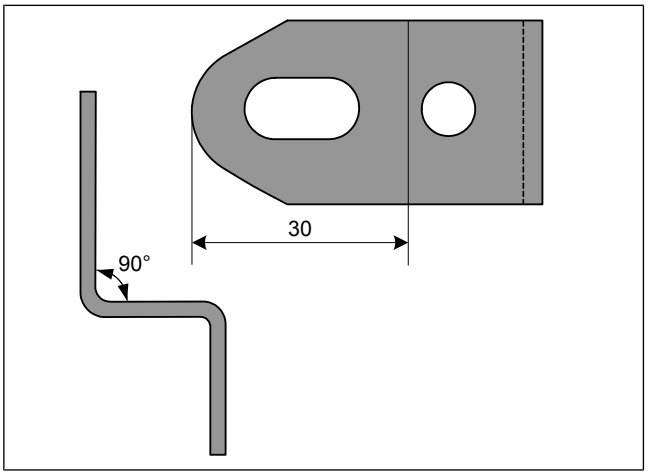


Fig. 83

Premounting RSH

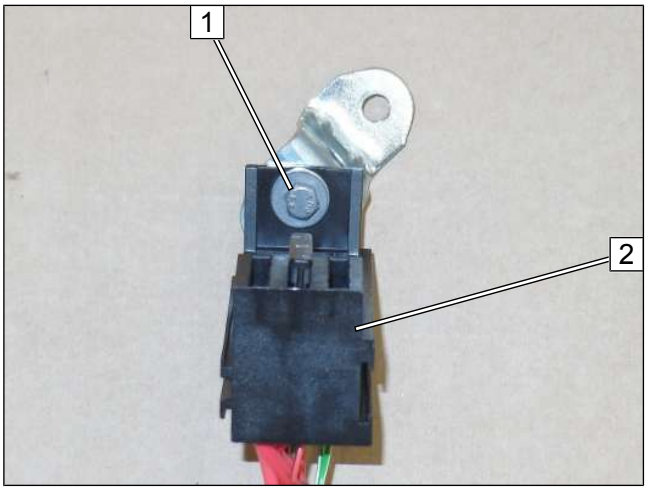


Fig. 84

1 M5x16 bolt, large diameter washer, RSH, angle bracket, large diameter washer, nut

2 RSH

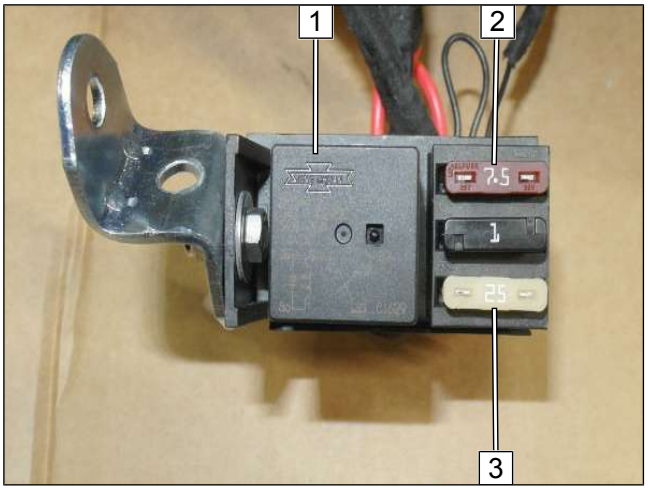


Fig. 85

1 Relay K1

2 7.5A fuse F5

3 25A fuse F4

14.3 Wiring diagram

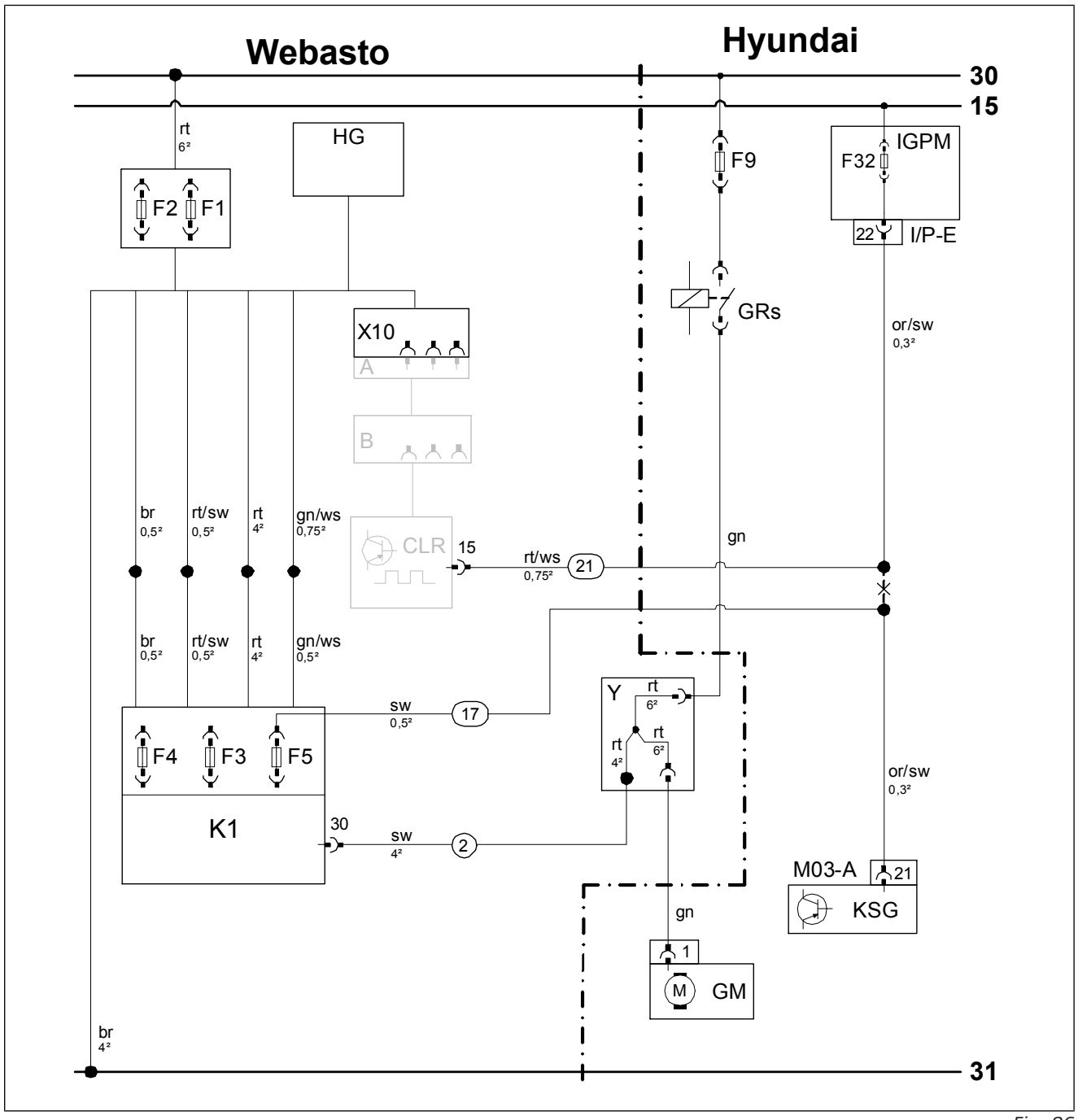


Fig. 86

Legend to wiring diagram

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Explanation
IGPM	Fuse and relay box of passenger compartment	X	Cutting point
F32	Fuse 7.5A	Y	Power adapter
I/P-E	32-pin IGPM connector		
F9	Fuse 40A		
GRs	Fan relay		
KSG	Air-conditioning control unit		
M03-A	40-pin KSG connector		
GM	Fan motor		

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		

14.4 Fan controller

Mounting RSH passenger compartment

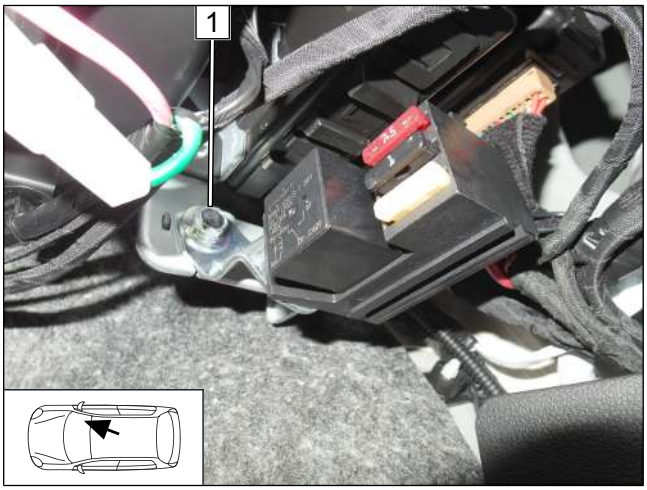


Fig. 87

1 Original vehicle bolt

Connecting same colour wires of wiring harnesses

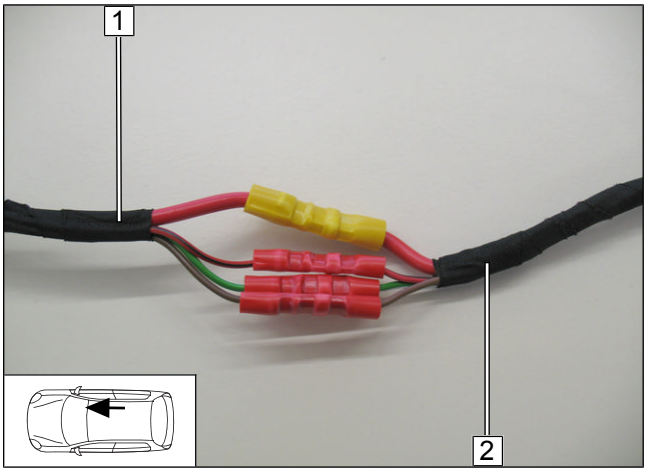


Fig. 88

1 Wiring harness of passenger compartment relay and fuse holder

2 Heater wiring harness

Fan motor connection

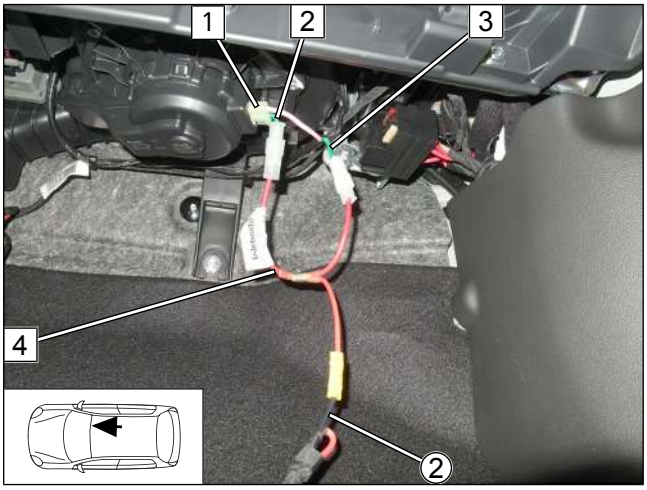


Fig. 89

▶ Connect to 2-pin connector **1** from fan motor.

2 Green (gn) wire of 2-pin connector, pin 1

3 Green (gn) wire of GRs

4 Power adapter

2 Black (sw) wire of fan wiring harness

Connecting KSG

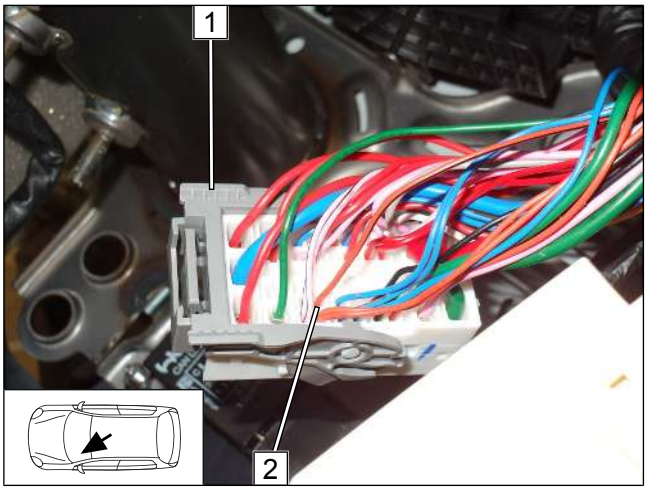


Fig. 90

1 32-pin connector of I/P-E

2 Orange/black (or/sw) wire from pin 22 of fuse F32

Connecting air-conditioning control unit

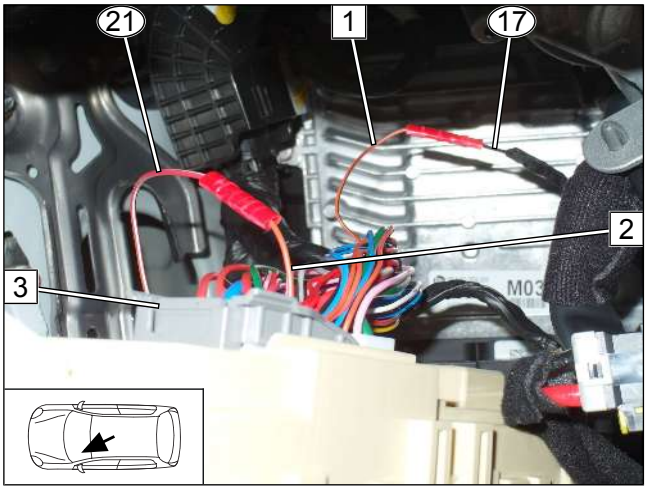


Fig. 91

- ▶ Connection to 32-pin connector I/P-E **3** of passenger compartment fuse and relay box IGPM.
- ▶ Route black (sw) wire **17** of power supply wiring harness to the driver's side.

1 Orange/black (or/sw) wire from connector M03, pin 21

2 Orange/black (or/sw) wire from connector I/P-E, pin 22 of fuse F32

21 Red/white (rt/ws) wire from CLR module/ 15

15 Electrical system of control elements

15.1 MultiControl CAR option

Mounting MultiControl CAR

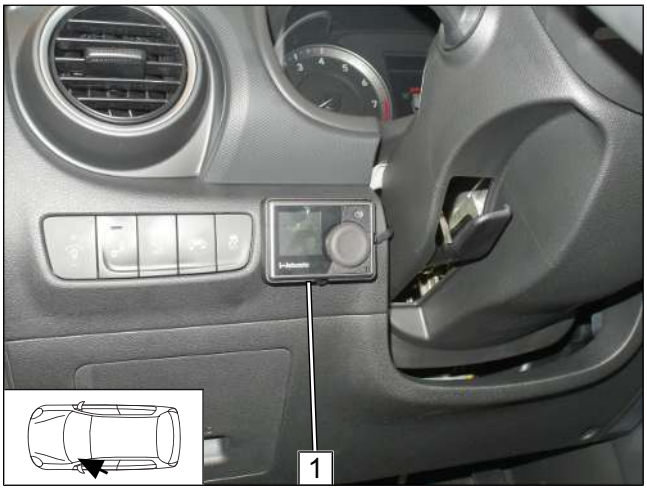


Fig. 92

Observe the MultiControl CAR installation documentation.

1 Installation frame

15.2 Telestart option

Preparing receiver bracket Telestart

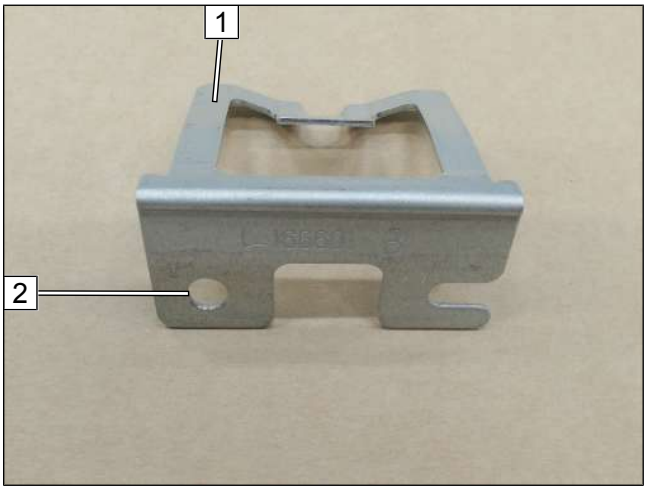


Fig. 93

1 Receiver bracket Telestart

2 Drill hole to 6.5mm dia.

Mounting receiver

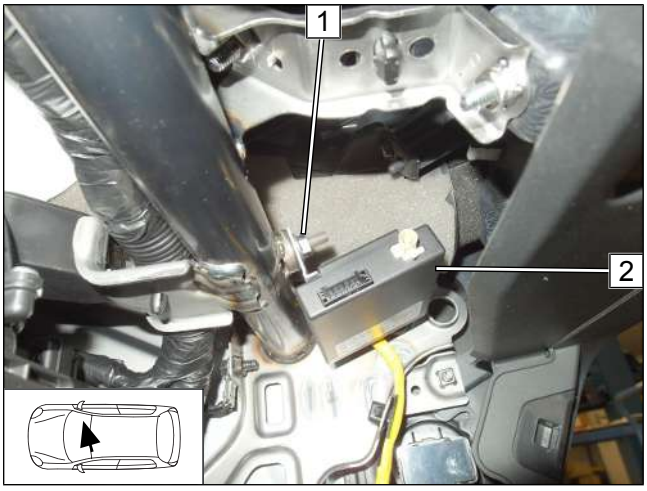


Fig. 94

Observe the Telestart installation documentation.

1 Original vehicle stud bolt, bracket Telestart, flanged nut

2 Telestartreceiver

Mounting temperature sensor T100 HTM

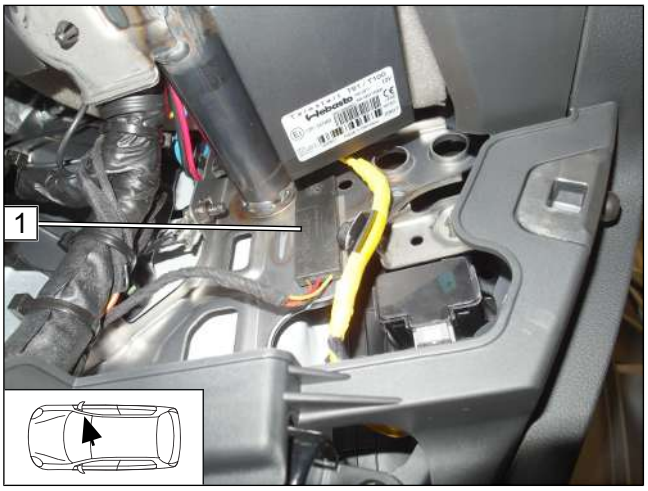


Fig. 95

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

Mounting aerial

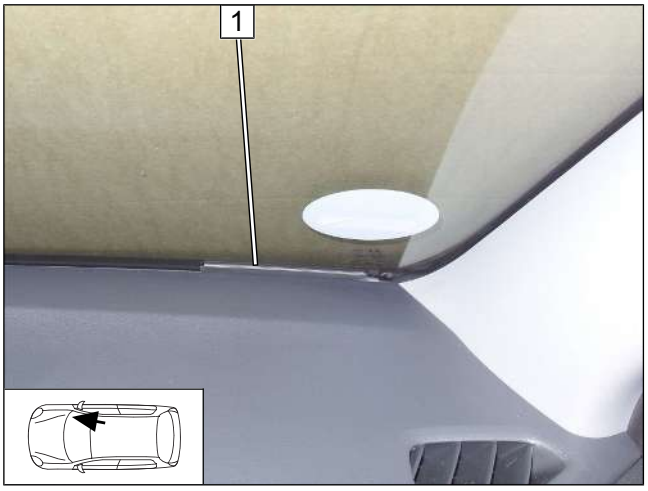


Fig. 96

1 Aerial

15.3 ThermoCall option

Mounting receiver

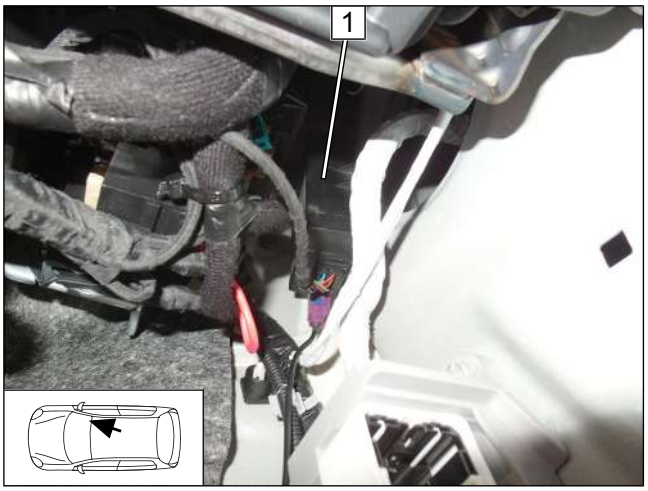


Fig. 97

Observe the ThermoCall installation documentation.

▶ Fasten receiver 1 using double-sided adhesive tape.

Mounting aerial (optional)

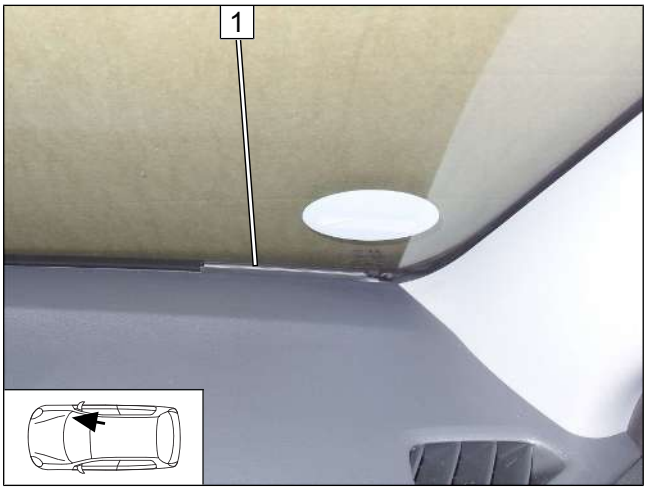


Fig. 98

1 Aerial

16 Final Work

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

- ▶ Mount removed parts in reverse order.

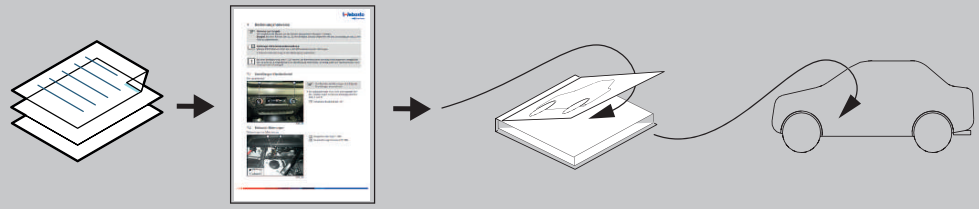
- ▶ Check all hoses, clamps and all electrical connections for firm seating.
- ▶ Insulate and tie back loose lines
- ▶ Spray heater and electrical components with anti-corrosion wax (Tectyl 100K).
- ▶ Connect the battery.

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
- ▶ 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 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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Only within Germany
Tel: 0395 5592 444
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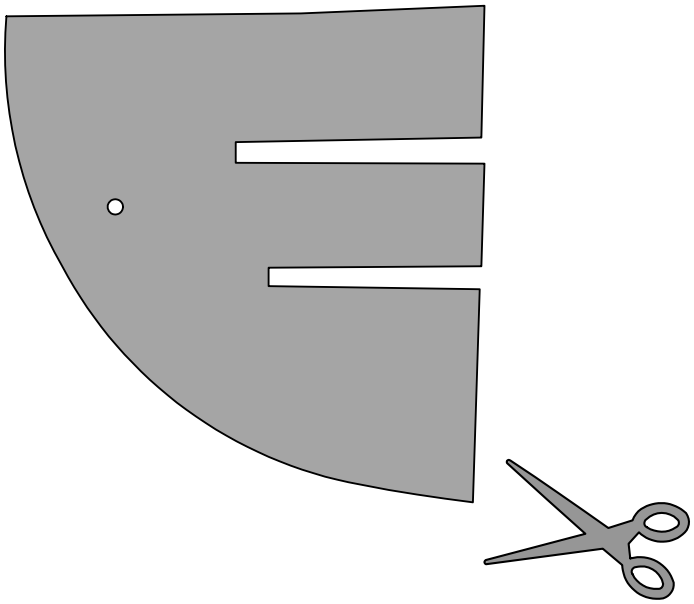
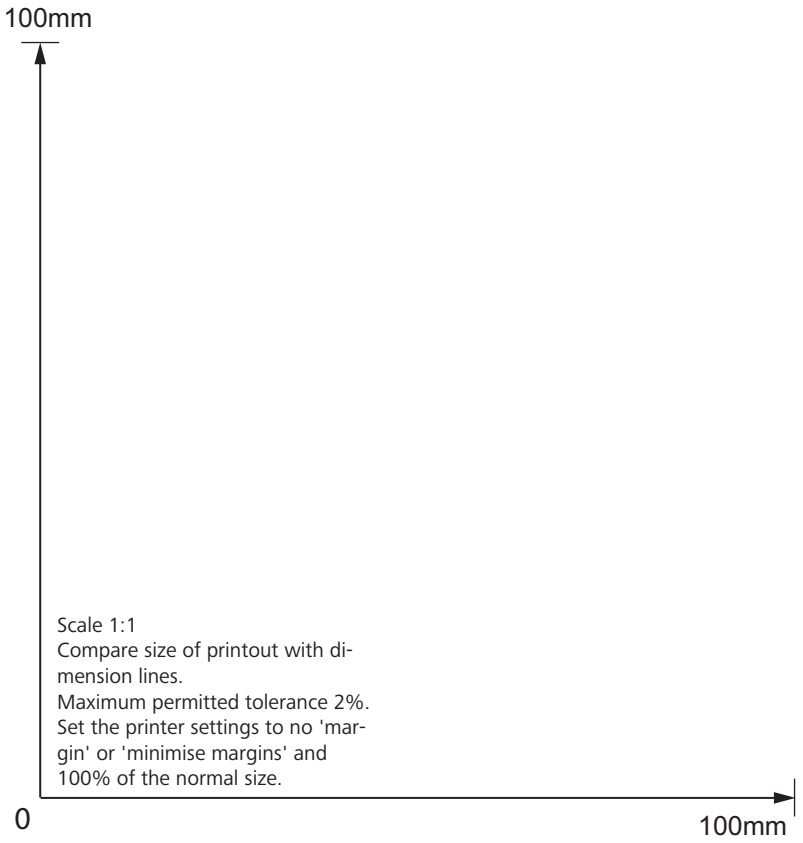
WWW.WEBASTO.COM

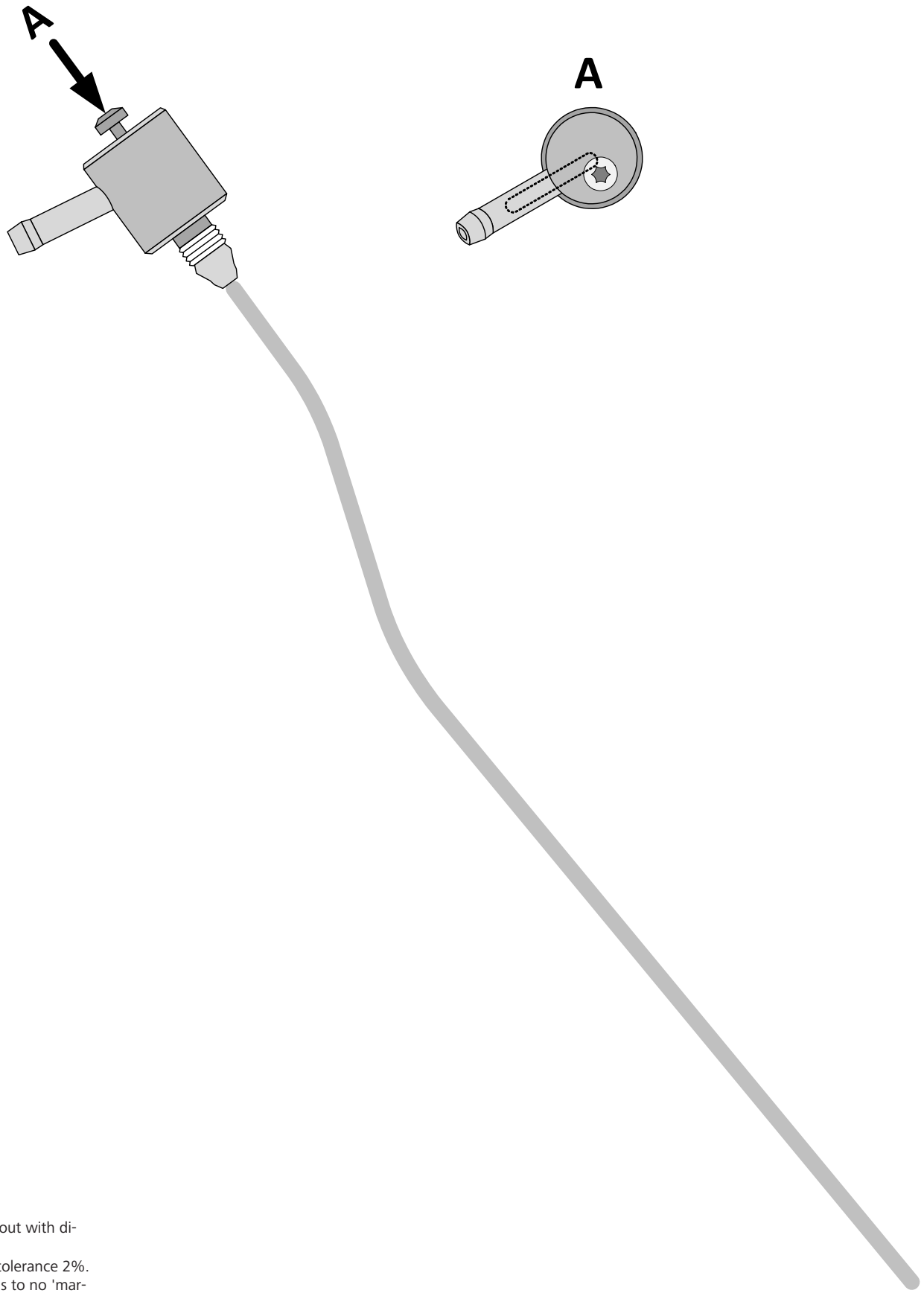
17 Drilling template FuelFix





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 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.

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. 99

Before parking the vehicle, make the following settings:

1 Set temperature to 'HI'
2 Set fan to level '2', max. '3'
3 Air outlet to windscreen

19.2 Installation location of fuses

Fuses in engine compartment

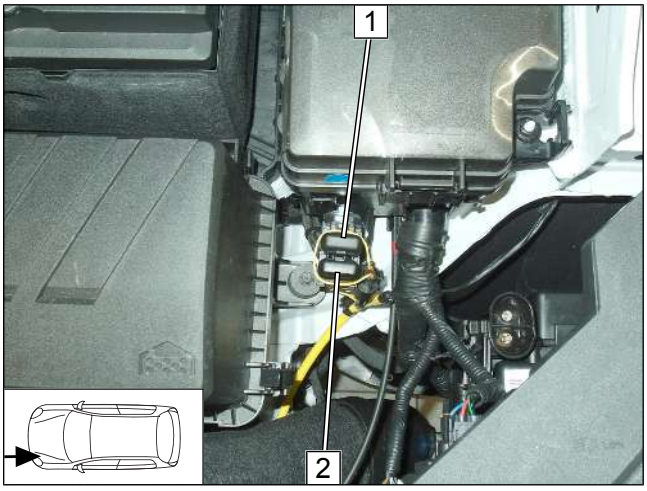


Fig. 100

1 F2 - 30A passenger compartment fan controller main fuse (light green)
2 F1 - 20A heater main fuse (yellow)

Fuses in passenger compartment

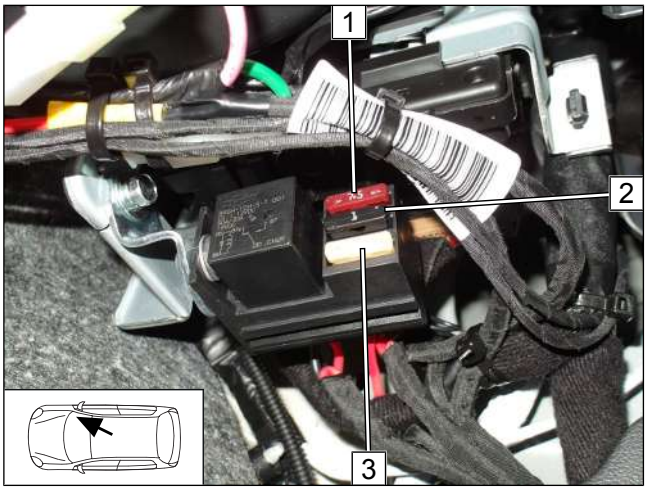


Fig. 101

1 F5 - 7.5A fan controller (brown)
2 F3 - 1A control element fuse (black)
3 F4 - 25A fan fuse (white or transparent)