EN

K

Einbaudokumentation

Thermo Top Evo water heater

Kühlmittelkreislauf "Inline" mit Motorvorwärmung

Suzuki Jimny

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Suzuki	Jimny	GJ	from 2019	e6* 2007/46* 0253*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
1.5P	Petrol	Euro 6d Temp	5-speed SG	75	1462	K15B

Validity	Equipment variants	Model
		Jimny
Verified equipment variants	Manual air-conditioning	x
	Automatic air-conditioning	x
	Front fog lights	x
	4 WD	x

Total installation time	Note
7.0 hours	

Contents

1 List of abbreviations

AAC	Automatic air-conditioning
ASH	Spacer bracket
Fig.	Figure
HG	Heater
MCC	MultiControl (control element)
PWM	Pulse width modulator
RSH	Relay and fuse holder of passenger compartment
SG	Manual transmission
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
Installation kit for Suzuki Jimny 2019 petrol	1327130A
Additional automatic A/C kit for Suzuki Ignis 2017 and Suzuki Jimny 2019 petrol	1326057_
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list

2.3 Information on Total Installation Time

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

2.4 Installation recommendations

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

3 About this document

3.1 Purpose of the document

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

Thermo Top Evo heater

3.2 Warranty and liability

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

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

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

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

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

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

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

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

3.2.1 Statutory regulations governing installation

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

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

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

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

Regulations and legal requirements

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

3.3.1 Safety information on installation

Danger posed by live parts

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

Danger of fire and leaking toxic gases due to improper installation

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

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage

- ▶ Fit protectors on sharp edges.

3.4 Using this document

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

3.4.1 Explanatory Notes on the Document

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

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

3.4.2 Use of symbols

DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

▶ Actions to protect yourself against risks.

WARNING

Type and source of the risk

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

▶ Actions to protect yourself against risks.

CAUTION

Type and source of the risk

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

▶ Actions to protect yourself against risks.

Type and source of the risk

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

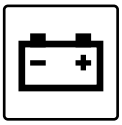
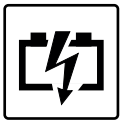
▶ Actions to protect yourself against risks.

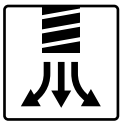
Reference to the vehicle manufacturer's specific documents.

Note on a special technical feature

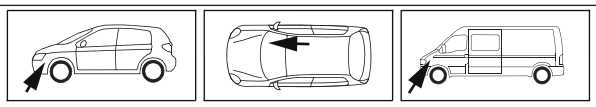
3.4.3 Work step identification marks

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

Mechanical system	Electrical system	High-voltage	Coolant
			

Combustion air	Fuel	Exhaust	Software
			

3.4.4 Orientation aid



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

3.4.5 Use of highlighting

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

4 Technical Information

Dimension specifications
– All dimensions specified in mm
– Perforated brackets and mounting angles are shown to scale
– Observe data regarding scale on the templates

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

Specified temperature for fabric heat shrink tubing
– Shrink temperature max. 230°C

Necessary special tools
– Hose clamp pliers for auto-tightening hose clamps
– Hose clamp pliers for Clic hose clamps of type W
– Hose clamping pliers
– Hose cutter
– Automatic wire stripper 0.2 - 6 mm²
– Crimping pliers for cable lugs 0.5 – 10 mm²
– Crimping pliers for male connector 0.14 – 6 mm²
– Crimping pliers for connector 0.25 – 6 mm²
– 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.

Vehicle area	Components to be removed	Other applicable documents
General	▶ Open the fuel tank cap ▶ Ventilate the fuel tank ▶ Close the fuel tank cap again ▶ Depressurise the cooling system	
Engine compartment and body	▶ Complete battery ▶ Air filter intake hose ▶ Exhaust tube between middle silencer and end silencer	
Passenger compartment	▶ Glove box ▶ A-pillar trim on front passenger's side (only in case of Telestart and ThermoCall)	

DANGER

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

Carry out the following work only during the corresponding installation sequence:

Vehicle body	▶ Fuel tank ▶ Tank fitting	

5.2 Heater preparation

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

6 Installation overview

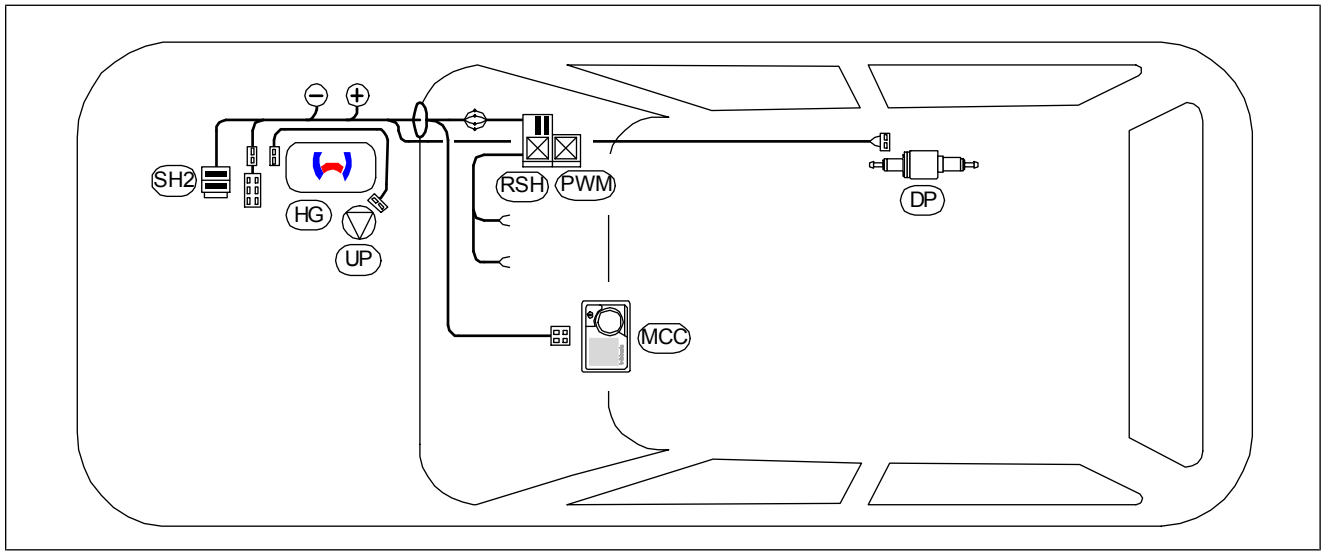


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
HG	Heater
MCC	MultiControl CAR
PWM	Pulse width modulator Gateway CAR (AAC only)
RSH	Relay and fuse holder of passenger compartment
SH2	Fuses of engine compartment
UP	Coolant pump

Heater installation location

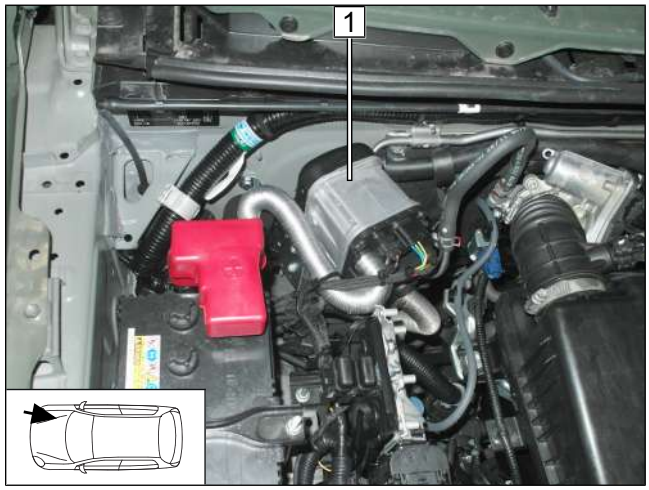


Fig. 2

1 Heater

7 Electrical system of engine compartment

Drilling hole

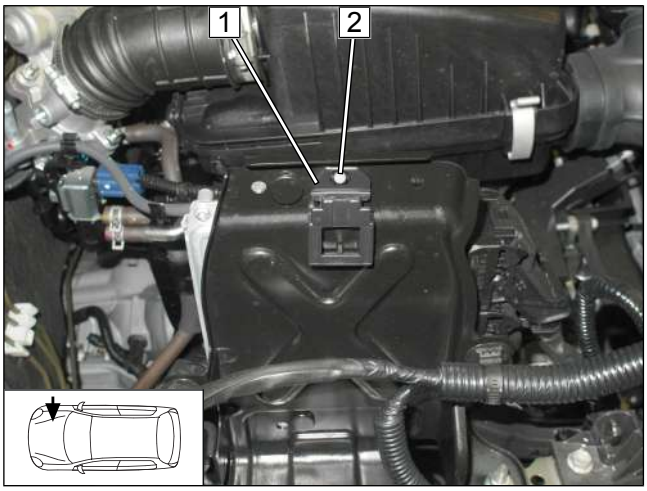


Fig. 3

1 Align fuse holder retaining plate
2 Ø6 hole

Mounting fuse holder retaining plate

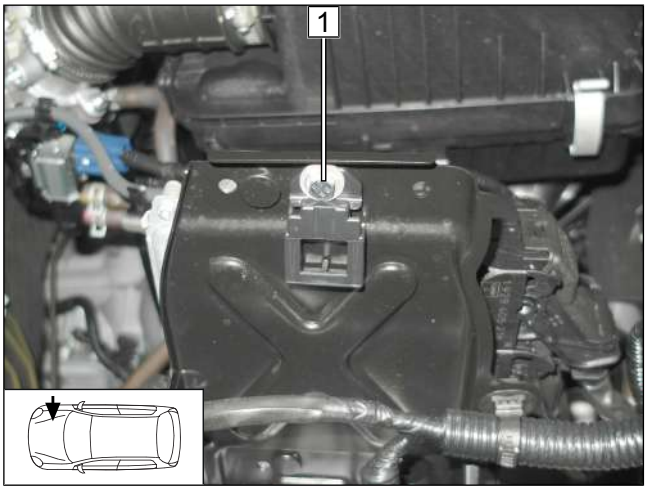


Fig. 4

1 M5x16 bolt, large diameter washer, fuse holder retaining plate, drilled hole, large diameter washer, nut

Mounting fuses F1 and F2

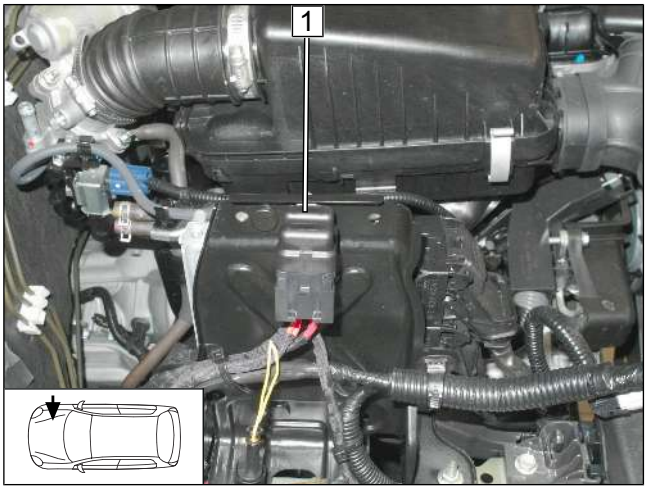


Fig. 5

1 Fuses F1, F2

Mounting positive and earth wire

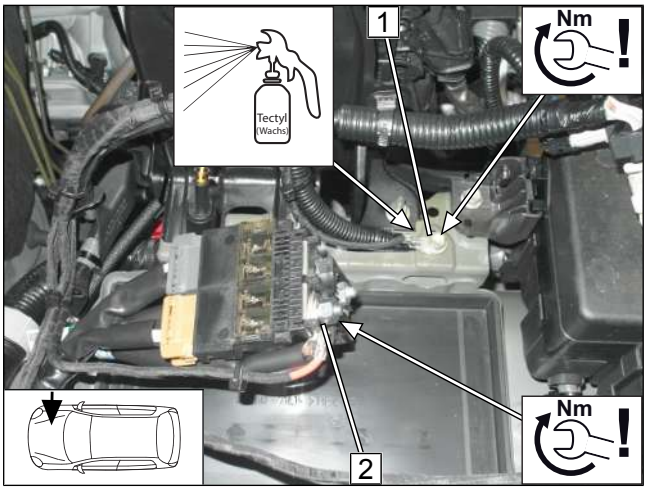


Fig. 6

DANGER

Fire hazard due to insufficient tightening torque

▶ Observe tightening torque

1 Original vehicle earth support point with earth wire

2 Original vehicle positive distributor with positive wire

Passenger compartment wiring harness pass through

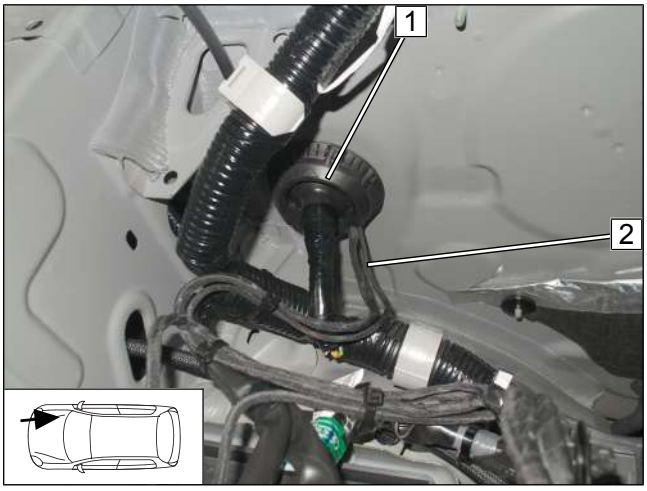


Fig. 7

1 Protective rubber plug

2 Passenger compartment and control element wiring harnesses

8 Mechanical system

8.1 Installation location preparation

Dismantling original vehicle vacuum line

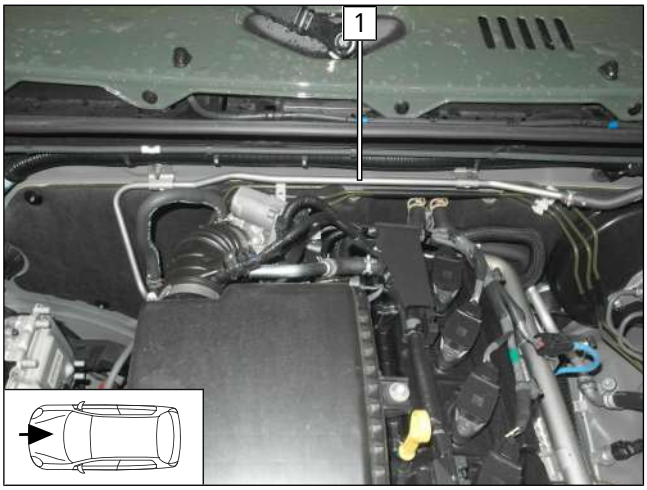


Fig. 8

1 Original vehicle vacuum line

Cutting insulation mat

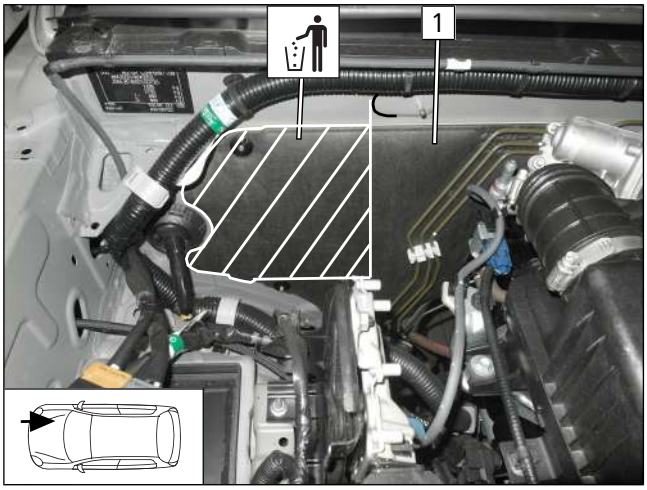


Fig. 9

1 Insulation mat

Taping up cut edges

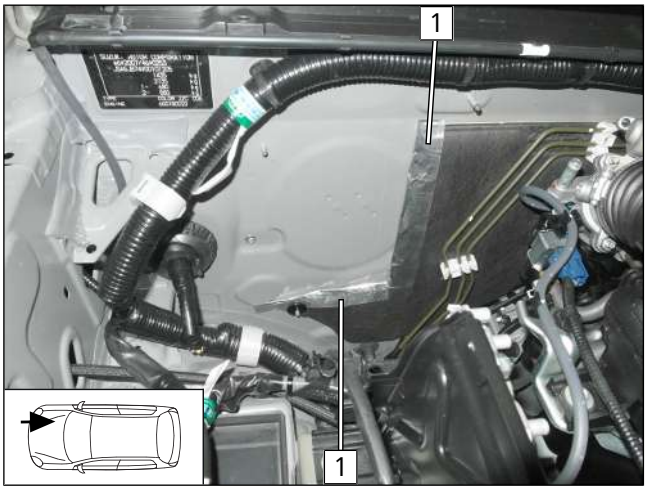


Fig. 10

1 Self-adhesive aluminium strip

Copy hole pattern

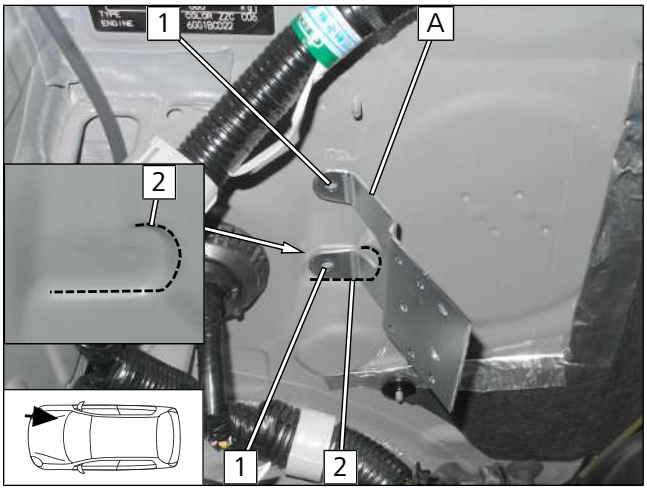


Fig. 11

▶ Cut and bend heater bracket according to template.

▶ Align bracket **A** as shown in Fig. with markings **2**.

1 Hole pattern

Inserting and tightening rivet nuts

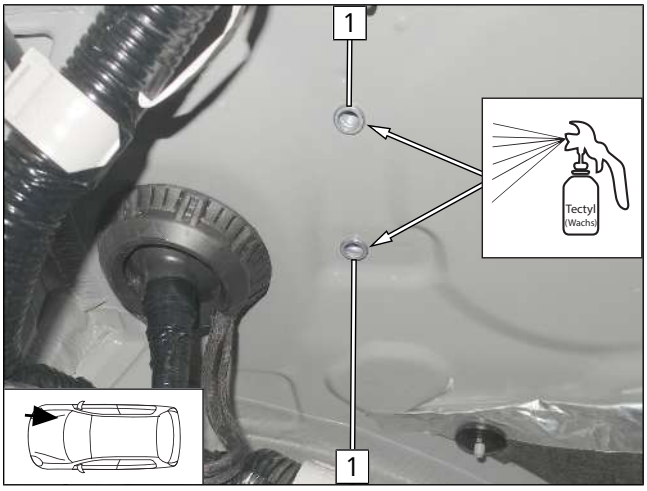
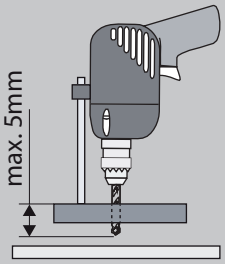


Fig. 12

Danger of damage to components



1 Ø9 hole, rivet nut

Mounting water connection piece

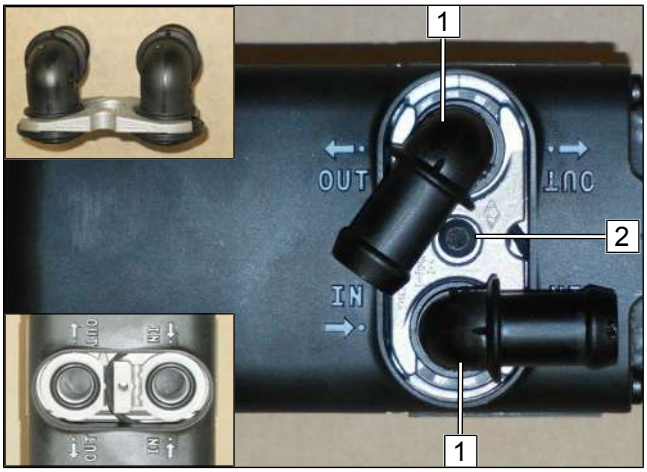


Fig. 13

1 Water connection piece, sealing ring

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

Mounting brackets A and B

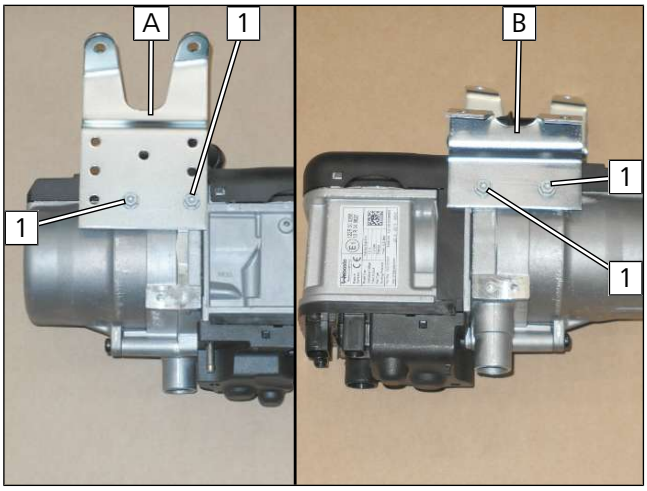


Fig. 14

1 5x13 self-tapping bolt

Mounting heater

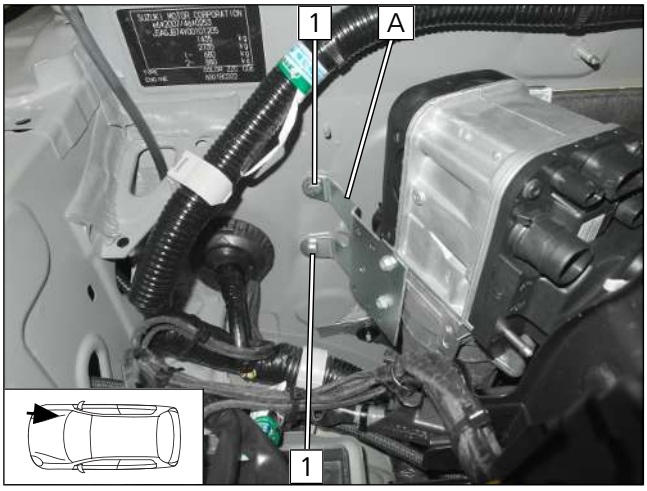


Fig. 15

1 M6x20 bolt, spring lockwasher

Copying hole pattern of bracket B

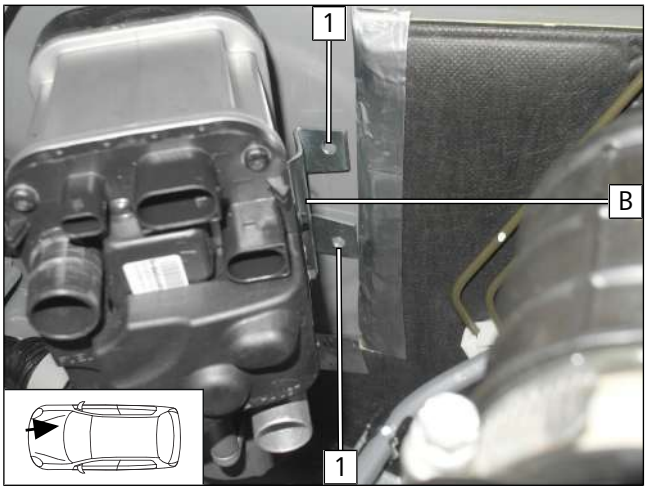


Fig. 16

1 Hole pattern

Remove the heater again.

Inserting and tightening rivet nuts

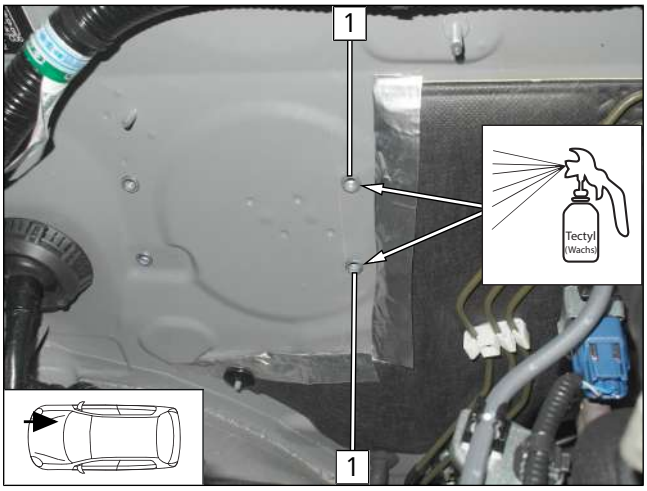
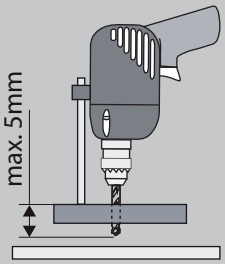


Fig. 17

Danger of damage to components



1 Ø9 hole, rivet nut

8.2 Premounting heater

Preparing coolant pump mount

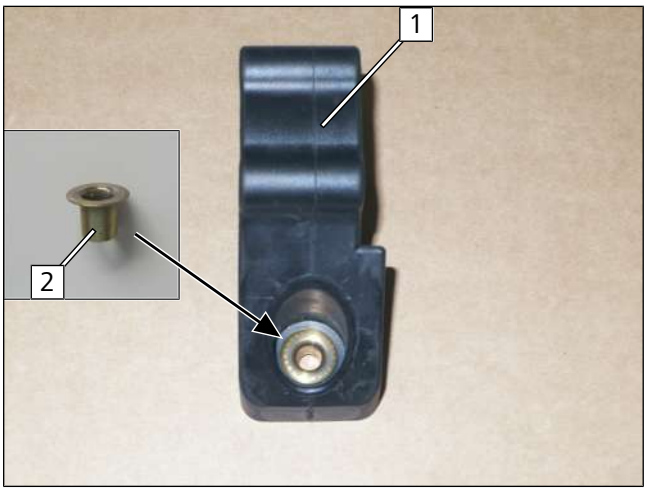


Fig. 18

1 Coolant pump mount
2 Sleeve

Preparing perforated bracket

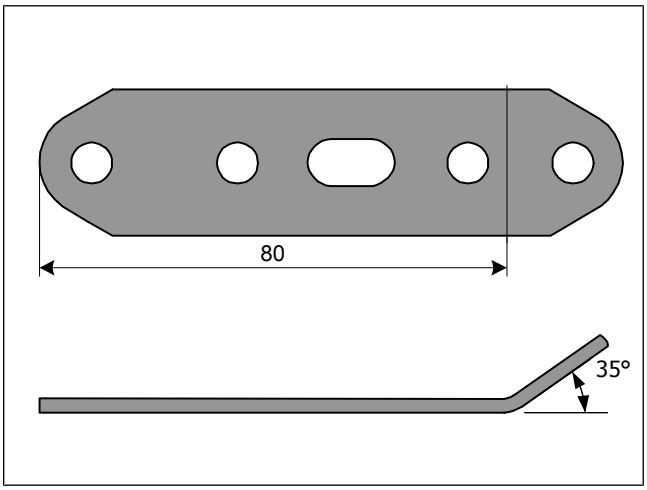


Fig. 19

Premounting coolant pump mount

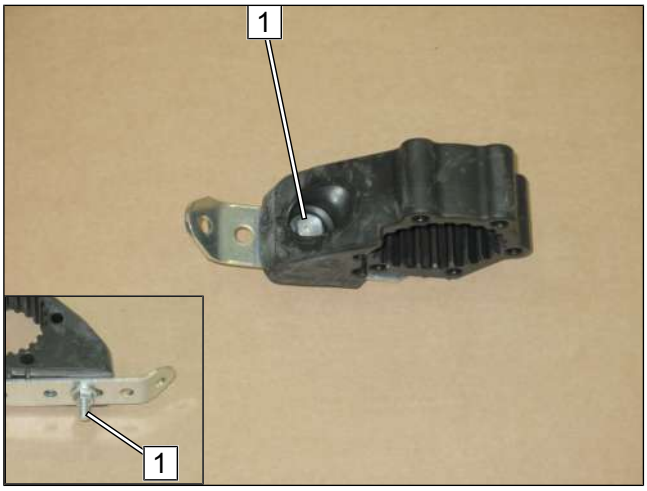


Fig. 20

1 M6x25 bolt, coolant pump mount, perforated bracket, flanged nut

Cutting hoses to length

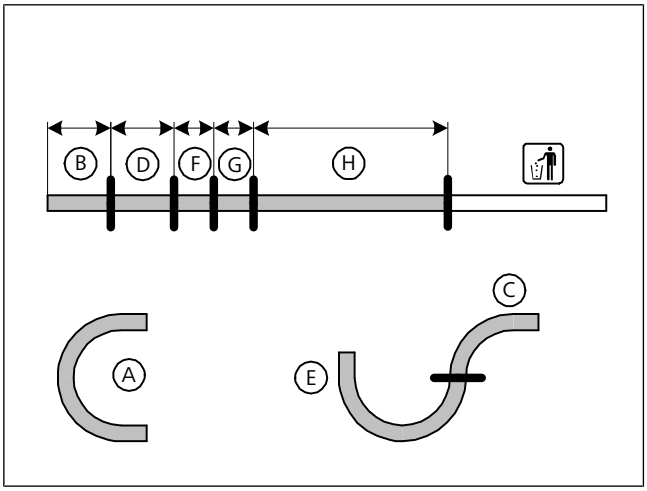


Fig. 21

A	180°, 18x18mm
B	180
C	Moulded hose, cut
D	130
E	Moulded hose, cut
F	75
G	60
H	460

Mounting coolant pump and hoses G, F and H

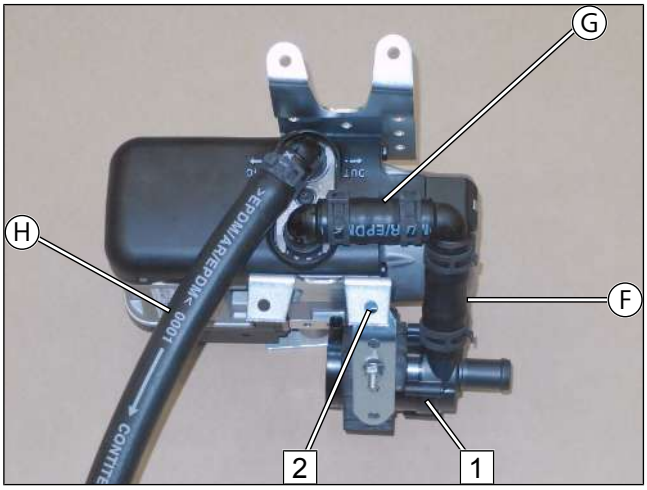


Fig. 22

▶ Mount hoses F, G and the coolant pump so that the holes in bracket B and in the perforated bracket of the coolant pump line up at position 2.

8.3 Heater mounting

Mounting heater

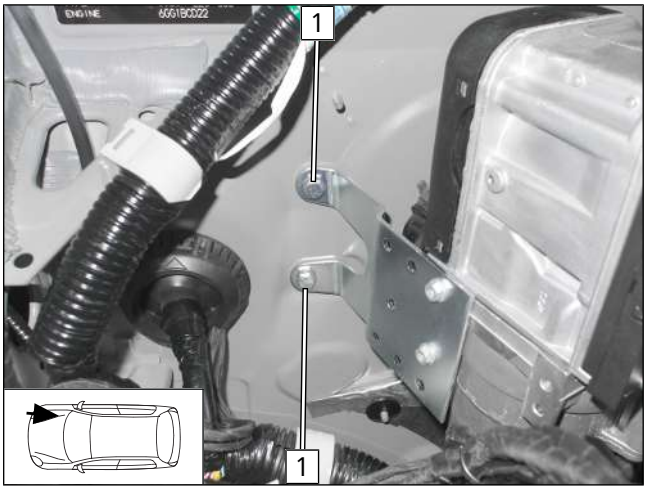


Fig. 23

Observe the general installation instructions of the heater.

1 M6x20 bolt, spring lock washer. Bracket **A**, rivet nut

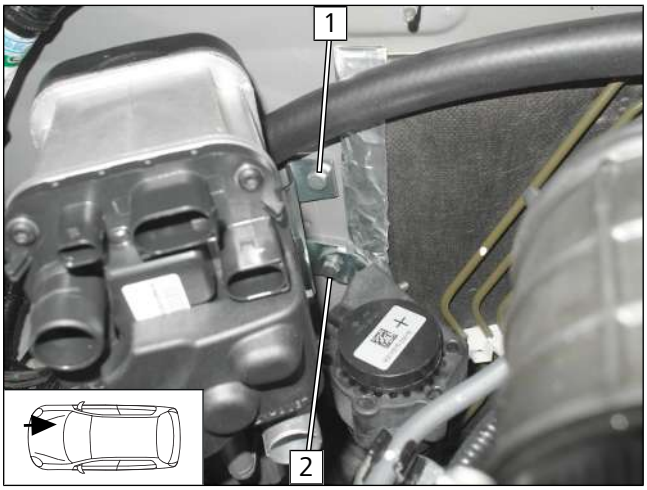


Fig. 24

1 M6x20 bolt, spring lock washer. Bracket **B**, rivet nut

2 M6x20 bolt, spring lock washer. Coolant pump perforated bracket, bracket **B**, rivet nut

Mounting wiring harnesses

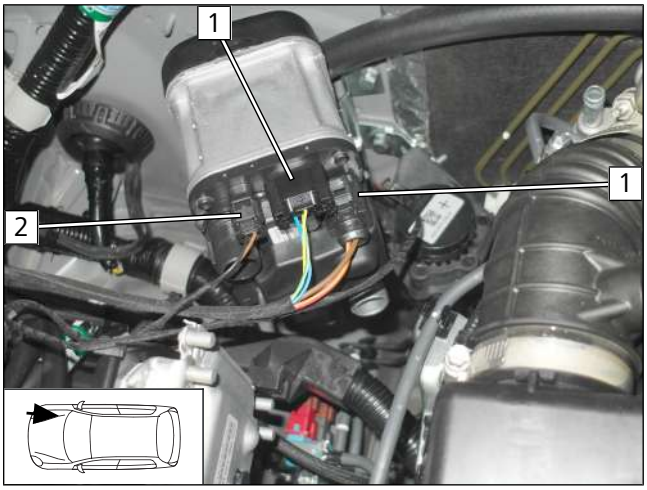


Fig. 25

1 Heater wiring harness connector

2 Coolant pump wiring harness connector

Mounting coolant pump wiring harness

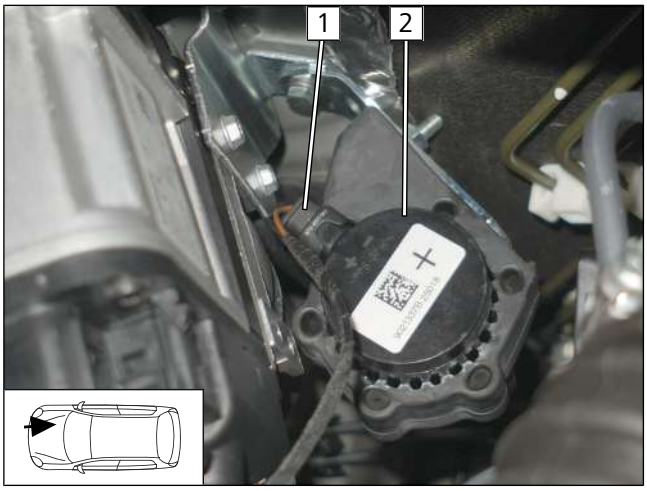


Fig. 26

1 Coolant pump wiring harness connector
2 Coolant pump

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

9.1 Mounting tank extracting device

Preparing drilling template

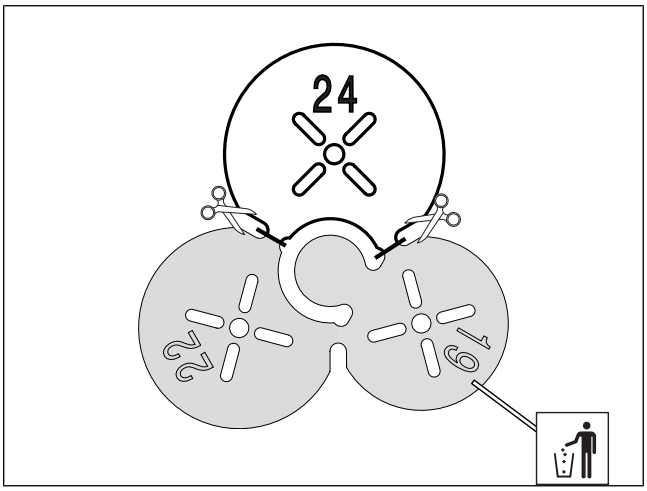


Fig. 27

Copy hole pattern

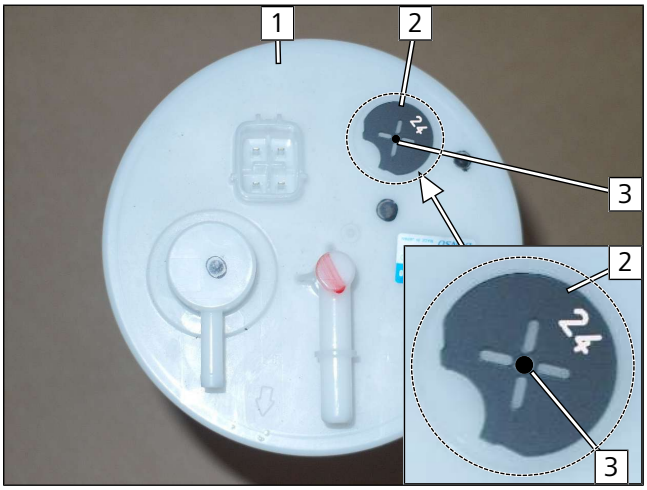


Fig. 28

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

- ▶ Remove the tank and tank fitting in accordance with the manufacturer's instructions.

Observe the installation instructions of the tank extracting device.

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

Hole for tank extracting device

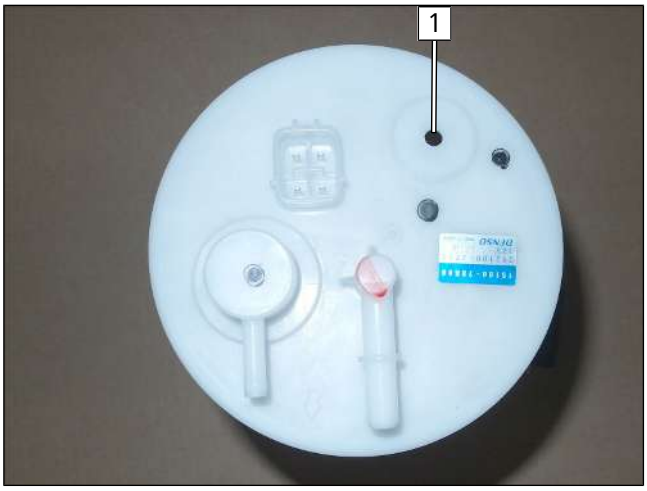


Fig. 29

1 Ø6 hole

Installing tank extracting device

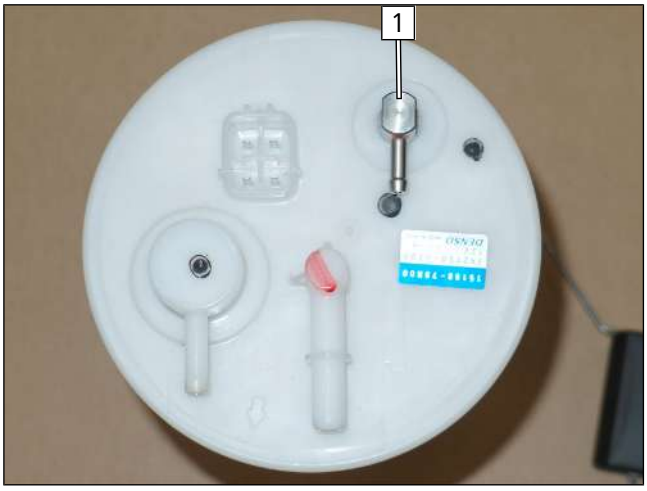


Fig. 30

▶ Bend tank extracting device 1 according to the template, cut to length and insert.

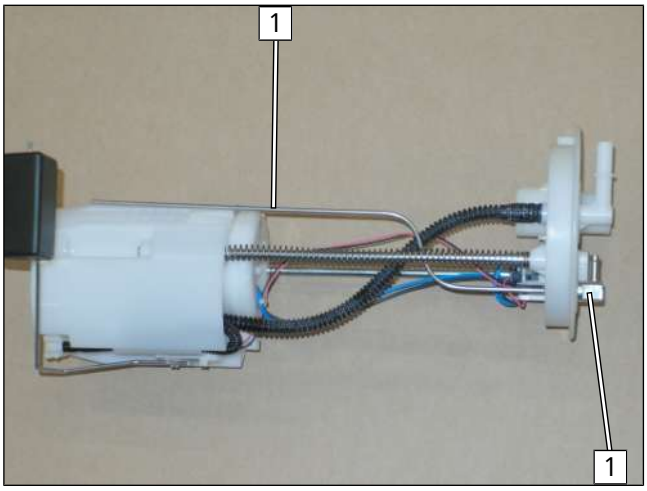


Fig. 31

▶ Align tank extracting device 1 as shown in Fig.

Reinstall tank fitting as per the manufacturer's instructions.

Connecting fuel line

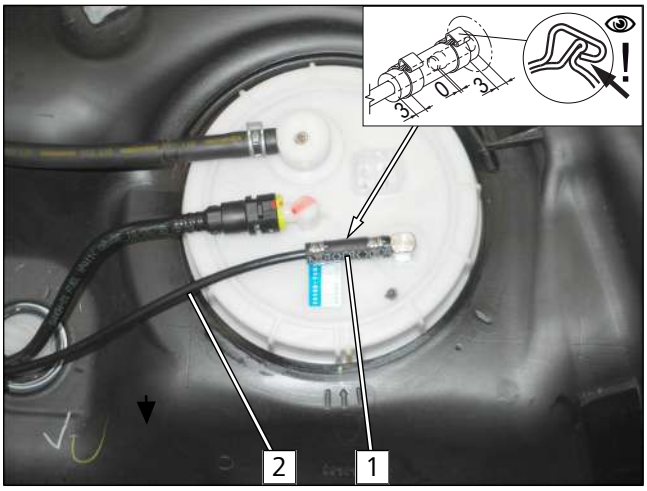


Fig. 32

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

Routing fuel line

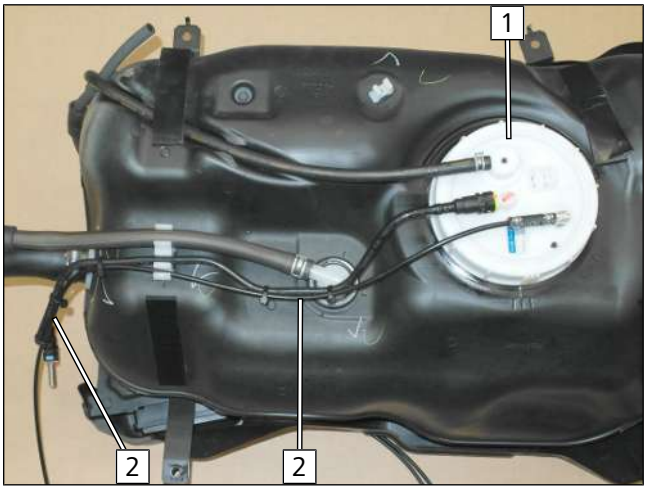


Fig. 33

▶ Route fuel line of tank extracting device 2 as shown and attach to original vehicle line using cable ties.

1 Tank fitting

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

Reinstall tank as per the manufacturer's instructions.

9.2 Mounting fuel pump

Preparing perforated bracket

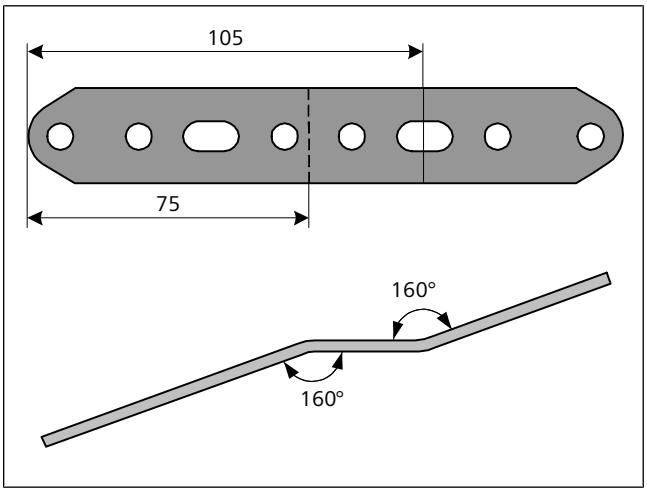


Fig. 34

Premounting fuel pump

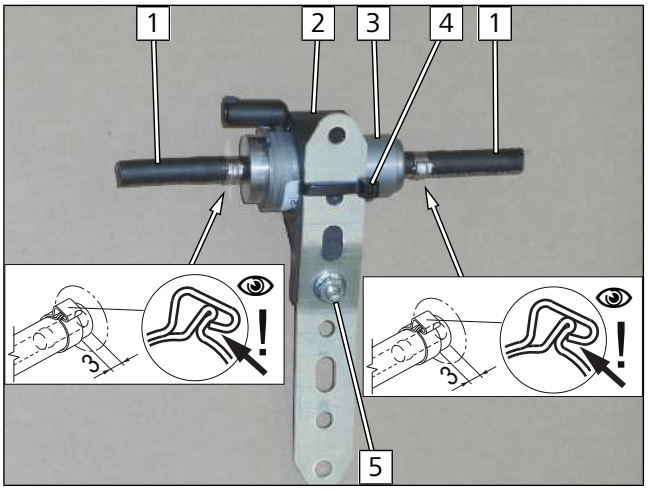


Fig. 35

1. Hose section, Ø10 clamp
2. Fuel pump mount
3. Fuel pump
4. Cable tie
5. M6x25 bolt, support angle bracket, fuel pump mount, perforated bracket, flanged nut

Mounting fuel pump

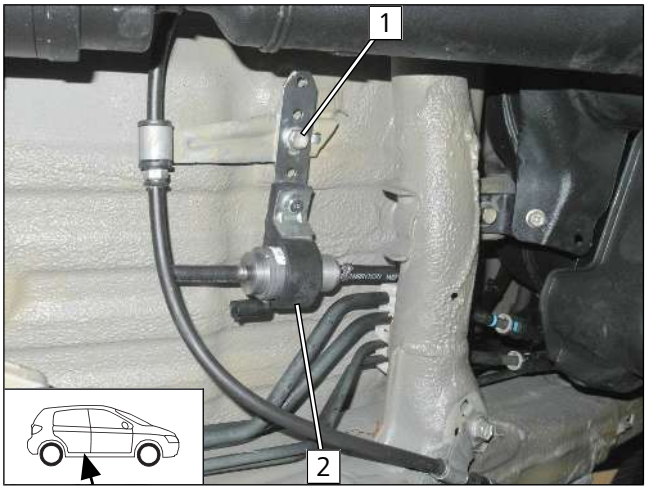


Fig. 36

1. Original vehicle bolt
2. Premounted fuel pump

Fuel pump connection

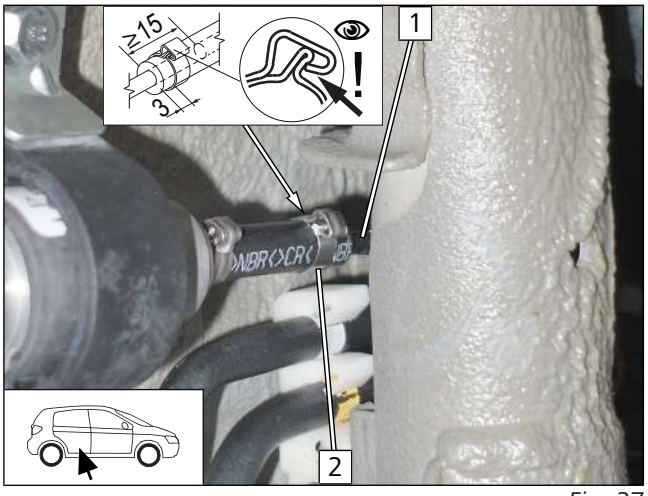


Fig. 37

1. Fuel line of tank extracting device
2. Ø10 clamp

9.3 Routing

Dismantling fuel pump connector X7

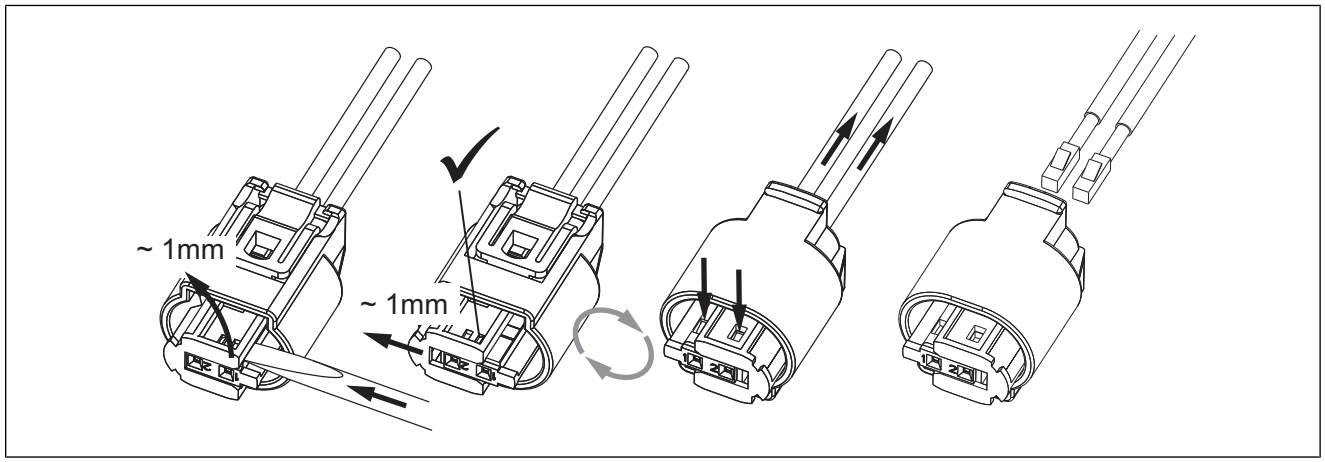


Fig. 38

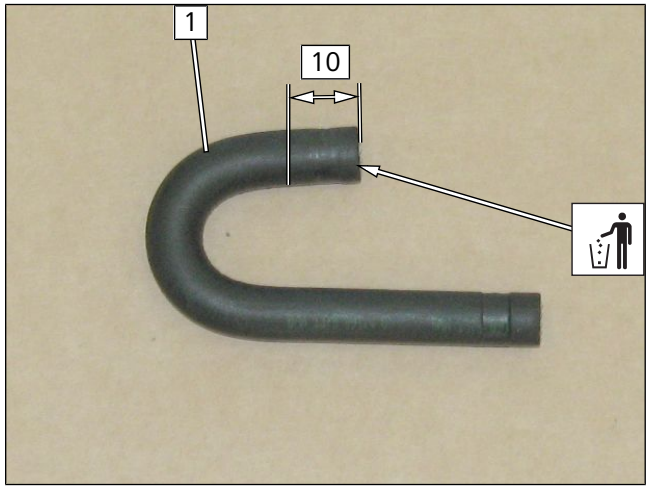


Fig. 39

▶ Shorten 180° moulded hose [1] as shown.

Connecting heater

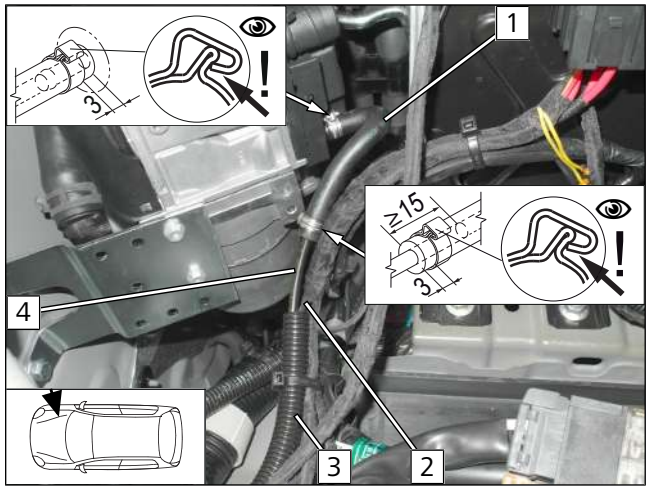


Fig. 40

▶ Draw fuel line [4] and fuel pump wiring harness [2] into Ø10 corrugated tube [3].

[1] 180° moulded hose, Ø10 clamp [2x]

Routing fuel line

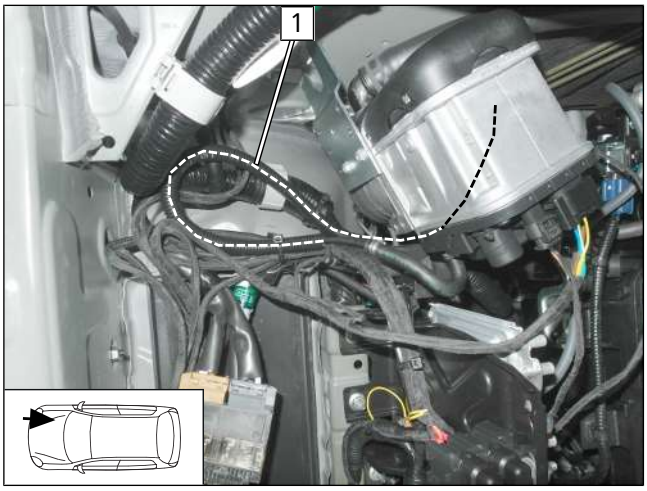


Fig. 41

▶ Route corrugated tube 1 with fuel line and fuel pump wiring harness along original vehicle lines to underbody and fasten using cable ties.

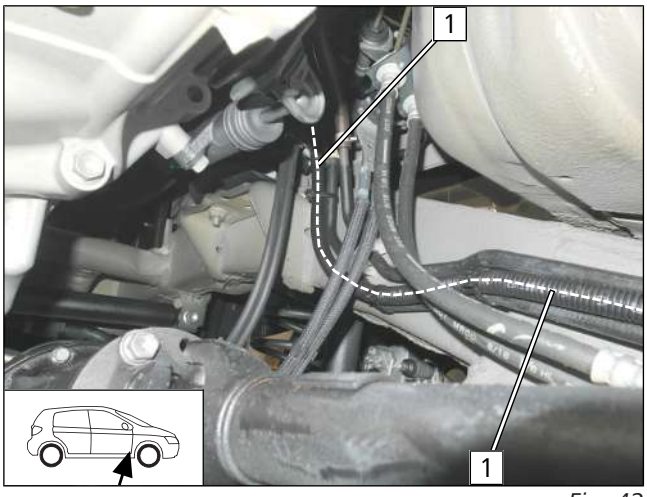


Fig. 42

▶ Route corrugated tube 1 with fuel line and fuel pump wiring harness along original vehicle lines to underbody and fasten using cable ties.

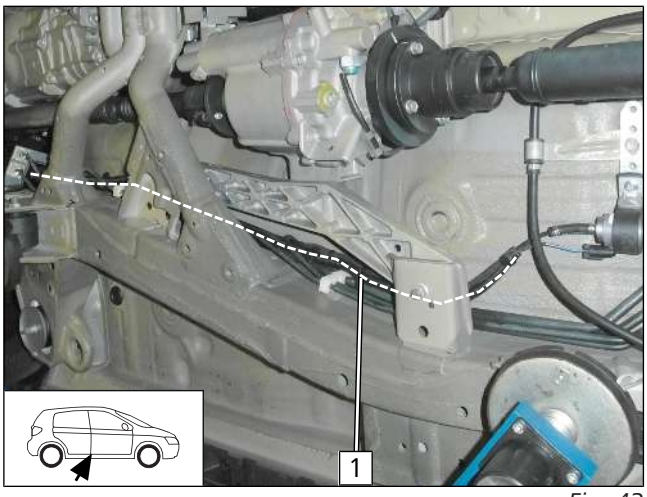


Fig. 43

▶ Route corrugated tube 1 with fuel line and fuel pump wiring harness on underbody along original vehicle lines to fuel pump installation location and fasten using cable ties.

Assembling fuel pump connector X7

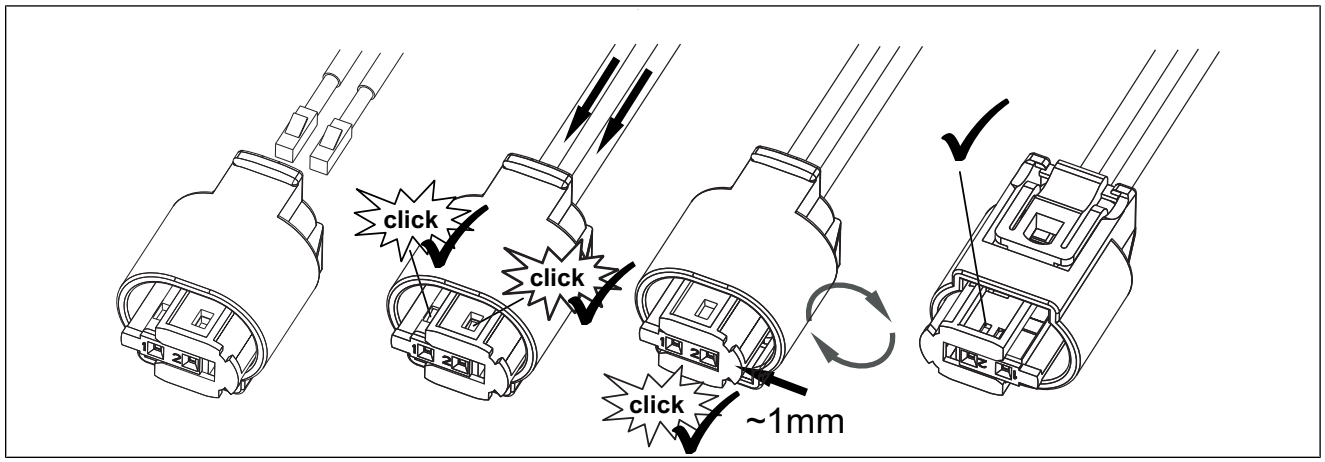


Fig. 44

Connecting fuel pump

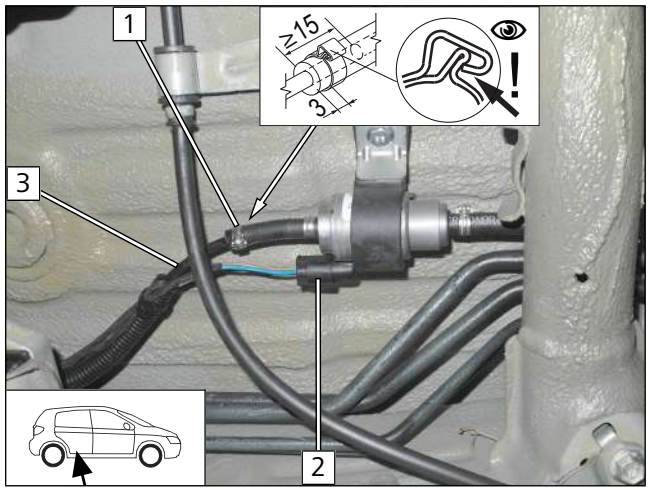


Fig. 45

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

10 Coolant

10.1 Hose routing diagram for ‘Inline’ connection

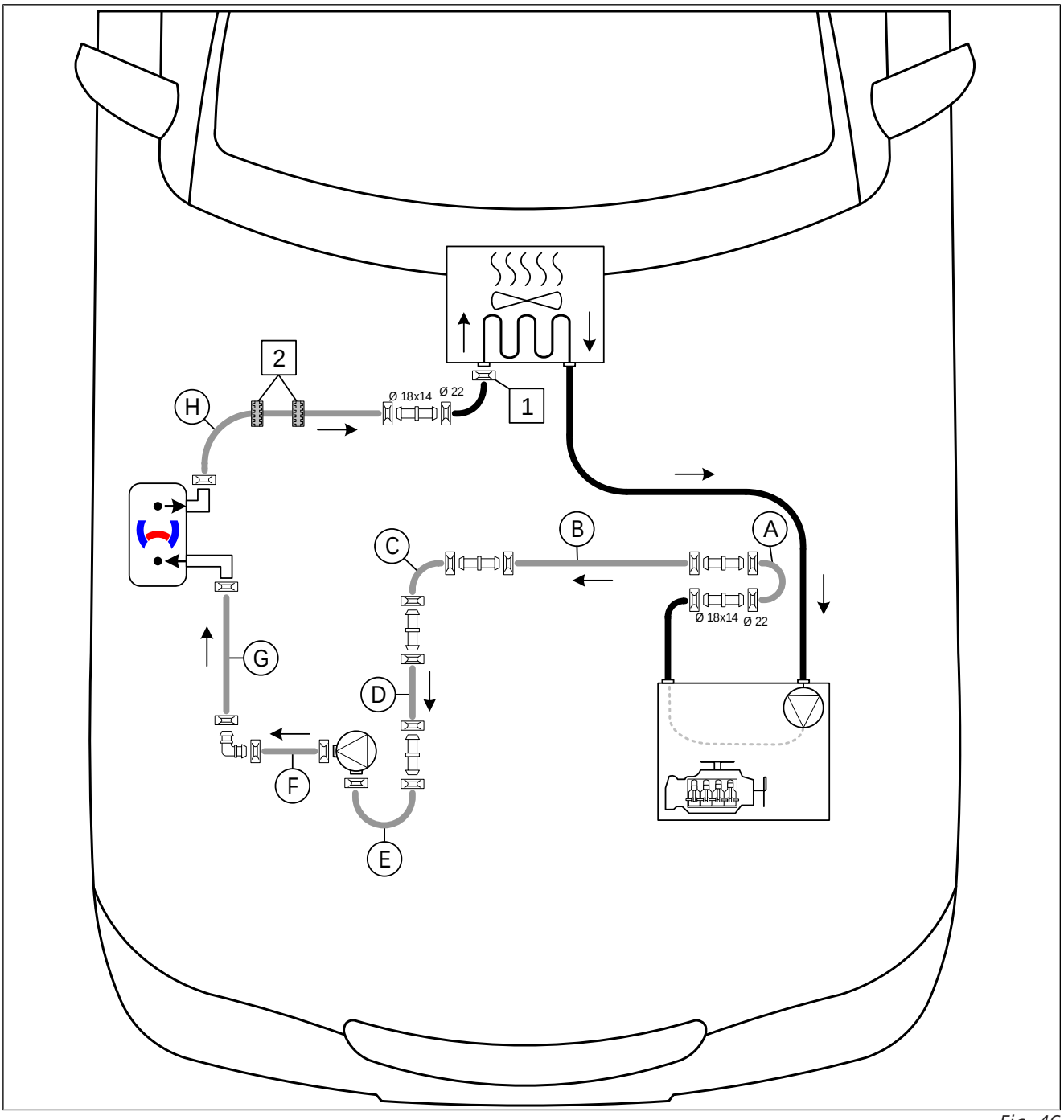


Fig. 46

All spring clips without a specific designation = Ø25

All connecting pipe or = Ø18x18

[1] Original vehicle spring clip, [2] Black (sw) rubber isolator

10.2 Coolant circuit installation

Creating hose group

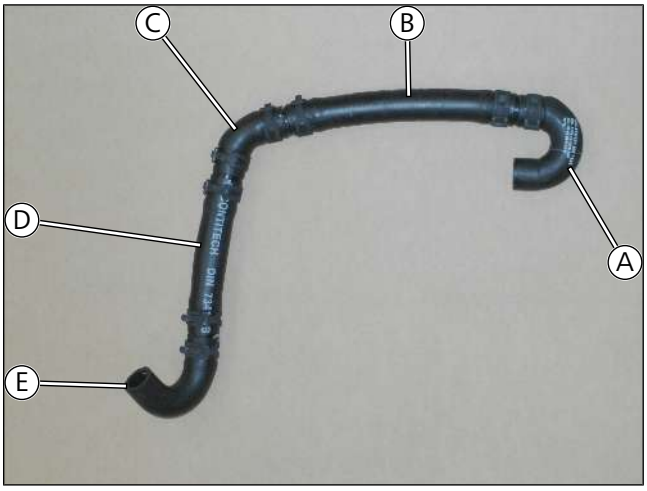


Fig. 47

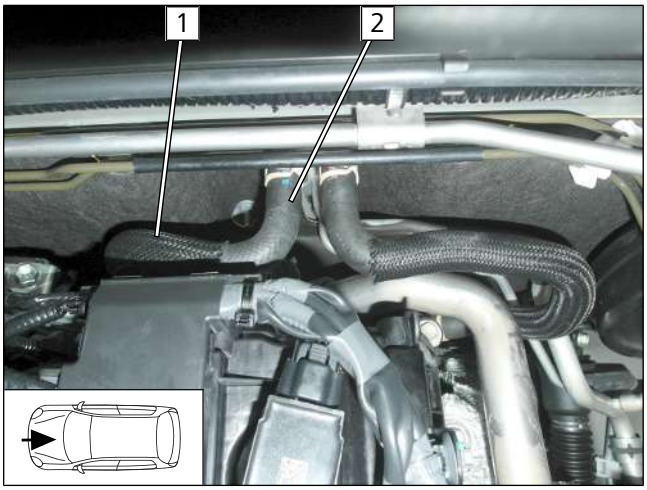


Fig. 48

▶ Remove braided protection hose [1] from original vehicle engine outlet/heat exchanger inlet hose [2].

Cutting hose of engine outlet / heat exchanger inlet

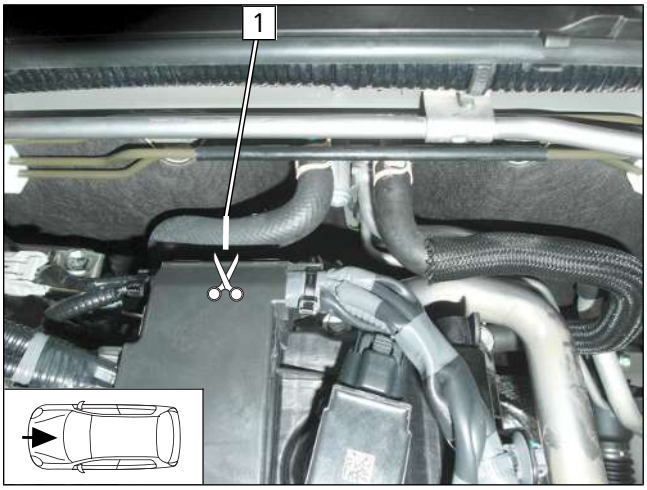


Fig. 49

[1] Cutting point

Mounting hose group

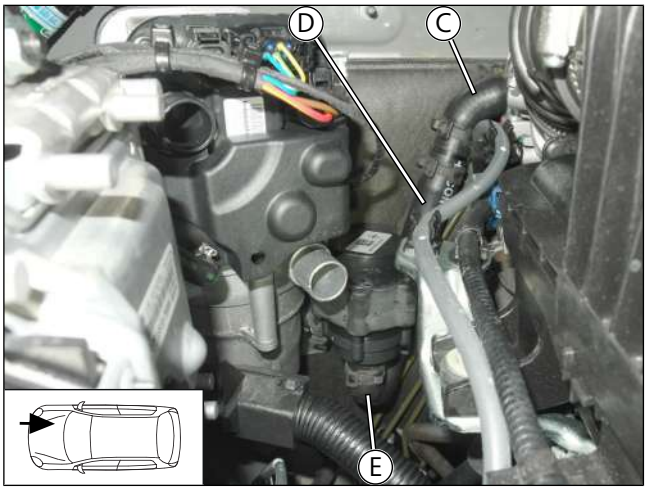


Fig. 50

Connecting engine outlet

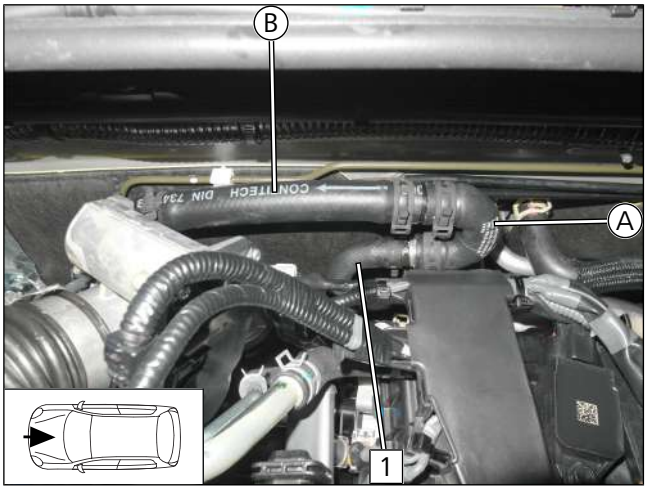


Fig. 51

1 Engine outlet hose section

Mounting rubber isolator

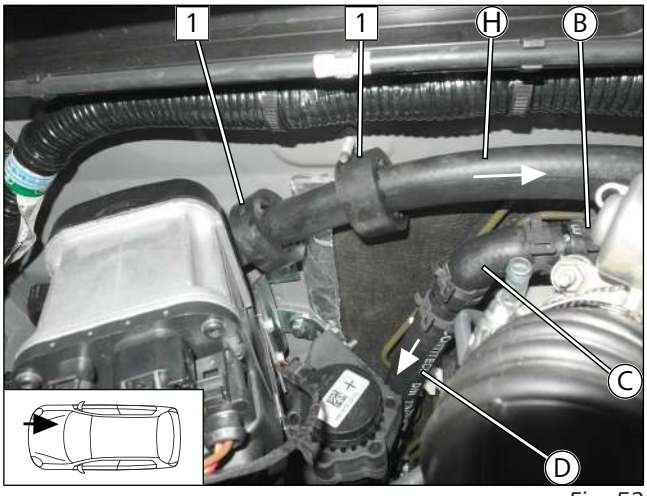


Fig. 52

▶ Position black (sw) rubber isolator 1 on hose (H) as shown.

Connecting heat exchanger inlet

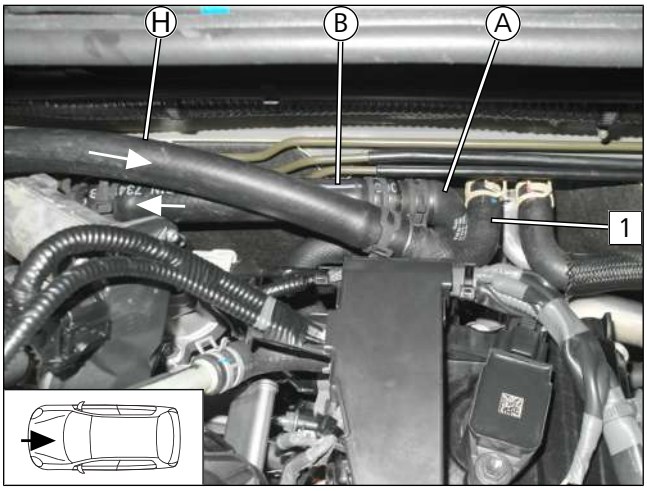


Fig. 53

1 Heat exchanger inlet hose section

Mounting vacuum line

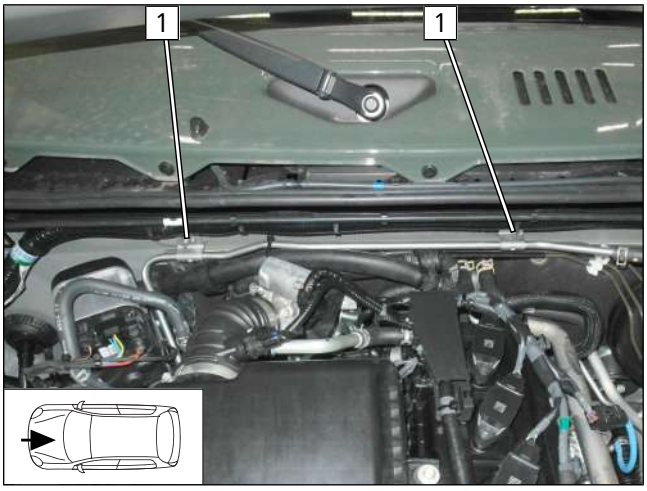


Fig. 54

▶ Mount vacuum line **1**.

Fastening hoses

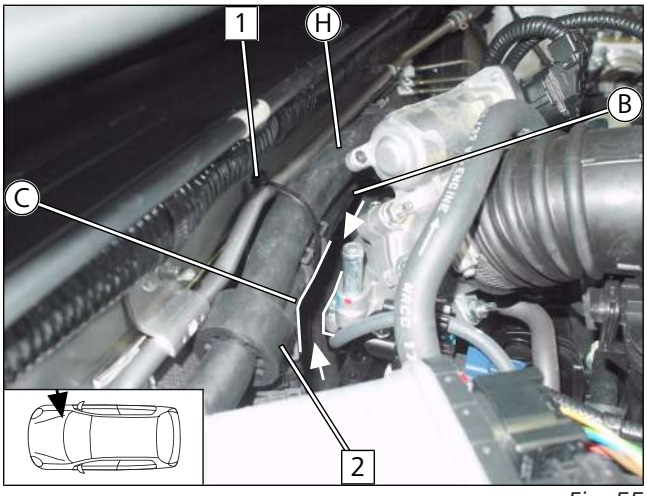


Fig. 55

Ensure sufficient distance from neighbouring components, correct if necessary.

>20

▶ Attach hoses to vacuum line with cable tie **1** Position black (sw) rubber isolator **2**.

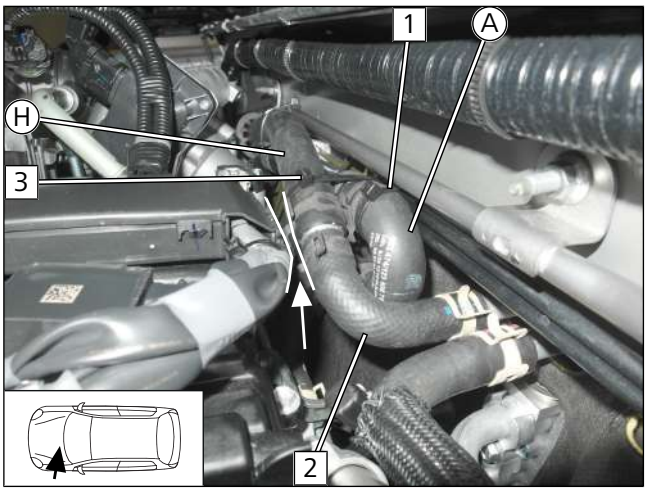


Fig. 56

Ensure sufficient distance from neighbouring components, correct if necessary.

>15

1 Cable tie around hose (A) and original vehicle brake lines

2 Heat exchanger inlet hose section

3 Cable tie around hose (A), (H) and original vehicle brake lines

Aligning vacuum line

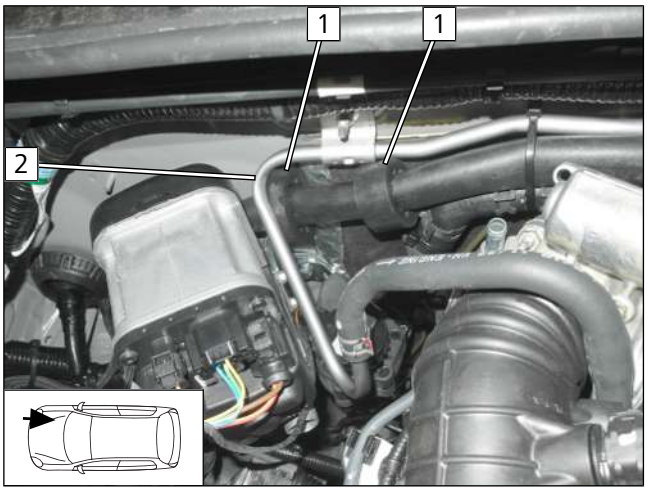


Fig. 57

Danger of damage to components

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

Danger of damage to the components

▶ Prevent kinking at position 2.

▶ Position black (sw) rubber isolator 1.

Connecting vacuum line

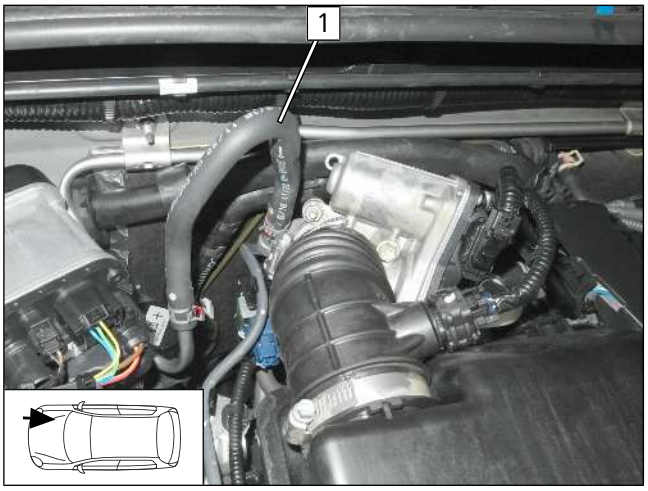


Fig. 58

Danger of damage to components

▶ Check that the passage to the brake booster is not blocked before connecting vacuum line 1.

11 Exhaust

Preparing perforated bracket

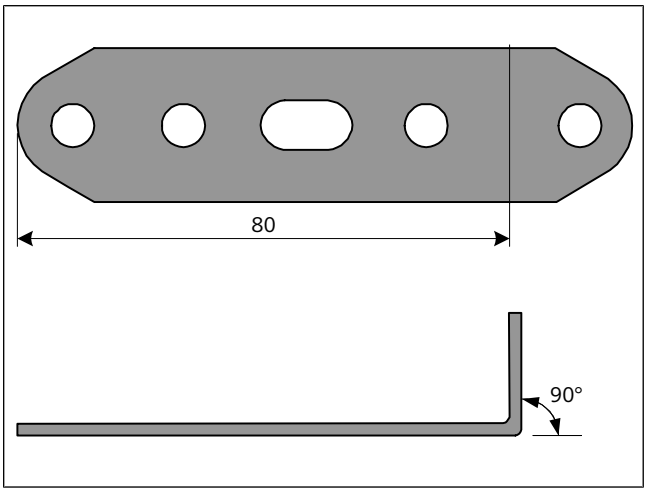


Fig. 59

Installing perforated bracket

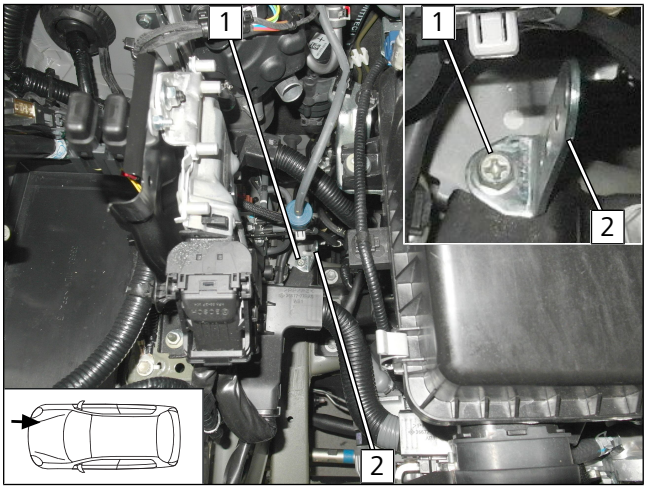


Fig. 60

1 Original vehicle bolt
2 Perforated bracket

Cutting exhaust pipe to length

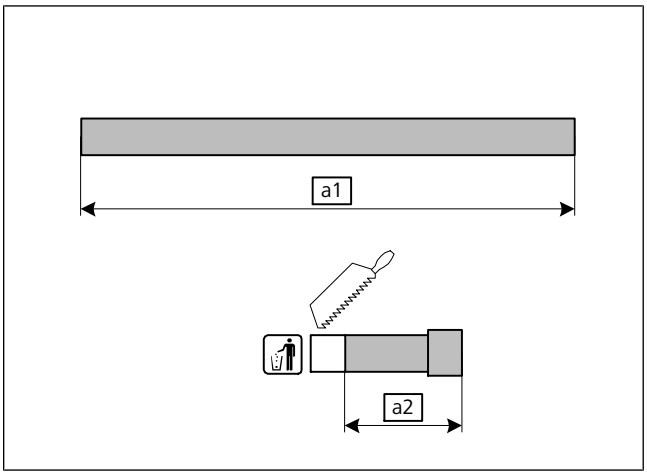


Fig. 61

a1 1000
a2 80

Bending exhaust pipe **a1**

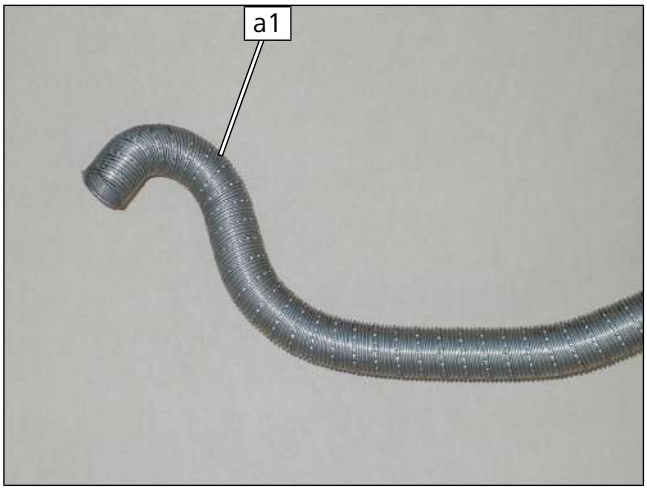


Fig. 62

▶ Bend exhaust pipe **a1** as shown.

Install exhaust pipes **a1**

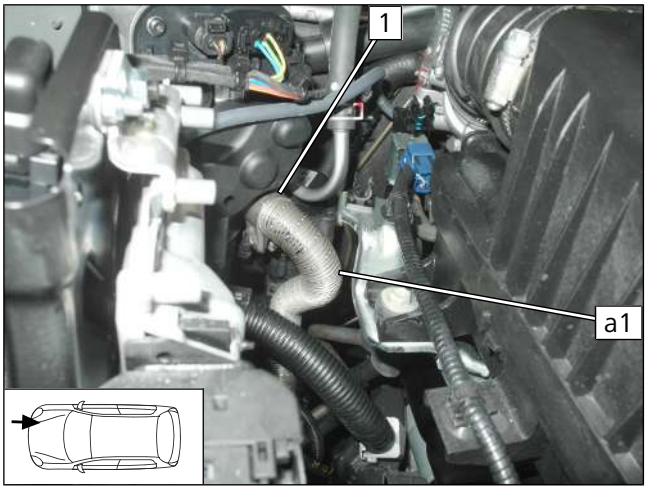


Fig. 63

Danger of damage to components

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

1 Hose clamp

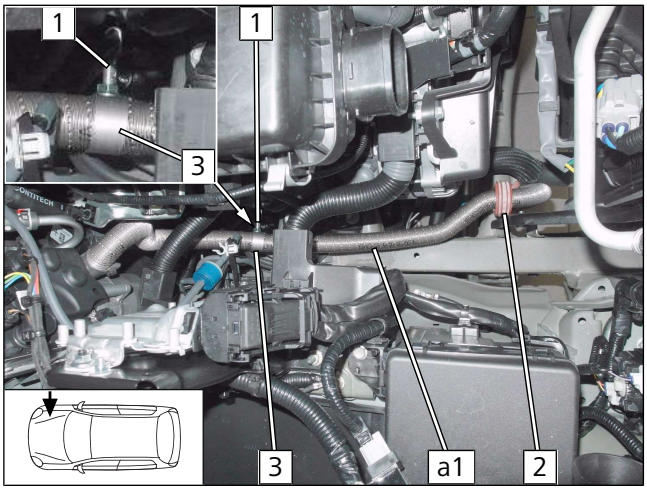


Fig. 64

1 M6x20 bolt, premounted perforated bracket, p-clamp, flanged nut

2 ASH

3 Pipe clamp

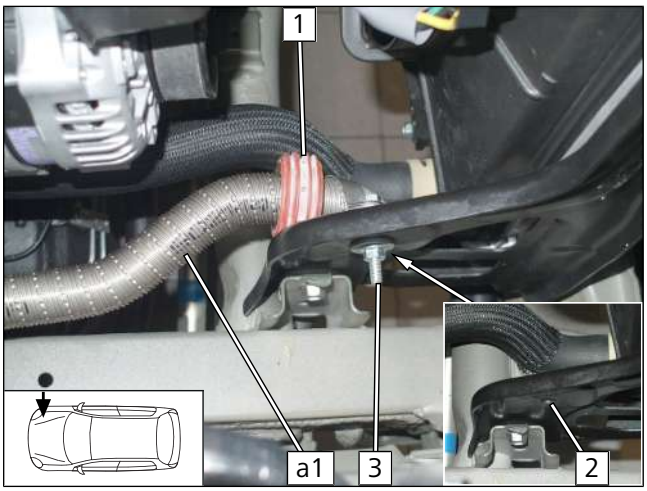


Fig. 65

1 Align ASH as shown

2 Original vehicle hole

3 M6x40 bolt, p-clamp, spacer (15), original vehicle hole, large diameter washer, flanged nut

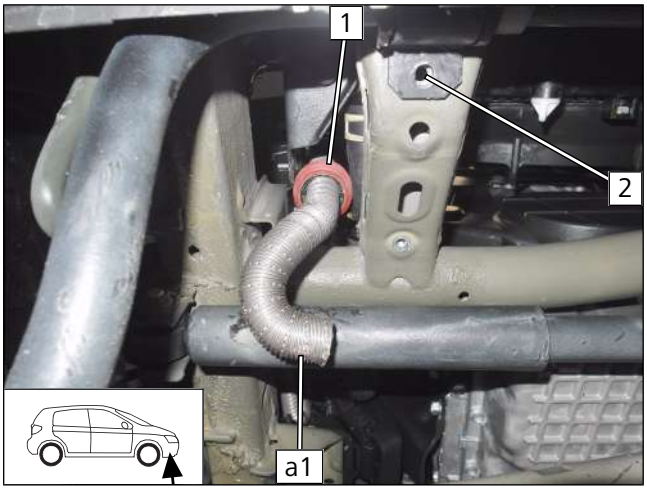


Fig. 66

▶ Remove original vehicle bolt at position 2, it will be needed later.

1 ASH

Preparing angle bracket

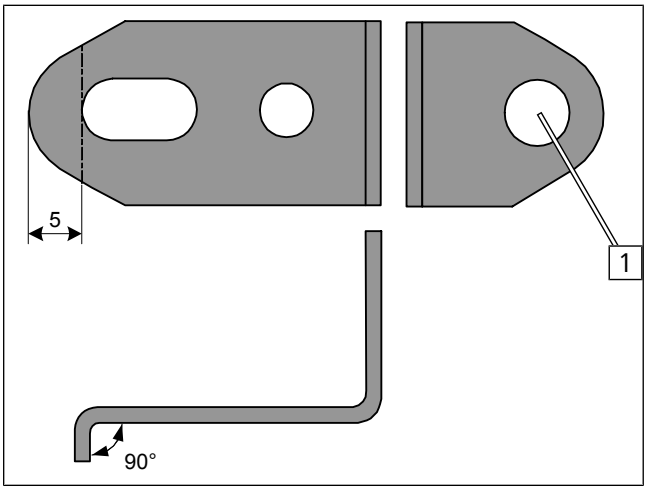


Fig. 67

1 Drill out hole to Ø8.5

Premounting exhaust silencer

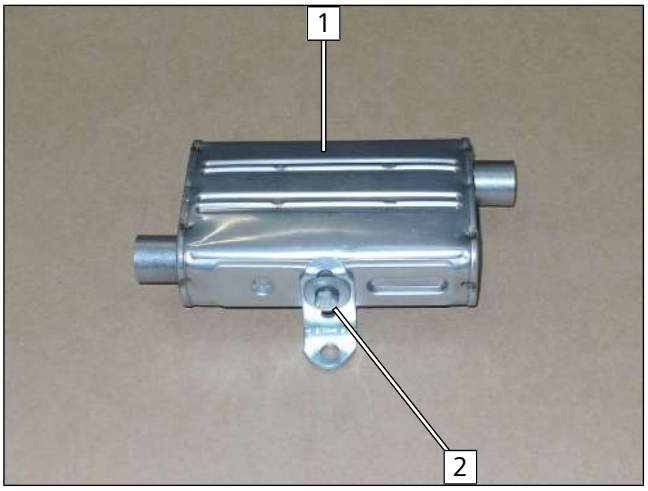


Fig. 68

- 1 Exhaust silencer
- 2 M6x16 bolt, spring lockwasher, large diameter washer, angle bracket

Mounting exhaust silencer and connecting exhaust pipe a1

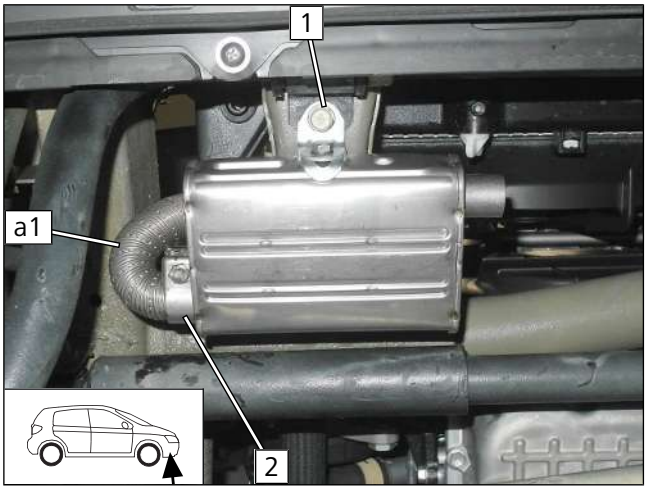


Fig. 69

- 1 Original vehicle bolt (previously removed)
- 2 Hose clamp

Aligning exhaust silencer

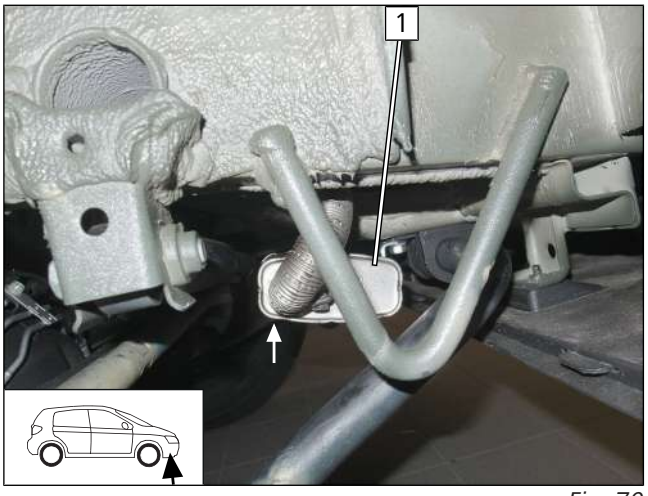


Fig. 70

▶ Align exhaust silencer 1 horizontally in the direction of the arrow as shown.

Aligning ASH

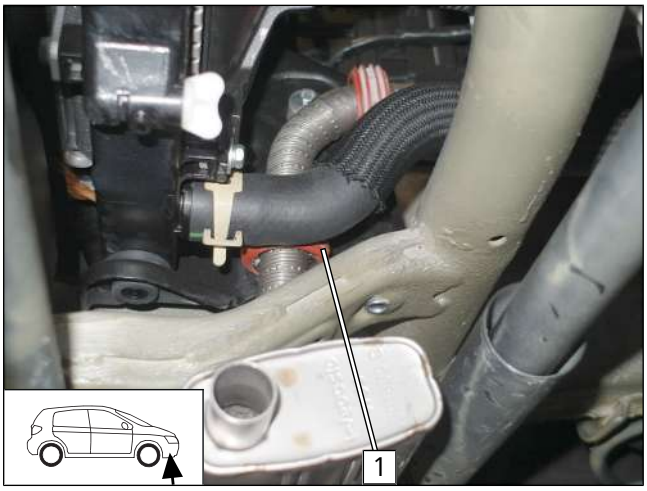


Fig. 71

▶ Align ASH with original vehicle radiator hose.

Mounting exhaust pipe a2

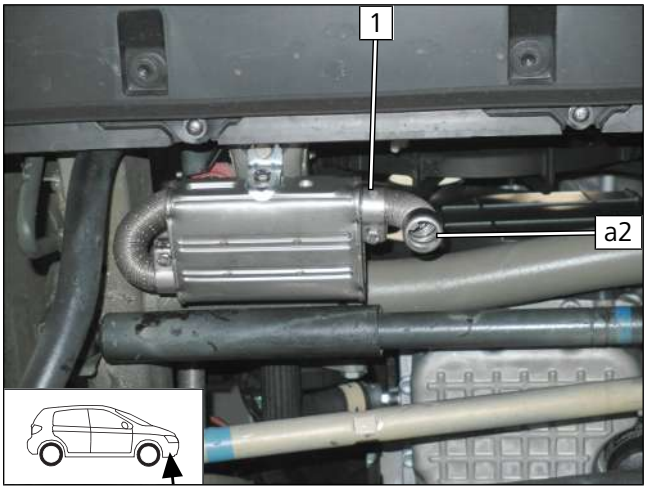


Fig. 72

Danger of damage to components

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

1 Hose clamp

12 Combustion air

Cutting combustion air pipe to length

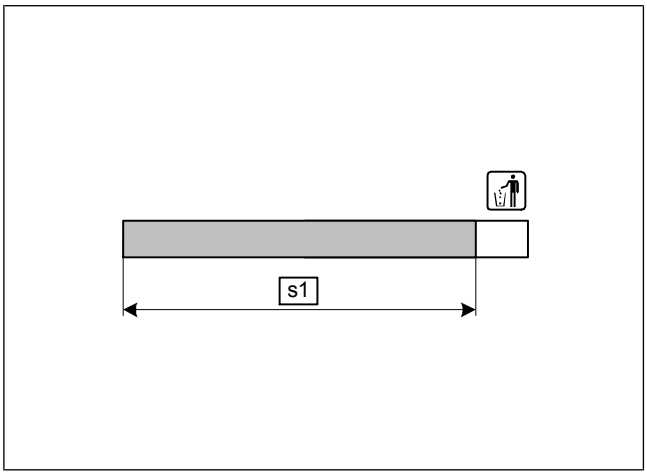


Fig. 73

s1 300

Mounting combustion air intake silencer bracket

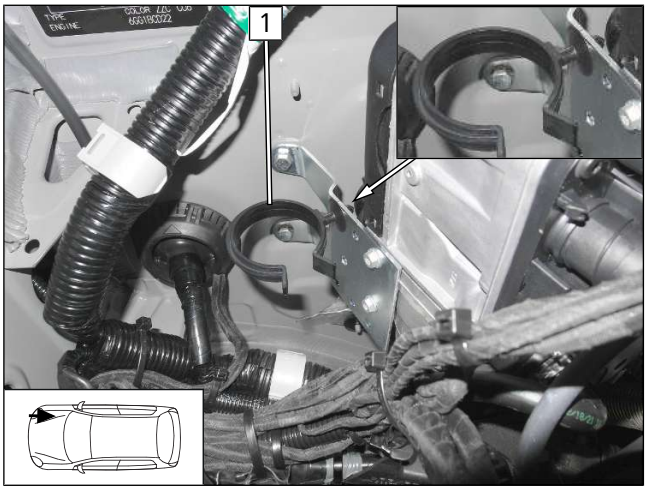


Fig. 74

1 Combustion air intake silencer bracket, hole in bracket **A**

Mounting combustion air pipe and combustion air intake silencer

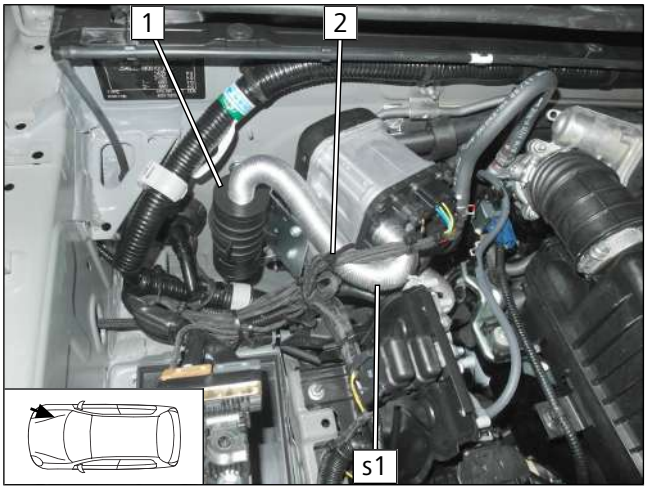


Fig. 75

Observe the installation instructions of the combustion air intake silencer.

▶ Attach heater wiring harness with cable tie **2** to **s1**.

1 Combustion air intake silencer

13 Electrical system of passenger compartment

13.1 Manual air-conditioning

13.1.1 Electrical system preparation

Assigning wires

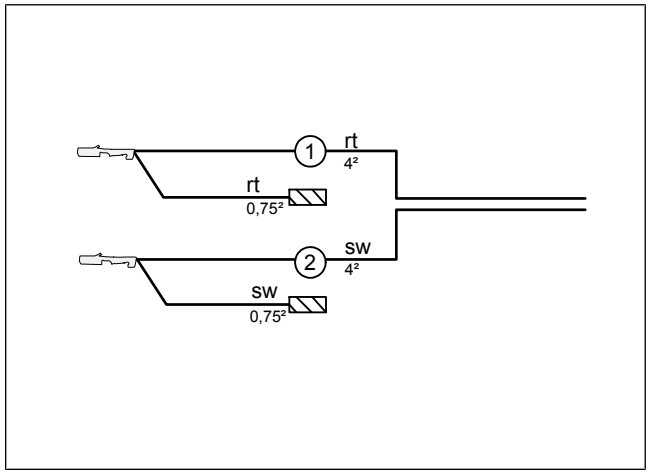


Fig. 76

Wire sections retain their numbering in the entire document.

① Red (rt) wire of fan wiring harness
② Black (sw) wire of fan wiring harness

Connecting wires to RSH

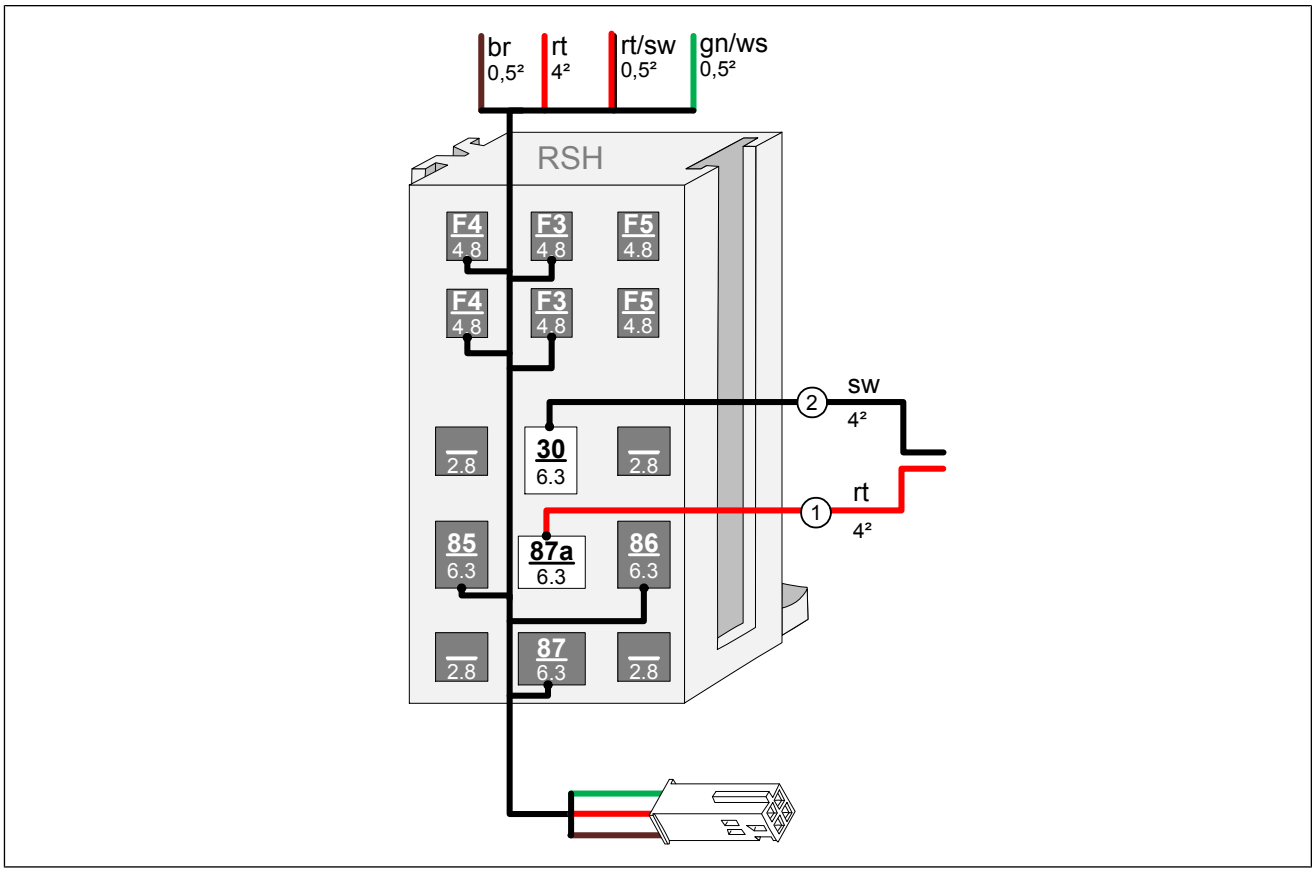


Fig. 77

13.1.2 System wiring diagram for manual air-conditioning

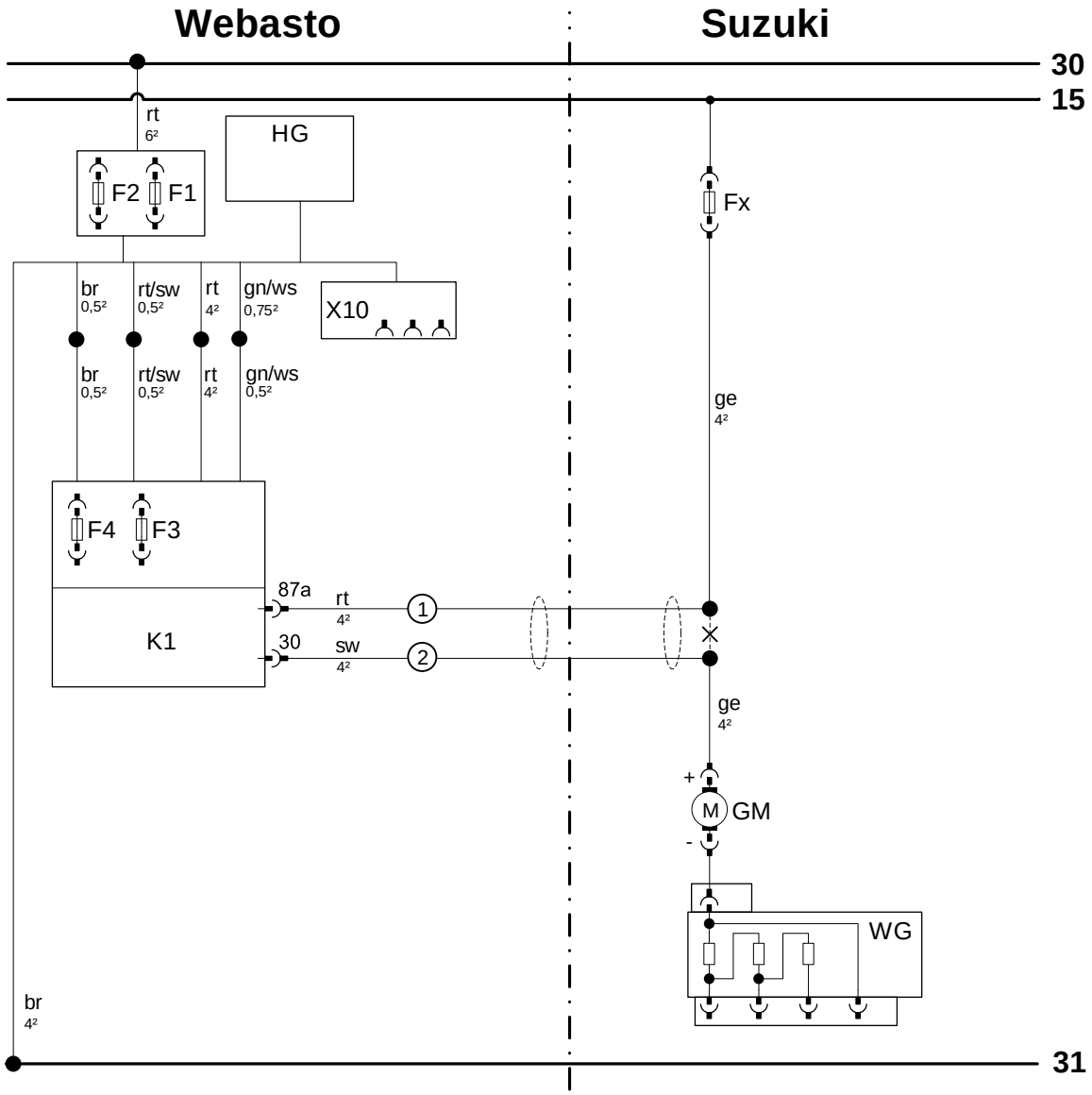


Fig. 78

Legend to wiring diagram

The vehicle connector and component designations are freely chosen by Webasto.
Cable colours may vary.

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Explanation
Fx	Fuse	X	Cutting point
GM	Fan motor		
WG	Resistor group		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Male plug for CLR module wiring harness	bg	beige
B	Female plug for CLR module wiring harness	bl	blue
C	Male plug for adapter wiring harness	br	brown
D	Female plug for adapter wiring harness	dbl	dark blue
E	Male plug for Plug&Play wiring harness	dgn	dark green
F	Female plug for Plug&Play wiring harness	ge	yellow
CCL GW	CAN CAN LIN Gateway	gn	green
CL GW	CAN LIN Gateway	gr	grey
CLR	Cold start module	hbl	light blue
D1	Diode	hgn	light green
D2	Diode group	or	orange
F0	Additional fuse for power supply	pk	pink
F1	Heater main fuse	rt	red
F2	Passenger compartment fan controller main fuse	sw	black
F3	Control element fuse	vi	violet
F4	Fan controller fuse	ws	white
F5	Additional fuse		
HG	Heater TT-Evo		
K1	Relay K1		
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	Female plug for control element		
Y	Power adapter		

13.1.3 Fan controller

Mounting RSH

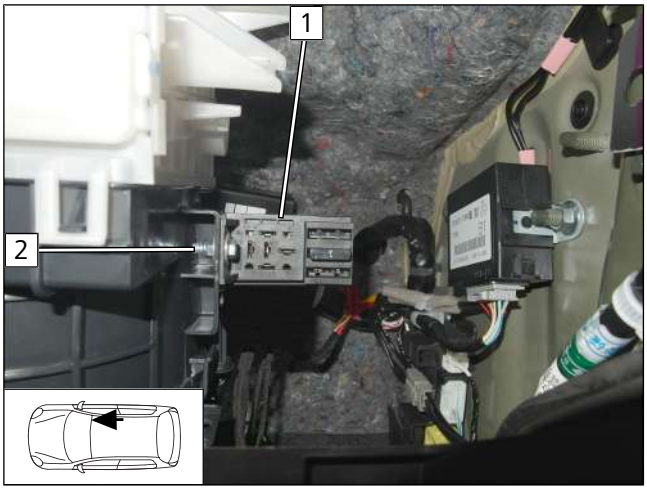


Fig. 79

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

1 RSH

2 M5x16 bolt, large diameter washer, RSH, original vehicle hole, large diameter washer, flanged nut

Mounting relay K1 and fuse F4

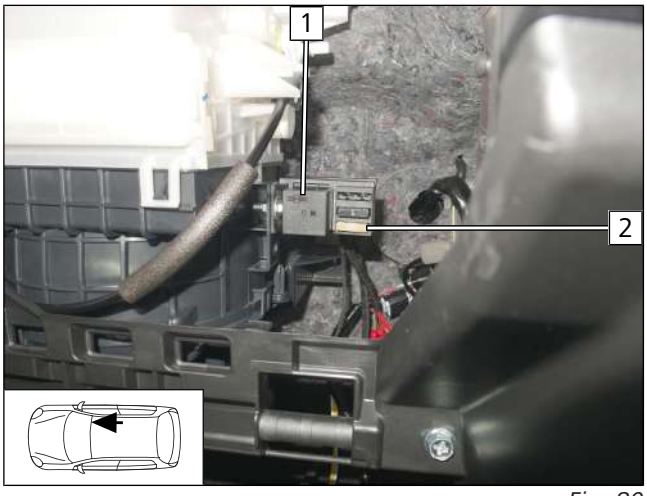


Fig. 80

1 Relay K1

2 25A fuse F4

Connecting same colour wires of wiring harnesses

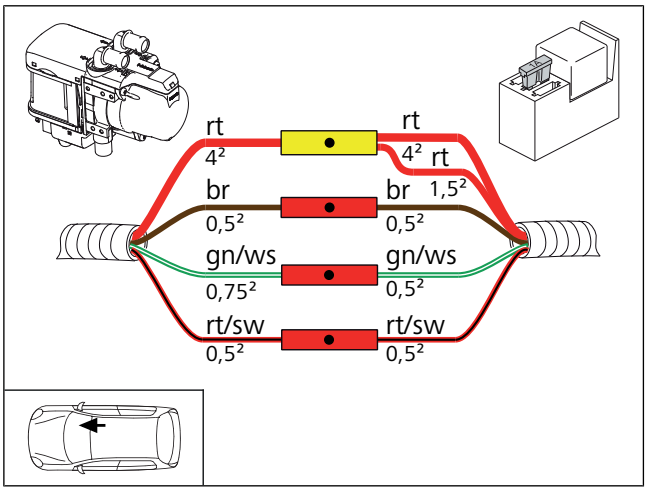


Fig. 81

Fan motor connection

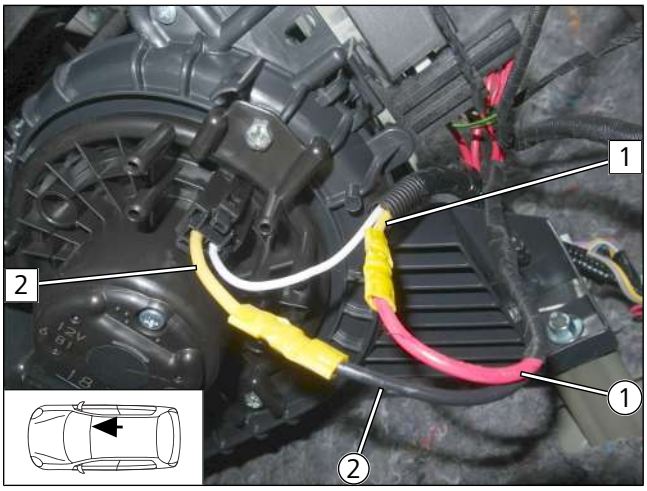


Fig. 82

[1] Yellow (ge) wire of fuse Fx
[2] Yellow (ge) wire of GM
① Red (rt) wire of K1/87a fan wiring harness
② Black (sw) wire of K1/30 fan wiring harness

13.2 Automatic air-conditioning

13.2.1 Electrical system preparation

Assigning wires

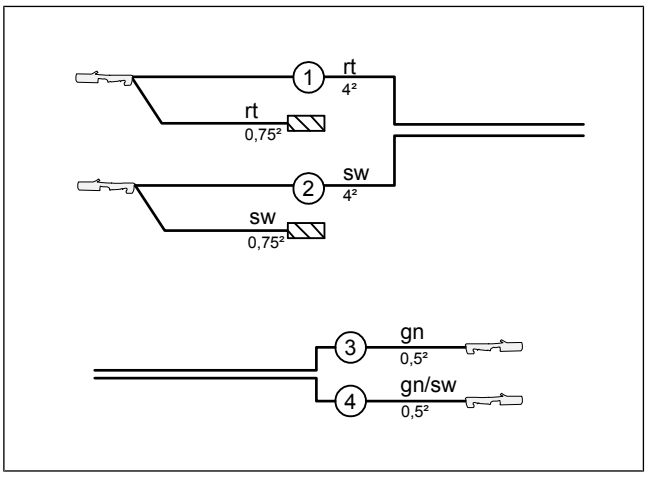


Fig. 83

Wire sections retain their numbering in the entire document.

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

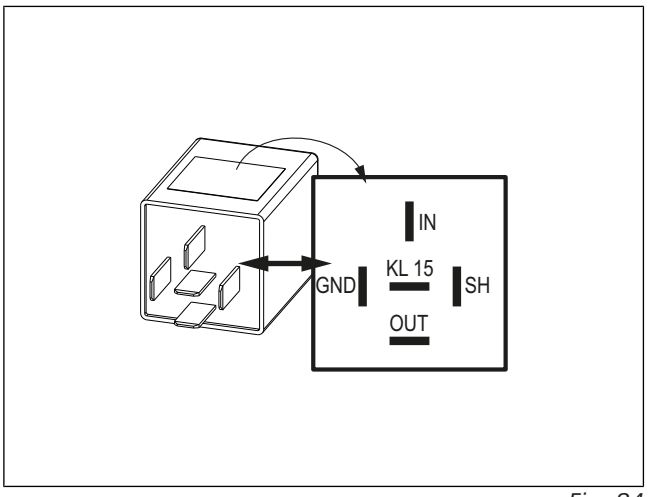


Fig. 84

▶ Check PWM Gateway settings when starting-up the heater, adjust if necessary to 1/3 of the fan capacity.

Parameters	Setting
Duty cycle	100% (DC)
Frequency	not relevant
Voltage	4.2 V
Function	High side

Assembling RSH and PWM Gateway sockets, connecting wires, connecting male and female connectors

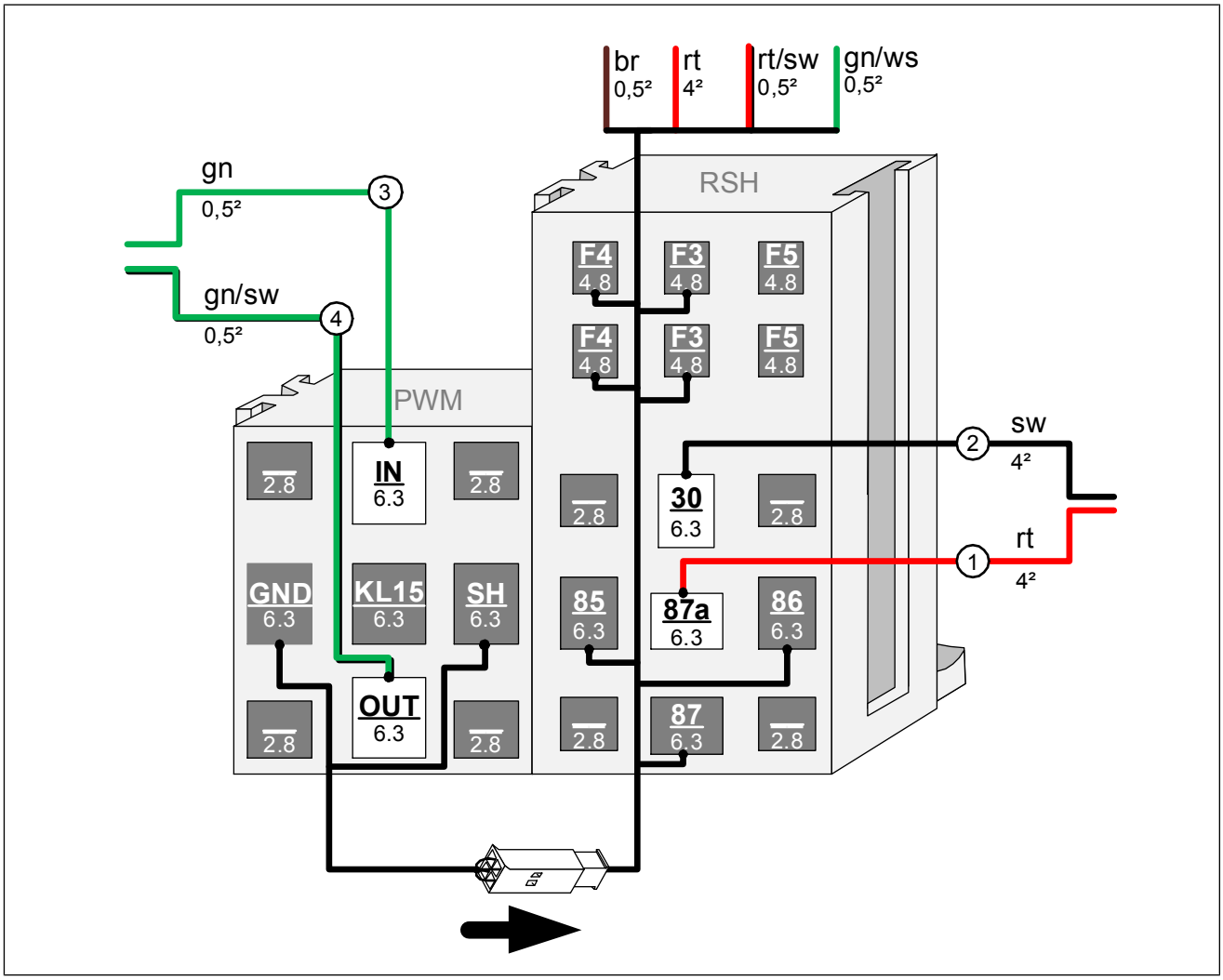


Fig. 85

13.2.2 System wiring diagram for automatic air-conditioning

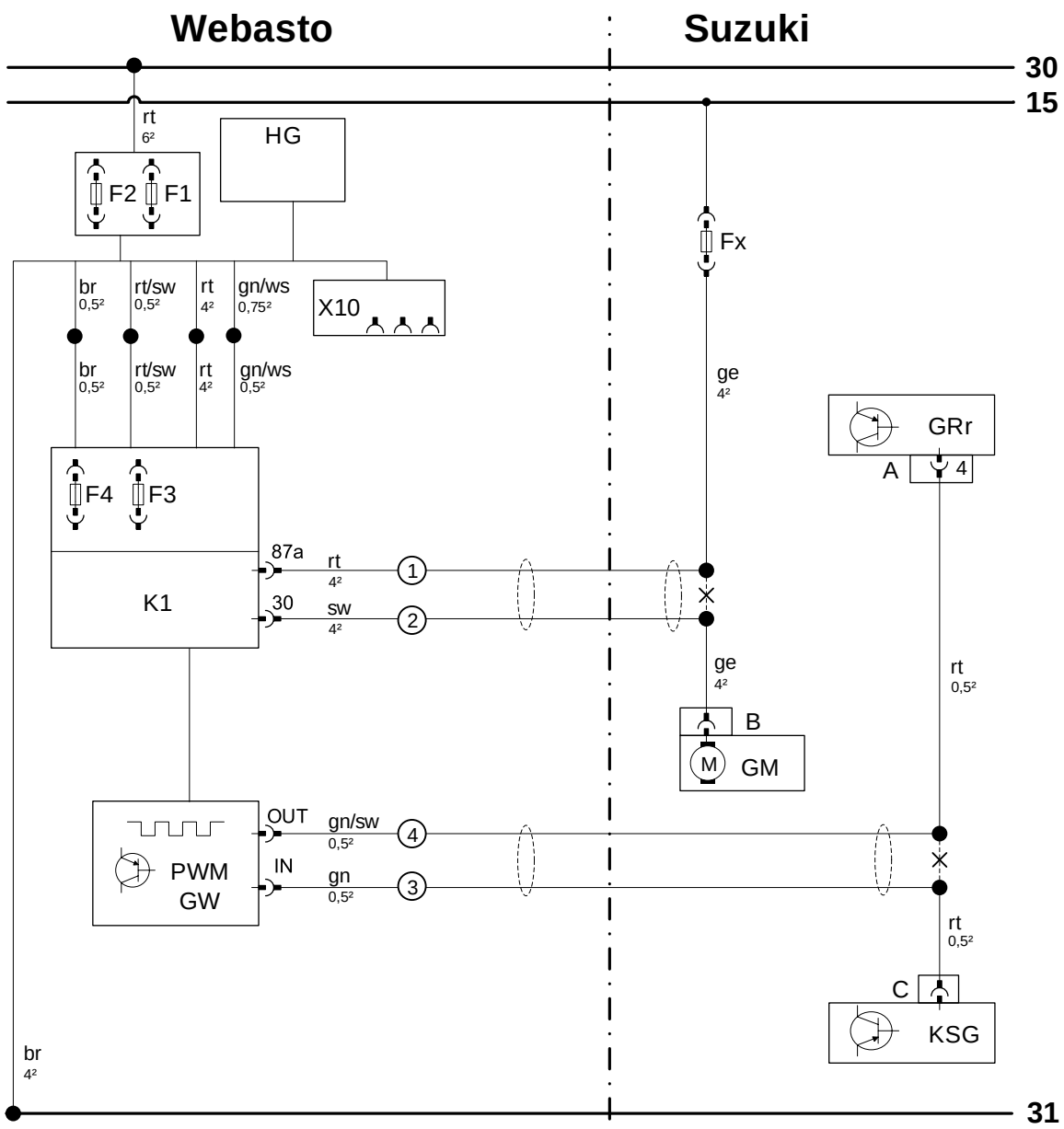


Fig. 86

Legend to wiring diagram

The vehicle connector and component designations are freely chosen by Webasto.
Cable colours may vary.

Vehicle components		Symbols	
Abbreviation	Component	Abbreviation	Explanation
Fx	Fuse	X	Cutting point
GRr	Fan controller		
A	Fan controller connector		
GM	Fan motor		
B	Fan motor connector		
KSG	Air-conditioning control unit		
C	Air-conditioning control unit connector		

Webasto components		Cable colours	
Abbreviation	Component	Abbreviation	Colour
A	Male plug for CLR module wiring harness	bg	beige
B	Female plug for CLR module wiring harness	bl	blue
C	Male plug for adapter wiring harness	br	brown
D	Female plug for adapter wiring harness	dbl	dark blue
E	Male plug for Plug&Play wiring harness	dgn	dark green
F	Female plug for Plug&Play wiring harness	ge	yellow
CCL GW	CAN CAN LIN Gateway	gn	green
CL GW	CAN LIN Gateway	gr	grey
CLR	Cold start module	hbl	light blue
D1	Diode	hgn	light green
D2	Diode group	or	orange
F0	Additional fuse for power supply	pk	pink
F1	Heater main fuse	rt	red
F2	Passenger compartment fan controller main fuse	sw	black
F3	Control element fuse	vi	violet
F4	Fan controller fuse	ws	white
F5	Additional fuse		
HG	Heater TT-Evo		
K1	Relay K1		
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	Female plug for control element		
Y	Power adapter		

13.2.3 Fan controller

Mounting RSH

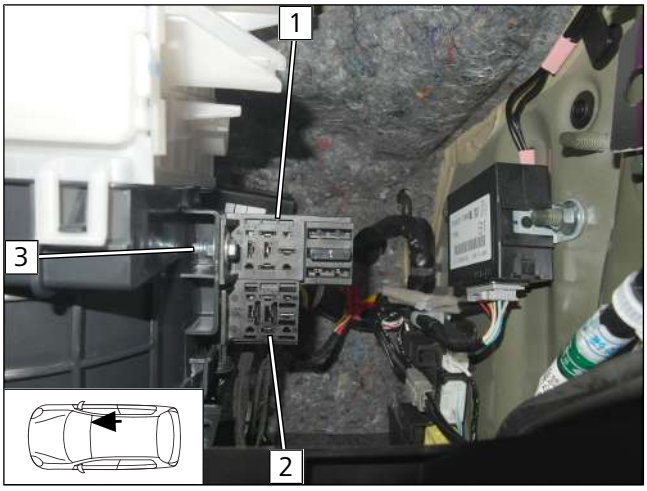


Fig. 87

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

1. RSH
2. PWM GW socket
3. M5x16 bolt, large diameter washer, RSH, original vehicle hole, large diameter washer, flanged nut

Mounting relay K1, PWM GW and fuse F4

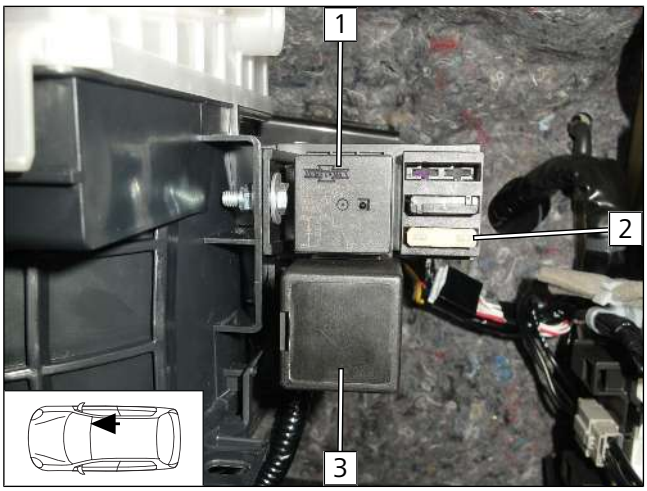


Fig. 88

1. Relay K1
2. 25A fuse F4
3. PWM GW

Connecting same colour wires of wiring harnesses

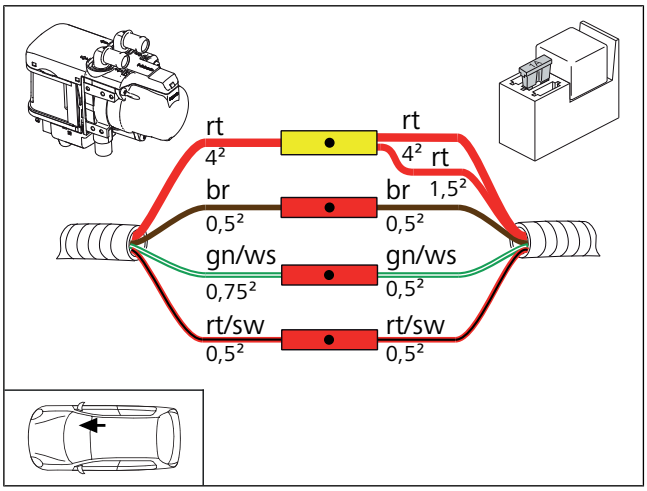


Fig. 89

Fan motor connection

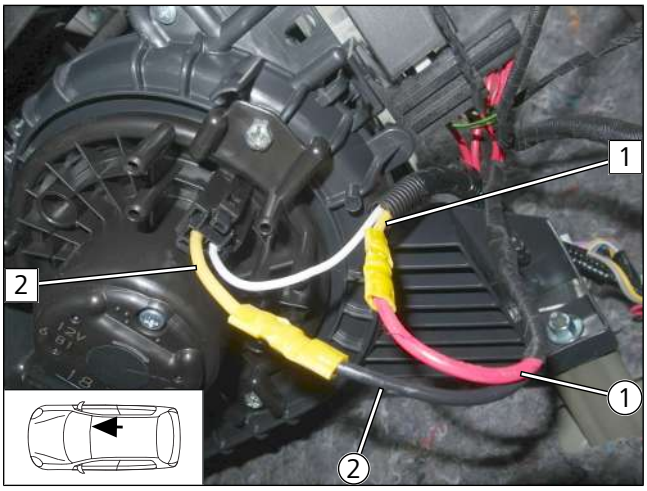


Fig. 90

1 Yellow (ge) wire of fuse Fx
2 Yellow (ge) wire of GM
① Red (rt) wire of K1/87a fan wiring harness
② Black (sw) wire of K1/30 fan wiring harness

Connection to fan controller

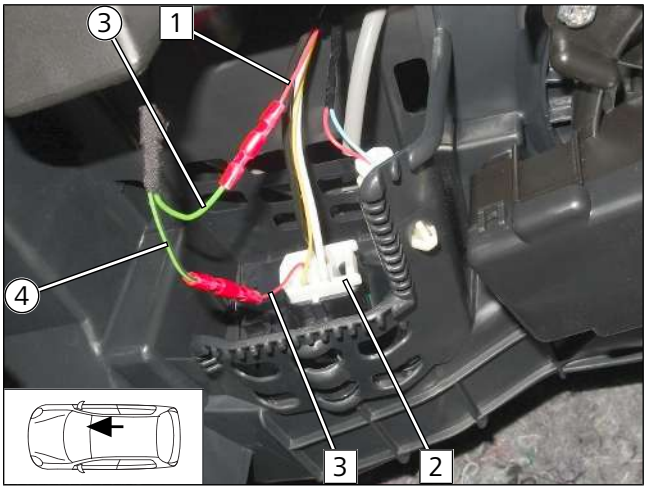


Fig. 91

1 Red (rt) wire of connector C/KSG
2 Connector A GRr
3 Red (rt) wire of connector A/GRr, pin 4
③ Green (gn) wire of PWM GW/IN wiring harness from PWM control
④ Green/black (gn/sw) wire of PWM GW/OUT wiring harness from PWM control

14 Electrical system of control elements

14.1 MultiControl CAR option

Mounting MultiControl CAR

Fig. 92

Observe the MultiControl CAR installation documentation.

14.2 Telestart option

Mounting receiver

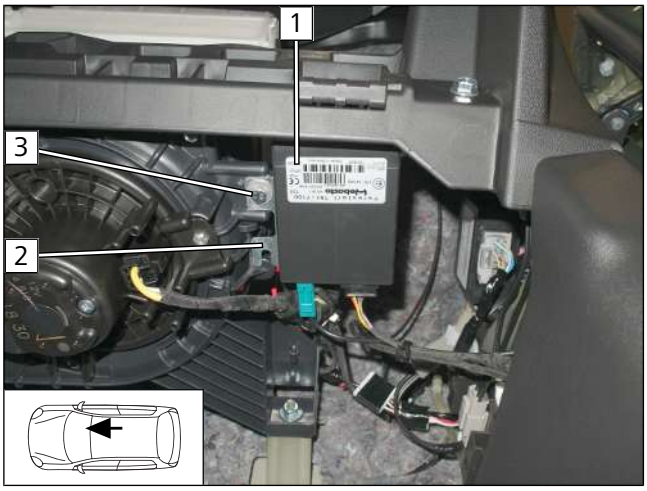


Fig. 93

Observe the Telestart installation documentation.

1 Receiver
2 Receiver bracket
3 M5x16 bolt, large diameter washer, receiver bracket, original vehicle hole, large diameter washer, flanged nut

Mounting temperature sensor, only in case of T100 HTM

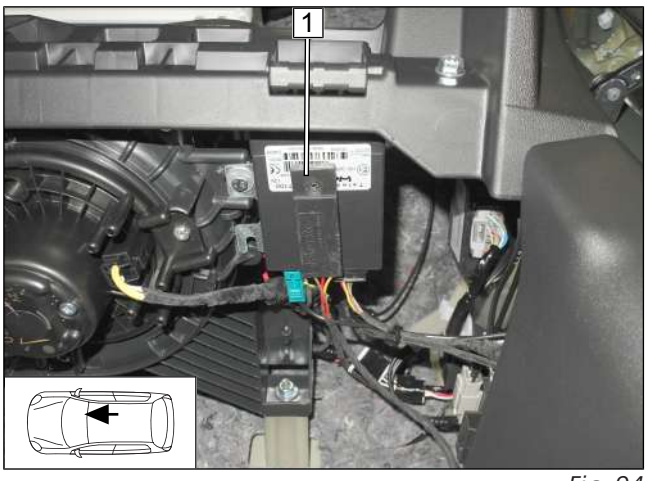


Fig. 94

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

Mounting aerial

Fig. 95

1 Aerial

14.3 ThermoCall option

Mounting receiver

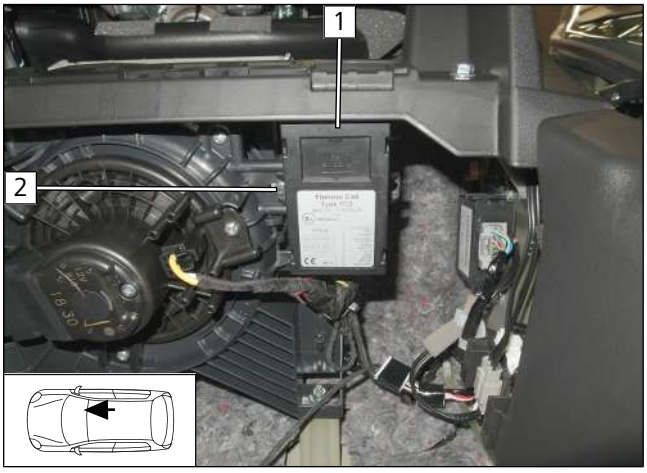


Fig. 96

Observe the ThermoCall installation documentation.

1 Receiver

2 M5x16 bolt, large diameter washer, ThermoCall lug, original vehicle hole, large diameter washer, flanged nut

Mounting aerial (optional)

Fig. 97

1 Aerial

15 Final work

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

▶ Mount removed parts in reverse order.

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

▶ Insulate and tie back loose lines

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

▶ Connect the battery.

Only use manufacturer-approved coolant.

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

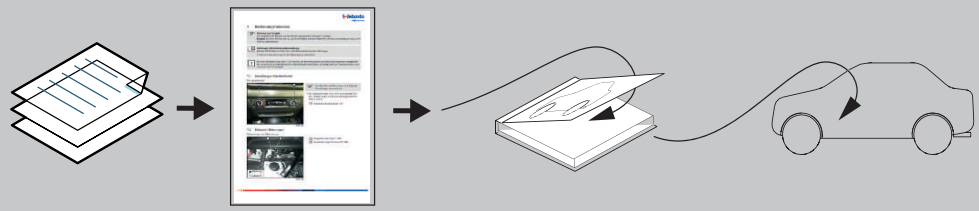
Further information can be found in the general installation and operating instructions of the Webasto components.

▶ Program MultiControl CAR, teach Telestart transmitter

▶ Initial start-up and function check

▶ Make settings on the A/C control panel according to the 'operating instructions'

▶ Affix 'Switch off parking heater before refuelling' caution label in area of filler point



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.

Webasto Thermo & Comfort SE
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82199 Gilching
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Company address:
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82205 Gilching
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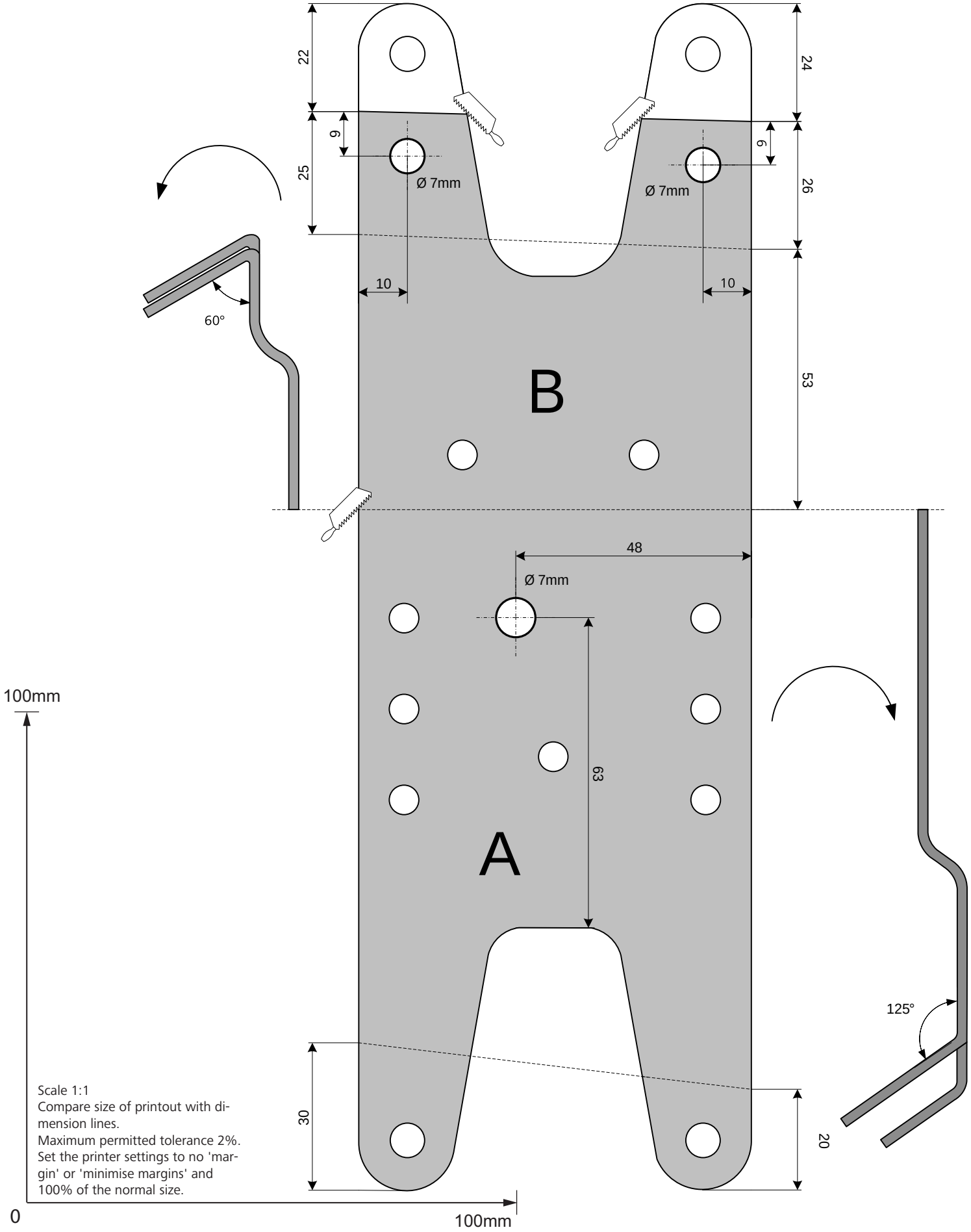
Technical Extranet: https://dealers.webasto.com

CE

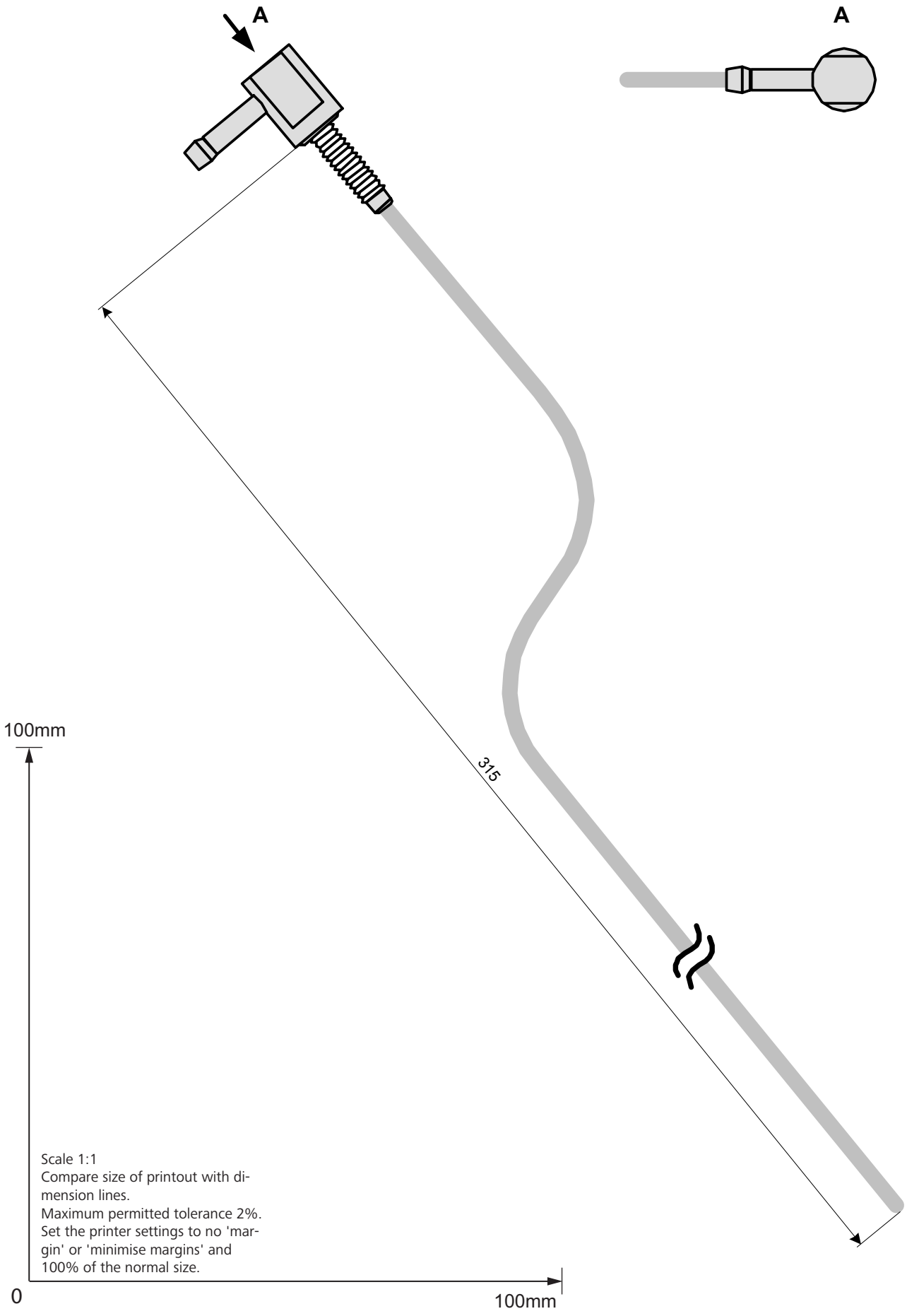
WWW.WEBASTO.COM

16 Heater bracket 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.

17 Tank extracting device template



18 Operating instructions for manual 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

Note for parking heater function

Your vehicle is equipped with a passenger compartment and engine preheating unit.

18.1 A/C control panel settings

Manual air-conditioning control panel

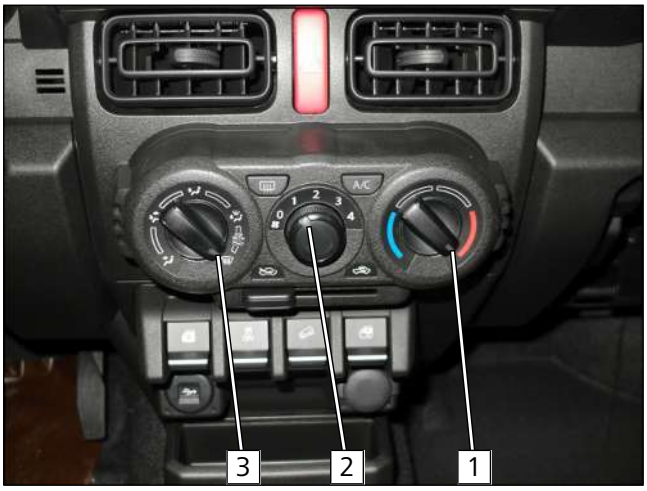


Fig. 98

Before parking the vehicle, make the following settings:

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

18.2 Installation location of fuses

Fuses in engine compartment

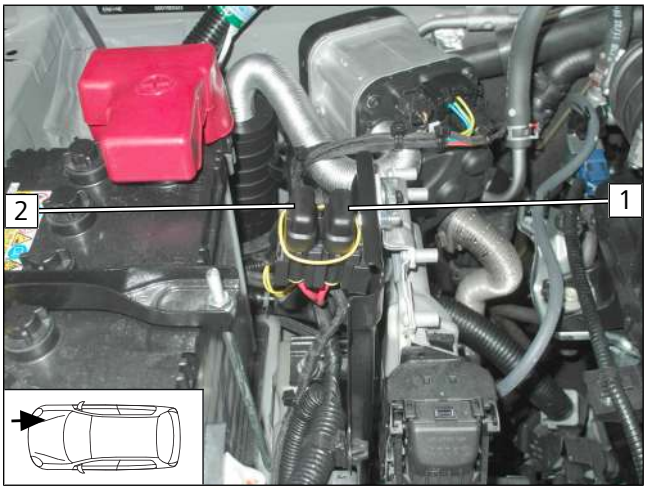


Fig. 99

1. F2 - 30A main fuse of passenger compartment
2. F1 - 20A heater fuse

Fuses in passenger compartment

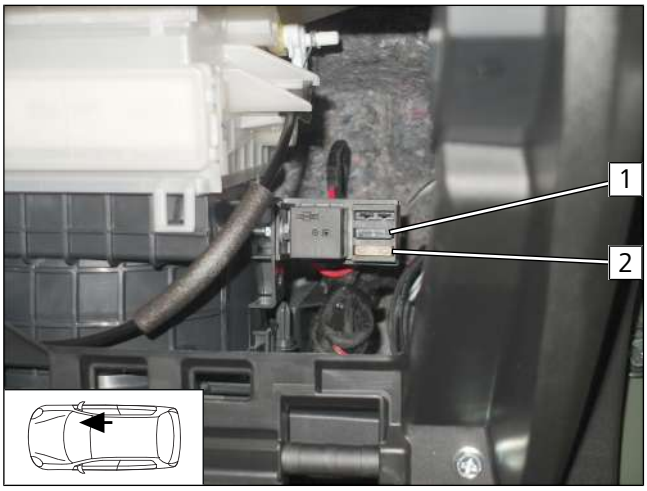


Fig. 100

1 F3 - 1A control element fuse
2 F4 - 25A fan controller fuse

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

Note for parking heater function

Your vehicle is equipped with a passenger compartment and engine preheating unit.

19.1 A/C control panel settings

Automatic A/C control panel

Fig. 101

Before parking the vehicle, make the following settings:

▶ The fan speed must not be preset.

1 Air outlet to windscreen
2 Set temperature to 'HI'

19.2 Installation location of fuses

Fuses in engine compartment

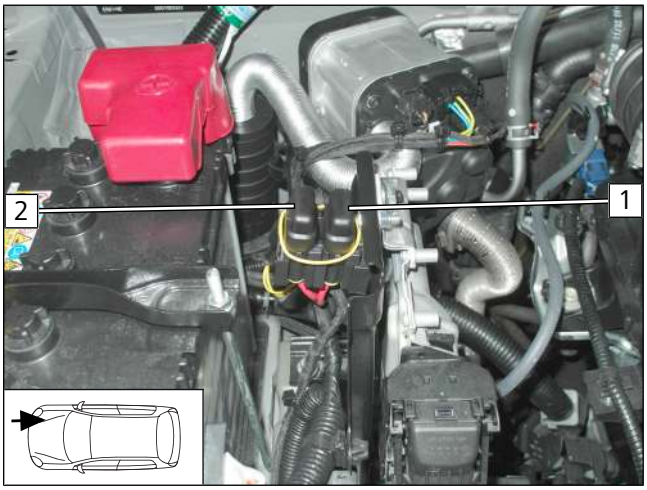


Fig. 102

1 F2 - 30A main fuse of passenger compartment
2 F1 - 20A heater fuse

Fuses in passenger compartment

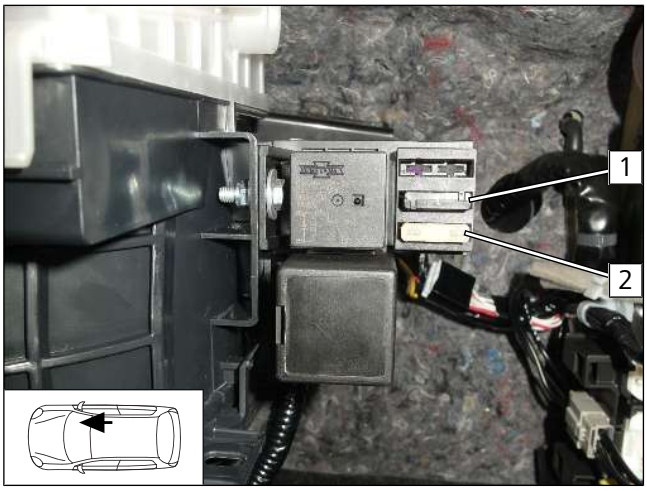


Fig. 103

1 F3 - 1A control element fuse
2 F4 - 25A fan controller fuse