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Installation documentation

for water heater Thermo Top Evo

'Inline' coolant circuit with engine preheating

Nissan X-Trail

Left-hand drive vehicle

Manufacturer	Model	Type	Model year	EG-BE-No. / ABE
Nissan	X-Trail	T32	2019	e13* 2007/46* 1456*…

Motorisation	Fuel	Emission standard	Transmission type	Output [kW]	Displace-ment [cm³]	Engine code
1.7D	Diesel	EURO6; WLTP;DG…	6-speed SG	110	1749	R9N
1.7D	Diesel	EURO6; WLTP;DG…	CVT	110	1749	R9N

Validity	Equipment variants	Model
		X-Trail
Verified equipment variants	Manual air conditioning	x
	2 zone automatic air-conditioning	x
	LED main headlights	x
	Halogen front fog lights	x
	LED daytime running lights	x
	Automatic Start-Stop system	x
	5 seater	x
Unverified equipment variants	Passenger compartment monitoring	x
	7 seater	x

Total installation time	Note
10 hours	

Contents

1 List of abbreviations

AAC	Automatic air-conditioning
AC	Manual air-conditioning
CVT	Continuously variable automatic transmission
DP	Fuel pump
EFIX	Exhaust end fastener
FF	FuelFix (tank extracting device)
HG	Heater
SG	Manual transmission
SH2	Engine compartment fuse holder for F1/F2
UP	Coolant pump
Veh.	Vehicle
X10	Female plug for control element

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 Nissan X-Trail 2019 diesel	1327721A
Additional 'Webasto Standard' A/C control kit for Nissan X-Trail AC and AAC or Additional 'Webasto Comfort' A/C control kit for Nissan X-Trail AAC	1324070_ 1327655_
In case of Telestart, control element, as well as indicator lamp in consultation with end customer	In accordance with price list

2.3 Notes on installation, in coordination with the end customer

▶ Arrange for the vehicle to be delivered with the tank only about ¼ full.

▶ The installation location of the following elements should be chosen in coordination with the end customer:

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

2.4 Information on Total Installation Time

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

3 About this document

3.1 Purpose of the document

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

Thermo Top Evo heater

3.2 Warranty and liability

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

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

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

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

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

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

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

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

3.2.1 Statutory regulations governing installation

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

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

3.3 Safety

Qualifications of installation personnel

The installation personnel must have the following qualifications:

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

Regulations and legal requirements

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

3.3.1 Safety information on installation

Danger posed by live parts

▶ Prior to installation, disconnect the vehicle from the voltage supply.

▶ Make sure the electrical system is earthed correctly.

▶ Always comply with legal requirements.

▶ Observe data on type label.

Danger of fire and leaking toxic gases due to improper installation

▶ Vehicle parts in the vicinity of the heater must be protected against excessive heating by the following measures:

  ⇨ Maintain minimum safety distances.

  ⇨ Ensure adequate ventilation.

  ⇨ Use fire-resistant materials or heat shields.

Danger due to sharp edges

- Lacerations
- Short circuit due to electrical wire damage

▶ Fit protectors on sharp edges.

3.4 Using this document

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

3.4.1 Explanatory Notes on the Document

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

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

3.4.2 Use of symbols

DANGER

Type and source of the risk

Consequences: Failure to follow the instructions can result in death

▶ Actions to protect yourself against risks.

WARNING

Type and source of the risk

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

▶ Actions to protect yourself against risks.

CAUTION

Type and source of the risk

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

▶ Actions to protect yourself against risks.

Type and source of the risk

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

▶ Actions to protect yourself against risks.

Reference to the vehicle manufacturer's specific documents.

Note on a special technical feature

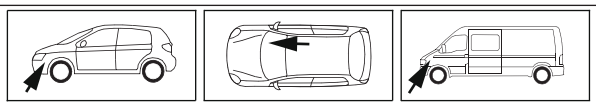
3.4.3 Work step identification marks

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

Mechanical system	Electrical system	High-voltage	Coolant

Combustion air	Fuel	Exhaust	Software

3.4.4 Orientation aid



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

3.4.5 Use of highlighting

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

4 Technical Information

Dimension specifications

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

Tightening torque specifications

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

Temperature specification for heat shrink plastic tubings

- Fabric heat shrink tubing: shrink temperature max. 230°C
- Standard heat shrink plastic tubing: shrink temperature max. 300°C

Necessary special tools

- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Hose clamping pliers
- Hose cutter
- Automatic wire stripper 0.2 - 6 mm^2
- Crimping pliers for cable lugs 0.5 – 10 mm^2
- Crimping pliers for male connector 0.14 – 6 mm^2
- Crimping pliers for connector 0.25 – 6 mm^2
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

5 Preparations

5.1 Vehicle preparation

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

Vehicle area	Components to be removed	Other applicable documents
General	▶ Open the fuel tank cap ▶ Ventilate the fuel tank ▶ Close the fuel tank cap again ▶ Depressurise the cooling system	K
Engine compartment and body	▶ Battery and battery carrier with control unit ▶ Entire air filter box with intake hose ▶ Engine design cover ▶ Detach the coolant expansion tank of the charge-air system (draining the coolant is not necessary) ▶ Front wheel on the driver's and front passenger's side ▶ Wheel well trim on the driver's side ▶ Remove the wheel well trim on the front passenger's side ▶ Bottom engine compartment trim ▶ Underbody trim on the front passenger's side ▶ Front bumper ▶ Headlight on the front passenger's side ▶ Washer reservoir	K
Passenger compartment	▶ Side instrument panel trim on the driver's side ▶ Lower instrument panel trim on the driver's side ▶ Front footwell trim on the centre console on the driver's and front passenger's side ▶ Carpet on the driver's side, folded back ▶ A-pillar trim (only in case of Telestart) ▶ A-pillar trim in the footwell on the driver's side ▶ Rear bench seat on the front passenger's side ▶ Tank fitting service lid	K H

5.2 Heater preparation

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

6 Installation overview

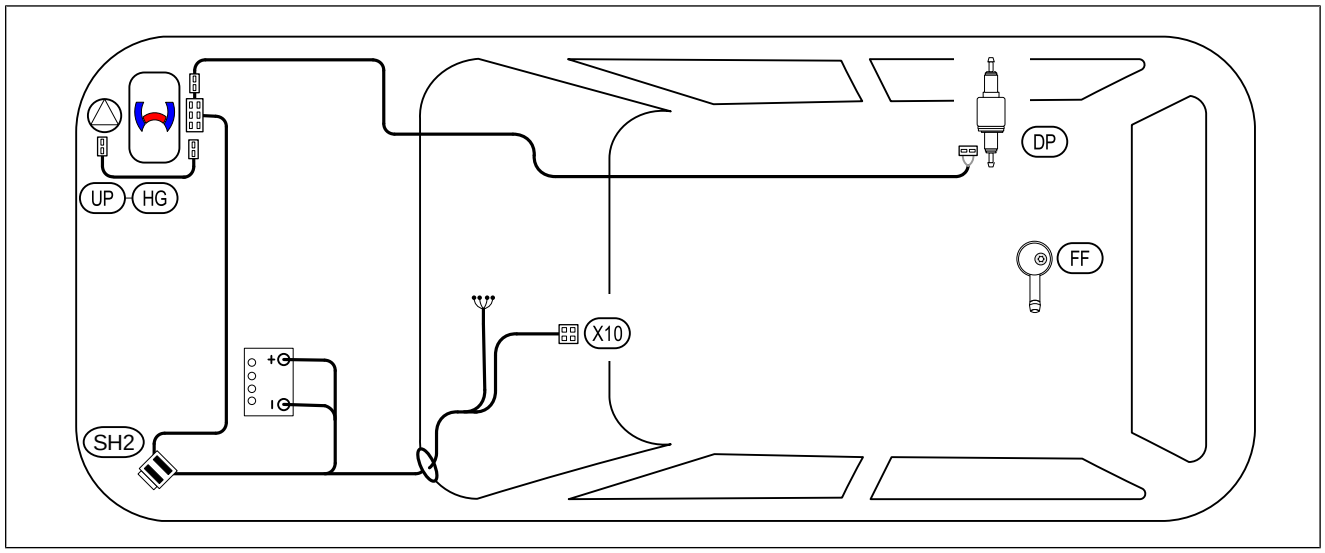


Fig. 1

Legend to installation overview

Abbreviation	Component
DP	Fuel pump
FF	FuelFix
HG	Heater
UP	Coolant pump
SH2	Engine compartment fuse holder for F1/F2
X10	Female plug for control element

Heater installation location

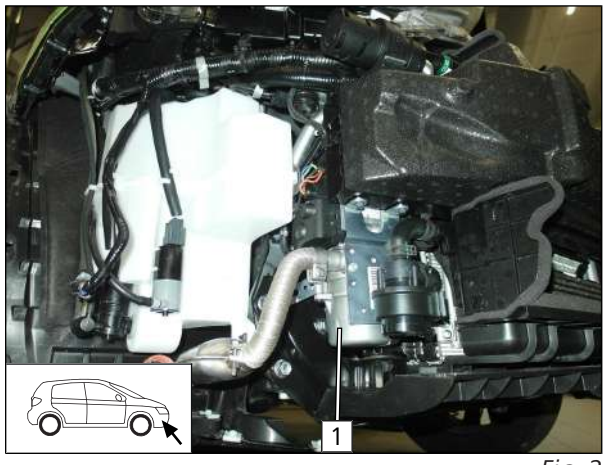


Fig. 2

1 Heater

7 Electrical system of engine compartment

Cutting to length/assigning corrugated tubes

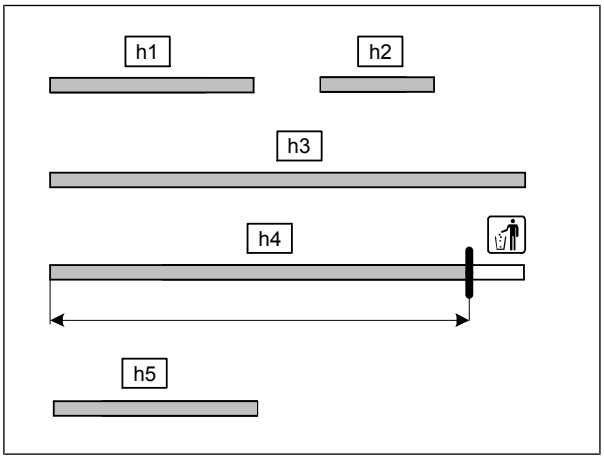


Fig. 3

	Length	Used for
h1	1400	Heater wiring harness
h2	430	Positive wire
h3	2100	Fuel line and fuel pump wiring harness
h4	1900	Fuel line and fuel pump wiring harness
h5	430	Fuel line

▶ Slit open **h1** corrugated tube lengthwise.

Preparing wiring harness

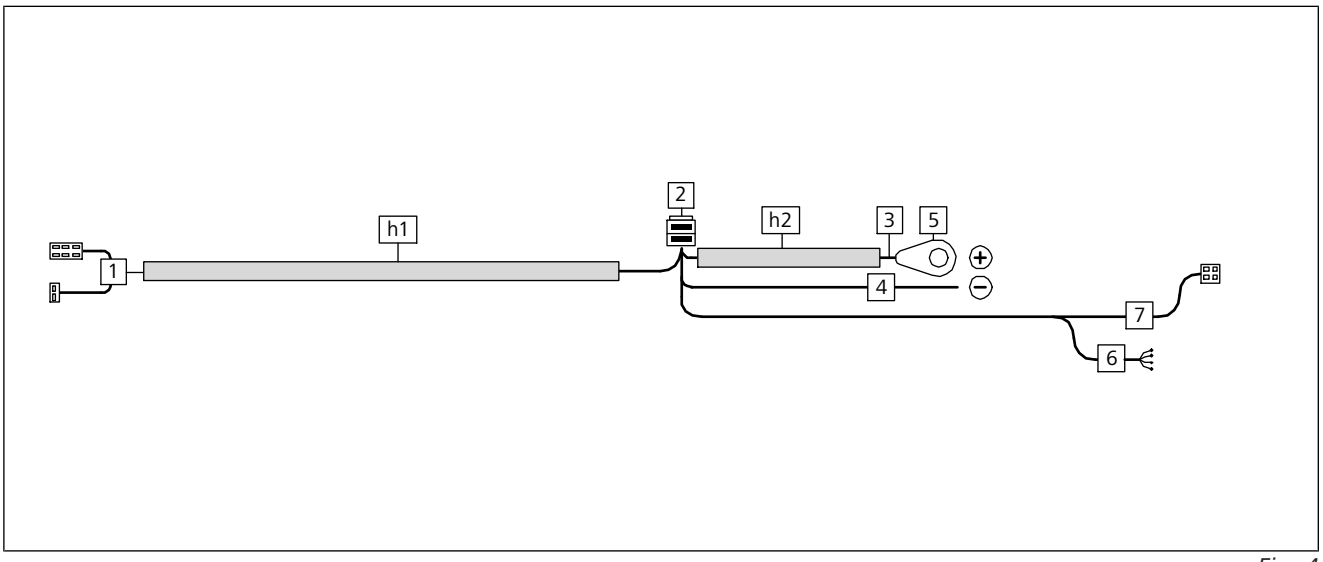


Fig. 4

Determine the cable lug size at the positive support point before crimping.

▶ Slide corrugated tube **h2** over positive wire **3**, then crimp on relevant cable lug **5**.

1 Heater wiring harness with connector X1 and X2
2 SH2
4 Earth wire
6 Passenger compartment wiring harness
7 Control element wiring harness

Shortening perforated bracket

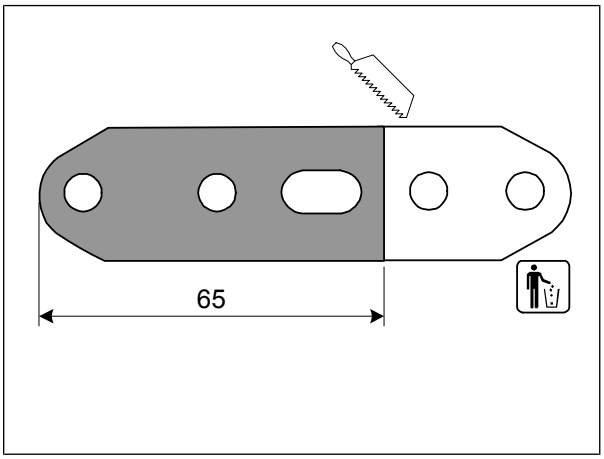


Fig. 5

Premounting retaining plate of SH2

Fig. 6

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

Drilling hole

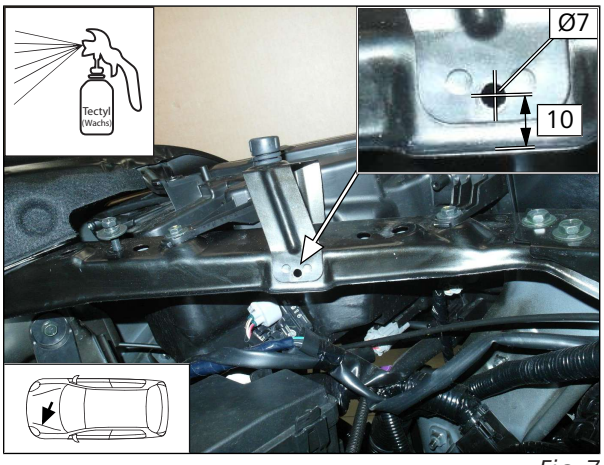


Fig. 7

Installing perforated bracket

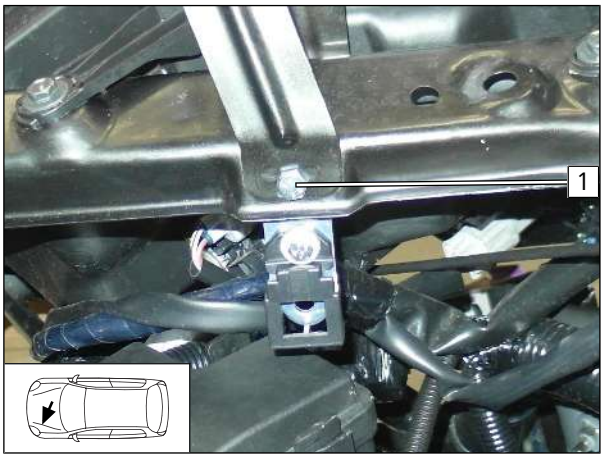


Fig. 8

1 M6x20 bolt, drilled hole, perforated bracket, large diameter washer, flanged nut

Installing SH2

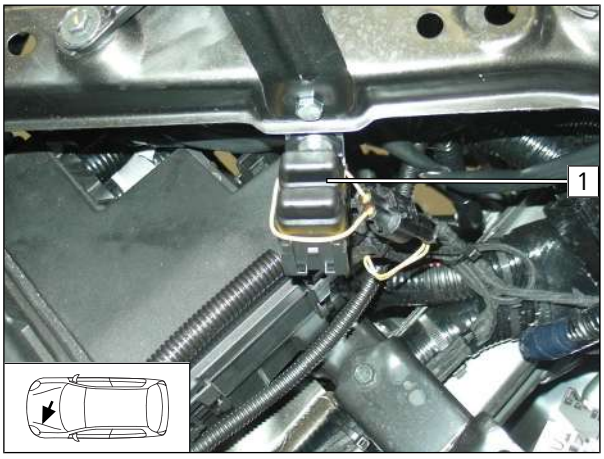


Fig. 9

1 SH2 with fuse F1 and F2

Connecting positive wire

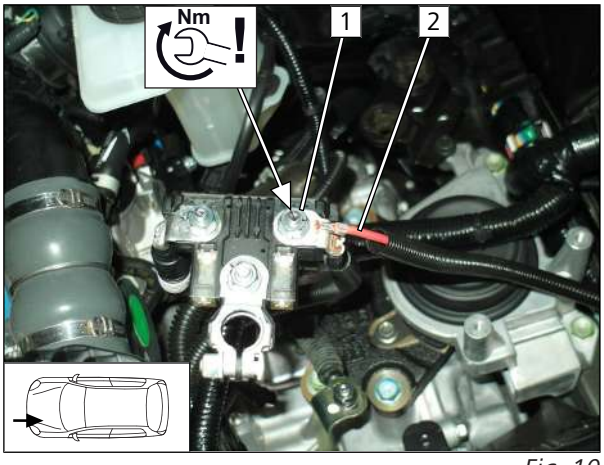


Fig. 10

DANGER

Observe tightening torque

1 Original vehicle positive support point

2 Positive wire

Connecting earth wire

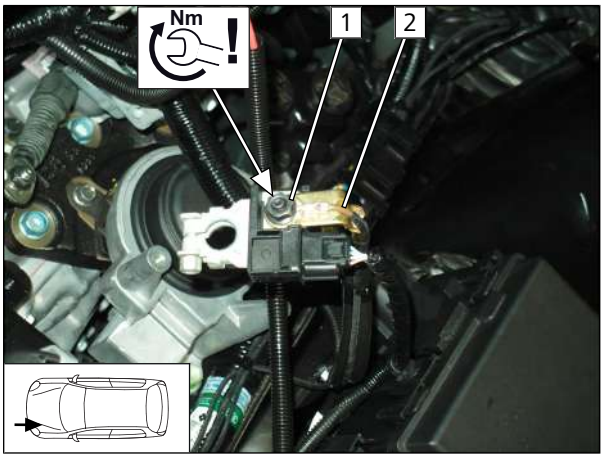


Fig. 11

DANGER

Observe tightening torque

1 Original vehicle earth support point
2 Earth wire

Routing wiring harness

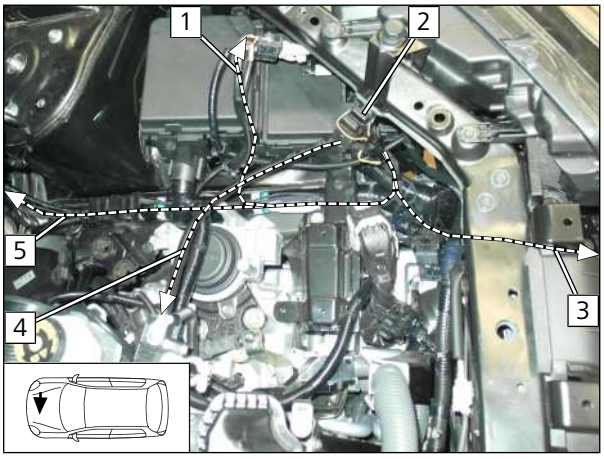


Fig. 12

1 Earth wire
2 SH2
3 Wiring harness to heater installation location
4 Positive wire
5 Wiring harness to wiring harness pass through in the passenger compartment

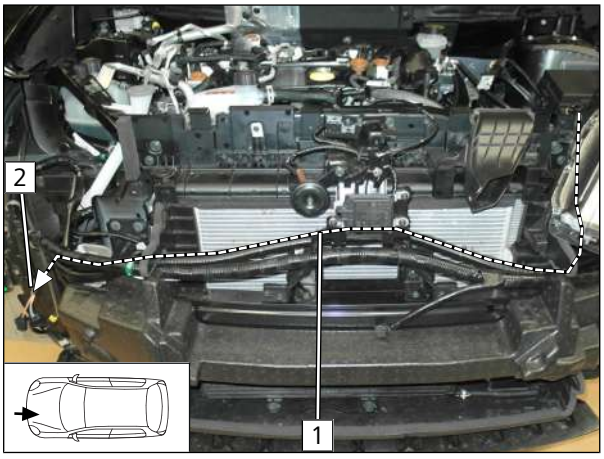


Fig. 13

▶ Route HG wiring harness 1 along original vehicle wiring harness to heater installation location 2 and attach using cable ties.

Passenger compartment wiring harness pass through

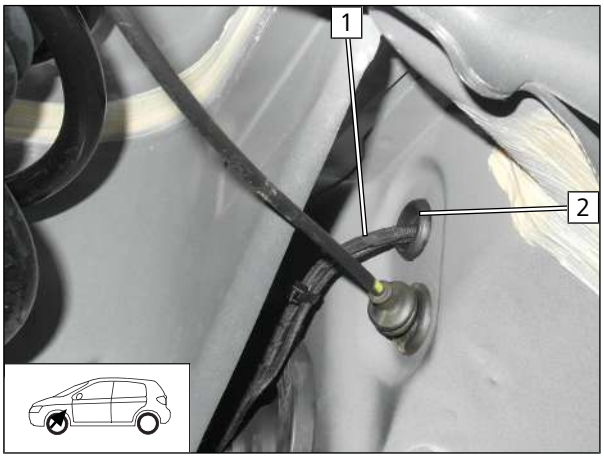


Fig. 14

1 Control element and passenger compartment wiring harnesses

2 Passenger compartment wiring harness pass through

8 Mechanical system

8.1 Preparing installation location

Drilling/enlarging holes

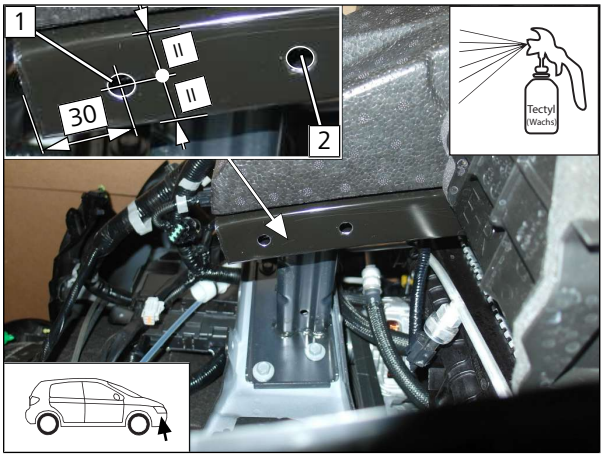


Fig. 15

1 Ø9 hole

2 Drill out original vehicle hole to Ø9

Inserting and tightening rivet nuts

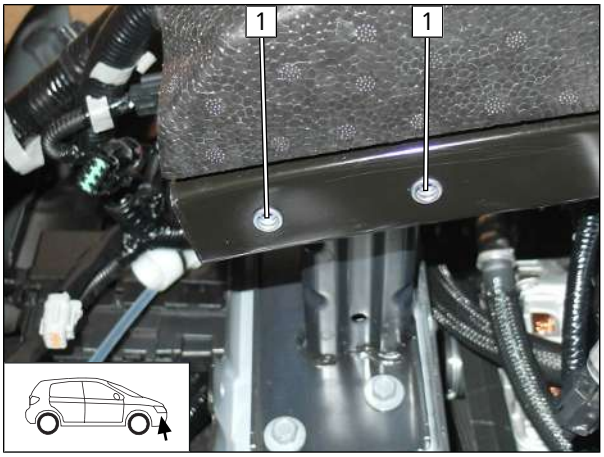


Fig. 16

1 Rivet nut

Removing original vehicle bolt

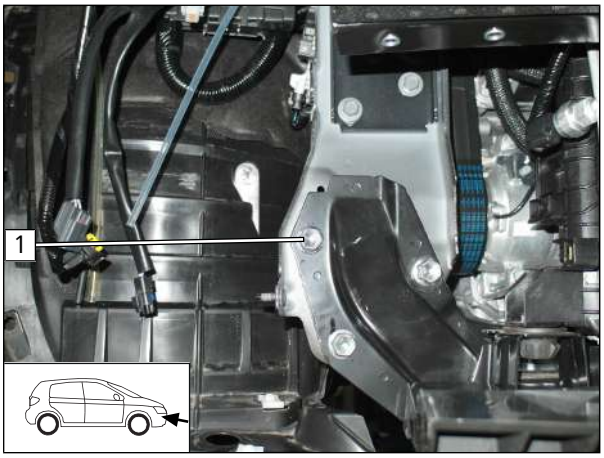


Fig. 17

▶ Remove original vehicle bolt 1, it will be reused.

Turning original vehicle spring clip

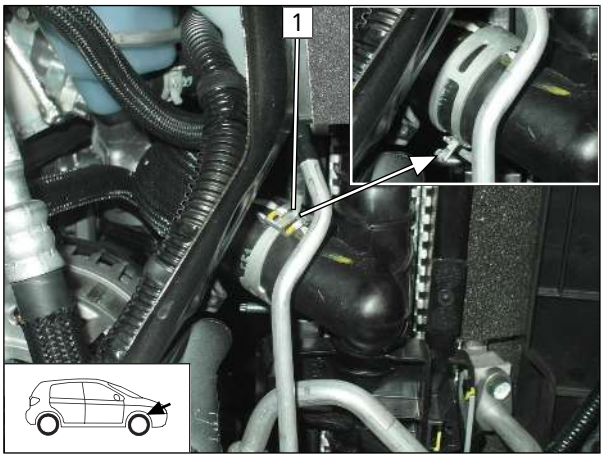


Fig. 18

▶ Turn fastener **1** of original vehicle radiator spring clip downwards as shown.

Fitting edge protection

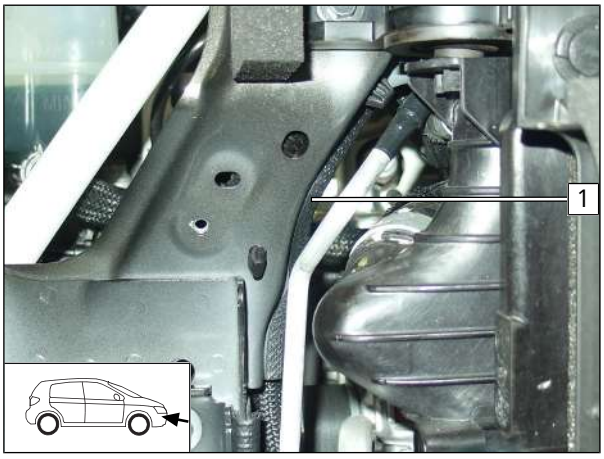


Fig. 19

1 150 long, narrow edge protection

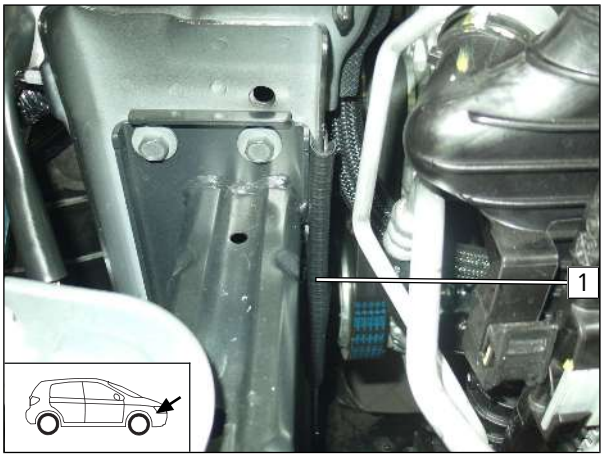


Fig. 20

1 180 long, wide edge protection

8.2 Premounting heater

Bending perforated bracket 1, enlarging hole

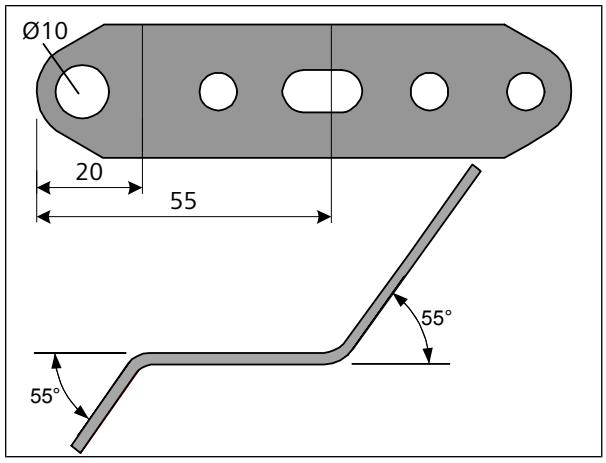


Fig. 21

Shortening and bending perforated bracket 2

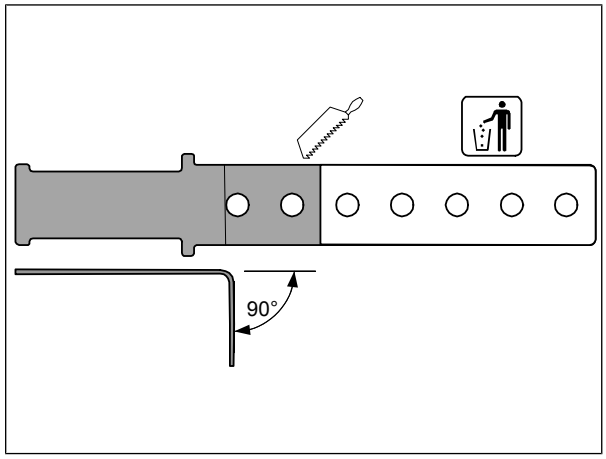


Fig. 22

Premounting HG bracket

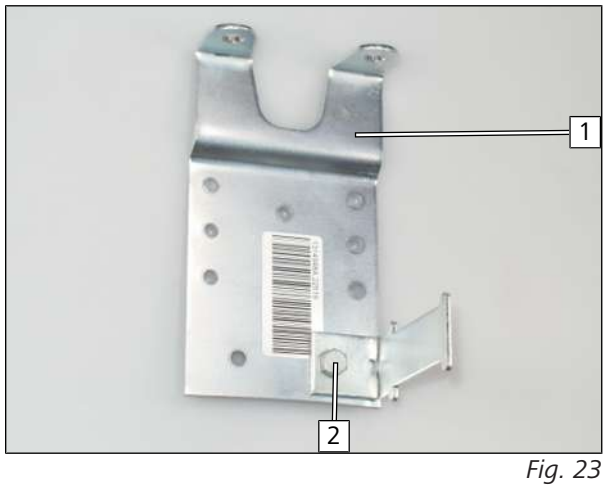


Fig. 23

▶ Prepare HG bracket **1** in accordance with template.

2 M6x12 bolt, perforated bracket 2, bracket HG, flanged nut

Mounting, aligning and fastening with 7Nm water connection piece with sealing ring and retaining plate

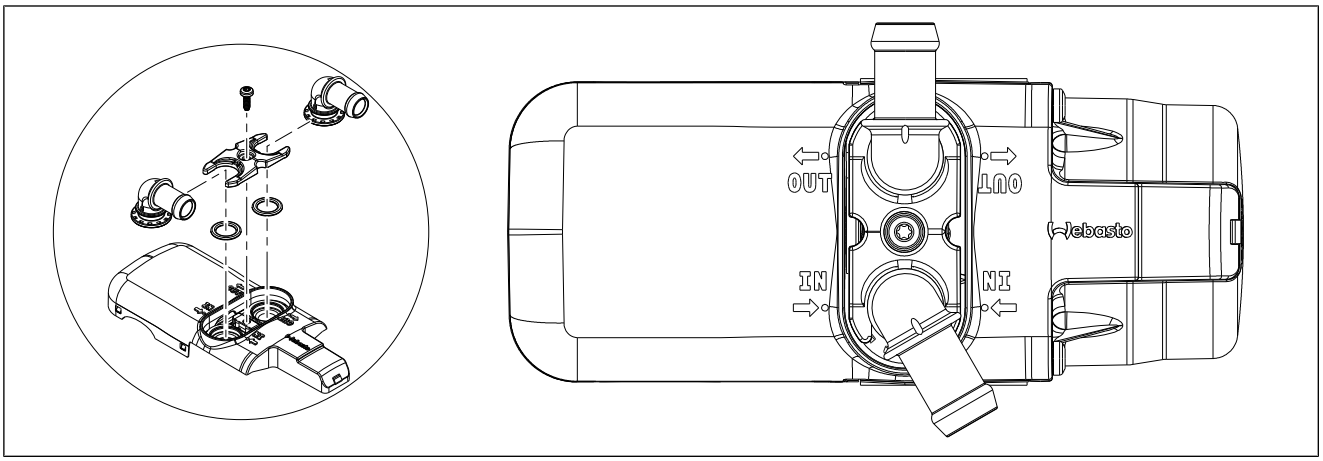


Fig. 24

Shortening fuel hose

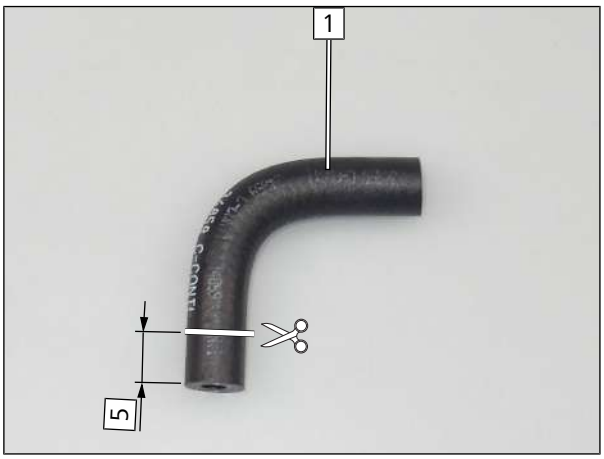


Fig. 25

1 90° moulded hose

Mounting fuel hose

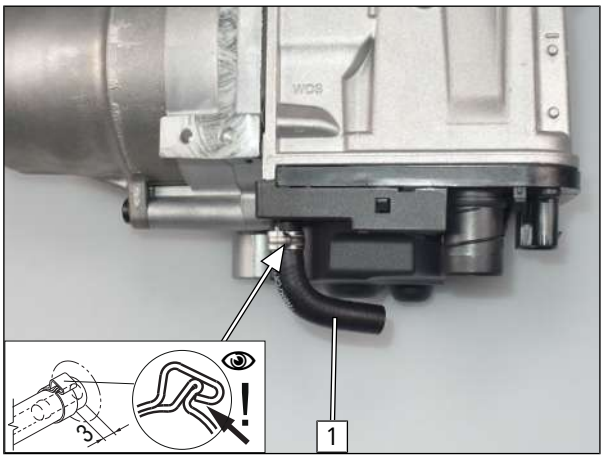


Fig. 26

1 90° moulded hose with short side on HG, Ø10 clamp

Mounting heater bracket

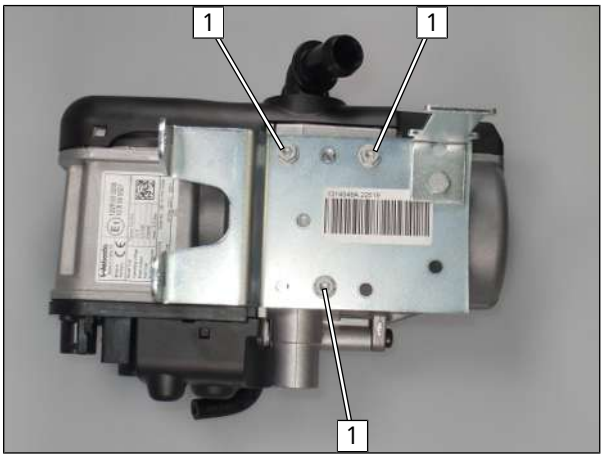


Fig. 27

1 5x13 self-tapping bolt, HG bracket, hole in HG

Preparing hoses

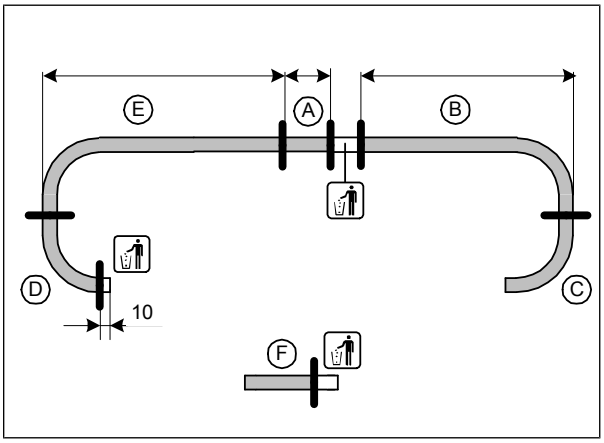


Fig. 28

A	230
B	940
C	90°
D	90°
E	940
F	230

Mounting fabric heat shrink tubing

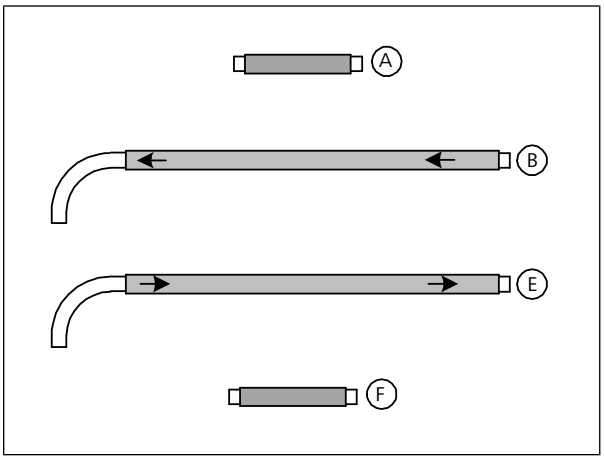


Fig. 29

Risk of interchanging the coolant hoses

▶ Indicate the direction of flow on hoses B and E using suitable means.

▶ 1. Slide on and cut to length

▶ 2. Shrink, use at most 230 °C

Mounting coolant pump and hose Ⓓ

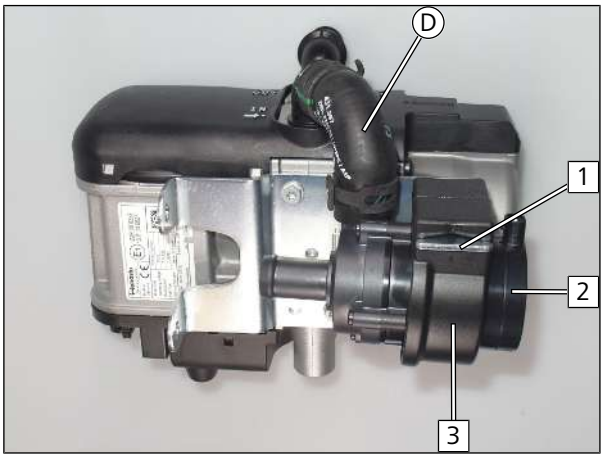


Fig. 30

All spring clips Ø25

- ▶ Slide coolant pump [2] in coolant pump mount [3].
- ▶ Push coolant pump mount onto perforated bracket [1].
- ▶ Connect hose Ⓓ to HG/IN and coolant pump outlet.

Mounting coolant pump wiring harness connector

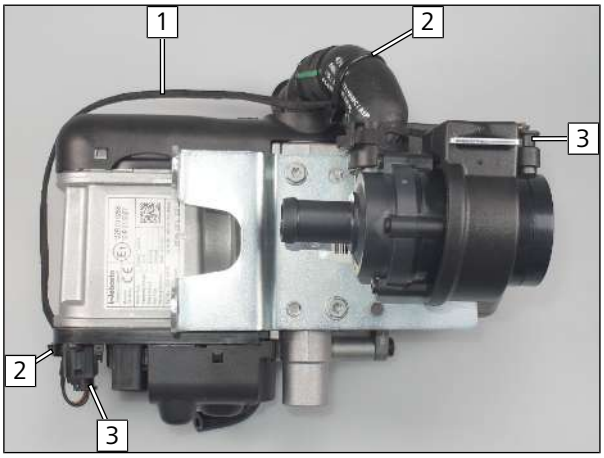


Fig. 31

[1] Coolant pump wiring harness
[2] Cable tie
[3] Coolant pump wiring harness connector

Mounting perforated bracket 1

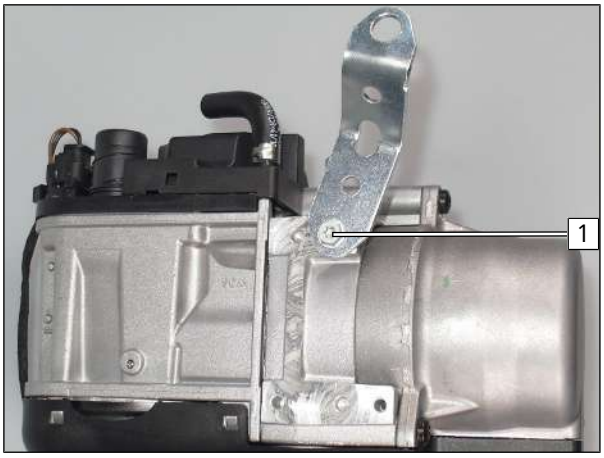


Fig. 32

[1] 5x13 self-tapping bolt, perforated bracket 2, hole in HG

Mounting hose Ⓔ onto HG/OUT

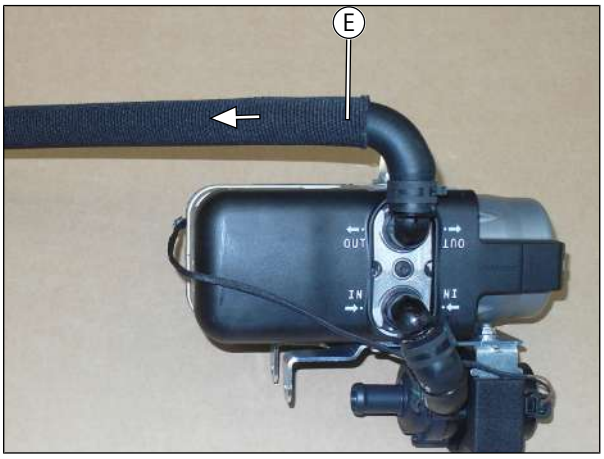


Fig. 33

Ø25 spring clip

8.3 Heater mounting

Routing hose Ⓔ

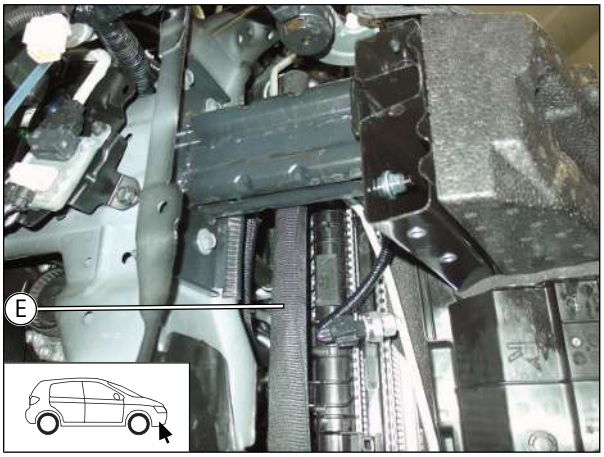


Fig. 34

Observe the general installation instructions of the heater.

▶ Thread hose Ⓔ upwards and route to the engine compartment as shown.

Mounting heater

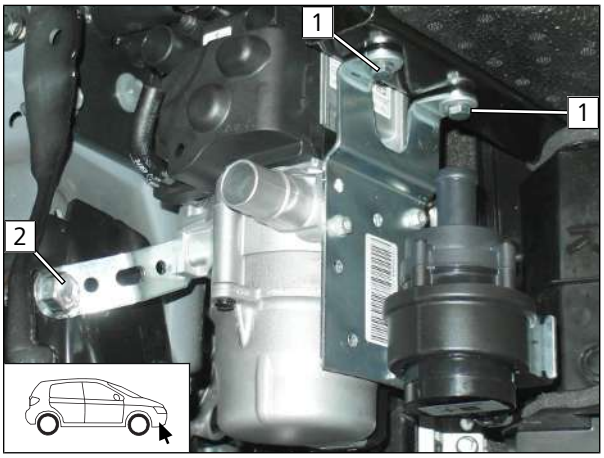


Fig. 35

1 Mount M6x20 bolt, spring lock washer, large diameter washer, HG bracket, rivet nut loosely

2 Mount original vehicle bolt, perforated bracket 1, original vehicle threaded hole loosely

Aligning heater

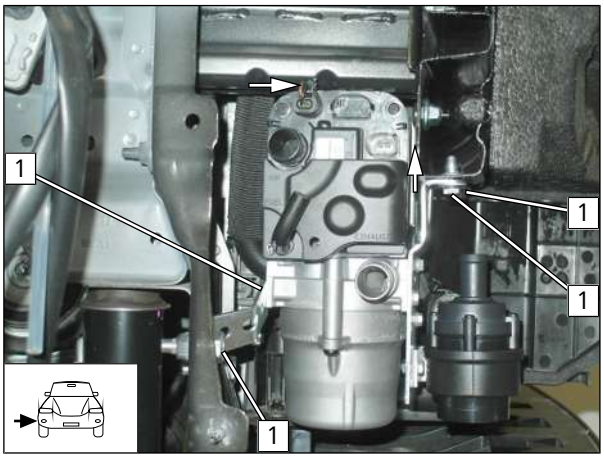


Fig. 36

Danger of damage to components

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

▶ Align heater vertically, as shown.

▶ Tighten all screw connections 1.

Checking distance

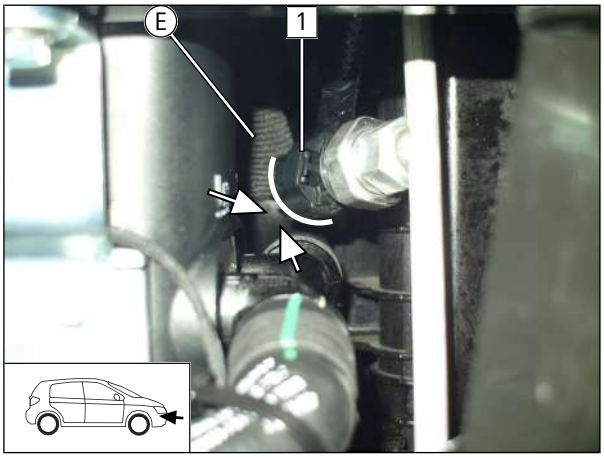


Fig. 37

Danger of damage to components

Ensure sufficient distance between pressure sensor 1 and hose E, correct if necessary.

>5

Mounting heater wiring harness connector

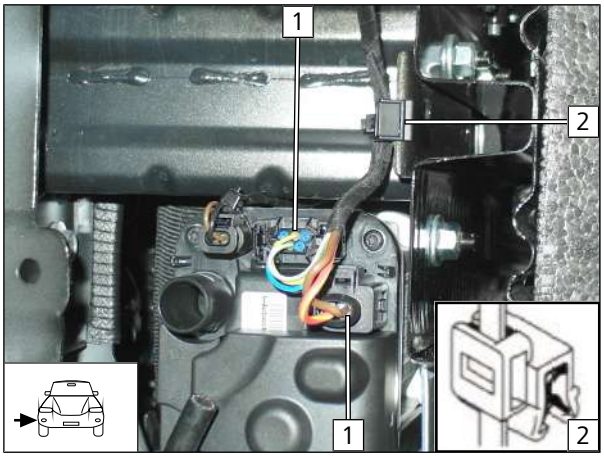


Fig. 38

1 Heater wiring harness connector

2 Edge clip cable tie, to fasten HG wiring harness

9 Coolant

9.1 Hose routing diagram

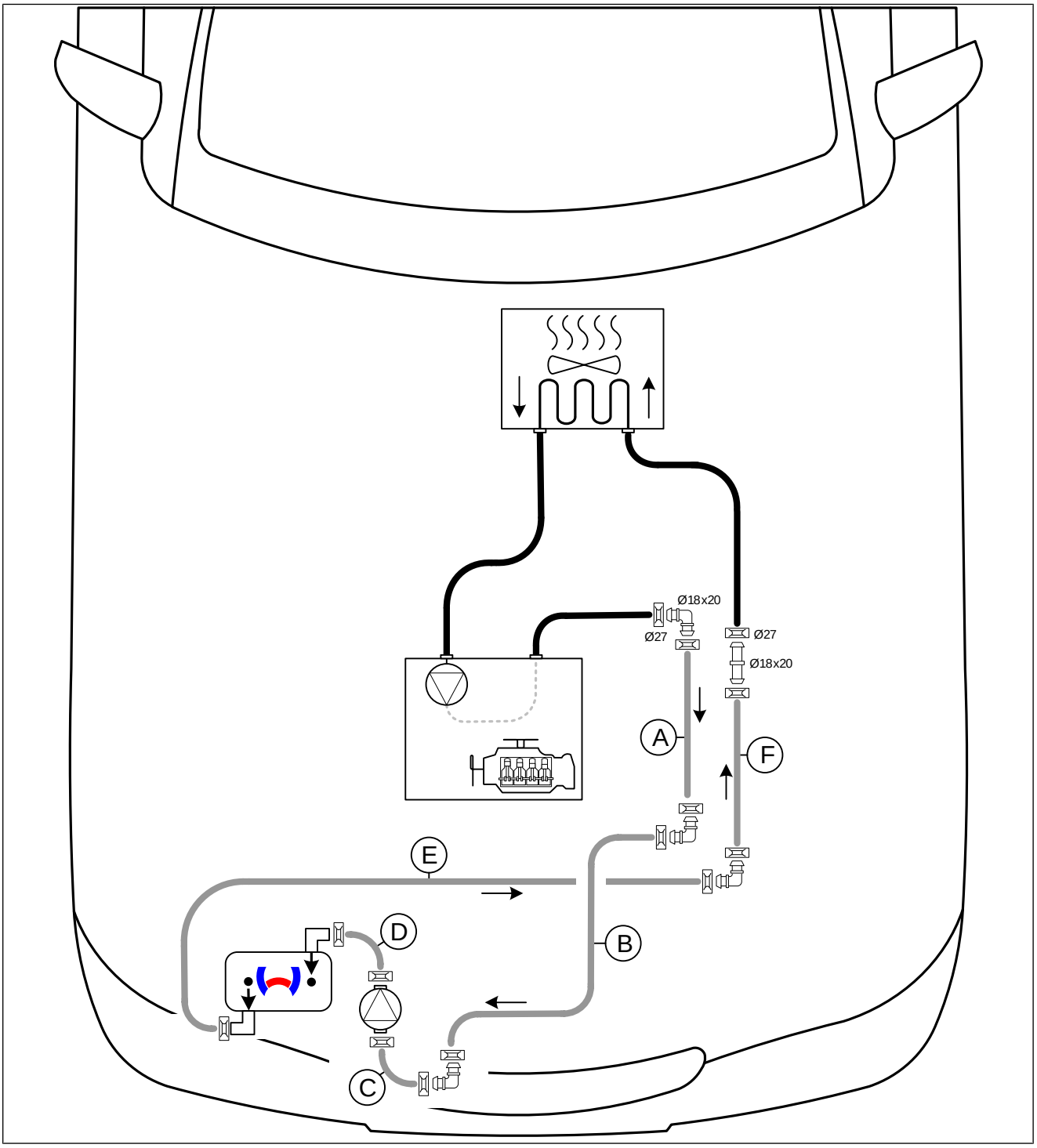


Fig. 39

All spring clips without a specific designation = Ø25

All connecting pipes without a specific designation = Ø18x18/90°

9.2 Coolant circuit installation

Premounting hoses Ⓐ and Ⓕ

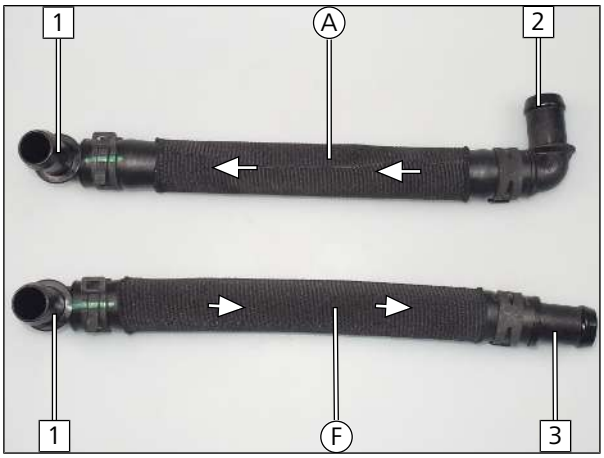


Fig. 40

1 Ø18x18 / 90° connecting pipe
2 Ø18x20 / 90° connecting pipe
3 Ø18x20 / 180° connecting pipe

Premounting hoses Ⓑ and Ⓒ

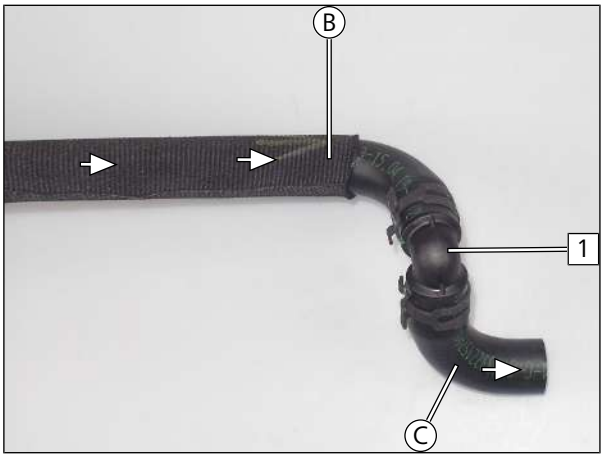


Fig. 41

1 Ø18x18 / 90° connecting pipe

Routing original vehicle wiring harness

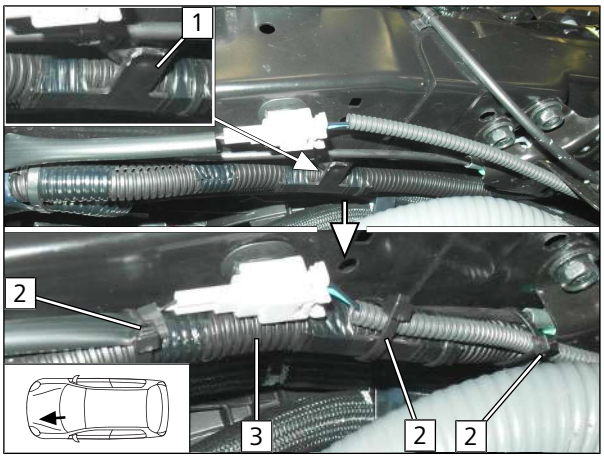


Fig. 42

1 Remove original vehicle wiring harness bracket
2 Cable tie for fastening original vehicle wiring harness **3**

Turning original vehicle spring clip

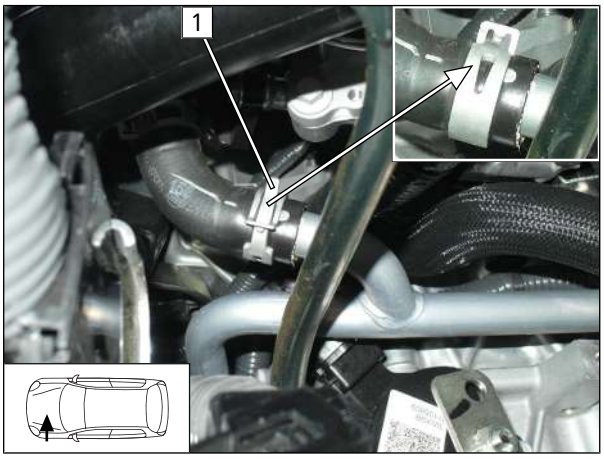


Fig. 43

1 Turn original vehicle spring clip as shown

Cutting point

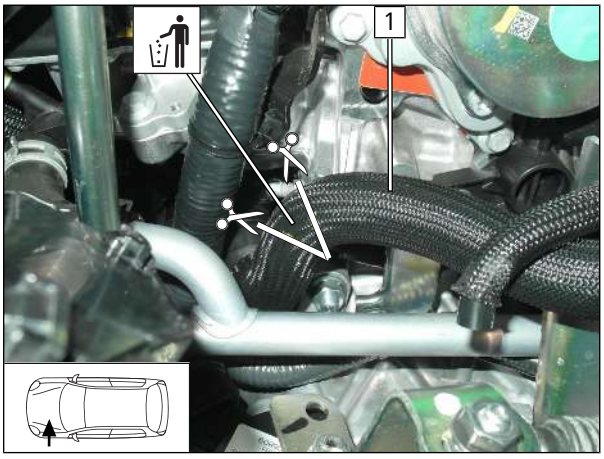


Fig. 44

1 Heat exchanger inlet / engine outlet hose

Removing braided protection

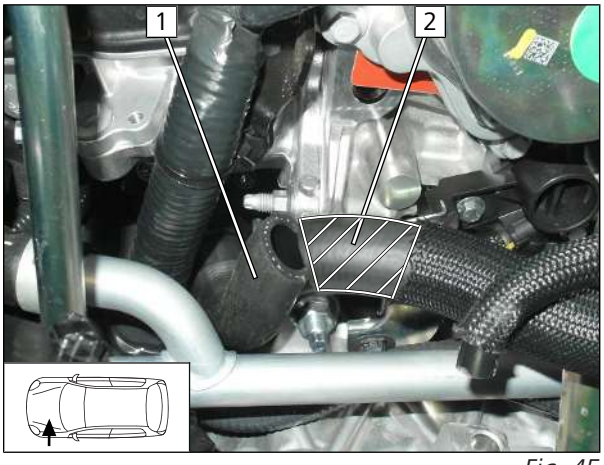


Fig. 45

1 Remove braided protection on engine outlet hose section

2 Remove braided protection on heat exchanger inlet hose section in marked area

Routing hose Ⓔ in the engine compartment

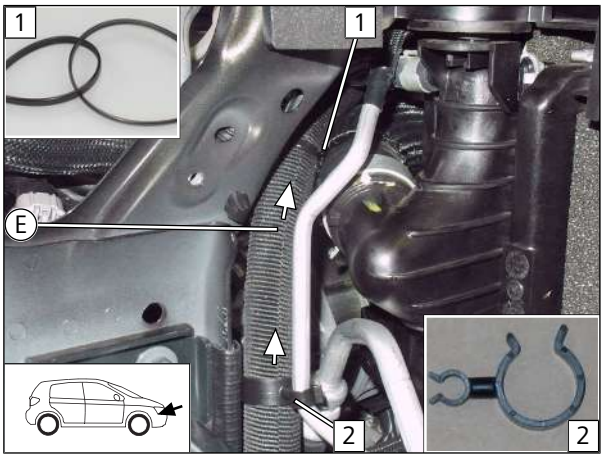


Fig. 46

1 Interlace 2 cable ties, use them to attach hose Ⓔ to radiator hose

2 Hose bracket for fastening hose Ⓔ to A/C line

Mounting hose group Ⓑ and Ⓒ on coolant pump

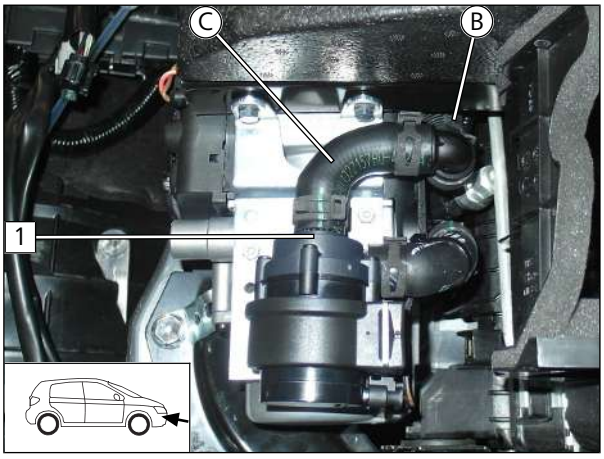


Fig. 47

1 Coolant pump inlet

Routing hose Ⓑ

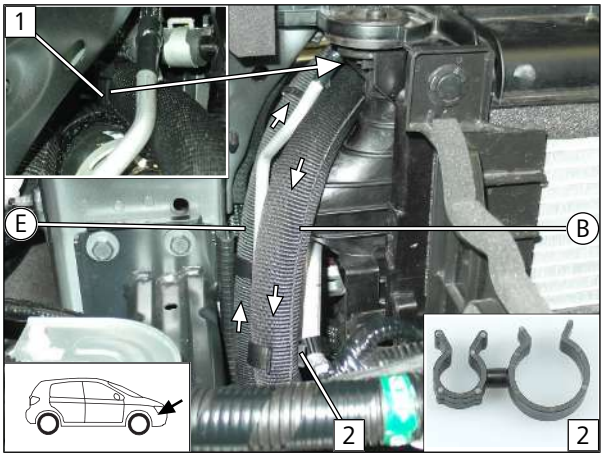


Fig. 48

1 Interlace 2 cable ties, use them to attach hose Ⓑ to radiator hose

2 Hose bracket for fastening hose Ⓑ to A/C line

Routing hoses Ⓑ and Ⓔ to cutting point

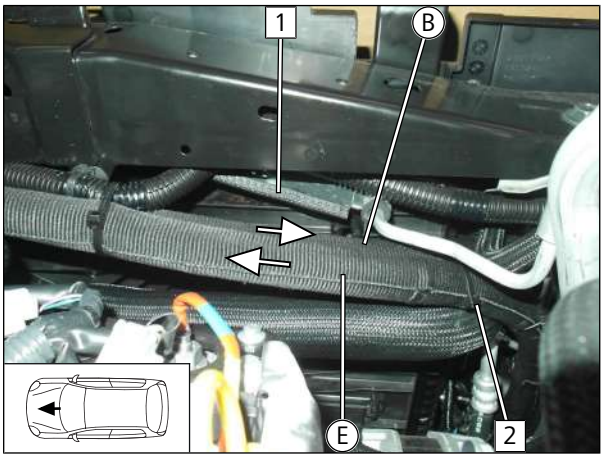


Fig. 49

1 100 long, narrow edge protection

2 Cable tie around hoses Ⓑ and Ⓔ

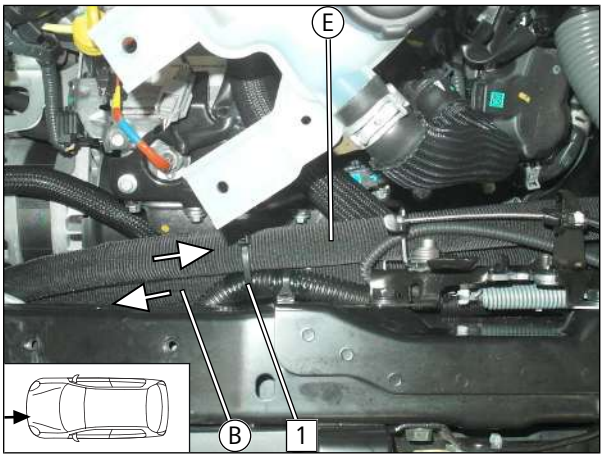


Fig. 50

1 Cable tie around hoses Ⓑ, Ⓔ and original vehicle wiring harness

Connecting hose Ⓐ to engine outlet

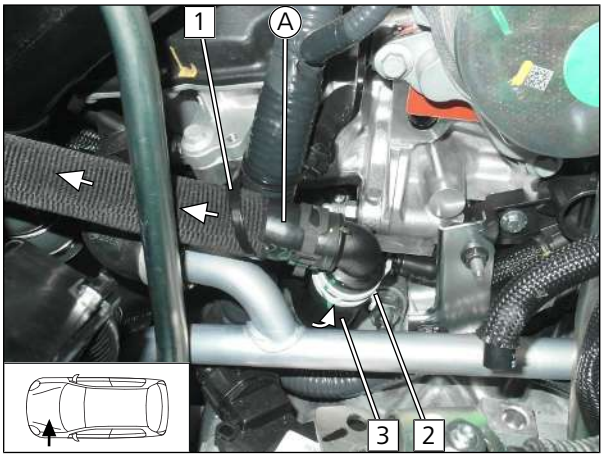


Fig. 51

1 Cable tie around hose Ⓐ and original vehicle wiring harness

2 Ø27 spring clip

3 Engine outlet hose section

Connecting hose Ⓐ to hose Ⓑ

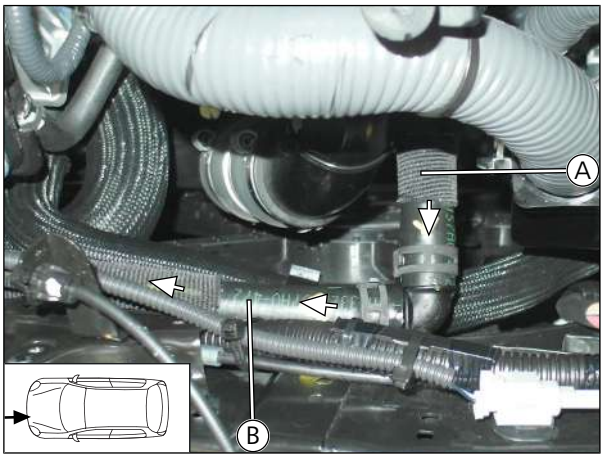


Fig. 52

Fastening hose Ⓐ

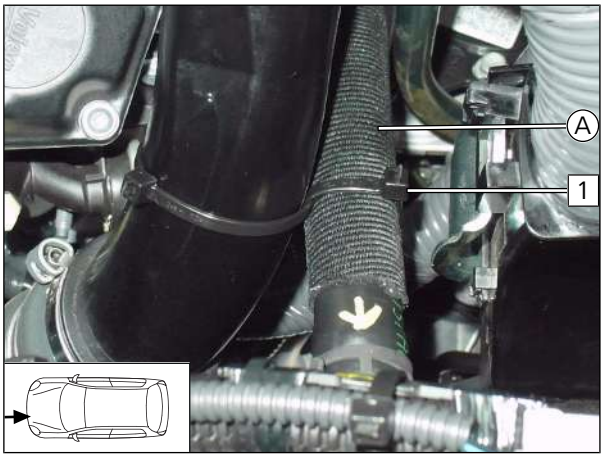


Fig. 53

1 Interlace 2 cable ties, use them to attach hose Ⓐ to charge-air tube

Connecting hose Ⓕ to heat exchanger inlet

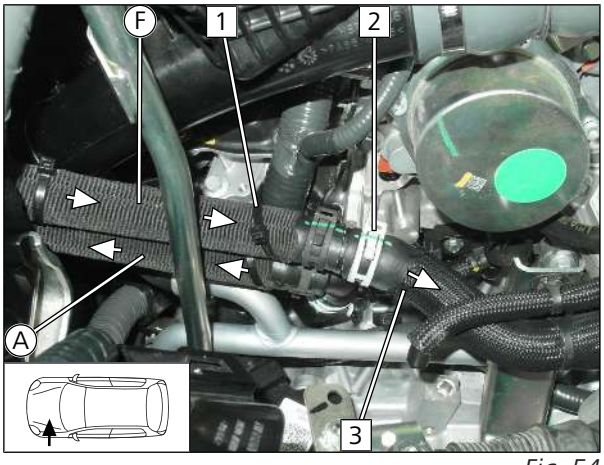


Fig. 54

1 Cable tie around hose Ⓕ and original vehicle wiring harness

2 Ø27 spring clip

3 Heat exchanger inlet hose section

Connecting hose Ⓕ to hose Ⓔ

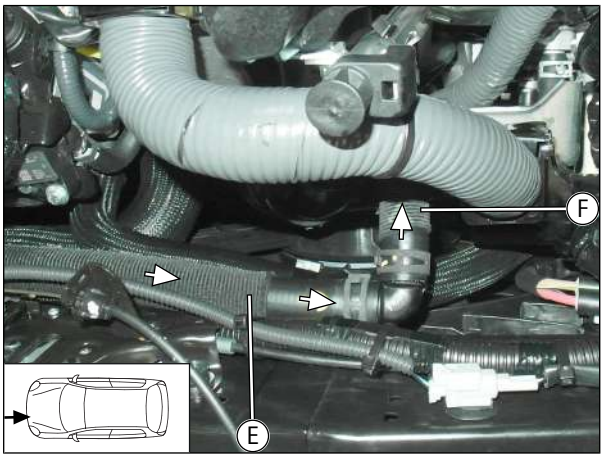


Fig. 55

Fastening hose Ⓕ

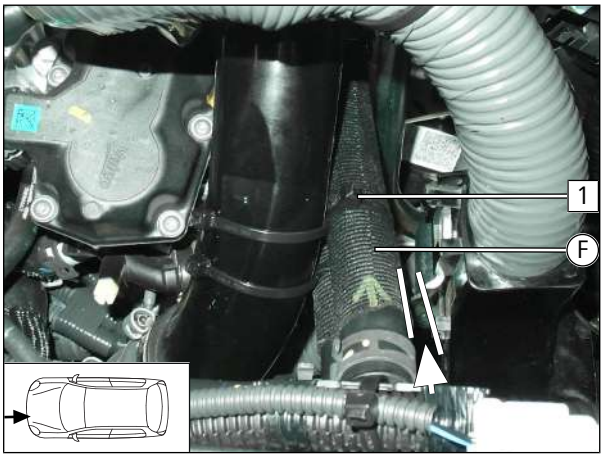


Fig. 56

Danger of damage to components

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

1 Interlace 2 cable ties, use them to attach hose Ⓕ to charge-air tube

Fastening hoses

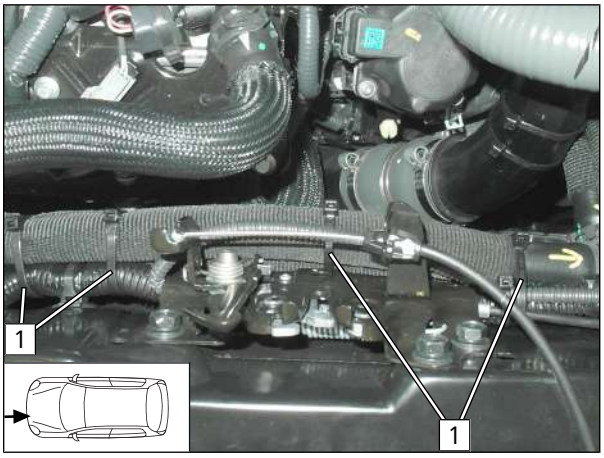


Fig. 57

1 Cable tie around hoses Ⓑ and Ⓔ and original vehicle wiring harness

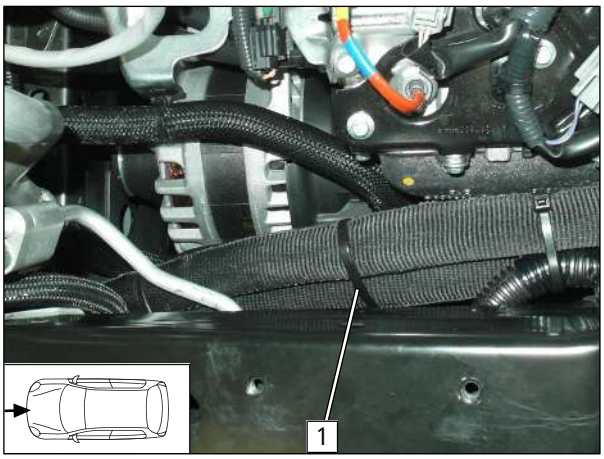


Fig. 58

1 Cable tie around hoses Ⓑ and Ⓔ

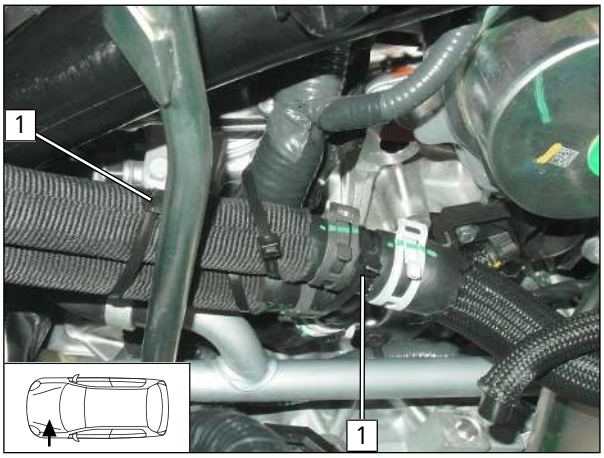


Fig. 59

1 Cable tie around hoses Ⓐ and Ⓕ

Checking distance

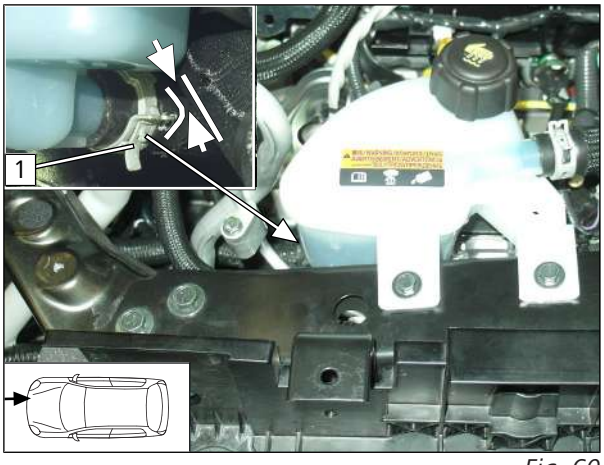


Fig. 60

▶ Mount the expansion tank.

Danger of damage to components

Ensure sufficient distance between hose and spring clip 1, turn clamp if necessary.

10 Fuel

DANGER

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

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

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

Danger of damage to components

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

Dismantling fuel pump connector X7

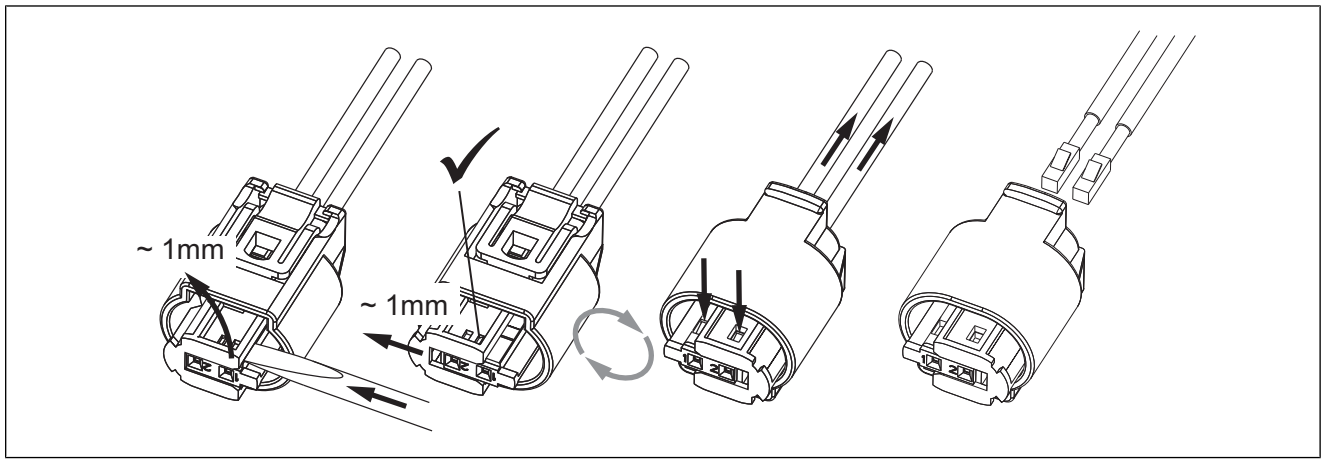


Fig. 61

10.1 Routing fuel line

Connecting fuel line to heater

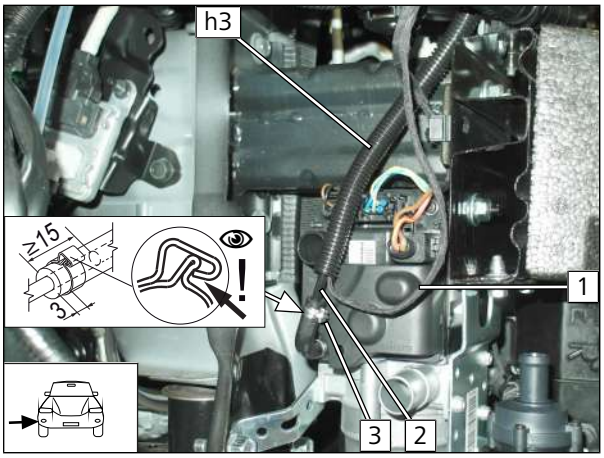


Fig. 62

- ▶ Draw fuel line **2** and fuel pump wiring harness **1** into corrugated tube **h3** and route in the engine compartment.

3 Ø10 clamp

Routing in engine compartment

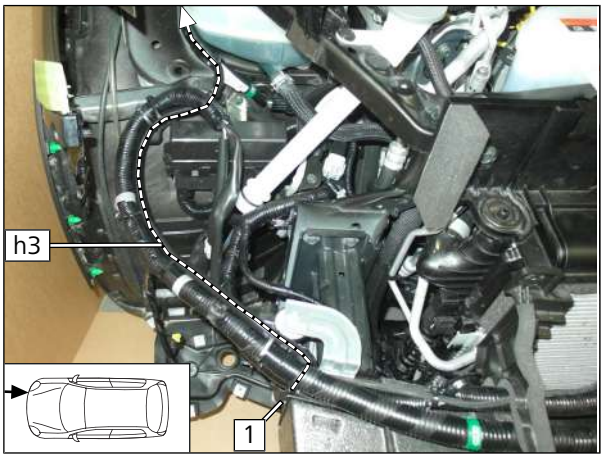


Fig. 63

▶ Route corrugated tube **h3** in the engine compartment along original vehicle lines to the firewall and attach with cable ties.

1 HG installation location

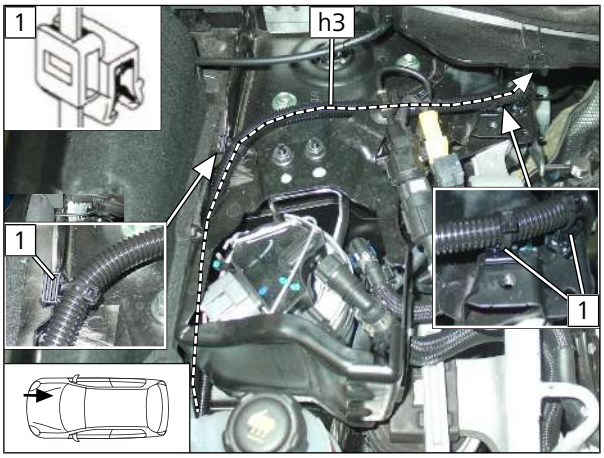


Fig. 64

▶ Route corrugated tube **h3** in the engine compartment along original vehicle lines to the firewall and attach with edge clip cable ties **1**.

Routing on firewall

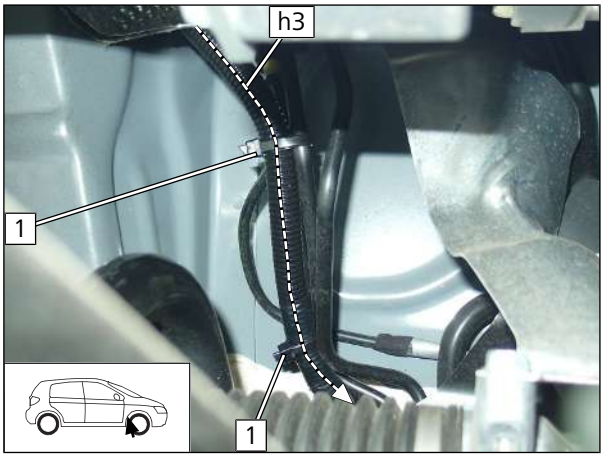


Fig. 65

▶ Route corrugated tube **h3** along original vehicle lines to the underbody and attach with cable ties.

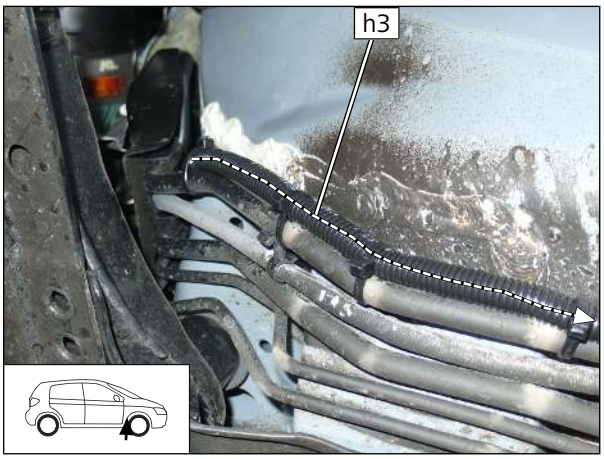


Fig. 66

▶ Route corrugated tube **h3** along original vehicle lines to the underbody and attach with cable ties.

Routing on underbody

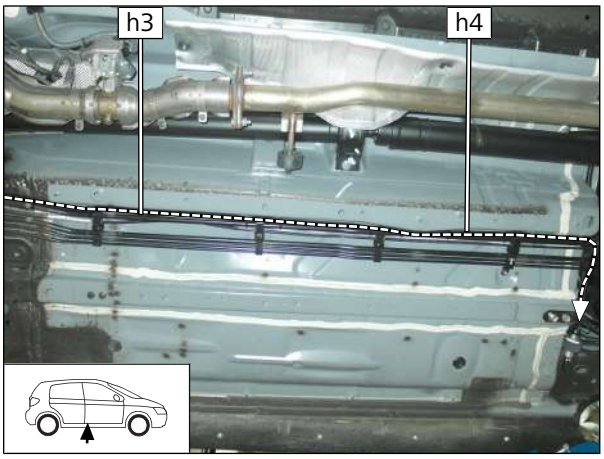


Fig. 67

▶ Draw fuel line into corrugated tube **h4**.

▶ Wrap the joint between corrugated tubes **h3** and **h4** with insulating tape.

▶ Route corrugated tubes on underbody along original vehicle lines to the installation location of the fuel pump and fasten with cable ties.

10.2 Mounting and connecting fuel pump

Drilling hole, inserting rivet nut

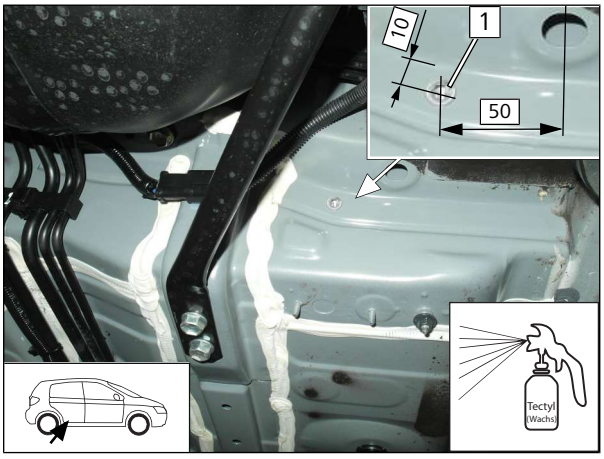


Fig. 68

1 Ø9 hole, rivet nut

Premounting fuel pump

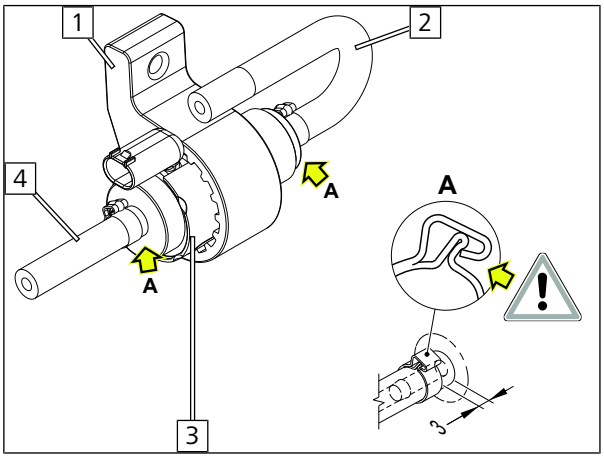


Fig. 69

The alignment of the fuel pump and fuel hoses will be carried out afterwards, during the installation.

1 Fuel pump mount
2 180° moulded hose, Ø10 clamp
3 Fuel pump
4 Hose section, Ø10 clamp

Mounting fuel pump

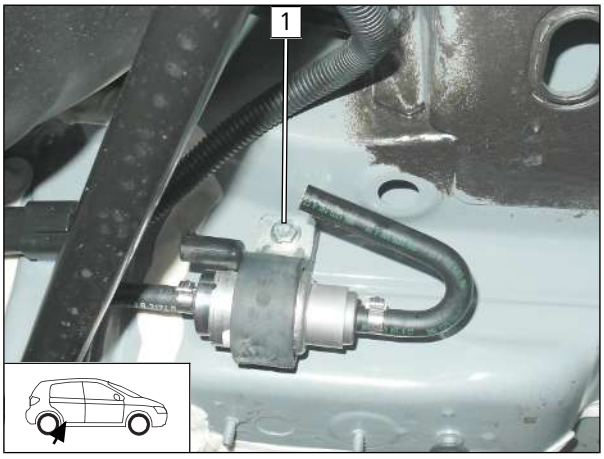


Fig. 70

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

Assembling fuel pump connector X7

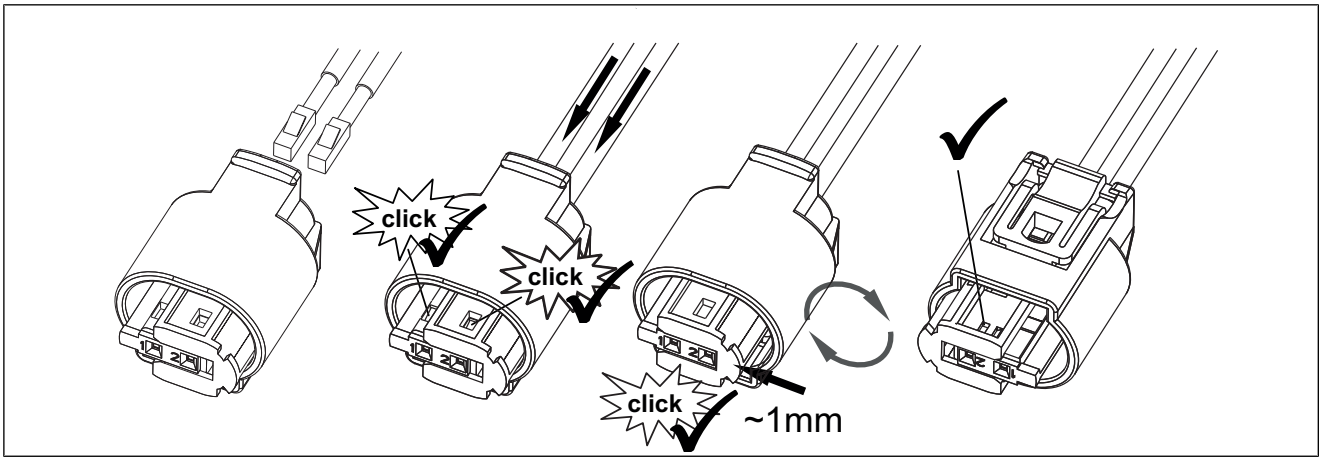


Fig. 71

Connecting fuel pump

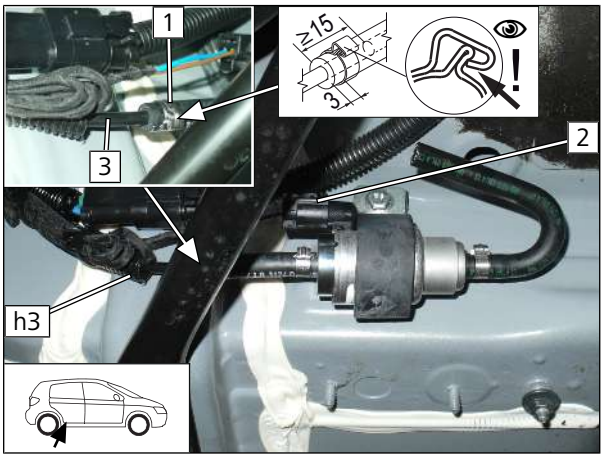


Fig. 72

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

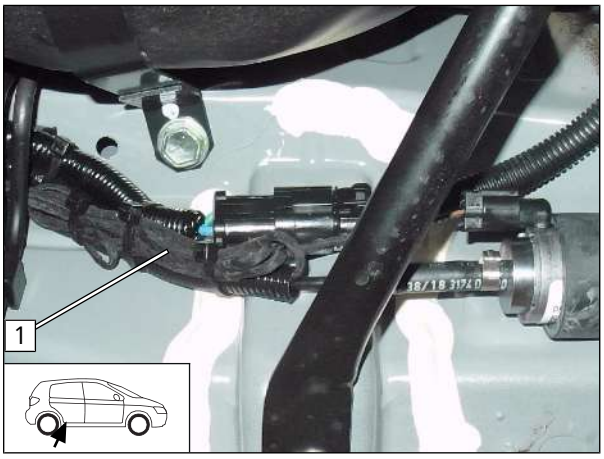


Fig. 73

▶ Fasten the rest of fuel pump wiring harness 1 with cable ties.

10.3 Dismantling instructions for rear bench seat on the front passenger's side

Removing cover

Fig. 74

1 Cover

Removing bolts

Fig. 75

1 Screws

Removing cover

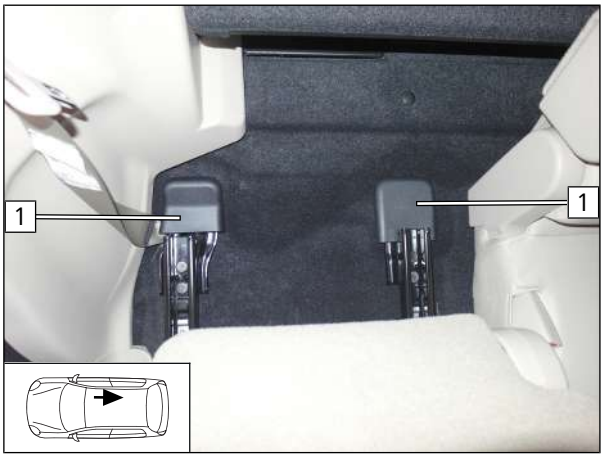


Fig. 76

▶ Slide the rear bench seat forward. Fold the backrest forward.

1 Cover

Removing bolts

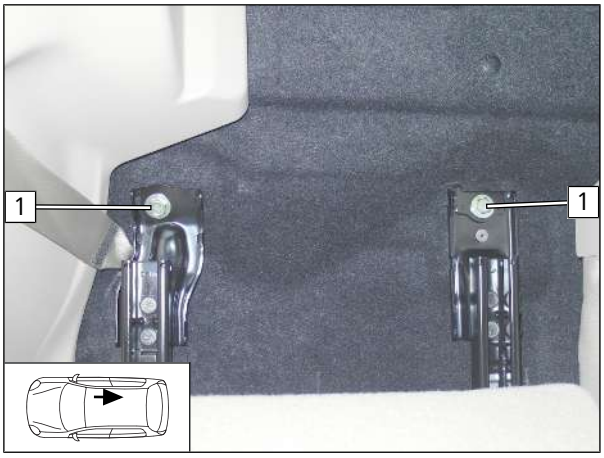


Fig. 77

1 Screws

10.4 Installing FuelFix

Repositioning sticker

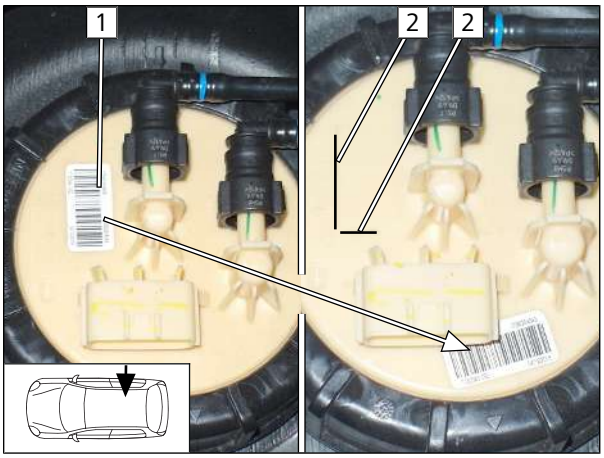


Fig. 78

The shape and material of the lock nut on the tank fitting may vary.

▶ Draw guide line 2 on existing embossing.

1 Sticker

Preparing drilling template

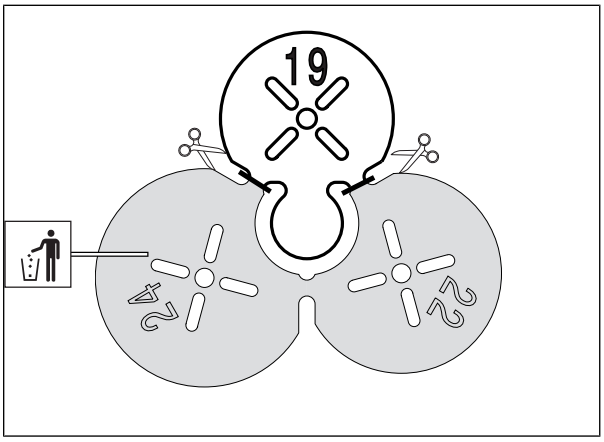


Fig. 79

Work steps F1, F2

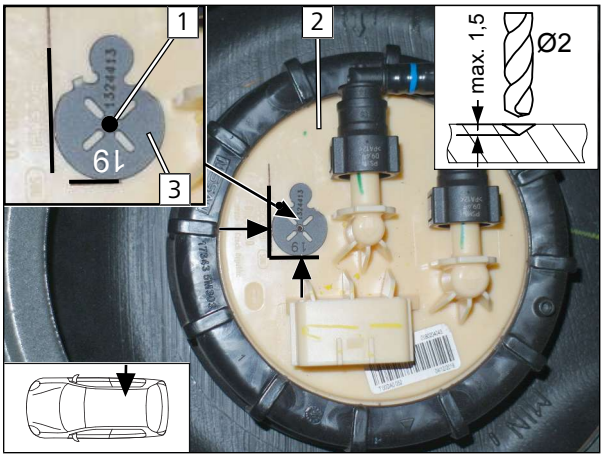


Fig. 80

Observe the installation instructions of the tank extracting device.

▶ Position template 3 at the guide lines as shown.

1 Ø2 centring hole
2 Tank fitting

Work step F3

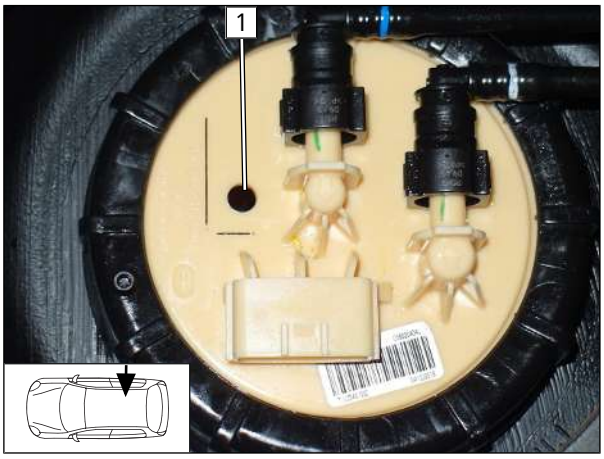


Fig. 81

DANGER

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

[1] Hole made with provided drill

Work steps F4, F5

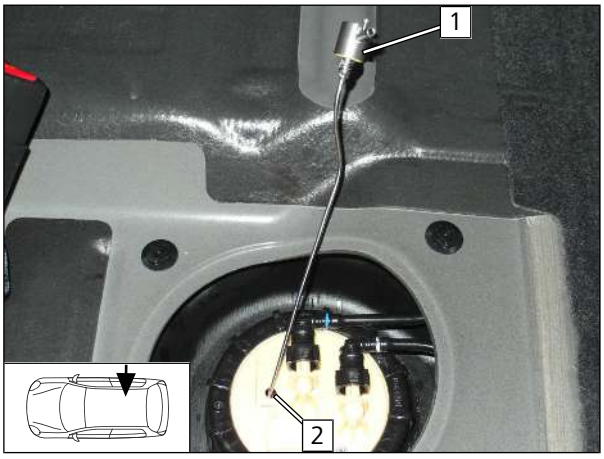


Fig. 82

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

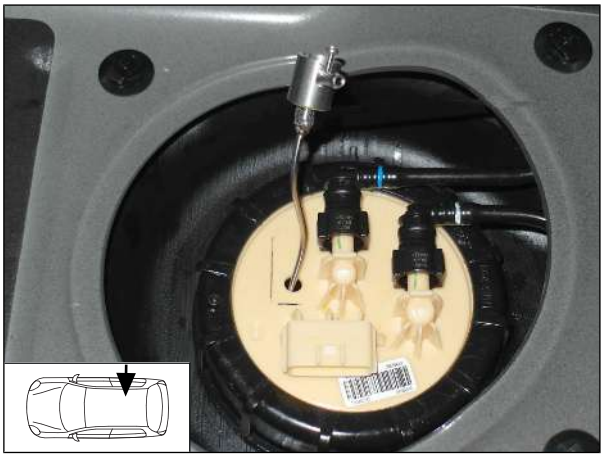


Fig. 83

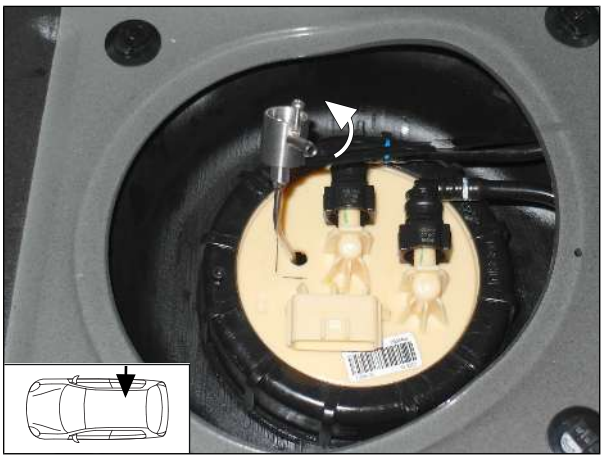


Fig. 84

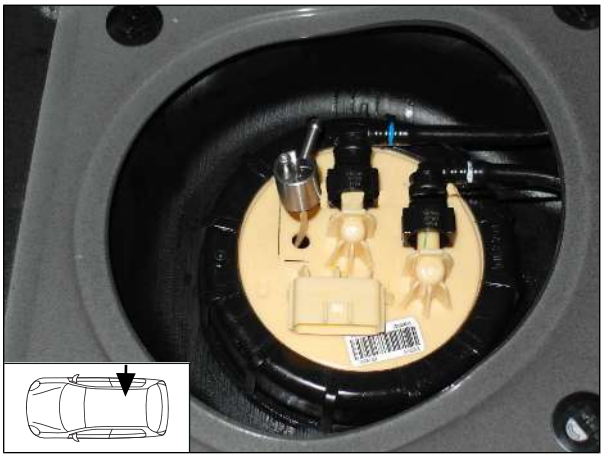


Fig. 85

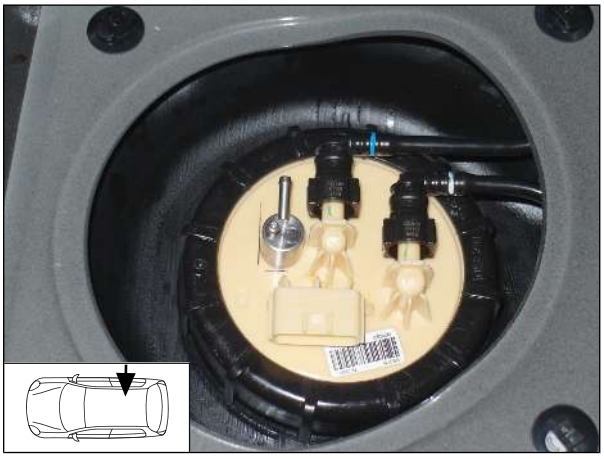


Fig. 86

Work steps F5.3, F5.4

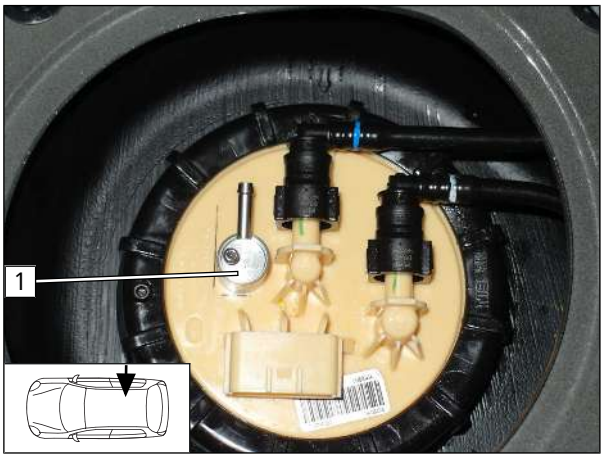


Fig. 87

▶ Align FuelFix [1] as shown.

Work step F6

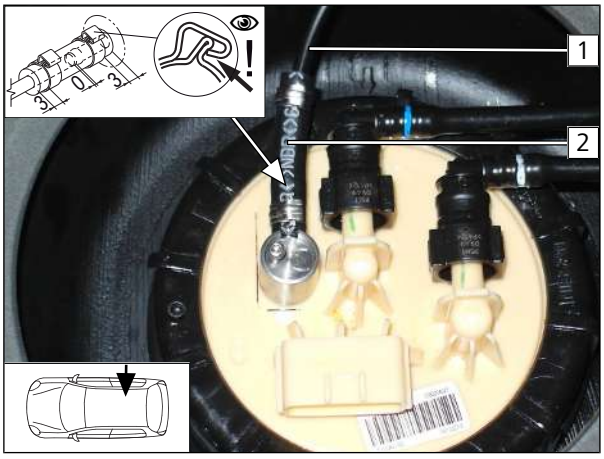


Fig. 88

[1] Fuel line of FuelFix

[2] Hose section, Ø10 clamp [2x]

Work step F7

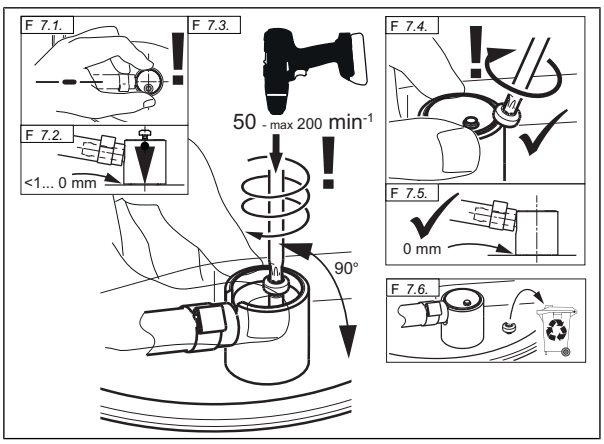


Fig. 89

DANGER

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

Work step F8

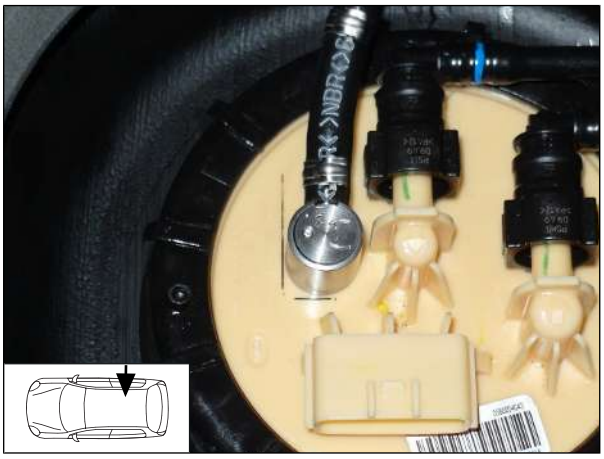


Fig. 90

Securing fuel line

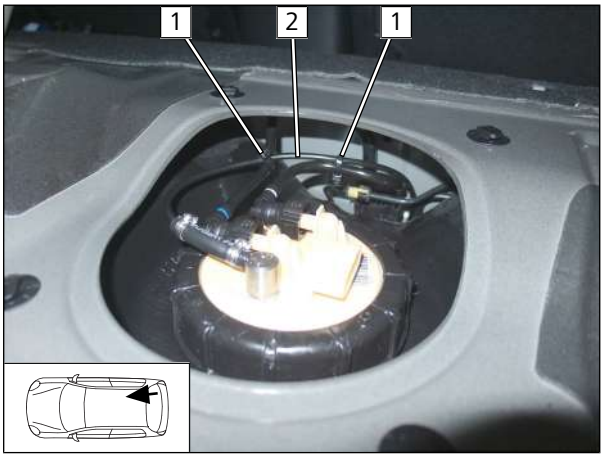


Fig. 91

▶ Secure fuel line **2** using cable tie **1** for tension relief.

Connecting fuel pump

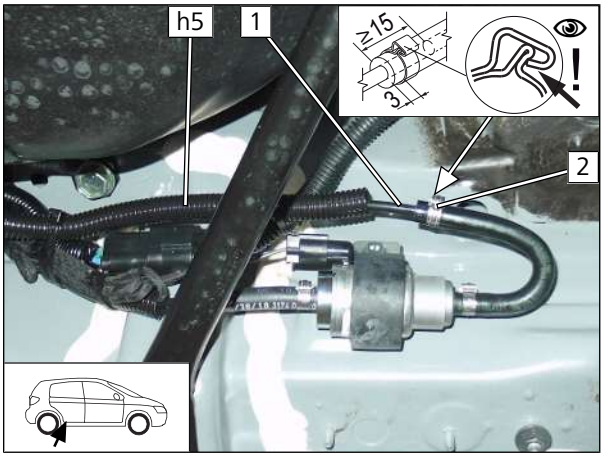


Fig. 92

1 Fuel line of FuelFix in corrugated tube **h5**

2 Ø10 clamp

11 Combustion air

Shortening perforated bracket

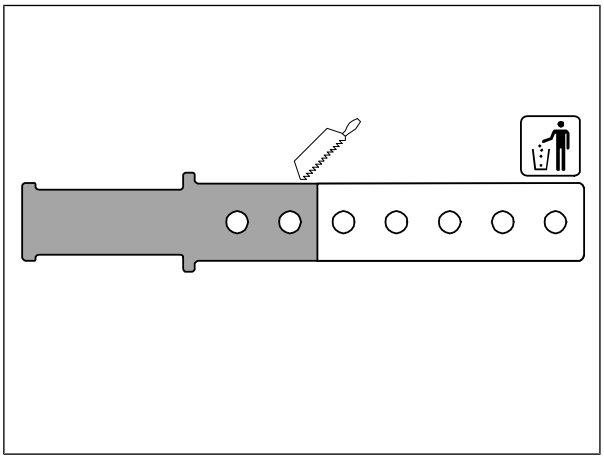


Fig. 93

Premounting combustion air intake silencer

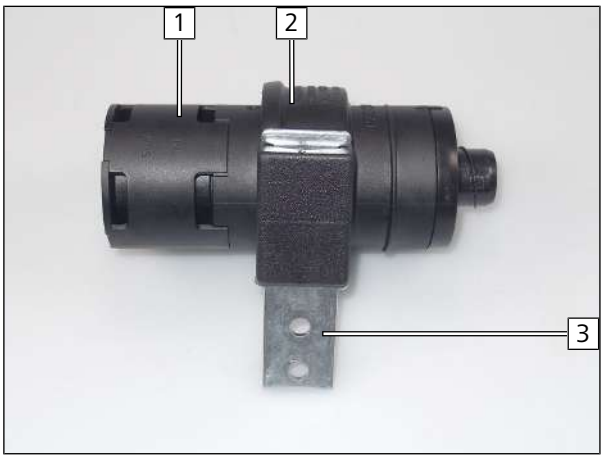


Fig. 94

Observe the installation instructions of the combustion air intake silencer.

1 Combustion air intake silencer
2 Combustion air intake silencer mount
3 Perforated bracket

Mounting combustion air intake pipe

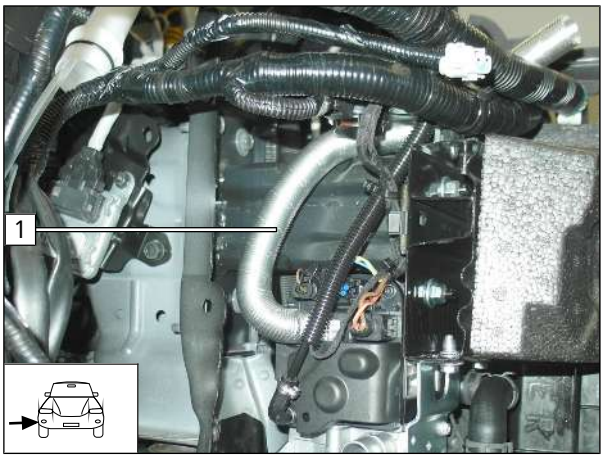


Fig. 95

▶ Mount combustion air intake pipe 1 on HG and route it upwards as shown.

Mounting combustion air intake silencer

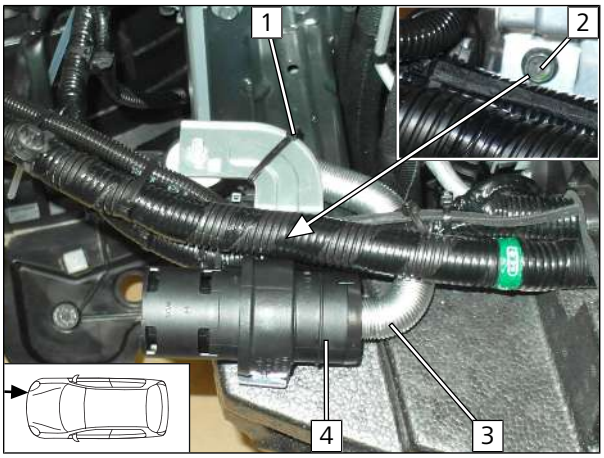


Fig. 96

1 Cable ties for fastening combustion air intake pipe
2 Original vehicle bolt for fastening perforated bracket
3 Combustion air intake line
4 Combustion air intake silencer

12 Exhaust

12.1 Mounting exhaust pipe

Preparing washer reservoir

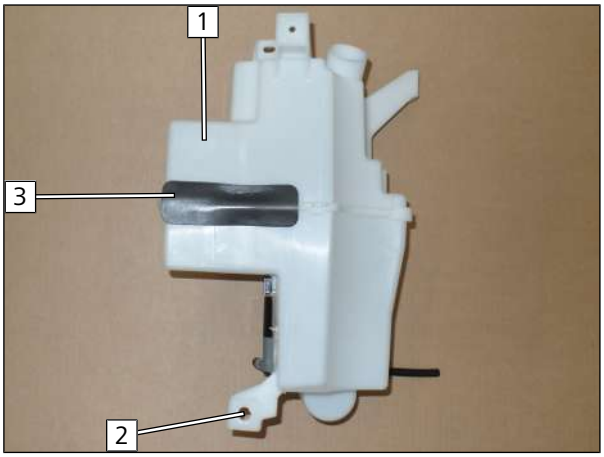


Fig. 97

1 Washer reservoir
2 Drill out hole to Ø12
3 Glue foam strip

Positioning angle bracket

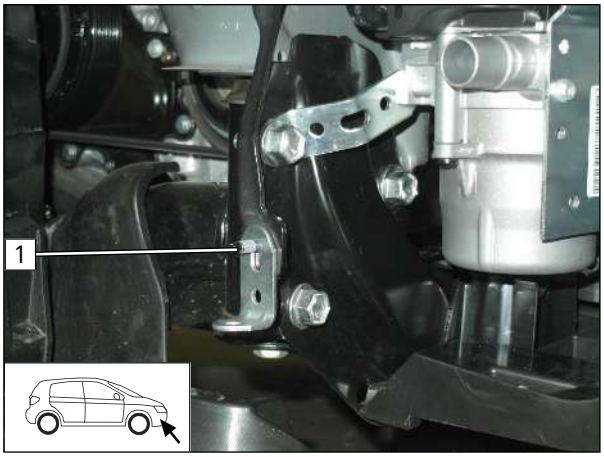


Fig. 98

▶ Position angle bracket on original vehicle stud bolt 1.

Mounting washer reservoir

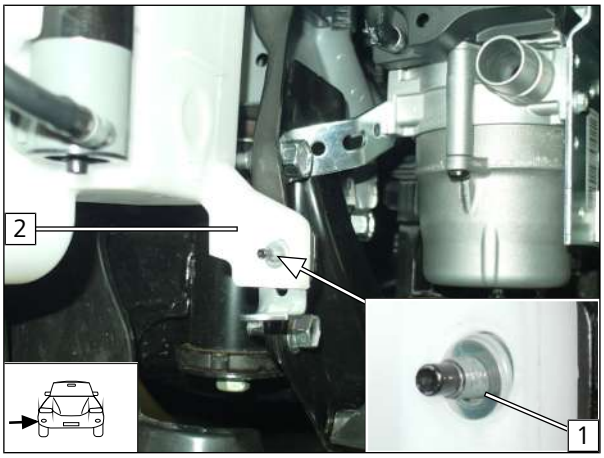


Fig. 99

1 Washer with outer Ø d_a 11.8 [3x] on original vehicle stud bolt
2 Washer reservoir

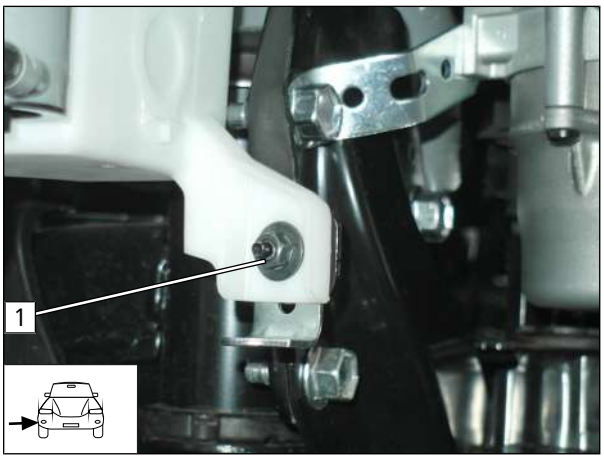


Fig. 100

1 Tighten original vehicle nut

Mounting exhaust silencer

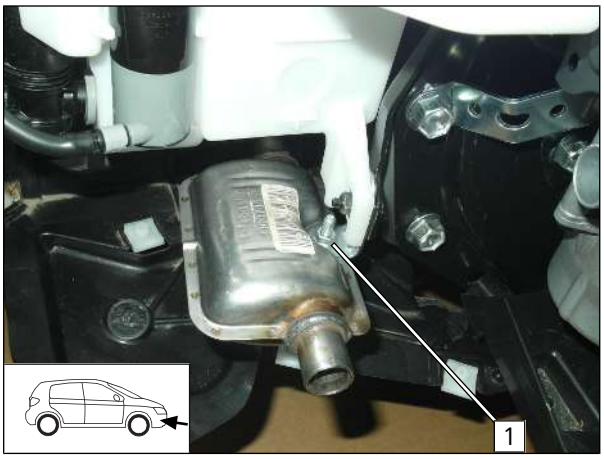


Fig. 101

1 M6x20 bolt, exhaust silencer, angle bracket, flanged nut

Cutting exhaust pipe to length

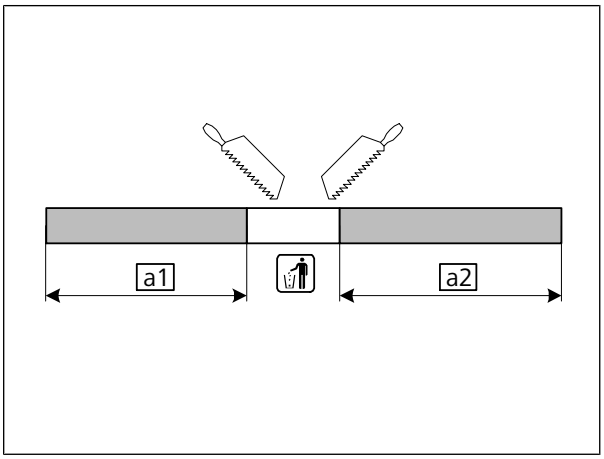


Fig. 102

a1 200

a2 240

Mounting exhaust pipe **a1**

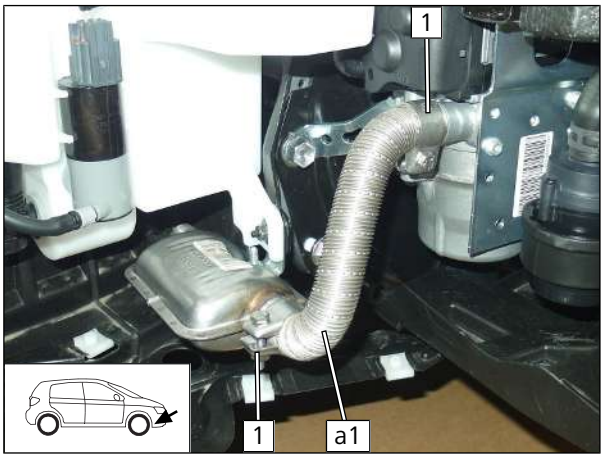


Fig. 103

1 Hose clamp

12.2 Mounting exhaust end fastener

Work steps E1, E2

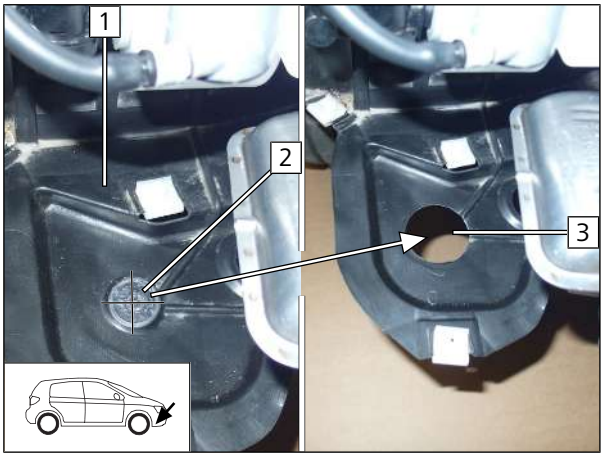


Fig. 104

Observe the EFIX installation instructions.

1 Wheel-well inner panel
2 Copy hole pattern in the middle of the embossing
3 Hole

Work step E3

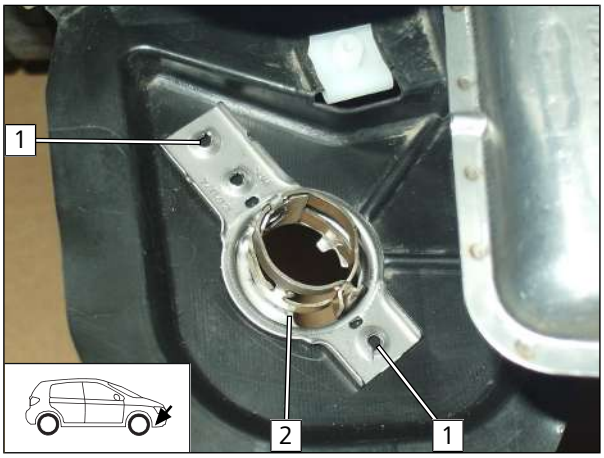


Fig. 105

1 Copy hole pattern
2 EFIX

Work step E4

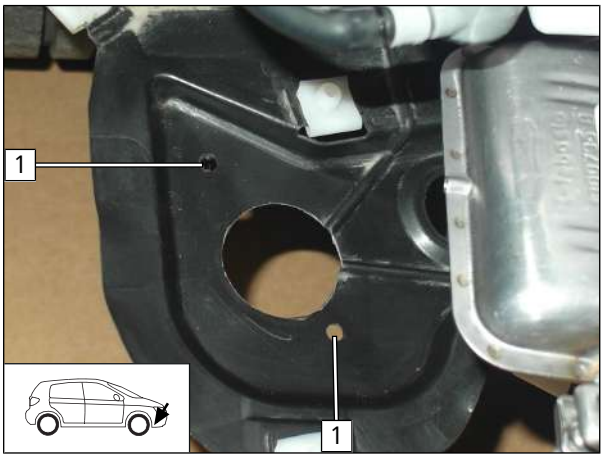


Fig. 106

1 Hole

Work step E5

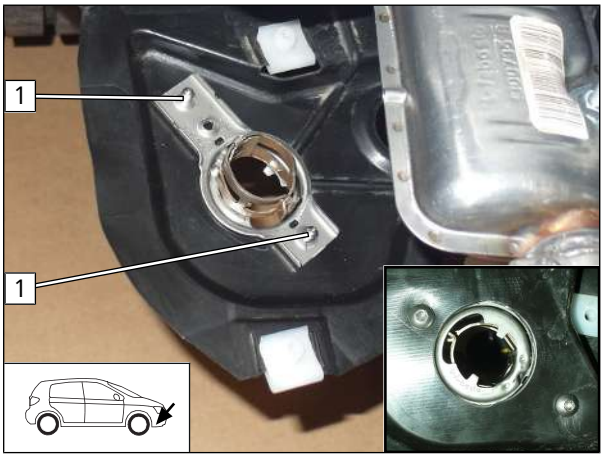


Fig. 107

1 5x13 self-tapping screw

Preparing exhaust pipe **a2**

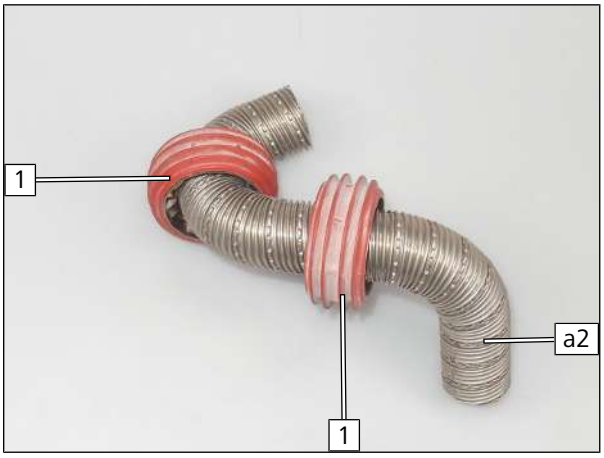


Fig. 108

1 Spacer bracket

Mounting exhaust pipe a2

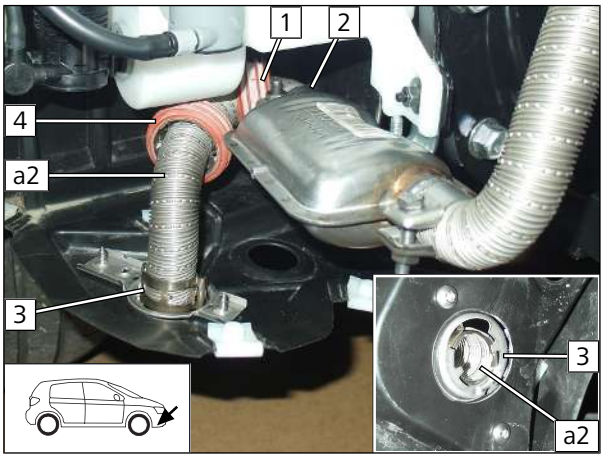


Fig. 109

1 Spacer bracket, align with wheel-well inner panel
2 Hose clamp
3 EFIX
4 Spacer bracket, align with washer reservoir

Preparing bumper

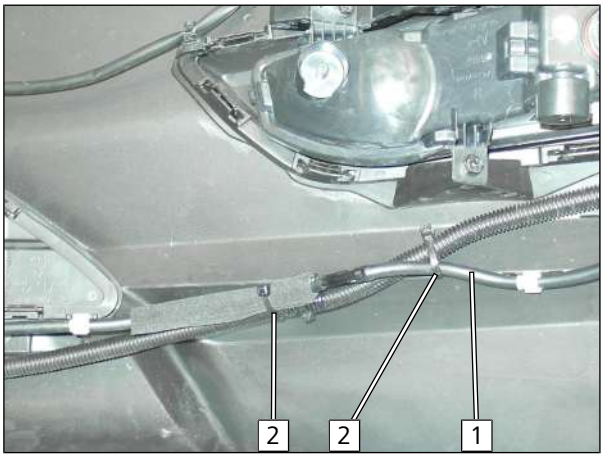


Fig. 110

- ▶ Fasten headlight washer system hose 1 with cable ties 2.
- ▶ Install bumper.

Danger of damage to components

- ▶ Ensure sufficient distance between exhaust system and original vehicle hoses, lines and plastic parts, correct if necessary.

13 Electrical system of passenger compartment

13.1 Air-conditioning control

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

'**Webasto Standard**' A/C control installation documentation for Nissan X-Trail with AC / AAC

'**Webasto Comfort**' A/C control installation documentation for Nissan X-Trail with AAC

13.2 Control element installation

Install the control element in accordance with the provided relevant general installation documentation. The installation location of the optional control element MultiControl or the push button of the Telestart or ThermoCall/ThermoConnect options should be confirmed with the end customer and should comply with the installation conditions.

14 Final Work

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

▶ Mount removed parts in reverse order.

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

▶ Insulate and tie back loose lines

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

▶ Connect the battery.

Only use manufacturer-approved coolant.

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

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

▶ Program MultiControl CAR, teach Telestart transmitter

▶ If the fan function or A/C control panel settings need to be checked, see the installation documentation in the additional 'Webasto Standard' A/C control or 'Webasto Comfort' kit, section Final work

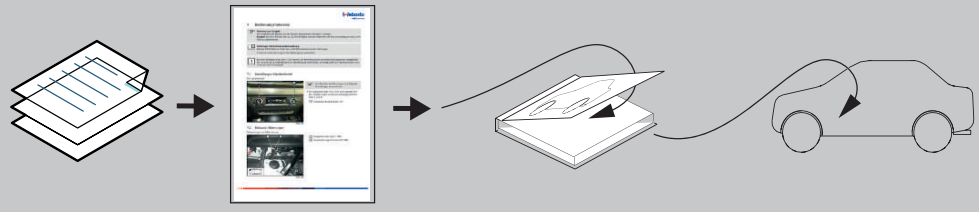
▶ Initial start-up and function check

▶ Affix 'Switch off parking heater before refueling' caution label in area of filler neck

Vehicle event log after parking heating mode

✓ Components of the original vehicle air conditioning system are activated during parking heating mode. Other vehicle components remain inactive, which in some circumstances may be interpreted as an error and can be filed as such in the event log. An increased power consumption (quiescent current) may also be registered for some vehicles.

▶ If an incorrect installation can be excluded, these entries are exclusively related to the parking heating mode situation and have no effect on the vehicle functions in driving mode.



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

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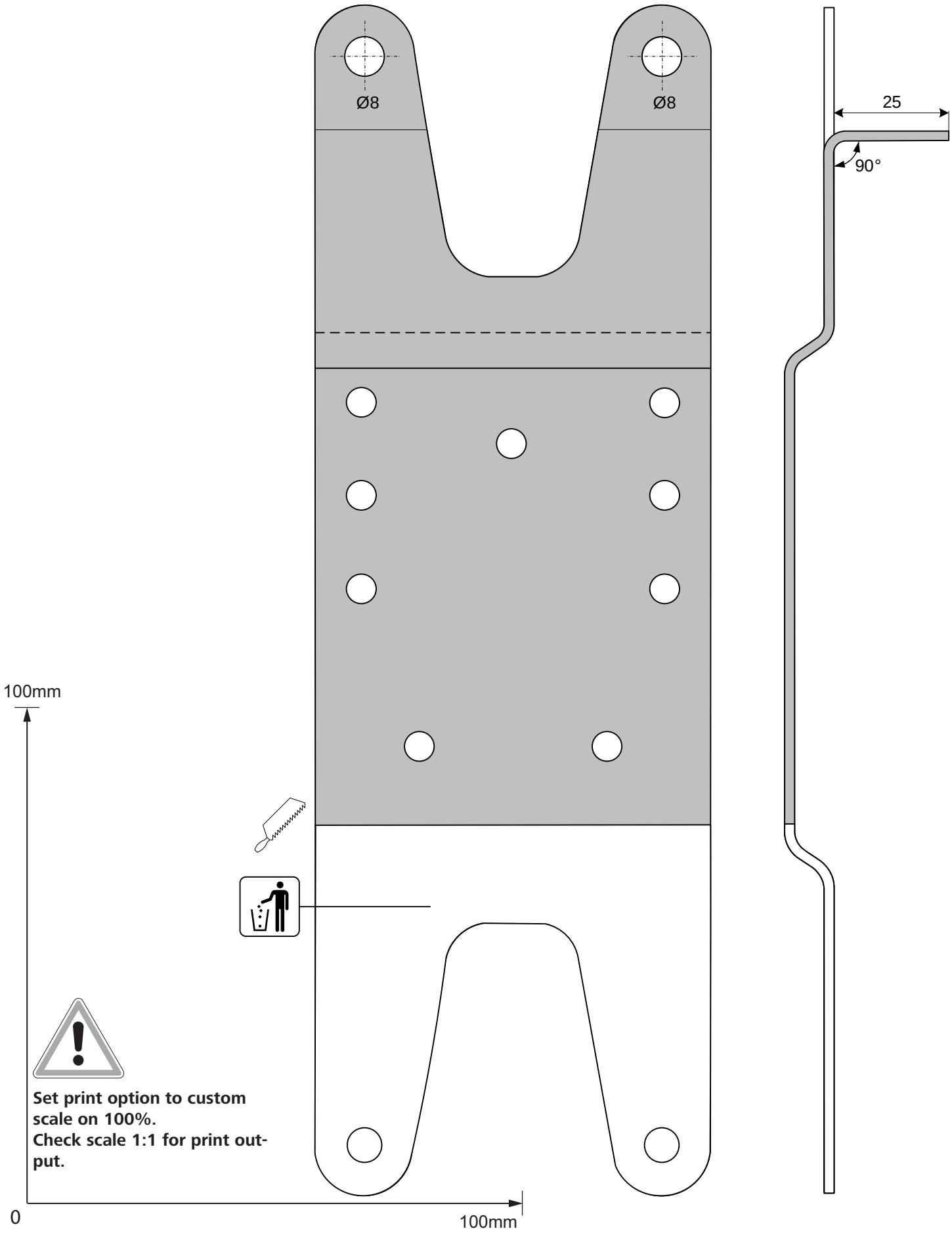
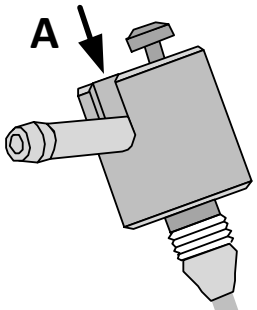
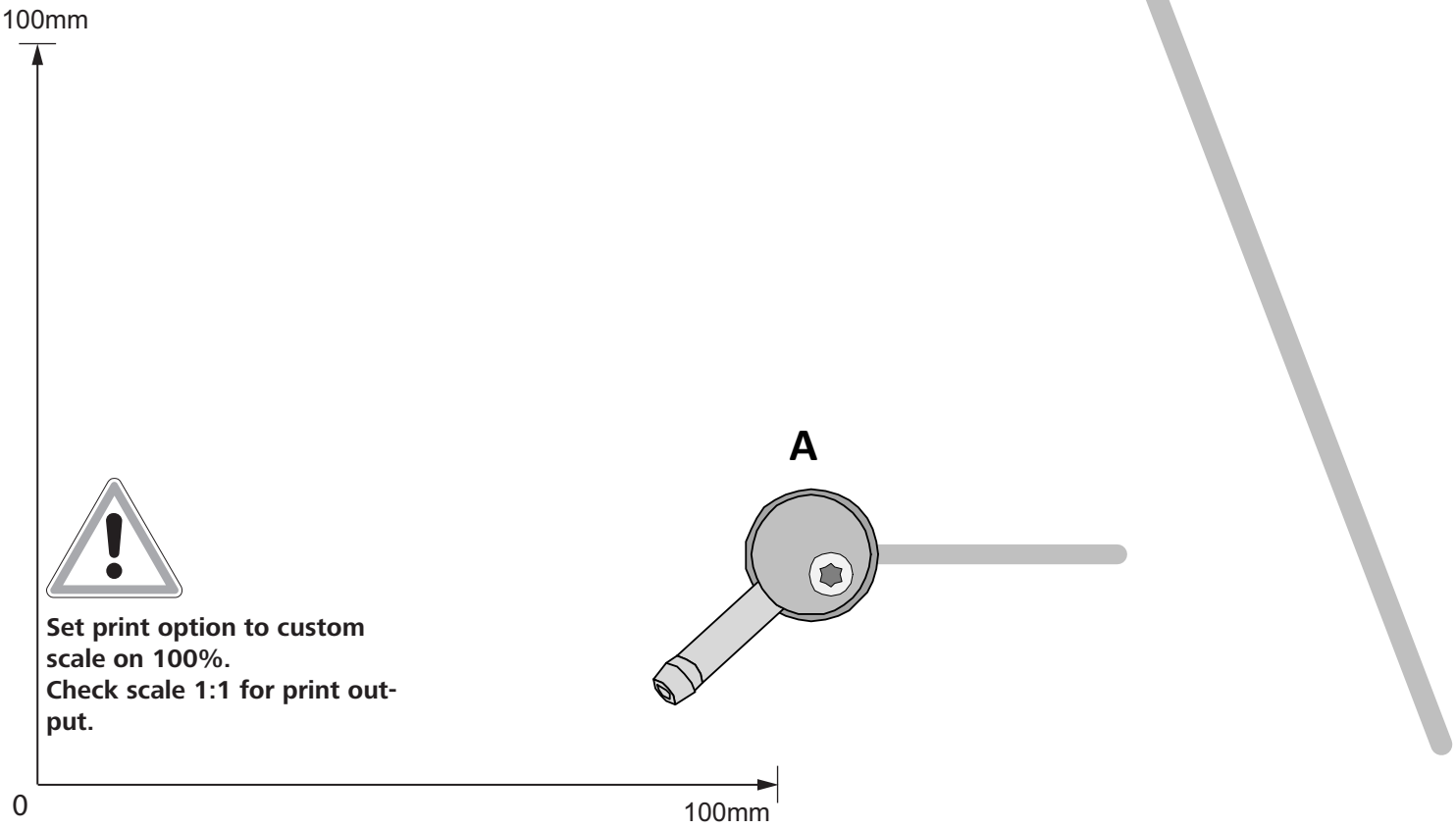
15 Heater bracket template



Set print option to custom scale on 100%.
Check scale 1:1 for print out-put.

16 FuelFix template





Set print option to custom scale on 100%.
Check scale 1:1 for print out-put.