Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

With FuelFix

Installation Documentation
Lexus NX200T / NX300h

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Lexus	NX200T / NX300h	AZ1	e6 * 2007 / 46 * 0111 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
2.5 P hybrid	Petrol	E-CVT	114 (145)	2494	2AR
2.0 P	Petrol	AG	175	1998	8AR

E-CVT = Electronic continuously variable transmission
AG = 6-speed automatic transmission

Model 2015
Left-hand drive vehicle

Verified equipment variants:
2 zone automatic air-conditioning
Front fog lights
LED headlights
LED daytime running lights
Headlight washer system
4 WD
Euro 6
Passenger compartment monitoring

Total installation time: about 11.7 hours

Note:

Only experts in high-voltage systems for vehicles should be authorised to carry out independent work on hybrid vehicles!
The high-voltage system must be taken out of operation, secured and reactivated according to the manufacturer's instructions.

Lexus NX200T / NX300h

Table of Contents

Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
- Installation kit with FuelFix Lexus NX200T / NX300h 2015 Petrol: **1323838C**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

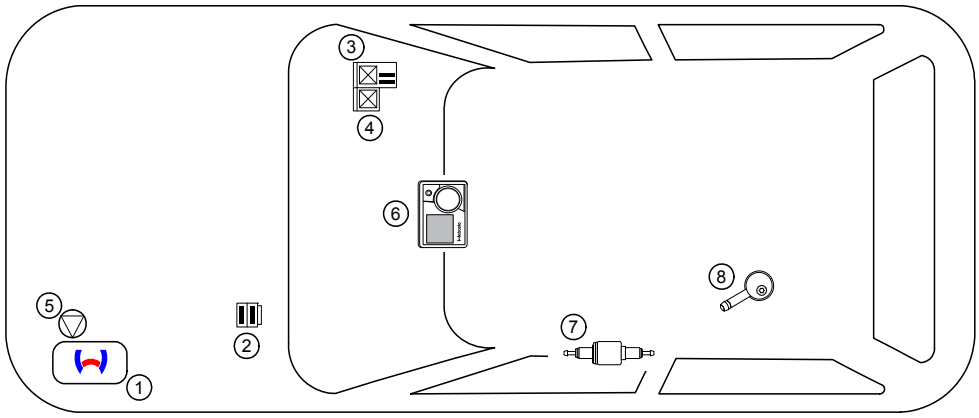
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full!
- The installation location of the push button in case of Telestart or Thermo Call should be confirmed with the end customer.

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. PWM Gateway
5. Circulating pump
6. MultiControl CAR
7. Metering pump
8. FuelFix



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.

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair

The improper installation or repair of Webasto heating and cooling systems can cause fire or the leakage of deadly carbon monoxide, leading to serious injury or death.

To install and repair Webasto heating and cooling systems you need to have completed a special company training course and have the appropriate technical documentation, special tools and special equipment.

Installation and repair may ONLY be carried out by persons trained and certified in a Webasto training course. NEVER try to install or repair Webasto heating or cooling systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

Only use genuine Webasto parts. See the Webasto air and water heaters accessories catalogue for this purpose.

1.2 Operation

To ensure safe operation, we recommend having the heater checked every two years by an authorised Webasto dealer, especially when used over a long period and/or under extreme environmental conditions.

Do not operate the heater in closed rooms due to the danger of poisoning and suffocation.

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel diesel (DIN EN 590) or petrol (DIN EN 228).

The heater may not be cleaned with a high-pressure cleaner.

1.3 Please note

ALWAYS follow all Webasto installation and operating instructions and observe all warnings.

To become familiar with and understand all functions and properties of the heater, the operating instructions must be read carefully and observed at all times.

For proper, safe installation and repair work, the installation instructions with all warnings and safety information must be carefully read and observed at all times. Please always contact a workshop authorised by Webasto for all installation and repair work.

Important

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, 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 have to audibly click into place during installation.

Sharp edges should be fitted with rub protection. 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 startup 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.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

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.

Important

Failure to follow the installation instructions will result in the invalidation of the type approval for the heater and therefore invalidation of the general **homologation of the vehicle**.

Note

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

2.1 Excerpt from the ECE directive 122 (heater) section 5 for the installation of the heater.

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

1.7.1. A clearly visible tell-tale in the operator's field of view shall inform when the combustion heater is switched on or off.

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

2.1.1. Subject to paragraph 2.1.2. combustion heaters shall be installed according to the requirements of this Annex.

2.1.2. Vehicles of category O having liquid fuel heaters are deemed to comply with the requirements of this Annex.

2.2. Positioning of heater

2.2.1. Body sections and any other components in the vicinity of the heater must be protected from excessive heat and the possibility of fuel or oil contamination.

2.2.2. The combustion heater shall not constitute a risk of fire, even in the case of overheating. This requirement shall be deemed to be fulfilled if the installation ensures an adequate distance to all parts and suitable ventilation, by the use of fire resistant materials or by the use of heat shields.

2.2.3. In the case of M2 and M3 vehicles, the heater must not be positioned in the passenger compartment. However, an installation in an effectively sealed envelope which also complies with the conditions in paragraph 2.2.2 may be used.

2.2.4. The label referred to in paragraph 1.4 or a duplicate, must be positioned so that it can be easily read when the heater is installed in the vehicle.

2.2.5. Every reasonable precaution should be taken in positioning the heater to minimise the risk of injury and damage to personal property.

2.3. Fuel supply

2.3.1. The fuel filler must not be situated in the passenger compartment and must be provided with an effective cap to prevent fuel spillage.

2.3.2. In the case of liquid fuel heaters, where a supply separate to that of the vehicle is provided, the type of fuel and its filler point must be clearly labelled.

2.3.3. A notice, indicating that the heater must be shut down before refuelling, must be affixed to the fuelling point. In addition a suitable instruction must be included in the manufacturer's operating manual.

2.4. Exhaust system

2.4.1. The exhaust outlet must be located so as to prevent emissions from entering the vehicle through ventilators, heated air inlets or opening windows.

2.5. Combustion air inlet

2.5.1. The air for the combustion chamber of the heater must not be drawn from the passenger compartment of the vehicle.

2.5.2. The air inlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

2.6. Heating air inlet

2.6.1. The heating air supply may be fresh or recirculated air and must be drawn from a clean area not likely to be contaminated by exhaust fumes emitted either by the propulsion engine, the combustion heater or any other vehicle source.

2.6.2. The inlet duct must be protected by mesh or other suitable means.

2.7. Heating air outlet

2.7.1. Any ducting used to route the hot air through the vehicle must be so positioned or protected that no injury or damage could be caused if it were to be touched.

2.7.2. The air outlet must be so positioned or guarded that blocking by rubbish or luggage is unlikely.

End of excerpt.

In multilingual versions the German language is binding.

Lexus NX200T / NX300h

Information on Validity

This installation documentation applies to Lexus NX200T / NX300h - vehicles - for validity, see page 1 - from model year 2015 and later, 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.

Technical Information

Special Tools
- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Deep-hole marker
- Hose clamping pliers
- Webasto Thermo Test Diagnosis with current software

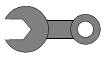
Dimensions
- All dimensions are in mm.

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

Explanatory Notes on Document

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

Mechanical System



Electrical System

Coolant Circuit

Combustion Air

Fuel

Exhaust Gas

Software

Special features are highlighted using the following symbols:

Specific risk of damage to components.

Specific risk due to electrical voltage.

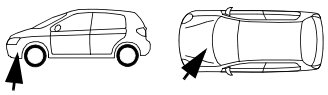
Specific risk of injury or fatal accidents.

Specific risk of fire or explosion.

Reference to manufacturer's vehicle-specific documents or to the general installation instructions of Webasto components.

Reference to a special technical feature.

The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.



Tightening torque according to the manufacturer's vehicle-specific documents.

Preliminary Work

Vehicle

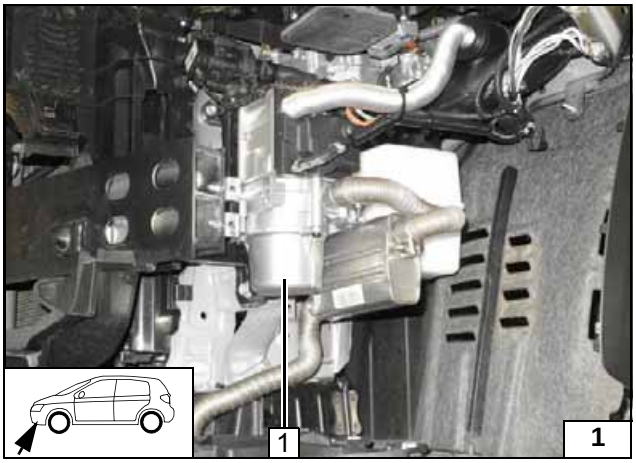
- Deactivate the hybrid system according to the vehicle manufacturer's workshop manual (NX300h only).
- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the battery (NX200T only).
- Disconnect the battery in the boot (NX300h only).
- Remove the air filter box.
- Remove the engine control unit.
- Remove the windscreen wiper.
- Remove the coolant reservoir cap.
- Remove the windscreen wiper motor.
- Remove the active strut brace.
- Remove the coolant reservoir.
- Remove the upper radiator trim.
- Detach the wheel well trim on the right and the left in the front area.
- Remove the front underride protection.
- Remove the bumper trim.
- Remove the left-hand headlight.
- Remove the resonator (NX300h only).
- Remove the lower engine cover.
- Remove the underbody trim.
- Remove the glove compartment.
- Remove the lower instrument panel trim on the front passenger's side.
- Remove the instrument panel trim on the front passenger's side at the bottom, on the left.

The following work should only be performed during the corresponding installation sequence:

- Remove the fuel tank according to the manufacturer's instructions.

Heater

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



Heater Installation Location

Figure shows NX300h!

1 Heater

Installation location

Preparing Electrical System

Wire sections retain their numbering throughout the entire document.

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

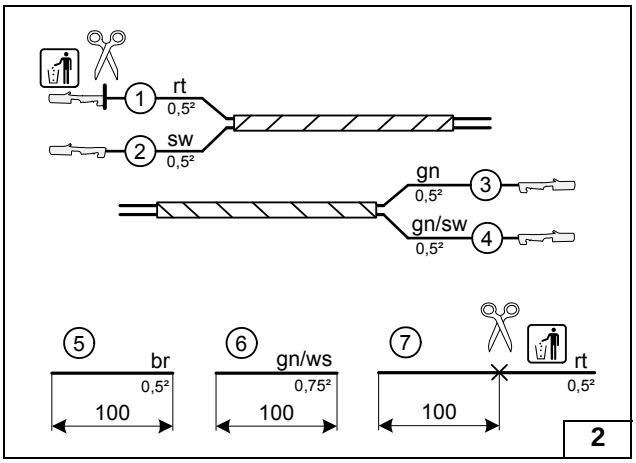
① Red (rt) wire from wiring harness of AC booster
② Black (sw) wire from wiring harness of AC booster
③ Green (gn) wire from wiring harness of PWM control
④ Green/black (gn/sw) wire from wiring harness of PWM control

Check the PWM Gateway settings when starting up the heater and adjust if necessary.

Settings:

Duty cycle: 65%
Frequency: 400Hz
Voltage: not relevant
Function: Low-side

Cutting to length / assigning wires



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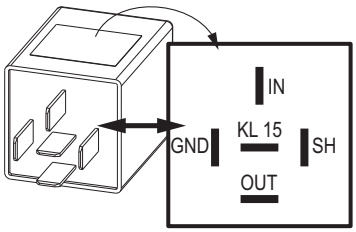
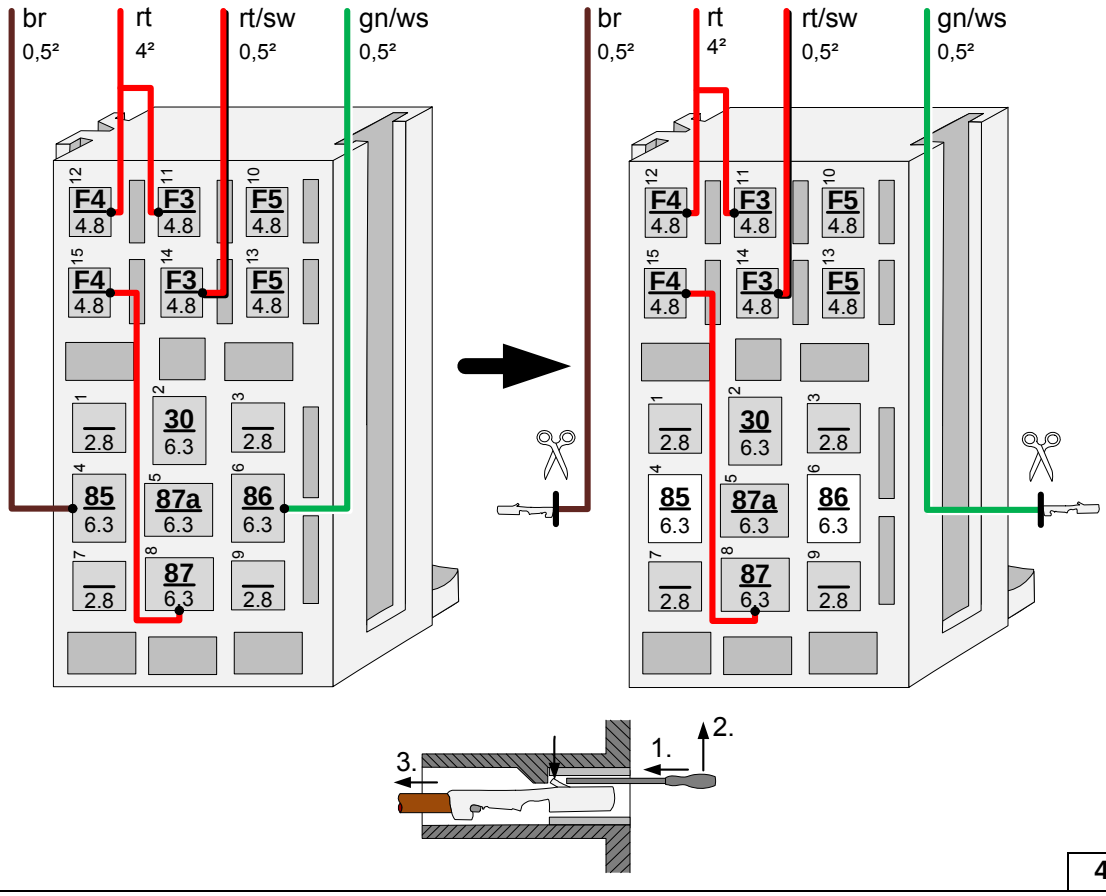


3

View of PWM GW



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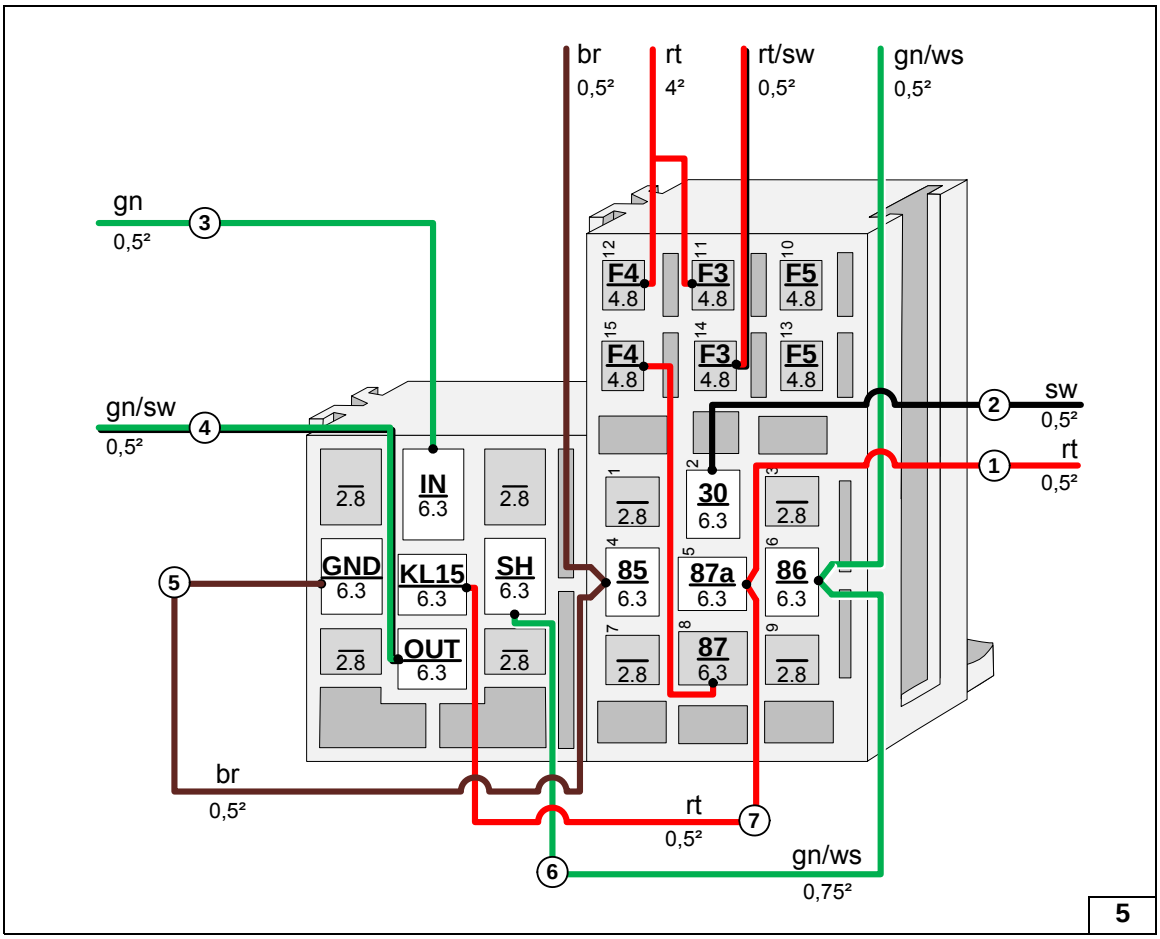
Preparing passenger compartment relay and fuse holder



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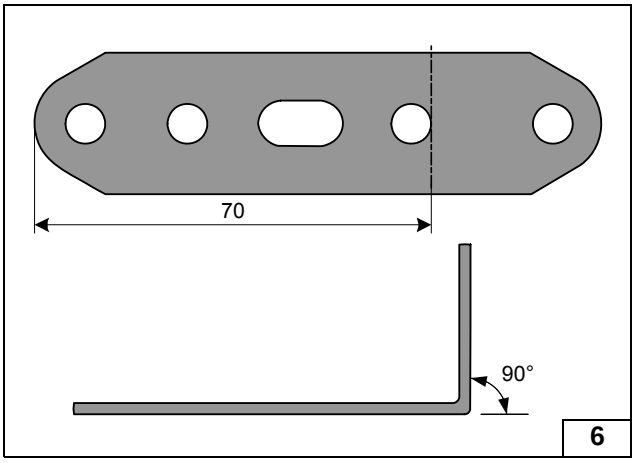
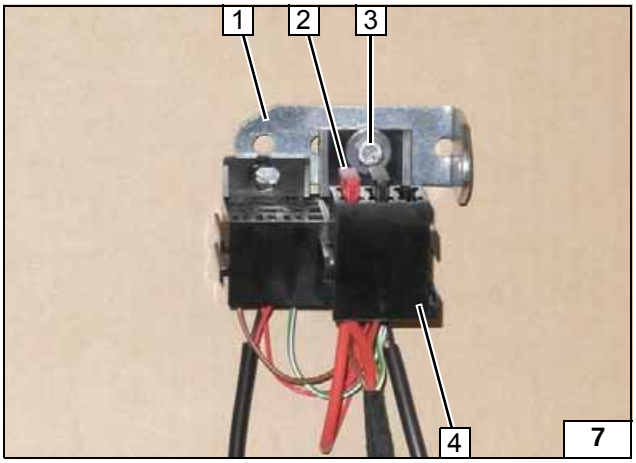
Connecting wire to socket of PWM GW and passenger compartment relay and fuse holder, interconnecting sockets



6

Bending perforated bracket



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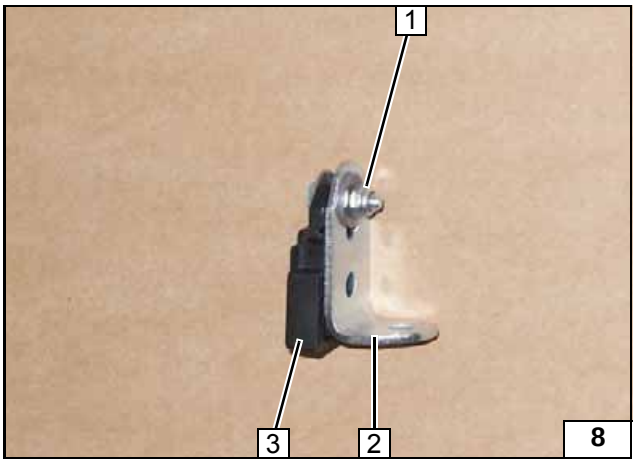
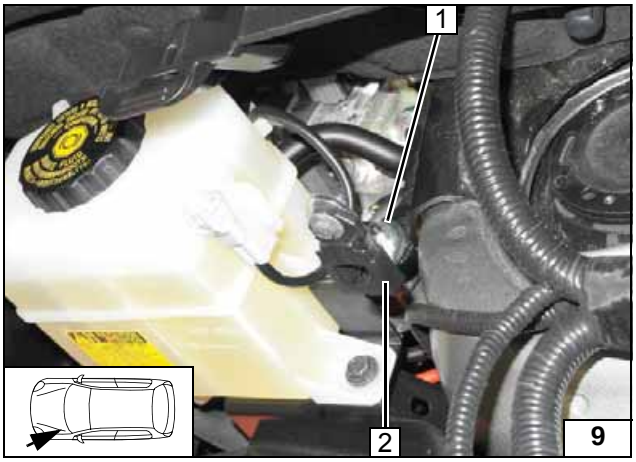
1 Perforated bracket
2 10A fuse F4
3 M5x16 bolt, large diameter washer [2x], nut
4 Passenger compartment relay and fuse holder

Installing perforated bracket, inserting fuse F4



1 M5x16 bolt, large diameter washer [2x], nut
2 Angle bracket
3 Retaining plate of engine compartment fuse holder

Premounting fuse holder retaining plate



NX200T

1 M6x20 bolt, flanged nut
2 Retaining plate of engine compartment fuse holder

NX300h

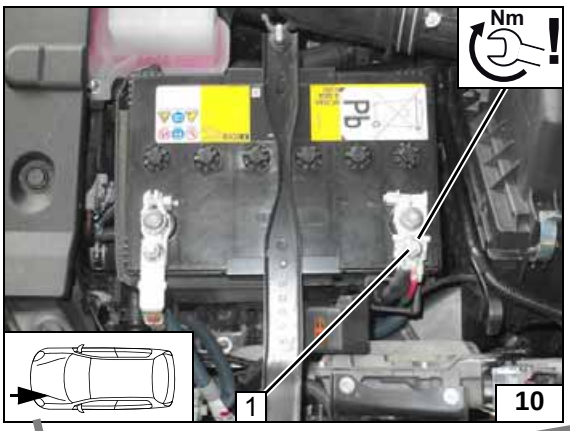
1 Flanged nut, original vehicle stud bolt
2 Retaining plate of engine compartment fuse holder

Installing fuse holder retaining plate

Electrical System

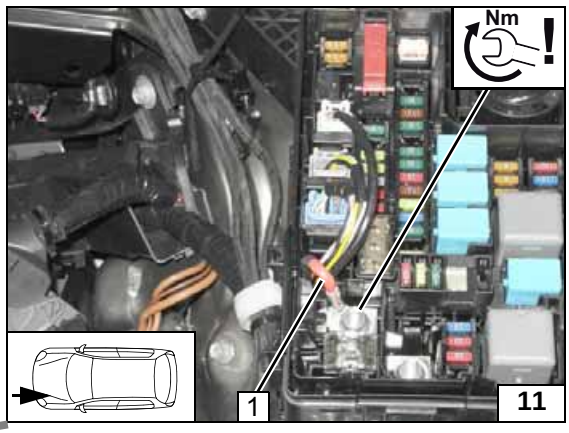
Positive wire of NX200T

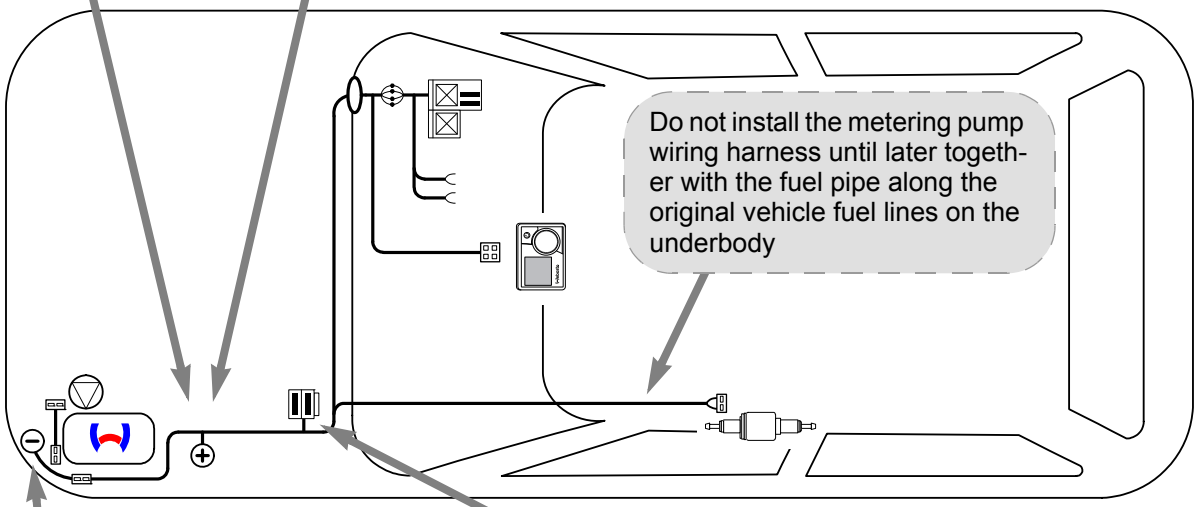
1 Positive wire on positive terminal



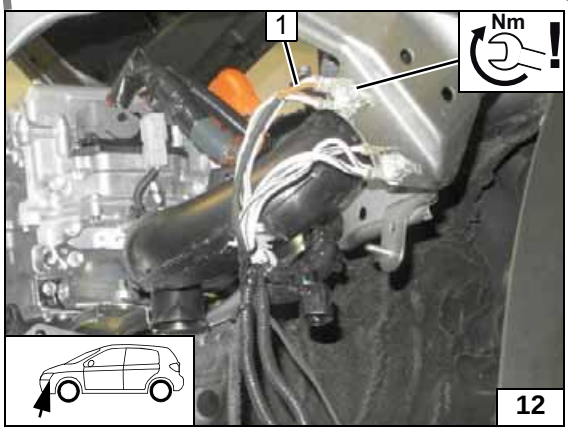
Positive wire of NX300h

1 Positive wire on positive distributor



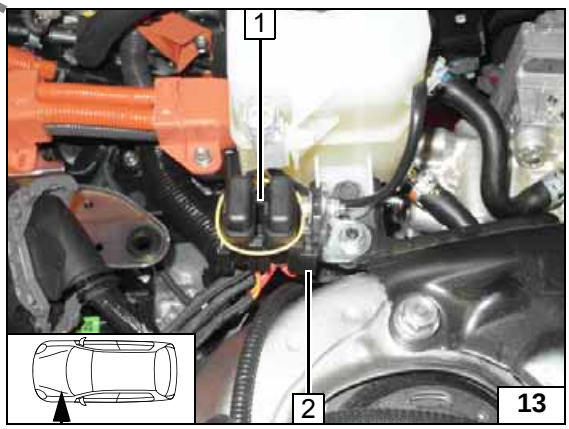


Wiring harness routing diagram



Earth wire

1 Earth wire on original vehicle earth support point



Engine compartment fuse holder

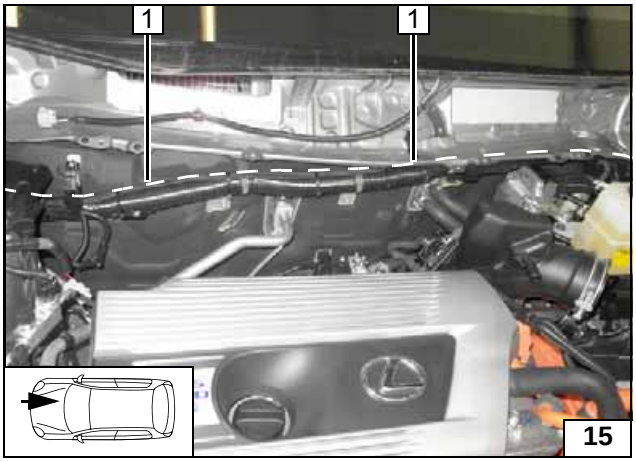
1 Fuses F1-2
2 Retaining plate of fuse holder

Wiring Harness Routing

Route wiring harnesses of fan controller and heater control **4** to the firewall!

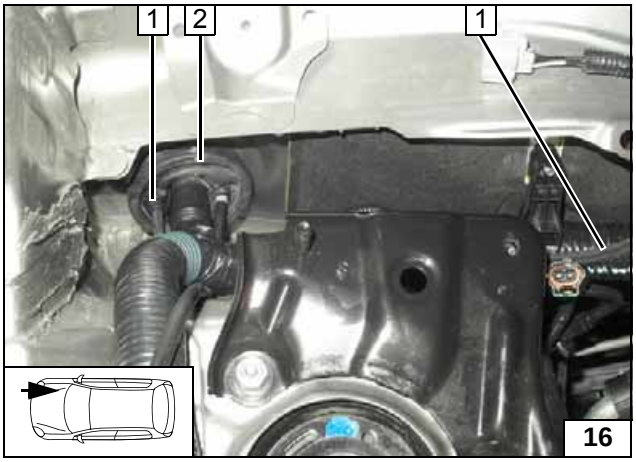
1 Cable tie, original vehicle bracket
2 Cable clip, original vehicle wiring harness
3 Earth wire, heater wiring harness, metering pump wiring harness

Routing wiring harnesses



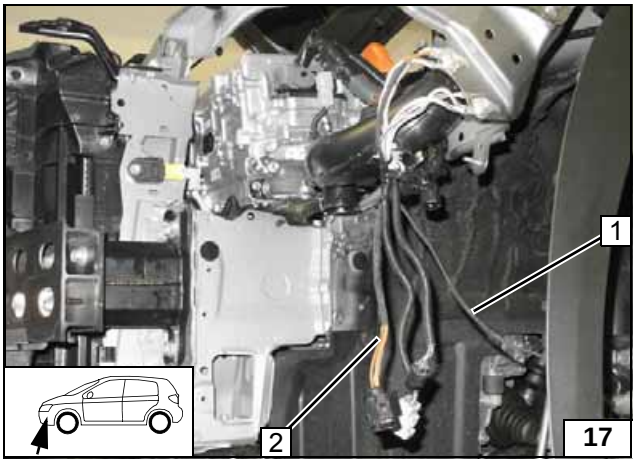
Route wiring harnesses of fan controller and heater control **1** along original vehicle wiring harness to the right vehicle side and secure with cable ties.

Routing wiring harnesses



1 Wiring harnesses of fan controller, heater control
2 Protective rubber plug

Wiring harness pass through

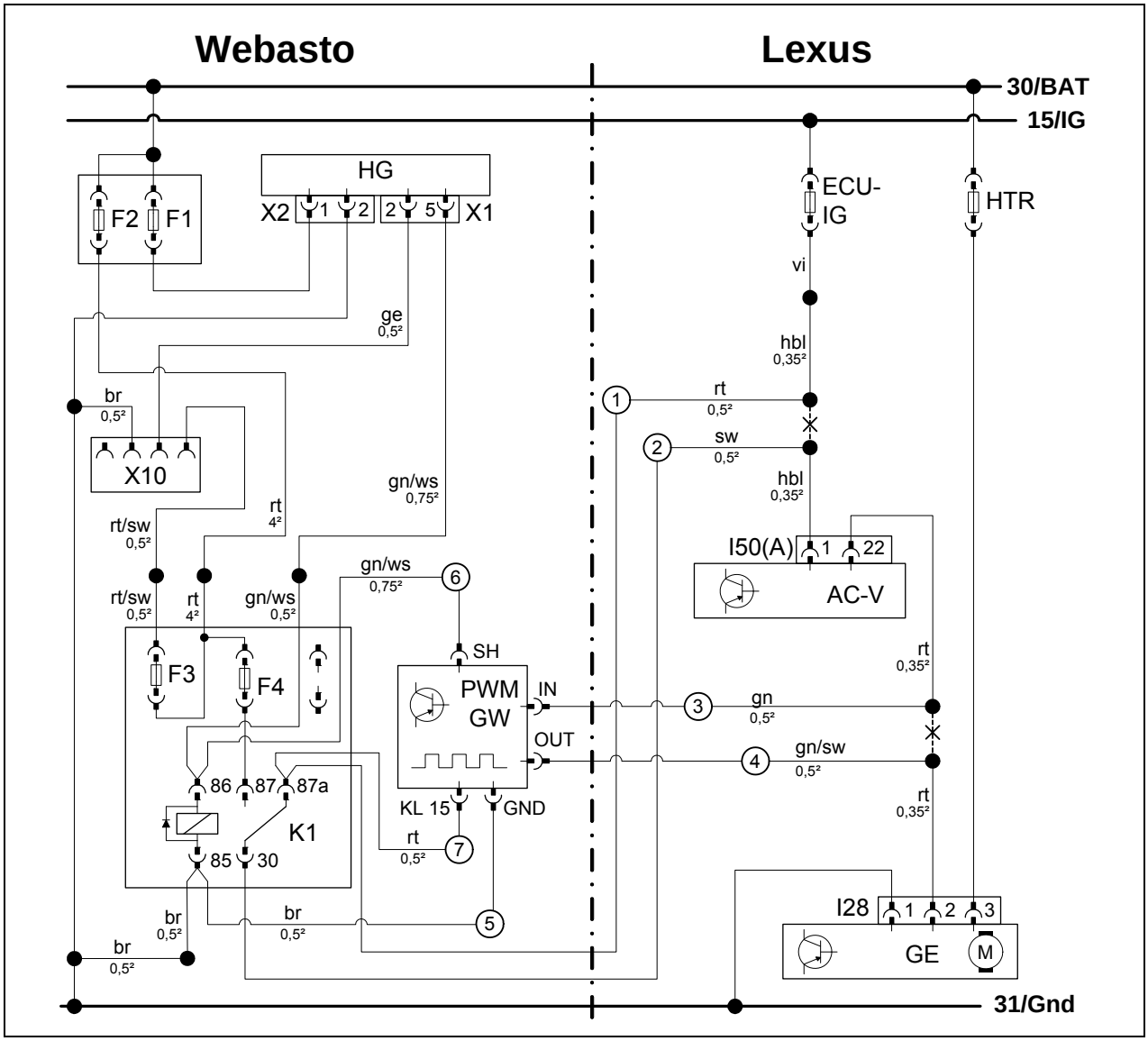


1 Wiring harness of metering pump
2 Wiring harness of heater

Routing wiring harnesses

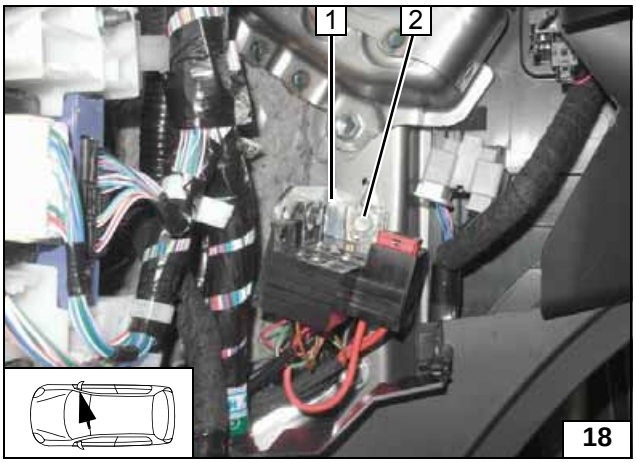
Fan Controller

Wiring diagram



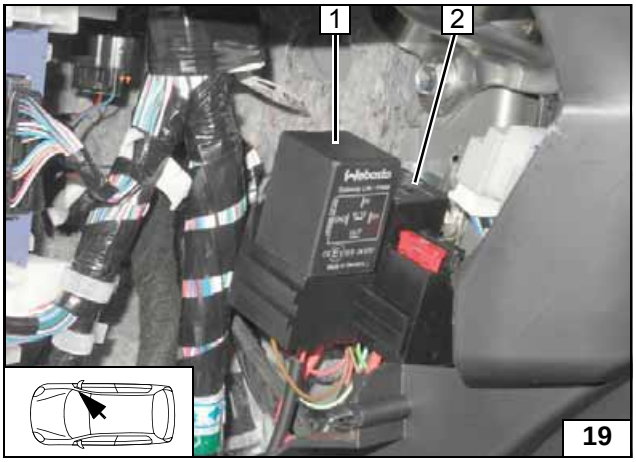
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	ECU-IG	10A fuse	rt	red
X1	6-pin heater connector	HTR	50A fuse	sw	black
X2	2-pin heater connector	AC-V	A/C booster	ge	yellow
F1	20A fuse	I50(A)	40-pin connector of AC-V	gn	green
F2	30A fuse	GE	Fan unit	br	brown
X10	4-pin connector of heater control	I28	Connector GE	ws	white
				hbl	light blue
F3	1A fuse			vi	violet
F4	10A fuse				
PWM GW	PWM-Gateway				
K1	Fan relay				
PWM GW settings:					
Duty cycle:	65%				
Frequency:	400Hz				
Voltage:	not relevant			**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	

Legend



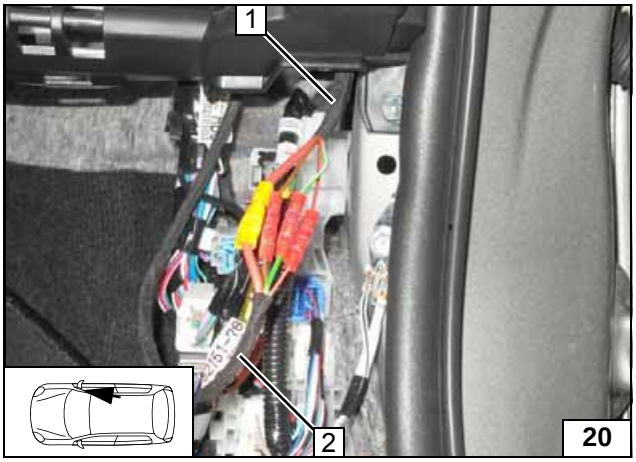
1 Angle bracket
2 Original vehicle bolt

Installing passenger compartment relay and fuse holder



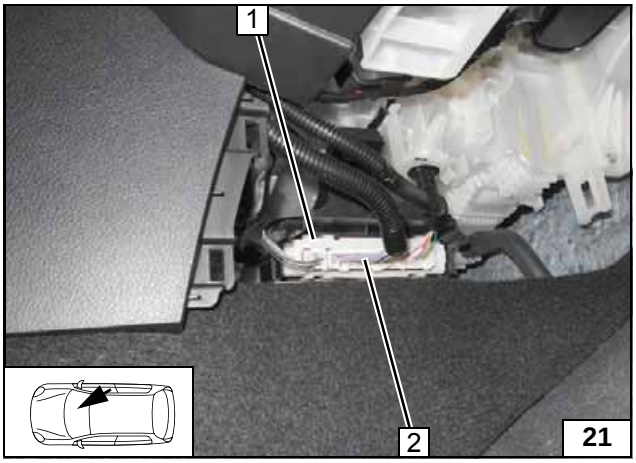
1 PWM Gateway
2 K1 relay

Installing K1 relay, PWM GW



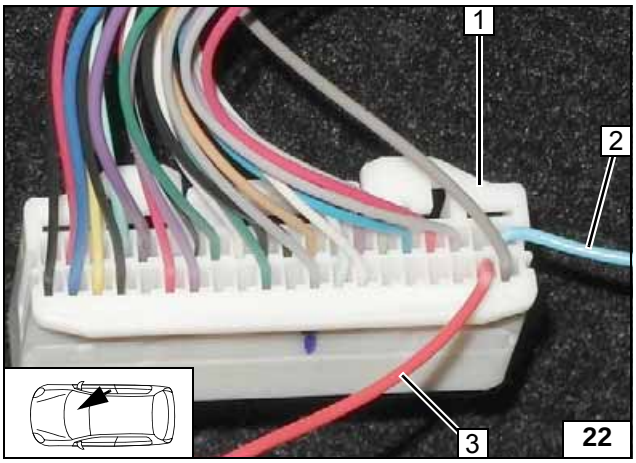
1 Wiring harness of passenger compartment relay and fuse holder
2 Wiring harness of heater

Connecting same colour wires of wiring harnesses



1 A/C booster
2 40-pin connector I50 (A)

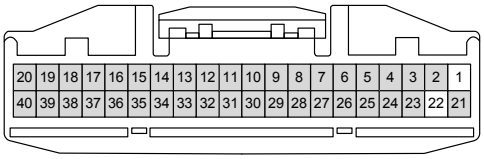
Pulling out connector I50 (A)

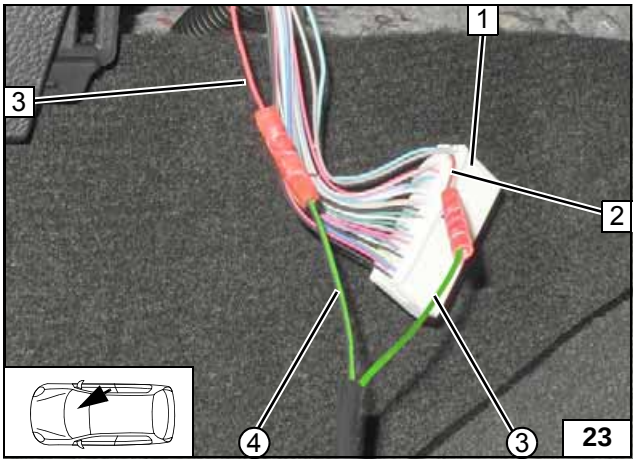


1 40-pin connector I50 (A)
2 Light blue (hbl) wire of connector I50(A), pin 1
3 Red (rt) wire of connector I50(A), pin 22

View of connector I50 (A)

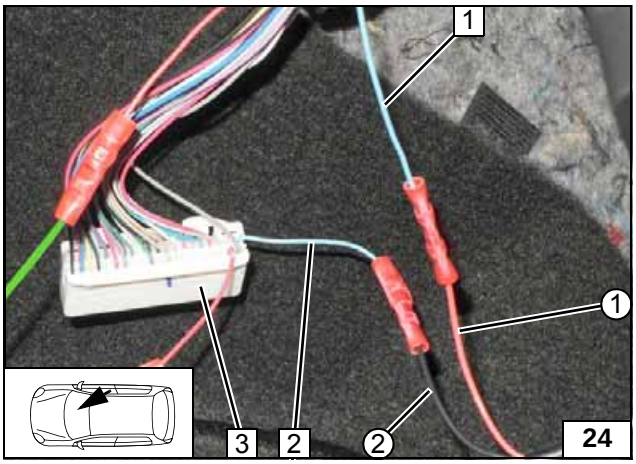
Connector I50 (A), on wiring side:





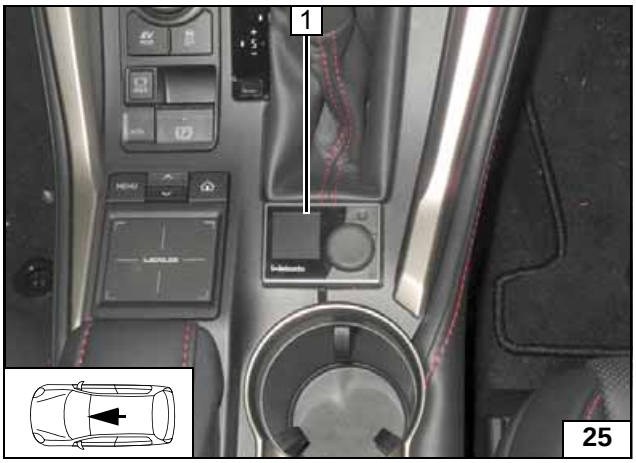
1 Connector I50(A) A/C-V
2 Red (rt) wire of connector I50(A) A/C-V, pin 22
3 Red (rt) wire of connector I28 GE, pin 2
③ Green (gn) wire from PWM GW / IN of wiring harness of PWM control
④ Green/black (gn/sw) wire from PWM GW / OUT of wiring harness of PWM control

Connecting A/C booster



1 Light blue (hbl) wire of fuse ECU-IG
2 Light blue (hbl) wire of connector I50(A) A/C-V, pin 1
3 Connector I50(A) A/C-V
① Red (rt) wire from K1/87a of AC booster wiring harness
② Black (sw) wire from K1/30 of AC booster wiring harness

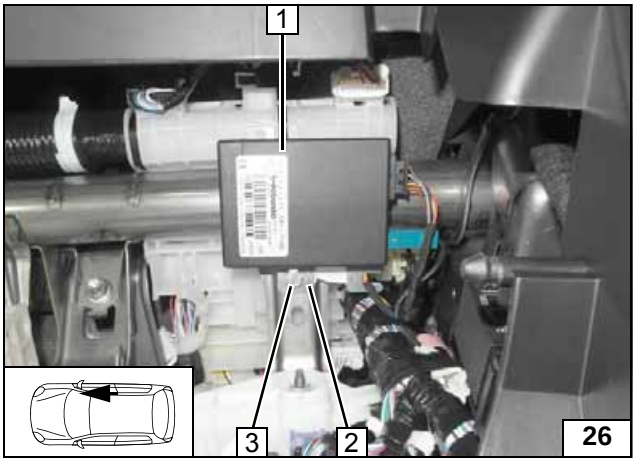
Connecting A/C booster



MultiControl CAR Option

1 MultiControl CAR

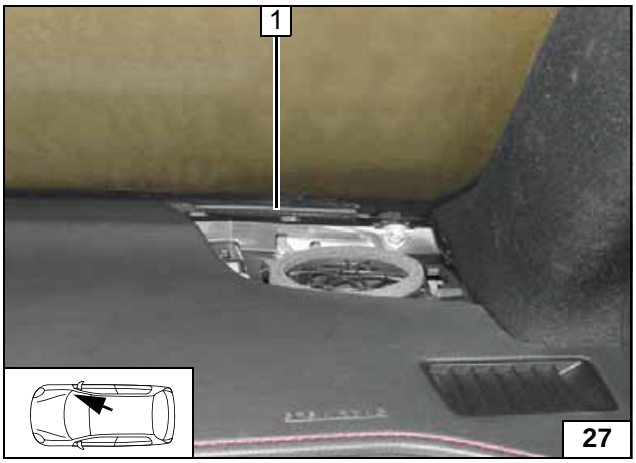
Installing MultiControl CAR



Remote Option (Telestart)

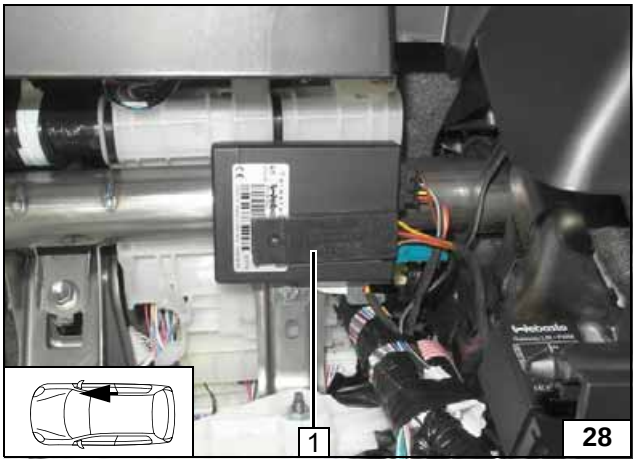
1 Receiver
2 Bracket
3 M5x16 bolt, washer, flanged nut, existing hole

Installing receiver



1 Aerial

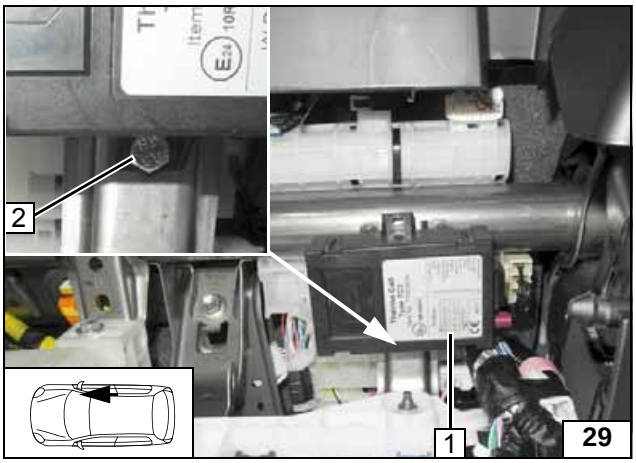
Installing aerial



Temperature sensor T100 HTM

Fasten temperature sensor **1** with double-sided adhesive tape.

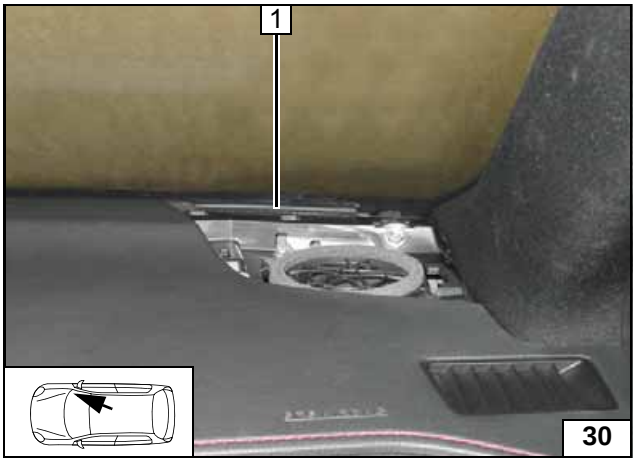
Installing temperature sensor



ThermoCall Option

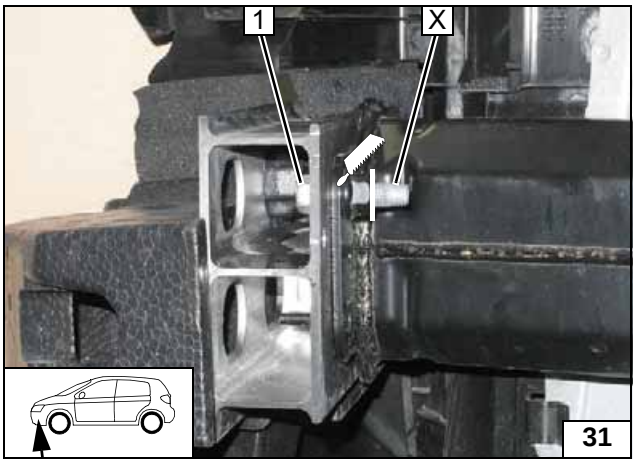
1 Receiver
2 M5x16 bolt, washer, flanged nut, existing hole

Installing receiver



1 Aerial (optional)

Installing aerial

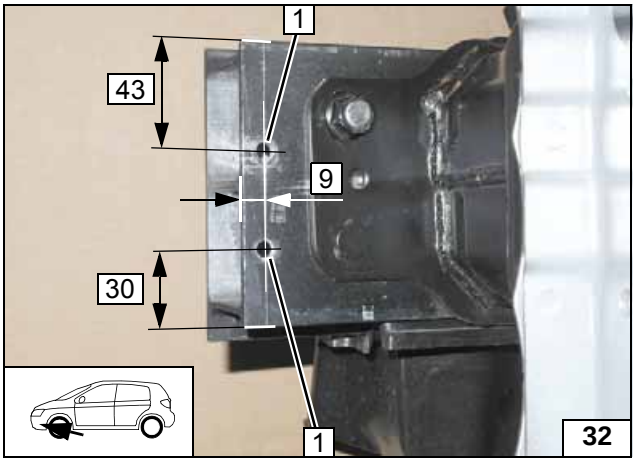


Preparing Installation Location

1 Original vehicle bolt

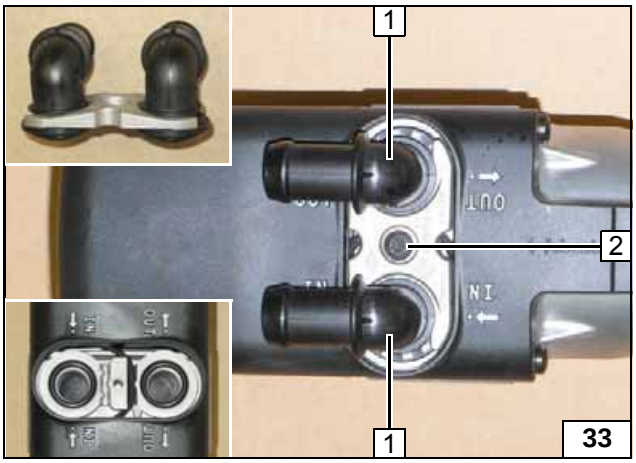
X = 

Shortening bolt



1 7mm dia. hole [2x]

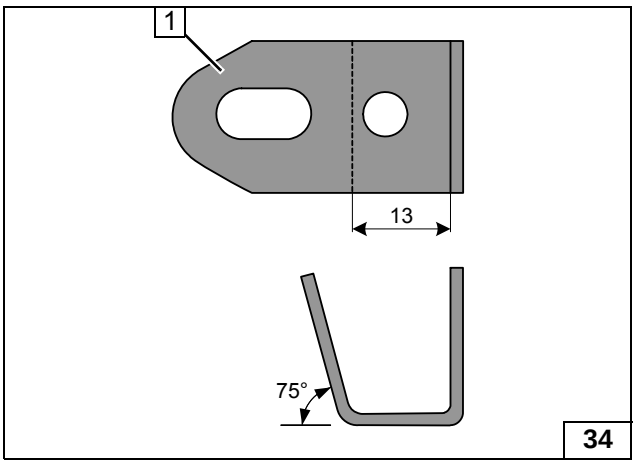
Holes in bumper



Preparing Heater

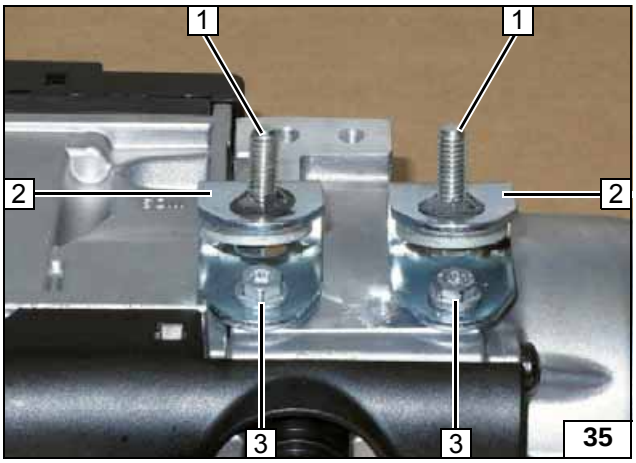
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection pieces

Installing water connection piece



1 Angle bracket [2x]

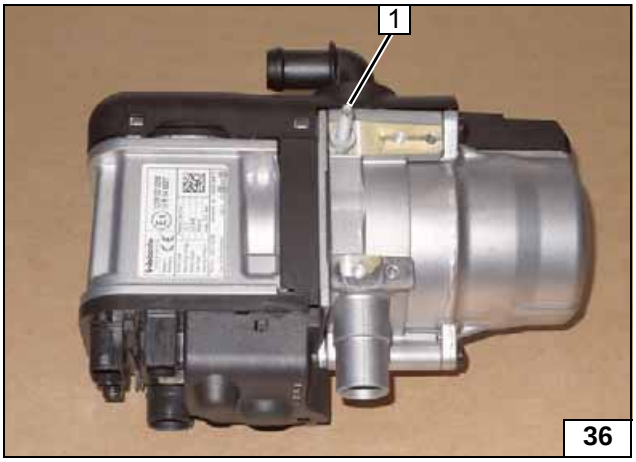
Preparing angle bracket 2x



35

1 M6x20 bolt, large diameter washer, pin lock [2x each]
2 Angle bracket [2x]
3 5x13 self-tapping bolt [2x]

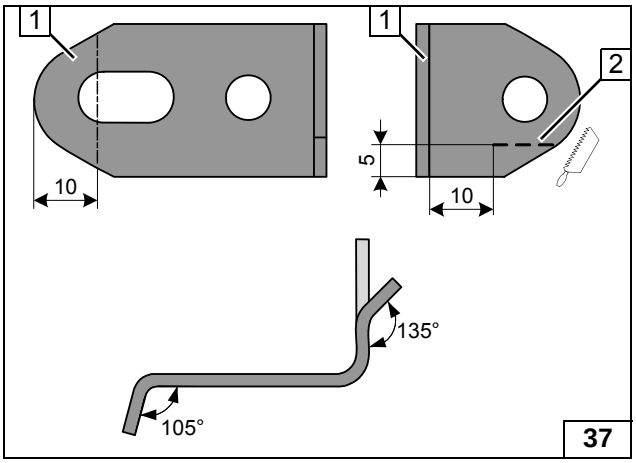
Installing angle bracket



36

1 M5/M6x25 self-tapping stud bolt

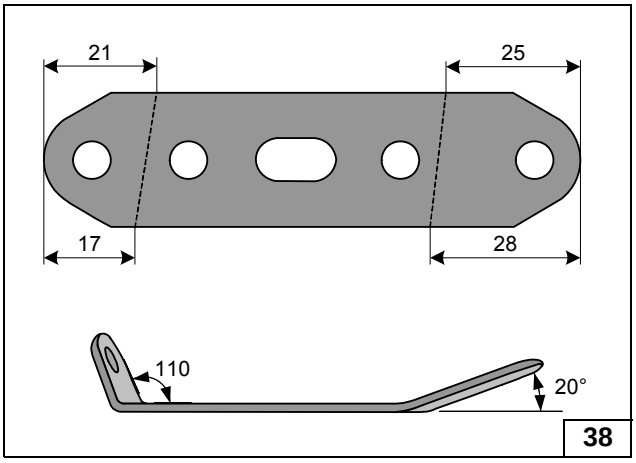
Mounting stud bolt



37

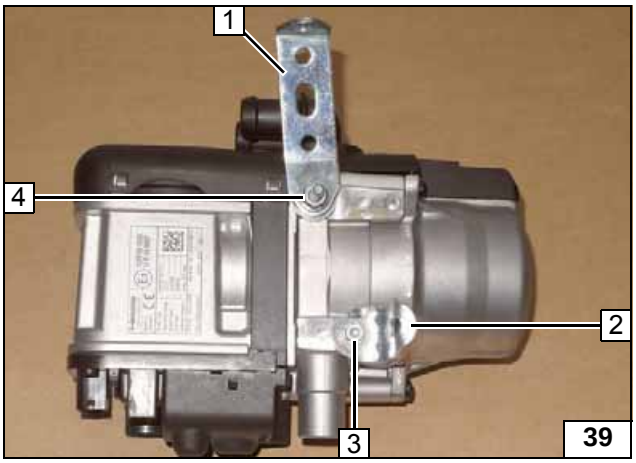
Cut angle bracket **1** at position **2** and angle down the tab by 45° in order to create a twist protection.

Preparing angle bracket



38

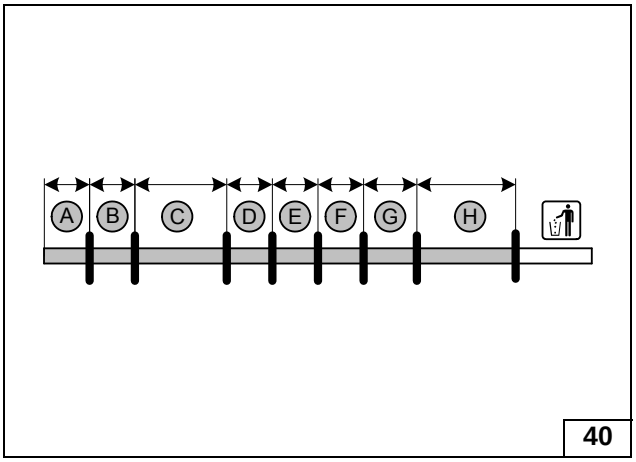
Preparing perforated bracket



Install a 5mm shim on the stud bolt at position **4**.

1 Perforated bracket
2 Angle bracket
3 5x13 self-tapping bolt
4 5mm shim, flanged nut [M6]

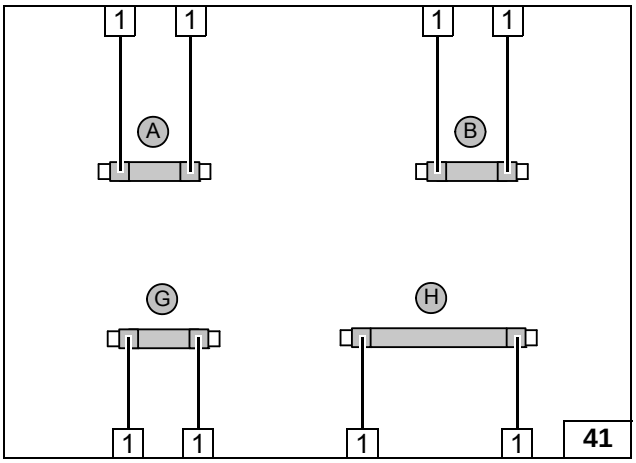
Installing perforated bracket and angle bracket



NX200T

A = 250
B = 210
C = 75
D = 170
E = 110
F = 90
G = 290
H = 500

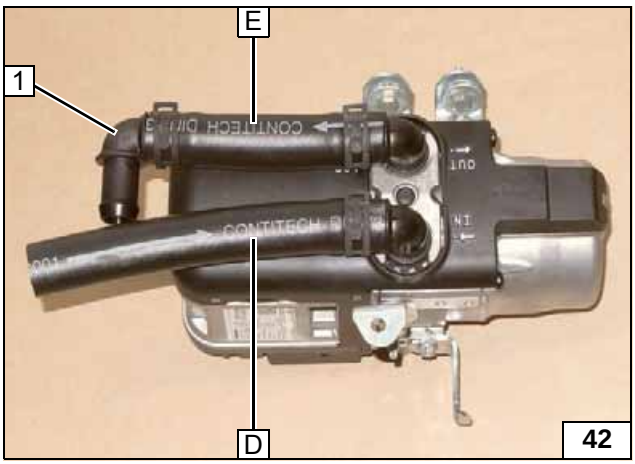
Cutting hoses to length



Slide braided protection hoses over hoses **A, B, G** and **H** and cut to length. Cut heat shrink plastic tubing to size.

1 Heat shrink plastic tubing, 60mm long [8x]

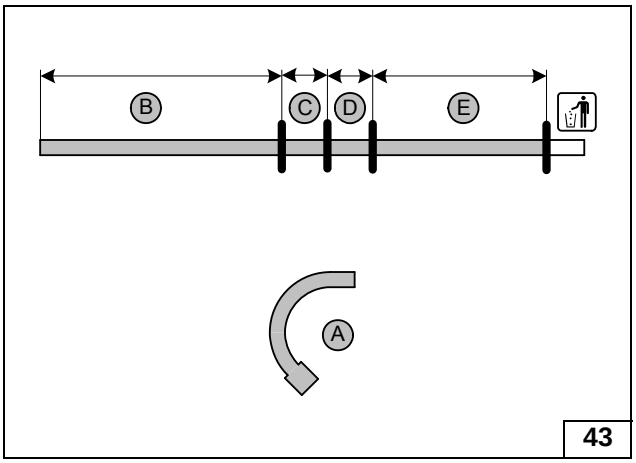
Preparing hoses



All spring clips = 25 mm dia.

1 90°, 18x18 mm dia. connecting pipe

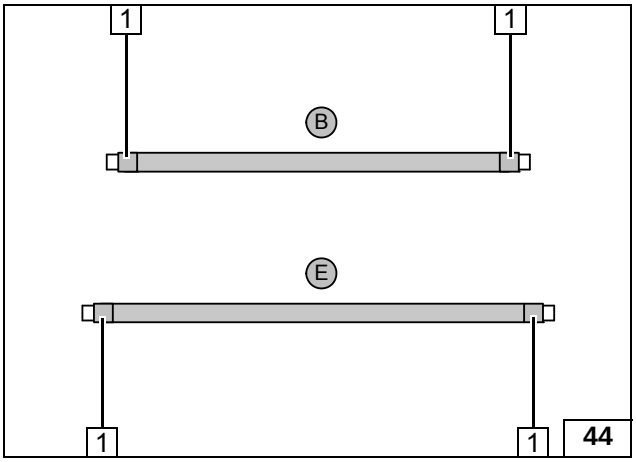
Premounting hoses



NX300h

A = 135°, 18x20mm dia.
B = 710
C = 170
D = 110
E = 750

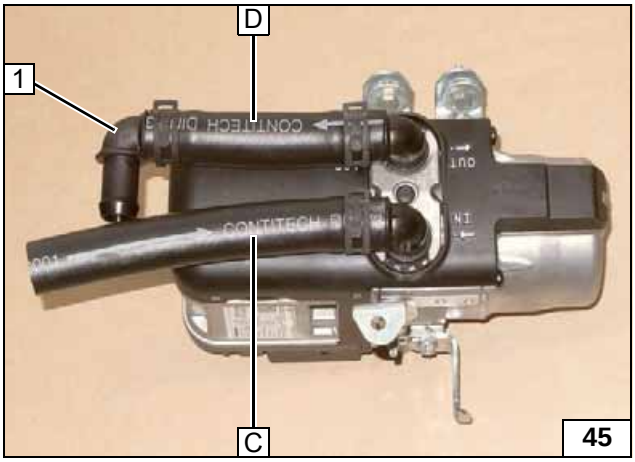
Cutting hoses to length



Push braided protection hoses onto hoses **B** and **E** and cut to length. Cut heat shrink plastic tubing to size.

1 Heat shrink plastic tubing, 60mm long [4x]

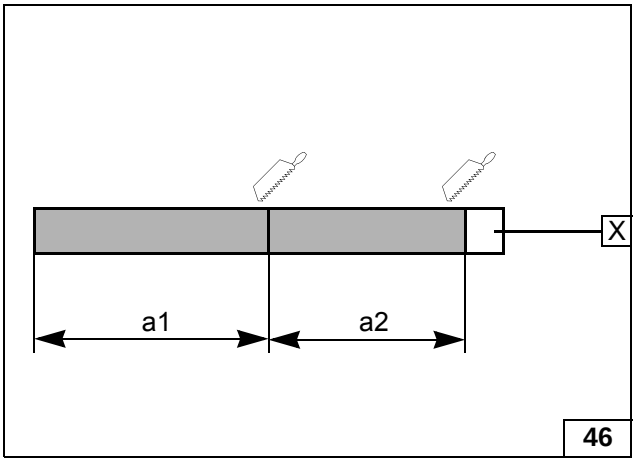
Preparing hoses



All spring clips = 25 mm dia.

1 90°, 18x18 mm dia. connecting pipe

Premounting hoses

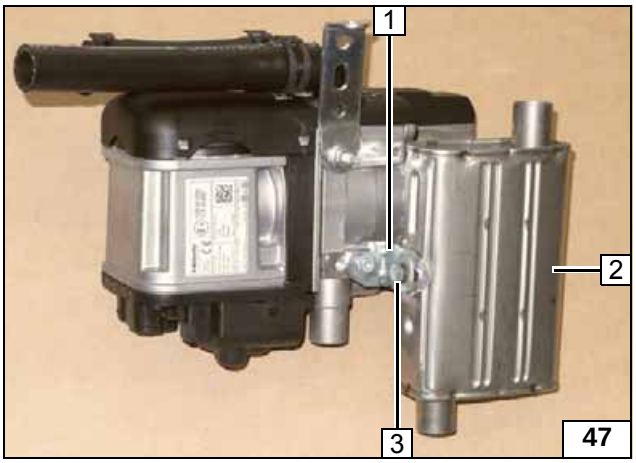


All vehicles

a1 = 250
a2 = 300

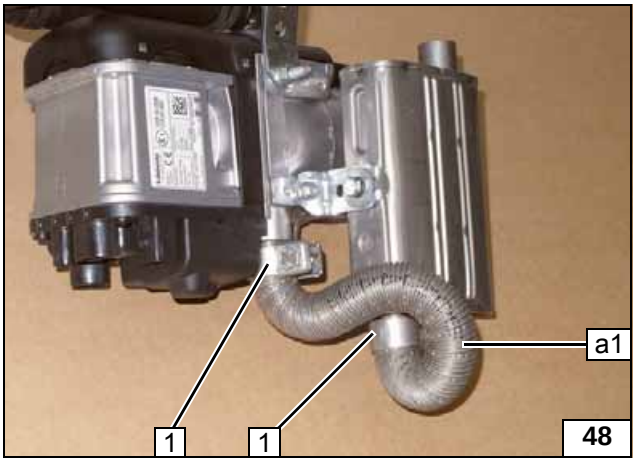
X =

Preparing exhaust pipe



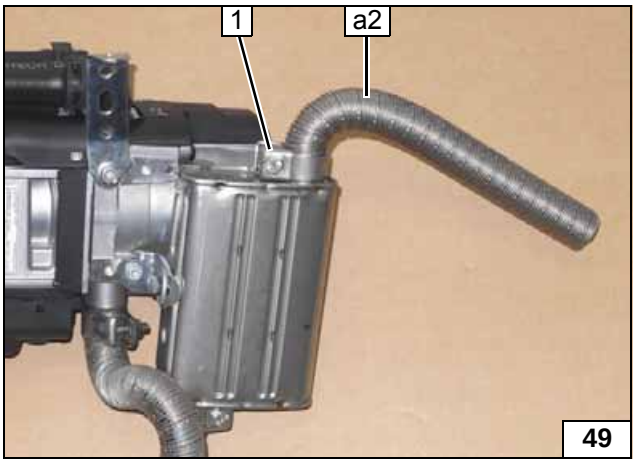
1 Angle bracket
2 Silencer
3 M6x16 bolt, spring lockwasher, large diameter washer

Installing silencer



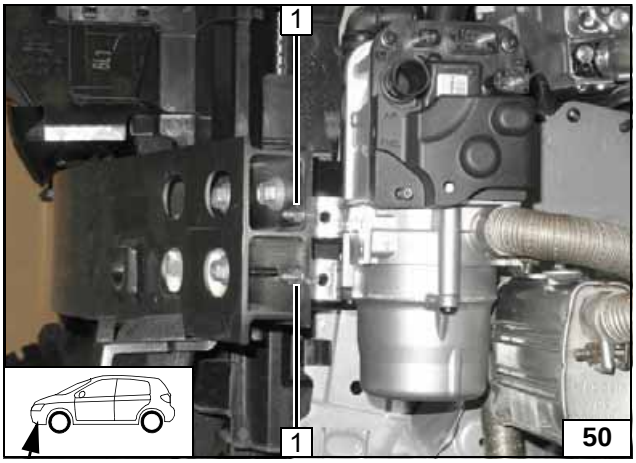
1 Hose clamp [2x]

Installing exhaust pipe a1



1 Hose clamp

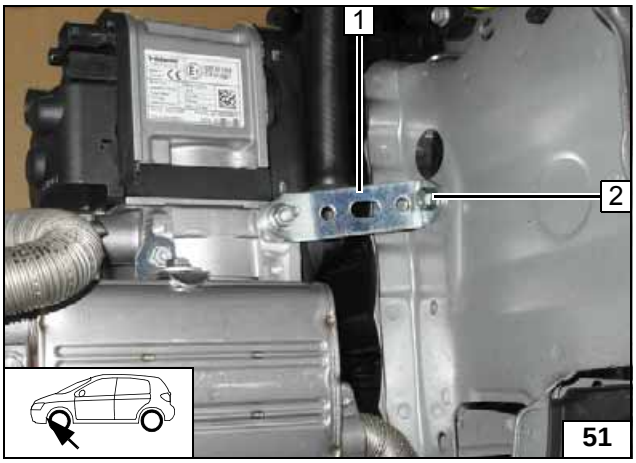
Installing exhaust pipe a2



Installing Heater

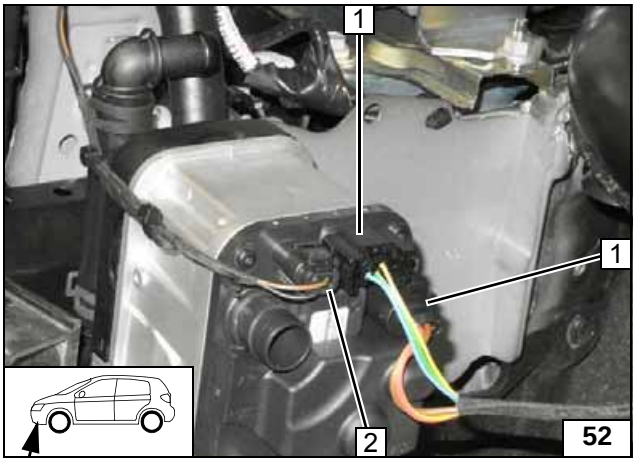
1 M6 flanged nut, premounted M6x20 bolt [2x]

Mounting heater



1 Prepared perforated bracket
2 M6x20 bolt, spring lockwasher, existing threaded hole

Mounting heater



1 Heater wiring harness connector [2x]
2 Connector of circulating pump wiring harness

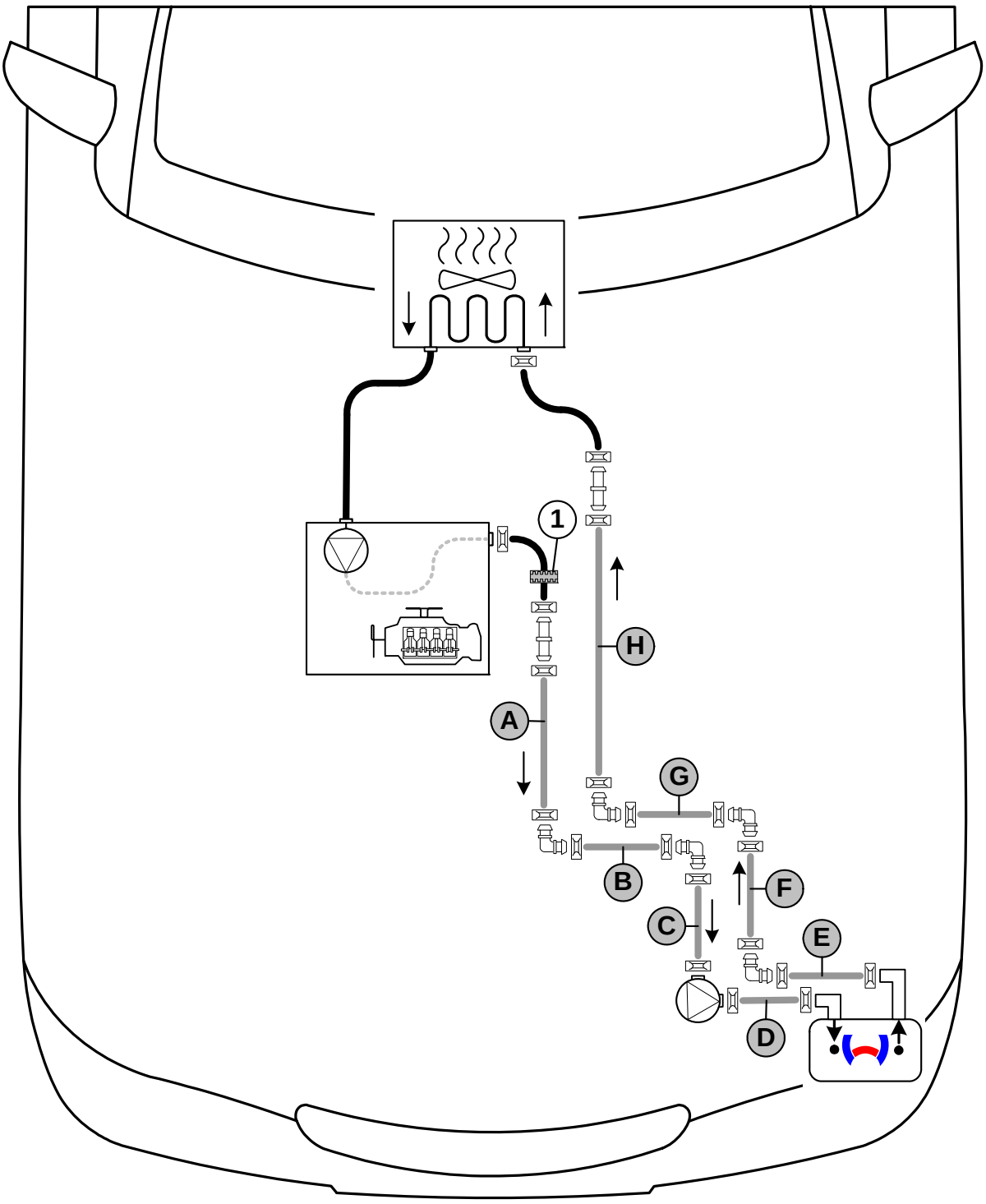
Installing wiring harnesses

Coolant Circuit of NX200T

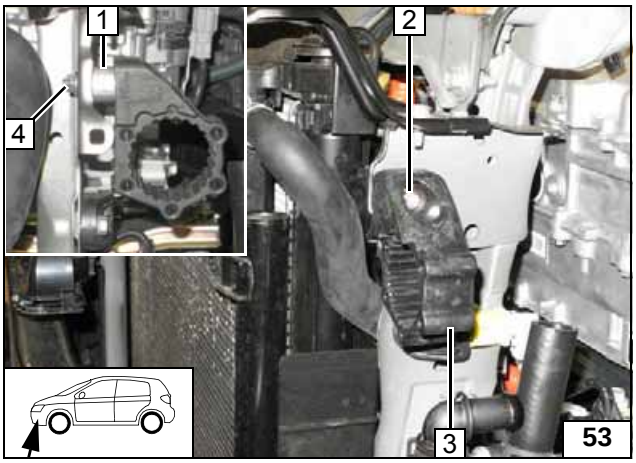
Any coolant running off should be collected in a suitable container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

The connection should be modelled on an "inline" circuit and based on the following diagram:

Hose routing diagram

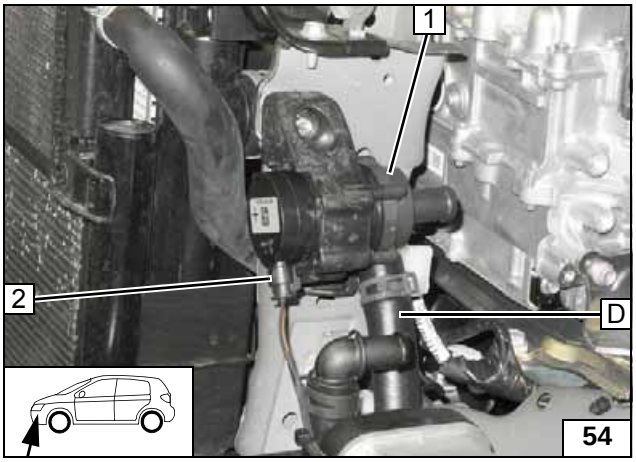


All spring clips without a specific designation = 25mm dia.
All connecting pipes without a specific designation and = 18x18mm dia.
1 = Black (sw) rubber isolator .



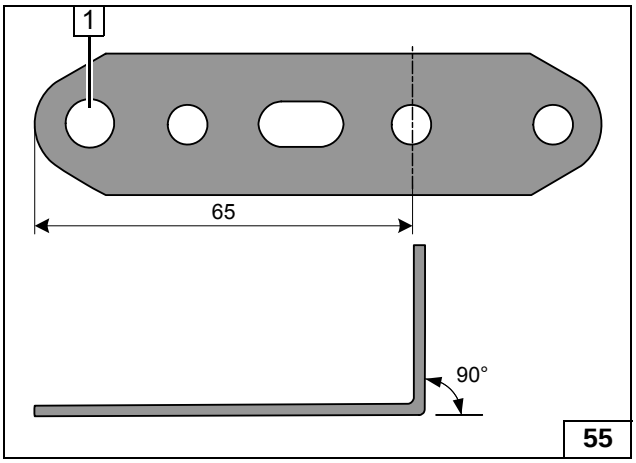
1 20mm shim
2 M6x50 bolt, existing hole
3 Circulating pump mounting
4 Flanged nut

Installing circulating pump mounting



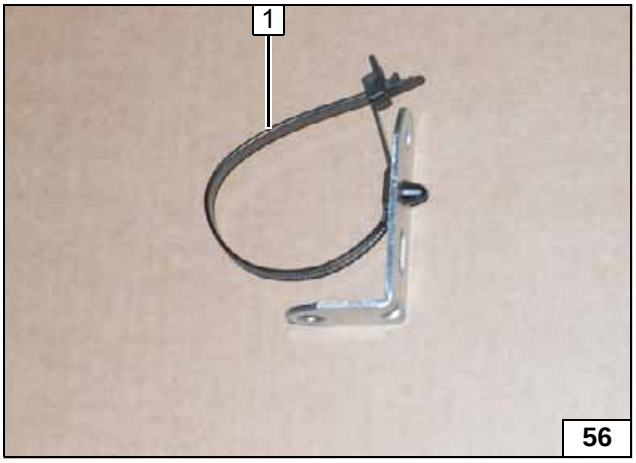
1 Circulating pump
2 Connector of circulating pump wiring harness

Installation and connection of circulating pump



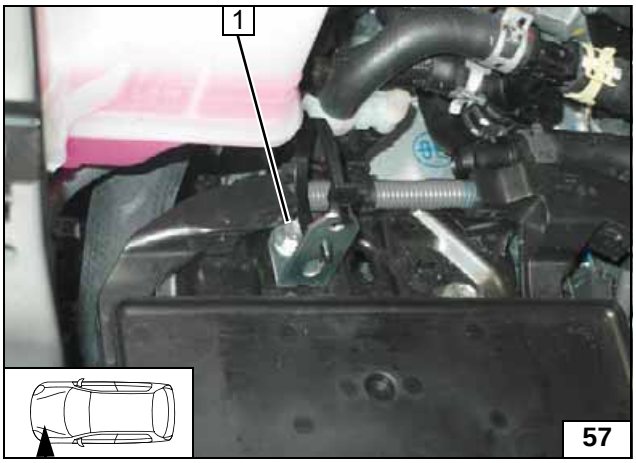
1 Drill out hole to 8.5mm dia.

Preparing perforated bracket



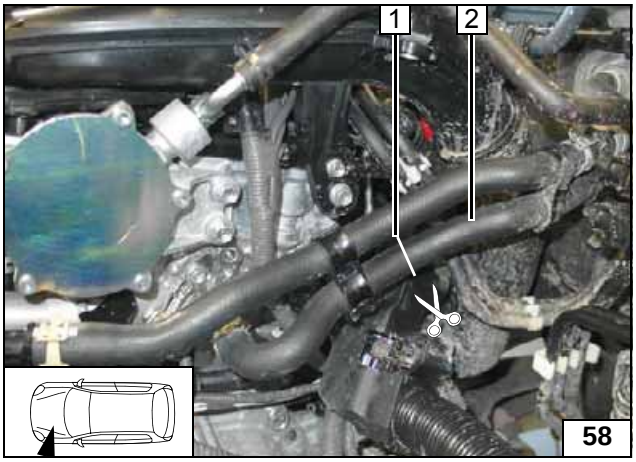
1 Install clip-type cable tie

Preparing perforated bracket



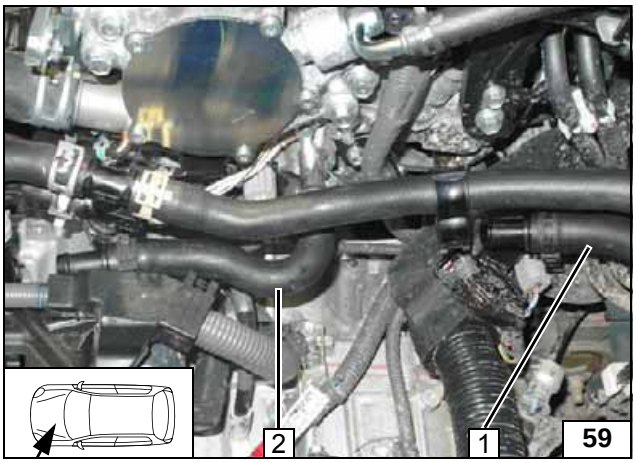
1 Original vehicle bolt

Installing perforated bracket



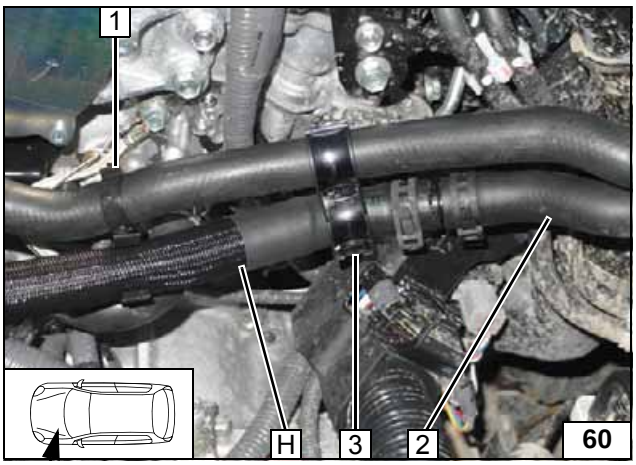
1 Cutting point
2 Hose of engine outlet/heat exchanger inlet

Cutting point



1 Hose section of heat exchanger inlet
2 Hose section of engine outlet, turned

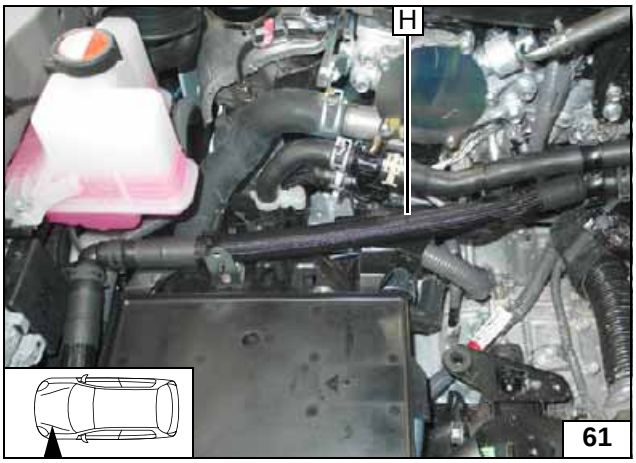
Cutting point



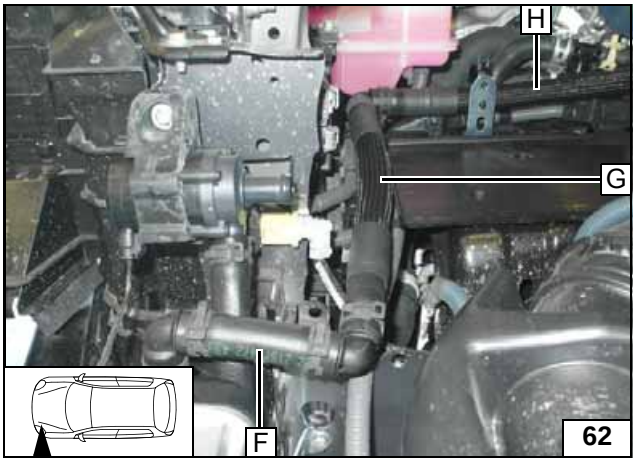
Route hose **H** through original vehicle hose bracket **3**.

1 Hose bracket between hose **H** and hose of heat exchanger outlet
2 Heat exchanger inlet hose section

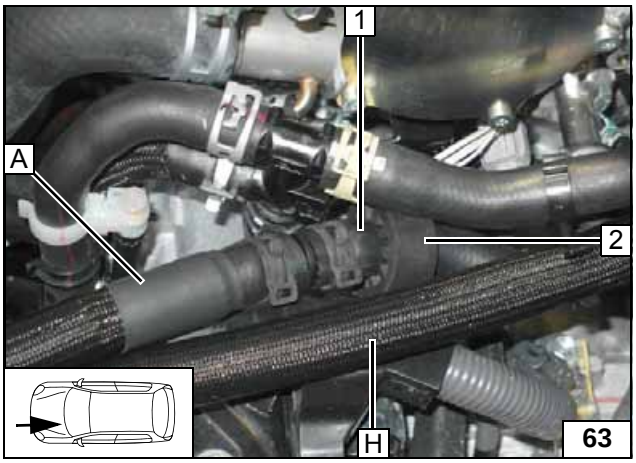
Connecting heat exchanger inlet



Routing in engine compartment

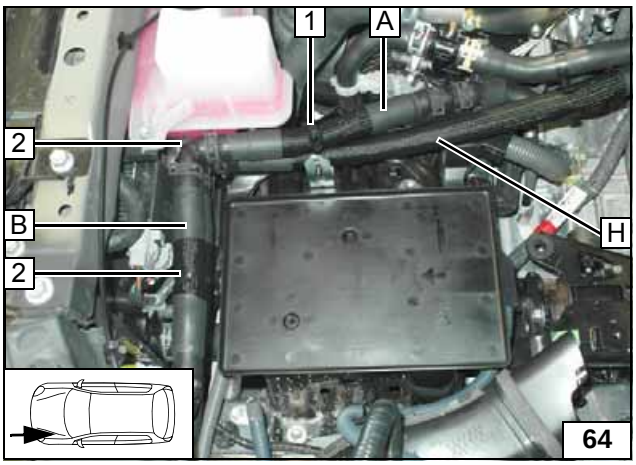


Connecting heater outlet



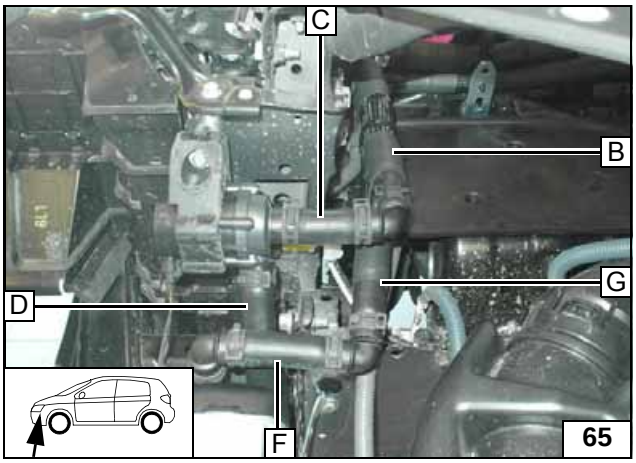
Position black (sw) rubber isolator **2** onto hose of engine outlet **1** before the connection!

Connecting engine outlet



1 Tighten clip-type cable tie
2 Cable tie [2x]

Routing in engine compartment



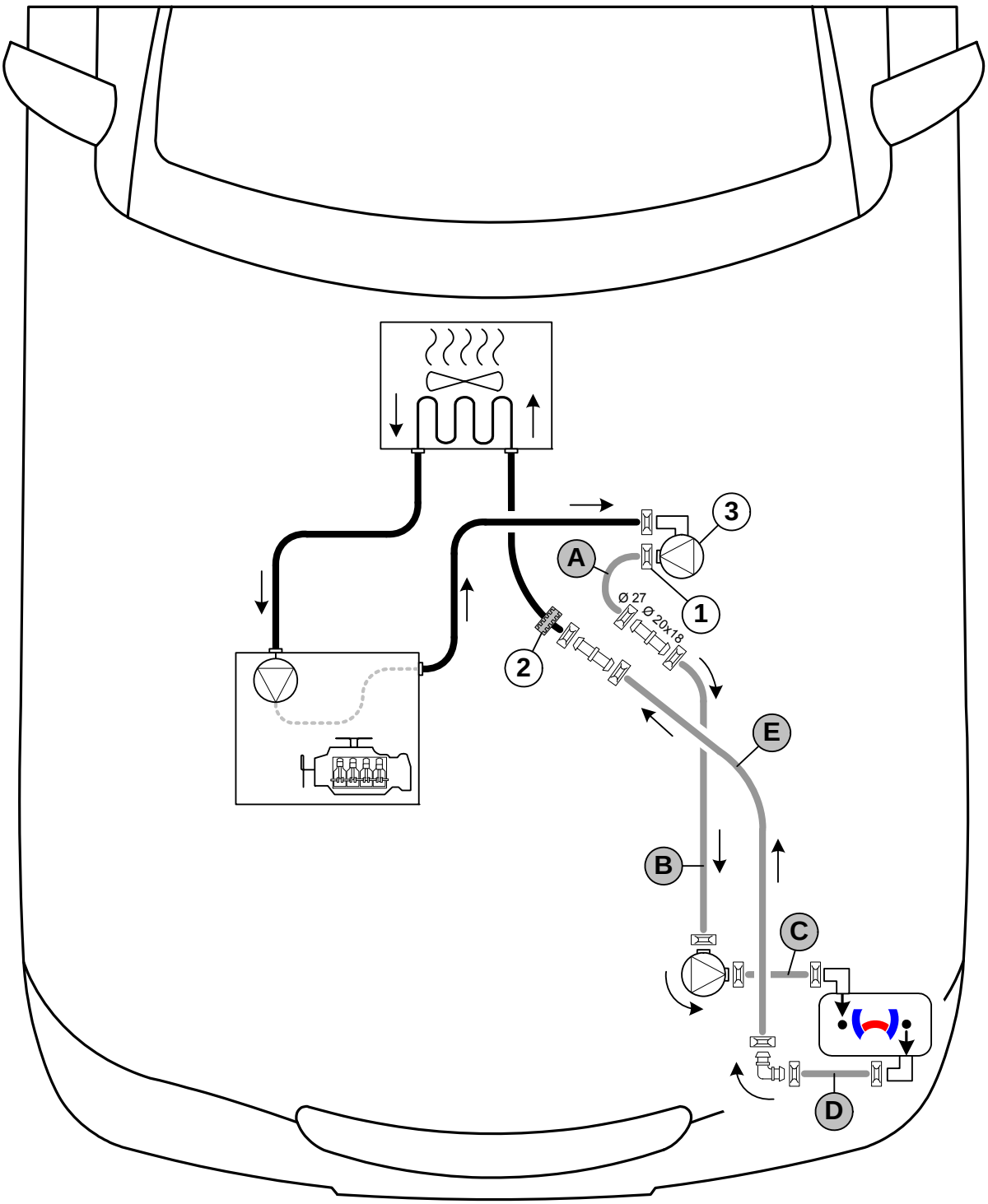
Connecting circulating pump

Coolant Circuit of NX300h

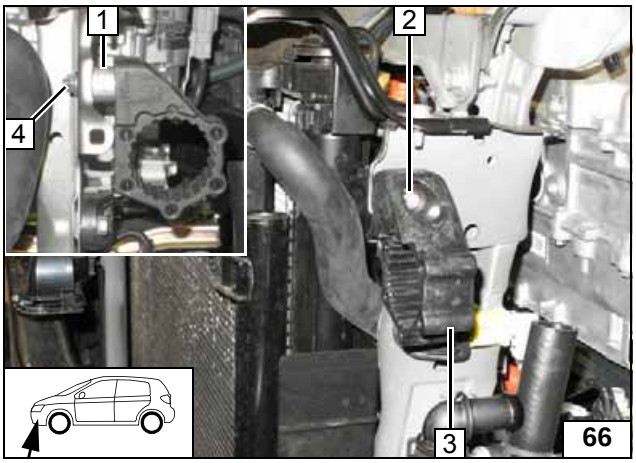
Any coolant running off should be collected in a suitable container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

The connection should be modelled on an "inline" circuit and based on the following diagram:

Hose routing diagram

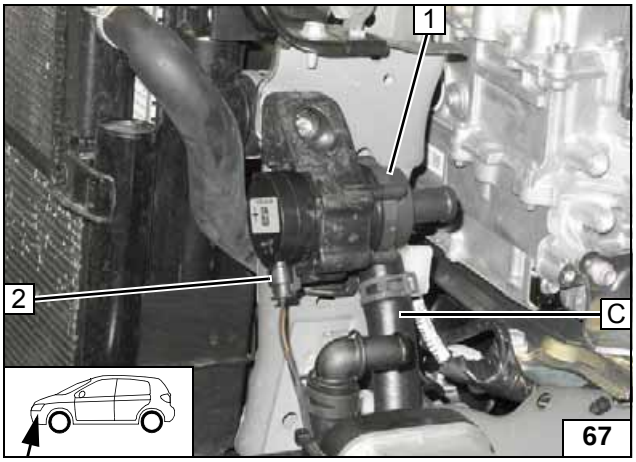


All spring clips without a specific designation = 25mm dia.
All connecting pipes without a specific designation and = 18x18mm dia.
1 = Original vehicle spring clip .
2 = Black (sw) rubber isolator .
3 = Original vehicle circulating pump.



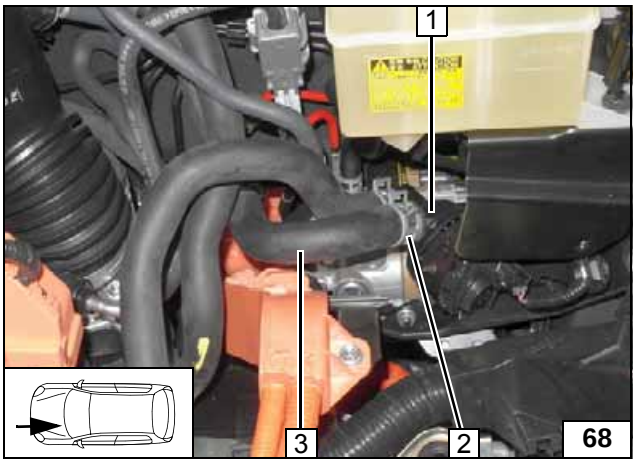
1 20mm shim
2 M6x50 bolt, existing hole
3 Circulating pump mounting
4 Flanged nut

Installing circulating pump mounting



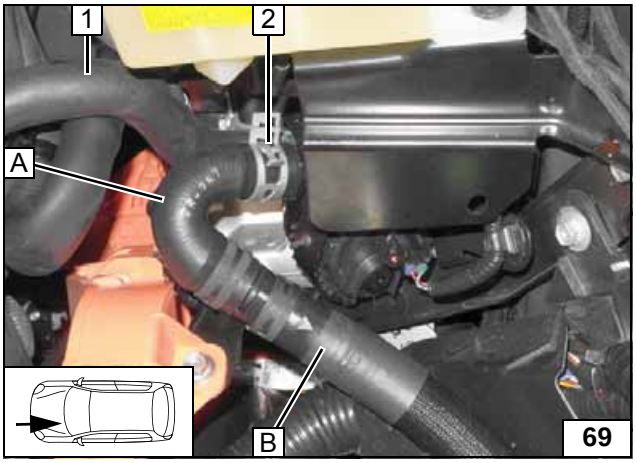
1 Circulating pump
2 Connector of circulating pump wiring harness

Installation and connection of circulating pump



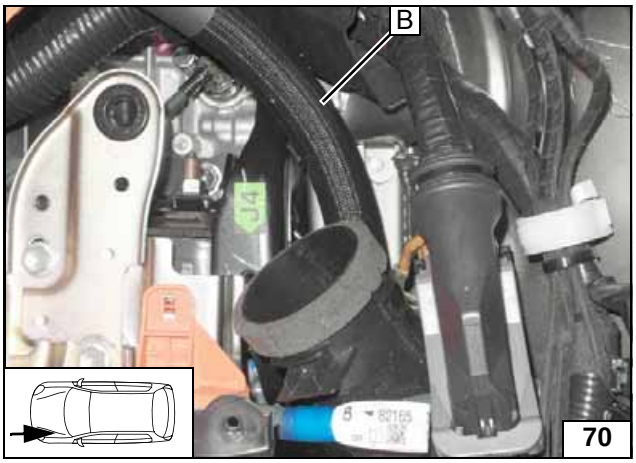
Pull hose of original vehicle circulating pump / heat exchanger inlet **3** from connection piece of circulating pump **1**. Original vehicle spring clip **2** will be reused.

Cutting point

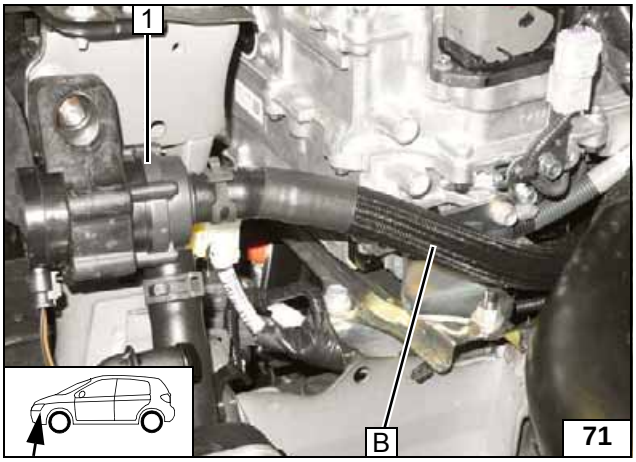


1 Hose of engine outlet / original vehicle circulating pump
2 Original vehicle spring clip

Connecting engine outlet

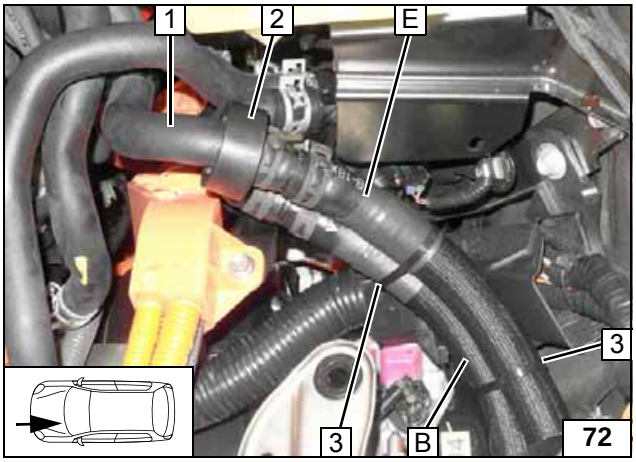


Routing in engine compartment



1 Circulating pump

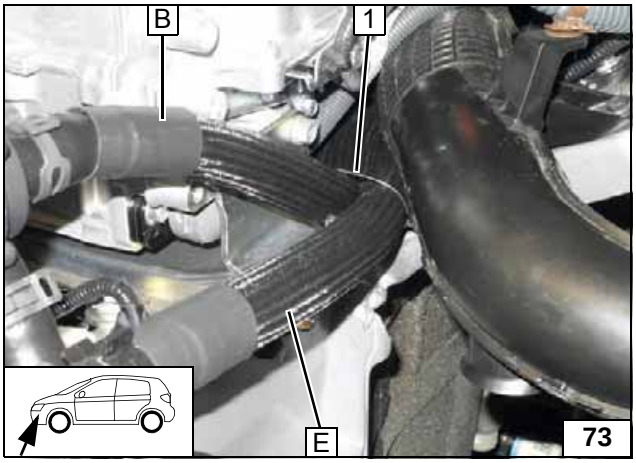
Connecting circulating pump



Slide black (sw) rubber isolator **2** onto hose of heat exchanger inlet **1**.

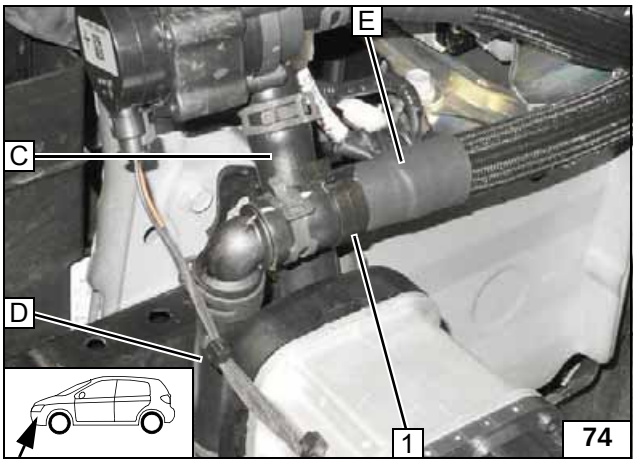
3 Cable tie [2x]

Connecting heat exchanger inlet



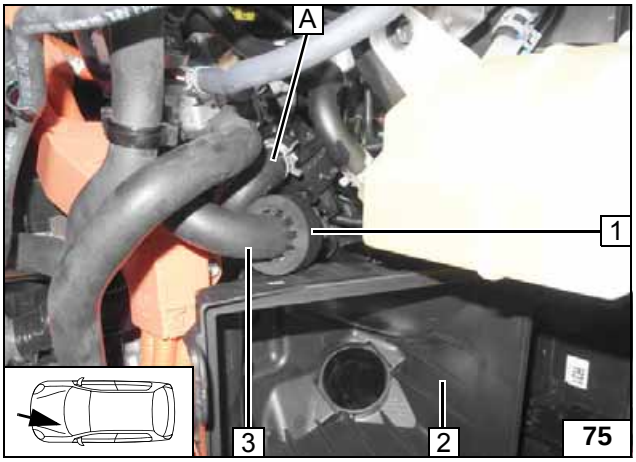
1 Cable tie

Routing in engine compartment



1 Hose bracket between hoses **C** and **E**

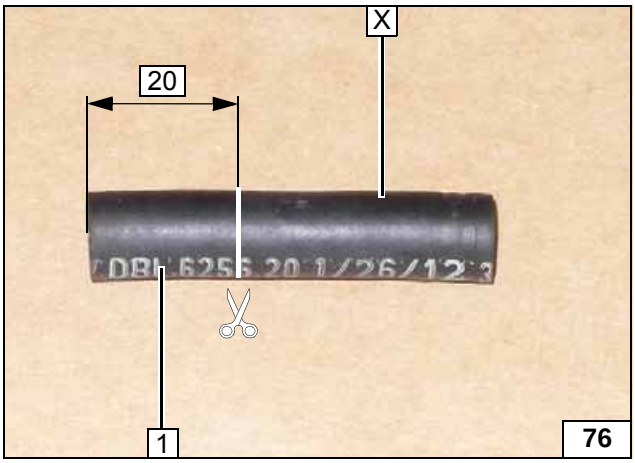
Connecting heater outlet



Install air filter box **2**.
Align black (sw) rubber isolator **1** between hose **A** and air filter box **2**.

3 Hose of heat exchanger inlet

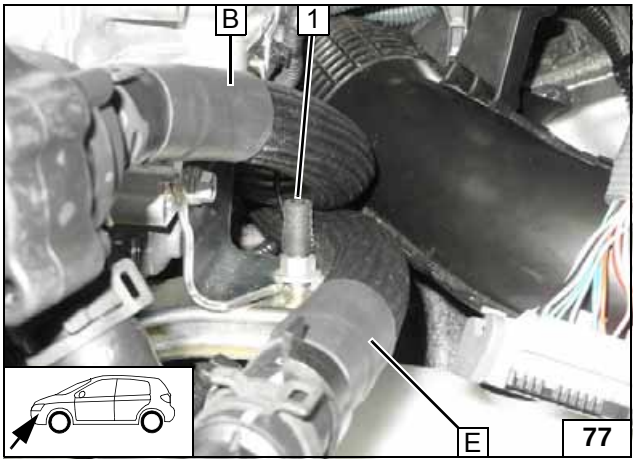
Aligning rubber isolator



1 4.5 mm dia. hose section

X =

Cutting hose section to length



Install hose section **1** as rub protection onto original vehicle bolt.
Align hoses.
Ensure sufficient distance from neighbouring components; correct if necessary.

Installing hose section

Fuel

Open the vehicle's fuel tank cap, ventilate the tank and then re-close the tank lock.

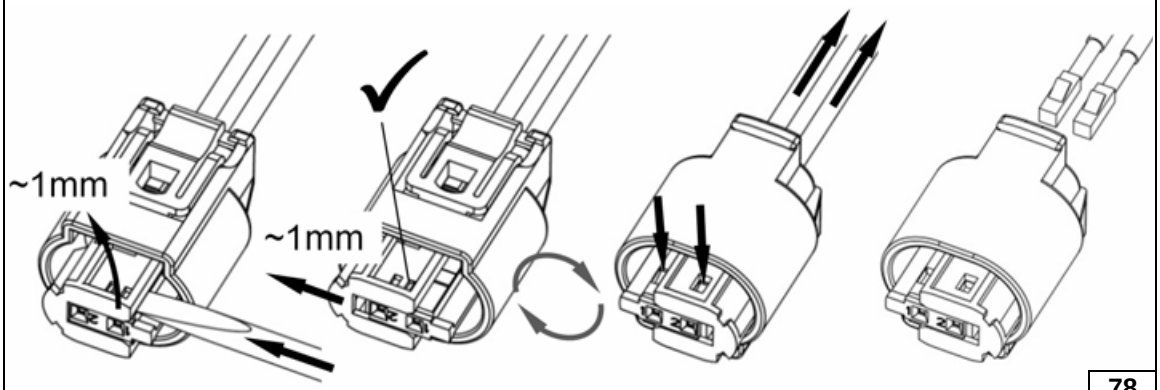
Catch any fuel running off in an appropriate container.

Route fuel line and metering pump wiring harness so that they are protected against stone impact.
Unless specified otherwise, always fasten using cable ties.
Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.

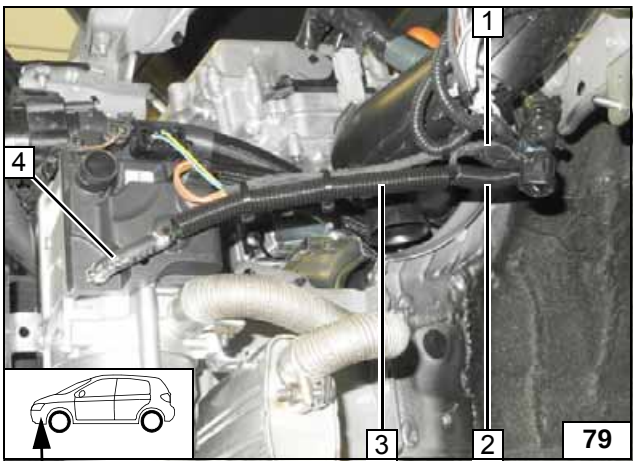
Dismantling metering pump connector

Connector X7



78

Connecting heater

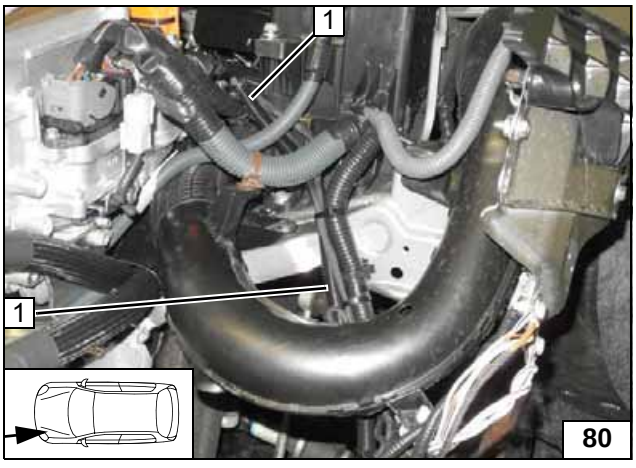


79

Cut 170mm from 10mm dia. corrugated tube.

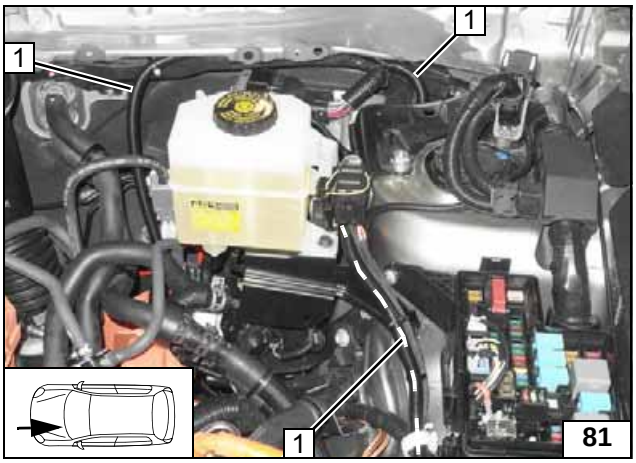
1. Wiring harness of metering pump
2. Wiring harness of metering pump, fuel line in 10mm dia., 1930mm corrugated tube
3. Fuel line in 10mm dia., 170mm corrugated tube
4. Fuel line, 90° moulded hose, 10mm dia. clamp [2x]

Routing lines



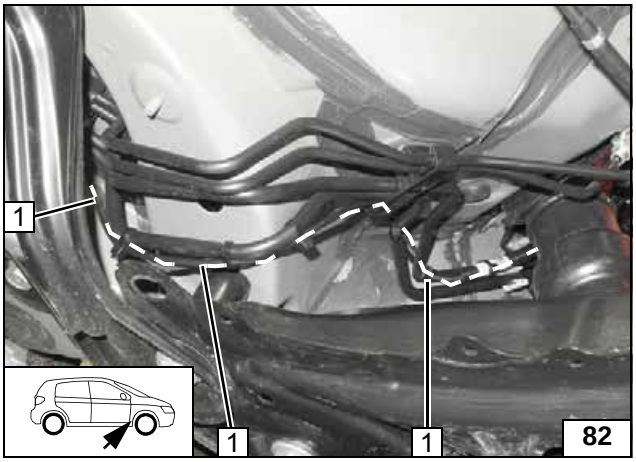
80

1. Fuel line, wiring harness of metering pump in 10mm dia. corrugated tube



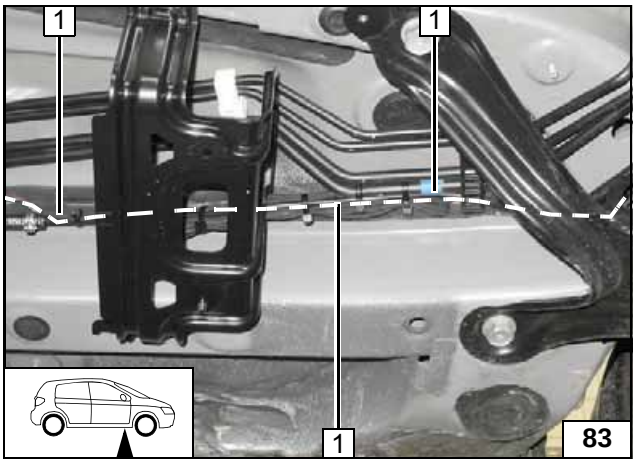
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle lines to the underbody and secure using cable ties.

Routing to underbody



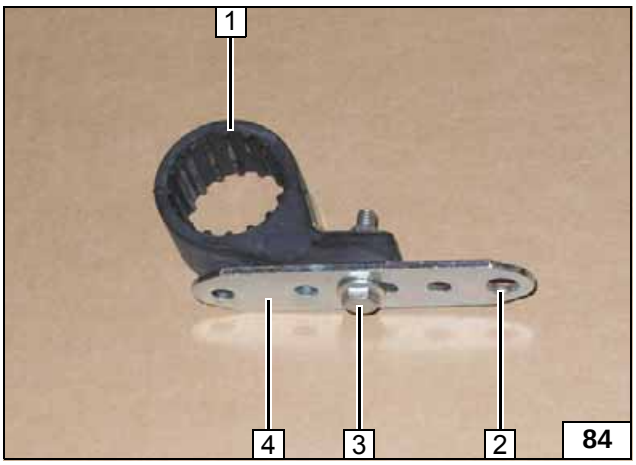
Route fuel line and wiring harness of metering pump **1** along original vehicle lines to the installation location of the metering pump and secure using cable ties.

Routing lines



Route fuel line and wiring harness of metering pump **1** along original vehicle lines to the installation location of the metering pump and secure using cable ties.

Routing lines

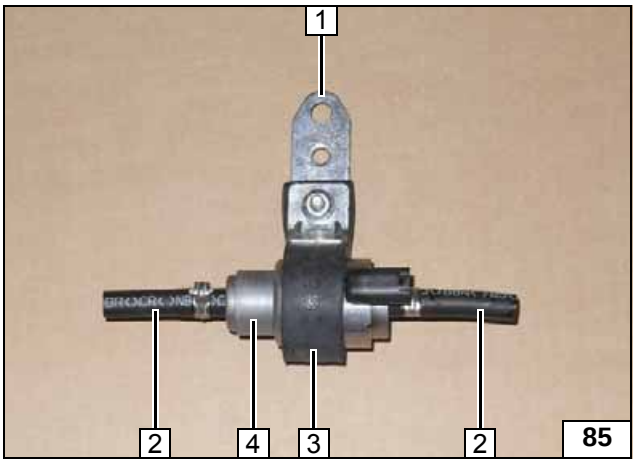


Drill out perforated bracket **4** at position **2** to 8.5mm dia.

1 Mounting of metering pump
3 M6x25 bolt, support angle bracket, flanged nut

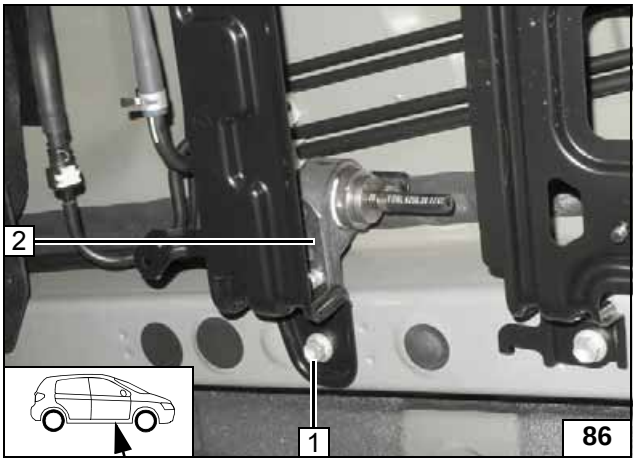
Preinstalling metering pump mounting

Premounting metering pump



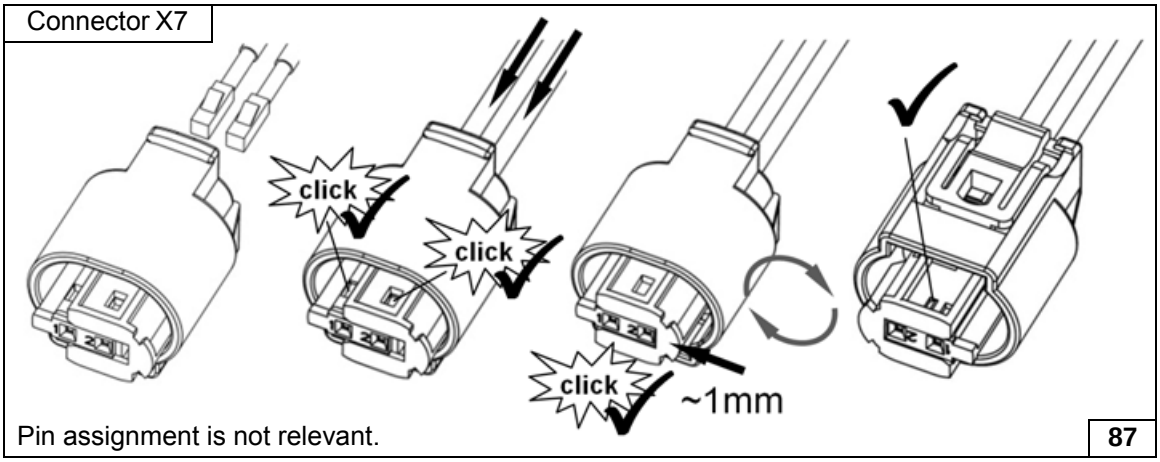
1 Perforated bracket
2 Hose section, 10mm dia. clamp [2x each]
3 Mounting of metering pump
4 Metering pump

Installing metering pump

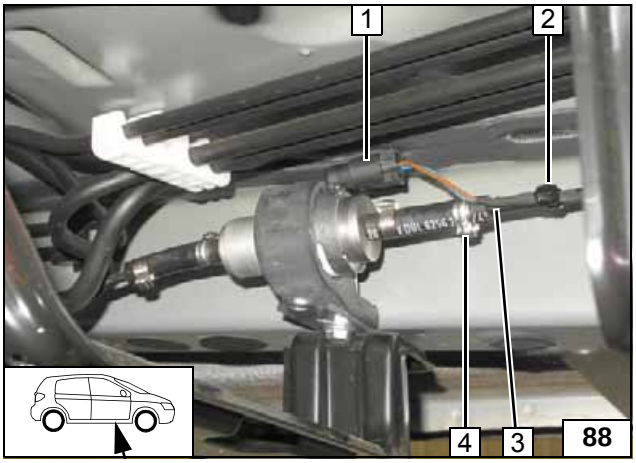


1 Original vehicle bolt
2 Perforated bracket

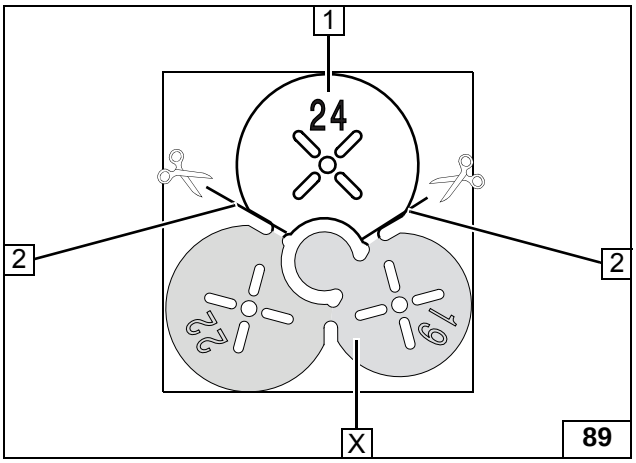
Completing metering pump connector



Connecting metering pump



1 Wiring harness of metering pump, connector X7 mounted
2 Cable tie used as strain relief
3 Fuel line
4 10mm dia. clamp

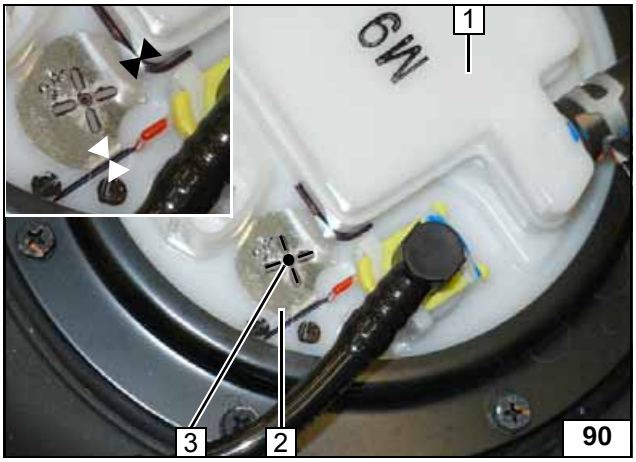


Install FuelFix

Cut out 24mm dia. drilling template **1** along the cutting line **2** as shown.

X =

Preparing drilling template



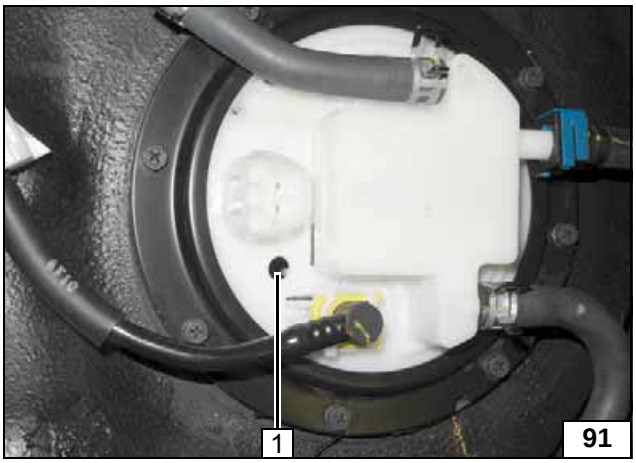
Remove the fuel tank according to the manufacturer's instructions.

Work steps F1 and F2.

Position template **2** on fuel tank sending unit **1** as shown.

3 Hole pattern

Copying hole pattern

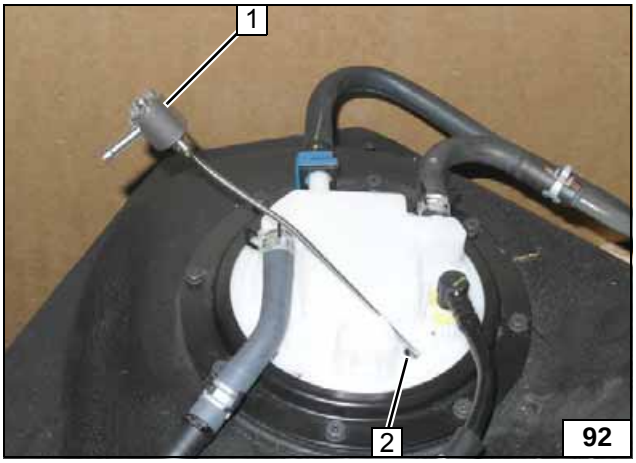


Work step F3.

1 Hole made with provided drill

Collect metal shavings

Hole for FuelFix



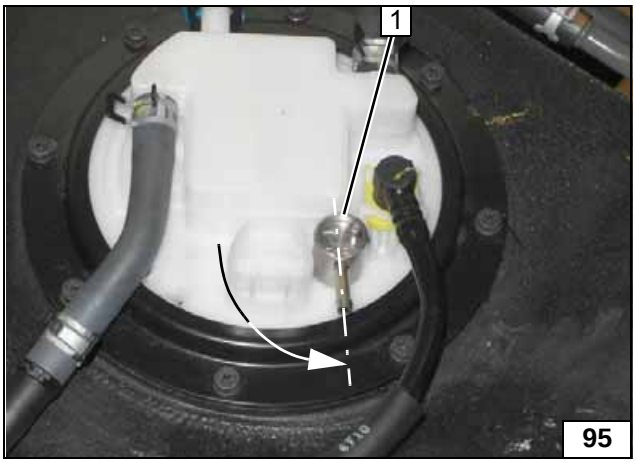
Work steps F4 and F5.

Bend FuelFix **1** according to template and cut to length.
Insert into hole **2**.

Preparing FuelFix

Inserting FuelFix

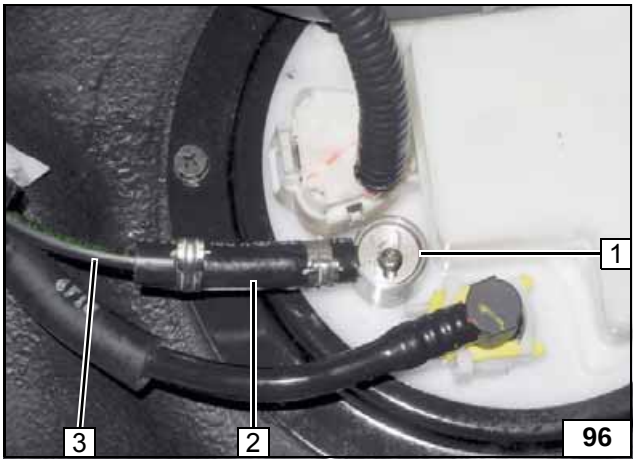
Inserting FuelFix



Work steps F5.3 and F5.4.

1 Align FuelFix as shown

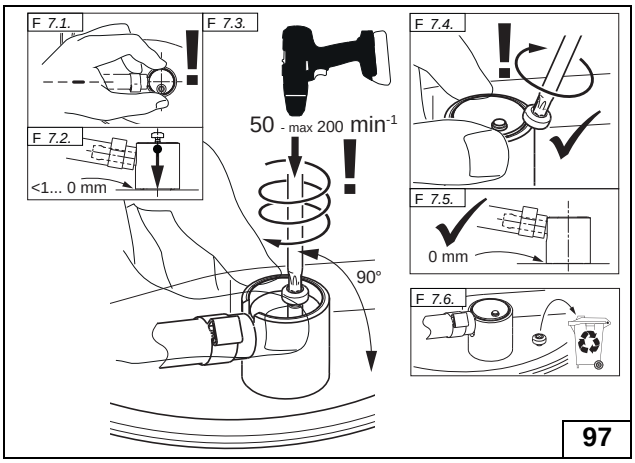
Aligning FuelFix



Work step F6.

1 FuelFix
2 Hose section, 10mm dia. clamp [2x]
3 Fuel line

Connecting fuel line

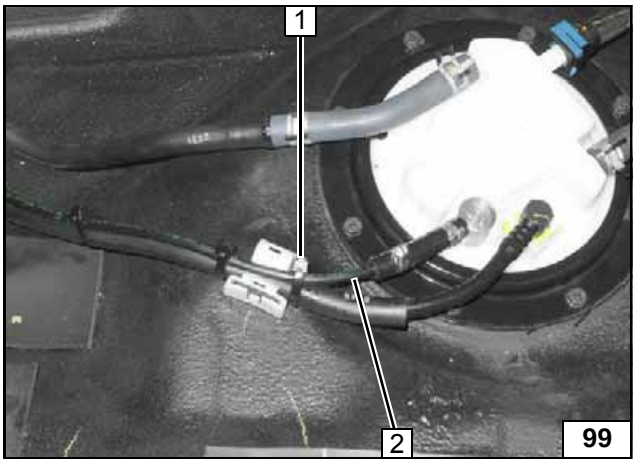


Work step F7.

Mounting FuelFix

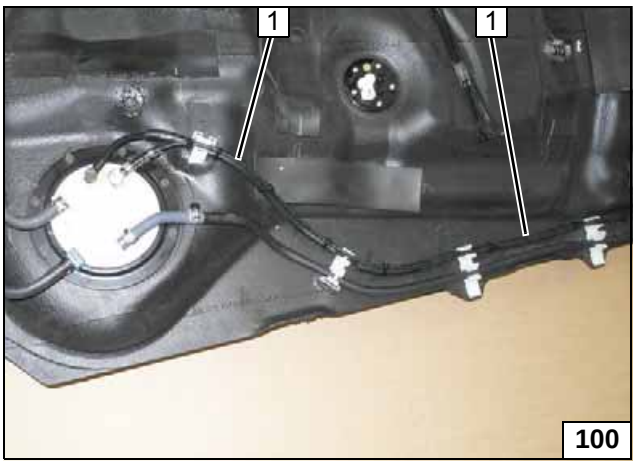
Work step F8.

Ensuring firm seating of FuelFix



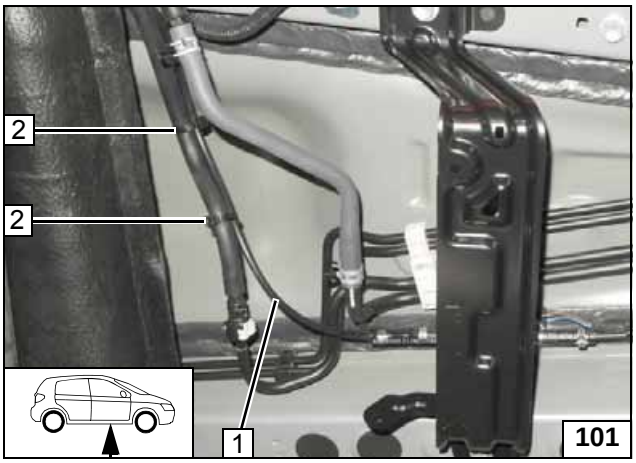
1 Cable tie used as strain relief
2 Fuel line of FuelFix

Securing fuel line



Route fuel line of FuelFix **1** along original vehicle fuel line and secure using cable ties.

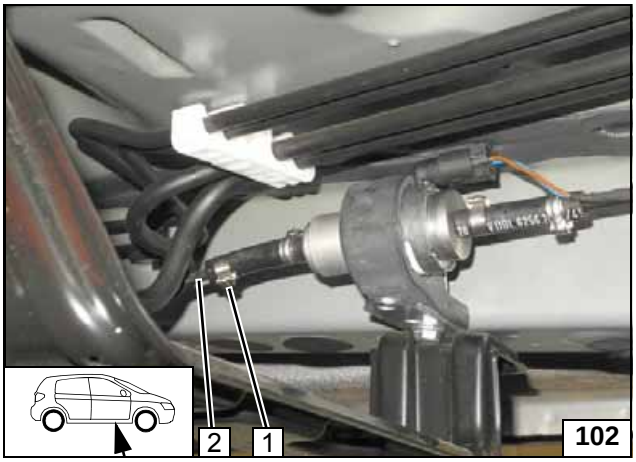
Routing fuel line



Install fuel tank in accordance with manufacturer's instructions.

1 Fuel line of FuelFix
2 Cable tie [2x]

Routing fuel line



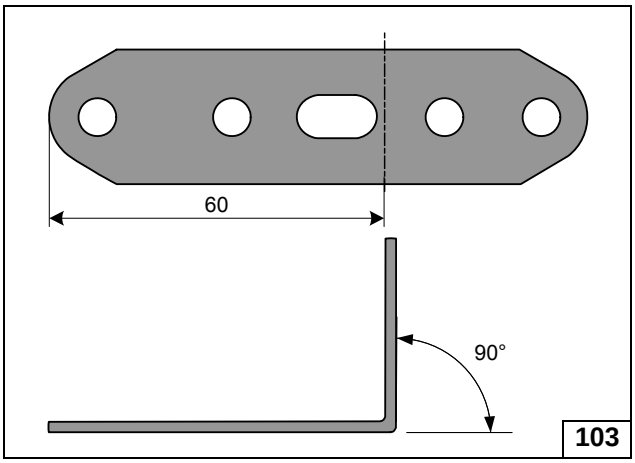
1 10mm dia. clamp
2 Fuel line of FuelFix

Connecting metering pump

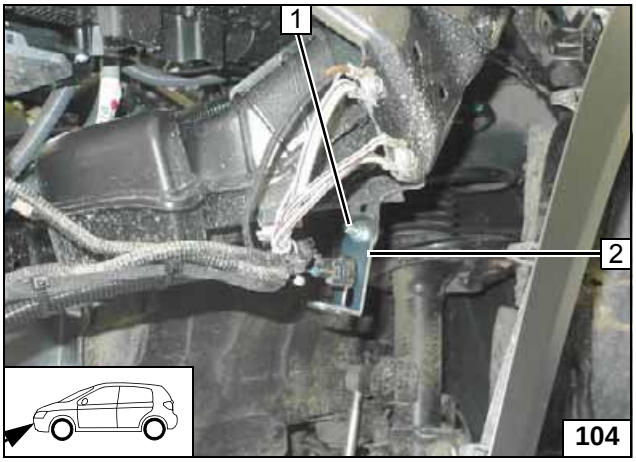
Combustion Air

NX200T

Preparing perforated bracket

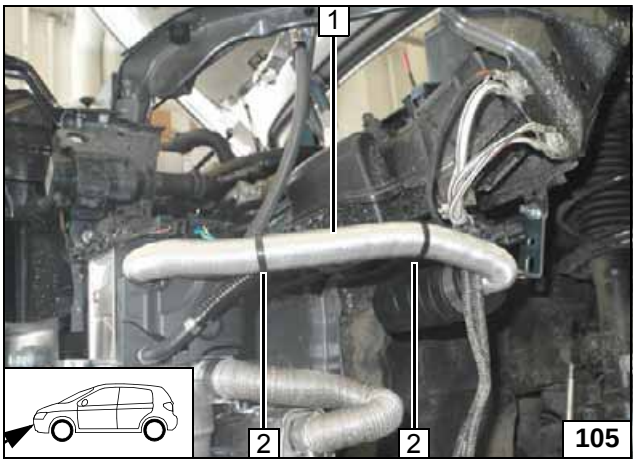


Installing perforated bracket



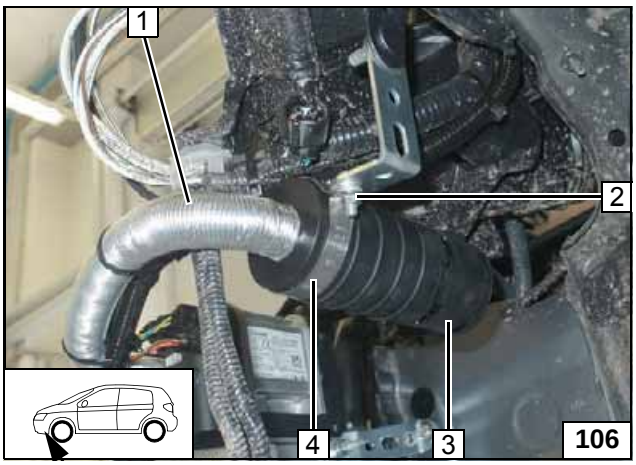
1 Original vehicle bolt, M6 flanged nut
2 Perforated bracket

Installing combustion air pipe



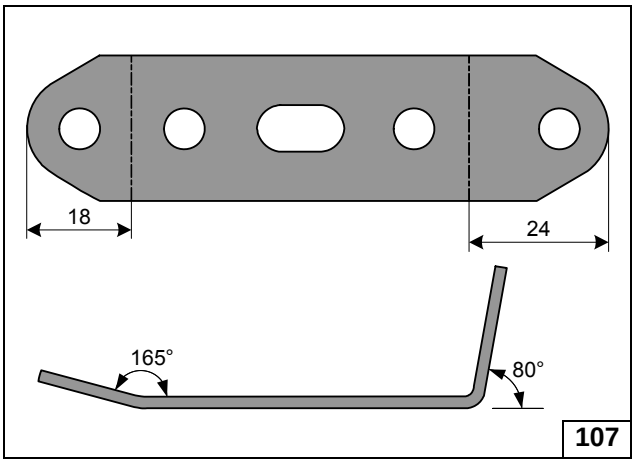
Attach corrugated tube with fuel line and wiring harness of metering pump onto combustion air pipe **1** using cable tie **2** [2x].

Installing silencer

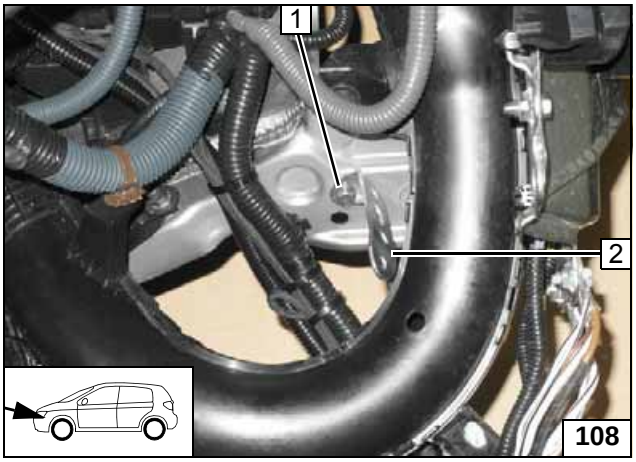


1 Combustion air pipe
2 M5x16 bolt, large diameter washer, flanged nut
3 Silencer
4 51mm dia. clamp

NX300h

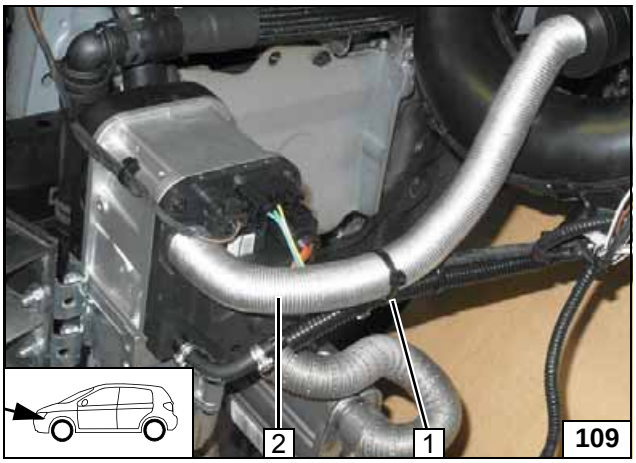


Preparing perforated bracket



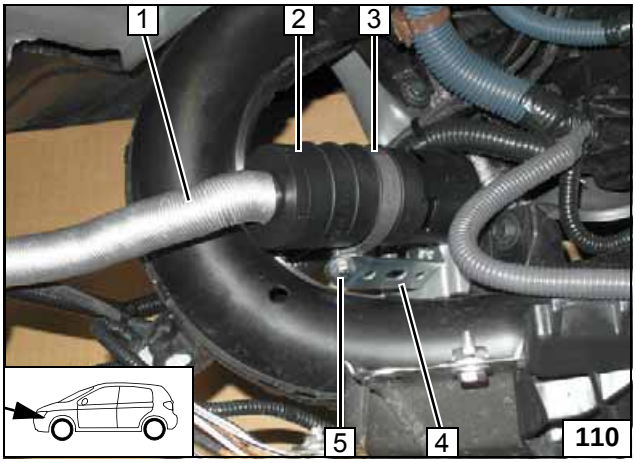
1 M6x20 bolt, spring lockwasher, existing threaded hole
2 Perforated bracket

Installing perforated bracket



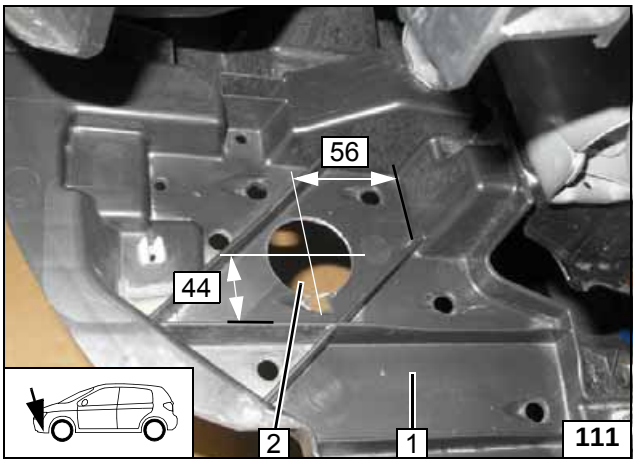
1 Cable tie
2 Combustion air pipe

Installing combustion air pipe



1 Combustion air pipe
2 Silencer
3 51mm dia. clamp
4 Perforated bracket
5 M5x16 bolt, large diameter washer, flanged nut

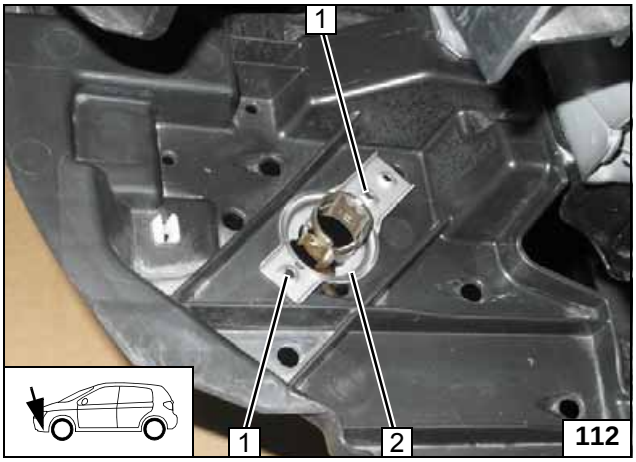
Installing silencer



Exhaust

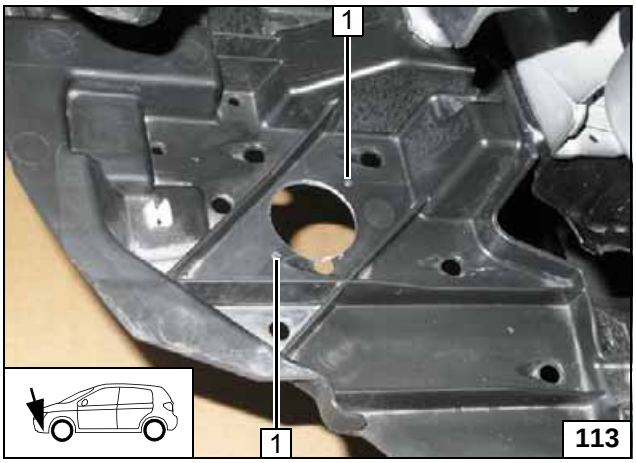
1 Underride protection
2 Hole (as per work step 1 of the installation instructions)

Hole in underride protection



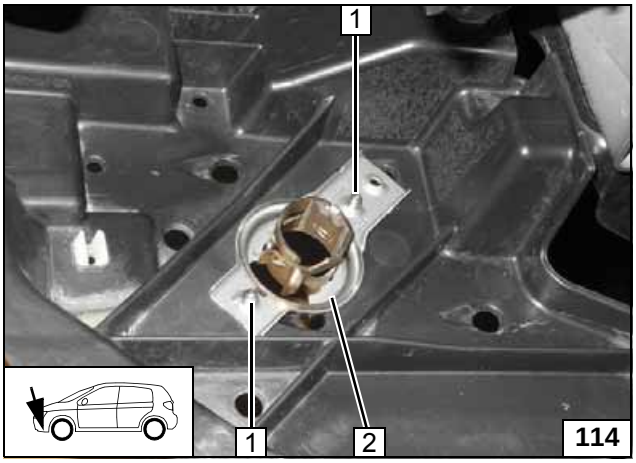
Position exhaust end fastener **2** in the hole as per work step 3 of the installation instructions and copy hole pattern **1** [2x].

Copying hole pattern



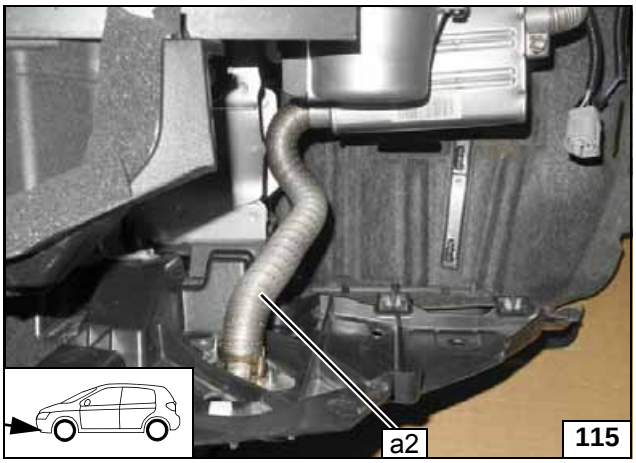
Hole **1** [2x] as per work step 4 of the installation instructions.

Holes in underride protection



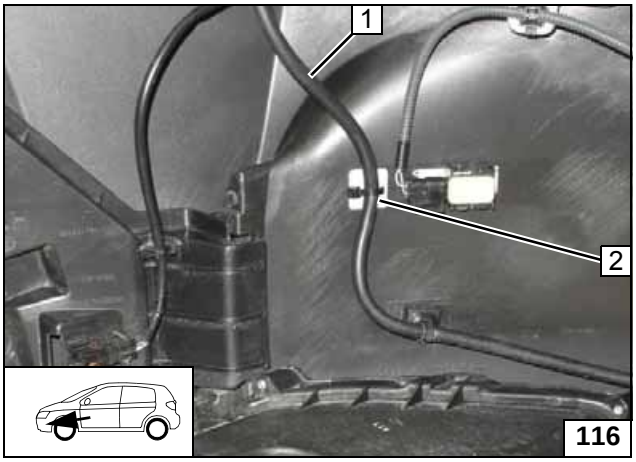
1 Self-tapping screw 5x13 [2x] as per work step 5 of the installation instructions
2 Exhaust end fastener

Installing exhaust end fastener



Align exhaust pipe **a2** as per work steps 6 - 7 of the installation instructions and install.

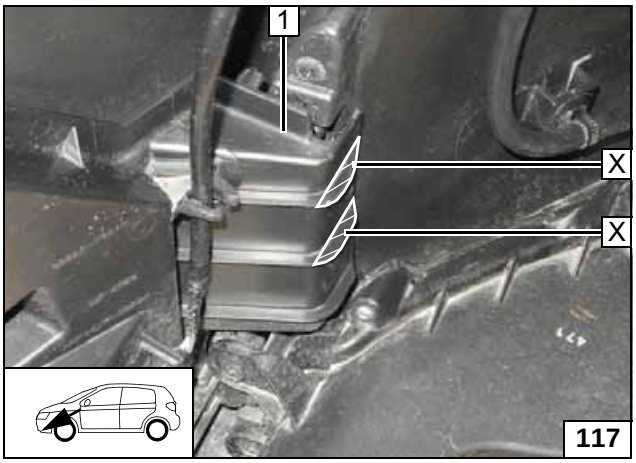
Installing exhaust pipe a2



Degrease bonding surface.

1 Hose of headlight washer system
2 Adhesive base, close cable tie

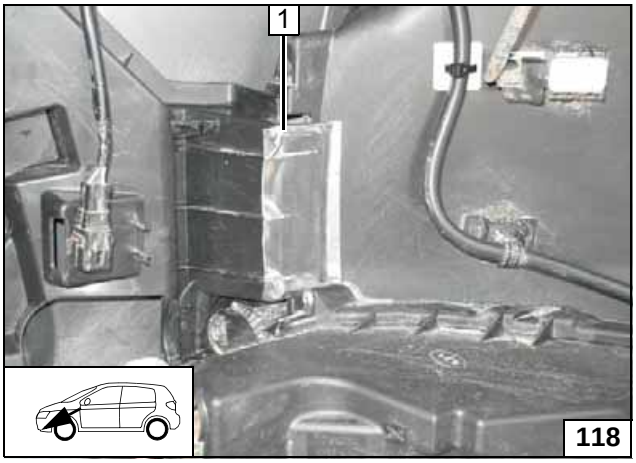
Moving hose of headlight washer system



Remove ribs [2x] of bumper trim **1**.

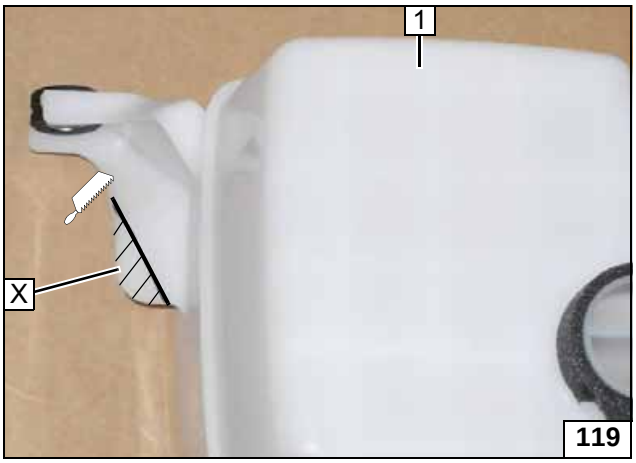
X = [2x]

Removing ribs



Cut off 95mm of aluminium tape **1** and stick it on.

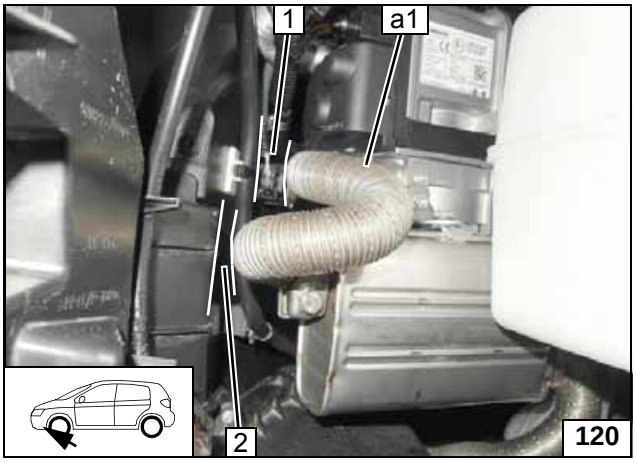
Sticking on aluminium tape



Cut off rib of resonator **1** (if present) at the marking.

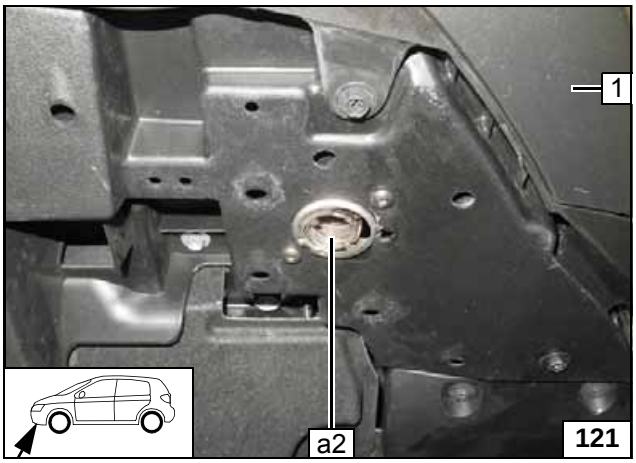
X =

Preparing resonator



Ensure sufficient distance (at least 15mm) between exhaust pipe **a1** and bumper trim at position **2** as well as hose of headlight washer system at position **1**, correct the position of exhaust pipe **a1** if necessary.

Checking distance from exhaust pipe a1



Install bumper **1**. Install exhaust pipe **a2** as per work step 8 of the installation instructions.

Installing exhaust pipe a2

Final Work

Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

Activation of hybrid system
The hybrid system should be re-activated prior to the connection of the 12V vehicle battery.

- **Connect the 12V vehicle battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Verification of the fan function (PWM Gateway):**
  Set the fan power to max. Afterwards, deactivate ignition and activate parking heater. Upon reaching the start-up temperature of 55°C, the fan speed must correspond to the value predefined by the PWM-Gateway of around ⅓ of the maximum speed.
- **Check the proper operation of the parking heater, see the operating instructions/installation instructions.**
- **Place the "Switch off parking heater before refuelling" caution label near the filler neck**

The initial startup is to be executed with the Webasto Thermo Test Diagnosis as follows:

- **Control coolant pump under Menu Component test, check coolant level**
- **Pre-feed fuel for the heater using the line filling menu.**
- **Check CO_2 settings; take setting values from the general installation instructions**
- **During the trial run, all water and fuel connections must be checked for leakage and firm seating**
- **Conduct troubleshooting in case of malfunctions.**

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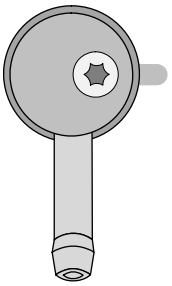
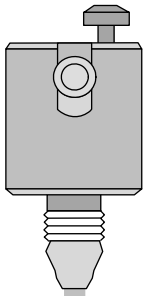
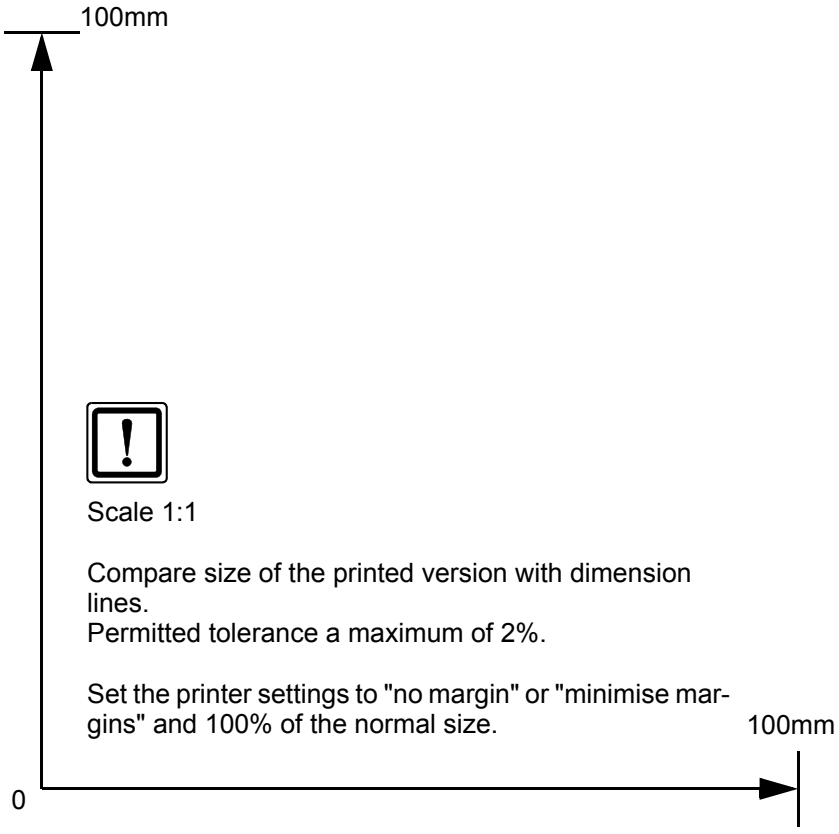
http://dealers.webasto.com

FuelFix Template

Top view





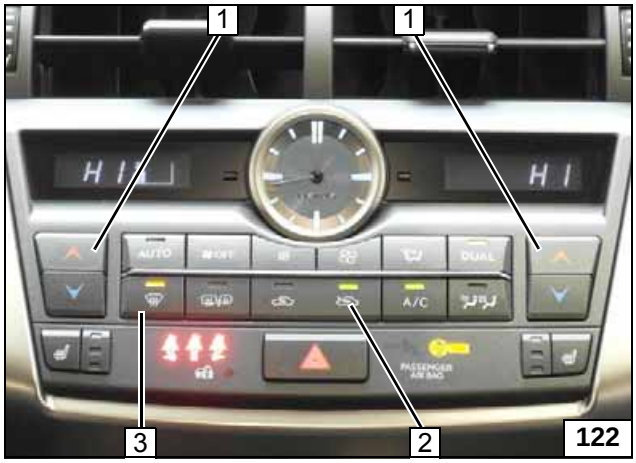


Operating Instructions

Please remove page and add to the vehicle operating instructions.

Note:
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.

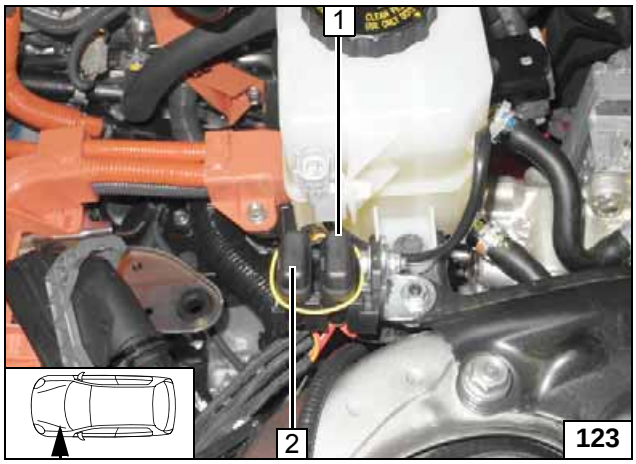
Before parking the vehicle, make the following settings:



It is not necessary to set the fan speed, it will be automatically set to approx. ⅓

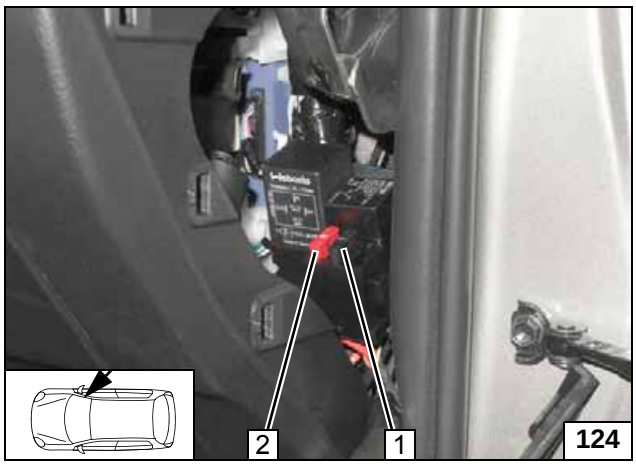
1 Set temperature on both sides to "HI"
2 Fresh air supply enabled
3 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



1 1A heater control fuse F3
2 10A fan fuse F4

Passenger compartment fuses