

Water Heater

Thermo Top Evo Parking Heater



Installation Documentation Nissan Murano

Validity

Manufacturer	Model	Type	EG-BE-No. / ABE
Nissan	Murano	Z51	e1 * 2001 / 116 * 0478 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm ³	Engine code
2.5 D	Diesel	6-speed AG	140	2488	YD25

AG = Automatic transmission

From Model Year 2011
Left-hand drive vehicle

Verified equipment variants: Automatic air-conditioning
Front fog light

Not verified: Manual air-conditioning
Passenger compartment monitoring
Headlight washer system

Total installation time: about 9 hours

Warning!

Limited off-road suitability and fording depth due to installation of heater on vehicle underbody!

Nissan Murano

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Necessary Components

- Basic delivery scope *Thermo Top Evo* based on price list
- Installation kit for Nissan Murano 2011 Petrol and diesel: **1316602A**
- 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

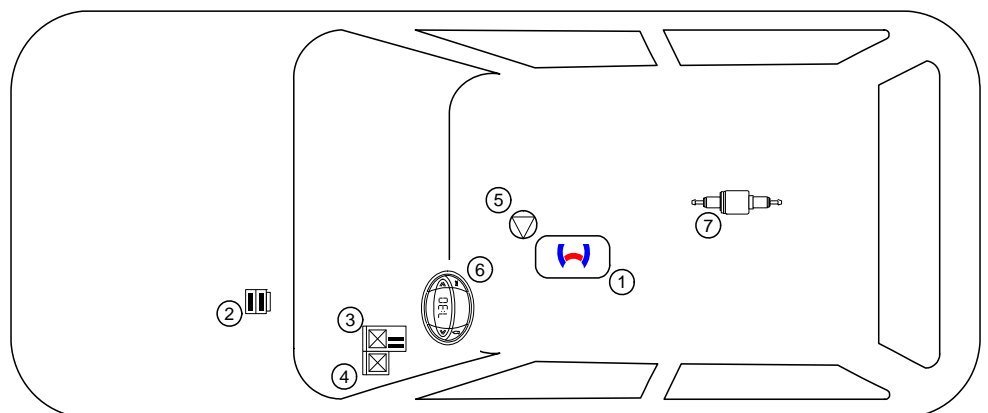
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full!
- The installation location of the push button in the case of Telestart or Thermo Call should be confirmed with the end customer.
- Depending on the space required and the manufacturer's instructions on the vehicle, we recommend the use of a vehicle battery with a higher electrical capacity!

Installation Overview

Legend:

1. Heater
2. Fuse holder of engine compartment
3. Relay and fuse holder of passenger compartment
4. IPCU
5. Circulating pump
6. Digital timer
7. Metering pump



Notes on Total Installation Time

The total installation time includes the time needed for mounting and demounting of 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 227).

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 must audibly snap into place during assembly.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K, Order No. 111329).

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 an IPCU, 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

For vehicles with an EU permit, no entry in accordance with § 19 Sub-Section 4 of Annex VIII b to the Road Traffic Act is required.

2.1 Excerpt from the directive 2001/56/EC Appendix VII 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.

Notes on Validity

This installation documentation applies to the Nissan Murano Petrol and diesel vehicles - for validity, see page 1 - from model year 2011 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 Instructions

Special Tools

- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- 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 of the bolt of 5x15 water connection piece retaining plate = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

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.

Special features are highlighted using the following symbols:

Mechanical system



Electrical system



Coolant circuit



Combustion air



Fuel



Exhaust gas



Software



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire and explosion



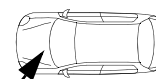
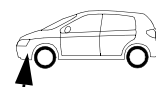
Reference to general installation instructions of the Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature



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



Nissan Murano

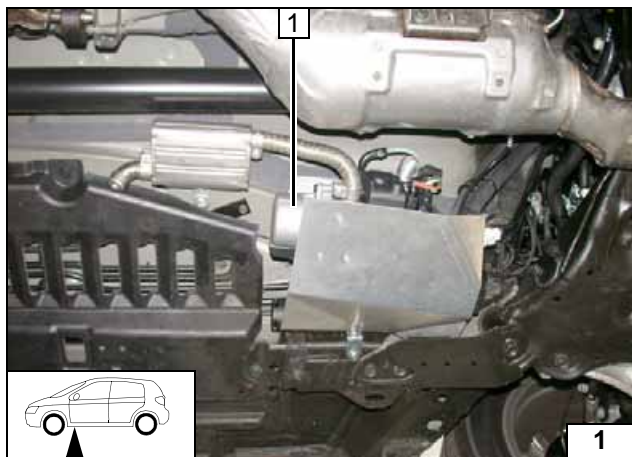
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the battery completely.
- Remove the air filter together with the intake hose.
- Remove the left wheel-well inner panel.
- Remove the mid-left underride protection.
- Remove the plastic trim of the fuel tank on the left.
- Remove the left rear bench seat.
- Open the tank-fitting service lid.
- Remove the lower instrument panel trim on the driver's side.
- Remove the A/C control panel according to the manufacturer's instructions.
- Remove the radio / navigation device according to the manufacturer's instructions.
- Detach the A/C booster.

Heater

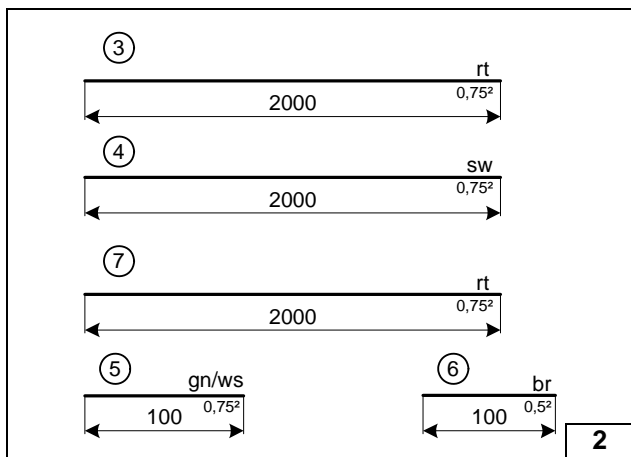
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place inside the engine compartment.



Heater Installation Location

1 Heater

Installation
location

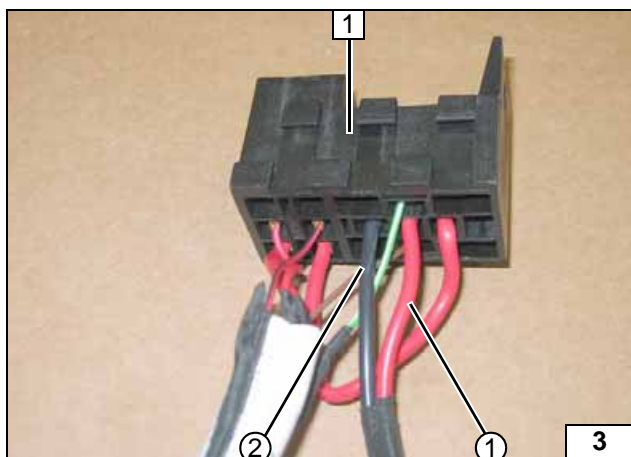


Preparing Electrical System

The wire sections retain their numbering in the entire document.



Preparing wires



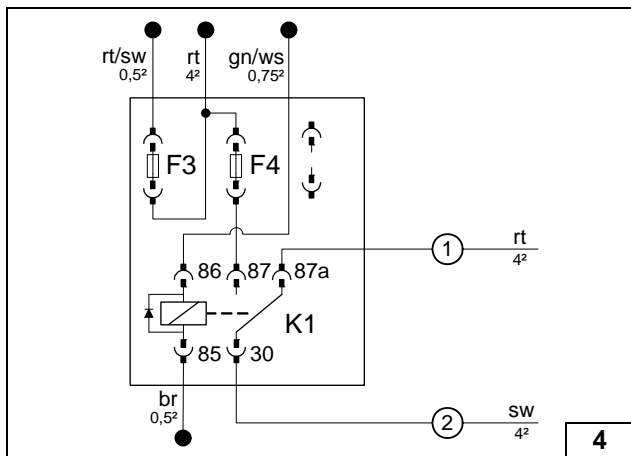
Install wires as shown in following wiring diagram.



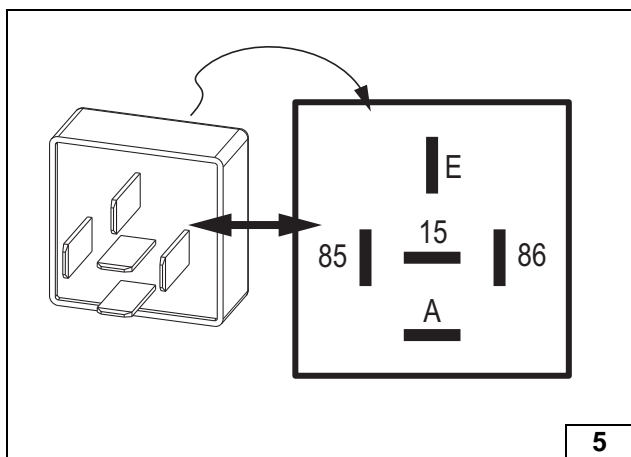
1 Relay and fuse holder of passenger compartment

- ① Red (rt) wire from K1/87a
- ② Black (sw) wire from K1/30

Preparing relay and fuse holder of passenger compartment



Preparing relay and fuse holder of passenger compartment



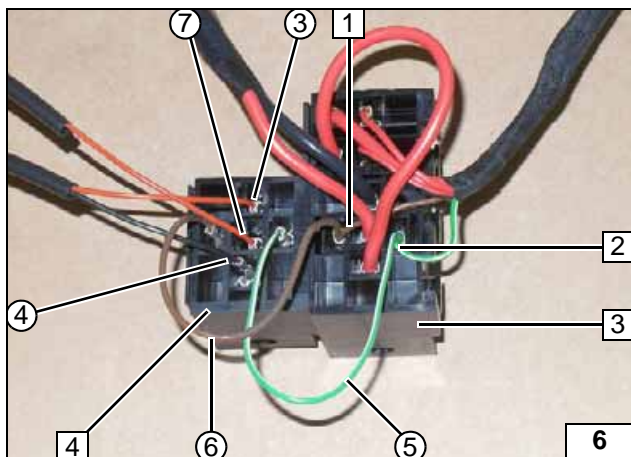
Check the IPCU settings when starting up the heater and adjust if necessary.



Settings:

- Duty cycle: 62%
- Frequency: 600Hz
- Voltage: 2.9V
- Function: low-side

Checking IPCU

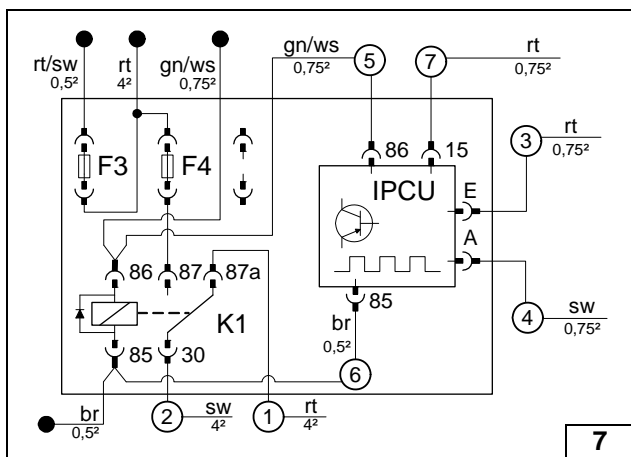


Interlock IPCU socket **4** and relay and fuse holder of passenger compartment **3**. Detach / remove contact of K1/86 and K1/85. Install wires as shown in following wiring diagram with supplied contacts.



Preparing relay and fuse holder of passenger compartment

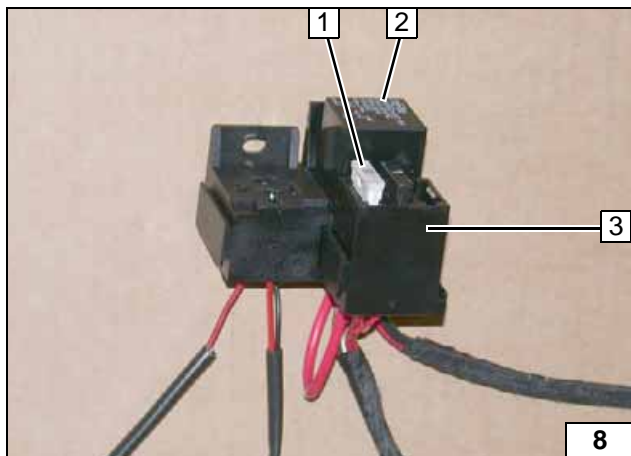
- 1 Brown (br) wire of K1/85
- 2 Green/white (gn/ws) wire of K1/86
- 3 Red (rt) wire of IPCU/E
- 4 Black (sw) wire of IPCU/A
- 5 Green/white (gn/ws) wire of K1/86 and IPCU/86
- 6 Brown (br) wire of K1/85 and IPCU/85
- 7 Red (rt) wire from IPCU/15



Pull wire section **3**, **4** and **7** into provided protective sleeving.



Preparing K1 relay, IPCU and F4



- 1 Fuse F4 25A
- 2 K1 relay
- 3 Relay and fuse holder of passenger compartment



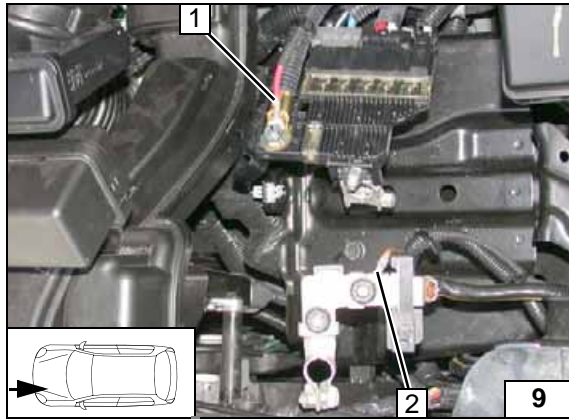
Mounting K1 relay and fuse F4



Electrical System

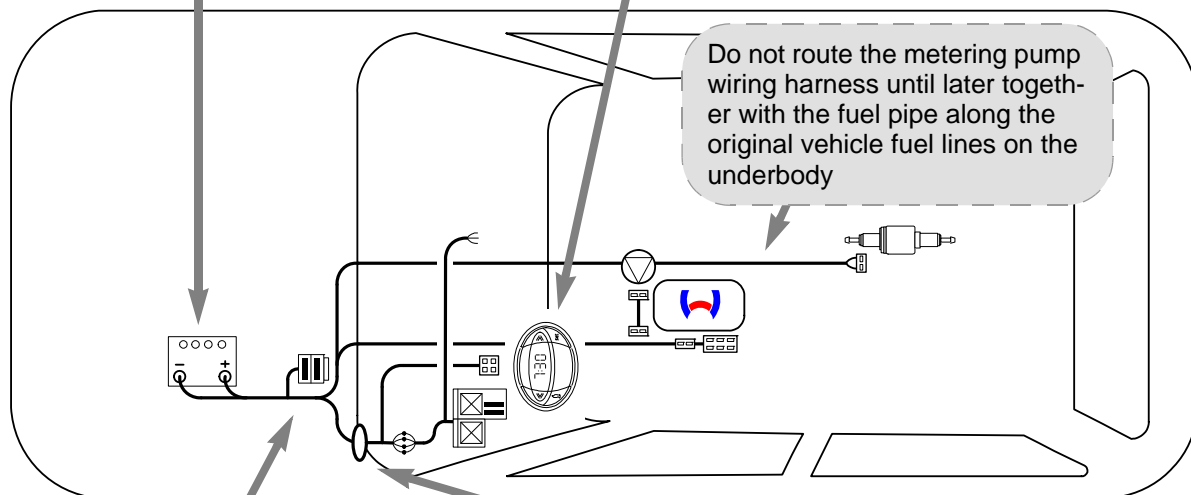
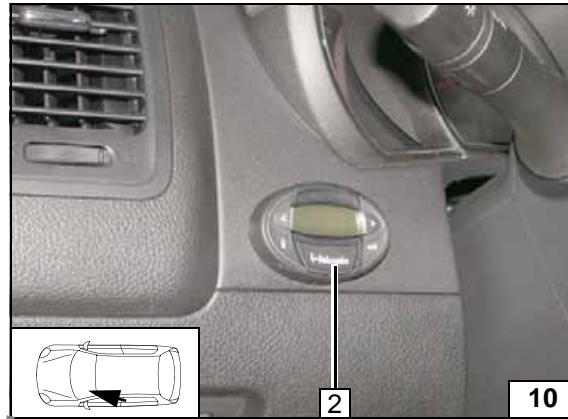
Positive and earth wire

- 1 Earth wire on original vehicle earth support point
- 2 Positive wire, 8mm dia. cable lug, positive battery terminal

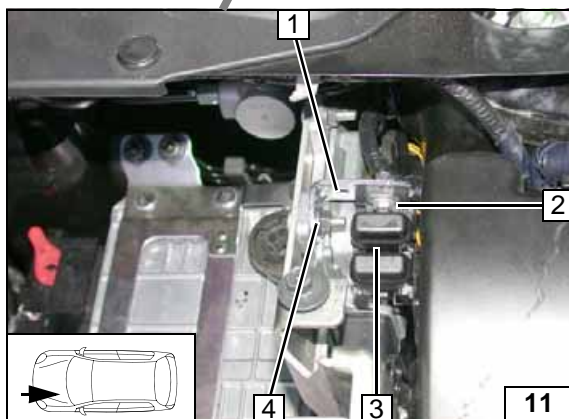


Digital timer

- 1 Digital timer

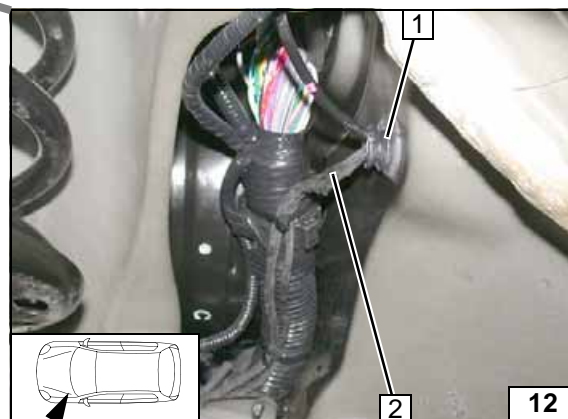


Wiring harness routing installation diagram



Fuse holder of engine compartment

- 1 Angle bracket
- 2 M5x16 bolt, washer [2x], retaining plate of fuse holder, nut
- 3 F1-2 fuses mounted
- 4 Original vehicle bolt of control unit

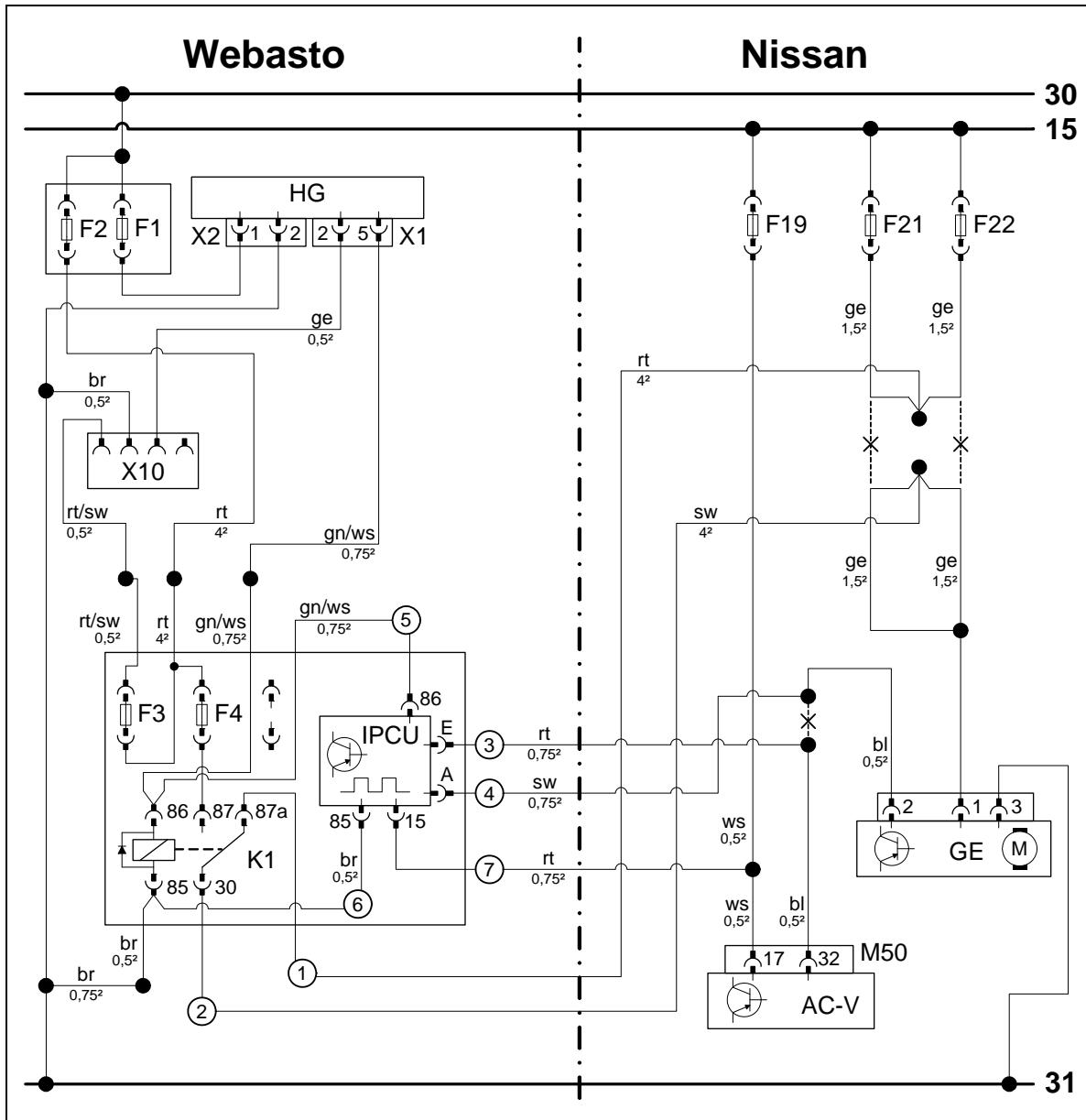


Wiring harness pass through

- 1 Protective rubber plug, bonnet Bowden cable, wheel well



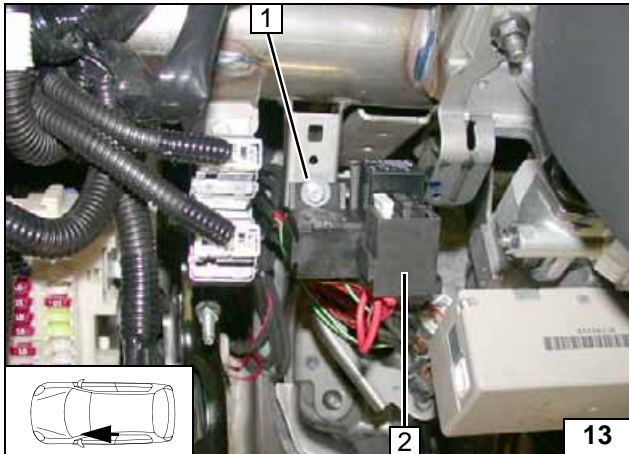
Fan Controller



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F19	10 A fuse	rt	red
X1	6-pin heater connector	F21	15A fuse	sw	black
X2	2-pin heater connector	F22	15A fuse	ge	yellow
X10	4-pin connector heater control	GE	Fan module	gn	green
K1	Fan relay	M50	40-pin AC-V connector	or	orange
F1	20A fuse	AC-V	AC booster	ws	white
F2	30A fuse			br	brown
F3	1A fuse			bl	blue
F4	25A fuse				
IPCU	Pulse width modulator				
IPCU adjustment values:					
Duty cycle: 62%					
Frequency: 600Hz					
Voltage: 2.9V				X	Cutting point
Function: low-side				Wiring colours may vary.	

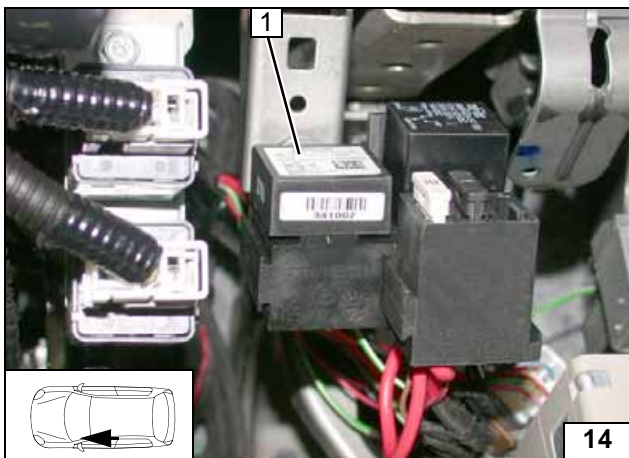
Legend



- 1 M5x16 bolt, large diameter washer [2x], flanged nut, existing hole
- 2 Relay and fuse holder of passenger compartment

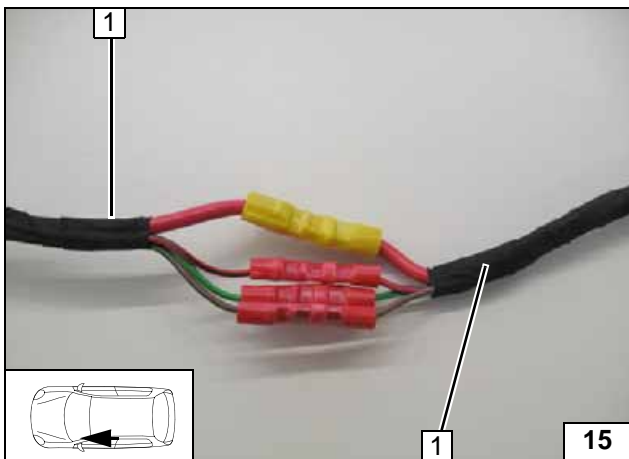


Installing relay and fuse holder passenger compartment



- 1 IPCU

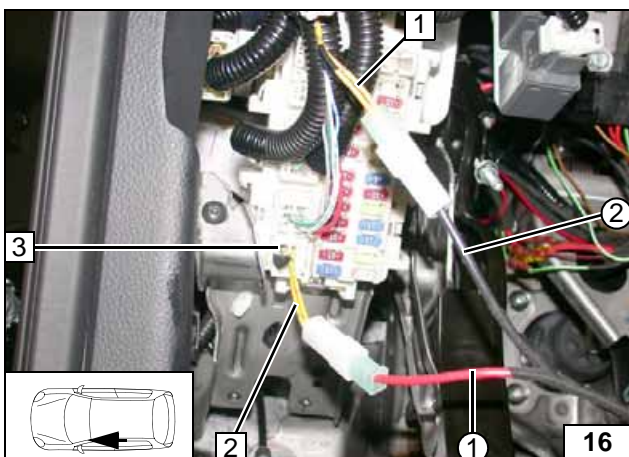
Installing IPCU



Connect wiring harness of passenger compartment relay and fuse holder 1 to wiring harness of heater 2 according to wiring diagram using same-colour wires.



Connecting wiring harnesses using same-colour wires

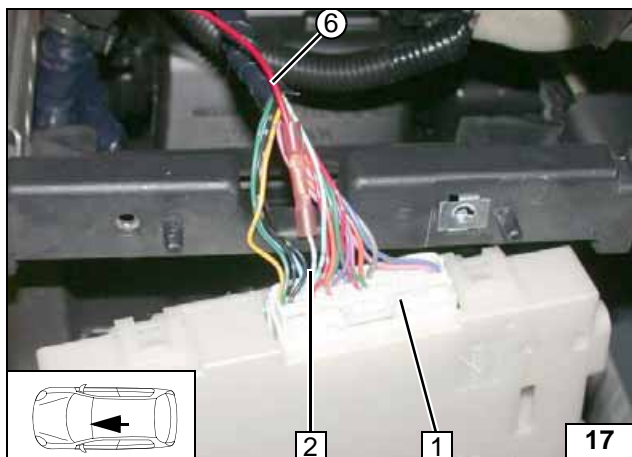


Connection on fuse and relay carrier of connector A 3. Establish connections according to wiring diagram.

- 1 Yellow (ge) wire [2x], Pin 1 of fan module
- 2 Yellow (ge) wire (2x), connector A of fuse 21 / 22
- ① Red (rt) wire from K1/87a
- ② Black (sw) wire from K1/30



Connecting fan module

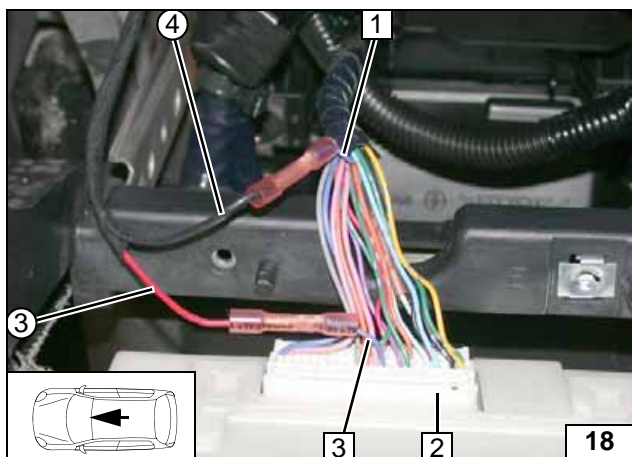


Connection to 40-pin connector M50 1 from A/C booster. Produce connections as shown in wiring diagram.



- 2 White (ws) wire of 40-pin connector, Pin 17
- ⑥ Red (rt) wire from IPCU/15

**Connect-
ing A/C
booster**

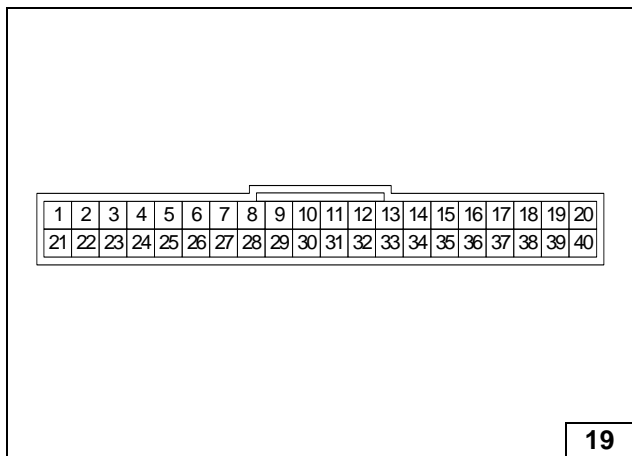


Connection to 40-pin connector M50 2 from A/C booster. Produce connections as shown in wiring diagram.



- 1 Blue (bl) wire, for fan module Pin 2
- 3 Blue (bl) wire of 40-pin connector, Pin 32
- ③ Red (rt) wire of IPCU/E
- ④ Black (sw) wire of IPCU/A

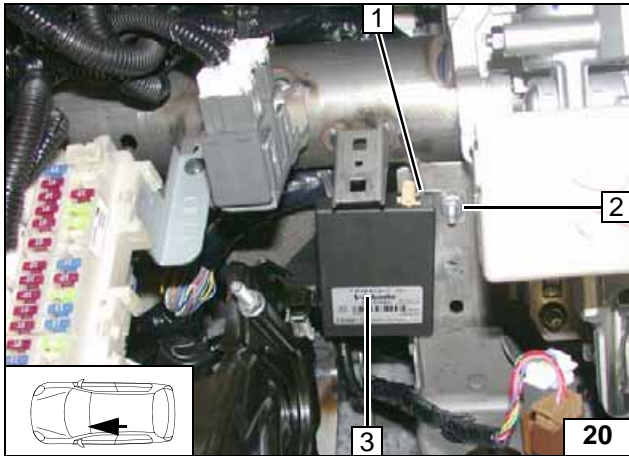
**Connect-
ing A/C
booster**



Wire side view.



**M50 con-
nector**

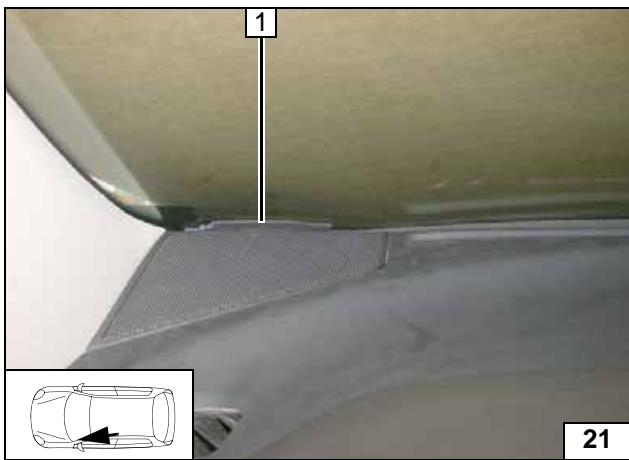


Remote Option (Telestart)

- 1 Bracket
- 2 M6x20 bolt, flanged nut, existing hole
- 3 Receiver

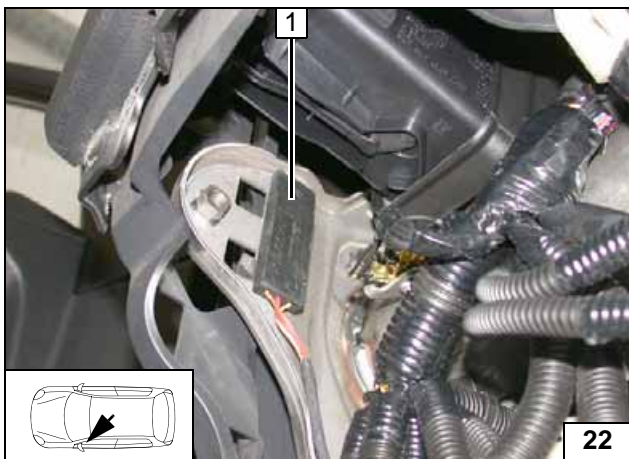


Mounting receiver



- 1 Antenna

Mounting antenna

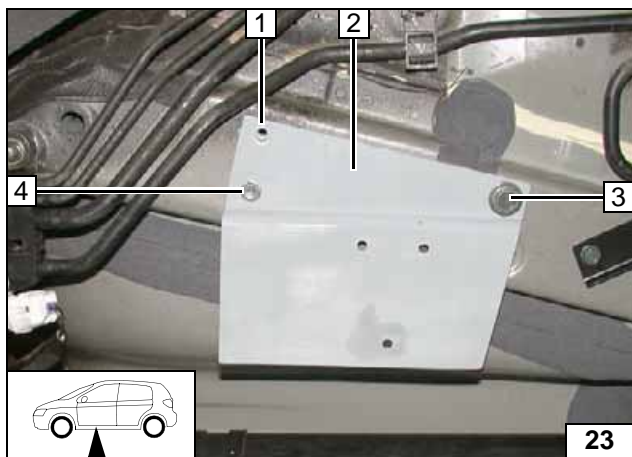


Temperature sensor T100 HTM

Fasten temperature sensor 1 with adhesive tape.



Mounting temperature sensor

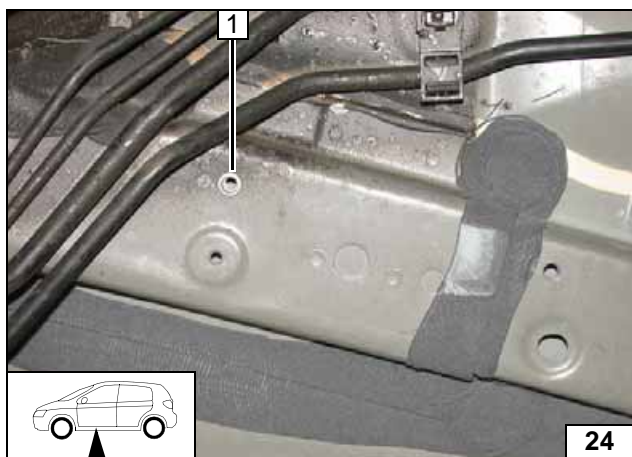


Preparing Installation Location

Mount bracket 2 loosely

- 1 Copy hole pattern
- 3 Original vehicle bolt M8
- 4 Original vehicle M6 bolt

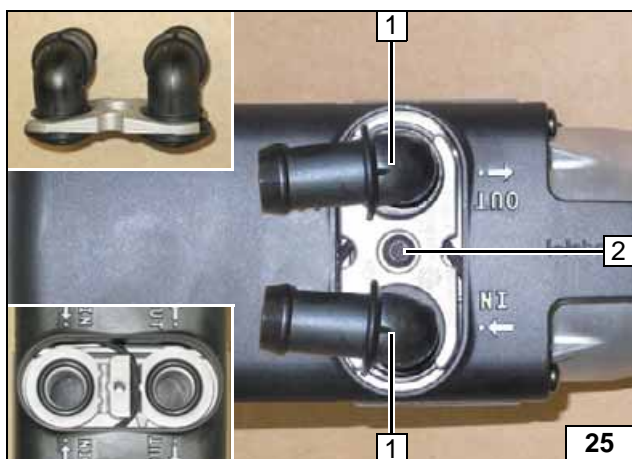
Copying hole pattern



Remove bracket!

- 1 9.1mm dia hole, rivet nut

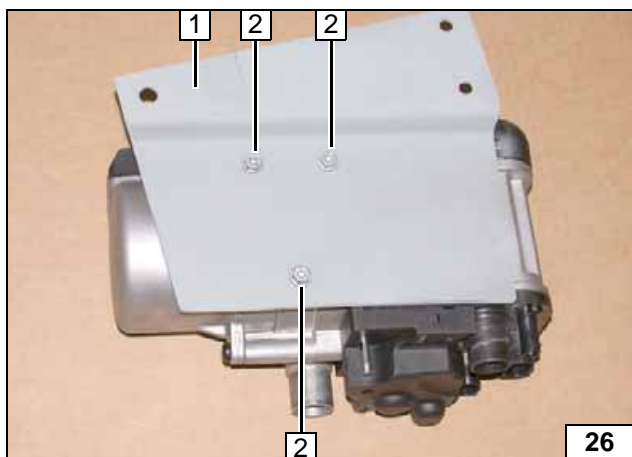
Installing rivet nut



Preparing Heater

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

Installing water connection piece



- 1 Bracket
- 2 5x13 self-tapping bolt [3x]

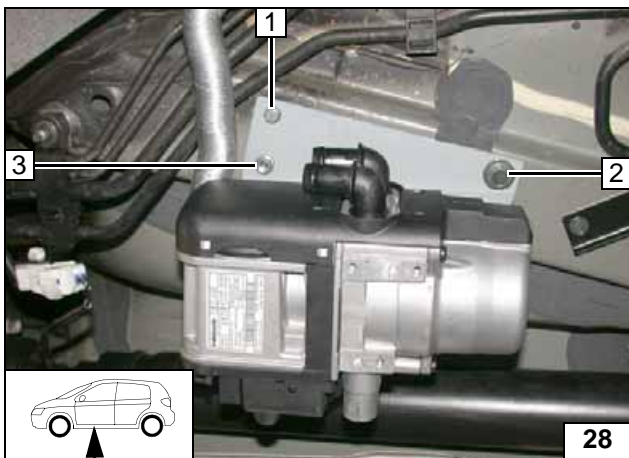
Installing bracket



1 Combustion air pipe



Premounting combustion air pipe



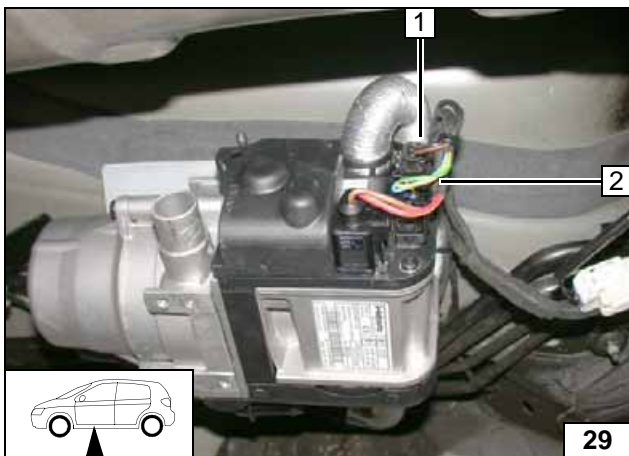
Installing Heater

Insert a large diameter washer between cross member and bracket at position 2.

- 1 M6x20 bolt, spring lockwasher
- 2 Original M8 vehicle bolt, large diameter washer
- 3 Original vehicle M6 bolt



Mounting heater



- 1 Wiring harness of circulating pump
- 2 Wiring harness of heater [2x]

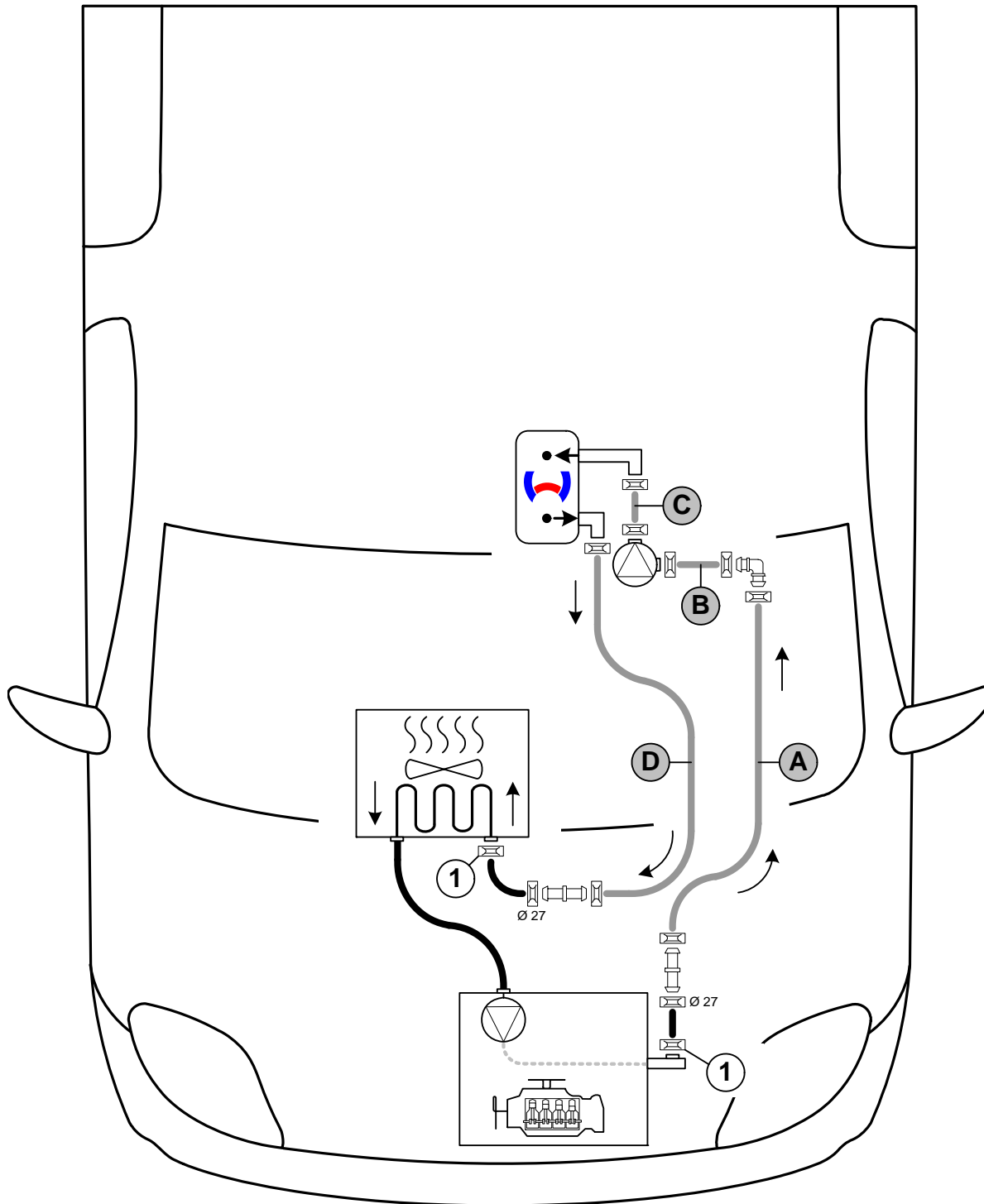
Installing wiring harnesses







Coolant Circuit

WARNING!

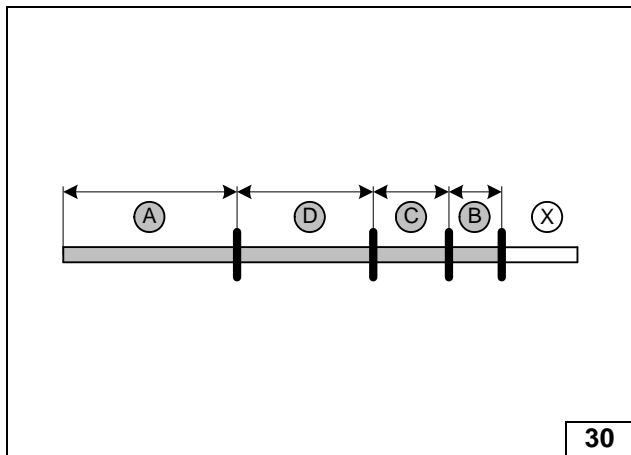
Any coolant running off should be collected in an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the coolant hose. The connection should be "inline" based on the following diagram:



Hose routing diagram

All connecting pipes without a specific designation  = 25 mm dia.
 1 = Original vehicle spring clip .
 Connecting pipe  = 18x18mm dia. Connecting pipes  = 18x20 mm dia.



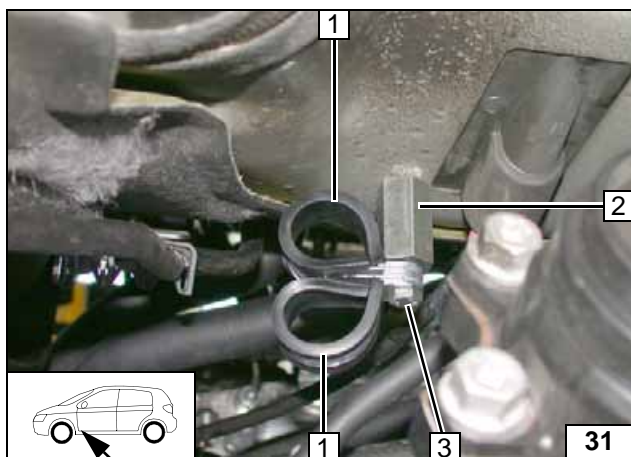


Discard section X

- A = 850
- B = 60
- C = 160
- D = 810

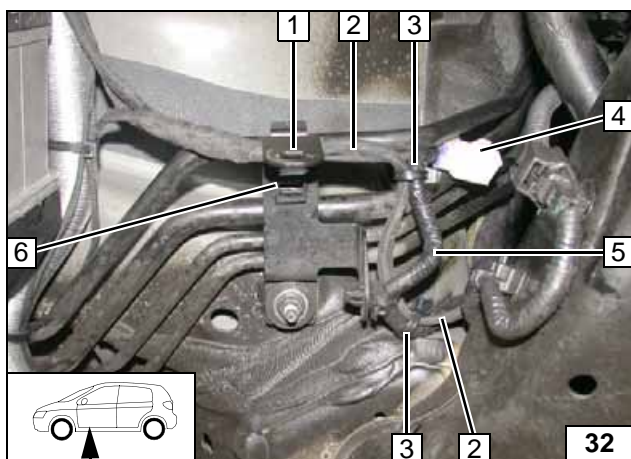


Cutting hoses to length



- 1 25 mm dia. rubber-coated p-clamp [2x]
- 2 M6x30 spacer nut, original vehicle stud bolt
- 3 Install M6x20 bolt loosely

Premounting pipe clamp loosely

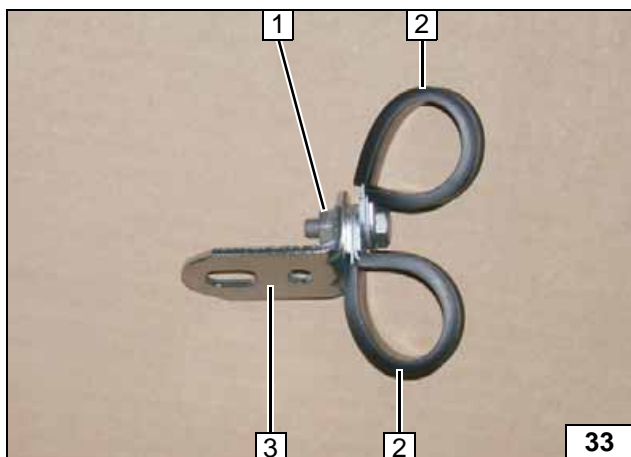


Detach connector of lambda probe 4 at position 1.

- 2 Wiring harness of heater
- 3 Cable tie [2x]
- 5 Original vehicle wiring harness
- 6 Fastening point for angle bracket

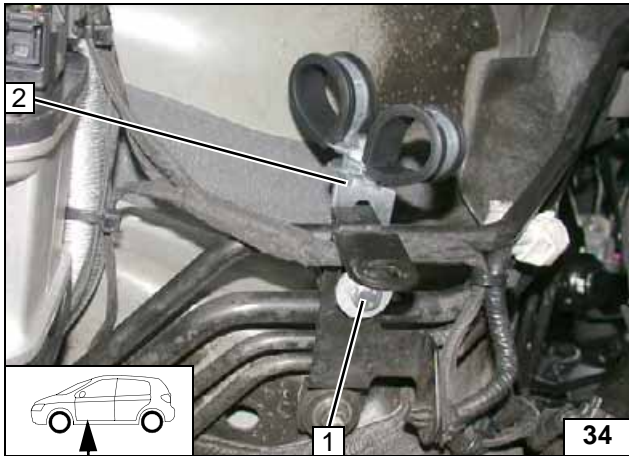


Detaching connector



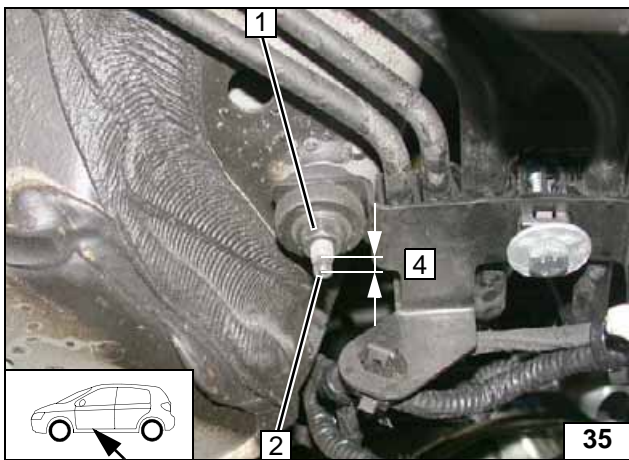
- 1 Install M6x20 bolt, flanged nut loosely
- 2 25 mm dia. rubber-coated p-clamp [2x]
- 3 Angle bracket

Premounting pipe clamp loosely



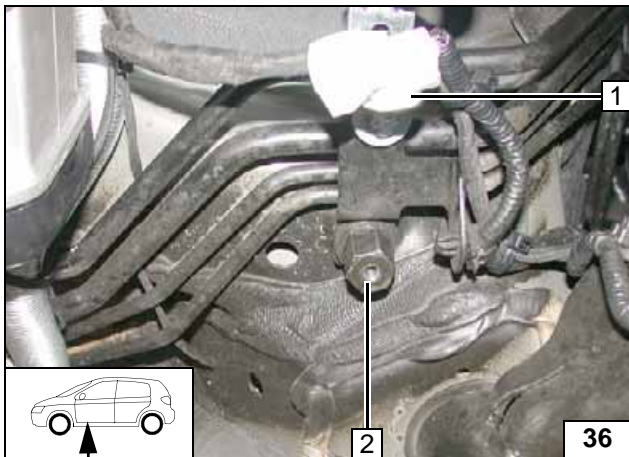
- 1 M6x35 bolt, large diameter washer [2x], flanged nut
- 2 Angle bracket

Installing pre-mounted pipe clamp



Remove flanged nut 1. Shorten original vehicle stud bolt 2 by 4mm.

Shortening stud bolt

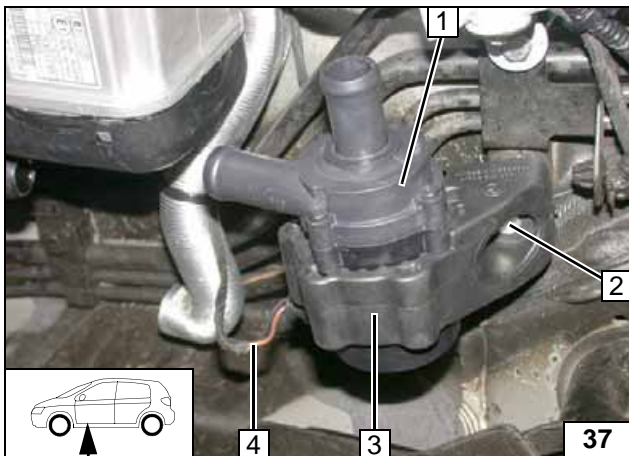


Reinstall connector of lambda probe 1.

- 1 M6x20 spacer nut, original vehicle stud bolt

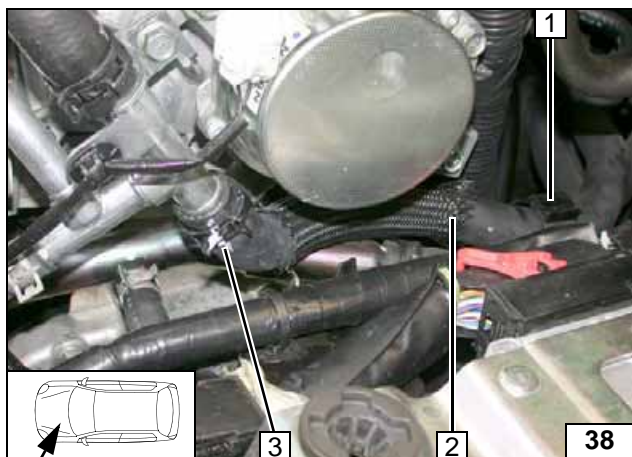


Installing spacer nut



- 1 Circulating pump
- 2 M6x20 bolt
- 3 Circulating pump mounting bracket
- 4 Install wiring harness of circulating pump

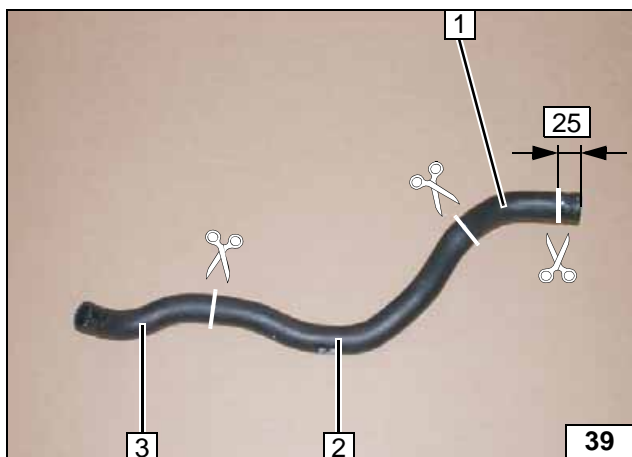
Installing circulating pump



Open spacer bracket **1**. Remove hose of engine outlet / heat exchanger inlet **2**. Original vehicle spring clip **3** will be reused.

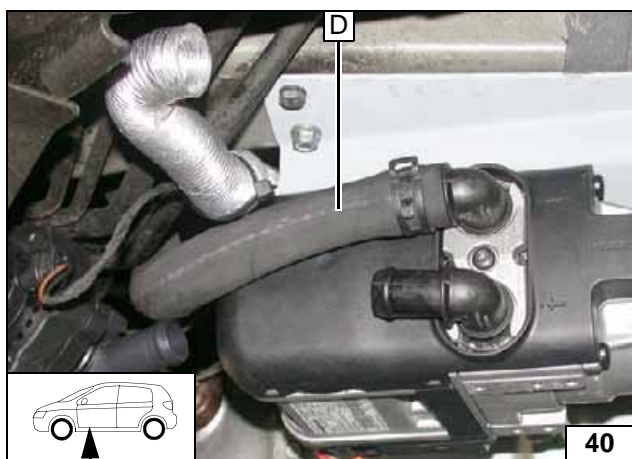


Cutting point

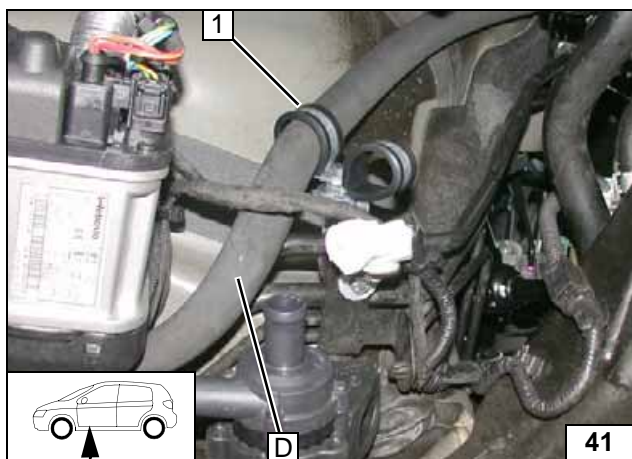


- 1** Hose section of heat exchanger inlet
- 2** Discard hose section
- 3** Engine outlet hose section

Cutting point



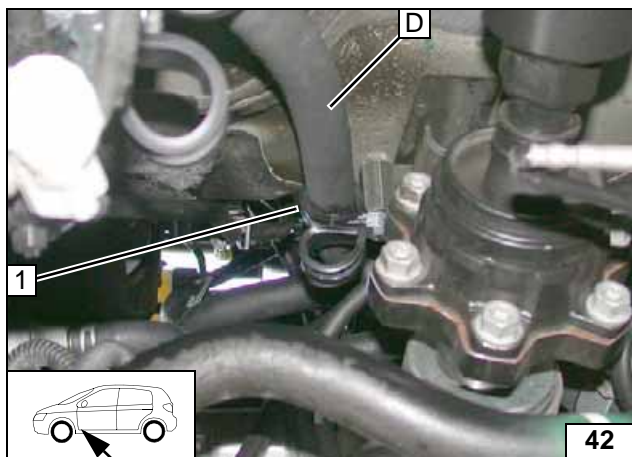
**Connect-
ing heater
outlet**



Route hose **D** through upper rubber-coated pipe clamp **1**.



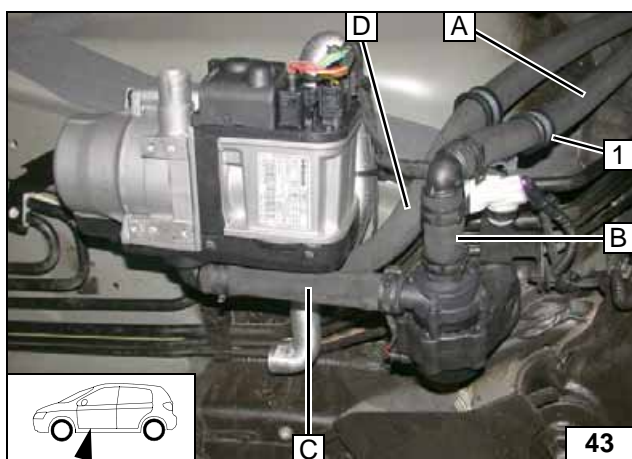
**Routing of
underbody**



Route hose **D** through upper rubber-coated pipe clamp **1**.



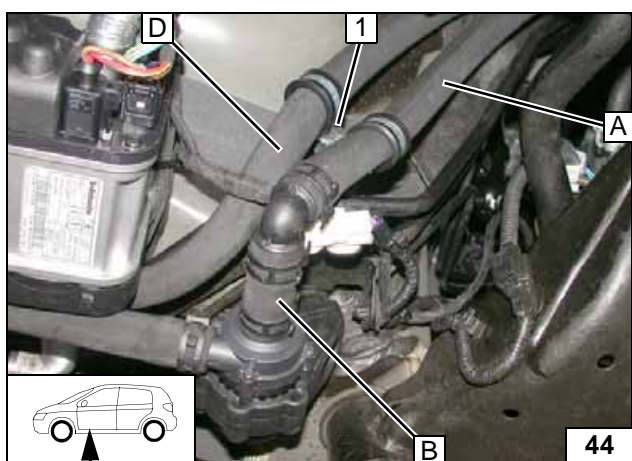
**Routing of
underbody**



Route hose **A** through lower rubber-coated pipe clamp **1**.



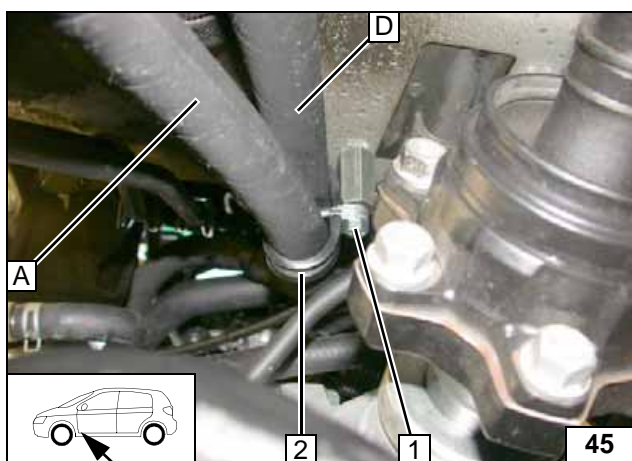
**Connect-
ing heater
inlet / circu-
lating
pump**



Align hoses. Tighten bolt at position **1**.



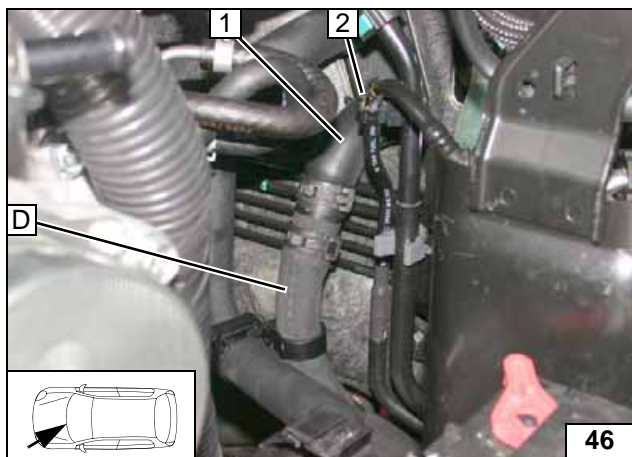
**Routing of
underbody**



Route hose **A** through rubber-coated pipe clamp **2**. Align hoses. Tighten bolt at position **1**.

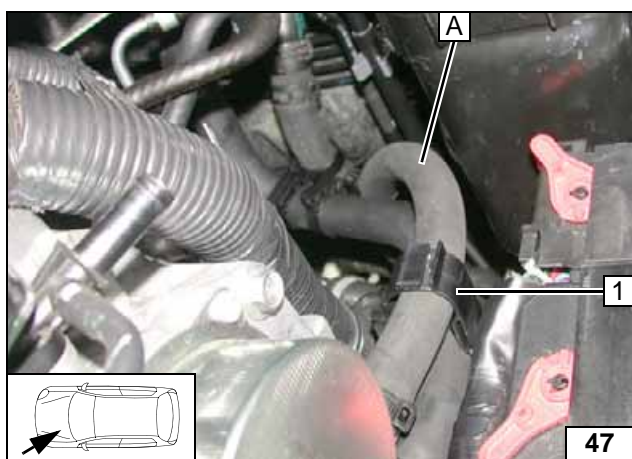


**Routing of
underbody**



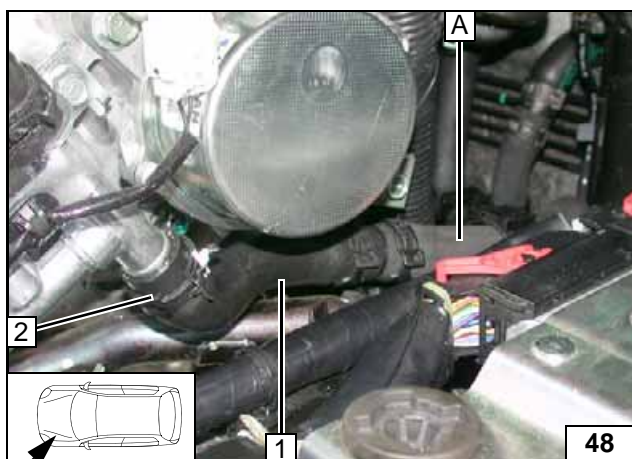
- 1 Hose on heat exchanger inlet
- 2 Original vehicle spring clip

Connect-
ing heat ex-
changer
inlet



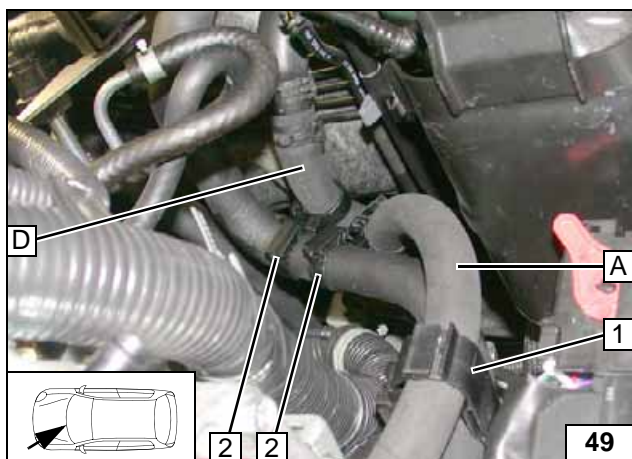
- 1 Original vehicle hose bracket

Routing in
engine
compart-
ment



- 1 Hose of engine outlet
- 2 Original vehicle spring clip

Connect-
ing engine
outlet

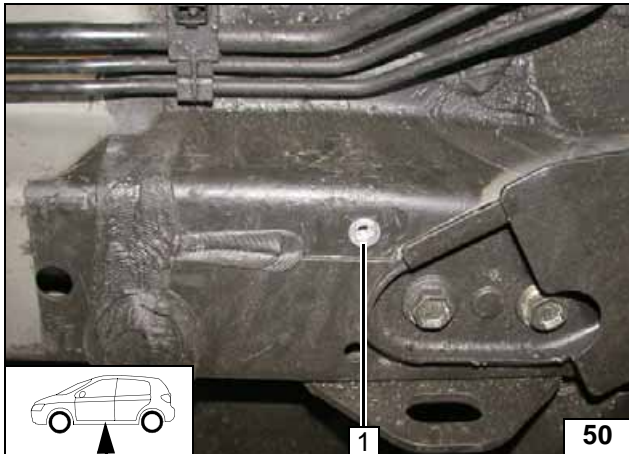
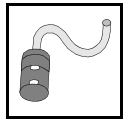


Ensure sufficient distance from neighbouring components.

- 1 Original vehicle hose bracket
- 2 Hose bracket [2x]



Inserting
hose
bracket

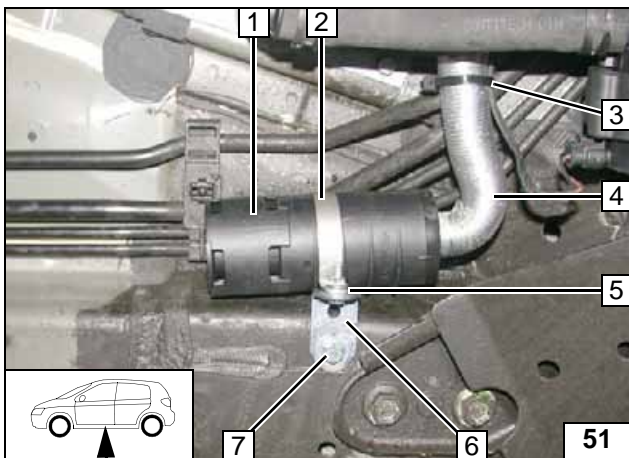


Combustion Air

- 1 Rivet nut, existing hole



Installing rivet nut



- 1 Silencer
- 2 51 mm dia. clamp
- 3 Cable tie
- 4 Combustion air pipe
- 5 M5x16 bolt, washer, flanged nut
- 6 Angle bracket
- 7 M6x20 bolt, spring lockwasher, large diameter washer



Mounting silencer



Fuel

CAUTION!

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

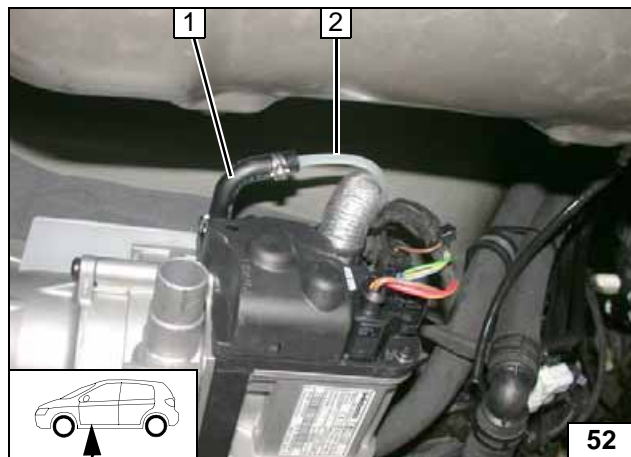
Catch any fuel running off in an appropriate container.

Install 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.

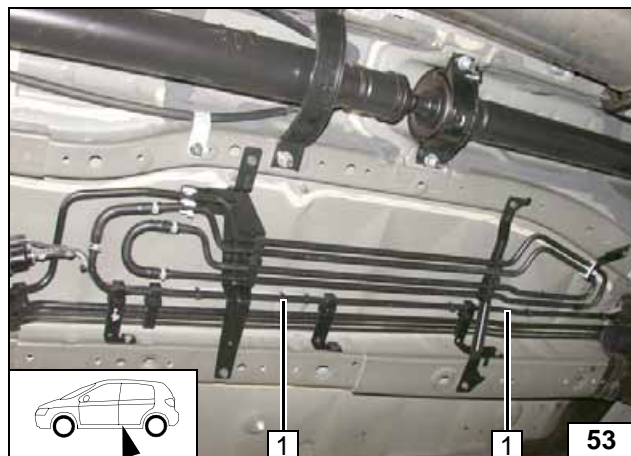
WARNING!

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



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

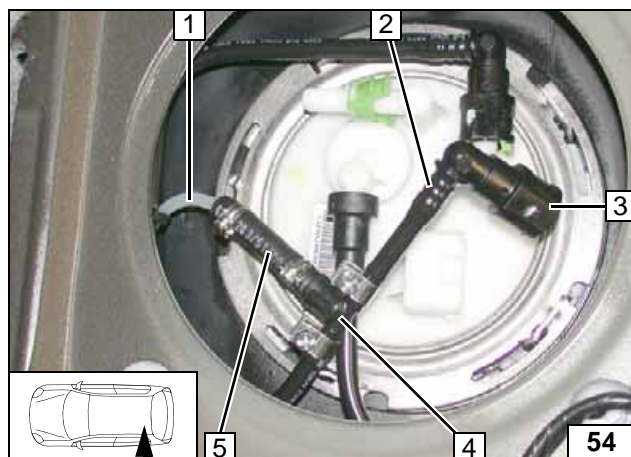
**Connect-
ing heater**



Route fuel line and wiring harness of metering pump 1 to original vehicle lines at the installation location of the metering pump.



**Routing
lines**

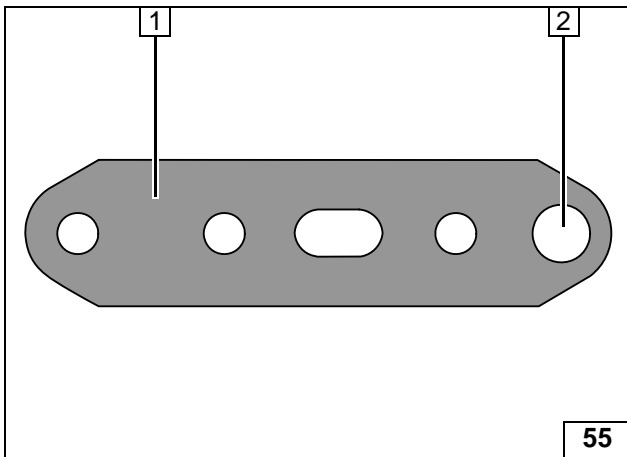


Separate fuel supply line 2 approx. 50 mm before coupling.

- 1 Fuel line
- 3 Coupling, detached from connection piece
- 4 6x5x6 fuel standpipe, 8 mm dia. clamp [2x]
- 5 Hose section, 10 mm dia. Caillau clamps [2x]



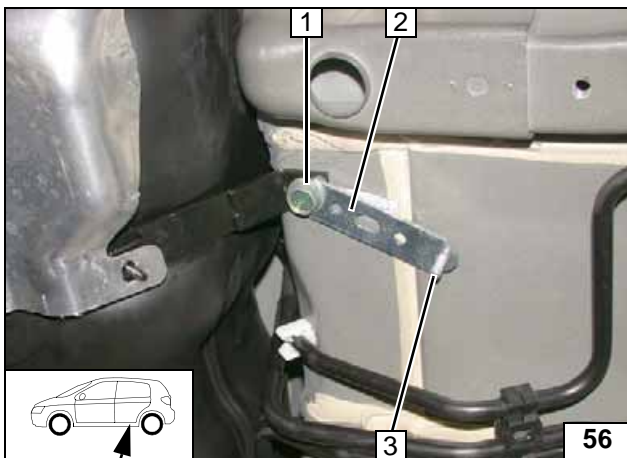
**Fuel ex-
traction**



Drill out perforated bracket 1 at position 2 to 10.5 mm dia.



Preparing perforated bracket

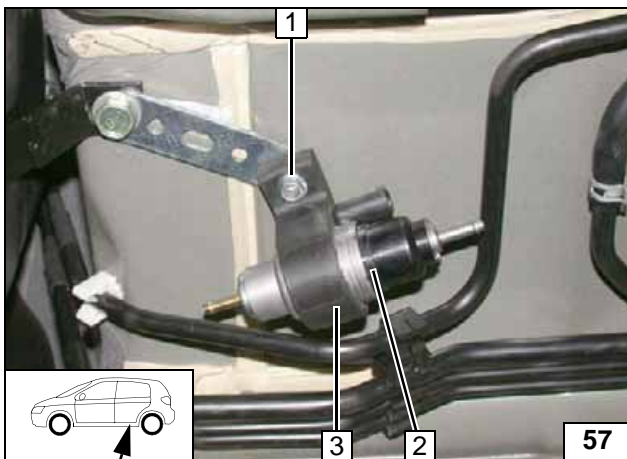


Insert M6x25 bolt 3 before installation in perforated bracket 2.



- 1 Original vehicle bolt for fuel tank fastening

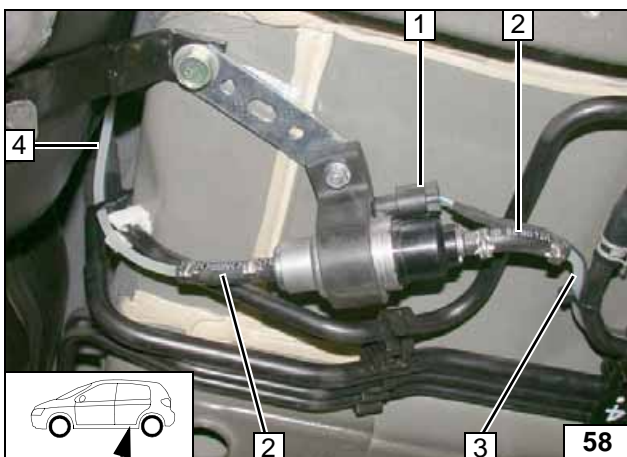
Installing perforated bracket



- 1 M6 flanged nut
- 2 Metering pump
- 3 Metering pump mounting bracket



Installing metering pump

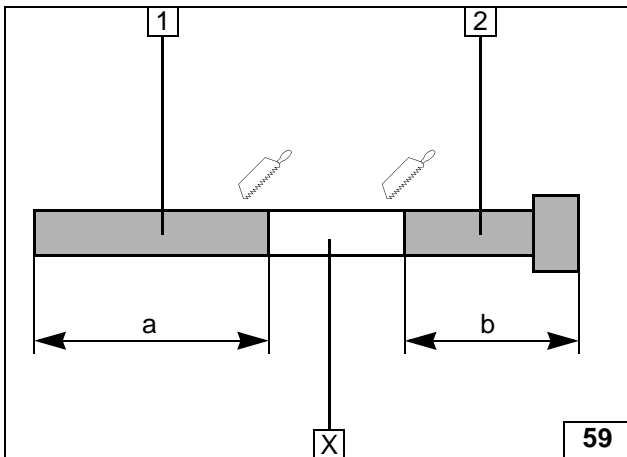


Check the position of the components; adjust if necessary. Check that they have freedom of movement.



- 1 Wiring harness of metering pump, connector mounted
- 2 Hose section [2x], 10 mm dia. Caillau clamp [4x]
- 3 Fuel line of heater
- 4 Fuel line of fuel standpipe

Connecting metering pump

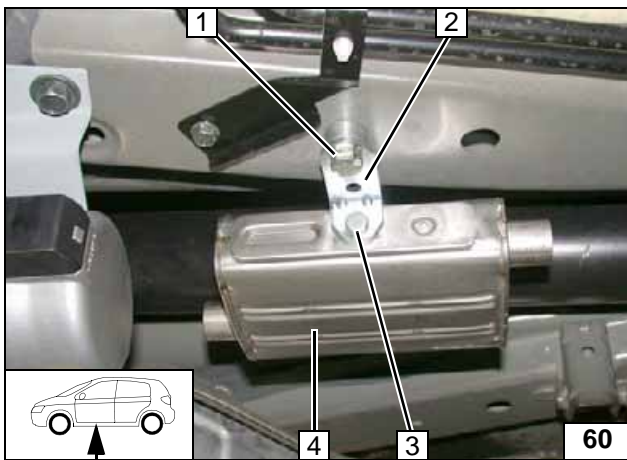


Exhaust Gas

Discard section X

- 1 Exhaust pipe
a = 190
- 2 Exhaust end section
b = 60

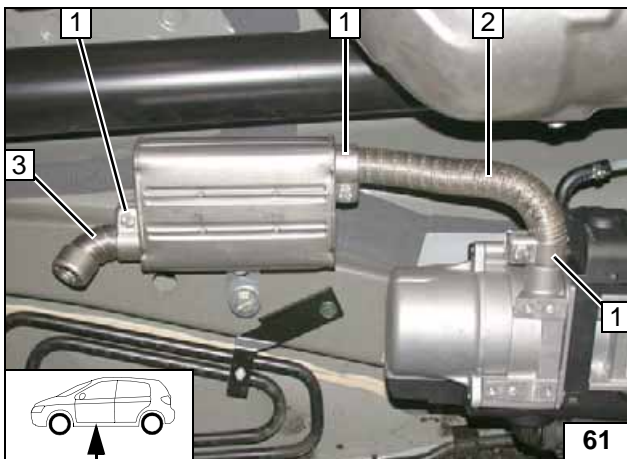
Preparing exhaust pipe



Insert 10mm shim between cross member and angle bracket 2.

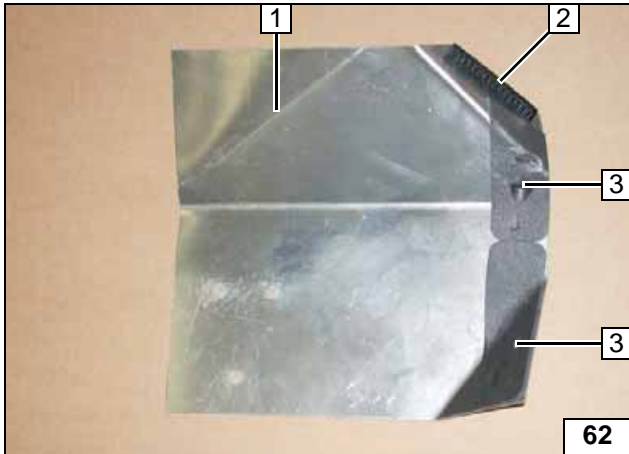
- 1 M8x30 bolt, spring lockwasher, large diameter washer, 10mm shim, original vehicle threaded hole
- 3 M6x16 bolt, spring lockwasher
- 4 Silencer

Mounting silencer



- 1 Hose clamp [3x]
- 2 Exhaust pipe
- 3 Exhaust end section

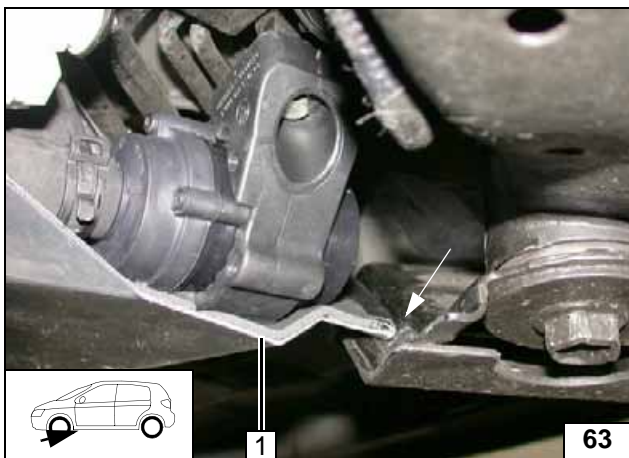
Mounting exhaust pipe and exhaust end section



Guard Plate

- 1 Guard plate
- 2 80mm edge protection
- 3 Paste insulation protection strips [2x]

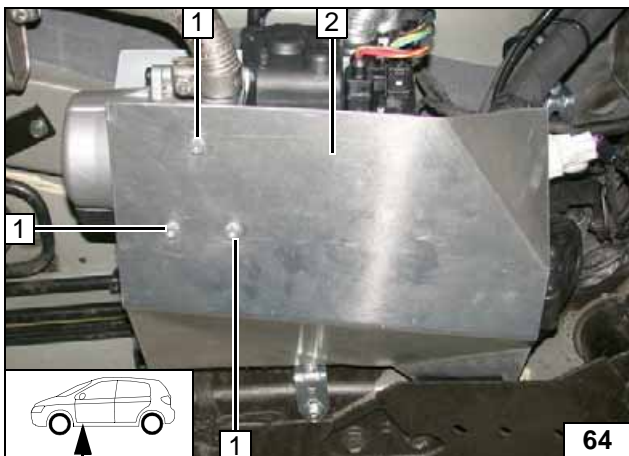
Preparing guard plate



Insert guard plate 1 in edge of cross member.



Inserting guard plate



Ensure sufficient distance from neighbouring components.

- 1 5x13 self-tapping bolt [3x]
- 2 Guard plate



Installing guard plate



Final Work

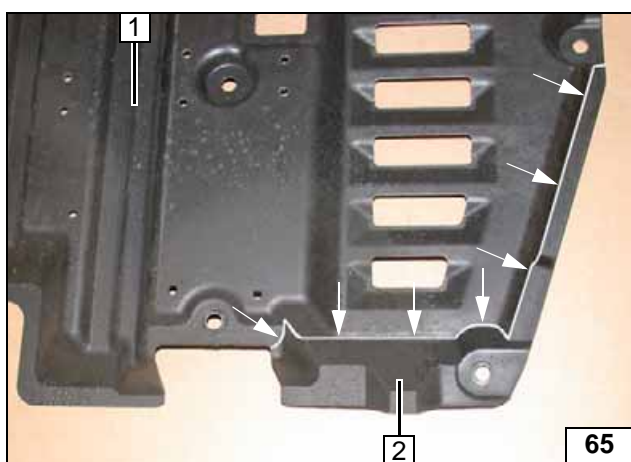
WARNING!

Mount removed parts in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate all loose lines and tie back.

Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).



- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Adjust digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Apply the caution label "Switch off parking heater before refilling" in the area of the filler neck**
- **See installation instructions for initial start-up and function check**



Cut out underide protection 1 at the marking.

2 Discard section



**Cutting out
underide
protection**

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
<http://dealers.webasto.com>

Operating Instructions for End Customer

Please remove page in case of automatic air-conditioning and add it 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.

Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating cycle.

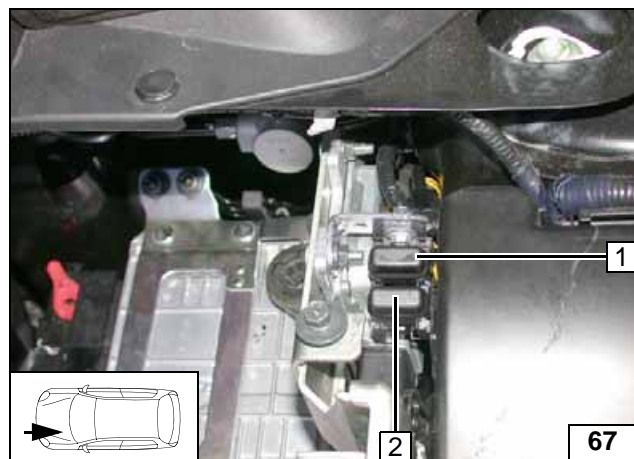
Deactivation instructions can be taken from the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

- 1 Set temperature on both sides to "30°"
- 2 Air outlet to windscreen

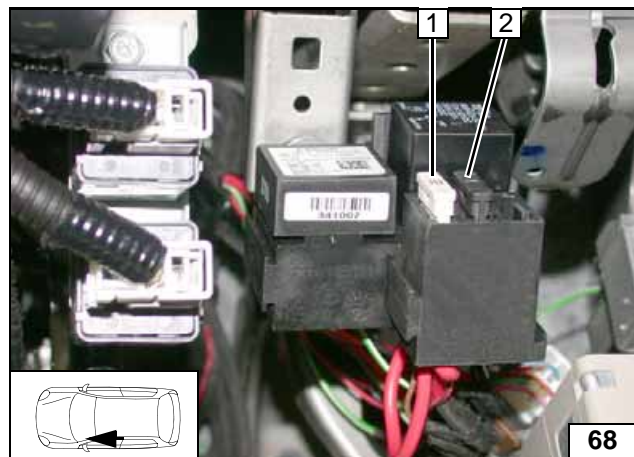


A/C control panel



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

Engine compartment fuses



- 1 25A fan fuse F4
- 2 1A fuse F3 of heater control

Passenger compartment fuses

