

Water Heater

Thermo Top Evo Parking Heater



Installation Documentation Nissan NP300 Navara

Validity

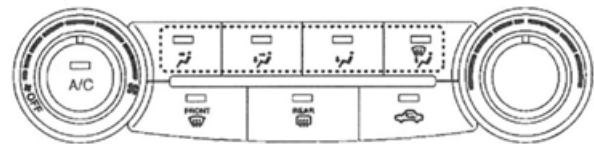
| Manufacturer | Model | Type | EG BE No. / ABE |
|--------------|--------------|------|----------------------------|
| Nissan | NP300 Navara | D231 | e9 * 2007 / 46 * 6364* ... |

| Motorisation | Fuel | Transmission type | Output in kW | Displacement in cm ³ | Engine code |
|--------------|--------|-------------------|--------------|---------------------------------|-------------|
| 2.3D | Diesel | 6-speed SG | 120 | 2298 | YS23 |
| 2.3D | Diesel | 6-speed SG | 140 | 2298 | YS23 |
| 2.3D | Diesel | 7-speed AG | 140 | 2298 | YS23 |

SG = Manual transmission
AG = Automatic transmission

From model year 2016
Left-hand drive vehicle

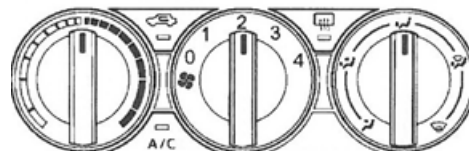
Verified equipment variants: Manual air-conditioning type B



- Multi-zone - automatic air-conditioning
- Halogen front fog lights
- Xenon headlight
- LED Headlight
- Headlight washer system
- Start button
- 4WD
- Euro 5 and 6

Not verified: 2WD

Exclusion: Manual air-conditioning type A



Total installation time: approx. 7.0 hours

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Necessary Components

- Basic delivery scope of Thermo Top Evo according to price list
- Installation kit for Nissan NP300 Navara 2016 Diesel: **1324686B**
- 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
- In case of installation of MultiControl CAR: MultiControl installation frame: **9030077_**

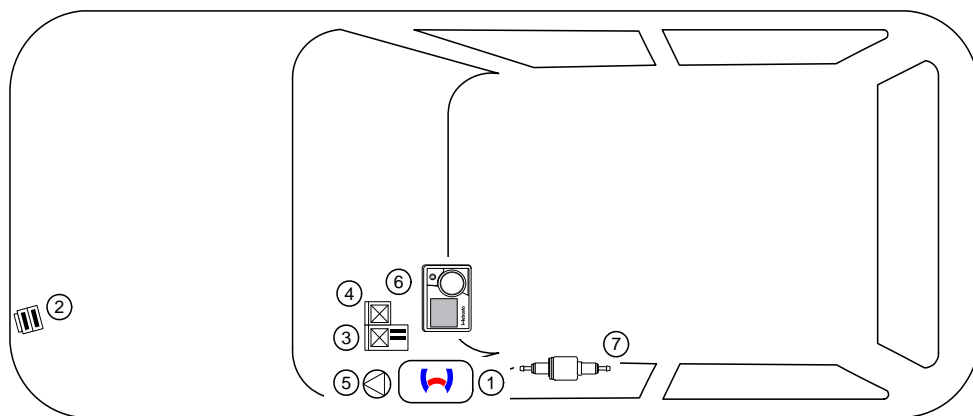
Installation instructions:

- 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 ThermoCall should be confirmed with the end customer.
- Depending on the space required and the vehicle manufacturer's instructions, we recommend the use of a vehicle battery with a higher electrical capacity.

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



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 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).

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 ECE regulation 122 (heating system) paragraph 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.

Nissan NP300 Navara

Information on Validity

This installation documentation applies to Nissan NP300 Navara Diesel vehicles - for validity, see page 1 - from model year 2016 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
- Hose clamping pliers
- Metric thread-setter kit
- M6 tap
- Deep-hole marker
- 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 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 damage to components.



Specific risk due to electrical voltage.



Specific risk of injury or fatal accidents.



Specific risk of fire or explosion



Reference to the 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



- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the battery and battery carrier.
- Remove the air filter together with the intake hose.
- Remove the glove box.
- Remove the glove box trim.
- Remove the instrument panel trim under the steering wheel.

Heater

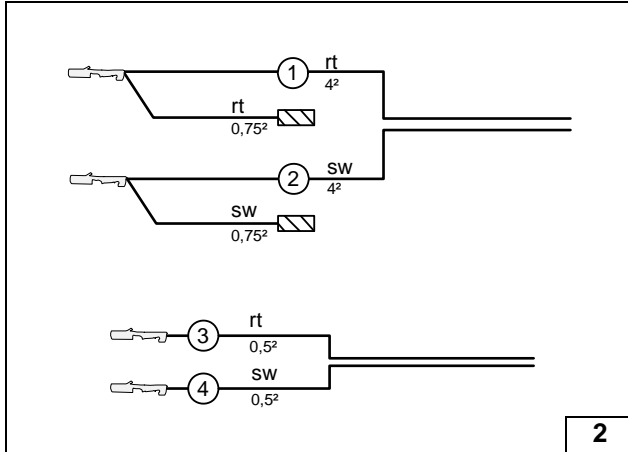
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) visibly in the appropriate place in the engine compartment.



Heater Installation Location

- 1 Heater

Installation location

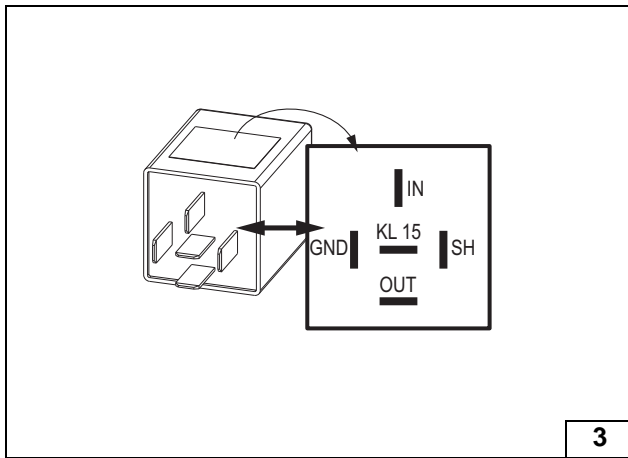


Preparing Electrical System

Wire sections retain their numbering in the entire document.

- ① Red (rt) wire of fan wiring harness
- ② Black (sw) wire of fan wiring harness
- ③ Red (rt) wire from wiring harness of PWM control
- ④ Black (sw) wire from wiring harness of PWM control

Cutting to length/as-signing wires

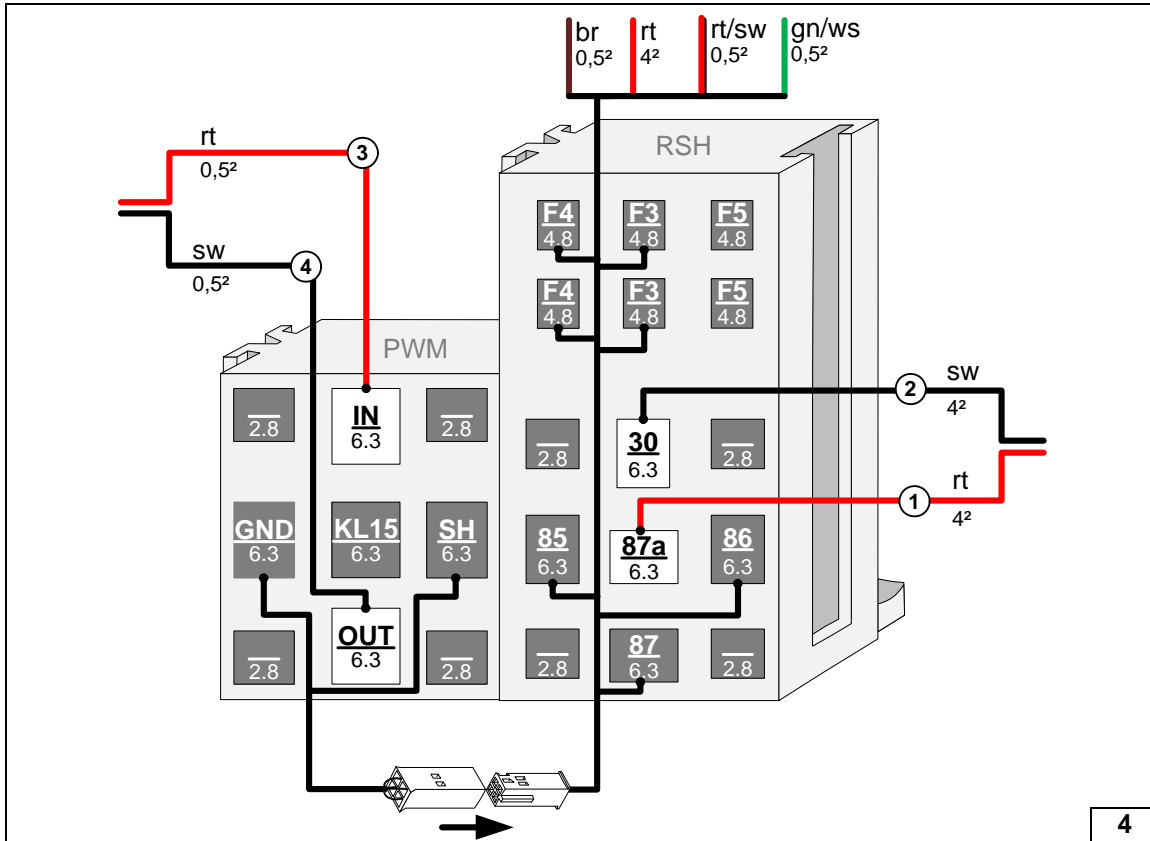


Check the PWM Gateway settings when starting up the heater and adjust if necessary.

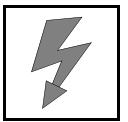
Settings:

- Duty cycle: 100% (DC)
- Frequency: not relevant
- Voltage: 2,7V
- Function: High side

View of PWM GW



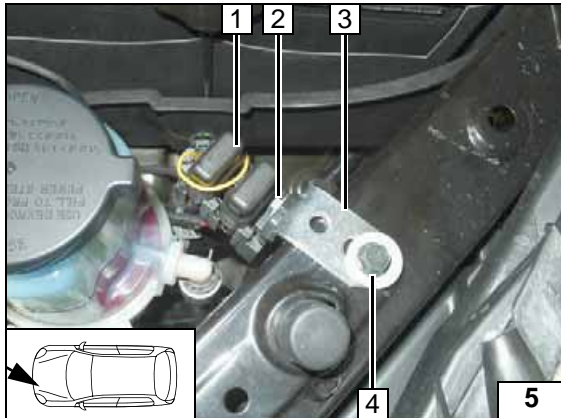
Interlocking LIN GW and passenger compartment relay and fuse holder sockets, connecting socket with connector, connecting wires



Electrical System

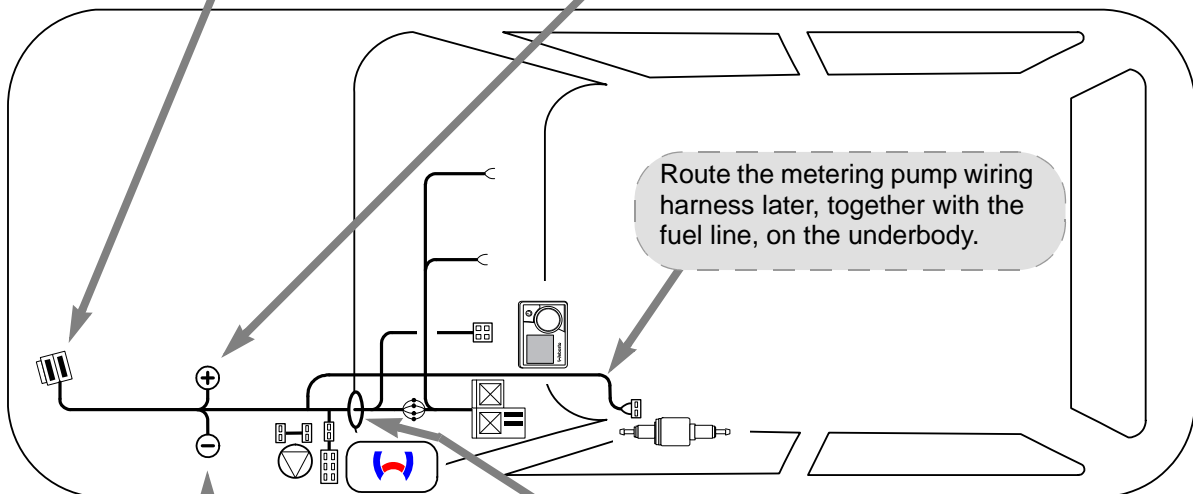
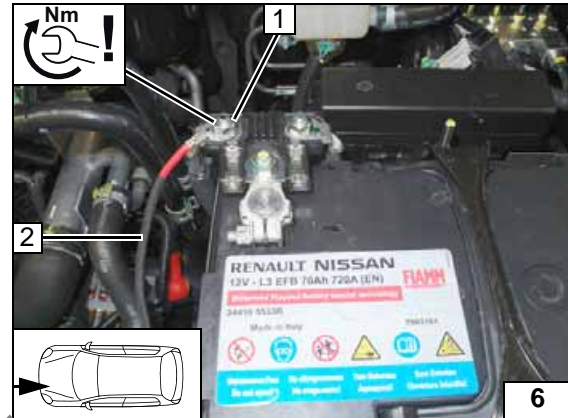
Engine compartment fuse holder

- 1 Fuses F1-2
- 2 M5x16 bolt, large diameter washer [2x], retaining plate of fuse holder, nut
- 3 Angle bracket
- 4 M6x20 bolt, spring lockwasher, large diameter washer, original vehicle threaded hole

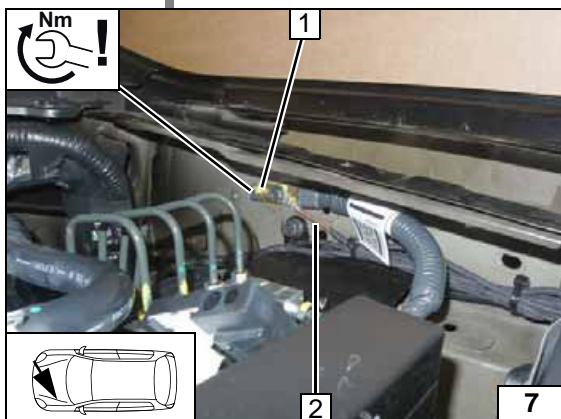


Positive wire

- 1 Original vehicle positive distributor
- 2 Positive wire

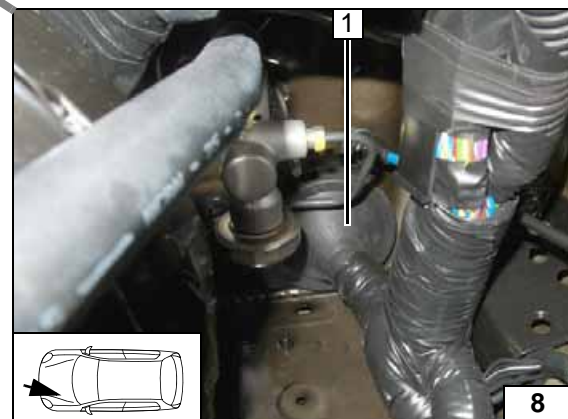


Wiring harness routing diagram



Earth wire

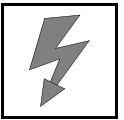
- 1 Original vehicle earth support point
- 2 Earth wire



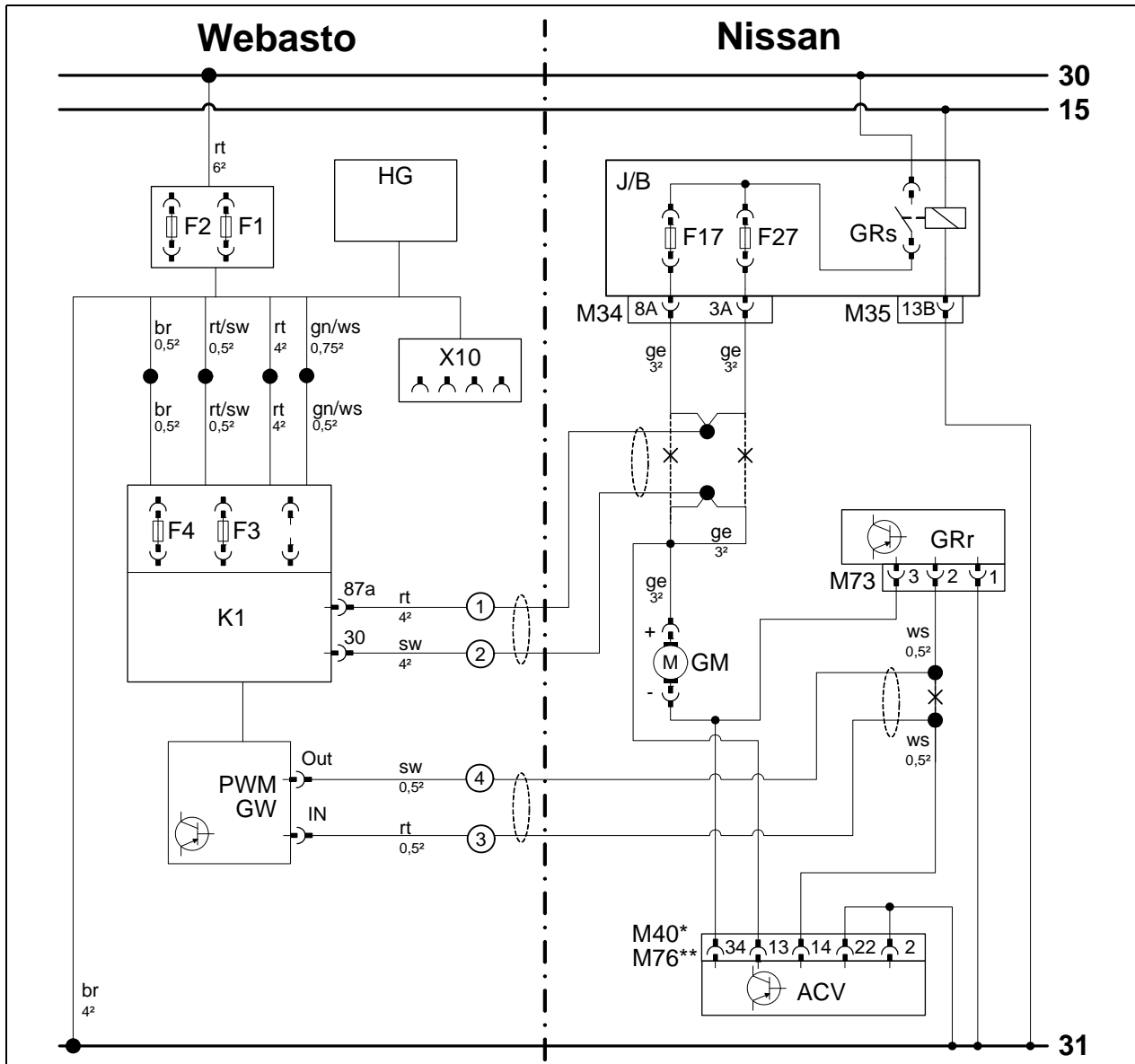
Wiring harness pass through

- 1 Protective rubber plug





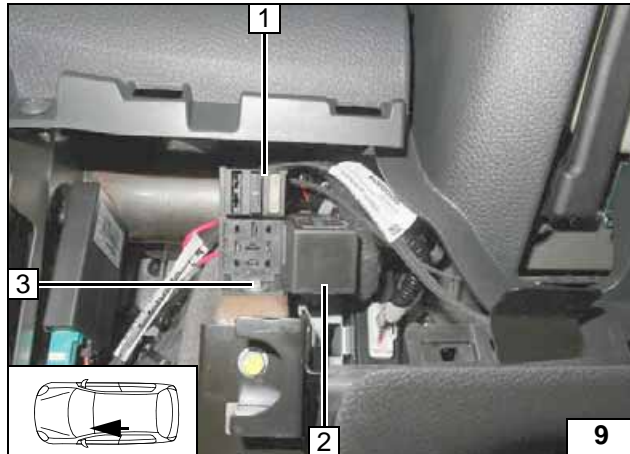
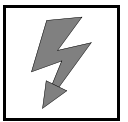
Fan Controller



Automatic A/C and manual A/C type B system wiring diagram

| Webasto components | | Vehicle components | | Colours and symbols | |
|-------------------------|-----------------------------------|--------------------|-------------------------------|--------------------------|--------------------------------|
| HG | TT-Evo heater | J/B | Fuse block | rt | red |
| F1 | 20A fuse | GRs | Fan relay | sw | black |
| F2 | 30A fuse | F27 | 15A fuse | ge | yellow |
| X10 | 4-pin connector of heater control | F17 | 15A fuse | gn | green |
| F3 | 1A fuse | M35 | 16-pin connector of J/B | ws | white |
| F4 | 25A fuse | M34 | 8-pin connector of J/B | br | brown |
| K1 | Fan relay | GRr | Fan controller | | |
| PWM GW | Pulse width modulator | M73 | 4-pin connector, GRr | | |
| PWM GW settings: | | GM | Fan motor | | |
| Duty cycle: 100% (DC) | | ACV | AC booster | * | Manual air-conditioning type B |
| Frequency: not relevant | | M40 | 40-pin connector of ACV / AC | ** | Automatic air-conditioning |
| Voltage: 2,7V | | M76 | 40-pin connector of ACV / ACC | | |
| Function: High side | | | | X | Cutting point |
| | | | | Wiring colours may vary. | |

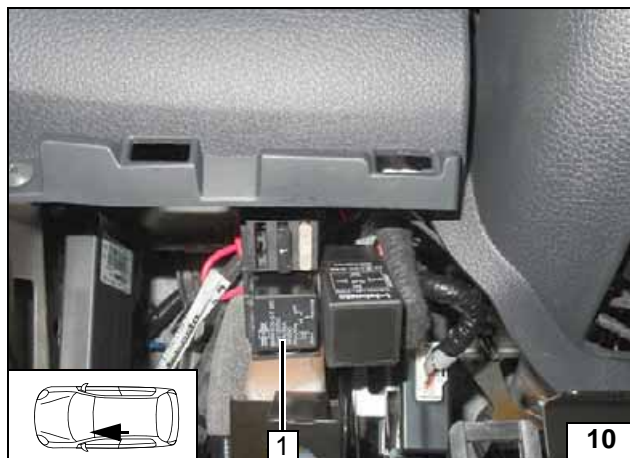
Legend



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

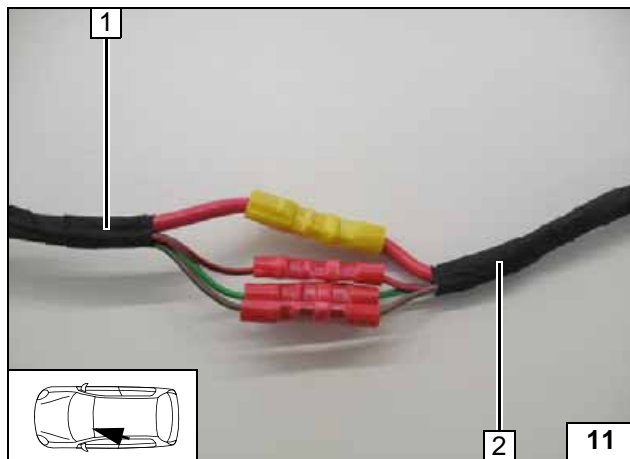
- 1 Fuses F3-4
- 2 PWM Gateway
- 3 M5x16 bolt, large diameter washer [2x], original vehicle hole, nut

Installing passenger compartment relay and fuse holder



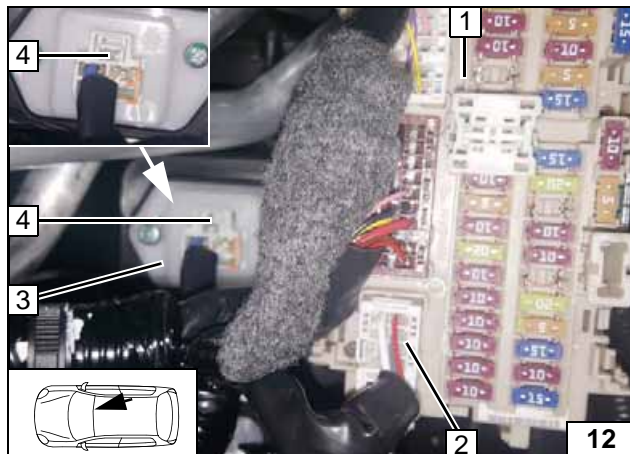
- 1 Relay K1

Installing relay K1



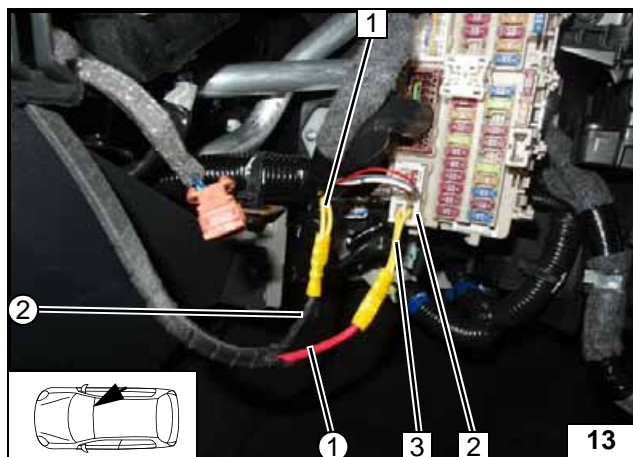
- 1 Passenger compartment relay and fuse holder wiring harness
- 2 Wiring harness of heater

Connecting same colour wires of wiring harnesses



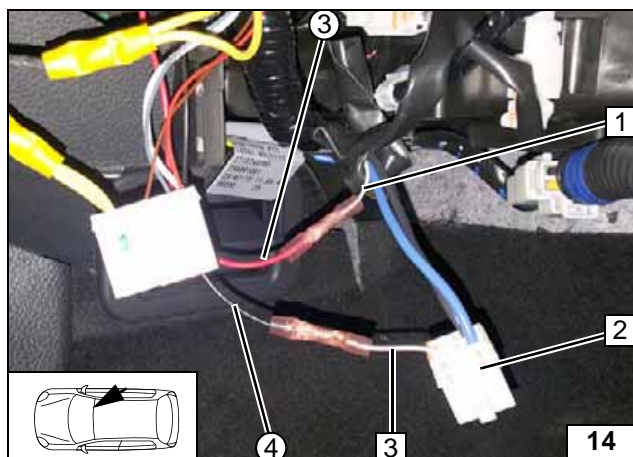
- 1 Fuse block J/B
- 2 8-pin connector M34, J/B
- 3 Fan controller GRr
- 4 4-pin connector M73, GRr

Removing connector



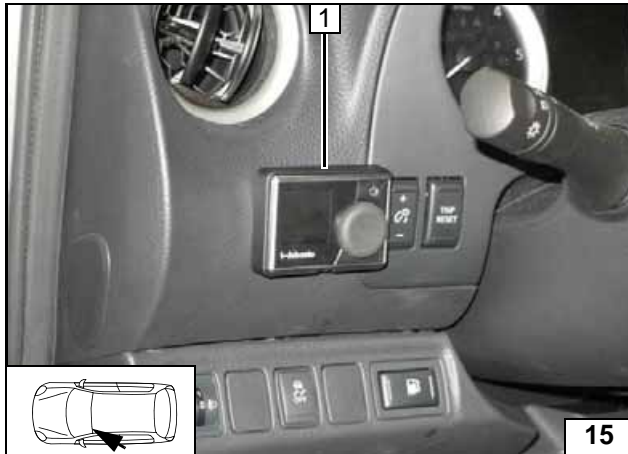
- 1 Yellow (ge) wires of GM and connector M40 (M76)/ pin 13, ACV
- 2 8-pin connector M34, J/B
- 3 Yellow (ge) wires of connector M34/ pin 3A and 8A
- ① Red (rt) wire of K1/87a, fan wiring harness
- ② Black (sw) wire of K1/30, fan wiring harness

Connecting fan controller



- 1 White (ws) wire of connector M40 (M76)/ pin 14, ACV
- 2 4-pin connector M73, GRr
- 3 White (ws) wire of connector M73/ pin 2, GRr
- ③ Red (rt) wire from wiring harness of PWM control
- ④ Black (sw) wire from wiring harness of PWM control

Connecting fan controller



MultiControl CAR Option

- 1 Installation frame



Installing MultiControl CAR

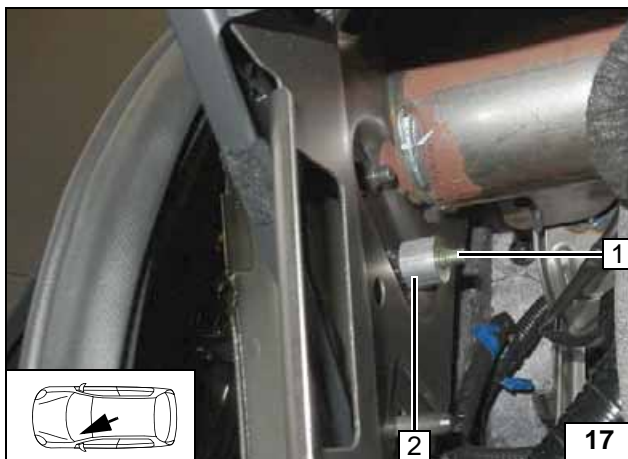


Remote Option (Telestart)

- 1 Receiver
- 2 8.5 mm dia. hole
- 3 Bracket of receiver

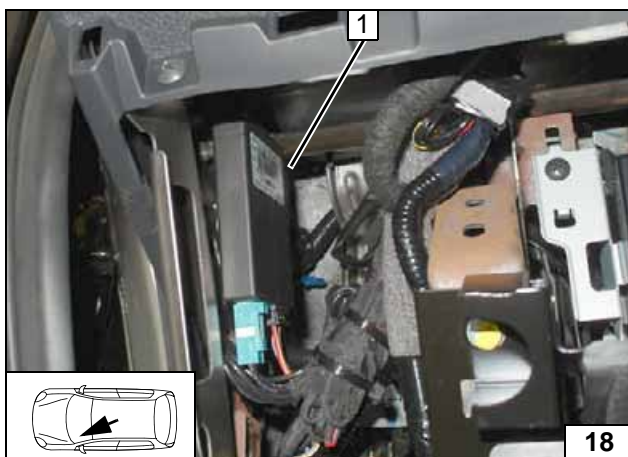


Premounting receiver



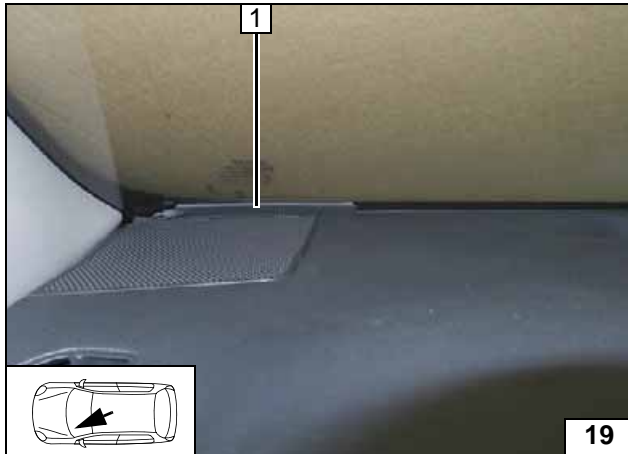
- 1 Original vehicle bolt M8
- 2 15mm spacer

Preparing installation location



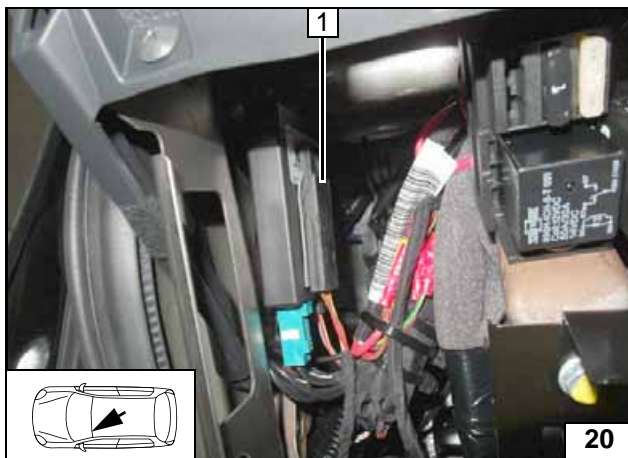
- 1 M8 flanged nut (hidden)

Installing receiver



1 Aerial

Mounting aerial

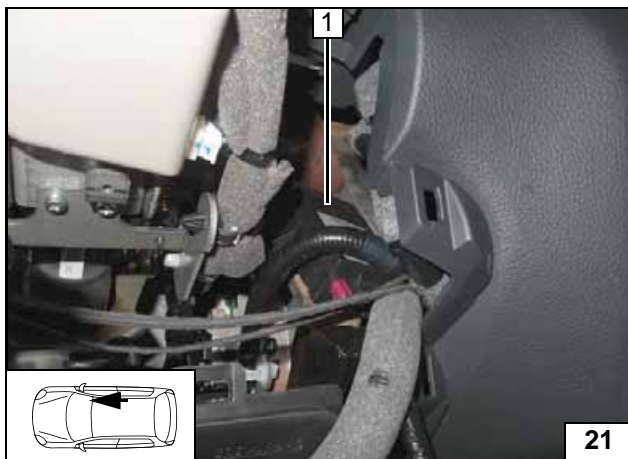


Temperature sensor T100 HTM

Fasten temperature sensor 1 with double-sided adhesive tape.



Installing temperature sensor

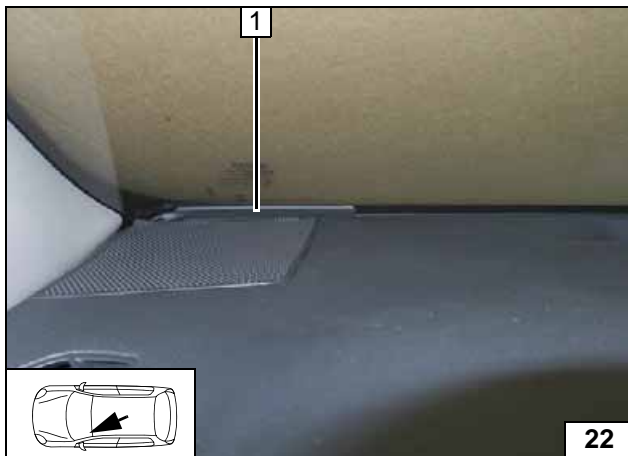


ThermoCall Option

Fasten receiver 1 with double-sided adhesive tape.

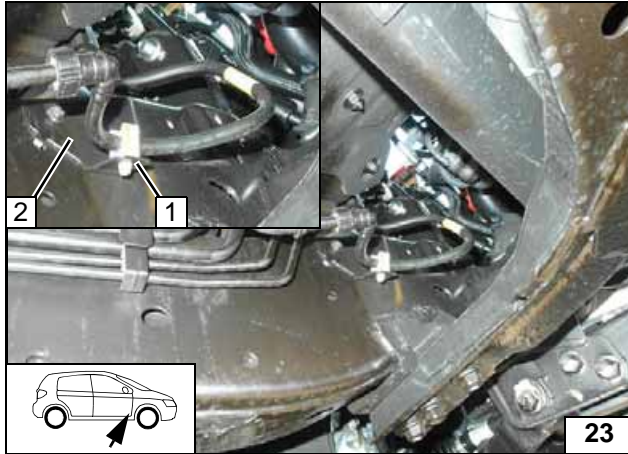
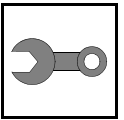


Installing receiver



1 Aerial (optional)

Mounting aerial



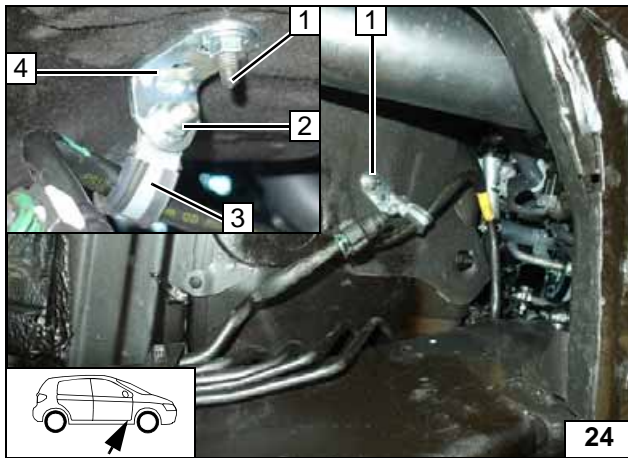
Preparing Installation Location



Euro 6 emission standard

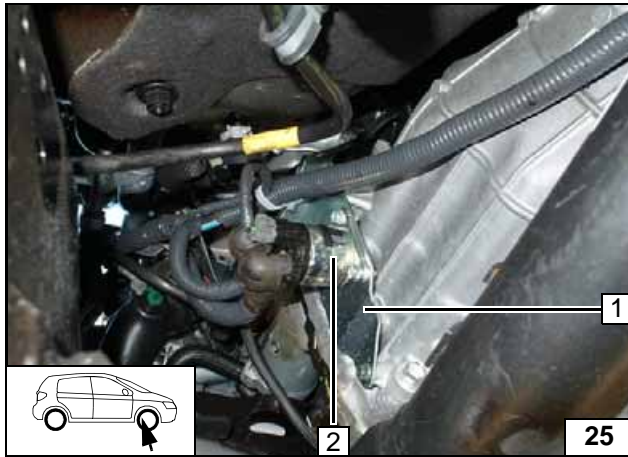
Dismantle original vehicle bracket **2** and clip **1**. Discard clip.

Routing original vehicle line



- 1 Original vehicle stud bolt, flanged nut
- 2 M6x20 bolt, flanged nut
- 3 15mm dia. rubber-coated p-clamp
- 4 Angle bracket

Fastening original vehicle line

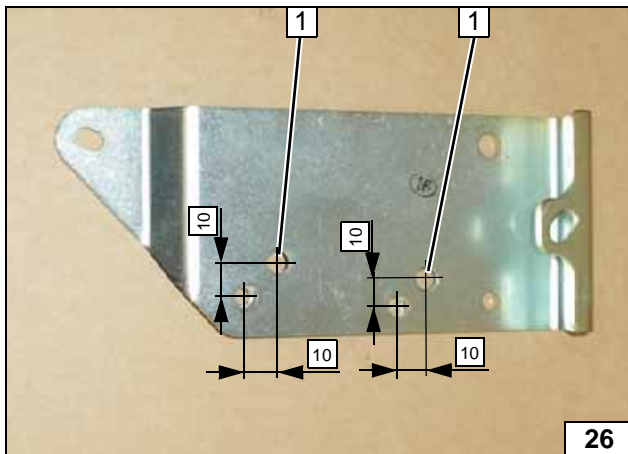


Fastening elements will be reused.



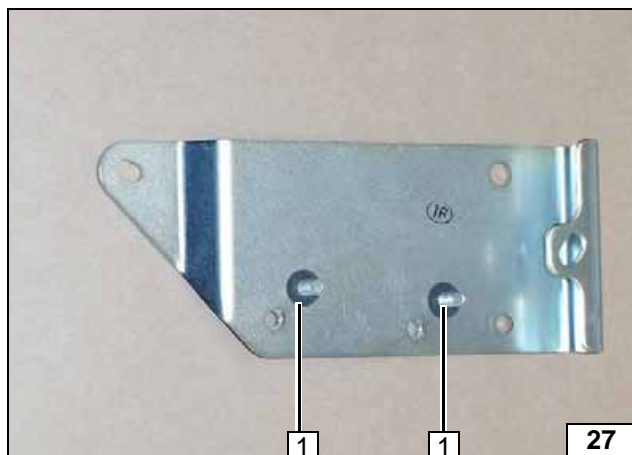
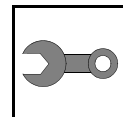
- 1 Bracket
- 2 Load relay

Dismantling load relay and bracket



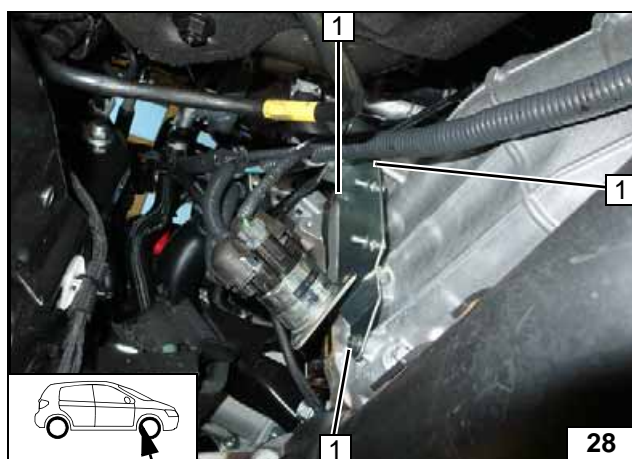
- 1 7 mm dia. hole [2x]

Preparing bracket



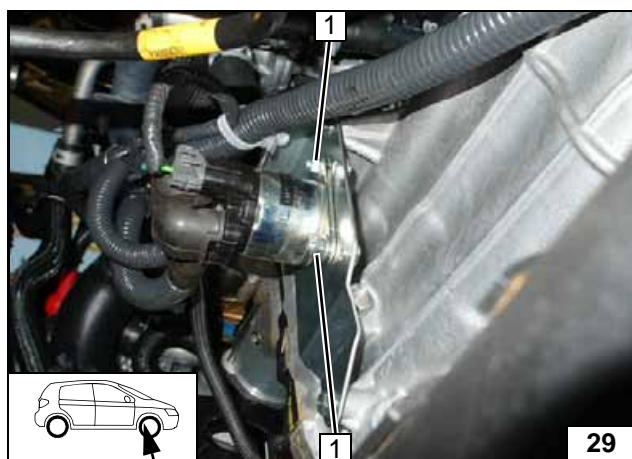
1 Original vehicle bolt, lock washer [2x each]

Premounting bolts



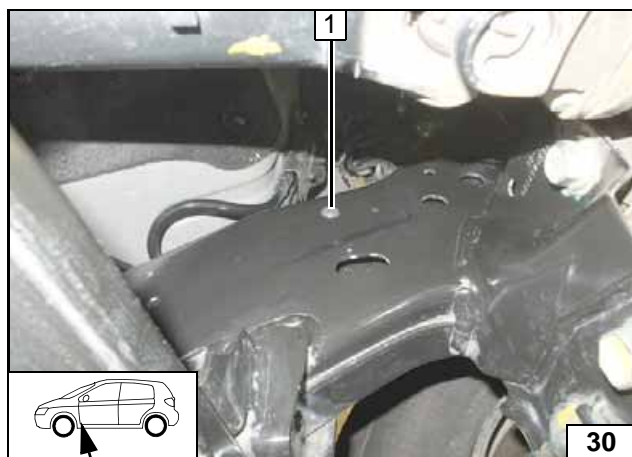
1 Original vehicle bolt [3x] (partly covered)

Installing bracket



1 Original vehicle nut [2x]

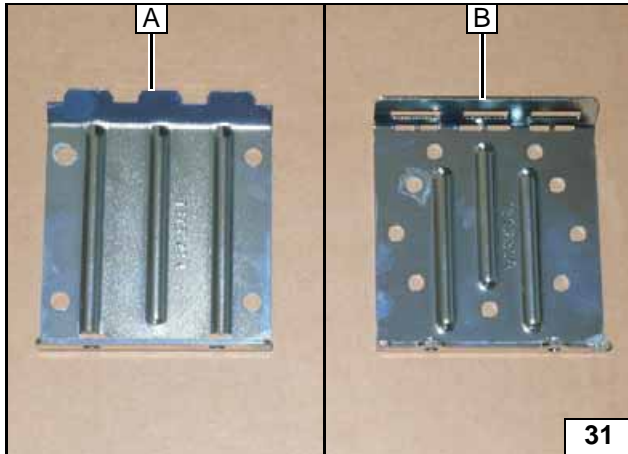
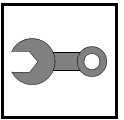
Installing load relay



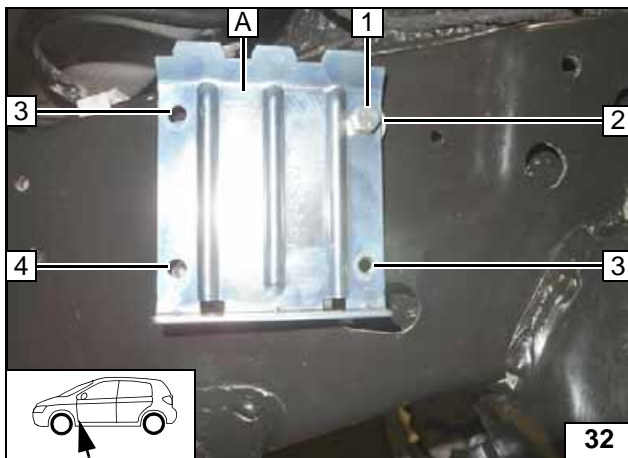
All vehicles

1 Rivet nut, original vehicle hole

Installing rivet nut

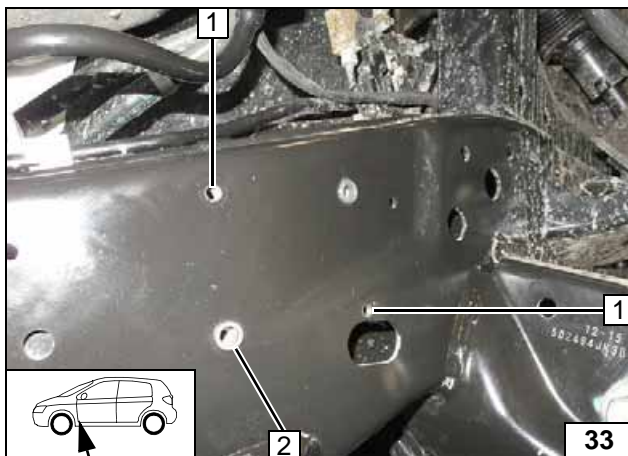


View / assigning two-part bracket



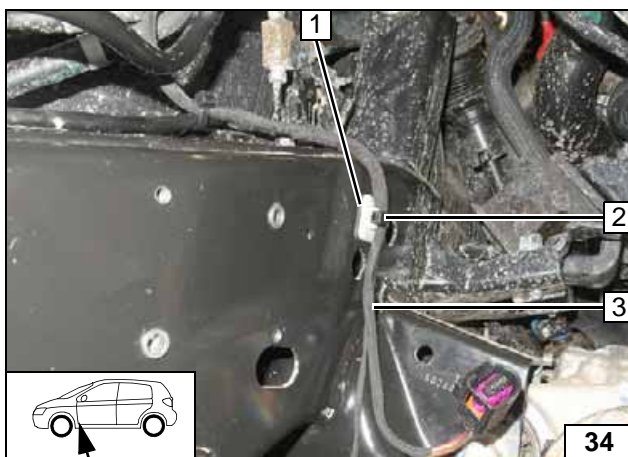
- 1 M6x25 bolt, spring lockwasher
- 2 5mm spacer
- 3 Copy hole pattern, 4.8mm dia. hole [2x]
- 4 Copy hole pattern, 9 mm dia. hole

Copying hole pattern



- 1 Tap M6 thread [2x]
- 2 Rivet nut

Installing rivet nut

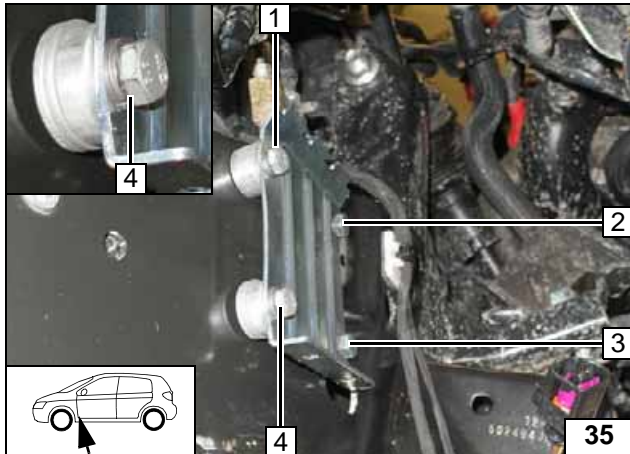
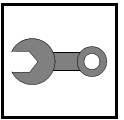


Degrease bonding surfaces at position 1.

- 1 Self-adhesive socket
- 2 Cable tie
- 3 Wiring harness of heater

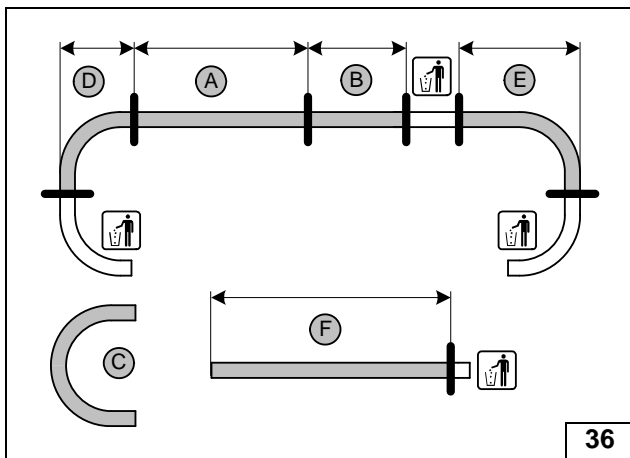
Fastening heater wiring harness





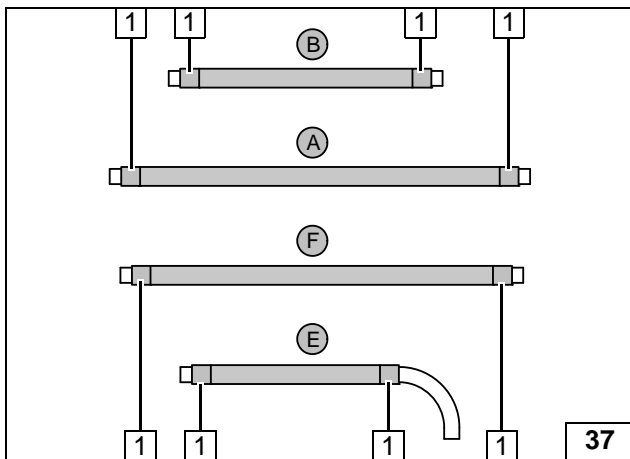
- 1 M6x10 bolt, spring lockwasher, 10mm spacer, M6 threaded hole
- 2 M6x25 bolt, spring lockwasher, 5mm spacer, rivet nut
- 3 M6x20 bolt, spring lockwasher, M6 threaded hole
- 4 M6x25 bolt, spring lockwasher, 5mm spacer, large diameter washer [2x], rivet nut

Installing bracket A



- A = 810
- B = 320
- C = 180° 18x18
- D = 110
- E = 470
- F = 760

Cutting hoses to length

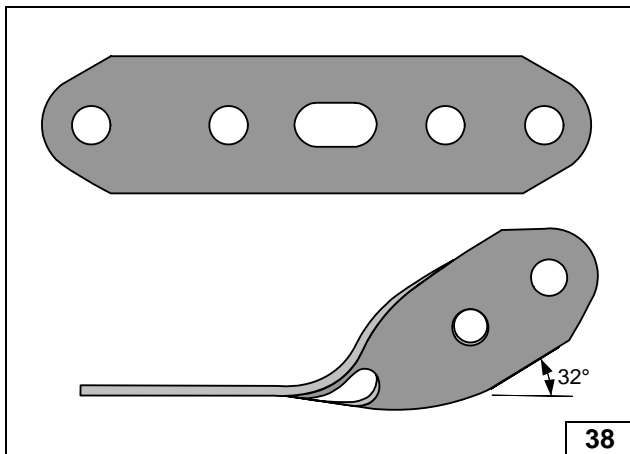


Slide on braided protection hoses and cut to length.

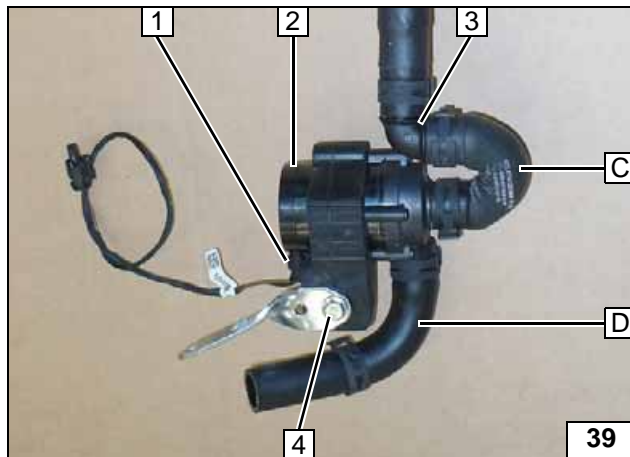
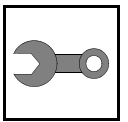


- 1 Cut to length heat shrink plastic tubing, 60 mm long [8x]

Installing braided protection hose



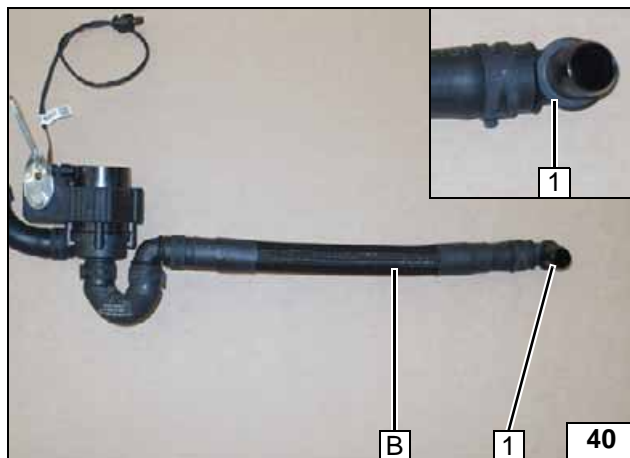
Twisting and bending perforated bracket



All spring clips 25 mm dia.!

- 1 Connector of circulating pump wiring harness
- 2 Circulating pump
- 3 90°, 18x18mm dia. connecting pipe
- 4 M6x25 bolt, perforated bracket, circulating pump mount, flanged nut

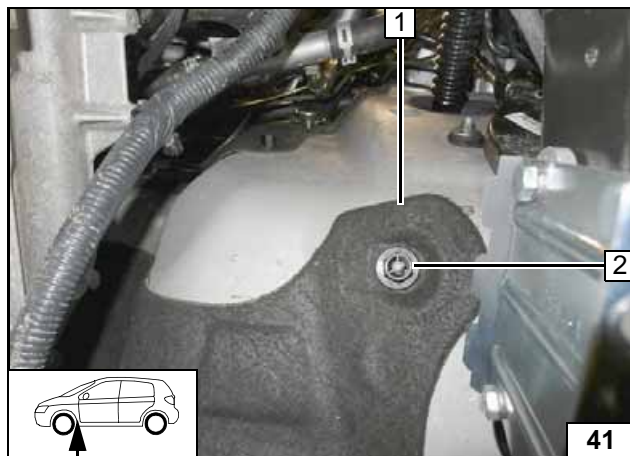
Premounting circulating pump



All spring clips 25 mm dia.!

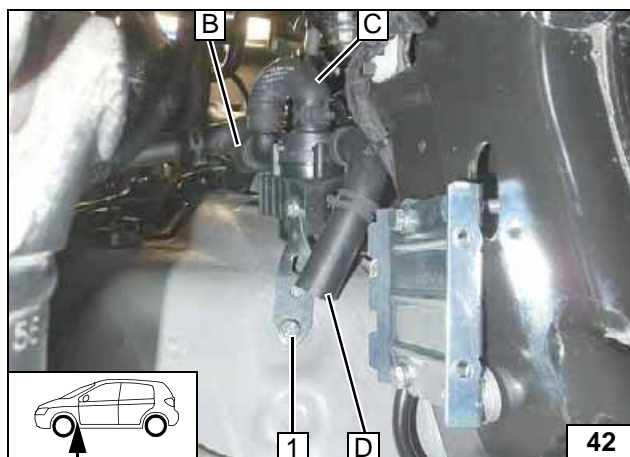
- 1 90°, 18x18mm dia. connecting pipe

Premounting circulating pump



Remove plastic nut **2**, fold back insulation **1**. The plastic nut will be reused.

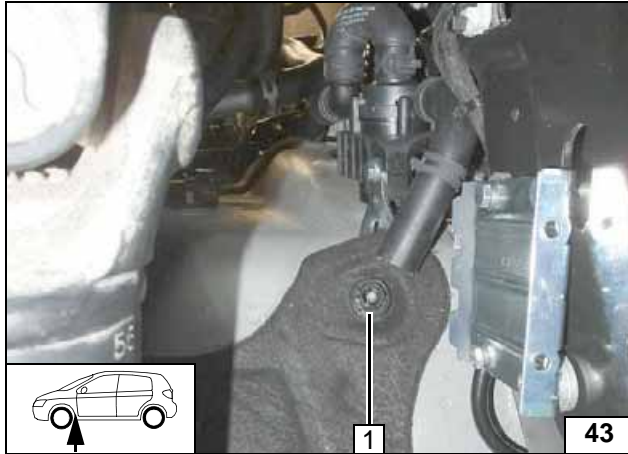
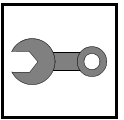
Detaching insulation



Route hose **B** in the engine compartment.

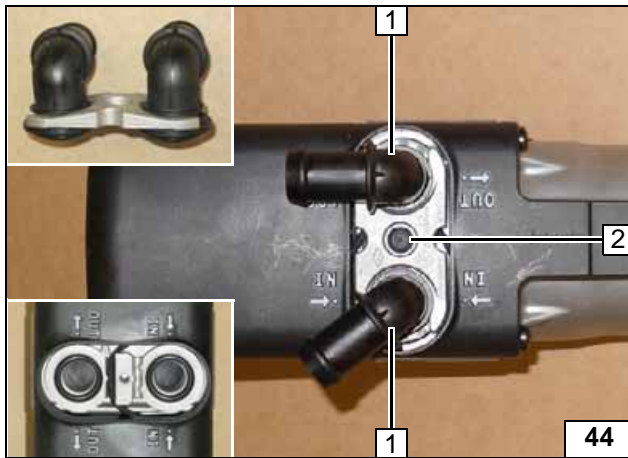
- 1 Original vehicle stud bolt, flanged nut

Installing circulating pump



1 Original vehicle plastic nut

Fastening insulation



Preparing Heater

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

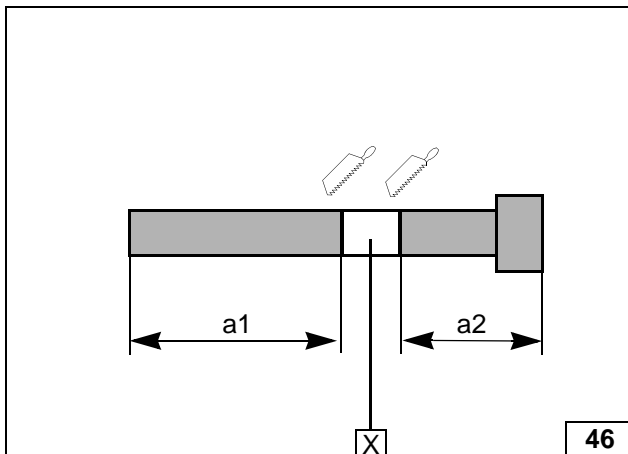


Installing water connection piece



1 5x13 self-tapping bolt [3x]

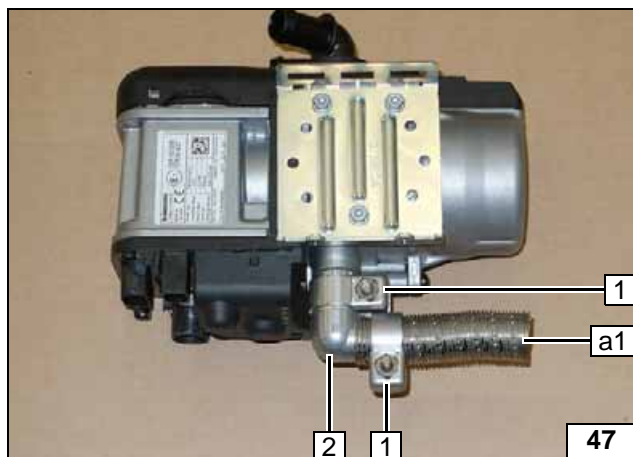
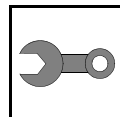
Installing bracket B



a1 = 85
a2 = 50

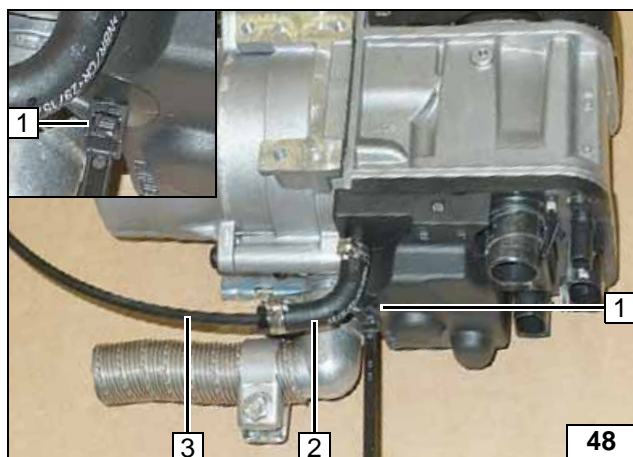
X =

Preparing exhaust pipe



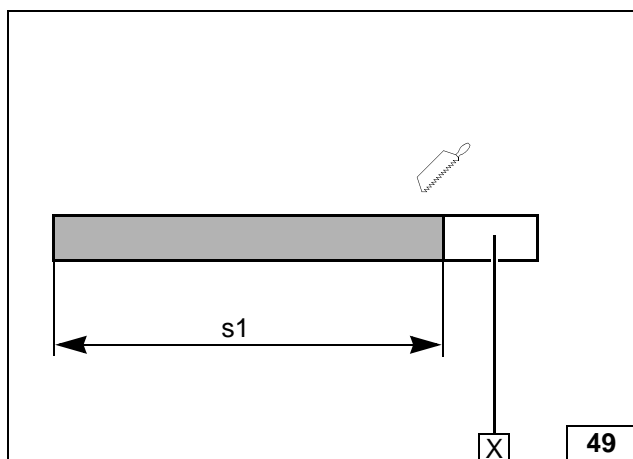
- 1 Hose clamp [2x]
- 2 Exhaust elbow

Premounting exhaust pipe a1

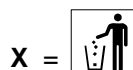


- 1 Clip-type cable tie, existing hole
- 2 90° moulded hose, 10 mm dia. clamp [2x]
- 3 Fuel line

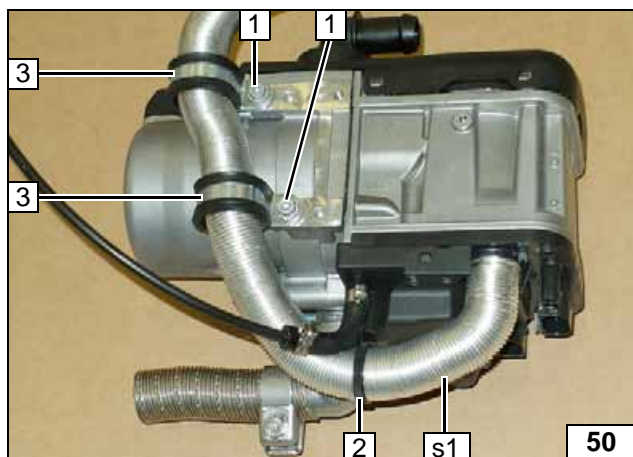
Premounting fuel line



s1 = 830



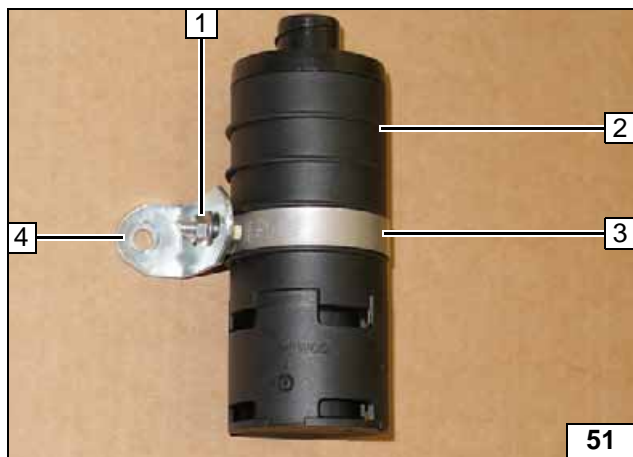
Cutting combustion air pipe to length



- 1 5x13 self-tapping bolt [2x]
- 2 Tighten clip-type cable tie
- 3 25 mm dia. rubber-coated p-clamp [2x]

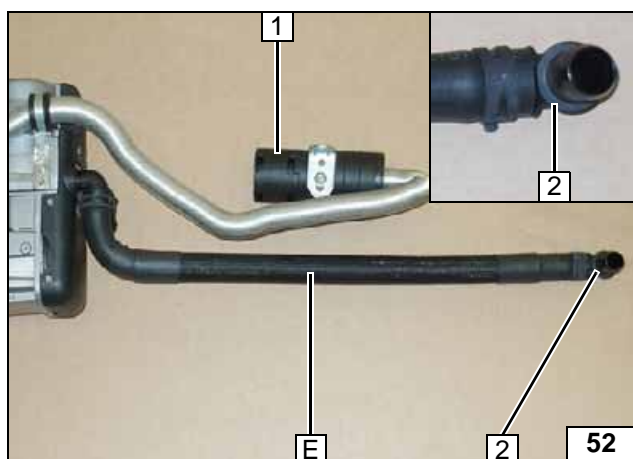


Installing combustion air pipe s1



- 1 M5x16 bolt, large diameter washer [2x], flanged nut
- 2 Silencer
- 3 51mm dia. clamp
- 4 Angle bracket

Premounting silencer

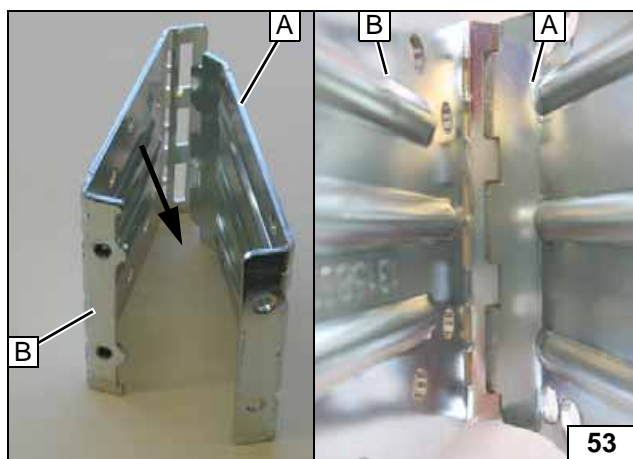


All spring clips 25mm dia.!

- 1 Installing silencer
- 2 90°, 18x18 mm dia. connecting pipe



Premounting hose E



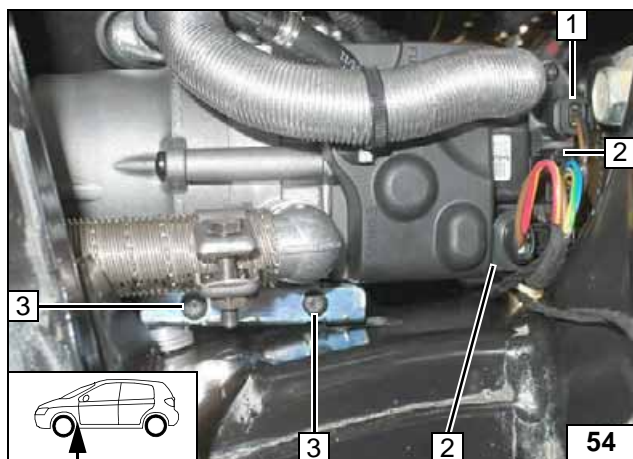
Installing Heater

The recesses of bracket **B** must be guided over the tabs of bracket **A**.

- A** Bracket (installed on vehicle)
- B** Bracket (installed on heater)



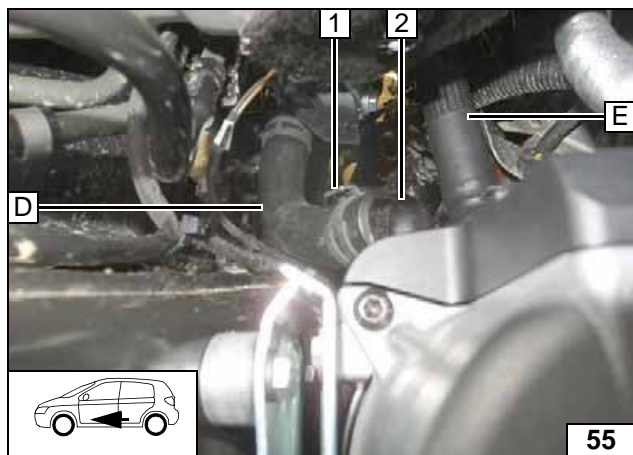
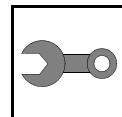
View of bracket A and B assembly



Route hose **E** in the engine compartment. Check the assembly of bracket **B** and bracket **A**, then screw them together.

- 1 Connector of circulating pump wiring harness
- 2 Heater wiring harness connector
- 3 M5x12 torx screw [2x]

Installing heater

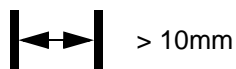


- 1 25 mm dia. spring clip
- 2 Connection piece of heater inlet

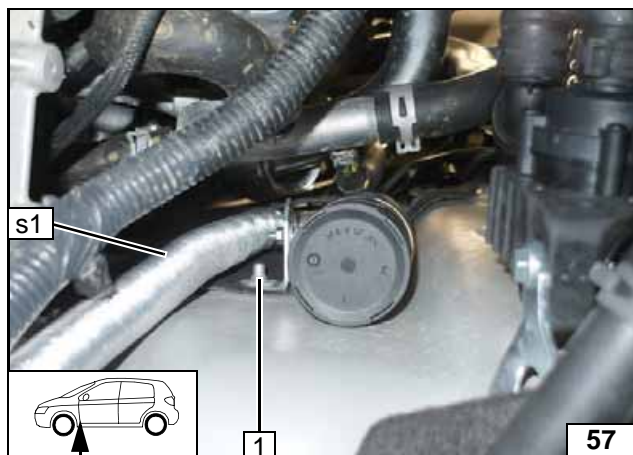
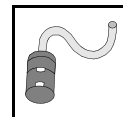
Installing hose D



Ensure sufficient distance from neighbouring components, correct if necessary.



Checking distance



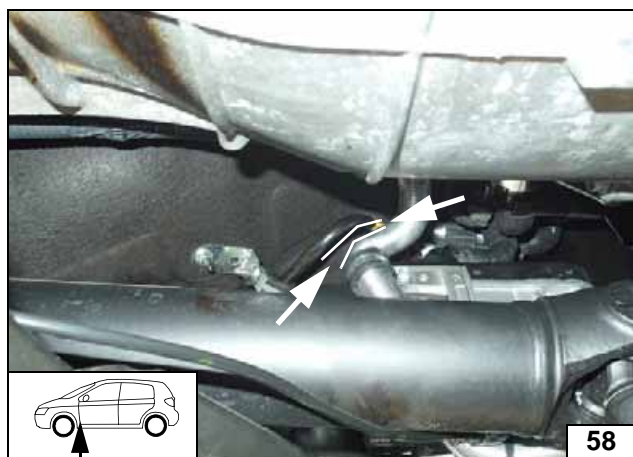
Combustion Air

Discard original plastic nut at position 1.

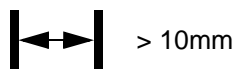
- 1 Plate nut, original vehicle stud bolt



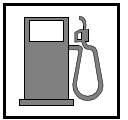
Installing silencer



Ensure sufficient distance from neighbouring components, correct if necessary.



Checking distance



Fuel



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

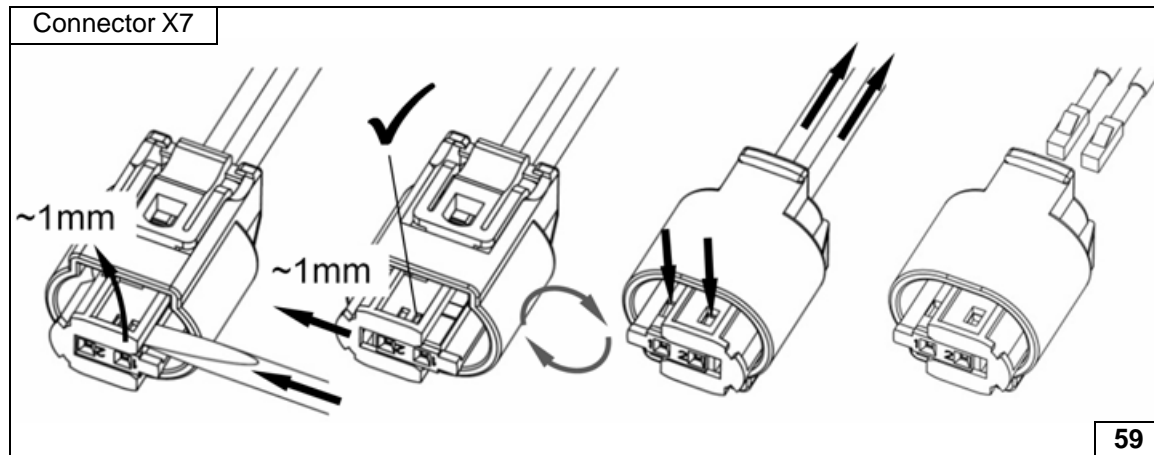
Catch any fuel running off in an appropriate container.



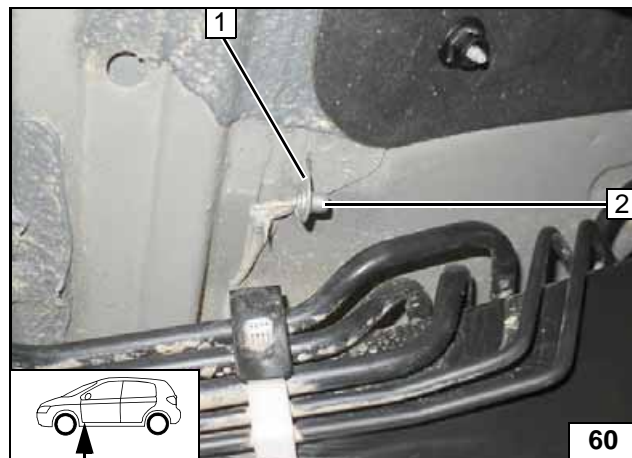
Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.

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

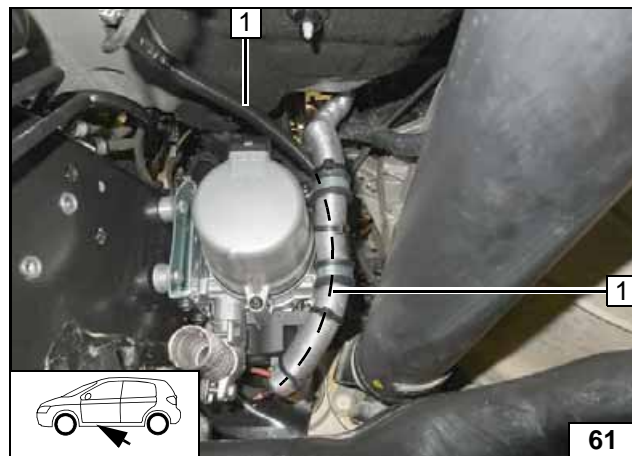


Bend original vehicle tab 1 as shown.

2 Rivet nut, original vehicle hole

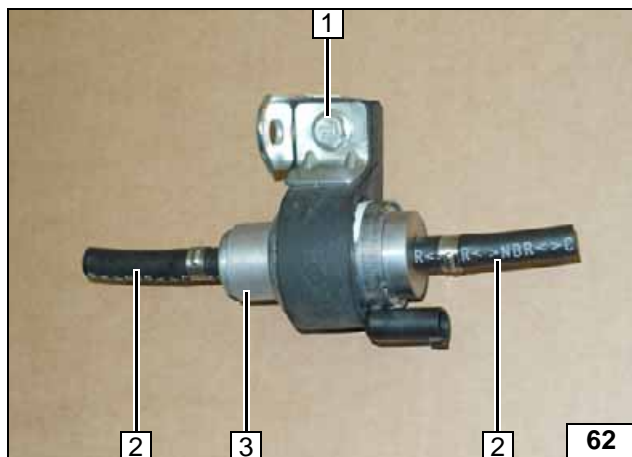


Preparing installation location of metering pump



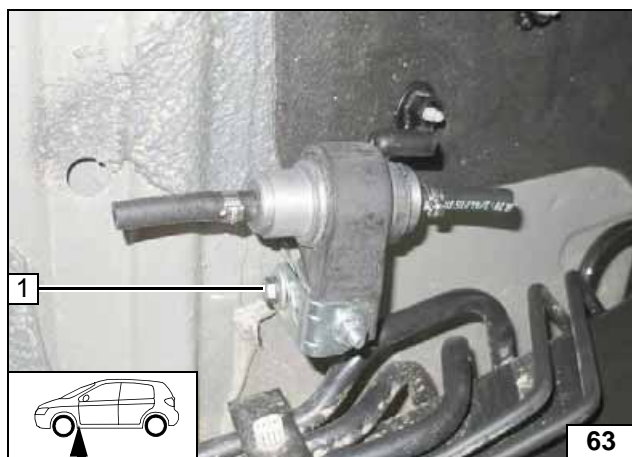
1 Fuel line and metering pump wiring harness in corrugated tube

Routing lines



- 1 M6x25 bolt, support angle bracket, metering pump mount, angle bracket, flanged nut
- 2 Hose section, 10mm dia. clamp [2x]
- 3 Metering pump

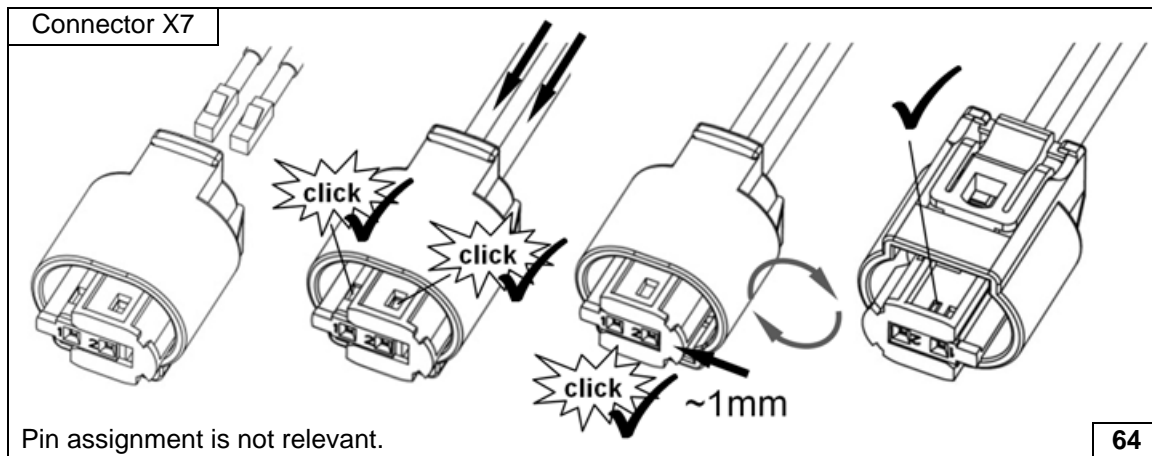
Premounting metering pump



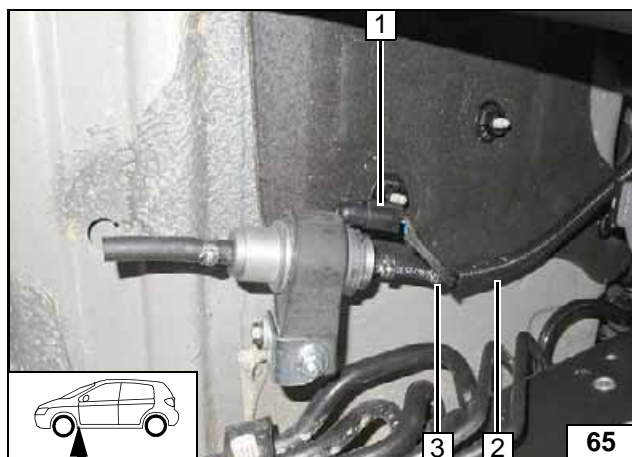
- 1 M6x20 bolt, spring lockwasher, large diameter washer



Installing metering pump



Completing metering pump connector

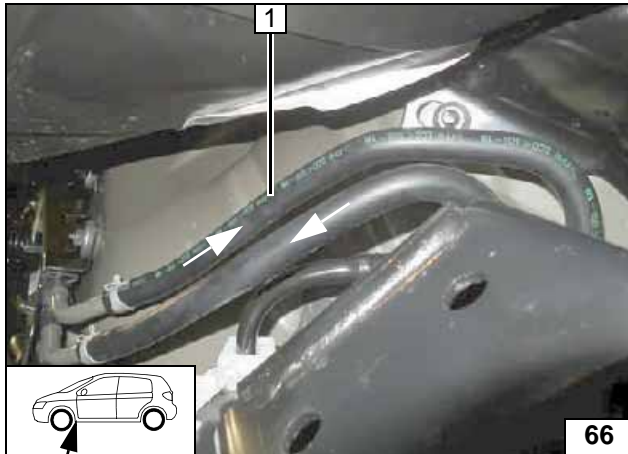


Ensure sufficient distance from neighbouring components, correct if necessary.

- 1 Metering pump wiring harness, connector X7 mounted
- 2 Fuel line and metering pump wiring harness in corrugated tube
- 3 10mm dia. clamp



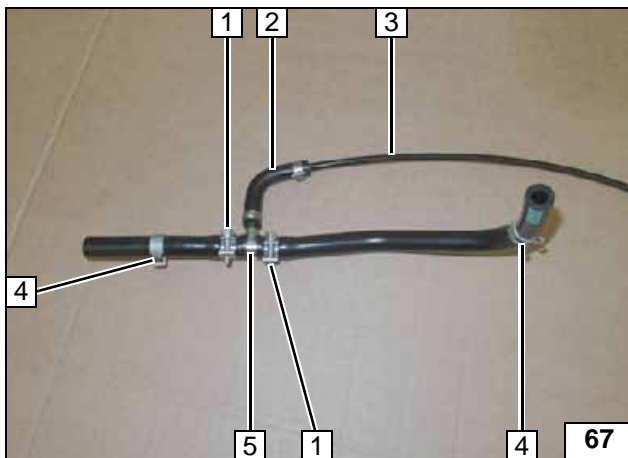
Connecting metering pump



Remove original vehicle fuel return line 1. Clamps will be reused!



Removing fuel hose

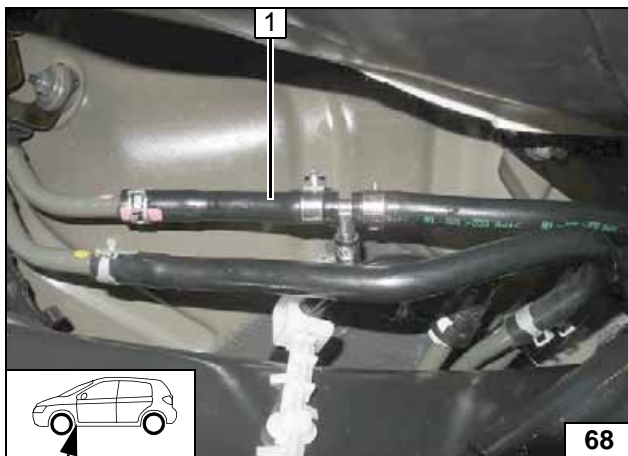


Separate original vehicle fuel hose as shown and insert 8x5x8 fuel standpipe 5.



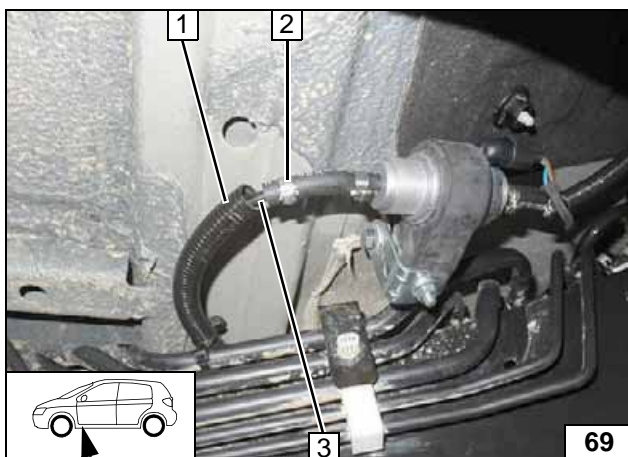
- 1 12 mm dia. clamp [2x]
- 2 90° moulded hose, 10mm dia. clamp [2x]
- 3 Fuel line
- 4 Original vehicle clamp [2x]

Fuel extraction



1 Install original vehicle fuel hose

Fuel extraction

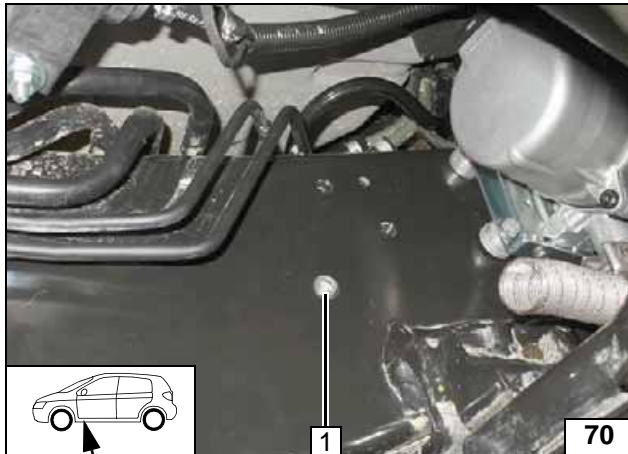
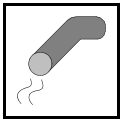


Ensure sufficient distance from neighbouring components, correct if necessary.



- 1 Corrugated tube
- 2 10mm dia. clamp
- 3 Fuel line of fuel standpipe

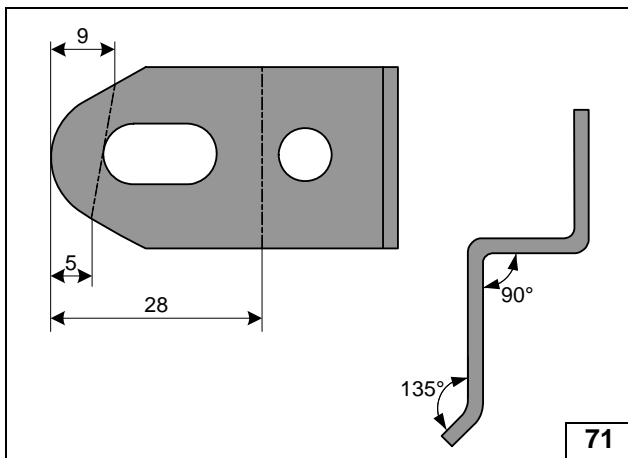
Connecting metering pump



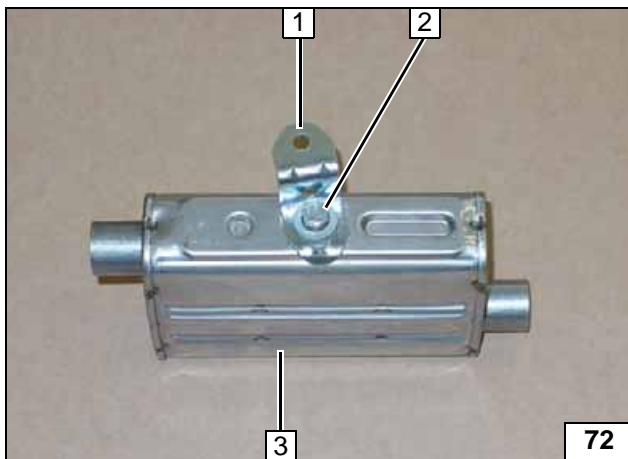
Exhaust Gas

- 1 Rivet nut, original vehicle hole

Installing rivet nut

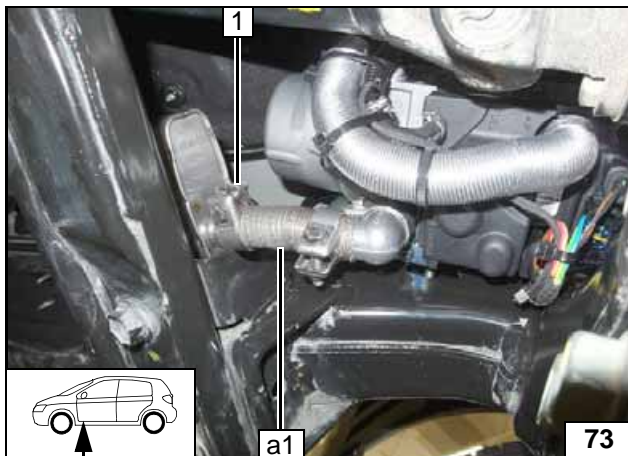


Bending angle bracket



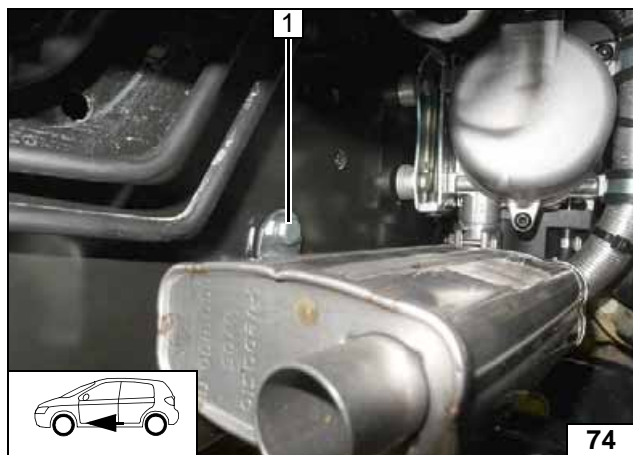
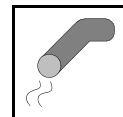
- 1 Angle bracket
- 2 M6x16 bolt, spring lockwasher, large diameter washer
- 3 Silencer

Premounting silencer



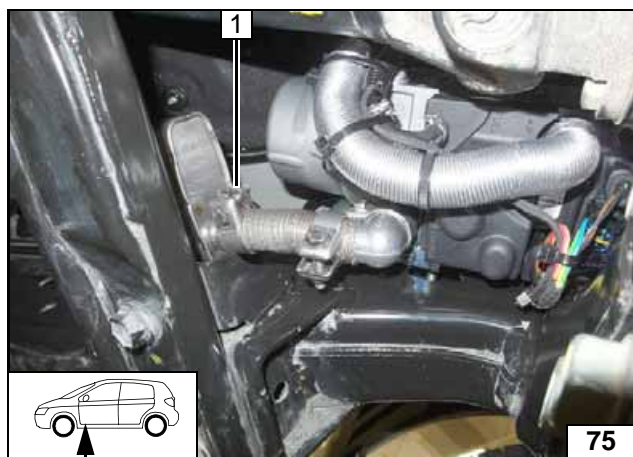
- 1 Position hose clamp

Sliding silencer onto exhaust pipe a1



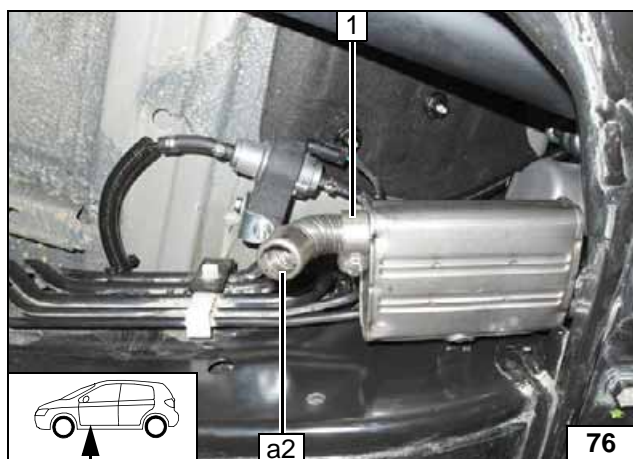
1 M6x20 bolt, spring lockwasher

Installing silencer



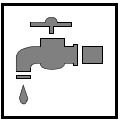
1 Tighten hose clamp

Securing exhaust pipe a1



1 Hose clamp

Installing exhaust pipe a2

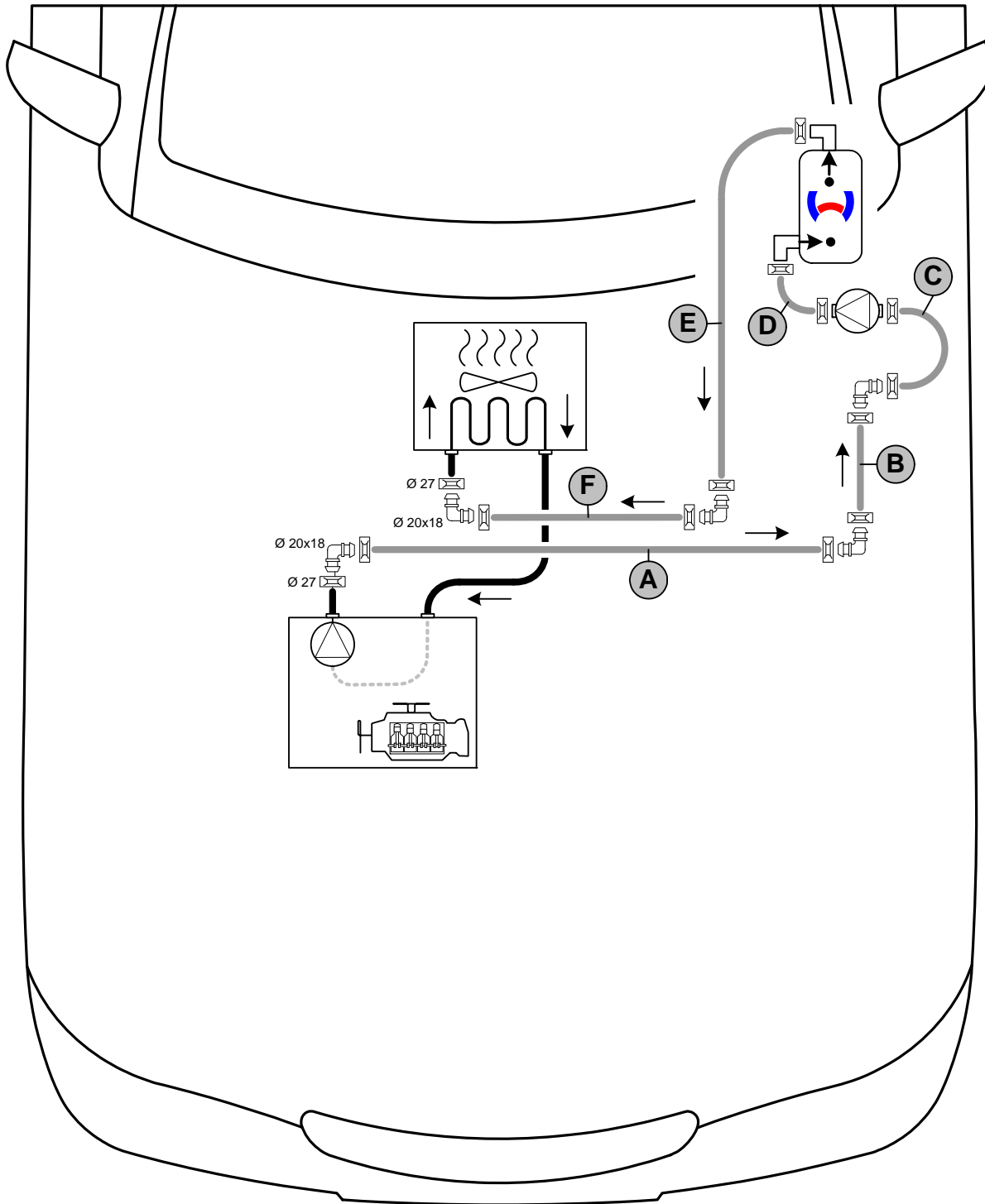


Coolant Circuit





Any coolant running off should be collected in an appropriate container. Route hoses 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.

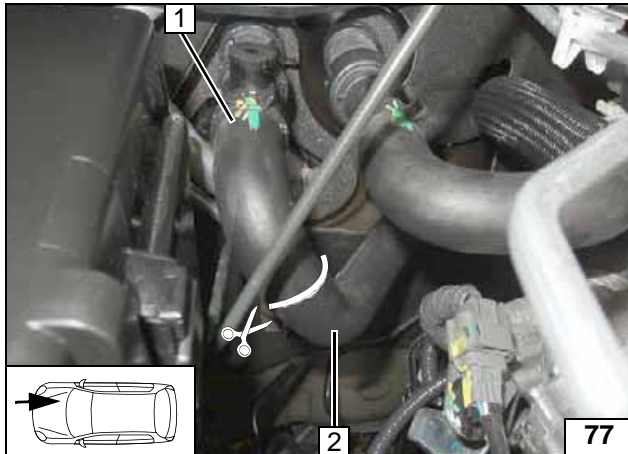
The connection should be modelled on an 'inline' circuit and based on the following diagram:



Hose routing diagram

All spring clips without a specific designation  = 25 mm dia.
 All connecting pipes without a specific designation  = 18x18 dia.



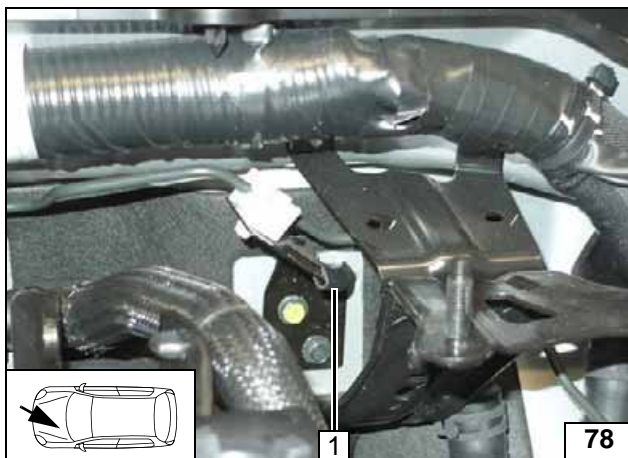


Cut hose of engine outlet / heat exchanger inlet at the markings.



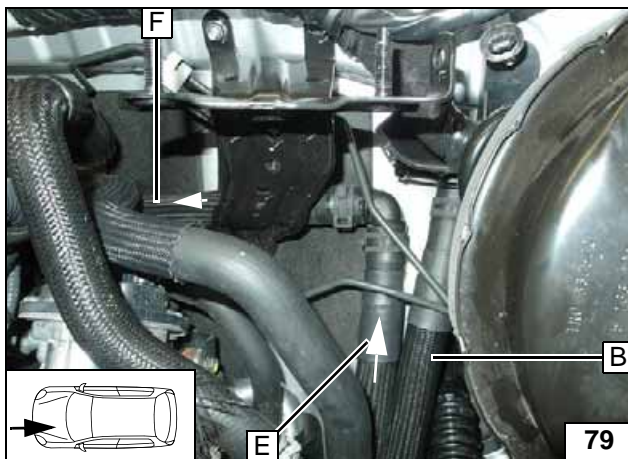
- 1 Hose section of heat exchanger inlet
- 2 Hose section of engine outlet

Cutting point

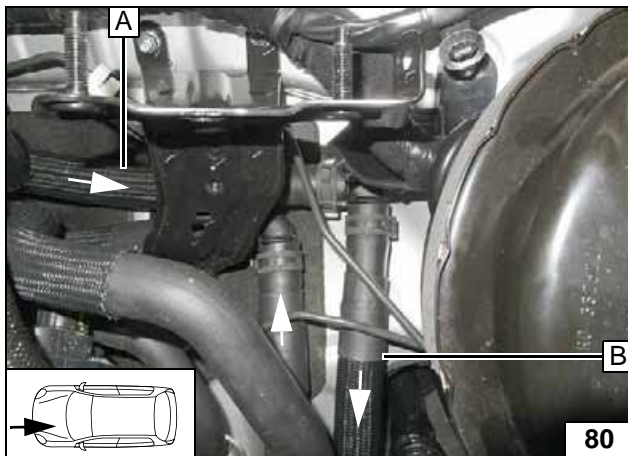


- 1 50 mm edge protection

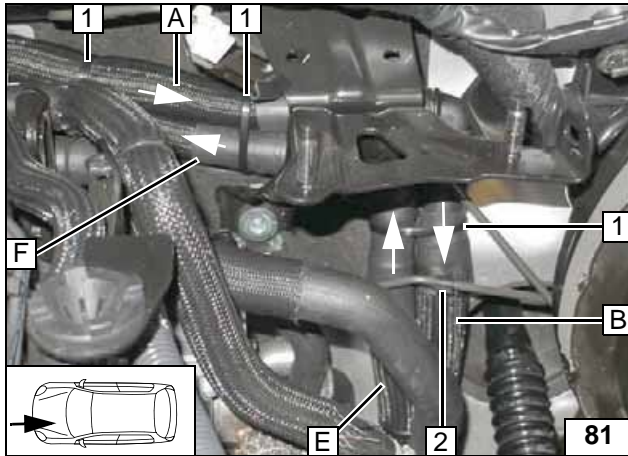
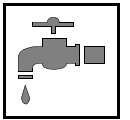
Installing edge protection



Connecting hoses E and F

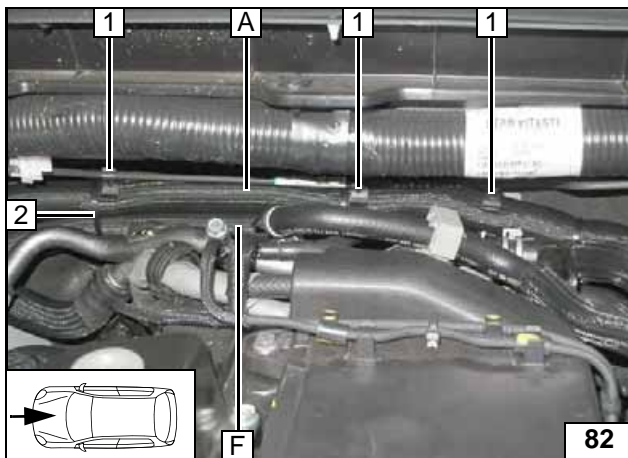


Connecting hoses A and B



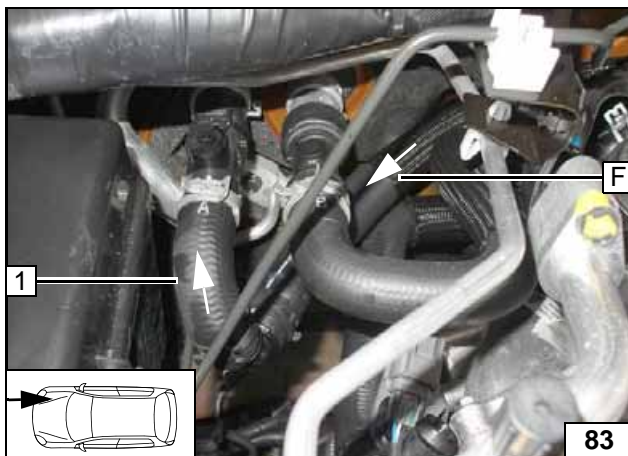
- 1 Cable tie
- 2 25x5 hose bracket

Routing in engine compartment



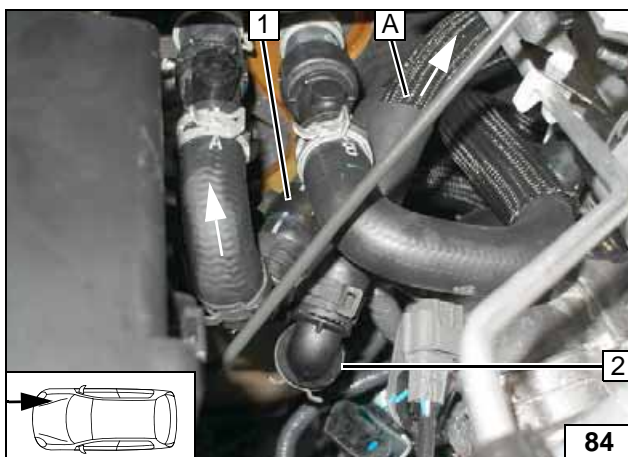
- 1 25x5 mm hose bracket [3x]
- 2 Cable tie

Routing in engine compartment



- 1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



- 1 25x25 hose bracket between hose A and hose F
- 2 Hose section of engine outlet

Connecting engine outlet



Final Work



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

- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications**
- **Program MultiControl CAR, teach Teletstart transmitter**
- **For initial startup and function check, please see installation instructions.**
- **Make settings on the A/C control panel according to the 'Operating Instructions'.**
- **Place the 'Switch off parking heater before refuelling' caution label near the filler neck.**



Operating Instructions for Manual Air-Conditioning Type B

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.

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

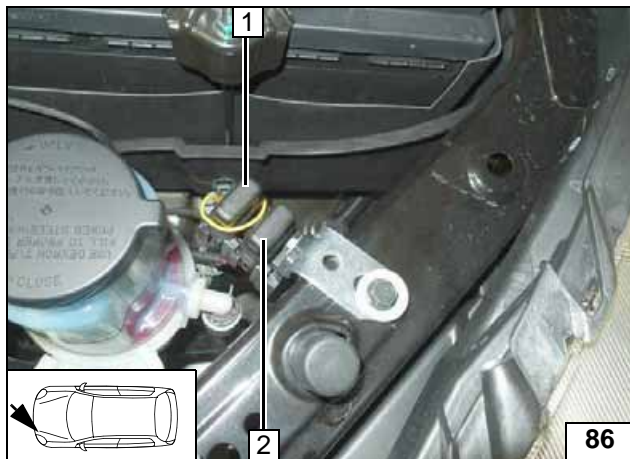
Deactivation instructions can be found in the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

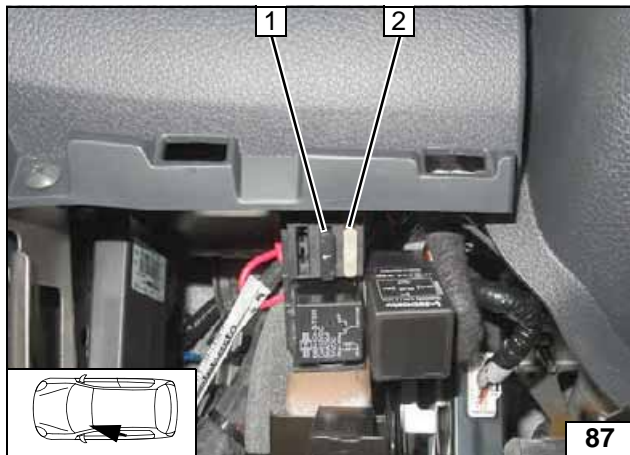


It is not necessary to set the fan speed, it will be automatically set to approx. 1/3.

- 1 Set temperature to "HI"
- 2 Air outlet to windscreen



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



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



A/C control panel

Engine compartment fuses

Passenger compartment fuses



Operating Instructions for Automatic Air-Conditioning

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.

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

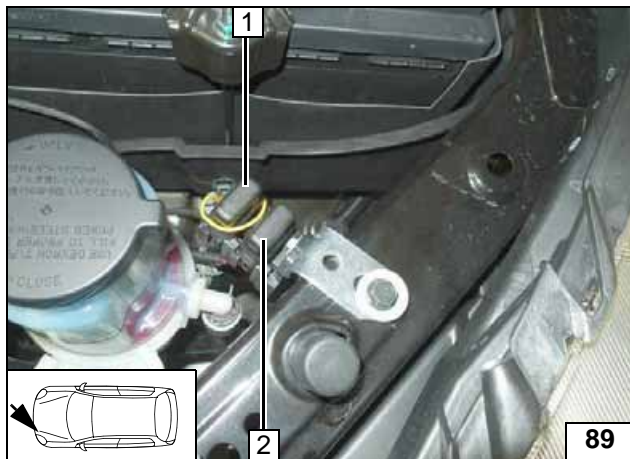
Deactivation instructions can be found in the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

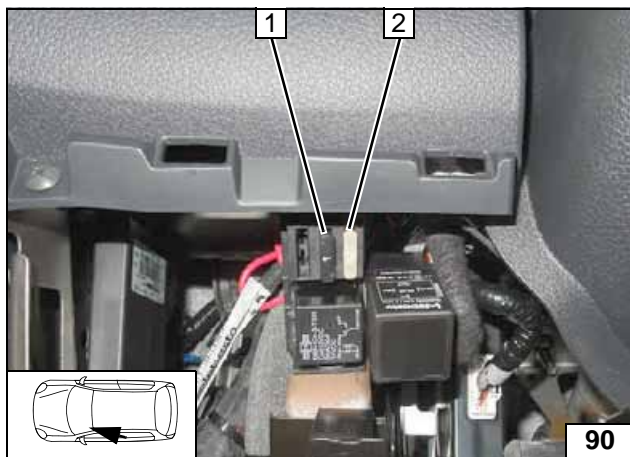


It is not necessary to set the fan speed, it will be automatically set to approx. 1/3.

- 1 Set temperature on both sides to 'HI'
- 2 Air outlet to windscreen



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



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



A/C control panel

Engine compartment fuses

Passenger compartment fuses

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89

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