Water Heater

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Nissan Micra

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Nissan	Micra	K13	e13 * 2007 / 46 * 1111 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.2 P	Petrol	5-speed SG	72	1198	HR12
1.2 P	Petrol	CVT- AG	72	1198	HR12

SG = Manual transmission
AG = Automatic transmission

From Model Year 2011
Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system
Front fog light
Start/Stop
Emission standard Euro 5

Not verified: Passenger compartment monitoring

Total installation time: approx. 9 hours

Nissan Micra

Table of Contents

Necessary Components

- Basic delivery scope *Thermo Top Evo* based on price list
- Installation kit for Nissan Micra 2011 Petrol: **1317911A**
- 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 upon consultation with end customer

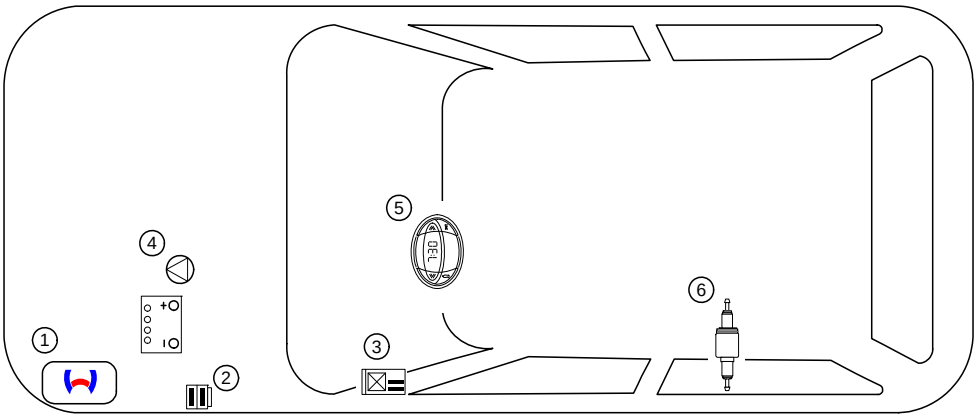
Installation instructions:

- 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. Circulating pump
5. Digital timer
6. 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 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, 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 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.

Notes on Validity

This installation documentation applies to Nissan Micra Petrol 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

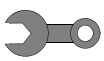
Dimensions
- All dimensions are in mm

Tightening torque values
- Tightening torque values for 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque of 5x15 retaining plate of water connection piece 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.

Mechanical system

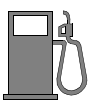


Electrical system

Coolant circuit

Combustion air

Fuel



Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents.

Specific risk due to electrical voltage

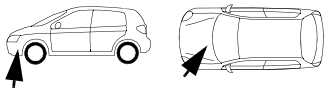
Specific risk of damage to components.

Specific risk of fire or 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



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

Nissan Micra

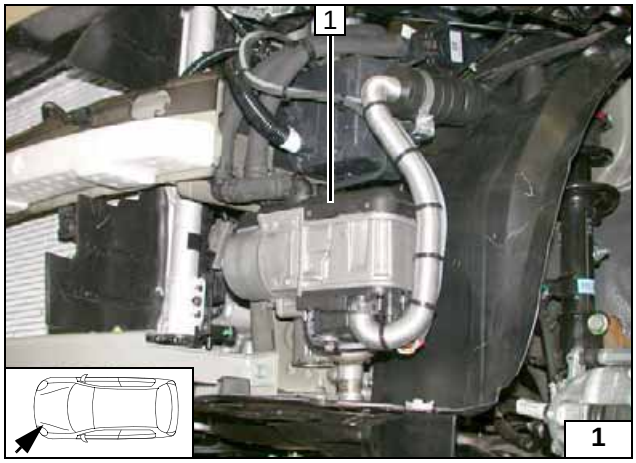
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect and remove the battery.
- Remove the air filter fully.
- Remove the engine control unit with the bracket.
- Detach the central electrical box of the engine compartment and put it aside.
- Remove the left-hand headlight.
- Remove the left-hand wheel well trim.
- Remove the bumper.
- Fold up the rear bench seat.
- Fold back the carpet.
- Open the right-hand tank-fitting service lid.
- Detach the central electrical box of the passenger compartment and put it aside.
- Remove the A/C control panel (only with automatic air-conditioning).

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

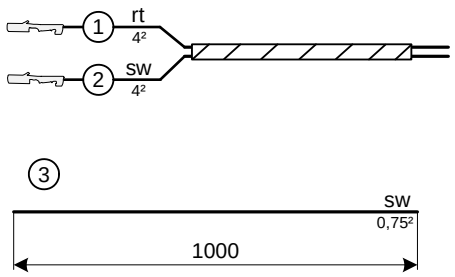
Preparing Electrical System

Wire sections retain their numbering in the entire document.

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

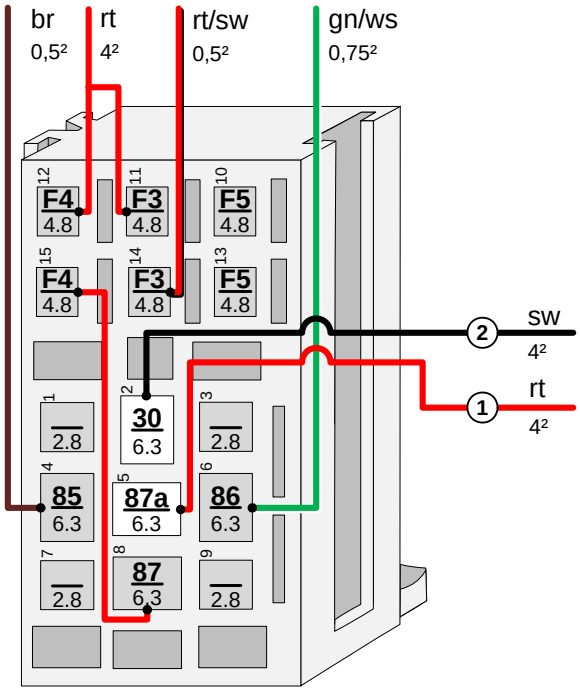
Wire ③ only in case of automatic air-conditioning! Pull into supplied protective sleeving.

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



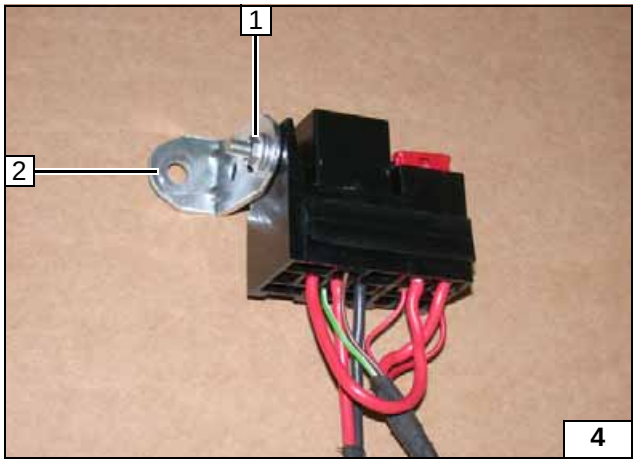
2

Assigning wires



3

Connecting wires to passenger compartment relay and fuse holder



4

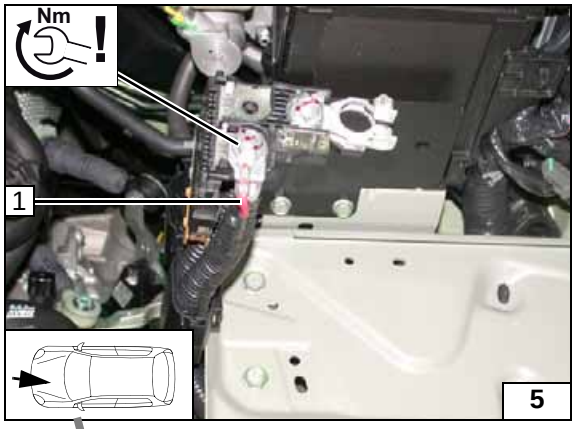
1 M5x16 bolt, washer [2x], nut
2 Angle bracket

Preparing relay and fuse holder of passenger compartment

Electrical System

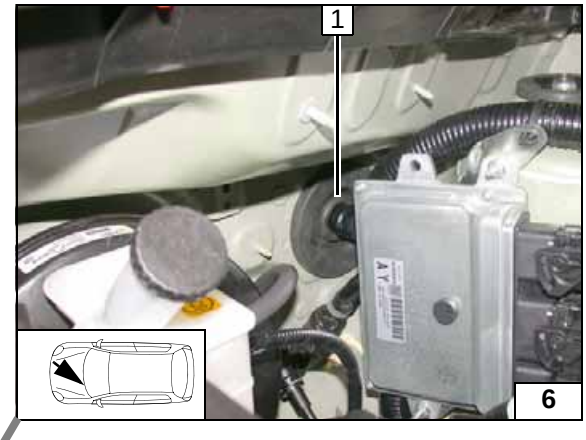
Positive wire

1 Positive wire on positive battery terminal

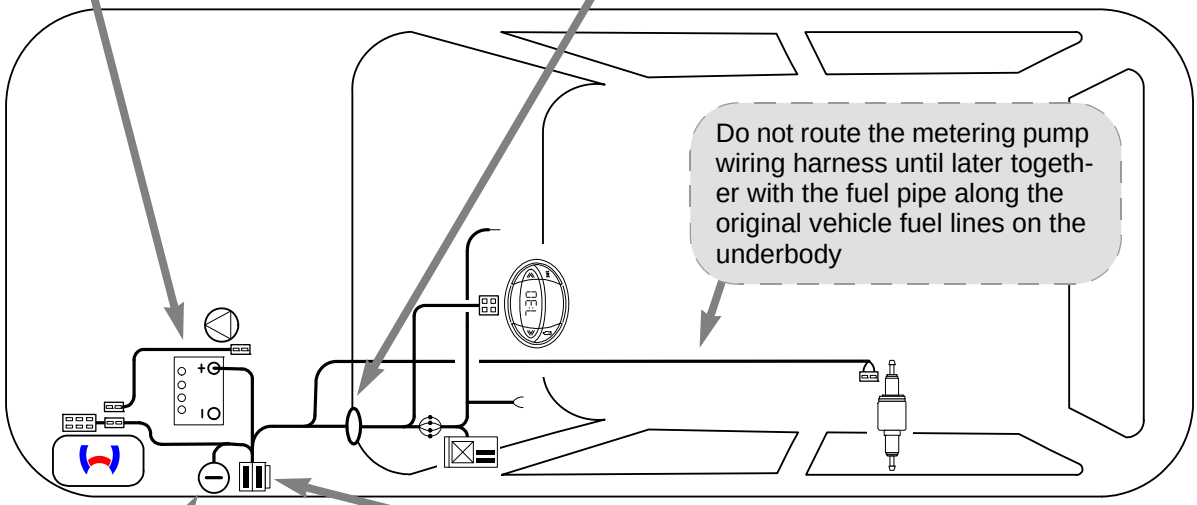


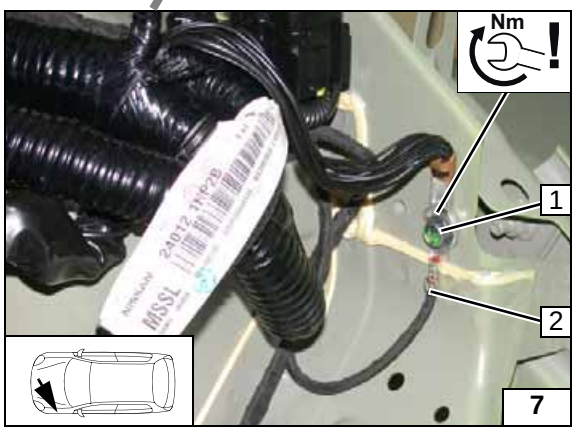
Wiring harness pass through

1 Protective rubber plug



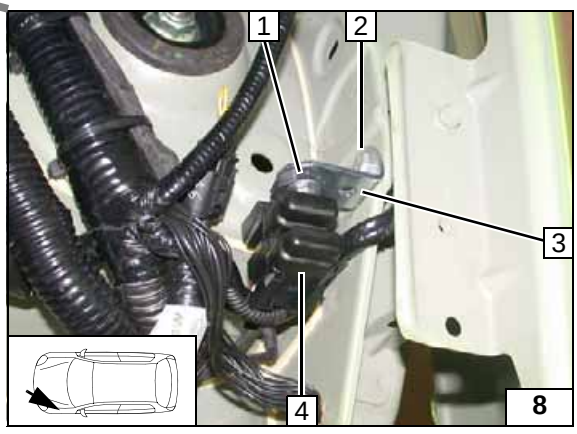
Wiring harness routing diagram





Earth wire

1 Original vehicle earth support point
2 Earth wire

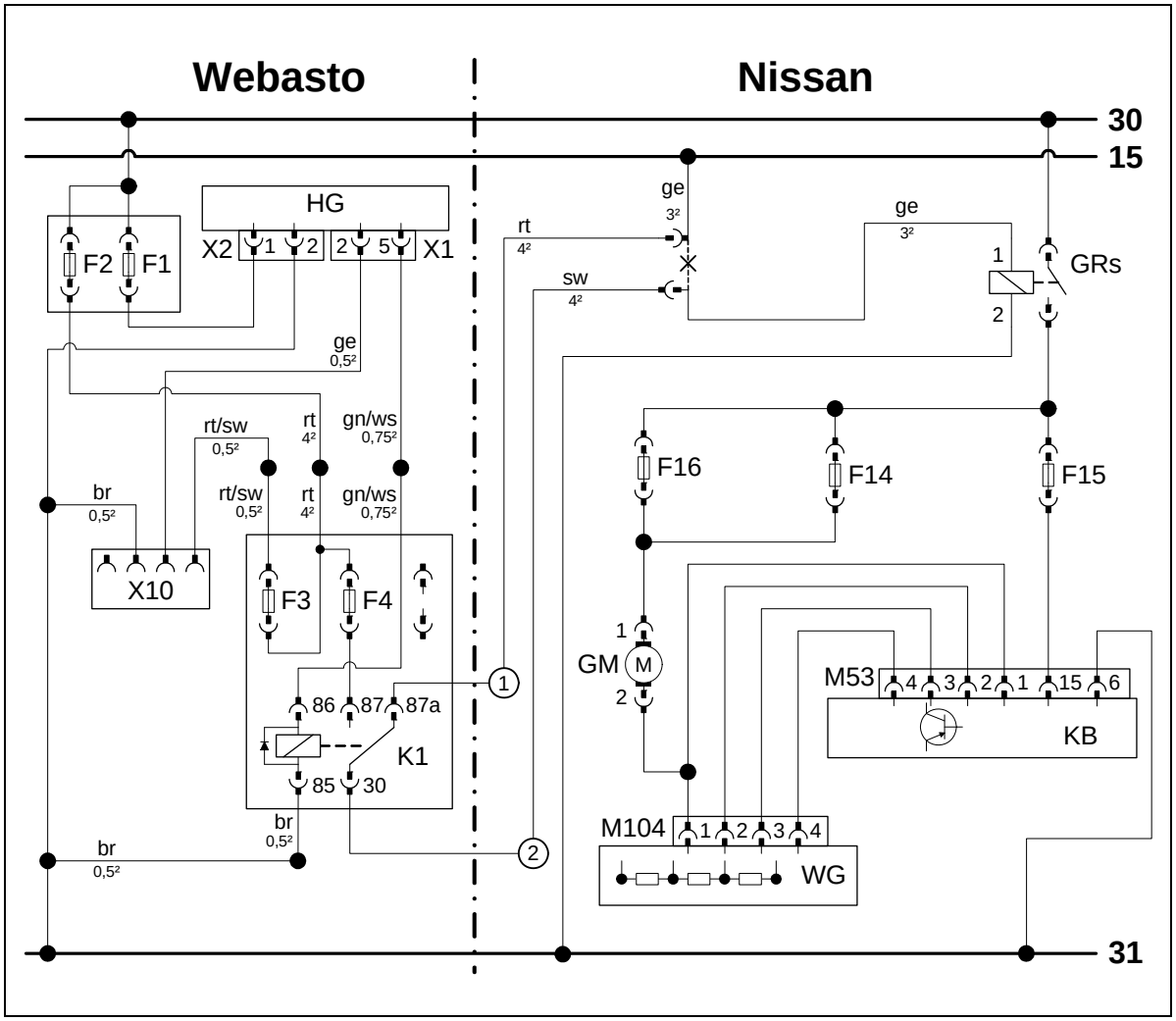


Fuse holder of engine compartment

1 M5x16 bolt, washer [2x], retaining plate of fuse holder, nut
2 M6x20 bolt, large diameter washer, flanged nut, existing hole
3 Angle bracket
4 F1-2 fuse mounted

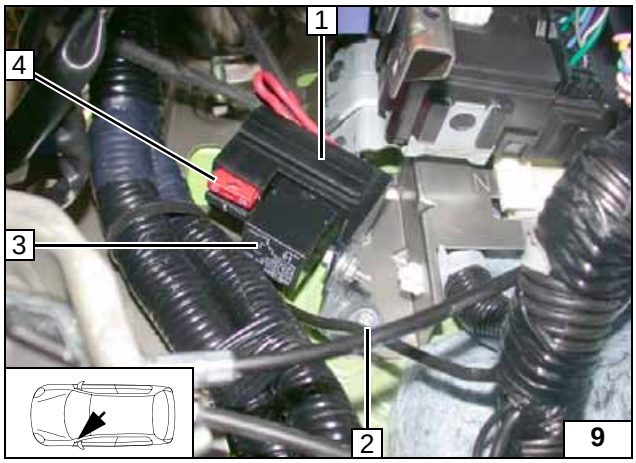
Manual Air-Conditioning Fan Controller

Wiring diagram



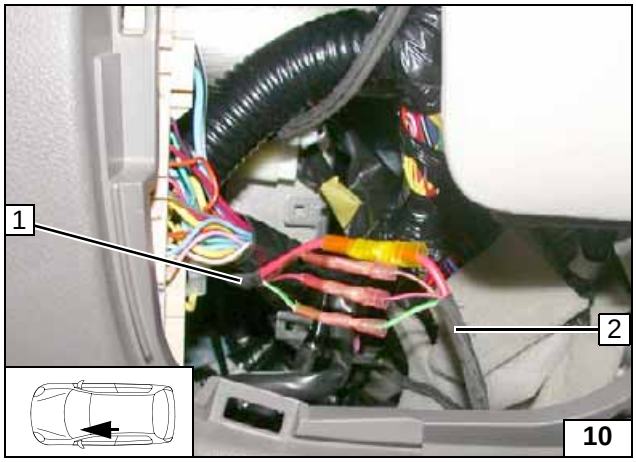
Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	GRs	Fan relay	rt	red
X1	6-pin heater connector	F16	15A fuse	sw	black
X2	2-pin heater connector	F14	15A fuse	ge	yellow
F1	20A fuse	F15	10 A fuse	gn	green
F2	30A fuse	GM	Fan motor	br	brown
X10	4-pin connector of heater control	KB	A/C control panel	ws	white
		M53	15-pin KB connector	bl	blue
F3	1A fuse	WG	Resistor group	gr	grey
F4	10 A fuse	M104	WG connector		
K1	Fan relay				
				X	Cutting point
				Wiring colours may vary.	



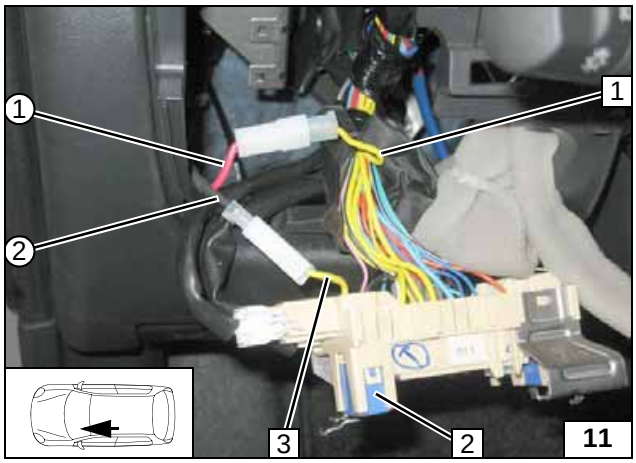
1 Relay and fuse holder of passenger compartment
2 Original vehicle bolt
3 K1 relay
4 10A fuse F4

Installing relay and fuse holder of passenger compartment



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

Connecting wiring harnesses using same colour wires



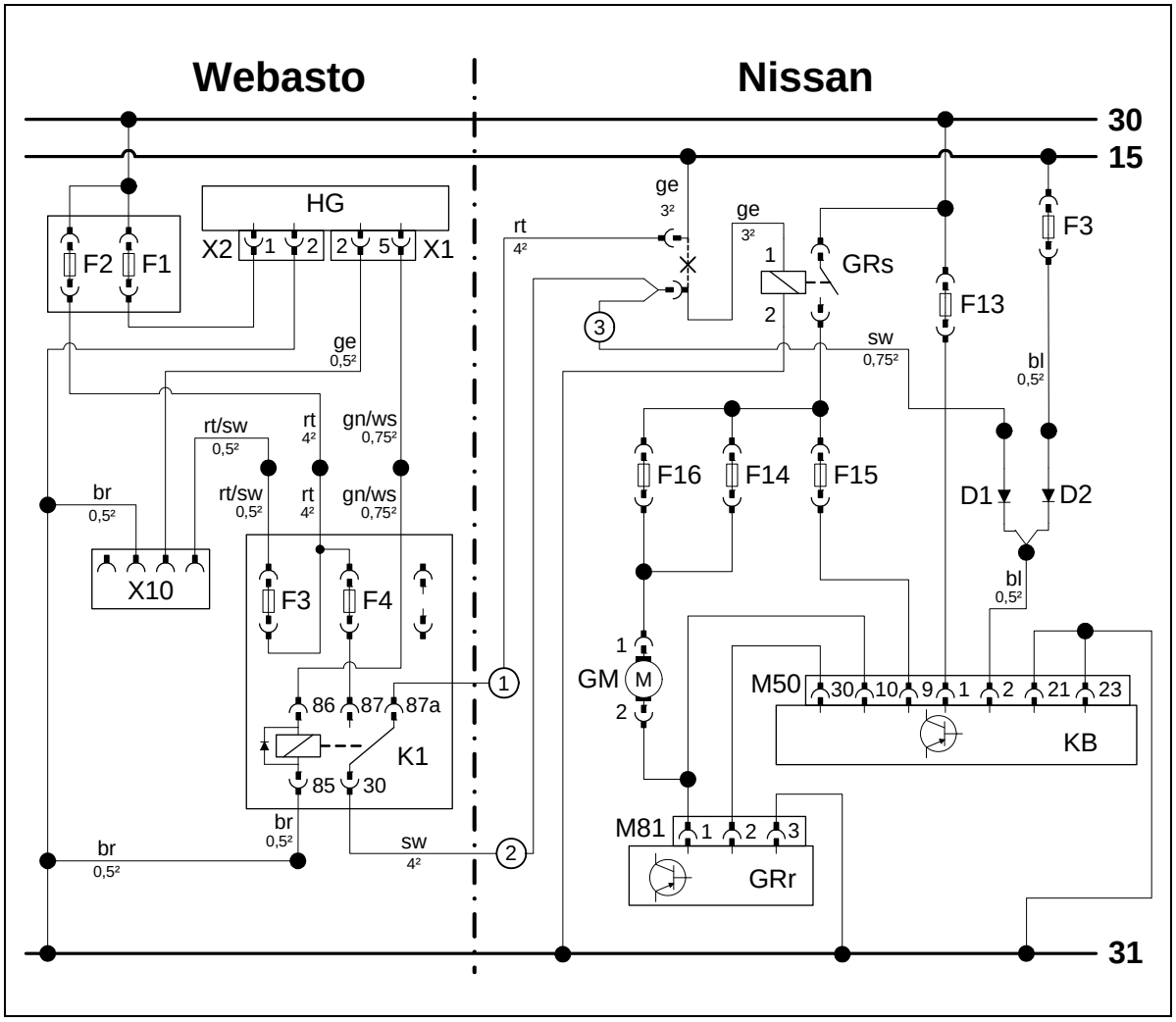
Connect to original vehicle fan relay **2**, pin 1.

1 Yellow (ge) wire of Terminal 15
3 Yellow (ge) wire to fan relay GRs/1
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30

Connecting the fan relay

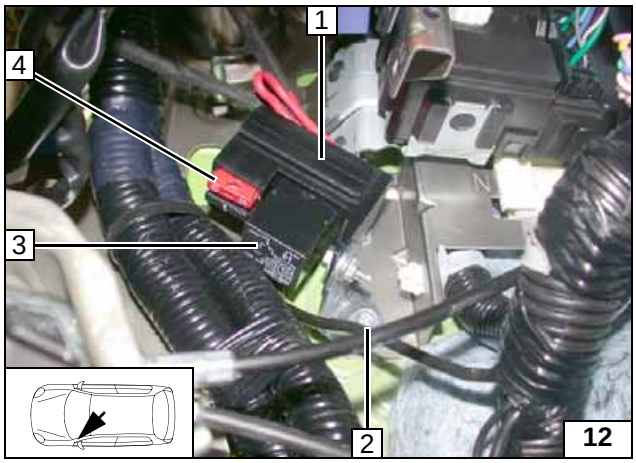
Automatic Air-Conditioning Fan Controller

Wiring diagram



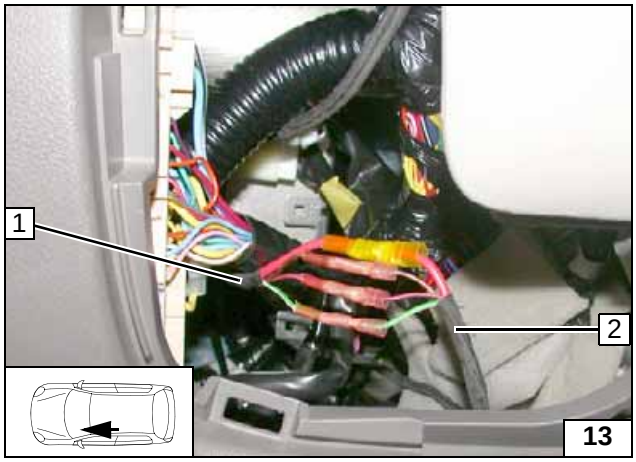
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F3	10 A fuse	rt	red
X1	6-pin heater connector	GRs	Fan relay	sw	black
X2	2-pin heater connector	F13	10 A fuse	ge	yellow
F1	20A fuse	F16	15A fuse	gn	green
F2	30A fuse	F14	15A fuse	br	brown
X10	4-pin connector of heater control	F15	10 A fuse	ws	white
		GM	Fan motor	bl	blue
F3	1A fuse	KB	A/C control panel	gr	grey
F4	10 A fuse	M50	40-pin KB connector		
K1	Fan relay	GRr	Fan controller		
D1	3A diode	M81	Connector GRr		
D2	3A diode			**X**	Cutting point
				Wiring colours may vary.	

Legend



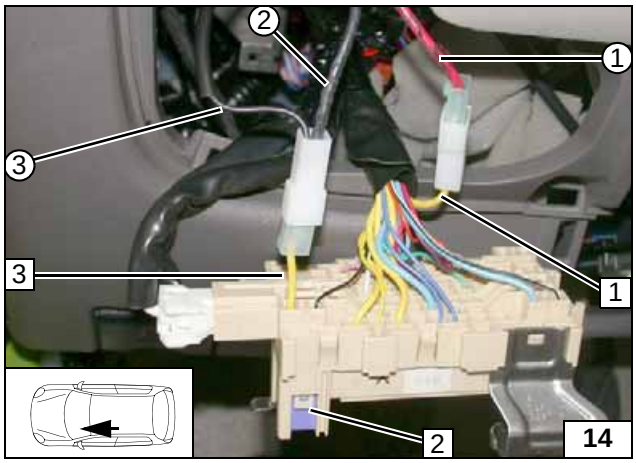
1 Relay and fuse holder of passenger compartment
2 Original vehicle bolt
3 K1 relay
4 10A fuse F4

Installing relay and fuse holder of passenger compartment



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

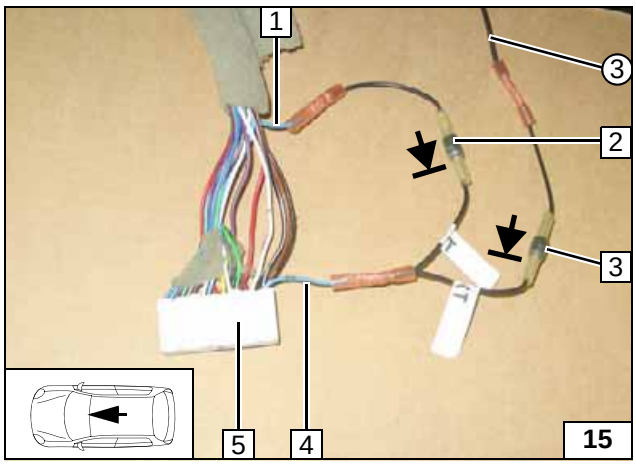
Connecting wiring harnesses using same colour wires



Connect to original vehicle fan relay **2** Pin 1. Route additional black (sw) wire ③ to A/C control panel.

① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30
1 Yellow (ge) wire of Terminal 15
3 Yellow (ge) wire to fan relay GRs/1

Connecting the fan relay



Connection to 40-pin connector M50 **5** from A/C control panel.
Pay attention to the diode direction of flow.

1 Blue (bl) wire from fuse F3
2 Diode D2
3 Diode D1
4 Blue (bl) wire, Pin 2

Wire-side view:

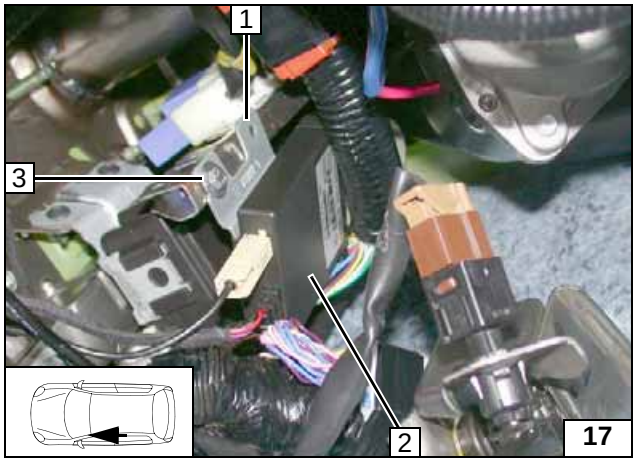
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Connecting A/C control panel

Digital Timer

1 Digital timer

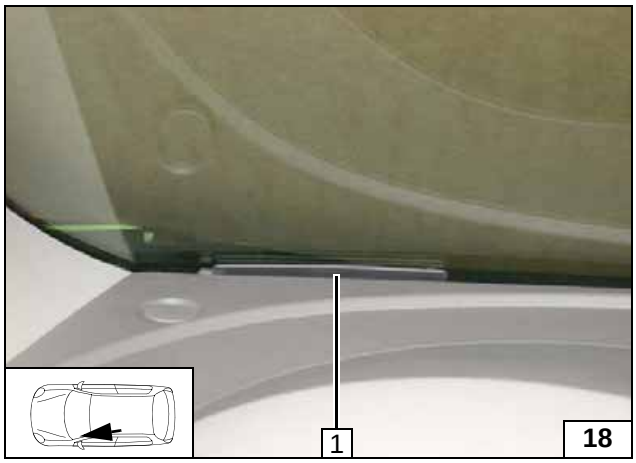
Installing digital timer



Remote Option (Telestart)

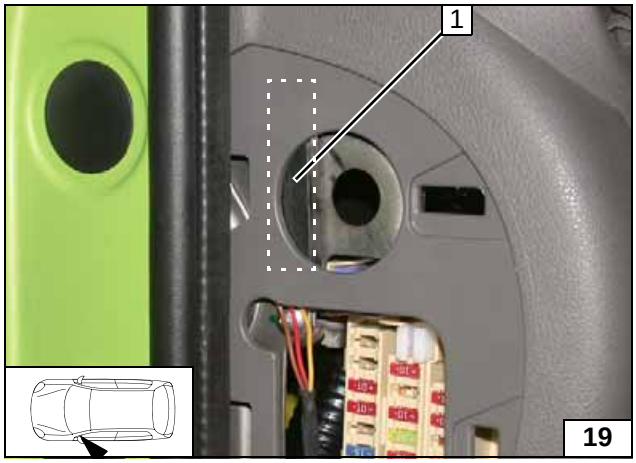
1 Bracket
2 Receiver
3 M5x16 bolt, large diameter washer, existing threaded hole

Installing receiver



1 Antenna

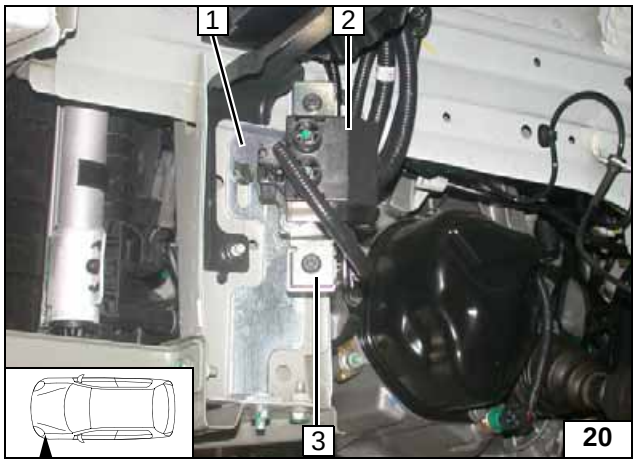
Mounting antenna



Temperature sensor T100 HTM

Fasten temperature sensor **1** with adhesive tape.

Mounting temperature sensor

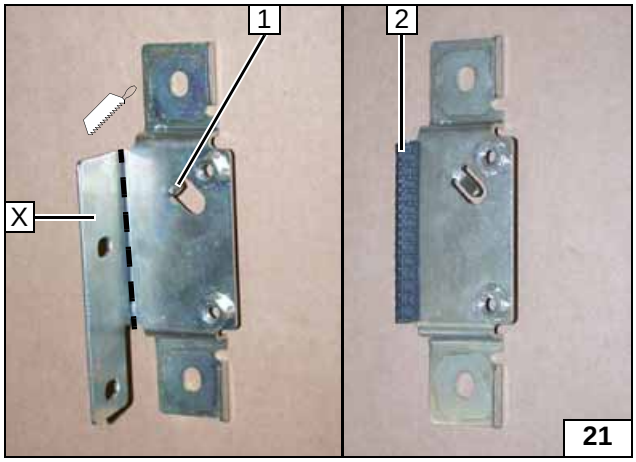


Preparing Installation Location

Loosen magnetic switch **2**, remove and discard original vehicle bracket **1**.

3 Retaining plate (will be reused)

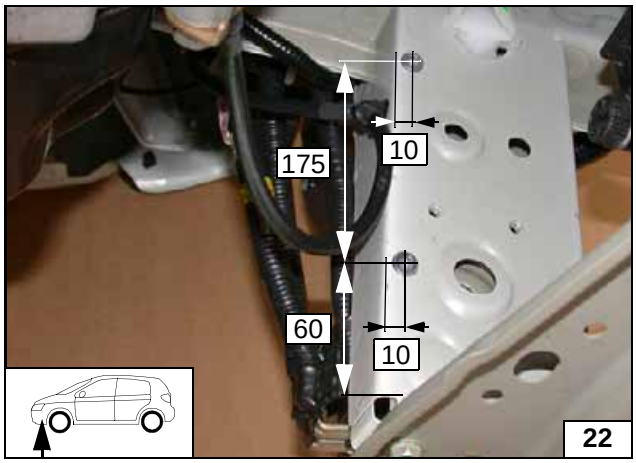
Magnetic switch



Cut retaining plate along the line, discard section **X**. Bend twist protection **1** back by 90° (see adjacent image).

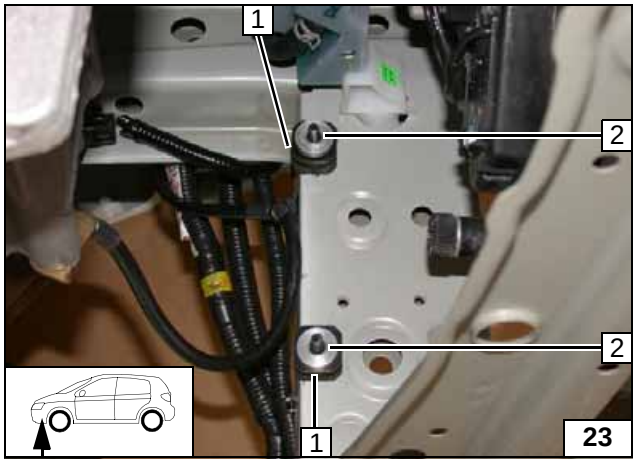
2 60mm long edge protection

Processing bracket



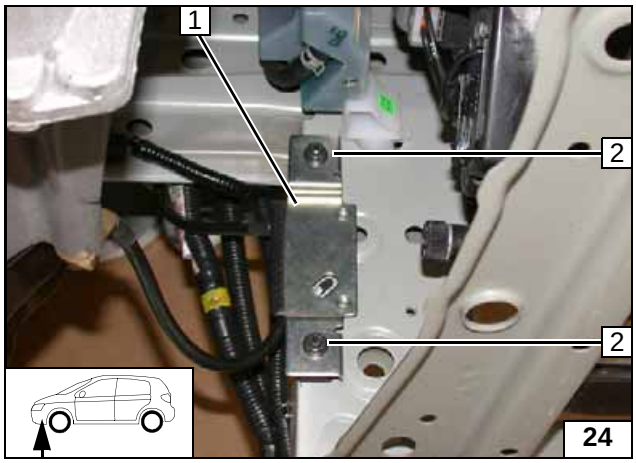
Copy hole pattern, drill 9.1mm dia., install rivet nut [2x]

Installing rivet nut



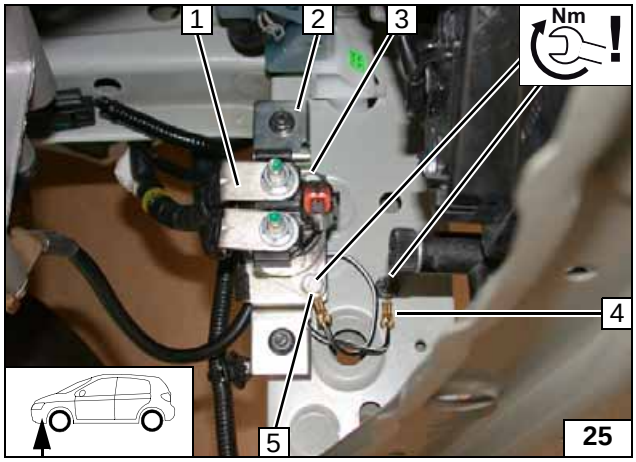
Screw in original vehicle silent block **1** with short thread.

1 Original vehicle silent block
2 5mm shim



1 Original vehicle bracket
2 Original vehicle flanged nut

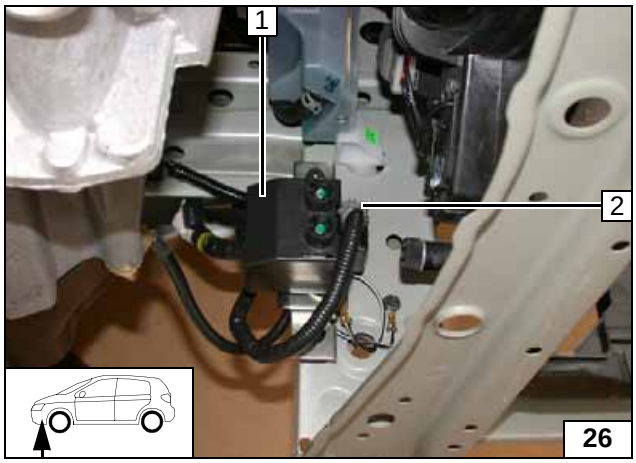
Installing bracket



Attach magnetic switch **1** to bracket **2**.

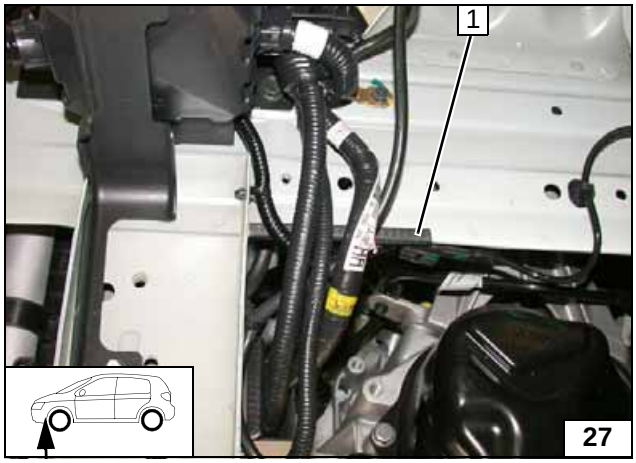
3 Original vehicle bolt
4 Earth strap, threaded hole, original vehicle bolt
5 Original vehicle bolt, earth strap

Installing magnetic switch



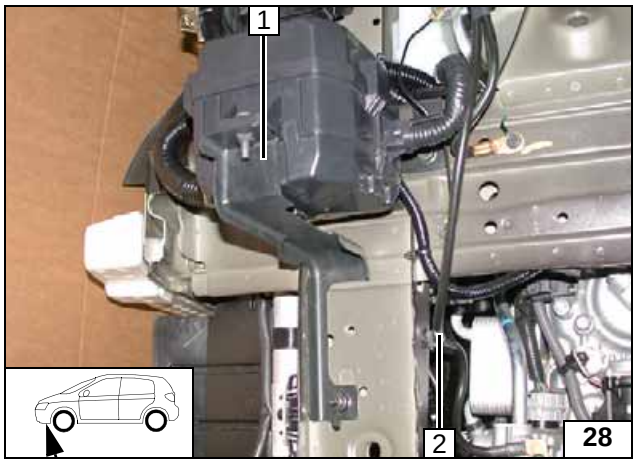
Install cover cap **1** and connector **2**

Cover cap



1 100mm long edge protection

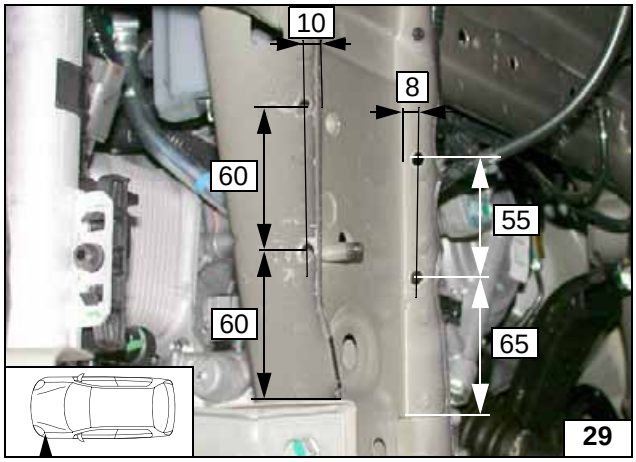
Edge protection



Remove original vehicle bracket, will later be reinstalled

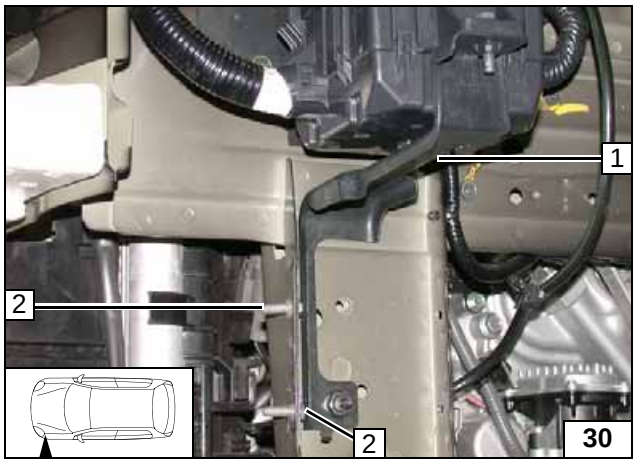
2 Loosen cable tie with hole

Removing bracket



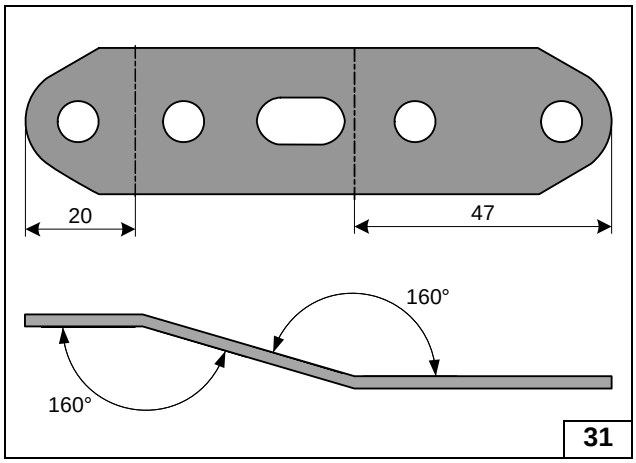
Copy hole pattern, drill 7mm dia. hole [4x]

Drilling hole pattern



1 Original vehicle bracket
2 M6x20 bolt, pin lock [2x]

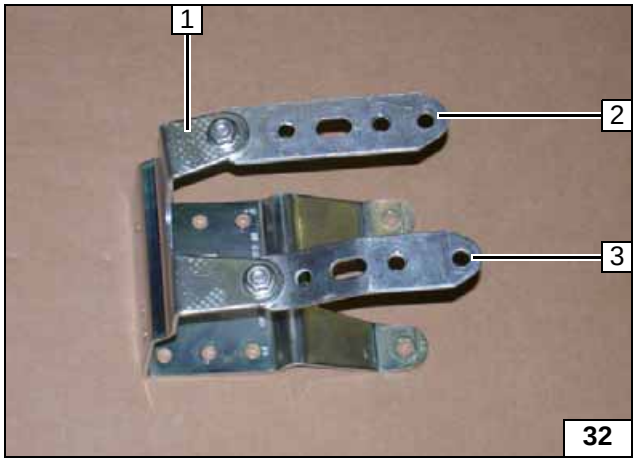
Installing bracket



Preparing Heater

Bend perforated bracket as shown in the sketch.

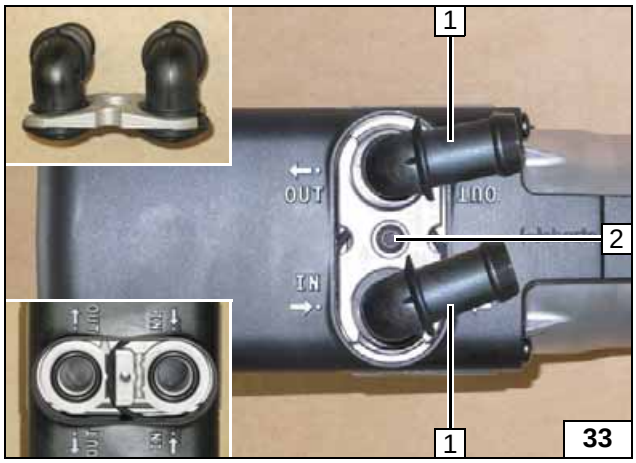
Bending perforated bracket



Shape bracket in accordance with the template.

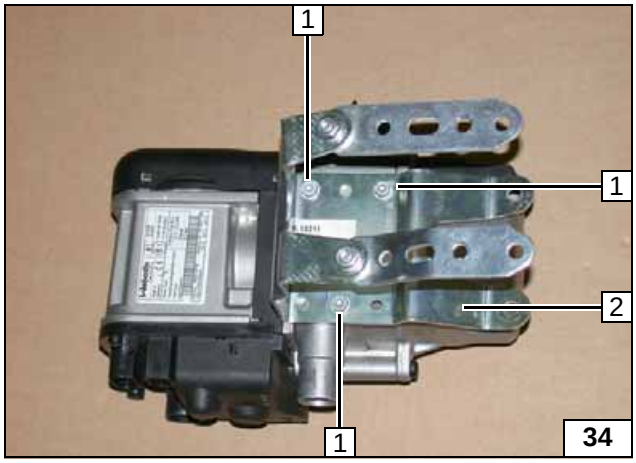
1 Bracket
2 Perforated bracket, M6x12 bolt, flanged nut
3 Bended perforated bracket, M6x12 bolt, flanged nut

Premounting bracket



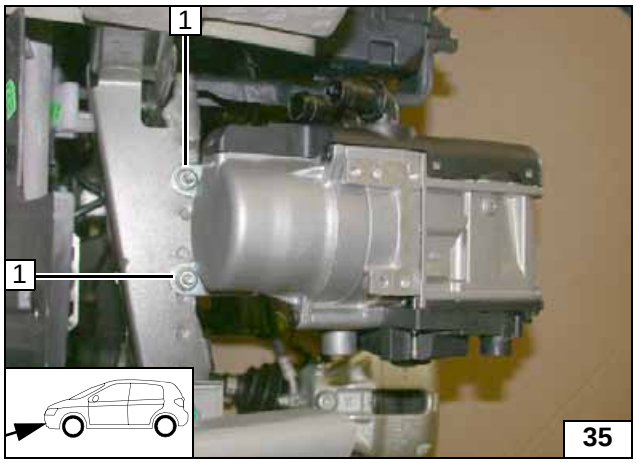
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



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

Installing bracket



Installing Heater

Mount heater loosely!

1 Premounted bolt, flanged nut

Installing heater

Tighten all loose bolt connections.

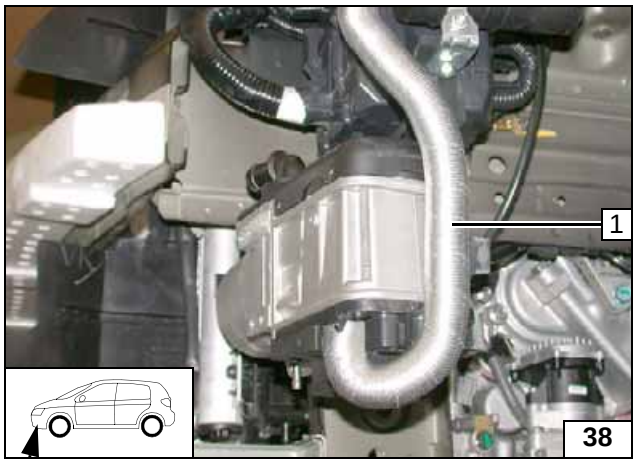
1 M6x20 bolt, flanged nut

Installing heater

1 Earth strap, original vehicle clip, perforated bracket

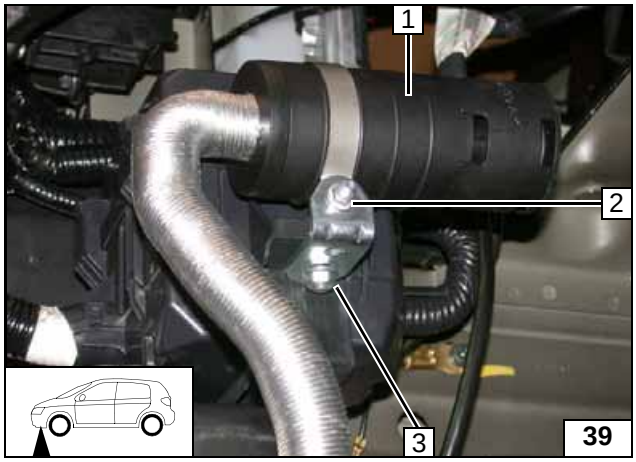
Earth strap

Combustion Air



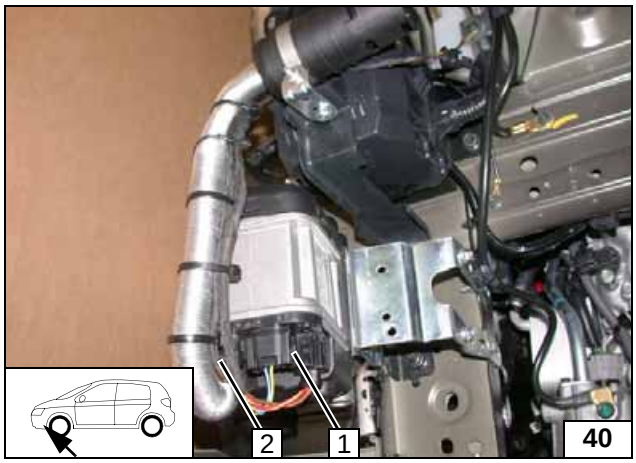
1 Combustion air pipe

Installing combustion air pipe



1 Silencer
2 M5x16 bolt, 51mm dia. clamp, angle bracket, flanged nut
3 Angle bracket, flanged nut, original vehicle bolt

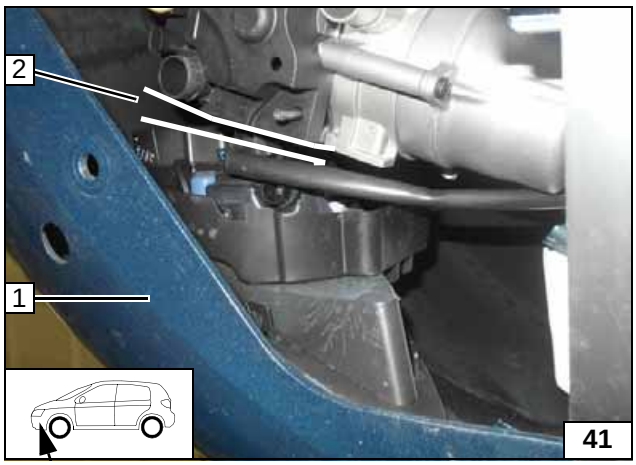
Mounting silencer



1 Connector for wiring harness of heater [2x]
2 Connector of circulating pump wiring harness

Routing and fastening using cable ties is conducted later.

Installing heater wiring harness



Install bumper **1** on a trial basis and check the distance (at least 15mm) between heater and front fog lights in area **2**, correct if necessary!

Installing heater wiring harness

Fuel

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

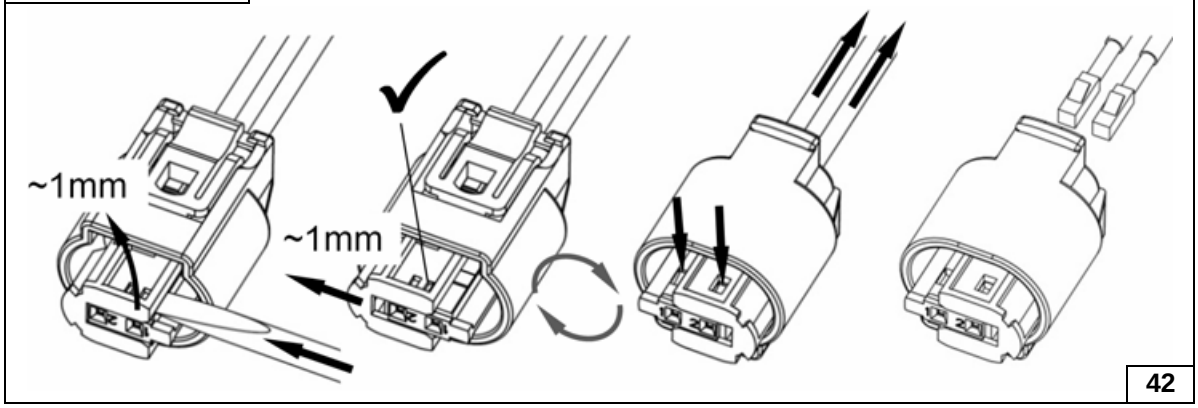
Catch any fuel running off in an appropriate container.

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.

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

Removing metering pump connector

Connector X7



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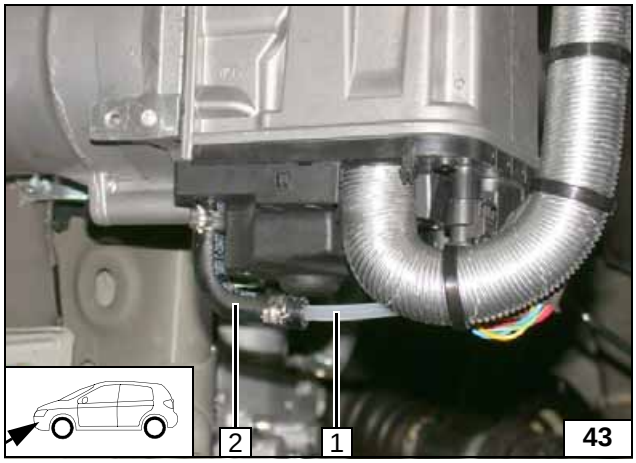
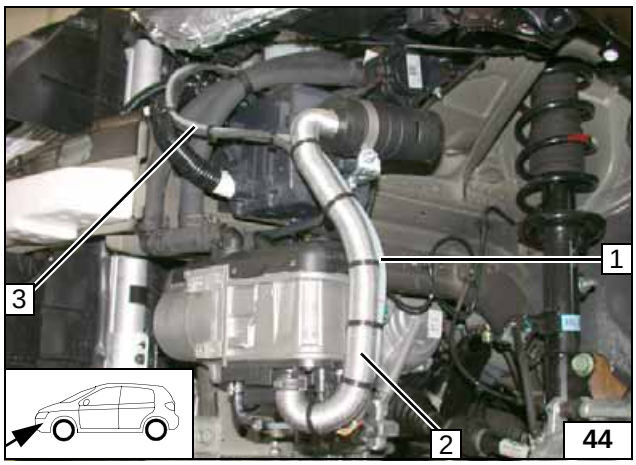
Connecting heater



43

1 Fuel line
2 90° moulded hose, 10 mm dia. clamp [2x]

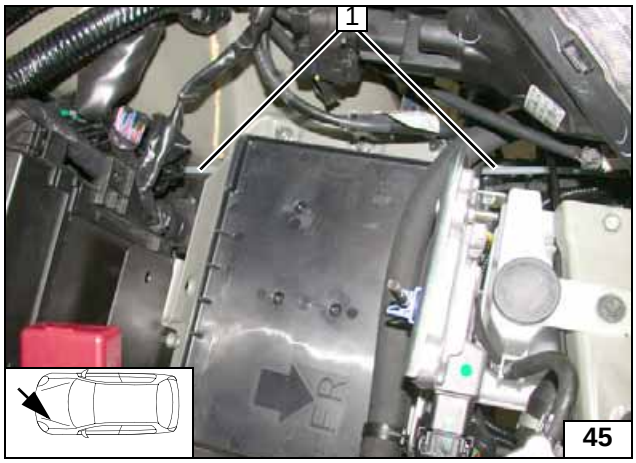
Routing lines



44

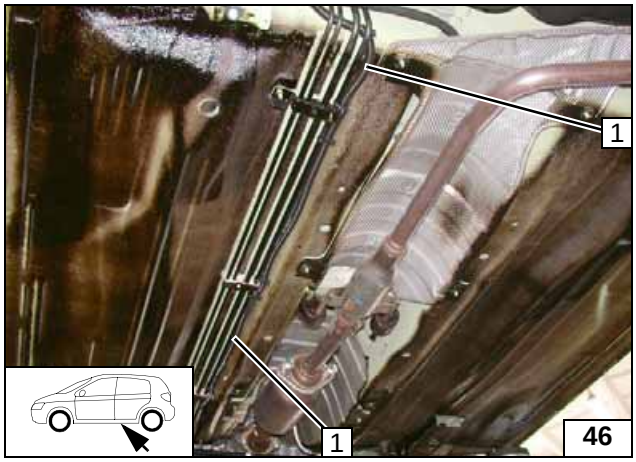
Route wiring harness of metering pump, wiring harness of heater, wiring harness of circulating pump and fuel line as shown in the image and secure using cable ties.

1 Wiring harness of heater, circulating pump
2 Intake pipe
3 Wiring harness of metering pump, fuel line



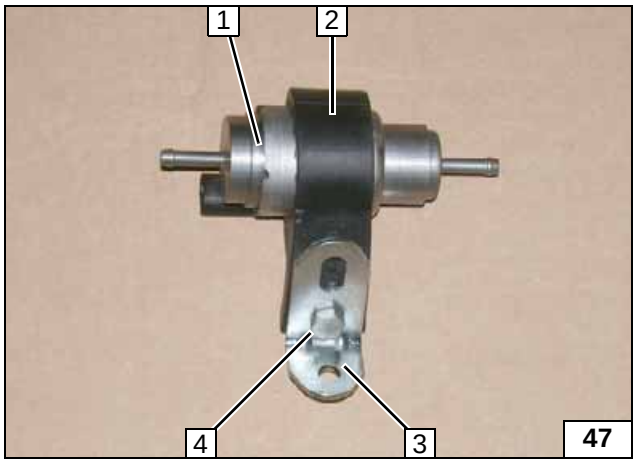
Route wiring harness of metering pump and fuel line **1** to underbody!

Routing lines



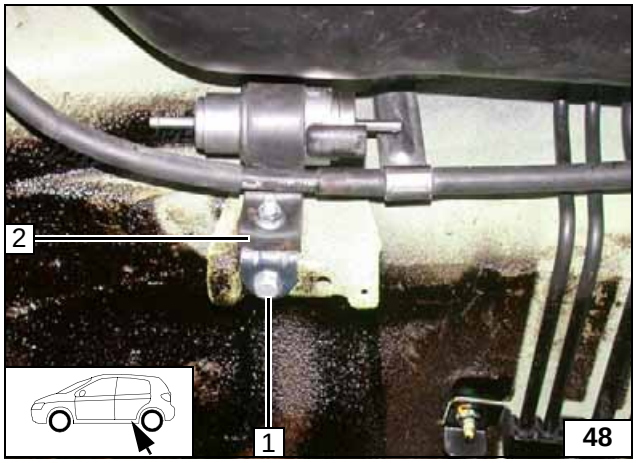
Route wiring harness of metering pump and fuel line **1** in corrugated tube to installation location of metering pump.

Routing lines



1 Metering pump
2 Metering pump mounting bracket
3 Angle bracket
4 M6x25 bolt, support angle bracket, flanged nut

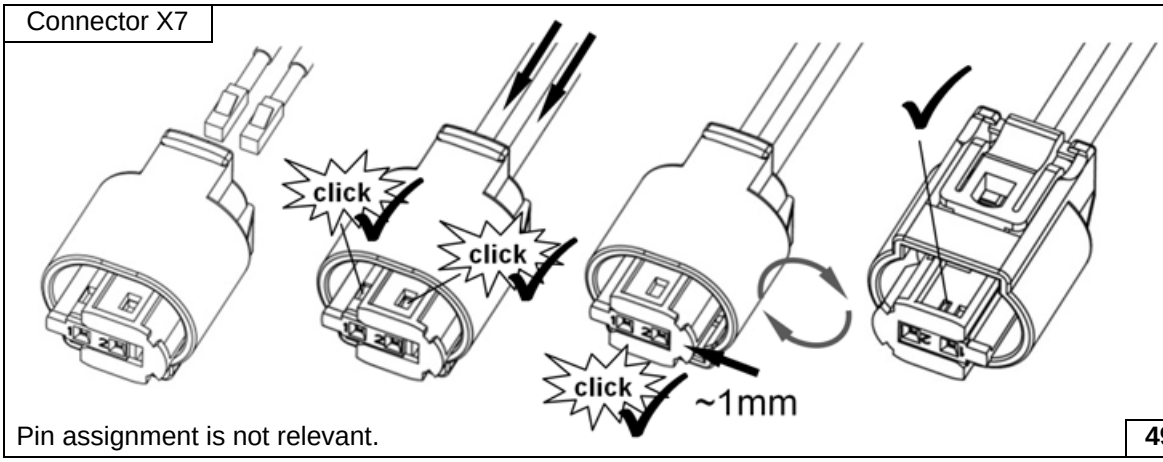
Premounting metering pump



1 Mount M6x20 bolt, flanged nut, existing hole
2 Angle bracket

Installing metering pump

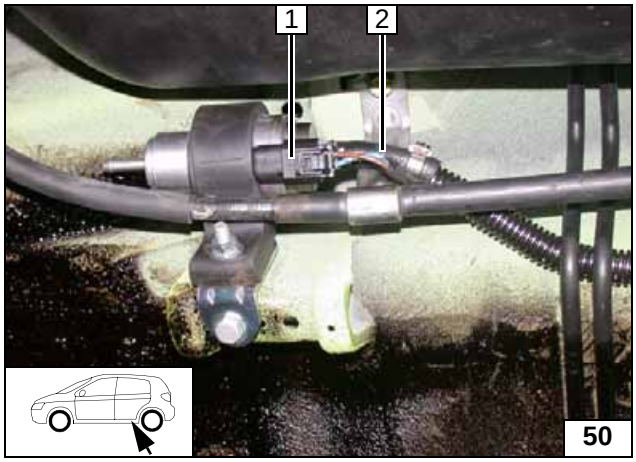
Connector X7



Pin assignment is not relevant.

49

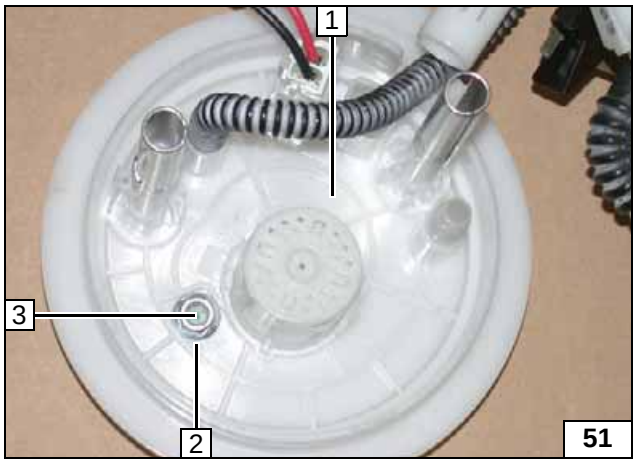
Completing metering pump connector



50

1 Wiring harness of metering pump, connector mounted
2 Fuel line of heater, hose section, 10 mm dia. clamp [2x]

Connecting metering pump

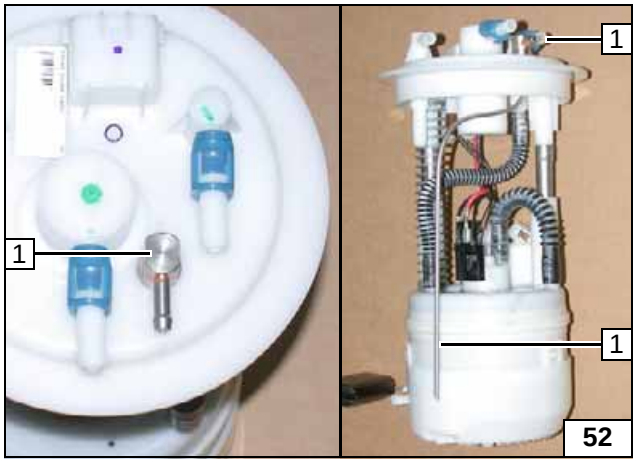


51

Remove and dismantle fuel-tank sending unit **1** according to manufacturer's instructions.

2 Mount M6 flanged nut
3 Copy hole pattern, 6 mm dia. hole

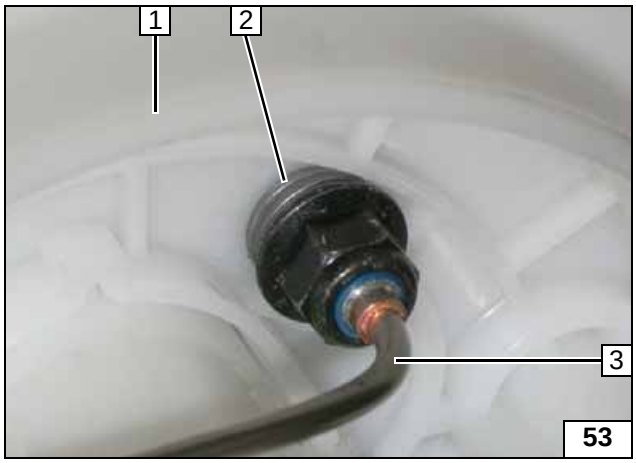
Fuel extraction



52

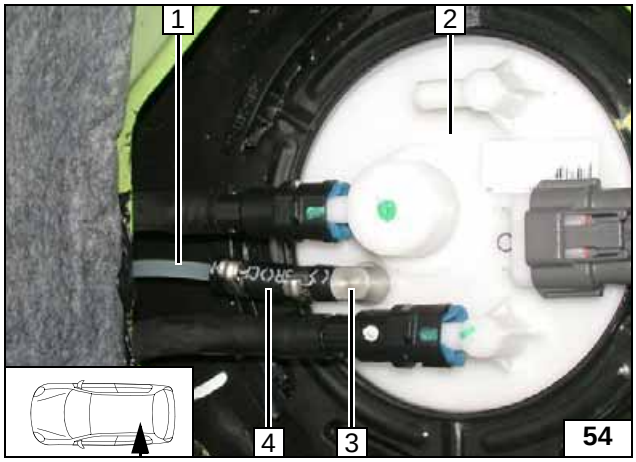
Shape fuel standpipe **1** according to template and cut to length. During installation, insert three washers according to the following figure as height compensation.

Installing fuel standpipe



1 Fuel-tank sending unit
2 Washer with outer dia. d_a =11.8mm [3x]
3 Fuel standpipe

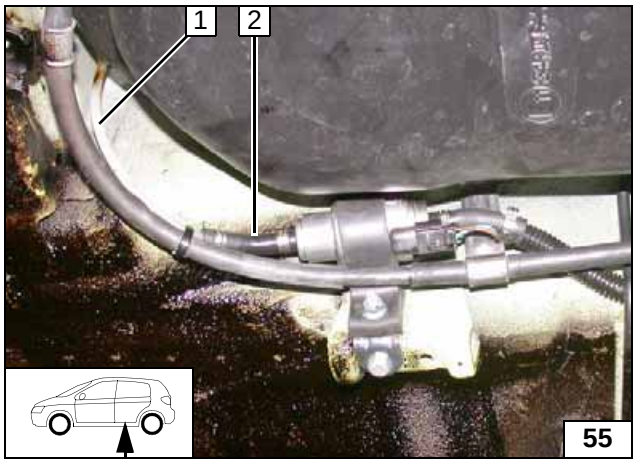
Installing fuel stand-pipe



Install fuel-tank sending unit **2** in accordance with manufacturer's instructions.

1 Fuel line
3 Fuel standpipe
4 Moulded hose, 10 mm dia. clamp [2x]

Connect-ing fuel line



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

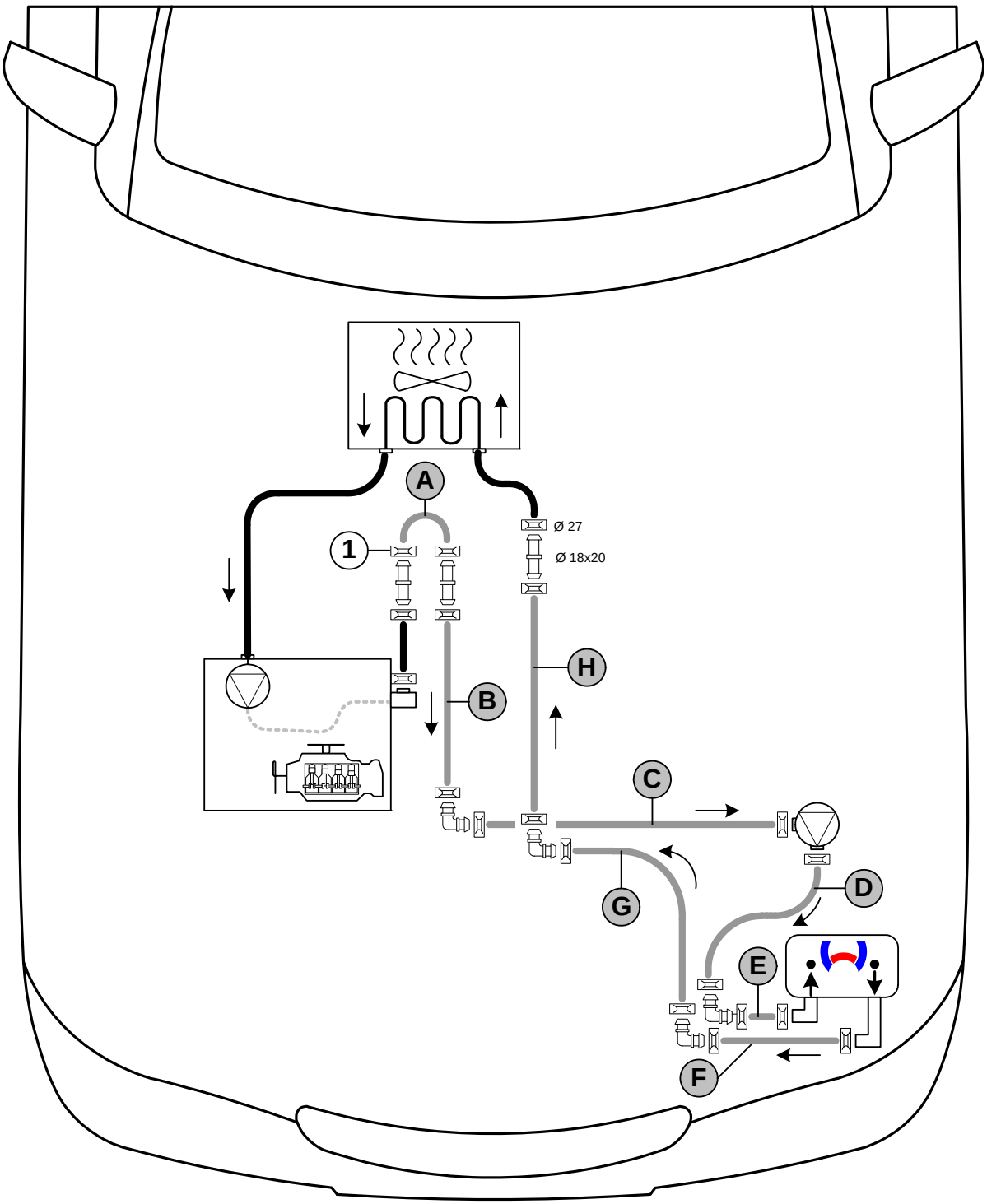
1 Fuel line of fuel standpipe
2 Hose section, 10 mm dia. clamp [2x]

Connect-ing meter-ing pump

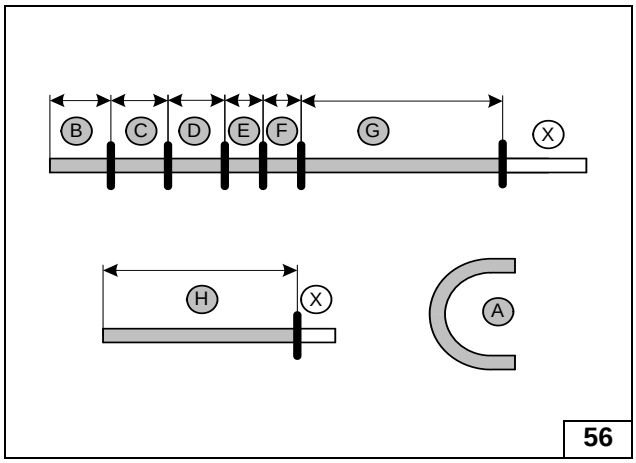
Coolant Circuit of CVT Automatic Transmission

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 no other hoses can be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be modelled on an "inline" circuit and based on the following diagram:

Hose routing diagram



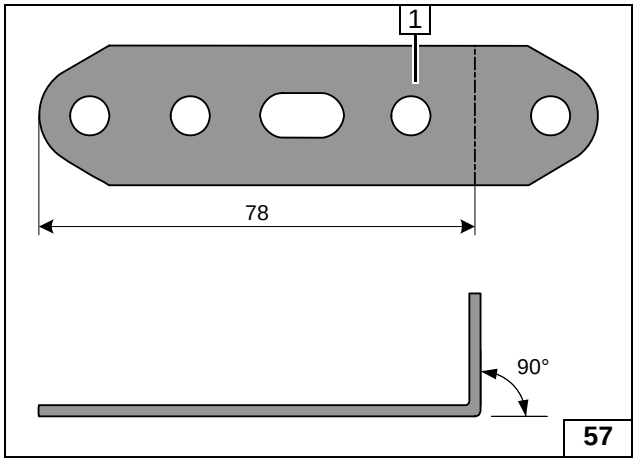
All spring clips without a specific designation = 25mm dia. **1** = Original vehicle spring clip .
Connecting pipe = 18x18mm dia.!



Discard section **X**.
Hose **A** = 180°, 18mm dia. moulded hose

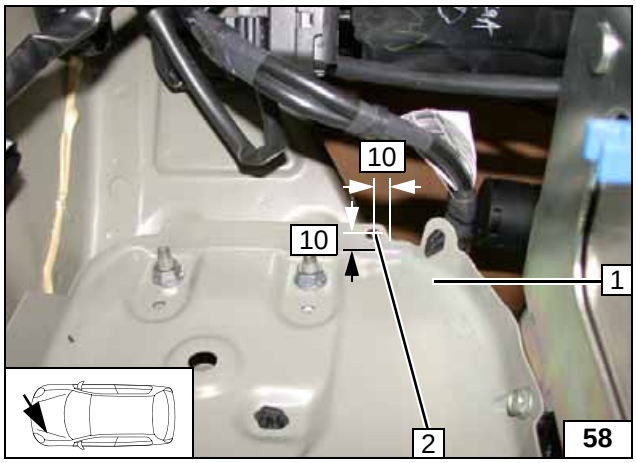
B = 390
C = 320
D = 390
E = 70
F = 85
G = 640
H = 380

Cutting hoses to length



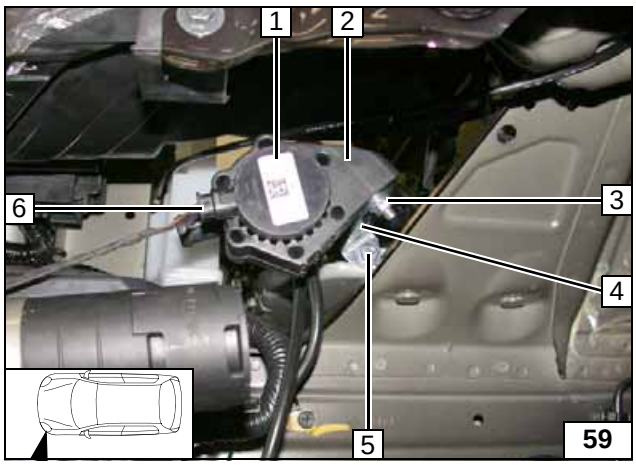
Angle perforated bracket **1** as shown in the image.

Preparing perforated bracket for circulating pump



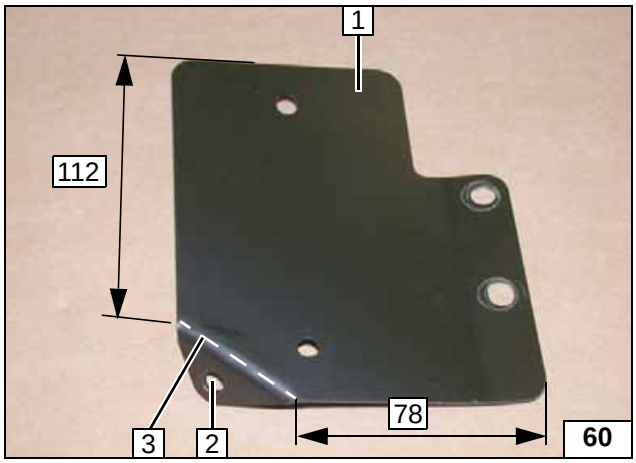
Copy hole pattern for 7.0mm dia. hole **2** in battery carrier **1** and drill.

Preparing installation of circulating pump



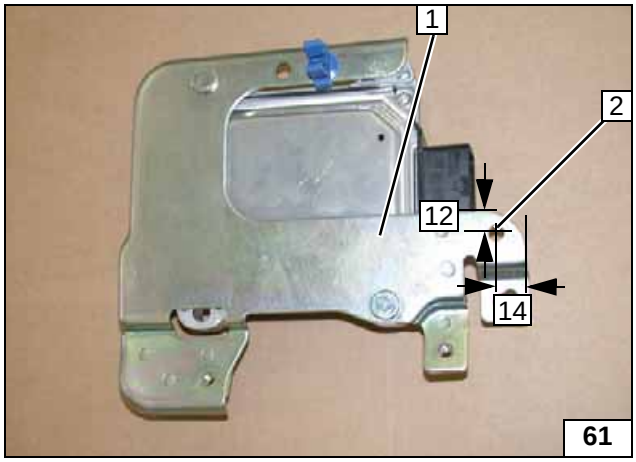
1 Circulating pump
2 Circulating pump mounting bracket
3 M6x25 bolt, flanged nut
4 Perforated bracket angled down
5 M6x20 bolt, flanged nut
6 Wiring harness of circulating pump

Installation of circulating pump



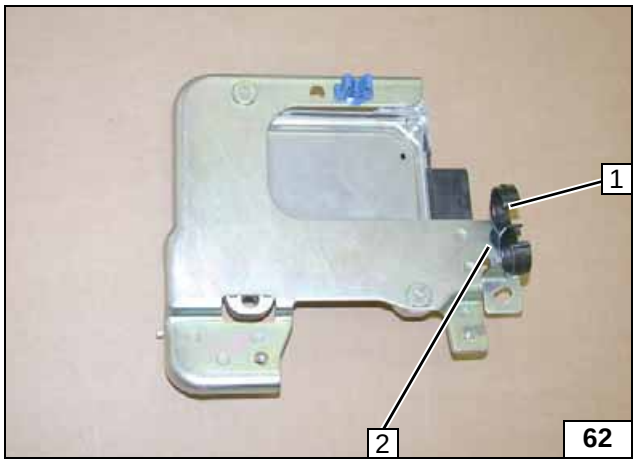
Bend retaining plate **1** at bending edge **3** at a 90° angle as shown in the image, copy hole pattern for 7.0mm dia. hole **2** and drill.

Preparing bracket of relay box



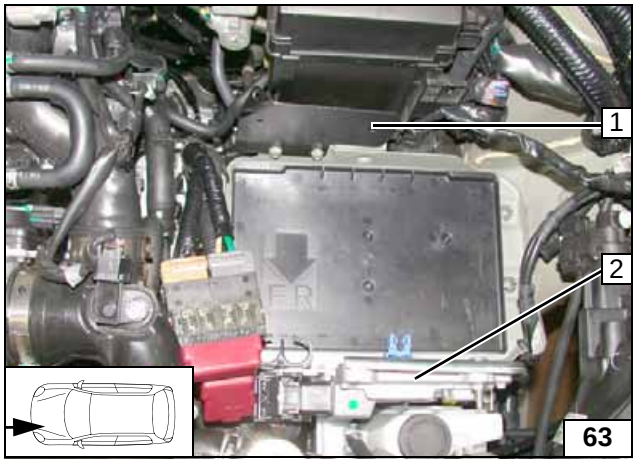
Copy hole pattern for 7.0mm dia. hole **2** to control unit bracket **1** and drill.

Preparing bracket of engine control unit



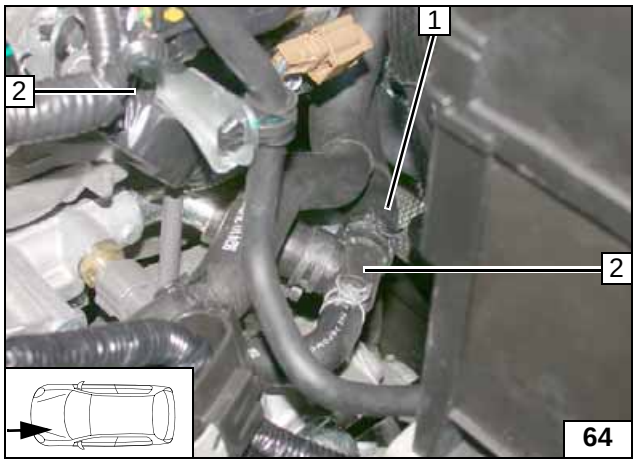
Insert hose bracket **1** into hole of bracket **2**.

Preparing bracket of engine control unit



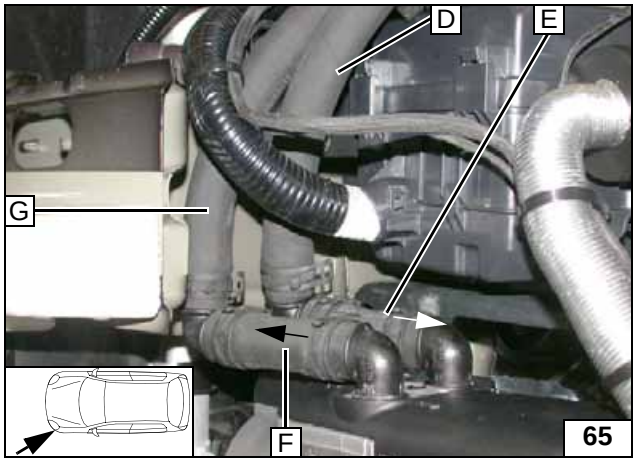
1 Install bracket of relay box
2 Install bracket of engine control unit

Preparing hose routing

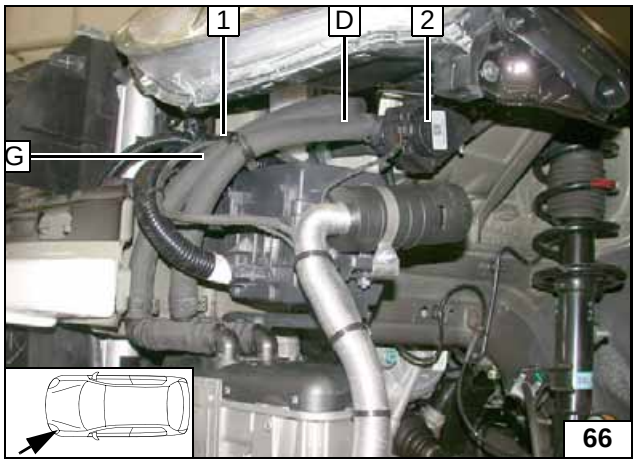


Pull hose of engine outlet **1** off connection piece **2**, original vehicle spring clip will be re-used.

Cutting point

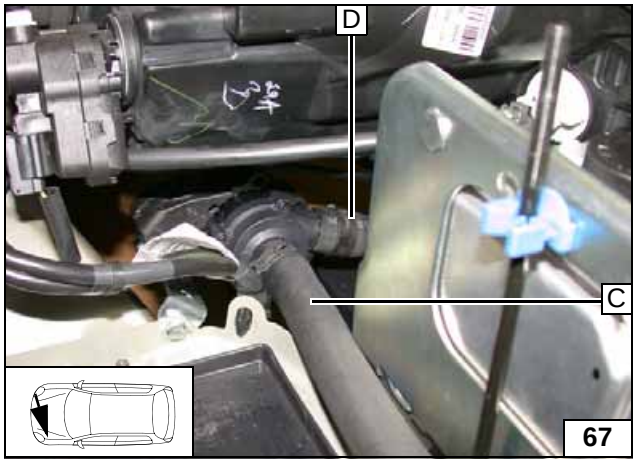


Connecting heater

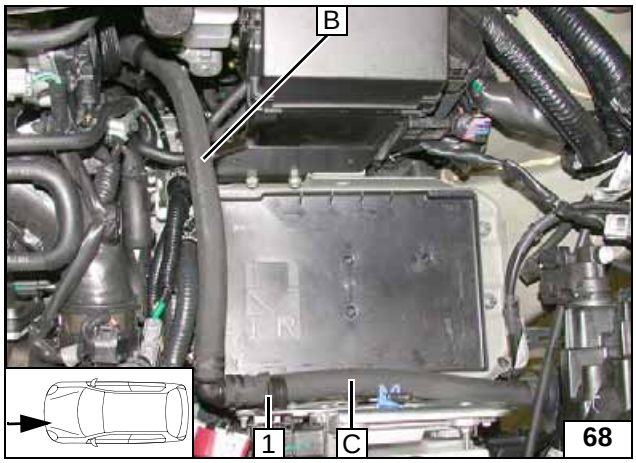


Insert hose bracket **1** between hose **D** and **G**. Connect hose **D** to circulating pump **2** and route hose **G** into the engine compartment.

Connecting circulating pump

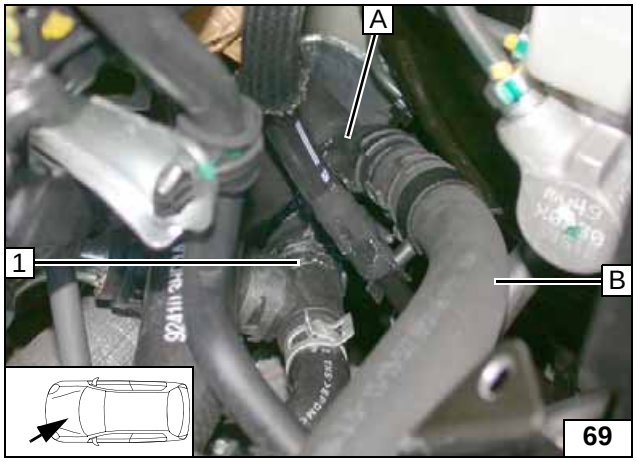


Connecting circulating pump



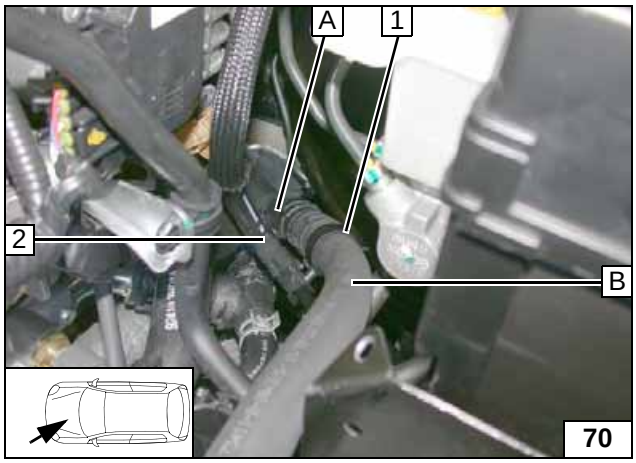
Insert hose **C** into hose bracket **1** (lower mounting), route hose **B** to the cutting point.

Routing in engine compartment



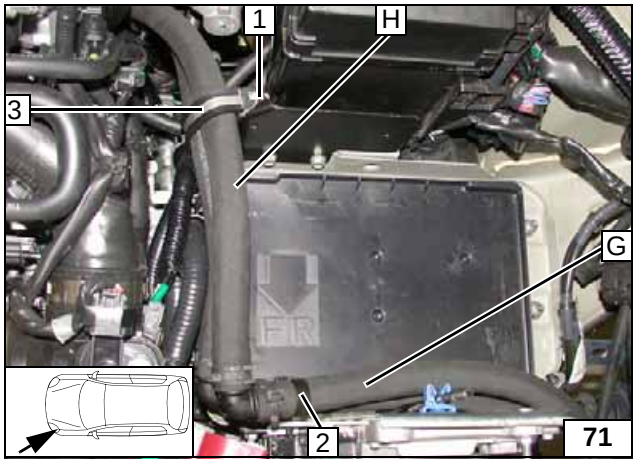
1 Connection piece for engine outlet

Connecting engine outlet



Insert hose bracket **1** between hose **B** and original vehicle hose **2**.

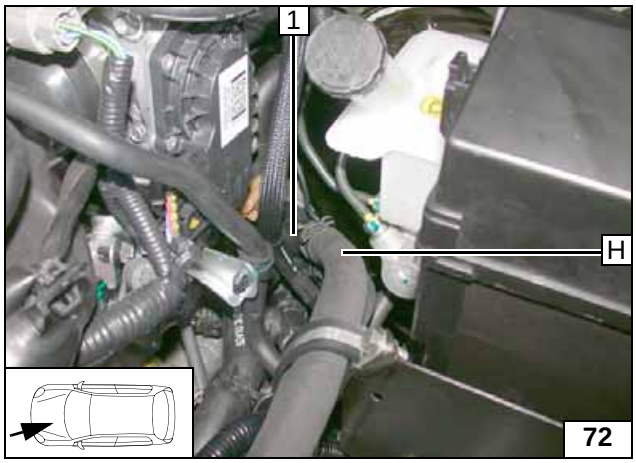
Hose bracket



Insert hose **G** into hose bracket **2**. Route hose **H** to the cutting point.

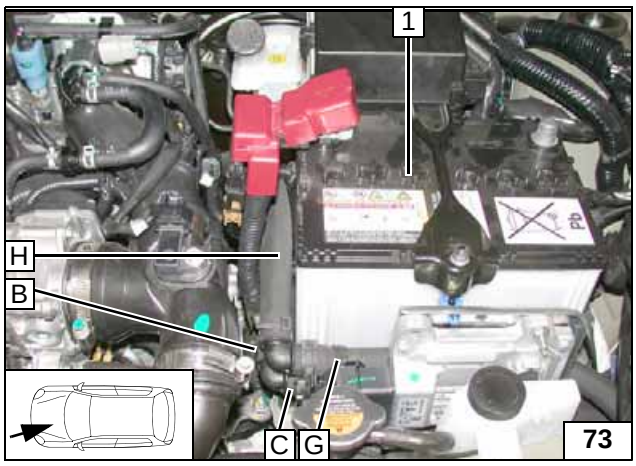
1 M6x20 bolt, flanged nut
3 38 mm dia. rubber-coated clamp

Routing in engine compartment



1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet



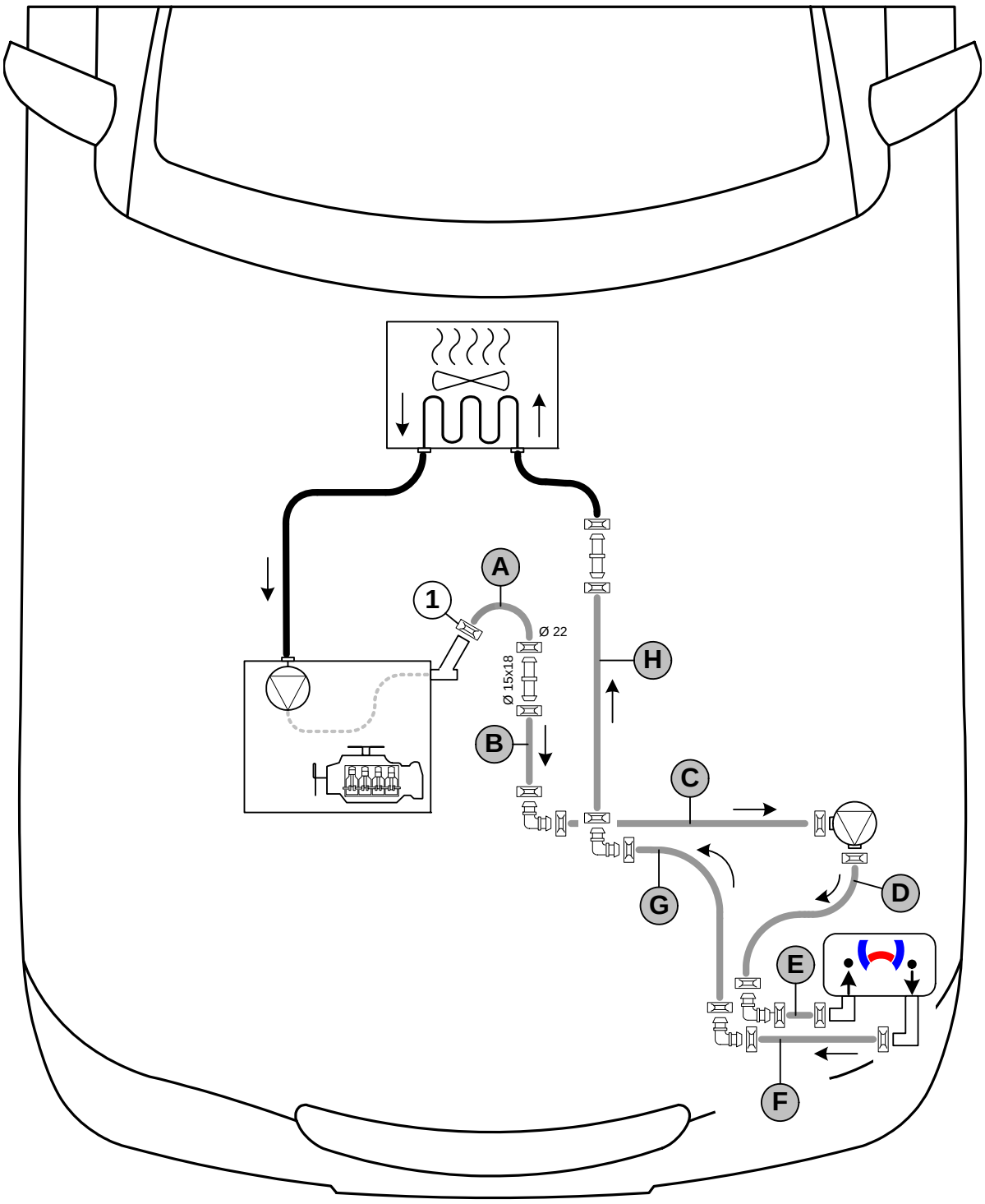
Install battery **1**, do not connect! Align hoses.

Checking distance

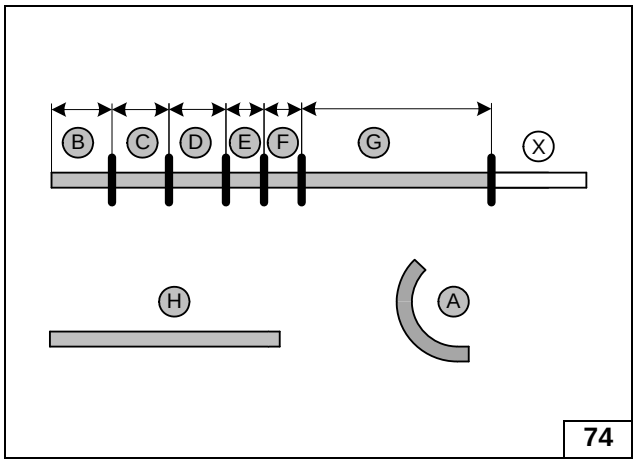
Coolant Circuit of Manual Transmission

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 no other hoses can be damaged. When installing the hoses, the heater must be filled with coolant.
The connection should be modelled on an "inline" circuit and based on the following diagram:

Hose routing diagram



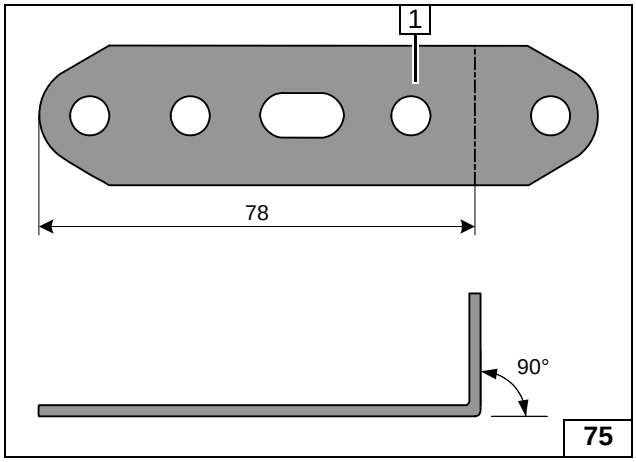
All spring clips without a specific designation = 25mm dia. **1** = Original vehicle spring clip.
All connecting pipes without a specific designation and = 18x18mm dia.



Discard section **X**.
Hose **A** = 135°, 15x18mm dia. moulded hose

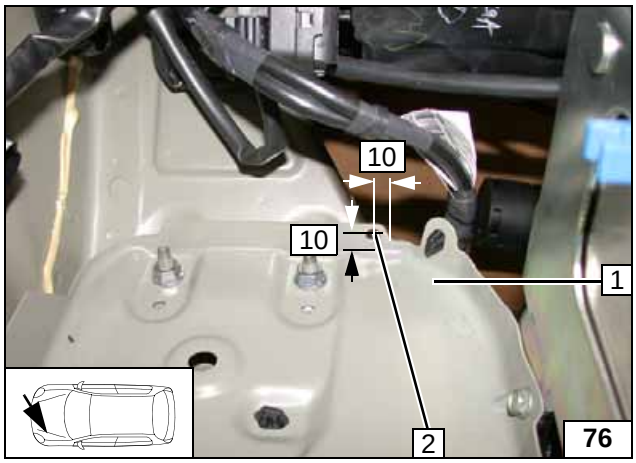
B = 310
C = 320
D = 315
E = 70
F = 85
G = 640
H = 400

Cutting hoses to length



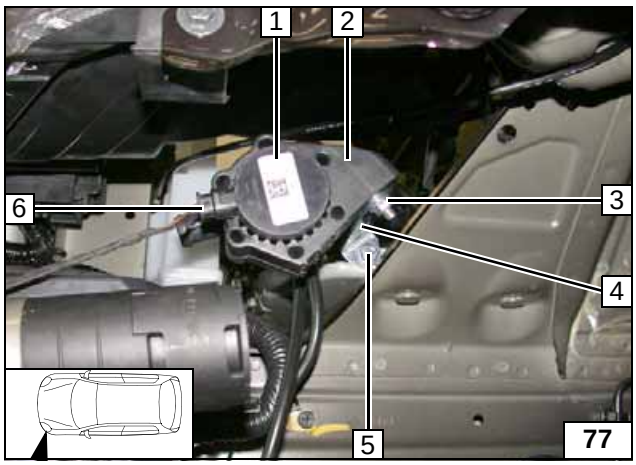
Angle perforated bracket **1** as shown in the image.

Preparing perforated bracket for circulating pump



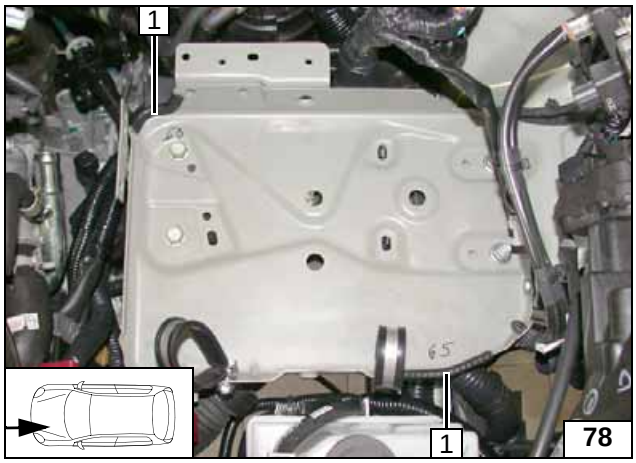
Copy hole pattern for 7.0mm dia. hole **2** in battery carrier **1** and drill.

Preparing installation of circulating pump



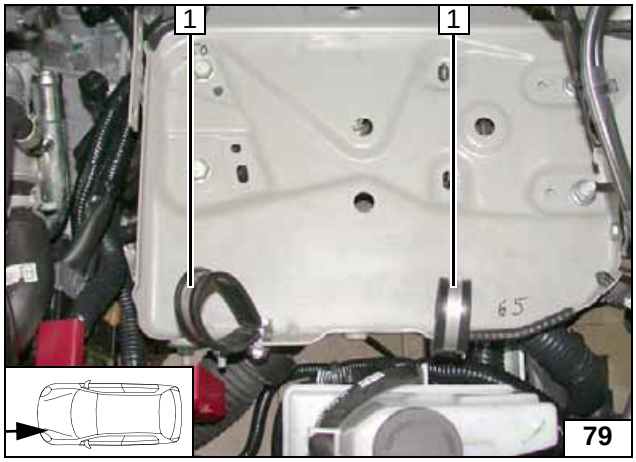
1 Circulating pump
2 Circulating pump mounting bracket
3 M6x25 bolt, flanged nut
4 Perforated bracket angled down
5 M6x20 bolt, flanged nut
6 Wiring harness of circulating pump

Installation of circulating pump



Insert 50mm long edge protection **1** [2x] as shown in the image.

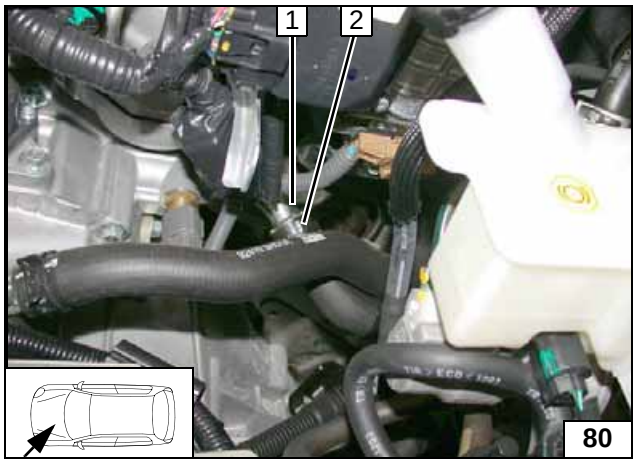
Preparing hose routing



Loosely mount 38mm dia. rubber-coated p-clamp **1**.

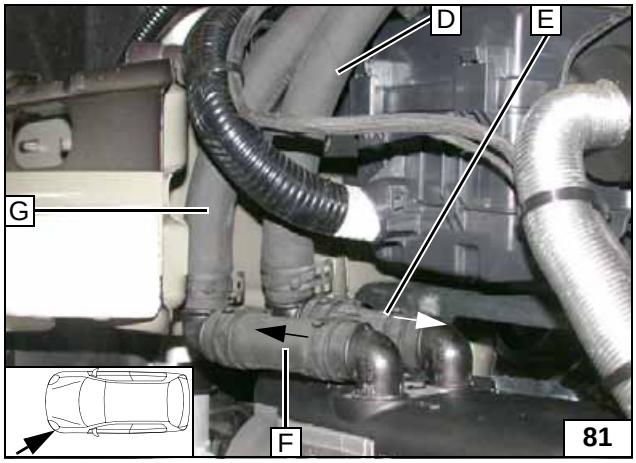
1 M6x20 bolt, flanged nut, original vehicle hole [2x each]

Preparing hose routing

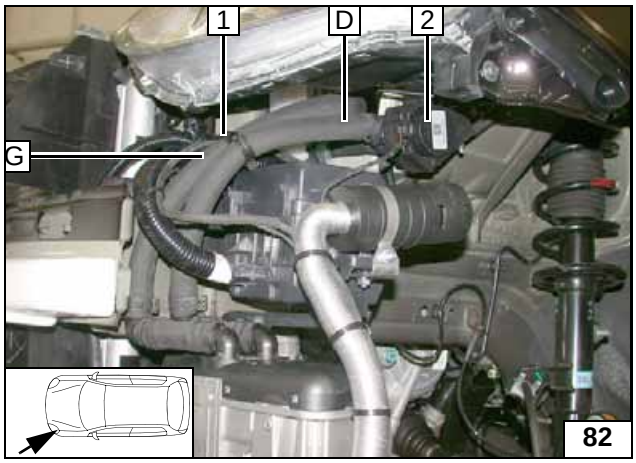


Pull hose of engine outlet **2** from connection piece **1**, original vehicle spring clip will be reused.

Cutting point

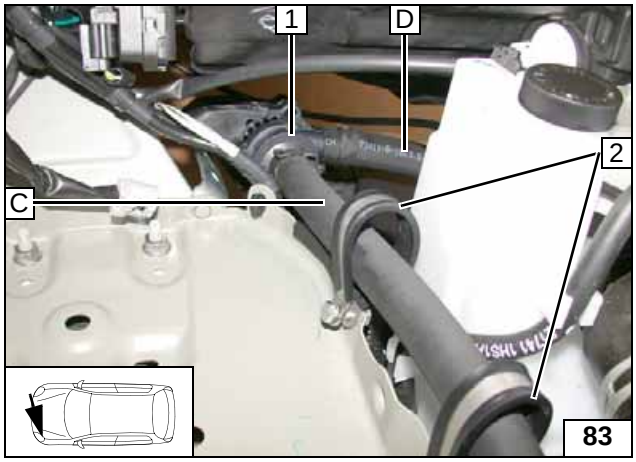


Connecting heater



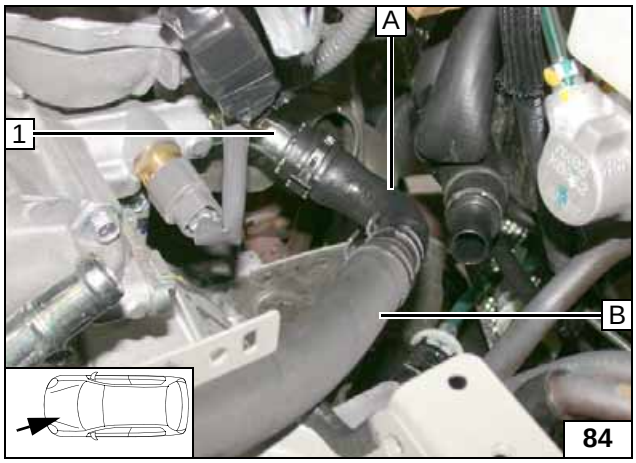
Insert hose bracket **1** between hoses **D** and **G**, connect hose **D** to circulating pump **2** and route hose **G** to the engine compartment.

Connecting circulating pump



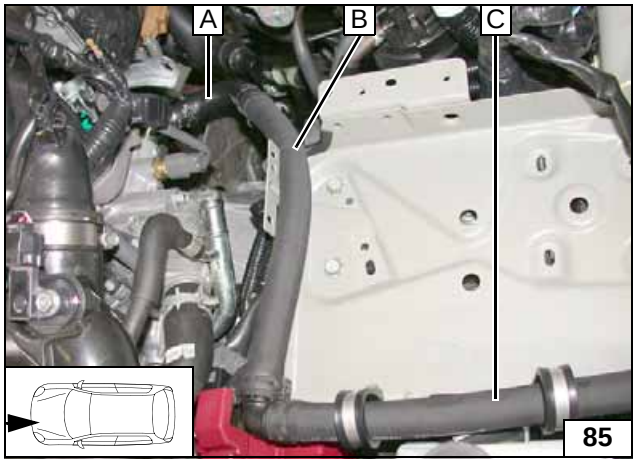
Connect hose **C** to circulating pump **1** and route through rubber coated p-clamps **2**.

Connecting circulating pump

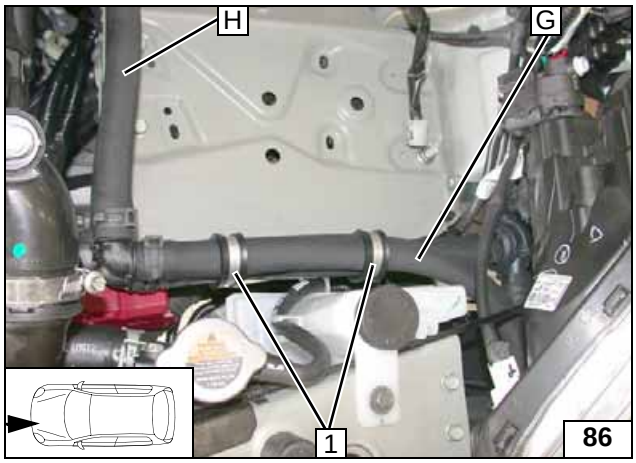


1 Connection piece for engine outlet

Connecting engine outlet

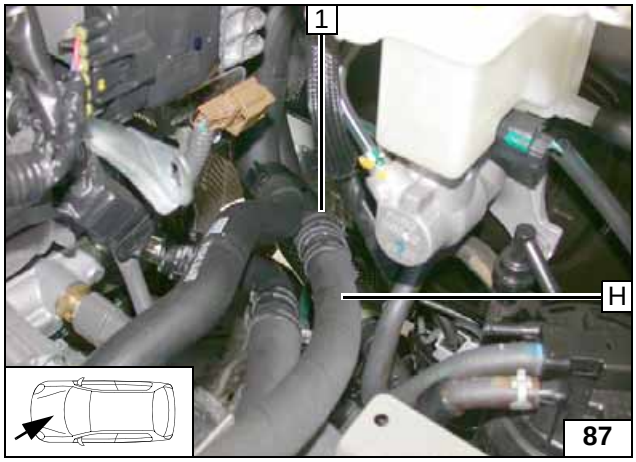


Routing in engine compartment



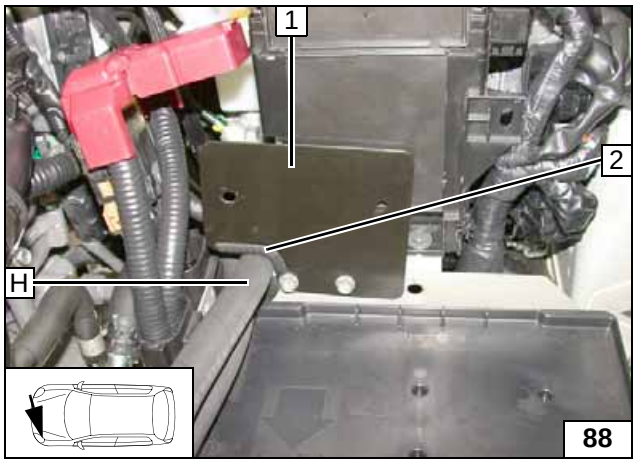
Route hose **G** through rubber-coated clamps **1**, route hose **H** to the cutting point.
Tighten screw fitting of rubber-coated clamps **1**.

Routing in engine compartment

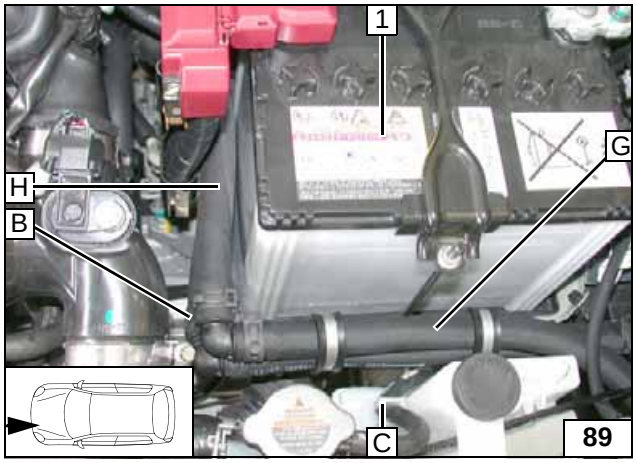


1 Hose section of heat exchanger inlet

Connecting heat exchanger inlet

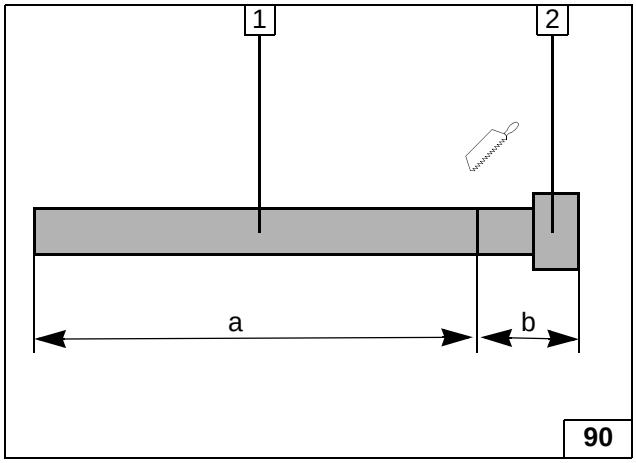


Insert 50mm long edge protection section **2**, install retaining plate **1**.



Install battery **1**, do not connect! Align hoses.

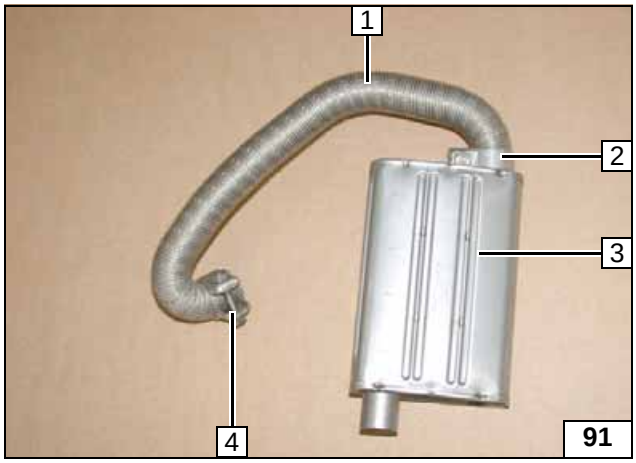
Checking distance



Exhaust Gas

1 Exhaust pipe
a =350
2 Exhaust end section
b =50

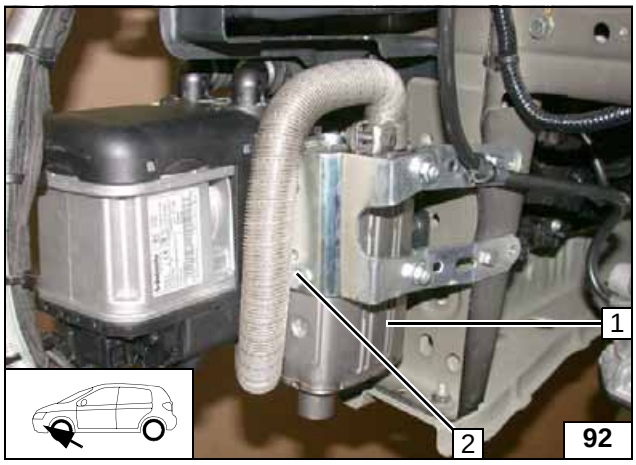
Preparing exhaust pipe



Shape exhaust pipe **1** as shown in the image.

2 Hose clamp
3 Silencer
4 Hose clamp loosely mounted

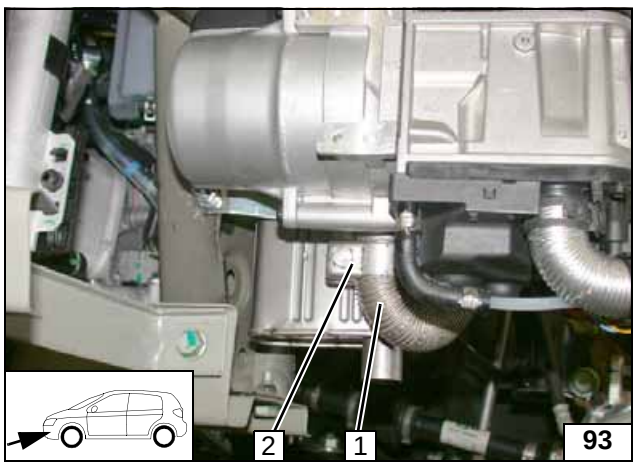
Premounting silencer



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

1 Silencer
2 M6x16 bolt, spring lockwasher

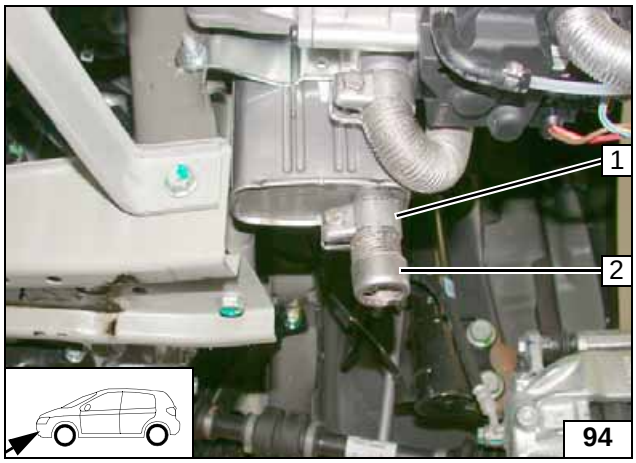
Mounting silencer



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

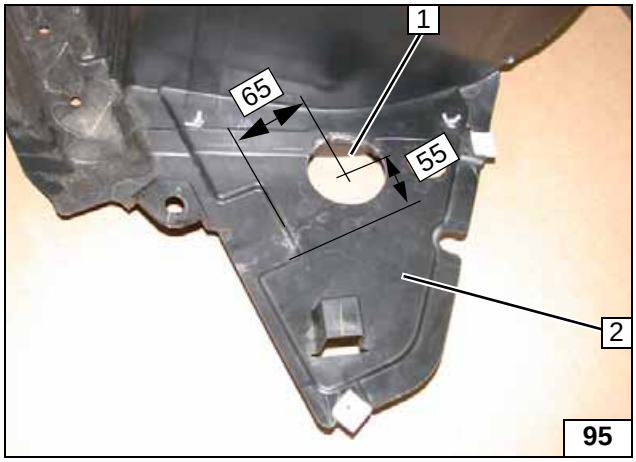
1 Exhaust pipe
2 Tighten hose clamp

Mounting exhaust pipe



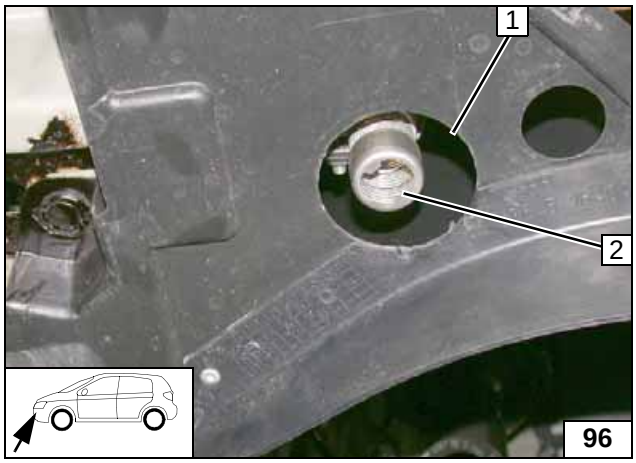
1 Hose clamp
2 Exhaust end section

Mounting exhaust end section



1 60 mm dia. hole
2 Wheel-well inner panel

Cutting out left wheel-well inner panel



Install bumper and wheel-well inner panel.

Align exhaust end section **2** in centre of hole and justified to the wheel-well inner panel **1**. Ensure sufficient distance from neighbouring components, correct if necessary.

Aligning exhaust end section

Final Work

WARNING!
Reassemble the disassembled components 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**

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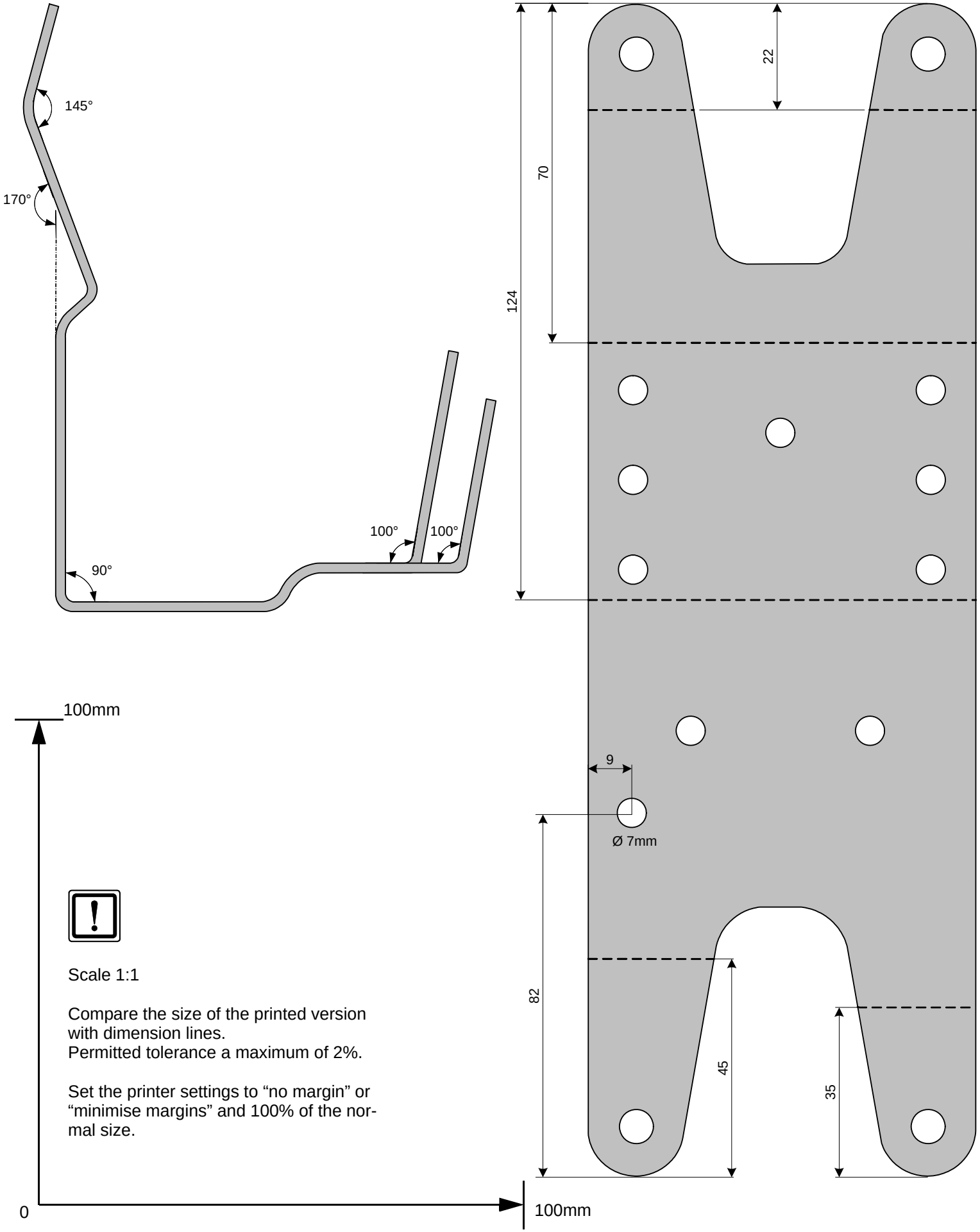
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Template for Bracket

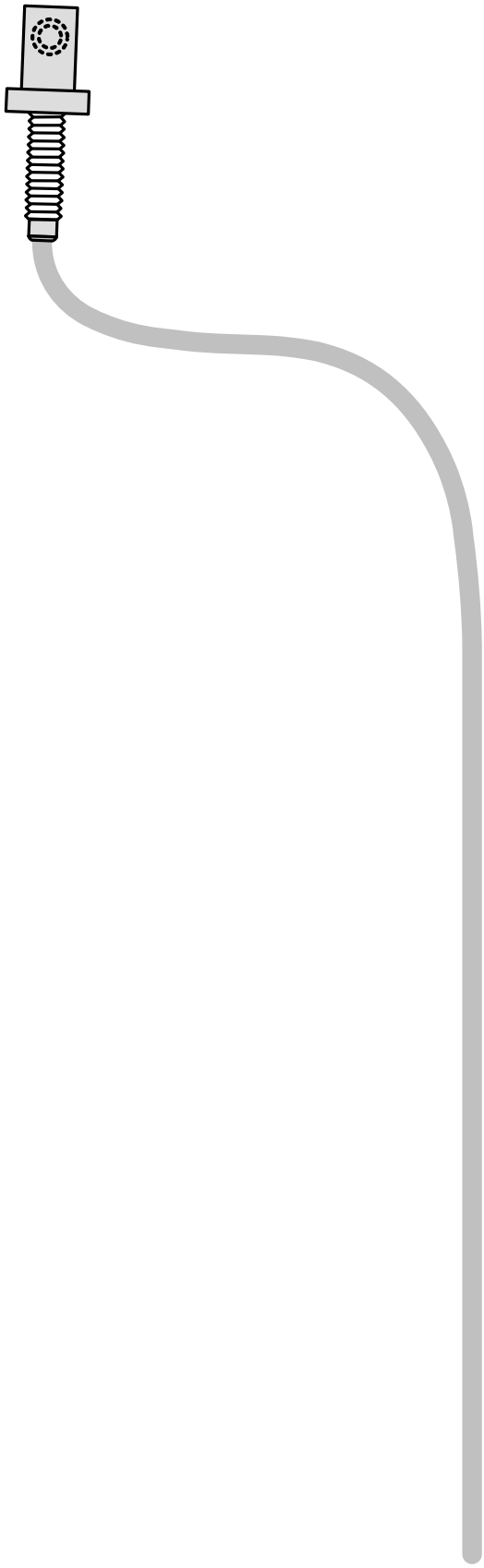


Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimise margins” and 100% of the normal size.

Template for Fuel Standpipe



100mm

Scale 1:1

Compare the size of the printed version with dimension lines.
Permitted tolerance a maximum of 2%.

Set the printer settings to “no margin” or “minimise margins” and 100% of the normal size.

0

100mm

Webasto
Feel the Drive

Operating Instructions for Manual 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.

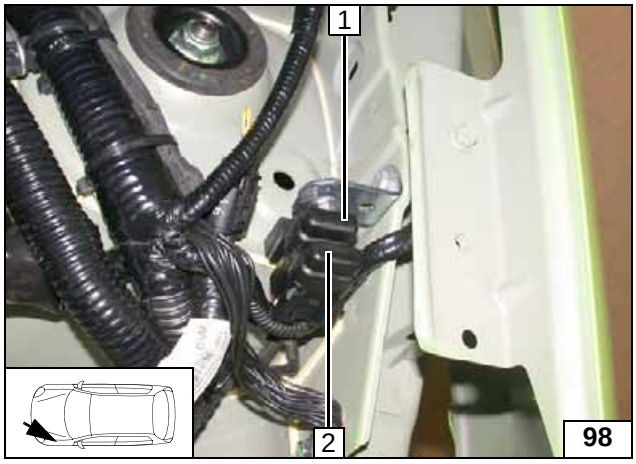
Passenger compartment monitoring, if installed, must be deactivated in addition to vehicle settings for the heating cycle.
Deactivation instructions can be found in the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

A/C control panel

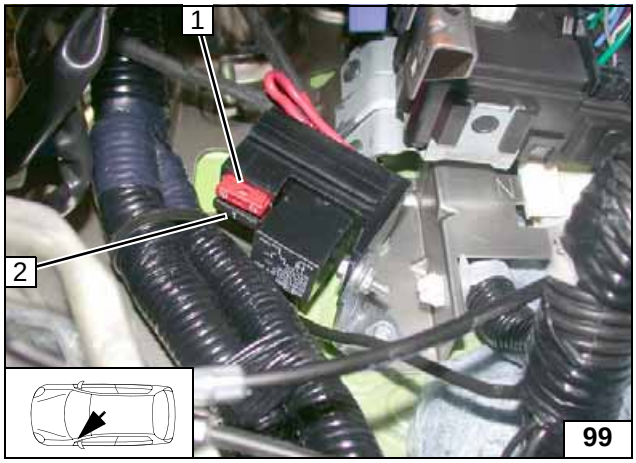
1 Set fan to level "1" or max. "2"
2 Set temperature to "max."
3 Air outlet to windscreen

Engine compartment fuses



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

Passenger compartment fuses



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

Webasto
Feel the Drive

Operating Instructions for Automatic Air-Conditioning

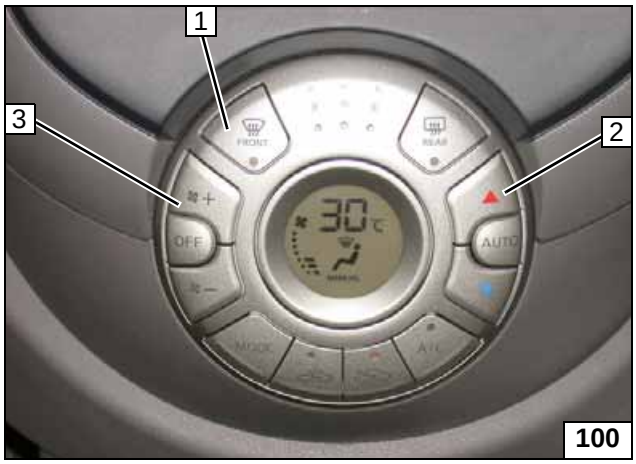
Please remove page and add to the vehicle operating instructions.

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.

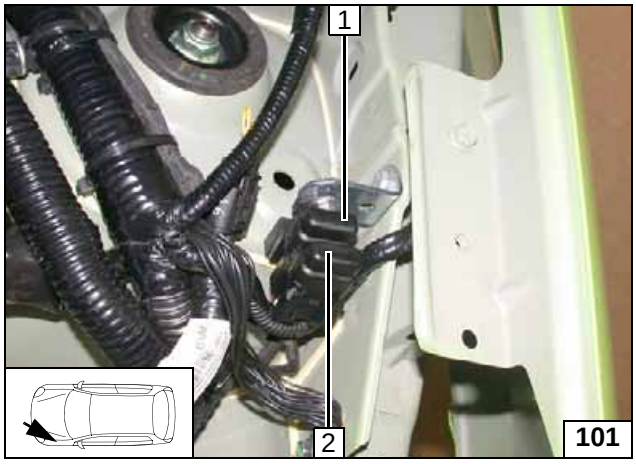
Before parking the vehicle, make the following settings:

A/C control panel



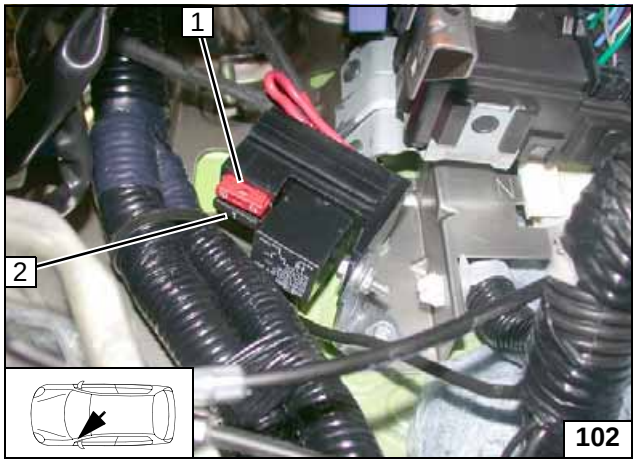
1 Air outlet to windscreen
2 Set temperature to "HI"
3 Set fan to level "2" or max. "3"

Engine compartment fuses



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

Passenger compartment fuses



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