Water Heater

Webasto
Feel the Drive

Thermo Top Evo Parking Heater

e1
00 0258

Installation documentation
Toyota LC 200

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Toyota	Landcruiser V8	J20 (A)	e6 * 2001 / 116 * 0112 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
4.5 V8	Diesel	6-speed AT	200	4461	1VD-FTV

AT = automatic transmission

From Model Year 2012
Left-hand drive vehicle

Verified equipment variants:

Front and rear air-conditioning

Front fog light
Alarm system
4 WD
Bi Xenon headlights with headlight washer system
Start button, smart key

WARNING!

Mind specific water connection with TT-EVO 4 without engine preheating.
Preheating the engine is not recommended and can cause starting problems and / or error messages.

Total installation time: approx. 9 hours

Toyota LC 200

Table of Contents

Necessary Components

- Standard delivery scope *Thermo Top Evo 4* in accordance with price list
- Installation kit for Toyota LC 200 2012 Diesel: **1318444A**
- 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

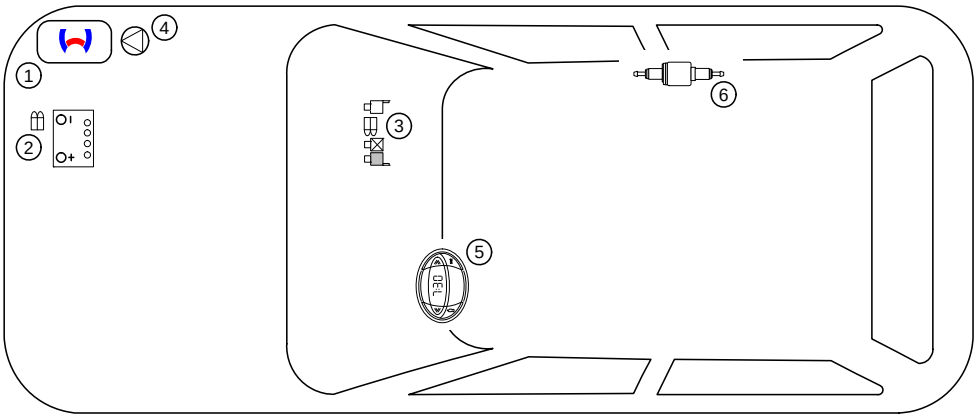
Note:

Preheating the engine is not recommended and can cause starting problems and / or error messages.
Only use *Thermo Top Evo 4*.

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment fuse holder
4. Circulating pump
5. Digital timer
6. Metering pump



Information on Total Installation Time

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

Information on Operating and Installation Instructions

1 Important Information (not complete)

1.1 Installation and Repair

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

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

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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel Diesel (DIN EN 590) or petrol (DIN EN 227).

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

1.3 Please note

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

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

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

IMPORTANT

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

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

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

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back.

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

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

The initial startup is to be executed with the Webasto Thermo Test Diagnosis.

When installing an IPCU, the corresponding settings must be checked or adjusted before the installation.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 03 5627

NOTE

The regulations of these guidelines are binding in the scope of the Directive 70/156/EEC and/or 2007/46/EC (for new vehicle models from 29/04/2009) and should also be observed in countries in which there are no special regulations.

IMPORTANT

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

NOTE

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

2.1 Excerpt from the directive 2001/56/EC Appendix VII for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Information on Validity

This installation documentation applies to Toyota LC 200 Diesel vehicles - for validity, see page 2 - from model year 2012 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 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
- 60mm dia. hole saw
- Webasto Thermo Test Diagnosis with current software

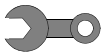
Dimensions
- All dimensions are in mm

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

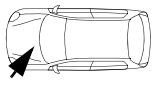
Specific risk of damage to components

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



Toyota LC 200

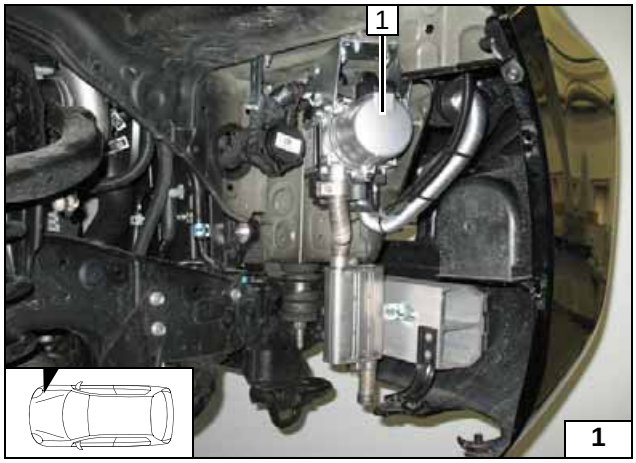
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Remove the right front wheel.
- Remove the wheel well trim on the right.
- Disconnect the battery on the right and remove it completely, including the carrier.
- Remove the air filter together with the intake hose.
- Remove the lower engine cover.
- Remove the glove compartment.
- Remove the airbag of the front passenger's side footwell.
- Remove instrument panel trim of front passenger's side footwell.
- Remove the door sill trim on the front passenger's side.

Heater

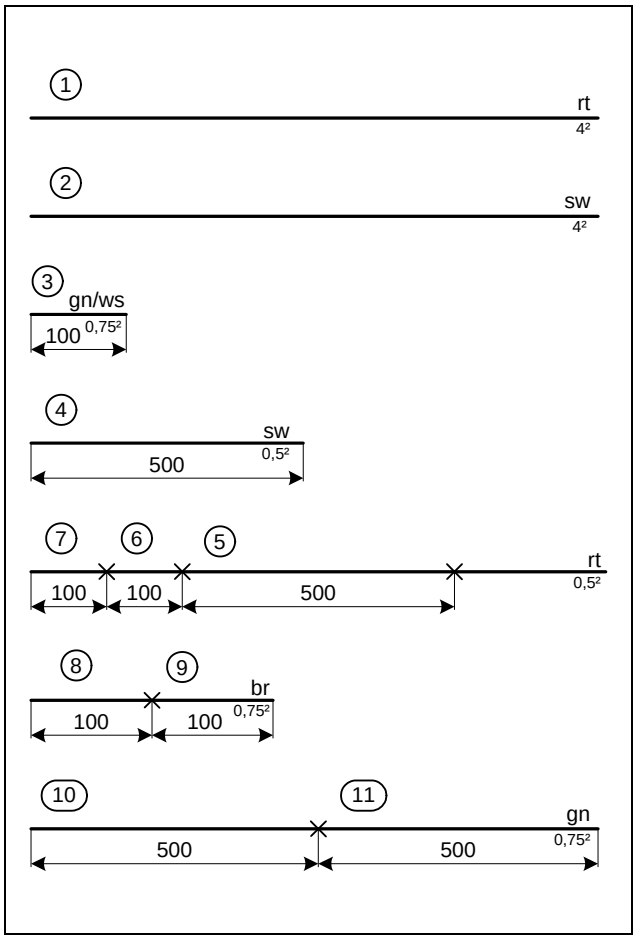
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



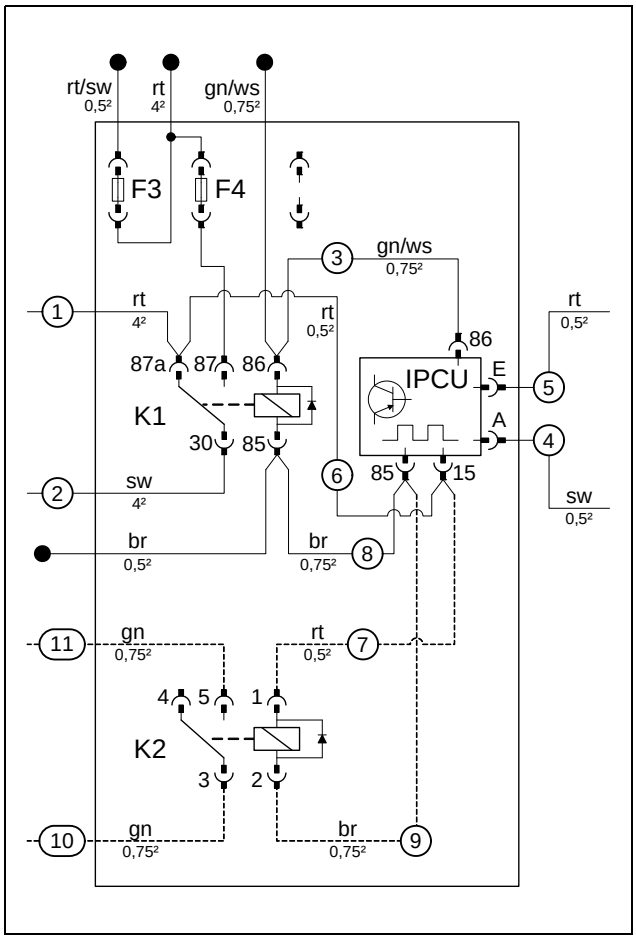
Preparing Electrical System

Wire sections retain their numbering in the whole document.

Preparing lines

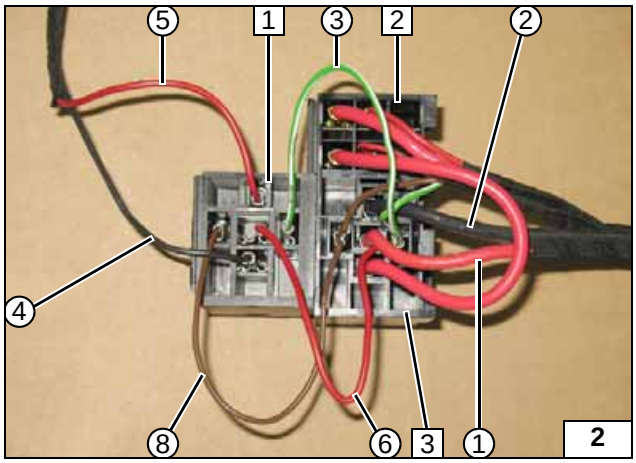
Preparing fuse holder of passenger compartment

Lines **7**, **9**, **10** and **11** are only needed in case of rear air-conditioning.



Connect lines to socket of K1 relay, K2 relay and IPCU in accordance with the wiring diagram. K2 relay is only needed in case of rear air-conditioning. Insert 10A fuse F4.

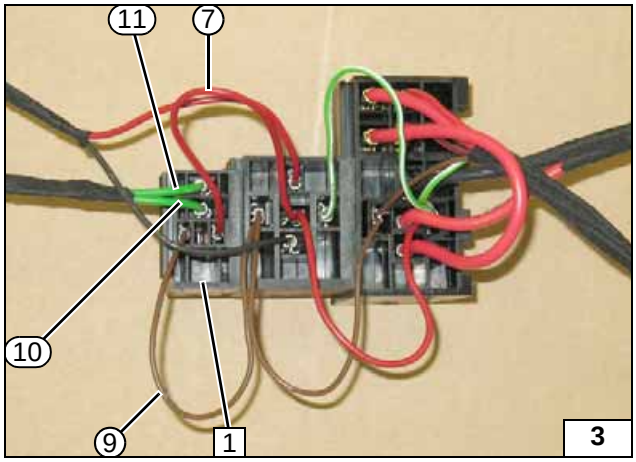
Wiring diagram of passenger compartment fuse holder



Connecting wires

Image shows passenger compartment fuse holder only for vehicles with front air-conditioning. Insert socket after installation.

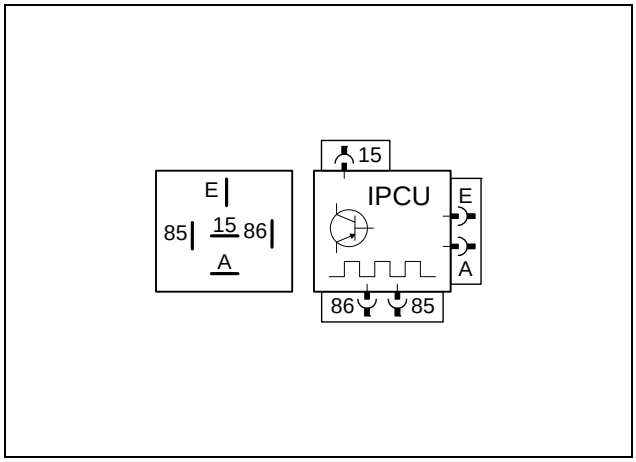
1 Socket of IPCU
2 Fuse holder of passenger compartment
3 Socket of K1 relay
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30
③ Green/white (gn/ws) wire of K1/86 and IPCU/86
④ Black (sw) wire of IPCU/A
⑤ Red (rt) wire of IPCU/E
⑥ Red (rt) wire of K1/87a and IPCU/15
⑧ Brown (br) wire of K1/85 and IPCU/85



Connecting wires

Image shows passenger compartment fuse holder for vehicles with front and rear air-conditioning. Additionally connect K2 relay and wires **7**, **9**, **10** and **11**. Insert socket after installation.

1 Socket of K2 relay
⑦ Red (rt) wire of IPCU/15 and K2/1
⑨ Brown (br) wire of IPCU/85 and K2/2
⑩ Green (gn) wire of K2/3
⑪ Green (gn) wire of K2/5

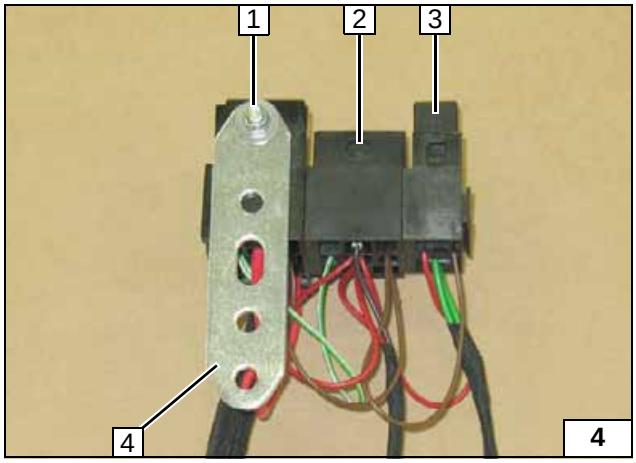


Premounting IPCU

IPCU view from the contact side
The IPCU included in the kit is pre-programmed with the following adjustment values:

Duty cycle: 60%
Frequency: 400 Hz
Voltage: 10 V
Function: Low-side

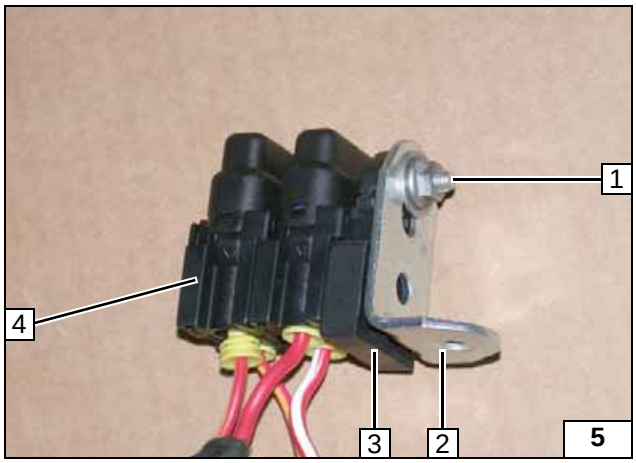
The adjustment value must be checked during startup of heater and adjusted if necessary.



Preparing fuse holder of passenger compartment

Insert K1 relay, IPCU **2** and, in case of vehicles with front and rear air-conditioning, K2 relay **3** after assembly.

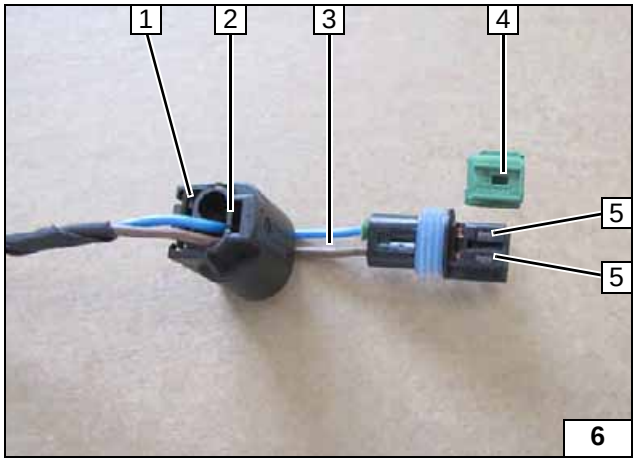
1 M5x16 bolt, washer [2x], passenger compartment fuse holder, nut
4 Perforated bracket



Preparing fuse holder of engine compartment

1 M5x16 bolt, washer [2x], nut
2 Angle bracket, mount loosely
3 Retaining plate for fuse holder
4 Fuses F1-2 mounted

Preparing fuse holder of engine compartment



Complete metering pump connector again after routing. Pin assignment is not relevant.

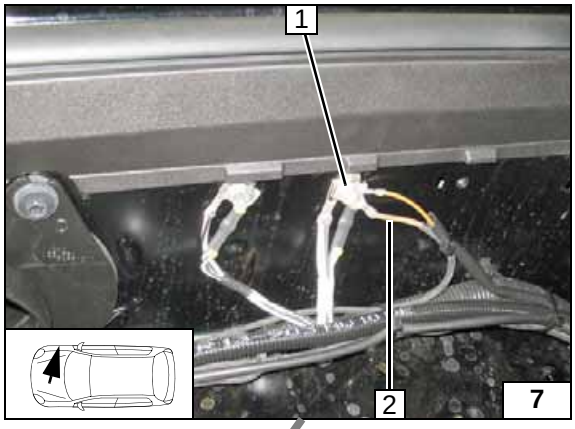
1 Connector housing
2 Lock
3 Blue (bl) / brown (br) wires
4 Coding
5 Timer lock

Dismantling connector

Electrical System

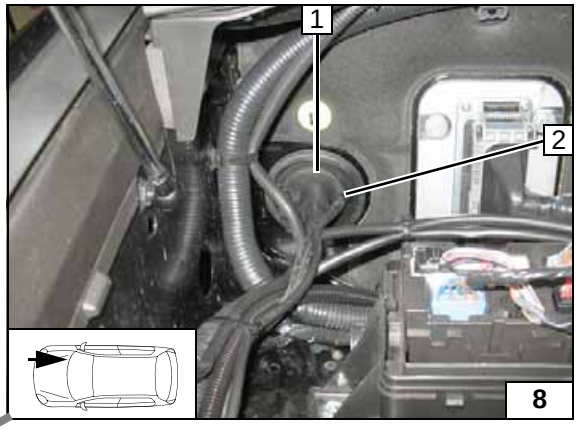
Earth wires

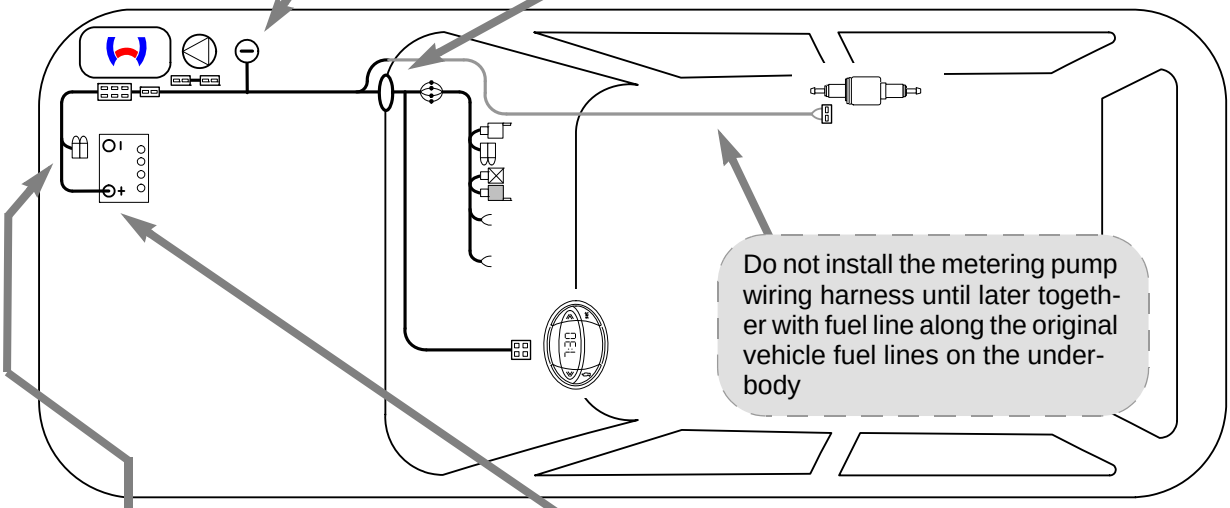
1 Original vehicle earth support point
2 Earth wire of heater



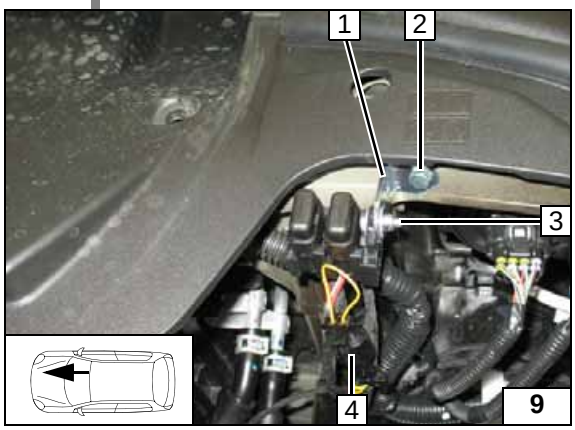
Wiring harness pass through

1 Protective rubber plug
2 Wiring harnesses of heater and heater control





Wiring harness routing diagram



Fuse holder of engine compartment

Align fuses, tighten bolt **3**.

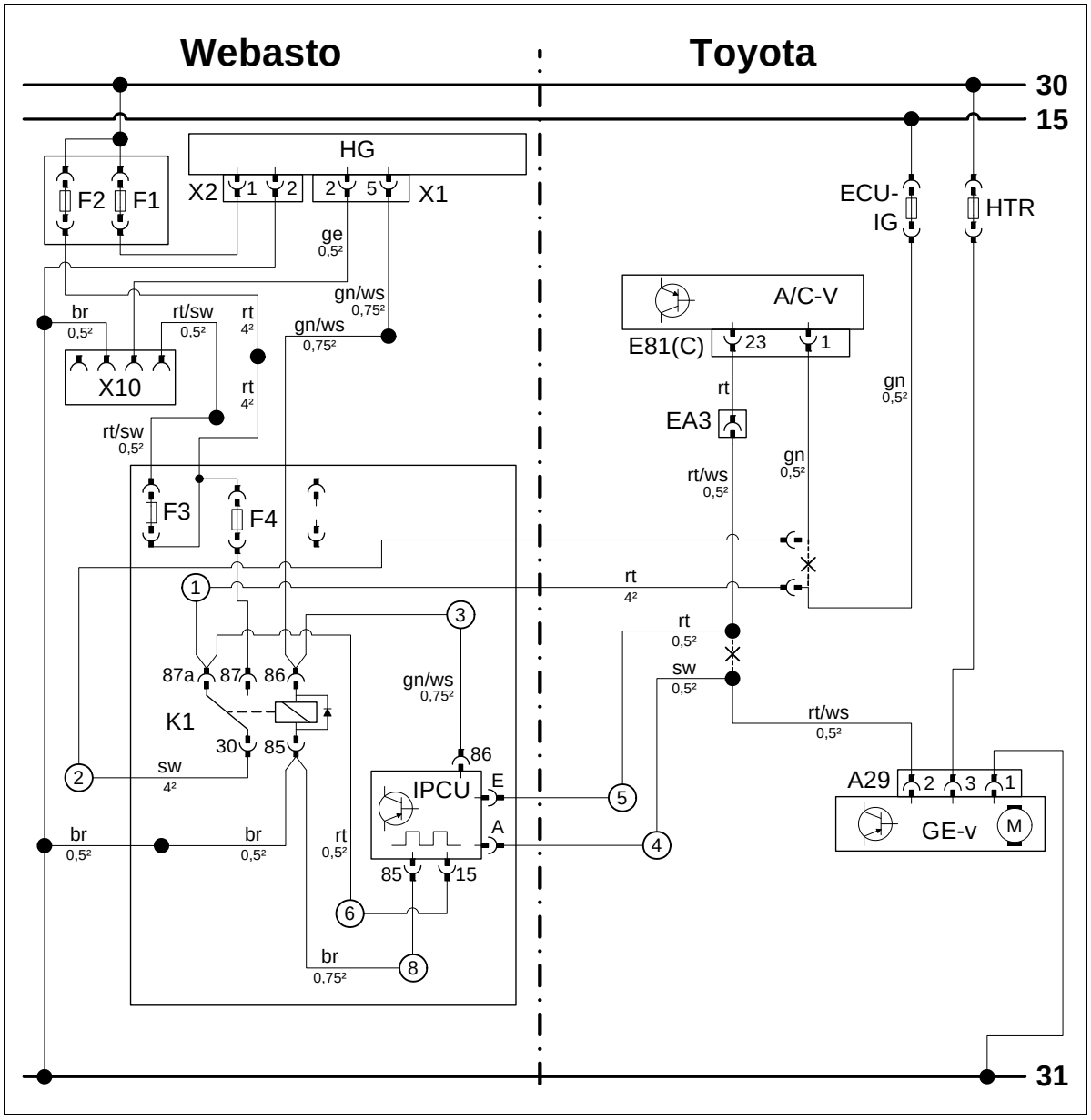
1 Angle bracket
2 M6x20 bolt, flanged nut, existing hole
4 Diagnosis connector

Positive wire

1 Positive wire on positive battery terminal

Front Air-Conditioning Fan Controller

Wiring diagram

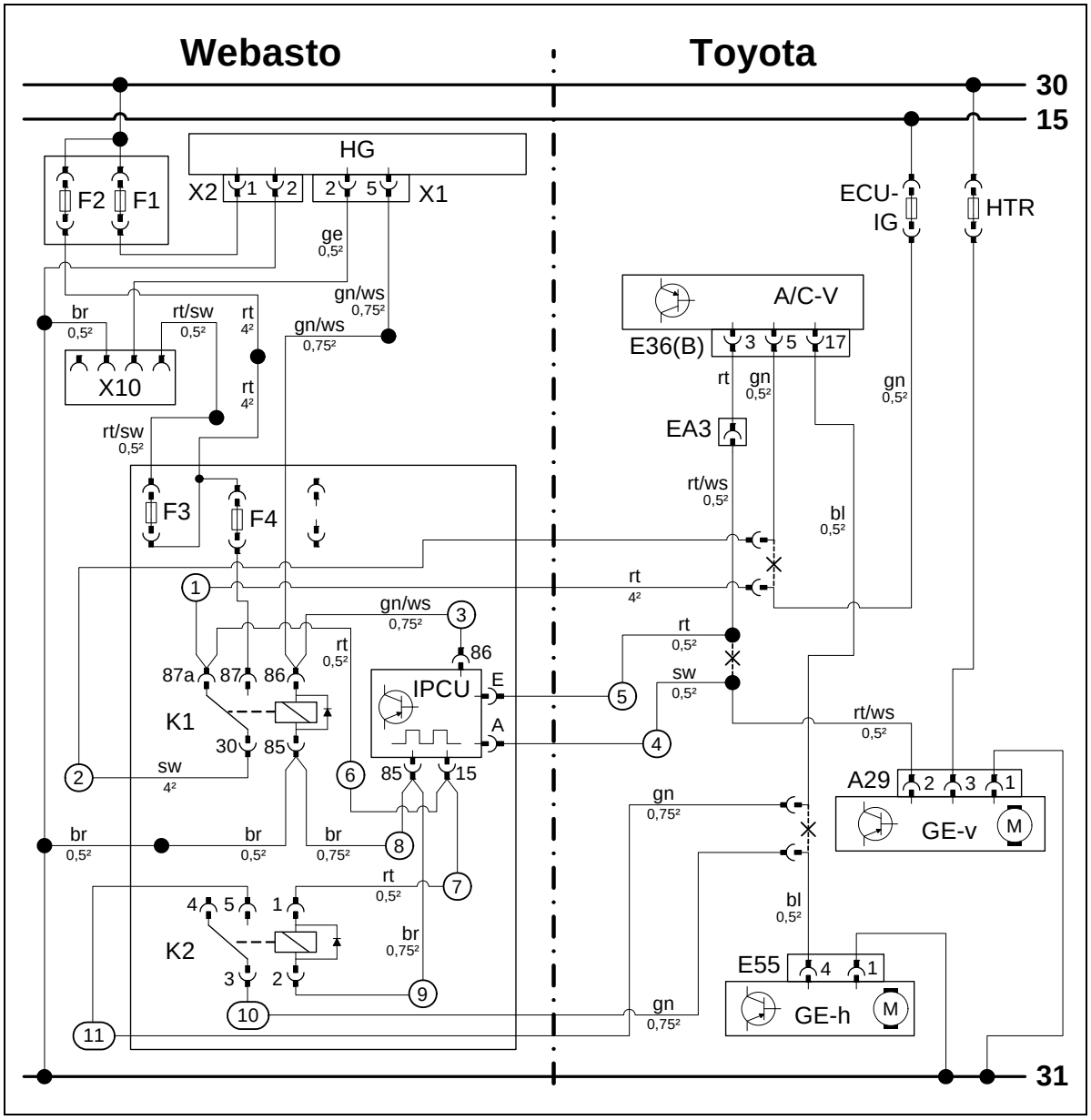


Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	GE-v	Fan unit, front	rt	red
X1	6-pin heater connector	A29	3-pin connector GE-v	sw	black
X2	2-pin heater connector	A/C-V	AC booster	ge	yellow
X10	4-pin connector Heater control	E36 (B)	35-pin connector A/C V	gn	green
		HTR	50A fuse	br	brown
K1	Fan relay	ECU-IG	10 A fuse	ws	white
F1	20A fuse	EA3	Plug connection		
F2	30A fuse				
F3	1A fuse				
F4	10 A fuse				
IPCU	Pulse width modulator				
IPCU adjustment values:					
Duty cycle:	60%				
Frequency:	400 Hz				
Voltage:	10 V			**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	

Legend

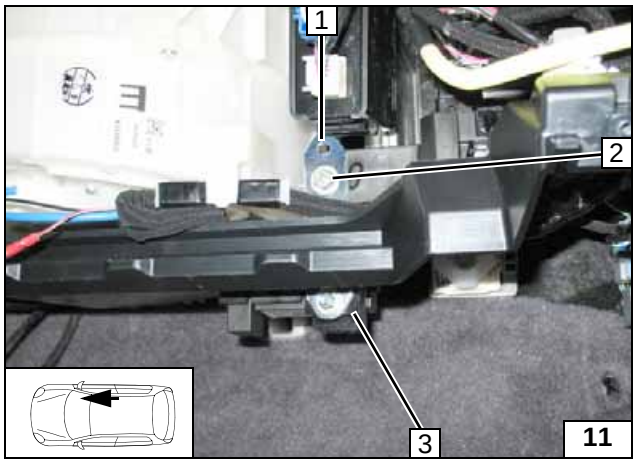
Front and Rear Air-Conditioning Fan Controller

Wiring diagram



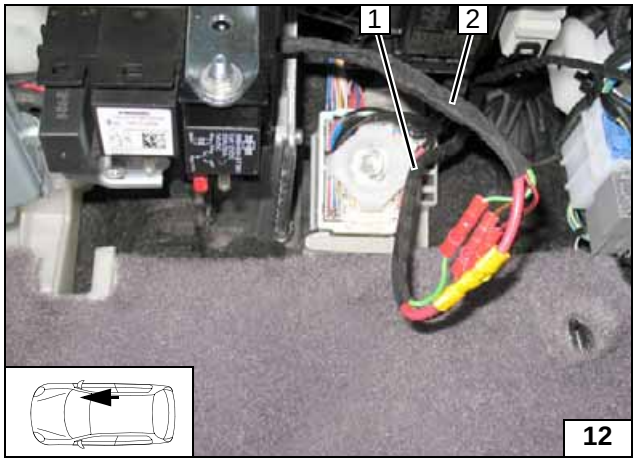
Webasto components		Vehicle components		Colours and symbols	
HG	Heater TT-Evo	GE-v	Fan unit, front	rt	red
X1	6-pin heater connector	A29	3-pin connector GE-v	sw	black
X2	2-pin heater connector	A/C-V	AC booster	ge	yellow
X10	4-pin connector Heater control	E36 (B)	35-pin connector A/C V	gn	green
		GE-h	Fan unit, rear	bl	blue
K1	Fan relay	E55	6-pin connector GE-h	ws	white
F1	20A fuse	HTR	50A fuse	br	brown
F2	30A fuse	ECU-IG	10 A fuse		
F3	1A fuse	EA3	Plug connection		
F4	10 A fuse				
IPCU	Pulse width modulator				
IPCU adjustment values:					
Duty cycle:	60%				
Frequency:	400 Hz				
Voltage:	10 V			**X**	Cutting point
Function:	Low-side			Wiring colours may vary.	

Legend



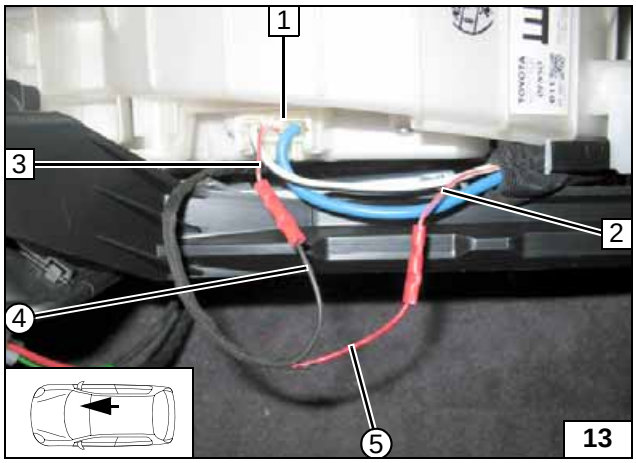
1 Perforated bracket
2 Original vehicle bolt, housing, fan motor
3 Fuse holder of passenger compartment

Mounting fuse holder of passenger compartment



Connect same colour wires from wiring harness of passenger compartment fuse holder **2** and wiring harness of heater **1** as shown on wiring diagram. Connect wires according to wiring diagram.

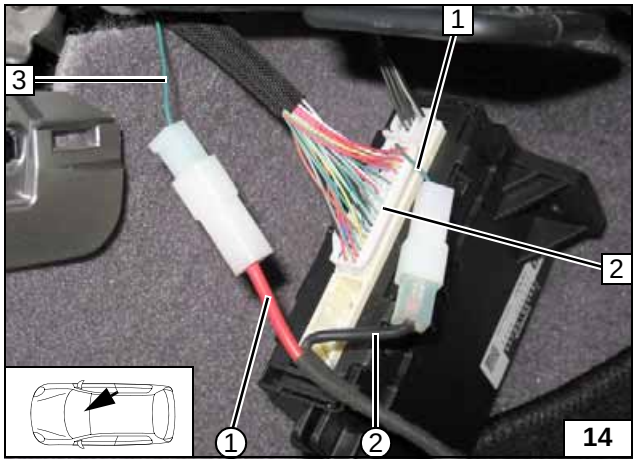
Connecting wiring harnesses



Connection to 3-pin connector **1** of fan unit A29 in the front. Produce connections as shown in wiring diagram.

2 Red/white (rt/ws) wire of A/C booster
3 Red/white (rt/ws) wire to A29 connector Pin 2
④ Black (sw) wire of IPCU/A
⑤ Red (rt) wire of IPCU/E

Connection for IPCU

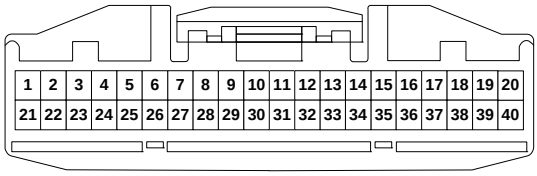


Front air-conditioning

Connection to 40-pin connector E81 (C) **2** of A/C booster. Produce connections as shown in wiring diagram.

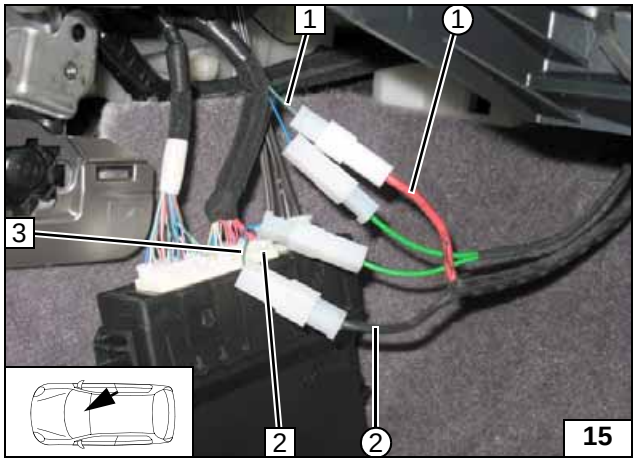
1 Green (gn) wire to connector E81 (C) Pin 1
3 Green (gn) wire of fuse IGN
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30

Connecting A/C booster



View on contact side of 40-pin connector E81 (C) of A/C booster.

Connector E81 (C)

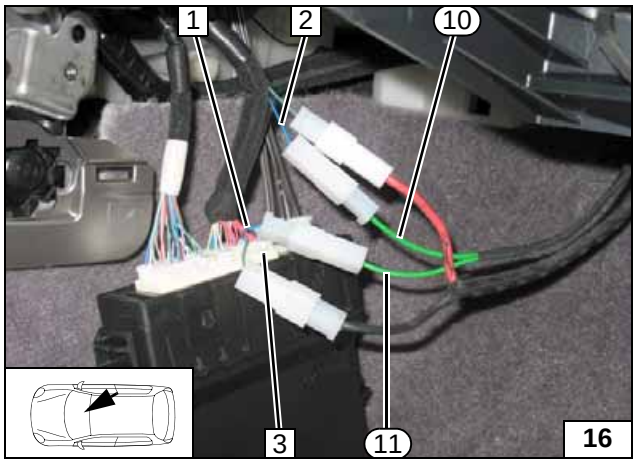


Front and rear air-conditioning

Connection to 35-pin connector E36 (B) **2** of A/C booster. Produce connections as shown in wiring diagram.

1 Green (gn) wire of fuse IGN
3 Green (gn) wire to connector E36 (B) Pin 5
① Red (rt) wire of K1/87a
② Black (sw) wire of K1/30

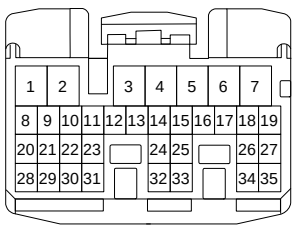
Connecting A/C booster



Connection to 35-pin connector E36 (B) **2** of A/C booster. Produce connections as shown in wiring diagram.

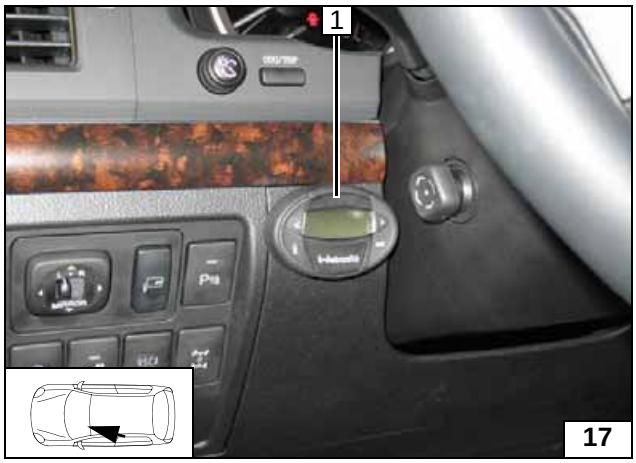
1 Blue (bl) wire to connector E36 (B) Pin 17
2 Blue (bl) wire of rear fan unit
⑩ Green (gn) wire of K2/3
⑪ Green (gn) wire of K2/5

Connecting A/C booster



View on contact side of 35-pin connector E36 (B) of A/C booster.

Connector E36 (B)



Digital Timer

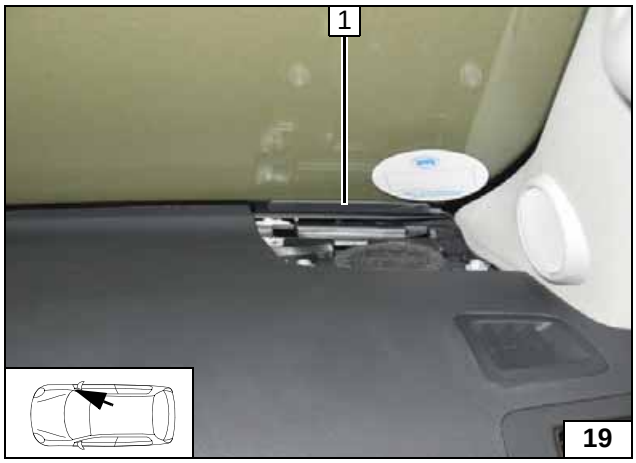
1 Digital timer

Mounting digital timer

Remote Option (Telestart)

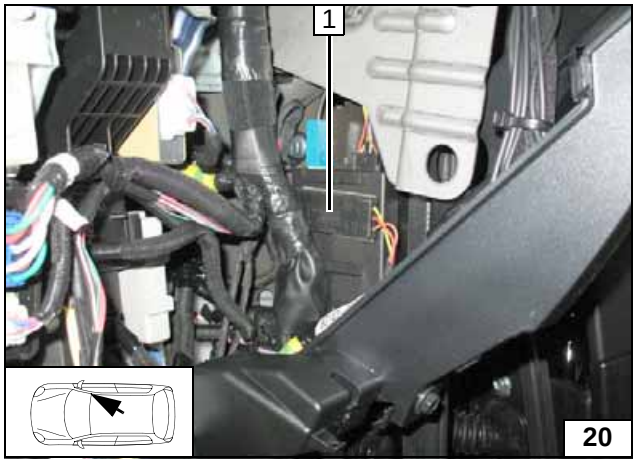
Fasten receiver **1** with adhesive tape.

Mounting receiver



1 Antenna

Mounting antenna



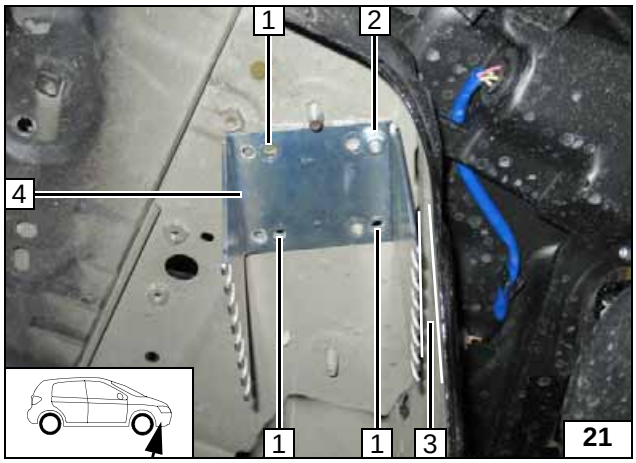
Temperature sensor T100 HTM

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

Mounting temperature sensor

Preparing Installation Location

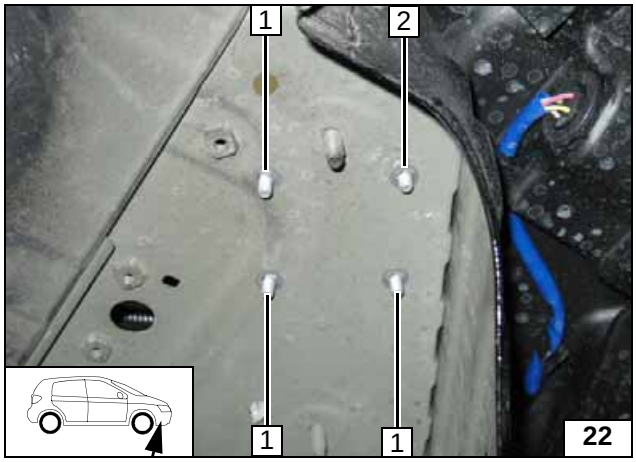
Copying hole pattern



Remove retaining clip at position **2**, insert M6x12 bolt and large diameter washer from above. Align bracket **4** so that the heater bolts fit between bracket and body at position **3**.

1 Copy hole pattern [3x]
2 Loosely mount M6x12 bolt, large diameter washer, flanged nut

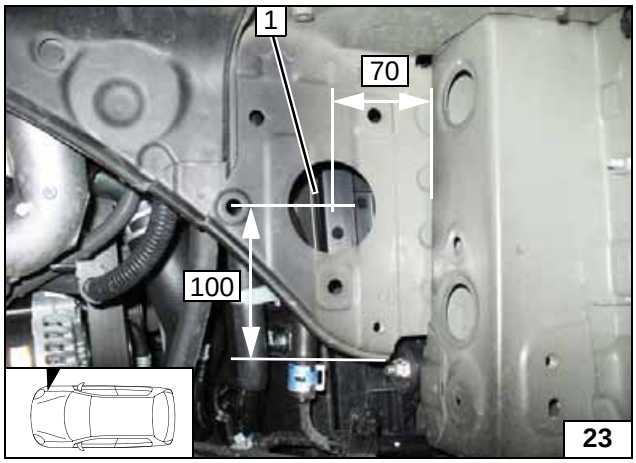
Installing bolts



Remove the bracket.

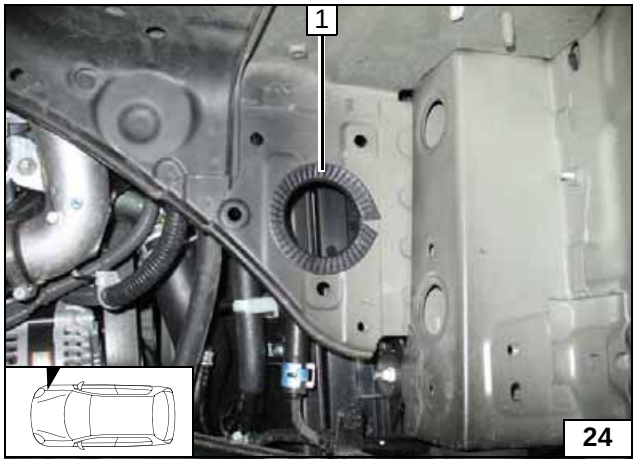
1 7mm dia. hole, M6x12 bolt, pin lock [3x each]
2 M6x12 bolt, large diameter washer, pin lock

Hole in cross member

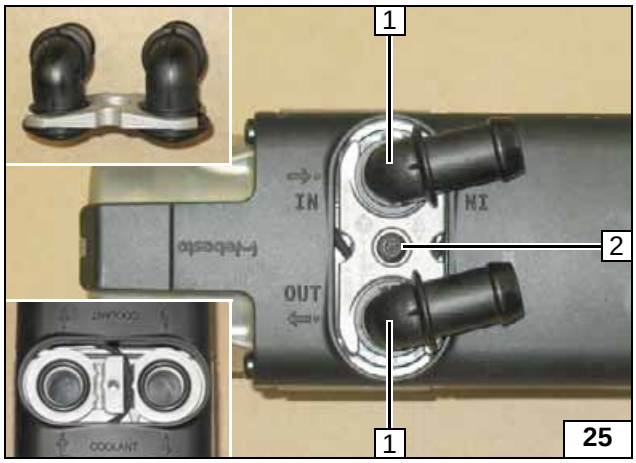


1 60mm dia. hole

Inserting edge protection



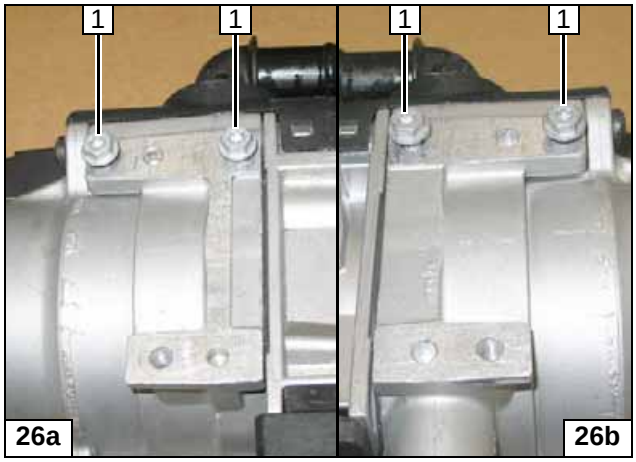
1 210mm edge protection



Preparing Heater

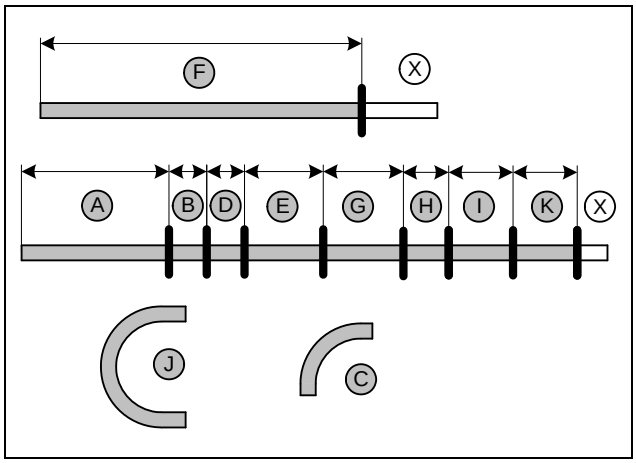
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Mounting water connection piece



Tap threads with 5x13 self-tapping bolt **1** [4x] and mount loosely (turn max. 3 threads).

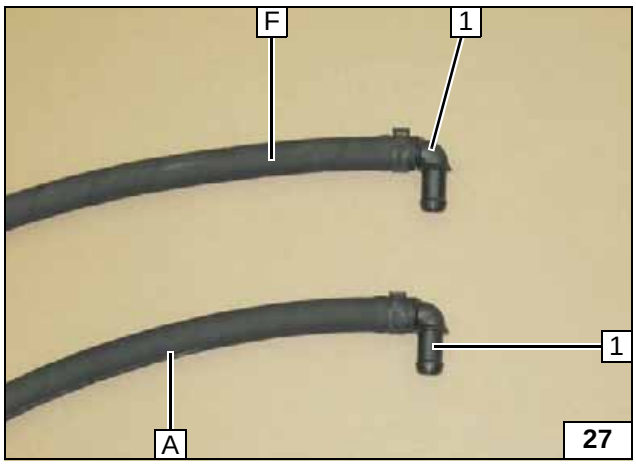
Premounting bolt loosely



Discard section **X**.
Hose **C** = 90°, 18 mm dia. moulded hose
Hose **J** = 180°, 18 mm dia. moulded hose

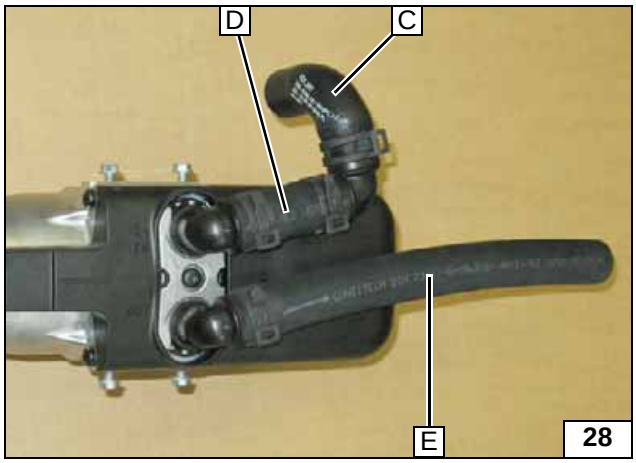
A =	800	**G** =	240
B =	70	**H** =	60
D =	60	**I** =	210
E =	240	**K** =	180
F =	620		

Cutting hoses to length



1 18x18mm dia. 90° connecting pipe, 25mm dia. spring clip [2x each]

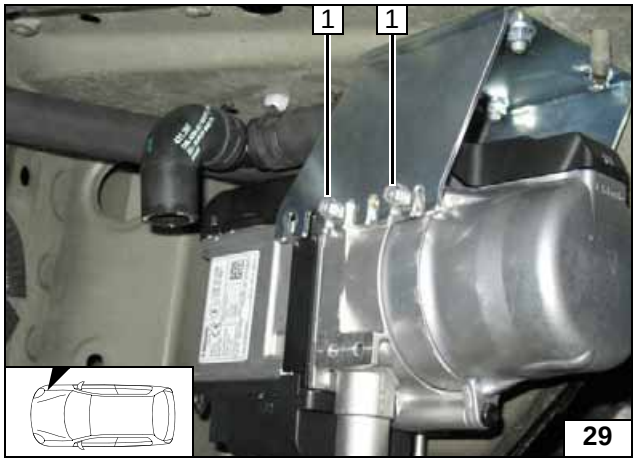
Preparing hoses A and F



All spring clips 25 mm dia.

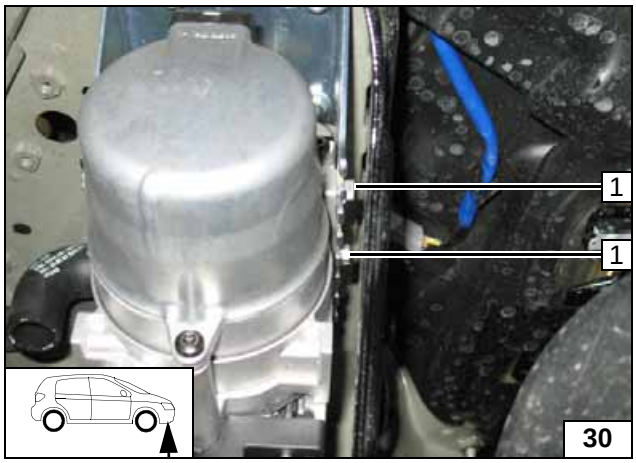
Premounting hoses

Installing Heater



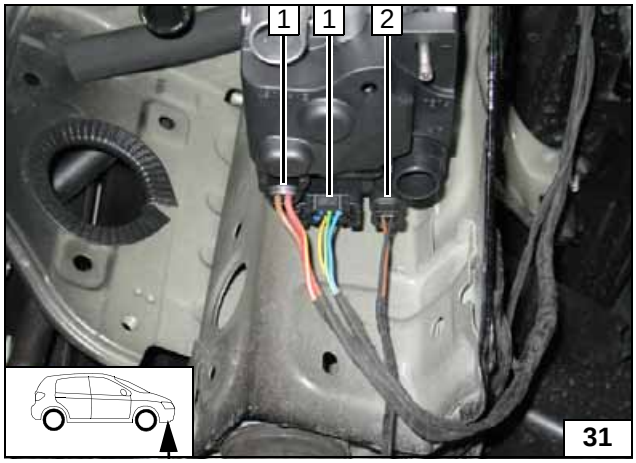
1 Tighten 5x13 self-tapping bolt [2x]

Mounting heater



1 Tighten 5x13 self-tapping bolt [2x]

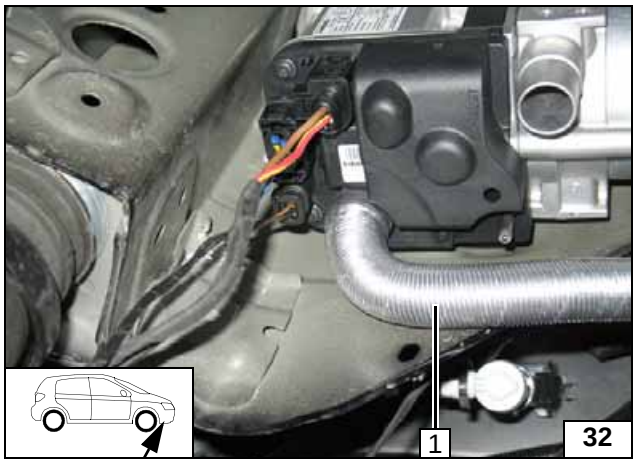
Mounting heater



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

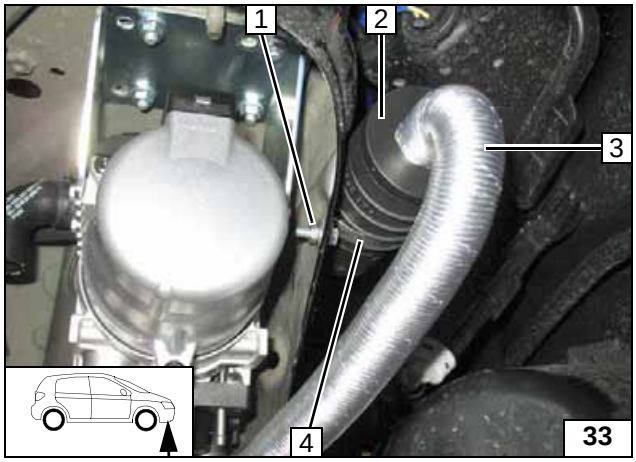
Attaching wiring harnesses

Combustion Air



1 Combustion air pipe

Mounting combustion air pipe

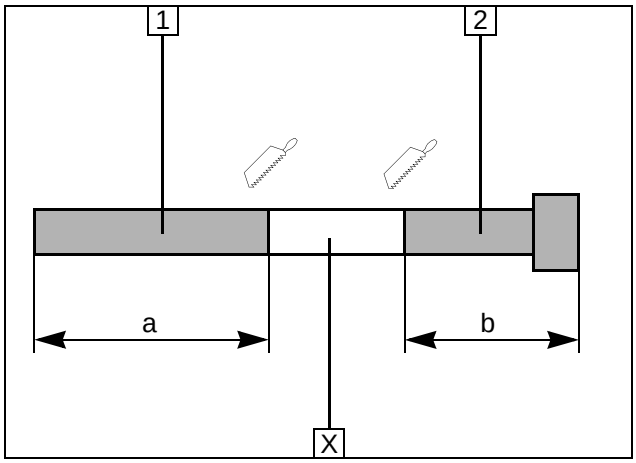


1 M5x16 bolt, large diameter washer, flanged nut, existing hole
2 Silencer
3 Combustion air pipe
4 51 mm dia. clamp

Installing silencer

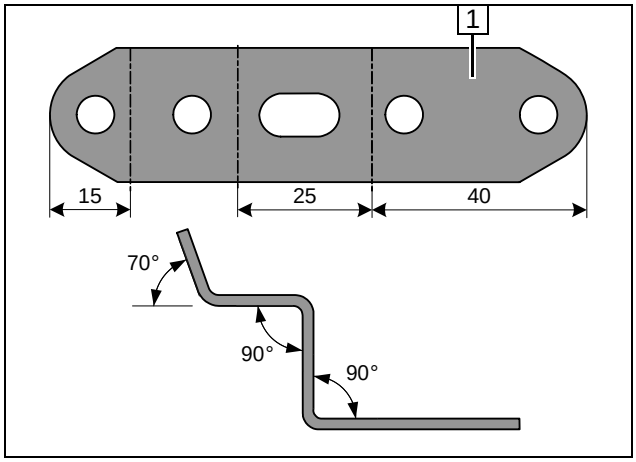
Exhaust Gas

Discard section **X**.



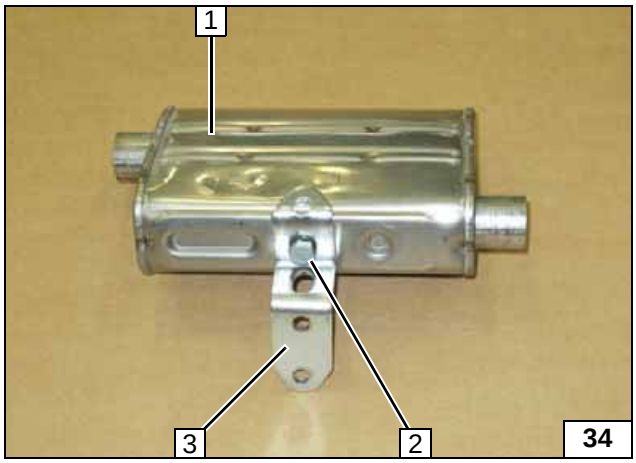
1 Exhaust pipe
a = 200
2 Exhaust end section
b = 70

Preparing exhaust pipe



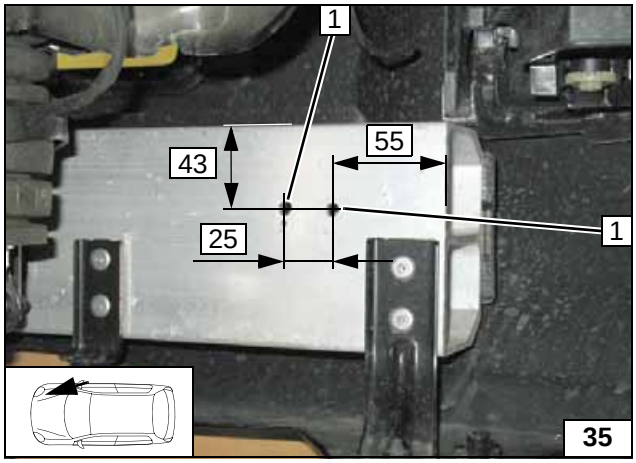
1 Perforated bracket

Angling down perforated bracket



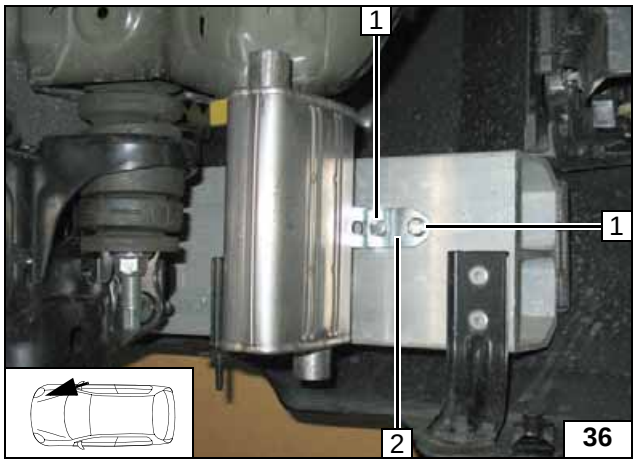
1 Silencer
2 M6x16 bolt, spring lockwasher
3 Perforated bracket

Premounting silencer



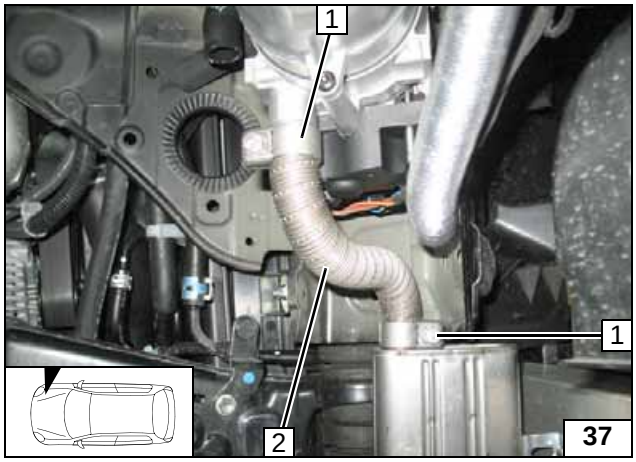
1 7mm dia. hole [2x]

Holes in bumper



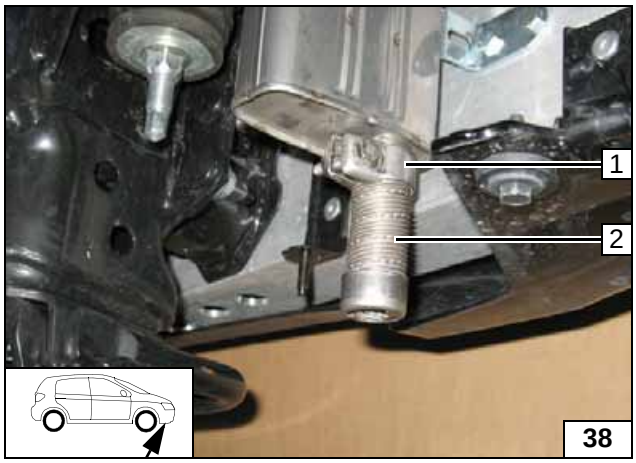
1 M6x20 bolt, flanged nut [2x]
2 Perforated bracket

Installing silencer



1 Hose clamp [2x]
2 Exhaust pipe

Mounting exhaust pipe



1 Hose clamp
2 Exhaust end section

Mounting end section

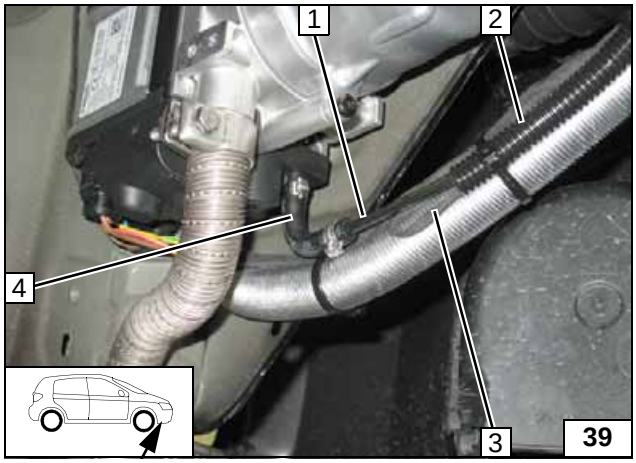
Fuel

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

Catch any fuel running off with 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.
Mount the fuel line and wiring harness with rub protection on sharp edges.

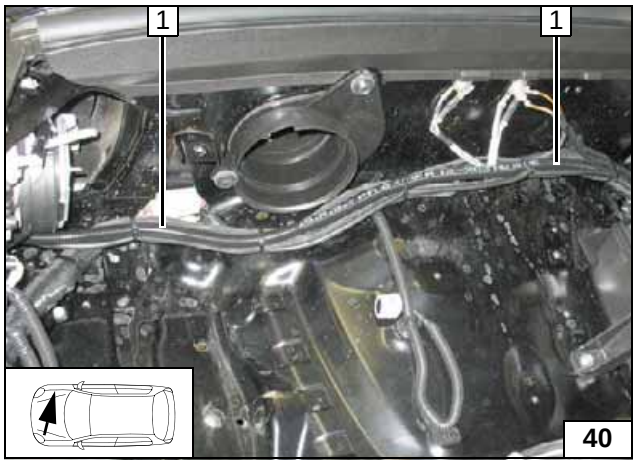
WARNING!
The fuel line and wiring harness are routed to the metering pump as shown in the wiring harness routing diagram.



Pull fuel line **1** and wiring harness of metering pump **3** into 10mm dia., 2100mm long corrugated tube **2**.

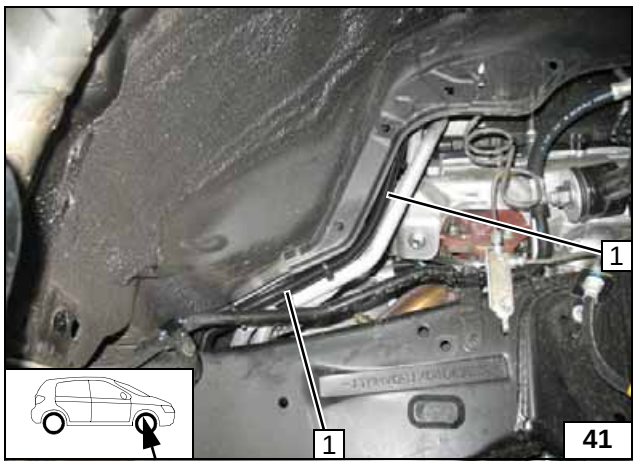
4 90° moulded hose, 10 mm dia. clamp [2x]

Connecting heater



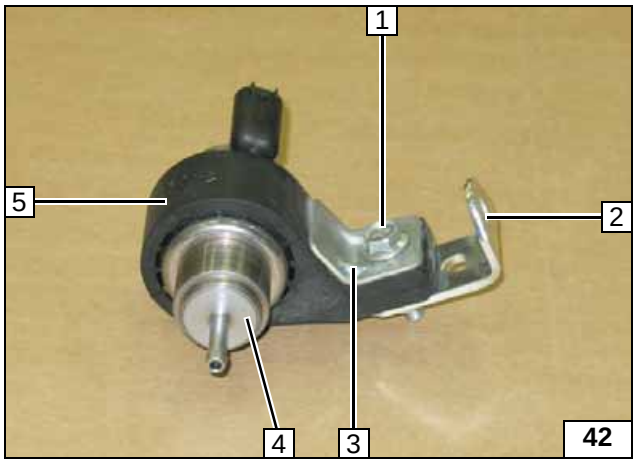
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** to firewall

Routing lines



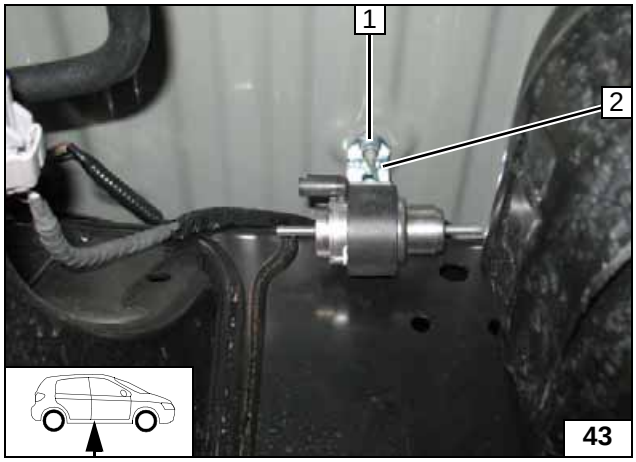
Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** along original vehicle brake lines to installation location of metering pump.

Routing lines



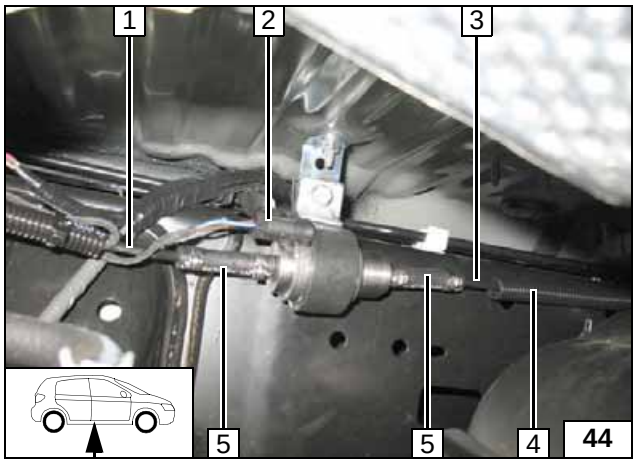
1 M6x25 bolt, flanged nut
2 Angle bracket
3 Support angle
4 Metering pump
5 Metering pump mounting

Premounting metering pump



1 Original vehicle stud bolt, M6 flanged nut
2 Angle bracket

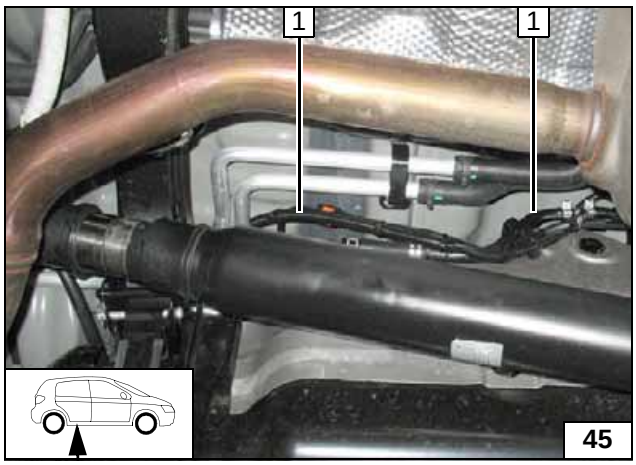
Mounting metering pump



Route fuel line to fuel standpipe **3** in 10mm dia., 1130 long corrugated tube **4** to the back.

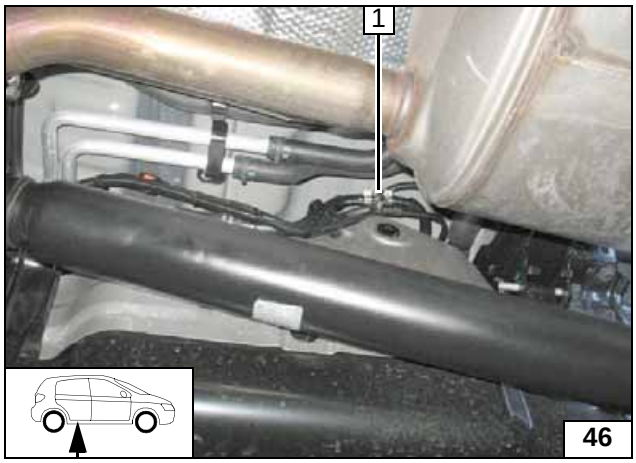
1 Fuel line of heater
2 Wiring harness of metering pump, connector mounted
5 Hose section [2x], 10 mm dia. clamp [4x]

Connecting metering pump



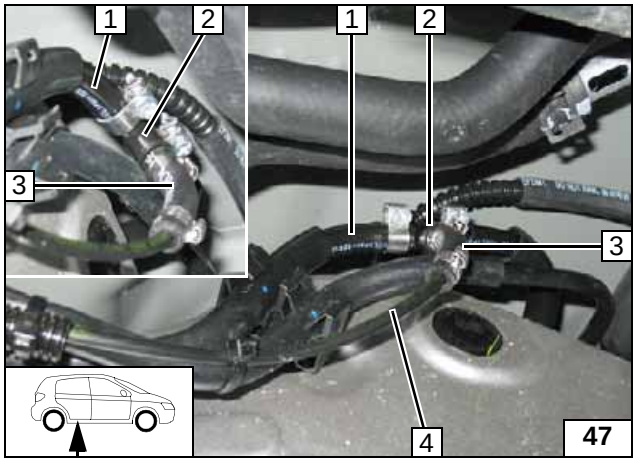
1 Fuel line and fuel standpipe in 10mm dia. corrugated tube

Routing lines



Remove protective hose of fuel supply line in the area of cutting point **1**.

Cutting point



Cut off fuel supply line **1** at position **2**. Check the position of the components; adjust if necessary. Check that they have freedom of movement.

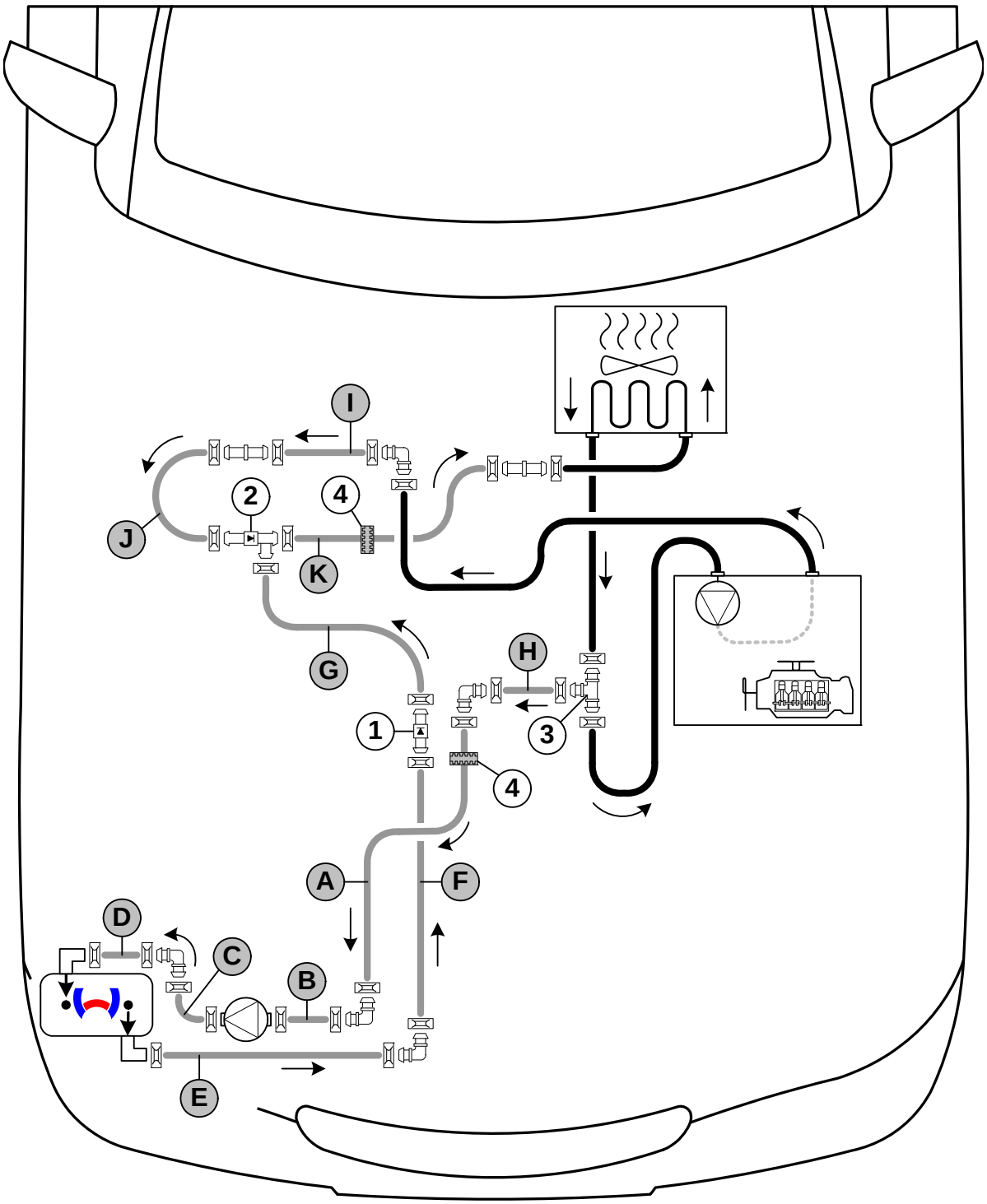
2 10x5x10 fuel standpipe, 12mm dia. clamp [2x]
3 Hose section, 10 mm dia. clamp [2x]
4 Fuel line

Fuel extraction

Front Air-Conditioning Coolant Circuit

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

Hose routing diagram

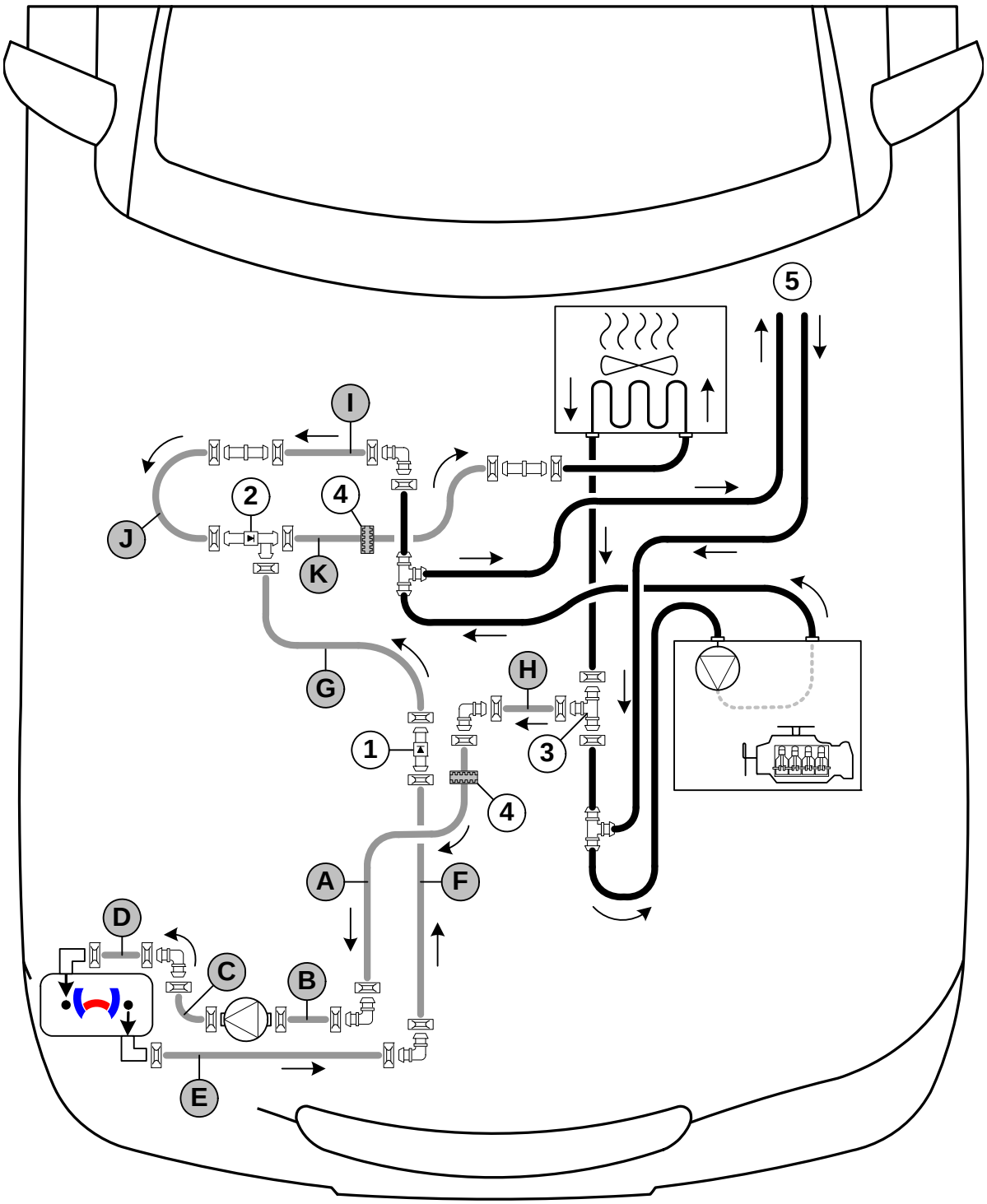


All spring clips = 25 mm dia. **4** = Black (sw) rubber isolator . **1** = Check valve 2x18mm dia.!
All connecting pipes and = 18x18 mm dia. **2** = Check valve 3x18mm dia.!
3 = T-piece .

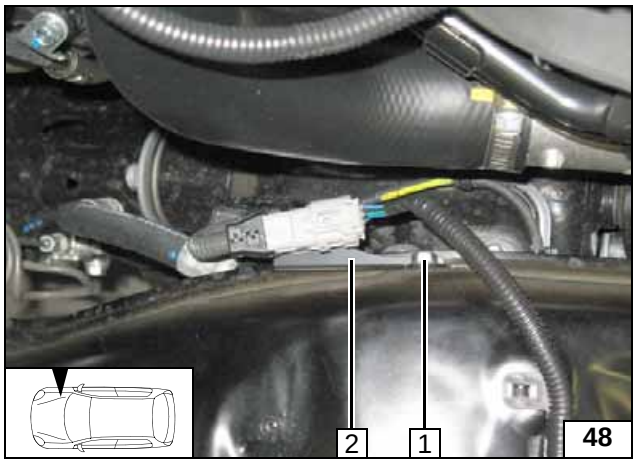
Front and Rear Air-Conditioning Coolant Circuit

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

Hose routing diagram

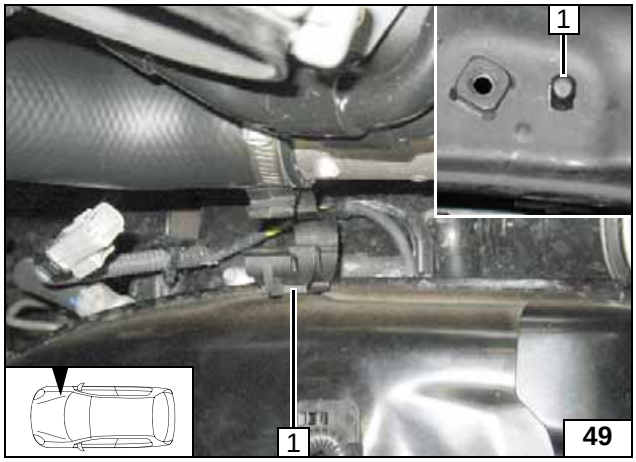


All spring clips = 25 mm dia. **4** = Black (sw) rubber isolator . **1** = Check valve 2x18mm dia.!
5 = Connection of rear heat exchanger All connecting pipes and = 18x18 mm dia.
2 = Check valve 3x18mm dia.! **3** = T-piece .



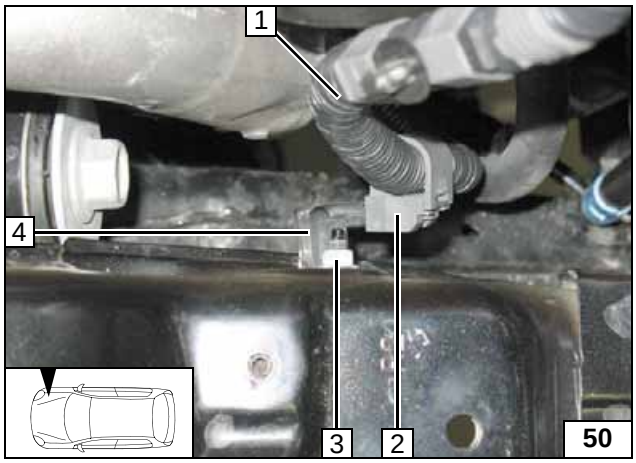
1 Remove bolt and discard
2 Remove bracket of connector and discard

Preparing installation location



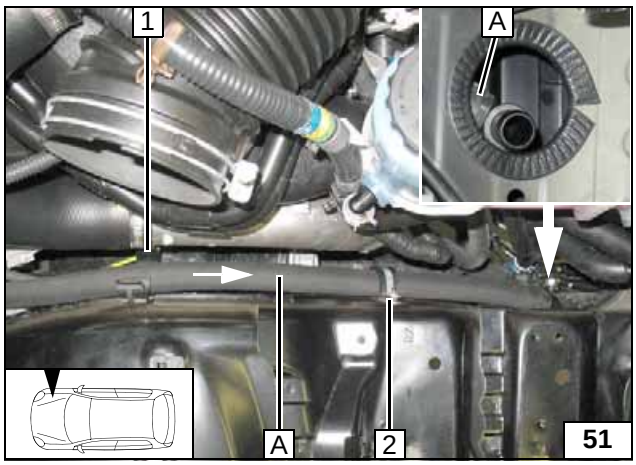
Insert hose bracket **1** into hole.

Preparing installation location



1 Battery earth cable
2 Remove hose bracket and discard
3 Remove flanged nut, will be reused
4 Remove bracket and discard

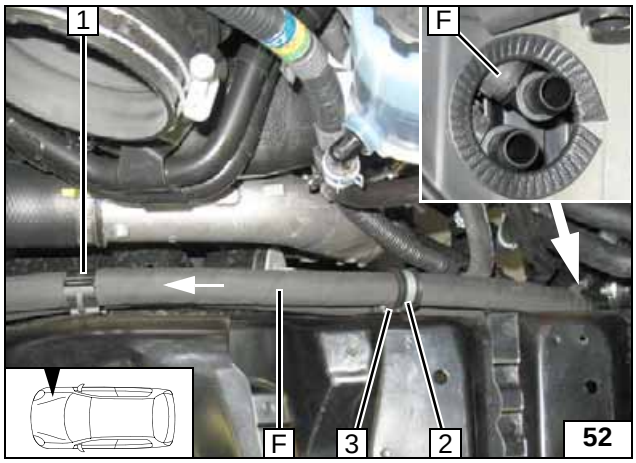
Preparing installation location



Route hose **A** through hose bracket **1** and rubber-coated p-clamp **2**. Align 90° connecting pipe in 60mm dia. hole.

2 25mm dia. rubber-coated p-clamp mounted on original vehicle stud bolt

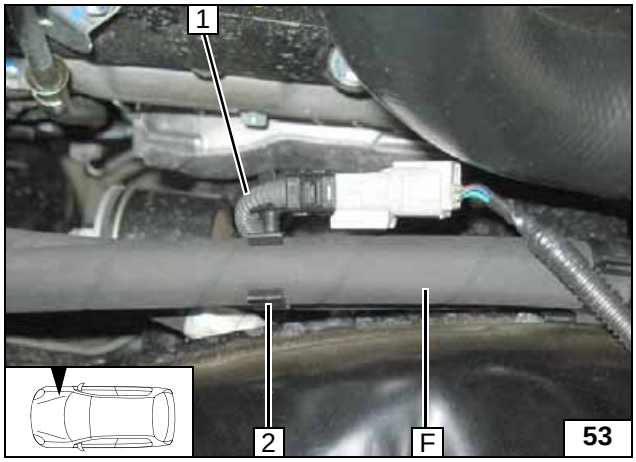
Routing in engine compartment



Route hose **F** through hose bracket **1** and rubber-coated p-clamp **2**. Align 90° connecting pipe in 60mm dia. hole.

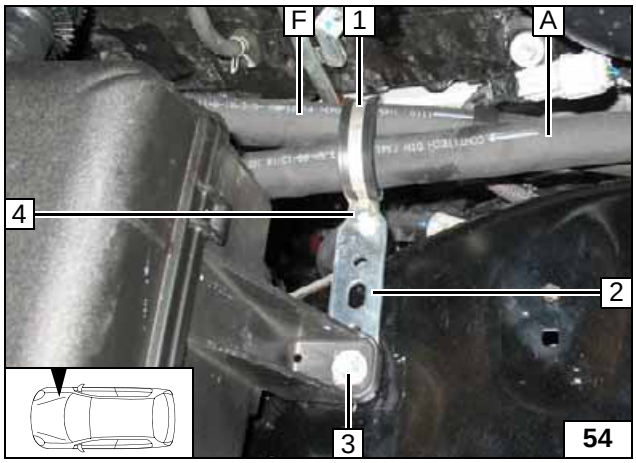
1 Close hose bracket
2 25mm dia. rubber-coated p-clamp mounted on original vehicle stud bolt
3 Original vehicle flanged nut on original vehicle stud bolt

Routing in engine compartment



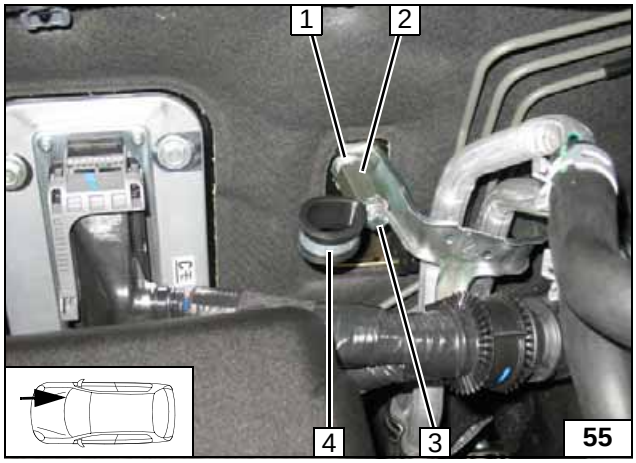
1 Wiring harness of original vehicle connector
2 Hose bracket

Mounting hose bracket



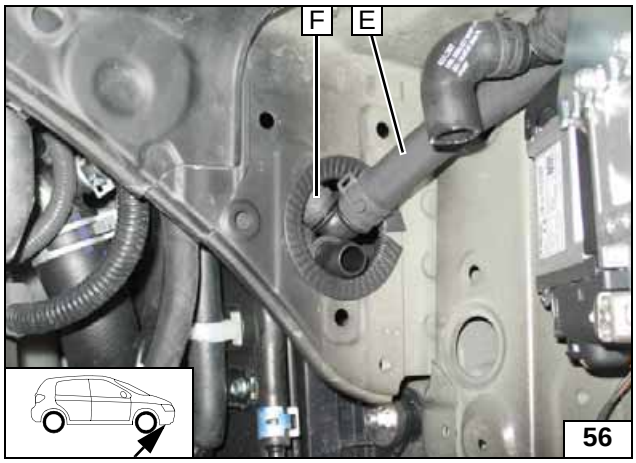
1 38 mm dia. rubber-coated p-clamp
2 Perforated bracket
3 Original vehicle bolt, central electrical box, engine compartment
4 M6x20 bolt, flanged nut

Fastening hoses

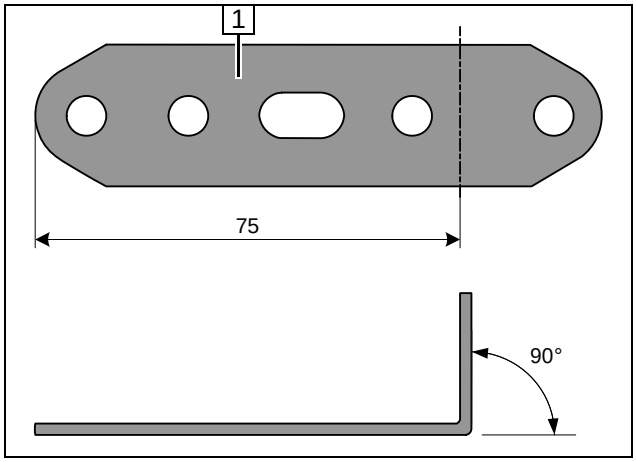


1 Original vehicle stud bolt
2 M6x30 spacer nut
3 M6x16 bolt, spring lockwasher
4 25 mm dia. rubber-coated p-clamp

Hose mounting

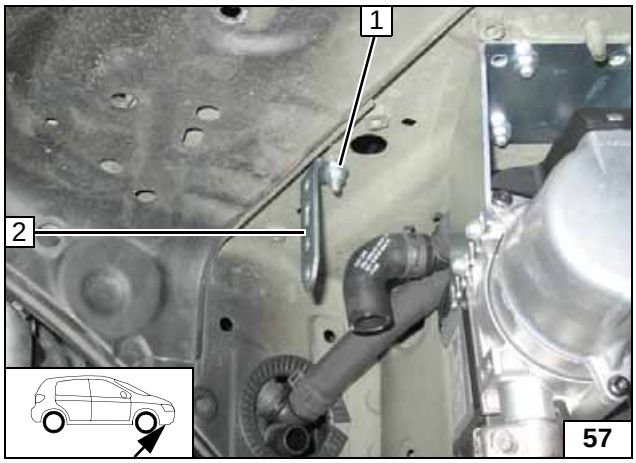


Connecting heater outlet



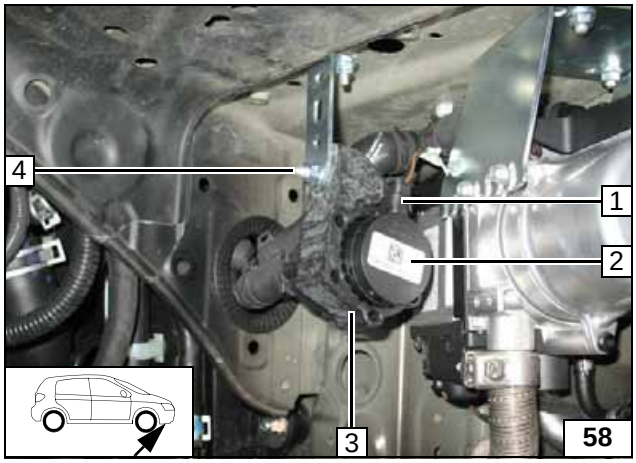
1 Perforated bracket

Angling down perforated bracket



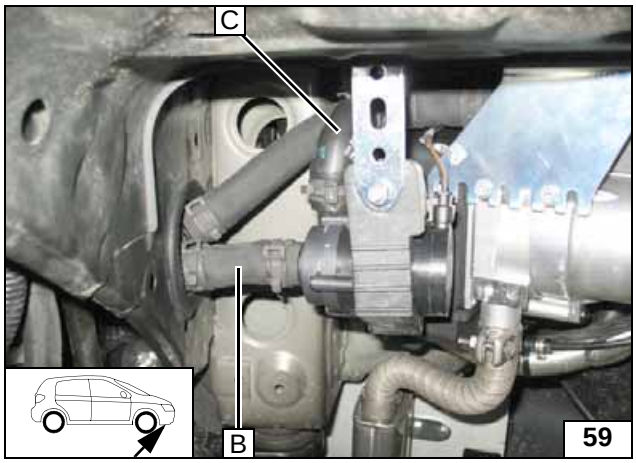
1 M6x20 bolt, flanged nut, existing hole
2 Perforated bracket

Installing perforated bracket



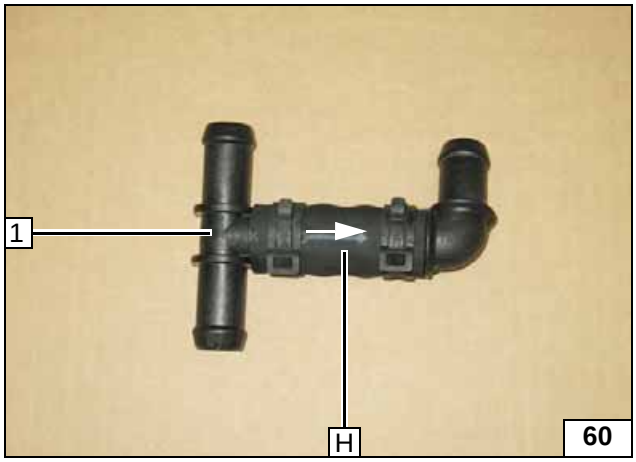
1 Mount wiring harness of circulating pump
2 Circulating pump
3 Circulating pump mounting
4 M6x25 bolt, flanged nut

Mounting circulating pump



Connecting circulating pump

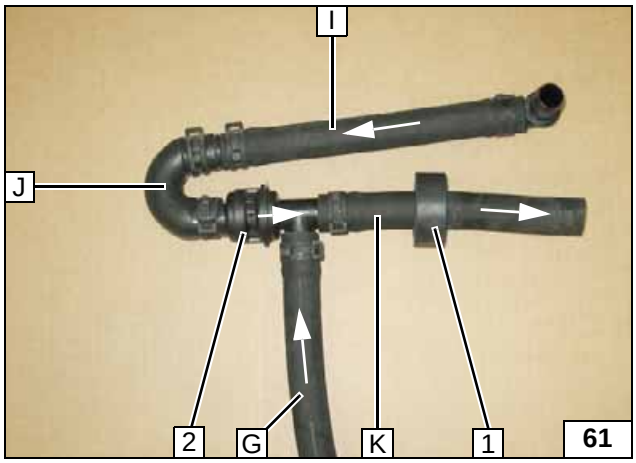
1 3x18mm dia. T-piece



Premounting T-Piece

Mind direction of flow of 3x18mm dia. check valve **2**.

1 Black (sw) rubber isolator

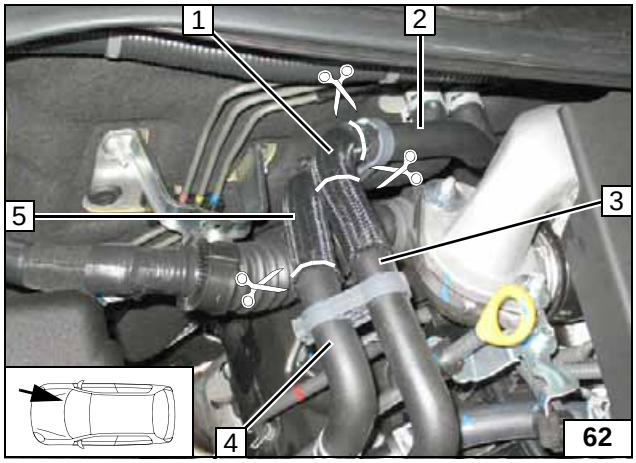


Premounting check valve

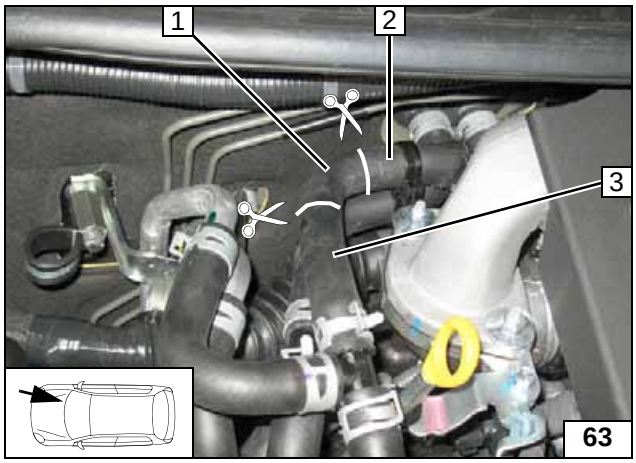
Cutting point in case of front air-conditioning

Cut hoses at the markings. Remove braided protection hoses.

1 Discard section
2 Hose section of heat exchanger inlet
3 Engine outlet hose section
4 Engine inlet hose section
5 Hose section on heat exchanger outlet



Cutting point

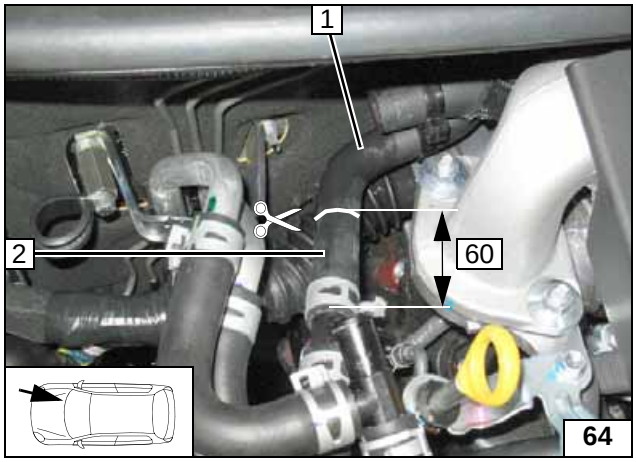


Cutting points in case of front and rear air-conditioning

Cut hose at the markings.

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

Cutting point

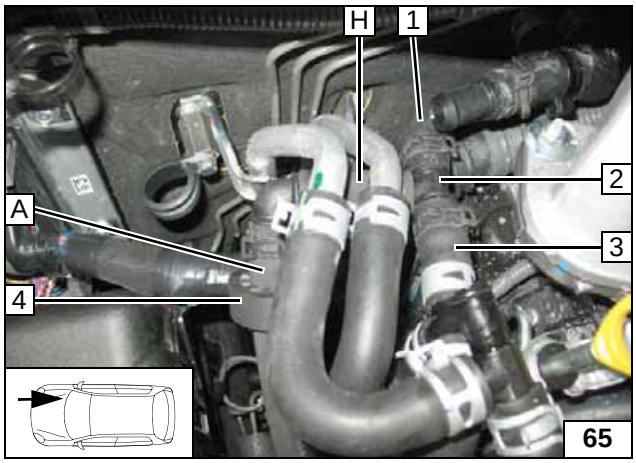


All vehicles

All the following images show the connection for vehicles with front and rear air-conditioning.
The engine outlet hose section has been removed for documentary purposes. Cut hose at the markings.

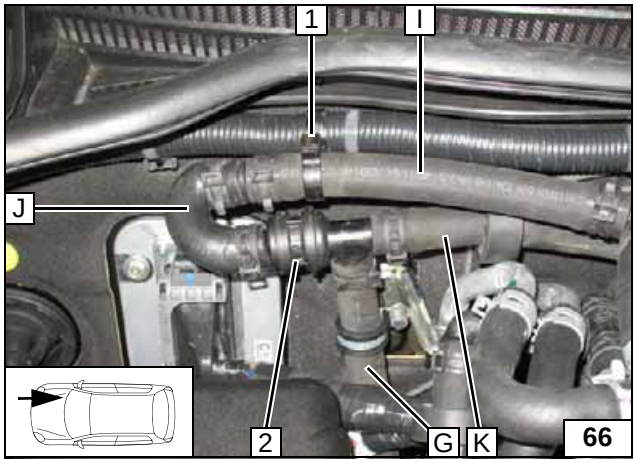
1 Hose section on heat exchanger outlet
2 Engine inlet hose section

Cutting point



1 Hose for heat exchanger outlet
2 T-piece
3 Hose of engine inlet
4 Align black (sw) rubber isolator

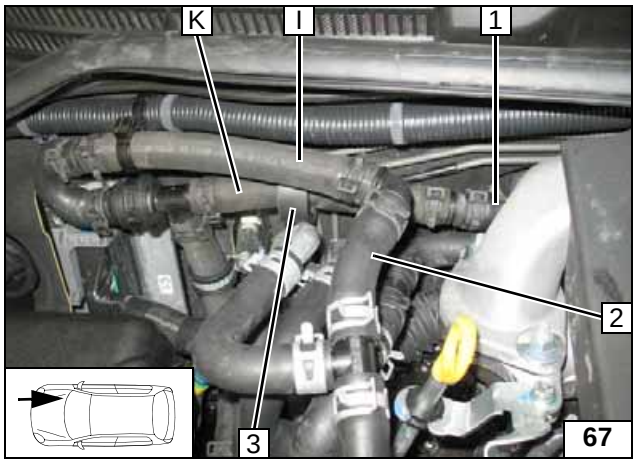
Installing T-Piece



Route hose **G** through rubber-coated p-clamp.

1 Original vehicle hose bracket
2 Check valve

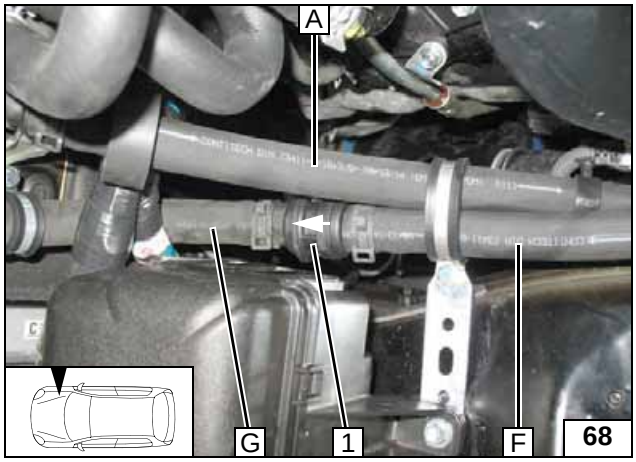
Installing check valve



Align black (sw) rubber isolator **3** on pipe and brake line. Align hoses. Ensure sufficient distance from neighbouring components, correct if necessary.

1 Hose on heat exchanger inlet
2 Hose of engine outlet

Connection of engine outlet / heat exchanger inlet



Check direction of flow.

1 Check valve 2x18mm dia.

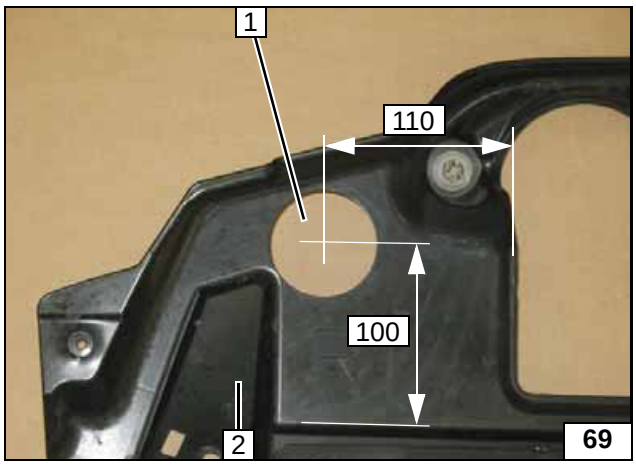
Installing check valve

Final Work

WARNING!
Reassemble the disassembled components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back all loose wires.
Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K, Order No. 111329).

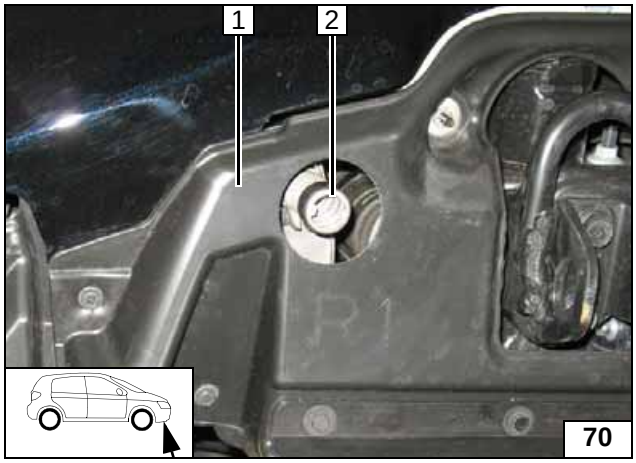
- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Set digital timer, teach Telestart transmitter**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Check the fan function (IPCU):**
  Adjust fan output to maximum. Then switch off ignition and switch on parking heater. On reaching the activation temperatur of 50°C, the fan speed must correspond to the value of approx. 1/3 of the maximum speed specified by IPCU.
- **Mount "Switch off parking heater before refueling" signboard in area of filler neck.**
- **During initial start up, proceed as follows with the Webasto Thermo Test Diagnosis:**

  - Control coolant pump under Menu Component test, check coolant level
  - Pump fuel for the heater under the menu pipe filling.
  - CO_2- Check settings; take setting values from the general installation instructions
  - During the trial run, all water and fuel connections must be checked for leakage and firm seating.
  - A error search is to be conducted in case of fault



1 60mm dia. hole
2 Wheel well trim

Cutting out wheel well trim



Align exhaust end section **2** in the centre of the wheel well trim hole **1**.

Aligning exhaust end section

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

Operating Instructions for End Customer

Please remove page 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.

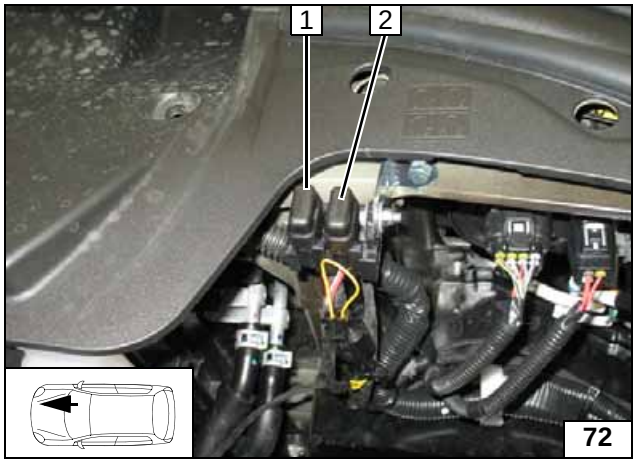
Passenger compartment monitoring, if installed, must be deactivated in addition to the vehicle settings for the heating process if false alarms are caused by the heating operation.
Please refer to the operating manual of the vehicle for instructions regarding deactivation.

Before parking the vehicle, make the following settings:

Due to the special water connection (without engine preheating), we recommend leaving the heater on after engine start until the engine operating temperature has been reached. Also activate the vehicle parking heater "PWR-HEAT". This causes the temperature drop for starting the engine to be reduced and the engine heating to be accelerated.

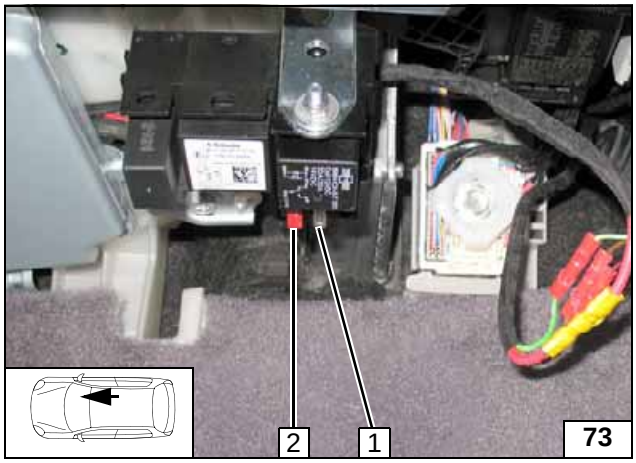
A/C control panel

1 Set temperature on both sides to "HI".
2 Air outlet to windscreen



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

Fuses of engine compartment



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

Fuses of passenger compartment