

Water Heater

Thermo Top Evo Parking Heater



Installation Documentation

Peugeot 308

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Peugeot	308	4	e2 * 2001 / 116 * 0362 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm ³	Engine code
1.4 VTI	Petrol	SG	70	1397	8FS (EP3)
1.4 VTI	Petrol	SG	72	1397	8FR (EP3C)
1.6 VTI	Petrol	SG	88	1598	5FS (EP6C)
1.6 VTI	Petrol	SG	88	1598	5FW (EP6)
1.6 THP	Petrol	SG	115	1598	5FV (EP6CDT)

SG = Manual transmission

From Model Year 2011 Left-hand drive vehicle

Verified equipment variants: Manual / automatic air-conditioning system

Front fog light
Daytime running lights

Not verified: Passenger compartment monitoring

Total installation time: approx. 8 hours

Peugeot 308

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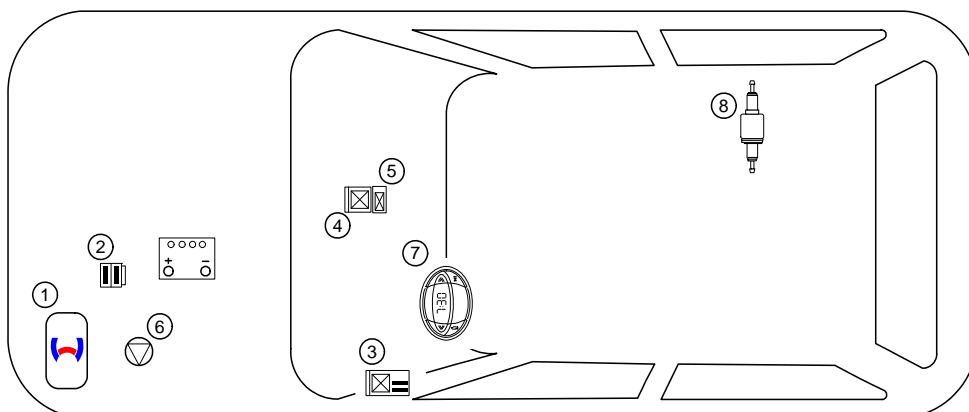
Necessary Components

- Basic delivery scope *Thermo Top Evo* in accordance with price list
- Installation kit for Peugeot 308 2011 Petrol: **1317783A**
- Heater control in accordance with price list and upon consultation with end customer
- In case of Telestart, indicator lamp in accordance with price list and in consultation with end customer

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Relay and fuse holder of passenger compartment
4. IPCU
5. K2 relay
6. Circulating pump
7. Digital timer
8. 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. Connectors on electronic components must audibly snap into place during assembly.

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

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

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

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

Peugeot 308

Information on Validity

This installation documentation applies to Peugeot 308 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 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
- Metric thread-setter kit
- Webasto Thermo Test Diagnosis with current software

Dimensions

- All dimensions are in mm

Tightening torque values

- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque 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.

Special features are highlighted using the following symbols:

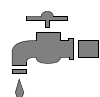
Mechanical system



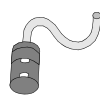
Electrical system



Coolant circuit



Combustion air



Fuel



Exhaust gas



Software



Specific risk of injury or fatal accidents.



Specific risk of damage to components.



Specific risk of fire and explosion



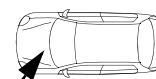
Reference to general installation instructions of the Webasto components or to the manufacturer's vehicle-specific documents.



Reference to a special technical feature



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



Peugeot 308

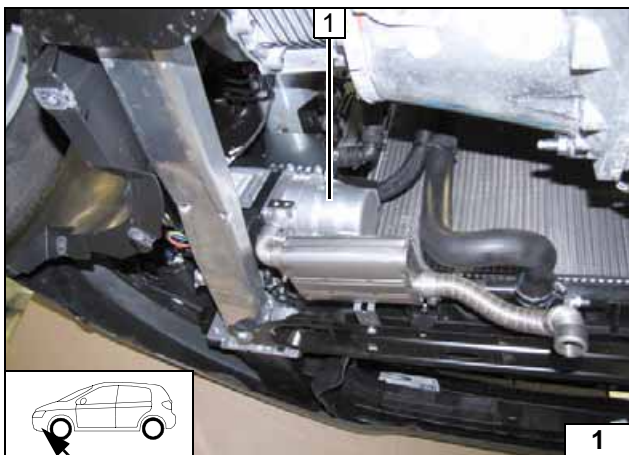
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery and remove it completely along with the carrier.
- Remove the air filter together with the intake hose.
- Remove the bracket of the air filter (original vehicle bolts will be reused).
- Remove the coolant reservoir cap.
- Remove the storage compartment in the centre of the instrument panel.
- Remove the trim of the A/C control panel.
- Remove the A/C control panel in accordance with the manufacturer's instructions.
- Remove the radio with duct.
- Remove lower and left instrument panel trim on the driver's side.
- Remove the knee airbag.
- Open the right-hand tank-fitting service lid.
- Remove the fuel-tank sending unit in accordance with manufacturer's instructions.
- Remove the underride protection.

Heater

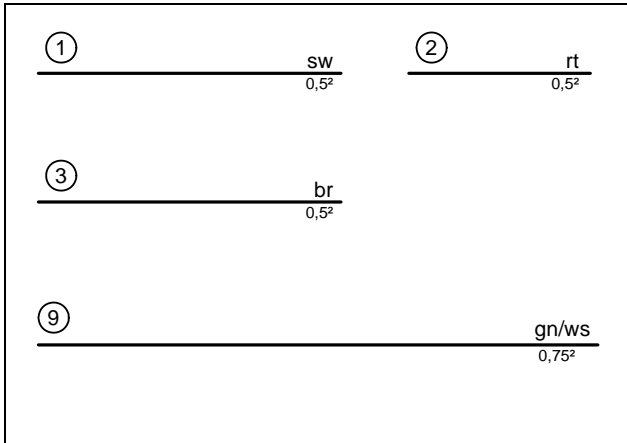
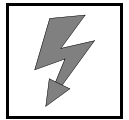
- Remove years that do not apply from the type and duplicate label.
- Attach the duplicate label (type label) in the appropriate place in the engine compartment.



Heater Installation Location

1 Heater

Installation location



Preparing Electrical System

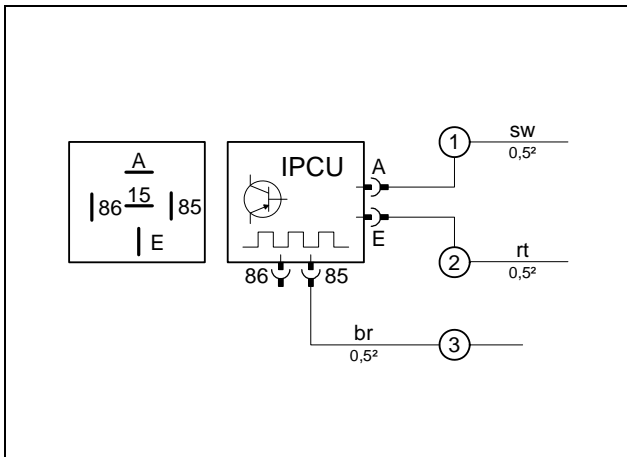
Wire sections retain their numbering in the entire document.

Manual air-conditioning

Insert green/white (gn/ws) wire ⑨ into protective sleeving.



Assigning wires

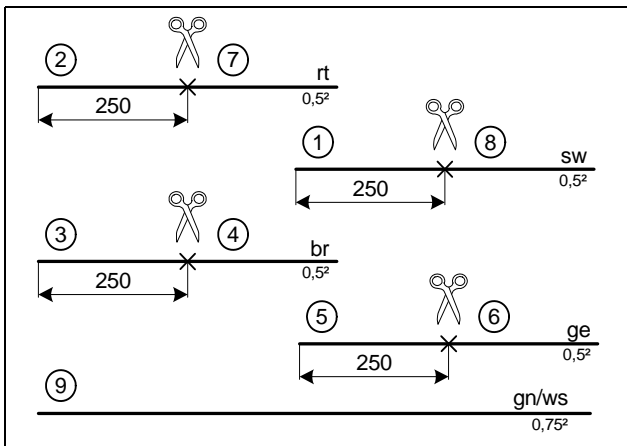


Connect wires.
The pre-programmed settings of the IPCU should be modified as follows:

Duty cycle: 100%
Frequency: 1000Hz
Voltage: 2.7V
Function: High-side



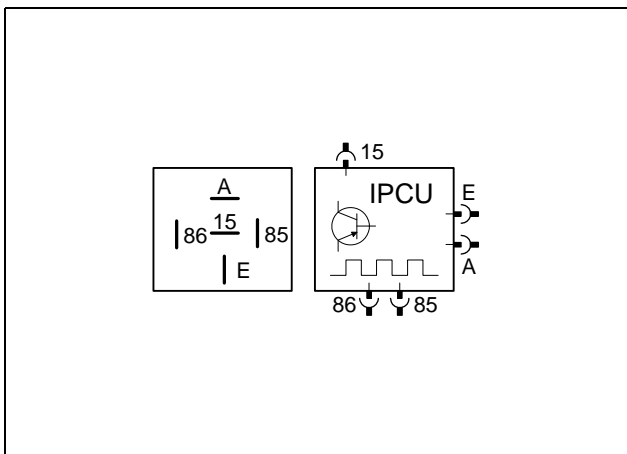
Premounting IPCU



Automatic air-conditioning



Cutting wires to length



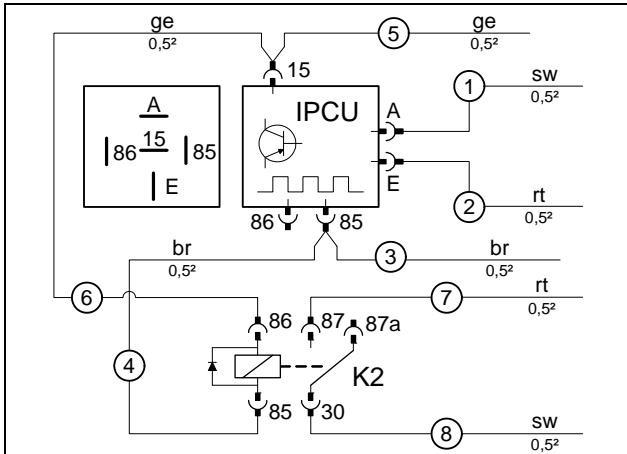
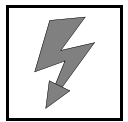
IPCU view on the contact side.
Check the IPCU settings before start-up of the heater and adjust if necessary.

IPCU settings:

Duty cycle: 70%
Frequency: 400Hz
Voltage: 12V
Function: Low side



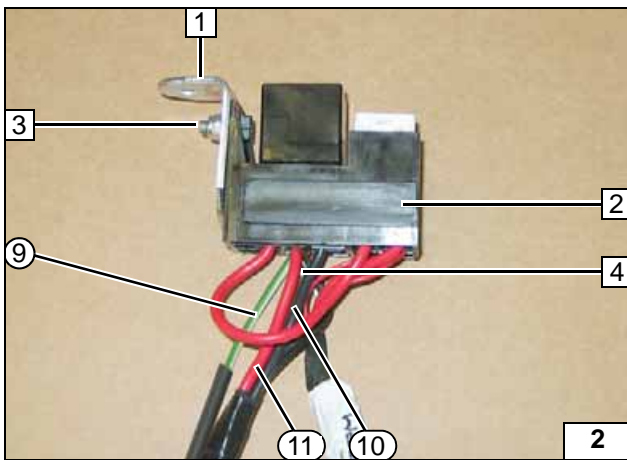
Preparing IPCU



Connect wires.



Pre-installing IPCU and K2 relay



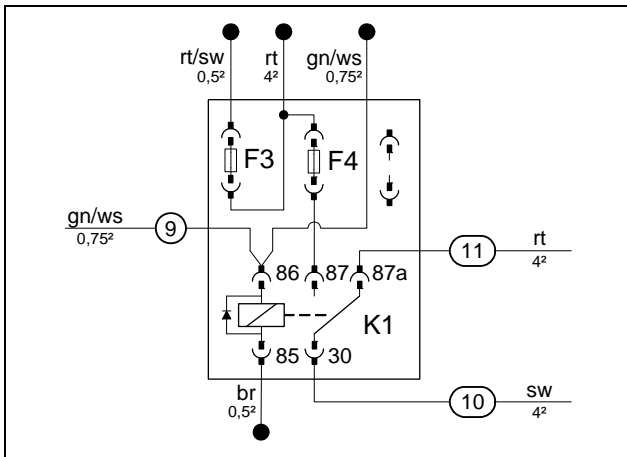
All vehicles

Remove/discard contact from K1/86
Install wires as shown in following wiring diagram with contacts supplied.



Preparing passenger compartment relay and fuse holder

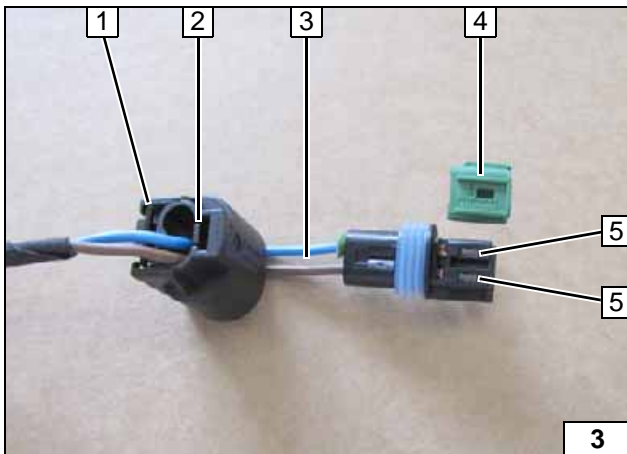
- 1 Angle bracket
- 2 Relay and fuse holder of passenger compartment
- 3 M5x16 bolt, large diameter washers [2x], nut
- 4 Green/white (gn/ws) wire of K1/86
- 9 Green/white (gn/ws) wire of K1/86 in protective sleeving
- 10 Black (sw) wire from K1/30
- 11 Red (rt) wire from K1/87a



Insert 25A fuse F4 and K1 relay.



Inserting and preparing K1 relay and F4



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



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

Disassembling connector



Electrical System

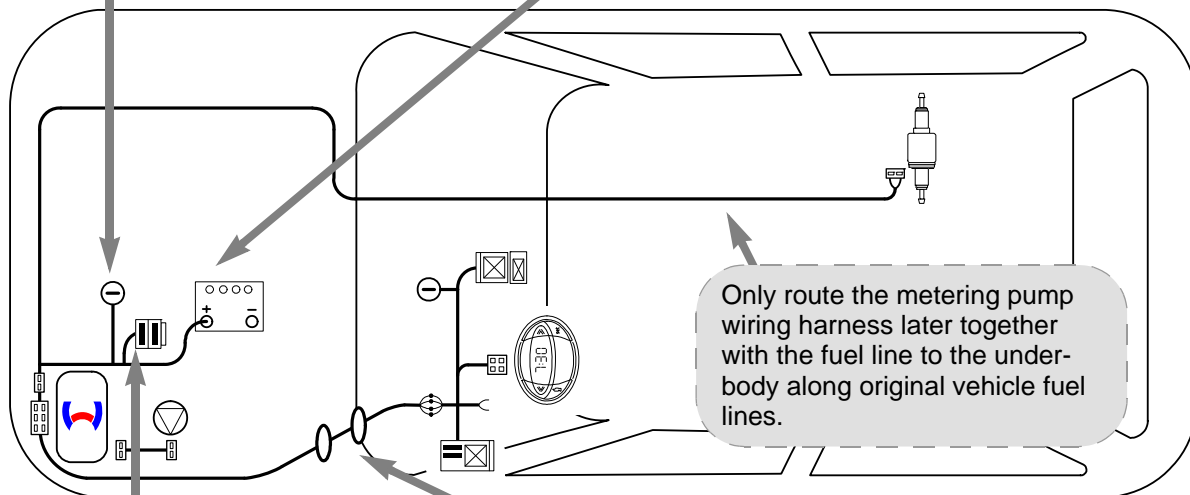
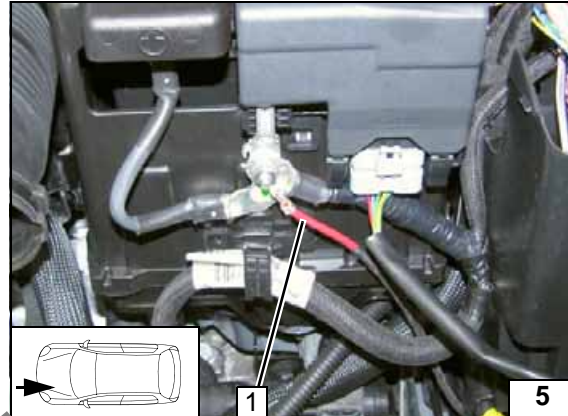
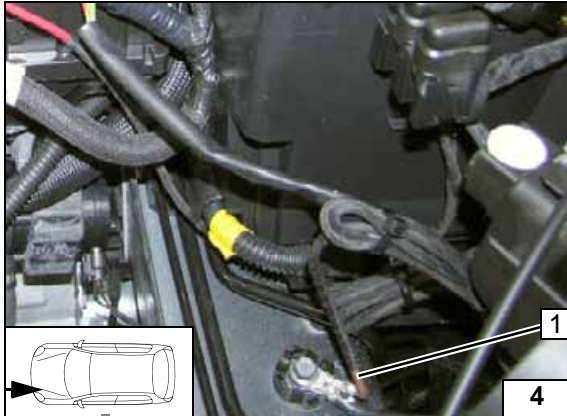


Earth wire

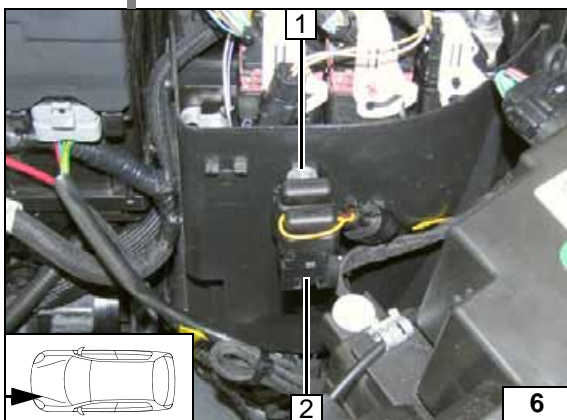
- 1 Earth wire on original vehicle earth support point

Positive wire

- 1 Positive wire on positive battery distributor

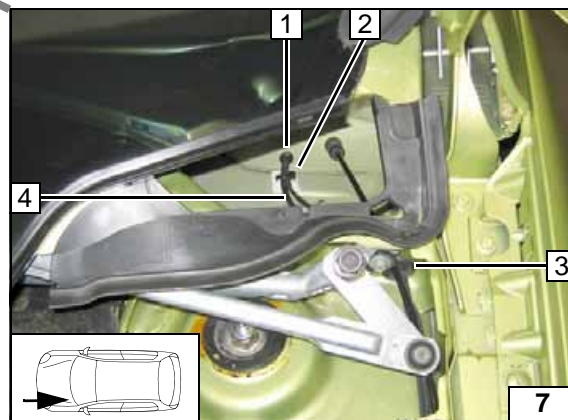


Wiring harness routing diagram



Fuse holder of engine compartment

- 1 5.5 mm dia. hole; M5x16 bolt, washer [2x], retaining plate of fuse holder, nut
- 2 F1-2 fuses

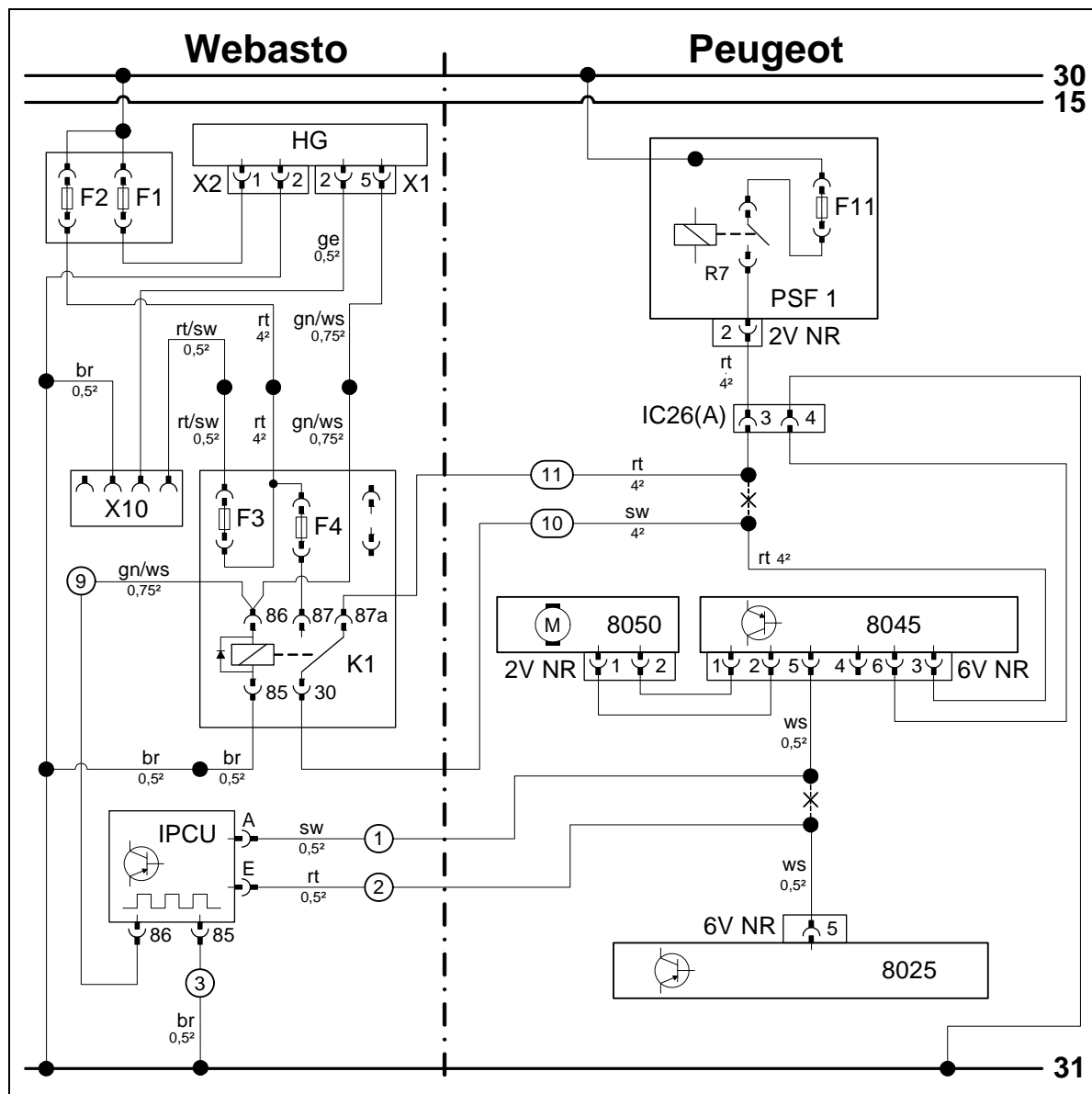


Wiring harness pass through

- 1 Protective rubber plug
- 2 Adhesive base with cable tie
- 3 Protective rubber plug
- 4 Wiring harnesses of heater, heater controls



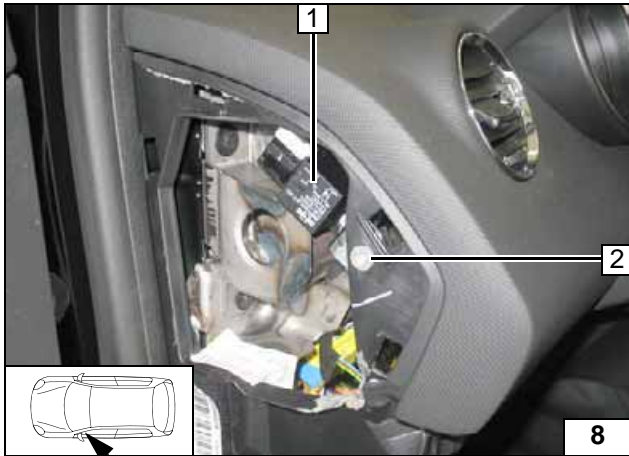
Fan Controller for Manual Air-Conditioning



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F11	Fuse	rt	red
X1	6-pin heater connector	PSF 1	Main power supply	sw	black
X2	2-pin heater connector	2V NR	2-pin connector	ge	yellow
X10	4-pin connector of heater control	IC26(A)	6-pin connector	gn	green
K1	Fan relay	8050	Fan motor	ws	white
F1	20A fuse	8045	Fan controller	br	brown
F2	30A fuse	6V NR	6-pin connector		
F3	1A fuse	8025	A/C control panel		
F4	25A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty cycle: 100%					
Frequency: 1000Hz					
Voltage: 2.7V					
Function: High-side					
				X	Cutting point
Wiring colours may vary.					

Legend

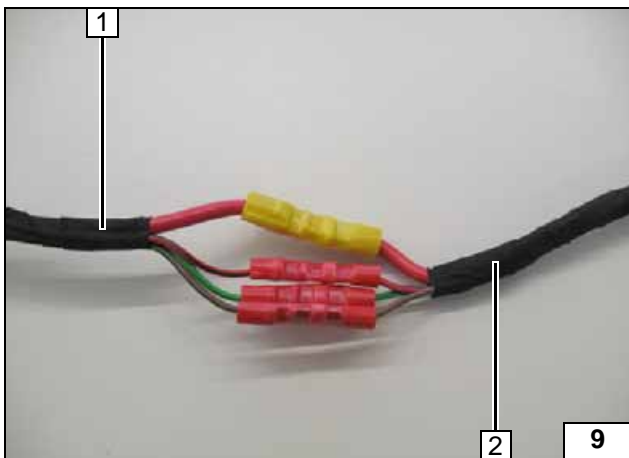


Countersink 6.5 mm dia. hole at position 2.



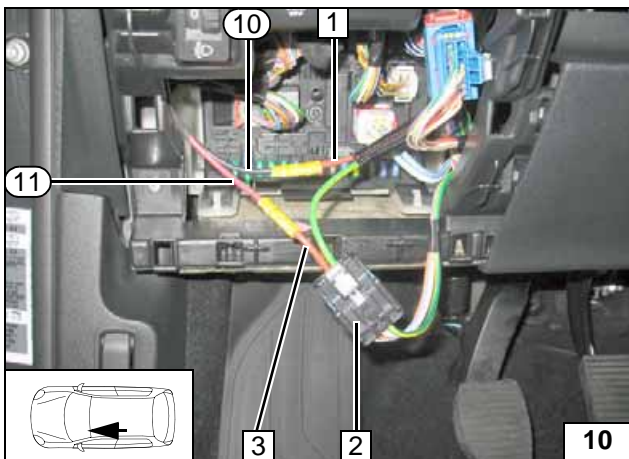
- 1 Relay and fuse holder of passenger compartment
- 2 M6x12 countersunk head screw, large diameter washer, flanged nut

Mounting passenger compartment relay and fuse holder



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

Connecting same colour wires of wiring harnesses

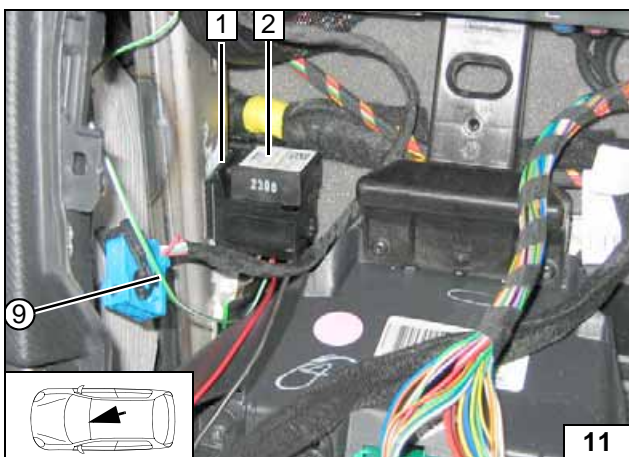


Connection on 6-pin connector 2.
Produce connections as shown in wiring diagram.



- 1 Red (rt) wire from 8045/3
- 3 Red (rt) wire of connector IC26(A), pin 3
- ⑩ Black (sw) wire from K1/30
- ⑪ Red (rt) wire from K1/87a

Connection of fan controller

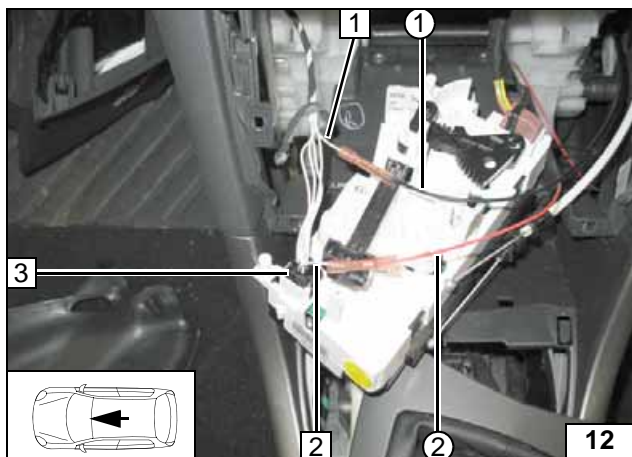


Before installation, connect green/white (gn/ws) wire ⑨ to IPCU/86. Fasten IPCU socket 1 on carrier with adhesive tape.



- 2 IPCU mounted

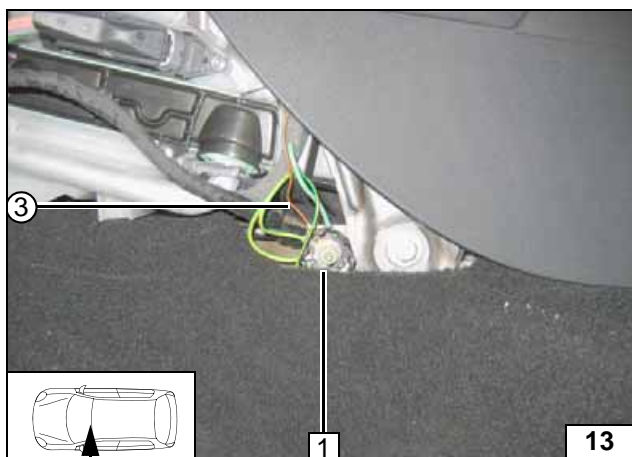
Installing IPCU



Connection on 6-pin connector **3** from A/C control panel.
Produce connections as shown in wiring diagram.

- 1** White (ws) wire from 8045/5
- 2** White (ws) wire from 8025/5
- ① Black (sw) wire from IPCU/A
- ② Red (rt) wire from IPCU/E

**Connec-
tion of
IPCU**

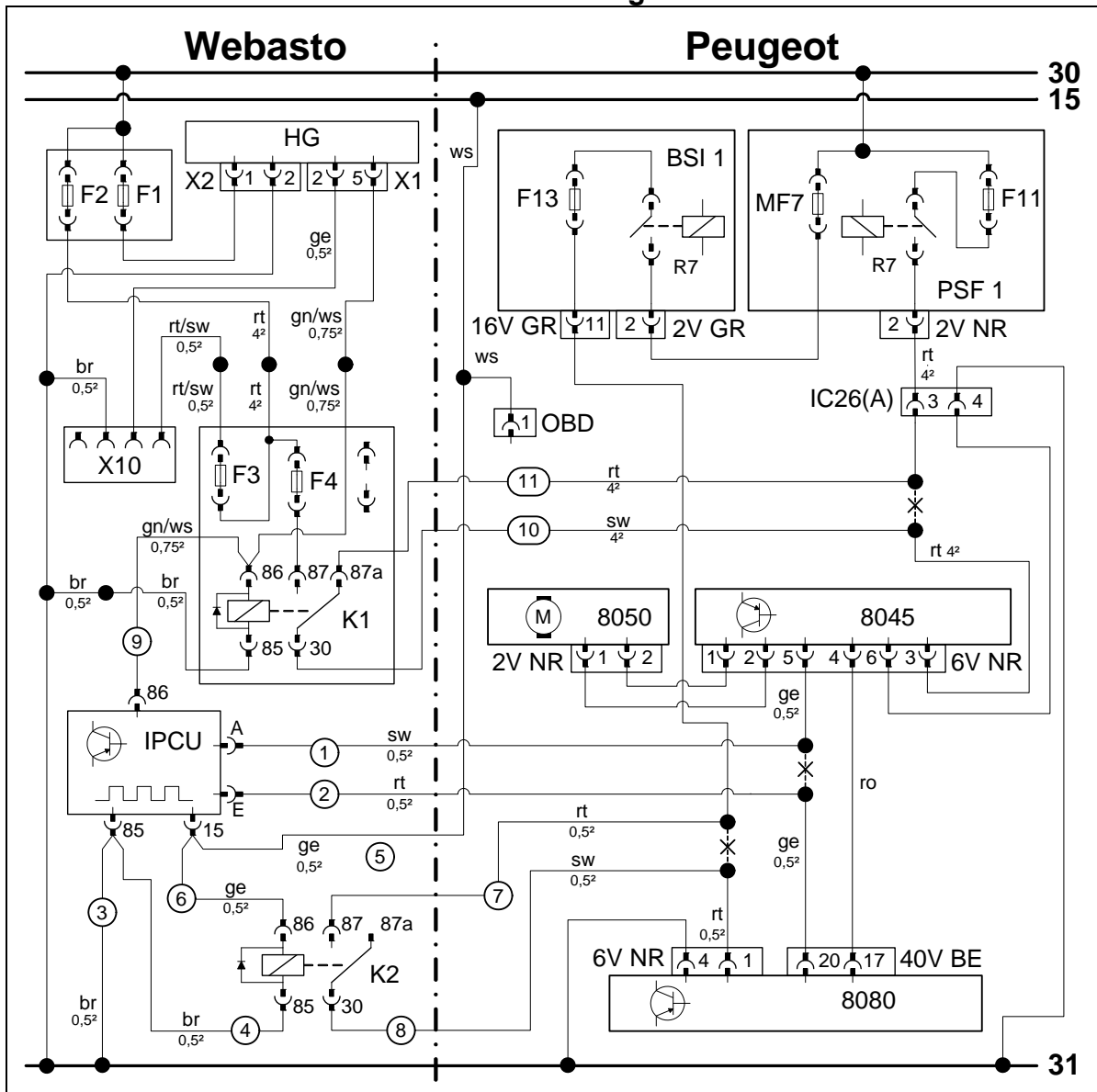


- 1** Original vehicle earth support point, centre console
- ③ Brown (br) wire from IPCU/85

**Earth con-
nection of
IPCU**



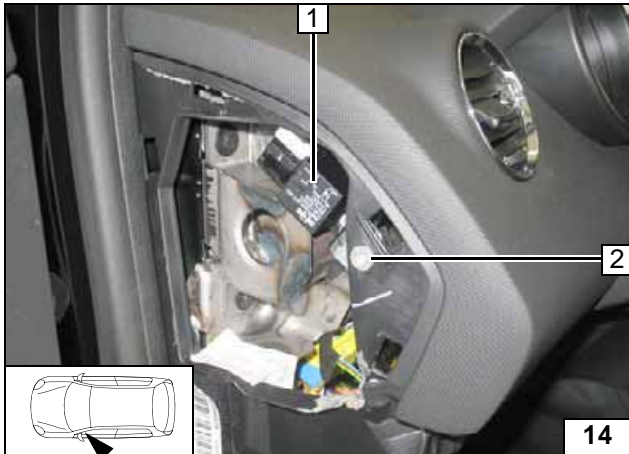
Fan Controller for Automatic Air-Conditioning



Wiring diagram

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	BSI 1	Central electrical box for passenger compartment	rt	red
X1	6-pin heater connector	F11	Fuse	sw	black
X2	2-pin heater connector	F13	Fuse	ge	yellow
X10	4-pin connector of heater control	MF7	Fuse	gn	green
K1	Fan relay	PSF 1	Main power supply	ro	pink
F1	20A fuse	16V GR	16-pin connector	ws	white
F2	30A fuse	2V GR	2-pin connector	br	brown
F3	1A fuse	2V NR	2-pin connector		
F4	25A fuse	IC26(A)	6-pin connector		
K2	Additional relay	OBD	OBD connector		
IPCU	Pulse width modulator	8050	Fan motor		
IPCU settings:		8045	Fan controller		
Duty cycle: 70%		6V NR	6-pin connector		
Frequency: 400Hz		40V BE	40-pin connector		
Voltage: 12V		8080	A/C control panel		
Function: Low side				X	Cutting point
				Wiring colours may vary.	

Legend

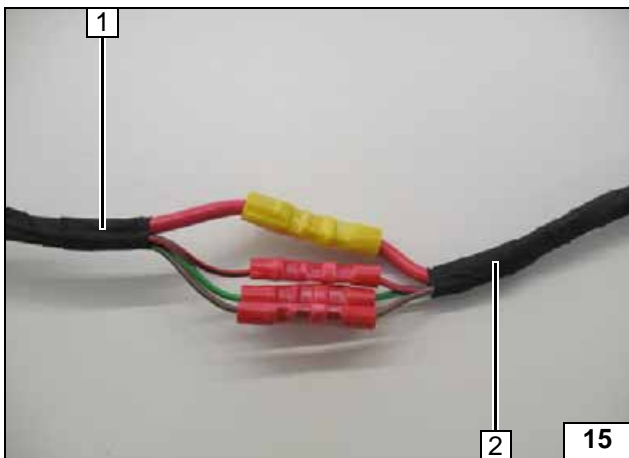


Countersink 6.5 mm dia. hole at position 2.



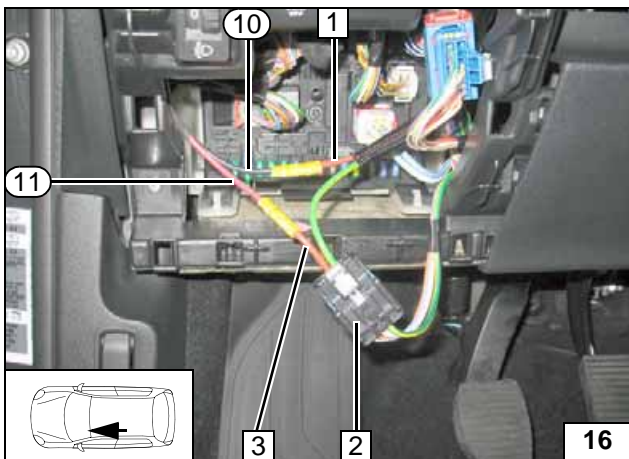
- 1 Relay and fuse holder of passenger compartment
- 2 M6x12 countersunk head screw, large diameter washer, flanged nut

Mounting passenger compartment relay and fuse holder



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

Connecting same colour wires of wiring harnesses

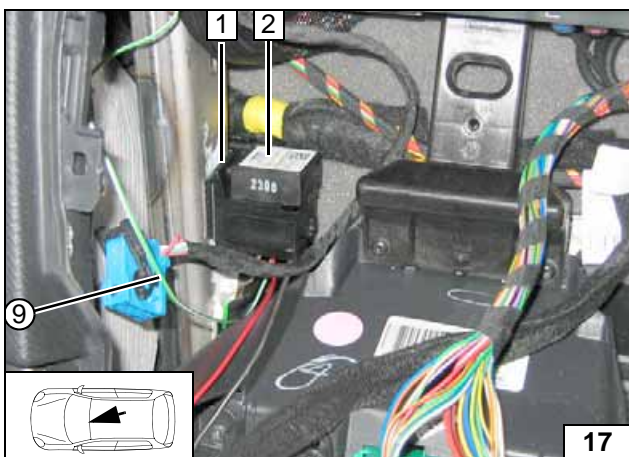


Connection on 6-pin connector 2.
Produce connections as shown in wiring diagram.



- 1 Red (rt) wire from 8045/3
- 3 Red (rt) wire of connector IC26(A), pin 3
- ⑩ Black (sw) wire from K1/30
- ⑪ Red (rt) wire from K1/87a

Connection of fan controller

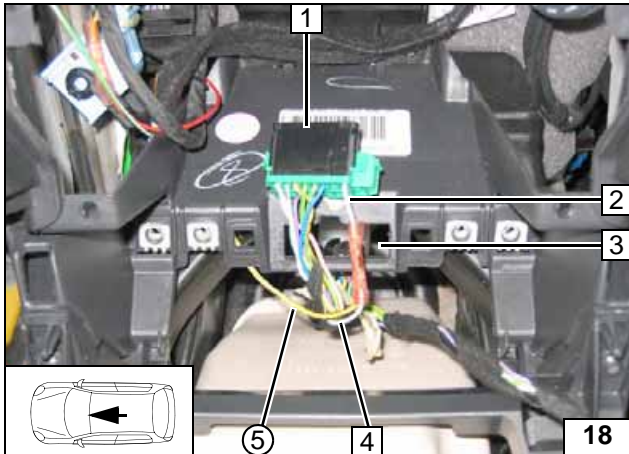


Before installation, connect green/white (gn/ws) wire ⑨ to IPCU/86. Fasten IPCU socket 1 on carrier with adhesive tape.



- 2 IPCU mounted

Installing IPCU

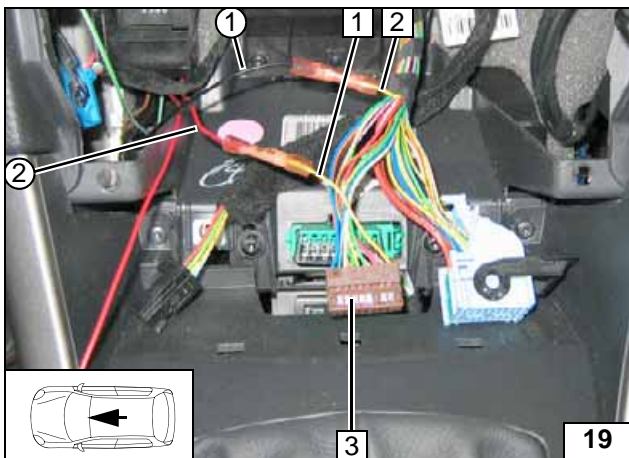


Connection to OBD socket outlet **1**.
Produce connections as shown in wiring diagram.



- 2** White (ws) wire of OBD socket outlet, pin 1
- 3** Slot for OBD socket outlet
- 4** White (ws) wire of terminal 15
- 5** Yellow (ge) wire of IPCU/15

**Connec-
tion of ter-
minal 15**

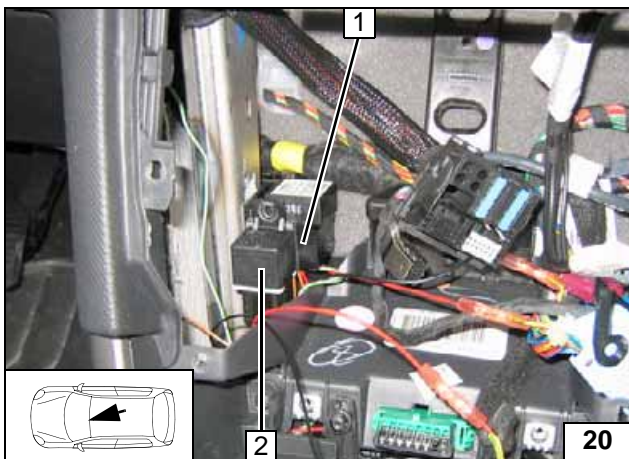


Connection on 40-pin connector **3** from A/C control panel (connector removed).
Produce connections as shown in wiring diagram.



- 1** Yellow (ge) wire from 8080/20
- 2** Yellow (ge) wire from 8045/5
- 1** Black (sw) wire from IPCU/A
- 2** Red (rt) wire from IPCU/E

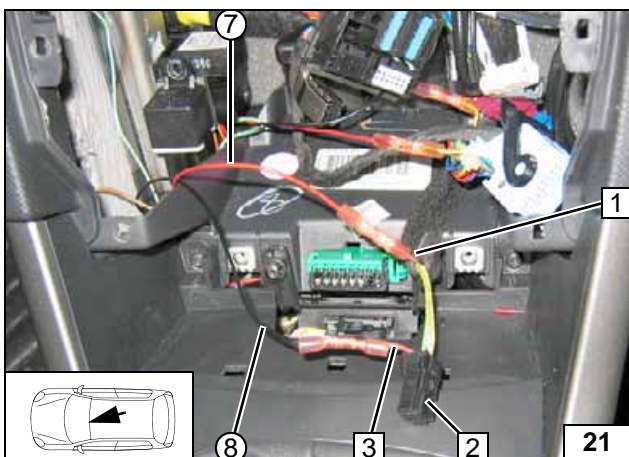
**Connec-
tion of
IPCU**



Fasten K2 relay **2** with adhesive tape to socket of IPCU **1**.



**Installing
K2 relay**

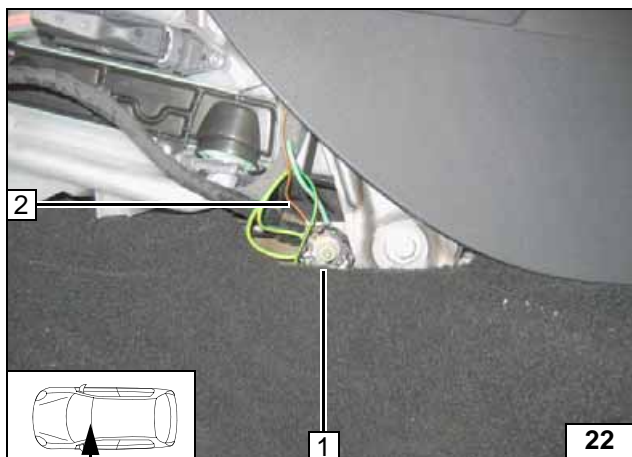


Connection on 6-pin connector **2** from A/C control panel.
Produce connections as shown in wiring diagram.



- 1** Red (rt) wire from BSI/11 (F13)
- 3** Red (rt) wire from 8080/1
- 7** Red (rt) wire from K2/87
- 8** Black (sw) wire from K2/30

**Connec-
tion of K2
relay**



- 1 Original vehicle earth support point, centre console
- 2 Brown (br) wire from IPCU/85

Earth connection of IPCU

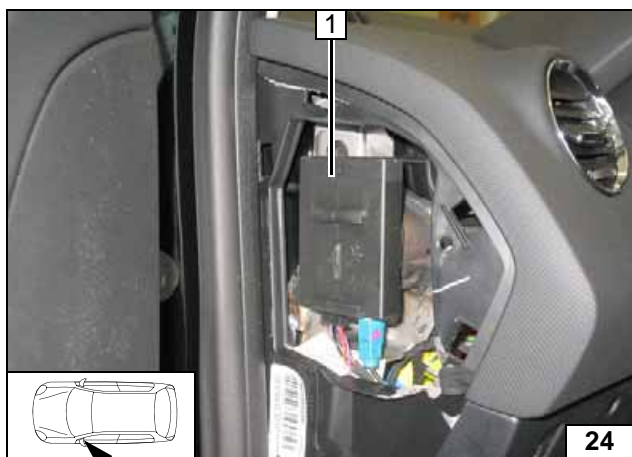


Digital Timer

1 Digital timer



Installing digital timer

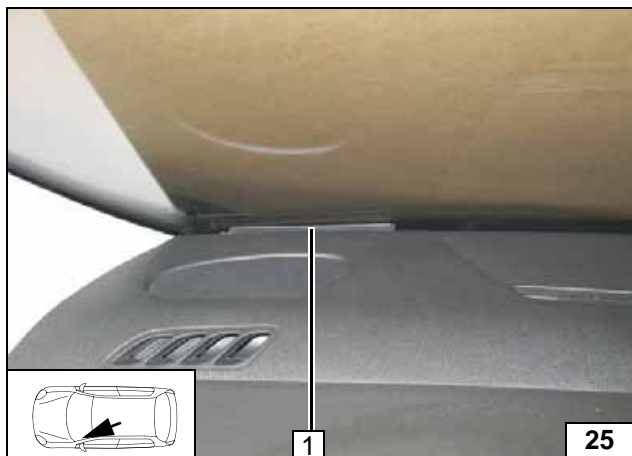


Remote Option Telestart

Fasten receiver 1 with adhesive tape.

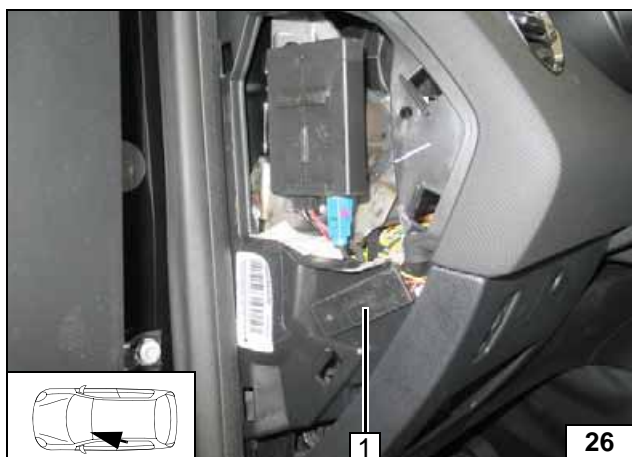


Installing receiver



1 Antenna

Installing antenna

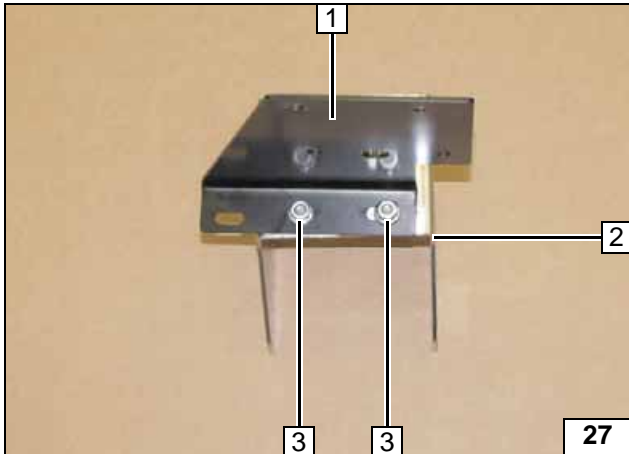


Temperature sensor T100 HTM

Fasten temperature sensor 1 with adhesive tape.



Installing temperature sensor



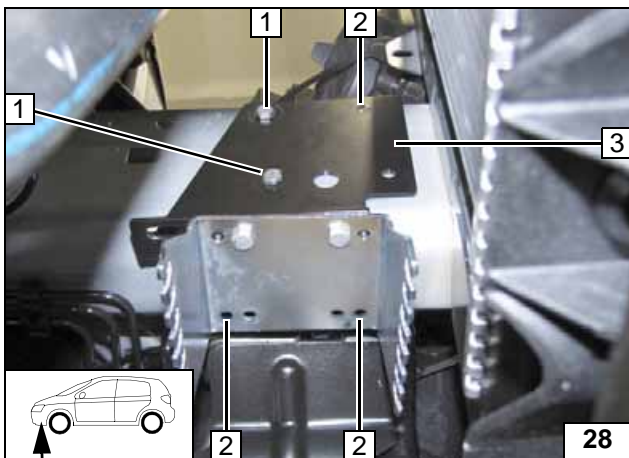
Preparing Installation Location

Insert one 5 mm shim each between retaining plate 1 and bracket 2 at position 3.

- 3 M6x16 bolt, 5mm shim, flanged nut [2x each]

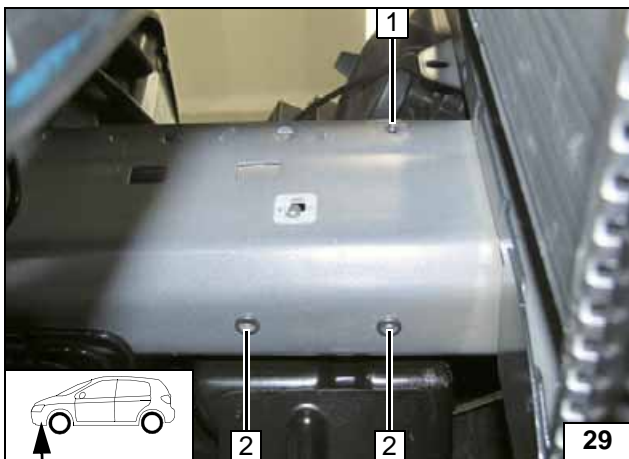


Premounting bracket



- 1 M6x20 bolt, existing threaded hole [2x]
- 2 Copy hole pattern [3x]
- 3 Install retaining plate loosely

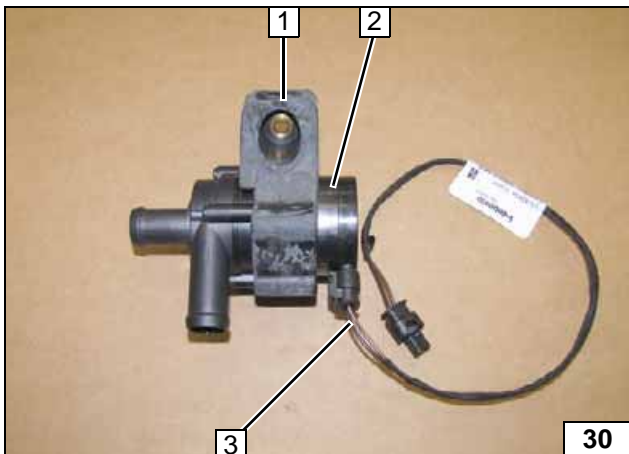
Copying hole pattern



Remove retaining plate with bracket.

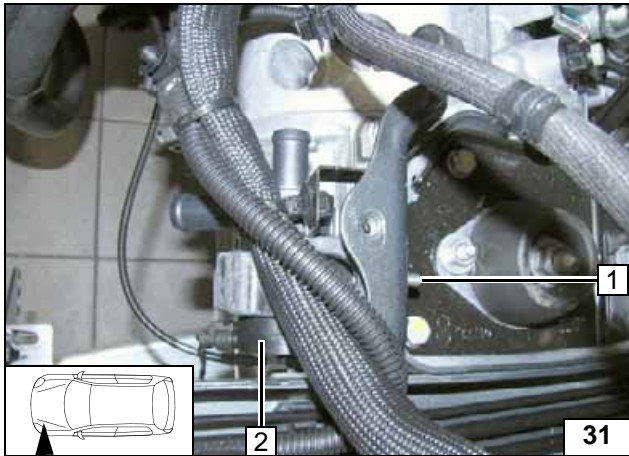
- 1 7 mm dia. hole
- 2 9.1mm dia. hole; rivet nut [2x each]

Inserting rivet nut



- 1 Circulating pump mounting
- 2 Circulating pump
- 3 Wiring harness of circulating pump

Premounting circulating pump

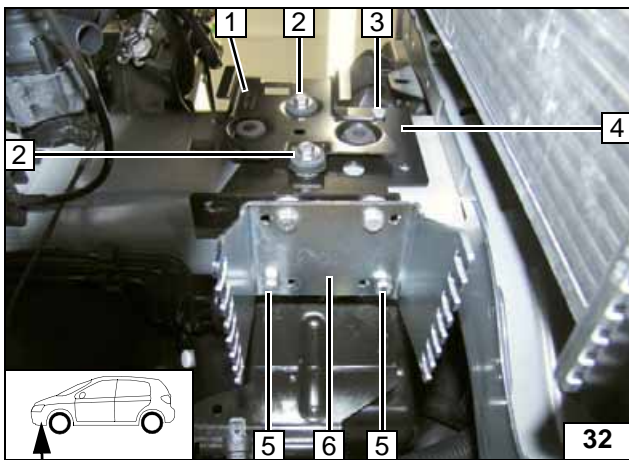


Remove original vehicle bolt at position 1 and discard.

- 1 M6x25 bolt, existing threaded hole
- 2 Circulating pump



Mounting circulating pump

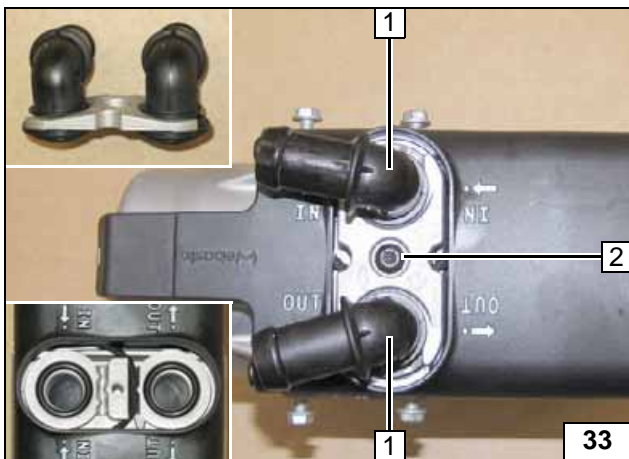


Insert one 20 mm shim each between bracket 6 and frame side member at position 5 [2x].

- 1 Bracket of air filter
- 2 Original vehicle bolt [2x] bracket of air filter
- 3 M6x16 bolt, flanged nut
- 4 Retaining plate
- 5 M6x40 bolt, spring lockwasher, 20mm shim [2x]



Installing bracket

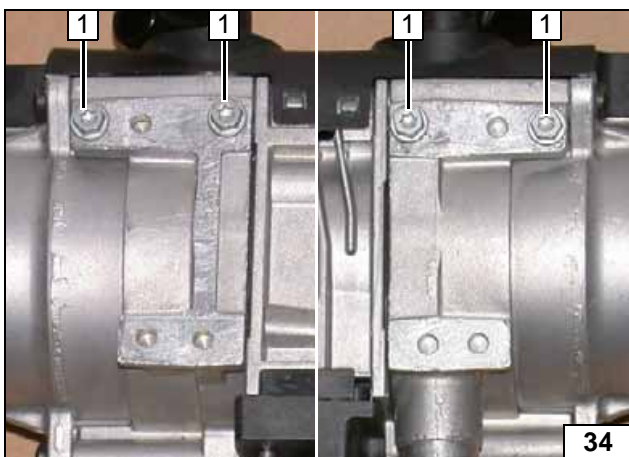


Preparing Heater

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



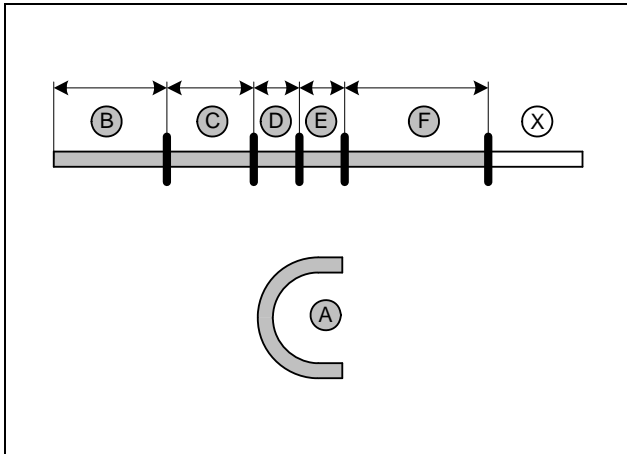
Installing water connection pieces



Screw 5x13 self-tapping bolts 1 [4x] into existing holes by a maximum of 3 thread turns.



Loosely pre-mounting bolts



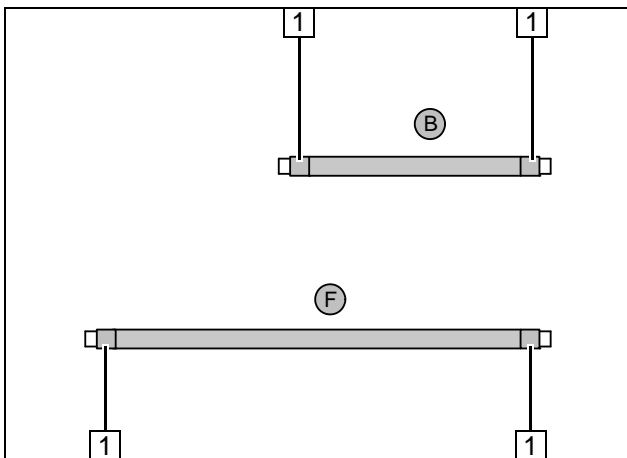
Discard section X.

Hose A = 18mm dia., 180° moulded hose

- B = 350
- C = 170
- D = 60
- E = 60
- F = 670



Cutting hoses to length

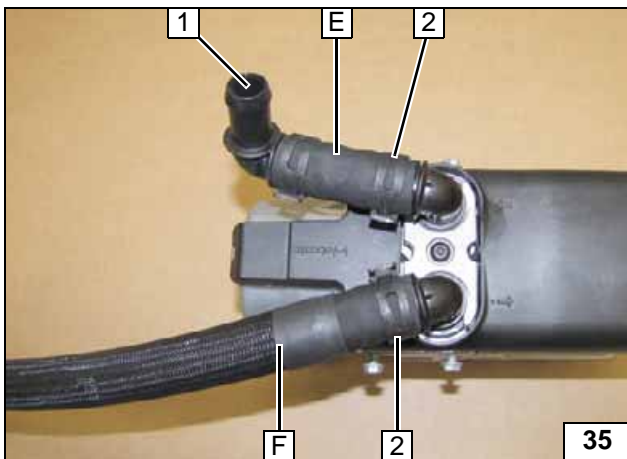


Push braided protection hoses onto hose B and F and cut to length. Cut heat shrink plastic tubing to size.



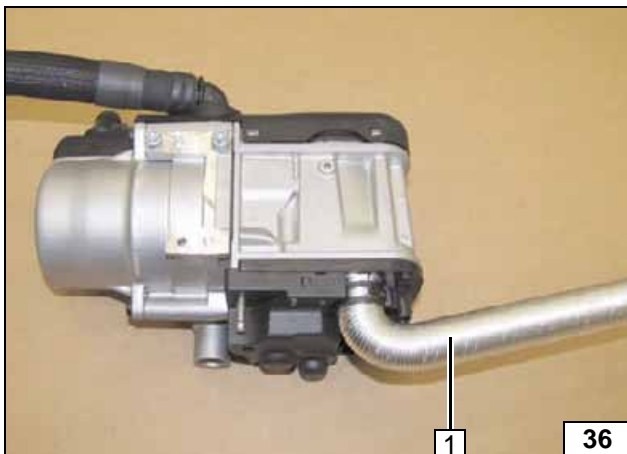
- 1 50 mm long heat shrink plastic tubing [4x]

Preparing hoses



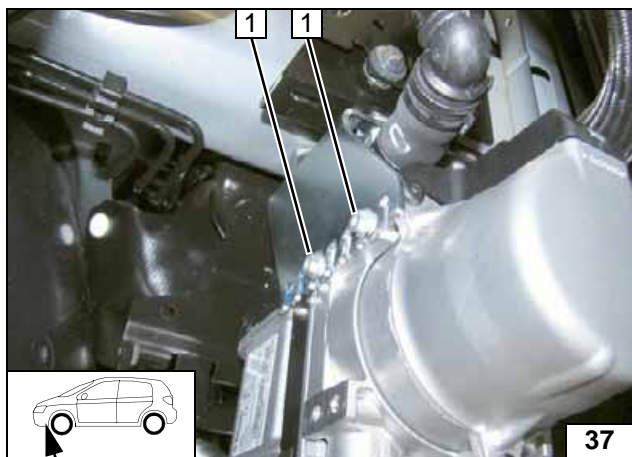
- 1 90°, 18x18mm connecting pipe, 25mm dia. spring clip
- 2 25mm dia. spring clip [2x]

Premounting hoses



- 1 Combustion air pipe

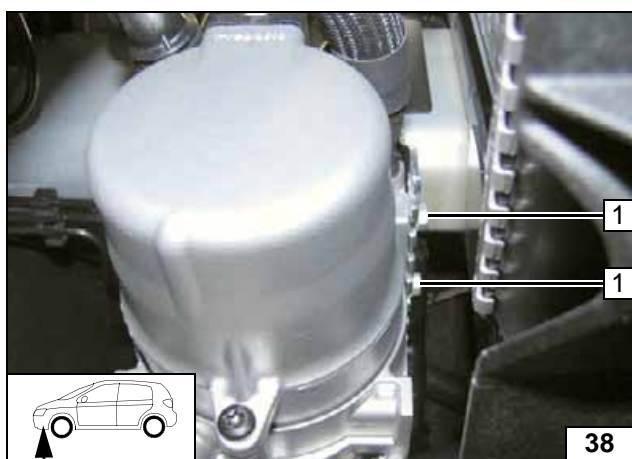
Premounting combustion air pipe



Installing Heater

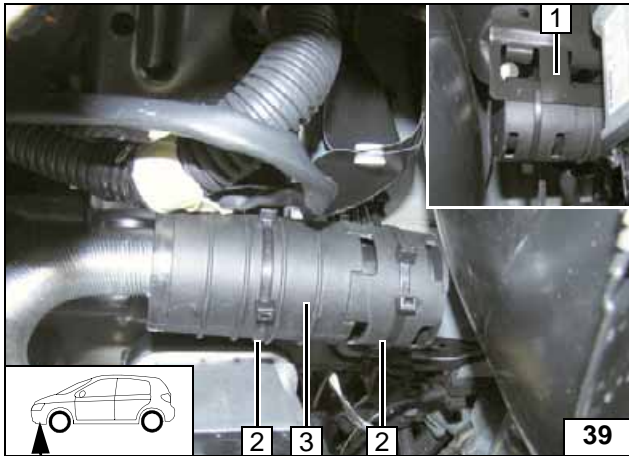
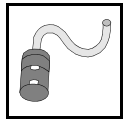
- 1 Tighten 5x13 self-tapping bolt [2x]

Mounting
heater



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

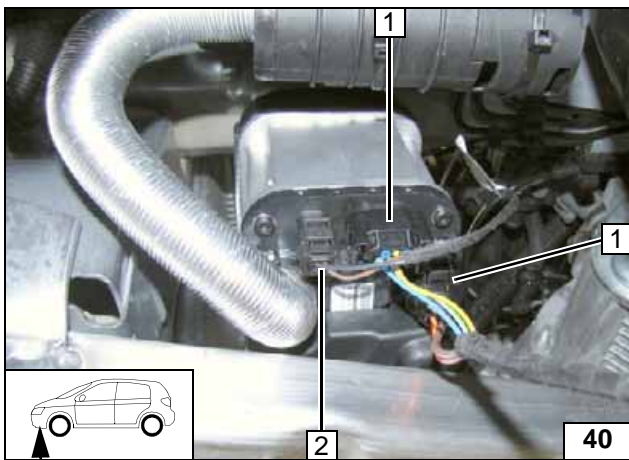
Mounting
heater



Combustion Air

- 1 ABS bracket
- 2 Cable tie [2x each]
- 3 Silencer

Installing silencer



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

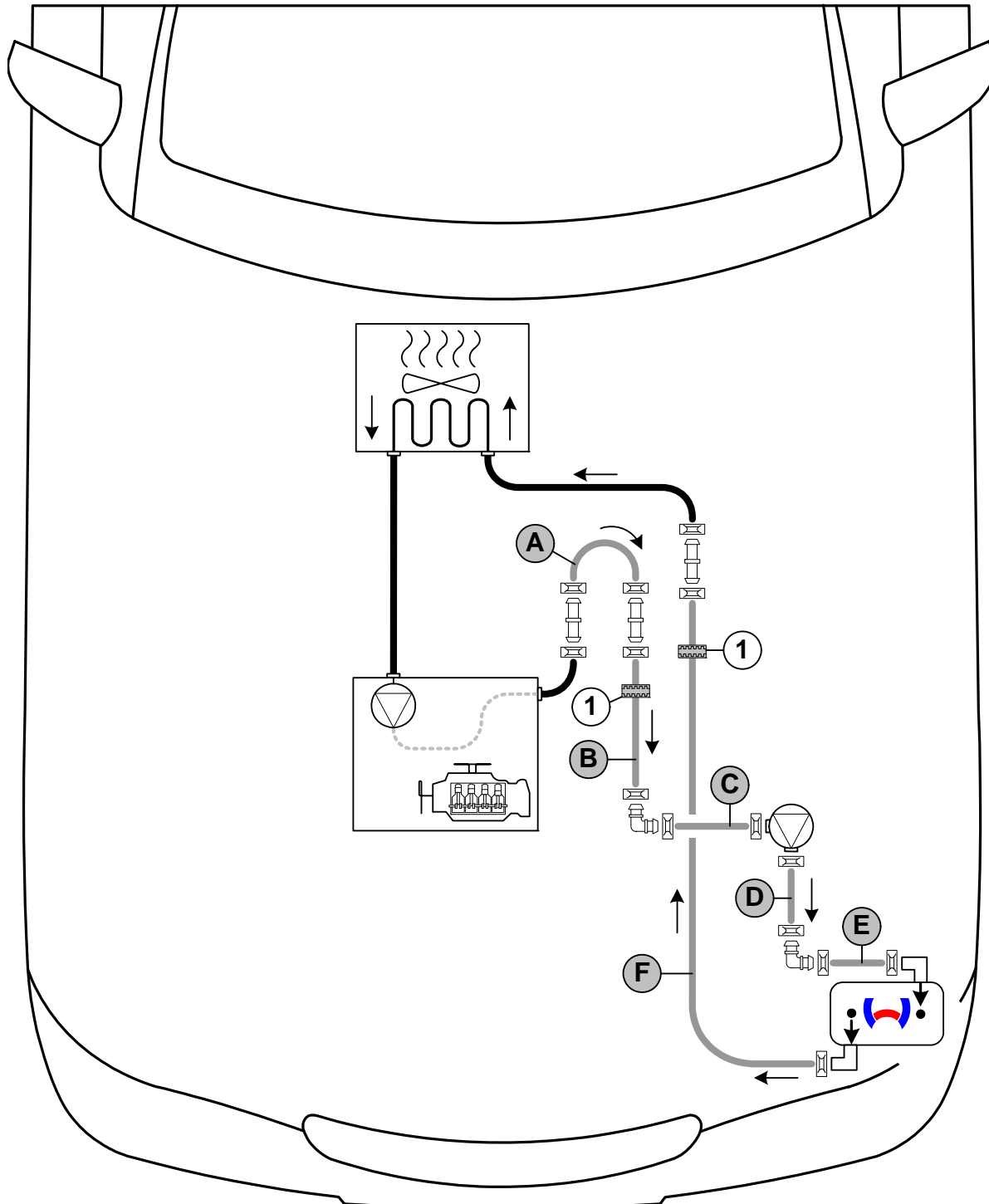
Installing wiring harnesses







Coolant Circuit

WARNING!

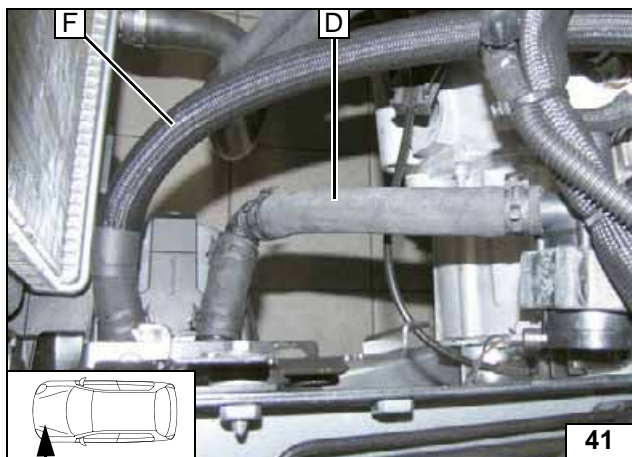
Any coolant running off should be collected using an appropriate container. Route hoses so that they are kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that no other hose can be damaged. The heater must be filled with coolant when installing the hoses. The connection should be "inline" based on the following diagram:



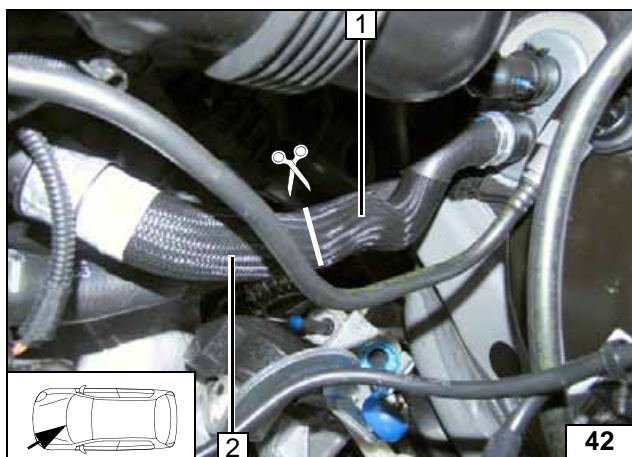
Hose routing diagram

All spring clips  = 25mm dia.
 1 = black (sw) rubber isolator  [2x].
 All connecting pipes  and  = 18x18 mm dia.





Con-
nection of cir-
culating
pump

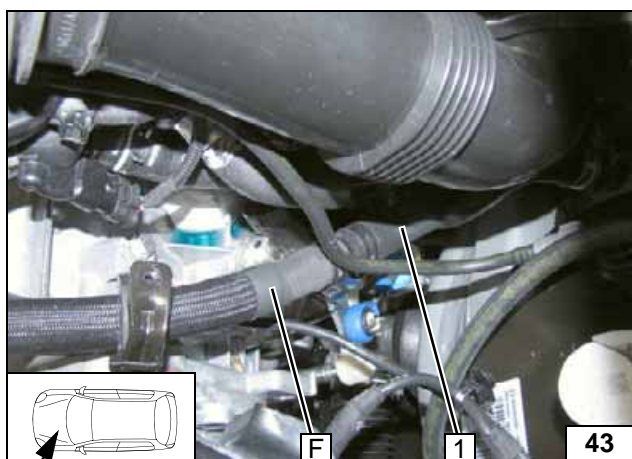


Cut off hose on engine outlet/heat exchanger inlet at marking. Remove braided protective hose from both hose sections.



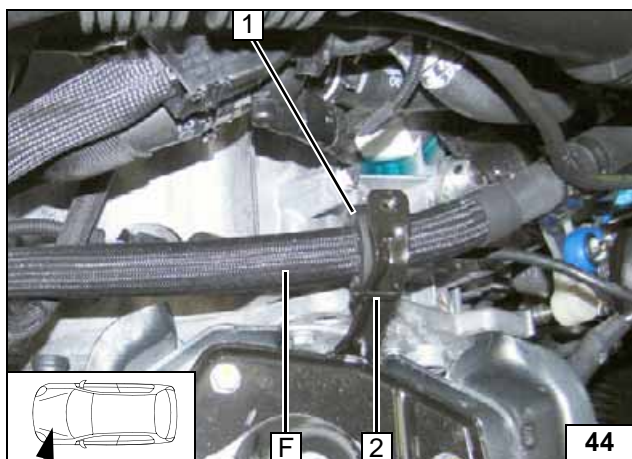
- 1 Hose section of heat exchanger inlet
- 2 Hose section of engine outlet

Cutting
point



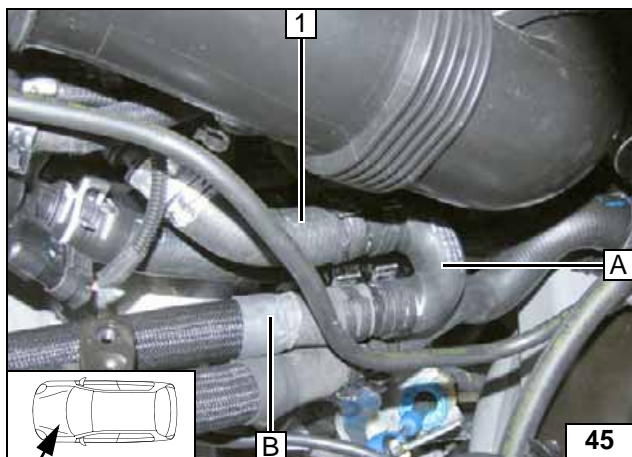
- 1 Hose of heat exchanger inlet

Connect-
ing heat ex-
changer
inlet



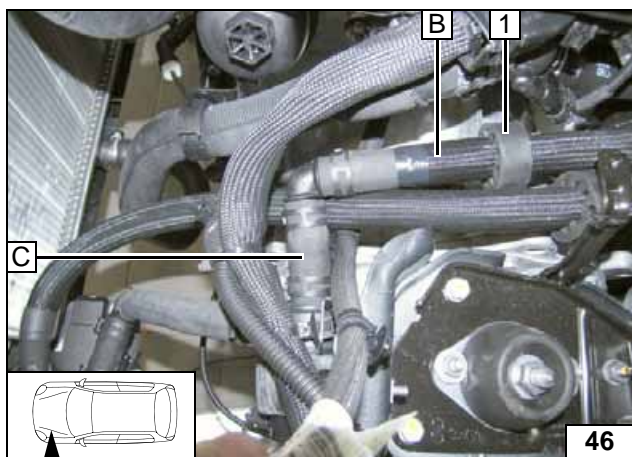
- 1 Slide on black (sw) rubber isolator and align
- 2 Cable tie

Routing in
engine com-
part-
ment



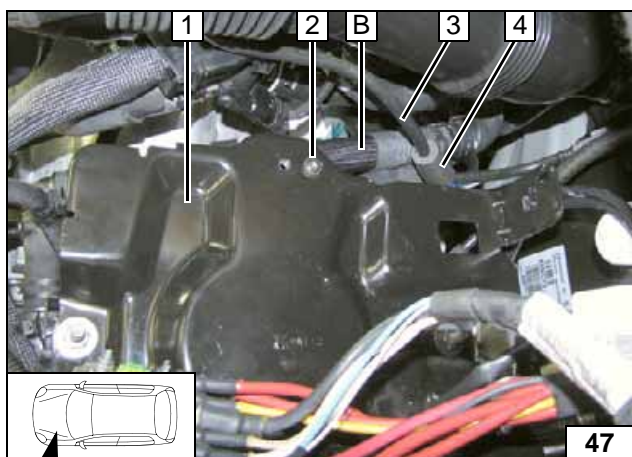
1 Hose of engine outlet

Connect-
ing engine
outlet



1 Slide on black (sw) rubber isolator and position

Conne-
tion of cir-
culating
pump



Shorten original vehicle bolt **2** by 5mm. Wind vacuum line **3** with rub protection **4**. Align hoses. Ensure sufficient distance to neighbouring components.

1 Battery carrier



Installing
battery car-
rier



Fuel

CAUTION!

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

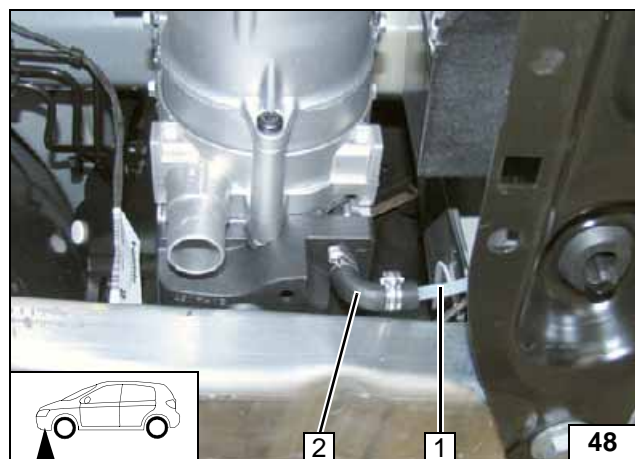
Catch any fuel running off in an appropriate container.

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

Mount the fuel line and wiring harness with rub protection on sharp edges.

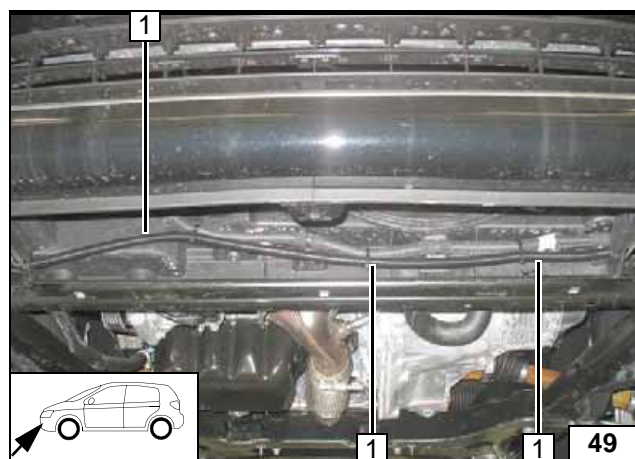
WARNING!

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



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

Connect-
ing heater



Route fuel line and wiring harness of metering pump into 2100mm corrugated tube 1 to the right vehicle side.



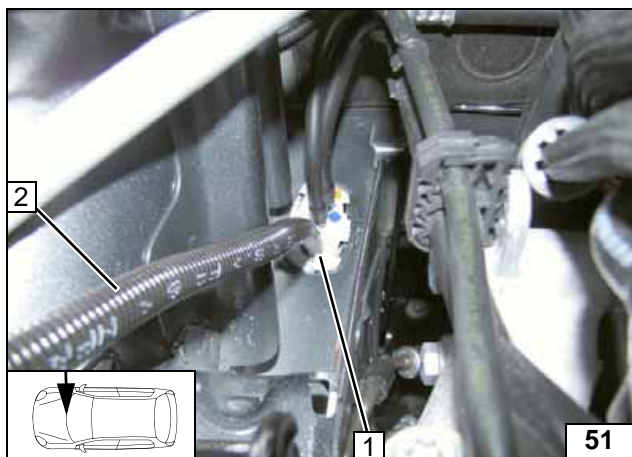
Routing
lines



Route fuel line and wiring harness of metering pump into corrugated tube 1 along the A/C line to the firewall.



Routing
lines

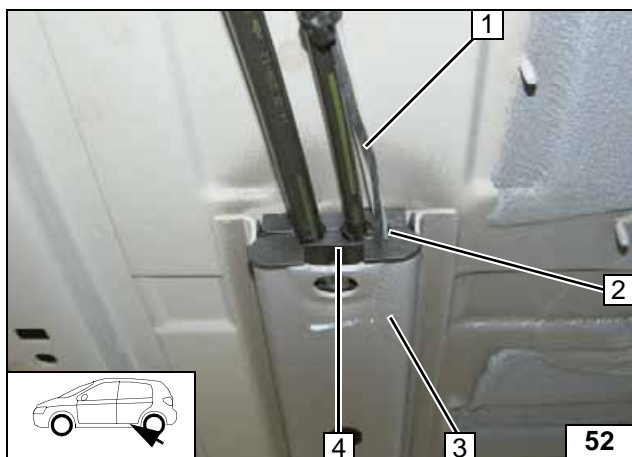


Route fuel line and wiring harness of metering pump in original vehicle line duct to the underbody.



- 1 Original vehicle pass through
- 2 Fuel line and wiring harness of metering pump in corrugated tube

Routing lines

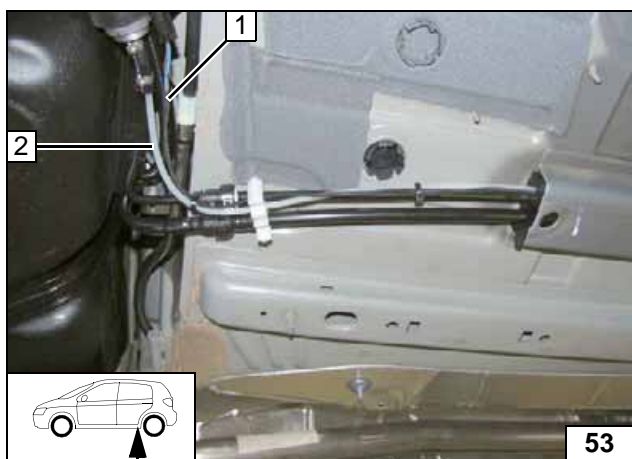


8mm dia. hole at position 2 in original vehicle sealing 4!



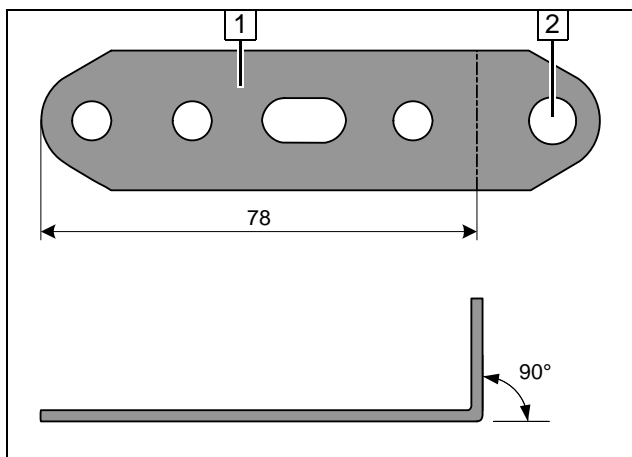
- 1 Fuel line, wiring harness of metering pump
- 3 Original vehicle line duct

Routing lines



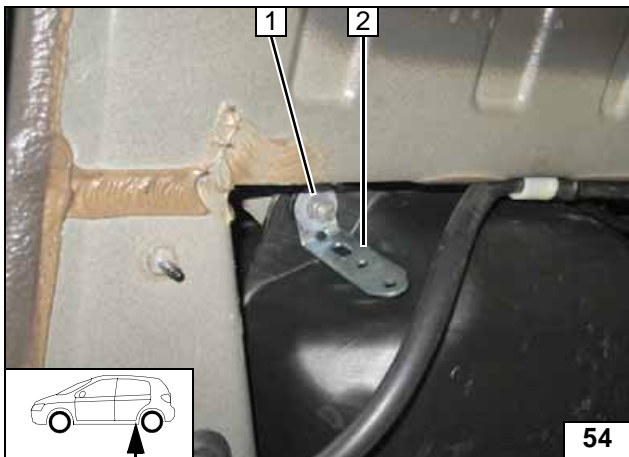
- 1 Wiring harness of metering pump
- 2 Fuel line

Routing lines



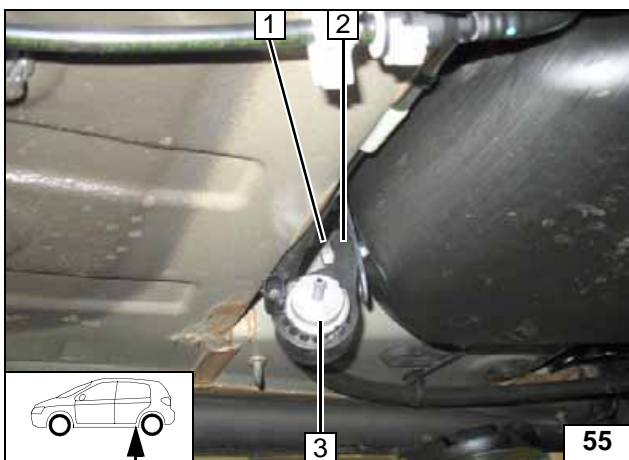
- 1 Perforated bracket
- 2 Drill out 9 mm dia. hole

Preparing perforated bracket



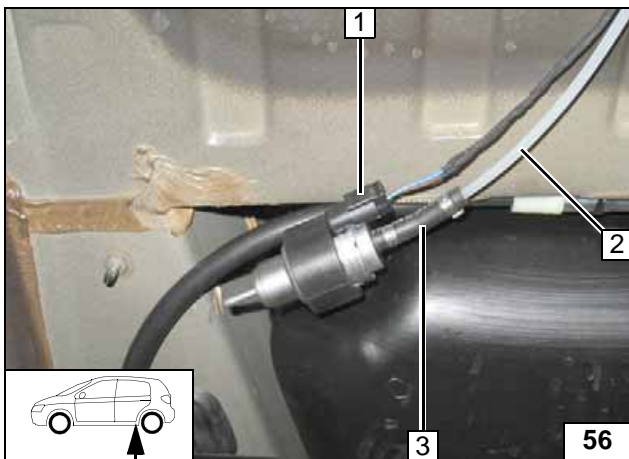
- 1 Perforated bracket
- 2 Original vehicle bolt

Mounting
metering
pump



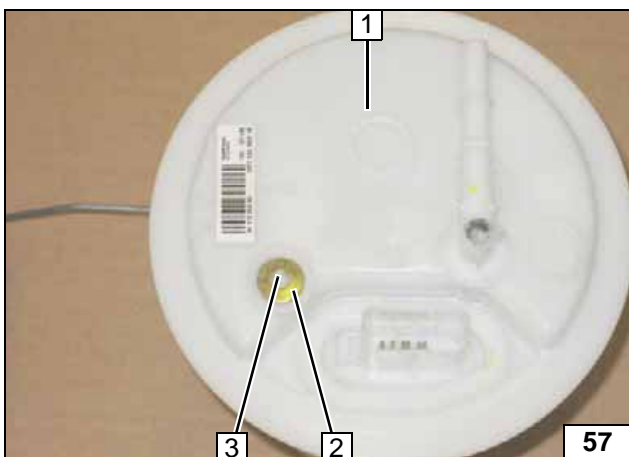
- 1 M6x25 bolt, flanged nut
- 2 Mounting of metering pump
- 3 Metering pump

Mounting
metering
pump



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

Connec-
tion of me-
tering
pump

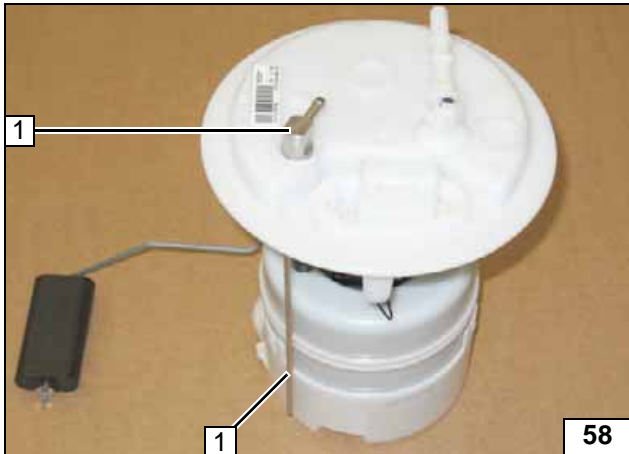


Remove fuel-tank sending unit 1 in accordance with the manufacturer's instructions.

- 2 Washer with outer dia. $d_a = 21.6\text{mm}$
- 3 Copy hole pattern, 6mm dia. hole



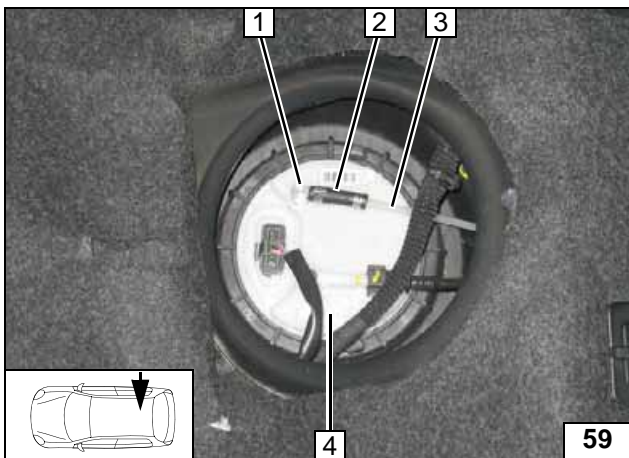
Fuel ex-
traction



Shape fuel standpipe 1 as shown in the template and cut it to length.



Installing fuel standpipe

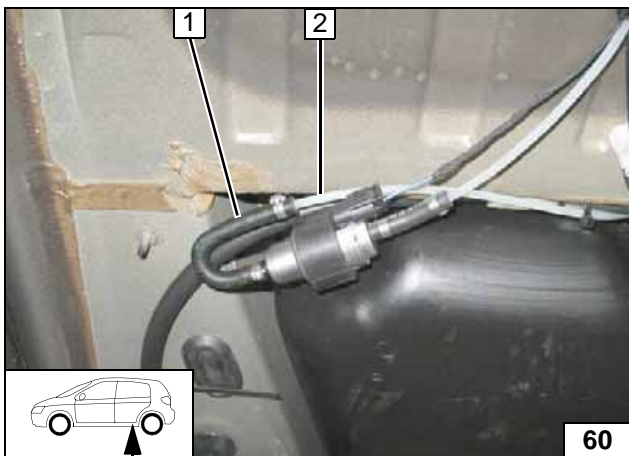


Install fuel-tank sending unit 4 in accordance with the manufacturer's instructions.



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

Connecting fuel line

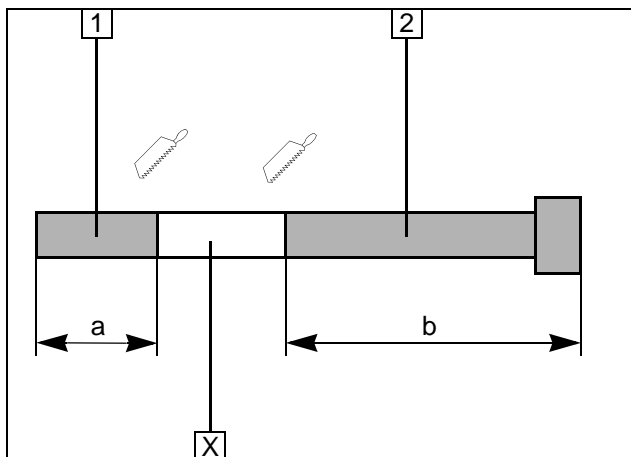
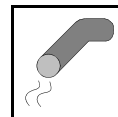


Check the position of the components; correct if necessary. Check that they have freedom of movement.



- 1 180° moulded hose, 10mm dia. clamp [2x]
- 2 Fuel line

Connection of metering pump

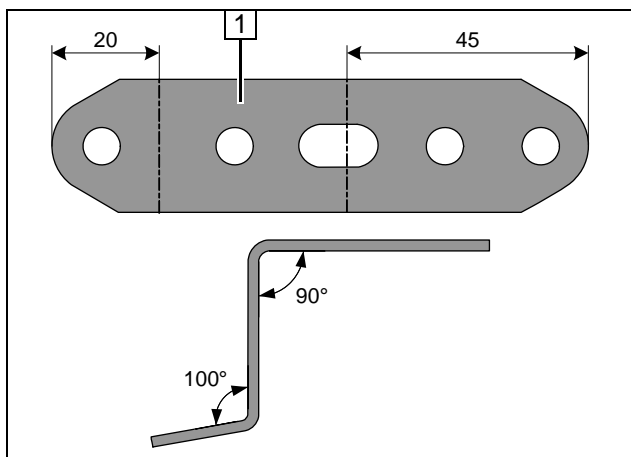


Exhaust Gas

Discard section X.

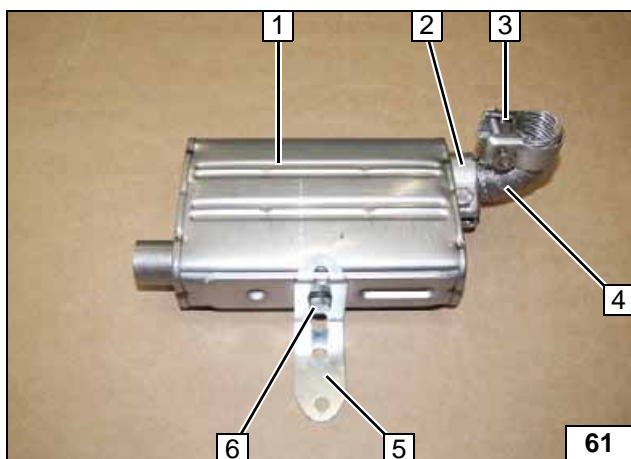
- 1 Exhaust pipe
a = 70
- 2 Exhaust end section
b = 220

Preparing
exhaust
pipe



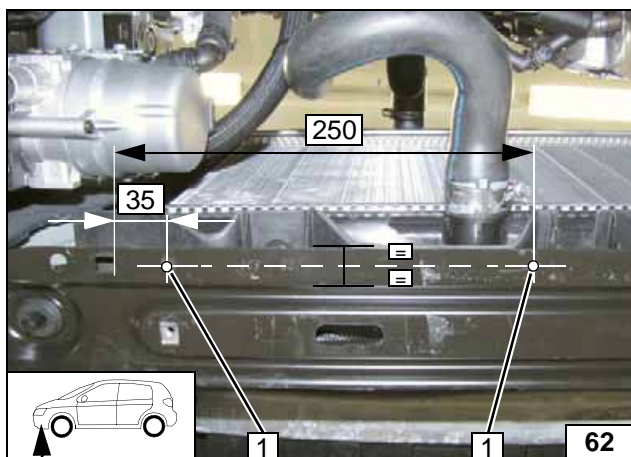
- 1 Perforated bracket

Angling
down per-
forated
bracket



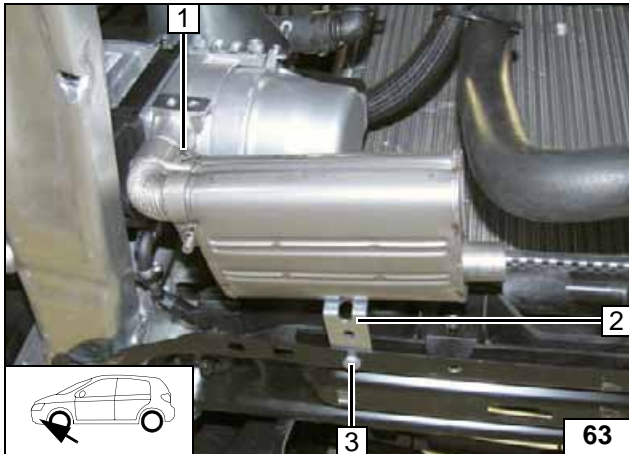
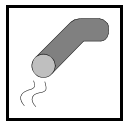
- 1 Silencer
- 2 Hose clamp
- 3 Mount hose clamp
- 4 Exhaust pipe
- 5 Perforated bracket
- 6 M6x16 bolt, spring lockwasher

Installing
silencer



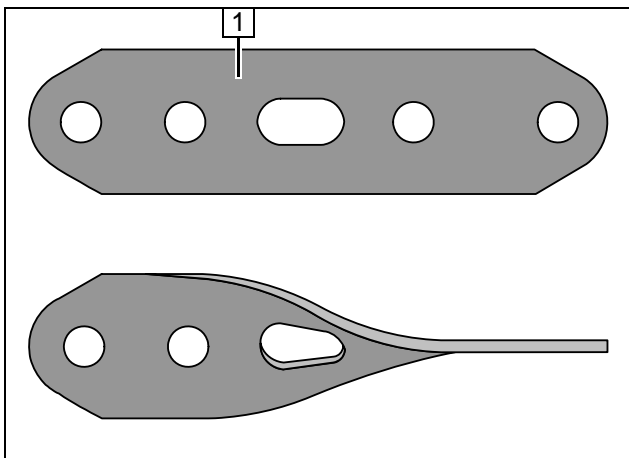
- 1 7mm dia. hole [2x]

Holes in
cross
member



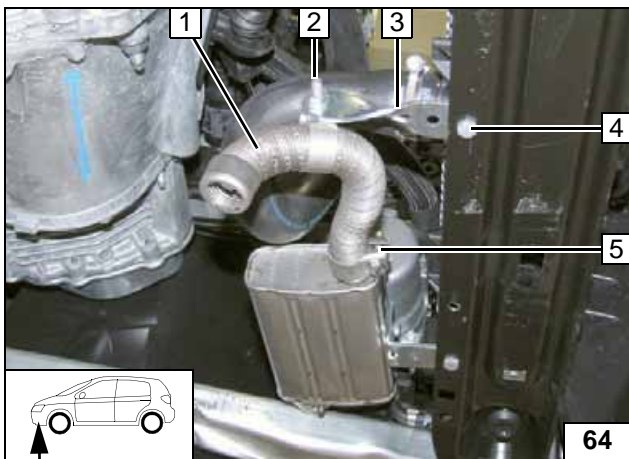
- 1 Tighten hose clamp
- 2 Perforated bracket
- 3 M6x12 bolt, flanged nut

Installing silencer



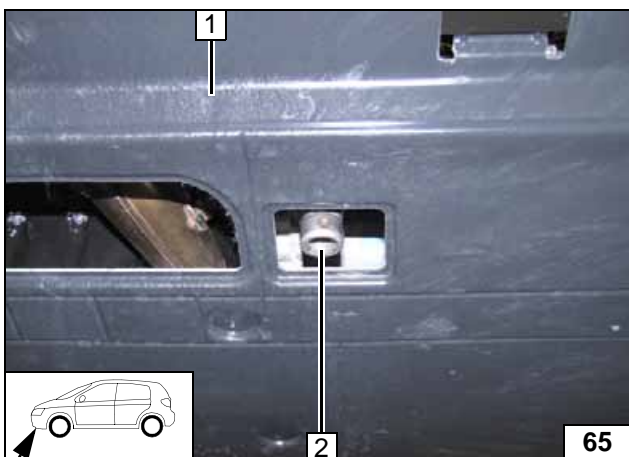
- 1 Twist 90° perforated bracket in longitudinal axis

Preparing perforated bracket



- 1 Exhaust end section
- 2 M6x20 bolt, p-clamp, flanged nut
- 3 Perforated bracket
- 4 M6x12 bolt, flanged nut
- 5 Hose clamp

Installing exhaust end section



When installing underide protection 1, ensure sufficient distance from silencer, adjust if necessary. Align exhaust end section 2 centrally in the recess of underide protection 1.



Aligning exhaust end section



Final Work

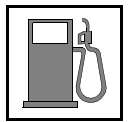
WARNING!

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

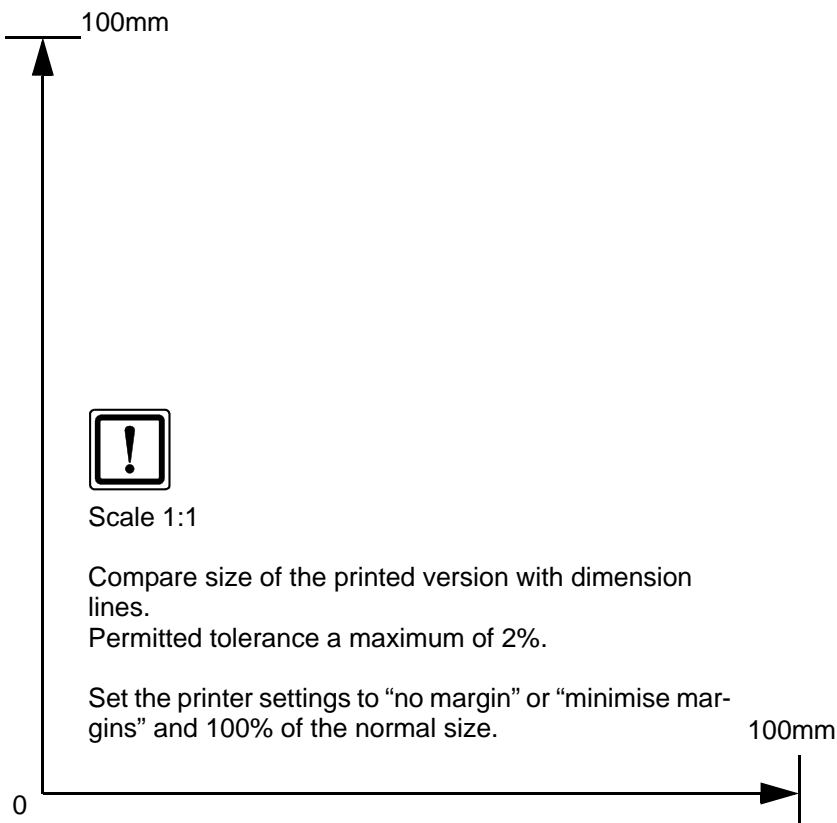


- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's instructions.**
- **Adjust digital timer, teach Telestart transmitter.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Place caution label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





Template for Fuel Standpipe



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

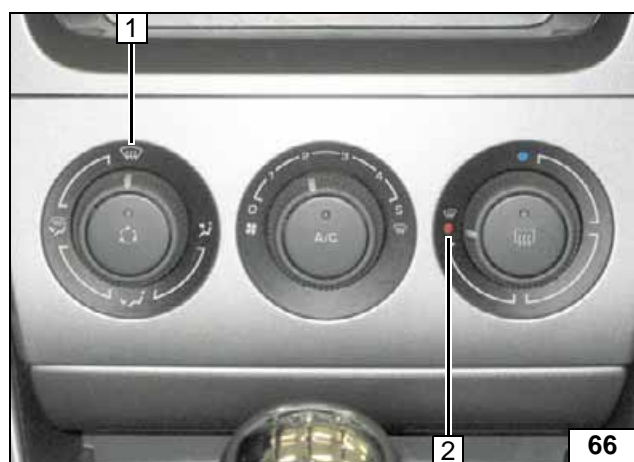
Example:

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 the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

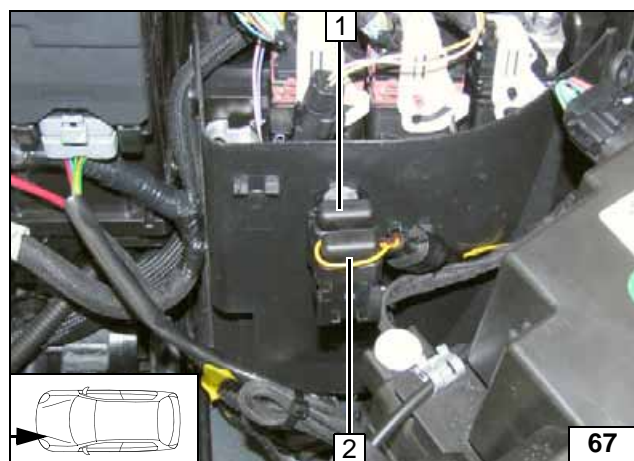
Before parking the vehicle, make the following settings:



- 1 Air outlet to windscreen
- 2 Set temperature to "max."

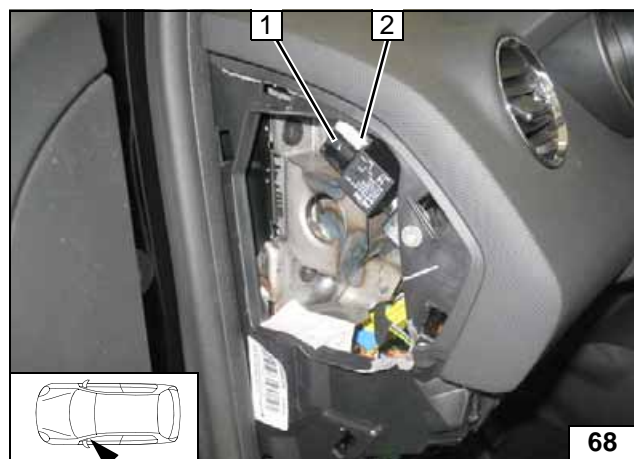


A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment



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 the vehicle settings for the heating operation.

For instructions on deactivation, please refer to the operating instructions of the vehicle.

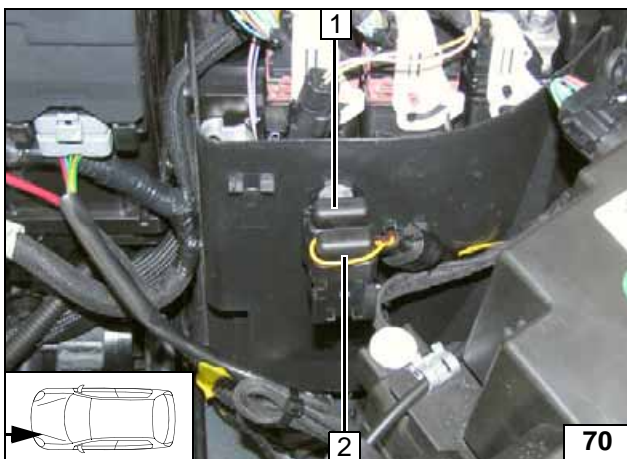
Before parking the vehicle, make the following settings:



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

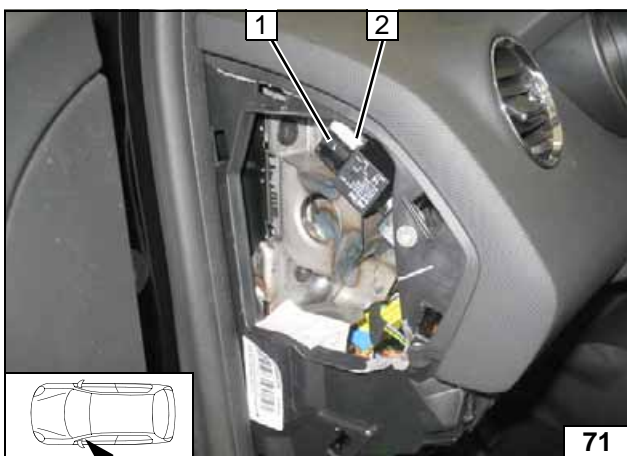


A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment

