

Water Heater

Thermo Top Evo Parking Heater



00 0258

Installation Documentation Subaru XV / Impreza



Validity

Manufacturer	Model	Type	EG BE No. / ABE
Subaru	XV	G4	e1 * 2007 / 46 * 0597 * ...
Subaru	Impreza	G4	e1 * 2007 / 46 * 0597 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm ³	Engine code
1.6 P	Petrol	5-gear SG / CVT	84	1600	FB16
2.0 P	Petrol	6-gear SG / CVT	110	1995	FB20

CVT = Lineartronic transmission
SG = manual transmission

XV from model 2012
Impreza starting with model
year 2013
Left-hand drive vehicle

Verified equipment variants: 1 and 2 zone automatic air-conditioning
Front fog lights
Keyless access
4WD
Stop & Go automatic choke
Xenon with headlight washer system
Euro 5 and 6 Emission standard

Total installation time: about 9 hours

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Necessary Components

- Basic delivery scope of Thermo Top Evo based on price list
Subaru part number: **1165**
- Installation kit for Subaru XV / Impreza 2012 Petrol: **1318542A**
Subaru part number: **1165-02**
- In case of Telestart, heater control as well as indicator lamp in accordance with price list and in consultation with end customer
- In case of MultiControl CAR installation: MultiControl installation frame: **9030077_**
Subaru part number: **9965-27**

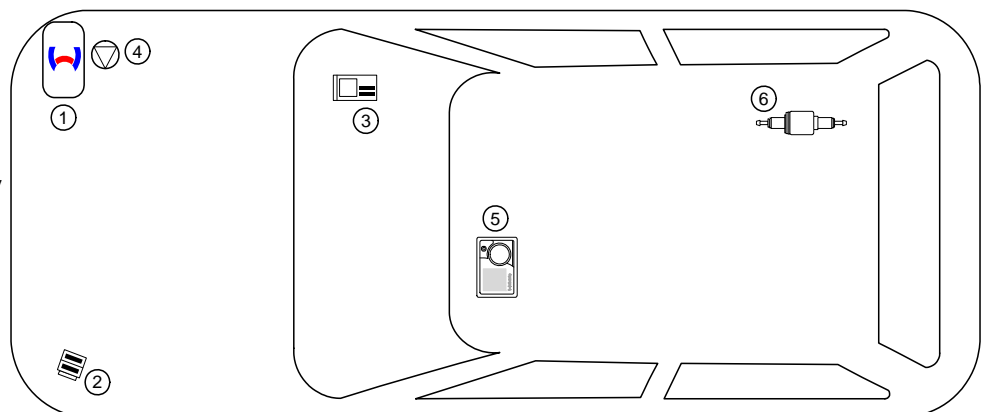
Installation instructions:

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

Installation Overview

Legend:

1. Heater
2. Engine compartment fuse holder
3. Passenger compartment relay and fuse holder
4. Circulating pump
5. MultiControl CAR
6. Metering pump



Information on Total Installation Time

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

The total installation time may vary for vehicle equipment other than provided.

Information on Operating and Installation Instructions

1 Important information (not complete)

1.1 Installation and repair



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



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



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

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

1.2 Operation

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

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

Always switch off the heater before refuelling.

The heater may only be used with the prescribed fuel diesel (DIN EN 590) or petrol (DIN EN 228).

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

1.3 Please note

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

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

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

Important

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

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

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

Installation should be carried out according to the general, standard rules of technology. Unless specified otherwise, fasten hoses, lines and wiring harnesses to original vehicle lines and wiring harnesses using cable ties. Insulate loose wire ends and tie back. Connectors on electronic components have to audibly click into place during installation.

Sharp edges should be fitted with rub protection. Spray unfinished body areas, e.g. drilled holes, with anti-corrosion wax (Tectyl 100K).

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

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

When installing a programmable control module (e.g. a PWM Gateway), the corresponding settings must be checked or adjusted.

2 Statutory regulations governing installation

Guidelines	Thermo Top Evo
Heating Directive ECE R122	E1 00 0258
EMC Directive ECE R10	E1 04 5627

Note

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

Important

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

Note

The heater is licensed in accordance with paragraph 19, section 3, No. 2b of the StVZO (German Road Traffic Licensing Authority).

2.1 Excerpt from ECE regulation 122 (heating system) paragraph 5 for the installation of the heater

Beginning of excerpt.

ANNEX VII

REQUIREMENTS FOR COMBUSTION HEATERS AND THEIR INSTALLATION

1. GENERAL REQUIREMENTS

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

2. VEHICLE INSTALLATION REQUIREMENTS

2.1. Scope

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

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

2.2. Positioning of heater

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

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

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

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

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

2.3. Fuel supply

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

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

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

2.4. Exhaust system

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

2.5. Combustion air inlet

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

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

2.6. Heating air inlet

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

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

2.7. Heating air outlet

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

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

End of excerpt.

In multilingual versions the German language is binding.

Subaru XV / Impreza

Information on Validity

This installation documentation applies to Subaru XV petrol vehicles starting with model year 2012 and later as well as Subaru Impreza vehicles starting with model year 2013 and later - for validity, see page 1 - , assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this 'installation documentation'.

Vehicle and engine types, equipment variants and other specifications not listed in this installation documentation have not been tested. However, installation according to this installation documentation may be possible.

Technical Information

Special Tools

- Hose clamp pliers for auto-tightening hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper, 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector, 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Deep-hole marker
- Webasto Thermo Test Diagnosis with current software

Dimensions

- All dimensions are in mm.
















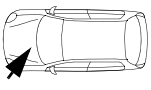

Tightening torque values

- Tightening torque values of 5x13 heater bolts and 5x11 heater stud bolts = 8Nm.
- Tightening torque value of 5x15 water connection piece retaining plate bolt = 7Nm.
- Tighten other bolt connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

Explanatory Notes on Document

You will find an identification mark on the outside top right corner of the page in question to provide you with a quick overview of the individual working steps.

Special features are highlighted using the following symbols:

Mechanical System		Specific risk of damage to components.	
Electrical System		Specific risk due to electrical voltage.	
Coolant Circuit		Specific risk of injury or fatal accidents.	
Combustion Air		Specific risk of fire or explosion.	
Fuel		Reference to the manufacturer's vehicle-specific documents or to the general installation instructions of Webasto components.	 
Exhaust Gas		Reference to a special technical feature.	
Software		The arrow in the vehicle icon indicates the position on the vehicle and the viewing angle.	 
		Tightening torque according to the manufacturer's vehicle-specific documents.	

Subaru XV / Impreza

Preliminary Work

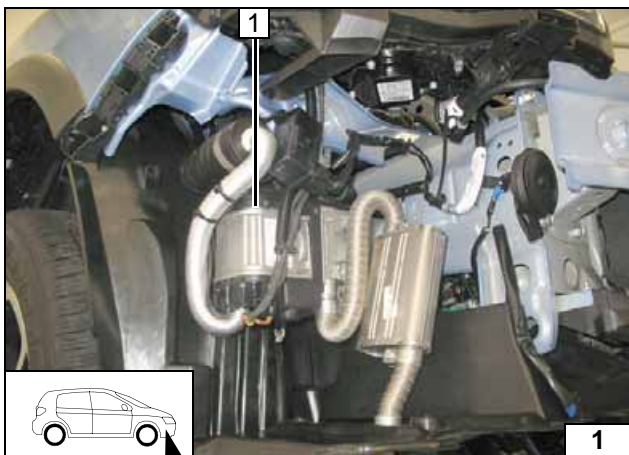
Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Remove the engine cover.
- Remove the air intake pipe.
- Remove the bumper.
- Remove the right fuel tank underride protection.
- Remove the right front and rear door sill trims.
- Remove the rear bench seat.
- Completely remove the glove box.
- Remove the A/C control panel in accordance with the manufacturer's instructions.
- Open the right-hand tank-fitting service lid.
- Remove the fuel tank sending unit in accordance with the manufacturer's instructions.

Heater

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

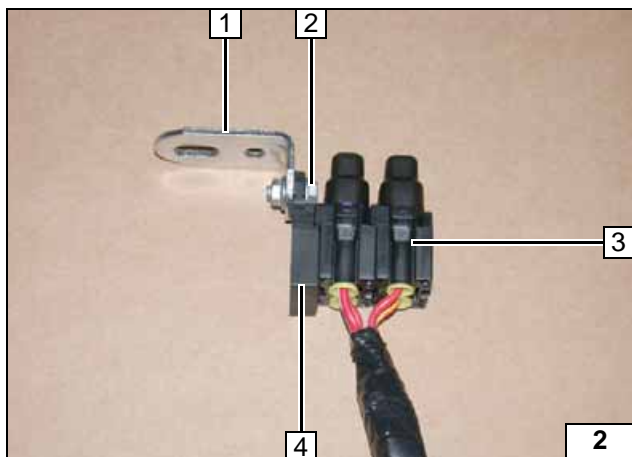
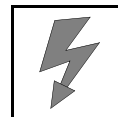
Pay extra attention to the special protection of inflammable components during the installation of the heater and exhaust duct.



Heater Installation Location

- 1 Heater

Installation
location



Preparing Electrical System

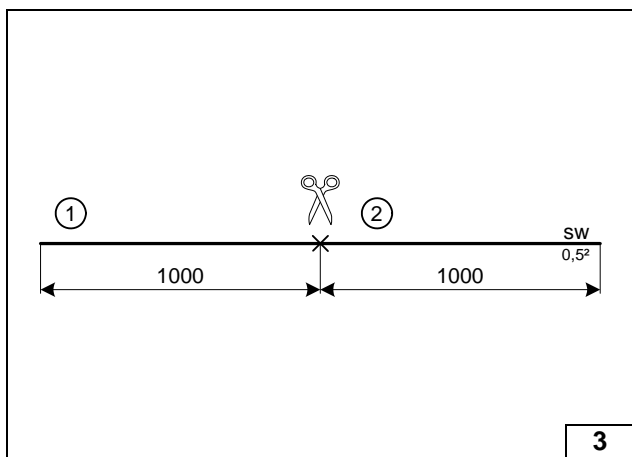
Wire sections retain their numbering in the entire document.

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

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



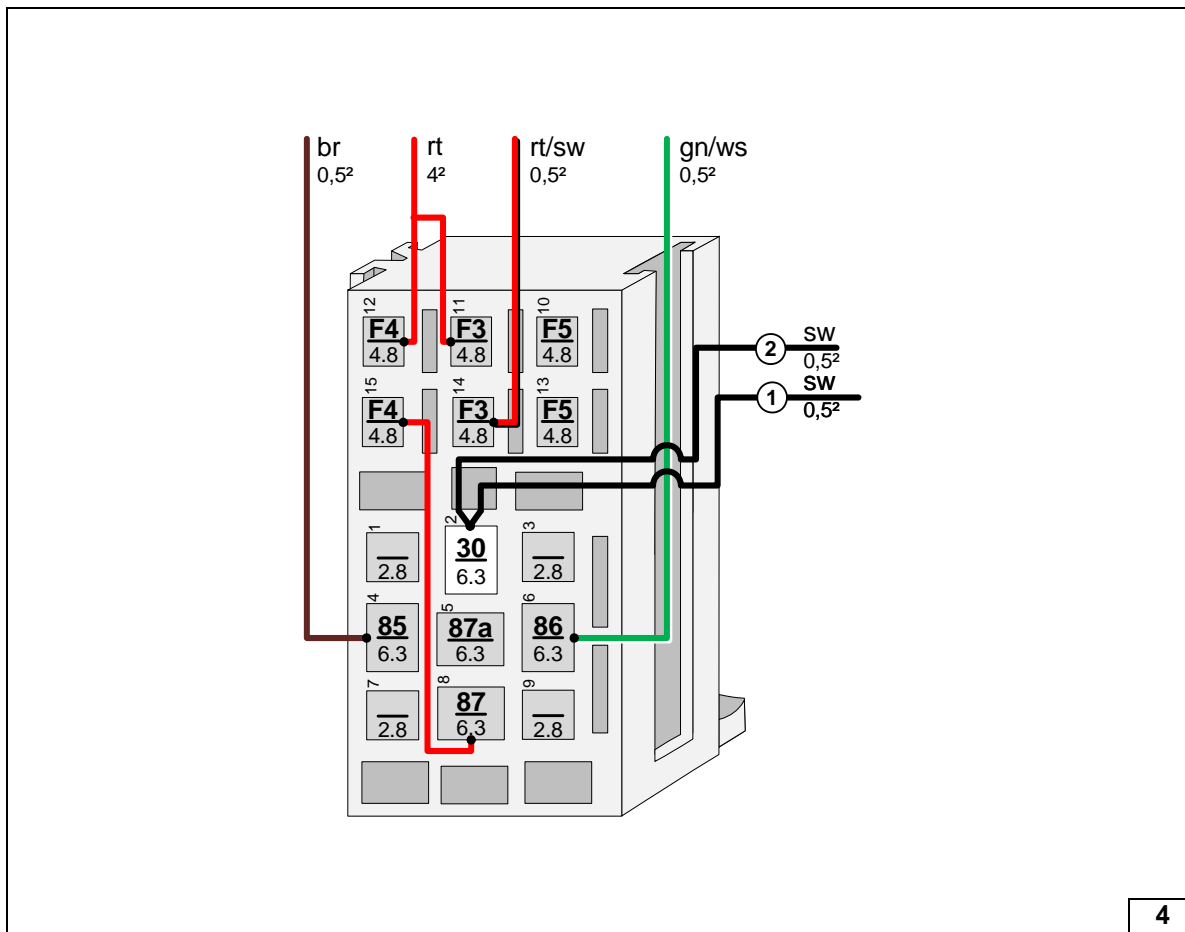
Preparing engine compartment fuse holder



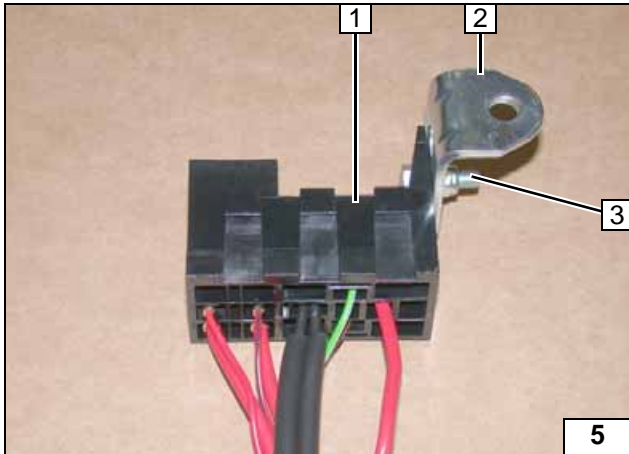
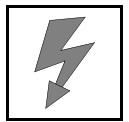
Pull wire section 1 and 2 into one protective sleeving each.



Cutting to length / as-signing wires



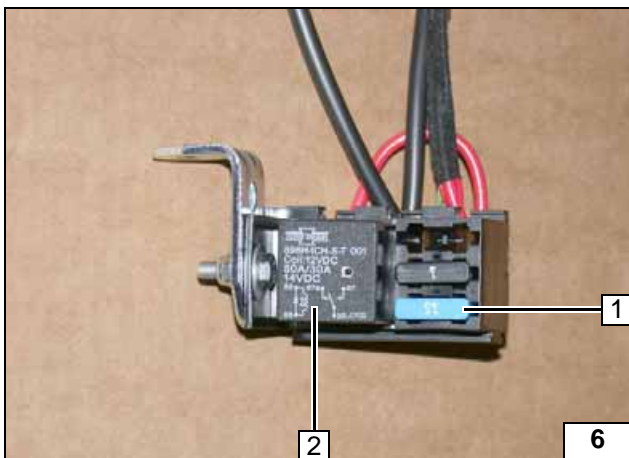
Connecting wires to passenger compartment relay and fuse holder



- 1 Passenger compartment relay and fuse holder
- 2 Angle bracket
- 3 M5x16 bolt, washer [2x], nut

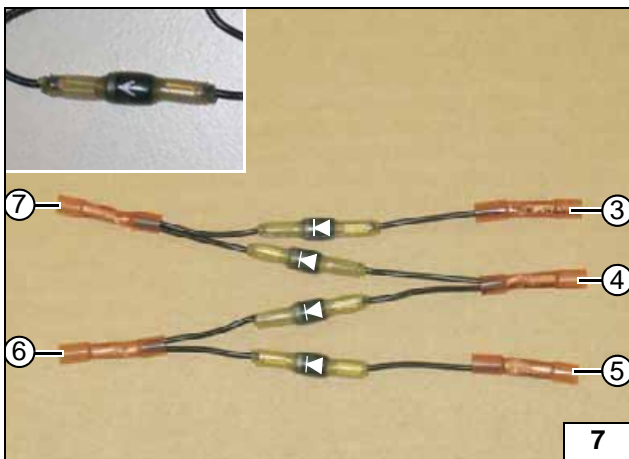


Preparing passenger compartment relay and fuse holder



- 1 15A fuse F4
- 2 Relay K1

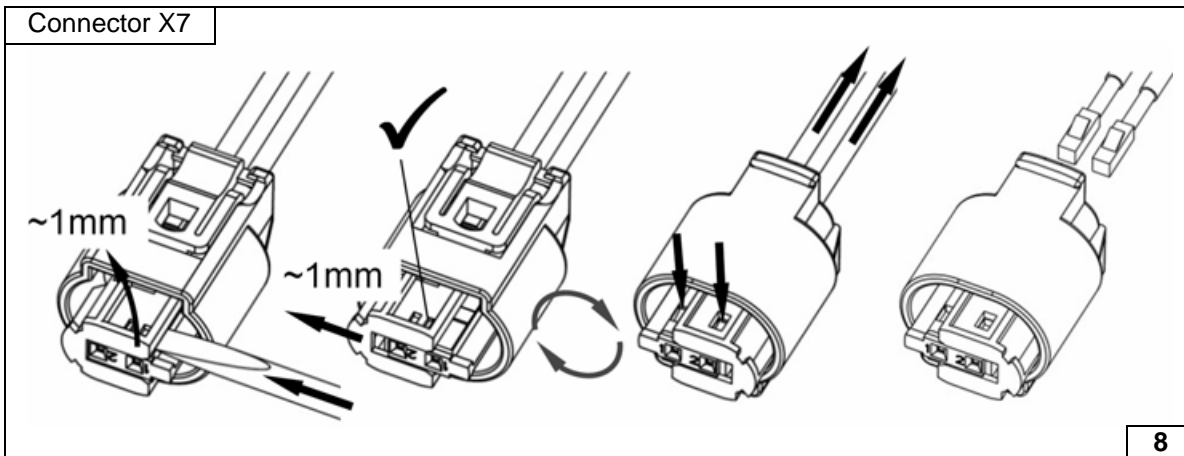
Inserting fuse F4 and relay K1



Premount four diodes with connectors to diode group D1 as shown. Watch direction of flow of diodes.

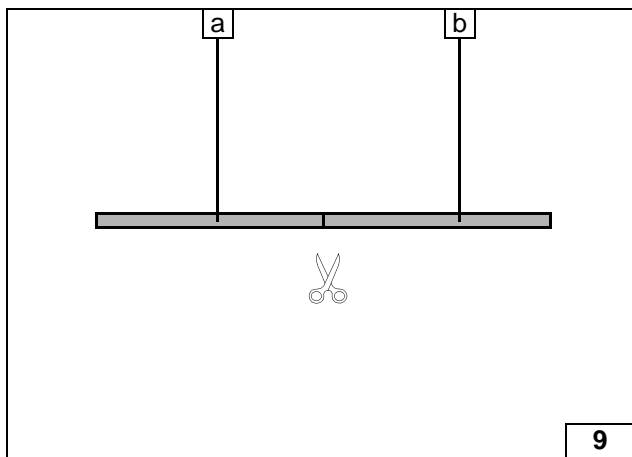
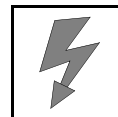


Premounting / assigning diode group



Dismantling metering pump connector





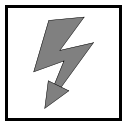
Cut 10mm dia., 2100mm long corrugated tube to length.

a = 900mm for wiring harness of heater (cut lengthwise)

b = 1200mm for fuel line



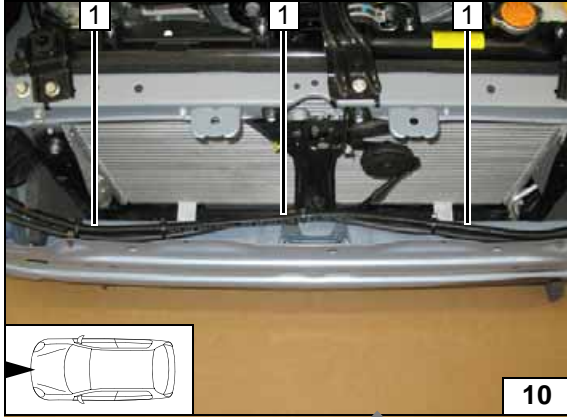
Cutting corrugated tube to length



Electrical System

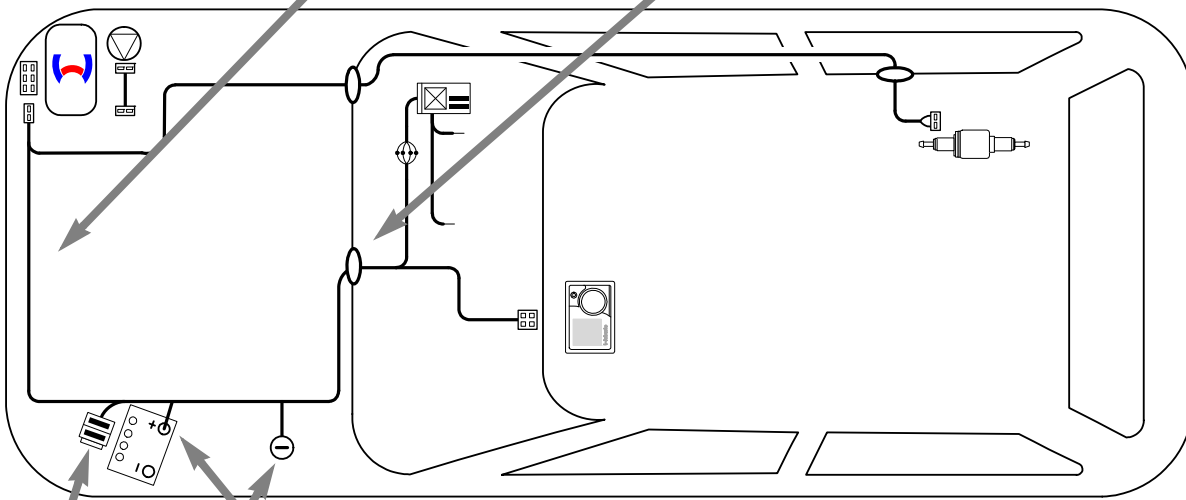
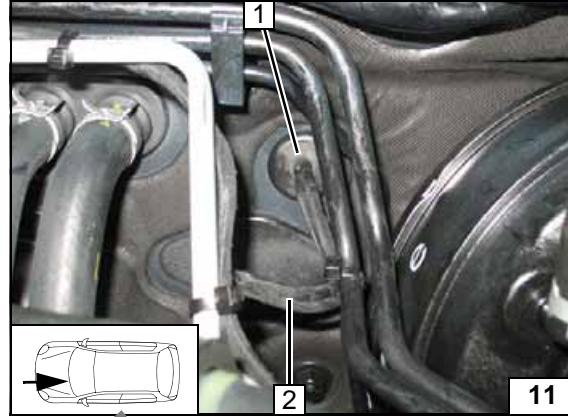
Wiring harness routing

- 1 Route heater wiring harness in corrugated tube along original vehicle hose

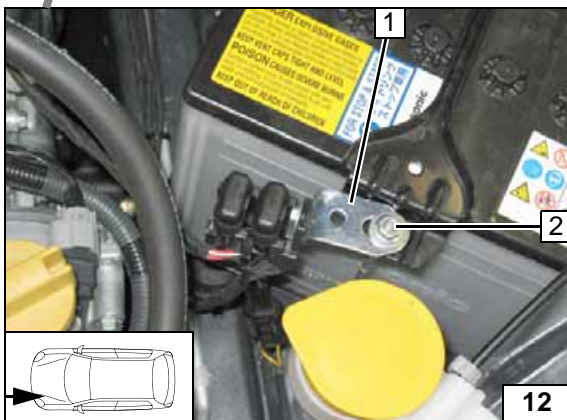


Wiring harness pass through

- 1 Punch 5mm dia. hole into rubber plug at position 1.
- 2 Wiring harnesses of heater, heater control

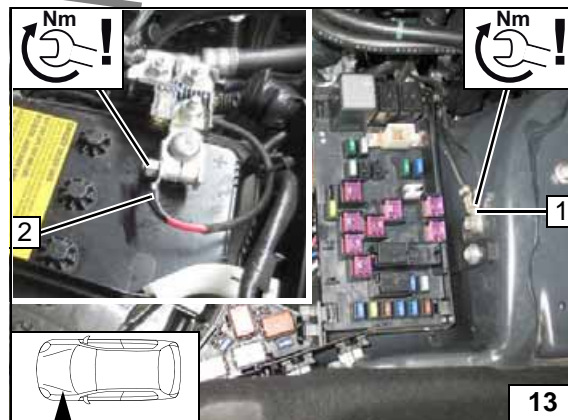


Wiring harness routing diagram



Engine compartment fuse holder

- 1 Angle bracket
- 2 Fastening bolts of battery, M6 flanged nut



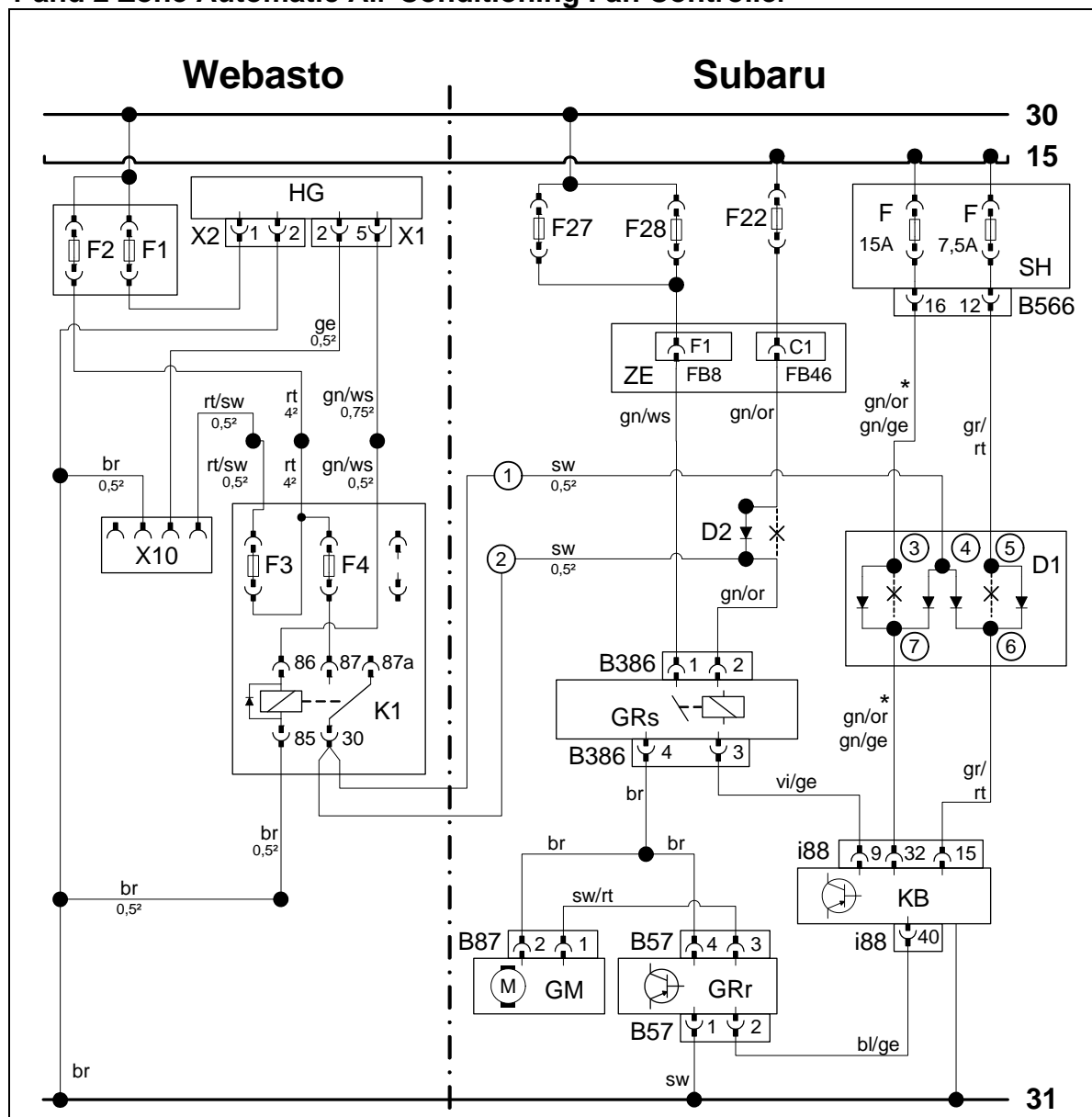
Positive and earth wire

- 1 Earth wire on original vehicle earth support point
- 2 Positive wire on positive battery terminal





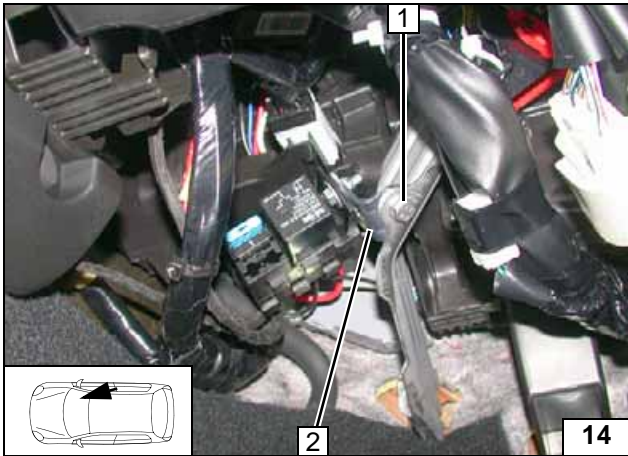
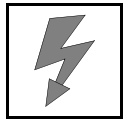
1 and 2 Zone Automatic Air-Conditioning Fan Controller



Wiring diagram

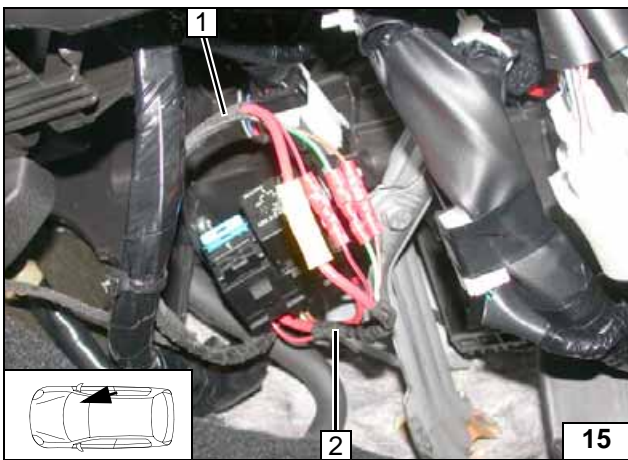
Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	F22	10A fuse	rt	red
X1	6-pin heater connector	F27	15A fuse	ws	white
X2	2-pin heater connector	F28	15A fuse	sw	black
F1	20A fuse	SH	Fuse holder	br	brown
F2	30A fuse	B566	25-pin connector of SH	gn	green
X10	4-pin connector of heater control	ZE	Central electrical box	vi	violet
F3	1A fuse	C1	24-pin connector C B52 of central electrical box, pin 1	bl	blue
F4	15A fuse	GRs	Fan relay	ge	yellow
K1	Fan relay	B386	5-pin connector of GRs	or	orange
D1	Diode group (4x3A)	KB	A/C control panel	*	Wiring colours, depending on equipment
D2	3A diode	i88	40-pin connector of KB		
		GM	Fan motor		
		B87	Connector of GM		
		GRr	Fan controller	X	Cutting point
		B57	Connector of GRr		Wiring colours may vary.

Legend



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

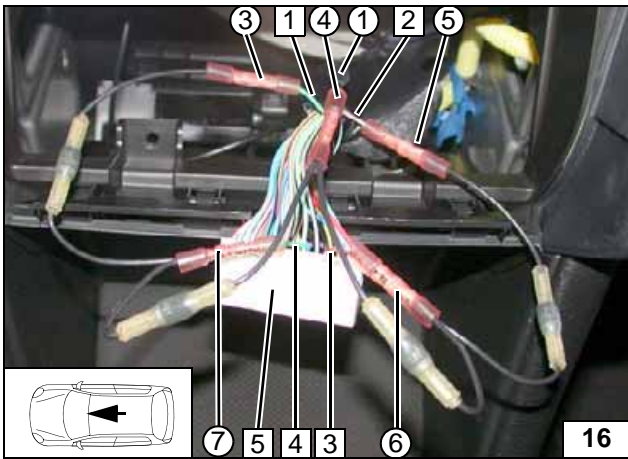
Installing passenger compartment relay and fuse holder



Connect passenger compartment relay and fuse holder wiring harness 2 to heater wiring harness 1.



Connecting wiring harnesses



Connection on 40-pin connector i88 5, pin 15 and 32 of A/C control panel.

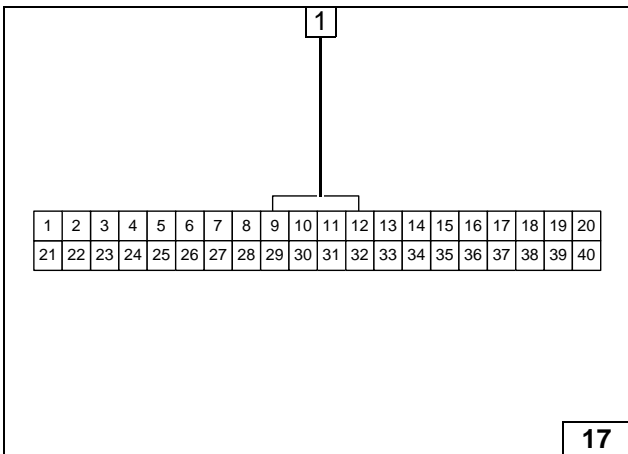


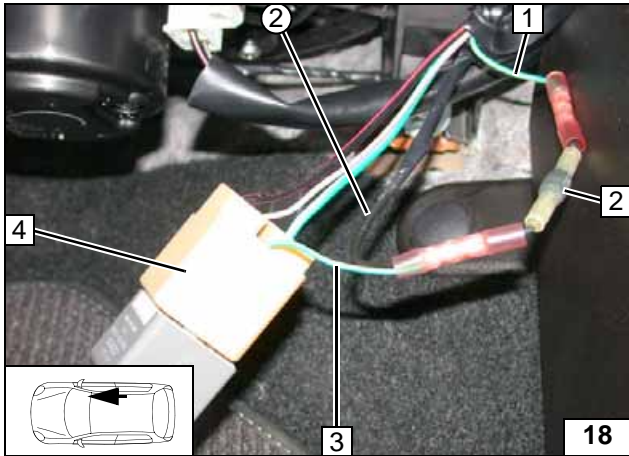
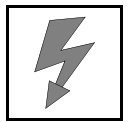
Connecting A/C control unit

- 1 Green/orange (gn/or) or green/yellow (gn/ge) wire of terminal 15
- 2 Grey/red (gr/rt) wire of terminal 15
- 3 Grey/red (gr/rt) wire of connector i88, pin 15
- 4 Green/orange (gn/or) or green/yellow (gn/ge) wire of connector i88, pin 32
- ① Black (sw) wire of K1/30
- ③ Black (sw) wire of D1
- ④ Black (sw) wire of D1
- ⑤ Black (sw) wire of D1
- ⑥ Black (sw) wire of D1
- ⑦ Black (sw) wire of D1

- 1 40-pin connector i88, on contact side

Connector i88 of A/C control panel



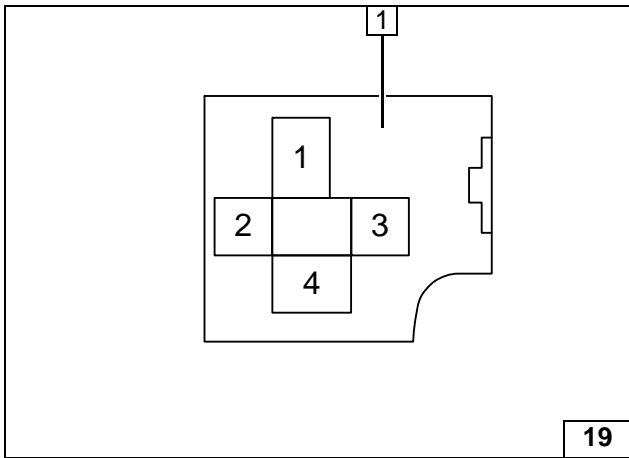


Watch direction of flow of diode D2 2.

- 1 Green/orange (gn/or) wire of connector C, pin 1 (FB46) ZE
- 3 Green/orange (gn/or) wire of connector B386 of fan relay, pin 2
- 4 5-pin connector B386 / PIN 2 of fan relay
- ② Black (sw) wire of K1/30

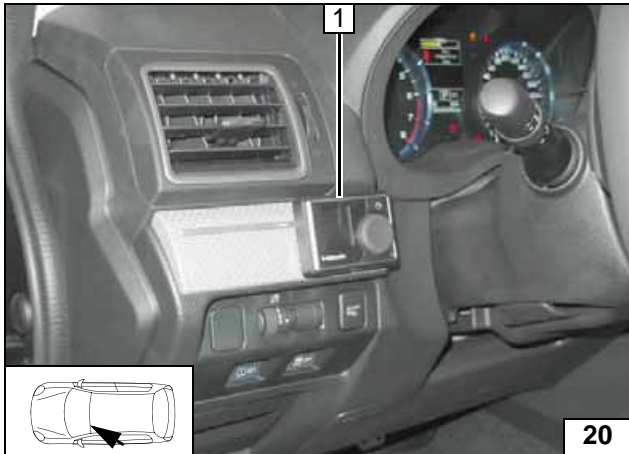
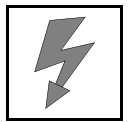


**Connect-
ing fan re-
lay**



- 1 5-pin connector B386, on contact side

**Connector
B386 of fan
relay**

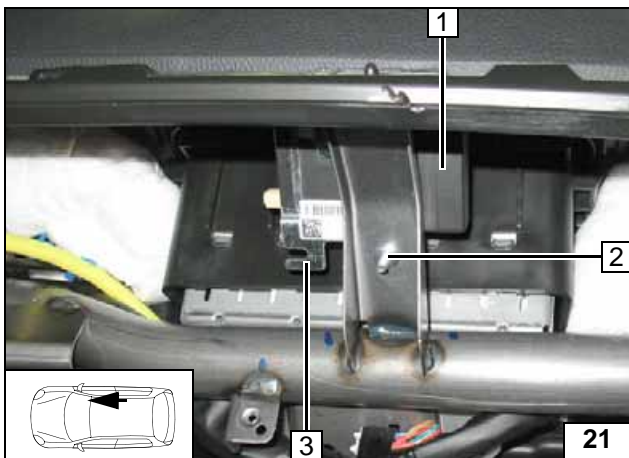


MultiControl CAR Option

- 1 Installation frame



Installing
MultiControl
CAR

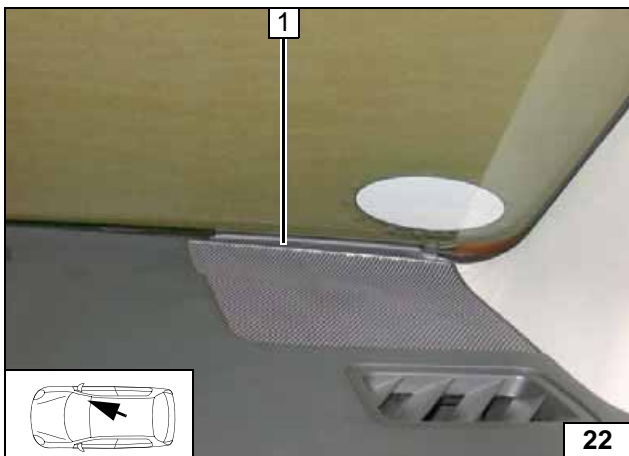


Remote Option (Telestart)

- 1 Receiver
- 2 M5x16 bolt, flanged nut, existing hole
- 3 Bracket

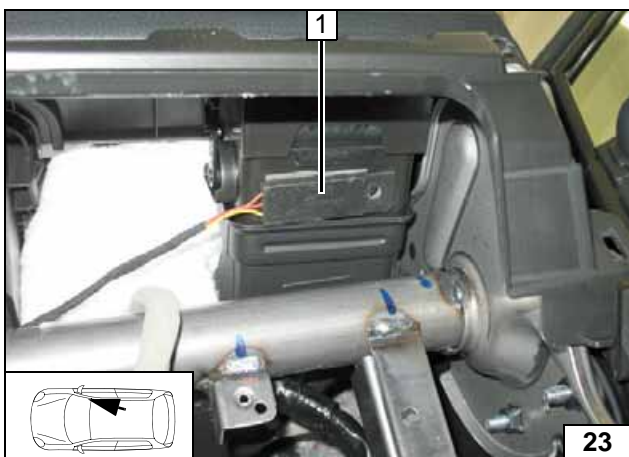


Installing
receiver



- 1 Aerial

Installing
aerial

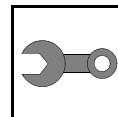


Temperature sensor T100 HTM

Fasten temperature sensor 1 with double-sided adhesive tape.



Installing
tempera-
ture sensor

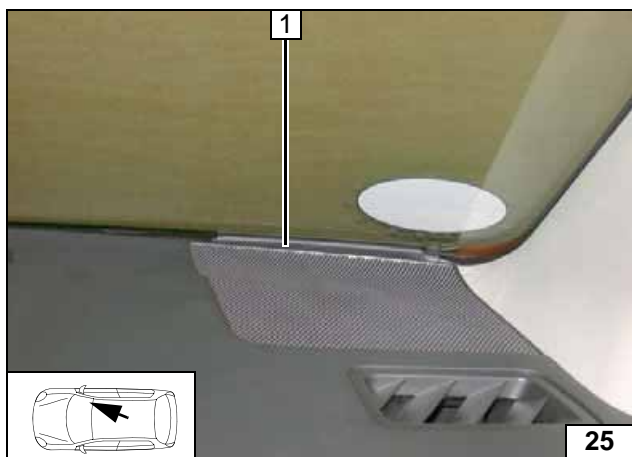


ThermoCall Option

- 1 Receiver
- 2 M5x16 bolt, flanged nut, existing hole

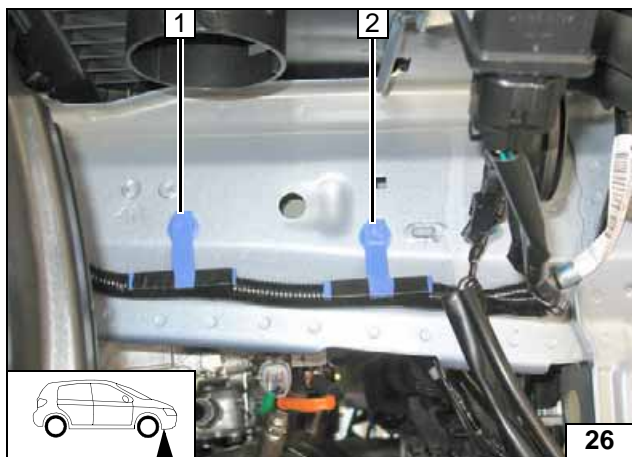


Installing receiver



- 1 Aerial (optional)

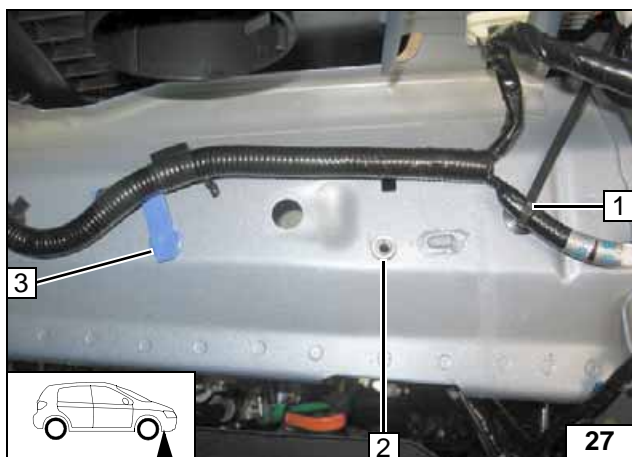
Installing aerial



Preparing Installation Location

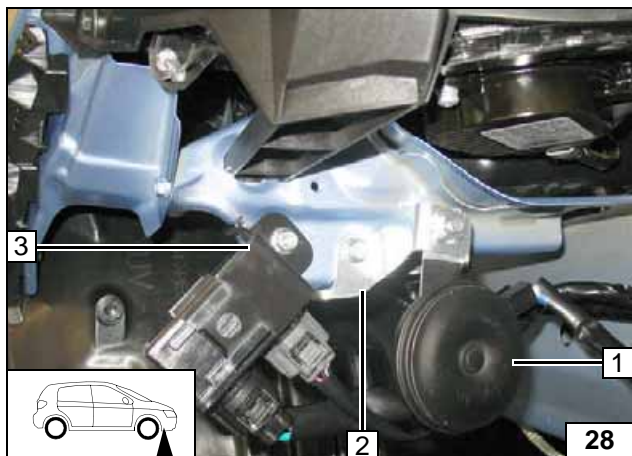
- 1 Remove clip and detach it from the wiring harness, will be reused
- 2 Remove clip and discard

Routing wiring harness



- 1 Clip with cable tie, original vehicle wiring harness, existing hole
- 2 Drill out existing hole to 9.1mm dia.; install rivet nut
- 3 Install clip, fasten wiring harness using insulating tape

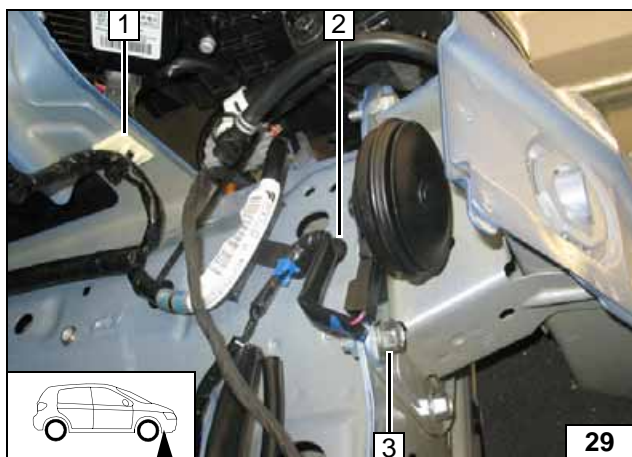
Routing wiring harness



XV only

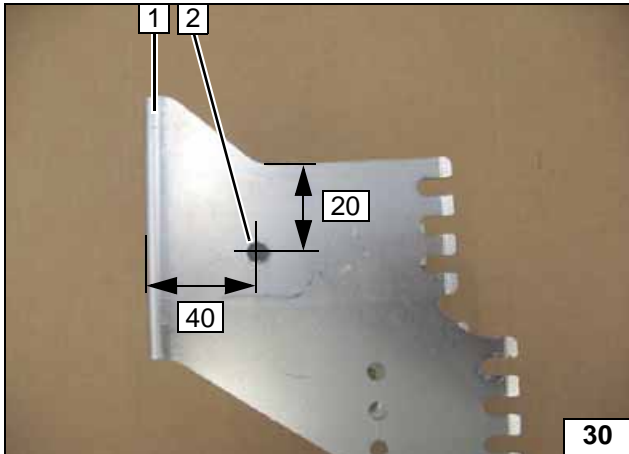
- 1 Horn
- 2 Dismantle bracket, discard with screws [2x]
- 3 Remove relay for windscreen wiper with bracket, original vehicle bolt will be fastened with combustion air silencer later

Removing wiper relay and horn



- 1 Self-adhesive socket, cable tie, original vehicle wiring harness
- 2 Clip with cable tie, original vehicle wiring harness, existing hole
- 3 Original vehicle bolt

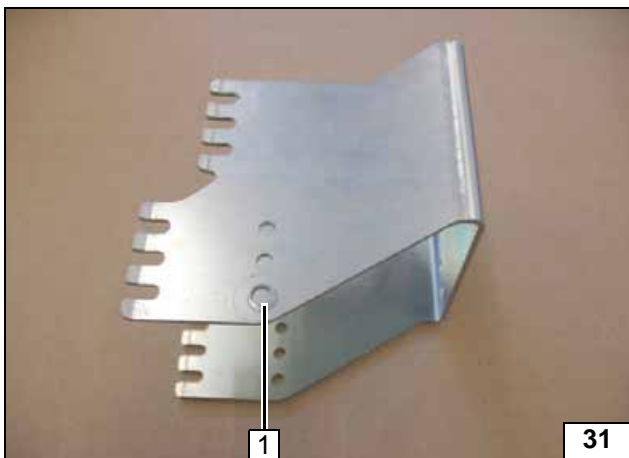
Installing horn



Preparing Bracket of Heater

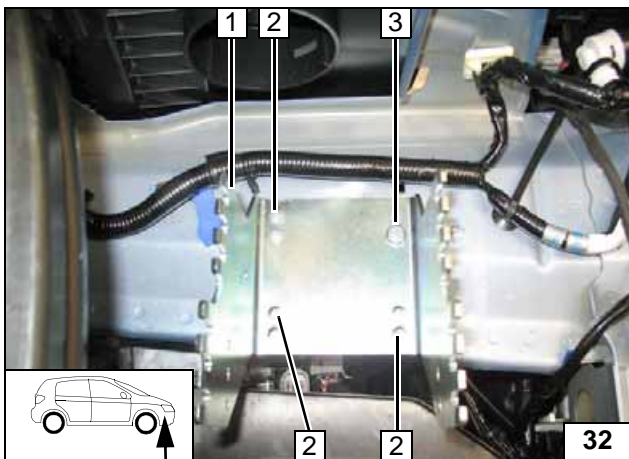
- 1 Bracket
- 2 Copy hole pattern, 7mm dia. hole

Preparing bracket



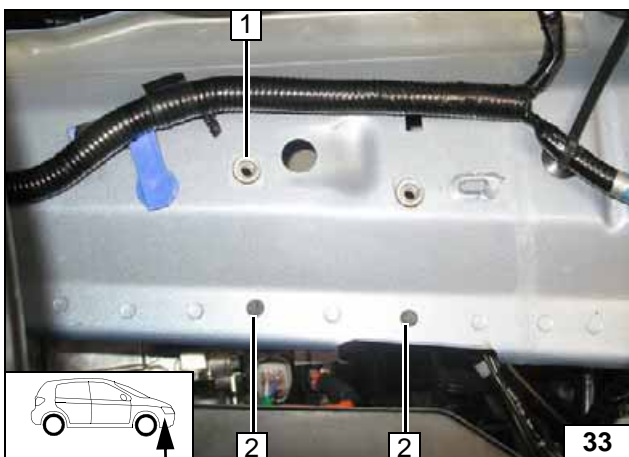
- 1 Drill out hole to 7 mm dia.

Preparing bracket



- 1 Align bracket vertically
- 2 Copy hole pattern [3x]
- 3 M6x20 bolt, spring lockwasher, install loosely

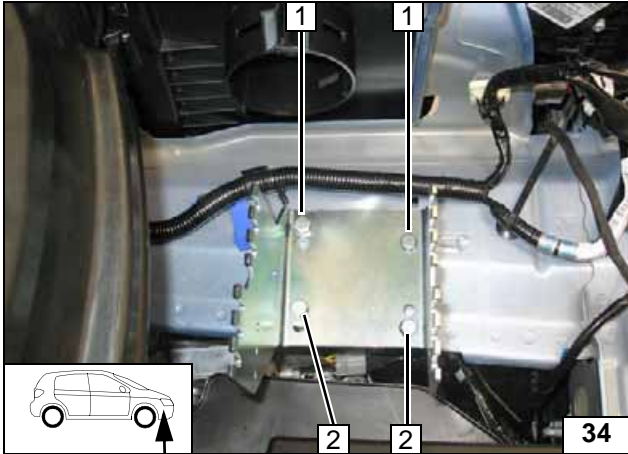
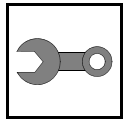
Copying hole pattern



Remove bracket.

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

Installing rivet nut

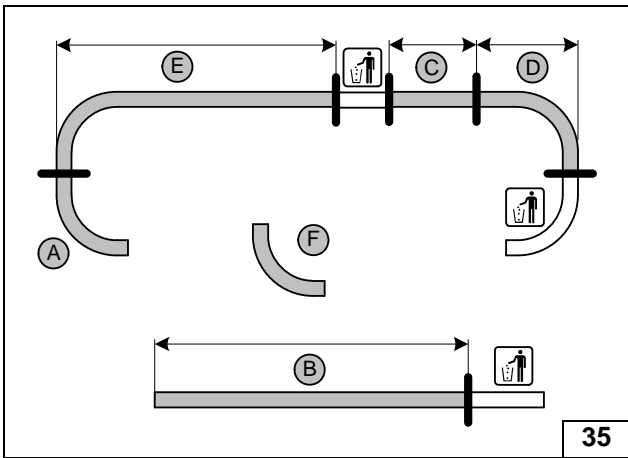


Position one 5 mm shim and one 10 mm shim each between bracket and vehicle at position 2.

- 1 M6x20 bolt, spring lockwasher [2x each]
- 2 M6x30 bolt, 5 mm shim, flanged nut [2x each]



Installing bracket

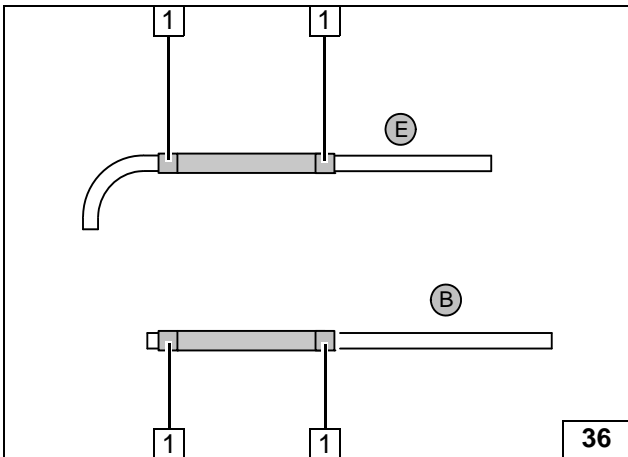


Hose F = 90°, 15x18 mm dia. moulded hose

- B = 1300
- C = 85
- D = 90
- E = 1360



Cutting hoses to length

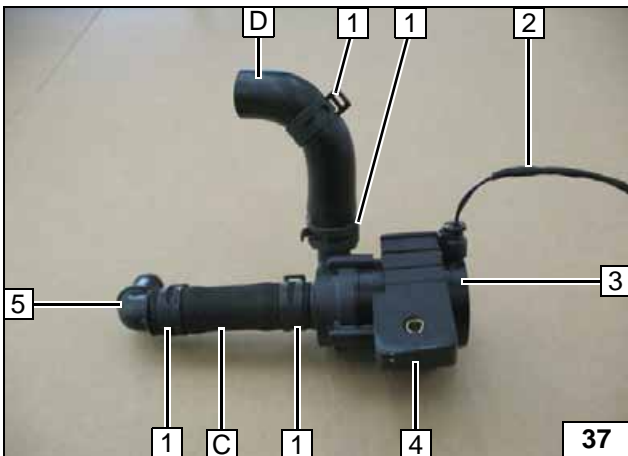


Cut supplied braided protection hose to length and push onto hoses B and F. Cut heat shrink plastic tubing to size.

- 1 25 mm long heat shrink plastic tubing [4x]

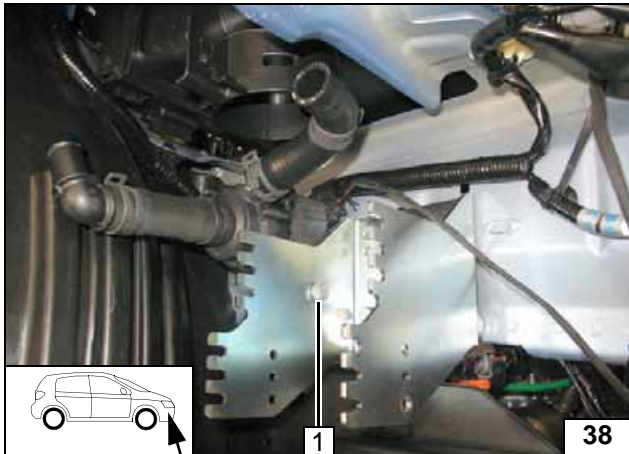


Preparing hoses



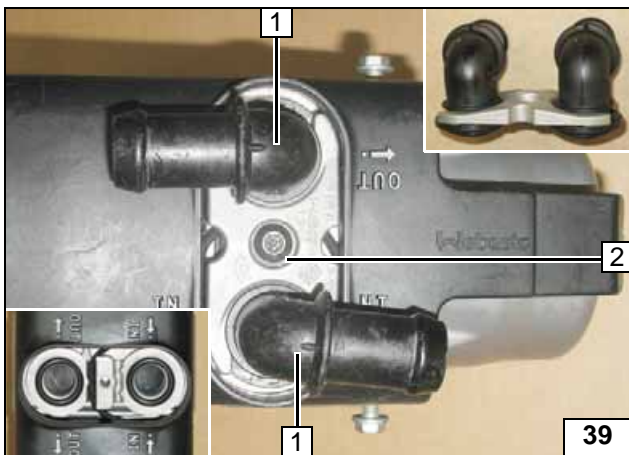
- 1 Spring clips 25 mm dia [4x]
- 2 Install circulating pump wiring harness
- 3 Circulating pump
- 4 Circulating pump mount
- 5 90°, 18x18 mm connecting pipe

Premounting circulating pump



1 M6x25 bolt, flanged nut

Installing circulating pump

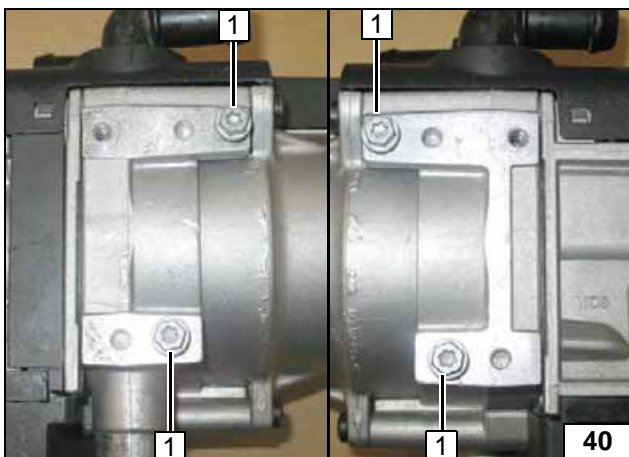


Preparing Heater

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



Installing water connection piece



Pre-cut thread with 5x13 self-tapping bolts 1 [4x] and mount loosely (screw in a max. of 3 threads).

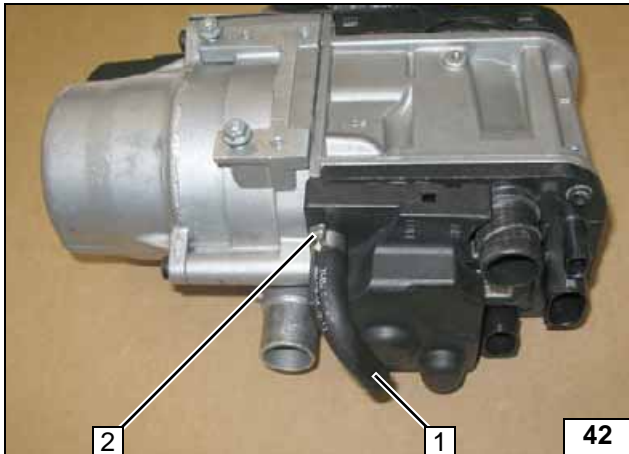


Premounting heater



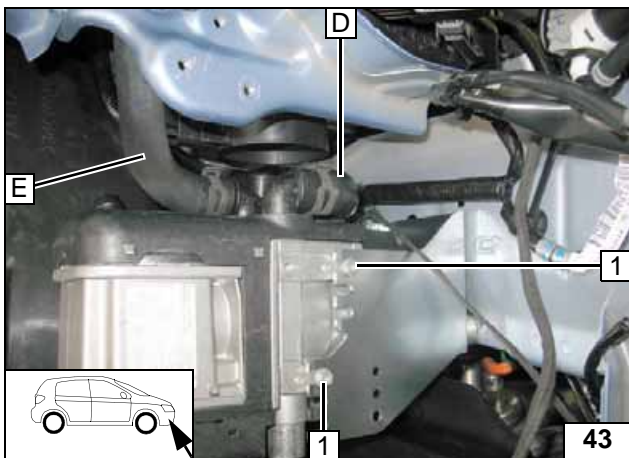
1 25 mm dia. spring clip

Premounting hose E



- 1 90° moulded hose
- 2 10 mm dia. clamp

Premounting fuel line

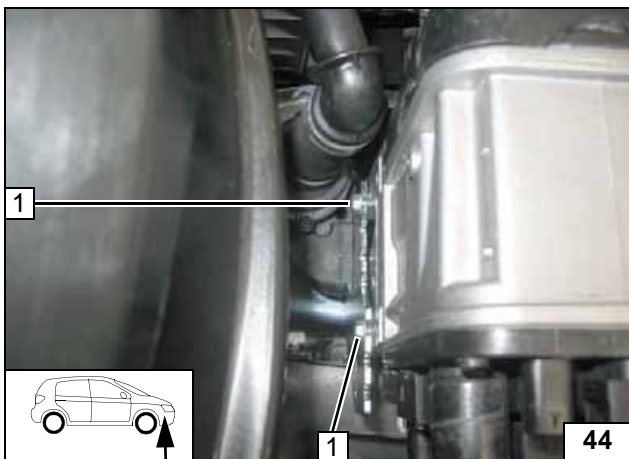


Installing Heater

Route hose E upwards. Push hose D onto heater inlet and fasten.

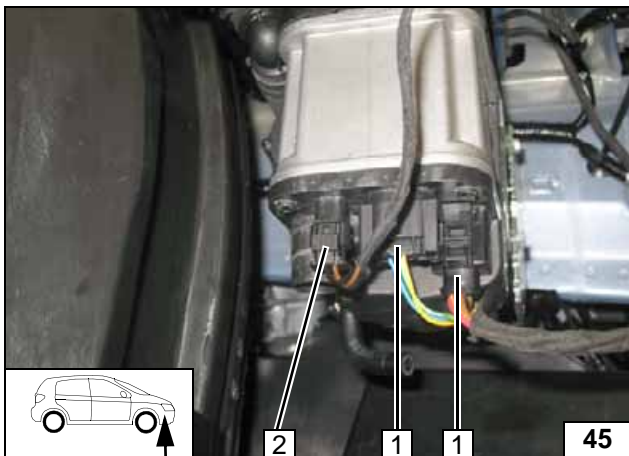
- 1 Tighten bolt [2x]

Installing heater



- 1 Tighten bolt [2x]

Installing heater



- 1 Heater wiring harness connector [2x]
- 2 Connector of circulating pump wiring harness

Installing wiring harnesses

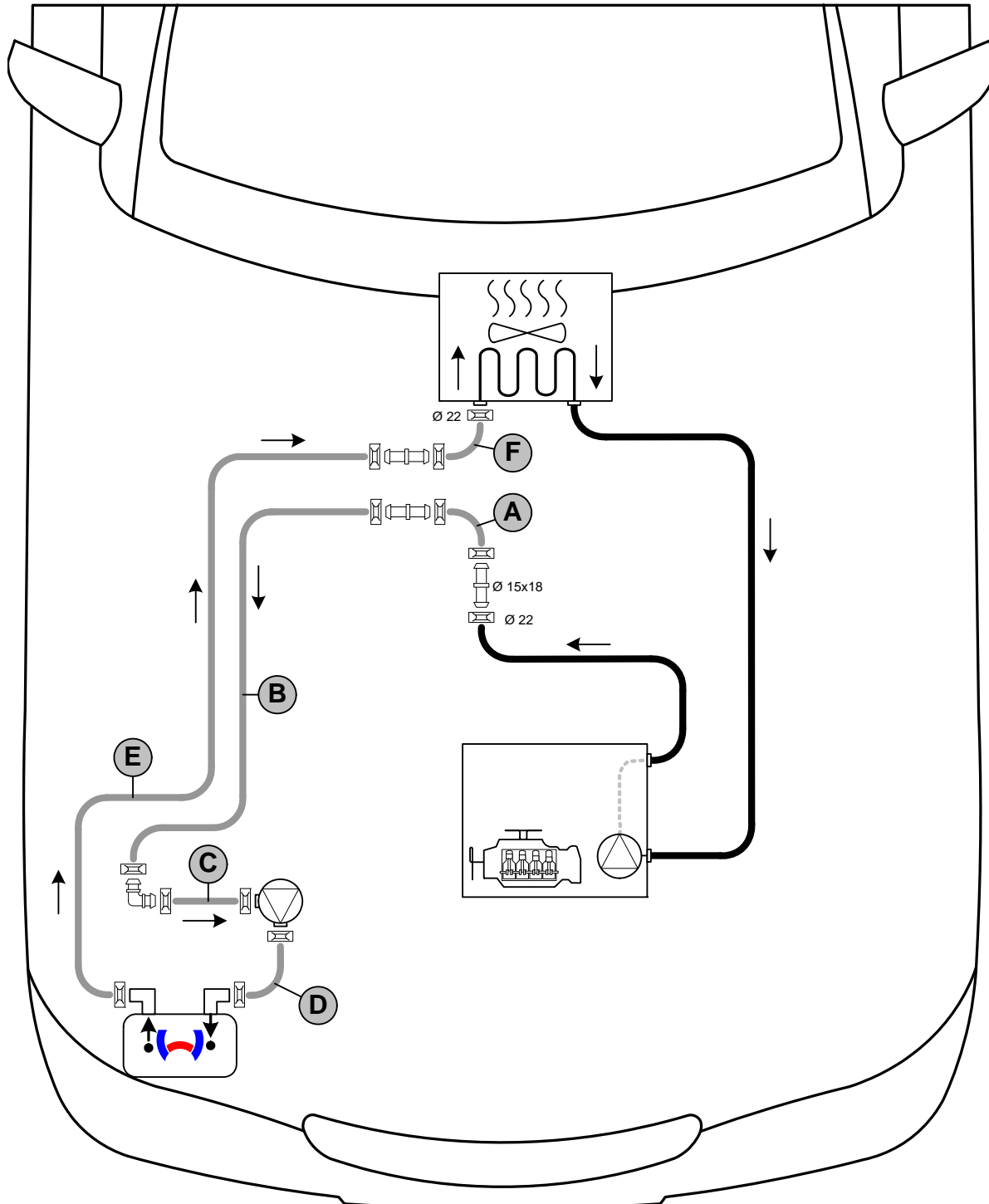


Coolant Circuit


WARNING!

Any coolant running off should be collected in an appropriate container. Route hoses kink-free. Unless specified otherwise, always fasten using cable ties. Position clamps so that other hoses cannot be damaged. The heater must be filled with coolant when installing the hoses.

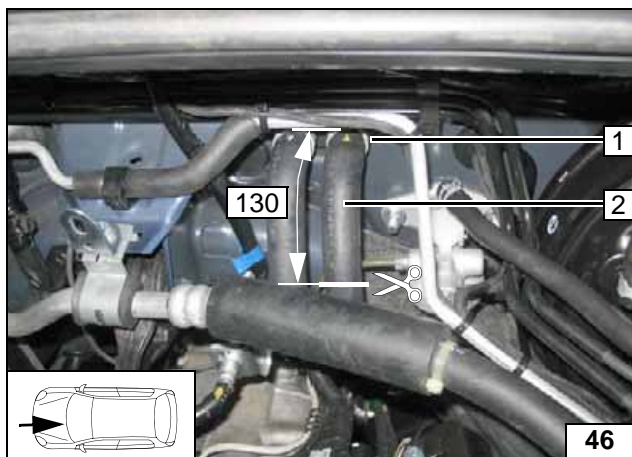
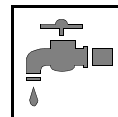
The connection should be modelled on an 'inline' circuit and based on the following diagram:



Hose routing diagram

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

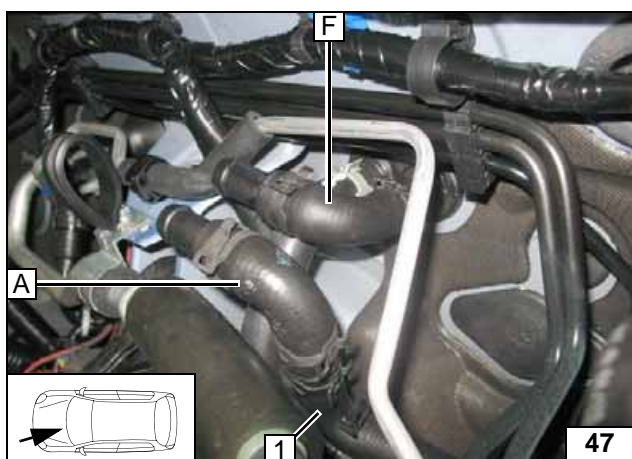




Cut hose of engine outlet / heat exchanger inlet at the marking (flat length from hose end 130mm). Remove and discard hose section of heat exchanger inlet **2** and spring clip **1**.



Cutting point

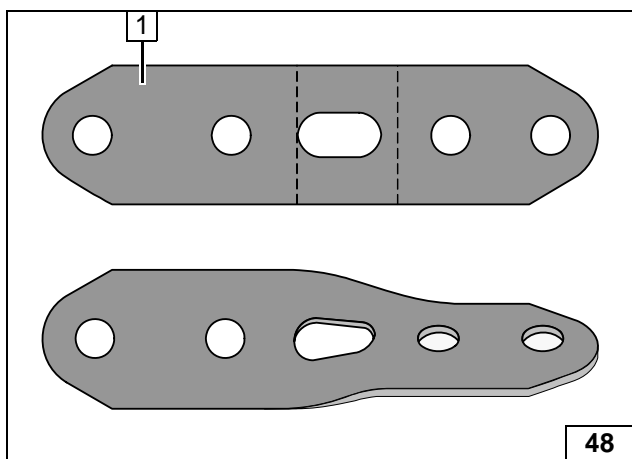


Mount hose **F** with 15 mm dia. on heat exchanger inlet connection piece.



1 Engine outlet hose section

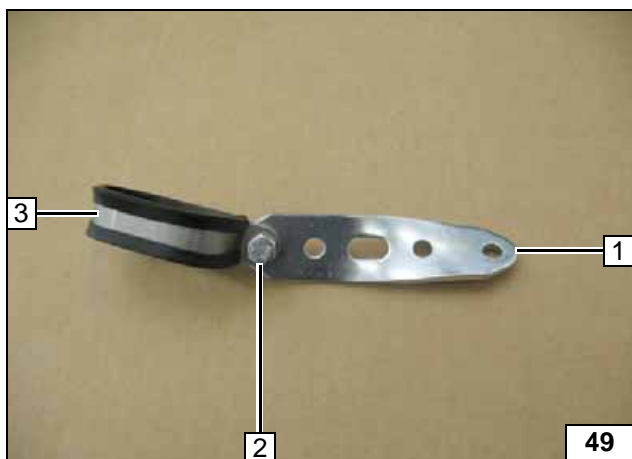
Connection on engine outlet and heat exchanger inlet



Twist perforated bracket **1** by approx. 45°.

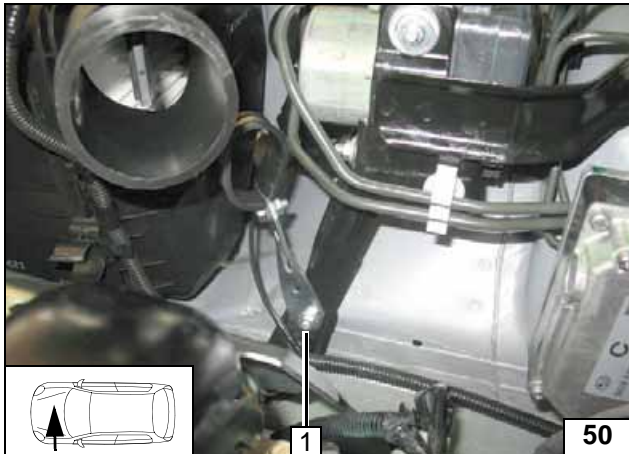


Preparing perforated bracket



- 1** Perforated bracket
- 2** M6x16 bolt, flanged nut
- 3** 38 mm dia. rubber-coated p-clamp

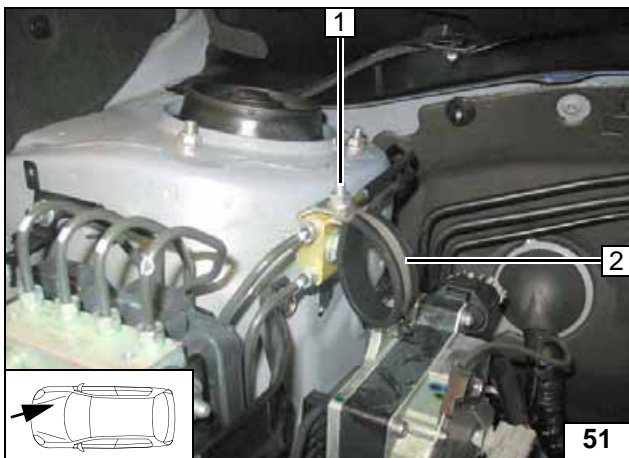
Premounting rubber-coated p-clamp



Remove original vehicle clip at position 1 and discard.

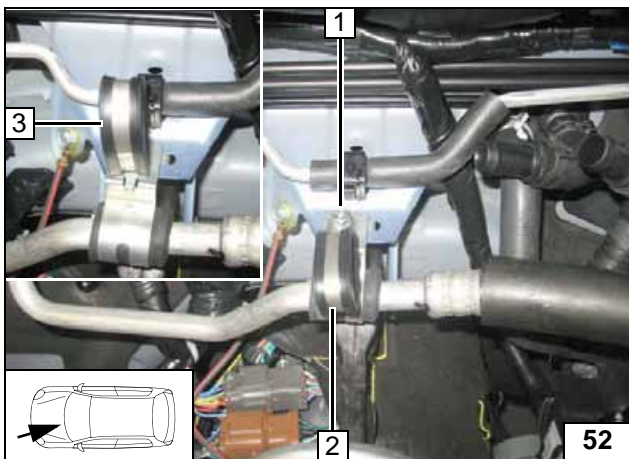
- 1 M6x12 bolt, flanged nut

Installing rubber-coated p-clamp



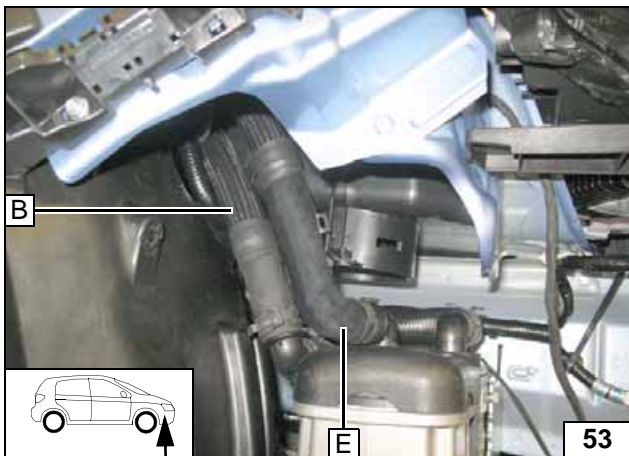
- 1 M6x16 bolt, existing hole, flanged nut
- 2 38 mm dia. rubber-coated p-clamp

Installing rubber-coated p-clamp

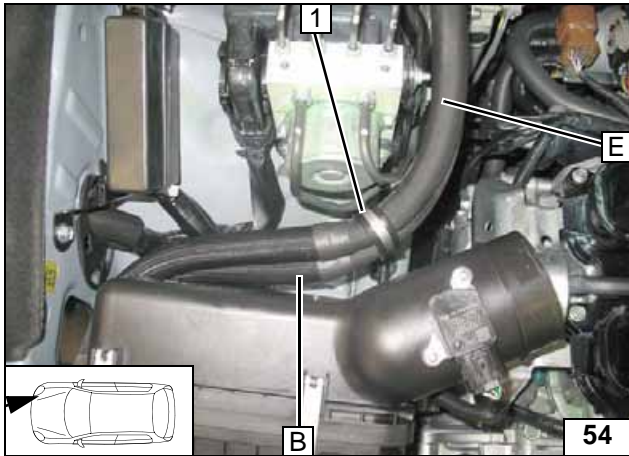


- 1 Original vehicle bolt
- 2 38 mm dia. rubber-coated p-clamp
- 3 Bend 38 mm dia. rubber-coated p-clamp after installation

Installing rubber-coated p-clamp

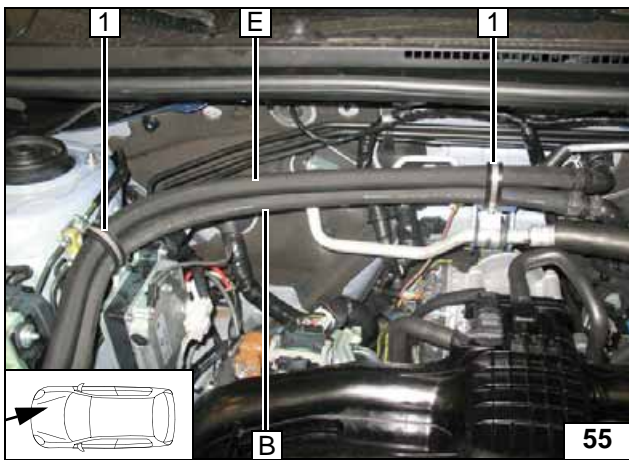


Connecting hoses B and E



Route hoses **B** and **E** through rubber-coated p-clamps **1**.

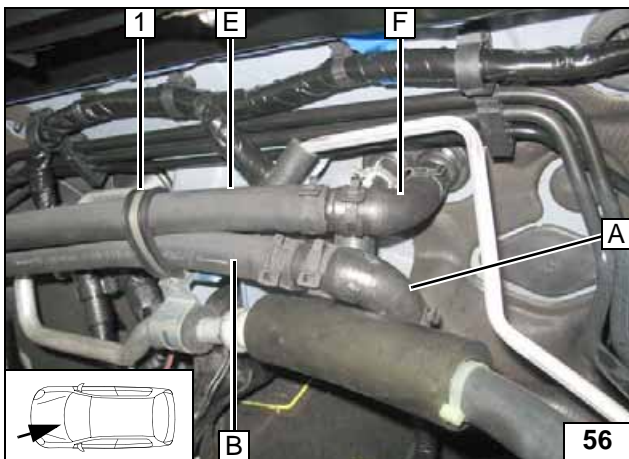
Routing in engine compartment



Route hoses **B** and **E** through rubber-coated p-clamps **1** [2x].



Routing in engine compartment

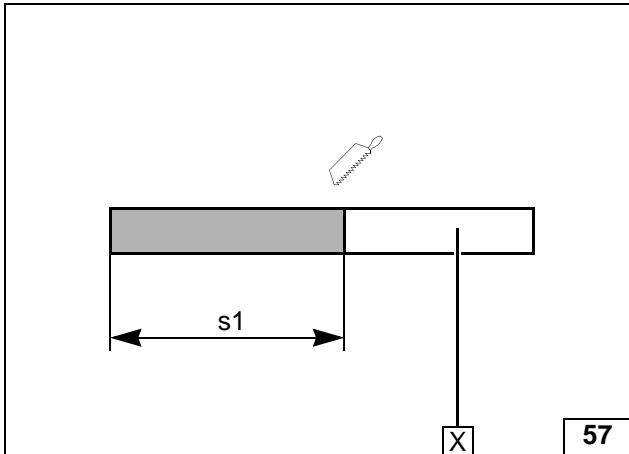
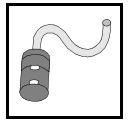


Align hoses. Ensure sufficient distance from adjacent components, correct if necessary.



1 38 mm dia. rubber-coated p-clamp

Connection on engine outlet and heat exchanger inlet

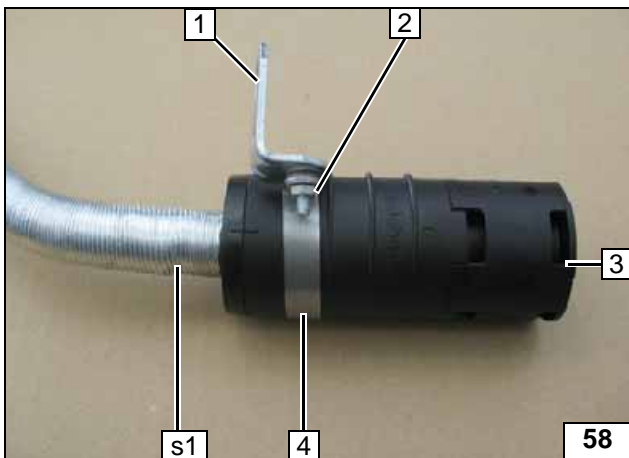


Combustion Air

s1 = 330

X =

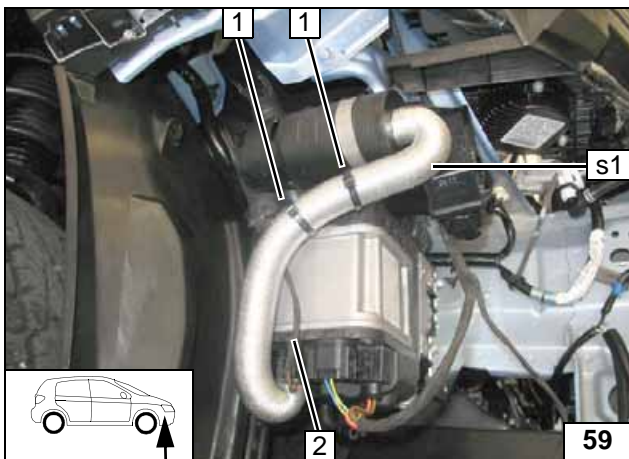
Cutting combustion air pipe to length



- 1 Angle bracket
- 2 M5x16 bolt, flanged nut
- 3 Silencer
- 4 51 mm dia. clamp



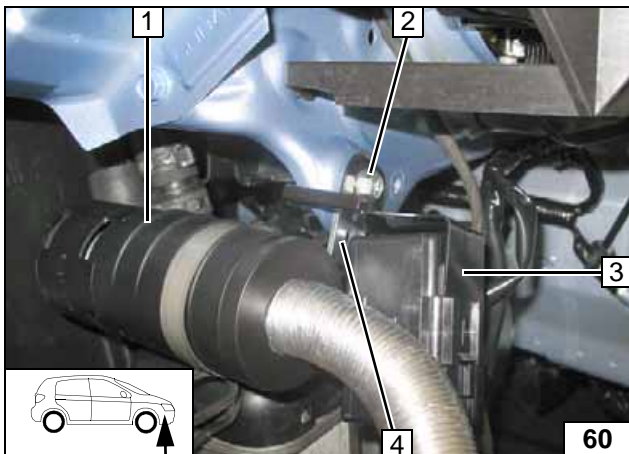
Installing silencer



Fasten wiring harness of circulating pump 2 with cable tie 1 [2x].



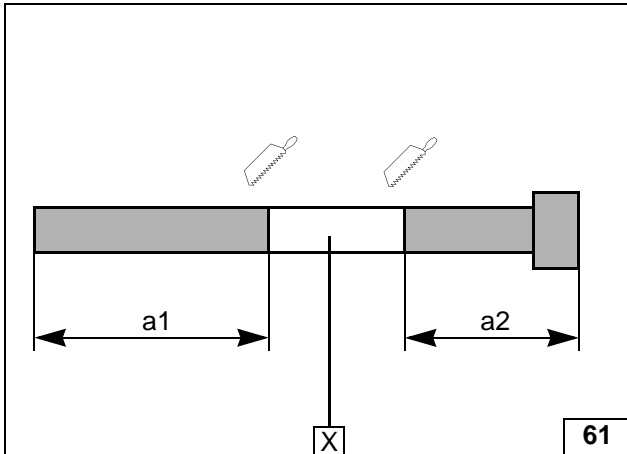
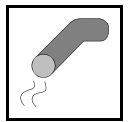
Installing combustion air pipe s1



- 1 Silencer
- 2 Original vehicle bolt
- 3 Windscreen wiper relay, only for XV.
- 4 Pre-mounted angle bracket



Installing silencer

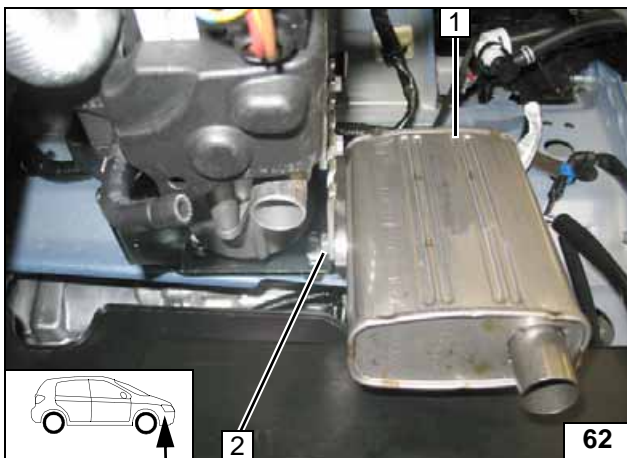


Exhaust Gas

a1 = 310
a2 = 93

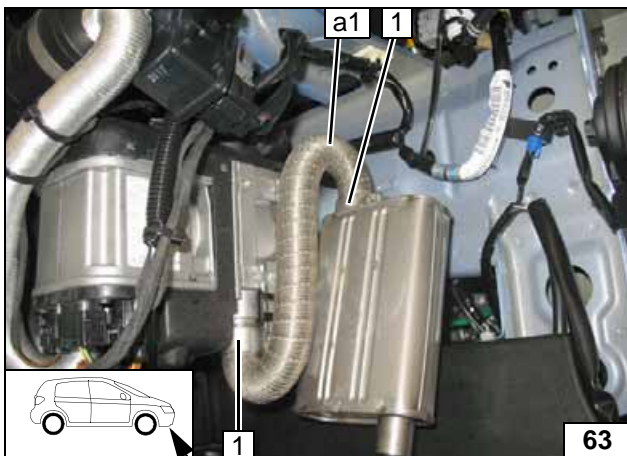
X =

**Preparing
exhaust
pipe**



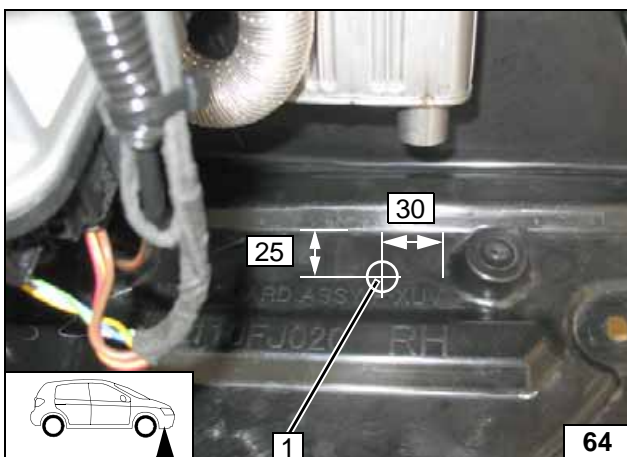
- 1 Silencer
- 2 M6x20 bolt, spring lockwasher, 5 mm shim

**Installing
silencer**



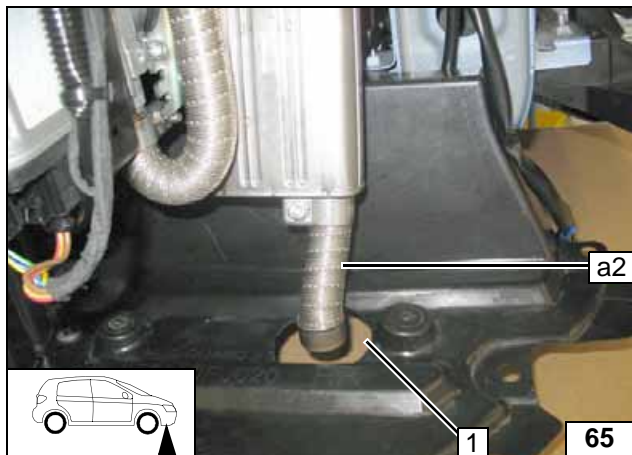
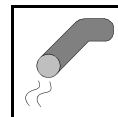
- 1 Hose clamp [2x]

**Installing
exhaust
pipe a1**



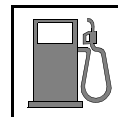
- 1 Copy hole pattern

**Copying
hole pat-
tern**



1 60 mm dia. hole

Installing
and align-
ing exhaust
pipe a2



Fuel

CAUTION!

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

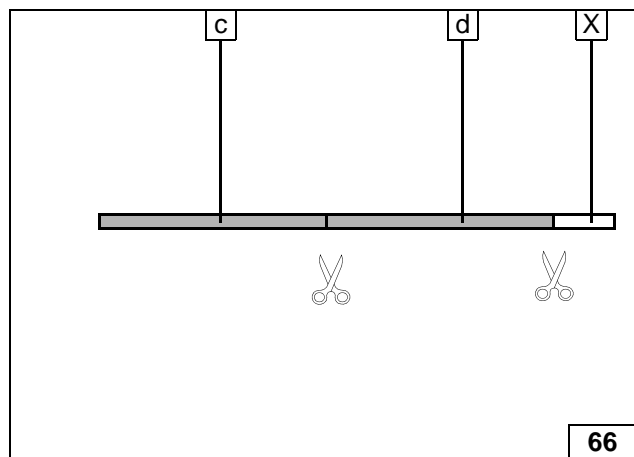
Catch any fuel running off in an appropriate container.

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

Provide rub protection for fuel line and wiring harness in areas where there are sharp edges.

WARNING!

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



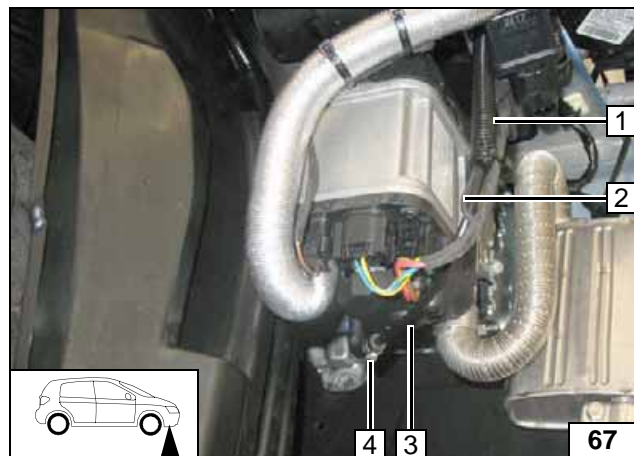
Cut 10mm dia., 1800mm long corrugated tube to length.

c = 750

d = 750

X =

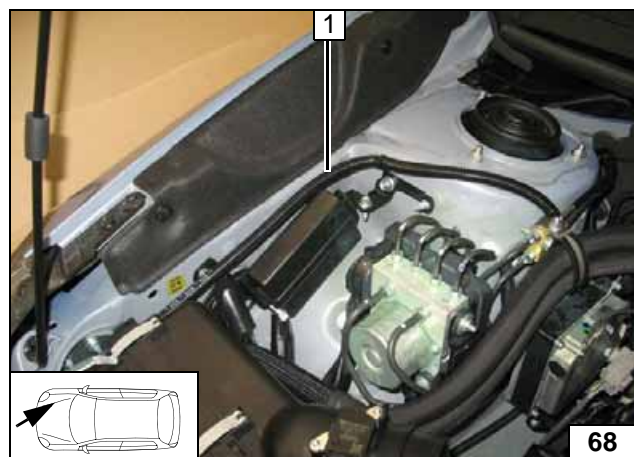
Cutting corrugated tube to length



Pull fuel line 3 and metering pump wiring harness 2 into corrugated tube d 1.

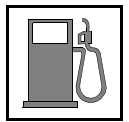
4 10 mm dia. clamp

Connecting heater



1 Fuel line and metering pump wiring harness into corrugated tube

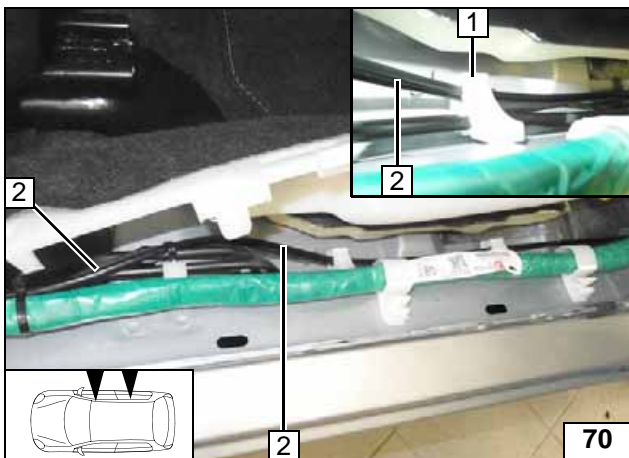
Routing lines



Route fuel line and wiring harness of metering pump through original vehicle pass through **1** into the passenger compartment.



Routing lines

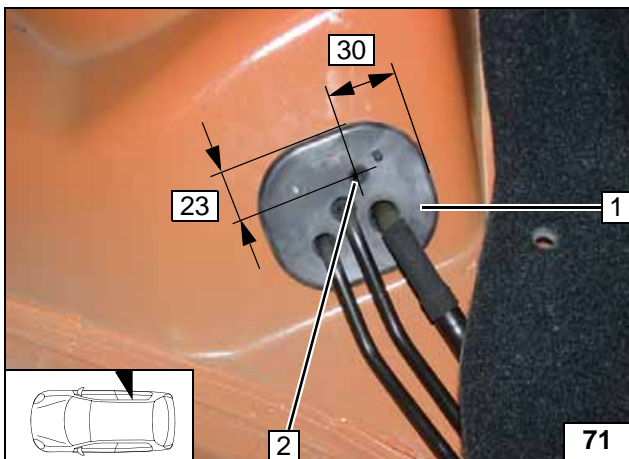


Route fuel line and wiring harness of metering pump **2** in the passenger compartment (front and rear) to the rear within cable duct along original vehicle fuel lines.



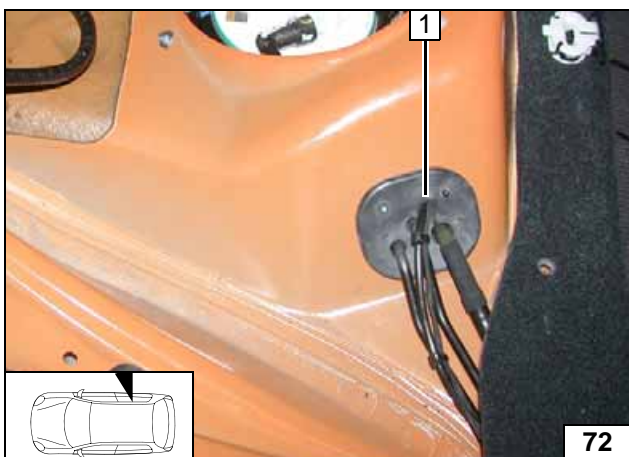
Routing lines

- 1** Mounting/bracket of fuel lines



- 1** Protective rubber plug
- 2** 7 mm dia. hole

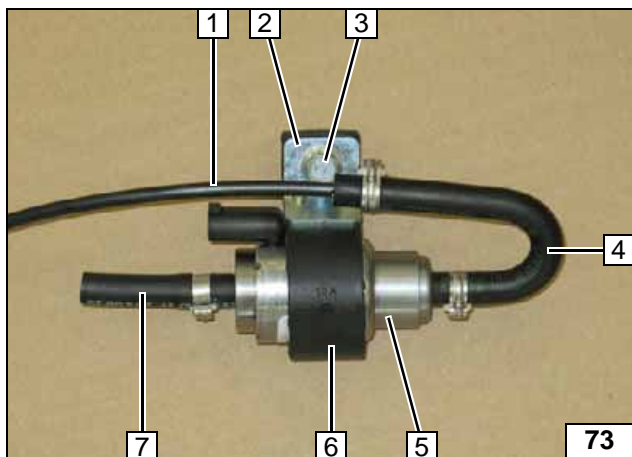
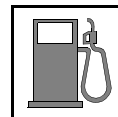
Hole in protective rubber plug



Route fuel line and metering pump wiring harness to the underbody through hole in protective rubber plug **1**.



Routing lines

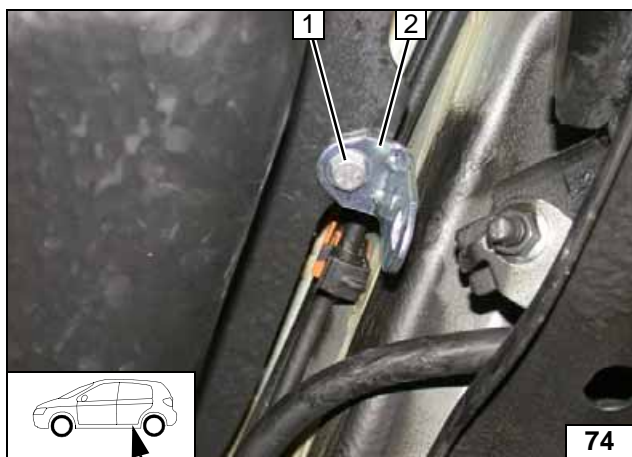


Cut off 1000mm from fuel line.

- 1 1000 mm long fuel line
- 2 Support angle bracket
- 3 Insert M6x25 bolt
- 4 180° moulded hose, 10 mm dia. clamp [2x]
- 5 Metering pump
- 6 Metering pump mount
- 7 Hose section, 10 mm dia. clamp

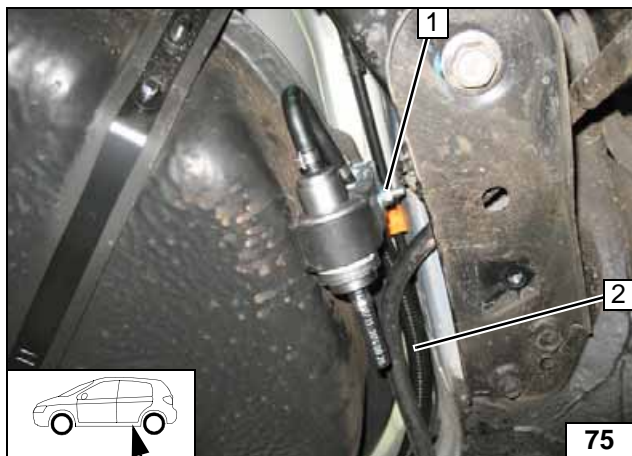


Premounting metering pump



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

Installing angle bracket

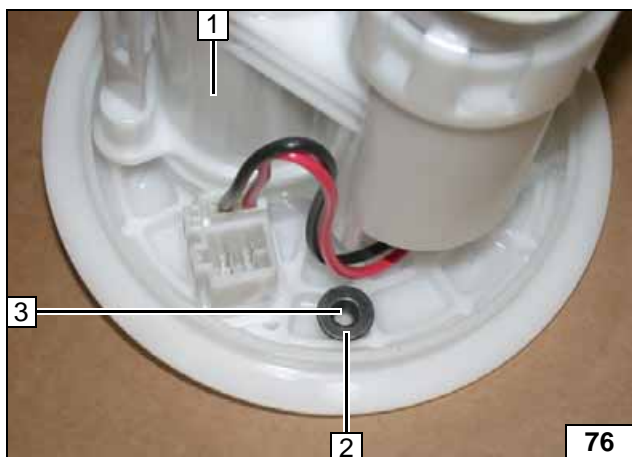


Push corrugated tube c 2 onto fuel line of fuel standpipe.

- 1 Flanged nut on M6x25 bolt



Installing metering pump

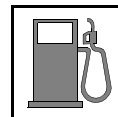


Remove fuel tank sending unit on right 1 according to manufacturer's instructions.

- 2 Flanged nut of fuel standpipe
- 3 Copy hole pattern, 2.5 mm dia. hole

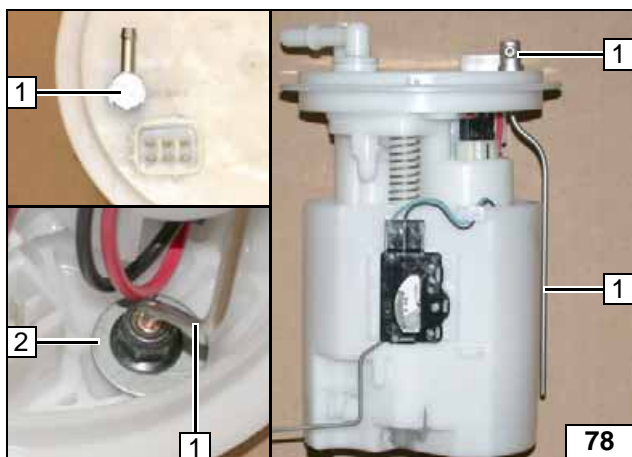


Preparing fuel extraction



1 Drill out 2.5 mm dia. hole to 6 mm dia.

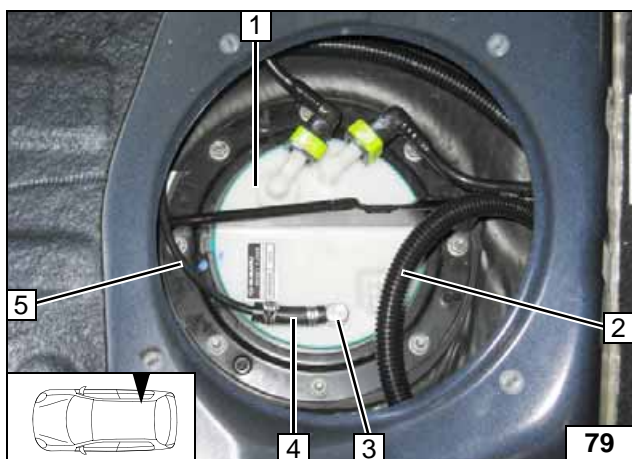
Hole in fuel tank sending unit



Bend fuel standpipe 1 according to template and cut to length. Insert large diameter washer 2 with outer dia. $d_a = 21.6\text{mm}$ between fuel tank sending unit and flanged nut.



Installing fuel standpipe

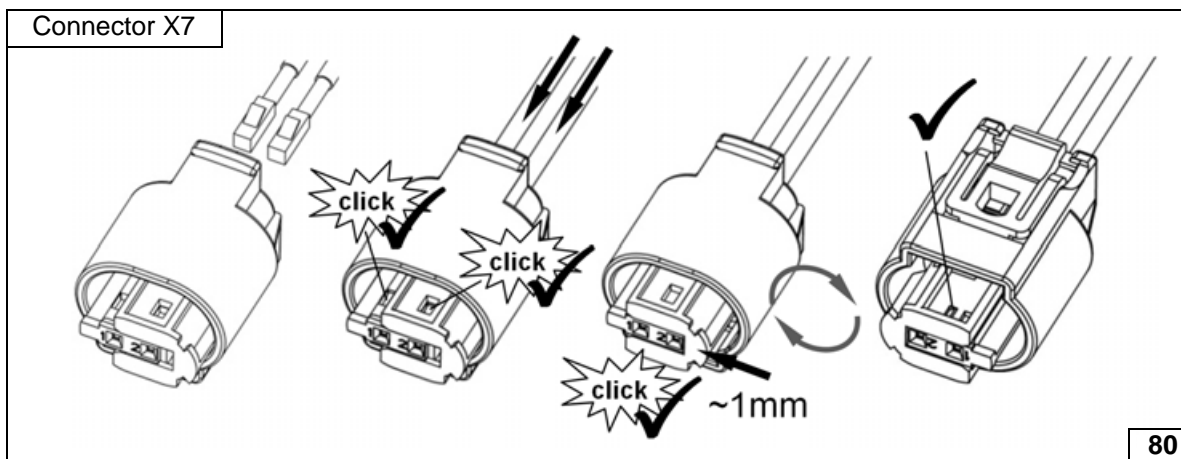


Install fuel tank sending unit 1 according to manufacturer's instructions. Route fuel line of heater and wiring harness of metering pump to the metering pump in corrugated tube d 3.

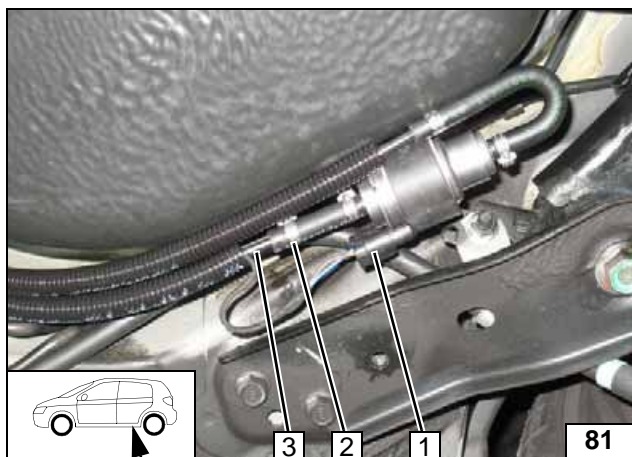
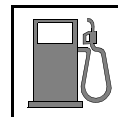


Connecting fuel line

- 3 Fuel standpipe
- 4 Hose section, 10 mm dia. clamp [2x]
- 5 Fuel line of fuel standpipe



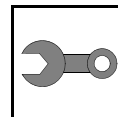
Completing metering pump connector



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

- 1 Metering pump wiring harness, connector X7 mounted
- 2 10 mm dia. clamp
- 3 Fuel line of heater

**Connect-
ing meter-
ing pump**



Final Work

WARNING!

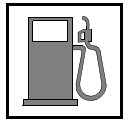
Reassemble the components in reverse order. Check all hoses, clamps and all electrical connections for firm seating. Insulate and tie back loose lines.

Only use manufacturer-approved coolant. Spray the heater components with anti-corrosion wax (Tectyl 100K).

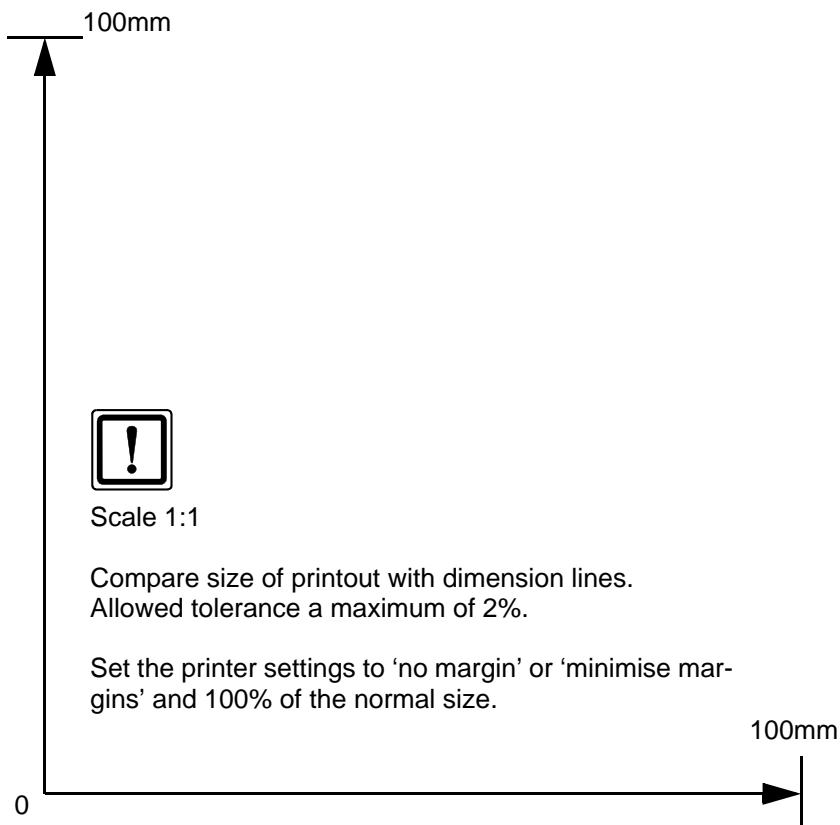
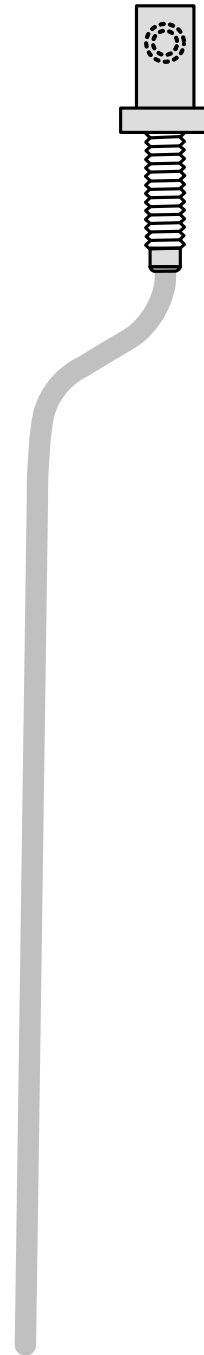


- **Connect the battery.**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer's specifications.**
- **Program MultiControl CAR, teach Telestart transmitter.**
- **Make settings on the A/C control panel according to the 'operating instructions'.**
- **Place the 'Switch off parking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





Fuel Standpipe Template



Operating Instructions for 1-Zone Automatic A/C

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

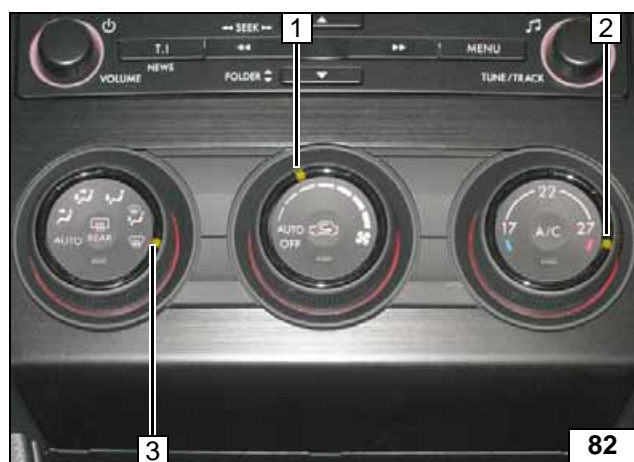
Example:

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.

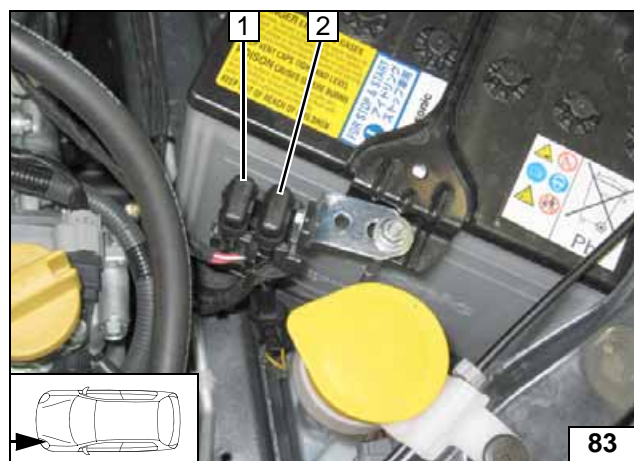
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



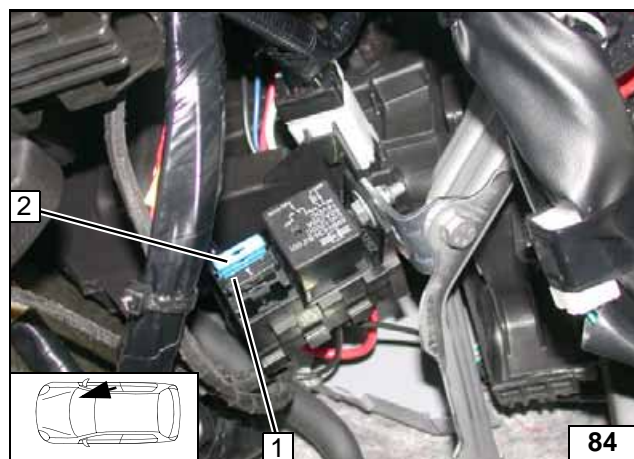
- 1 Set fan to level '2', or max. '3'
- 2 Temperature to 'max.'
- 3 Air outlet to windscreen

A/C control panel



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

Engine compartment fuses



- 1 1A heater control fuse F3
- 2 15A fan fuse F4

Passenger compartment fuses



Operating Instructions for 2-Zone Automatic A/C

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.

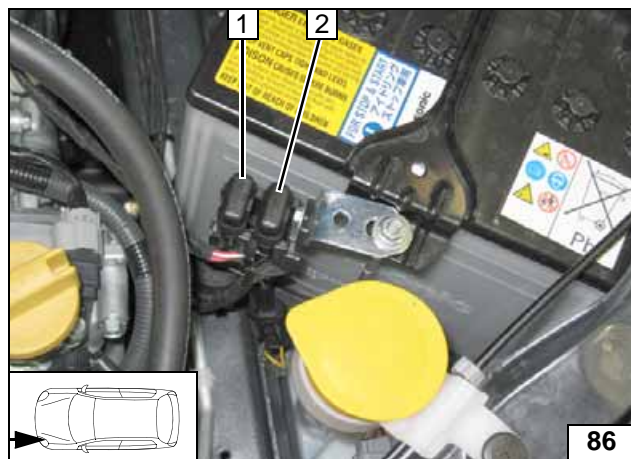
For instructions on deactivation, please refer to the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:



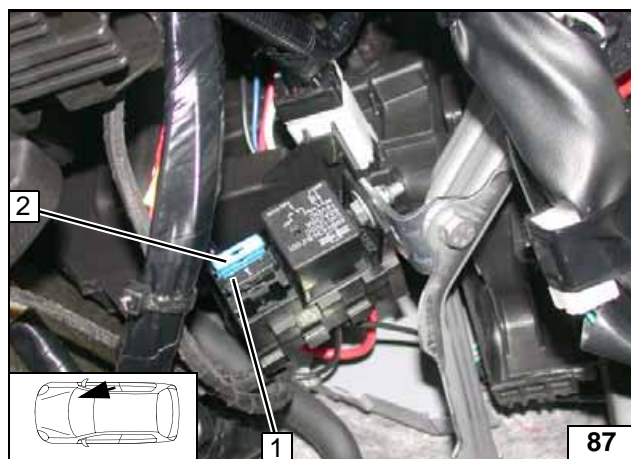
- 1 Air outlet to windscreen
- 2 Set fan to level '2'
- 3 Set temperature on both sides to 'HI'

A/C control panel



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

Engine compartment fuses



- 1 1A heater control fuse F3
- 2 15A fan fuse F4

Passenger compartment fuses

