Water Heater

Webasto
Feel the Drive

Thermo Top Evo Parking Heater

E1
00 0258

Installation Documentation
Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h

Validity

Manufacturer	Model	Type	EG-BE No. / ABE
Toyota	Prius	XW3 (a)	e11 * 2001 / 116 * 0264 * ...
Toyota	Prius Plug-in	XW3 P	e11 * 2007 / 46 * 0015 * ...
Toyota	Prius+	XW4 (a)	e11 * 2007 / 46 * 0157 * ...
Toyota	Prius+	XW3 (a)	e11 * 2001 / 116 * 0264 * ...
Lexus	CT200h	A10 (a)	e11 * 2007 / 46 * 0150 * ...

Motorisation	Fuel	Transmission type	Output in kW	Displacement in cm³	Engine code
1.8 Hybrid	Petrol	Continuously variable AG	73	1798	2ZR-FXE

AG = Automatic transmission

From Model Year 2011
Left-hand drive vehicle

Verified equipment variants:
Automatic air-conditioning
Solar roof (only for Prius)
Front fog light
Halogen headlights
LED headlights with headlight washer system
LED daytime running lights
Smart key

Not verified:
Passenger compartment monitoring
Manual air-conditioning

Total installation time: about 8 hours

Note:

ONLY let electrotechnically instructed personnel (German abbreviation EuP) carry out work on hybrid vehicles. Mind the vehicle manufacturer's instructions.

Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h

Table of Contents

Necessary Components

- Basic delivery scope *Thermo Top Evo* in accordance with price list
- Installation kit for Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h 2011 1.8 petrol: **1316543E**
- To be ordered from Toyota / Lexus additionally:

Fuel-tank sending unit mounting parts	**Prius Plug-in**	**Prius+ / CT200h**	**Prius**
Ring	77144-52030	Kit 77169-52040	77144-47041
Seal	77169-52030		77169-47040

Optional for Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h	
Load status indicator	DENGS-56380-37
MXS 3.8 charging unit	DENGS-MXS38-37

- Heater control in accordance with price list and upon consultation with final customer
- In case of Telestart, indicator lamp in accordance with price list and upon consultation with final customer

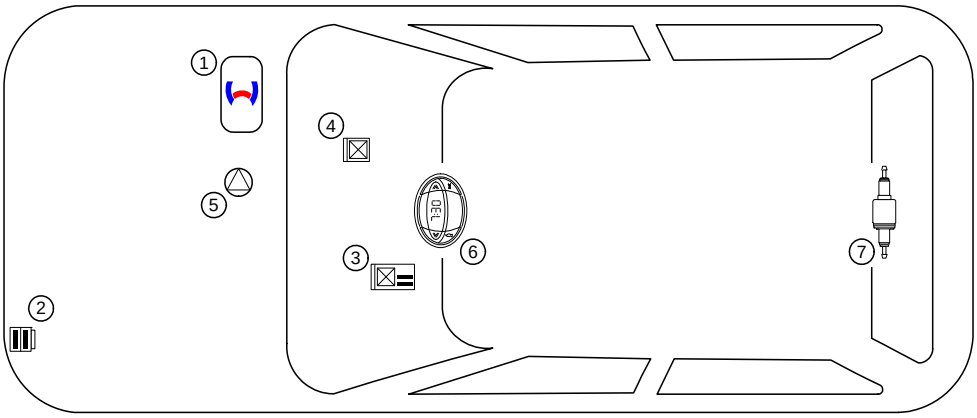
Installation instructions:

- Arrange for the vehicle to be delivered with the tank only about ¼ full.
- The installation location of the push button in the case of Telestart or Thermo Call should be confirmed with the end customer.

Installation Overview:

Legend:

1. Heater
2. Fuse holder of engine compartment
3. Relay and fuse holder of passenger compartment
4. IPCU
5. Circulating pump
6. Digital timer
7. Metering pump



Notes on Total Installation Time

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

Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h

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.

Notes on Validity

This installation documentation applies to Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h Petrol vehicles - for validity, see page 1 - from model year 2011 and later, assuming technical modifications to the vehicle do not affect installation, any liability claims excluded. Depending on the vehicle version and equipment, modifications may be necessary during installation with respect to this installation documentation.

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

Technical Instructions

Special Tools
- Hose clamp pliers for self-clamping hose clamps
- Hose clamp pliers for Clic hose clamps of type W
- Automatic wire stripper 0.2 - 6mm²
- Crimping pliers for cable lug / tab connector 0.5 - 6mm²
- Torque wrench for 2.0 - 10 Nm
- Hose clamping pliers
- Metric thread-setter kit
- Webasto Thermo Test diagnosis with current software
- Special tool for removal of fuel pump sensor (fuel-tank sending unit)
  Toyota Prius / Prius+ / Prius Plug-in / Lexus CT200h: **09808-14030**

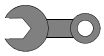
Dimensions
- All dimensions are in mm

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 bolt = 7Nm.
- Tighten other screw connections in accordance with manufacturer's instructions or in accordance with state-of-the-art-technology.

Explanatory Notes on Document

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

Mechanical system



Electrical system

Coolant circuit

Combustion air

Fuel

Exhaust gas

Software

Special features are highlighted using the following symbols:

Specific risk of injury or fatal accidents

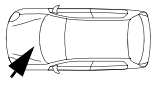
Specific risk of damage to components.

Specific risk of fire or explosion.

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

Reference to a special technical feature

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



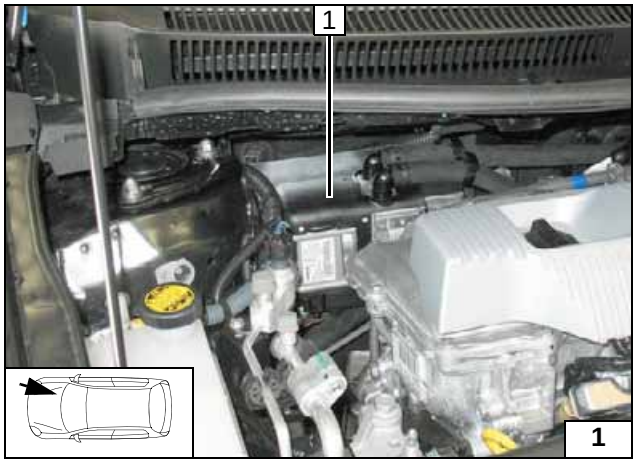
Preliminary Work

Vehicle

- Open the fuel tank cap.
- Ventilate the fuel tank.
- Close the fuel tank cap again.
- Depressurise the cooling system.
- Disconnect the battery.
- Deactivate the high-voltage system in accordance with the manufacturer's instructions.
- Remove the windscreen wiper.
- Remove the windscreen wiper motor fully.
- Remove the entire coolant reservoir.
- Remove the rear bench seat.
- Open the tank-fitting service lid on the left.
- Remove the fuel-tank sending unit according to manufacturer's instructions.
- Remove the cover on the left below the fuel-tank (Lexus CT200h only).
- Remove the output silencer [if available] between the strut towers according to manufacturer's instructions (Lexus CT200h only).
- Remove the underride protection of the engine.
- Remove the trim at the underbody of fuel lines.
- Remove the centre console trim in the driver's side and front seat passenger's side footwell (only on driver's side in case of Prius+).
- Remove the driver's side instrument panel trim.
- Remove the footwell trim on the driver's side and front passenger's side (only on driver's side in case of Prius+).

Heater

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



Heater Installation Location

1 Heater

Installation location

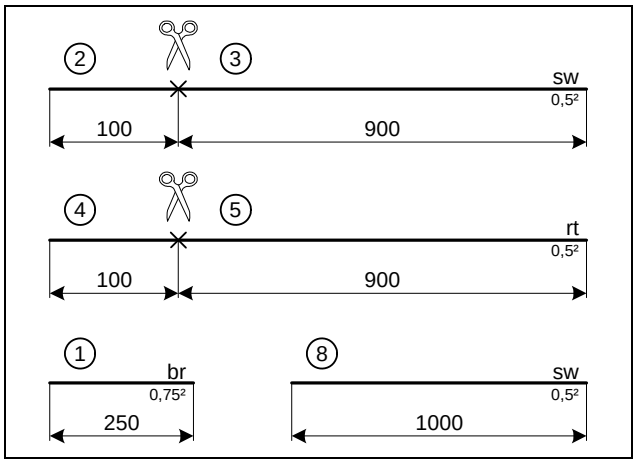
Preparing Electrical System

Wire sections retain their numbering in the entire document.

Cutting wires to length

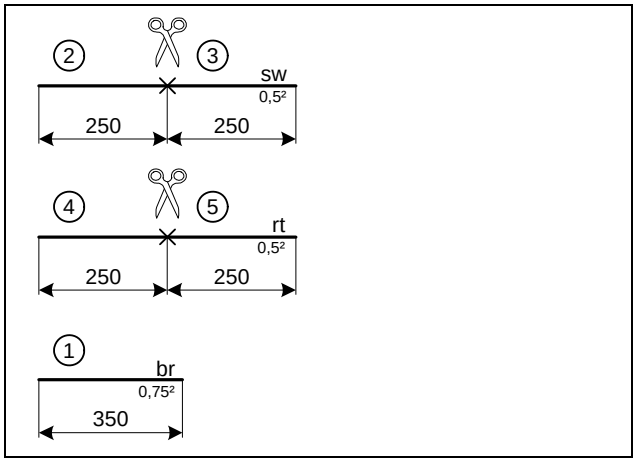
Prius / Prius Plug-in / Lexus

Pull wire section **8** (only needed for Prius) into accompanying protective sleeving.



Prius+

Cutting wires to length



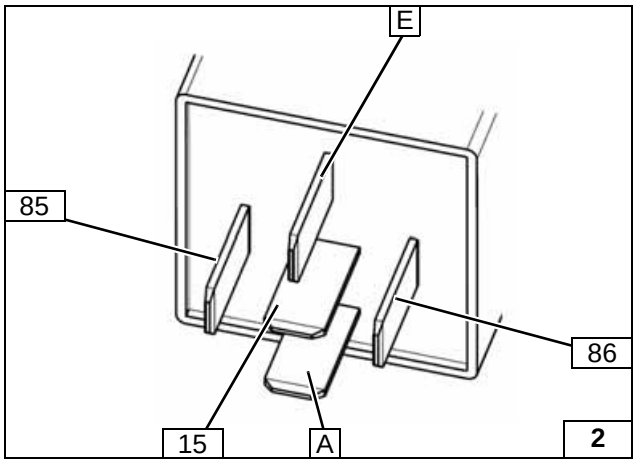
All vehicles

Check the IPCU settings before start-up of the heater and adjust if necessary.

Connection for IPCU

Settings:

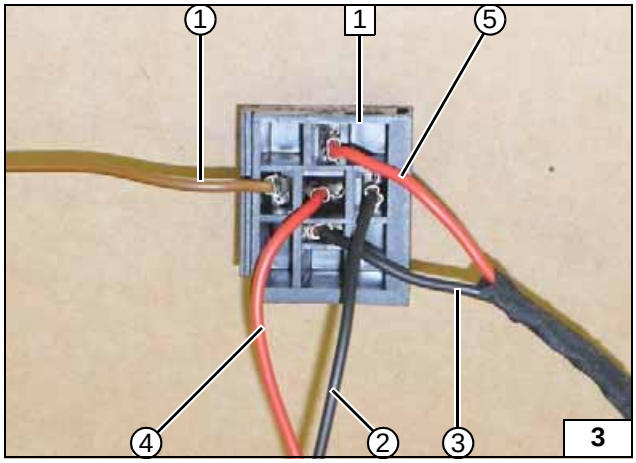
Duty cycle: 60%
Frequency: 400Hz
Voltage: 10V
Function: Low side

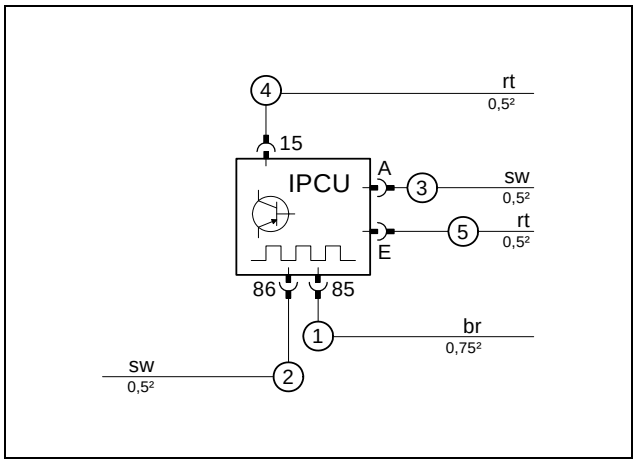


Connect wires according to wiring diagram to the IPCU socket.

Premounting IPCU socket

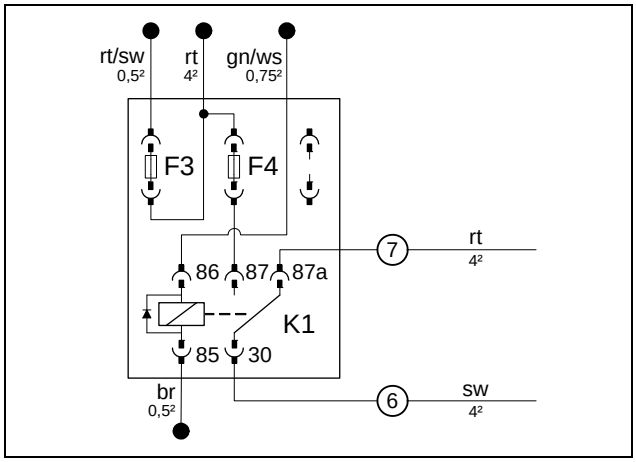
1 Socket of IPCU
① Brown (br) wire of IPCU/85
② Black (sw) wire of IPCU/A
③ Black (sw) wire of IPCU/86
④ Red (rt) wire of IPCU/15
⑤ Red (rt) wire of IPCU/E





Mount IPCU.

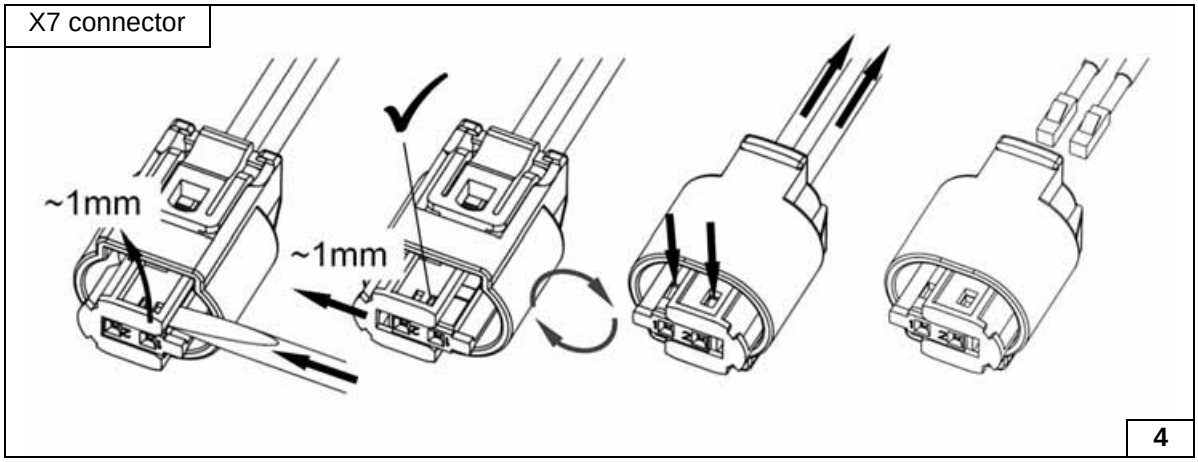
Premounting IPCU



Insert K1 relay and 10A fuse F4 into relay and fuse holder of passenger compartment (only for Lexus).
Produce connections as shown in wiring diagram.

Preparing passenger compartment relay and fuse holder

X7 connector



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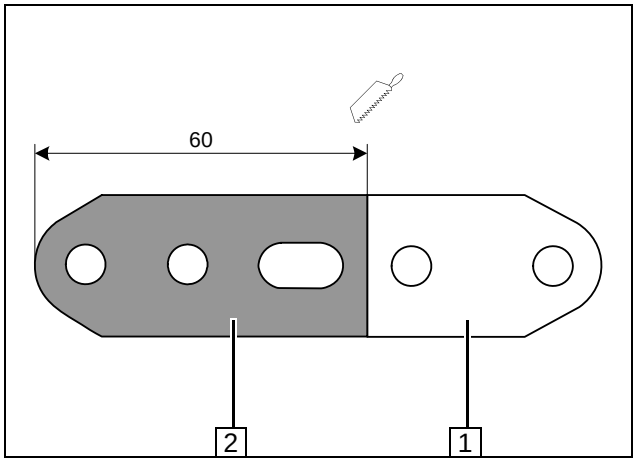
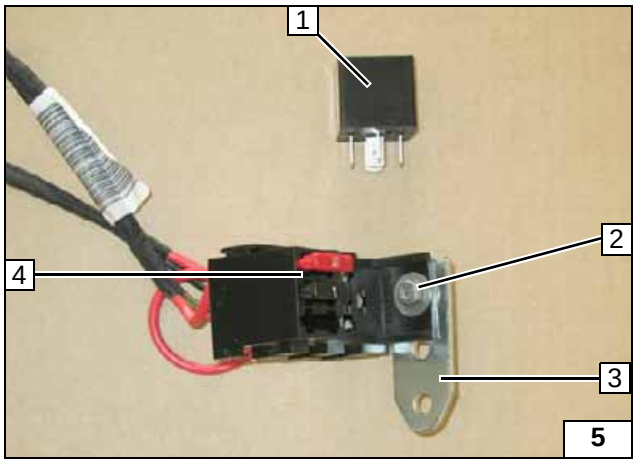
Removing connector of metering pump



Lexus

1 Discard section
2 Perforated bracket

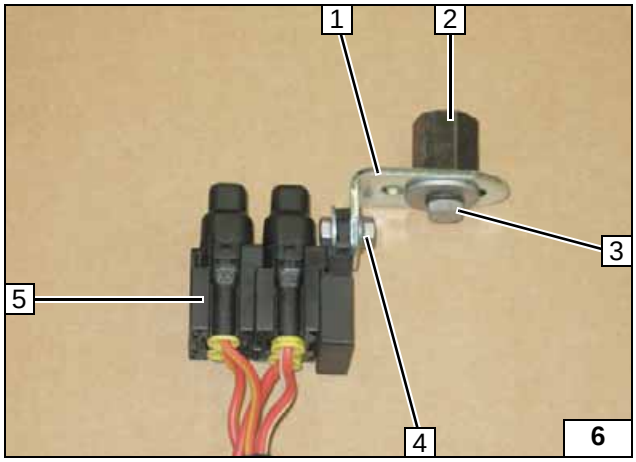
Cutting perforated bracket to length



K1 relay **1** is inserted only after installation

2 M5x16 bolt, large diameter washer [2x], relay and fuse holder of passenger compartment, nut
3 Perforated bracket
4 Fuses F3 = 1A and F4 = 10A plugged-in

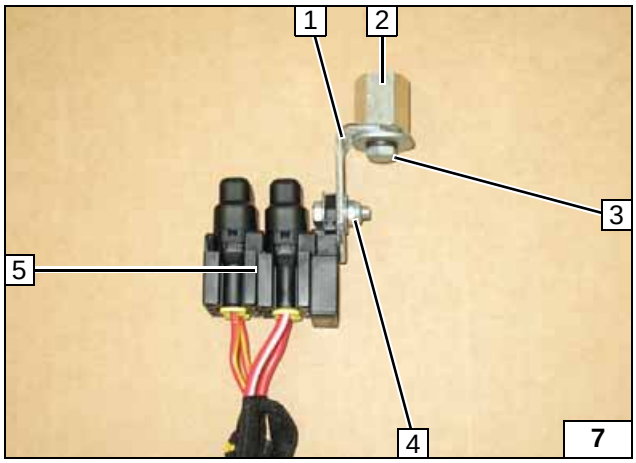
Premounting relay and fuse holder of passenger compartment



Engine compartment fuse holder for Prius / Prius Plug-in / Lexus

1 Angle bracket
2 20 mm spacer nut
3 M6x12 bolt, spring lockwasher, large diameter washer
4 M5x16 bolt, large diameter washer [2x], retaining plate for fuse holder, nut
5 Fuses F1-2 mounted

Premounting fuse holder of engine compartment



Fuse holder of Prius+ engine compartment

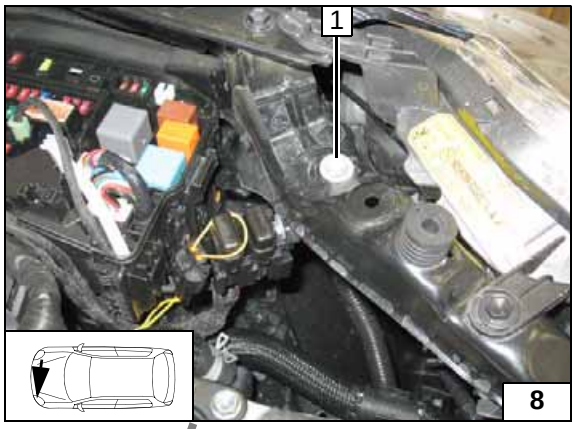
1 Angle bracket
2 20 mm spacer nut
3 M6x12 bolt, spring lockwasher, large diameter washer
4 M5x16 bolt, large diameter washer [2x], retaining plate for fuse holder, nut
5 Fuses F1-2 mounted

Premounting fuse holder of engine compartment

Electrical System

Engine compartment fuse holder for Prius / Prius Plug-in

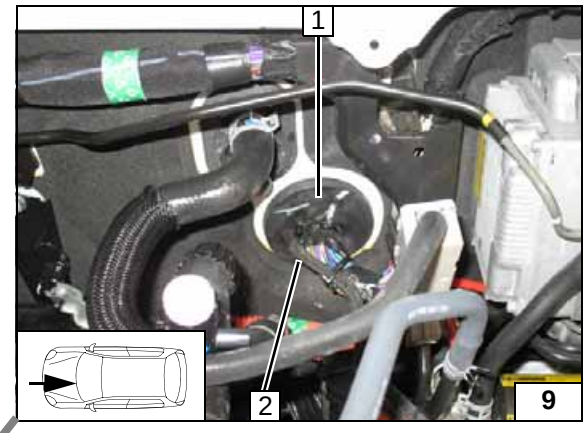
1 M6x12 bolt, spring lockwasher, large diameter washer, existing hole



Wiring harness pass through of all vehicles.

For wiring harness routing, see Install heater

1 Protective rubber plug
2 Heater wiring harnesses, heater control



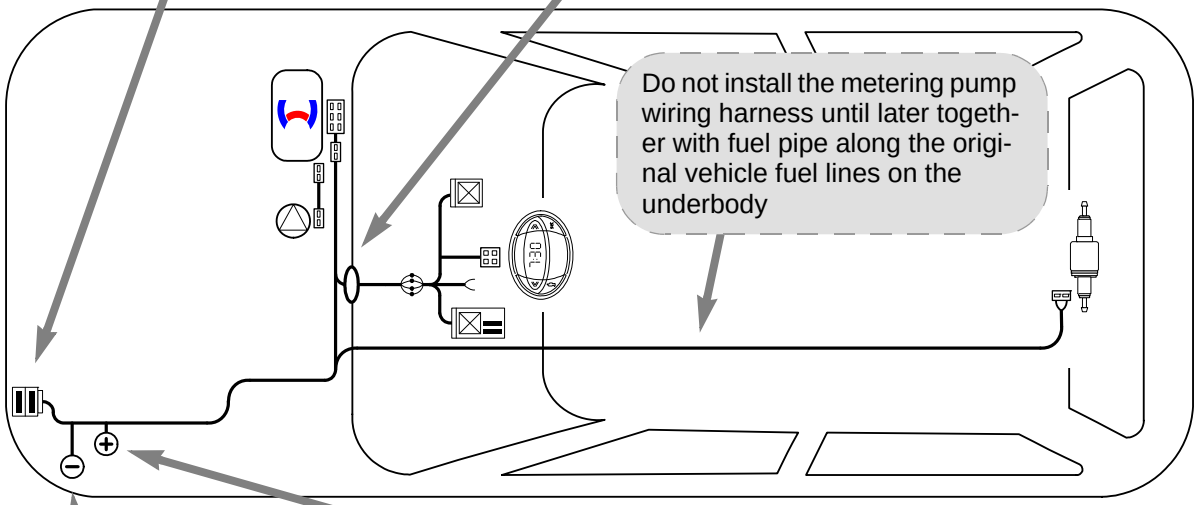
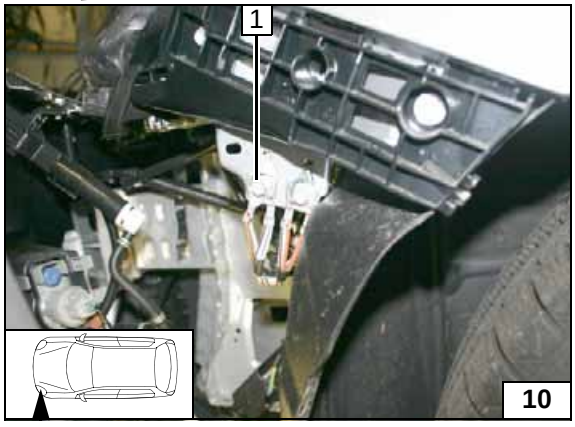


Diagram of wiring harness routing



Earth wire for Prius / Prius Plug-in

1 Earth wire on original vehicle earth support point

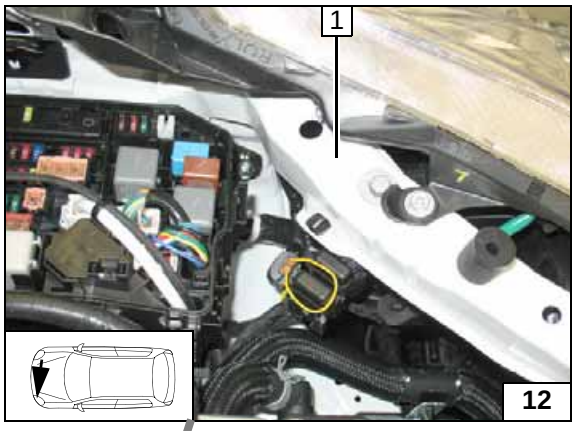
Positive wire for Prius / Prius Plug-in

Crimp the tab receptacle at the positive wire **1** and insert it into the free socket (+30).

Electrical System

Fuse holder of Prius+ engine compartment

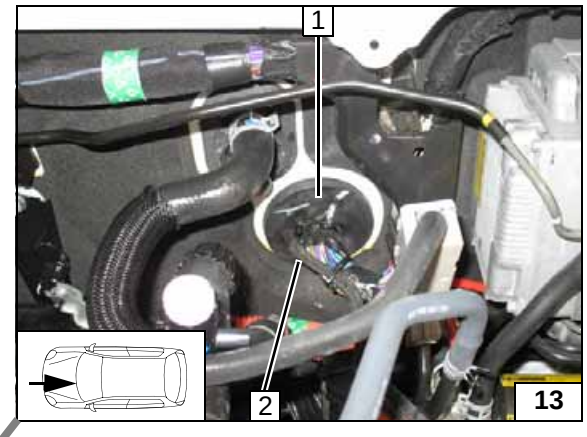
1 M6x12 bolt, spring lockwasher, large diameter washer, existing hole



Wiring harness pass through of all vehicles.

For wiring harness routing, see Install heater

1 Protective rubber plug
2 Heater wiring harnesses, heater control



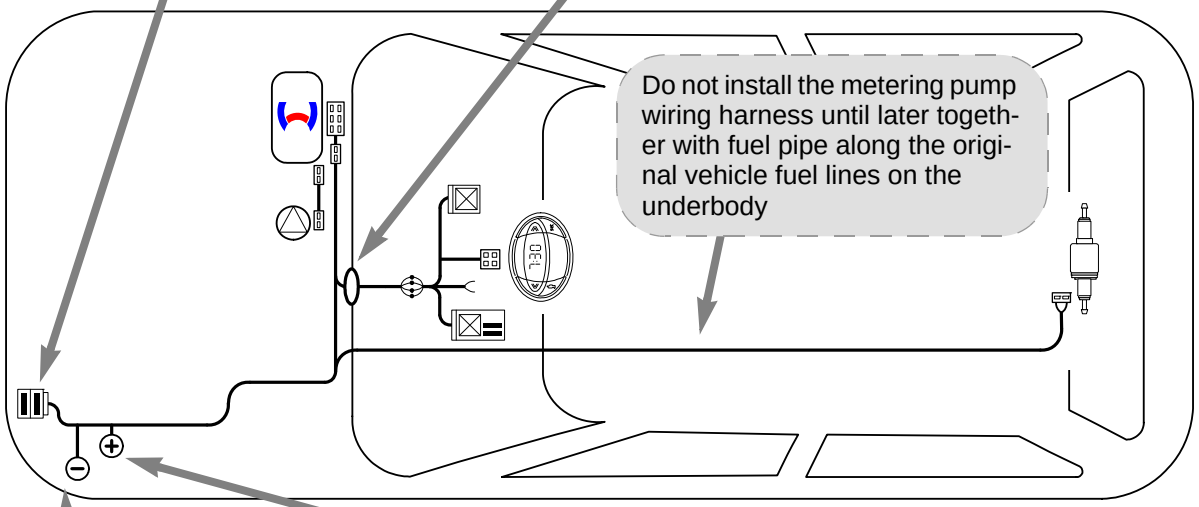
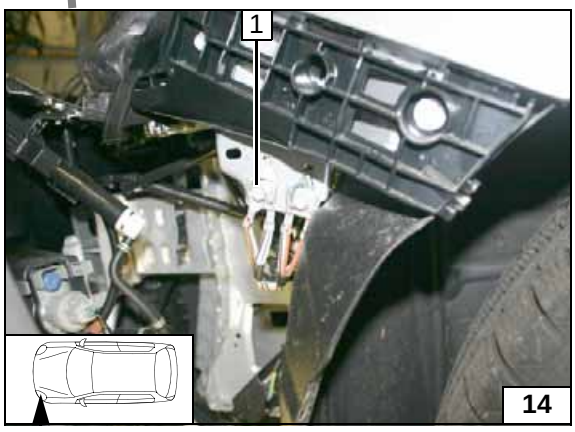
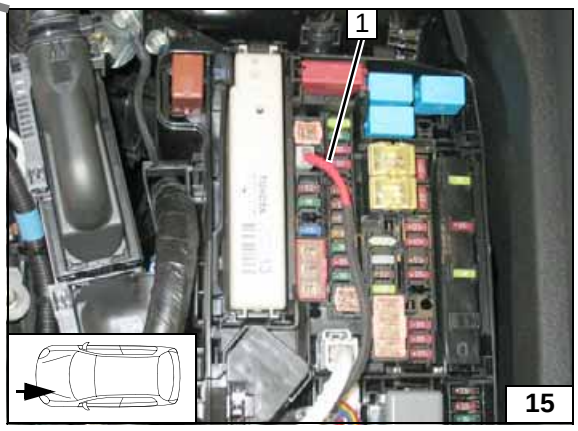


Diagram of wiring harness routing



Prius+ earth wire

1 Earth wire on original vehicle earth support point



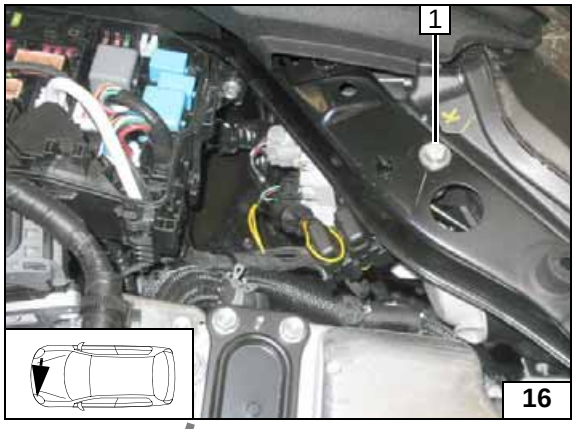
Prius+ positive wire

Crimp the tab receptacle at the positive wire **1** and insert it into the free socket (+30).

Electrical System

Fuse holder of Lexus engine compartment

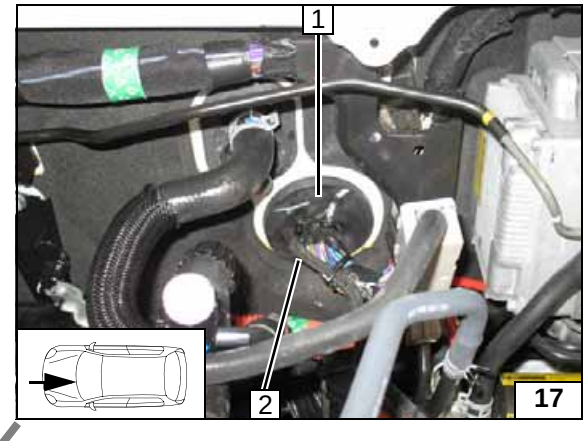
1 M6x12 bolt, spring lockwasher, large diameter washer, existing hole



Wiring harness pass through of all vehicles.

For wiring harness routing, see Install heater

1 Protective rubber plug
2 Heater wiring harnesses, heater control



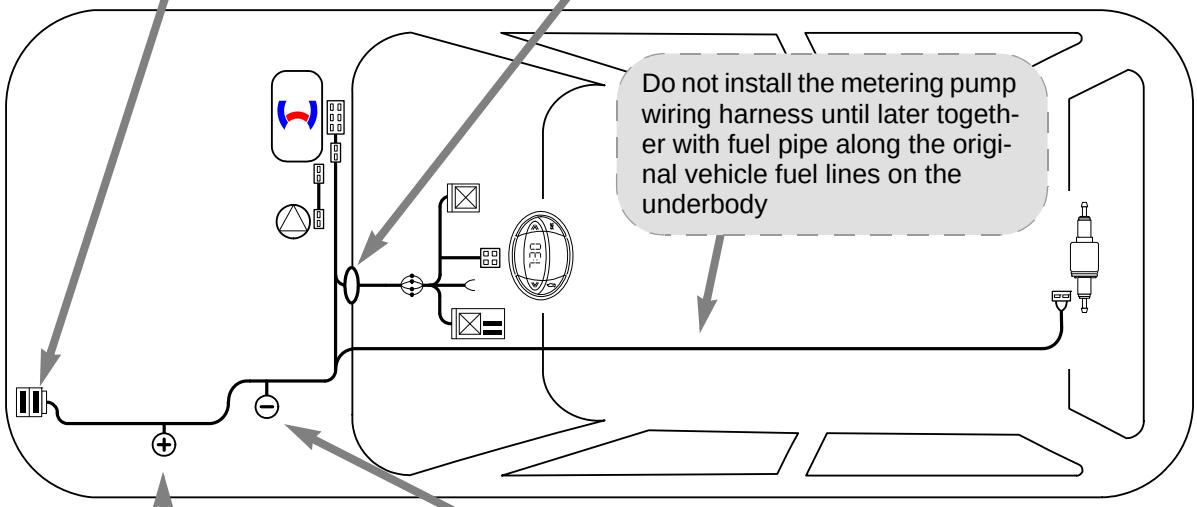
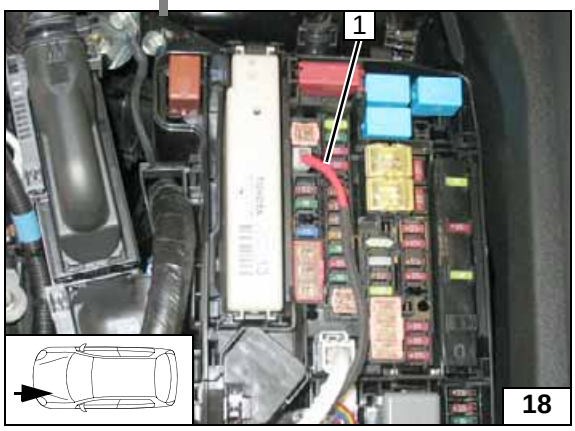
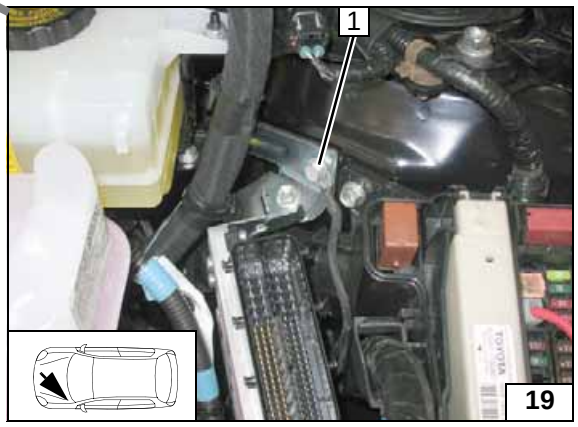


Diagram of wiring harness routing



Positive wire of Lexus

Crimp the tab receptacle at the positive wire **1** and insert it into the free socket (+30).

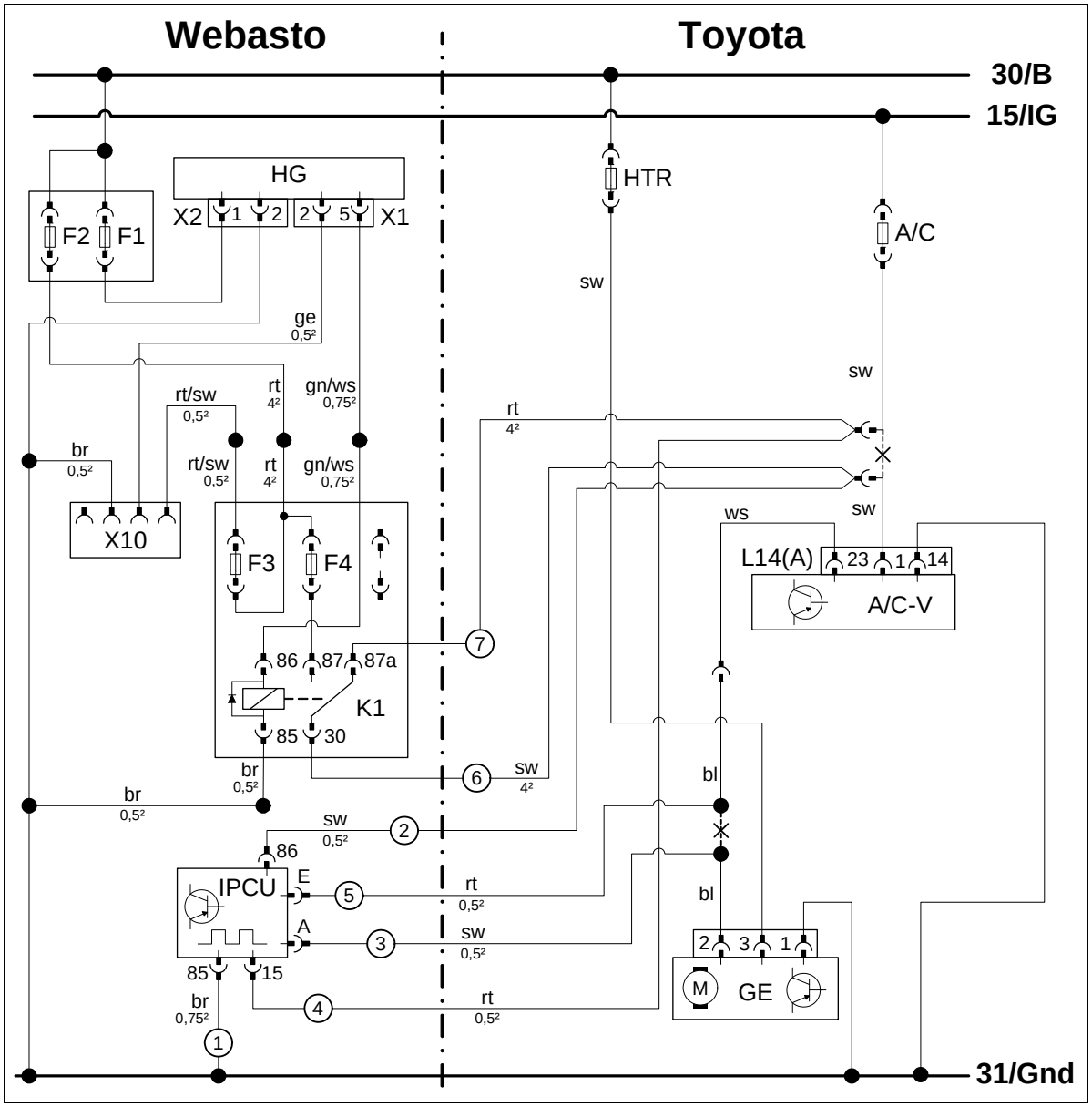


Earth wire of Lexus

1 Earth wire, original vehicle bolt

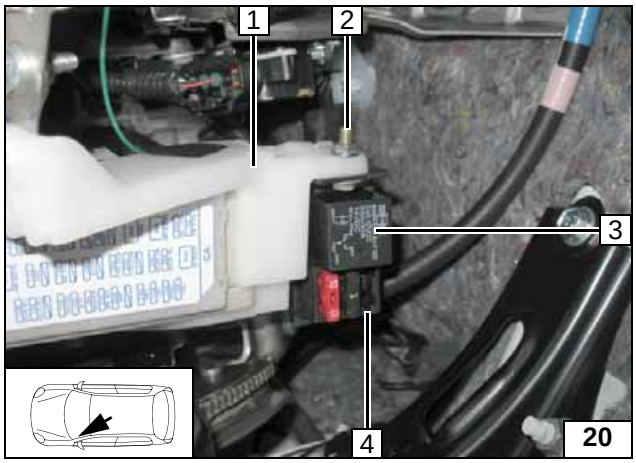
Fan Controller for Prius and Prius Plug-in

Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	HTR	50A fuse	rt	red
X1	6-pin heater connector	A/C	10A fuse	sw	black
X2	2-pin heater connector	L14(A)	40-pin connector A/C V	ge	yellow
X10	4-pin connector of heater control	A/C-V	A/C booster	gn	green
		GE	Fan unit	bl	blue
K1	Fan relay			ws	white
F1	20A fuse			br	brown
F2	30A fuse			ro	pink
F3	1A fuse				
F4	10A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty-Cycle: 60%					
Frequency: 400 Hz				**X**	Cutting point
Voltage: 10 V				Cable colours and pin designations may vary	
Function: Low-side					

Legend

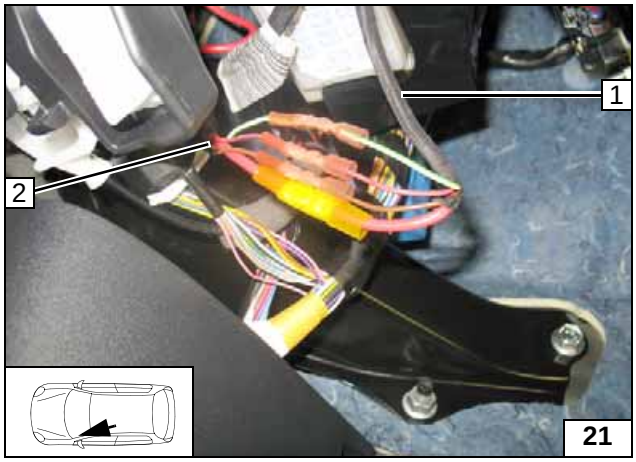


Prius and Prius Plug-in

Produce connections as shown in wiring diagram. 5.5mm dia. hole at position **2** in fuse box **1**.

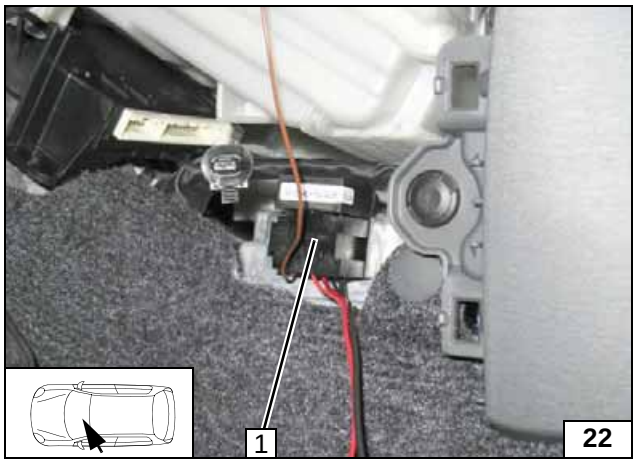
Installing relay and fuse holder of passenger compartment

- **2** M5x20 bolt, large diameter washer, flanged nut
- **3** K1 relay plugged in
- **4** Relay and fuse holder of passenger compartment,
  F3 = 1A and F4 = 10A fuses plugged in



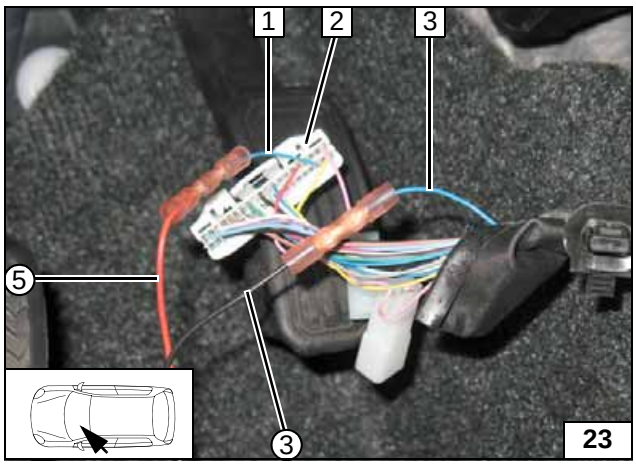
Connect wiring harness of heater **1** and passenger compartment relay and fuse holder **2** according to wiring diagram and using same-colour wires.

Connecting wiring harnesses



Fasten IPCU socket **1** on control unit with adhesive tape.

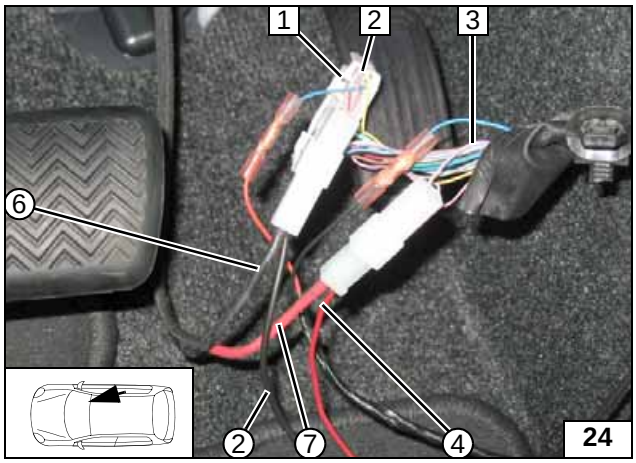
Mounting IPCU



Connection to the 40-pin connector L14(A) **2** of the A/C booster. Produce connections as shown in wiring diagram.

Connecting A/C booster

- **1** Blue (bl) wire to 40-pin connector L14(A) Pin 23
- **3** Blue (bl) wire of fan unit
- ③ Black (sw) wire of IPCU/A
- ⑤ Red (rt) wire of IPCU/E

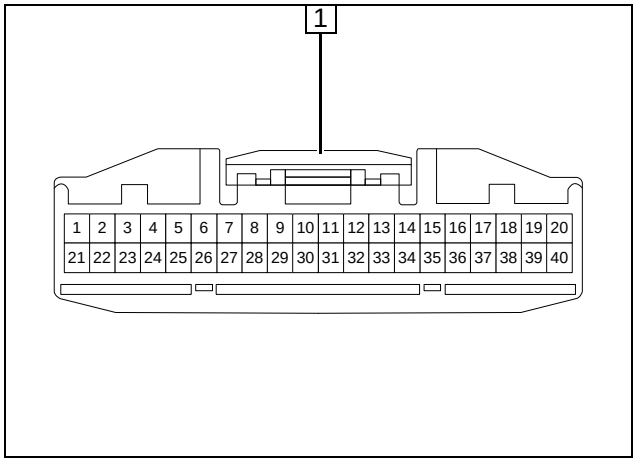


Prius and Prius Plug-in

Connection to the 40-pin connector L14(A) **1** of the A/C booster. Produce connections as shown in wiring diagram.

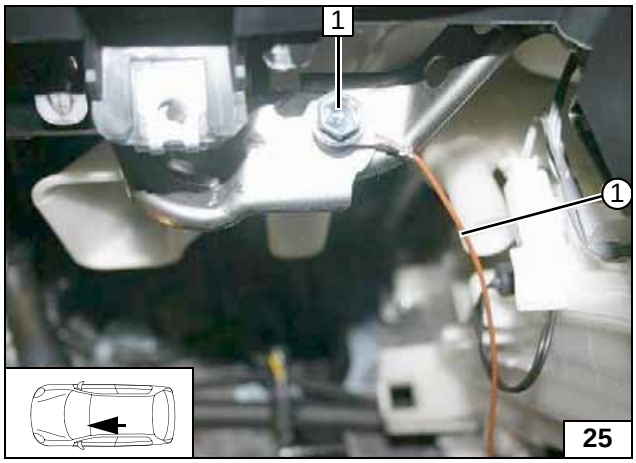
Connecting A/C booster

2 Black (sw) wire to 40-pin connector L14(A) Pin 1
3 Black (sw) wire of fuse A/C
② Black (sw) wire of IPCU/86
④ Red (rt) wire of IPCU/15
⑥ Black (sw) wire of K1/30
⑦ Red (rt) wire of K1/87a



Connector L14(A)

1 Connector L14(A) on contact side [from front]

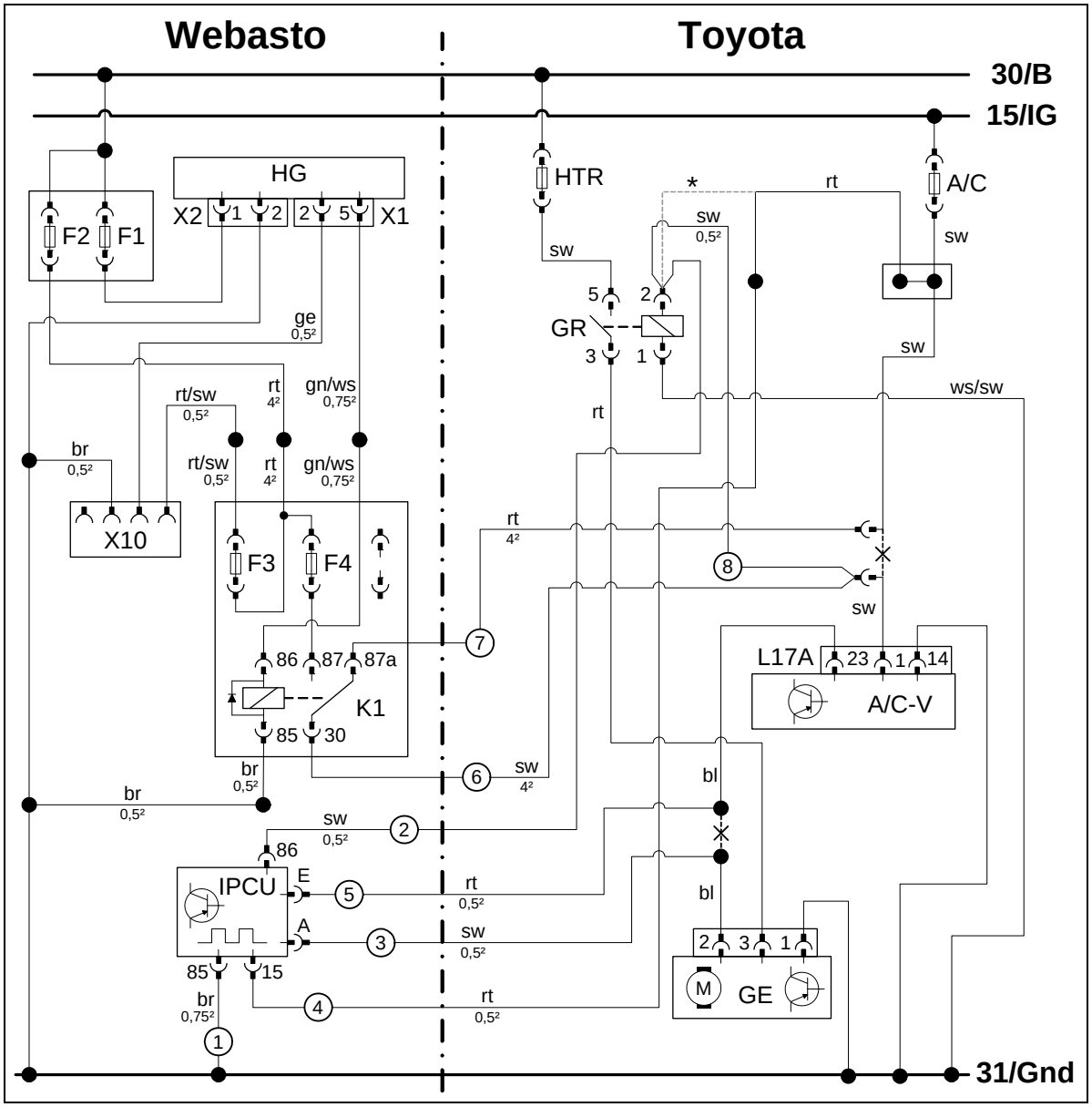


Earth connection for IPCU

1 Original vehicle bolt
① Brown (br) wire of IPCU/85, 6mm dia. cable lug

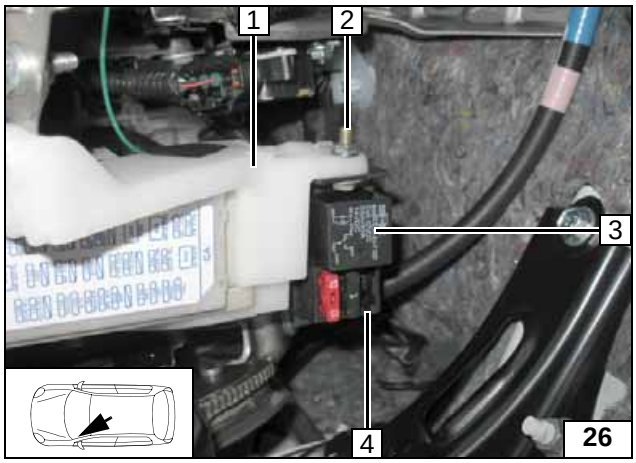
Fan Controller for Prius With Solar Roof

Wiring diagram



Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	HTR	50A fuse	rt	red
X1	6-pin heater connector	A/C	10A fuse	sw	black
X2	2-pin heater connector	GR	Fan relay L104	ge	yellow
X10	4-pin connector of heater control	L17A	A/C-V connector	gn	green
		A/C-V	A/C booster	bl	blue
K1	Fan relay	GE	Fan unit	ws	white
F1	20A fuse			br	brown
F2	30A fuse				
F3	1A fuse				
F4	10A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty-Cycle: 60%				*	Original connection
Frequency: 400 Hz				**X**	Cutting point
Voltage: 10 V				Cable colours and pin designations may vary	
Function: Low-side					

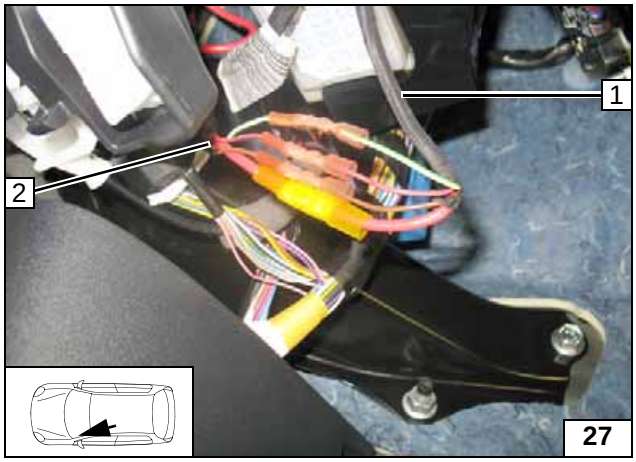


Prius with solar roof

Produce connections as shown in wiring diagram. 5.5mm dia. hole at position **2** in fuse box **1**.

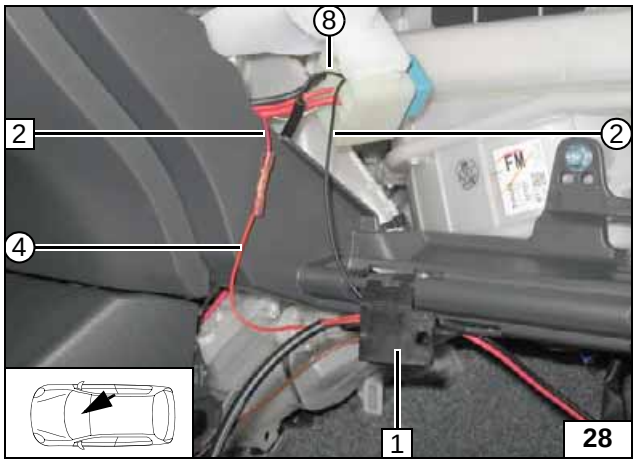
2 M5x20 bolt, large diameter washer, flanged nut
3 K1 relay plugged in
4 Relay and fuse holder of passenger compartment, F3 = 1A and F4 = 10A fuses plugged in

Installing relay and fuse holder of passenger compartment



Connect wiring harness of heater **1** and passenger compartment relay and fuse holder **2** according to wiring diagram and using same-colour wires.

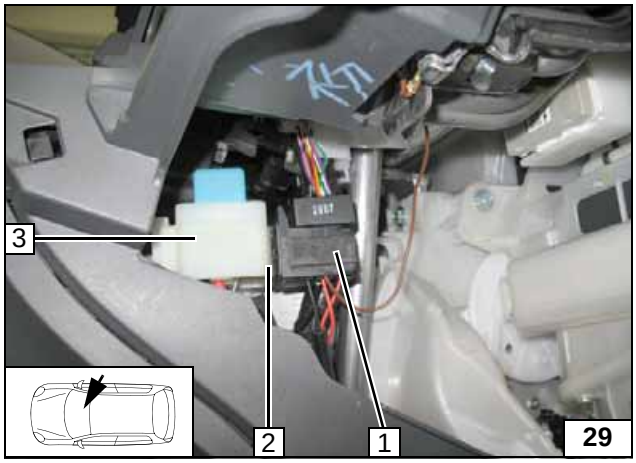
Connecting wiring harnesses



Connect to the fan relay. Detach red (rt) wire **2** from the socket of fan relay Pin 1 and connect with wire ④ Connect black (sw) wire ⑧ and black (sw) wire ② together to fan relay Pin 1. Produce connections as shown in wiring diagram.

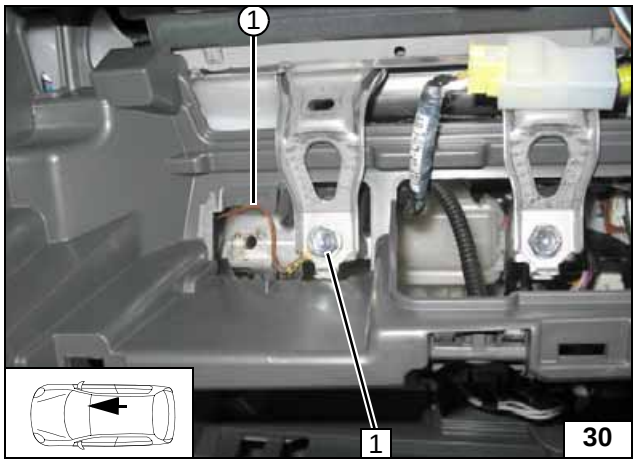
1 Socket of IPCU
2 Red (rt) wire of A/C fuse
② Black (sw) wire of IPCU/86
④ Red (rt) wire of IPCU/15
⑧ Black (sw) additional wire of A/C-Booster

Connection for IPCU



Fasten IPCU socket **1** with adhesive tape **2** on fan relay**3**.

Mounting IPCU

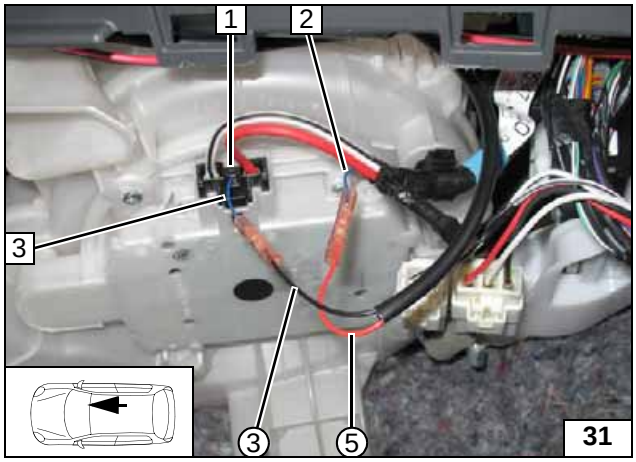


Prius with solar roof

Produce connections as shown in wiring diagram.

1 Original vehicle bolt
① Brown (br) wire of IPCU/85, 6mm dia. cable lug

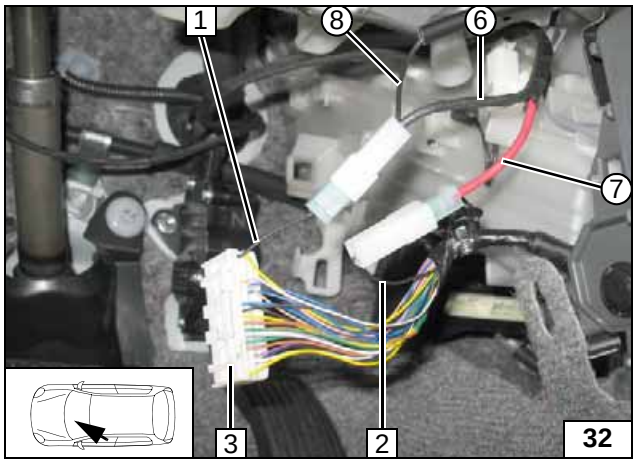
Earth connection for IPCU



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

2 Blue (bl) wire of A/C booster
3 Blue (bl) wire to fan unit connector Pin 2
③ Black (sw) wire of IPCU/A
⑤ Red (rt) wire of IPCU/E

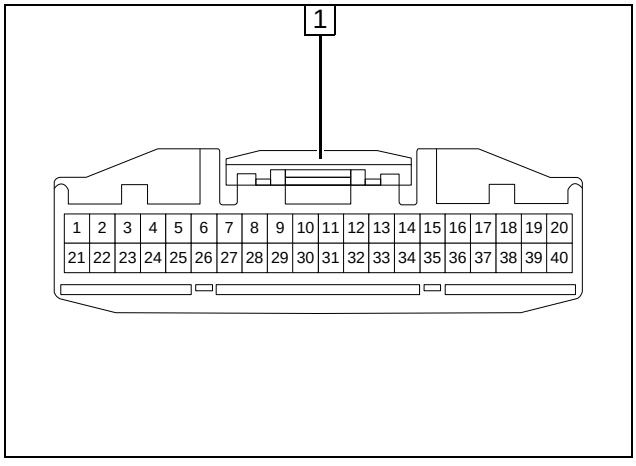
Connecting fan unit



Connection to the 40-pin connector L17(A) **3** of the A/C booster. Produce connections as shown in wiring diagram.

1 Black (sw) wire to 40-pin connector L17(A) Pin 1
2 Black (sw) wire of fuse A/C
⑥ Black (sw) wire of K1/30
⑦ Red (rt) wire of K1/87a
⑧ Black (sw) additional wire of fan relay Pin 1

Connecting A/C booster

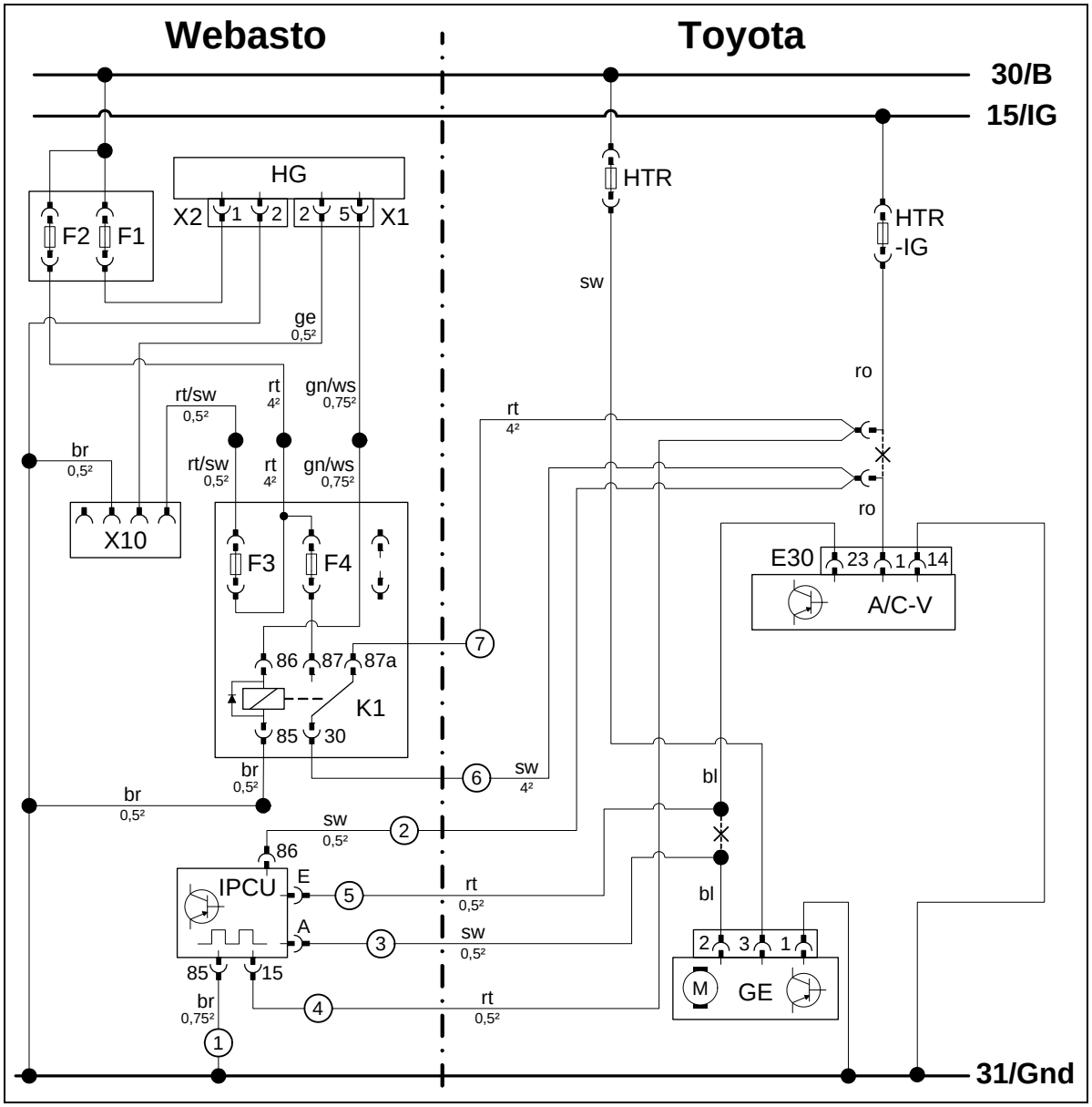


1 Connector L17(A) on contact side [from front]

Connector L17(A)

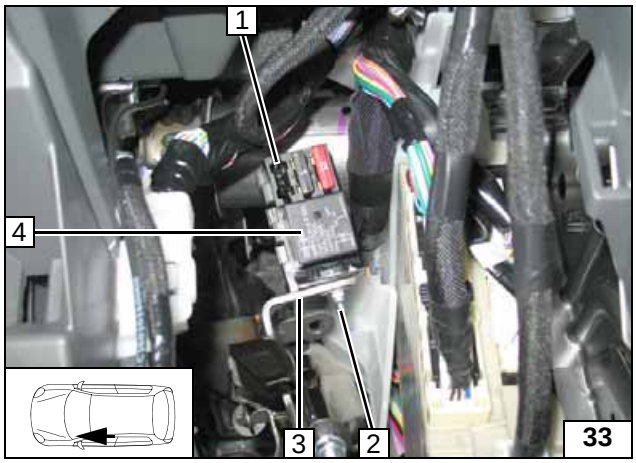
Fan Controller of Prius+

Wiring diagram



Legend

Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	HTR	50A fuse	rt	red
X1	6-pin heater connector	HTR-IG	10A fuse	sw	black
X2	2-pin heater connector	E30	40-pin connector A/C V	ge	yellow
X10	4-pin connector of heater control	A/C-V	A/C booster	gn	green
		GE	Fan unit	bl	blue
K1	Fan relay			ws	white
F1	20A fuse			br	brown
F2	30A fuse			ro	pink
F3	1A fuse				
F4	10A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty-Cycle: 60%					
Frequency: 400 Hz				**X**	Cutting point
Voltage: 10 V				Cable colours and pin designations may vary	
Function: Low-side					

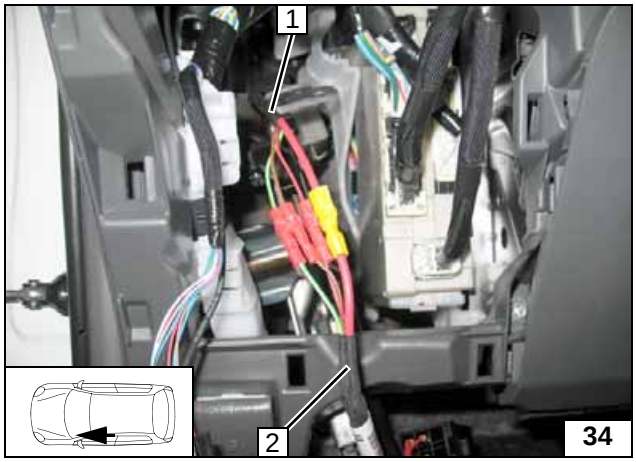


Prius+

Produce connections as shown in wiring diagram.

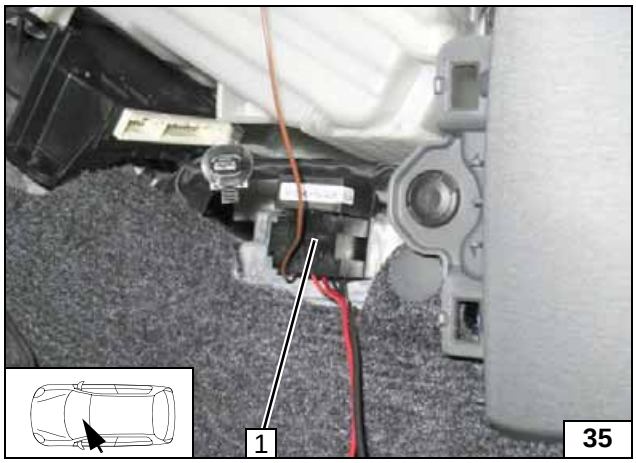
1 Relay and fuse holder of passenger compartment, F3 = 1A and F4 = 10A fuses plugged in
2 M6x16 bolt, large diameter washer, nut, existing hole
3 Bracket of emergency brake pedal
4 K1 relay plugged in

Installing relay and fuse holder of passenger compartment



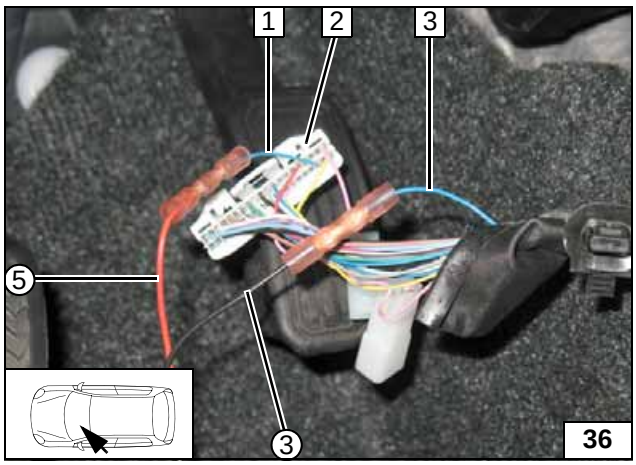
Connect wiring harness of heater **1** and passenger compartment relay and fuse holder **2** according to wiring diagram and using same-colour wires.

Connecting wiring harnesses



Fasten IPCU socket **1** on control unit with adhesive tape.

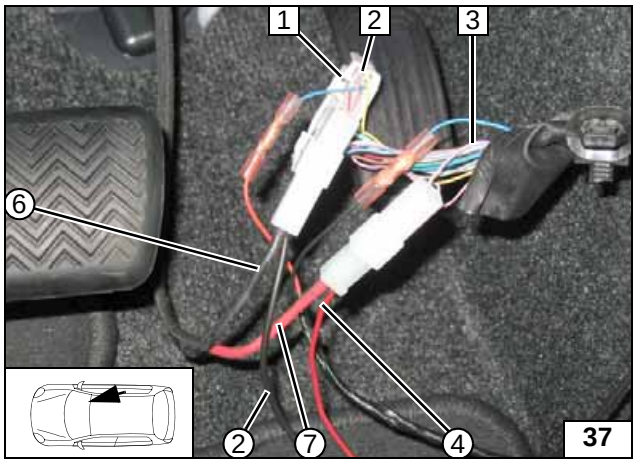
Mounting IPCU



Connection to the 40-pin connector E30 (A) **2** of the A/C booster. Produce connections as shown in wiring diagram.

1 Blue (bl) wire to 40-pin connector E30 (A) Pin 23
3 Blue (bl) wire of fan unit
③ Black (sw) wire of IPCU/A
⑤ Red (rt) wire of IPCU/E

Connecting A/C booster

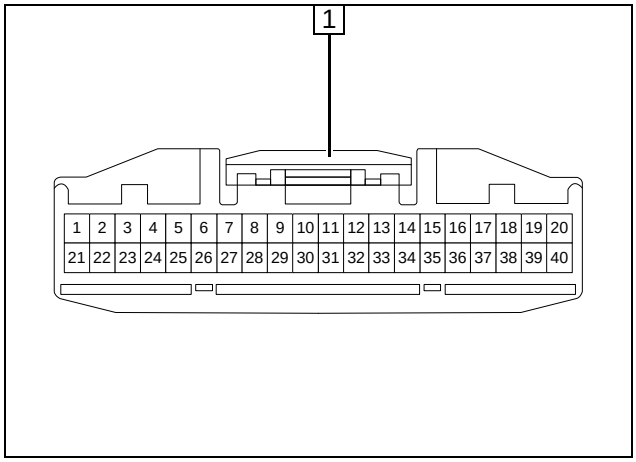


Prius+

Connection to the 40-pin connector E30 (A) **1** of the A/C booster. Produce connections as shown in wiring diagram.

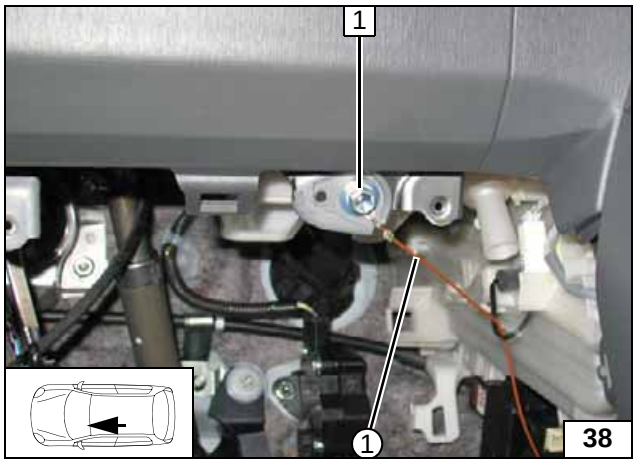
Connecting A/C booster

- **2** Pink (ro) wire to 40-pin connector E30 (A) Pin 1
- **3** Pink (ro) wire of Fuse HTR IG
- ② Black (sw) wire of IPCU/86
- ④ Red (rt) wire of IPCU/15
- ⑥ Black (sw) wire of K1/30
- ⑦ Red (rt) wire of K1/87a



Connector E30 (A)

- **1** Connector E30 (A) on contact side [from front]

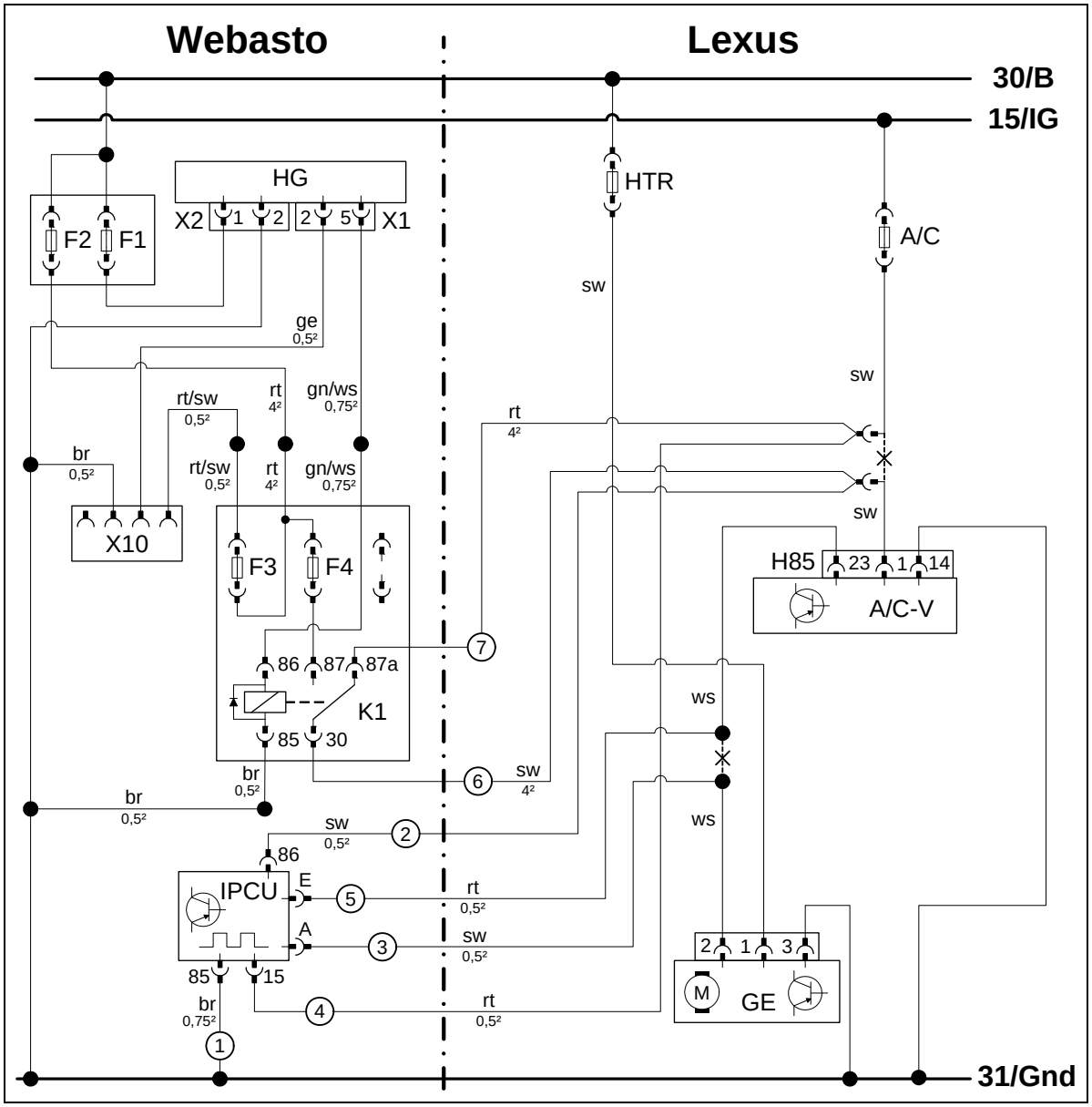


Earth connection for IPCU

- **1** Original vehicle bolt
- ① Brown (br) wire of IPCU/85, 6mm dia. cable lug

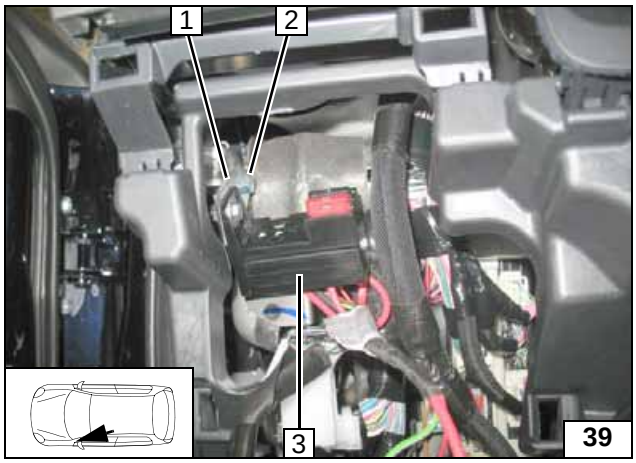
Lexus Fan Controller

Wiring diagram



Webasto components		Vehicle components		Colours and symbols	
HG	TT-Evo heater	HTR	50A fuse	rt	red
X1	6-pin heater connector	A/C	10A fuse	sw	black
X2	2-pin heater connector	A/C-V	A/C booster	ge	yellow
X10	4-pin connector of heater control	H85	40-pin connector A/C V	gn	green
		GE	Fan unit	bl	blue
K1	Fan relay			ws	white
F1	20A fuse			br	brown
F2	30A fuse				
F3	1A fuse				
F4	10A fuse				
IPCU	Pulse width modulator				
IPCU settings:					
Duty-Cycle: 60%					
Frequency: 400 Hz				**X**	Cutting point
Voltage: 10 V				Cable colours and pin designations may vary	
Function: Low-side					

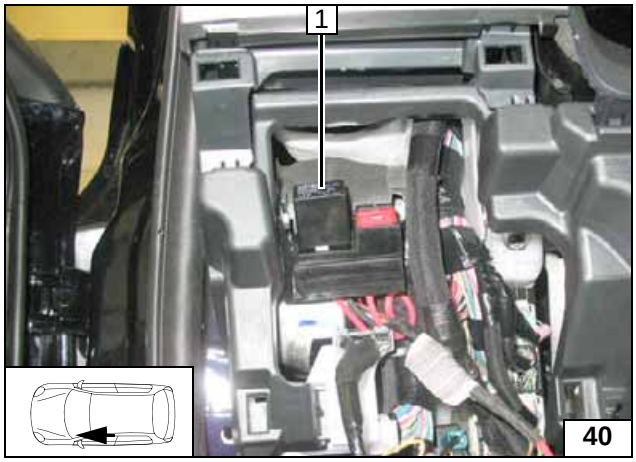
Legend



Lexus

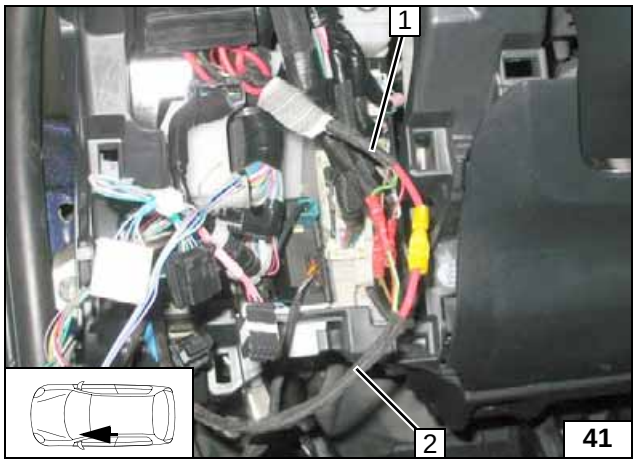
1 Perforated bracket
2 M6x20 bolt, flanged nut, existing hole
3 Relay and fuse holder, fuses F3 = 1A and F4 = 10A

Installing relay and fuse holder of passenger compartment



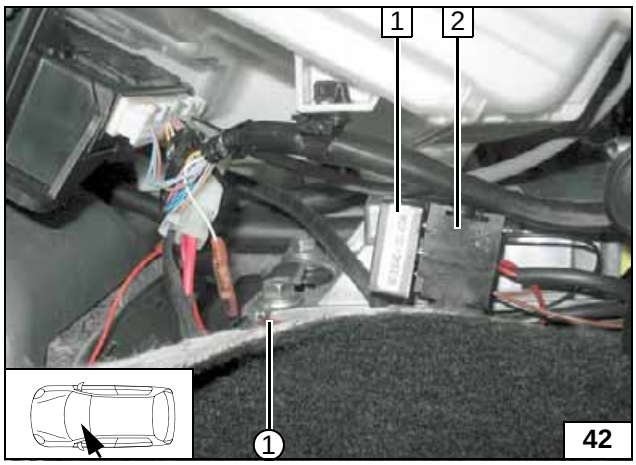
1 K1 relay

Mounting K1 relay



Connect wiring harness of heater **2** and passenger compartment relay and fuse holder **1** according to wiring diagram and using same-colour wires.

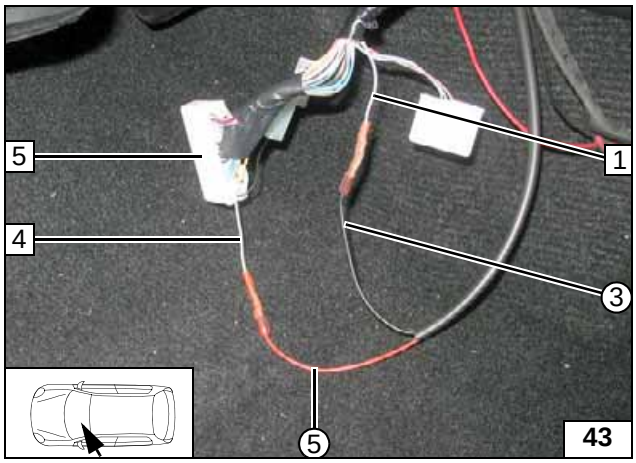
Connecting wiring harnesses



Fasten IPCU socket **2** on control unit with adhesive tape.

1 IPCU mounted
① Brown (br) wire of IPCU/85, 8mm dia. cable lug, original vehicle bolt

Mounting IPCU

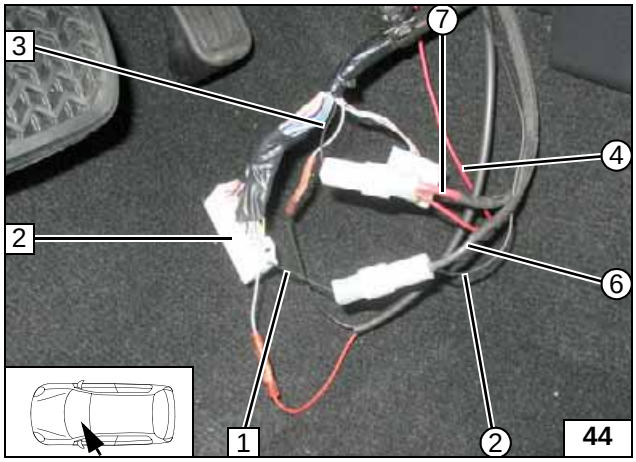


Lexus

Connect to the 40-pin connector H85 (A) **5** of the A/C booster. Produce connections as shown in wiring diagram.

1 White (ws) wire to fan unit connector Pin 2
4 White (ws) wire to 40-pin connector H85 (A) Pin 23
③ Black (sw) wire of IPCU/A
⑤ Red (rt) wire of IPCU/E

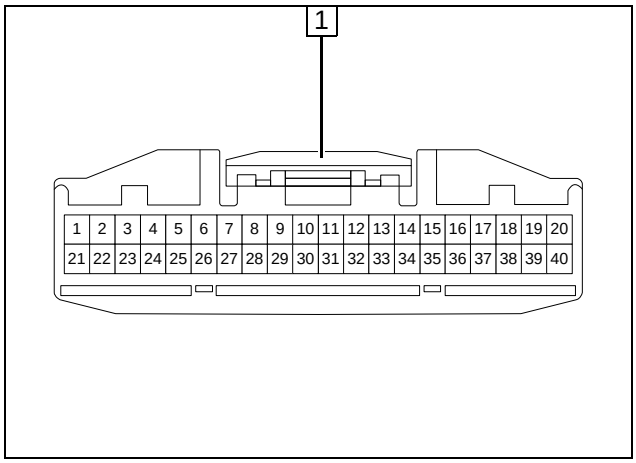
Connecting A/C booster



Connect to the 40-pin connector H85 (A) **2** of the A/C booster. Produce connections as shown in wiring diagram.

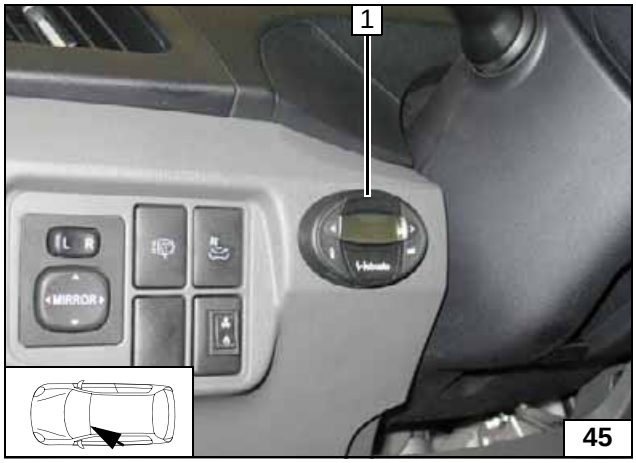
1 Black (sw) wire to 40-pin connector H85 (A) Pin 1
3 Black (sw) wire to terminal 15
② Black (sw) wire of IPCU/86
④ Red (rt) wire of IPCU/15
⑥ Black (sw) wire of K1/30
⑦ Red (rt) wire of K1/87a

Connecting A/C booster



1 Connector H85 (A) on contact side [from front]

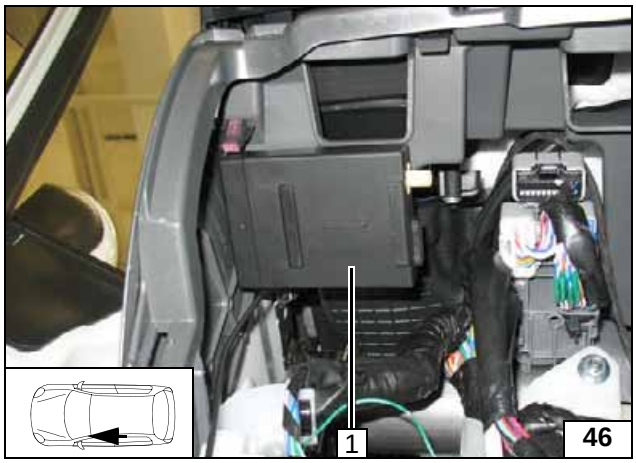
Connector H85 (A)



Digital Timer for Prius and Prius Plug-in

1 Digital timer

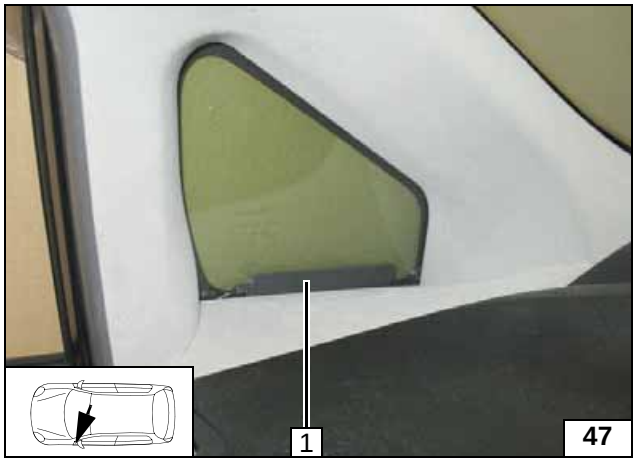
Mounting digital timer



Telestart Option for Prius and Prius Plug-in

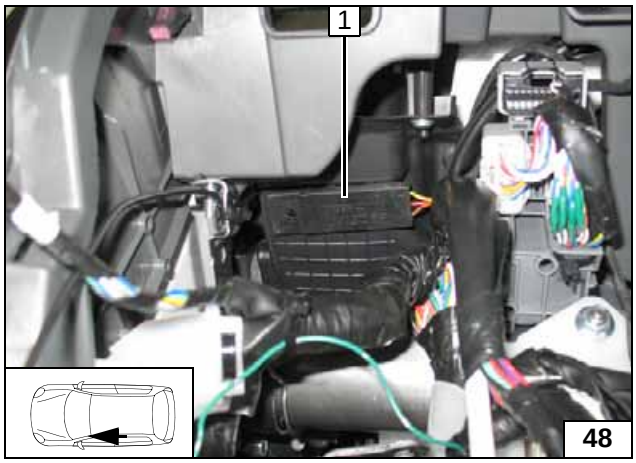
Fasten receiver **1** with adhesive tape.

Installing receiver



1 Paste antenna

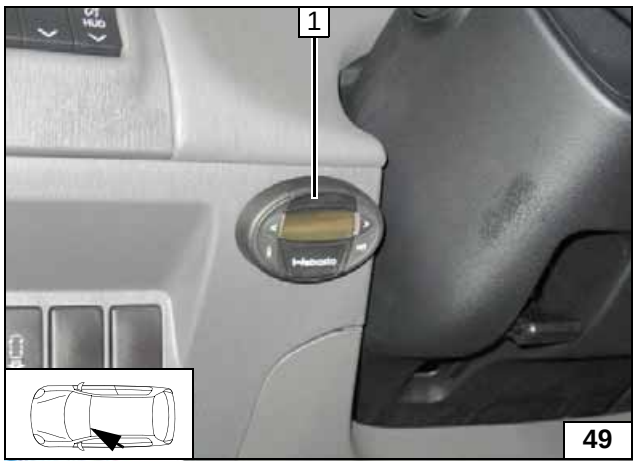
Installing antenna



Temperature sensor T100 HTM

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

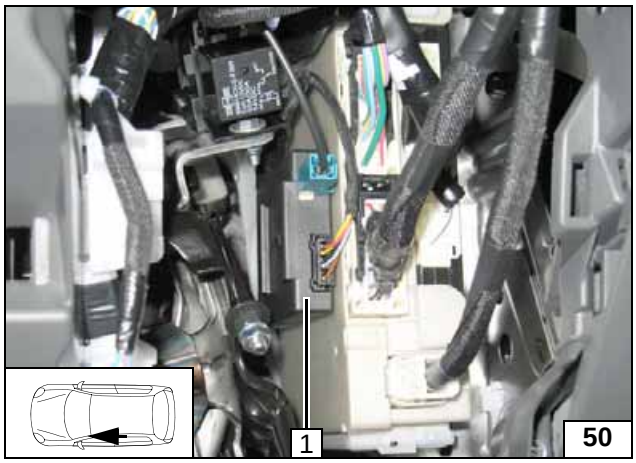
Mounting temperature sensor



Prius+ Digital Timer

1 Digital timer

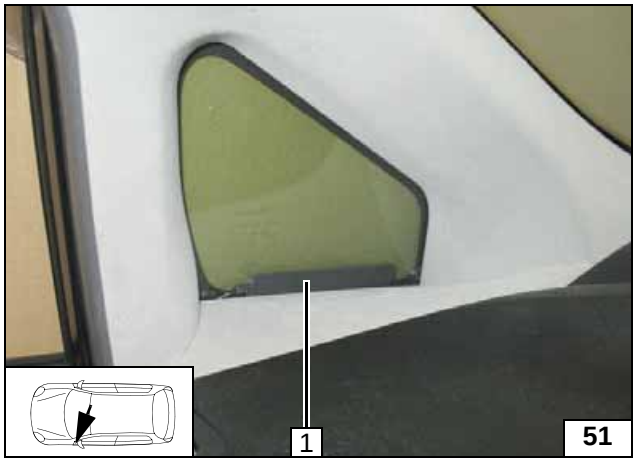
Mounting digital timer



Prius+ Remote Option (Telestart)

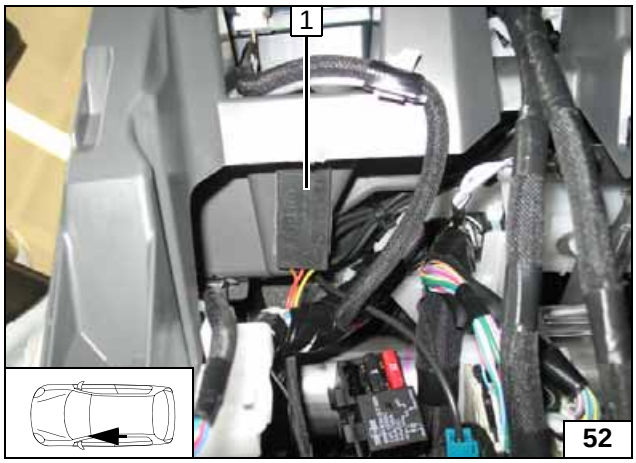
Fasten receiver **1** with adhesive tape.

Installing receiver



1 Paste antenna

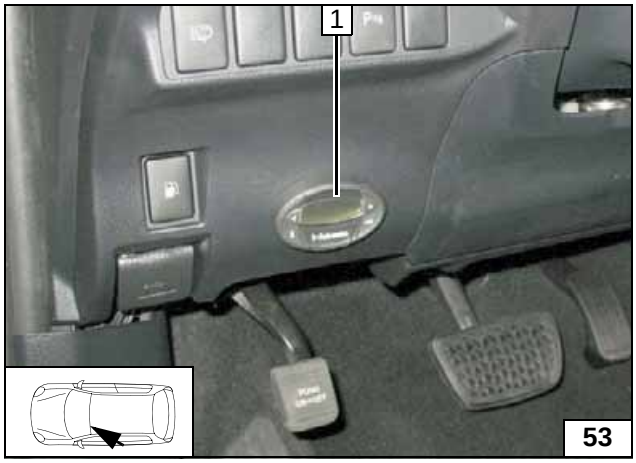
Installing antenna



Temperature sensor T100 HTM

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

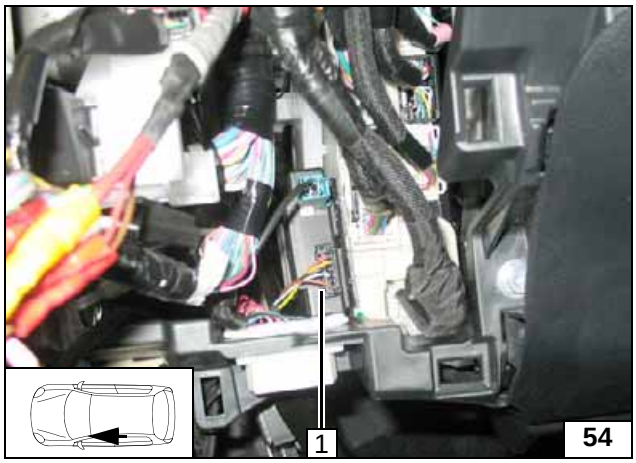
Mounting temperature sensor



Lexus Digital Timer

1 Digital timer

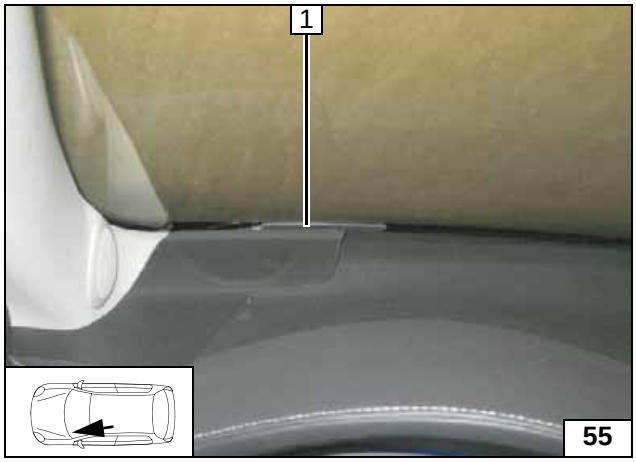
Mounting digital timer



Lexus Remote Option (Telestart)

Fasten receiver **1** with adhesive tape.

Installing receiver



1 Paste antenna

Installing antenna

Temperature sensor T100 HTM

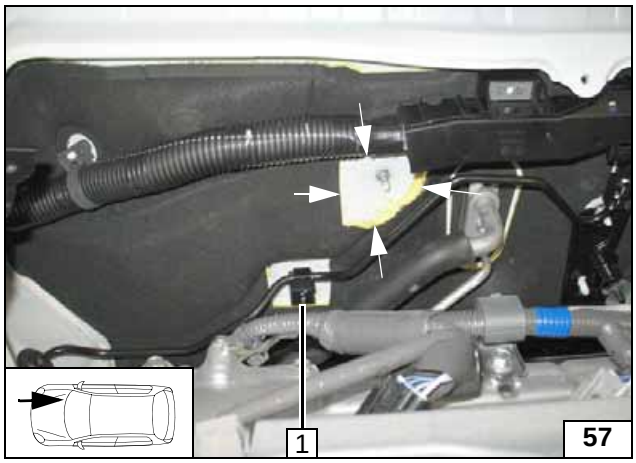
Fasten temperature sensor **1** to original vehicle wiring harness with cable tie.

Installing temperature sensor

Preparing Installation Location

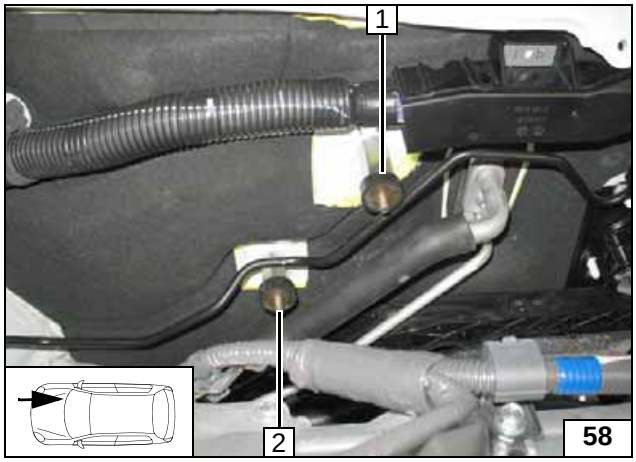
Cut out insulation mat in area of marking. Remove retaining clip **1** and discard.

Cutting out insulation mat



1 M6x40 spacer nut, silent block, existing stud bolt
2 M6x30 spacer nut, silent block, existing stud bolt

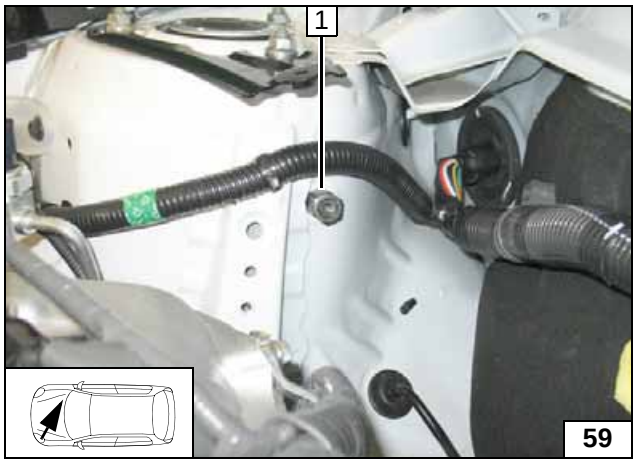
Installing spacer nuts



Prius / Prius+ / Prius plug-in

1 Install loosely M6x20 spacer nut, M6x12 bolt, spring lockwasher, large diameter washer, existing hole

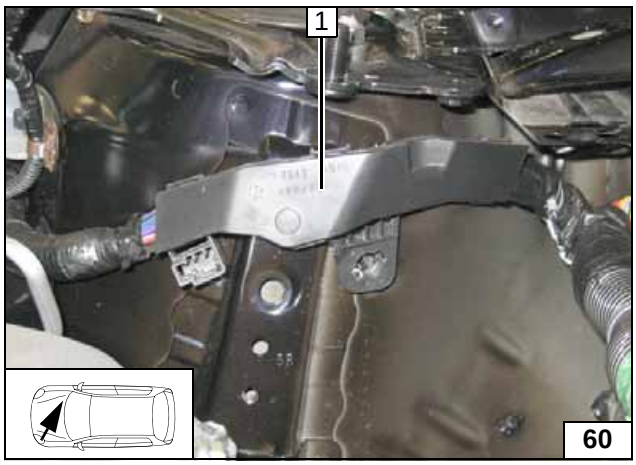
Installing spacer nut

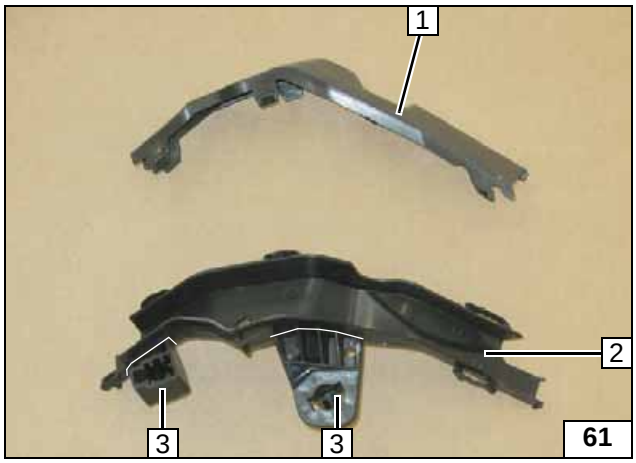


Lexus

1 Cable duct

Removing cable duct

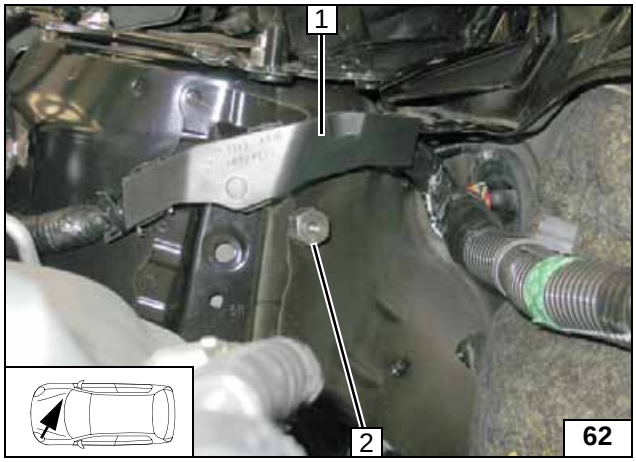




Cut out cable duct **2** at the markings.

1 Cover of cable duct
3 Discard sections

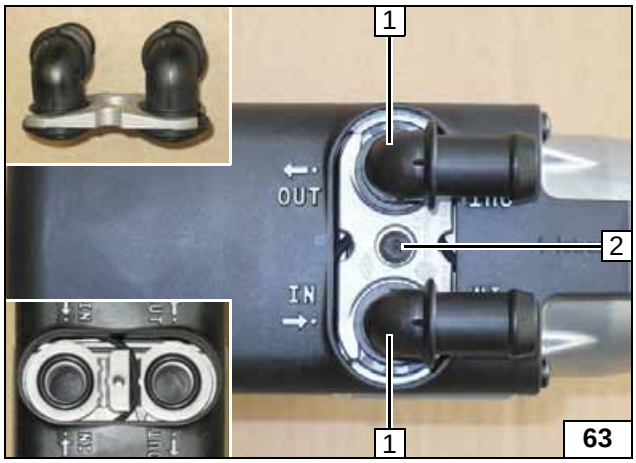
Cutting out cable duct



1 Cable duct installed with cover
2 Install loosely M6x20 spacer nut, M6x12 bolt, spring lockwasher, large diameter washer, existing hole

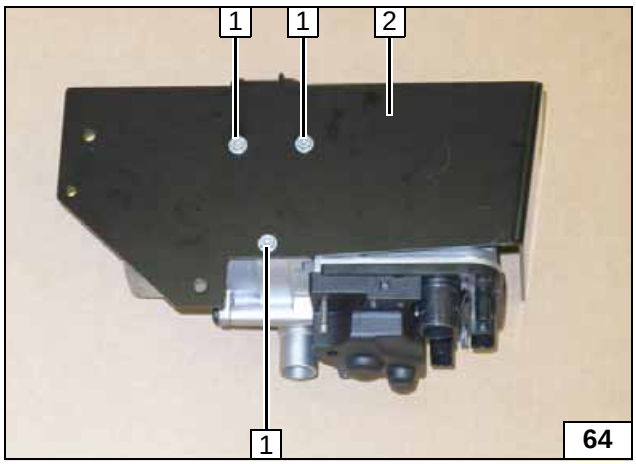
Installing spacer nut

Preparing Heater



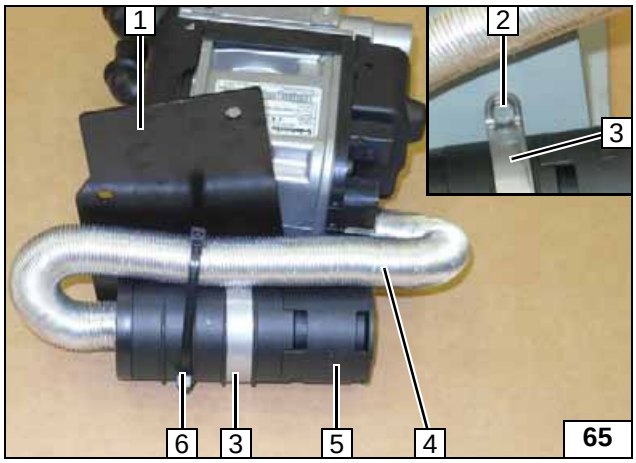
1 Water connection piece, sealing ring [2x each]
2 5x15 self-tapping bolt, retaining plate of water connection piece

Installing water connection piece



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

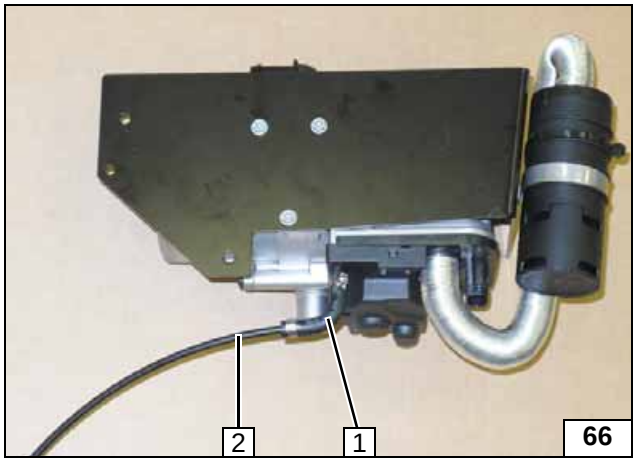
Premounting bracket on heater



Fasten combustion air pipe **4** with two cable ties **6** to silencer **5**.

1 Bracket
2 M5x16 bolt, flanged nut
3 51 mm dia. p-clamp

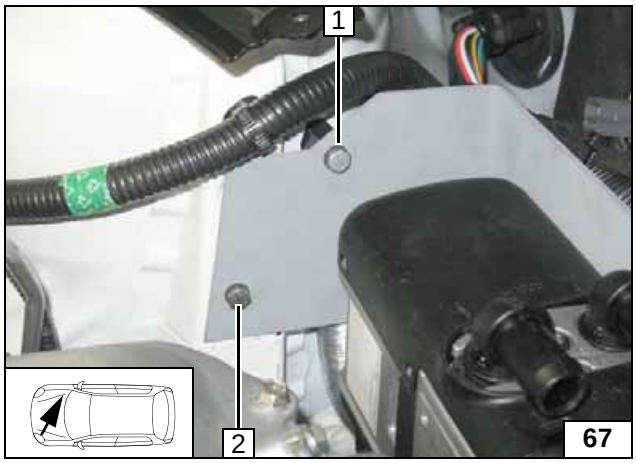
Installing silencer



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

Premounting fuel line

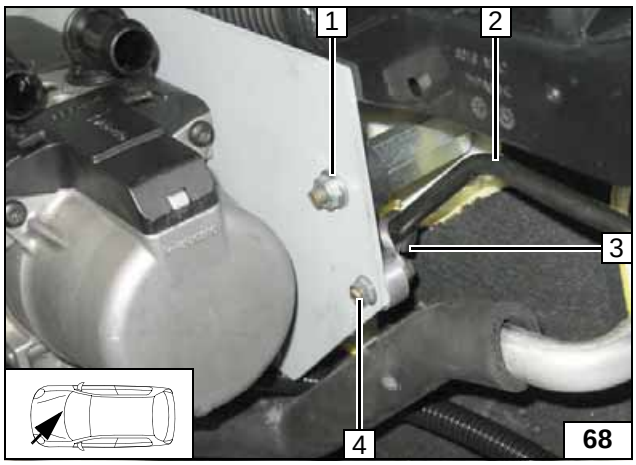
Installing Heater



Before installing heater, attach wiring harnesses of circulating pump and heater [2x].

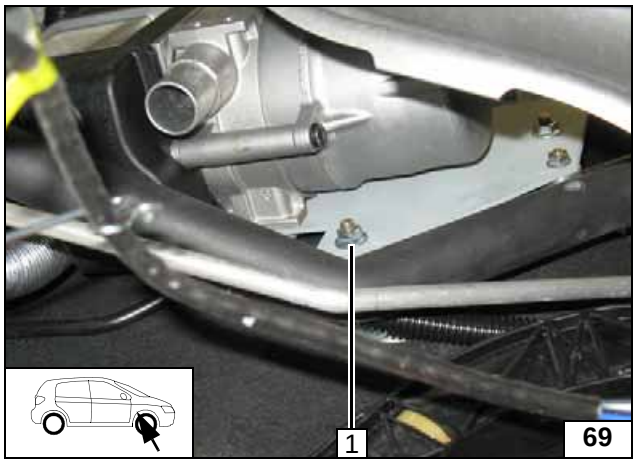
1 M6x12 bolt mounted loosely, spring lock-washer, large diameter washer
2 M6x20 bolt mounted loosely, spring lock-washer, large diameter washer, existing threaded hole

Installing heater



1 M6 flanged nut mounted loosely, large diameter washer
2 Original vehicle brake line
3 5 mm dia. rubber-coated p-clamp
4 M5x20 bolt, 10 mm shim, flanged nut

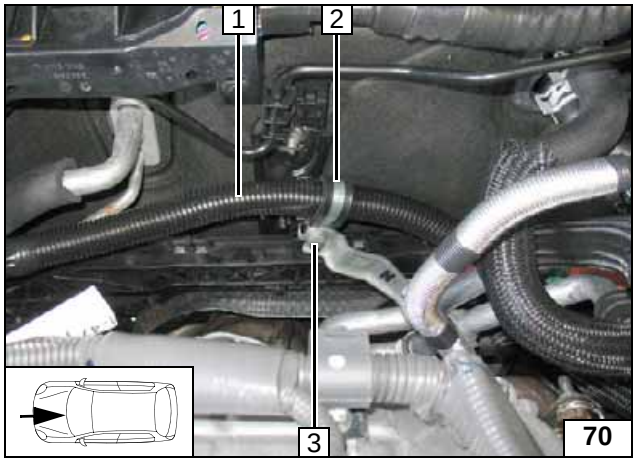
Installing heater



1 M6 flanged nut, large diameter washer

Align heater with bracket in the oblong holes and tighten loosely mounted bolts, spacer nuts and flanged nuts. Ensure sufficient distance from neighbouring components while doing so.

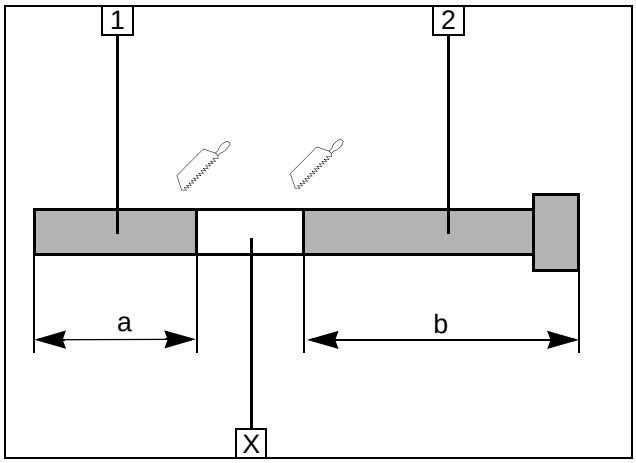
Installing heater



Slit open 17 mm dia. corrugated tube lengthwise. Route wiring harness of heater, fuel line and wiring harness of metering pump in 17 mm dia. corrugated tube **1** (700) to the left vehicle side.

2 25 mm dia. rubber-coated p-clamp
3 Original vehicle bolt

Routing wiring harnesses

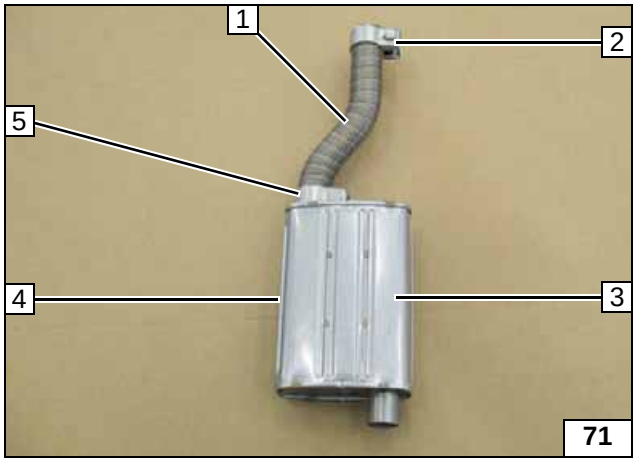


Exhaust Gas

Discard section **X**.

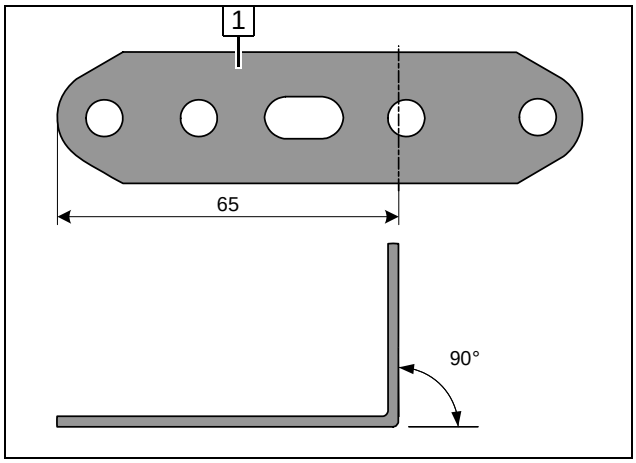
1 Exhaust pipe
a = 170
2 Exhaust end section
b = 420

Preparing exhaust pipe



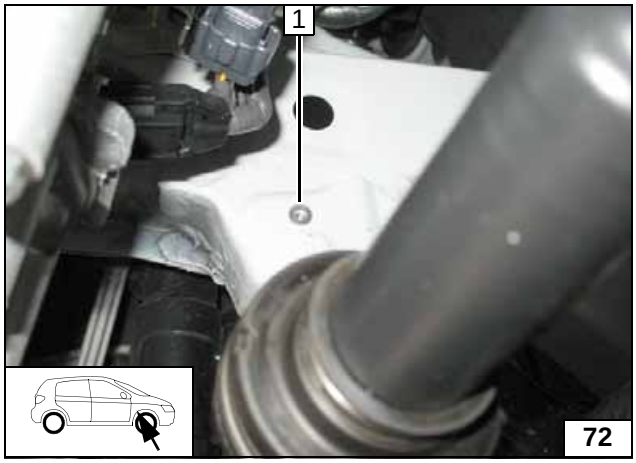
1 Exhaust pipe
2 Tighten hose clamp slightly
3 Silencer
4 Existing threaded hole
5 Hose clamp

Premounting silencer



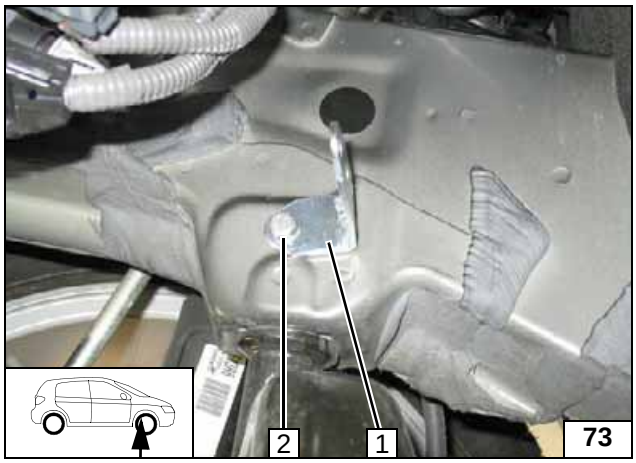
1 Perforated bracket

Angling down perforated bracket



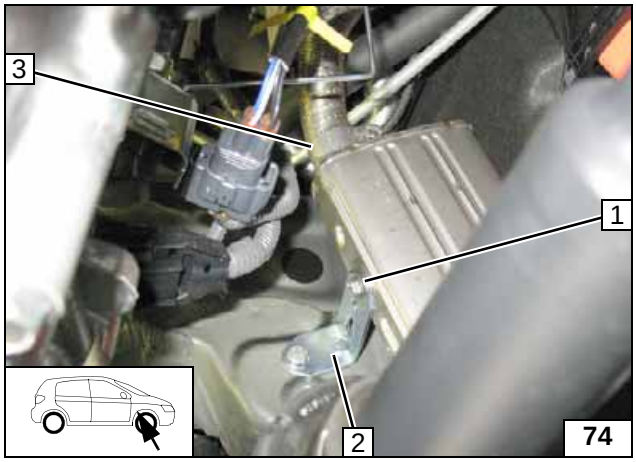
1 Rivet nut, existing hole

Installing rivet nut



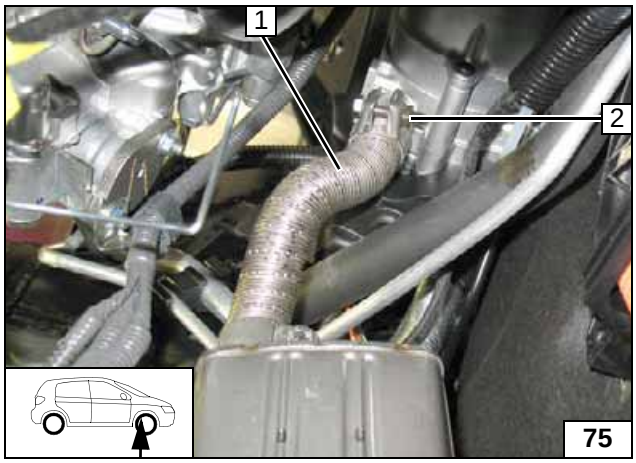
1 Perforated bracket
2 M6x20 bolt, spring lockwasher

Installing perforated bracket



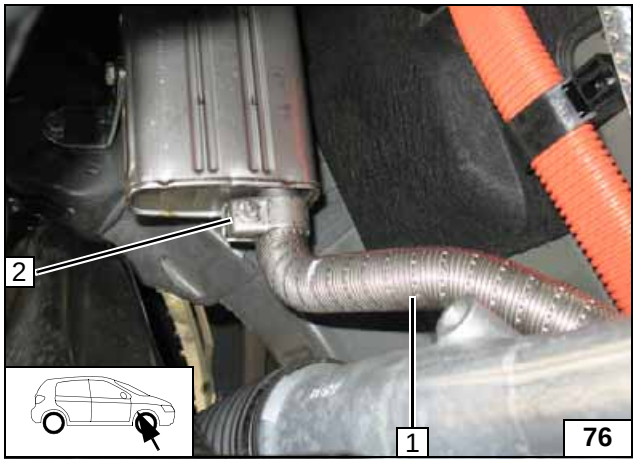
1 M6x16 bolt, spring lockwasher
2 Perforated bracket
3 Tighten hose clamp

Installing silencer



1 Exhaust pipe
2 Tighten hose clamp

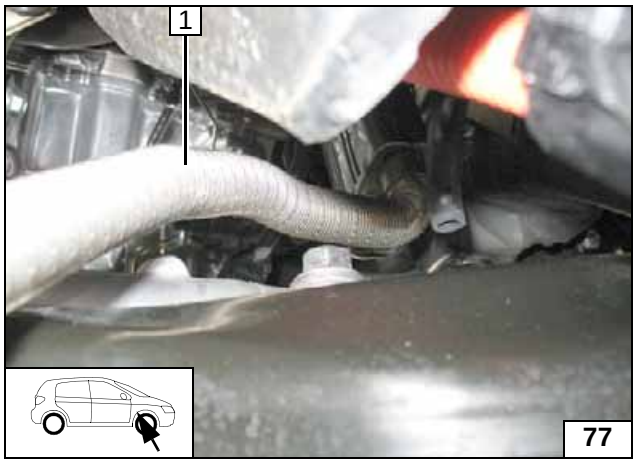
Installing exhaust pipe



Ensure adequate distance from steering sleeve.

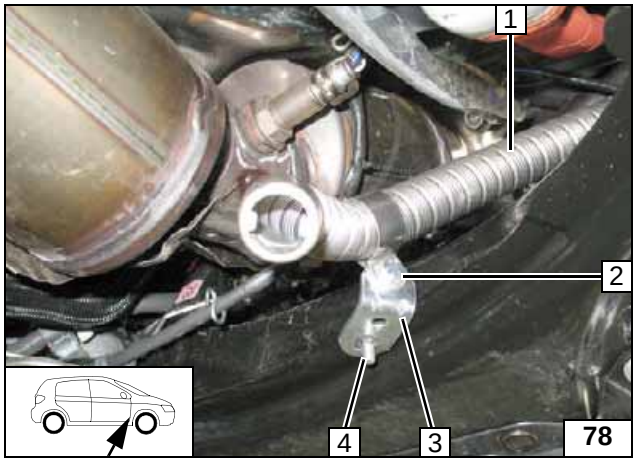
1 Exhaust end section
2 Hose clamp

Mounting exhaust end section



1 Exhaust end section

Routing exhaust end section

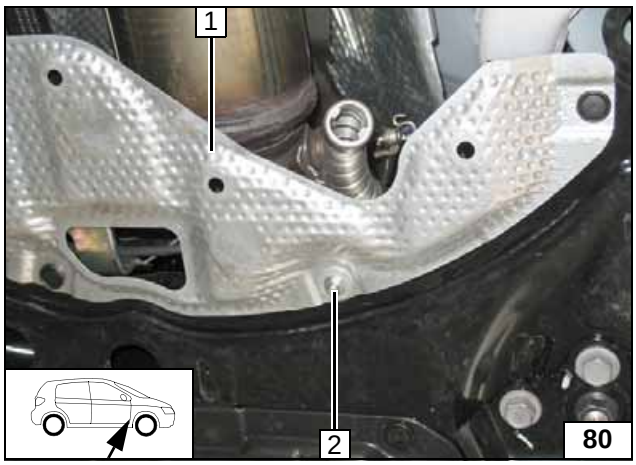


1 Exhaust end section
2 M6x20 bolt, 25 mm dia. p-clamp, large diameter washer, flanged nut
3 Angle bracket
4 M6x16 bolt, pin lock, existing hole

Fastening exhaust end section

Ensure sufficient distance to adjacent components, especially to heat shield plate and cross member.

Aligning exhaust end section



Install trim of underbody **1**. Align exhaust system, ensure adequate distance from neighbouring components, correct if necessary.

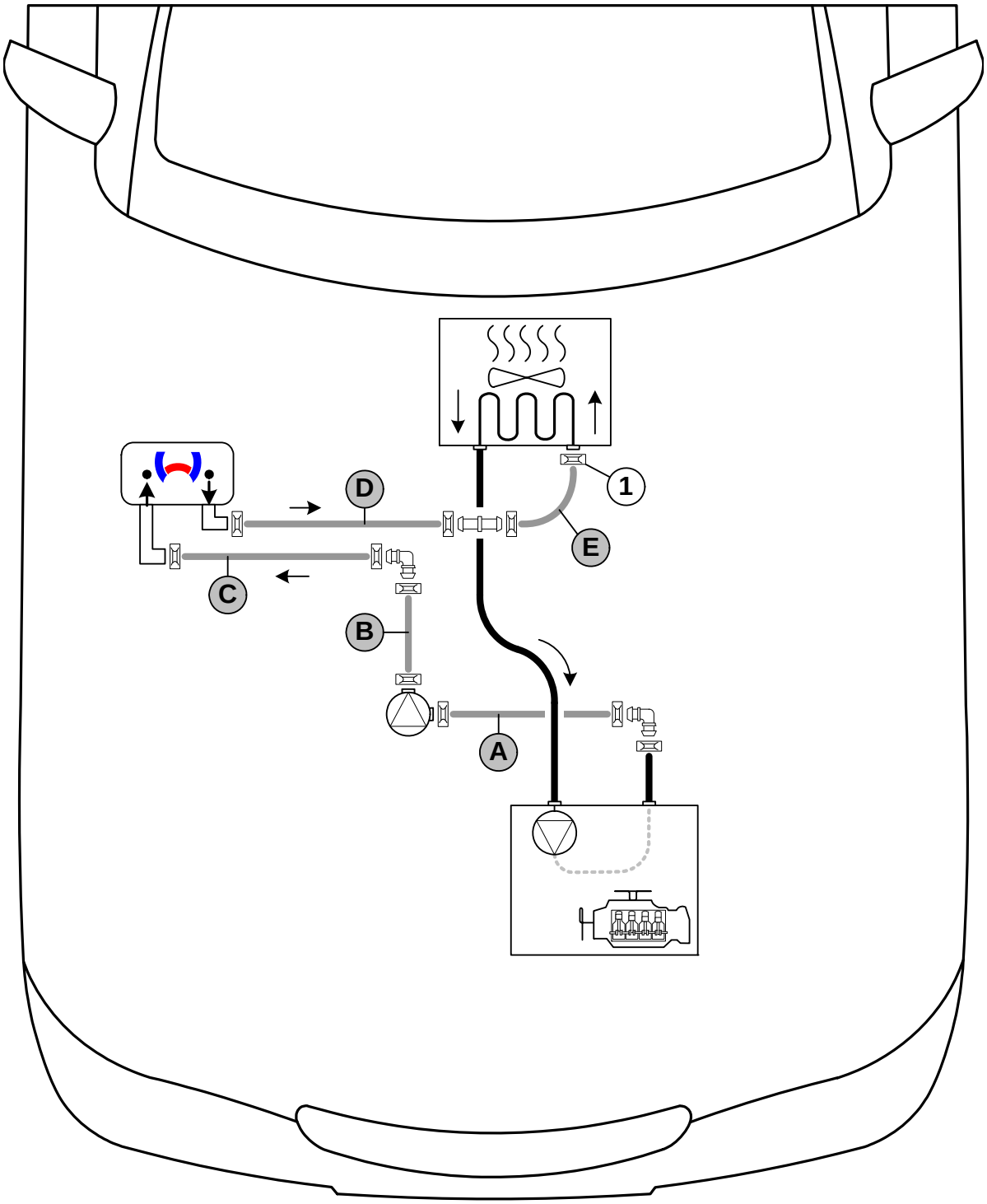
2 Large diameter washer, M6 flanged nut

Fastening exhaust end section

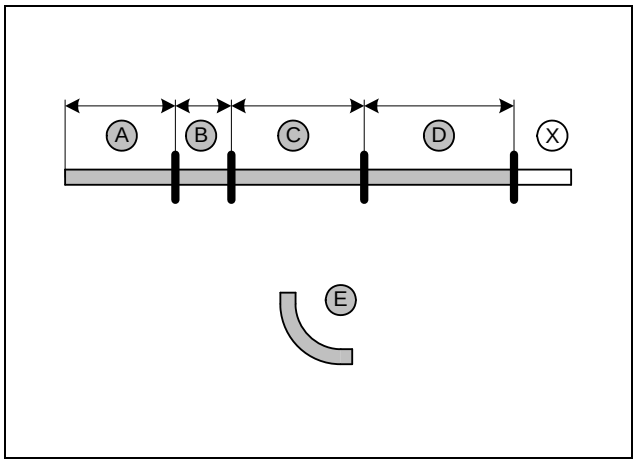
Coolant Circuit

WARNING!
Any coolant running off should be collected in a suitable container. Install 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. When installing the hoses, the heater must be filled with coolant.
The connection should be "inline" based on the following diagram:

Hose routing diagram



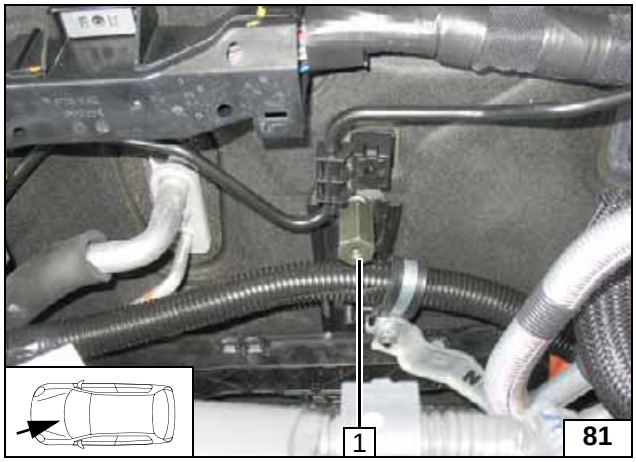
All spring clips = 25 mm dia. **1** = original vehicle spring clip .
All and connecting pipes = 18x18mm dia.



Hose **E** = 90°, 18 mm dia. moulded hose
Discard section **X**.

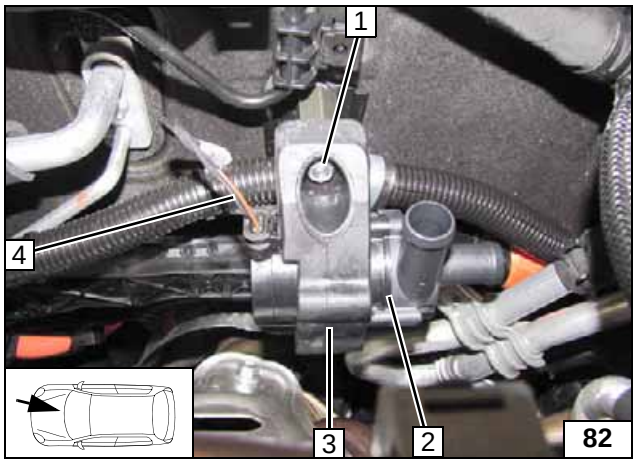
A = 140
B = 60
C = 340
D = 420

Cutting hoses to length



1 M6x30 spacer nut, original vehicle stud bolt

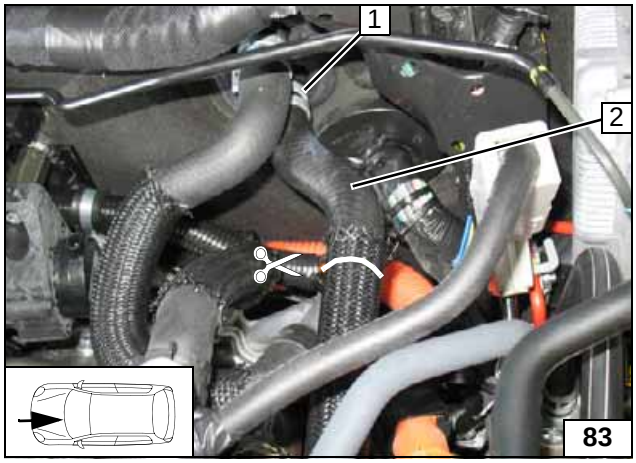
Installing spacer nut



Insert wiring harness of circulating pump **4** and route in slit open 17mm dia. corrugated tube.

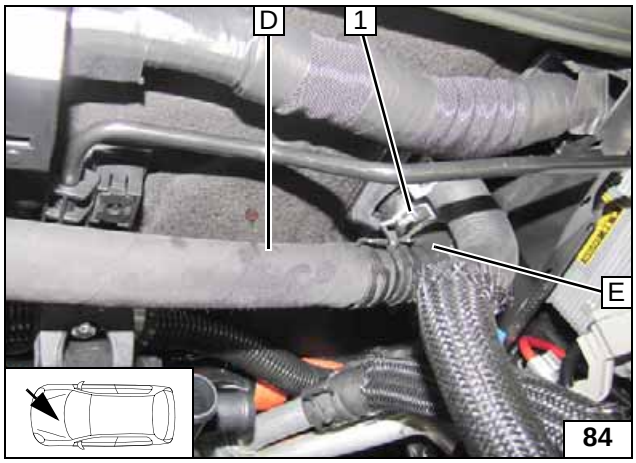
1 M6x25 bolt
2 Circulating pump
3 Circulating pump mounting

Installing circulating pump



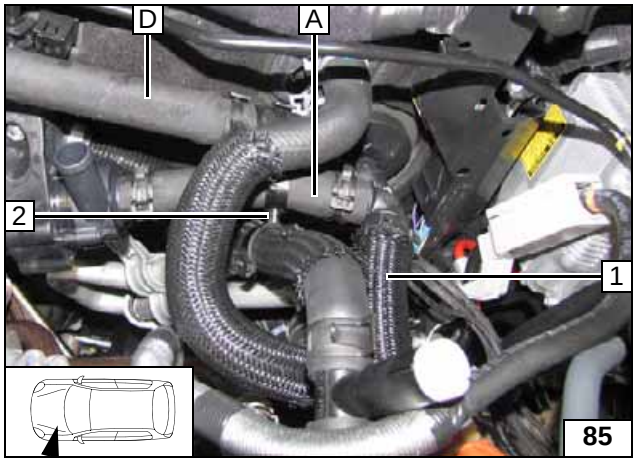
Slide back braided protection hose at the cutting point. Cut the engine outlet hose / heat exchanger inlet at the marking. Spring clip **1** will be reused. Remove hose section **2** and discard.

Cutting point



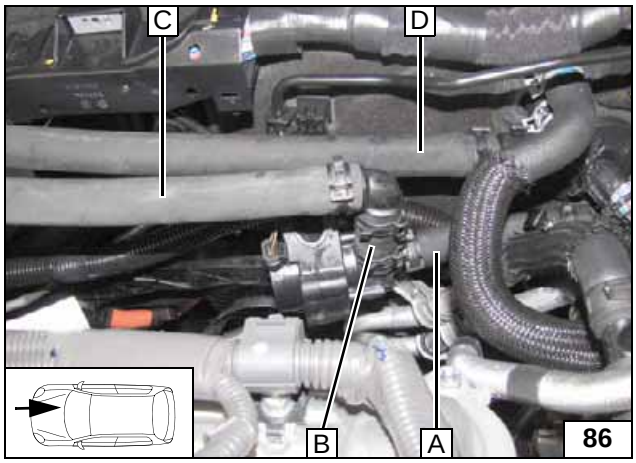
1 Original vehicle spring clip

Connecting heat exchanger inlet

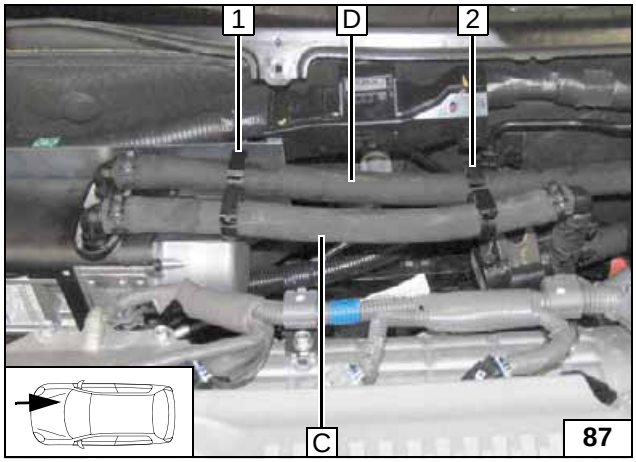


1 Hose of engine outlet
2 Hose bracket

Connecting engine outlet



Connecting circulating pump



Hose **D** at heater outlet.
Hose **C** at heater inlet.
Ensure sufficient distance from neighbouring components.

2 Hose bracket [2x]

Connecting heater

Fuel

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

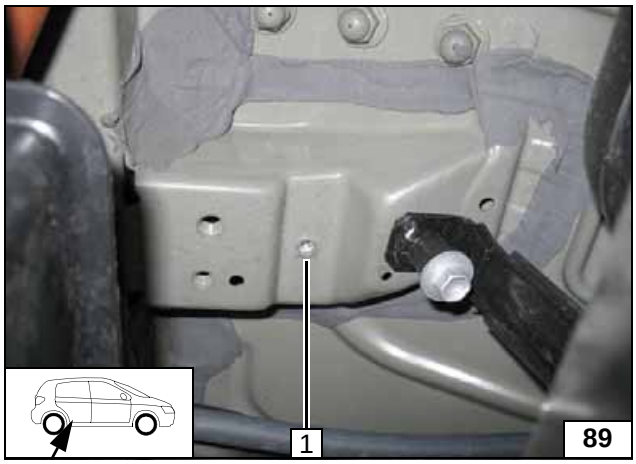
Catch any fuel running off with an appropriate container.

Route fuel line and metering pump wiring harness so that they are protected against stone impact. Unless specified otherwise, always fasten using cable ties.
Mount the fuel line and wiring harness with rub protection on sharp edges.

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

Route fuel line and wiring harness of metering pump in 10mm dia. corrugated tube **1** (1130 and 2100) along original vehicle fuel lines to installation location of metering pump.

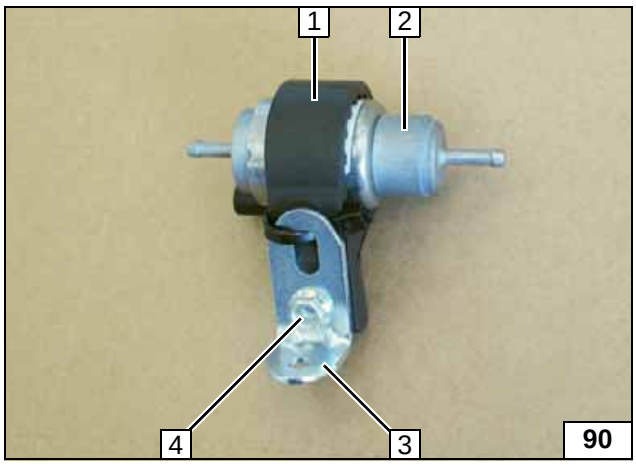
Routing lines



Prius / Prius plug-in / Lexus

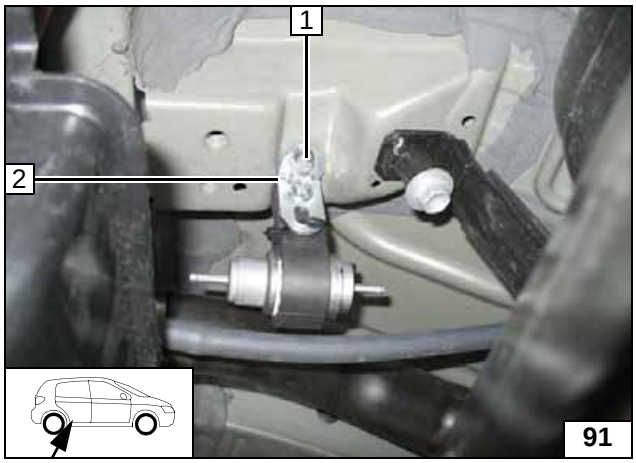
1 Rivet nut, existing hole

Installing rivet nut



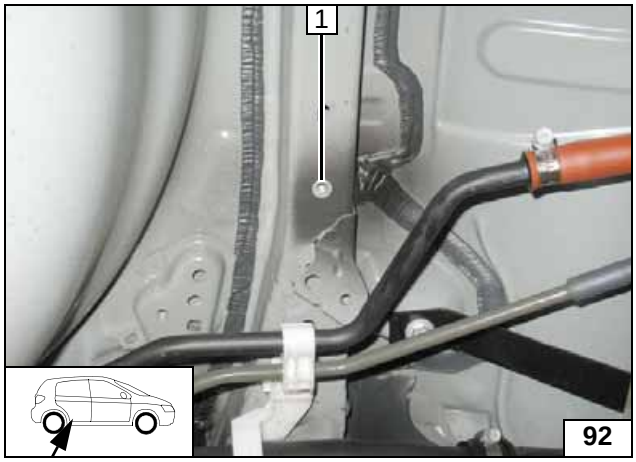
1 Metering pump mounting
2 Metering pump
3 Angle bracket
4 M6x25 bolt, support angle bracket, flanged nut

Premounting metering pump



1 M6x20 bolt, spring lockwasher
2 Angle bracket

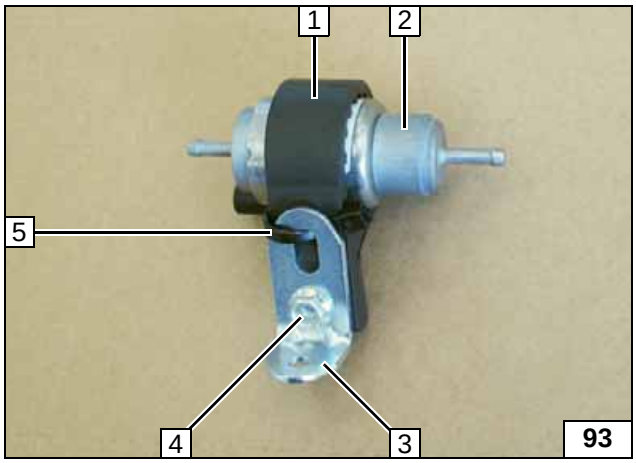
Installing metering pump



Prius+

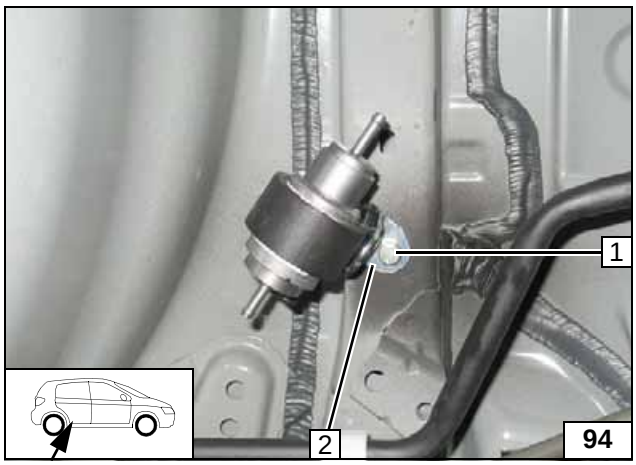
1 Rivet nut, existing hole

Installing rivet nut



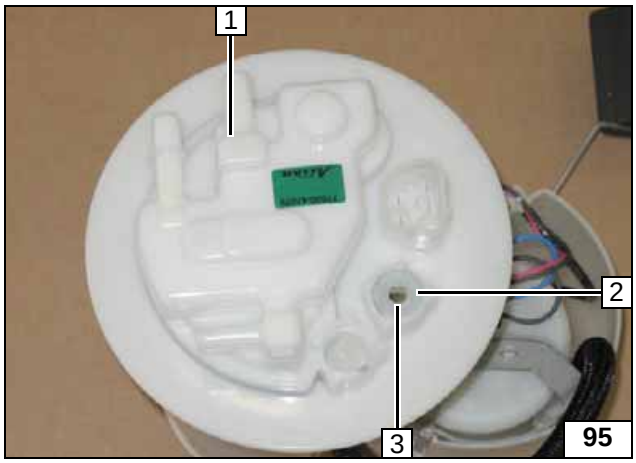
1 Metering pump mounting
2 Metering pump
3 Angle bracket
4 M6x25 bolt, support angle bracket, flanged nut
5 Cable tie

Premounting metering pump



1 M6x20 bolt, spring lockwasher
2 Angle bracket

Installing metering pump

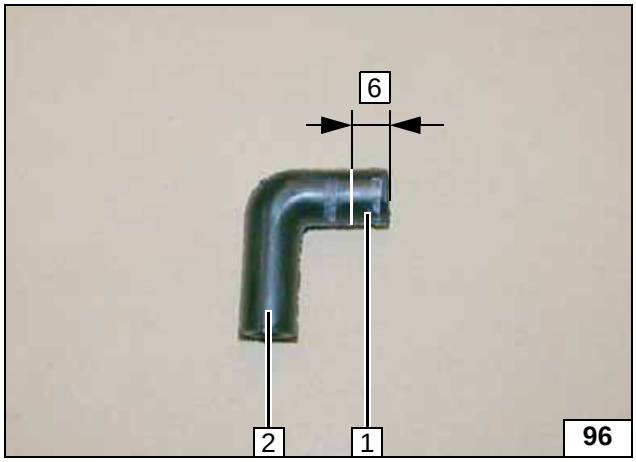


All vehicles

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

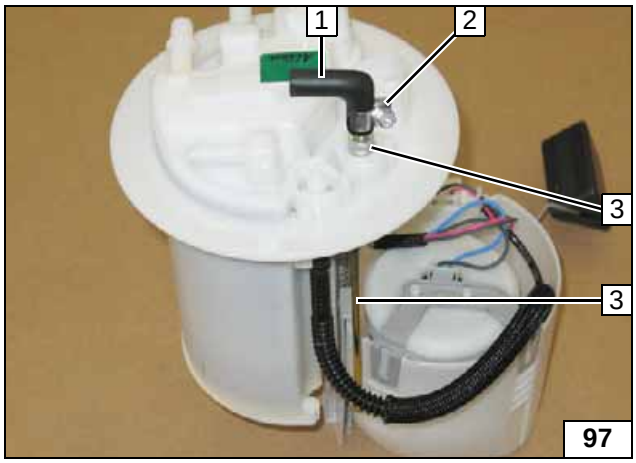
2 Washer outer dia. d_a = 17.6 mm
3 Copy hole pattern, 6 mm dia. hole

Fuel extraction



1 Discard section
2 90° moulded hose

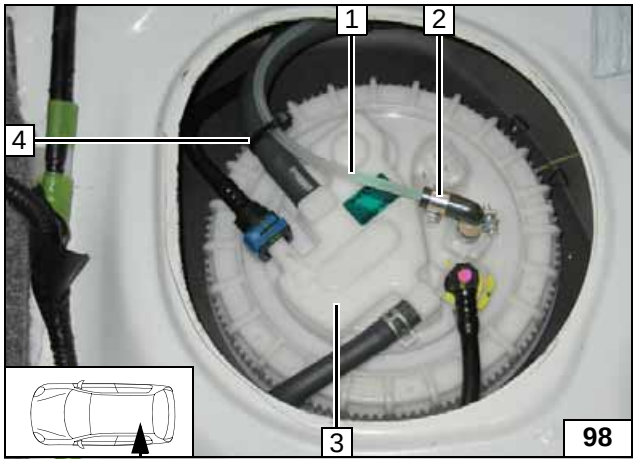
Shortening 90° moulded hose



Shape, cut to length, install and align fuel standpipe **3** according to template.
Install 90° moulded hose **1** with shortened side on fuel standpipe **3**.

2 9 mm dia. clamp

Installing fuel standpipe



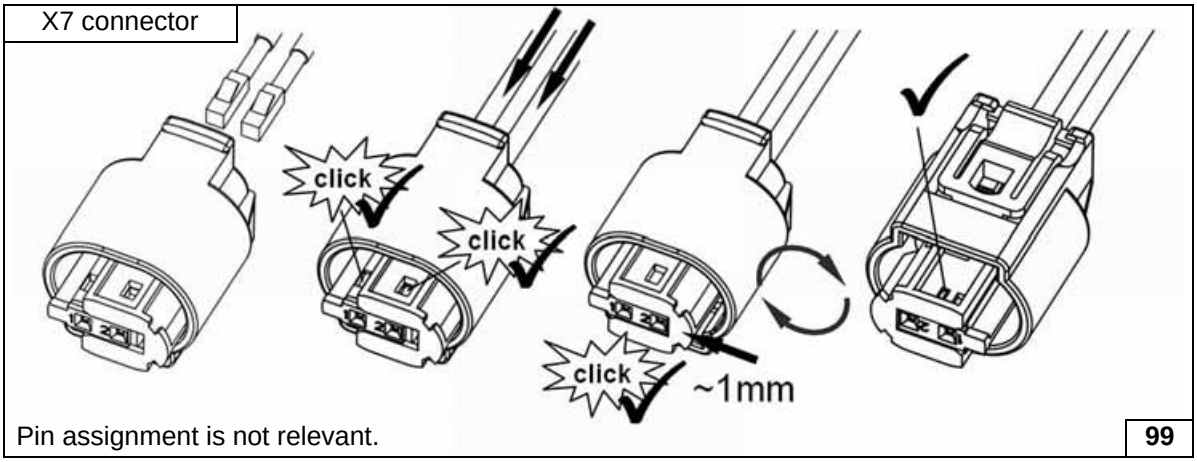
Install fuel tank sending unit **3** using specified spare parts and tools according to manufacturer's instructions. Ensure adequate distance of the fuel line **1** from the cover.

2 9 mm dia. clamp
4 Cable tie

Connecting fuel line

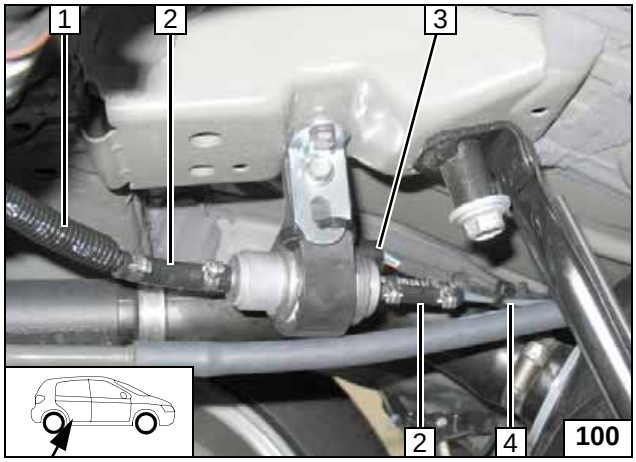
Completing connector of metering pump

X7 connector



Pin assignment is not relevant.

99



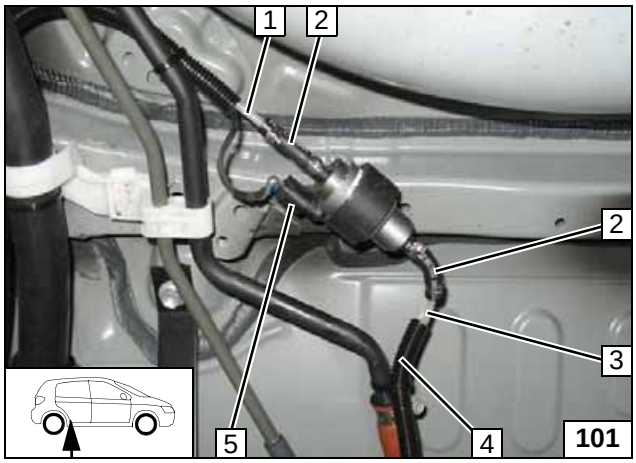
100

Prius / Prius plug-in / Lexus

Connection of metering pump

Slide corrugated tube **1** onto fuel line of fuel standpipe.
Check the position of the components; correct if necessary. Check that they have freedom of movement.

- **2** Hose section [2x], 10 mm dia. Caillau clamp [4x]
- **3** Wiring harness of metering pump, connector mounted
- **4** Fuel line of heater



101

Prius+

Connection of metering pump

Slide corrugated tube **4** onto fuel line of fuel standpipe **3**.
Check the position of the components; correct if necessary. Check that they have freedom of movement.

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

Final Work

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

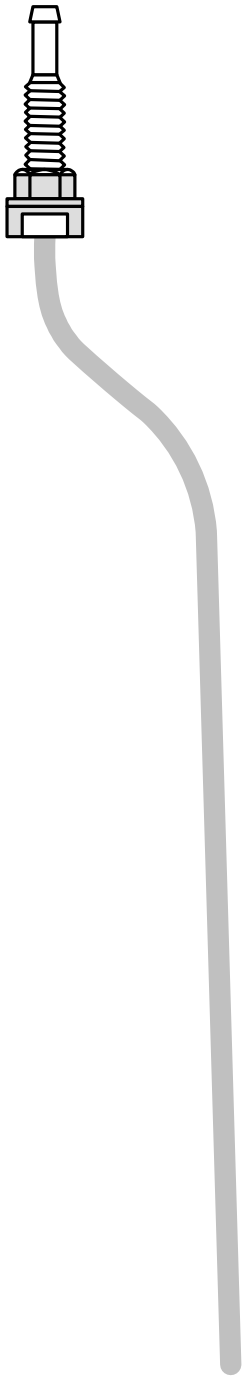
- **Activate high-voltage system in accordance with the manufacturer's instructions**
- **Connect the battery**
- **Fill and bleed the coolant circuit according to the vehicle manufacturer’s specifications.**
- **Set the digital timer.**
- **Make settings on A/C control panel according to the "Operating Instructions for End Customer".**
- **Checking the fan function (IPCU):**
  Adjust fan output to maximum. Then switch off ignition and switch on parking heater.
  On reaching the activation temperature of 50°C the fan speed must correspond to the value of approx. 1/3 of the maximum speed specified by IPCU.
- **Check the proper function of the parking heater, see the operating instructions/installation instructions.**
- **Place caution label "Switch off parking heater before refuelling" in the area of the filler neck.**
- **During initial start up, proceed as follows with the Webasto Thermo Test Diagnosis:**

  - Control coolant pump under Menu Component test, check coolant level
  - Pump fuel for the heater under the menu pipe filling
  - Check CO2 settings; take setting values from the general installation instructions
  - During the trial run, all water and fuel connections must be checked for leakage and firm seating
  - An error search is to be conducted in case of fault.

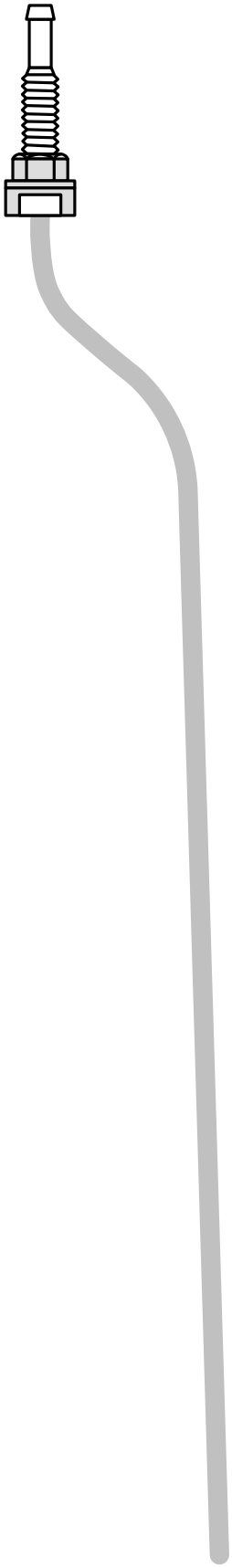
Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany
Internet: www.webasto.com
Technical Extranet:
http://dealers.webasto.com

Template for Fuel Standpipe

Prius / Prius Plug-in / Lexus



Prius+



100mm

1:1 scale

Compare size of printout with dimension lines.
Permitted tolerance a maximum of 2%.

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

100mm

0

Operating Instructions for Prius and Prius Plug-in

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.

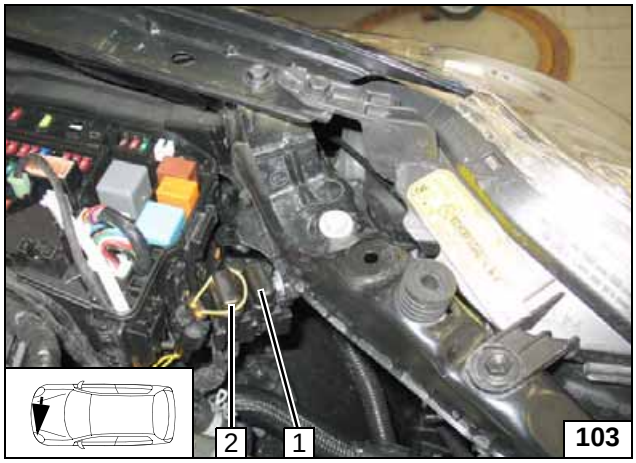
If vehicles have passenger compartment monitoring, this must be deactivated in addition to the vehicle settings for the heating operation.
Deactivation instructions can be found in the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

There is no need to preselect the fan speed.

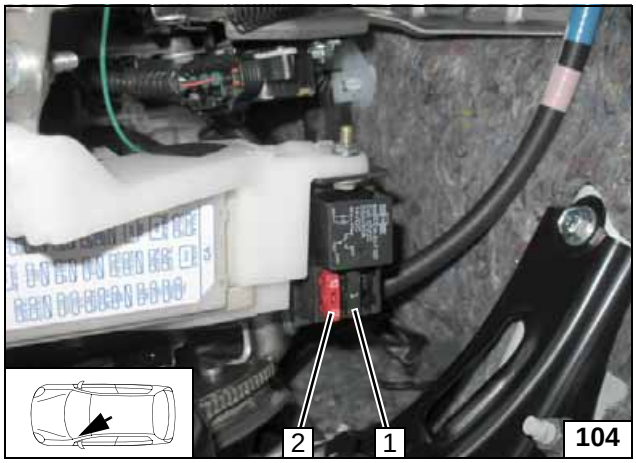
1 Set temperature to "max."
2 Air outlet to windscreen

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment

Operating Instructions for Prius+

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.

If vehicles have passenger compartment monitoring, this must be deactivated in addition to the vehicle settings for the heating operation.
Deactivation instructions can be found in the operating instructions of the vehicle.

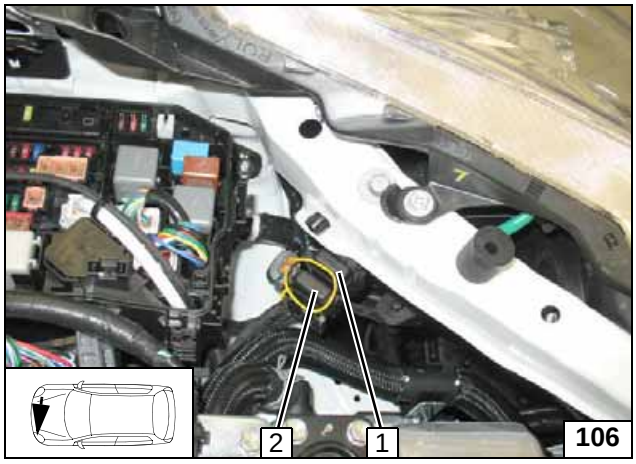
Before parking the vehicle, make the following settings:

105

There is no need to preselect the fan speed.

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

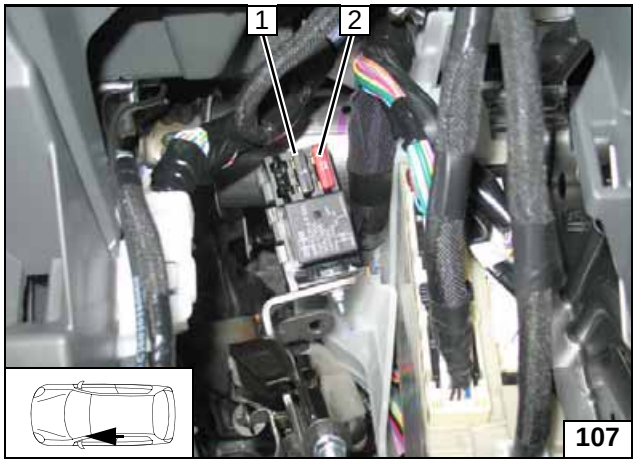
A/C control panel



106

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

Fuses of engine compartment



107

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

Fuses of passenger compartment

Operating Instructions for Lexus CT200h

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.

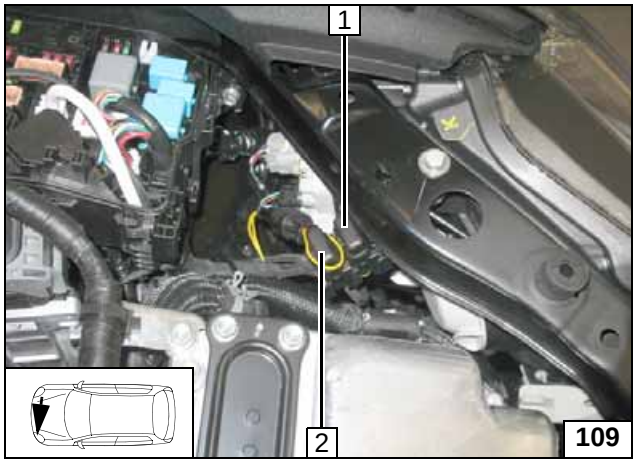
If vehicles have passenger compartment monitoring, this must be deactivated in addition to the vehicle settings for the heating operation.
Deactivation instructions can be found in the operating instructions of the vehicle.

Before parking the vehicle, make the following settings:

There is no need to preselect the fan speed.

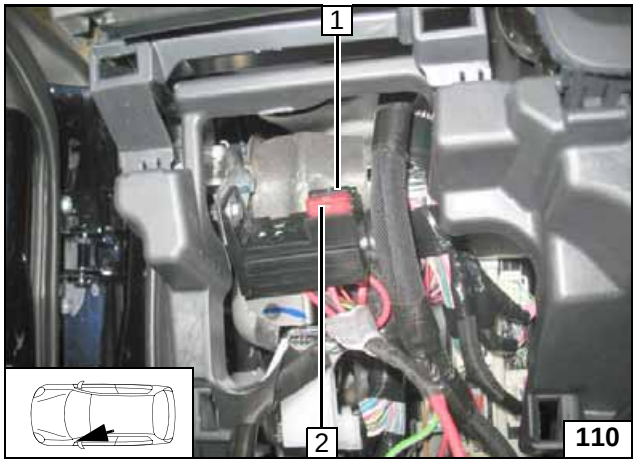
1 Set temperature to "HI"
2 Air outlet to windscreen

A/C control panel



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

Fuses of engine compartment



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

Fuses of passenger compartment