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2010 JEEP Patriot OEM Service and Repair Workshop Manual

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YOUR CURRENT VEHICLE

Auxiliary Fuel Pump Module

AUXILIARY FUEL PUMP MODULE

REMOVAL

WARNING

The fuel system is under constant high pressure even with engine off. Until the fuel pressure has been properly released from the system, do not attempt to open the fuel system. Do not smoke or use open flames/sparks when servicing the fuel system. Wear protective clothing and eye protection. Make sure the area in which the vehicle is being serviced is in a well ventilated area and free of flames/sparks. Failure to comply may result in serious or fatal injury.

WARNING

No sparks, open flames or smoking. Risk of poisoning from inhaling and swallowing fuel. Pour fuel only into appropriately marked OSHA approved containers. Wear protective clothing. Risk of injury to eyes and skin from contact with fuel.

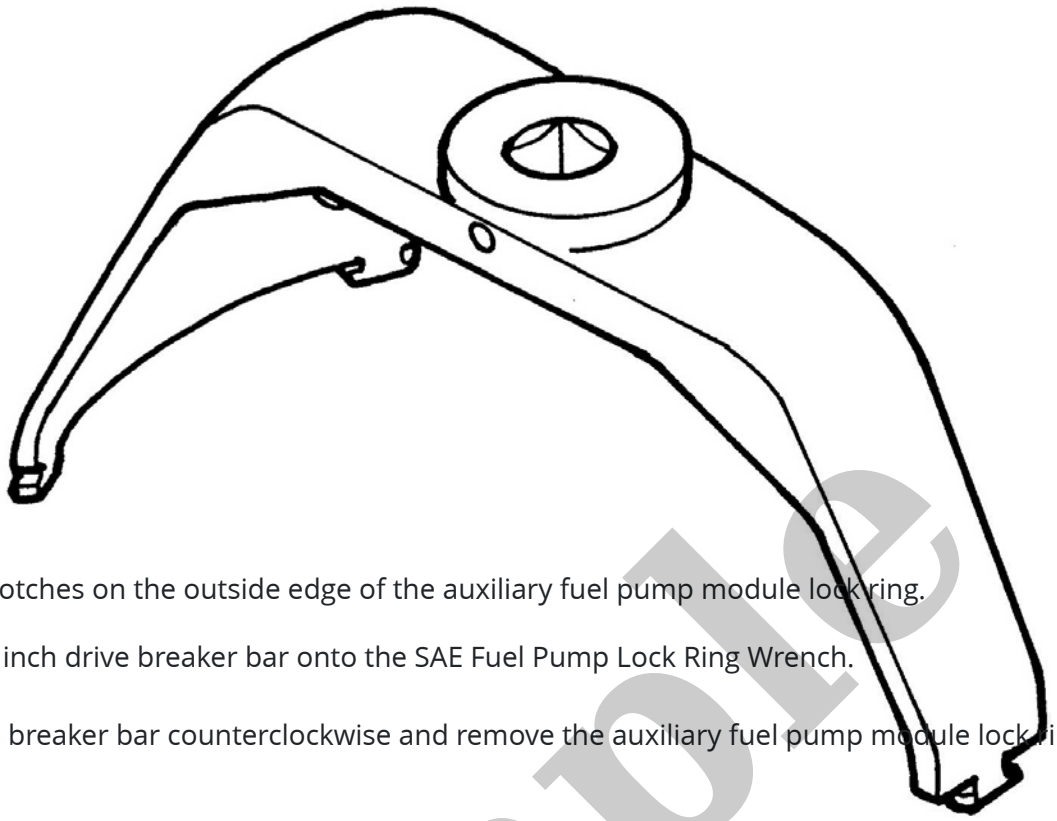
CAUTION

Do not allow the float arm of the auxiliary fuel pump module to come in contact with any part of the fuel tank during removal or installation, damage to the float arm and fuel level sending card may result.

CAUTION

Whenever the auxiliary fuel pump module is serviced, the rubber O-ring seal must be replaced.

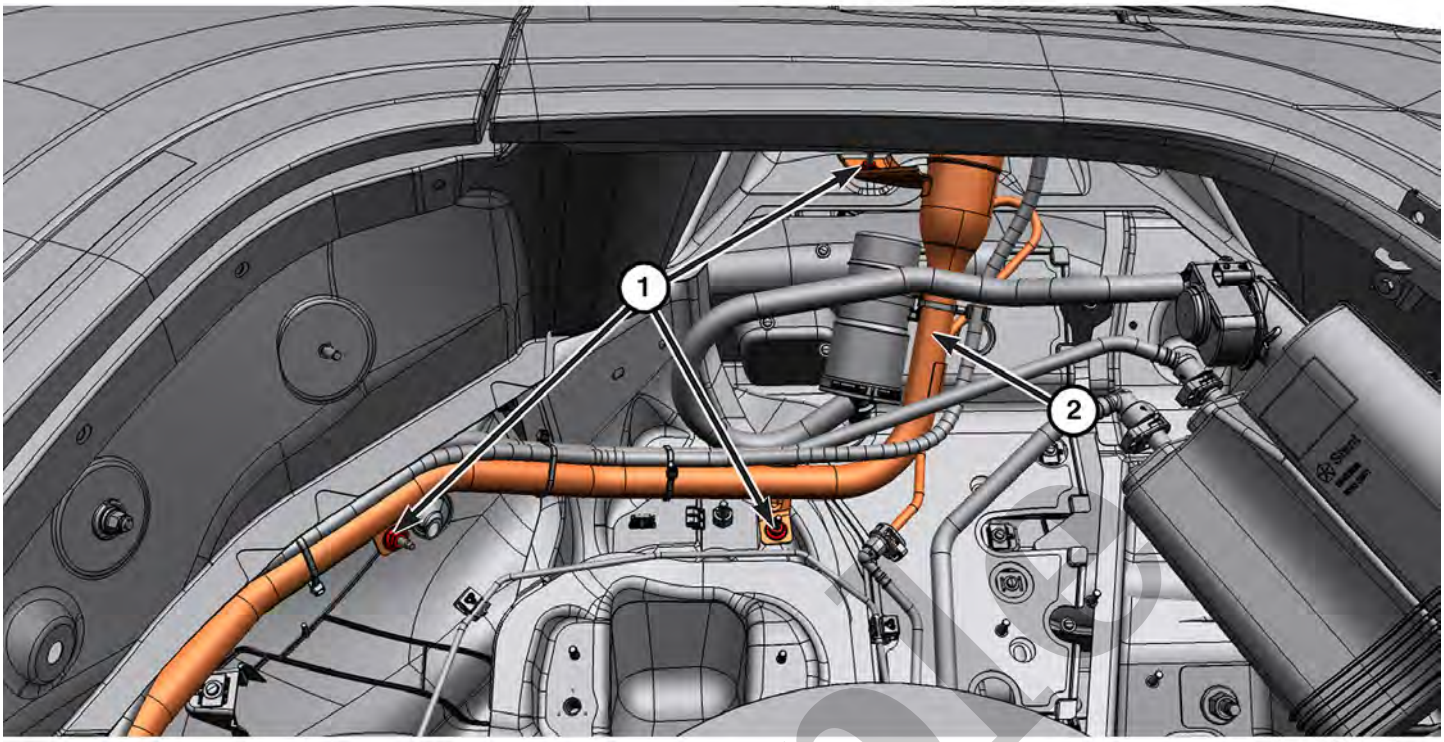
1. Perform the fuel system pressure release procedure (Refer to 09 - Engine/Fuel System/Standard Procedure)(Refer To List 1).



into the notches on the outside edge of the auxiliary fuel pump module lock ring.

10. Install a ½ inch drive breaker bar onto the SAE Fuel Pump Lock Ring Wrench.

11. Rotate the breaker bar counterclockwise and remove the auxiliary fuel pump module lock ring.



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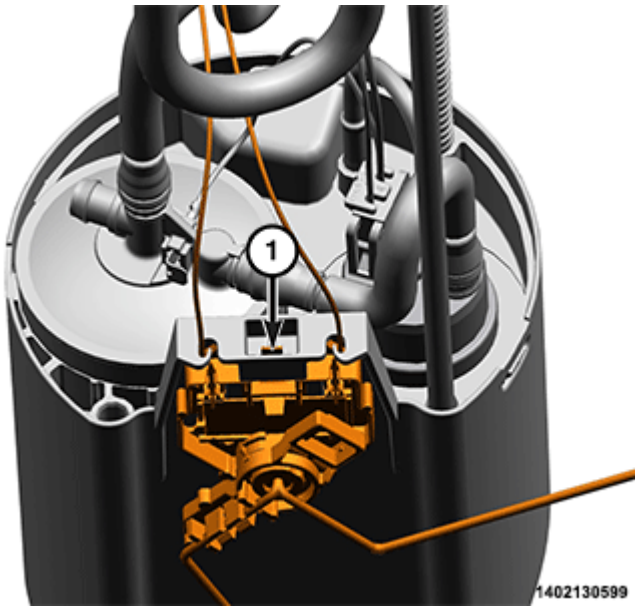
CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Fuel Filler Tube to Body Nut(s)	**8 N·m (71 In. Lbs.)**	–



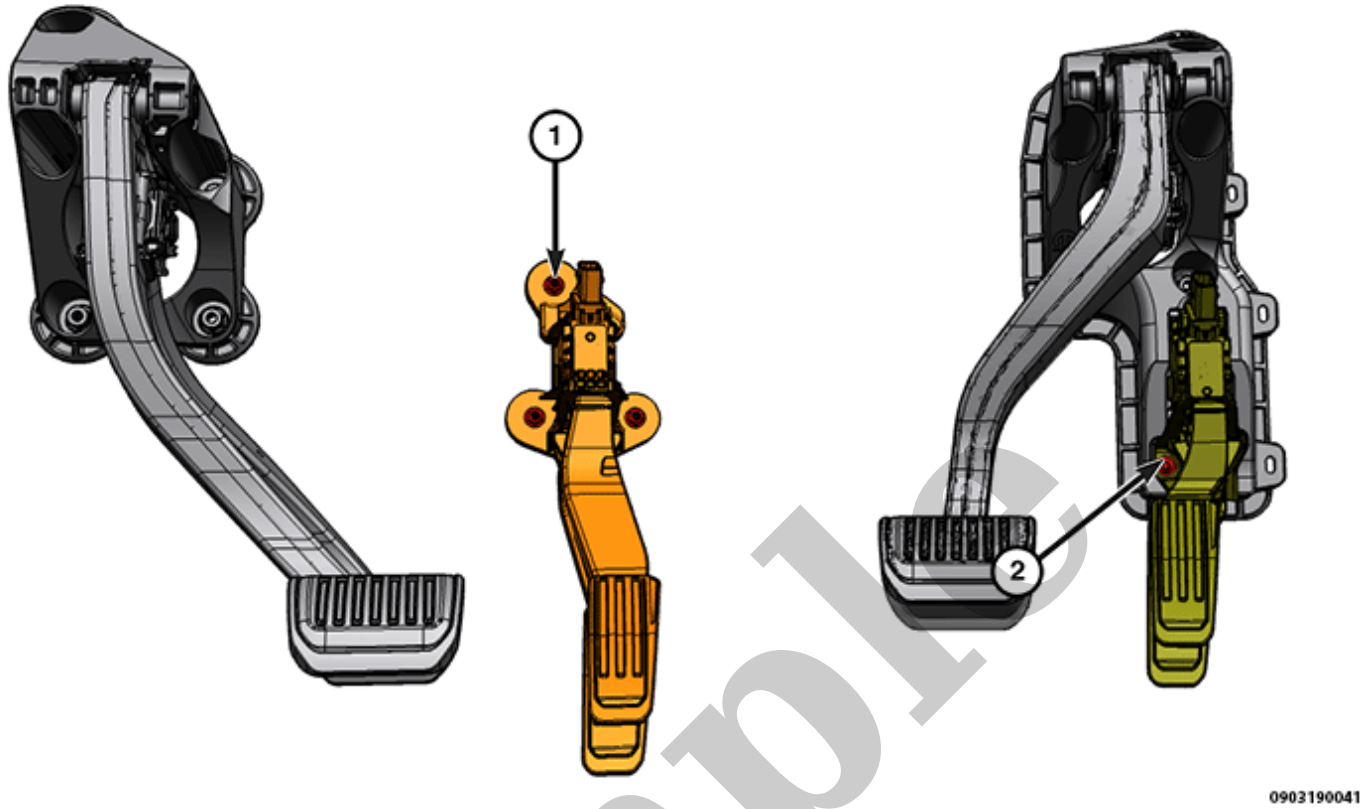
1 - Fuel Level Sensor Retaining Tab

3. Disengage the fuel level sensor retaining tab from fuel pump module housing and slide the fuel level sensor upward, removing it from the fuel pump module.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle.

TORQUE SPECIFICATIONS - FUEL SYSTEM

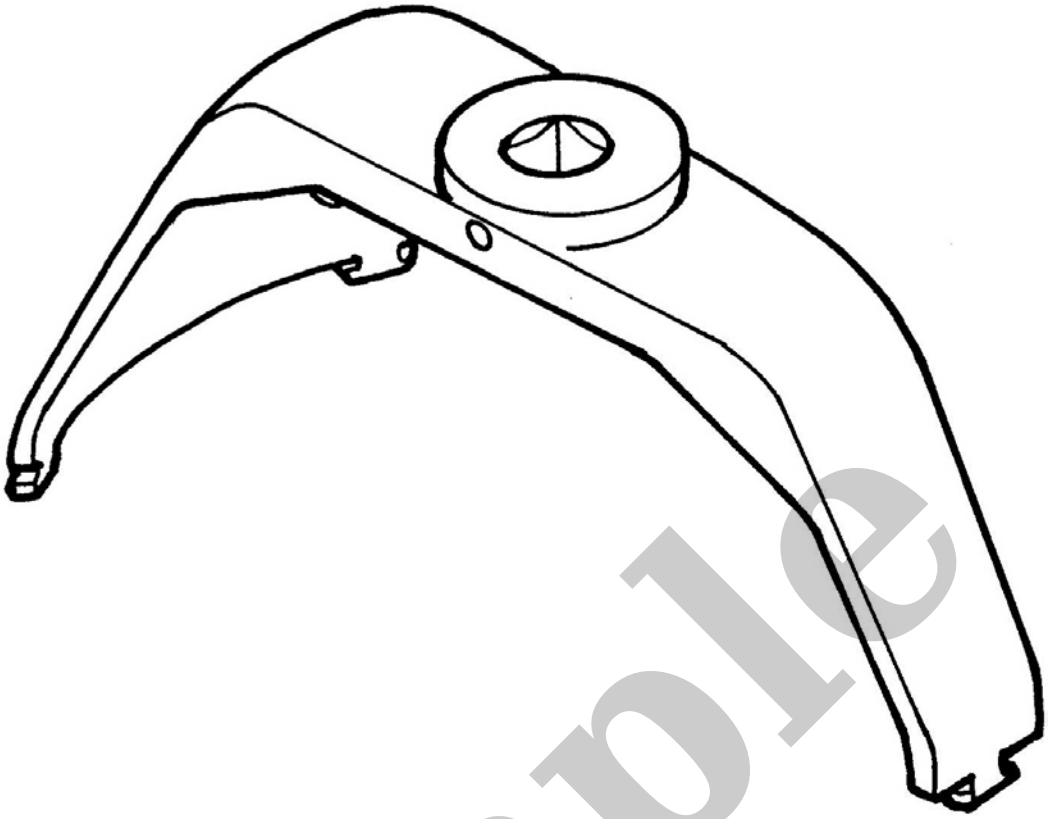


CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Accelerator Pedal to Bulkhead Nuts	**9 N·m (80 In. Lbs.)**	–
2	Accelerator Pedal to Bracket Bolt (RHD)	**5 N·m (44 In. Lbs.)**	–

Refer To List:

List 1

- 09 - Engine, 2.0L / Fuel System / ASSEMBLY, Fuel Pump / Removal and Installation
- 09 - Engine, 3.6L / Fuel System / ASSEMBLY, Fuel Pump / Removal and Installation
- 09 - Engine, 5.7L / Fuel System / ASSEMBLY, Fuel Pump / Removal and Installation



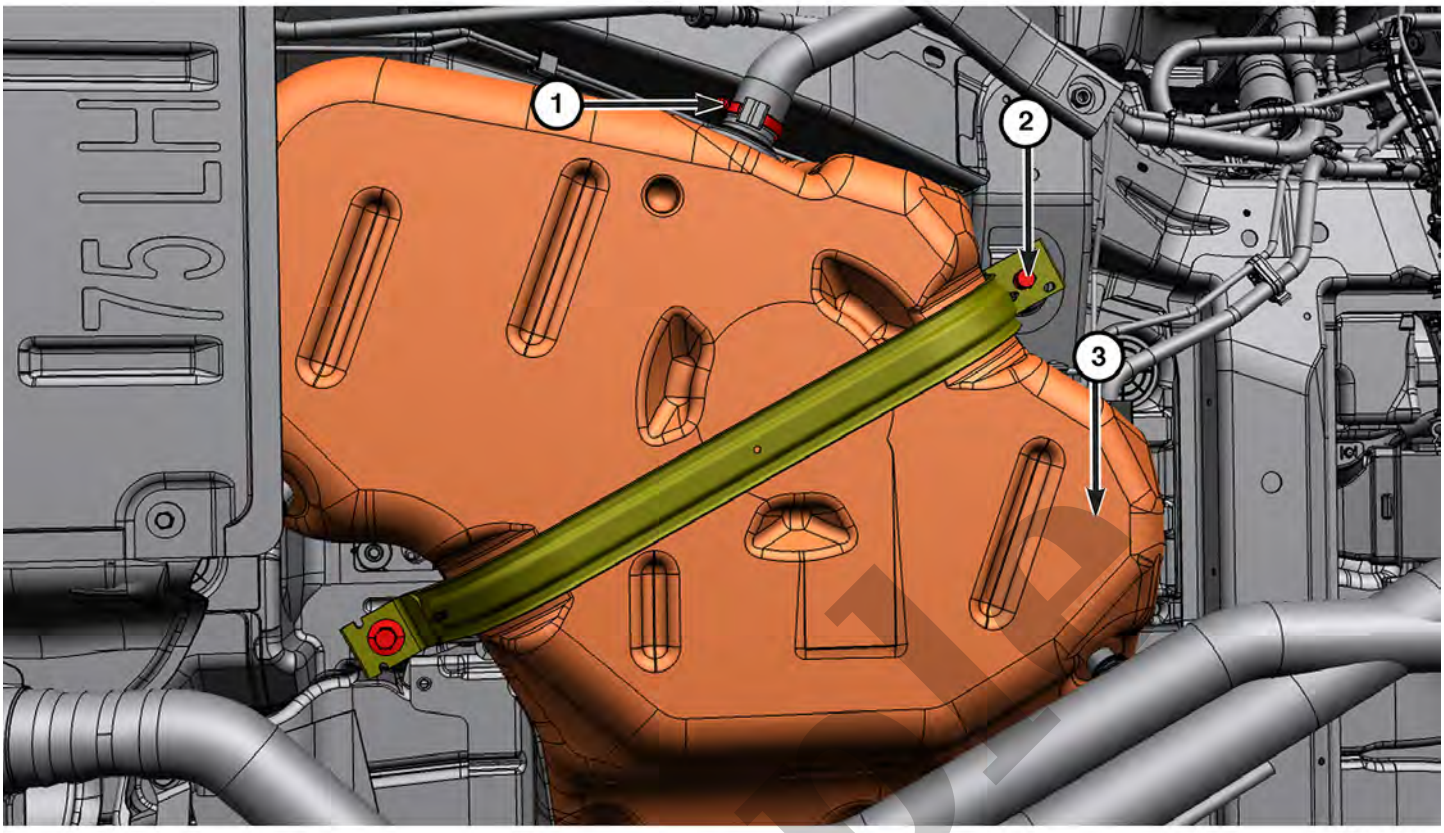
into the notches on the outside edge of the main fuel pump module lock ring.

9. Install a ½ inch drive breaker bar onto the SAE Fuel Pump Lock Ring Wrench.

NOTE

The main fuel pump module will spring up slightly when lock ring is removed.

10. Rotate the breaker bar counterclockwise and remove the main fuel pump module lock ring lock ring.



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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Fuel Filler Tube Clamp	**3 N·m (30 In. Lbs.)**	–
2	Fuel Tank Mounting Straps	**55 N·m (41 Ft. Lbs.)**	–

4.	Fuel Tank Filler Tube
5.	Fuel Pump Module - Primary
6.	Fuel Tank
7.	Fuel Rail

OPERATION: Fuel is picked up in the fuel tank by the fuel pump module. This module is located inside of the fuel tank. A fuel return system is provided within the fuel pump module using check valves. A separate fuel return line from the engine to the tank is not used. The fuel pressure regulator and the main fuel filter are combined within the fuel pump module. There is no fuel filler cap on this vehicle, it is equipped with a cap-less fuel system.

Fuel Level Sensor

Component Index

The fuel gauge sending unit is attached to the side of the fuel pump module. The fuel gauge sending unit consists of a float arm and a variable resistor track (card).

Fuel Pump Control Module

Component Index

The fuel pump control module is mounted inside the right rear wheel well. The fuel pump control module is responsible for supply and regulation of voltage to the fuel pump relay and the fuel pump.

Fuel Pump Module

Component Index

The fuel pump module is mounted inside the fuel tank and contains the following components:

- Mounting flange.
- Electric fuel pump.
- Fuel pump reservoir.
- Inlet strainer.
- Fuel pressure regulator.
- Fuel level sending unit.
- Fuel filter.

4.	Throttle Body
5.	Manifold Absolute Pressure (MAP) Sensor
6.	Camshaft Position Sensor
7.	Powertrain Control Module (PCM)
-	Crankshaft Position (CKP) Sensor — not shown
-	Accelerator Pedal Position Sensor (APPS) — not shown
-	Fuel Injectors — not shown

OPERATION

Various sensors provide the inputs necessary for the PCM to correctly operate. The PCM continuously adapts to meet changing operating conditions and driving demands.

Fuel is injected into the intake port above the intake valve in precise metered amounts through electrically operated fuel injectors. Under most operating conditions, the PCM maintains an air fuel ratio of 14.7 parts air to 1 part fuel by constantly adjusting injector pulse width. Injector pulse width is the length of time the injector is open. The PCM adjusts the injector pulse width by opening and closing the ground path to each injector. Upstream Oxygen sensor feedback is the main input to fueling. Throttle input, engine speed, and MAP sensor feedback are contributing factors.

In order to maintain a 14.7 to 1 air fuel ratio the PCM regulates:

- Ignition timing.
- Air/fuel ratio.
- Emission control devices.
- Cooling fan.
- Charging system.
- Idle speed.
- Vehicle speed control.

The PCM also monitors the Fuel Injector system wiring for and related electrical faults.

Accelerator Pedal Position Sensor (APPS)

Component Index