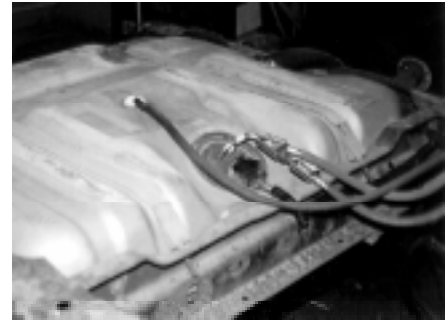


# FU01–Tank Assembly



## 1. Description

This procedure describes methods for the removal and installation of a fuel tank assembly. Inspection and evaluation requirements are also included.



## 2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality repair of fuel tank assemblies. This procedure is intended for use by professionals who are qualified through training and experience.



### **3. Referenced Documents**

The following documents are considered part of this procedure by reference.

#### **3.1 Procedures**

- EL11 Troubleshooting
- EL21 Self-Diagnostics
- FU02 Pump, In-Tank
- FU11 Lines
- HM01 Hazardous Materials
- PS01 Personnel Safety

#### **3.2 Other Information**

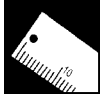
Vehicle-specific repair information



## 4. Equipment And Material Requirements

### 4.1 Special Equipment

Special tools may be required for removing quick-connect fuel line fittings.



## 5. Damage Analysis

### 5.1 General Damage

Inspect a fuel system and tank assembly for these conditions:

- visible damage
- leaks
- corrosion
- damaged filler neck or cap
- damaged or tripped inertia switch
- evidence of fuel contamination



Damaged fuel tank parts must be replaced. Verify the availability of replacement parts. Contaminated fuel tanks may require cleaning and pressure-testing.



## 6. Personnel Safety

### 6.1 General Safety

General safety information is in **PS01**.

### 6.2 Fuel Safety

To prevent injury when working with fuel systems:

- Quickly open shop doors and windows if there is a leak.
- Have the proper fire extinguisher available.
- Always relieve fuel pressure before performing any repairs to the fuel system.
- Keep fuel, fuel tanks, and fuel containers away from any sparks, flames, or other heat sources.
- Do not turn the ignition switch ON or crank the engine with a fuel line disconnected.
- Store fuel only in approved containers.

**(cont'd)**



## 6. Personnel Safety (cont'd)

- Do not fill containers completely with liquid fuel. Leave about 25 mm (1") for expansion.
- If filled containers must be transported, make sure they are secured to prevent tipping.
- Do not store a partially filled container for long periods of time.
- Never leave containers open after filling or pouring from the container.
- Do not prime an engine with fuel while cranking the engine.
- Never use any type of fuel as a cleaning agent.
- Wear gloves made of fuel-resistant material, such as **nitrile rubber**, when handling fuels. If fuel gets on your skin, wash it off immediately.
- When fuel is present, work in a well-ventilated area.
- Identify air-conditioning and fuel-rail access ports before attaching equipment.
- Ground fuel transfer equipment to the vehicle when pumping fuel into or out of the tank, or into storage containers.
- Whenever possible, use a battery powered drop lamp to light the work area.



## 7. Environmental Safety

### 7.1 Hazardous Materials

Hazardous material safety information is in **HM01**.

### 7.2 Fuel

To protect the environment from fuel spills:

- Plug or cap disconnected hoses and lines to prevent fuel spillage.
- Properly collect and dispose of fuel.
- Treat spilled fuel as hazardous waste.



## 8. Vehicle Protection

### 8.1 Fuel Tank Assembly

Do not attempt to weld or straighten a metal fuel tank. Do not attempt to repair plastic fuel tanks.

**(cont'd)**



## 8. Vehicle Protection (cont'd)

### 8.2 Adjacent Parts

To protect adjacent parts when working with a fuel tank assembly:

- Ensure that the ignition switch is in the LOCK position, and the key is removed.
- Cover adjacent **cosmetic surfaces** to protect them from spilled fuel. Even with the fuel pressure relieved, there may be some pressure in the fuel lines.
- Plug or cap hoses and lines to prevent fuel spillage.
- Carefully handle removed parts to avoid spilling any fuel.
- Immediately rinse off any spilled fuel with water and clean the surface.



## 9. Repair Procedure

### 9.1 Fuel Tank Assembly Removal

To remove a fuel tank assembly:

- 1. Relieve the fuel pressure from the fuel lines. Follow the vehicle maker's recommendations.
- 2. Remove the fuel filler cap to relieve pressure from the tank.
- 3. Disconnect and isolate the negative battery cable, if required. Follow the vehicle maker's recommendations for recording and resetting **electronic memories**.
- 4. Properly drain the fuel into an approved container marked for the customer's vehicle.
- 5. Properly lift and support the vehicle.
- 6. Remove the rear wheels, if required for access.
- 7. Remove any tank or hose covers or protectors.
- 8. Disconnect the fuel pump electrical connector, and other accessible electrical wires, if required. Mark the location for proper reconnection.
- 9. Disconnect any accessible hoses or fuel lines. Mark for reinstallation.
- 10. Properly support the fuel tank.
- 11. Disconnect the fuel filler neck at the body or fuel tank, and the fuel filler vapor relief line, if required.
- 12. Remove the straps and fasteners holding the fuel tank to the vehicle.
- 13. Lower the fuel tank assembly.

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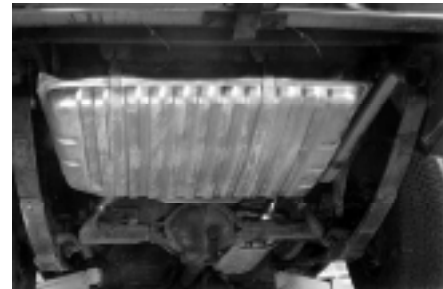
## 9. Repair Procedure (cont'd)

- 14. Disconnect any remaining fuel lines and electrical wires.
- 15. Remove the fuel tank from the vehicle.
- 16. Remove the fuel pump, sending unit, rollover switch, etc., for transfer to the replacement tank.
- 17. Replace any damaged or one-time fasteners, gaskets, washers, etc.

### 9.2 Fuel Tank Installation

To install a replacement fuel tank assembly:

- 1. Transfer any parts to the replacement fuel tank.
- 2. Properly lift and support the fuel tank assembly into position enough to reinstall wires and fuel lines that will not be accessible when the tank is installed.
- 3. Carefully lift the fuel tank into its final position. Position the hose connectors and fuel filler neck onto the fuel tank. Loosely install the fasteners for the fuel filler neck.
- 4. Reinstall the straps and fasteners to hold the tank assembly to the vehicle. Torque the fasteners to the vehicle maker's recommendations.
- 5. Remove the support. Make sure the straps are not twisted or bent.
- 6. Torque the fasteners for the fuel filler neck to the vehicle maker's recommendations.
- 7. Reconnect the remaining hoses and fuel filler vapor relief line.
- 8. Reinstall any covers or protectors.
- 9. Reconnect the fuel pump electrical connector.
- 10. Reinstall the rear wheels, if removed for access.
- 11. Lower the vehicle.
- 12. Transfer the customer's fuel back into the tank. Replace contaminated fuel with fresh, clean fuel.
- 13. Reinstall the fuel filler cap.
- 14. Install any labels previously removed.
- 15. Start the vehicle and check for leaks.
- 16. Road-test the vehicle to check fuel system performance.
- 17. Perform a visual inspection to ensure that fuel system parts do not contact adjacent parts.





## 10. Use Of Recycled (Salvage) Parts

### 10.1 Condition Of **Salvage Parts**

Do not install a salvage fuel tank assembly having any of these defects:

- visible damage
- evidence of previous repairs
- corrosion that has caused pitting
- leaks

Replace any damaged hoses, lines, or connectors. Salvage tank assemblies should be cleaned and pressure-tested before installation.

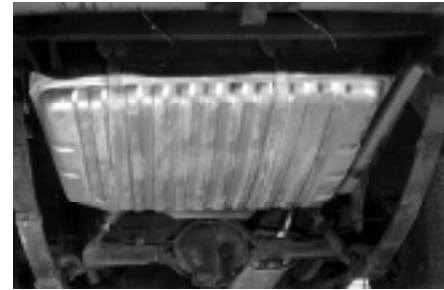


## 11. Inspection And Testing

### 11.1 Inspection Of A Replaced Fuel Tank Assembly

After a fuel tank installation, inspect the vehicle for these conditions:

- proper attachment of lines, hoses, clamps, and other fasteners
- fasteners torqued to the vehicle maker's recommendations
- absence of fuel leaks
- proper installation of all labels
- proper operation of the fuel-level gauge



Road-test the vehicle to check for abnormal fuel-pump noise and proper fuel-system performance. Verify that no stored trouble codes indicate a fuel system problem. See **EL21**.