Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

1997 FORD Thunderbird OEM Service and Repair Workshop Manual

Go to manual page

module) P060D:00	Performance: No Sub Type Information	occurs in the PCM (powertrain control module) . Verify the PCM (powertrain control module) is at the latest calibration level.
PCM (powertrain control module) P1575:00	Pedal Position Out Of Self Test Range: No Sub Type Information	Sets when the PCM (powertrain control module) detects either the APP1 or APP2 input is greater than the expected value. The PCM (powertrain control module) monitors the APP (accelerator pedal position) sensor inputs to determine if the APP1 and APP2 signals are less than an expected value during the KOEO (key on, engine off) self-test. Make sure the floor mat is not interfering with the accelerator pedal. Repeat the self-test without applying the accelerator pedal. Diagnose any APP (accelerator pedal position) sensor circuit Diagnostic Trouble Codes (DTCs) first.
PCM (powertrain control module) P2122:00	Throttle/Pedal Position Sensor/Switch 'D' Circuit Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects the accelerator pedal position 1 (APP1) is out of self-test range low.
PCM (powertrain control module) P2123:00	Throttle/Pedal Position Sensor/Switch 'D' Circuit High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the accelerator pedal position 1 (APP1) is out of self-test range high.
PCM (powertrain control module) P2127:00	Throttle/Pedal Position Sensor/Switch 'E' Circuit Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects the accelerator pedal position 2 (APP2) is out of self-test range low.
PCM (powertrain control module) P2128:00	Throttle/Pedal Position Sensor/Switch 'E' Circuit High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the accelerator pedal position 2 (APP2) is out of self-test range high.
PCM (powertrain control	Throttle/Pedal Position Sensor/Switch 'D'/'E' Voltage Correlation:	Sets when the PCM (powertrain control module) detects the APP (accelerator pedal position) sensor inputs APP1 and APP2 disagree on the position of the accelerator pedal by greater than an expected value. The PCM (powertrain control module)

Accelerator Pedal

310-02 Acceleration Control	***2022 F-150***
Removal and Installation	***Procedure revision date: 04/13/2021***

Accelerator Pedal

Removal

NOTE

Removal steps in this procedure may contain installation details.

NOTE

To prevent setting Diagnostic Trouble Codes (DTCs), make sure the ignition switch is in the OFF position prior to disconnecting the accelerator pedal electrical connector.

NOTE

Vehicles with adjustable pedals, position the driver's seat to the full rearward position and, if possible, adjust the pedals to the full forward position.

Vehicles equipped with adjustable pedals

1. Release the clips to open the access panel, remove the bolts and the access panel.

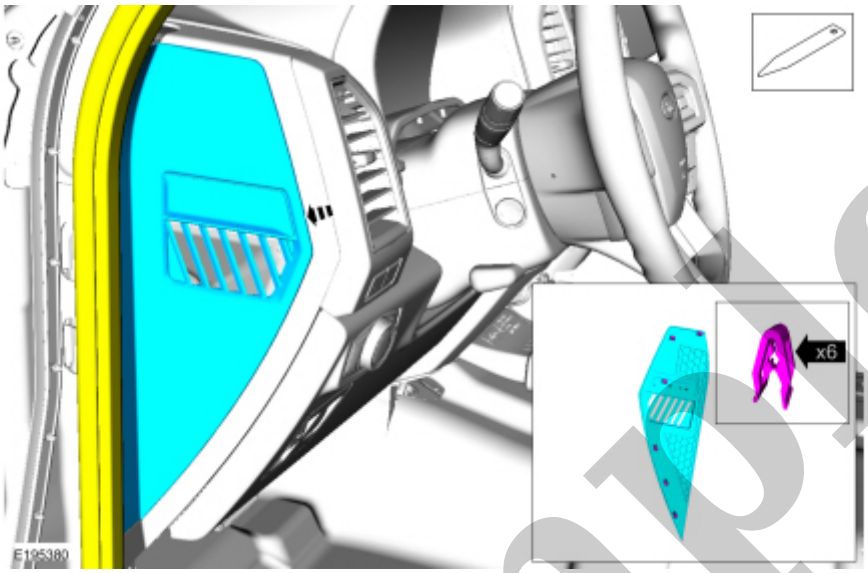
   Torque : 22 lb.in (2.5 Nm)

3. **NOTE**

   The door frame weather strip may need to be partially relocated.

   Release the clips and remove the LH (left-hand) instrument panel finish panel.

   Use the General Equipment: Interior Trim Remover



Click here to learn about symbols, color coding, and icons used in this manual.

4. Remove the following items:

   1. Release the clips and remove the LH instrument panel finish panel.
   2. Remove the bezel assembly instrument panel cover upper mounting screw.

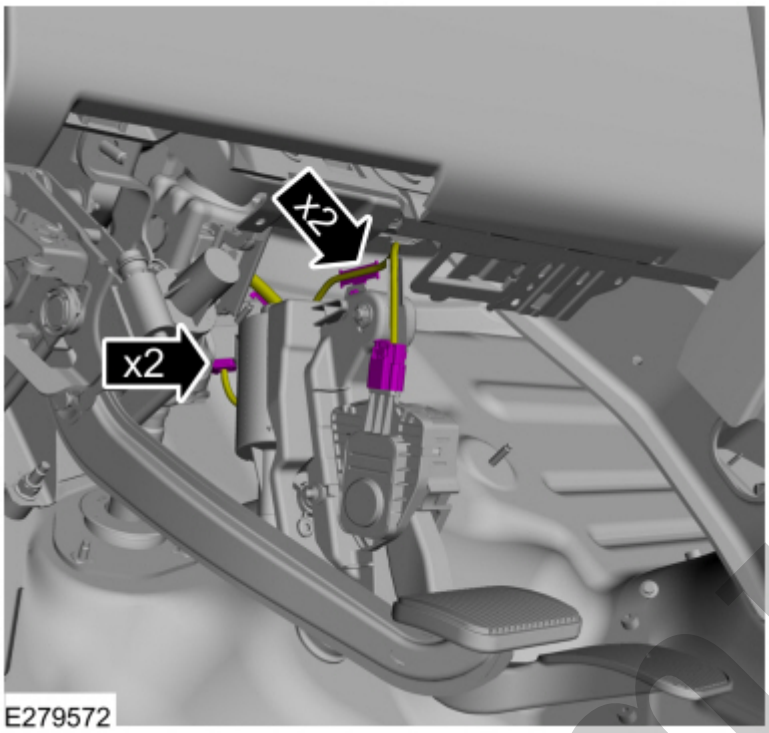
      Torque : 27 lb.in (3 Nm)

   3. Pull out the bezel assembly instrument cover by detaching the 7 clips and position the cover downward.

Click here to learn about symbols, color coding, and icons used in this manual.

7. • Disconnect the 2 accelerator pedal electrical connectors.

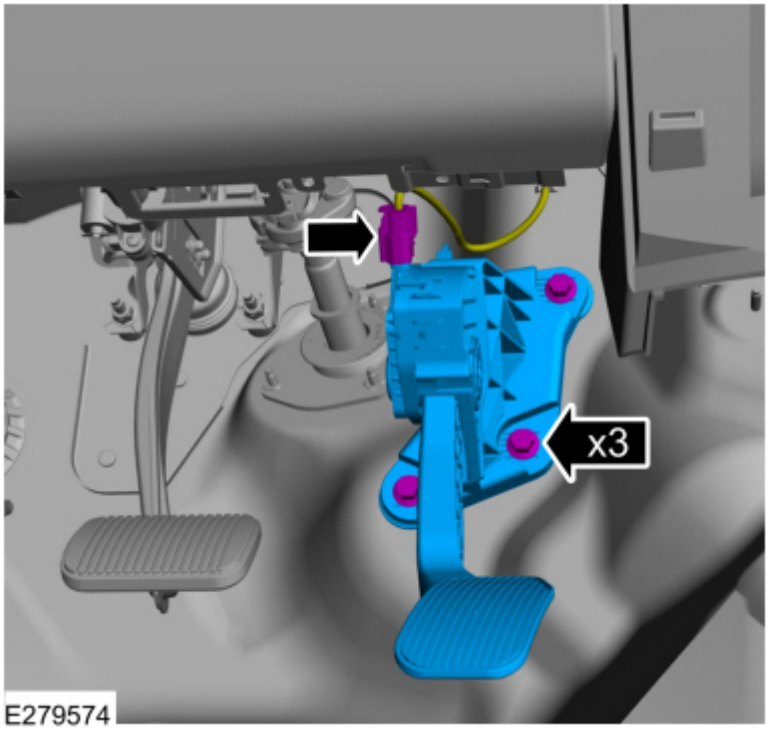
   • Remove the wiring harness clips.



Click here to learn about symbols, color coding, and icons used in this manual.

8. • Remove the 3 bolts and the accelerator pedal assembly.

   Torque : 155 lb.in (17.5 Nm)



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

1. To install, reverse the removal procedure.

- The fuel pump logic is defined in the fuel system control strategy and executed by the PCM (powertrain control module) .
- The fuel pump control module relay is located inside the battery junction box. The fuel pump control module relay provides voltage to the fuel pump control module.
- The PCM (powertrain control module) commands a duty cycle to the fuel pump control module. The fuel pump control module reports diagnostic information to the PCM (powertrain control module) . The fuel pump control module controls the voltage to the FP based on the duty cycle request from the PCM (powertrain control module) . Voltage for the fuel pump is supplied by the fuel pump control module relay.
- For vehicles with gasoline direct fuel injection, a fuel pressure sensor monitors the low pressure fuel system.
- For vehicles with gasoline direct fuel injection, the fuel injection pump raises fuel system pressure to as high as 15 MPa (2175 psi), and delivers it to the fuel rail.
- The fuel injector is a solenoid operated valve that meters the fuel flow to each combustion cylinder. The fuel injector is opened and closed a constant number of times per crankshaft revolution. The amount of fuel is controlled by the length of time the fuel injector is held open. The fuel injector is normally closed and is operated by the PCM (powertrain control module) .
- There are 3 to 5 filtering or screening devices in the fuel delivery system.
- The FP assembly contains the fuel pump, the fuel pressure regulator, lifetime fuel filter and the fuel sender assembly. The fuel pressure regulator is attached to the FP assembly and regulates the pressure of the fuel supplied to the fuel injectors. The fuel pressure regulator controls the pressure of the clean fuel as the fuel returns from the fuel filter. The fuel pressure regulator is a diaphragm operated relief valve. Fuel pressure is established by a spring preload applied to the diaphragm. The FP assembly is located in the fuel tank.

Fuel Pump Control

The FP signal is a duty cycle command sent from the PCM (powertrain control module) to the fuel pump control module. The fuel pump control module uses the FP command to operate the fuel pump at the speed requested by the PCM (powertrain control module) or to turn the fuel pump OFF. A valid duty cycle to command the fuel pump ON, is in the range of 15-47%. The fuel pump control module doubles the received duty cycle and provides this voltage to the fuel pump as a percent of the battery voltage. When the ignition is turned ON, the fuel pump runs for about 1 second and is requested OFF by the PCM if engine rotation is not detected.

Fuel Pump Duty Cycle Output From PCM

80%	This duty cycle indicates the fuel pump control module is detecting a concern with the secondary circuits.

Fuel Filters

The system contains 3 to 5 filtering or screening devices.

- The fuel intake filter or screen is a fine nylon mesh filter mounted on the intake side of the fuel pump. It is part of the assembly and cannot be repaired separately.
- The filter/screen at the fuel rail port of the injectors is part of the fuel injector assembly and cannot be repaired separately
- The filter/screen at fuel inlet side of the fuel pressure regulator is part of the regulator assembly and cannot be repaired separately.
- The fuel filter assembly is located between the fuel pump and injectors. This filter may be a lifetime fuel filter located in the fuel pump assembly or an external 3 port inline filter that allows clean fuel to return to the fuel tank. A new filter may be installed for the external filter.
- The fuel filter sock is located on the fuel pump assembly between the reservoir and the fuel tank.The fuel filter sock is located on the fuel pump assembly between the reservoir and the fuel tank.

Component Description

Fuel Pump (FP) Assembly

The FP assembly contains the fuel pump and sender assembly. The fuel pump is located inside the FP assembly reservoir and supplies fuel through the FP assembly manifold to the engine and FP assembly jet pump. The jet pump continuously refills the reservoir with fuel, and a check valve located in the manifold outlet maintains system pressure when the fuel pump is not energized. A flapper valve located in the bottom of the reservoir allows fuel to enter the reservoir and prime the fuel pump during the initial fill.

Fuel Pump Control Module

The fuel pump control module receives a duty cycle signal from the PCM (powertrain control module) and controls the fuel pump operation in relation to this duty cycle. The PCM (powertrain control module) requests low or high speed fuel pump operation depending on engine fuel demand. The fuel pump control module controls the fuel pump by switching the fuel pump power circuit ON and OFF at the required duty cycle. The fuel pump control module sends diagnostic information to the PCM (powertrain control module) on the FPM circuit.

The high pressure fuel system may be under vacuum after several hours of cold soak. Fuel vapor may collect at the fuel injection pump, causing a long start condition. To prevent this, the fuel pump relay is energized, depending on application, when the PCM (powertrain control module) reveives a calibrated signal. This

Fuel Tank and Lines

310-01A Fuel Tank and Lines - 2.7L EcoBoost (238kW/324PS)	***2022 F-150***
Diagnosis and Testing	***Procedure revision date: 09/26/2022***

Fuel Tank and Lines

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
PCM (powertrain control module)	P008A:00	Low Pressure Fuel System Pressure - Too Low: No Sub Type Information	GO to Pinpoint Test HC
PCM (powertrain control module)	P008B:00	Low Pressure Fuel System Pressure - Too High: No Sub Type Information	GO to Pinpoint Test HC
PCM (powertrain control module)	P0230:00	Fuel Pump Primary Circuit: No Sub Type Information	GO to Pinpoint Test KC
PCM (powertrain control module)	P025A:00	Fuel Pump Module A Control Circuit/Open: No Sub Type Information	GO to Pinpoint Test KC

WARNING

Before working on or disconnecting any of the fuel tubes or fuel system components, relieve the fuel system pressure to prevent accidental spraying of fuel. Fuel in the fuel system remains under high pressure, even when the engine is not running. Failure to follow this instruction may result in serious personal injury.

WARNING

Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING

Do not carry personal electronic devices such as cell phones, pagers or audio equipment of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING

When handling fuel, always observe fuel handling precautions and be prepared in the event of fuel spillage. Spilled fuel may be ignited by hot vehicle components or other ignition sources. Failure to follow these instructions may result in serious personal injury.

WARNING

Clean all fuel residue from the engine compartment. If not removed, fuel residue may ignite when the engine is returned to operation. Failure to follow this instruction may result in serious personal injury.

WARNING

Fuel may remain pressurized in some fuel lines after the Fuel System Pressure Release procedure. Wear safety gloves and a face shield when disconnecting pressure lines to avoid skin and eye contact. Failure to follow this instruction may result in serious personal injury.

NOTE