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.

2023 Ford Maverick Service and Repair Manual

Go to manual page

PCM (powertrain control module)	P2C27:00	Fuel Injector Group B Supply Sense Circuit Low: No Sub Type Information	GO to Pinpoint Test KG
PCM (powertrain control module)	P2C28:00	Fuel Injector Group B Supply Sense Circuit High: No Sub Type Information	GO to Pinpoint Test KG

Symptom Chart

Symptom	Possible Sources	Action
• The engine runs rough at idle.	• Refer to the pinpoint test.	• GO to Pinpoint Test KG

Pinpoint Tests

PINPOINT TEST DI : DIRECT FUEL INJECTION FUEL INJECTOR

NOTICE

Do not apply battery voltage across the fuel injector circuits. Permanent damage to the fuel injector can result.

Normal Operation and Fault Conditions

Refer to the DTC (diagnostic trouble code) Fault Trigger Conditions.

The PCM (powertrain control module) monitors the operation of the fuel injector drivers.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0201:00	Cylinder 1 Injector 'A' Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel injector circuitry is inoperative.
PCM (powertrain control module) P0202:00	Cylinder 2 Injector 'A' Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel injector circuitry is inoperative.
PCM (powertrain control module)	Cylinder 3 Injector 'A' Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel injector circuitry is

PCM (powertrain control module) P02F3:00	Cylinder 6 Injector Circuit Range/Performance: No Sub Type Information	Sets when the PCM (powertrain control module) detects the output voltage of the fuel injector control circuit is outside of the calibrated limit.

Possible Sources

- Fuel injector circuitry concern
- Fuel injector (9F593)
- PCM (powertrain control module) (12A650)

Pinpoint Test Steps available in the on-line Workshop Manual.

PINPOINT TEST KG : FUEL INJECTOR

Normal Operation and Fault Conditions

Refer to the DTC (diagnostic trouble code) Fault Trigger Conditions.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P2149:00	Fuel Injector Group 'B' Supply Voltage Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the injector relay voltage is less than the calibrated threshold. This DTC (diagnostic trouble code) also sets when a concern is detected in the INJRLY circuit.
PCM (powertrain control module) P21CF:00	Cylinder 1 Injector 'B' Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel injector circuitry is inoperative. The comprehensive component monitor (CCM) monitors the operation of the fuel injector drivers in the PCM (powertrain control module) .
PCM (powertrain control module) P21D0:00	Cylinder 2 Injector 'B' Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel injector circuitry is inoperative. The comprehensive component monitor (CCM) monitors the operation of the fuel injector drivers in the PCM (powertrain control module) .

Pinpoint Test Steps available in the on-line Workshop Manual.

PCM (powertrain control module)	P0193:00	Fuel Rail Pressure Sensor Circuit High (Bank 1): No Sub Type Information	GO to Pinpoint Test DD

Global Customer Symptom Code (GCSC) 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).

Global Customer Symptom Code Chart

Customer Symptom	Action
Start/Run/Move > Starting > Hard Start/Long Crank > Always	GO to Pinpoint Test DD
Driving Performance > Poor Fuel Economy > Combined > Unloaded	GO to Pinpoint Test DD

Pinpoint Tests

PINPOINT TEST DD : FUEL PRESSURE, FUEL RAIL PRESSURE (FRP) AND FUEL RAIL PRESSURE TEMPERATURE (FRPT) SENSORS

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

PCM (powertrain control module) P0088:00	Fuel Rail/System Pressure - Too High (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel rail pressure requested by the PCM (powertrain control module) is less than the fuel rail pressure delivered, by more than a calibrated threshold for greater than a calibrated length of time.
PCM (powertrain control module) P018C:00	Fuel Pressure Sensor 'B' Circuit Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel pressure sensor circuit is shorted to signal return or ground. A fuel pressure sensor PID (parameter identification) value during ignition ON, engine OFF, or ignition ON, engine running, less than 0.3 volt indicates a concern is present.
PCM (powertrain control module) P018D:00	Fuel Pressure Sensor 'B' Circuit High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the fuel pressure sensor circuit is open or shorted to voltage.
PCM (powertrain control module) P0192:00	Fuel Rail Pressure Sensor Circuit Low (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects the FRP (fuel rail pressure) circuit is shorted to SIGRTN or ground. A FRP (fuel rail pressure) sensor PID (parameter identification) value during ignition ON, engine OFF, or ignition ON, engine running, less than 0.3 volt indicates a concern is present.
PCM (powertrain control module) P0193:00	Fuel Rail Pressure Sensor Circuit High (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects the FRP (fuel rail pressure) circuit is open or shorted to voltage.

Possible Sources

- FRP (fuel rail pressure) sensor circuitry concern
- Low fuel level
- Fuel filter
- Fuel supply line
- Fuel pump module
- Fuel injection pump
- Low ambient temperature operation
- Fuel pressure sensor (9F972)
- FRP (fuel rail pressure) sensor (6B288)
- PCM (powertrain control module) (12A650)

Pinpoint Test Steps available in the on-line Workshop Manual.

High-Pressure Fuel System

303-04C Fuel Charging and Controls - 3.5L EcoBoost (BM)	***2022 F-150***
Diagnosis and Testing	***Procedure revision date: 11/5/2020***

High-Pressure Fuel System

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)	P0001:00	Fuel Volume Regulator Control Circuit/Open: No Sub Type Information	GO to Pinpoint Test HP
PCM (powertrain control module)	P0003:00	Fuel Volume Regulator Control Circuit Low: No Sub Type Information	GO to Pinpoint Test HP
PCM (powertrain control module)	P0004:00	Fuel Volume Regulator Control Circuit High: No Sub Type Information	GO to Pinpoint Test HP
PCM (powertrain control module)	P0087:00	Fuel Rail/System Pressure - Too Low (Bank 1): No Sub Type Information	GO to Pinpoint Test HP
PCM (powertrain control module)	P0088:00	Fuel Rail/System Pressure - Too High (Bank 1): No Sub Type Information	GO to Pinpoint Test HP

PCM (powertrain control module) P0001:00	Fuel Volume Regulator 'A' Control Circuit/Open: No Sub Type Information	Sets when the PCM (powertrain control module) detects high or low voltage from the fuel volume regulator (FVR) and fuel volume regulator return (FVRRTN) circuits.
PCM (powertrain control module) P0003:00	Fuel Volume Regulator 'A' Control Circuit Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects high or low voltage from the fuel volume regulator (FVR) and fuel volume regulator return (FVRRTN) circuits. A FVRRTN circuit short to ground may damage the solenoid coil. If P0001 is retrieved after a circuit repair, check the solenoid coil for an open circuit.
PCM (powertrain control module) P0004:00	Fuel Volume Regulator 'A' Control Circuit High: No Sub Type Information	Sets when the PCM (powertrain control module) detects high or low voltage from the fuel volume regulator (FVR) and fuel volume regulator return (FVRRTN) circuits.
PCM (powertrain control module) P0087:00	Fuel Rail/System Pressure - Too Low (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects it is no longer capable of maintaining the fuel pressure within the calibrated parameters. The PCM (powertrain control module) regulates the fuel rail pressure by controlling the fuel volume regulator. Diagnose any FRP and FVR circuit Diagnostic Trouble Codes (DTCs) first.
PCM (powertrain control module) P0088:00	Fuel Rail/System Pressure - Too High (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects it is no longer capable of maintaining the fuel pressure within the calibrated parameters. The PCM (powertrain control module) regulates the fuel rail pressure by controlling the fuel volume regulator.
PCM (powertrain control module) P00C6:00	Fuel Rail Pressure Too Low - Engine Cranking (Bank 1): No Sub Type Information	Sets when the PCM (powertrain control module) detects the high pressure fuel system cannot achieve the threshold within certain time and crankshaft rotation limits; the PCM (powertrain control module) attempts to start the engine at fuel pump assembly pressure. The high pressure fuel system must reach a minimum pressure threshold before the engine can be started. The high pressure fuel system must reach a minimum pressure threshold before the engine can be started.

Direct Injection Fuel Rail LH

303-04C Fuel Charging and Controls - 3.5L EcoBoost (BM)	***2022 F-150***
Removal and Installation	***Procedure revision date: 10/1/2020***

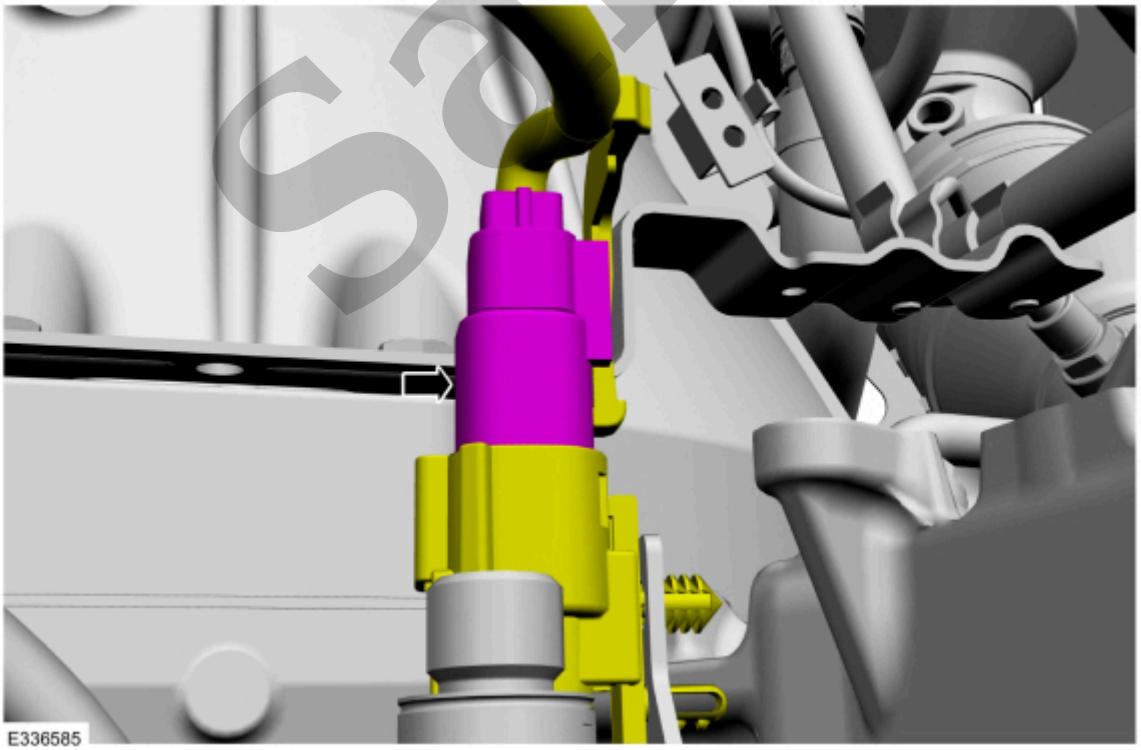
Direct Injection Fuel Rail LH

Removal

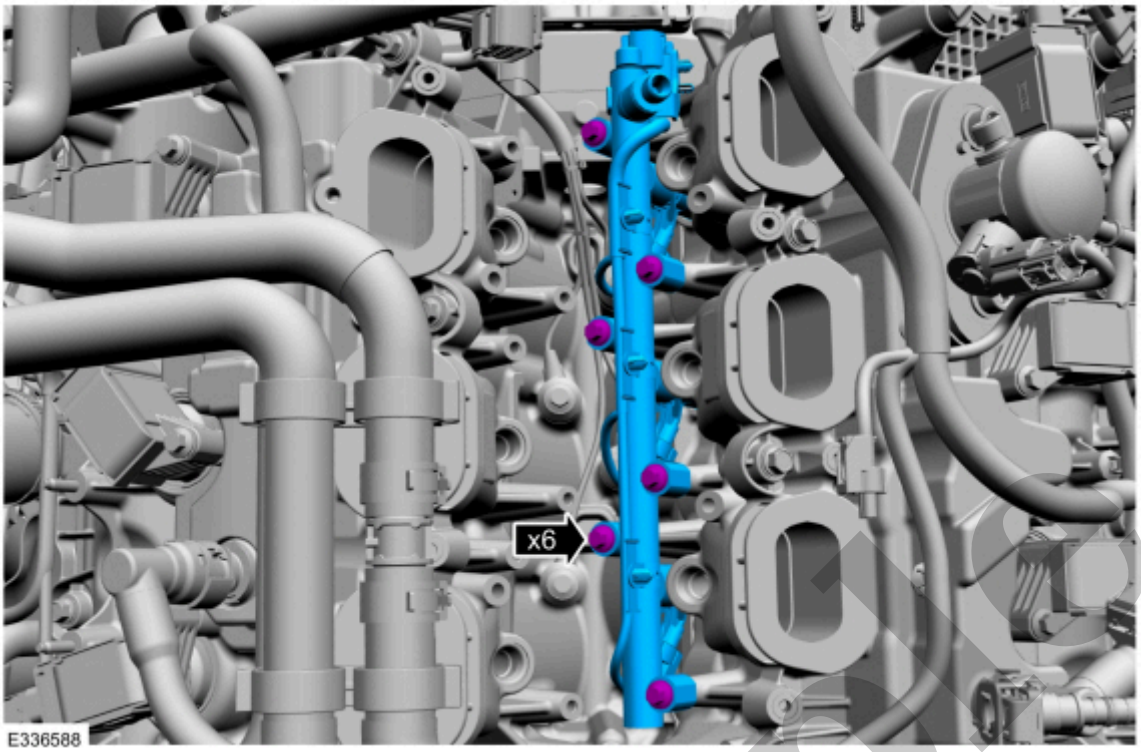
1. Remove the direct injection fuel rail RH.

   Refer to: Direct Injection Fuel Rail RH(303-04D Fuel Charging and Controls - 3.5L V6 PowerBoost (CN), Removal and Installation).

2. Disconnect the fuel injector main harness electrical connector.

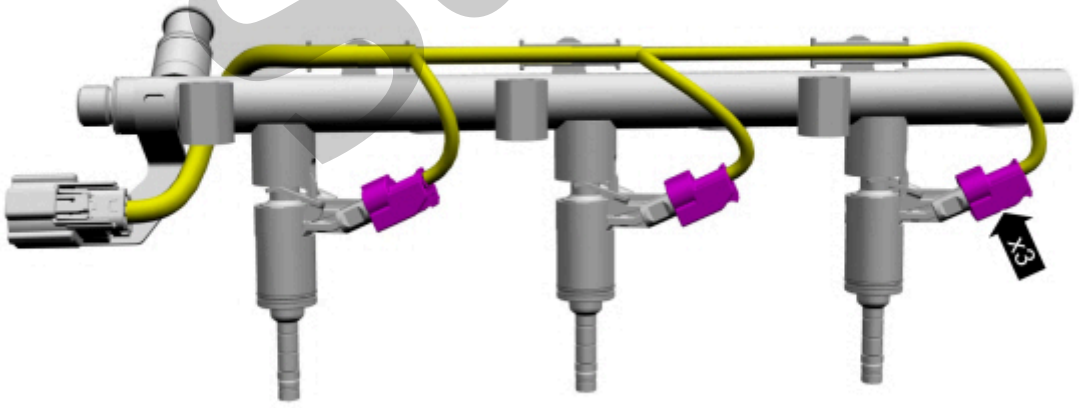


allow the injector to be removed by hand.



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

5. Disconnect the fuel injector electrical connectors



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