

SECTION 303-04C: Fuel Charging and Controls — 5.0L (4V)
REMOVAL AND INSTALLATION

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Fuel Rail

Material

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil XO-5W20-QSP (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil CXO-5W20-LSP12 (Canada); or equivalent	WSS-M2C930-A

Removal



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: 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 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: 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: Always disconnect the battery ground cable at the battery when working on an evaporative emission (EVAP) system or fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

1. Release the fuel system pressure. For additional information refer to [Section 310-00](#).
2. Disconnect the battery ground cable. For additional information, refer to [Section 414-01](#).
3. Disconnect the 2 Evaporative Emission (EVAP) tube retaining clips from the fuel rail.
4. Remove the LH and RH fuel rail insulators.
5. Disconnect the 8 fuel injector electrical connectors.

6. Disconnect the fuel supply tube. For additional information, refer to the quick connect procedure in [Section 310-00](#).
7. Remove the 4 fuel rail bolts.
8. Remove the fuel rail and fuel injectors as an assembly from the intake manifold.
9. Remove the retaining clips and fuel injectors from the fuel rail.
10. **NOTICE: Do not reuse the O-ring seals. Failure to follow this direction may cause the fuel system to leak.**

Remove and discard the fuel injector O-ring seals.

Installation

1. **NOTICE: Use O-ring seals that are made of special fuel-resistant material. Use of ordinary O-ring seals may cause the fuel system to leak.**

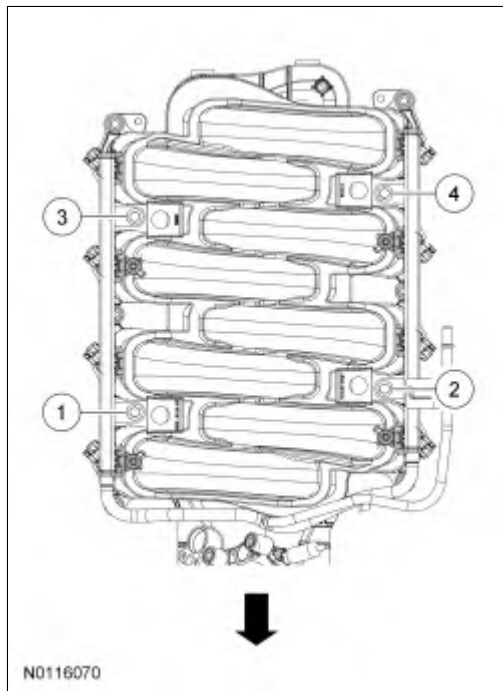
Install new O-ring seals on the fuel injectors.

2. **NOTE:** The fuel injector clip can be reused if it is not damaged during removal. If the clip is reused, the 2 sides of the clip should be squeezed back into shape by placing it between index finger and thumb.

NOTE: Lubricate the upper and lower fuel injector O-ring seals with clean engine oil prior to installation.

Install the fuel injectors and retaining clips onto the fuel rail.

3. Install the fuel rail and fuel injectors as an assembly onto the intake manifold.
4. Install the 4 bolts and tighten in the sequence shown in 3 stages.
 - Stage 1: Hand tighten.
 - Stage 2: Tighten to 10 Nm (89 lb-in).
 - Stage 3: Tighten an additional 90 degrees.



5. Connect the fuel supply tube. For additional information, refer to the quick connect procedure in [Section 310-00](#).
 6. Connect the 8 fuel injector electrical connectors.
 7. Install the LH and RH fuel rail insulators.
 8. Connect the 2 EVAP tube retaining clips to the fuel rail.
 9. Connect the battery ground cable. For additional information, refer to [Section 414-01](#).
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