
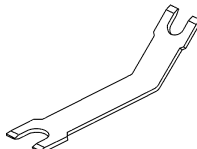
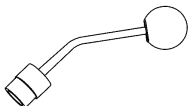


## REMOVAL AND INSTALLATION

### Fuel Injectors — Early Build

#### Special Tool(s)

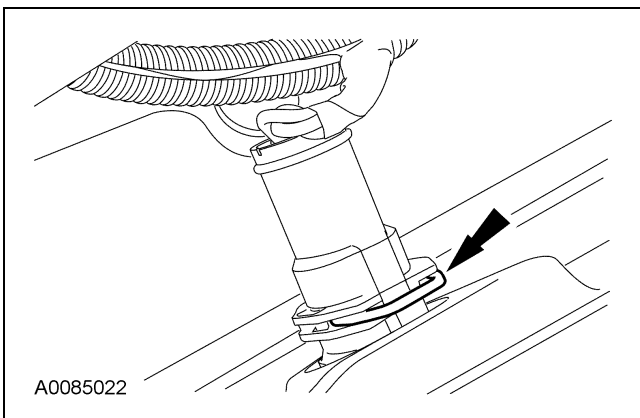
 <p>ST2247-A</p>	<p>Quick Disconnect Tool 303-625</p>
 <p>ST2703-A</p>	<p>Disconnect Tool, Quick Release Coupling 303-755</p>
 <p>ST2862-A</p>	<p>Release Tool, Injector Connector 303-1115</p>

#### Material

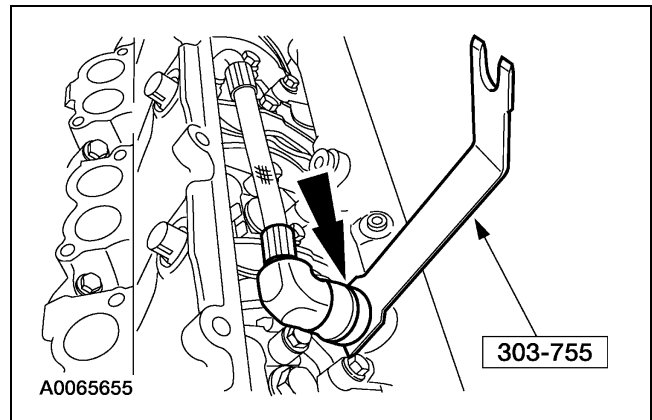
Item	Specification
<p>SAE 15W-40 Super Duty Motor Oil XO-15W40-QSD or equivalent</p>	<p>WSS-M2C171-B</p>

#### Removal

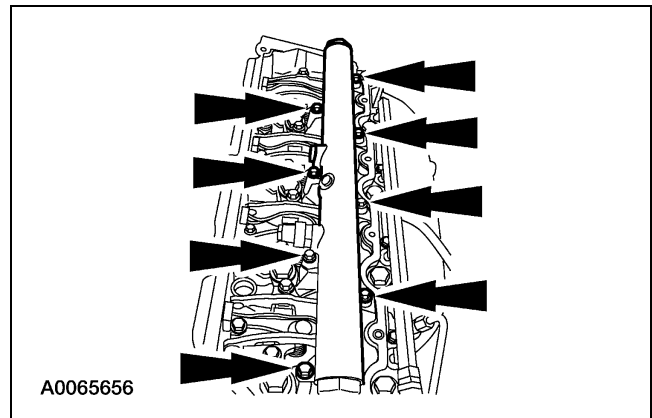
1. Remove the valve cover. For additional information, refer to Section 303-01C.
2. Disconnect the fuel injector electrical connector.



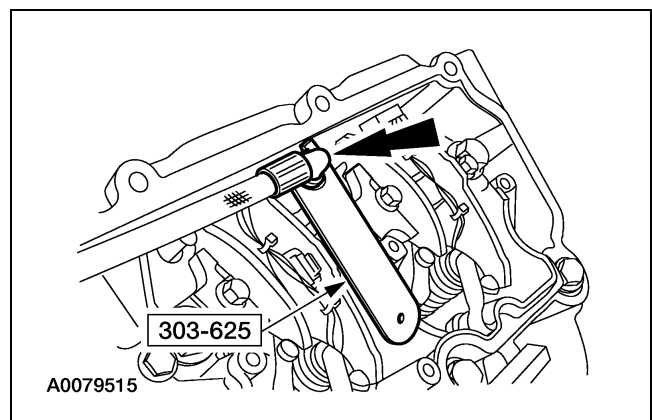
3. Disconnect the high-pressure oil rail supply line at the high-pressure oil rail.



4. Remove the bolts and the high-pressure oil rail.



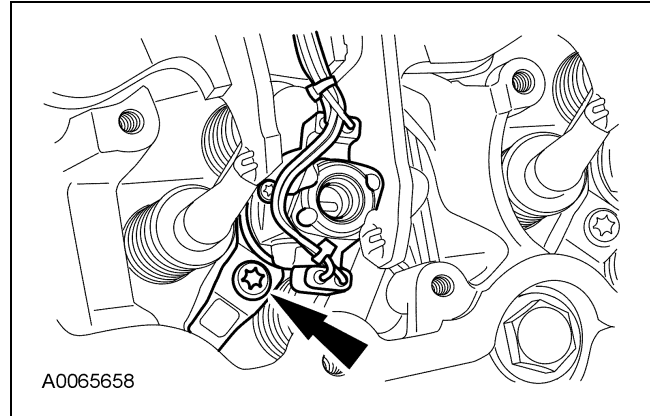
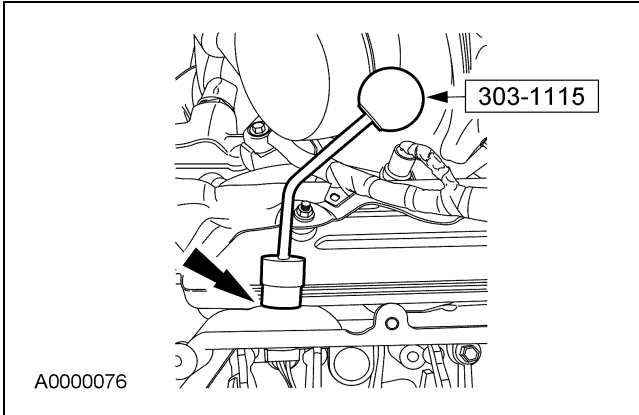
5. Disconnect and remove the high-pressure oil supply line.



**REMOVAL AND INSTALLATION (Continued)**

6. **⚠ CAUTION: Do not attempt to apply battery voltage to the fuel injector or damage to the fuel injector will occur.**

Using the special tool, push the fuel injector electrical connector out of the rocker arm carrier.

**Installation**

1. **⚠ CAUTION: If the fuel injector oil inlet D-shaped O-ring is damaged, a new fuel injector must be installed.**

Install new O-ring seals and copper washer on the fuel injector. Lubricate the fuel injector and O-ring seals liberally with clean engine oil.

7. Prior to removing the injector assembly, insert clean shop towels in the oil drain holes adjacent to each glow plug.

8. **⚠ CAUTION: Failure to account for all snap rings or pieces prior to placing the vehicle back in service can cause engine damage. A missing snap ring can be ingested into the lube oil system, causing severe engine damage.**

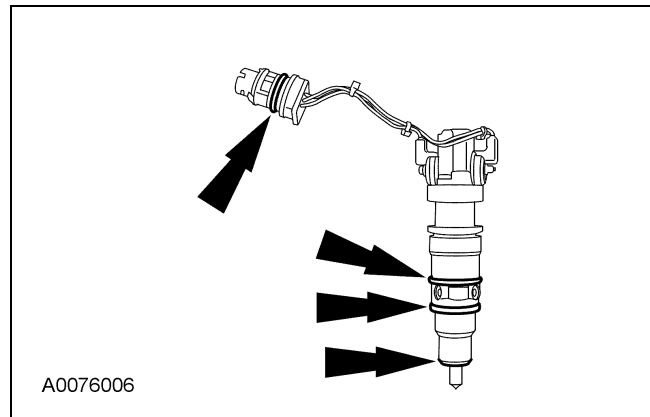
**⚠ CAUTION: To prevent engine damage, do not use air tools to remove the fuel injectors. The clip that extracts the injector can dislodge and fall into the oil drain hole.**

**NOTE:** There is no need to drain the fuel rail.

**NOTE:** If engine coolant is found in the combustion chambers, it may be necessary to install a new injector sleeve. For additional information, refer to Fuel Injector Sleeve in this section.

**NOTE:** Use a tool like Snap-On SDMT440 torx to avoid damaging the fuel injector plastic and to avoid interference with the evaporator case.

Remove the bolt, fuel injector hold-down clamp and fuel injector.

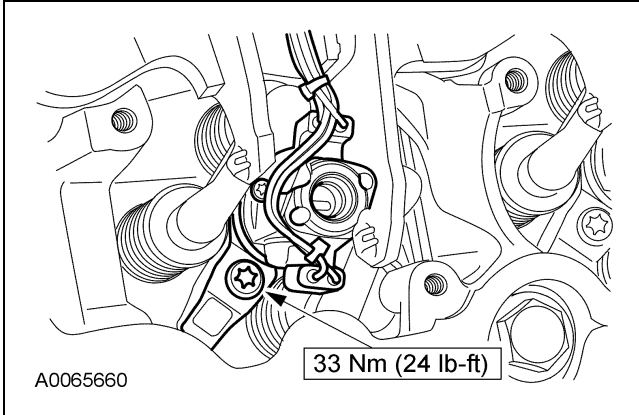


**REMOVAL AND INSTALLATION (Continued)**

2. **⚠ CAUTION:** Failure to tighten the injector properly can lead to engine failure.

**⚠ CAUTION:** To prevent engine damage, do not use air tools to install the fuel injectors. The clip that extracts the injector can dislodge and fall into the oil drain hole.

Install the fuel injector, fuel injector hold-down clamp and bolt.

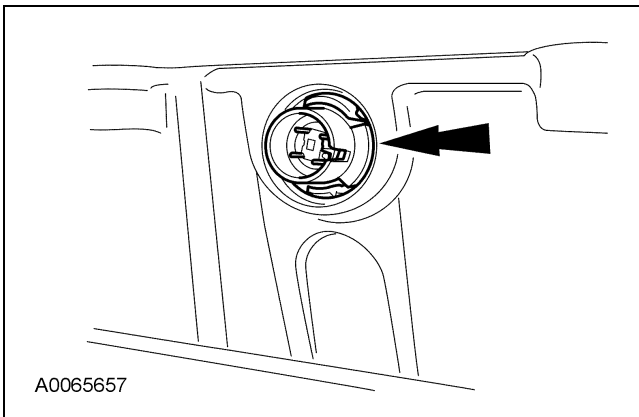


3. **NOTE:** If a snap ring or piece of a snap ring is missing from the injector hold-down assembly, it must be located prior to removing the shop towels.

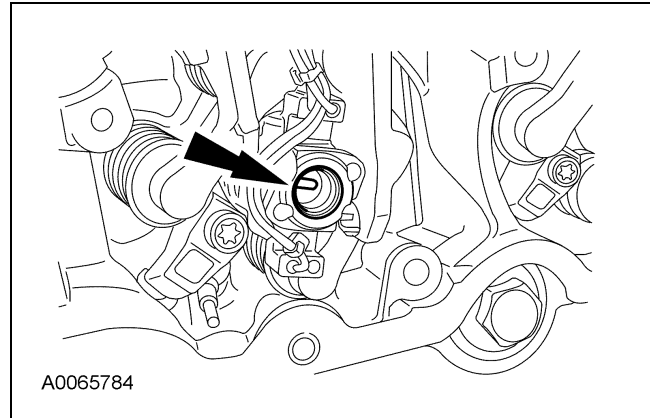
Remove the shop towels.

4. **⚠ CAUTION:** Make sure the injector wiring is clear of all moving parts or engine damage can occur.

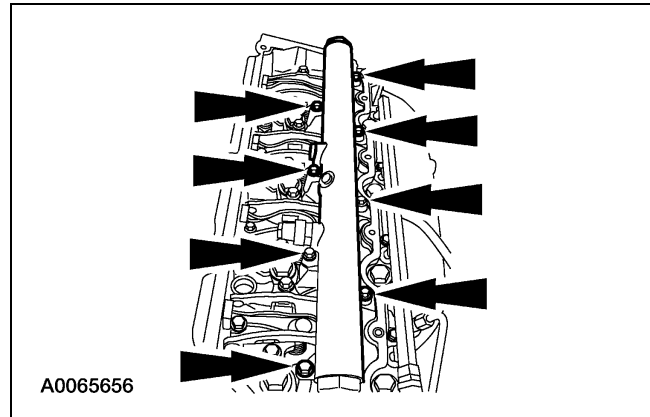
Install the fuel injector electrical connector into the rocker carrier.



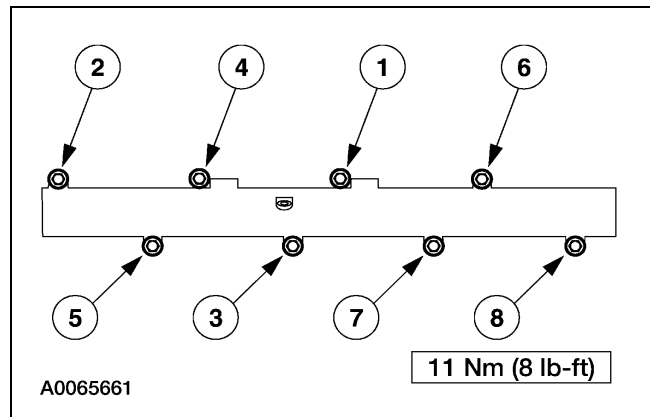
5. Apply engine oil to the top fuel injector O-ring seals.



6. Install the high-pressure oil rail and bolts.
- Install the high-pressure oil rail.
  - Install the bolts finger tight.

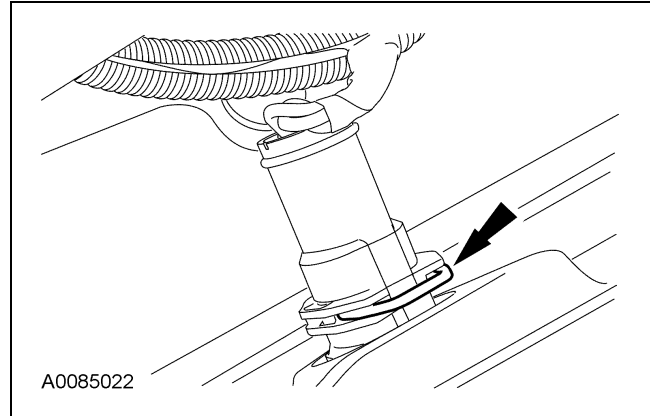
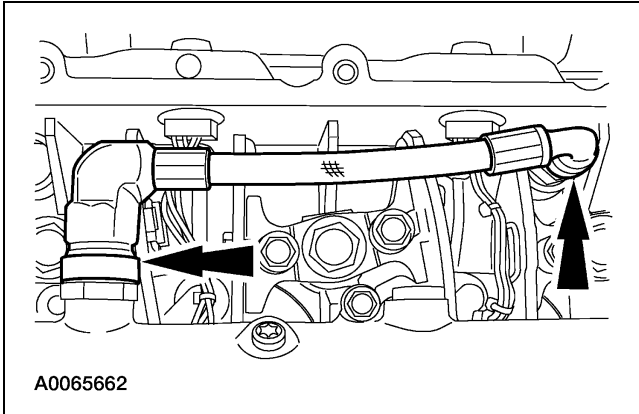


7. Tighten the bolts in the sequence shown.



**REMOVAL AND INSTALLATION (Continued)**

8. Install the high-pressure oil line.



9. Connect the fuel injector electrical connector.

10. Install the valve covers. For additional information, refer to Section 303-01C.