

Fuel Injection Pump

Special Tool(s) / General Equipment

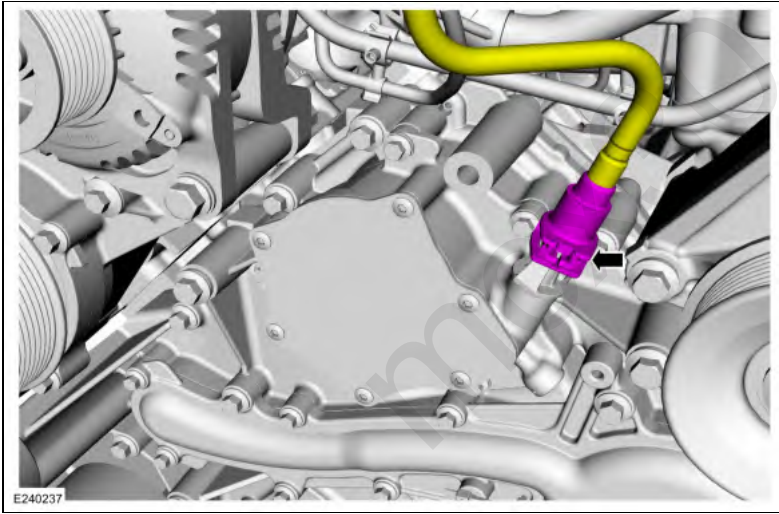
	100-002 (TOOL-4201-C) Holding Fixture with Dial Indicator Gauge
	308-021 (T75L-4201-A) Gauge, Clutch Housing

Removal

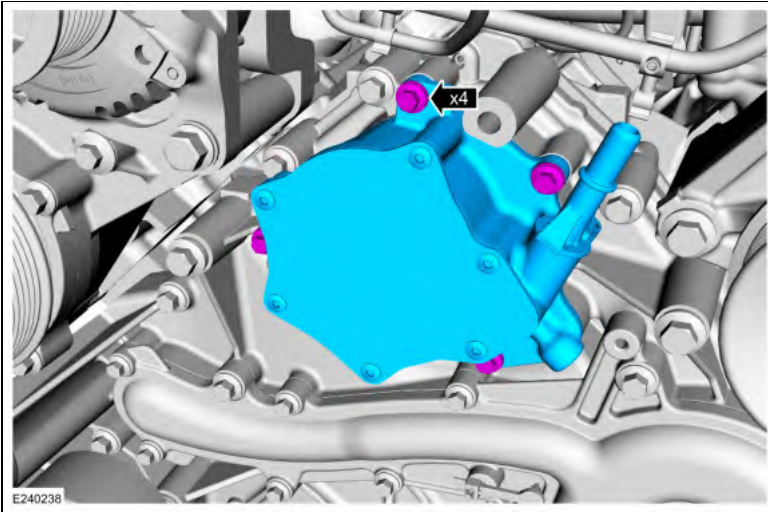
NOTICE: Do not work on the fuel system until the pressure has been released and the engine has cooled. Fuel in the high-pressure fuel system is hot and under very high pressure. High-pressure fuel may cause cuts and contact with hot fuel may cause burns. Failure to follow these instructions may result in serious personal injury.

NOTICE: Fuel injection equipment is manufactured to very precise tolerances and fine clearances. To prevent fuel system damage, it is essential that absolute cleanliness is observed when working with these components.

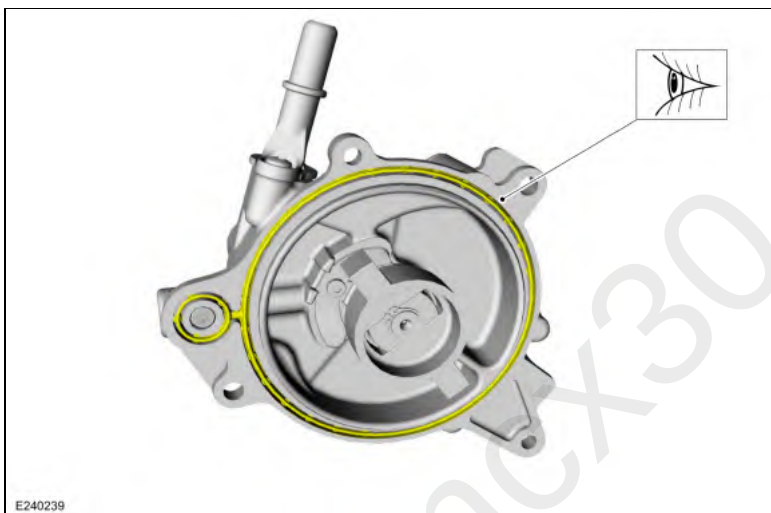
1. Remove the fuel rail supply tube.
Refer to: Fuel Rail Supply Tube (303-04B Fuel Charging and Controls - 6.7L Power Stroke Diesel, Removal and Installation).
Refer to: Fuel Rail Supply Tube (303-04 Fuel Charging and Controls - 6.7L Power Stroke Diesel) .
2. Remove the cooling fan drive assembly.
Refer to: Cooling Fan Drive Assembly (303-05 Accessory Drive - 6.7L Power Stroke Diesel) .
3. Disconnect the vacuum hose.



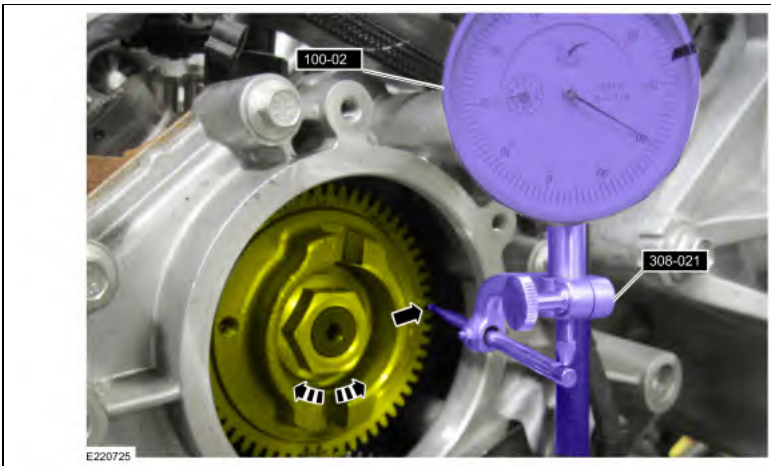
4. Remove the bolts and the vacuum pump.



5. Inspect the gasket, clean or replace as needed. Clean the mating faces.



6. Using the special tools, check the fuel injection pump drive gear backlash. Refer to "Camshaft, Gear backlash - camshaft gear to fuel injection pump". Install new components as needed.
Refer to: Specifications (303-01B Engine - 6.7L Power Stroke Diesel, Specifications).
Refer to: Specifications (303-01 Engine - 6.7L Power Stroke Diesel) .
Use Special Service Tool: 100-002 (TOOL-4201-C) Holding Fixture with Dial Indicator Gauge. , 308-021 (T75L-4201-A) Gauge, Clutch Housing.

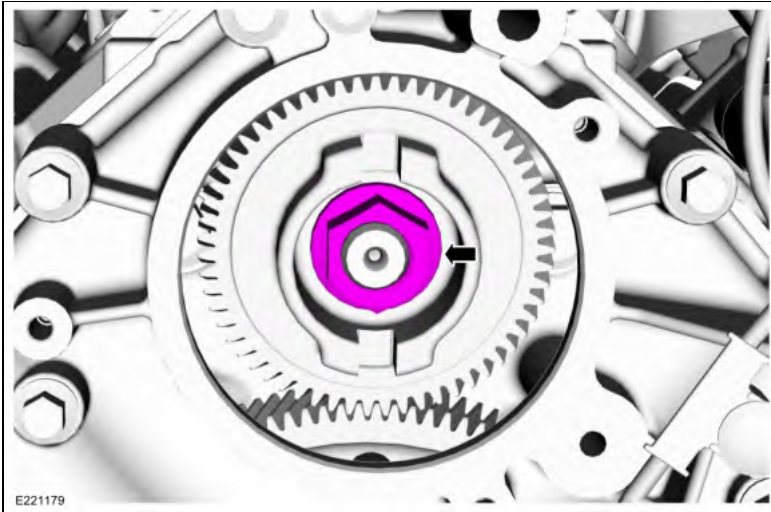


7. **NOTE:** : The crankshaft gear contains a single timing mark. The camshaft drive gear contains a single timing mark and a double timing mark. The fuel injection pump drive gear contains a double timing mark. The engine is timed correctly when the single mark on the crankshaft drive gear is aligned with the double mark on the camshaft drive gear, and the single mark on the camshaft drive gear is aligned with the double mark on the fuel injection pump drive gear. Additionally, the keyway on the fuel injection pump drive gear must be in the 12 o'clock position.

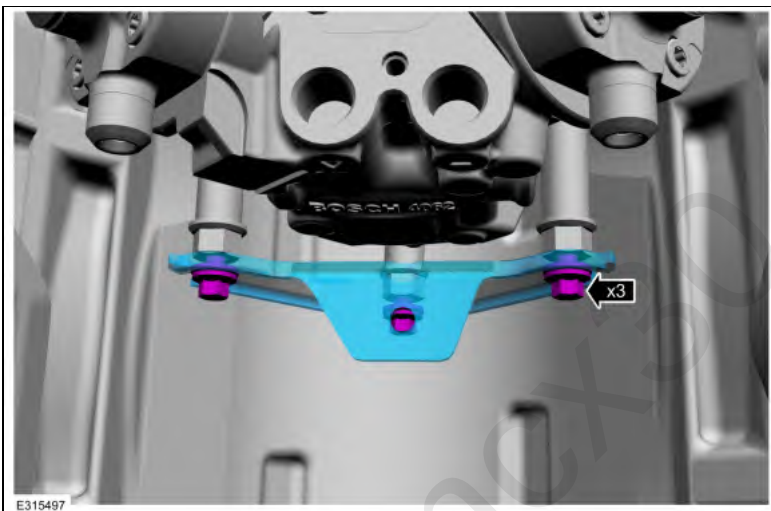
Rotate the crankshaft clockwise, as viewed from the front, until the single mark on the camshaft drive gear and the double mark on the fuel injection pump drive gear are aligned.



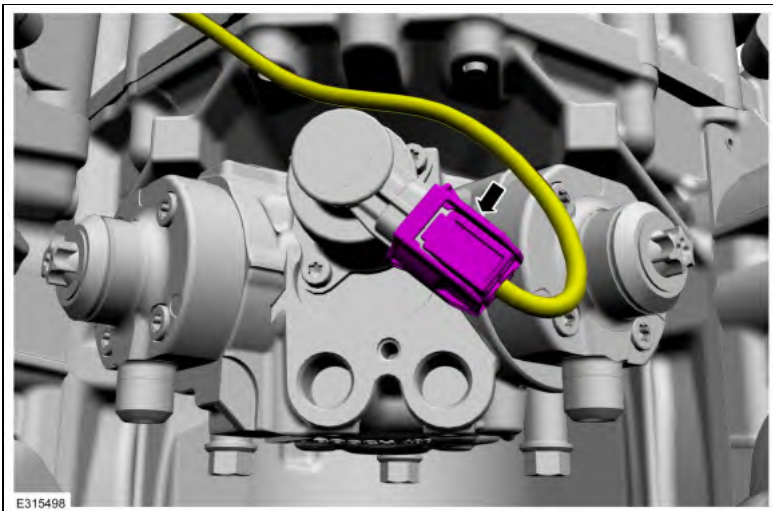
8. Remove the fuel injection pump drive gear nut.



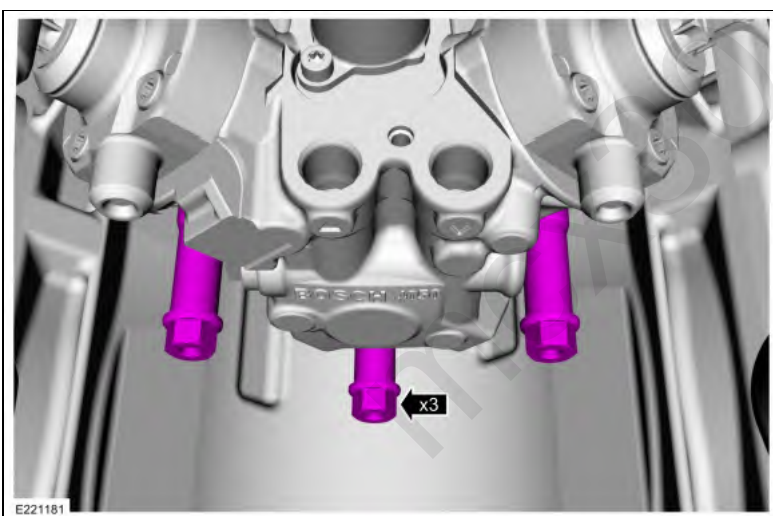
9. Remove the bolts, then remove the fuel rail supply tube bracket.



10. Disconnect the electrical connector.

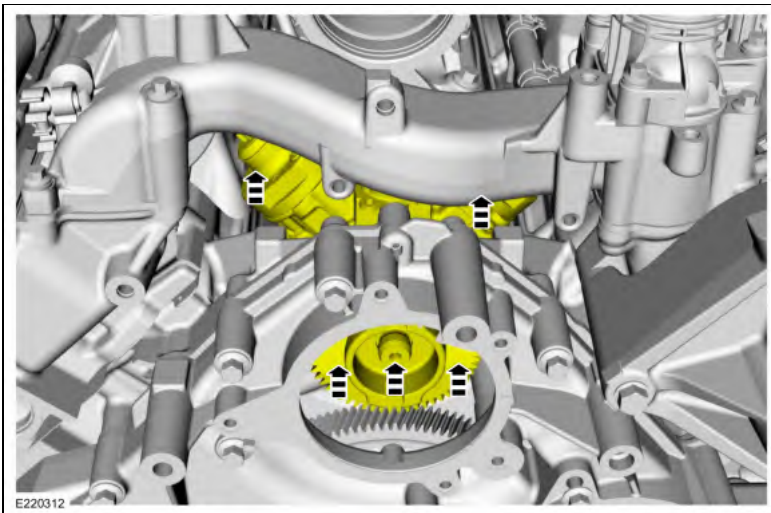


11. Remove the fuel injection pump spacers.



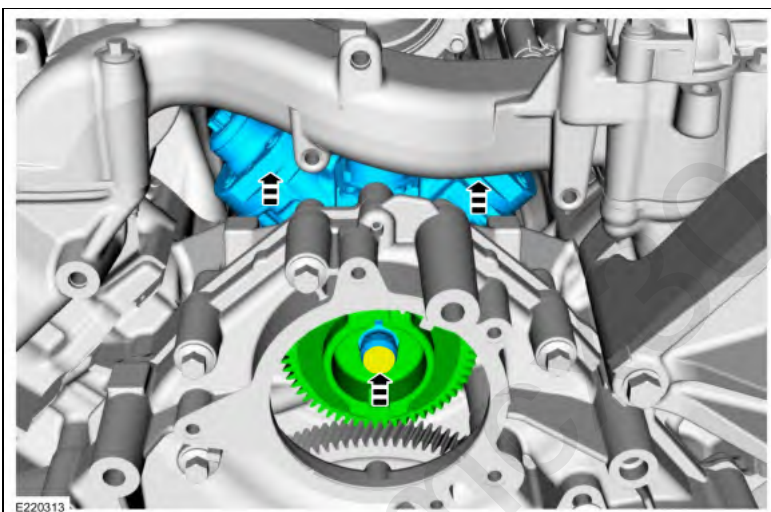
12. **NOTICE:** Do not pry against the mating surface of the fuel injection pump or damage to the fuel injection pump may occur.

Slide the fuel injection pump rearward until the fuel injection pump drive gear contacts the engine block.



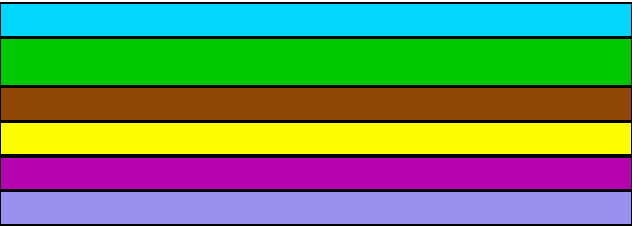
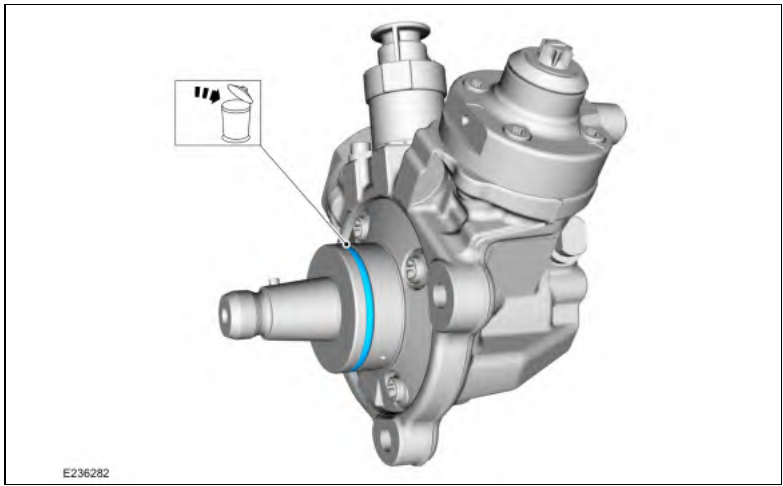
13.

- Tap the fuel injection pump shaft with a mallet to free the fuel injection pump drive gear from the fuel injection pump, slide the fuel injection pump off the mounting studs and remove the fuel injection pump.
- Remove the fuel injection pump drive gear.



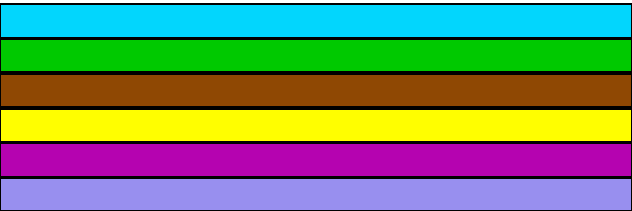
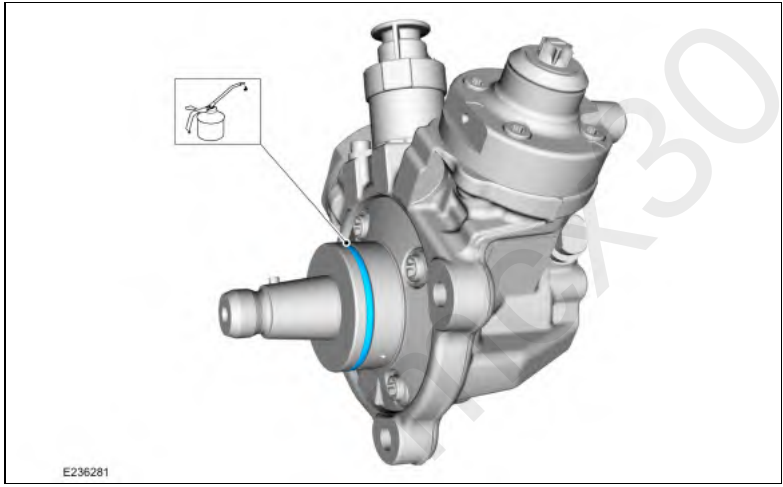
14. **NOTICE: No cleaning of the pump is permitted.**

Remove and discard the fuel injection pump O-ring seal.



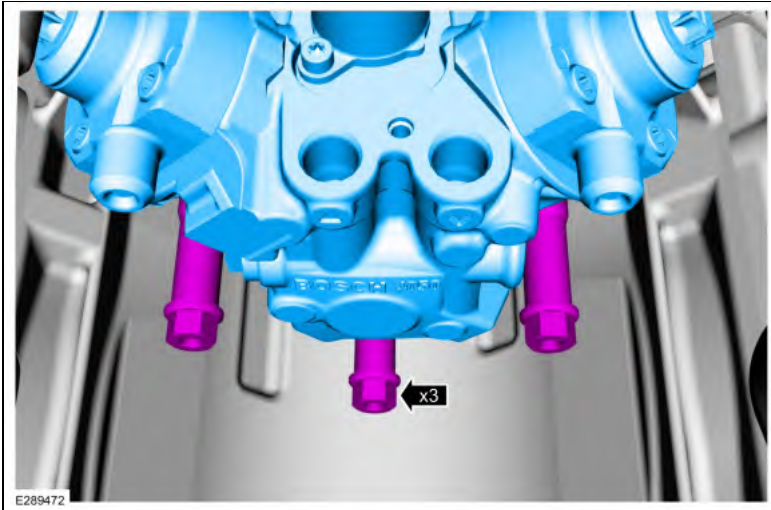
Installation

1. Install a new fuel injection pump O-ring seal and lubricate with clean engine oil.
Refer to: Specifications (303-01B Engine - 6.7L Power Stroke Diesel, Specifications).
Refer to: Specifications (303-01 Engine - 6.7L Power Stroke Diesel) .

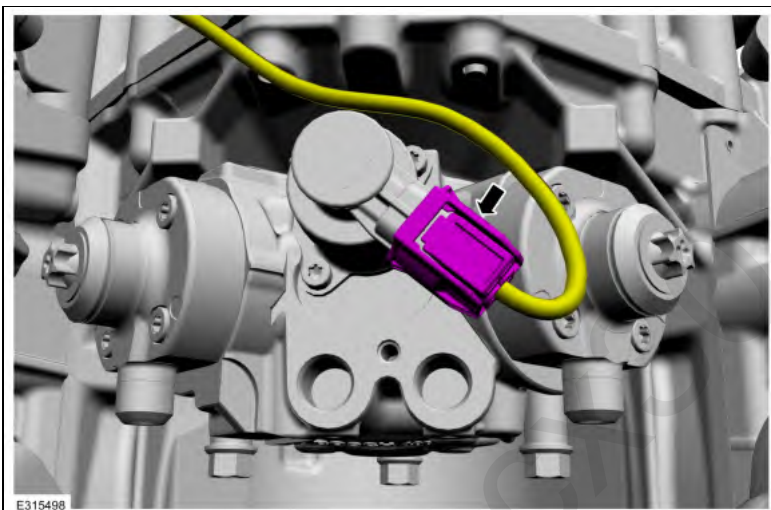


2. **NOTICE:** While mounting the pump to the engine, the pump flange must be inserted parallel and without tilting into the pivot.

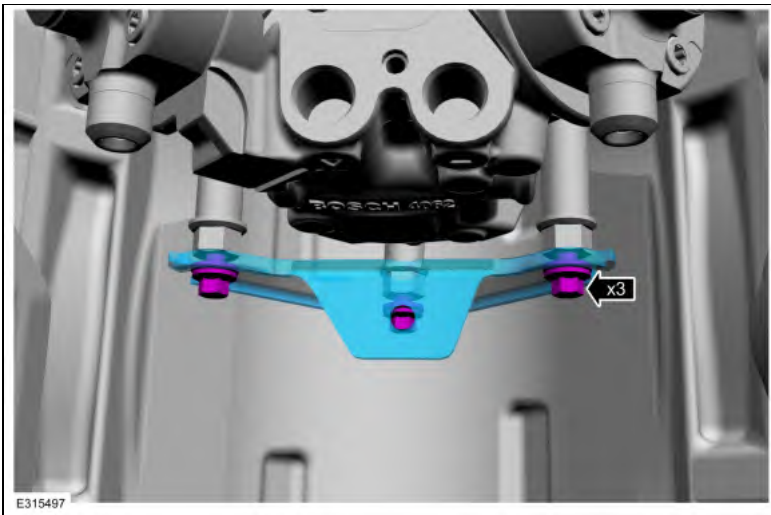
Install the fuel injection pump, then install and tighten the fuel injection pump spacers.
Torque: 18 lb.ft (24 Nm)



3. Connect the electrical connector.



4. Install the fuel rail supply tube bracket, then install and tighten the fuel rail supply tube bracket bolts.
Torque: 89 lb.in (10 Nm)



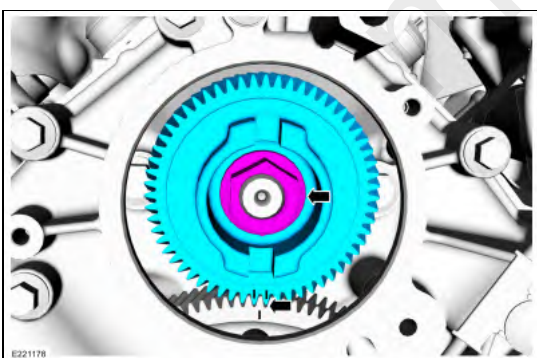
5. **NOTE:** The crankshaft gear contains a single timing mark. The camshaft drive gear contains a single timing mark and a double timing mark. The fuel injection pump drive gear contains a double timing mark. The engine is timed correctly when the single timing mark on the crankshaft drive gear is aligned with the double timing mark on the camshaft gear, and the single timing mark on the camshaft drive gear is aligned with the double timing mark on the fuel injection pump drive gear. Additionally, the keyway on the fuel injection pump drive gear must be at 12 o'clock position.

NOTE: Ensure that the fuel injection pump shaft pin is in a vertical position.

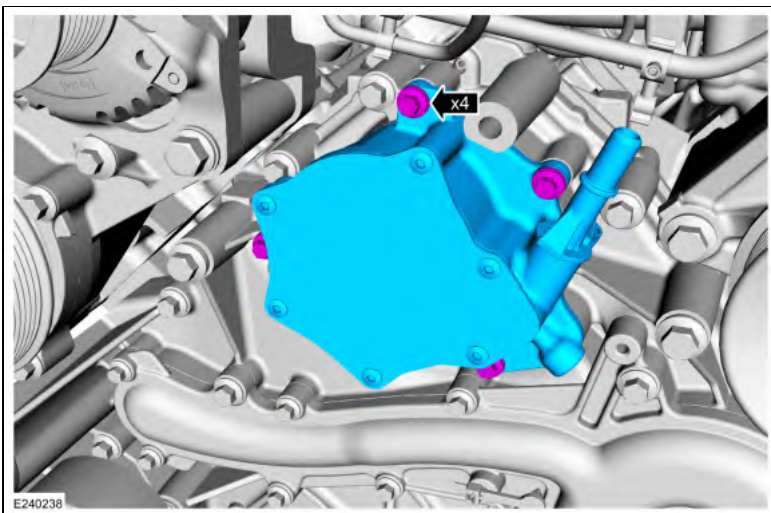
NOTE: Align the keyway on the fuel injection pump drive gear with the pin on the fuel injection pump shaft.

NOTE: A replacement fuel injection pump drive gear may be thinner than the original gear.

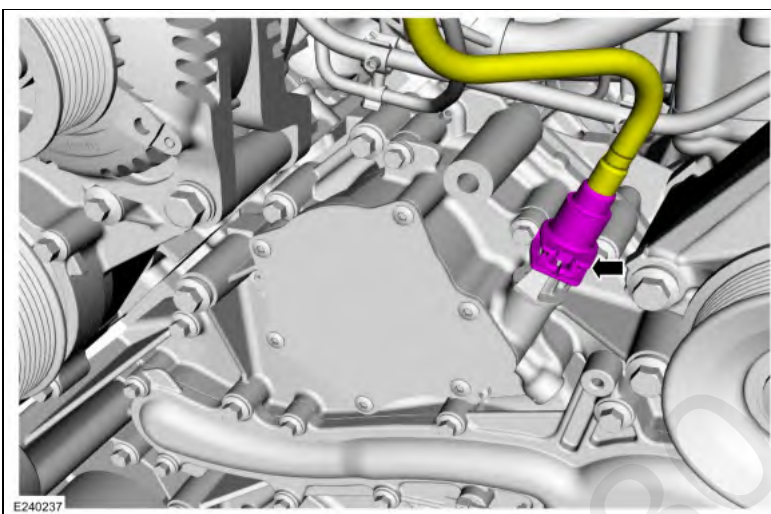
1. Install the fuel injection pump drive gear, make sure the single timing mark on the camshaft drive gear is aligned correctly with the double timing mark on the fuel injection pump drive gear.
2. Install and tighten the fuel injection pump drive gear nut.
Torque: 59 lb.ft (80 Nm)



6. Install the vacuum pump and the bolts.
Torque:
Stage 1: 89 lb.in (10 Nm)
Stage 2: 45 Å°



7. Connect the vacuum hose.



8. Install the cooling fan drive assembly.

Refer to: Cooling Fan Drive Assembly (303-05 Accessory Drive - 6.7L Power Stroke Diesel) .

9. Install the fuel rail supply tube.

Refer to: Fuel Rail Supply Tube (303-04B Fuel Charging and Controls - 6.7L Power Stroke Diesel, Removal and Installation).

Refer to: Fuel Rail Supply Tube (303-04 Fuel Charging and Controls - 6.7L Power Stroke Diesel) .

10. **NOTE:** *This step is required only when a new fuel injection pump is being installed.*

After the new fuel injection pump is installed, using a diagnostic scan tool, perform the following:

- Reset/clear the specified function for the fuel system- high pressure side.
- Clear the continuous PCM DTC's and reset the emissions monitors information in the PCM. Refer to Section 2 PC/ED manual.