Caterpillar 3306 B

INSTALLATION & REMOVAL OF FUEL INJECTION PUMP HOUSING & GOVERNOR

●Remove Fuel Injection Pump Housing & Governor

Tools Needed		A
8S2264	Puller Group	1
8b7560	Step Plate	1
5P1075	Washer	

Start By:

a) Removing fuel injection lines

NOTICE: Keep all parts clean from contaminates. Contaminants put into the system may cause rapid wear and shortened component life.

1. Remove bolts (1) and fan guard (2)
2. Loosen bolts (7), (9) and (10). Remove belts (8).
3. Remove bolt (4) to clip. Remove grease line (3).
4. Remove nuts (6). Remove cover (5) and the gasket.
5. Loosen bolt (12) enough to leave a gap of 3.18 mm (.125 in) between wahers (11) and the fuel pump drive gear.
6. Install tool (A) as shown. Tighten the stud to pull the fuel pump drive gear loose from the taper on the fuel injection pump camshaft.
7. Remove tool (A), bolt (12), and washer (11).
8. Identify and disconnect wired (13).
9. Remove tube assemblies (15) and (18).
10. Remove two bolts (14), fuel transfer pump (17), and the)-ring seal.
11. Remove bolts (16), the filter base, The gasket and the filter (19).
12. Fasten the fuel injection pump housing and governor to a hoist.
13. Remove two bolts (22), three nuts (21), and the fuel injection pump housing and governor. The weight of the fuel injection pump housing and governor is 29 kg (64 lb.)
14. Remove the two O-ring seals from the bottom of the fuel injection pump housing and governor.
15. Loosen screw (25). Remove two screws (26), control assembly (23) and spacers (24).

●Install Fuel Injection Pump Housing & Governor

Tools Needed		B	C
5P7307	Engine Turning Tool Group	1	
6V4186	Timing Pin		1

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Start By:

a) Removing fuel injection lines

NOTE: Number 1 piston must be set at top dead center (TDC) to perform all timing procedures.

NOTE: The engine is seen from the flywheel end when direction of crankshaft rotation is given.

1. Remove the starter.
2. Install tool (B) on flywheel housing as shown.
3. To find TDC for No. 1 piston;
   a. Turn the flywheel clockwise (opposite the direction of engine rotation) approximately 30 degrees. This removes all play from the timing gears.
4. If No. 1 pistons is not on the compression stroke, remove the 3/8" – 16 x 2 ¼" NC bolt (27) and turn the flywheel 360° counterclockwise. Install the 3/8" bolt as before. The No1 piston is now at TDC.
5. Install tooling (C) in the fuel injection pump housing as shown. Push on tooling (C) and turn injection pump camshaft (32). When

tooling (C) engages the groove (slot) in the camshaft, the fuel injection pump is in the No.1 piston TDC position.

6. Be sure O-ring seals (28), (29), (30) and (31) are in position on the fuel injection pump housing and governor. Put clean engine oil on the seals.
7. Place control assembly (23) and spacers (24) in position on the fuel injection pump housing and governor. Install screws (26) and tighten screw (25).
8. Attach a hoist and put the fuel injection pump housing and governor in position on the timing gear plate and oil manifold. Install three nuts (21) and two bolts (22).
9. Put the drive gear in position on the fuel injection pump and install washers (11) and bolt (12) finger tight. Be sure that tool (C) is is the notch in the camshaft of the fuel injection pump.
10. Install a 3/8" – 24 x ½" NC bolt in one of the holes in the drive gear.
11. Use a torque wrench to place a force of 68 N*m (50 lb ft) on the 3/8" bolt while tightening the drive gear bolt to a torque of 270 +- 25 N*m (200+- 18 lb ft). Remove tool (C) from the fuel pump and the 3/8" – 16x2 ¼" bolt (27) from the flywheel.
12. With tooling (B), turn the engine flywheel two complete revolutions. When the 3/8" –16 x 2 ¼" bolt goes in the hole in the flywheel when the timing pin is installed in the notch in the camshaft the timing is correct.
13. Remove tool (B).
14. Put cover (31) and the gasket in position. Install four bolts (32).
15. Put the filter base, the gasket, and filter (19) in position. Install bolts (16).
16. Put fuel transfer pump (17) and the O-ring seal in position install two bolts (14)
17. Install tube assemblies (18) and (15). Connect wires (13).
18. Put the gasket and cover (5) in position. Install the washers and nuts (6). Install grease line (3) and bolt ($) to the clip.
19. Install belts (8). Use belt tension gauge and adjust the fan belts. Measure the bell farthest from the engine. Tighten new belts until gauge indication is 534+- 22 N (120 _- 5 lb.). Tighten bolt (7), bolt (9), and bolt (10). Operate the engine at high idle for a minimum of 30 minutes after step 18. Make another adjustment of the belt tension. The correct gauge indication for a used belt is 400 +- 44 N (90 +_- 10 lb.). Tighten bolt (7), bolt (9), and (10).
20. Put fan guard (2) in position and install bolts (1).

End By:

a) Installing valve cover

b) Installing fuel injection lines