

## Stanadyne DM Pump Removal and Installation

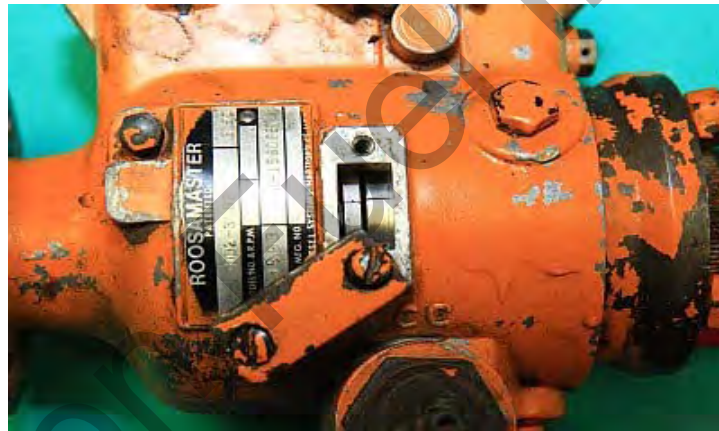
### Removal

Clean the exterior of the injection pump and mounting surfaces.

**IMPORTANT:** Never steam clean or pour cold water on an Injection pump while the pump is running or while it is warm. To do so may cause seizure of the injection pump.

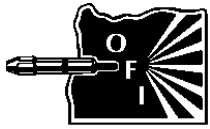
### Cam Timed Injection Pumps:

Stanadyne DM model injection pumps are “cam timed”. Remove the timing window cover and roll the engine into time by lining up the timing marks (figure 1). Rotate the engine in the normal direction of rotation, reference your engine service manual for the correct engine degrees and cylinder number. Most injection pumps rotate one revolution for every two revolutions of the crankshaft.



Timing marks on a Stanadyne pump (figure 1)

1. Remove the fuel inlet and fuel return line.
2. Remove the electrical connector for the shut off solenoid, if equipped.
3. Remove the injection lines, cap fittings on nozzles and on injection pump.
4. Disconnect speed control linkage.
5. Remove injection pump drive gear cover (shown removed, figure 2).



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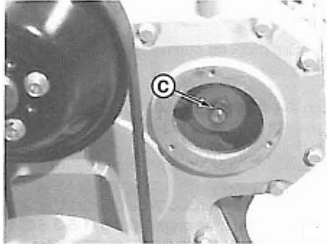


Figure 2

**NOTE:** The injection pump drive gear fits snugly onto the drive shaft and is indexed by a hollow pin or Woodruff key installed in drive shaft.

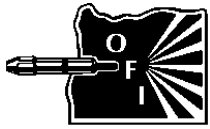
6. Remove drive gear retaining nut and washer from end of pump shaft. Be careful not to let washer fall inside timing gear cover.
7. Use a gear puller to remove the drive gear from the tapered shaft. Use care not to damage the end of the injection pump drive shaft.
8. Remove hold-down nuts and slide injection pump away from the mounting studs.

## Inspection

1. Inspect injection pump mounting hole in cylinder block making sure it is clean and free of burrs.
2. Inspect the pump mounting surface on the engine cover making sure it is clean and smooth.
3. Inspect injection pump drive shaft for presence of metal transfer from gear slippage. Also, check to see if index pin in shaft is not damaged, indicating gear slippage.
4. If the shaft shows signs of gear slippage, the injection pump is very likely seized, and the cause of the seizure must be found before reinstalling a repaired or replaced pump. The drive gear must also be changed

## Installation

1. If you didn't time the engine before removing the injection pump remove the timing cover is marked "Timed Start Inj." or "Timed End Inj." Roll the injection pump into time by lining up the timing marks (see figure 1 above).
2. Roll the engine into time by lining up the timing marks or pinning the engine into time. Reference your engine service manual for the correct engine degrees and cylinder number.



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3. Install seal into groove on front face of pump mounting flange or use a new gasket as per your engine manufactures parts manual. Slide injection pump onto mounting studs while inserting pump shaft into drive gear.
4. Check pump shaft and index pin for proper alignment with pump drive gear key slot.

**IMPORTANT:** Shaft roll pin may be easily damaged if improperly assembled. Pump drive gear should not move when initially installing pump index pin into drive gear key slot.

5. Pump should sit squarely and solidly on mounting pad when a slight pressure is applied.

**IMPORTANT:** DO NOT use tightening force of pump mounting stud nuts to pull pump shaft into drive gear

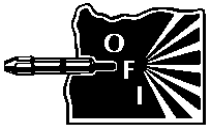
6. With the pump shaft index pin properly engaged in the drive gear key slot, finger-tighten mounting stud nuts
7. Push the pump drive gear firmly onto shaft. Install washer and retaining nut (C) onto end of shaft. Tighten retaining nut to the specified torque, per your engine service manual. Install access cover plate using a new O-ring, if required.
8. Turn pump to align timing marks (Fig. 1 above). Tighten mounting nuts securely.
9. Rotate engine backward 1/4 revolution.
10. Rotate engine in direction of rotation until injection pump timing marks line up. The flywheel timing marks should now be aligned. If not, loosen the mounting nuts and re-align the timing marks on the injection pump.  
**IMPORTANT:** The normal backlash of gears is enough to throw the injection pump timing off by several degrees, resulting in poor engine performance. Therefore, it is very important that the timing of the pump be rechecked after Installation.
11. Then install the injection lines, but leave the injector ends in order to perform bleeding (later in these instructions)
12. Reconnect the fuel inlet and return line, leaving the inlet line loose for bleeding procedures.
13. Reconnect the shutoff solenoid (if equipped)
14. Reconnect the throttle linkage.

### Priming and Starting

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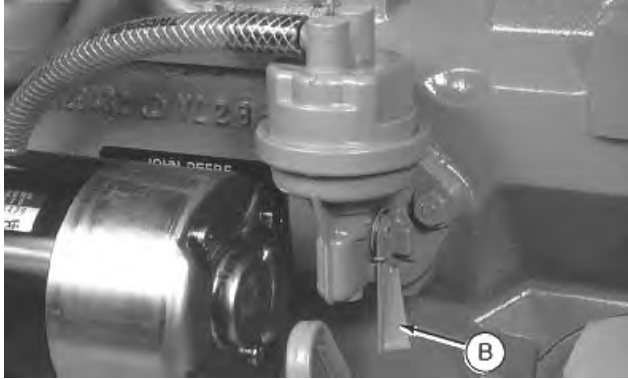


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1. Open the bleeder screw on the secondary filter (if equipped) and operate the hand primer to bleed the air from the system.



B. Hand Primer

2. When fuel flows freely from the fuel inlet line, tighten the fuel inlet line at the injection pump.
3. Leave the shut off disconnected or in the off position and crank the engine over for 10 seconds.
4. Connect the electrical shut off solenoid.
5. Crank the engine to start.
6. If the engine will not start, loosen the injection lines at the injectors, one line at a time. Crank the engine over until fuel free of bubbles flows from the injector, tighten the injection line.



Use two open ended wrenches if if needed.

You can experience an airlock while trying to bleed the fuel system if all of the injection lines are loose at one time while cranking the engine.

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