

APT^B 02/08 R1

SUBJECT: 6.0 L Injector Failure Analysis and Preventive Maintenance

June 2, 2009

We've developed two installer guides to assist the installer in avoiding premature failures and cold start driveability issues. These are included with each **AP60900** or **AP60901** 6.0 L Injector. The first, shown below, covers failure analysis and the second advises installers to follow the procedures listed in Ford® [TSB 08-26-3](#) to test the FICM. FICM calibration (program module installation) should also be performed to incorporate cold injector inductive heat calibration.

Attention Installer:

Be sure the injector chamber gasket sealing surface of the cylinder head injector sleeve is clean (see combustion blow by below). Clean fuel and lubricating oil are the keys to longer injector life. When installing injectors, change both fuel filters (pre-filter and final filter) and change lube oil and filter. An oil change will eliminate the diluted oil that results when injectors are removed and fuel drains out of the fuel passages in the cylinder head.

Before installing remanufactured Alliant Power Injectors in your engine, perform a visual check of the injectors you've removed. This will help avoid repeated and premature failures. Three common failures and an oil rail installation caution are noted below.

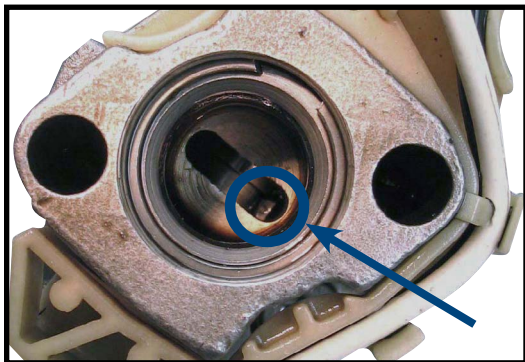
Combustion Blow By

An injector nut that's black with carbon from the chamber gasket to the bottom O-ring indicates the sealing surface of the injector sleeve needs to be cleaned. We recommend using solvent and a stiff brush (i.e., Rotunda/Owatonna Tool part number 303-D112) to loosen and remove carbon materials. Pay particular attention to the chamber gasket and injector O-ring sealing areas, then use shop towels to clean and dry the sleeve.



Fuel Contamination

Discoloration or other visible signs of fuel contamination in the area between the two injector nut O-rings indicates the injector has been subjected to water or other contaminants in the fuel. The fuel should be analyzed to determine if contaminants are currently present. The contaminated fuel that left the evidence may already have flowed through the system. If contaminants are present, a complete flushing of the fuel system is required.



Upstream Mechanical Failure

Metallic pieces in the high-pressure oil inlet bore of the injector (note the chunk restricting movement of the spool valve) are a sign of a failure upstream from the injector, most likely the high-pressure pump. Replacement of the high-pressure pump and oil reservoir screen plus flushing the high-pressure oil system will be necessary.



Oil Rail Installation Failure

Misalignment of the oil rail inlet fittings can result in a failure such as shown above. The seal itself can be damaged by misalignment, even without evidence of hard part failures. To avoid this type of failure, be certain all injector inlet fittings are properly aligned during oil rail installation.

Recommended Lube Oil and Fuel Filter Change Schedule

Change Oil (15 Quarts) and Filter

- Severe Duty – 5,000 miles
- Normal Duty – 7,500 miles

Change Fuel Filters

- Severe Duty – 10,000 miles
- Normal Duty – 15,000 miles

Injector Hold Down Screw Torque

Change Oil (15 Quarts) and Filter

- 24 lb–ft (33 Nm):

Note: Super Duty vehicles built 1/16/2006 and later and Econoline vehicles built 1/23/2006 and later, torque is 26 lb–ft (35 Nm)

R1–Referenced TSB 08–26–3, which supersedes TSB 07–5–4; the new TSB includes procedures to test the FICM, in addition to performing the FICM calibration (program module installation) to incorporate cold injector inductive heat calibration.

