

Ford 6.4L Power Stroke Service Tips + Injector Replacement Tips



That Ford 6.4L Power Stroke truck dropped off at the shop for a performance issue may have multiple problems. That's why it's important to determine the overall engine / vehicle condition, along with the necessary repairs, so a complete service package can be presented to the customer. Below you'll find service tips designed to help you do just that. Additionally, you'll find Ford 6.4L injector replacement tips.

Service Tips

- 1.** Make sure the engine is mechanically sound. A relative compression test does not always show a cylinder(s) that is low on compression. Check for excessive engine blow-by and perform a compression or cylinder leak down test.
- 2.** Dilution of the lubrication oil with fuel is common in the 6.4L application. Fuel in the oil can be the result of leaking injector body o-rings, frequent DPF regeneration events and excessive idling. Excessive idling will result in more DPF regenerations increasing the risk of engine oil dilution. Dilution of the engine oil will result in increased engine component wear and the potential of an engine runaway. Check if the oil level is high, then place a drop of oil from the dipstick onto a white paper towel, if a ring forms around the oil drop there is fuel in the oil. A common problem is rocker arm wear from a lack of lubrication.
- 3.** When performing a significant repair the engine oil should be changed and a 5,000 mile oil change interval recommended to the customer that will extend the engine life. Prior to the oil change use the IDS scan tool to check the PID to determine what the DPF soot level is. Run a regeneration if the DPF is partially loaded or loaded. This will prevent contamination of the new oil and initially reduce on highway active regenerations.
- 4.** The Powertrain Control Module (PCM) should be updated to the latest calibration before performing diagnostics.
- 5.** Use of the Relative Compression test, Power Balance test, KOEO Injector Electrical Self test, Short Term Fuel Trim (SFT) review and diagnostic trouble codes (DTCs) can point to which cylinder(s) have a mechanical or injector problem. Use of the IDS scan tool is recommended. Most other scan tools will not perform the necessary tests and clearing of the SFT values.

Injector Replacement Tips

- 1.** When replacing one or more injectors perform a fuel system inspection to prevent a comeback and premature injector failures.
- 2.** Remove inspect the secondary and HFCM filters and housings for contamination and signs that water has been present.

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3. Remove the high-pressure line from the rail to the injector and drain the fuel from the line into a dark cap from an aerosol spray can and inspect for small shiny metal particles.
4. Take and inspect a sample from the pressure test port on the fuel cooler.
5. Remove the fuel supply and return lines at the high-pressure pump to check for rust.
6. If rust, contamination or metal particles are found the fuel system must be cleaned including the tank, HFCM, secondary filter housing, supply lines, high-pressure system, return system including the cylinder head and lines, and the fuel cooling system. If metal particles are found the high-pressure pump must be replaced, other system components may also need to be replaced since it is difficult to remove all of the contamination. Failure to completely clean the complete fuel system will result in immediate or repeated short-term injector failures.
7. Use caution when working on the fuel system to prevent injury. The high-pressure side of the fuel system is pressurized up to 26,000 PSI and the injector wiring high voltage exceeds 100 volts. Make sure the engine is off, the high-pressure has bled down and the engine has cooled off prior to working on the fuel system.
8. DTech fuel injectors have tolerances measured in microns. It is important to work in a clean manner to prevent contamination of the fuel system to prevent premature failures.
9. Install new primary and secondary fuel filters. To extend injector life, recommend to your customer changing the fuel filters with every or at least every other oil change.
10. High-pressure injection lines on the 6.4L must be replaced with new anytime they are loosened or removed.
11. The SFT values must be cleared after replacement of one or more injectors and after other fuel system repairs.

Additional Resources

Product Information Bulletins:

FI-302 - Ford 6.4L Power Stroke High-Pressure Injection Line + Tightening Procedure

FI-301 - Ford 6.4L Power Stroke Injector Mounting Kit

FI-300 - DTech Remanufactured Ford 6.4L Power Stroke Injector

Ford TSB:

12-12-10 Low power with MIL - faulty EGT

11-2-2 White smoke in wet weather

09-16-08 PCM updated calibration

09-16-2 Random engine ticking or tapping noise