ShopTalk

Tech Tips from a lifetime under the hood.....

DIESEL

Vehicle: 2003 6.0L Diesel Excursion
Mileage: 131,890

Complaint: Sluggish, Low Power and Rough Idle
Background: The Ford dealer installed a #3 injector, replaced the FICM (fuel injection control module) and replaced the right bank fuel inlet check valve. The customer was not sure if the dealer resealed both the injector o-rings and oil injection o-rings.

The diagnostic test I ran showed the ECM had a diagnostic trouble code of P0303. This code meant the #3 cylinder would misfire and when hot cylinders #5 and #7 would misfire off idle, but at idle only #3 had a dead miss. I then informed the customer that injectors #3, #5 and #7 would need replacing. I also suggested to the customer that we should replace injector #1 during the repair. The customer gave me the approval to replace all injectors in the right bank.

After the repairs the truck seemed normal and had full power. However we always try to test drive a truck twice. Once on a short trip and then after a good heat soak a longer test drive. The engine started dropping cylinders #1, #3, #5 and #7 at a steady cruise speed. It felt almost like an engine surge. During the misfire you could accelerate and the engine performed normally with full power. At idle, the engine would now idle smoothly. However the engine had diagnostic trouble code P0303 after every test drive when hot. Later while running a diagnostic we found that you could raise the engine RPM from 1500 to 2200 RPM. The engine would misfire on cylinders #1, #3, #5 and #7 in the shop. We decided that with no helpful engine diagnostic codes, abnormal PID data readings and since the problem is heat related we would start to focus in on oil and fuel issues in the right cylinder head. Therefore, our first step was to replace the valve connector located in the high pressure oil manifold where the oil hose connects to the manifold. The part number is 3C3Z6N853A and is on the right cylinder bank.

This had no effect on the injector misfires. Next we removed both fuel check valves located at the front of each cylinder head and reversed their locations. The misfire followed the right fuel check valve and the engine now had a diagnostic trouble code#P0306, cylinder misfire #6. This valve had already been replaced by the Ford dealer. So we then replaced the defective valve with part#W301866. After the installation of the check valve the truck test drove normal and had no diagnostic trouble codes.

Note: The #3 injector and fuel check valves still had Ford warranty. However the customer did not want to take the truck back to the dealer or try and get warranty on these parts. His reasoning was that Ford kept his truck too long and charged him for repairs that did not repair his engine performance problems.

Monty Seltz
North Shepherd Drive In Service Manager

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