

Injectronics

TECHNICAL BULLETIN

FORD – EA CFI

#T0051

Make: Ford

Model: EA CFI

Subject: Running rich fault

Ford EA falcons were originally equipped with 3.2 and 3.9 litre centre point fuel injected engines which over the years have been known to have rich running, poor fuel economy to blowing black smoke related faults. Through our experiences at Injectronics we have noted some of the more prevalent causes of this condition.

1. Battery terminals must be of a clean serviceable nature. Bad earth's, engine earth's (especially the main earth at the right hand side engine mount) and poor fusible link connections have all led to rich running faults.
2. Alternator output must be a minimum of 13 volts. Also, the power supply from the main relay to ECM pin 5 must be above 12 volts as this can also cause the engine to run rich.
3. Fuel pressure should be 100KPA and flow should be approximately 240cc in 10 seconds.
4. The canister purge control solenoid valve, located behind the passenger side headlamp, often jams open, allowing fuel vapours from the charcoal canister into the intake system which can cause abnormally high fuel mixtures.
5. Manifold absolute pressure sensors are a common cause of rich running, often causing the engine to blow copious amounts of black smoke. With ignition on – engine off, the output frequency should be approximately 160Hz. With engine at idle, the output frequency should be 100-110 Hz.
6. Oxygen sensors indicating a low output voltage will cause the ECM to think the engine is running lean and therefore constantly enriching the engine air fuel ratio to compensate.
7. The 2 injectors fitted to the centre point engines have been known to leak, either through the housing of the injector or the pintle itself which can cause over fuelling.
8. The PIP signal, generated via the hall sensor and TFI module, is calculated by the ECM to operate and vary the frequency of the injectors. If this signal, which should be a 12-volt square wave becomes distorted or reduced in its voltage it can lead to the engine running over rich to the point of possible engine stall.
9. Coolant temperature sensors which continually show a cold engine resistance figure (i.e 38 k ohms) will also cause engine to run rich and have excessive fuel consumption.
10. Earths at the coolant temp sensor, air temp sensor and map sensor must be at zero volts.