

Piezo Injector failing intermittently

A 2008 Ford Fiesta 1.4 TDCi had been in several times to the workshop with a misfire complaint. Each time, the fault code scan revealed a circuit fault with injector cylinder 2.

The technician tested the injector circuit, knowing these injectors are Delphi Piezo injectors. The resistance of the injector should be between 198 to 210kohms.

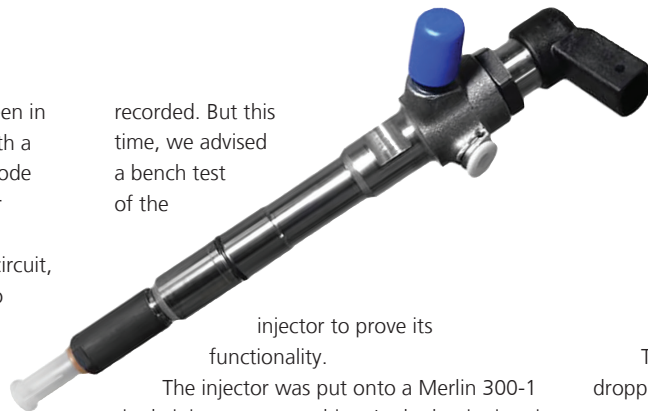
On this model, the cylinder count begins from the transmission end, not the timing belt end as would be normal on most vehicles. Cylinder 2 was the second in from the gearbox.

All the injectors were at 200 Kohms, well within the manufacturer's specifications.

The connections were cleaned, and terminal tightness was checked. The fault code was cleared and the engine ran for a considerable time. No fault codes returned, so it was considered a successful repair. The vehicle was returned to the customer and all was fine for almost 1 month until the fault returned.

The technician repeated the test on the injector for cylinder 2 and it passed. The resistance was 200kohms, as previously

recorded. But this time, we advised a bench test of the



injector to prove its functionality.

The injector was put onto a Merlin 300-1 single injector test machine. In the beginning, it performed well. But less than a minute into the test, it failed.

We then connected the injector to an insulation test meter, to test the resistance under load, along with the insulation to the injector body. For this, we used a Megger MFT, but any insulation meter would be suitable. As these injectors are operated at around 150 Volts, that setting was selected.

When testing the injector at that voltage, the resistance failed and returned to 520 ohms on an open load test. This resistance is not within specification, confirming that the injector was faulty. The technician was now confident in replacing the injector.



Tim Stock,
Autobiz Helpline

These injectors can be very fragile; even dropping them onto a hard workbench can cause the internal piezo element to fail. We have seen, several times, following an accident involving a front-end impact that a misfire can develop due to failed injectors.

Rough handling can also occur in the transportation process. Delivering these to the workshop has been an issue.

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