A poor running Transit 2.2 TDCi - It is not always about the codes

A recent Helpline case was for a 2012 Ford Transit lacking power, and proved to be an unusual issue. The vehicle was recently purchased and was bought with an under-power fault. It looked like the previous owner had replaced many components to resolve the issue, but had finally given up and sold the vehicle on.

As the vehicle had no fault codes stored, the technician started with the obvious tests: looking for boost pressure and other turbocharger issues. The boost was as expected, and the turbocharger was ruled out as an issue.

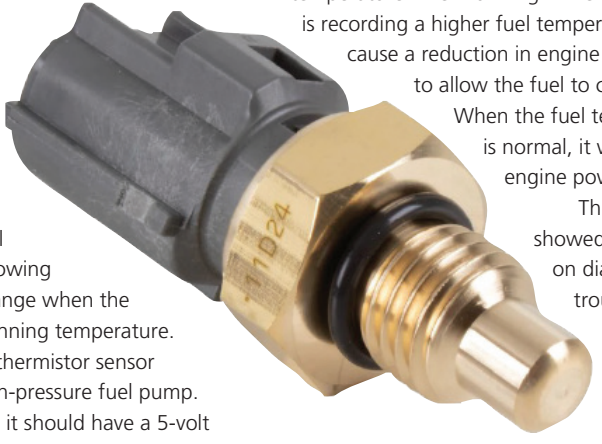
Fuel pressure was next on the list. The filter was new and of a reputable brand. The idle fuel pressure was 280 Bar, and under load it was over 1600 Bar with a pump duty cycle ratio recorded@ 20%. This was well within manufacturer's specifications, so we put this aside as not being the issue.

The DPF differential pressure was low. It was around 6 Mbar at idle and only 80 Mbar under full load, so there was no fault at the DPF.

The injectors showed no issues, and smooth-running data was perfect.

We asked for a complete list of the running data from cold, to check for any plausibility issues.

And then something stood out as an issue: From cold, all temperatures should be equal until the engine is running, but the fuel temperature was showing 90°, and did not change when the vehicle was up to running temperature.



This is an NTC thermistor sensor mounted on the high-pressure fuel pump. When disconnected, it should have a 5-volt signal line and a ground. When reconnected, you should expect to see around 3.4-3.7 Volts on the signal line and 0.0 volts on the ground, at ambient temperature of 19°C.

After replacing the faulty fuel temperature sensor, engine power was restored, and the temperature ranged from ambient to a higher temperature when running. When this sensor is recording a higher fuel temperature, it will cause a reduction in engine performance, to allow the fuel to cool down. When the fuel temperature is normal, it will allow full engine power.

This Transit showed that reliance on diagnostic trouble codes is not always the answer to correct diagnosis.