

GENERAL DIESEL TROUBLESHOOTING TIPS

These tips apply to any turbo diesel, tuned or standard

FUEL QUALITY ISSUES: Tuning-diesels.com and our colleagues at Energy Tuning Ltd have found that in fact, over half the erratic running problems &/or cutting out are caused by contaminated or dirty fuel. We believe this is due to the addition of biodiesel to pump fuel which has two side effects: a) It encourages the growth of the diesel bug and b) it dissolves the sediment in fuel storage tanks, delivery tankers, forecourt tanks, and vehicle fuel tanks and fuel lines. We have cut open many fuel filters which should not have needed replacing to find the element as black as an oil filter element. A new filter and a couple of bottles of Millers Ecomax Diesel One-shot works miracles but bear in mind that you may need to change the filter more frequently.

CASE STUDY 1. Un tuned Peugeot hdi displaying a pollution warning message on the dash and in limp mode. The customer suspected a clogged dpf, but since we know that that warning message appears when almost any engine fault is present, diagnostics showed a 'fuel pressure' fault code. Changing the fuel filter cured the problem and you can see why from the condition of the original below.



CASE STUDY 2.

180k mile Vectra 1.9 150bhp tuned with a Turbotune module. The performance became erratic and it started cutting out on full throttle. It had been serviced only 5K miles previously so we were shocked to find the fuel filter in the state it was -as shown below.

MOST FUEL FILTERS ARE ONLY CHANGED EVERY 24K TO 36K MILES AND THE DEALER WILL NOT CHANGE IT AS A ROUTINE

Replacing this cured all the symptoms. **MEASURE UNLESS YOU ASK THEM TO.**

EGR VALVES: All diesels since about 1995 are fitted with an exhaust gas recirculation system to reduce exhaust Nitrogen Oxide levels. These feed some exhaust gas into the inlet manifold and due to the hostile environment often seize up, & clog up, obstructing the air flow* or leak, which allows intake air to bypass the engine by flowing the 'wrong way' through the egr valve. The result is misfiring, hesitation, flat spots, exhaust smoke and generally rough running. The maf sensor signal is also affected, which accounts for much of the effect on performance.

** they clog by carbonising the oil fumes which are fed into the intake upstream of the turbo from the crankcase ventilation system, so a malfunctioning pcv valve can greatly increase oil fumes and hence lead to rapid clogging.*

TURBO VNT MECHANISM STICKING: (doesn't apply to the 75/ZT and most older turbo diesels (pre 2000))

If the mechanism sticks in the low rev position, this causes overboosting which invokes limp mode and again, when a tuning module is removed, the reduction in fuelling prevents the boost pressure spiking so no problem occurs, giving the impression that the module is the cause when it is just highlighting the real culprit. Disconnecting the linkage and freeing off the mechanism is usually all that is needed. Alternatively, if the mechanism sticks in the high rev position, the performance will be poor at low rpm. The engine warning light usually comes on when the boost pressure is out of range.

TURBO / INTERCOOLER HOSE LEAKS. Sudden loss of performance occurs when a hose bursts or comes loose. There isn't usually any smoke because the map sensor signal alerts the ecu to the drop in expected boost pressure.

CRANKCASE VENTILATION SYSTEM CLOGGED OR FAULTY (called pcv valve on the 75/ZT/Td4) Oil laden crankcase fumes are fed into the intake system to be burned (its how the oil always found in the intake system gets there). But there is a valve to regulate the amount, which if faulty, can allow too much of the intake air to be replaced with fumes. Result - blue and/or black smoke and a drop in performance.

PREVENTATIVE MEASURES:

USE MILLERS REGULARLY, DON'T LABOUR THE ENGINE AT LOW RPM AND BIG THROTTLE OPENINGS, GIVE THE ENGINE A THRASHING ONCE A MONTH FOR A FEW MILES OR DRIVE AT 70MPH IN 4TH FOR 5MINS. High rpm and light load will clean out the injectors, turbo, dpf and exhaust, especially when Millers has been added.

AVOID SUPERMARKET FUEL - IT HAS NONE OF THE CLEANING AND CETANE ENHANCING ADDITIVES FOUND IN THE PREMIUM BRANDS. (Tesco's is usually Esso so can be used) Try Shell V Power (not BP Ultimate) - if your mpg is better it may pay for itself and so can always be used.

IF YOU HAVE A MOTORHOME OR OTHER VEHICLE WHICH IS NOT USED FOR LONG PERIODS, ALMOST EMPTY THE TANK SO THAT ANY DIESEL BUG AND WATER FROM CONDENSATION WILL AT LEAST BE DILUTED AT THE NEXT FILL UP, BUT BE PREPARED TO CHANGE FUEL FILTER MORE OFTEN (carry a spare)

APPARENTLY RonBox RELATED Our tuning modules have been on sale for eight years and thousands are in daily use without causing any driveability or reliability issues which confirms our faith in what is a very reliable product range. They genuinely do exactly what we claim and there are no bugs in the firmware and the hardware components are also trouble free as are the cables which are made for us. **Often any unexpected symptoms are due to the product just highlighting out of spec engine parts such as maf sensor, fuel filter, exhaust gas recirculation system, injectors, etc. If you have just fitted the module, then disconnect it, re read the instructions and re fit it as 95% of problems are due to incorrect connection. No diesel will perform well if the maf sensor is out of spec.**