

Diesel Troubleshooting

Probable Cause	Engine not starting	Hard to start engine	Runs rough at lower RPM	Lack of power	Diesel knock / pinking	Black smoke	White smoke	Blue smoke
Low compression ▼	X	X					X	
Low fuel pressure ▼	X	X	X	X		X	X	
Low cranking speed – flat battery ▼	X	X						
Glow plugs or relay faulty ▼	X	X					X	
Insufficient fuel supply ▼	X	X	X	X			X	
Fuel Quality – petrol – contamination ▼	X	X	X	X	X		X	
Air – vacuum in fuel supply ▼	X	X	X	X				
Blocked fuel supply – filters ▼	X	X	X	X	X			
Faulty diesel injector(s) ▼	X	X	X	X	X	X	X	
Faulty high pressure pump ▼	X	X	X	X		X		
Faulty pressure regulator – sensor ▼	X	X	X	X				
Faulty low pressure supply pump ▼	X	X	X	X				
Air intake restriction ▼			X	X		X		
Turbo problems – waste gate ▼				X		X	X	X
EGR problems ▼				X		X	X	
Injector blow-by seat leaking ▼			X	X	X	X		

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Cam – crank sensor ▼	X	X	X		X	X	X	
Injector wiring harness ▼			X		X	X	X	
Internal engine problems ▼	X	X	X	X				X

The Answer is in the Smoke

We can generally understand what is wrong with a diesel engine by the colour of smoke emitted from the exhaust. There are three basic colours - black, white and blue.

Black Smoke

This is due to a air to fuel ratio imbalance, either the fuel system is delivering too much fuel into the engine or there is not enough clean air (oxygen) a few things to look for:

- Faulty injectors (injectors need attention at about 100.000 to 120 000 miles)
- Faulty injector pump
- Dirty air cleaner
- Turbocharger or intercooler faulty
- Problems within cylinder head, valves clogged up due to faulty EGR (exhaust gas recycling unit)

White Smoke

Normally means that the fuel injected into the cylinder is not burning correctly. The smoke will burn your eyes.

- Engine/pump timing out
- Fuel starvation to the pump causing the pumps timing not to operate correctly
- Low engine compression
- Water/petrol in the fuel

Blue Smoke

The engine is burning engine oil

- Worn cylinders or piston rings
- Faulty valves or valve stem seals
- Engine over full with engine oil
- Faulty injector pump/lift pump allowing engine oil to be mixed with the diesel