

IPD TECH BULLETIN

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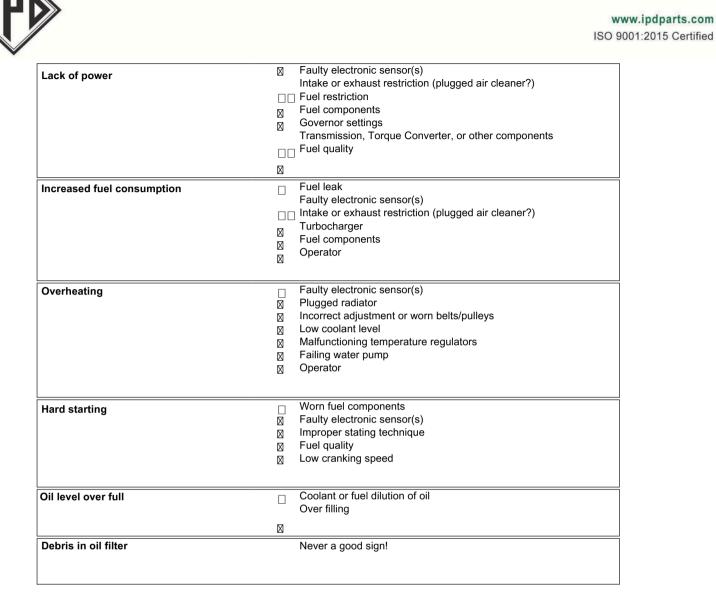
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Indicators and possible causes of common engine problems for heavy duty diesel engines

COMMON INDICATORS AND CAUSES:

With all the variations in diesel engine designs running in equipment today it's almost impossible to make a complete list of the symptoms and causes you may encounter. This tech bulletin is not meant to be considered as a complete list of those indicators and/or their causes. But, hopefully will provide you with a general list of possible causes related to some of the more common complaints you may hear concerning diesel engines. Indicators and causes vary between engine models, applications and design. As you review the list below you will most likely be able to add additional information based from your own experiences

Problem Indicators:	Possible Causes (not in order of probability)
Excess black smoke during full load (un-burnt fuel)	 Eaulty electronic sensor(s) Fuel ratio control setting Intake or exhaust restriction (plugged air cleaner?) Lugging Over fueling or Over loading Valve adjustment Failing turbocharger
Blue smoke (oil consumption)	 Oil Leaks High oil level resulting from other problems General engine wear due hours of operation 0 Worn piston rings & liners 0 Worn valve train components 0 Worn turbocharger
White Smoke (water in combustion chamber or un-burnt fuel at start up)	 Faulty electronic sensor(s) Cold ambient air temperature Leaking head gasket Cracked head and/or liners Faulty injector(s) Incorrect starting procedure Quality of the fuel
Increased oil consumption or Blow-by	○ Oil leaks ☑ Quality and type of oil ☑ Air compressor ➢ Normal engine wear ○ Worn or broken rings/liners ○ Worn turbocharger seals ○ Worn valve guides ○ Over loading Prolonged idling
Unusual noises	 Malfunctioning fuel nozzle/injectors Worn engine components Turbocharger Too much valve lash



In most cases a good maintenance program will prevent or indentify problems before they progress into something major. Qualified technicians, with the correct tools are essential in diagnosing and repairing problems correctly.

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