

**MECHANIC STUDY**  
**GUIDE Engine Repair - Diesel**  
Heavy Duty Trucks

Listed below are a number of items and subjects which make up the mechanic certification tests identified above. An individual's ability to pass the certification test will depend upon the amount of knowledge the person has concerning these items.

**Engine Components - 24%**

Detroit blower rotor clearance adjustment  
Piston rings  
Piston ring grooves  
After cooling - benefits  
Bolt grade recognition  
Lube oil coolers  
Turbo charger operation  
Valve bridge function

**Diagnosis - 34%**

Turbo problem diagnosis  
Coolant in crankcase  
Smoke problem diagnosis  
Engine operating temperature  
Low oil pressure  
Engine tear-down diagnosis  
Blow-by  
Crankshaft diagnosis  
Engine Miss

**Lube & Fuel -**

**10%**

Direct injection  
Leaky fuel lines  
Restarting and engine that has run out of fuel  
Fuel Filters

**Skills In Measuring -**

**12%**

Tools for measuring  
Plastigage reading  
Cylinder taper  
Reading a micrometer  
Crankshaft End-play

**Miscellaneous - 20%**

Using a vacuum gauge  
fuel shut-off solenoid  
Idle speed  
Detroit diesel R.P.M. setting  
Understanding 2-stroke, 4-stroke engines  
Valve seat width  
Valve lash adjustment  
Overheating

**SAMPLE QUESTION:**

A diesel engine misses at all speeds and there is a puff of smoke when it misfires. What is the most likely cause of this problem?

- A. Erratic governor action.
- B. Stale fuel.
- C. A miscalibrated pump.
- D. A sticking nozzle.

**ANSWER: D**