

TUNE-UP AND SERVICE A DIESEL ENGINE

Name

Date

Project #

Tools and Materials Needed

- Basic hand tool set
- Compression tester with adaptors
- Appropriate engine special tools
- Torque wrench
- Nozzle tester

- Dynamometer
- Appropriate engine service manuals
- Dynamometer
- Battery Service
- Safety Glasses

Service air intake and exhaust system

Inspected

Serviced

Replaced

- Clean precleaner (if used)
- Remove and clean air cleaner
- Swab out inlet pipe in air cleaner body.
- Inspect exhaust system and muffler
- Check crankcase ventilating system for restrictions

Service basic engine

- Recheck air intake for restrictions
- Check radiator for air bubbles or oil indicating compression or oil leaks
- Check for leakage at cylinder head gasket
- Retighten cylinder head cap screws (NOTE: Refer to appropriate job sheet or engine service manual)
- Adjust valve clearance (NOTE: Refer to appropriate job sheet or engine service manual)
- Check Compression pressure on each cylinder (NOTE: Refer to appropriate job sheet or engine service manual)

Service Fuel System

- Check fuel lines for leaks or restrictions
- Clean fuel pump sediment bowl
- Test fuel pump pressure (NOTE: Refer to appropriate job sheet or engine service manual)
- Check speed control linkage
- Service diesel fuel filters
- Check diesel injection pump (NOTE: Refer to appropriate job sheet or engine service manual)
- Check and clean diesel injection nozzles (NOTE: Refer to appropriate job sheet or engine service manual)
- Bleed diesel fuel system

- Check diesel injection pump timing

Service Lubrication System

- Check operation of pressure gauge or light
- Service oil filter
- Check condition of crankcase oil
- Check engine oil pressure

Service Cooling System

- Check water pump for leaks and excessive shaft end play
- Inspect radiator hoses
- Clean and flush cooling system
- Test thermostat and pressure cap
- Test radiator for leaks
- Check condition/tension of fan belt

Service Electrical System

- Service battery
 - Clean battery, cable, terminals, and battery box.
 - Tighten battery cables and battery hold down
 - Check specific gravity of electrolyte and add water to proper level
 - Make high discharge or load test of battery condition
(NOTE: Refer to appropriate job sheet or engine service manual)
- Service generator or alternator
 - Check belt tension
 - Test alternator or generation output
(NOTE: Refer to appropriate job sheet or engine service manual)
- Service starting circuit
 - Check safety starter switch
 - Check current draw of starting motor
 - Service clutch free travel. Check free travel at clutch pedal or lever (if used)
(NOTE: Refer to appropriate job sheet or engine service manual)
- Check engine performance by conducting a load test with a dynamometer
(NOTE: Refer to appropriate job sheet or engine service manual)