Engine Trouble Shooting

GASOLINE ENGINE TROUBLE SHOOTING

The following Trouble Shooting guide covers all mechanical problems which relate to all engines in general. For specific Trouble Shooting problems relating to Diesel engines, see Diesel Engine Trouble Shooting in this section. For Carburetor or Ignition problems in all engines, see Tune-Up Trouble Shooting in Section 1.

CONDITION & POSSIBLE CAUSE

Engine Lopes While Idling

- Intake manifold-to-head leaks.
- Blown head gasket.
- Worn timing gears, chain or sprocket.
- Worn camshaft lobes.
- Overheated engine.
- Blocked crankcase vent valve.
- Leaking EGR valve.
- Faulty fuel pump.

Engine Has Low Power

- Leaking fuel pump.
- Sticking valves, weak valve springs, incorrect valve timing or worn camshaft lobes.
- Excessive piston-to-bore clearance.
- Blown head gasket.
- Improper power steering glow control valve operation.
- Clutch slipping on manual transmission.
- Engine overheating.
- Improper pressure regulator valve operation on automatic transmission.
- Improper automatic transmission fluid level.
- Improper operation of diverter valve.
- Vacuum leaks.
- Leaking piston rings.

Faulty High Speed Operation

- Low fuel pump volume.
- Leaking engine valves, or faulty valve springs.
- Incorrect valve timing.
- Intake manifold restricted.
- Worn distributor shaft.

Faulty Acceleration

- Improper fuel pump stroke.
- Incorrect basic ignition timing.
- Inoperative pump discharge check ball or needle.
- Faulty elastomer valve.
- Worn or damaged pump diaphragm or piston.
- Leaking engine valves.

CONDITION & POSSIBLE CAUSE

Intake Backfire

- Improper ignition timing.
- Faulty accelerator pump discharge.
- Improper choke operation.
- Defective EGR valve.
- Too lean fuel mixture.
- Initial choke valve clearance too large.

Exhaust Backfire

- Vacuum leak.
- Faulty diverter valve.
- Faulty choke operation.
- Exhaust system leak.

Engine Detonation

- Overadvanced timing or faulty ignition system.
- Spark plugs loose or cracked.
- Fuel lines, fuel filter or fuel pump clogged or faulty.
- EGR valve inoperative.
- PCV system inoperative.
- Vacuum leaks.
- Excessive combustion chamber deposits.
- Leaking, sticking or broken valves.

External Oil Leakage

- Improperly seated fuel pump, or worn gasket.
- Improperly seated or broken push rod cover gasket.
- Improperly seated or broken oil filter gasket.
- Improperly seated or broken oil pan gasket, or bent oil pan gasket surface.
- Improperly seated or broken timing chain cover gasket.
- Improperly seated or worn rear main bearing oil seal.
- Loose oil line plugs.
- Improperly seated oil pan drain plug.
- Obstructed camshaft rear bearing drain hole.
- Loose rocker arm cover, or broken cover gasket.
- Oil pressure sending switch leaking.

GASOLINE ENGINE TROUBLE SHOOTING (Cont.)

CONDITION & POSSIBLE CAUSE	CONDITION & POSSIBLE CAUSE
Excessive Oil Consumption • Intake or exhaust valve "O" ring seal damaged or has excessive looseness. • Worn valve stems or guides. • Plugged oil drain back holes. • Improper PCV valve operation. • Engine oil level too high. • Engine oil too thin. • Valve stem oil deflectors missing or damaged. • Piston rings improperly installed or incorrect size. • Piston rings out-of-round, broken or scored. • Piston ring gaps not staggered. • Piston ring tension insufficient due to engine overheating. • Piston ring grooves or oil return slots clogged. • Piston rings sticking in ring grooves. • Ring grooves worn excessively. • Compression rings installed upside down. • Excessively worn or scored cylinder walls. • Mismatch of oil ring expander and rail. • Intake gasket dowels too long. • Excessive main or connecting rod bearing clearance. **No Oil Pressure** • Low oil level. • Oil pressure gauge or sending unit broken. • Oil pump malfunction. • Oil pressure relief valve sticking. • Oil passages on pressure side of pump blocked. • Oil pickup screen or tube blocked. • Loose oil inlet tube. • Excessive clearance at main or connecting rod bearing. • Loose camshaft bearings. • Internal leakage at oil passages. **Low Oil Pressure** • Low engine oil level, or engine oil too thin. • Oil pressure relief spring weak or stuck. • Oil pickup tube and screen blocked, or has air leak. • Excessive oil pump clearance. • Excessive main, rod or camshaft bearing clearance.	**High Oil Pressure** • Improper grade of oil. • Oil pressure gauge or sending unit inaccurate. • Oil pressure relief valve sticking closed. **Noisy Main Bearings** • Inadequate oil supply. • Excessive main bearing clearance. • Excessive crankshaft end play. • Loose flywheel or torque converter. • Loose or damaged vibration damper. • Eccentric or out-of-round crankshaft journals. • Excessive belt tension. **Noisy Connecting Rods** • Inadequate oil supply. • Excessive bearing clearance or missing bearing. • Crankshaft connecting rod journal out-of-round. • Misaligned connecting rod or cap. • Improperly tightened connecting rod bolts. **Noisy Pistons and Rings** • Excessive piston-to-cylinder wall clearance. • Cylinder walls excessively tapered or out-of-round. • Piston ring broken. • Piston pin loose or seized. • Connecting rods misaligned. • Piston ring side clearance excessively loose or tight. • Excessive carbon build-up on piston. **Noisy Valve Train Components** • Insufficient oil supply. • Worn or bent push rods. • Worn rocker arms, or bridged pivots. • Dirt or chips in hydraulic valve lifters. • Excessive valve lifter leak down. • Valve lifter face worn. • Broken or cocked valve springs. • Excessive valve stem-to-guide clearance. • Valve bent. • Loose rocker arms. • Excessive valve seat runout. • Missing valve lock. • Push rod rubbing or contacting cylinder head.