

Troubleshooting Engine Mechanical Problems

Problem	Cause	Solution
Connecting rod bearing noise	<ul style="list-style-type: none">• Insufficient oil supply• Carbon build-up on piston• Bearing clearance excessive or bearing missing• Crankshaft connecting rod journal out-of-round• Misaligned connecting rod or cap• Connecting rod bolts tightened improperly	<ul style="list-style-type: none">• Inspect for low oil level and low oil pressure• Remove carbon from piston crown• Measure clearance, repair as necessary• Measure journal dimensions, repair or replace as necessary• Repair as necessary• Tighten bolts with specified torque
Piston noise	<ul style="list-style-type: none">• Piston-to-cylinder wall clearance excessive (scuffed piston)• Cylinder walls excessively tapered or out-of-round• Piston ring broken• Loose or seized piston pin• Connecting rods misaligned• Piston ring side clearance excessively loose or tight• Carbon build-up on piston is excessive	<ul style="list-style-type: none">• Measure clearance and examine piston• Measure cylinder wall dimensions, rebore cylinder• Replace all rings on piston• Measure piston-to-pin clearance, repair as necessary• Measure rod alignment, straighten or replace• Measure ring side clearance, repair as necessary• Remove carbon from piston
Valve actuating component noise	<ul style="list-style-type: none">• Insufficient oil supply• Rocker arms or pivots worn• Foreign objects or chips in hydraulic tappets• Excessive tappet leak-down• Tappet face worn• Broken or cocked valve springs• Stem-to-guide clearance excessive• Valve bent• Loose rocker arms• Valve seat runout excessive• Missing valve lock• Excessive engine oil	<ul style="list-style-type: none">• Check for:<ul style="list-style-type: none">(a) Low oil level(b) Low oil pressure(c) Wrong hydraulic tappets(d) Restricted oil gallery(e) Excessive tappet to bore clearance• Replace worn rocker arms or pivots• Clean tappets• Replace valve tappet• Replace tappet; inspect corresponding cam lobe for wear• Properly seat cocked springs; replace broken springs• Measure stem-to-guide clearance, repair as required• Replace valve• Check and repair as necessary• Regrind valve seat/valves• Install valve lock• Correct oil level