

# Troubleshooting Engine Performance

Problem	Cause	Solution
Power not up to normal (cont.)	<ul style="list-style-type: none"> <li>• Incorrect spark plug gap</li> <li>• Faulty fuel pump</li> <li>• Faulty fuel pump</li> <li>• Incorrect valve timing</li> <li>• Faulty ignition coil</li> <li>• Faulty ignition wires</li> <li>• Improperly seated valves</li> <li>• Blown cylinder head gasket</li> <li>• Leaking piston rings</li> <li>• Improper feedback system operation</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust gap</li> <li>• Replace fuel pump</li> <li>• Replace fuel pump</li> <li>• Check valve timing and repair as necessary</li> <li>• Test coil and replace as necessary</li> <li>• Test wires and replace as necessary</li> <li>• Test cylinder compression and repair as necessary</li> <li>• Replace gasket</li> <li>• Test compression and repair as necessary</li> <li>• Refer to Chapter 4</li> </ul>
Intake backfire	<ul style="list-style-type: none"> <li>• Improper ignition timing</li> <li>• Defective EGR component</li> <li>• Defective TAC vacuum motor or valve</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust timing</li> <li>• Repair as necessary</li> <li>• Repair as necessary</li> </ul>
Exhaust backfire	<ul style="list-style-type: none"> <li>• Air leak into manifold vacuum</li> <li>• Faulty air injection diverter valve</li> <li>• Exhaust leak</li> </ul>	<ul style="list-style-type: none"> <li>• Check manifold vacuum and repair as necessary</li> <li>• Test diverter valve and replace as necessary</li> <li>• Locate and eliminate leak</li> </ul>
Ping or spark knock	<ul style="list-style-type: none"> <li>• Incorrect ignition timing</li> <li>• Distributor advance malfunction</li> <li>• Excessive combustion chamber deposits</li> <li>• Air leak into manifold vacuum</li> <li>• Excessively high compression</li> <li>• Fuel octane rating excessively low</li> <li>• Sharp edges in combustion chamber</li> <li>• EGR valve not functioning properly</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust timing</li> <li>• Inspect advance mechanism and repair as necessary (Distributor systems only)</li> <li>• Remove with combustion chamber cleaner</li> <li>• Check manifold vacuum and repair as necessary</li> <li>• Test compression and repair as necessary</li> <li>• Try alternate fuel source</li> <li>• Grind smooth</li> <li>• Test EGR system and replace as necessary</li> </ul>
Surging (at cruising to top speeds)	<ul style="list-style-type: none"> <li>• Low fuel pump pressure or volume</li> <li>• Improper PCV valve air flow</li> <li>• Air leak into manifold vacuum</li> <li>• Incorrect spark advance</li> <li>• Restricted fuel filter</li> <li>• Restricted air cleaner</li> <li>• EGR valve not functioning properly</li> <li>• Improper feedback system operation</li> </ul>	<ul style="list-style-type: none"> <li>• Replace fuel pump</li> <li>• Test PCV valve and replace as necessary</li> <li>• Check manifold vacuum and repair as necessary</li> <li>• Test and replace as necessary</li> <li>• Replace fuel filter</li> <li>• Clean or replace air cleaner filter element</li> <li>• Test EGR system and replace as necessary</li> <li>• Refer to Chapter 4</li> </ul>