

		appropriate Automatic Transmission article for the procedure. TEST the system for normal operation after the repair.
Engine vibration - mostly at coast/neutral coast. Condition improves with vehicle acceleration	Combustion instability	CHECK the ignition system. INSTALL new components as necessary. Refer to the appropriate Engine article for the procedure. TEST the system for normal operation after the repair.
Engine vibration or shudder - occurs with light to medium acceleration above 56 km/h (35 mph)	Worn or damaged spark plugs	INSPECT the spark plugs for cracks, high resistance or broken insulators. INSTALL a new spark plug(s) as necessary. Refer to the appropriate Engine article for the procedure. TEST the system for normal operation after the repair.
	Plugged fuel injector	REPAIR or INSTALL a new injector as necessary. Refer to the appropriate Engine article for the procedure. TEST the system for normal operation after the repair.
	Contaminated fuel	INSPECT the fuel for contamination. DRAIN the fuel system and refill. TEST the system for normal operation after the repair.

DIAGNOSIS AND TESTING > ENGINE > COMPONENT TESTS

The following component tests are used to diagnose engine concerns.

Engine Oil Leaks



NOTE: If an overnight drive is done, the fan air or road air blast can cause erroneous readings.



NOTE: When diagnosing engine oil leaks, the source and location of the leak must be positively identified prior to repair.

Prior to carrying out this procedure, clean the cylinder block, cylinder heads, valve covers, oil pan and flywheel/flexplate with a suitable solvent to remove all traces of oil.

Engine Oil Leaks - Fluorescent Oil Additive Method

Use the 12 Volt Master UV Diagnostic Inspection Kit to carry out the following procedure for oil leak diagnosis.

1.

Add 29.6 ml (1 oz) of Dye-Lite® Gasoline Engine Oil Leak Detection Dye (164-R3700 Rotunda) to a minimum of 0.47L (1/2 qt) and a maximum of 0.95L (1 qt) engine oil and fill through the engine oil fill. Thoroughly premix the gasoline engine oil leak detection dye or it will not have enough time to reach the crankcase, oil galleries and seal surfaces during this particular 15 minute test. The additive must be mixed well with oil and added through the oil fill. Check the level on the oil level indicator to determine what amount of oil to premix. If it is in the middle of the crosshatch area or below the full mark, use 0.95L (1 qt). If it is at the full mark, use 0.47L (1/2 qt).

2.

Run the engine for 15 minutes. Stop the engine and inspect all seal and gasket areas for leaks using the UV Leak Detector Kit. A clear bright yellow or orange area will identify the leak. For extremely small leaks, several hours may be required for the leak to appear.

3.

At the end of test, make sure the oil level is within the upper and lower oil indicator marks. Remove oil as necessary if it registers above the full mark.

Leakage Points - Underhood

Examine the following areas for oil leakage:

- Valve cover gaskets
- Cylinder head gaskets
- Oil cooler, if equipped
- Oil filter adapter
- Engine front cover
- Oil filter adapter and filter body
- Oil level indicator tube connection
- Oil pressure switch

Leakage Points - Under Engine, With Vehicle on Hoist

Examine the following areas for oil leakage:

- Oil pan gaskets
- Oil pan sealer
- Engine front cover gasket
- Crankshaft front seal
- Crankshaft rear oil seal