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4.4 OIL CONSUMPTION DIAGNOSIS

DEFINITION: Excessive oil consumption (not due to leaks) is the use of 0.95 litres or more of engine oil within 2,500 kilometres.

Checks	Action
Preliminary	1. The causes of excessive oil consumption may include the following conditions: • External oil leaks. Refer to *4.5 OIL LEAK DIAGNOSIS* in this Section. • Incorrect oil level or improper reading of the oil level indicator. With the vehicle on a level surface, run the engine for a few minutes, allow adequate drain down time (2-3 minutes) and check for the correct engine oil level. • Improper oil viscosity. Refer to the vehicle Owners Manual and use the recommended SAE grade and viscosity for the prevailing temperatures. • Continuous high speed driving and/or severe usage. • Crankcase ventilation system restrictions or malfunctioning components. • Worn valve guides and/or valve stems. • Worn or improperly installed valve stem oil seals. • Piston rings broken, worn, not seated properly. Allow adequate time for the rings to seat. Replace worn piston rings as necessary. • Piston and rings improperly installed or incorrectly fitted to the cylinder bore. • Excessive piston to bore clearance.

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4.5 OIL PRESSURE DIAGNOSIS

Conduct an oil pressure check, as detailed in **2.4 ENGINE OIL PRESSURE** - CHECK, in this Section

Checks	Action
Oil Pressure Below Specification	1. Inspect the engine for one or more of the following: • Oil pump worn or dirty. • Oil pump to engine block bolts loose. • Oil pump screen loose, plugged or damaged. • Oil pump screen O-ring seal missing or damaged. • Malfunctioning oil pump oil pressure relief valve. • Excessive bearing clearances. • Cracked, porous or restricted oil galleries. • Oil gallery plugs leaking, missing or incorrectly installed. • Broken/malfunctioning hydraulic valve lifters.
Oil Pressure Above Specification	1. Inspect for one or more of the following: • Plugged or incorrect oil filter fitted. • Malfunctioning oil by-pass valve. • Malfunctioning oil pressure gauge or sensor.

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4.6 OIL LEAK DIAGNOSIS

NOTE: Most fluid leaks can be repaired by visually locating the leak, repairing or replacing the component, or by resealing the gasket surface.

When a leak has been located, determine the *cause* of the leak. Otherwise the leak will most probably re-occur.

Step	Action	Value(s)	Yes	No
1	1. Operate the vehicle until it reaches normal operating temperature. 2. Park the vehicle on a level surface, over a large sheet of paper or other clean surface. 3. Wait for at least 15 minutes. 4. Check for oil drips. Are oil drips present?	–	Go to Step 2	Go to Step 3
2	Identify the type of fluid and the approximate location of the leak. Can you identify the type of fluid and the approximate location of the leak?	–	Go to Step 10	Go to Step 3
3	1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Check for leaks at the following locations: • Sealing surfaces. • Fittings • Cracked or damaged components. Can you identify the source of the leak?	–	Go to Step 10	Go to Step 4
4	1. Completely clean the entire engine and surrounding components. 2. Operate the vehicle for several miles at normal operating temperature and at varying speeds. 3. Park the vehicle on a level surface, over a large sheet of paper or other clean surface. 4. Wait for at least 15 minutes. 5. Identify the type of fluid, and the approximate location of the leak. Can you identify the type of fluid and the approximate location of the leak?	–	Go to Step 10	Go to Step 5
5	1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Check for leaks at the following locations: • Sealing surfaces. • Fittings. • Cracked or damaged components. Can you identify the source of the leak?	–	Go to Step 10	Go to Step 6
6	1. Completely clean the entire engine and surrounding components. 2. Apply an aerosol-type powder (baby powder, foot powder, etc.) to the suspected area. 3. Operate the vehicle for several miles at normal operating temperature and at varying speeds. 4. Identify the type of fluid, and the approximate location of the leak, from the discolorations in the powder surface. Can you identify the type of fluid and the approximate location of the leak?	–	Go to Step 10	Go to Step 7
7	1. Visually inspect the suspected area. Use a small mirror to assist in looking at hard to see areas. 2. Check for leaks at the following locations: • Sealing surfaces. • Fittings. • Cracked or damaged components. Can you identify the source of the leak?	–	Go to Step 10	Go to Step 8