DIAGNOSIS AND TESTING (Continued)

Compression Pressure Limit Chart

Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI	Maximum PSI	Minimum PSI
134	101	164	123	194	145	224	168
136	102	166	124	196	147	226	169
138	104	168	126	198	148	228	171
140	105	170	127	200	150	230	172
142	107	172	129	202	151	232	174
144	108	174	131	204	153	234	175
146	110	176	132	206	154	236	177
148	111	178	133	208	156	238	178
150	113	180	135	210	157	240	180
152	114	182	136	212	158	242	181
154	115	184	138	214	160	244	183
156	117	186	140	216	162	246	184
158	118	188	141	218	163	248	186
160	120	190	142	220	165	250	187
162	121	192	144	222	166		

CA5015-B

If one or more cylinders read low, squirt approximately one tablespoon of XO-20W30-QR (ESR-M2C179-A) or equivalent engine oil on top of the pistons in the low reading cylinders. Repeat compression pressure check on these cylinders.

1. If compression improves considerably, piston rings are at fault.
2. If compression does not improve, valves are sticking or seating poorly.
3. If two adjacent cylinders indicate low compression pressures and squirting oil on pistons does not increase compression, the cause may be a cylinder head gasket leak between cylinders. Engine oil and / or coolant in cylinders could result from this problem.

   It is recommended the Compression Pressure Limit Chart be used when checking cylinder compression so that the lowest reading number is 75 percent of the highest reading.

Example

If, after checking the compression pressures in all cylinders, it was found that the highest reading obtained was 196 psi and the lowest pressure reading was 155 psi, the engine is within specification and the compression is considered satisfactory.

Excessive Engine Oil Consumption

Tools Required:

- Rotunda Engine Cylinder Leak Detection Kit 014-00705

The amount of oil an engine uses will vary with the way the vehicle is driven in addition to normal engine-to-engine variation. This is especially true during the first 12000 km (7500 miles) when a new engine is being broken in or until certain internal engine components become conditioned. Vehicles used in heavy duty operation may use more oil. The following are examples of heavy-duty operation:

- Trailer towing applications
- Severe loading applications
- Sustained high speed operation

Engines need oil to lubricate the following internal components:

- Engine block cylinder walls
- Pistons and piston rings
- Intake and exhaust valve stems
- Intake and exhaust valve guides
- All internal engine components

When the pistons move downward, a thin film of oil is left on the cylinder walls. The thin film of oil is burned away on the firing stroke during combustion. If an engine burned a drop of oil during each firing stroke, oil consumption would be about one quart for every mile traveled. Fortunately modern engines use much less oil than this example. However, even efficient engines will use some oil or they would quickly wear out. Additionally as the vehicle is operated, some oil is drawn into the combustion chambers past the intake and exhaust valve stem seals and burned.

Many different conditions can affect oil consumption rates. The following is a partial list of these items: