

# 4. Lubrication System

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## Service Information

### ⚠ WARNING

- If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. Run the engine in an open area or with an exhaust evacuation system in an enclosed area.
- Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

- The service procedures in this section must be performed with the engine oil drained.
- When removing and installing the oil pump use care not to allow dust or dirt to enter the engine.
- If any portion of the oil pump is worn beyond the specified service limits, replace the oil pump as an assembly.
- After the oil pump has been installed check that there are no oil leaks and that oil pressure is correct.

## Troubleshooting

### Oil Level Low

- Oil consumption
- External oil leak
- Worn piston ring or incorrect piston ring installation
- Worn valve guide or seal

### Low Or No Oil Pressure

- Clogged oil orifice
- Incorrect oil being used

### No Oil Pressure

- Oil level too low
- Oil pump drive sprocket broken
- Oil pump damaged (pump shaft)
- Internal oil leaks

### Low Oil Pressure

- Clogged oil strainer screen
- Oil pump worn or damaged
- Internal oil leak
- Incorrect oil being used
- Low oil level

### High Oil Pressure

- Plugged oil filter, gallery, or metering orifice
- Incorrect oil being used