

General Motor Knowledge  
Part 14

Lubrication System

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Will you be able to drive that new car one hundred and twenty thousand miles? Have you ever thought about how long it would take to drive that many miles? If you were to drive at an average speed of 50 miles per hour, it would take 2,400 hours to drive 120,000 miles. But wait! This is only 100 days, just a little over three months! Will you be able to drive that new car for three months before it falls apart? If you can, how many times will you have to change the oil?

A refrigerator has a useful life of 15 to 20 years. It runs about 60% of the time or a total of 10 to 12 years! This is considerably longer than three months for a new car. Most folks don't change the oil in their refrigerator.

How do we make motors that will out-live thirty automobiles back-to-back? The secret is our bearing and shaft finishes and our lubrication system. Have you ever thought about our oil system?

The oil is stored in a "reservoir" wick. It is applied to the shaft by a "feeder" wick. The shaft pumps the oil, under pressure, through the bearing. Can you see how this is done? When the bearing is full of oil, the shaft literally floats on the oil film. This happens and there is no metal rubbing on metal, almost no bearing wear. The oil continues out the end of the bearing. It is caught and returned to the oil reservoir through a "return" wick. Do you recognize these parts? Once back in the reservoir the oil is cooled by the oil still there. As it circulates back toward the shaft, the wicks filter any impurities.

Our lubrication system contains an oil pump, an oil cooler and an oil filter. We use an oil designed to operate at -40°F. We use another oil that continues to lubricate our bearing under conditions that would boil water. Yet, our oil system enables the motor to operate, unattended, for many years not just three months.