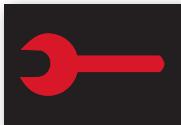


SERVICE REMINDER LIGHT



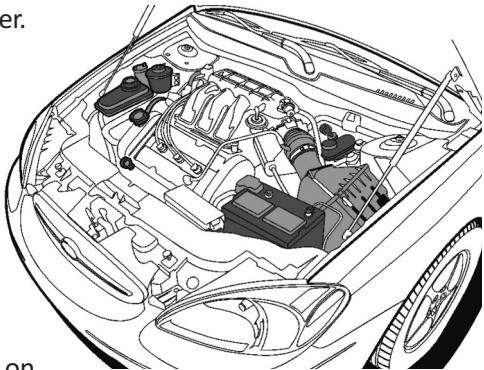
Good Maintenance Adds Extra Mileage



The old days of putting a small sticker on the inside of your windshield as a reminder of when your vehicle is due for an oil change are over. Many newer automobiles have a system to track the "oil life" and notify the owner when it is time for an oil change.

Some automobile manufacturers equip their vehicles with mileage or condition-based reminder systems. An on-board computer keeps track of the miles driven or engine operating conditions since the last maintenance service was performed and turns on a reminder light when the next maintenance is due. These manufacturers want their customers to be aware of the recommended oil drain interval and rely on a reminder system and the owner's manuals to provide this information.

The oil change intervals recommended by the vehicle manufacturer are also based on the use of the proper engine oil. It's vitally important that the correct type (conventional or synthetic) and grade of oil be installed. For vehicles driven minimally, the time since the last service should be used rather than the mileage recommendations.



What does it mean?



The oil and filter change is the building block of most scheduled maintenance programs. Since the oil requires replacement more frequently than any other consumable, any scheduled maintenance program or maintenance reminder system should take this into account.

Modern automotive engine lubricants serve several important functions that are essential for engine performance and longevity. These functions include lubrication of moving parts in order to reduce friction and wear and improving fuel economy.

Engine lubricants must perform these functions for hundreds of hours between oil changes under a variety of operating conditions. Unfortunately, the properties of engine oil change during service, due to a number of factors such as environmental conditions, vehicle aging, severe driving conditions, as well as engine design and performance specifications.

For instance, oil change interval lengths have historically been classified as either "normal" or "severe" based upon applicable driving conditions. The definition of normal vs. severe driving may vary depending on the automobile manufacturer. Generally, normal service is defined as: "Anything other than severe service." Normal driving conditions support an engine oil's ability to maintain its performance over a greater period of time and mileage.



On the other end of the spectrum, severe service conditions will cause engine oil properties to degrade more quickly. Severe service is generally defined by driving characteristics that may include: stop-and-go driving, frequent highway driving, operation in dusty conditions, cold-weather operation, hot-weather operation, short trips under 4 miles, etc.

Many vehicle manufacturers have added a Service Interval Indicator because they recognized that each vehicle is used differently—and so the need for routine maintenance is different for each vehicle.



**MOTORIST
ASSURANCE
PROGRAM**

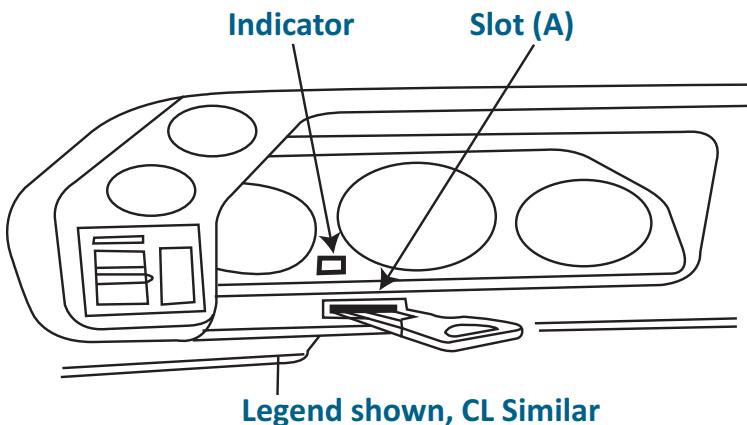
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The system continually analyzes the way the vehicle is driven, and uses this analysis to determine when service is needed; however, many of these systems do not directly measure lubricant quality. A few systems use oil condition sensors to measure lubricant characteristics and determine oil change intervals. Even these systems give a limited amount of information regarding the lubricant's actual condition.

Keep in mind, scheduled maintenance intervals do not address the problem of premature lubrication failure, which can result from the presence of engine coolant or fuel in the oil. A software-based maintenance reminder system can go only so far, because it may not directly measure the condition of the oil or detect the presence of contamination.

Resetting mileage-based maintenance reminder systems is usually pretty straightforward and should not require special tools.



Some early reminder systems had a small slot in the dash and inserting the ignition key in the slot reset the system and turned out the light.

Since most of the instrument/control panels are now electronic rather than mechanical, reset procedures usually involve a combination of a reset button and the ignition switch.

Proper Maintenance Helps Extend Vehicle Life!

Your driving type or vehicle usage may affect the maintenance intervals below.

You should follow the manufacturer's service schedule that best matches your vehicle's operating conditions.

Those recommendations may include:

- » Change your engine oil at the vehicle manufacturer's recommended service interval that matches your vehicle's operating conditions and your driving habits
- » Check your tire inflation pressure monthly
- » Rotate your tires at the vehicle manufacturer's recommended service interval or every 6 months/5,000 miles
- » Change the engine air filter annually or when visibly restricted.
- » Inspect Brake System every 12 months/15,000 miles

Taking the Mystery Out of Maintenance



Severe Driving Conditions

- » Trips of less than four miles are one of the most frequent and severe types of driving. Short trips with many stops and starts (particularly in cold weather), do not allow engines to reach normal operating temperatures which may cause moisture to accumulate in the crankcase.
- » Frequent idling for long periods of time, such as stop-and-go driving in heavy traffic, or sustained highway driving in hot weather, can make it essential to change the engine oil and oil filter at 3,500 mile or three-month intervals.
- » Although the base oil does not usually wear out, the oil additives do, and unless they are replenished, the oil cannot properly function and harmful contaminants may accumulate in the crankcase.
- » Oil change recommendations are not retroactive and do not alter the recommendations for earlier model cars. Applying such schedules to older cars could lead to serious problems.



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