

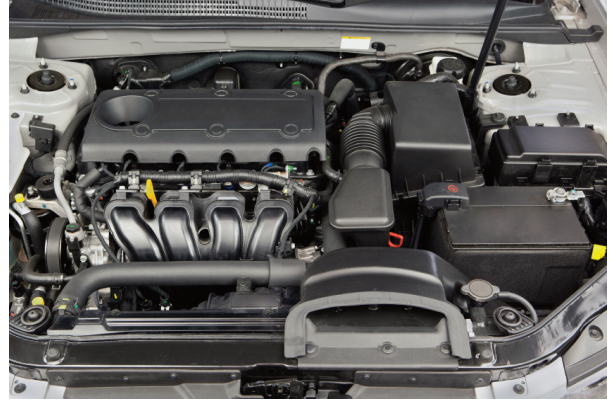
# ENGINE OIL BASICS



**Good Maintenance  
Adds Extra Mileage**



The primary function of engine oil is to provide lubrication to the metal surfaces inside an engine. With proper lubrication the components will not rub against each other as frequently and wearing out due to friction can be reduced. Engine oil also cleans the engine by carrying away contaminants and harmful chemicals, the unwanted by-products of the combustion process; cools the engine by transferring heat that is generated away from the components that may be damaged with increased temperature, and improves sealing around the critical components inside the engine minimizing their exposure to oxygen. Engine oil also contains an additive package designed to counteract the acids that are a result of the combustion process.



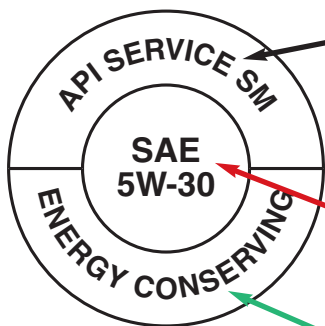
## What does it mean?



### The API Certification Mark, also known as the “Starburst”

An oil displaying this mark meets the current engine protection standard and fuel economy requirements of the International Lubricant Standardization and Approval Committee (ILSAC), a joint effort of U.S. and Japanese automobile manufacturers. Most automobile manufacturers recommend oils that carry the API Certification Mark.

### The API Service Symbol, also known as the “Donut”



**1. Performance Level:** Gasoline engine oil categories (for cars, vans, and light trucks with gasoline engines): Oils designed for gasoline-engine service fall under API's "S" (Service) categories.

Diesel engine oil categories (for heavy-duty trucks and vehicles with diesel engines): Oils designed for diesel-engine service fall under API's "C" (Commercial) categories.

**2. Viscosity Grade:** The measure of an oil's thickness and ability to flow at certain temperatures. Vehicle requirements may vary. Follow your vehicle manufacturer's recommendations on SAE oil viscosity grade.

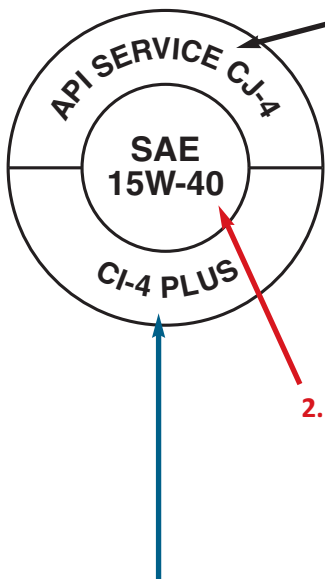
**3. Energy Conserving:** The "Energy Conserving" designation applies to oils intended for gasoline-engine cars, vans, and light trucks. Widespread use of "Energy Conserving" oils may result in an overall savings of fuel in the vehicle fleet as a whole.



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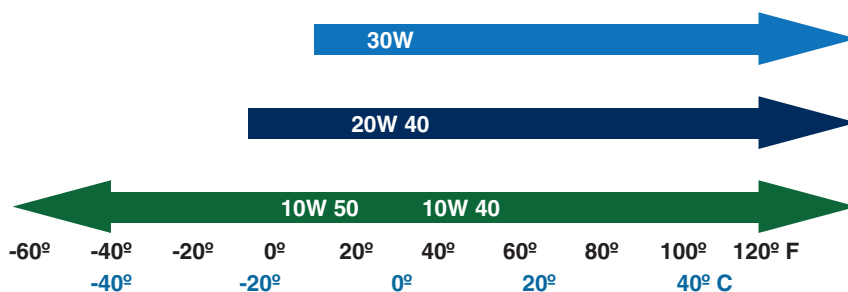
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### The API Service Symbol "Donut" with CI-4 PLUS

Used in conjunction with API CI-4 and CJ-4, the "CI-4 PLUS" designation identifies oils formulated to provide a higher level of protection against soot-related viscosity increase and viscosity loss due to shear in diesel engines. Like Energy Conserving, CI-4 PLUS appears in the lower portion of the API Service Symbol "Donut."

### Engine Oil Viscosity Chart



## Things to Watch For

- » Some of the motor oil components are consumed sacrificially while doing the job of protecting your engine. Foreign contaminants also accumulate in the oil.
- » The correct oil change interval is the one recommended by the engine manufacturer for your individual driving conditions. It is printed in the vehicle owner's manual.
- » Severe use typically includes stop-and-go driving, frequent high-speed driving and short trips, towing, operating in dusty conditions and operating in cold / hot weather.
- » You should review the severe service definition in your owner's manual to determine the proper oil drain interval.



### 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*



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