

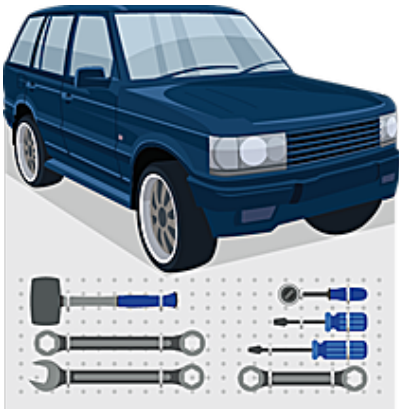
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Summary on Viscosity

The proper viscosity is the single most important criteria of a lubricating oil. The basic performance of machinery is based on the viscosity of the lubricant. Viscosity is the resistance to the flowability of the oil. The thicker an oil, the higher its viscosity.

Multigrade oils work by having a polymer added to a light base oil that prevents the oil from thinning too much as it warms up. At low temperatures, the polymers are coiled up and allow the oil to flow as it's low number (W number) indicates.



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As the oil heats up, the polymers unwind into long chains which prevent the oil from thinning as much as it normally would. The result is that at 100°C, the oil has thinned only as much as its higher rating. Think of it like this: a 10W30 oil is a 10-weight oil that will not thin more than a 30-weight oil when it gets hot.

The viscosity index of a lubricant is an empirical formula that allows the change in viscosity in the presence of heat to be calculated. This tells the user how much the oil will thin when it is subjected to heat. The higher the viscosity index, the less an oil will thin at a specified temperature. Multi-viscosity motor oils will have a viscosity index well over 100, while single viscosity motor oils and most industrial oils will have a VI of about 100 or less.