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Octane Requirements

Scope

Worldwide

Situation

We have received inquiries from customers wondering if they can use fuel with a slightly lower than required octane rating, if it doesn't contain ethanol. The fuel octane rating must be equal to or greater than the required octane rating, regardless of its ethanol content.

The Octane Rating and Its Importance

The octane rating is a number that relates to the fuel's ability to resist detonation. Fuels with higher octane ratings are more resistant to detonation than fuels with lower octane ratings. Engines with high compression ratios, superchargers, or turbochargers, require fuel that is more resistant to detonation.

When part of the air/fuel mixture is ignited from the heat of compression, and the other part of the fuel is ignited by the spark plug, the two flame fronts collide in the combustion chamber, and damage the pistons and cylinder heads.

Detonation will result in catastrophic engine failure. Octane ratings must be adhered to—warranty claims that result from using the wrong fuel will not be honored.

Where to Find the Octane Rating

Octane ratings or research octane numbers (RON) are listed in the owner's manual for the engine under Fuel Requirements and on the data plate for the engine.

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