



# CompAir



## Hydrotreated Vegetable Oil (HVO) Fuel in Portable CompAir Compressors

Hydrotreated Vegetable Oil (HVO) is a renewable diesel alternative that has gained popularity in various industries, including construction and manufacturing. Portable compressors, commonly used in these industries, can greatly benefit from HVO fuel due to its environmental and operational advantages.

HVO fuel is produced through the hydrotreatment of vegetable oils and animal fats. Unlike traditional biodiesel, HVO has a similar chemical structure to conventional diesel, making it a drop-in replacement without requiring engine modifications. It is free from oxygen, ensuring better stability and performance.

### Benefits of Using HVO in Portable Compressors

#### 1. Environmental Benefits

- ▶ Reduces greenhouse gas emissions by up to 90% compared to fossil diesel.
- ▶ Lower levels of particulate matter and NOx emissions contribute to improved air quality.
- ▶ Derived from sustainable sources, reducing dependence on fossil fuels.

- ▶ Offers extended storage life with reduced risk of degradation.
- ▶ Produces fewer deposits, leading to cleaner engine operation and lower maintenance costs.



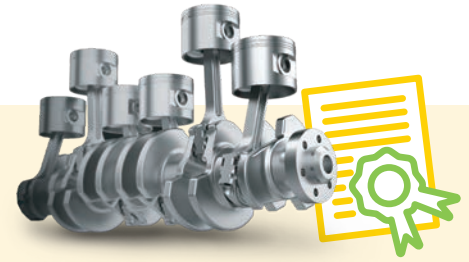
#### 2. Operational Benefits

- ▶ Compatible with existing diesel engines, requiring no modifications.
- ▶ Provides improved cold-weather performance due to its higher cetane number.

#### 3. Compliance and Regulations

- ▶ Meets EN15940 standards for paraffinic fuels, ensuring high quality and reliability.
- ▶ Many governments and organizations support HVO adoption through incentives and regulatory frameworks.





## Current Stance from Engine Manufacturers

Leading engine manufacturers have provided clarity on the use of HVO in their engines, affirming its suitability for various applications, including portable compressors.

**Cummins** has officially approved the use of HVO in its diesel engines. They state that HVO can be used as a direct substitute for traditional diesel without modifications. Cummins recommends using high-quality HVO meeting the EN15940 standard to ensure optimal engine performance and longevity. They emphasize that HVO will help reduce emissions and improve fuel efficiency.

**Yanmar** supports the use of HVO in its engines, noting that it is a safe and efficient fuel option for their diesel-powered machinery. Yanmar highlights that HVO reduces CO<sub>2</sub> emissions by up to 90% compared to fossil fuels, aligning with their commitment to sustainability. As with Cummins, they advise ensuring the HVO meets the required quality standards and confirm that no engine modifications are needed.

**Deutz** also approves HVO for use in its diesel engines. Their engines are designed to operate on HVO without any modifications, and they encourage customers to use HVO as an alternative to traditional diesel to contribute to reducing emissions. Deutz has been active in advocating for alternative fuels, including HVO, to help meet stringent emissions regulations while maintaining performance standards.

**Note: There will be a 1– 3% reduction in available engine power due to the lower density of HVO fuel, while unlikely to present any problems you should be aware of this. Contact the engine manufacturer for full fluid recommendation guidelines.**

## HVO Fuel Specifications

HVO fuel meets stringent industry standards to ensure optimal performance in diesel engines. Below are key specifications:

- ▶ **Standard Compliance:** EN15940 (European standard for paraffinic diesel fuels), ASTM D975 (U.S. diesel fuel-standard)
- ▶ **Cetane Number:** 70–90 (compared to 48–55 for regular diesel) – ensures better combustion and engine performance
- ▶ **Sulfur Content:** < 5 ppm – ultra-low sulfur reduces engine wear and emissions
- ▶ **Density:** 775–800 kg/m<sup>3</sup> at 15°C – slightly lower than conventional diesel
- ▶ **Viscosity:** 2–4 mm<sup>2</sup>/s at 40°C – comparable to fossil diesel for smooth engine operation
- ▶ **Oxygen Content:** 0% – improves storage stability and reduces risk of oxidation

- ▶ **Aromatics:** < 1% – minimizes soot formation and particulate emissions
- ▶ **Cold Flow Properties:** Can be tailored for different climates (e.g., winter-grade variants available)
- ▶ **Flash Point:** > 61°C – enhances safety in handling and storage

These specifications ensure that HVO functions efficiently in modern diesel engines, including those from Cummins, Yanmar, and Deutz, without requiring modifications.

## Considerations for Use

- ▶ **Fuel Availability:** HVO is becoming more widely available but may not be as accessible as traditional diesel in some regions.
- ▶ **Cost:** Typically, HVO is more expensive than conventional diesel; however, the price is expected to decrease as production scales up.
- ▶ **Storage and Handling:** HVO is less prone to microbial growth than bio-diesel, but proper storage practices should still be followed.

## Conclusion

HVO fuel presents a promising solution for reducing emissions and improving the efficiency of portable compressors. Its drop-in compatibility, environmental advantages, and operational benefits make it a viable choice for industries looking to transition toward sustainable energy sources. As availability and affordability improve, HVO is likely to become a standard fuel option in various applications.



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