

## ABOUT VOLVO/WESTPORT HPDI™ FUEL SYSTEM

### Overview

The Volvo/Westport High Pressure Direct Injection (HPDI™) fuel system is a cost-effective way to reduce CO<sub>2</sub> in long-haul trucking and other high-load and off-road applications. The system offers OEMs the flexibility to easily differentiate their biogas, natural gas, hydrogen, and other fuel product lines while maintaining maximum commonality with their conventional diesel-fueled products.

Engines can achieve higher horsepower and torque by using direct injection and relying on high pressures in the combustion chamber for ignition. Subsequently, the characteristic of the engine using an HPDI fuel system is very similar to a diesel engine.

### How it Works

- The HPDI fuel system consists of a fully integrated “tank to tip” solution based on diesel technology
- At the heart of the engine is a revolutionary patented injector with a dual concentric needle design
- A small amount of pilot fuel (which can be diesel fuel or a biodiesel renewable fuel) is injected into the cylinder prior to the gas to initiate the ignition

### HPDI and Alternative Fuels

An HPDI-internal combustion engine system is the most fuel-flexible solution in terms of which low carbon fuels it can run on, including renewable natural gas, hydrogen, e-Fuels and biofuels, all while delivering peak performance and maintaining or exceeding power, efficiency, and torque.



### Straightforward Transition

HPDI allows OEMs to preserve their existing engine architecture, leverage existing engineering talent and experience, installed investments, and decades of technology development in vehicle powertrain design, supply chain, and manufacturing.

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For fleets, a vehicle equipped with the HPDI system is an ideal solution to reduce their fuel costs for decarbonized regional and long-distance applications with no compromise on vehicle performance.

The HPDI transition is straightforward for OEMs and fleets alike:

- Internal combustion engines with alternative fuels utilize existing vehicle architectures
- An internal combustion engine burns alternative fuels in much the same way it burns diesel, minimizing the learning curve
- The range and refueling times are similar\*, allowing fleets to maintain existing practices
- Known technology provides familiarity with operation, troubleshooting, maintenance, servicing, and drivability
- Diesel and alt-fuel engines share similar componentry, creating economies of scale
- Existing and established ICE supply chain can be utilized to maximize overall efficiencies

\*As defined by the profile of the alternative fuel

For additional information, please visit the [HPDI website](#).

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## About Westport Fuel Systems

At Westport, we are driving innovation to power a cleaner tomorrow. We are a leading supplier of advanced fuel delivery components and systems for clean, low-carbon fuels such as natural gas, renewable natural gas, propane, and hydrogen to the global transportation industry. Our technology delivers the performance and fuel efficiency required by transportation applications and the environmental benefits that address climate change and urban air quality challenges. Headquartered in Vancouver, Canada, with operations in Europe, Asia, North America, and South America, we serve our customers in more than 70 countries with leading global transportation brands. At Westport, we think ahead. For more information, visit [www.wfsinc.com](http://www.wfsinc.com).

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