

Near-Zero Heavy-Duty Diesel Engine Enters Fleet Service

Already compliant with 2027 NO_x Emission Levels

SAN DIEGO, April 6, 2022 - Achates Power has announced that the cleaner, heavy-duty diesel engine it developed in a project funded by the California Air Resources Board (CARB) and several partners has entered fleet service with WALMART Corporation in a Peterbilt 579 tractor. It is the only diesel engine operating on the road capable of meeting CARB's 2027 regulation, which requires a 90% reduction in emissions of nitrogen oxide (NO_x) compared to current standards.

The project team also demonstrated that the engine, known as a heavy-duty opposed-piston diesel engine, reduces carbon dioxide (CO₂) by 10%. The Achates Power ultra-low-NO_x engine is engineered to achieve superior fuel efficiency because of its lower heat losses, improved combustion and reduced pumping losses. The cleaner engine is able to deliver ultra-low NO_x by managing exhaust gas temperatures to ensure rapid catalyst light off and by maintaining aftertreatment temperatures at optimum operating conditions in all driving conditions.

CALSTART leads the extensive demonstration project team. The team includes Aramco Americas, BASF, Corning, Southwest Research Institute, Borg Warner, Eaton, Faurecia, Tenneco, Eberspaecher and SuperTurbo. "Achates Power is grateful that the California Air Resources Board led the funding of this demonstration program, and we are pleased to work with our partners around the world to bring opposed-piston engines to the market," said Dave Crompton, President and CEO of Achates Power. "It is particularly noteworthy that we were able to achieve the extremely stringent state NO_x limits without any additional emissions control devices, reducing cost, complexity, and compliance risk of ultralow NO_x powertrain solutions."

In addition to CARB, the South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District, and the Sacramento Metro Air Quality Management District provided funding for the project.

"Reducing emissions from heavy-duty vehicles is critically needed to clean the air" said Wayne Nastri, Executive Officer of the South Coast Air Quality Management District. "This type of innovative, cleaner engine design is what we need not only here locally in the South Coast, but across the country to protect communities nationwide suffering from pollution associated with goods movement."

The opposed-piston engine can use existing manufacturing facilities, processes, and materials to allow rapid time-to-market and deployment. It also uses existing components and supply chains. It is expected to cost less than current engines, even as it meets much more stringent environmental regulations. It does not require any additional emissions control devices and has a reduced part count compared to conventional engines. In addition, Achates Power is conducting further testing with a fully aged catalyst (the equivalent of 800,000 miles of operation) to demonstrate continued ability to meet CARB's stringent standards.

About Achates Power, Inc.

The Achates Power Opposed-Piston Engine is engineered to meet future emissions and fuel economy standards more cost effectively than any other engine solution. Founded with the mission to build cleaner, more efficient engines, Achates Power has an experienced staff of engineers and scientists working with leading engine manufacturers to bring the OP Engine to market. Achates Power is backed by the Oil and Gas Climate Investments, Saudi Aramco Energy Ventures, and other investors. For more information visit www.achatespower.com.

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