International Newsroom

International Engine Group Introduces All-New V-8 Diesel Platform

Customer Requirements Drive Design of MaxxForce™ 7

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— International Truck and Engine Corporation today announced the MaxxForce™ 7, the engine that will redefine commercial diesel performance and driver comfort for the industry. Featuring

a high-pressure common-rail fuel system utilizing piezo-actuated injectors and an advanced air management system, the MaxxForce 7 provides exceptional fuel economy, power, performance, reliability and durability, while meeting the EPA's stringent 2007 EPA emissions standards.

"To meet demanding customer requirements, we started with fresh thinking based upon customer needs to design the new MaxxForce 7," said Jack Allen, president, International Engine Group. "Customers told us they need an engine that not only provides fuel economy, power and performance for their business, but also 'quiet power' for driver comfort and reduction of noise pollution for city routes where many of our products are used. We deliver that with the MaxxForce 7."

Fuel Economy

The new V-8 platform has had more than 80,000 hours of engine testing and 6 million miles of development and validation, the results of which show impressive numbers. Thousands of hours of dynamometer testing with the MaxxForce 7 engine have demonstrated exceptional fuel economy over its predecessors. By optimizing transmission and drivelines it is possible for our customers to see double-digit improvements in fuel economy. This is where the value of an integrated truck and engine company pays off for the customer. International has the ability to optimize its vehicles to achieve economy and

provide these advantages and benefits to its customers.

"Our lab data verifies a double-digit fuel economy gain during pickup and delivery cycles," said Helmut Endres, vice president engineering and product development, International Engine Group. "Even with increased displacement and the impact of exhaust aftertreatment devices, engine dynamometer and vehicle testing indicates the fuel economy of MaxxForce 7 powered products will not degrade (relative to the current V-8 product) under any operating condition."

Tom Cellitti, vice president and general manager, Medium Truck Vehicle Center, International Truck Group said, "In-city cycle testing indicates a significant improvement in tank mileage. This level of improvement is a result of base engine and vehicle power train optimization. Actual comparative vehicle fuel economy tests will be conducted later this year and actual results made available at that time."

High-Pressure Common Rail with Piezo-Actuated Injectors

Helping drive the fuel economy improvements is a high-precision, high-pressure common-rail fuel system that utilizes Piezo-actuated fuel injectors. The Piezo-electric linear actuator is a solid-state ceramic actuator that converts electric energy into linear motion precisely controlling the needle's opening and closing through the hydraulic circuit. The capabilities of these actuators, the fastest in the industry, combined with the ingenuity of International's calibrators result in a system that delivers five shots of fuel through the combustion cycle. This allows the fuel to burn more completely and efficiently resulting in greater fuel economy, lower noise, low emissions and aftertreatment control without external dosing.

Advanced Air Management

Working in conjunction with the common-rail fuel system is an airmanagement system utilizing an electronically controlled variable geometry turbocharger (EVRTTM). The EVRT employs a set of vanes that automatically adjust to optimize the airflow within the turbo to provides exceptional response over a wide range of engine speeds for impressive acceleration, grade climbing capability, high-altitude performance and towing capability. It also drives EGR, delivers more air at lower RPMs and reduces parasitic loads in low or no load conditions. All of this helps to reduce noise, improve fuel economy, meet emissions and make the International trucks the MaxxForce 7 powers responsive and driver friendly.

Other features behind the reliability, durability and performance of the MaxxForce 7 include:

- Parallel cooling optimizes the cooling of critical components versus using series-cooling loops. The parallel system used on the MaxxForce7 allows dedicated coolant flow to each critical component providing even cooling, which equates to long component life.
- Directed Piston Cooling Jet Tubes and gallery cooled pistons, a big-bore feature incorporated into the new engine, distribute cooling oil into a passage surrounding the combustion bowl to remove the maximum amount of heat from the piston. This helps to achieve maximum durability and reliability and assure outstanding power and cylinder life in the face of higher injection pressures.
- A single ECM with 32-bit processor provides powerful electronic control of the engine and aftertreatment systems and is vertically integrated to provide efficient communication with International's trucks.
- Top-mounted oil filter provides for ease and low cost of maintenance and ownership by allowing for quick and easy removal of the innovatively designed oil cartridge, which is similar in concept to a printer cartridge.
 This keeps oil self-contained during a filter change, which should be done

every 10,000 miles, and the engine free of dripping oil during routine maintenance.

- 10,000-mile oil drain interval allows drivers to go longer between service stops, adding to the engine's low cost of required maintenance and ownership.
- Hydraulic lifters give the MaxxForce 7 a service-free valvetrain, eliminating the need to ever get under the valve cover.

The MaxxForce 7 diesel engine will power Class 5 through Class 7 trucks with 200-230 hp at 2,600 RPM and 560-620 ft. lbs of torque @ 1,400 RPM.

International Truck and Engine Corporation

International Truck and Engine Corporation is the operating company of Navistar International Corporation (NYSE: NAV). The company produces International® brand commercial trucks, mid-range diesel engines and IC brand school buses, Workhorse brand chassis for motor homes and step vans, and is a private label designer and manufacturer of diesel engines for the pickup truck, van and SUV markets. The company is also a provider of truck and diesel engine parts and service sold under the International® brand. A wholly owned subsidiary offers financing services.

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