



Roush Revving Up Ford's F-150

For those who for some time have been anxiously waiting, a new propane-fueled vehicle was introduced by a Tier II original equipment manufacturer (OEM) early this spring. Even more exciting for propane-fueled vehicle enthusiasts is that the vehicle is America's best selling pickup truck—a Ford F-150. Several demonstration models of the new Roush liquid propane injection Ford F-150 are on the road, appearing at the Alternative Fuels & Vehicles National Conference in Anaheim, Calif. and the National Propane Gas Association (NPGA) Southeastern Convention & International Expo in Atlanta in April.

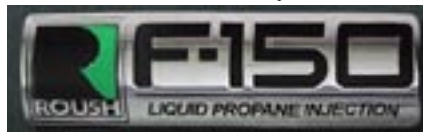
According to industry sources, the truck's advanced liquid injection system provides increased air charge and a cold dense mixture into the combustion chamber, resulting in no loss in horsepower or torque but with similar mileage compared with the gasoline version of the truck.

The first new dedicated propane vehicle from an OEM in several years, the truck was developed through a partnership between Roush Industries (Livonia, Mich.) and the Propane Education & Research Council (PERC). Roush, which also fields several NASCAR racing teams, is a full-service engineering supplier that has partnered with Ford for

several years.

The F-150 Styleside pickup is available with either XL or XLT trim, and the full range of regular cab, SuperCab, and SuperCrew cab is being offered, as well all bed lengths. The truck, powered by a Triton 5.4-liter, three-valve V-8 engine, features the CleanFUEL USA (Georgetown, Texas) dedicated Liquid Propane Injection (LPI™) system. In addition, the vehicle's OEM computer has been recalibrated to provide optimum performance and fuel economy.

The LPG rail assembly includes two



billet aluminum propane injection fuel rails, an insulated crossover, a combined pressure/temperature sensor, and a service port that provides data to the engine's computer, allowing for more precise fuel control at the intake port.

The Roush F-150 will be equipped with a toroidal 20-gal. under-body fuel tank designed by ICOM of Italy for the truck. The toroidal tank is positioned between the rear frame rails in the space usually occupied by the spare tire, which has been moved to the truck bed. An extended-range 50-gal. in-bed tank is also available.

The fuel tanks feature a high-flow fuel pump, dual filters, and the required control valves needed to run the engine. The tank also contains the fuel sender and electronic auto stop-fill system. Fueling is done through the fuel filler door, and an automatic stop-fill device prevents overfilling. This allows the vehicle to be fueled without using the "bleeder" system that vents propane vapor during filling. Fuel is also filtered prior to entering the tank.

The start is controlled by a one-touch system, where the engine controls take over from the driver to provide the fastest possible start with the lowest emissions. The OEM engine control is used with unique calibration values to suit the changes in properties from gasoline to propane. The maintenance schedule for the Roush F-150 LPI is similar to that of a gasoline engine schedule, with no special oils or change intervals required.

"Aside from its superb engineering, this vehicle is right here, right now," said Tom Arnold, director, alternative fuel products for Roush. "This vehicle will have a positive impact on reducing emissions and our dependency on foreign oil."

Roush is in the process of selecting and training Ford dealers to meet the re-



Roush's F-150 LPI fuel rail assembly features two fuel rails, an insulated crossover, and a service port. Fuel storage choices include a 20-gal. toroidal tank that fits between the rear frame rails and an optional 50-gal. in-bed tank.

quirements of local and national codes for service and sales of the dedicated propane F-150 which is being offered as a 2007.5 model year. Due to the additional training needed for service and sale, the number of dealers initially will be limited, but enough to cover the requirements of national availability.

Roush began taking orders for the pickup at the Southeastern Convention. Early response from attendees at the two conventions has been good, according to those involved with the project. Several orders were reportedly placed by propane marketers and a number of government fleet managers.

The pickup is scheduled to be available for purchase in August or September of this year. A preliminary application for certification by the Environmental

Protection Agency (EPA) has been submitted and the vehicle is expected to be designated SULEV or ULEV. EPA and California Air Resources Board (CARB) certifications are expected in July, according to Roush. Emission and engine testing was performed in Roush's own laboratories prior to making the vehicle available for EPA and CARB confirmatory testing.

The base LPI option adds \$6500 to the purchase price, which can be offset by alternative fuel incentives available through the 2005 federal highway and energy bills. The LPI option includes dedicated propane fuel lines, fuel rail assembly, and fuel tank.

PERC awarded the grant and contract for the pickup to Roush in February 2006. The company designed, manufac-

tured, and brought the truck to market in only 14 months. "Roush has an unparalleled reputation for technical expertise, quality, and value," noted Brian Feehan, managing director of engine fuel programs for PERC. "It is because of this expertise and experience that we chose Roush to develop this vehicle.

Eight demonstration models were manufactured for the vehicle's roll-out and show circuit and are currently being tested by propane marketers and fleet managers in different parts of the country.

For more information, or to order a Roush F-150 propane-fueled truck, call (800) 59ROUSH (597-6874) or visit www.propanetruck.us.—John Needham