Detroit Delivers Next-Level Fuel Efficiency with a New DT12 Transmission Series and Redesigned DD15 Gen 5 Engine

May 26, 2020

Contact: fred.ligouri@daimler.com

PORTLAND, Ore. – May 26, 2020 – Enhancements to the industry-leading Detroit® DD15 engine and an expanded lineup of the popular Detroit DT12 automated manual transmission will benefit Freightliner Cascadia customers with better fuel economy, performance and durability.

The DT12 transmission has evolved into the DT12 On-Highway Series to offer three purpose-built options to meet the unique needs of various on-highway applications, all of which are now available to order. Engineered with extreme fuel efficiency and performance in mind, the all-new DT12-HE debuts with enhanced features and robust capability.

The DD15 Gen 5 engine has been completely updated and engineered to deliver the efficiency the market expects and is a perfect complement to the Cascadia. It will be available with January 2021 truck builds. The Gen 5 advances the unmatched legacy of Detroit’s heavy-duty engine platform (HDEP), the most popular Class 8 heavy-duty engine platform sold in North America for the past five years, according to data from IHS Markit.

“The addition of the DD15 Gen 5 and DT12 On-Highway Series to the Detroit portfolio is sure to add to the momentum we have built by delivering the most robust and fuel-efficient powertrain on the market,” said Kelly Gedert, vice-president, On-highway market development, DTNA. “With a rich heritage of innovative engineering, world-class manufacturing facilities, and access to a global toolkit of cutting-edge technologies, our customers demand Detroit solutions because they are the best in the industry.”

The New Family of DT12 Transmissions: Maximum Efficiency, More Choice & Greater Durability

The DT12 On-Highway Series brings the same proven and durable experience that epitomizes Detroit components while pioneering new features for the DT12 transmission line.

The trifecta-topping Detroit DT12-HE transmission is an all-new DT12 option unleashing ultimate performance, capability and efficiency. Customer adoption is growing for downsophobia with faster rear axles ratios to achieve maximum powertrain fuel efficiency. In answer to this increasing demand, the revolutionary transmission boasts higher overall ratios for improved downsophobia and an improved oil system design, both contributing to increased efficiency. The DT12-HE debuts with Cascadia production beginning in early 2021 and additional model applications will be announced soon.

Also included in the DT12 On-Highway Series, is the DT12-HL transmission, a lightweight carry-over option offering comparable efficiency and durability to the rest of the portfolio and intended for weight-sensitive applications. Lastly, the DT12-H, a revised designation for the stalwart of the portfolio, retains the same venerable characteristics that have made the DT12 a favorite of fleets small and large. Both the DT12-H and DT12-HL are currently available for order in Cascadia builds.
The DD15 Gen 5 Engine: The Best Just Got Better

The new DD15 Gen 5 engine advances the legacy of the highly capable, and real world validated DD15 to bring enhanced performance, durability and fuel economy for the Cascadia. A complete rethink of the class-leader and the application of precision engineering principles combine to provide cutting-edge improvements for 2021, including increased downspeeding, better combustion and a new swirl piston design. With nearly 50 percent new componentry for the DD15 and fine-tuning by the global team of Detroit engineers, the DD15 Gen 5 brings up to a three percent improvement in fuel efficiency from propulsion alone. As an additional benefit of more efficient operation, the engine also stands to reduce carbon dioxide emissions.

A new ball bearing simple geometry turbocharger reduces friction and allows peak power and torque to be reached faster in the Cascadia. Peak horsepower is reached at lower engine RPMs of 1500 RPM versus the prior generation’s 1625 RPM, and peak torque is achieved at 900 RPM versus a previously rated 1075 RPM. Modified inlet ports in engine cylinders and a new piston bowl shape combine to create a swirl effect that creates a fuel spray pattern for better atomization. Along with an ultra-high compression ratio, the new swirl design piston makes combustion cleaner and more efficient than the previous generation of the DD15.

The durability of many key components is improved thanks to reduced design complexity and increased robustness. A new EPA GHG21-compliant aftertreatment system for the DD15 Gen 5 debuts a smaller unit design to reduce weight by more than 60 pounds while increasing nitrous oxide conversion and, dependent on duty cycle, allowing increased diesel particulate filter service intervals.

As a truly innovative way to maximize performance and durability, the DD15 Gen 5 debuts ThermoCoasting, a revolutionary new feature that prevents aftertreatment cool down during a driving regen to keep the system at the optimum temperature. To accomplish this, ThermoCoasting will engage engine brakes when necessary between 900 and 1500 RPM while the engine mimics coasting by maintaining zero torque at the flywheel to balance power delivery. Powertrain noise levels during ThermoCoasting are unobtrusive and parallel the decibel levels observed when in low engine brake setting. ThermoCoasting stands to benefit aftertreatment performance and is just one of many thermal management improvements made to the DD15 Gen 5, which also includes improved cooling circuitry and temperature distribution across cylinder heads.

Equipped with a DT12 transmission and DD15 engine, the Cascadia is a technological powerhouse of the open road, specifically designed, engineered and assembled for optimal efficiency, maximum utilization and lowest Real Cost of Ownership.

The Difference with Detroit: Connected Technology

A fully integrated powertrain from Detroit enables a complete technologically- and data-driven experience to asset operation. The benefits of Detroit integration include the addition of Detroit Assurance 5.0, which introduces the industry’s only full SAE Level 2 collision mitigation system. Detroit Assurance 5.0 offers features such as Active Lane Assist to help keep a vehicle in its lane, Side Guard Assist with full trailer sweep to allow a driver to “see” into their blind spot and receive auditory and visual warnings of obscured vehicles, pedestrians or objects, and Active Brake Assist that includes the industry exclusive feature of full braking on moving pedestrian and Adaptive Cruise Control down to zero miles per hour to either avoid rear-end collisions or lessen their severity. Combined, the system offers the most advanced driver assistance features available on the road today to increase driver comfort, improve the driver experience and add peace of mind for fleets.

Full Detroit integration also offers customers the chance to benefit from the connectivity and analytics of Detroit Connect’s suite of connected vehicle services, including Virtual Technician to translate fault event codes into actionable intelligence and increased uptime, Remote Updates to optimize vehicle performance with over-the-air programming and analytics tools to glean greater insight to efficiency gains.

For more information, go to DemandDetroit.com or visit the Detroit YouTube channel.

About Detroit

Detroit® is a single-source trucking business solution that offers mid-range and heavy-duty diesel engines, transmissions, axles, safety systems and connected vehicle services for on-highway and vocational commercial markets. Detroit products are sold and serviced through a network of hundreds of locations in North America. For more information, or to find the nearest Detroit location, visit DemandDetroit.com.

Detroit is a brand of Detroit Diesel Corporation, a subsidiary of Daimler Trucks North America.

About Daimler Trucks North America
Detroit® delivers next-level fuel efficiency with a new DT12 transmission and redesigned DD15 Gen 5 engine.

Detroit® is a single-source trucking solution that offers mid-range and heavy-duty diesel engines, transmissions, axles, safety, and active airbag that includes the industry exclusive feature of full airbag on moving pedestrian and Adaptive Cruise Control down to zero mile per hour to either avoid rear-end collision or lengthen their everhit. Combined, the system offers the most advanced driver assistance.

Remote Update to optimize vehicle performance with over-the-air programming and analytics tools to glean greater insights to efficiency.

Full Detroit integration also offers customers the chance to benefit from the connectivity and analytics of Detroit Connect® suite of applications.

The Difference with Detroit: Connected Technologies

Detroit® delivers next-level fuel efficiency with a new DT12 transmission and redesigned DD15 Gen 5 engine. Daimler Trucks North America is a Daimler company, the world’s leading commercial vehicle manufacturer.

Detroit® and DD15 engine are engineered and assembled for optimal efficiency, maximum utilization and lowest Real Cost of Ownership.

The new DD15 Gen 5 engine has been completely updated and engineered to deliver the efficiency the market expects and is a perfect match to the Detroit DT12 automated manual transmission.

The DT12 transmission has evolved into the DT12 On-Highway™ series to offer three purpose-built options to meet the unique needs of various applications.

The DT12-H and DT12-HL are currently available for order in Cascadia.

Also included in the DT12 On-Highway™ series, is the DT12-HL transmission, a lightweight carryover option offering comparable efficiency to the DT12-H.

A new all-bearing component geometry turbocharger reduces friction and allows peak power and torque to be reached faster in the Cascadia.

A new all-bearing component geometry turbocharger reduces friction and allows peak power and torque to be reached faster in the Cascadia.

Cutting-edge improvements for 2021, including increased downshifting, better computation and a new swirl piston design, combine to provide cutting-edge improvements for 2021, including increased downshifting, better computation and a new swirl piston design.

Compliance aftertreatment system for the DD15 debut a smaller unit design to reduce weight by more than 60 pounds while increasing durability and fuel economy for the Cascadia.

The durability of man-made components is improved thanks to reduced design complexity and increased robustness. A new PA GHG21-compliant computation cleaner and more efficient than the previous generation of the DD15.

The DT12-H is available in the Cascadia.

According to data from IH2 Markit, Daimler Trucks North America, with a core focus on innovation and world-class manufacturing facilities, delivers the most robust and fuel-efficient powertrain on the market. In answer to growing demand, the revolutionary transmission offers higher overall ratios for improved downshifting and an improved oil temperature.

Customer adoption is growing for downshifting with faster rear axle ratio to achieve maximum powertrain fuel efficiency. In answer to growing demand, the revolutionary transmission offers higher overall ratios for improved downshifting and an improved oil temperature.

The trifecta-topping Detroit DT12-H transmission is an all-new DT12 option unleashing ultimate performance, capability and efficiency.