

# International® S13 Integrated Powertrain Provides Customers Durability, Reliability and Industry-Leading Operating Efficiency

**LAS VEGAS (August 16, 2022)** – International introduces the specifications and design philosophy surrounding its new International® S13 Integrated Powertrain. The S13 Integrated Powertrain, which Navistar developed in [collaboration with the TRATON GROUP](#), significantly increases operating efficiency, reliability and durability, enhances performance, reduces operating costs and provides greater profitability for customers, all contributing to maximized uptime and improved total operating economy.

“The path toward a zero-emissions future requires improvements to traditional propulsion technologies parallel to the development of new powertrain technologies,” said Michael Grahe, executive vice president, Operations. “To ensure optimal reliability, efficiency, performance and sustainability, we designed the S13 Integrated Powertrain from the ground up.”



Created from a clean sheet design, the S13 Integrated Powertrain consists of three distinct components – an engine, a transmission and an aftertreatment system – all designed and developed concurrently to ensure maximized compatibility and integration between systems.

The S13 Integrated Powertrain offers customers several benefits contributing to higher operational efficiency and improved performance. In comparison to the first-generation International® A26 engine specified with the 12-speed overdrive Eaton Endurant HD automated transmission, the S13 Integrated Powertrain is the lightest weight powertrain on the market, providing a weight reduction of 52 lb. With the same comparison when specified with the [updated International LT® Series aerodynamics package](#), the S13 Integrated offers up to a 15% gain in fuel efficiency\*.

## Engine Design

The 13-liter International S13 engine achieves advanced fuel efficiency and performance through combustion efficiency and a reduction of friction and pumping losses.

The S13 engine operates on low revolutions and higher torque equating to fewer fuel injections and less fuel consumption. Designed with selective catalytic reduction (SCR) technology as the primary emissions reduction technology in mind, the S13 engine has no exhaust gas recirculation (EGR) cooler and flows 100% of the exhaust to the turbocharger in normal engine operating conditions. This process delivers more power and improved engine performance. Eliminating the recirculation of exhaust gas ensures a more complete fuel burn and allows cleaner air to enter the combustion chamber on the intake cycle to mitigate soot buildup.

With the goal of improving uptime through elimination of subcomponents, the S13 engine has succeeded in improving efficiencies in multiple areas. A fixed geometry turbocharger reduces system complexity and increases reliability. Low friction materials and finishes are used for the liners, rings and bearings. The design eliminated the downstream fuel injector and the high-pressure fuel pump operates at a lower pressure of 1,800 bar. Additional features include a dual overhead cam design and cast aluminum cam cover and oil pan, 23:1 compression ratio and a compression release brake for maximum engine braking power. The compacted graphite iron block of the S13 engine combined with a cast aluminum cam cover and oil pan help make this the lightest weight 13L powertrain available in North America.

When it comes to performance, the S13 engine has seven engine rating options, with a maximum 515 horsepower and 1,850 lb-ft of torque at 2,000 revolutions per minute (RPM) governing speed.

## Transmission Features

The first commercial transmission offered by International, the International® T14 is a 14-speed fully automated manual transmission with an electronic clutch actuator to deliver faster, smoother shifting.

As part of the clean sheet design, shifting logic and integrated software controls maximize efficiency and performance resulting in gear shifting that is perfectly matched to engine revolutions.

The T14 features a planetary gear set that supports a compact design and optional programmable reverse speeds. This transmission has two crawler gears for improved heavy load startability and low-speed maneuvering. Complete with deep low-end gearing and shifting smoothness, the T14 delivers efficiencies of a direct drive in an overdrive package.

The S13 Integrated Powertrain offers increased power, with the full torque available at 900 RPM to support drivability. Drivers have shift-on-the-fly capabilities with Economy, Performance and Performance+ modes. Also included are intelligent shifting capabilities, like skip shifting and turning radius offsets.

In addition to multiple shifting capabilities, the T14 transmission includes options for low-speed maneuvering, hill hold, and initial vehicle movement modes.

### **Aftertreatment System Architecture**

The compact design of the Dual Stage Aftertreatment is purpose built with easy access for serviceability, as well as significantly improved emissions control and fuel efficiency.

To keep temperatures at an optimal range and extend service intervals, the aftertreatment system includes a dual-stage SCR catalyst system in a one-box design.

Since an EGR cooler was eliminated from the combustion process, less soot and particulate matter are generated. This cleaner combustion cycle allows for extended service intervals and eliminates the need for active regeneration cycle and the diesel oxidation catalyst. By employing a design which eliminates the need for active diesel particulate filter regeneration, the Dual Stage Aftertreatment system saves fleets time and fuel.

“To ensure superior performance and reliability of the S13 Integrated Powertrain, it’s been designed to meet the toughest requirements of the North American market,” said Grahe. “Before this integrated powertrain goes into serial production, this product will have logged more than 4 million miles of field testing on North American roads. We are testing on all terrains – from the desert of Arizona to the frozen tundra of Alaska.”

### **Comprehensive Ownership Solutions**

The International S13 Integrated Powertrain includes several customer benefits outside of the product itself, including dealer integrated software, built-in service products, repair maintenance contracts and other solutions available for International® vehicles equipped with the new S13 Integrated Powertrain.

OnCommand® Connection, Navistar’s connected services platform, will come standard and offer programmable parameters, over-the-air calibration changes and software updates. The powertrain’s predictive capabilities help fleet owners and service managers stay ahead of potential service needs. International® 360, Navistar’s service communications tool designed to accelerate the repair process and streamline dealer communications, is also an available option to customers.

This combines fleet monitoring and preventive maintenance to increase uptime, have fewer unplanned events and extend service intervals to keep customers’ businesses operating at maximum efficiency.

The S13 Integrated Powertrain is backed by North America’s largest one-stop dealer network to support any service requirements.

“Navistar has the largest dealership and service network in North America with over 1,000 service locations offering ASE certified technicians,” said Göran Nyberg, executive vice president, Commercial Operations. “This provides customers a single point of service for the entire vehicle.”

Navistar offers a five-year powertrain warranty, alongside a selection of additional warranties and extended service contracts.

The S13 Integrated Powertrain will be manufactured at Navistar’s Huntsville Powertrain Manufacturing Plant in

Huntsville, Ala. For more information about the S13 Integrated, visit [www.internationaltrucks.com/shift](http://www.internationaltrucks.com/shift).

For additional media resources, visit [www.internationaltrucks.com/media/S13](http://www.internationaltrucks.com/media/S13).

*\*Comparing the fuel economy of the 2017 GHG International® A26 engine in a 2021 model year International® LT® Series truck with aero package to the fuel economy of the new International® S13 Integrated Powertrain in a 2024 model year International® LT® Series truck with the LT aero package and chassis enablers. Actual customer results may vary due to various factors, including but not limited to truck specifications, weight of the vehicle, predictive features, environmental conditions, etc.*

## **About Navistar**

Navistar, Inc. (“Navistar”) is a purpose-driven company, reimagining how to deliver what matters to create more cohesive relationships, build higher-performing teams and find solutions where others don’t. Based in Lisle, Illinois, Navistar or its subsidiaries and affiliates produce International® brand commercial trucks and engines, IC Bus® brand school and commercial buses, all-makes OnCommand® Connection advanced connectivity services, and Fleetrite®, ReNEWed® and Diamond Advantage® brand aftermarket parts and includes a Brazilian manufacturer of engines and gensets, MWM Motores Diesel e Geradores. With a history of innovation dating back to 1831, Navistar has more than 14,500 employees worldwide and is a member of TRATON SE, a global champion of the truck and transport services industry. Additional information is available at [www.Navistar.com](http://www.Navistar.com).

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