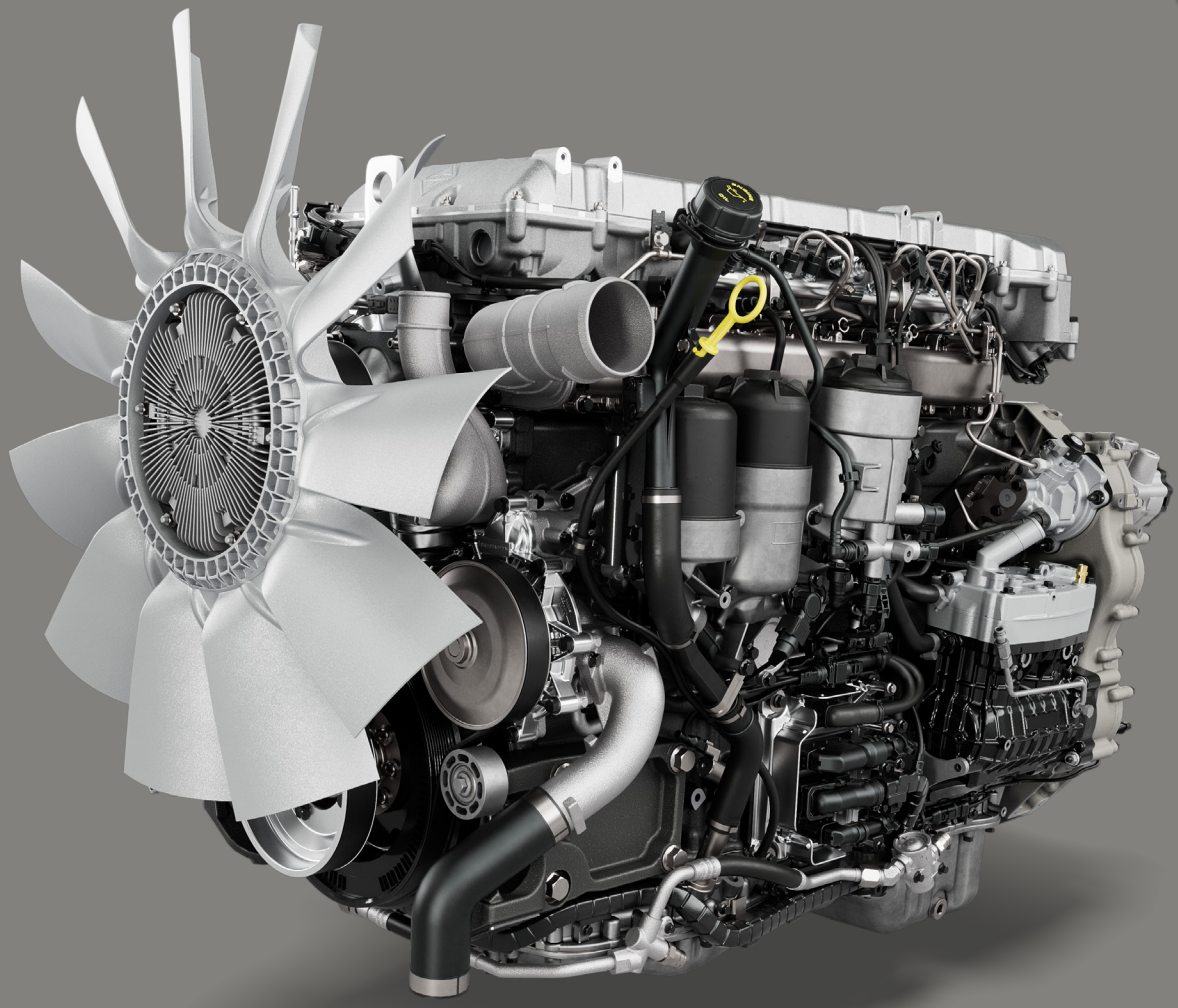
S13 INTEGRATED POWERTRAIN
HX® SERIES AND HV® SERIES



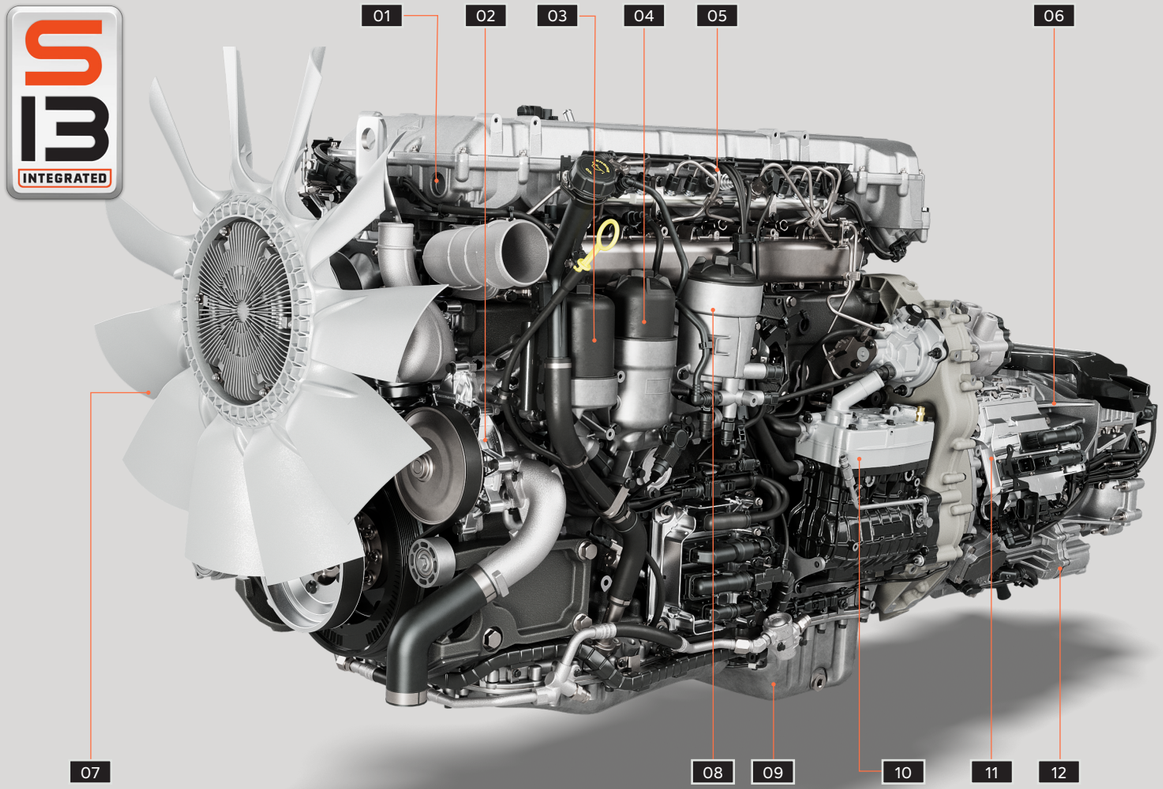
SMOOTH, POWERFUL, EFFICIENT AND READY FOR EPA 2027.

It should come as no surprise that the International® S13® Integrated Powertrain needed only minimal updates to meet 2027 EPA standards. It was, after all, engineered with a clean sheet of paper and a long-term vision that anticipated future regulations. As a result, 90% of the powertrain's components carry over unchanged, which means your service tools, parts, technician training, and driver resources remain familiar, making the transition to the 2027 S13® Integrated Powertrain seamless.

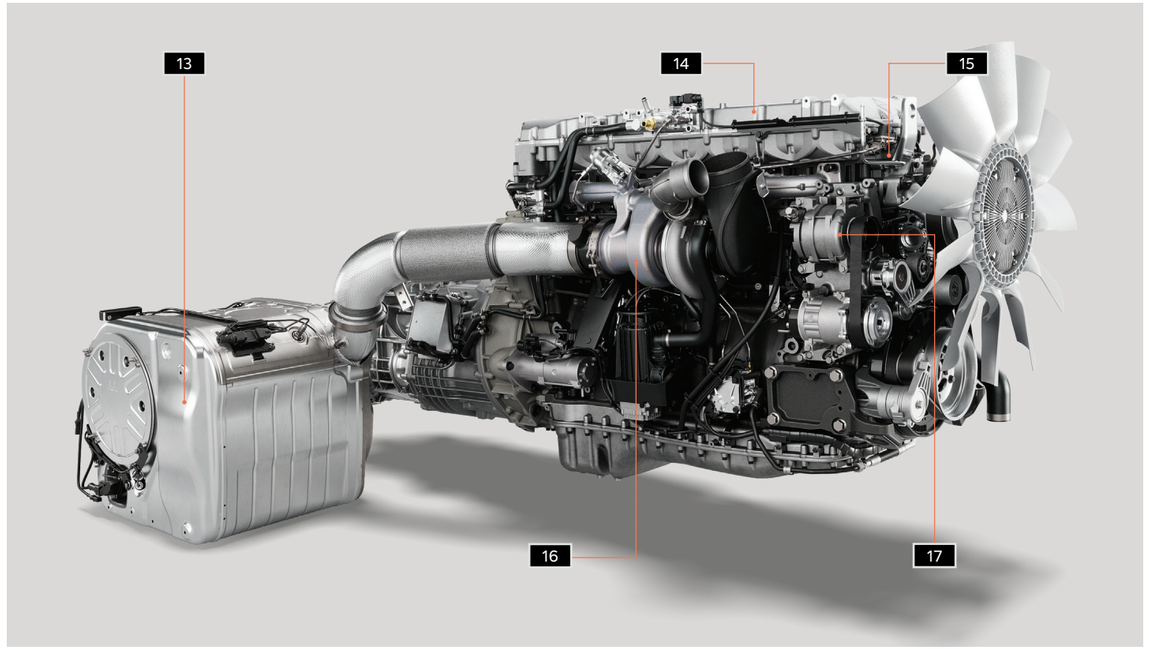
After years on the jobsite, the S13® Integrated Powertrain has proven to be a reliable workhorse. The engine, transmission, and aftertreatment system are designed to work as one, delivering robust power, smooth shifts and incredible efficiency.

INTERNATIONAL

IT ALL COMES TOGETHER

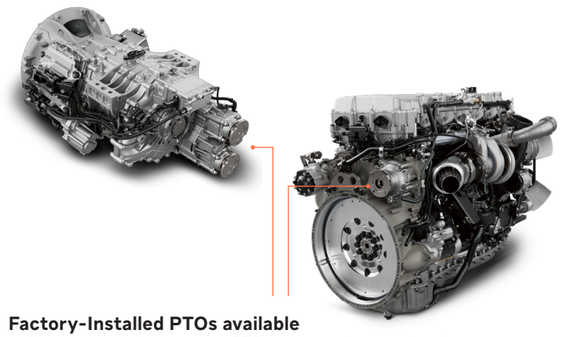


The International® S13® Integrated Powertrain represents a streamlined approach to delivering a heavy-duty powertrain with reduced complexity and increased operating efficiency. The engine features a double overhead cam design with Variable Valve Timing and an integrated compression release brake, along with a standardized 24V electrical architecture (alternator, starter, engine controllers), while retaining a 12V cab and electrical system for accessories and body controls. The engine, combined with the Dual Stage Aftertreatment System, is so effective at reducing emissions that neither a Diesel Oxidation Catalyst nor any EGR hardware is needed. This not only reduces weight and complexity, but it also means you never have to stop work to perform an active regen—improving uptime and productivity.



PARTS AND SPECIFICATIONS

01	Variable Valve Timing (VVT)	Adapts valve timing to match real-time operating conditions for smooth performance and exceptional power across all engine speeds and loads. Improved engine braking performance from 470hp to 540hp resulting in improved brake-wear life and overall performance.
02	Water Pump	Low displacement, Low parasitic losses
03	Oil Centrifuge	Further removes soot and other contaminants from oil that cannot be eliminated by the oil filter alone. Helps maintain oil drain interval customers expect.
04	Oil Filter	Cartridge style
05	High-Pressure Fuel System	1800 Bar
06	T14® Transmission	14-speed single countershaft geartrain transmission with wide overall gear ratio at 26.7:1, including two crawler gears and up to 6 speeds in reverse
07	11-Blade Fan	For additional efficiency
08	Fuel Filter	Top access, cartridge style
09	Oil Pan	Aluminum pan provides corrosion protection (stainless steel available)
10	Air Compressors	• Single cylinder (iron) • Two cylinder (aluminum) • Two cylinder clutched (aluminum)
11	Transmission Control Module (TCM)	24V TCM uses learned driver behavior and predictive shifting, utilizing GPS and topography data to optimize gear selection for fuel efficiency and performance
12	Electronic Clutch Actuator (ECA)	Delivers fast, smooth shifting
13	Dual Stage After-Treatment	• Compact design for more frame rail mounting space • No active DPF regen needed
14	Aluminum Valve Cover	Rugged and lightweight
15	No Cooled EGR, EGR cross-over tube eliminated	No Diesel Oxidation Catalyst or recirculation of exhaust gas required
16	Fixed Geometry Turbo	More reliable and efficient design
17	24V Alternator, Starter, Engine Controllers	Delivers enhanced cold crank performance plus helps to improve starter and battery life



Factory-Installed PTOs available

- Single- and dual-transmission PTOs available with a variety of common SAE interfaces, installed directly at the factory
- REPTO and FEPTO options available without horsepower restrictions

S13 INTEGRATED

Engine type	Diesel, 4-Cycle
Configuration	Inline 6-Cylinder
Displacement	12.74L (777 cu. in.)
Bore & Stroke	5.12 in. x 6.30 in. (126 mm & 166 mm)
Compression Ratio	23:1
Aspiration	Fixed Geometry Turbocharger
Combustion System	1800 bar Common Rail
Engine Lubrication	47.5 quarts (45L)
Total Engine Weight	2,284 lbs. (1,036 kg)
Valves	4 Valves per Cylinder, Dual Overhead Camshaft

INDUSTRY-LEADING ENGINE WARRANTY

Base Engine	24 months; unlimited miles, unlimited hours*
Base Major Component	60 months; 500,000 miles
Base Towing	24 months; unlimited miles, unlimited hours**
Optional Engine	Up to 72 months, 600,000 miles
Optional Major Component	Up to 84 months, 700,000 miles

* Fire & rescue applications: 60 months/100,000 miles/unlimited hours
**Towing for vehicles with engine failures

S13 INTEGRATED POWER CURVES

HP @ 1800 RPM	Torque [lb-ft]	Governed speed [RPM]
370 (HV Series only)	1250	2000
400	1450	2000
430	1550	2000
450	1750	2000
475	1750	2000
515	1850	2000

T14 TRANSMISSION

Lightweight, efficiently packaged and robustly designed

14-speed including 2 crawler gears

Single countershaft transmission designed for simplicity and reliability

Vocational-specific drive modes, including paver, off-road and split shaft

T14 GEAR RATIOS AVAILABLE

Gear	Ratio	Step	Gear	Ratio	Step	Gear	Ratio	Step
R6	4.59*	-	1	20.81	29%	8	3.53	29%
R5	5.91*	-	2	16.16	29%	9	2.77	29%
R4	7.61*	-	3	12.57	29%	10	2.15	29%
R3	9.81*	-	4	9.76	29%	11	1.66	29%
R2	12.60	-	5	7.56	29%	12	1.29	29%
R1	16.23	-	6	5.87	29%	13	1.00	29%
			7	4.55	29%	14	0.78	-

TRANSMISSION, CLUTCH AND TRANSMISSION MOUNTED PTO BASE WARRANTY (INCLUDES TOWING)

Less than 52K Rear Axle Rating:	3 years; unlimited miles
Greater than 52K Rear Axle Rating:	2 years; unlimited miles

DUAL STAGE AFTERTREATMENT

The advanced Dual Stage Aftertreatment system allows the powertrain to focus on what it does best: delivering power – when and where you need it.

DPF service intervals extended due to less soot being produced by the engine

No diesel oxidation catalyst, no fuel dosing

Easy access to DPF for easy serviceability

No pre-heating hardware needed

Meets 2027 EPA NOx standard: 0.035 (previous standard: 0.20)

DUAL STAGE AFTERTREATMENT BASE WARRANTY

2 years, unlimited miles, unlimited hours

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Note: The information and conclusions contained herein are believed to be correct at time of publication, but do not necessarily apply to similar vehicles with different specifications or with production dates after the production of this publication. Vehicles with different specifications or later dates of production may yield different results. Vehicle specifications are subject to change without notice. TAD26001 05/2026 ©2026 International Motors, LLC (d/b/a International Motors USA LLC in Illinois and Ohio). All rights reserved. All marks are trademarks of their respective owners.