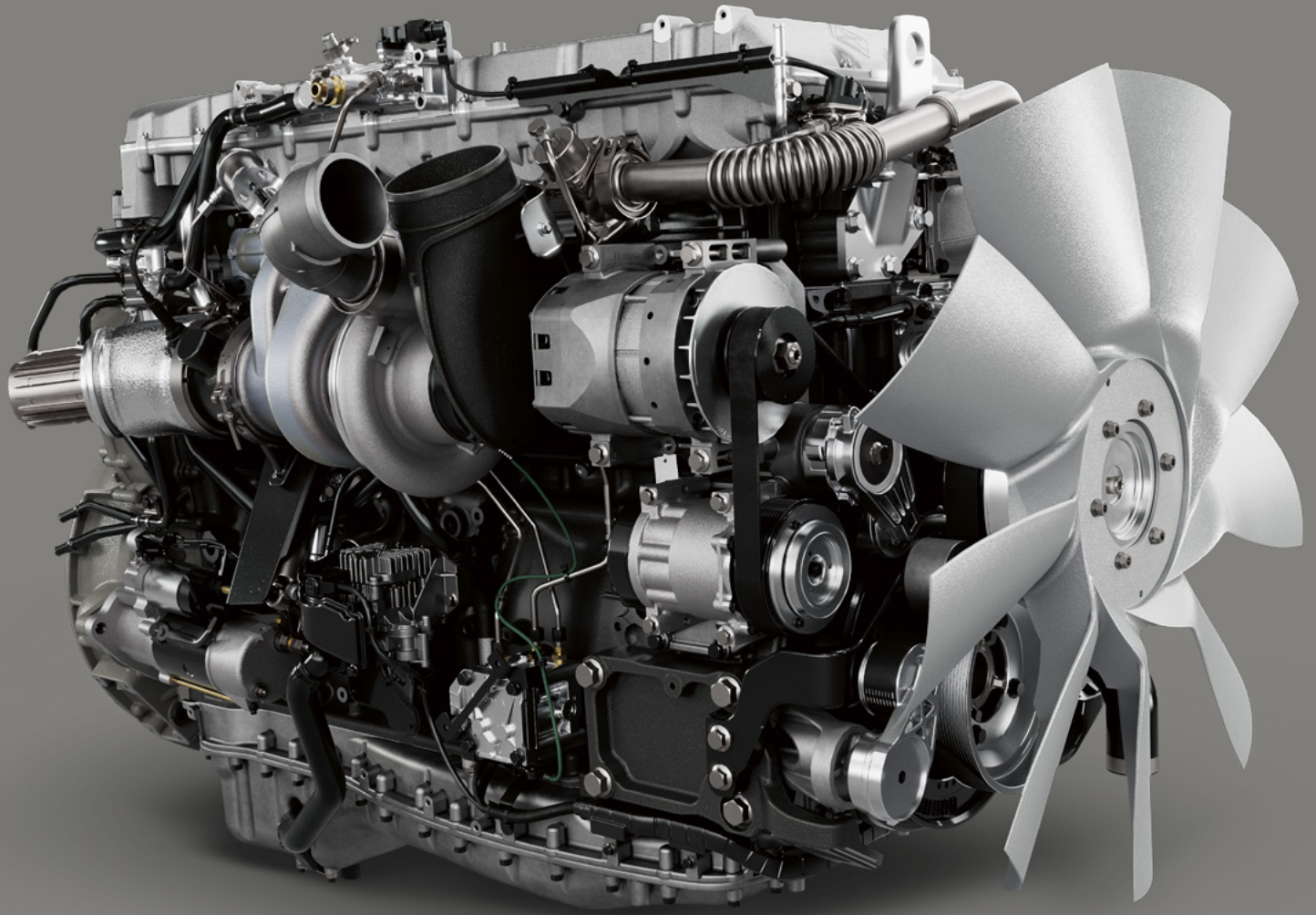


S13 INTEGRATED POWERTRAIN HX[®] SERIES



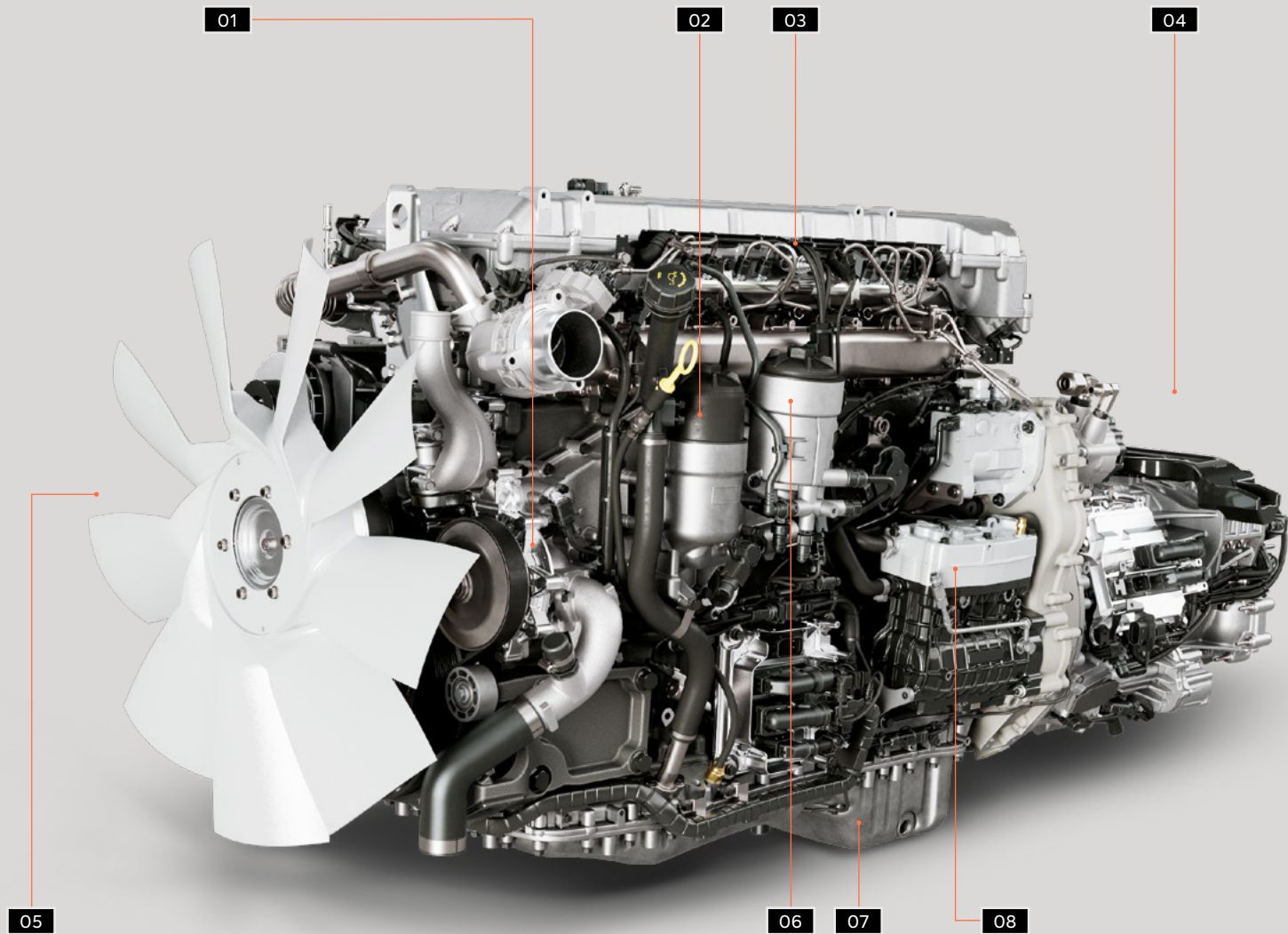
**SUPERIOR OPERATING ECONOMY.
STELLAR PERFORMANCE.
SIMPLE, EASY-TO-SERVICE DESIGN.**

A clean sheet of paper and decades of experience. That's what the engineering team started with when they began work on the International[®] S13[®] Integrated Powertrain. Thanks to this spirit of collaboration between partner companies, the team was able to shift what's possible and rethink, redesign and reinvent what an integrated powertrain can be.

The result is an engine, transmission and aftertreatment system designed to work as one that's simple, easy to service and delivers stellar performance with superior operating economy.

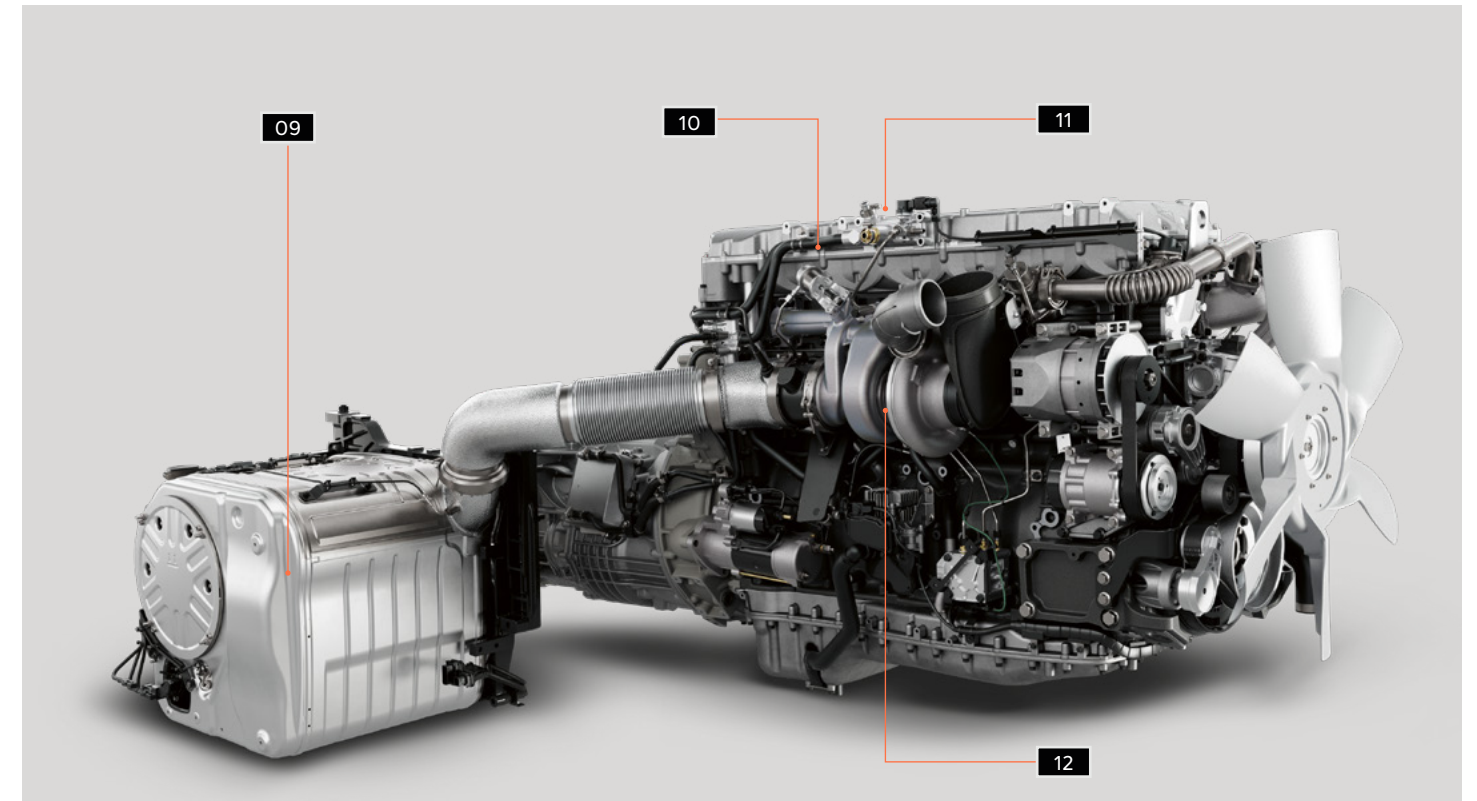


IT ALL COMES TOGETHER



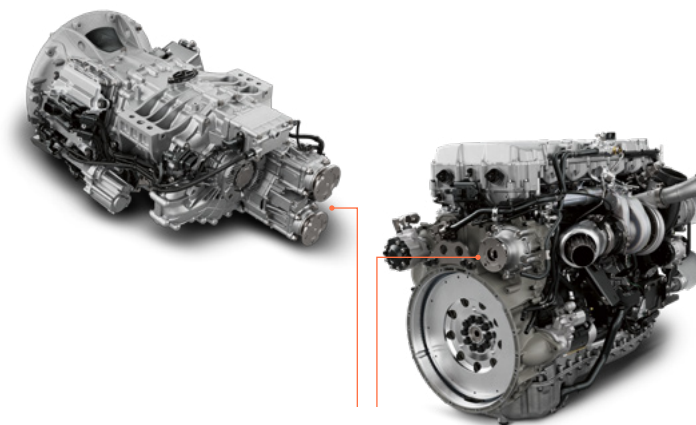
The International® S13® engine features a novel cylinder and piston head design with maximum cooling properties. This double overhead cam design with integrated compression release brake assembly and parallel valve pattern not only helps to reduce parasitic loss, but also directly equates to less fuel being consumed. Plus, thanks to the dual stage

aftertreatment module, a heavy (40–50 lbs), EGR cooler is no longer needed to reduce emissions. Its absence not only contributes to the S13 being the lightest 13-liter diesel engine available in North America, it also means nearly 100% of the exhaust flow goes through the simple, less complex fixed-geometry turbocharger for maximum performance and efficiency.



PARTS AND SPECIFICATIONS

01	Water Pump	Low displacement, Low parasitic losses
02	Oil Filter	Cartridge style
03	High-Pressure Fuel System	1800 Bar
04	T14 Transmission	14-speed single countershaft geartrain transmission with wide ratio spread for efficiencies on flatlands and performance on hilly terrains
05	6- or 9-Blade Fan	For additional efficiency
06	Fuel Filter	
07	Oil Pan	Aluminum pan provides corrosion protection
08	Air Compressors	<ul style="list-style-type: none"> • Single cylinder (iron) • Two cylinder (aluminum) • Two cylinder clutched (aluminum)
09	Dual Stage After-Treatment	<ul style="list-style-type: none"> • Compact design for more frame rail mounting space • No active DPF regen needed
10	No Cooled EGR	EGR cooler not required with this advanced engine design
11	Aluminum Valve Cover	Rugged and lightweight
12	Fixed Geometry Turbo	More reliable and efficient design



Factory-Installed PTOs available

- Single- and dual-transmission PTOs available with a variety of common 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
B10 Design life	1,200,000 mi (1,931,000 km)

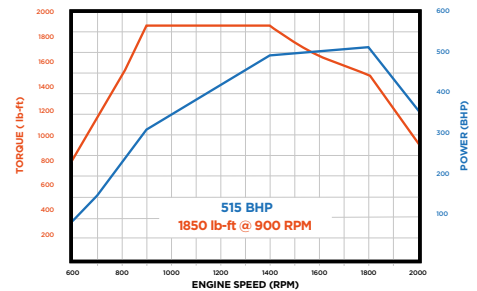
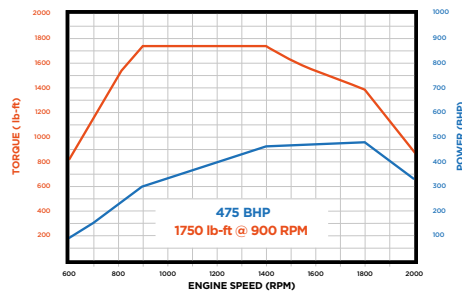
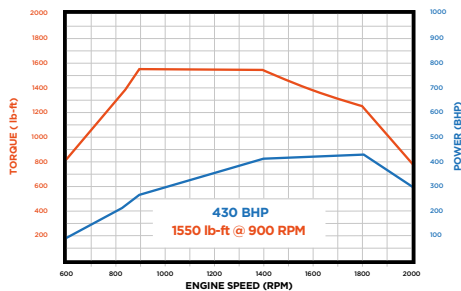
INDUSTRY-LEADING ENGINE WARRANTY

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] @ 900 RPM	Governed speed [RPM]
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

DUAL STAGE AFTERTREATMENT BASE WARRANTY

2 years, unlimited miles, unlimited hours