



INTERNATIONAL'S GOT YOUR BACK

When selecting a MaxxForce™ big bore engine for your International® truck, you are completely covered by North America's largest commercial truck dealer network – with 900 dealer locations, 7,000 service technicians and unmatched parts availability.

MAXXFORCE

INTERNATIONAL DIESEL POWER™

ALWAYS PERFORMING

With International Engine Group and MaxxForce engines, you get products and an organization behind them that are always performing. For more information on the MaxxForce™ 11 and MaxxForce™ 13 engines, visit your local International dealer or visit us at www.MaxxForce.com. MaxxForce™ International Diesel Power is the signature brand for International engines for a wide array of commercial vehicle applications. MaxxForce engines are designed, engineered and built to deliver what you expect - power, performance, reliability and durability.

www.MaxxForce.com



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MAXXFORCE

INTERNATIONAL DIESEL POWER™

CLASS 8 BIG BORE ENGINES

MAXXFORCE 11 and MAXXFORCE 13

INTEGRATION HAS ITS ADVANTAGES

The new MaxxFORCE™ 11 and MaxxFORCE™ 13 big bore diesel engines will revolutionize how the world looks at Class 8 commercial diesel engines. Designed specifically for International® Class 8 trucks, with a combination of technologically advanced materials and components, these engines deliver advantages that will ensure your business is "Always Performing." Beginning in fall of 2007, the MaxxFORCE 11 and MaxxFORCE 13 will be available in International® WorkStar™ severe service, TranStar™ regional-haul and ProStar™ long-haul commercial vehicles.

OUTSTANDING FUEL ECONOMY

Technologies responsible:

- High-pressure common-rail fuel system
- Twin-series turbochargers with interstage cooler
- Innovative Eco-Therm™ heat-management system
- Low-friction design

Key advantages:

- Low cost of ownership
- Enhanced performance

EXCELLENT POWER CHARACTERISTICS

Technologies responsible:

- High-pressure common-rail fuel system
- Twin-series turbochargers with interstage cooler

Key advantages:

- Peak torque at 1,000 rpm
- Better response for earlier up-shifts
- Better lugging for fewer downshifts

LOW NOISE, VIBRATION AND HARSHNESS

Technologies responsible:

- High-pressure common-rail fuel system
- Integral ribs in the cylinder block
- Laminate-steel oil-pan construction

Key advantages:

- Exceptional driver comfort and reduced fatigue
- NVH that approaches the levels of a gasoline engine

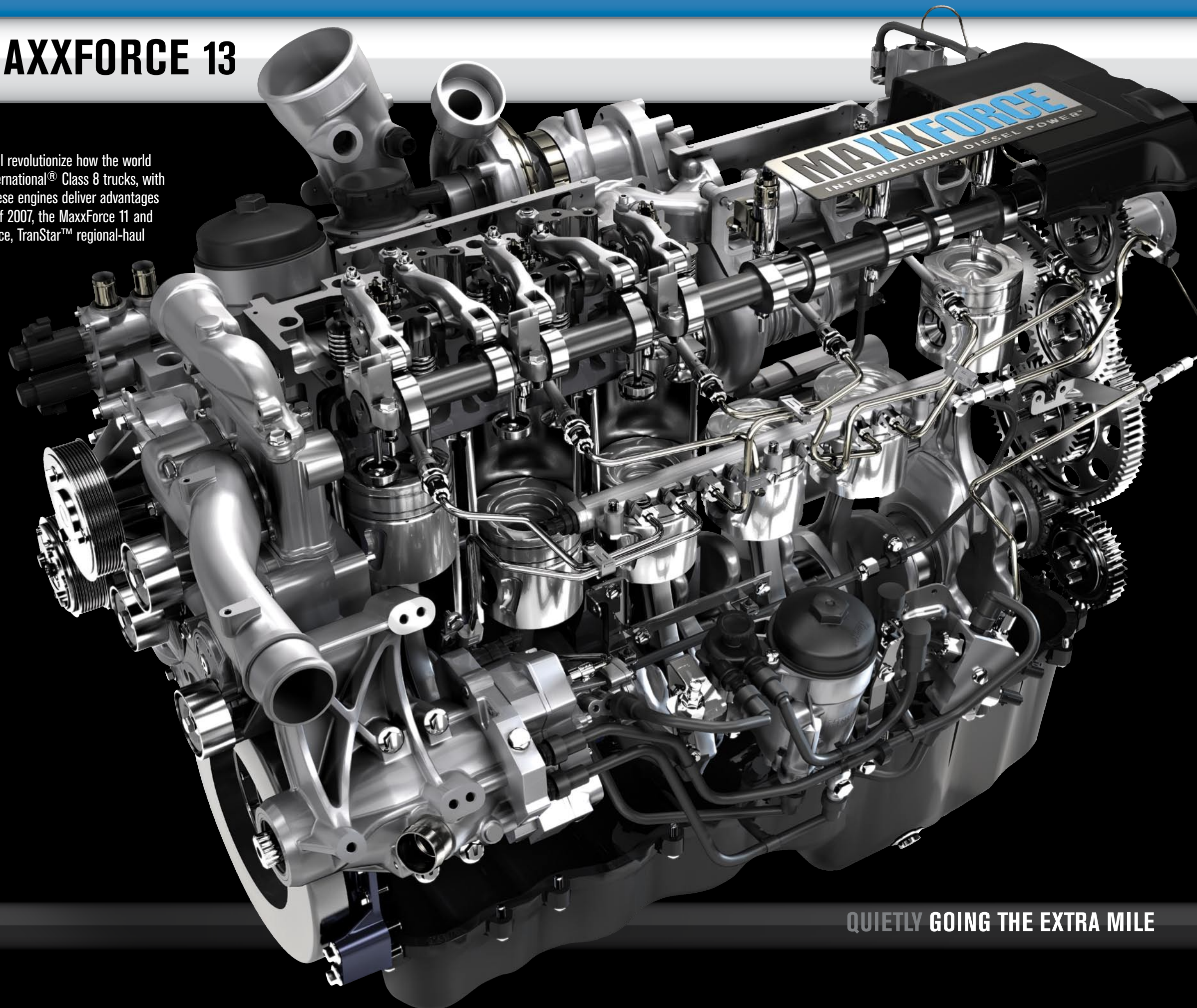
HIGH STRENGTH WITHOUT ADDED WEIGHT

Technology responsible:

- Compacted-graphite iron cylinder block

Key advantage:

- Extremely strong block foundation for long service life without excess weight



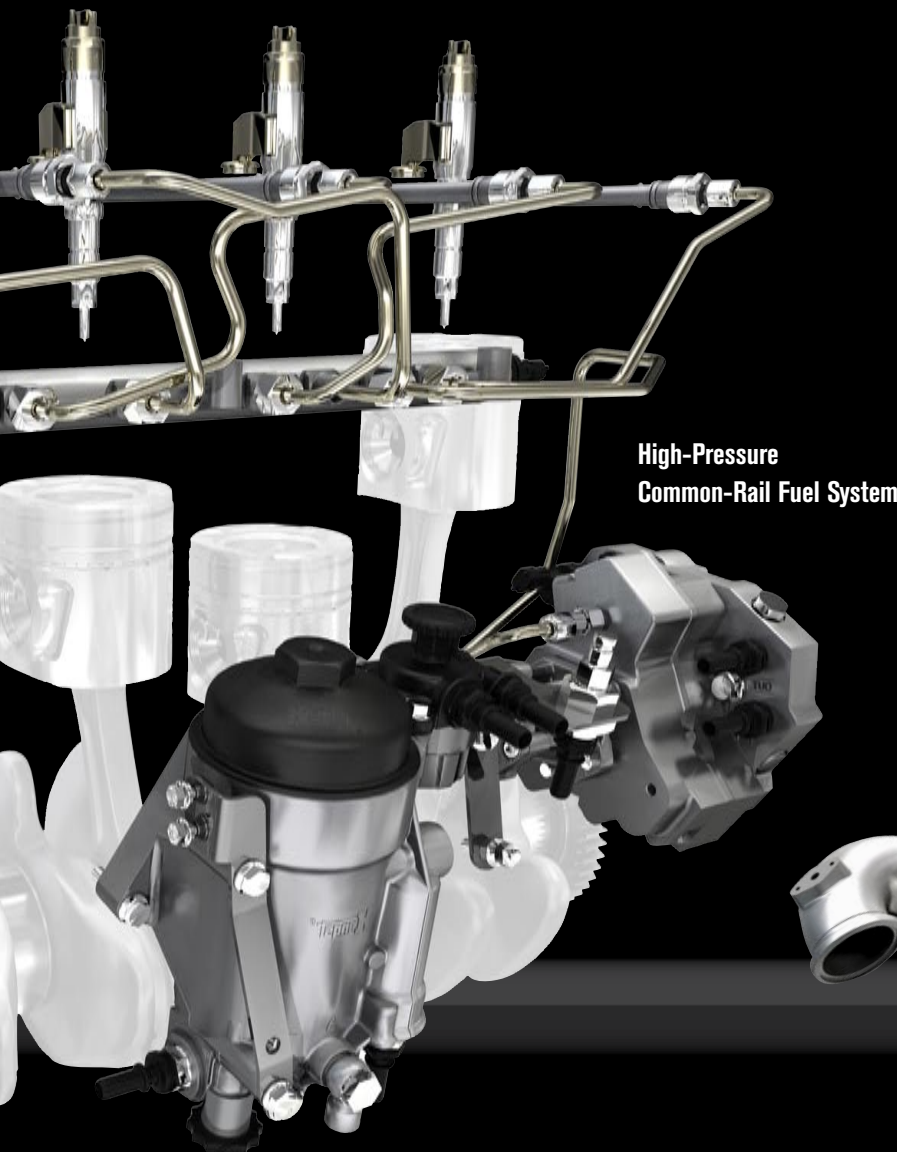
QUIETLY GOING THE EXTRA MILE

MAXXFORCE 11 and MAXXFORCE 13

TECHNOLOGIES DELIVERING PRODUCT EXCELLENCE.

HIGH-PRESSURE COMMON-RAIL FUEL SYSTEM

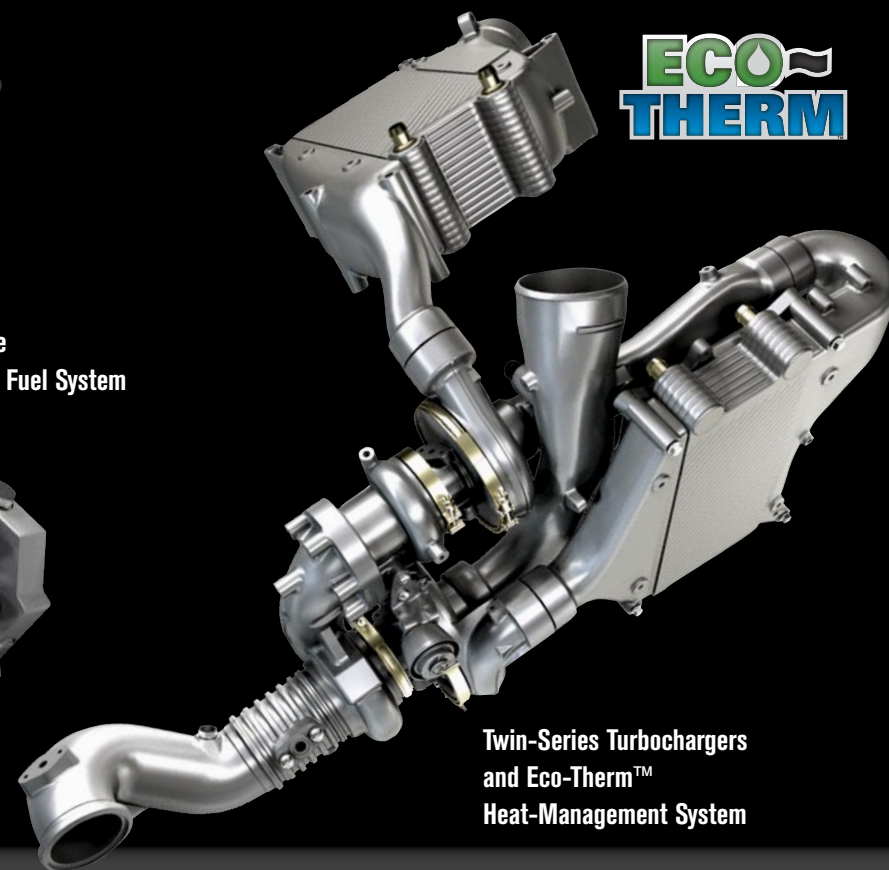
- Electronically programmable to deliver peak fuel pressure of up to 26,000 PSI at any engine speed for outstanding power and responsiveness.
- High-pressure injection creates a higher surface-to-volume ratio of fuel and air in the cylinders for more complete and efficient combustion.
- Multiple injection events per cycle provide optimum fuel/air mixture for more complete combustion and better fuel efficiency.
- Multiple injections also reduce the “diesel clatter” because there are now several smaller combustion events instead of the “big bang” from the one large injection event common in many diesel engines.
- Peak torque is achieved at 1,000 rpm (just above idle) allowing for earlier up-shifts when accelerating and fewer downshifts when climbing hills. Operating the engine at low speeds also minimizes engine friction for better fuel efficiency.



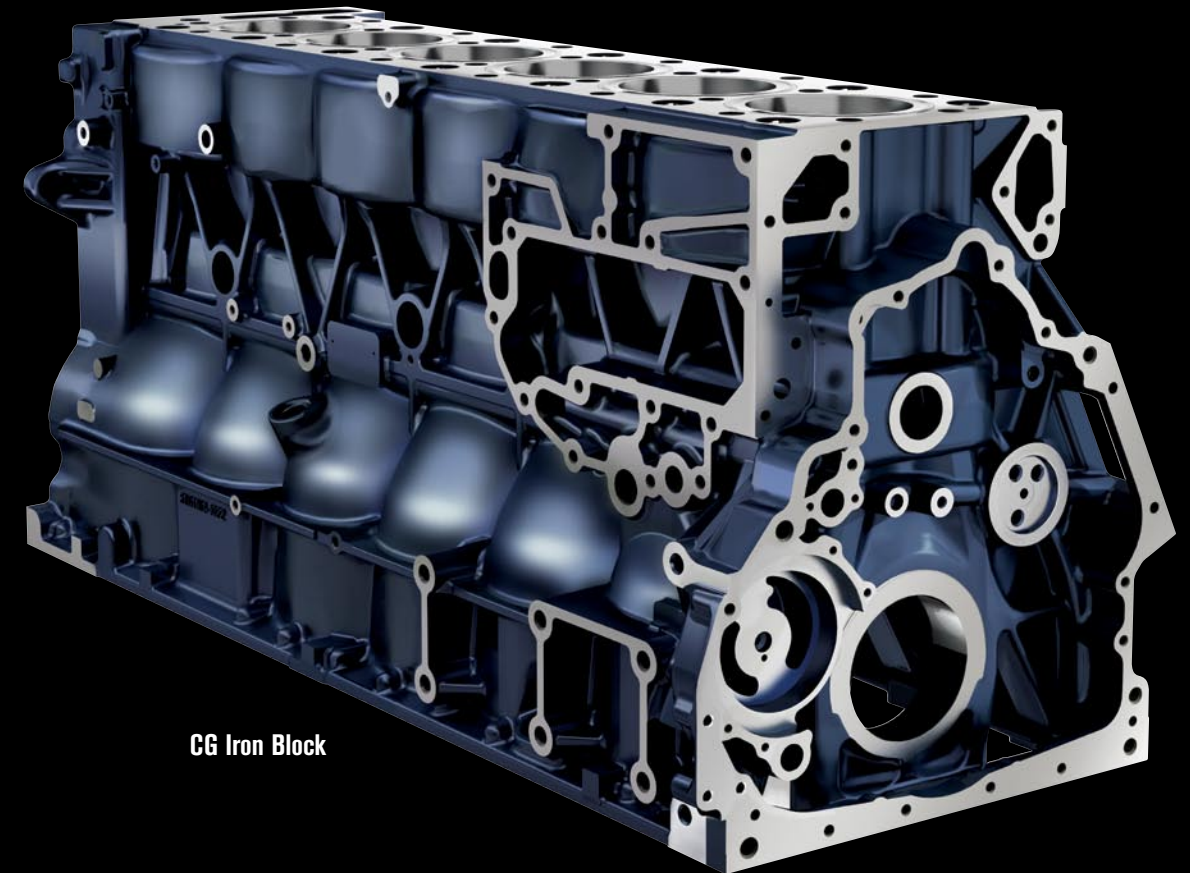
High-Pressure
Common-Rail Fuel System

TWIN-SERIES TURBOCHARGERS AND ECO-THERM™ HEAT-MANAGEMENT SYSTEM

- Smaller, primary turbo responds very quickly to deliver air for immediate take-off at low engine speeds.
- Larger, secondary turbocharger provides peak power at higher speeds and when climbing hills.
- Peak torque is achieved at 1,000 rpm and holds steady to 1,200 rpm, reducing gear shifting needs uphill and allows for shifting at lower speeds when accelerating. Other 11-liter to 13-liter engines do not achieve peak torque at these low engine speeds.
- Work in tandem with fuel the system to provide high power at low engine speeds for more efficient operation.
- An interstage cooler reduces temperature of the air exiting the first turbo increasing air density so more air can be packed into the second turbo to maintain peak power as speeds increase.
- Another cooler after the second turbocharger cools the air a final time before engine intake to provide better combustion and more power.



Twin-Series Turbochargers
and Eco-Therm™
Heat-Management System



CG Iron Block

ECO-THERM™ HEAT-MANAGEMENT SYSTEM

- Innovative two-circuit design allows for complete control of coolant flow and temperature to create ideal engine operating temperature in all conditions.
- Provides quicker and better engine warm-up characteristics.
- Manages engine heat to reduce fuel usage during regeneration of diesel particulate filter.

LOW FRICTION DESIGN

- Overhead cam and rolling element bearing valve system reduce operational load to optimize engine efficiency.

COMPACTED-GRAPHITE IRON BLOCK

- The MaxxForce™ 11 and MaxxForce™ 13 big bore engines are among the first heavy-duty diesels with a lightweight yet virtually indestructible engine block, cast entirely from compacted-graphite iron. This provides 13-liter engine capability and durability in a package weight closer to most 11-liter engines.
- 70% stronger than gray iron.
- 40% stiffer than gray iron.
- Double the fatigue limit of gray iron.
- More efficient compound than gray iron, which means less material is needed to create the desired strength and durability.
- Weight savings of up to several hundred pounds over gray iron big bore engines while maintaining the same or higher strength.
- Unique molecular structure resists fractures.
- Pronounced ribbing in the crankcase provides additional noise attenuation.
- A rubber gasket between oil-pan and engine block prevents block noise from resonating in the pan. Laminate-steel oil-pan construction further dampens and attenuates engine noise.

MAXXFORCE 11 and MAXXFORCE 13

MAXXFORCE 11 PERFORMANCE DATA

Horsepower (bhp)	Torque (lb-ft)	Gov. Speed (rpm) On-highway / Severe service	Clutch-Engagement Torque @ 800 rpm
330	1,250	1,900 / 2,100	660
370	1,350	1,900 / 2,100	760
390	1,400	1,900 / 2,100	830

MAXXFORCE 13 PERFORMANCE DATA

410	1,450	1,900 / 2,100	830
430	1,550	1,900 / 2,100	830
475	1,700	1,900 / 2,100	960

MAXXFORCE 11 SPECS

Engine Type	Diesel, 4-cycle
Configuration	In-line 6-cylinder
Displacement	10.5 L (641 cu. in.)
Bore and Stroke	120 mm x 155 mm (4.72 in x 6.10 in)
Compression Ratio	17:1
Aspiration	Twin-series turbocharger, air/liquid intercooled
Governed Speed	1,900 rpm on-highway, 2,100 rpm vocational
Combustion System	Direct injection
Cooling System Capacity	49 L (52 U.S. qt) (engine only)
Lubricating System Capacity	42 L (44.5 U.S. qt)
Total Engine Weight (dry)	2,244 lbs (1,018 kg)
Dimensions	1,365 mm L x 930 mm W x 1,239 mm H (54 in x 37 in x 49 in)
Valves	4 per cylinder, overhead cam actuated
Horsepower Range	330-390 horsepower (246-291 kW)
Torque Range	1,250-1,400 lb.-ft. (1,693-1,964 Nm) @ 1,000 to 1,200 rpm
Clutch Engagement Torque	660-830 lb.-ft. @ 800 rpm

PREVENTATIVE MAINTENANCE INTERVALS

Change Engine Oil, Replace Oil Filter:	Up to 25,000 miles (40,234 km) / 1,100 hours / 4,200 gallons (15,899 L) of fuel depending on duty cycle
Replace Fuel Filter:	25,000 miles (40,234 km) / 1,100 hours
Replace Coolant*:	600,000 miles (965,606 km) / 24,000 hours

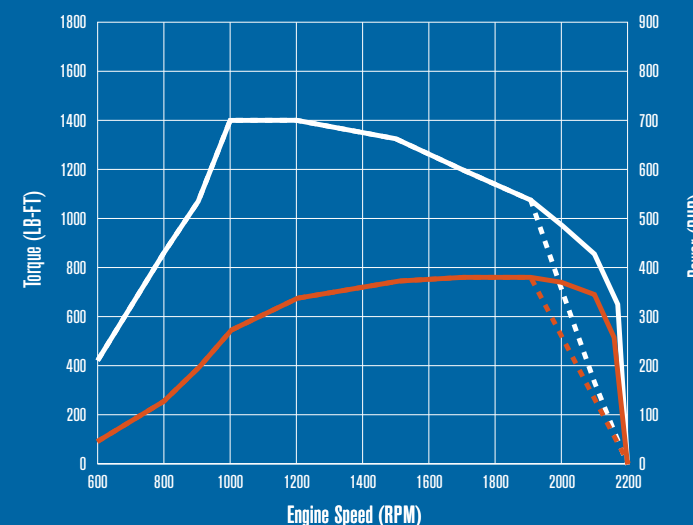
*Add extender @ 300,000 miles (482,803 km) / 12,000 hours

MAXXFORCE 13 SPECS

Engine Type	Diesel, 4-cycle
Configuration	In-line 6-cylinder
Displacement	12.4 L (757 cu. in.)
Bore and Stroke	126 mm x 166 mm (4.96 in x 6.54 in)
Compression Ratio	17:1
Aspiration	Twin-series turbocharger, air/liquid intercooled
Governed Speed	1,900 rpm on-highway, 2,100 rpm vocational
Combustion System	Direct injection
Cooling System Capacity	49 L (52 U.S. qt) (engine only)
Lubricating System Capacity	42 L (44.5 U.S. qt)
Total Engine Weight (dry)	2,244 lbs (1,018 kg)
Dimensions	1,365 mm L x 930 mm W x 1,239 mm H (54 in x 37 in x 49 in)
Valves	4 per cylinder, overhead cam actuated
Horsepower Range	410-475 horsepower (306-354 kW)
Torque Range	1,450-1,700 lb.-ft. (1,964-2,302 Nm) @ 1,000 to 1,200 rpm
Clutch Engagement Torque	830-960 lb.-ft. @ 800 rpm

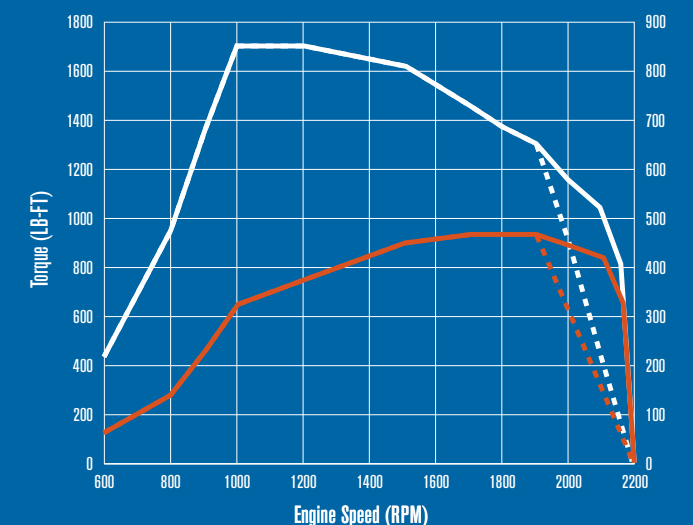
MAXXFORCE 11 PERFORMANCE

390 HP

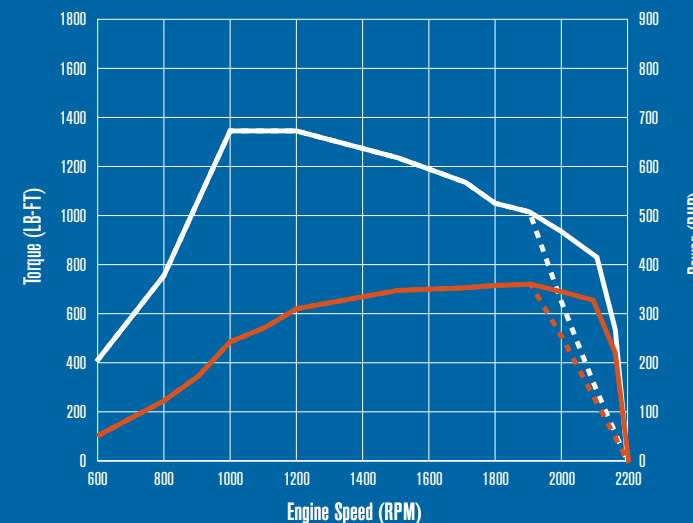


MAXXFORCE 13 PERFORMANCE

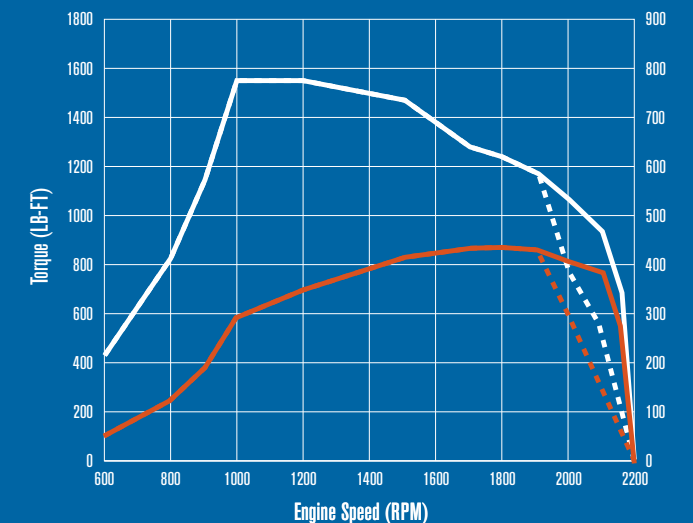
475 HP



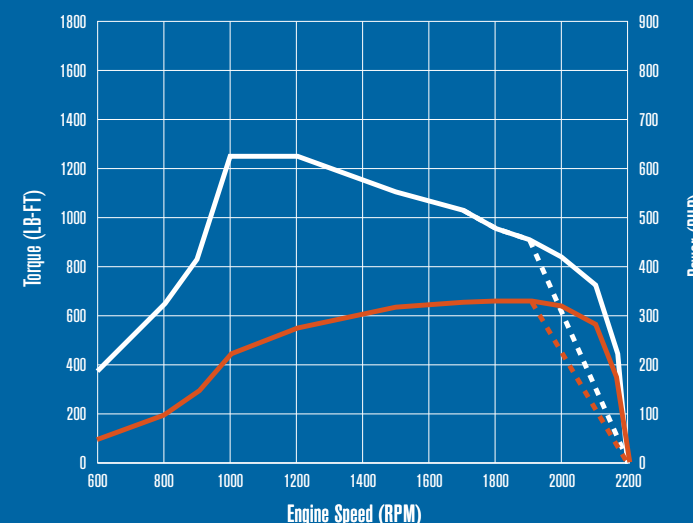
370 HP



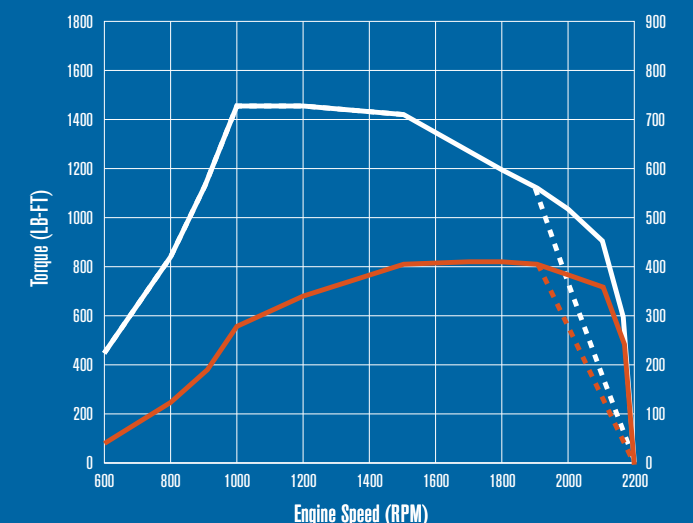
430 HP



330 HP



410 HP



SEVERE SERVICE TORQUE RATINGS (2,100 RPM)

ON-HIGHWAY TORQUE RATINGS (1,900 RPM)

SEVERE SERVICE HORSEPOWER RATINGS (2,100 RPM)

ON-HIGHWAY HORSEPOWER RATINGS (1,900 RPM)