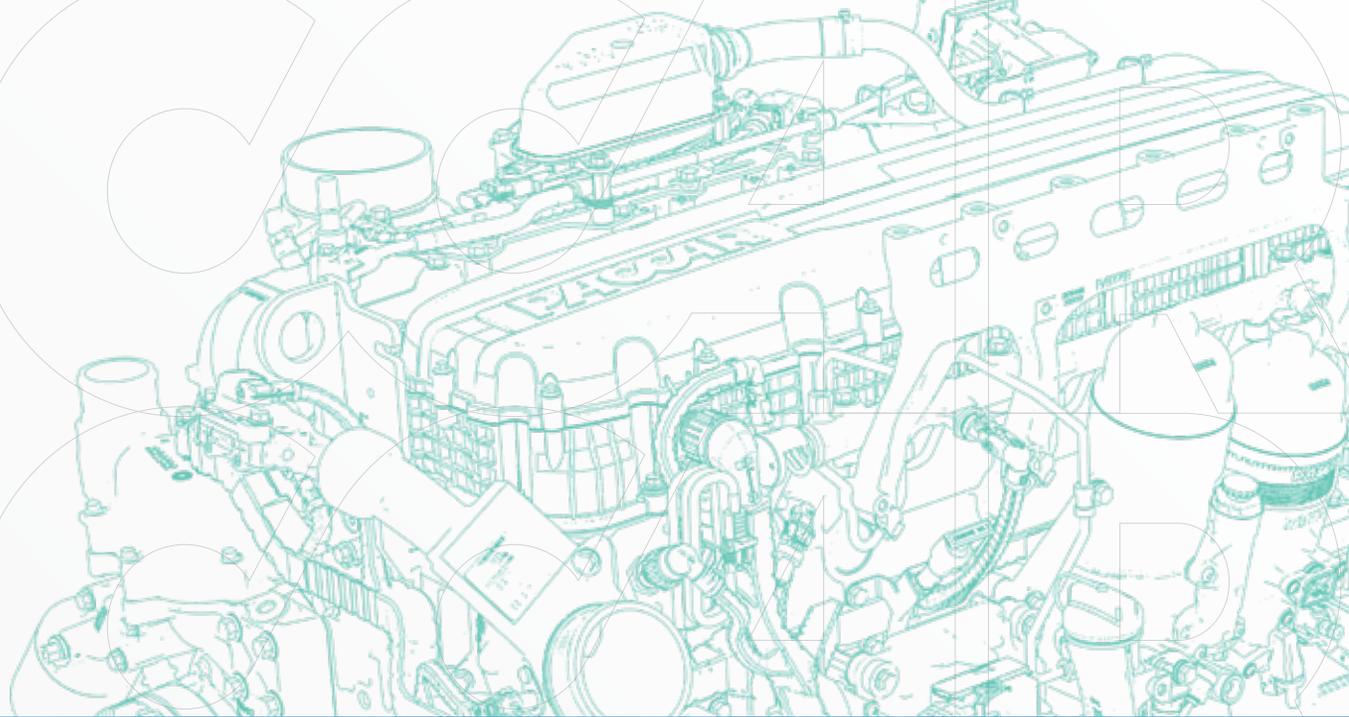


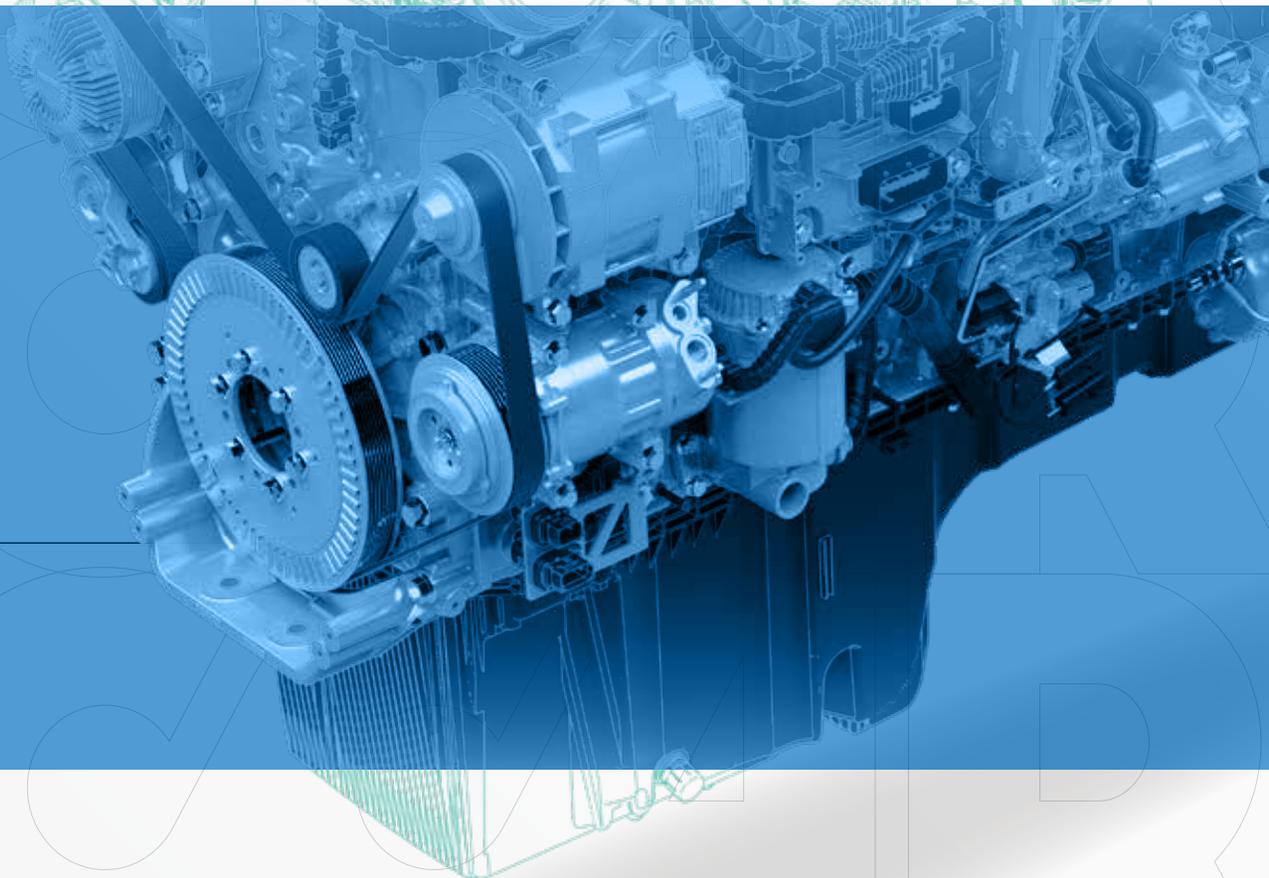
PACCAR ENGINES

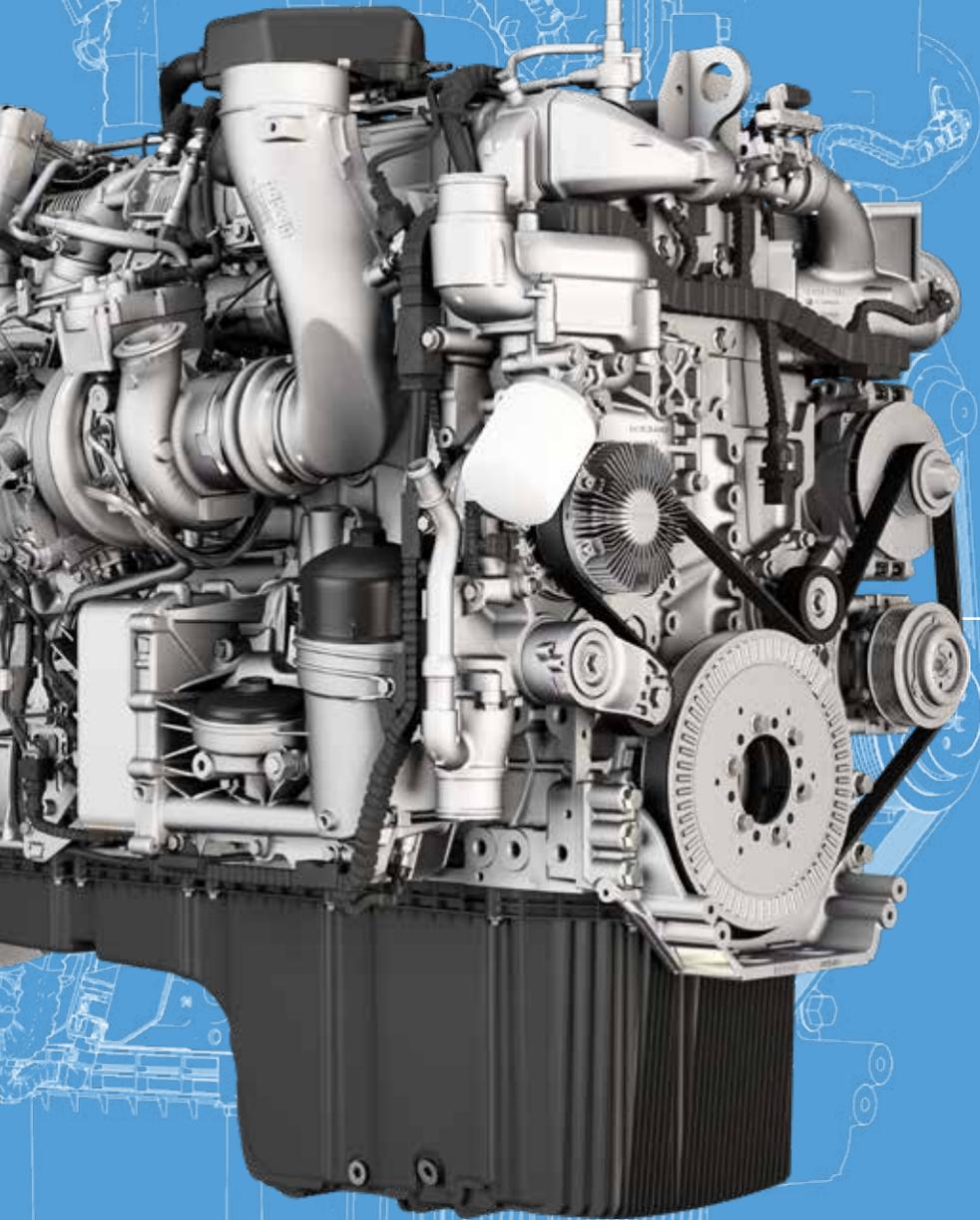


MX-13

EPA 2021

BUILT TO GO THE DISTANCE





HIGH- PERFORMANCE REDEFINED

**INTRODUCING AN ENHANCED, MORE FUEL
EFFICIENT PACCAR ENGINE FOR BIG JOBS,
HEAVY LOADS AND HIGHWAY HAULING.**

The PACCAR MX-13 12.9 L. engine features enhanced durability, reduced complexity, performance upgrades, increased downspeeding capability and more efficient combustion. The result: More power, longevity, uptime, ease of service and driver satisfaction – plus, even better fuel economy compared to the EPA 2017 MX-13 engine.

The PACCAR MX-13 engine guarantees a smooth-operating, high-performance powertrain of unmatched capability, optimized for a seamless integration with the PACCAR 12-Speed Transmission and PACCAR 40K Axles.

Best of all, every MX engine comes with the ironclad support of PACCAR, a global company with over 115 years of meticulous engineering, continuous innovation and manufacturing excellence. Backed by the longest – and strongest – major component warranty in the industry.

REDUCED COMPLEXITY AND PERFORMANCE UPGRADES

The new-generation PACCAR MX-13 engine challenges convention and pushes boundaries to produce a less complex, easier-to-service solution that enhances reliability. For example, the fully-encapsulated engine harness - a PACCAR exclusive - protects much better against the elements. Improved routing reduces wiring congestion and block-mounted connectors ensure a stable, stress-free solution. Connections between the engine and vehicle were reduced and further protected from the elements.

The new combined engine and aftertreatment control module eliminates wiring harnesses and connectors for a streamlined, highly-reliable design. A constant power source improves the shut-down sequence and enables immediate battery disconnect.

GREATER RELIABILITY AND MAXIMUM UPTIME

PACCAR is an innovation company, forever advancing the state-of-the-art in heavy duty diesel engines. With the PACCAR MX engines for 2021, virtually every part of the combustion process - and each critical component that helps produce and contain it - was scrutinized, modified, and improved. The objective: To design and produce a heavy-duty engine that not only meets EPA standards and offers unprecedented fuel efficiency, but to also produce an engine that runs longer, performs better, and maximizes your productivity. Mile after mile, day in and day out.

STRUCTURAL ENHANCEMENTS

The PACCAR MX-13 engine incorporates several design changes that strengthen load-bearing components. The crankshaft, for example, features optimized main bearing and connecting rod diameters for improved load distribution. The addition of counter-weights on the crankshaft further reduces vibration and noise - something the driver will instantly notice and appreciate.

Oil flow to the camshaft was increased to reduce wear and to protect critical rotating assemblies. The valve train was also optimized to decrease camshaft loading and a diamond-like low-friction coating was added to the engine brake mechanism to increase the durability of the upper valve train.



ALL-NEW FUEL MODULE

The fuel module was optimized for service and improved performance. The primary and secondary fuel filters are engine-mounted for easier, faster access. A fuel blender and 12 V heater come standard for better cold weather performance. The mistake-proof filter design speeds filter exchanges and is also aligned with oil change intervals for reduced downtime. An improved fuel priming pump is easier to use during service.



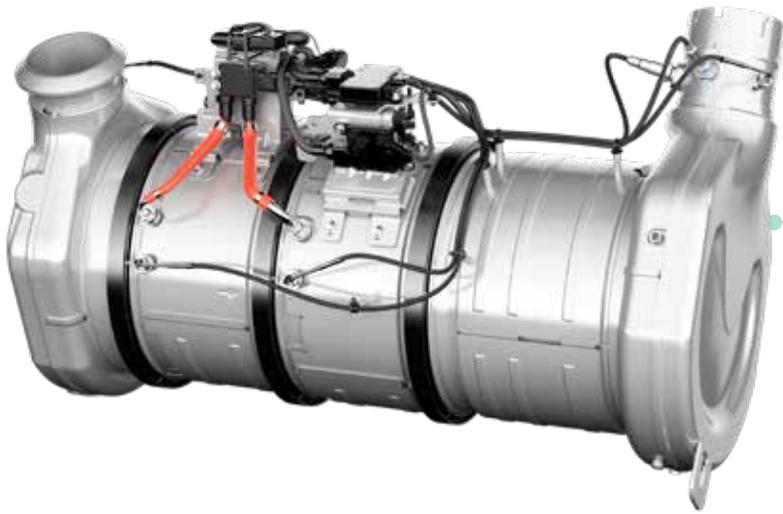
IMPROVED FUEL ECONOMY

Ultra-high combustion chamber pressure and lower friction components together with PACCAR's innovative synergetic piston design combine to reduce combustion noise, boost performance and increase fuel efficiency while significantly reducing your carbon footprint.

The PACCAR MX Engine's cutting edge design has been optimized to maximize air flow into the cylinder and utilizes multi-pulse fuel injection to greatly improve combustion efficiency, reduce noise and provide thermal management for the aftertreatment system.

A smaller, more efficient turbocharger improves responsiveness without sacrificing power. Designed for all driving conditions, the turbocharger boosts power and torque at lower speeds for better driveability and more efficiency while delivering better fuel economy on the highway.





NEXT GENERATION AFTERTREATMENT SYSTEM

PACCAR engines are known for their clean, efficient, reliable and easily serviced **aftertreatment systems**. For 2021, PACCAR strengthens that commitment with refinements to further reduce particulates and NOx without sacrificing power, performance or fuel economy.

PERFECTING THE PISTON

The piston is the beating heart of every engine - subjected to more heat, pressure and stress than any other part on the engine. The design, shape, construction and operation of the piston makes a world of difference.

PACCAR's new synergetic piston design with optimized bowl geometry achieves an unprecedented level of air/fuel mixing - enhancing combustion, fuel economy and emission control. The combustion process is also much quieter, substantially reducing engine noise inside and outside the cab.

- **REDUCED COMPRESSION HEIGHT DECREASES THE FRICTION AND MASS OF THE ROTATING ASSEMBLY**
- **BETTER PISTON COOLING AND DESIGN REDUCES OIL CONSUMPTION**
- **DIAMOND-LIKE COATING ON PISTON RINGS IMPROVES DURABILITY AND WEAR RESISTANCE**



LESS SCHEDULED DOWNTIME EQUALS MAXIMUM UPTIME

Extended service intervals offer a major competitive difference that can produce significant savings. Oil and fuel filter changes, for example, occur together at 75,000 mile intervals, much less frequently than competitive engines.

Each PACCAR MX engine also comes standard with factory-installed remote diagnostics – purposeful technology that helps you monitor engine performance.

Quicker-to-fix, more serviceable components can greatly reduce shop time and get you on your way more quickly. Fuel and oil filters, for example, are mounted above the frame rail for quick and easy access and replacement.

When you need genuine parts and expert service, PACCAR’s expansive support network – with more than 800 PACCAR MX service locations throughout North America – means you are never far from quality service and support for your PACCAR powered vehicle.

MAINTENANCE INTERVALS

MAINTENANCE ITEM ¹		MI.	KM.
Fuel Filter	Normal/Line Haul < 20% Idle Time	75,000	120,000
	Normal/Line Haul > 20% Idle Time	50,000	80,000
	Severe/Vocational Duty	30,000	48,000
Oil and Filter	Normal/Line Haul < 20% Idle Time	75,000	120,000
	Normal/Line Haul > 20% Idle Time	50,000	80,000
	Severe/Vocational Duty	30,000	48,000
Coolant Filter		300,000	480,000
DEF Filter		300,000	480,000

¹Reference MX Engine Operator’s Manual for engine maintenance requirements



WORLD-CLASS TECHNOLOGY AND DURABILITY TESTING

MX engines have been thoroughly tested both in engine test cells and over-the-road in a number of challenging conditions. Extensive customer field testing has accumulated over 250 million miles of real-life usage. This in-depth testing and validation has developed an engine that delivers high-value performance in the real world.

The PACCAR Engine Company, based in Columbus, Mississippi, is home to a world-class engine manufacturing facility. From the CNC machining centers for engine blocks and cylinder heads to robotic assembly, MX-13 engines are manufactured to extraordinarily high standards. In order to achieve excellent repeatability and high quality, the plant utilizes torque-controlled tooling, and all engines are 100% hot tested before they leave the facility.

MX-13 ENGINE CHART

RATINGS

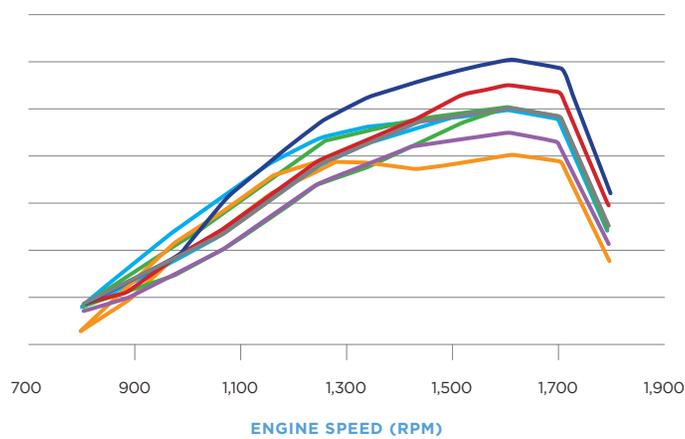
PEAK HORSEPOWER **PEAK TORQUE (LB.-FT. @ RPM)**

510	1,850 @ 1,000	●
485	1,650 @ 900	●
455MT ³	1,650/1,850 @ 900	●
455MT ³	1,550/1,750 @ 900	●
455	1,650 @ 900	●
430	1,550 @ 900	●
405MT ³	1,650/1,750 @ 900	●

³Multi-torque rating

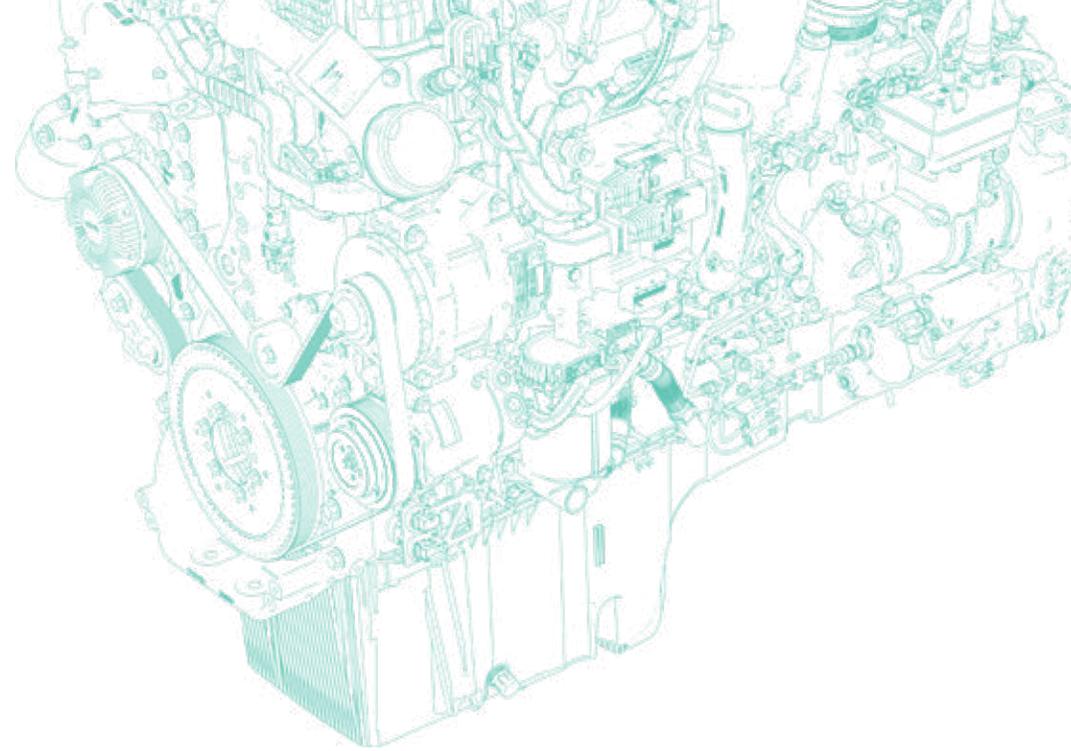
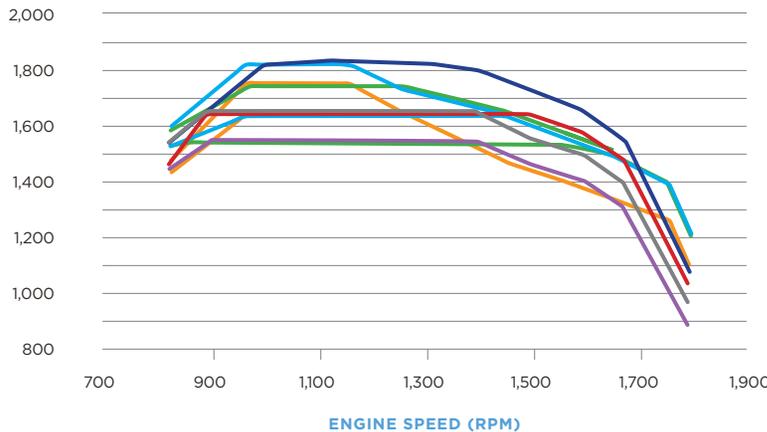
HORSEPOWER (HP)

HORSEPOWER



TORQUE (LB.-FT.)

TORQUE



MORE EFFICIENT POWER WITH IMPROVED DOWNSPEEDING

The PACCAR MX-13 offers a peak torque at a low RPM - delivering a smoother driving experience, higher productivity and greater fuel economy than ever before.

BEST-IN-CLASS WARRANTY

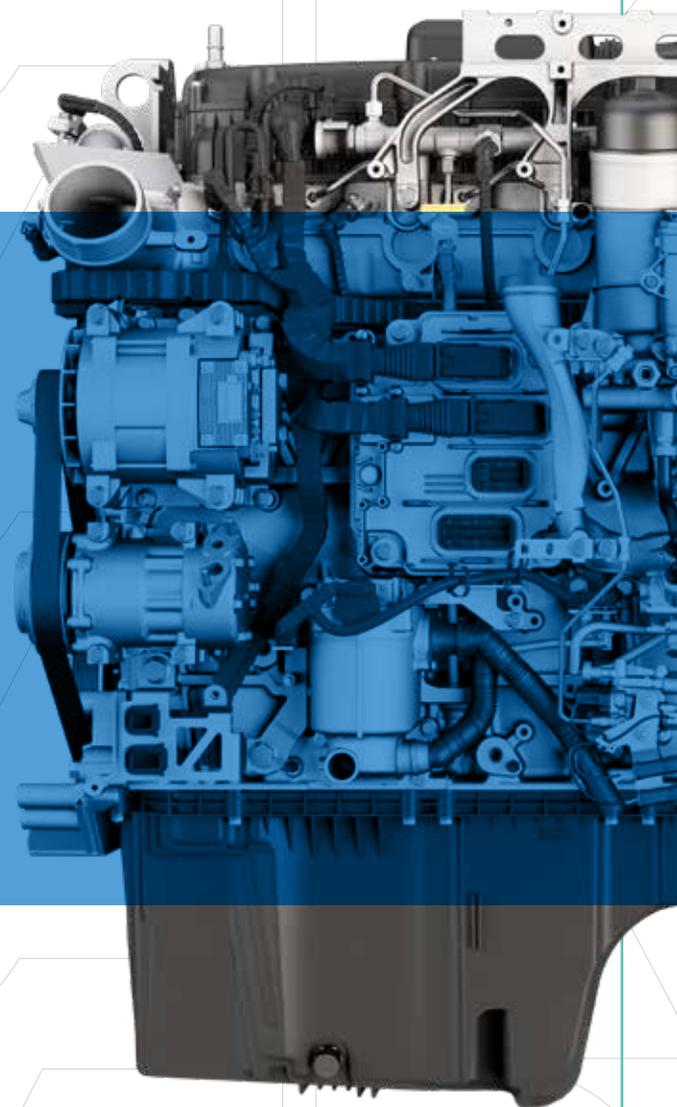
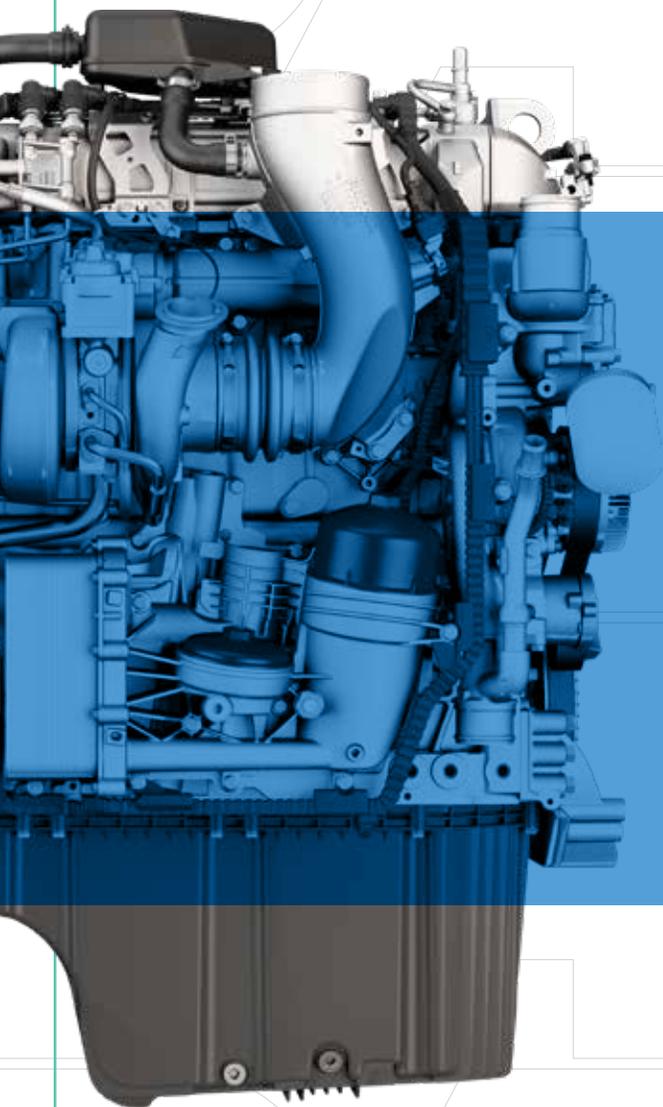
As you might expect, PACCAR MX-13 engines are backed by one of the strongest warranties in the industry and available with extended protection plan options to meet your precise business and application requirements.

PACCAR MX ENGINE STANDARD WARRANTY

Base Warranty ⁴	2 YRS./250,000 MI. (400,000 KM.)
Towing ⁵	2 YRS./250,000 MI. (400,000 KM.)
Aftertreatment	2 YRS./250,000 MI. (400,000 KM.)
Major Components	5 YRS./500,000 MI. (800,000 KM.)

⁴Extended protection plans available

⁵Base Engine Warranty includes towing for warrantable failures. Reference warranty document for terms and conditions.



WE'RE WITH YOU ALL THE WAY

When you need genuine parts and expert service, PACCAR's expansive support network will get you back on the road fast. With hundreds of PACCAR Engine dealerships throughout North America you are never far from quality service and support when you buy a PACCAR powered vehicle. Expect comprehensive warranty coverage, a hassle-free process and expedited parts and service for critical downtime situations.

**VISIT WWW.PACCARPOWERTRAIN.COM
TO FIND YOUR LOCAL DEALER**

PACCAR POWERTRAIN

PACCAR Inc. - P.O. Box 1518,
Bellevue, WA 98009

Note: Equipment and specifications shown in this brochure are subject to change without notice.
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