



# FOR THE ULTIMATE POWER

The PACCAR MX-13 Engine brings efficiency and flexibility together into one, high-performance solution.

**PACCAR** **MX-13**  
***Powered By Quality***





**INNOVATIVE  
PERFORMANCE  
TEAMED WITH  
EXCEPTIONAL  
EFFICIENCY**

# THE STANDARD FOR INNOVATION

The PACCAR MX-13 engine brings a new level of innovation through industry-leading quality, exceptional efficiency and proven performance. For over 50 years, PACCAR has delivered over 1 million engines globally, providing innovative solutions and an unwavering commitment to superior customer service and support.

## QUALITY

PACCAR's core commitment to quality is evident in the attention to detail, the seamless integration of systems and the use of the highest quality materials available, resulting in long-term customer value.

## EFFICIENCY

The PACCAR MX-13 engine features innovative designs that contribute to efficiency, reliability and durability, delivering an overall lower cost of ownership.

## PERFORMANCE

The 12.9 litre PACCAR MX-13 engine combines maximum power with outstanding fuel efficiency to optimise performance in many applications.





# THE FOCUS AS ALWAYS IS ON RELIABILITY AND DURABILITY

Transport professionals will find the PACCAR MX-13 engine credentials and specifications ideal for a variety of heavy duty applications including single trailers, tipper and dog and B-double.

## LIGHTWEIGHT COMPONENTS

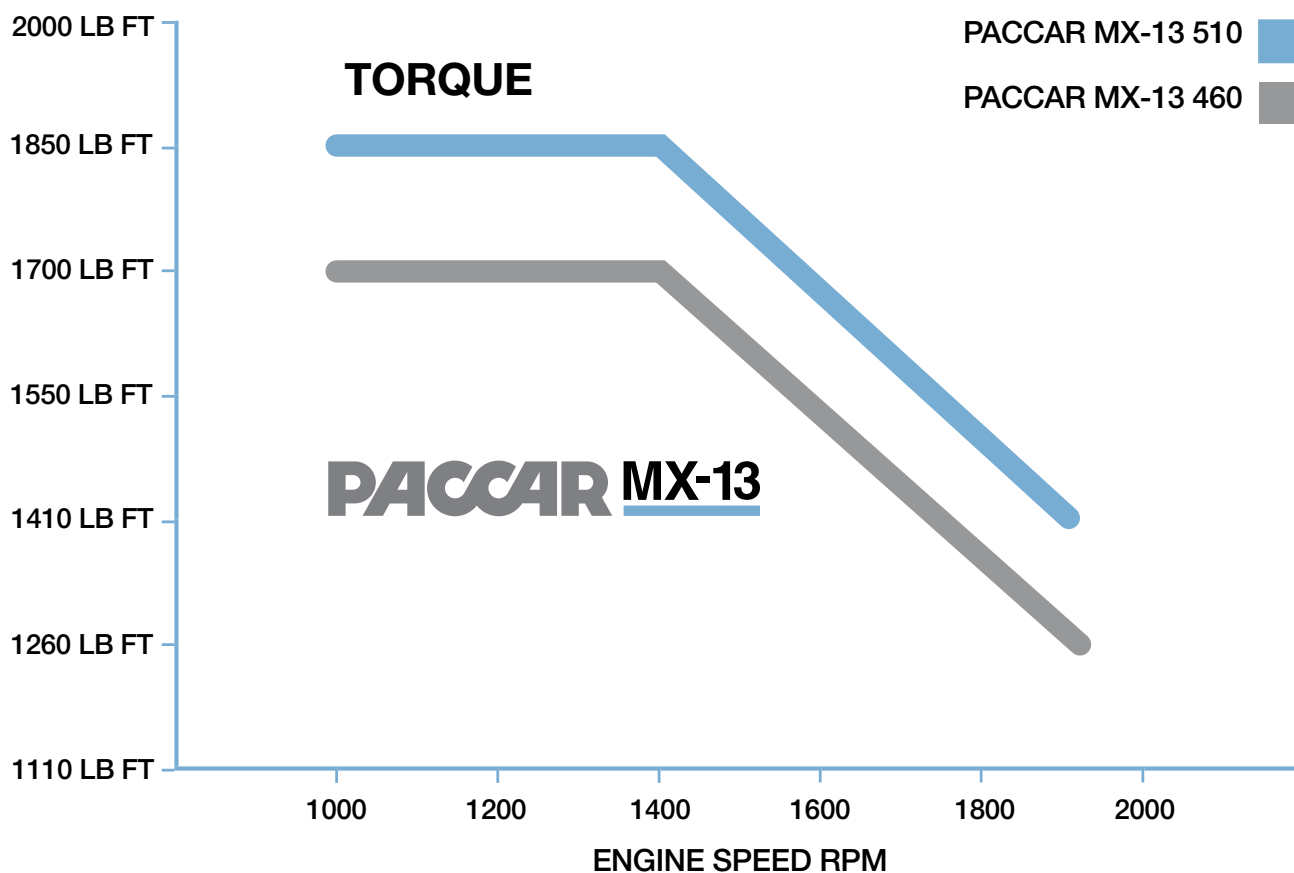
The PACCAR MX-13 uses Compacted Graphite Iron (CGI) in both the cylinder block and head. CGI is lighter and stronger than traditional grey iron and offers operators an excellent horsepower-to-weight ratio to optimise payload. The distinctive PACCAR MX-13 crankshaft reduces weight and increases power for quicker acceleration and smoother overall operation.

## RELIABILITY & DURABILITY

State of the art production processes and first class materials result in exceptional reliability and durability. The strength of CGI allows the block to be shaped to reduce noise and increase overall strength of the engine. Outstanding thermal fatigue characteristics allow the block to expand and contract whilst maintaining excellent structural integrity. In addition to CGI, the PACCAR MX-13 features an aluminium frame mounted to the bottom of the block to further increase block stiffness and structural integrity.

The integrated lubrication module of the PACCAR MX-13 combines filters, a thermostat and an oil cooler joined directly to the engine without external lines, which maintains oil quality and extends service intervals. The PACCAR MX-13 features a fully encapsulated wiring harness mounted directly to the block that protects wiring from the elements and removes stress from connectors. This results in a dependable electrical system that can be serviced in a non-invasive manner to keep trucks in operation.





## PERFORMANCE AND DRIVEABILITY

PACCAR MX-13 engines deliver excellent torque at low engine speeds and high performance over a wide rev range. The PACCAR MX-13 engine brake offers optimum stopping power on long gradients.

A rear mounted gear train reduces torsional vibrations that occur with front engine gear trains. The design places gears within the flywheel circumference, where the primary energy transfer takes place, resulting in greater harmonic balancing, which reduces wear and tear and provides drivers with a quieter operating environment.

# MAIN CONSTRUCTION

## CYLINDER BLOCK

Compact Graphite Iron (CGI) with integrated housing for the Unit Pump system. Aluminium ladder frame for a high crankcase stiffness.

## CYLINDER HEAD

One-piece cylinder head (CGI) with integrated intake manifold. Composite valve cover.

## VALVES

Four valves per cylinder. Inlet valves with single valve springs. Exhaust valves with double valve springs.

## CRANKSHAFT

'Stepped-die' forged steel crankshaft without contra-weights.

## CYLINDER LINERS

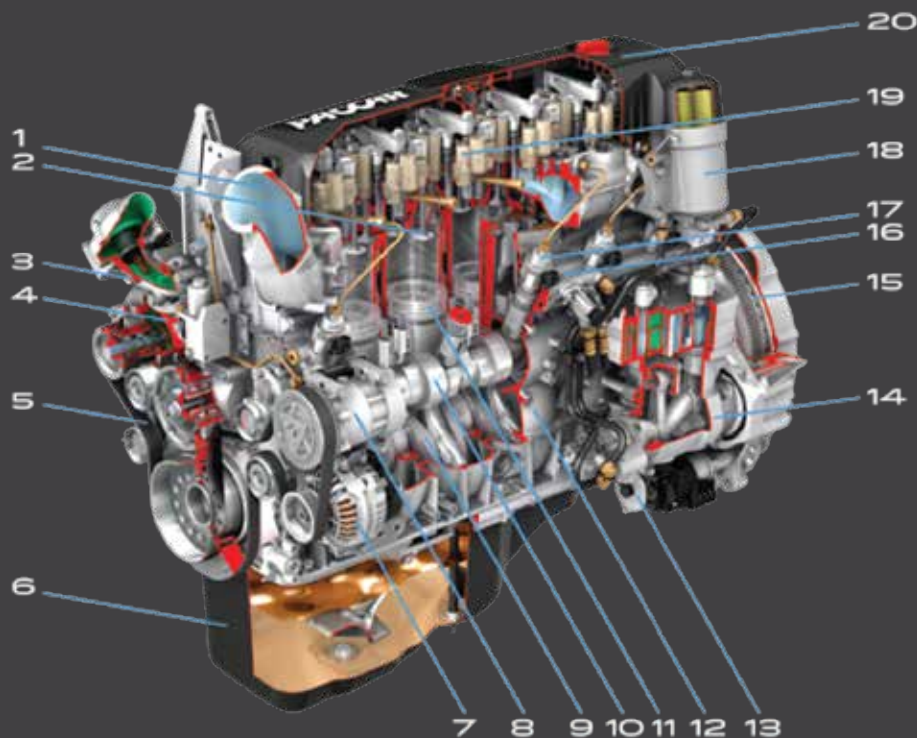
Wet 'top-stop' liners. Oil cooled pistons with three piston rings each.

## OIL SUMP

Sheet steel extruded oil sump, with fully elastic mounting against the cylinder block.

## DISTRIBUTION GEAR

Low-noise rear mounted distribution drive with straight gears.



## LEGEND

- |                       |                               |                               |
|-----------------------|-------------------------------|-------------------------------|
| 1. Air Intake Pipe    | 8. Air/Conditioner Compressor | 15. Flywheel                  |
| 2. Valve              | 9. Crank Shaft                | 16. Low Pressure Fuel Gallery |
| 3. Thermostat Housing | 10. Cam Shaft                 | 17. Unit Pump                 |
| 4. Water Pump         | 11. Piston                    | 18. Fuel Filter               |
| 5. Poly-V Belt        | 12. Engine Block              | 19. MX-13 Engine Brake        |
| 6. Oil Sump           | 13. Starter Engine            | 20. Valve Cover               |
| 7. Alternator         | 14. Air Compressor            |                               |





# FUEL INJECTION AND INDUCTION

## FUEL INJECTION

Electronic Unit Pump (EUP) injection system.  
Integrated pump unit solenoids.

## INJECTORS

SMART injection technology with variable needle opening pressure and precisely timed multi-point injection.

## INJECTION PRESSURE

Max. 2,000 bar.

## INDUCTION

Turbocharged with charge air cooling (intercooling).

## TURBOCHARGER

Compact single-stage turbocharger with by-pass control.

# LUBRICATION

## OIL MODULE

Fully integrated module, containing oil filters, oil cooler, thermostat, valves and tubing.

## OIL FILTERS

Full-flow main oil filter. Centrifugal by-pass filter for extended service intervals. Fully recyclable filter cartridges.

## OIL COOLER

Thermostatically controlled plate-type heat exchanger.

## OIL PUMP

Gear-type pump with integrated suction control.

## RATINGS

### PACCAR MX-13 460

COMPRESSION RATIO	16.5 to 1
MAX OUTPUT	460 hp (340kW) @ 1400 – 1900 rpm
MAX TORQUE	1700 lb ft (2300nm) @ 1000 – 1410 rpm

### PACCAR MX-13 510

COMPRESSION RATIO	16.5 to 1
MAX OUTPUT	510 hp (375kW) @ 1500 – 1900 rpm
MAX TORQUE	1850 lb ft (2500nm) @ 1000 – 1410 rpm

## SPECIFICATIONS

Six-cylinder in-line turbocharged diesel engine with inter-cooling. Clean combustion with Selective Catalytic Reduction (SCR) after-treatment for Euro 5 emission levels.

NUMBER OF CYLINDERS	6 turbo intercooled
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PISTON DISPLACEMENT	12.9 litres
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FUEL INJECTION	Electronically controlled
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BORE & STROKE	130 x 162mm
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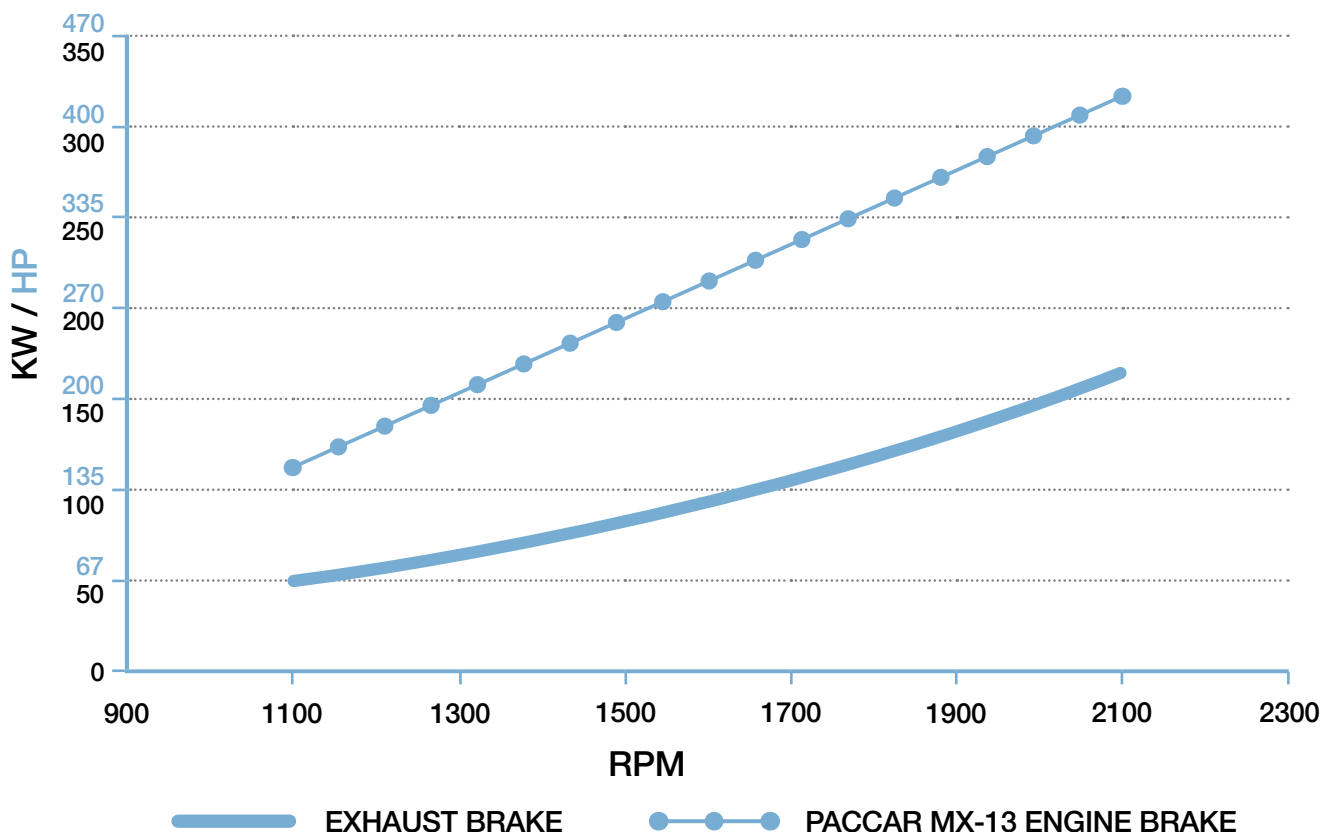
## AUXILIARIES & EXHAUST BRAKE/ENGINE BRAKE

### AUXILIARY DRIVE

Primary and secondary poly-V belt drives. Low-energy air compressor and combined steering pump/fuel feed pump unit driven from the distribution gears.

### PACCAR MX-13 ENGINE BRAKE & EXHAUST BRAKE

Hydraulically operated compression brake integrated in the valve rocker groups combined with pneumatically operated exhaust brake.





# FUEL EFFICIENCY

SMART fuel injection technology is used to deliver high injection pressures combined with precise injection timing and multi-point injection. The outcome is an optimum combustion process and excellent fuel efficiency.

The PACCAR MX-13 features low operational engine speeds with excellent torque characteristics, thereby requiring fewer gear changes, which results in lower fuel consumption.

# ENVIRONMENT

To comply with the Euro 5 requirements for exhaust gas emissions, PACCAR MX-13 engines use SCR technology, optimised for high performance with low fuel consumption and low emission of particulate matter.

An optimised combustion process results in low emissions of particulate matter allowing for long service intervals, which reduces the total oil waste over the truck's service life.



# PACCAR AUSTRALIA SUPPORT & SERVICE

PACCAR engine technicians are certified in the latest technologies and utilise cutting edge diagnostic tools and equipment so your vehicle stays on the road and in service.

Because the PACCAR MX-13 engine is powered by PACCAR you can rely on the Kenworth dealer network for all your parts and service support.

## DEALER NETWORK

PACCAR Australia offers an extensive dealer network right across Australia that is renowned for its professionalism and excellence in the heavy duty truck industry. The PACCAR network also includes highly qualified dealers in New Zealand.

Our dedicated 1800 Roadside Assistance Service covers Australia 24-7. Simply call 1800 4 PACCAR (1800 472 222) to be connected to your nearest PACCAR Dealer.

**1800 4 PACCAR**  
(1800 472 222)

**PACCAR**



**ROADSIDE ASSISTANCE**

## TOTAL VALUE

The PACCAR MX-13 engine offers a long term value proposition through its technologically advanced designs and lightweight materials that achieve excellent performance and fuel economy. The fully integrated systems provide longer service intervals, increased uptime and lower operating costs.



**KENWORTH**







**TALK TO YOUR  
KENWORTH  
DEALER TODAY**

Your Kenworth dealer will be happy to discuss your particular application and horsepower needs so that you will enjoy maximum productivity from your PACCAR MX-13 engine.

Visit [paccar.com.au](http://paccar.com.au) to find your local dealer.

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