

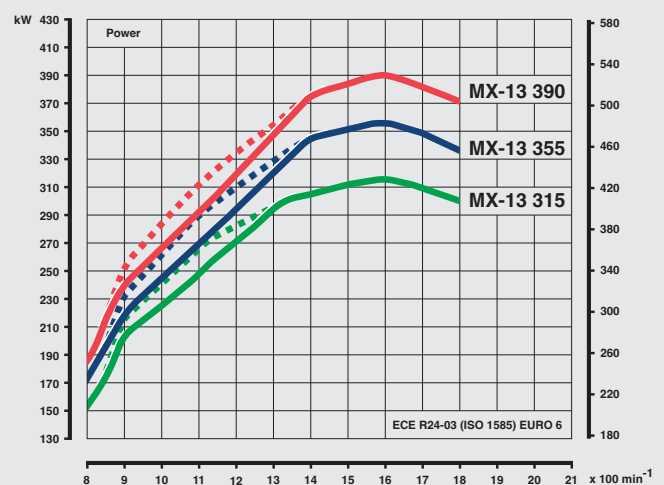
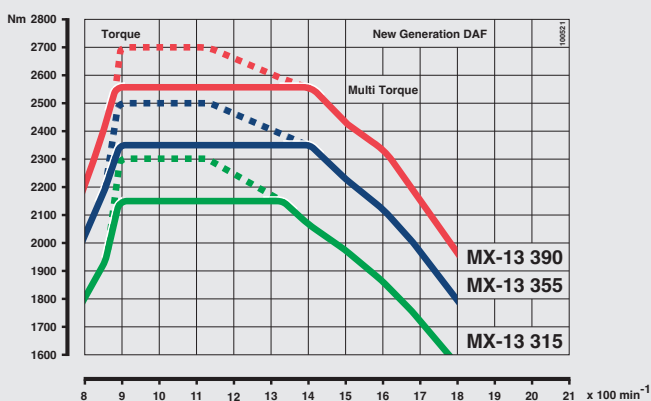
PACCAR MX-13 engines

The 12.9 litre Euro 6 PACCAR MX-13 engine uses ultra-modern common rail technology, a turbo with variable geometry and advanced controls for maximum efficiency. In order to comply with the strict Euro 6 emissions requirements, it features exhaust gas recirculation, together with SCR technology and an active soot filter.

The engines provide additional torque at low revs in the highest gear for direct drive gearboxes and in the two highest gears for overdrive gearboxes to support lower fuel consumption of the vehicle.

Engine	OUTPUT KW (HP)	TORQUE NM
PACCAR MX-13 315	315 (428) at 1600 rpm	2300 at 900 - 1125 rpm ^{1]} 2150 at 900 - 1365 rpm
PACCAR MX-13 355	355 (483) at 1600 rpm	2500 at 900 - 1125 rpm ^{1]} 2350 at 900 - 1365 rpm
PACCAR MX-13 390	390 (530) at 1675 rpm	2700 at 900 - 1460 rpm ^{1]} 2550 at 900 - 1425 rpm

^{1]} In the highest gear for direct drive gearboxes and in the two highest gears for overdrive gearboxes



PACCAR MX-13 engines

General information

Six-cylinder in-line turbocharged diesel engine with intercooling. Ultra clean combustion with Exhaust Gas Recirculation (EGR), Diesel Particulate Filter (DPF) and Selective Catalytic Reduction (SCR) aftertreatment for Euro 6 emission levels.

■ **Bore x stroke**
130 x 162 mm

■ **Piston displacement**
12.9 litres

■ **Compression ratio**
• 19.4 to 1 (MY25 - 03683)
• 18.5 to 1 (MY24 - 03670)

Main construction

■ **Cylinder block**

- Compact graphite iron (CGI).
- Integrated housing for the high pressure fuel pump units
- High strength and wear resisting liner material
- Improved cooling

■ **Cylinder head**

- Compact graphite iron (CGI) one-piece cylinder head with integrated intake manifold
- Composite valve cover

■ **Valves**

Four valves per cylinder

■ **Cylinder liners**

Wet liners with Anti Polishing Ring

■ **Pistons**

Oil cooled piston with three piston rings each

■ **Crankshaft**

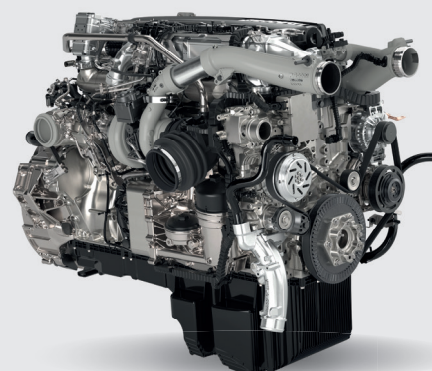
'Stepped-die' forged steel crankshaft without contra-weights, updated to facilitate efficient miller-timing*

■ **Oil sump**

- Composite oil sump for lower weight special ribbing for low noise
- Electronically driven and monitored crankcase ventilation

■ **Distribution gear**

Low-noise rear mounted distribution drive



* For EU vehicles configured with 03683 option

Fuel injection and induction

■ **Fuel feed pump**

Optimized delivery

■ **Fuel unit**

- Single cartridge filter
- Integrated heater
- Automatic water drain

■ **Fuel injection**

- common rail with 2 high pressure pump units integrated in the engine block
- Smart Outlet Metering Valve (OMV)

■ **Injectors**

Wide angle injectors (ATe)

■ **Injection pressure**

max. 2500 bar

■ **Induction**

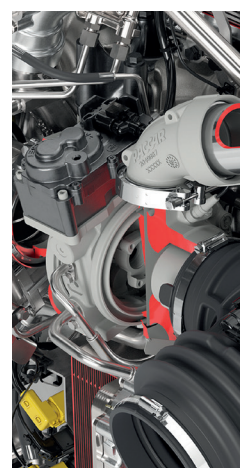
Turbocharged with charge cooling (intercooling)

■ **Turbocharger**

Variable geometry turbocharger (VTG)

■ **Intercooler**

Aluminium, single-row, transverse-type intercooler



Lubrication

■ Oil module

Pre-assembled module, containing oil filters, oil cooler, thermostat, valves and tubing

■ Oil filters

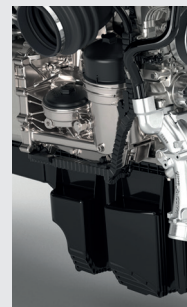
- Full-flow main oil filter
- Centrifugal by-pass filter for extended service intervals
- Fully recyclable filter cartridges

■ Oil cooler

- Thermostatically controlled stainless steel heat exchanger

■ Oil pump

- Variable, high efficient oil pump



Auxiliaries and exhaust brake / engine brake

■ Auxiliary drive

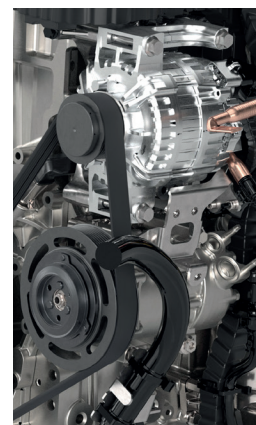
- Poly-V belt drive
- Low-energy air compressor with Smart Air supply
- Control (SAC) and combined steering pump/fuel feed pump driven from the distribution gears, clutched air compressor (03150) available for improved efficiency*

■ Exhaust brake

Electrically operated butterfly valve in the exhaust duct

■ MX Engine Brake

- integrated compression release brake
- VTG and BPV for brake power control
- Smart, electronically controlled, cooled actuator



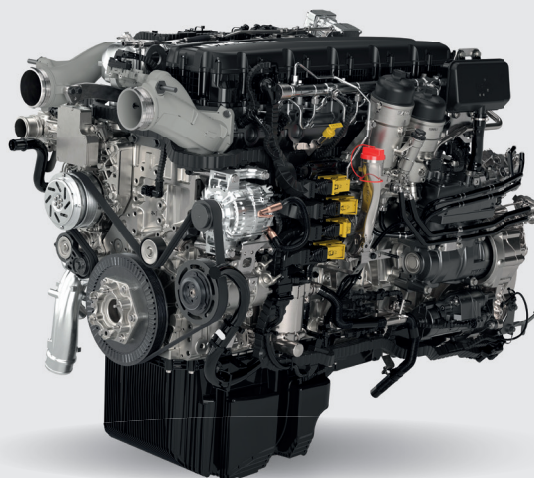
* For EU vehicles configured with 03683 option

PACCAR MX-13 engines

Reliability and durability

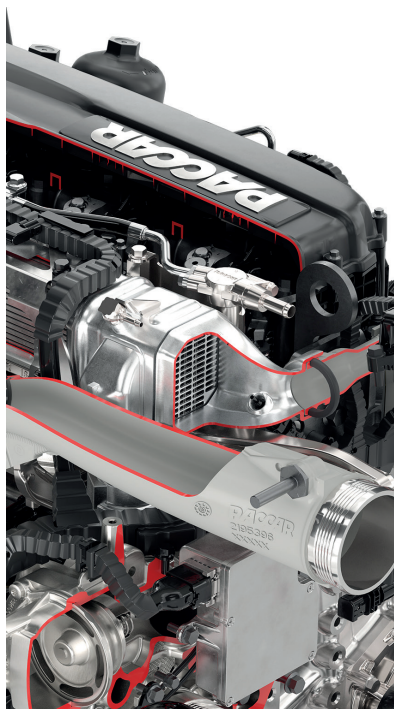
State-of-the art techniques, first class materials and extensive functional integration result in high reliability and long durability. Water and oil feeds, low pressure fuel lines and the high pressure fuel injection pump housing are integrated in the cylinder block.

The cylinder block has been designed without side covers for maximum stiffness and low noise generation. The one-piece cylinder head has an integrated inlet manifold. The combined fuel filter and water separator is mounted directly on the engine for maximum ease of maintenance.



Performance

All PACCAR MX-13 engines deliver excellent torque at low engine speeds and a high performance is available over a wide rev range. The optional, very powerful MX Engine Brake offers optimum driveability on long gradients. The integration of the MX Engine Brake in the service brake operation results in improved driving safety and reduced brake lining wear.



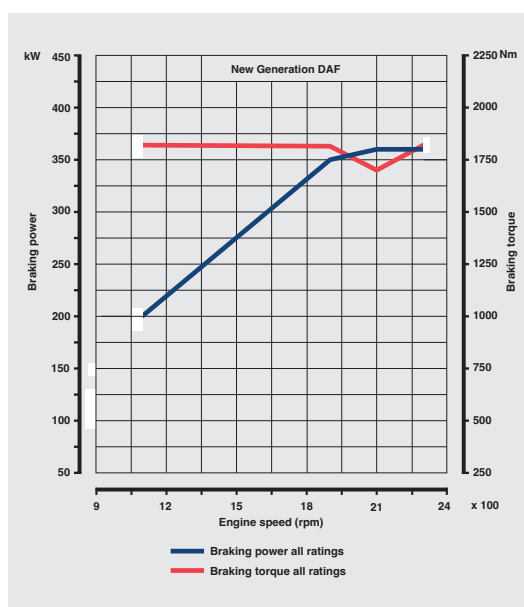
Fuel efficiency

A well-controlled combustion process together with additional technology to achieve the ultra-low Euro 6 emission values, results in an excellent fuel efficiency. The fuel in the common rail is supplied using smart dosing controls, to ensure optimum efficiency by only compressing the amount of fuel mixture that is really needed. This reduces hydraulic losses to a minimum.

Environment

In order to meet the stringent Euro 6 emission requirements, DAF is using a combination of exhaust gas after-treatment technologies, such as an SCR catalytic converter and an active soot filter. The right exhaust gas mixture results in an optimum temperature in the filter to regenerate the collected soot particles. To allow as much passive regeneration as possible the exhaust manifold, as well as the most essential parts of the exhaust system, have been encapsulated. Also the SCR catalytic converter benefits from the higher temperature which improves the efficiency and reduces the AdBlue consumption.

Engine Brake



Legend

- | | |
|------------------------------|------------------------|
| 1. EGR valve | 14. Poly-V belt |
| 2. Air intake pipe | 15. Alternator |
| 3. Seventh injector | 16. Thermostat housing |
| 4. Exhaust brake valve | 17. EGR Venturi |
| 5. VTG turbo | 18. EGR Cooler |
| 6. Flywheel | 19. MX Engine Brake |
| 7. Engine block | |
| 8. Oil filter module | |
| 9. Oil sump | |
| 10. Crankshaft | |
| 11. Coolant filter | |
| 12. Water pump | |
| 13. Air condition compressor | |

