

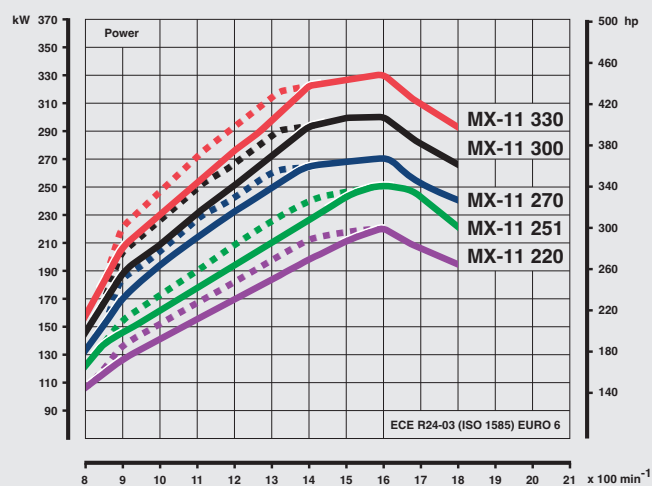
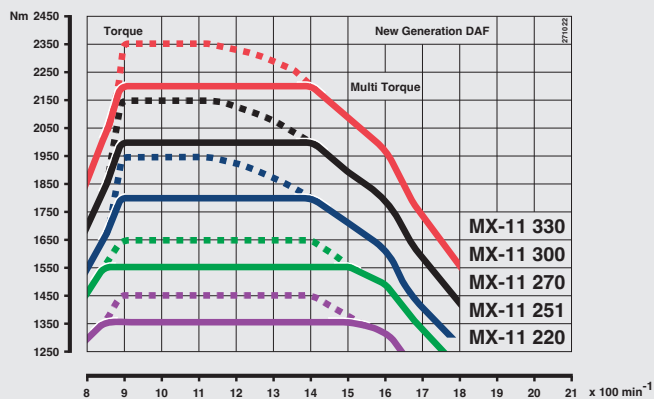
PACCAR MX-11 engines

The 10.8 litre Euro 6 PACCAR MX-11 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 emission requirements, it features exhaust gas recirculation, together with an active soot filter and SCR technology.

The engines MX-11 271, 291 and 320 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-11 220	220 (299) at 1675 rpm	1350 at 900-1400 rpm
PACCAR MX-11 251	251 (341) at 1675 rpm	1500 at 900-1400 rpm
PACCAR MX-11 270	270 (367) at 1600 rpm	1950 at 900-1125 rpm ^{1]} 1800 at 900-1400 rpm
PACCAR MX-11 300	300 (408) at 1600 rpm	2150 at 900-1125 rpm ^{1]} 2000 at 900-1400 rpm
PACCAR MX-11 330	330 (449) at 1600 rpm	2350 at 900-1125 rpm ^{1]} 2200 at 900-1400 rpm

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



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General information

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

■ **Bore x stroke**
123 x 152 mm

■ **Piston displacement**
10.8 litres

■ **Compression ratio**
• 19.0 to 1 (EU - 03683)
• 18.5 to 1 (Non-EU - 03670)

Main construction

■ **Cylinder block**

- Compact graphite iron (CGI) with vertical ribs to maximize strength and achieve low noise levels.
- Integrated housing for the high pressure fuel pumps.

■ **Cylinder head**

- Compact graphite iron (CGI) one-piece cylinder head with double overhead camshafts and integrated air intake manifold.
- Composite valve cover.

■ **Valves**

- Four valves per cylinder
- Valves with single valve springs

■ **Cylinder liners**

Wet liners with Anti Polishing Ring

■ **Pistons**

Oil cooled piston with three piston rings each

■ **Crankshaft**

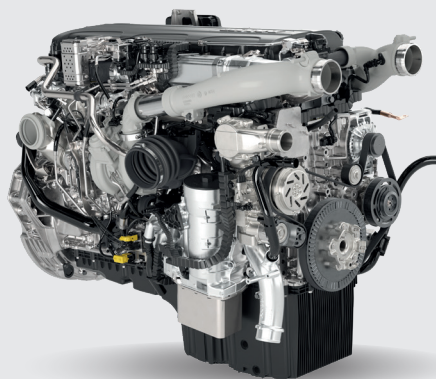
'Stepped-die' forged steel crankshaft without contra- weights, updated to facilitate efficient miller-timing*

■ **Oil sump**

Composite oil sump

■ **Distribution gear**

Low-noise rear mounted distribution drive with straight gears



* For EU vehicles configured with 03683 option

Fuel injection and induction

■ **Cylinder block**

- Compact graphite iron (CGI) with vertical ribs to maximize strength and achieve low noise levels.
- Integrated housing for the high pressure fuel pumps.

■ **Fuel injection**

Common rail with 2 high pressure pump units integrated in the engine block.

■ **Injectors**

Injectors with variable needle opening pressure.

■ **Injection**

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 plate-type stainless steel heat exchanger.

■ Oil pump

Vane-type pump, variable, high efficient oil pump.

Auxiliaries and exhaust brake / engine brake

■ Auxiliary drive

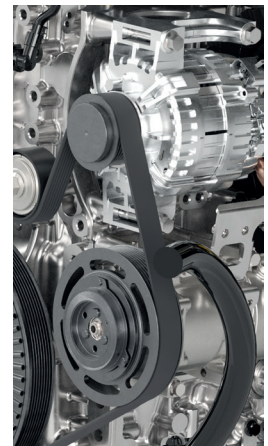
- Poly-V belt drive.
- Low-energy air compressor and combined steering pump/fuel feed pump unit driven from the distribution gears, clutched air compressor (03150) available for improved efficiency*

■ Exhaust brake

- Electrically controlled Back Pressure Valve (BPV) in the exhaust duct

■ MX Engine Brake

- Integrated, electronically controlled, hydraulically operated, compression brake



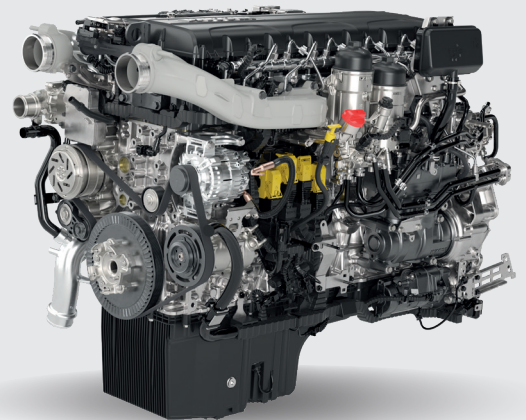
* For EU vehicles configured with 03683 option

PACCAR MX-11 engines

Engine torque and performance

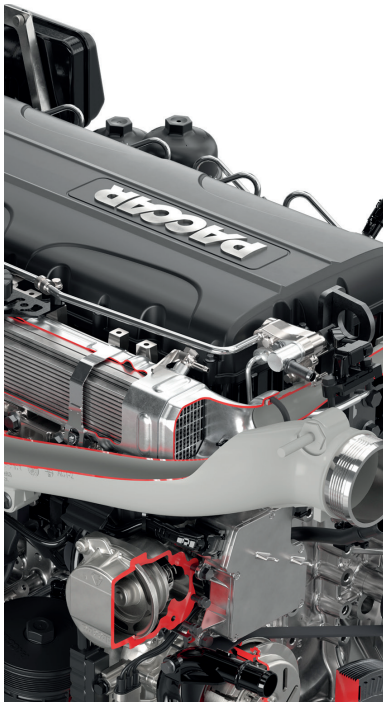
Two different engine tunings are used to adapt the PACCAR MX-11 engines to specific application areas. Engines with outputs 220 and 251 kW have been optimized for urban, regional and national distribution, with solo vehicles or combinations up to 32-36 tonnes GCM. These engines deliver maximum torque over an extra wide range of 900-1400 rpm.

Engines with outputs 270, 300 and 330 kW have been optimized for one-stop delivery types of application, with GCMs ranging from 36 to 44 tonnes. These MX-11 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.



Performance

All PACCAR MX-11 engines deliver excellent torque at low engine speeds and a high torque is available over a wide rev range. The optional, very powerful MX Engine Brake offers reliable endurance braking on long descents. The integration of the MX Engine Brake in the service brake operation results in improved driving safety and reduced brake lining wear.



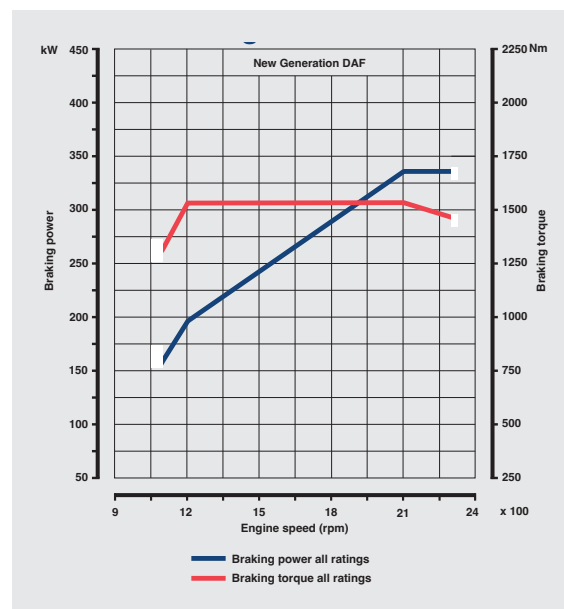
Fuel efficiency

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 uses a combination of exhaust gas after-treatment technologies, such as an active soot filter and SCR catalytic converter. 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. Valve cover | 11. Crankshaft |
| 2. EGR Valve | 12. Centrifugal oil filter |
| 3. Air intake pipe | 13. Air conditioning compressor |
| 4. Seventh injector | 14. Water pump |
| 5. VTG Turbo | 15. Poly-V belt |
| 6. Flywheel | 16. Alternator |
| 7. Exhaust brake valve | 17. Thermostat housing |
| 8. Engine block | 18. EGR mix tube |
| 9. Oil filter module | 19. MX Engine Brake |
| 10. Oil sump | |

