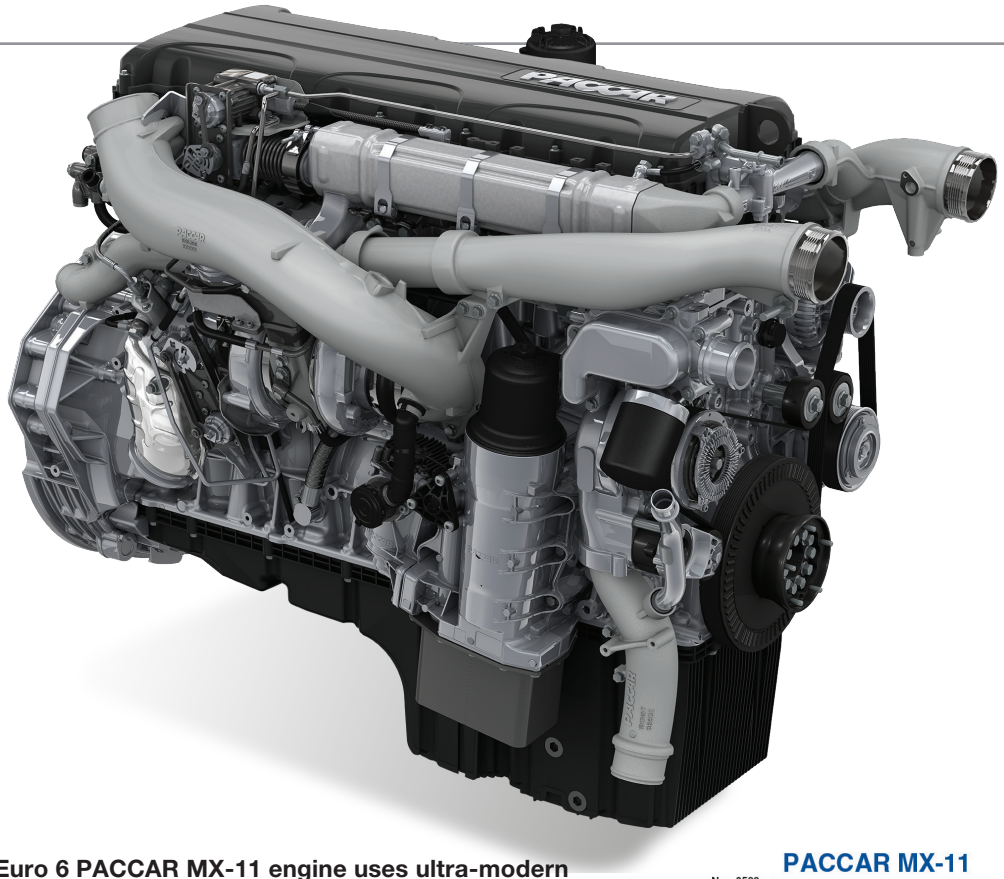
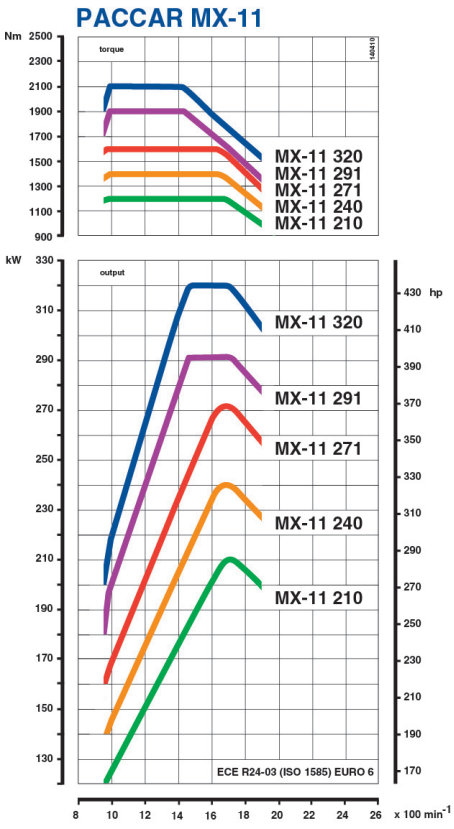
PACCAR MX-11 engines



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.

Engine	Output kW (hp)	Torque Nm
MX-11 210	210 (286)[1]	1200 at 1000 - 1700 rpm
MX-11 240	240 (326)[2]	1400 at 1000 - 1650 rpm
MX-11 271	271 (369)[2]	1580 at 1000 - 1650 rpm
MX-11 291	291 (396)[3]	1900 at 1000 - 1450 rpm
MX-11 320	320 (435)[3]	2100 at 1000 - 1450 rpm

[1] at rated engine speed 1700 rpm
[2] at rated engine speed 1650 rpm
[3] at rated engine speed 1450 - 1700 rpm



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 .....17.5 to 1

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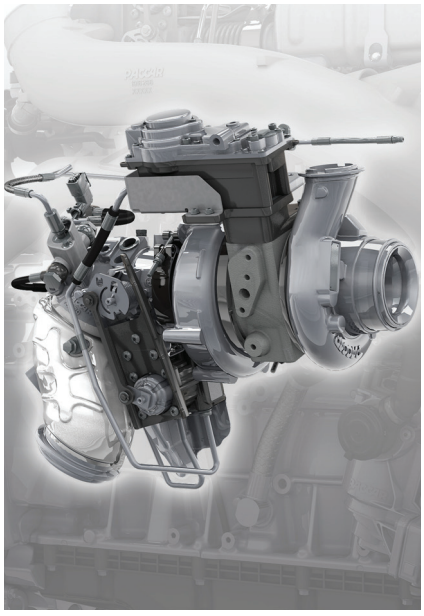
Main construction

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
Oil sump	-	composite oil sump
Distribution gear	-	low-noise rear mounted distribution drive with straight gears

Fuel injection and induction

Fuel injection	-	Common Rail (CR) injection system fuel pumps integrated for low vulnerability
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

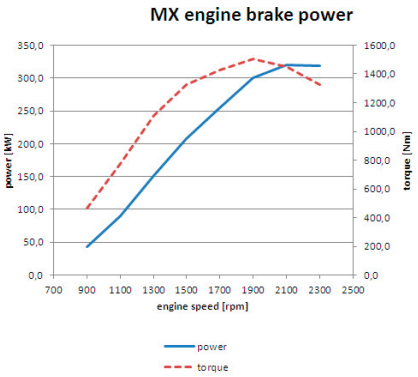


Lubrication

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	-	gear-type pump with integrated suction control

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
Exhaust brake	-	electrically controlled Back Pressure Valve (BPV) in the exhaust duct
MX Engine Brake	-	integrated, electronically controlled, hydraulically operated, compression brake



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Engine torque and performance

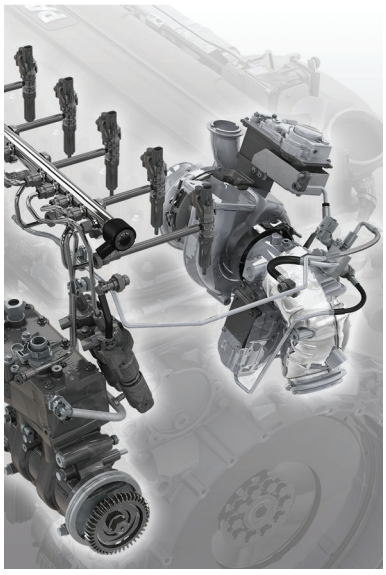
Two different engine tunings are used to adapt the PACCAR MX-11 engines to specific application areas.
Engines with outputs 210, 240 and 271 kW have been optimized for urban, regional and national distribution, with solo vehicles or combinations up to 32-36 tonnes GCM.
These engines deliver maximum torque over an extra wide range of 1000-1650 rpm.
Engines with outputs 291 and 320 kW have been optimized for one-stop delivery types of application, with GCMs ranging from 36 to 44 tonnes.
These engines deliver maximum torque from 1000 to 1450 rpm, with the advantage of a wider power band (1450-1700 rpm).

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.

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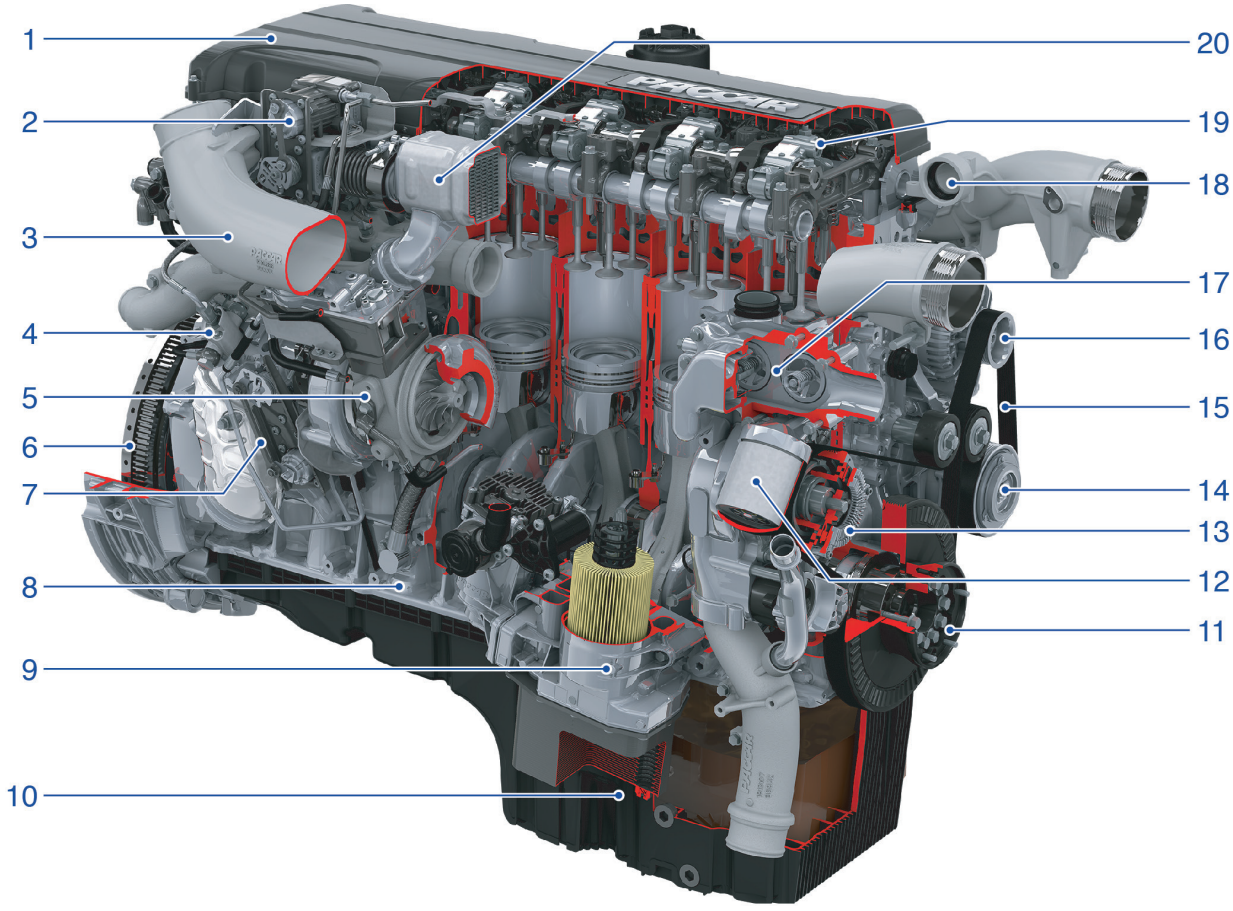
Legend:

1.	Valve cover	8.	Engine block	15.	Poly-V belt
2.	EGR Valve	9.	Oil filter module	16.	Alternator
3.	Air intake pipe	10.	Oil sump	17.	Thermostat housing
4.	Seventh injector	11.	Crankshaft	18.	EGR mix tube
5.	VTG Turbo	12.	Coolant filter	19.	MX Engine Brake
6.	Flywheel	13.	Water pump	20.	EGR cooler
7.	Exhaust brake valve	14.	Air conditioning compressor		



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