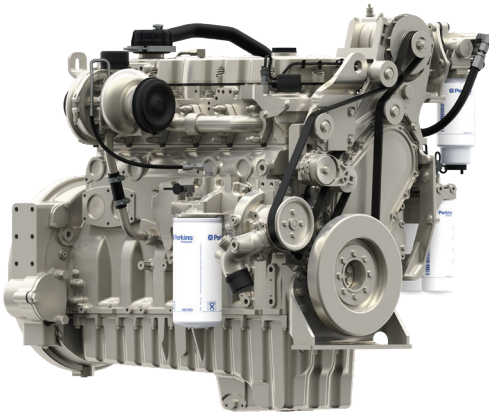
1706 Series 1706D-E93TA Industrial Engine

China Nonroad Stage III, Brazil MAR-1, UN R96 Stage IIIA, UN R120
230-310 kW / 308-416 hp

The Perkins® 1706D-E93TA is a 6 cylinder, 9.3 litre engine that produces up to 310 kW (416 hp) of power and 1810 Nm (1335 lb-ft) of torque out of a compact, lightweight package.



The 1706D model is a platform extension of the 1706J for highly regulated countries (HRC) and meets China Nonroad Stage III, Brazil MAR-1 and UN R96 Stage IIIA emission standards and UN R120 performance standard for measurement of net power and specific fuel consumption. The 1706D has a common core engine, high pressure common rail fuel system, similar machine interfaces and controls architecture. This simplifies the decision-making process for global customers by allowing them to standardise their worldwide product offering and reap the benefits of common installation, maintenance and service requirements from a single supplier solution.

The 1706D offers outstanding power density up to 33 kW/L (44 hp/L) that allows OEMs to downsize their engine platform without sacrificing performance or reliability. It is designed to allow simple, low-cost installations with a full range of configurable attachment option including installed radiators from the factory. End users will enjoy a low cost of ownership from low fuel consumption.

Typical applications for the Perkins 1706D include air compressors, hydraulic excavators, ag tractors/harvesters, pumps and rock crushers/ screeners.

Specification		
Number of cylinders	6 vertical in-line	
Bore and stroke	115 x 149 mm	4.5 x 5.8 in
Displacement	9.3 litres	567.5 cubic in
Aspiration	Turbocharged aftercooled	
Cycle	4 stroke	
Combustion system	Direct injection	
Compression ratio	16.5:1	
Rotation	Anti-clockwise, viewed on flywheel	
Total lubricating capacity	30 litres	7.9 US gal
Cooling system	Liquid	
Total coolant capacity	22 litres	5.8 US gal

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THE HEART OF EVERY GREAT MACHINE

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230-310 kW / 308-416 hp

Features and benefits

Dependable power

- World-class manufacturing capability and processes coupled with proven core engine designs assure reliability, quiet operation and many hours of productive life

High performance

- High power and torque density, providing the opportunity to downsize in engine displacement without sacrificing performance or reliability

Lifetime of low cost

- Fuel consumption optimised to match operating cycles of a wide range of equipment and applications

Ease of installation

- Fully configurable engine options and industrial open power unit (IOPU) available from factory to avoid significant design, validation and manufacturing costs
- The 1706D offers platform commonality with the 1706J for highly regulated countries to reduce cost of installation and support a global customer base by sharing a common core engine and offering similar machine interfaces and controls architecture.

Local support, global coverage

- Perkins recognise that the customer relationship is important to machine manufacturers and we can offer a range of flexible solutions to help provide appropriate support, either to the OEM's network or directly to the machine customer
- With highly trained Perkins distributors in thousands of communities in over 180 countries, you are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition
- To find your local distributor: www.perkins.com/distributor

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Technical information

Air inlet

- Turbocharged aftercooled

Control system

- Full electronic control system with all system functions controlled from a single, engine-mounted electronic control module (ECM)
- All connectors and wiring looms waterproof and designed to withstand harsh off-highway environments
- Flexible and configurable software features and well supported SAE J1939 CAN bus enables highly integrated machines

Cooling system

- Vertical outlet thermostat housing, centifugal water pump
- Detailed guidance on cooling system design and validation available to ensure machine reliability

Flywheel and housing

- Wide choice of drivetrain interfaces, SAE2 and SAE1 configurations

Fuel and fuel system

- High Pressure Common rail fuel system

Oil system

- Choice of sumps for different applications
- Open crankcase ventilation (OCV) system with fumes disposal (optional OCV filter system)
- Oil cooler, oil filler, oil filter, oil dipstick, oil pump (gear-driven)

Power take-off

- Available SAE No. 1 flywheel housings with rear power take-off (PTO) drive options for SAE B, SAE C or combination.
- Engine power can also be taken from the front of the engine on some applications

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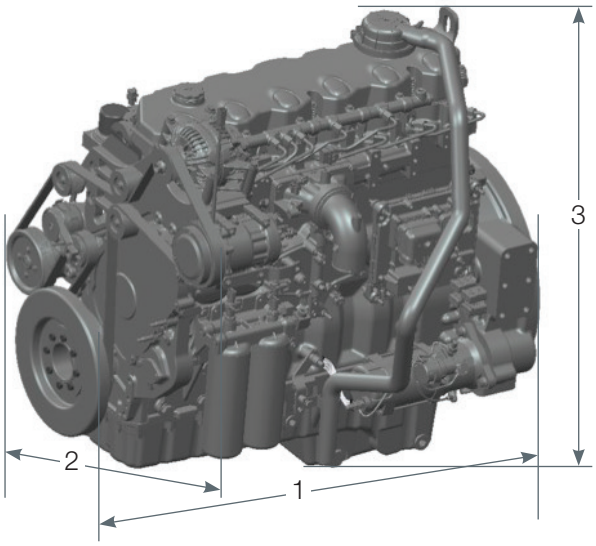

Engine package weights and dimensions			
1	Length	1125 mm	44.3 in
2	Width	791 mm	31.1 in
3	Height	1068 mm	42.0 in
	Weight (dry)	865 kg	1907 lb

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Photographs are for illustrative purposes only and may not reflect final specification.
All information in this document is substantially correct at time of printing and may be altered subsequently.
Final weight and dimensions will depend on completed specification.

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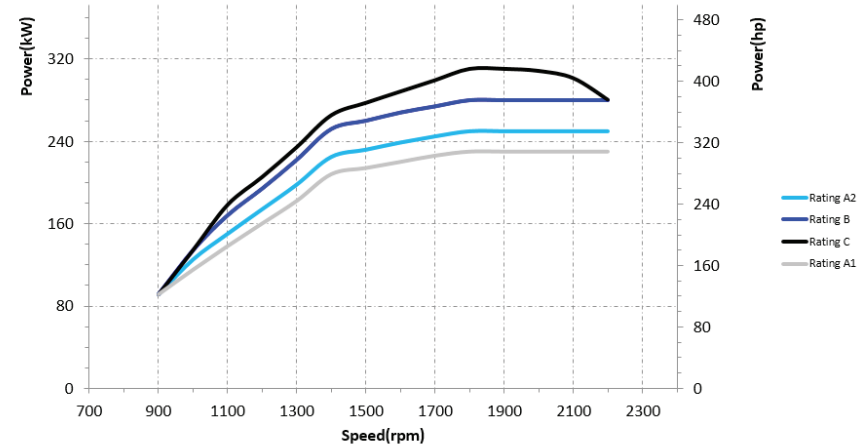

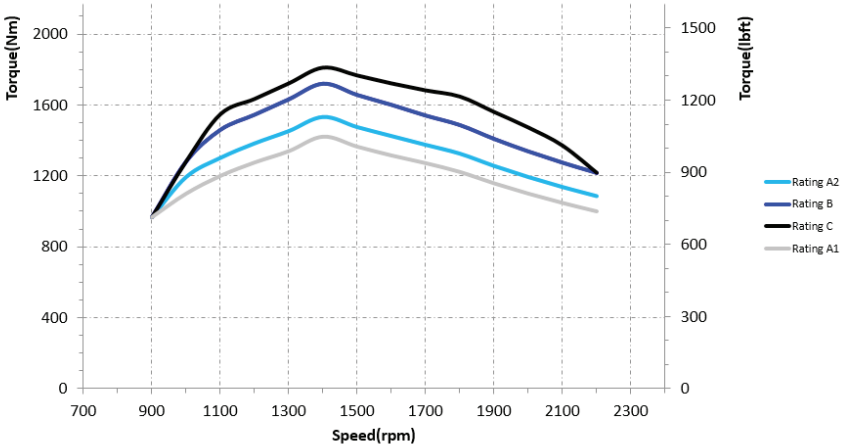

Rating type	Rated Speed rpm	Power kW	Power hp	Torque Nm	Torque lb·ft	Speed rpm
A	2200	230	308	1416	1044	1400
A	2200	250	335	1532	1130	1400
B	2200	280	375	1715	1265	1400
C*	2200	310	416	1810	1335	1400

* C-rating peak power 310 kW / 416 hp up to 1900 rpm

Rating definitions and conditions

IND-A (Continuous) for heavy duty service where the engine is operated at maximum power and speed up to 100% of the time without interrruption or load cycling.

IND-B for service where power and/or speed are cyclic (time at full load not to exceed 80%).

IND-C (Intermittent) is the horsepower and speed capability of the engine where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

Rating Conditions for Diesel Engines – greater than 7 litre

All rating conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42,780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with a density of 838.9 g/L.

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