

1706 Series 1706J-E93TA Industrial Engine

EU Stage IV, U.S. EPA Tier 4 Final
250-340 kW / 335-456 hp

The ability to power your machine line-up with one engine supplier is truly achievable with Perkins. We have introduced a platform of 9-18 litre industrial engines that completes our market-leading industrial power range and covers 8.2-597 kW (11-800 hp).

This model is a turbocharged, air-to-air chargecooled, 9.3 litre, 6 cylinder product capable of producing 340 kW (456 hp).

Using DPF technology, these engines meet Stage IV / Tier 4 Final certification, and are Stage V-capable*. This allows for sales into countries with the highest global emissions standards.

To support the demands of your machine installation we offer a choice of engine configurations and options. The robust technology allows you to integrate these engines into your equipment with the minimum of re-engineering.

Perkins has developed a reputation for designing and building reliable and durable engines for the most demanding applications. Choosing Perkins as your engine supplier means your development costs can be reduced and your machines are future-proofed to meet anticipated emissions standards.

Meets EU Stage IV/ U.S. EPA Tier 4 Final emissions standards.

*as proposed Stage V emissions standards.



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	17.0:1	
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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 **Perkins**®

THE HEART OF EVERY GREAT MACHINE

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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

- Market leading power density, providing more opportunities to downsize in engine displacement

Lifetime of low cost

- Fuel consumption optimised to match operating cycles of a wide range of equipment and applications
- Minimum 5,000 hour diesel particulate filter (DPF) ash service and capability of 500 hour oil change intervals enable low-cost maintenance

Ease of installation

- Exceptional power density enables standardisation across numerous applications. Multiple installation options available to minimize total package size
- Low heat rejection levels to support compact cooling packs
- Compact aftertreatment options to provide maximum installation options

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
- 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, centrifugal 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 system with fumes disposal (optional OCV filter system)
- Oil cooler, oil filler, oil filter, oil dipstick, oil pump (gear-driven)

Power take-off

- SAE1 power take-off available with optional SAE A, SAE B and SAE C power take-off drives
- Engine power can also be taken from the front of the engine on some applications

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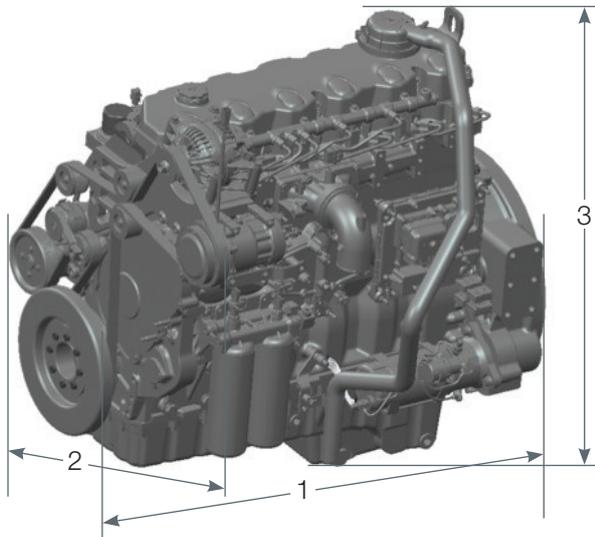
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Engine package weights and dimensions			
1	Length	1125 mm	44.3 in
2	Width	791 mm	31.1 in
3	Height	1068 mm	42.0 in
	Weight (dry)	865 kg	1907 lb

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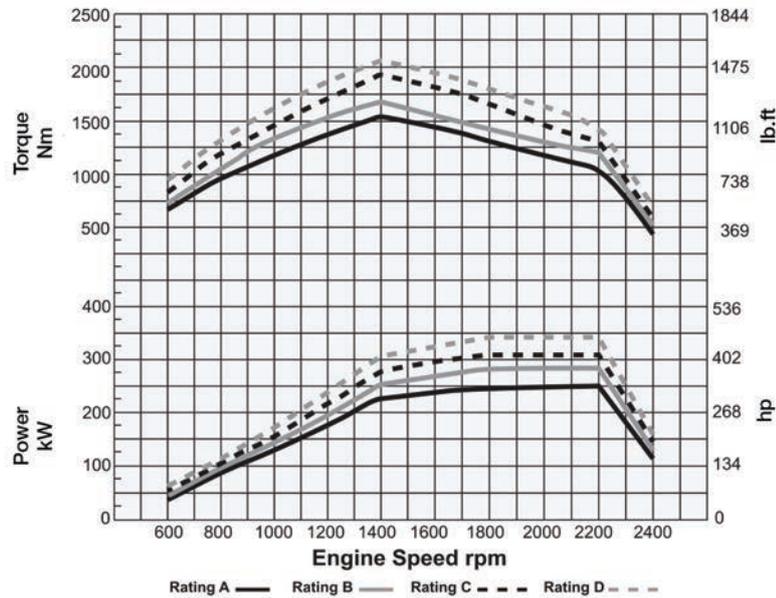
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Performance Data (Preliminary)



Speed rpm	Power kW	Power hp	Speed rpm	Torque Nm	Torque lb-ft	Rating type
2200	250	335	1400	1530	1129	A
2200	280	376	1400	1714	1264	B
2200	310	416	1400	1897	1399	C
2200	340	456	1400	2081	1535	D

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 interruption 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%).

IND-D for service where maximum power is required for periodic overloads (time at full load not to exceed 10% of the duty cycle).

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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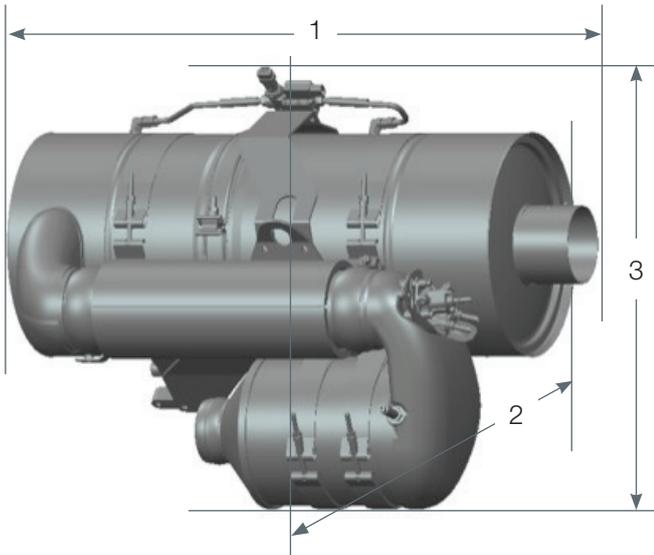
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Aftertreatment dimensions and weight

1	Length	925mm	36 in
2	Width	694 mm	27 in
3	Height	432 mm	17 in
	Weight	140 kg	308 lb

Aftertreatment

- DOC – Diesel Oxidation Catalyst
- DPF – Diesel Particulate Filter
- SCR - Selective Catalytic Reduction
- SCR Auxiliaries - A range of tanks and heated lines are available

Technology

The DPF technology chosen is a wall flow filter configuration that performs through the whole work cycle of the engine thus allowing it to work efficiently.

Power

Using our advanced research and development techniques, we have perfectly matched the aftertreatment to the engine. The engine performance has then been optimised to give the maximum power and in normal operation, the regeneration is invisible to the operator.

Mounting

Compact aftertreatment unit.

Ability to mount DOC separately from DPF/SCR. Vertical DPF/SCR options available.

Regeneration

The Passive Regeneration system reduces any requirements for downtime.

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