Cat® C18 ACERT™ Industrial Diesel Engine

Industrial



The Cat® C18 ACERT™ Industrial Diesel Engine is offered in ratings ranging from 429-522 bkW (575-700 bhp) @ 1800 -2100 rpm. These ratings meet China Stage II, U.S. EPA Tier 3 equivalent, and EU Stage IIIA equivalent emission standards. Ratings: 571-597 bkW (765-800 bhp) @ 1800-2100 rpm meet U.S. EPA Tier 2 equivalent emission standards. Non-certified ratings are also available at 429-522 bkW (575-700 bhp) @ 1800-2100. Industries and applications powered by C18 ACERT engines include Agriculture, Ag Tractors, Aircraft Ground Support, Bore/Drill Rigs, Chippers, Grinders, Compactors, Rollers, Compressors, Construction, Cranes, Dredgers, Forestry, General Industrial, Hydraulic Power Units, Irrigation Equipment, Material Handling, Mining, Mobile Earthmoving Equipment, Paving Equipment, Pumps, Shovels/Draglines, Surface Hauling Equipment and Trenchers.

Specifications

Power Rating		
Minimum Power	429 bkW	575 bhp
Maximum Power	597 bkW	800 bhp
Rated Speed		1800-2100 rpm

Emission Standards	
Emissions	China Nonroad III, U.S. EPA Tier 3 equivalent or U.S. EPA Tier 2 equivalent, EU Stage IIIA equivalent, or Non-certified

General	
Engine Configuration	Inline 6, 4-Stroke-Cycle Diesel
Bore	145 mm (5.71 in)
Stroke	183 mm (7.2 in)
Displacement	18.1 L (1104.5 in^3)
Aspiration	Turbocharged Aftercooled (TA)
Compression Ratio	16.3:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise

Engine Dimensions (Approximate. Final dimensions dependent on selected options)	
Length	1388.2-1414 mm (54.6-55.7 in)
Width	921-974 mm (36.3-38.3 in)
Height	1243-1257 mm (48.9-49.5 in)
Weight, Net Dry (Basic Operating Engine Without Optional Attachments)	1673 kg (3688 lb)

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Benefits and Features

Emissions

Designed to meet China Nonroad III emission standards. Meets U.S. EPA Tier 3 equivalent or U.S. EPA Tier 2 equivalent, EU Stage IIIA equivalent or EU Stage II equivalent emission standards. U.S. EPA Tier 3 equivalent EU Stage IIIA equivalent available using EPA (U.S.) Flexibility and EU Flexibility. Also available for other regulated and non-regulated areas.

Reliable, Quiet and Durable Power

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

Broad Application Range

Industry leading range of factory configurable ratings and options for agricultural, material handling, construction, mining, aircraft ground support, and other industrial applications.

Package Size

Exceptional power density enables standardization across numerous applications. Multiple installation options minimize total package size. Ideal for equipment with narrow engine compartments.

Quality

Every Cat engine is manufactured to stringent quality standards in order to assure customer satisfaction.

World-class Product Support Offered Through Global Cat Dealer Network

- Scheduled maintenance, including SOSSM sample
- Customer Support Agreements (CSA)
- Caterpillar Extended Service Coverage (ESC)
- Superior dealer service network
- Extended dealer service network through the Cat Industrial Service Distributor (ISD) program

Standard Equipment

Air Inlet System

- Turbocharged Aftercooled (429-470 bkW, 575-630 bhp)
- Twin Turbocharged Aftercooled (522-597 bkW, 700-800 bhp)
- Air-to-Air Aftercooled

Charging System

- Charging alternator 24 volt, 50 amp

Control System

- Electronic governing, PTO speed control
- Programmable ratings
- Automatic altitude compensation
- Power compensation for fuel temperature
- Programmable low and high idle and total engine limit
- Electronic diagnostics and fault logging
- Engine monitoring system SAE J1939 broadcast and control

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- ADEM™ A4 Electronic Control Unit (ECU)

Cooling System

- Thermostats and housing, vertical outlet
- Jacket water pump, centrifugal
- Water pump, inlet

Exhaust System

- Exhaust manifold, dry
- Optional exhaust outlet

Flywheels and Flywheel Housing

- SAE No. 1 or SAE No. 0 flywheel housing

Fuel System

- MEUI injection
- Fuel filter, secondary (2 micron)
- Fuel filter, tertiary (2 micron)
- ACERT™ Technology
- Fuel transfer pump
- Fuel priming pump

Lube System

- Crankcase breather
- Oil cooler
- Oil filler
- Lube oil filter
- Front sump oil pan
- Oil dipstick
- Gear driven oil pump

General

- Vibration damper
- Lifting eyes
- Cold start capability to -20° C (-4° F)
- Paint: Caterpillar yellow, with optional colors available at request

The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

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Rating Type: IND-D RATING

Emissions: U.S. EPA Tier 2 Nonroad Equivalent Emission Standards (Not Currently EPA Certified)

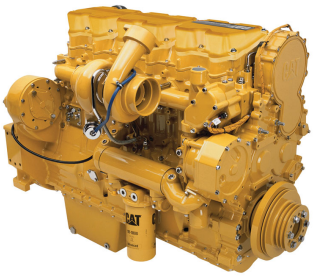


Image shown may not reflect actual configuration

C18 ACERT

DITA

571 bkW (765 bhp) @ 2100 rpm

	Metric	English
General Engine		
Power Rating	571 kW	765 hp
Number of Cylinders	6	
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1106.0 cu in.
Compression Ratio	16.3 : 1	

RATING DEFINITIONS AND CONDITIONS

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

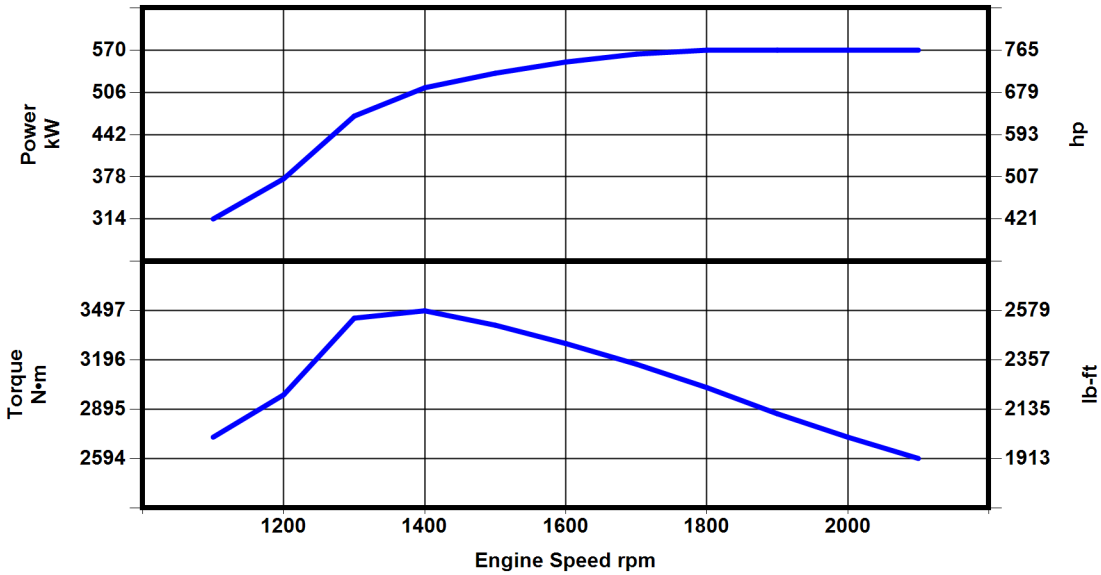
Diesel Engines — up to 7.1 liter All rating conditions are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance measured using fuel to EPA specifications in 40 CFR Part 1065 and EU specifications in Directive 97/68/EC with a density of 0.845-0.850 kg/L @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Diesel Engines — greater than 7.1 liter 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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Rating Type: IND-D RATING

Emissions: U.S. EPA Tier 2 Nonroad Equivalent Emission Standards (Not Currently EPA Certified)



Engine Speed rpm	Engine Power bkW	Engine Power bhp	Torque N*m	Torque lb-ft
2100	571	765	2594	1913
2000	571	765	2724	2009
1900	571	765	2867	2115
1800	571	765	3027	2232
1700	564	757	3170	2338
1600	552	740	3296	2431
1500	535	718	3408	2514
1400	513	687	3496	2578
1300	470	630	3451	2545
1200	375	503	2983	2200
1100	314	421	2724	2009

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