

On construction sites and mining operations, in agriculture and forestry, and in a wide range of industries, Cat® C18 ACERT™ Industrial Diesel Engines deliver the power, performance and durability to take on the biggest challenges. More importantly, they're backed by the world-class Cat dealer network ready to service and support every Cat® industrial engine. 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. C18 ACERT engines, with ratings: 429-522 kW (575-700 bhp) @ 1800-1900 rpm, meet U.S. EPA Tier 4 Interim, EU Stage IIIB emission standards and are designed to meet U.S. EPA Tier 4 Final, EU Stage IV emission standards. Ratings > 560 kW (750 bhp) meet U.S. EPA Tier 4 Interim emission standards and are designed to meet U.S. EPA Tier 4 Final emission standards. This information about Emissions describes the particular rating's emissions technology. For more information about emissions certification, please contact your local Cat dealer.

Specifications

Power Rating		
Minimum Power	447 kW	600 bhp
Maximum Power	597 kW	800 bhp
Rated Speed	1800-1900	

Emission Standards	
Emissions	U.S. EPA Tier 4 Final Nonroad, EU Stage IV Nonroad, U.S. EPA Tier 4 Interim Nonroad Equivalent (Not Currently EPA Certified) and EU Stage IIIB Nonroad Equivalent (Non-Current for EU) Emission Standards

General	
Engine Configuration	In-Line 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) or Series Turbocharged Aftercooled (TTA)
Compression Ratio	16.0:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise
Cooling System Capacity	26.9 L (28.4 qt)
Lube System (refill)	40-74 L (42-78 qt)

Engine Dimensions (Approximate. Final dimensions dependent on selected options)

Length	1438 mm (56.6 in)
Width	943-1132 mm (37.1-44.6 in)
Height	1239-1356 mm (48.8-53.4 in)
Weight - Net Dry (Basic Operating Engine Without Optional Attachments)	1580-1717 kg (3583-3785 lb)

Aftertreatment Dimensions (Approximate. Final dimensions dependent on selected options)

Length	1097-1153 mm (43-45.4 in)
Width	762-1112 mm (30-43.8 in)
Height	468-652 mm (18-25.7 in)
Weight	258-272 kg (569-600 lb)
Diameter	330.2-355.6 mm (13-14 in)

PETU Dimensions (Tier 4 Final, Stage IV Only)

Length	854 mm (33.6 in)
Width	287 mm (11.3 in)
Volume Capacity	48.4 L (51.1 qt)
Weight	19.42 kg (42.8 lb)
Height	551 mm (21.7 in)

Benefits And Features

Emissions

Ratings: 429-522 kW (575-700 bhp) meet U.S. EPA Tier 4 Final, EU Stage IV emission standards. U.S. EPA Tier 4 Interim Equivalent, EU Stage IIIB Equivalent ratings are also available using U.S. and EU Flex Provisions.

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.



High Performance

Simple and efficient turbocharger or series turbocharger for high power applications.

Fuel Efficiency

Fuel consumption optimized to match operating cycles of a wide range of equipment and applications while maintaining low operating costs.

Fuel & Oil

Tier 4 Interim or Tier 4 Final, Stage IIIB or Stage IV engines require Ultra Low Sulfur Diesel (ULSD) fuel containing a maximum of 15 ppm sulfur, and new oil formulations to support the new technology. Cat® engines are designed to accommodate B20 biofuel. Your Cat dealer can provide more information regarding fuel and oil.

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.

Low Cost Maintenance

Worldwide service delivers ease of maintenance and simplifies the servicing routine. If applicable, minimum 5000-hour diesel particulate filter (DPF) ash service interval enables low-cost maintenance. Capable of optimal oil change intervals of up to 500-hours, depending on rating, application, operating conditions, and maintenance practices. Engine B10 life up to 10000 hours for Tier 4 Final, Stage IV. The S-O-SSM program is available from your Cat dealer to determine oil change intervals and provide optimal performance.

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

Tier 4 Interim, Stage IIIB Aftertreatment Features

Regeneration. Cat Regeneration System maximizes fuel efficiency during regeneration. Flexible regeneration options maximize uptime. **Mounting.** Remote installation options provide OEM flexibility for many applications, including horizontal and vertical mounting, with and without muffler. **Service.** Minimum 5000 hour DPF ash service interval.

Tier 4 Final, Stage IV Aftertreatment Features

Regeneration. Cat Regeneration System maximizes fuel efficiency during regeneration. Transparent regeneration maximizes uptime. Aftertreatment life is twice as long as engine rebuild **Mounting.** Remote installation options provide OEM flexibility for many applications, including horizontal and vertical mounting. **Service.** Minimum 5000 hour DPF ash service interval. PETU filter service is 5000 hours. PETU DEF capacity up to 48 liters (51 U.S. quarts)

Standard Equipment

Air Inlet System

- Turbocharged
- Air-to-Air Aftercooled
- Mid-mount turbocharged system with front and rear exhaust configurations (Tier 4 Final, Stage IV)

Control System

- Electronic control system
- Over-foam wiring harness
- Automatic altitude compensation
- Power compensated for fuel temperature
- Remote fan control
- Configurable software features
- Engine monitoring system SAE J1939 broadcast and control
- Integrated Electronic Control Unit (ECU)

Cooling System

- Thermostats and housing, vertical outlet
- Centrifugal water pump
- Guidance on cooling system design available through your dealer to ensure equipment reliability

Flywheels and Flywheel Housing

- Choice of SAE No. 0 or SAE No. 1 flywheel housing
- Available SAE No. 1 power take off with optional SAE A, SAE B or SAE C power take off drives. Engine power can also be taken from the front of the engine with optional attachments. (Tier 4 Final, Stage IV).

Fuel System

- MEUI injection
- Primary fuel filter
- Secondary fuel filters
- Fuel transfer pump
- Electronic fuel priming

Lube System

- Open crankcase ventilation system
- Oil cooler
- Oil filler
- Lube oil filter
- Oil dipstick
- Gear driven oil pump
- Choice of front, rear or center sumps
- Open crankcase ventilation system with fumes disposal (optional OCV filter system) (Tier 4 Final, Stage IV)

Power Take Off (PTO)

- SAE A, SAE B or SAE C power take off (PTO) drives. Engine power can also be taken from the front of the engine on some applications.

General

- Paint: Caterpillar yellow, with optional colors available at request

U.S. EPA Tier 4 Interim, EU Stage IIIB Aftertreatment / Clean Emissions Control Equipment

- Aftertreatment information applies to ratings from 429-522 kW (575-700 bhp)
- Cat Regeneration System
- Clean Emissions Module (CEM), consisting of Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC)
- NOx Reduction System (NRS)
- Flex pipe connection kit with 90° rotatable elbows to attach to Cat Regeneration System Inlet
- Available in 12 volt or 24 volt systems

U.S. EPA Tier 4 Final, EU Stage IV Aftertreatment/ Clean Emissions Control Equipment

- Aftertreatment information applies to ratings from 429-522 kW (575-700 bhp)
- Cat Regeneration System
- Clean Emissions Module (CEM), consisting of Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC)
- Aftertreatment Electronic Control Unit (ECU)
- NOx Reduction System (NRS)
- Pump Electronic Control Unit (PETU)
- Selective Catalytic Reduction (SCR)
- Available in 12V or 24V systems

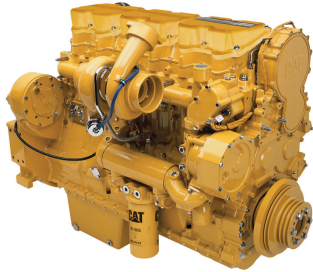


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Rating Type: IND-C (INTERMITTENT) RATING

Emissions: U.S. EPA Tier 4 Final Nonroad Emission Standards



C18 ACERT
DITA
563 bkW (755 bhp) @ 1800 rpm

Image shown may not reflect actual configuration

Metric English

General Engine		
Power Rating	563 kW	755 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	16.0 : 1	

RATING DEFINITIONS AND CONDITIONS

IND-C (INTERMITTENT) RATING:Intermittent service where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

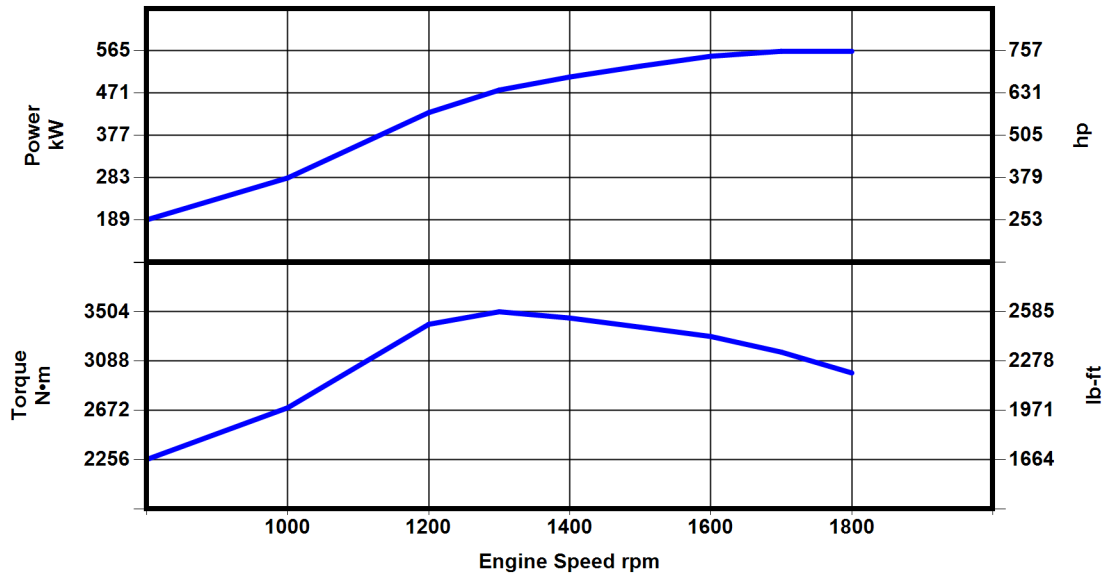
Diesel Engines — up to 7.1 liter All rating conditions are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance measured using fuel to EPA specifications in 40 CFR Part 1065 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.



Rating Type: IND-C (INTERMITTENT) RATING

Emissions: U.S. EPA Tier 4 Final Nonroad Emission Standards



Engine Speed rpm	Engine Power bkW	Engine Power bhp	Torque N*m	Torque lb-ft
1800	563	755	2987	2203
1700	563	755	3163	2333
1600	552	740	3295	2430
1500	530	711	3374	2489
1400	506	679	3451	2546
1300	477	640	3504	2584
1200	427	573	3398	2506
1000	282	378	2693	1986
800	189	253	2256	1664

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