Cat® C27 ACERT™ Diesel Engine

Industrial



No matter where they operate and no matter what the application, these high horsepower Cat® C27 ACERT™ Industrial Diesel engines will deliver durable, reliable power that will keep your customers productive while lowering their operating costs to keep them profitable. Today's Cat® engines are the finest ever produced by Caterpillar - with a legacy of power and rugged reliability driven by the demands of performance. Applications powered by C27 ACERT engines include: Bore/Drill Rigs, Chippers/Grinders, Construction, Cranes, Dredgers, Forestry, Hydraulic Power Units, Irrigation Equipment, Material Handling, Mobile Earthmoving Equipment, Paving Equipment, Pumps, Shovels/Draglines, Surface Hauling Equipment and Trenchers. C27 ACERT engines, with ratings: 597-783 bkW (800-1050 bhp) @ 1800 rpm, 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	597 bkW	800 bhp
Maximum Power	783 bkW	1050 bhp
Rated Speed		1800 rpm

Emission Standards	
Emissions	U.S. EPA Tier 4 Final

General	
Engine Configuration	V-12, 4-Stroke-Cycle Diesel
Bore	137.2 mm (5.4 in)
Stroke	152.4 mm (6 in)
Displacement	27 L (1649.5 in³)
Aspiration	Twin Turbocharged-Aftercooled (TTA)
Compression Ratio	16.0:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise
Cooling System Capacity	67.9 L (71.7 qt)
Lube System (refill)	68 L (71.9 qt)

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Engine Dimensions (Approximate. Final dimensions dependent on selected options)	
Length	1874 mm (73.8 in)
Width	1600 mm (63 in)
Height	1370 mm (53.9 in)
Weight - Net Dry (Basic Operating Engine Without Optional Attachments)	3004 kg (6625 lb)

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Benefits And Features

Emissions

Meets U.S. EPA Tier 4 Final emission standards.

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.

Fuel Efficiency

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

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. Service intervals at 250 hours are standards. Capable of optimal oil change intervals of up to 500-hours, depending on rating, application, operating conditions, and maintenance practices. No aftertreatment is required. 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

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Standard Equipment

Air Inlet System

- Turbocharged
- Air-to-Air Aftercooled

Control System

- Electronic control system
- Over-foam wiring harness
- Automatic altitude compensation
- Power compensated for fuel temperature
- Configurable software features
- Engine monitoring system SAE J1939 broadcast and control

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

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

Fuel System

- MEUI injection
- Fuel filter, secondary (2 micron)
- Fuel transfer pump
- Electronic fuel priming

Lube System

- Open crankcase ventilation system
- Oil cooler
- Oil filler
- Lube oil filter
- Rear sump oil pan
- Oil dipstick
- Gear driven oil pump

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Power Take Off

General

- Paint: Caterpillar yellow, with optional colors available at request
- Vibration damper
- Lifting eyes

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Rating Type: IND-A (CONTINUOUS) RATING

Emissions: U.S. EPA Tier 4 Interim Nonroad Standards

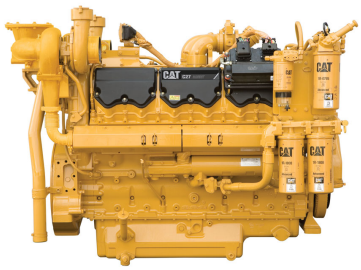


Image shown may not reflect actual configuration

C27 ACERT
DITA
597 bkW (800 bhp) @ 2100 rpm

	Metric	English
General Engine		
Power Rating	597 kW	800 hp
Number of Cylinders	12	
Bore	137 mm	5.4 in
Stroke	152 mm	6.0 in
Displacement	27.0 L	1649.0 cu in.
Compression Ratio	16.0 : 1	

RATING DEFINITIONS AND CONDITIONS

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

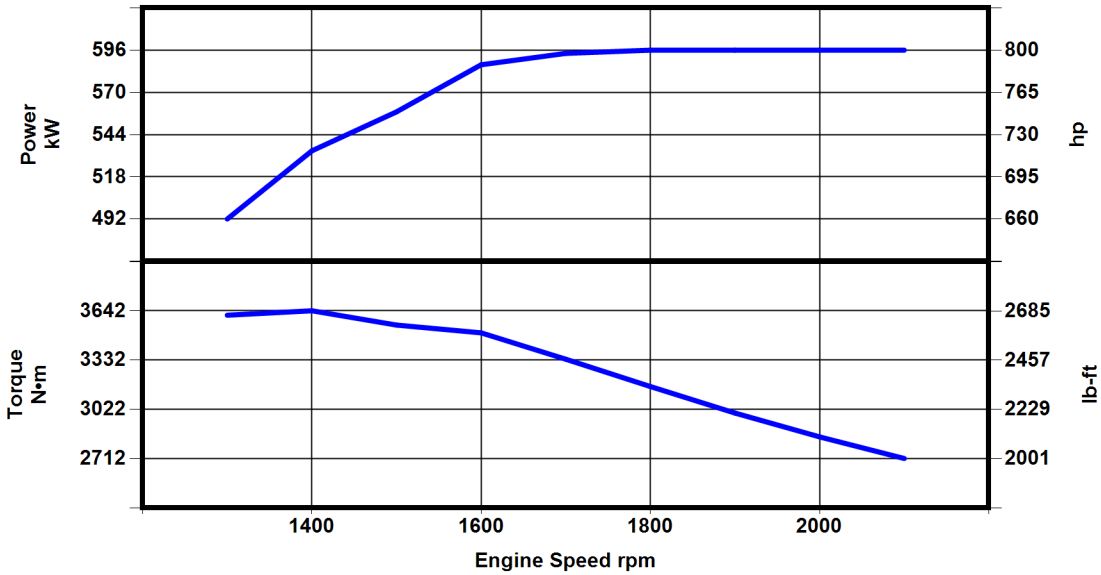
Diesel Engines — up to 7.1 liter All rating conditions are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance measured using fuel to EPA specifications in 40 CFR Part 1065 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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Emissions: U.S. EPA Tier 4 Interim Nonroad Standards



Engine Speed rpm	Engine Power bkW	Engine Power bhp	Torque N*m	Torque lb-ft
2100	597	800	2712	2001
2000	597	800	2848	2101
1900	597	800	2998	2211
1800	597	800	3165	2334
1700	594	797	3337	2461
1600	587	787	3503	2584
1500	558	748	3552	2620
1400	534	716	3642	2686
1300	492	660	3614	2666

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