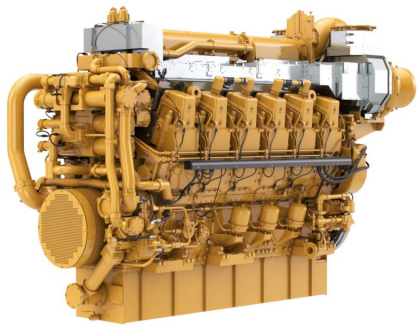
C280-12 Propulsion Engine

Marine



Building on the durability and reliability of the C280 engine platform, Caterpillar is pleased to offer the IMO II compliant C280 engine line. The core components are the same as the existing C280, including the latest in EUI fuel system capabilities and state-of-the-art ADEM™ A3 Electronic Control Unit (ECU) features. Caterpillar® products continue to deliver more available power while delivering outstanding fuel efficiency. You can also count on long maintenance intervals and worldwide Caterpillar parts and service availability.

Specifications

Power Rating	
Power Range	4640-5096 bhp (3460-3800 bkW)

Engine Specifications		
Speed Range		900 rpm
Configuration		Vee 12, 4-Stroke-Cycle Diesel
Aspiration		TTA
Bore	280 mm	11 in
Stroke	300 mm	11.8 in
Displacement	222 L	13546 in3
Rotation (from flywheel end)		Counterclockwise or clockwise
Emissions		IMO II

Dimensions & Weights		
Length	4623 mm	182 in
Width	2032 mm	80 in
Height	3404 mm	134 in
Dry Weight	25980 kg	57276 lb

Benefits and Features

A3 ECU

• CAN J1939 data link • Waterproof connectors • Maintenance-free • Backup ECU for redundant governing

Electronic Advantages:

• Load feedback • Programmable droop • Adjustable gain • Adjustable fuel/air ratio control • Histograms of engine operation • Cat Messenger display presents diagnostics and other engine parameters

Data Advantages through J1939 Link:

• Engine speed • Boost pressure • Throttle position • Fuel consumption rate • Inlet manifold temperature • Diagnostic codes and events • Configuration • Desired engine speed • Battery voltage • Engine load • Lifetime totals — engine hours, fuel burned, idle fuel, idle hours • Trip totals — average fuel rate, idle fuel, idle hours, engine hours, fuel burned, trip reset

Customer Interface Panel

• Interfaces with standard Cat® Marine Monitoring System (PLC in Price List) • Provides visual indication of ECU functionality • Accepts 4 — 20 mA or PWM remote throttle speed input • Marine alarm and protection

Electronic Unit Injectors

• “Drop-in” installation • No threaded fuel connections • High pressure inside injector only • Does not require double wall fuel lines or leak collection device • Injector synchronization not required

Standard Equipment

Air Inlet System

- Aftercooler, fresh water, corrosion resistant coated (air side)
- Air inlet shutoff
- Breather, crankcase, top-mounted
- Turbocharger, engine oil lubricated

Control System

- Dual Caterpillar A-III Electronic Engine Control Modules with Electronic Unit Injector Fuel System
- Rigid Wiring Harness (10 amp 24volt power required to drive Electronic Engine Control Modules)

Cooling System

- Engine coolant water drains

Exhaust System

- Dry, gas tight, exhaust manifold

Fuel System

- Distillate fuel (requires viscosity ranging from 1.4 cSt to 20 cSt at 38 degrees C)
- Fuel transfer pump (mounted on left hand side)
- Duplex fuel filters
- Electronically Controlled Unit Injectors

Lube Systems

- Centrifugal oil filters with single shutoff. Service side engine mounted on cylinder block inspection covers. Includes installed oil lines and single shutoff valve. Filters centrifuge bypass oil from the main lubricating oil pump. Can be serviced with the engine running.
- Oil filler and dipstick
- Valve, oil pressure regulating
- Valves, crankcase explosion relief

General

- Paint, Caterpillar yellow
- Pumps, gear driven: fuel, oil, jacket water, aftercooler/oil cooler water

Optional Equipment

Engine Application/Design Control

- Crankshaft Deflection Marks
- Extra Mounting Feet

Engine Package Description

- Front Auxiliary Drive
- Stub Shaft Certification

Air Inlet System

- Air Cleaners
- Air Cleaner options

Control System

Cooling System

- Auxiliary Water Pump
- Jacket Water Heaters
- Heat Recovery System
- Heat Recovery Thermostats
- De-Aerator
- Connections for Driven Equipment
- Cooling System Connection Groups

Exhaust System

- Outlet Expander
- Flexible Exhaust Fittings
- Weld Flange

Fuel System

- Fuel Priming Pump
- Duplex Primary Fuel Strainer
- Fuel Systems Connections

Lube System

- Oil Pan Drain Valve
- Lube Connections
- Lube Oil Heater

Marine Society Requirements

- Spray Shielding

Protection System

- Monitoring System
- Turbocharger Speed Sensor
- Cylinder Pressure Relief Valve
- Oil Mist Detector

Spare Parts Kits

- Intake and Air System
- Basic Engine
- Cylinder Head
- Fuel System
- Cooling System
- Instrumentation
- Cylinder Valve Kits

Starting System

- Boost Control Valve, Pressure Reducing Valve

Engine Testing

- Basic System Testing
- Special Witness Test
- Customer Selected Test Points
- Marine Limit Line Test
- Propeller Demand Curve Test

Service Tools/Ship Protection/Factor Support

- Commissioning
- Service Tools
- Shipping Protection - Export Boxing
- AID Emblem
- Storage Preservation

Project Specific Installation Drawings