

Marine Propulsion Engines



3500C

CATERPILLAR®

THE SOPHISTICATION OF SIMPLICITY



More available power over a wider operating range

High power density for continuous applications with A and B ratings at 1200, 1600, and 1800 rpm.

More sophisticated electronic control system

Provides improved engine monitoring, communication, and display capabilities. Results in easier integration with your vessel's systems.

More flexible cooling system options

Separate Circuit Cooling for optimum cooling capabilities. Keel cooled options are designed for high inlet water temperatures, minimizing cooler size and installation costs.

Durable and reliable

The 3500 engine platform is a simple and proven design providing industry-leading reliability and durability.

True technical sophistication

Delivers ease of maintenance and assembly/disassembly without the need for expensive processes or tools.

Meets EPA Tier 2 Marine, EU Stage IIIA and IMO emissions regulations

New Diesel Electric Propulsion ratings available

2250 ekW 3516-HD @ 60Hz
2000 ekW 3516-HD @ 60Hz



**WHEN CATERPILLAR SAYS IT'S A CONTINUOUS RATING,
THAT MEANS YOU CAN HAUL A DRILL RIG FROM SEATTLE
TO SINGAPORE AT FULL THROTTLE AND FULL POWER.**

More power with lower emissions for your applications

Unrestricted Continuous A ratings of up to 2450 bhp (1825 kW) providing 4900 bhp (3650 kW) for applications with twin engines.

Heavy Duty B ratings of up to 3005 bhp (2240 kW) providing 6010 bhp (4480 kW) for applications with twin engines.

Maximum Continuous C ratings of up to 3150 bhp (2350 kW) providing 6300 bhp (4700 kW) for applications with twin engines.

Intermittent Duty D ratings of up to 3385 bhp (2525 kW) providing 6770 bhp (5050 kW) for applications with twin engines.

Outstanding fuel efficiency and lube oil consumption

Standard or reverse rotation options available

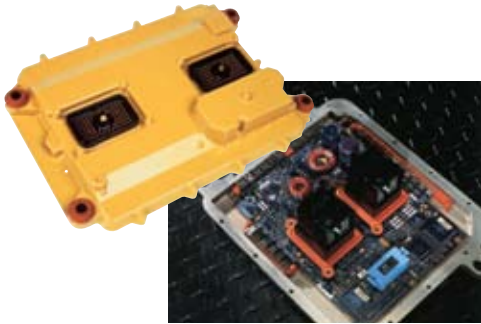
Long maintenance intervals

Worldwide parts and service availability



3500C ENGINE FEATURES

IMPROVED PERFORMANCE AND INCREASED FUNCTIONALITY



ADEM™ A3 Electronic Control Unit (ECU)

- One of the most advanced electronic control systems available for Cat® marine engines
- Faster, with more memory capability
- Compatible with several optional display systems
- Does not require fuel cooling
- Enhanced input/output capacity
- Rugged marine design and IP66 connectors
- Award-winning circuitry design



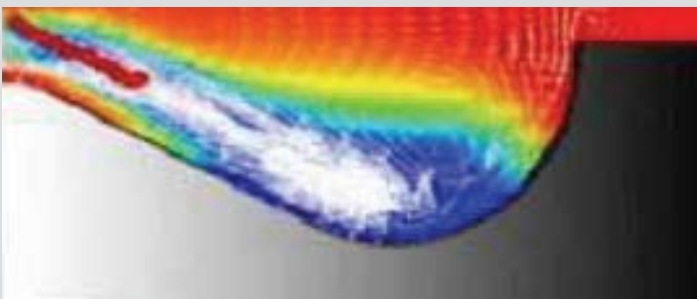
Engine-Mounted Instrument Panel

- Integrated MPD display for quick response and effective local control
- Optional local speed control
- Optional individual cylinder exhaust temperature scanner with data link for remote mounting
- Local E-stop, warning indicators, horn
- Plug & Run connections allow mounting on port or starboard side of engine



Marine Power Display (MPD)

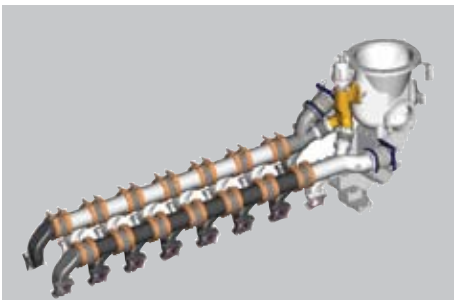
- Graphic display of engine operating parameters in analog, digital, or bar-chart format
- Rugged, weatherproof construction
- Fully user-configured display screens
- Marine classification society-type approved
- Diagnostic messages and alarms
- Three-tier prioritization of events and diagnostics
- Multilingual capability
- Night-mode LCD display
- ISO symbols for parameter identification



Caterpillar® ACERT® Technology

- 3500C is the first marine large engine model to incorporate the building blocks of ACERT® Technology.
- ACERT Technology is the key enabler that allows us to meet current emissions regulations.

Caterpillar® ACERT® Technology uses advanced computer modeling to optimize the combustion process within the piston crater.



Modular Pulse Exhaust Manifold

- Modular pulse-type exhaust system designed to conserve exhaust pulse energy for maximum thermal efficiency at the turbochargers
- Highly efficient inlet and exhaust air flow

High Capacity, High Efficiency Turbos

- Standard marine twin turbocharger configuration
- More reserve power for superior part load performance at continuous ratings
- Turbos tuned for high power and excellent fuel consumption



Rigid Wiring Harness

- Highly durable: long service life
- Flexibility for custom wire additions
- Lined with fire retardant foam
- Marine classification society approved

Wastegate for 16-cylinder High Power Ratings

- Provides excellent acceleration at low and medium speeds
- Optimizes fuel consumption near cruise



Power Distribution Box

- Isolates "control power" from alternator/starter/jacket water heater power
- Mountable off engine
- Allows end user to choose up to three independent power sources
- Has built-in circuit breakers and switches for easy troubleshooting

Marine Classification Society Approval

ABS / DNV / LR / GL / CCS / BV

3500C ENGINE FEATURES

Electronic Features

- 3D histogram data collection
- Load feedback signal for CPP operation
- Electronic torque limit for re-power and torque limited application equipment
- Programmable droop
- Adjustable governor gains
- Condition-based maintenance
- Monitoring features
- Serial data bus communications
- Primary and secondary A3 controllers on all propulsion engines

Cat[®] Pilot House Panels

- Cat pilot house panels with integrated Marine Power Display (MPD)
- Easily connected to the engine customer connector
- Ability to have full function helm panels and reduced function wing panels

Unit Injectors

- Caterpillar designed and built system
- “Drop-in” installation
- No threaded fuel connections
- High pressure fuel contained inside the injector
- Does not require double wall lines or leak collection devices

Power Take-off

- Power take-off adapters available
- Auxiliary drives for power take-offs for hydraulic pumps and compressors

Engine-Mounted Gear-Driven Pumps

- Standard engine-mounted aftercooler pump
- Standard engine-mounted jacket water pump
- Optional engine-mounted, gear-driven, super high capacity sea water pump

Engine Mounting System

- Rigid mounting points
- Optional resilient mounting

In-Hull Overhaul

- Easily removable side covers
- Accessible bearing caps



TECHNICAL DATA

3500C Specifications

Bore — mm (in) 170.0 (6.69)
 Stroke — mm (in) 190, 215 (7.48, 8.46)
 Rated Speed 1200, 1600, 1800 rpm
 Aspiration Twin Turbocharged-Aftercooled
 Governor Electronic
 Cooling System Heat Exchanger or Keel Cooled
 Rotation (from flywheel end) ..Clockwise or Counterclockwise

3516C Specifications

Displacement — L (cu in) 69-78 (4,210-4,766)
 Flywheel & Housing SAE No. 00
 Refill Capacity — L (gal)
 Cooling System (engine only) 233.2 (61.6)
 Lube Oil System
 A-C Ratings 807 (213.0)
 D Rating 204 (53)
 Oil Change Interval (deep sump) 1000 hours

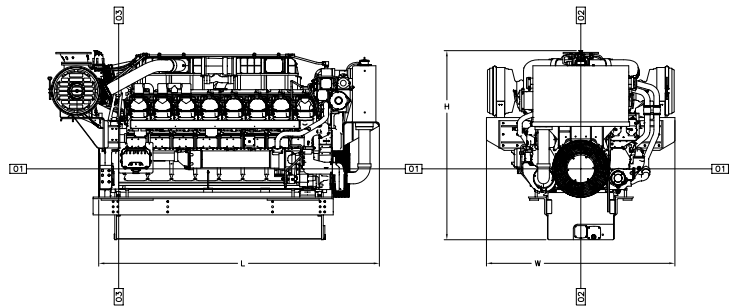
3512C Specifications

Displacement — L (cu in) 51.8-58.6 (3,161-3,576)
 Flywheel & Housing SAE No. 00
 Refill Capacity — L (gal)
 Cooling System (engine only) 156.8 (41.4)
 Lube Oil System
 A-C Ratings 625 (165.0)
 D Rating 152 (40)
 Oil Change Interval (deep sump) 1000 hours

3508C Specifications

Displacement — L (cu in) 34.5 (2,107)
 Flywheel & Housing SAE No. 0
 Refill Capacity — L (gal)
 Cooling System (engine only) 103 (27.1)
 Lube Oil System 443 (117.0)
 Oil Change Interval (deep sump) 1000 hours

3500C Dimensions



3516C

Length — mm (in) 3083.7-3185.5 (121.5-125.5)
 Width — mm (in) 2036.9-2142.1 (80.2-84.4)
 Height — mm (in) 1967.0-2149.8 (77.5-85.0)

3512C

Length — mm (in) 2564.6-2645.4 (101.0-104.2)
 Width — mm (in) 2036.9-2142.1 (80.3-84.4)
 Height — mm (in) 1947.4-2134.1 (76.7-84.1)

3508C

Length — mm (in) 2117.3 (83.4)
 Width — mm (in) 1703 (67.1)
 Height — mm (in) 1828.9 (72.1)

MARINE PROPULSION RATINGS

MODEL	RATING	RPM	POWER (bhp)	POWER (kW)
3508C	A/B/C	1200	775/850/900	578/634/671
3508C	A/B/C	1600	1000/1050/1100	746/783/820
3512C-HD	A/B/C	1600	1810/1911/2012	1350/1425/1500
3512C	A/B/C	1800	1500/1575/1650	1120/1175/1230
3512C-HD	B/C/D	1800	2250/2365/2550	1678/1765/1901
3516C	A/B/C	1600	2000/2100/2200	1491/1566/1640
3516C-HD	A/B/C	1600	2450/2575/2682	1825/1920/2000
3516C-HD	B/C/D	1800	3005/3250/3385	2240/2350/2525

DIESEL ELECTRIC PROPULSION RATINGS

MODEL	RATING	RPM	POWER (ekW)
3516C-HD	DEP	1800	2000/2250

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For more information please visit <http://marine.cat.com>

Images may not reflect actual engine.
For most current information, please refer to TMI web.

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