

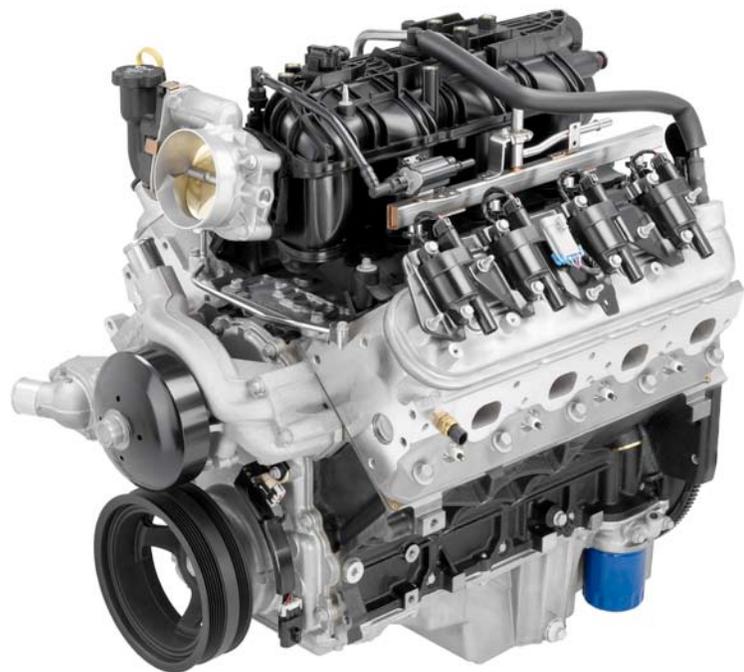


One of GM's newest
marine engines

Vortec 6000 V8 VVT (LY6) Marine Engine

Features & Benefits

- Cast iron deep-skirt cylinder block with six-bolt main bearing caps that limit crankshaft flex and stiffen the engine's structure
- Cast aluminum structural oil pan for additional rigidity
- High flow aluminum cylinder head design
- Variable valve timing using a hydraulic cam phaser to retard cam timing for low end torque and advance cam timing for high rpm horsepower
- Steel camshaft, hydraulic roller lifters, and steel roller rocker arms for reduced friction and excellent durability
- Returnless fuel injection with stainless steel fuel rail
- Electronic Throttle Body fully compatible with electronic throttle control software in the MEFI-5 engine control module
- Coil-near-plug ignition system with 58X crankshaft position encoder, 4X cam sensor, and dual flat response knock sensors for precise control of ignition timing under all operating conditions
- Iridium tip long-life spark plugs with improved "self-cleaning" properties which decrease the potential for plug fouling
- External water crossover integrated into the water pump casting so that no coolant flows through the composite intake manifold
- Inconel (high temperature) exhaust valves for long-term durability
- Revised cam phaser for improved idle quality
- Shallow sump oil pan for marine applications
- Floating pin pistons which reduce noise and increase durability
- Heavy-duty timing chain with a new leaf spring dampener to ensure quiet operation and long-term durability



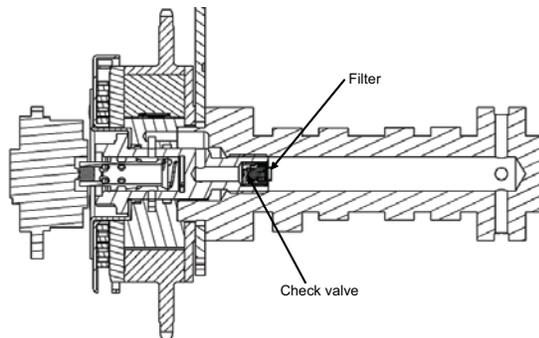
Factory-installed EFI hardware, including coil-near-plug ignition, is standard on the Vortec 6000 GEN-IV marine engine.

Available Options

- An electronic control module (ECM) and related hardware are available in kit form. The ECM uses state-of-the-art technology to optimize fuel and spark control.
- Vortec 6000 Sight Shield and related mounting hardware are available in kit form.
- GM-designed accessory drive components will be available in kit form.
- Flat-faced flywheel available

Vortec 6000 Feature Focus

GM Powertrain takes its expertise in designing outstanding Vortec truck and SUV engines and leverages it to make sophisticated yet extremely durable marine engines. In addition, the well-recognized Vortec brand name by itself has become a valuable selling tool for OEMs.



Oil flows through #2 cam bearing, into center of camshaft, through check valve and filter in valve, through oil control spool valve which directs oil into the correct phaser cavity: either advance, retard, or both (hold position).

Variable Valve Timing

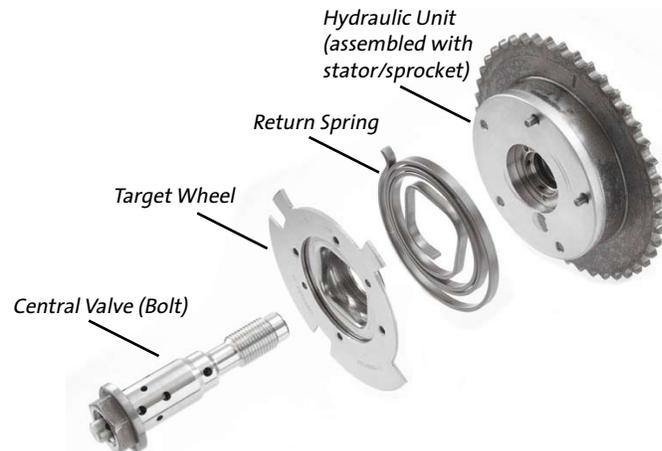
The Vortec 6000's dual-equal cam phaser adjusts camshaft timing at the same rate for both intake and exhaust valves. A vane-type phaser is installed on the cam sprocket to turn the camshaft relative to the sprocket, thereby adjusting the timing of both intake and exhaust valve operation. The vane phaser is actuated by hydraulic pressure from engine oil, and managed by a solenoid that controls oil pressure on the phaser. The phaser uses a wheel or rotor with four vanes (like a



An advanced coil-near-plug ignition system ensures a powerful spark is precisely delivered to each cylinder.



Many of GM marine engines are Vortec engines. Vortec means uncompromised power — outstanding power with no sacrifice in fuel efficiency or durability and very little required maintenance.



propeller) to turn the camshaft relative to the cam sprocket, which turns at a fixed rate via chain from the crankshaft. The solenoid directs oil to pressure points on either side of the four phaser vanes; the vanes, and camshaft, turn in the direction of the oil flow. The more pressure, the more the phaser and camshaft turn. The Vortec 6000's new engine control module directs the phaser to advance or retard cam timing, depending on driving demands. The dual-equal phaser can turn the camshaft over a range of 26 degrees relative to the cam sprocket (or 7 degrees advance, 45 degrees retard relative to the crank).

(New phaser for 2008 MY)

Additional Features

- Superior engine sealing system features one-piece rear main seal, one-piece front crankshaft seal, and controlled-compression gaskets on the oil pan, front cover, raised rail rocker arm covers, and intake manifold
- Cast-iron crankshaft has undercut and rolled fillets for durability
- Metric fasteners used throughout
- 100% cold testing performed at engine plant to verify product quality

Specifications

Type: 6.0L V8 (LY6)

Displacement: 364 cid (5967 cc)

Engine Orientation: Longitudinal

Compression Ratio: 9.6:1

Valve Configuration: Overhead Valves
(2 valves per cylinder)

Assembly Site: Romulus, Michigan

Valve Lifters: Hydraulic Roller

Firing Order: 1 - 8 - 7 - 2 - 6 - 5 - 4 - 3

Bore x Stroke: 101.6 X 92 mm

Bore Center: 111.76 mm

Bore Area: 648.59 cm²

Fuel System: Port Fuel Injection

Fuel Type: Regular Unleaded

Horsepower:

385 hp (287 kW) @ 5600 rpm

Torque:

400 lb-ft (542 Nm) @ 4400 rpm

Actual power levels may vary depending on OEM calibration and application.

Fuel Shutoff: 5600 rpm

Engine Mass: 539 lb (245 kg)

Emissions Controls: Positive Crankcase Ventilation (PCV)

Materials:

Block: Cast Iron

Cylinder Head: Cast Aluminum

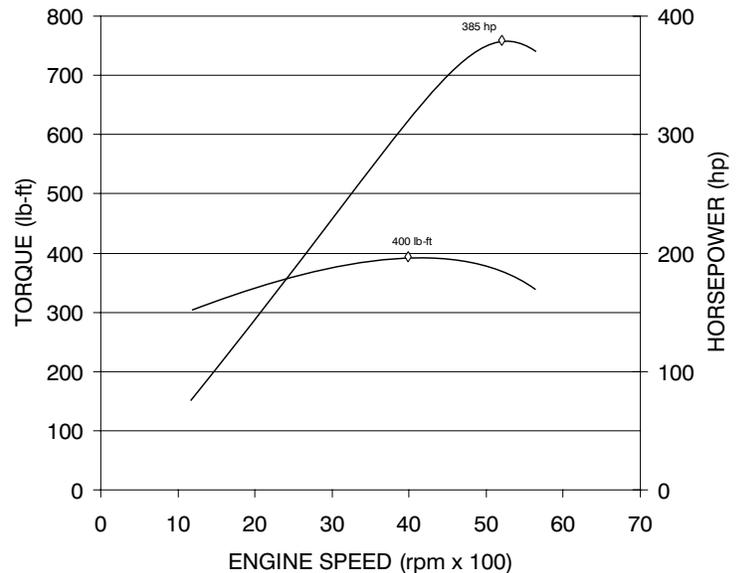
Intake Manifold: Composite

Main Bearing Caps: Powder Metal

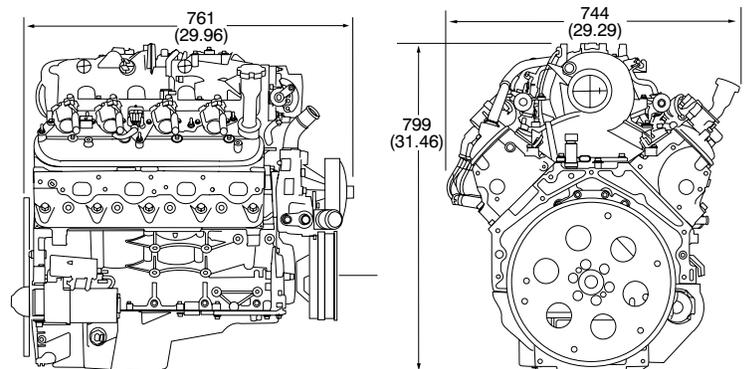
Crankshaft: Cast Iron with Undercut and Rolled Fillets

Camshaft: Steel

Connecting Rods: Forged Powder Metal



Actual power levels may vary depending on OEM calibration and application.



GM Powertrain

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