Factory-installed EFI hardware, including coil-near-plug ignition, is standard on the Vortec 6.0L GEN-IV marine engine.

- 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-6 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
Vortec 6.0L V-8 VVT (L96) Marine

Factory-installed EFI hardware, including coil-near-plug ignition, is standard on the Vortec 6.0L GEN-IV marine engine.

- 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
- Inconnel (high temperature) exhaust valves for long-term durability
- 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
- Sil-1 nitrided intake valve added (E85 capability)
- Brico 3010 intake/exhaust seat inserts (E85 capability)

**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 6.0L Sight Shield and related mounting hardware available.
- GM-designed accessory drive components available.
- Flat-faced flywheel available
Variable Valve Timing

The Vortec 6.0L’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 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 6.0L’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.

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).
Vortec 6.0L V-8 VVT (L96)

Specifications

- **Vortec 6.0L (L96) Specification Focus**
  - **Type:** 6.0L V-8 VVT (Gen-IV Small Block)
  - **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:** E85 Capable, 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)

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

- **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