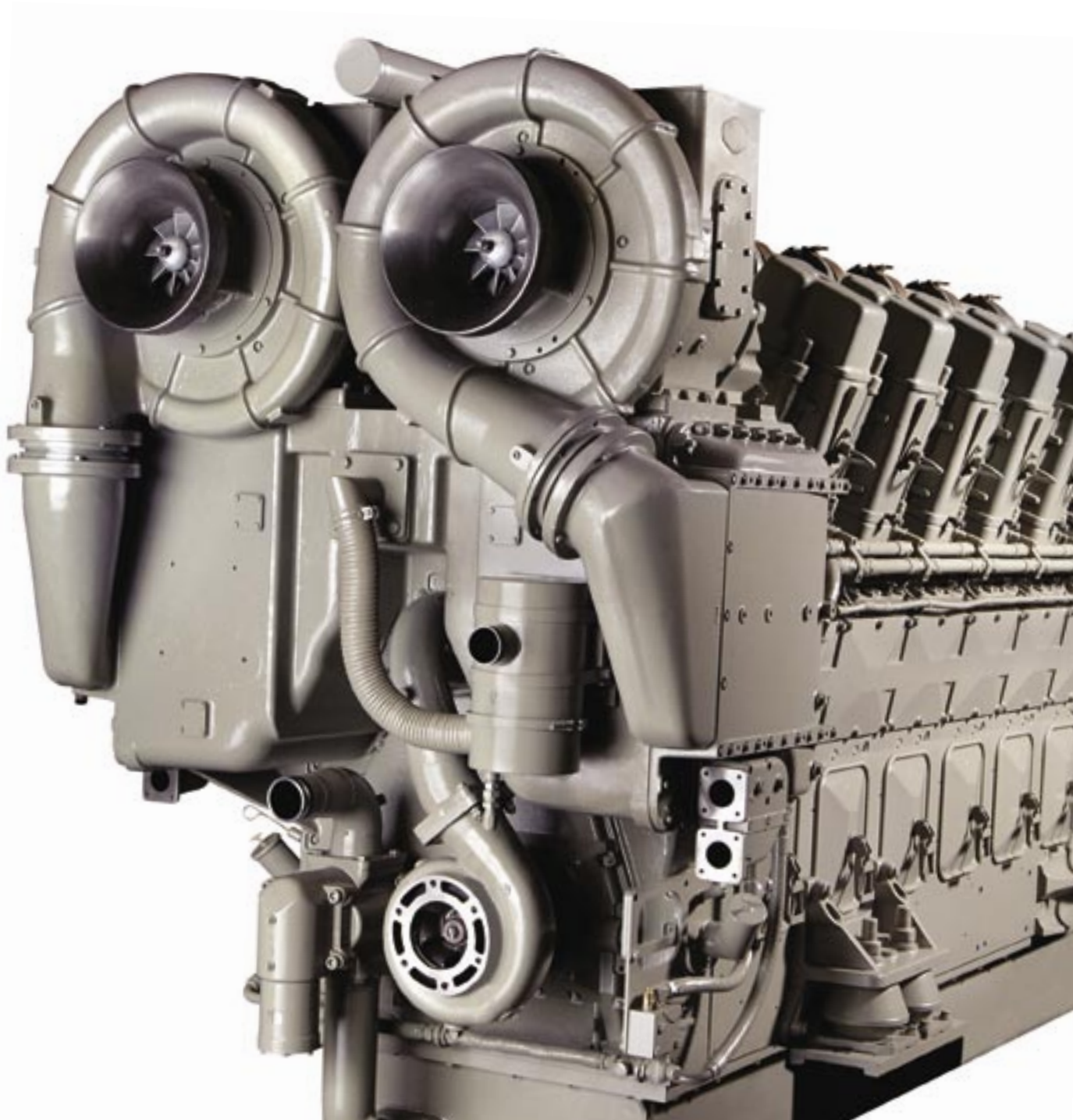


GE  
Marine

# Making waves

GE's New V250 Diesel Engine



Better fuel efficiency

Greater power density

Higher reliability & maintainability

# They're all on board

It's all here—in the most technologically advanced, fuel-efficient, environmentally compatible diesel engine ever built by GE.

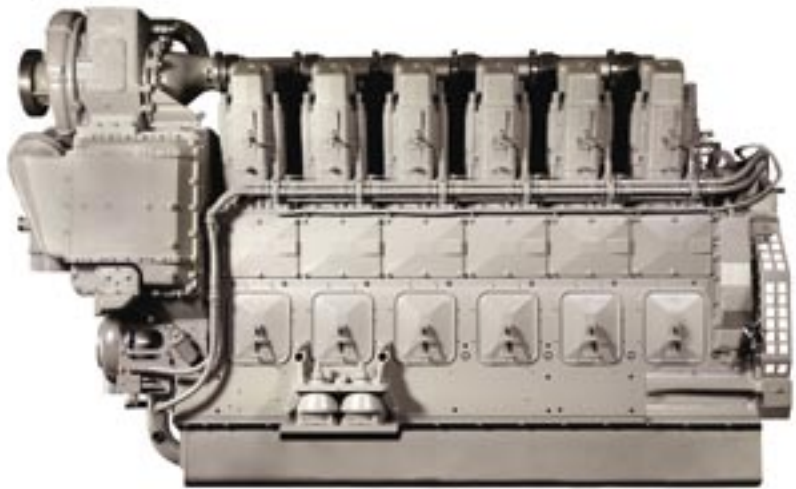
It's the product of more than six years in development and testing and nearly six million megawatt hours in service. And with customization to the marine industry and competitive pricing, it's ready to meet your marine power needs.

The V250 Diesel Engine. It's quite simply our best diesel engine ever.



# The New V250 Diesel Engine

GE has been designing and building high-performance diesel engines for more than 40 years. Today, we're one of the leading manufacturers of medium-speed diesel engines in the world. In our new V250 marine engine, we've combined the best features of earlier engine designs with advancements proven to deliver efficiency, reliability and performance advantages.



## 6.5%

### **6.5% fuel savings while meeting Tier 2**

The V250 proves it's possible to meet the emissions compliance requirements of U.S. EPA Tier 2 without sacrificing fuel efficiency. In this new engine, improved fuel management, a new combustion system design and refined cooling together deliver fuel savings of as much as 6.5%, compared to our earlier engine designs. At the same time, the V250 meets the EPA's new, more stringent emissions guidelines as well as Marpol Annex VI standards.

## 25%

### **25% greater power density in a compact design**

A relatively large bore engine with a narrow overall width and lighter weight, the V250 packs a lot of power into its footprint. Among other features, its inlet and exhaust manifolds are compactly arranged between cylinder banks. Where space is at a premium, the trim design and high power-to-weight ratio of the V250 give it a clear edge.

## 100%

### **100% engineered for reliability and maintainability**

The V250 is a brand new engine—designed not only for higher efficiency and lower emissions but also for improved reliability and maintainability. Every critical component and system of the V250 was engineered, manufactured, tested, refined and validated extensively for reliability. For easier maintenance, a segmented camshaft, sectional exhaust manifold, unitized power assembly and other features simplify component removal and replacement.

GE's V250 diesel engines are available in 12-cylinder and 16-cylinder V configurations for medium-speed duty with continuous power from 2175 kw to 4240 kw.



# V250 engine systems

Proven performance and operating advantages

## Advanced EFI

Designed for greater efficiency at varying speeds and loads, the V250's electronic fuel injection features precise fuel control, increased pressure capability and refined timing. Optimization of the cam profile, injection start, injection volumes and flows, and control algorithms have produced a relatively simple system, proven reliable through extensive validation.

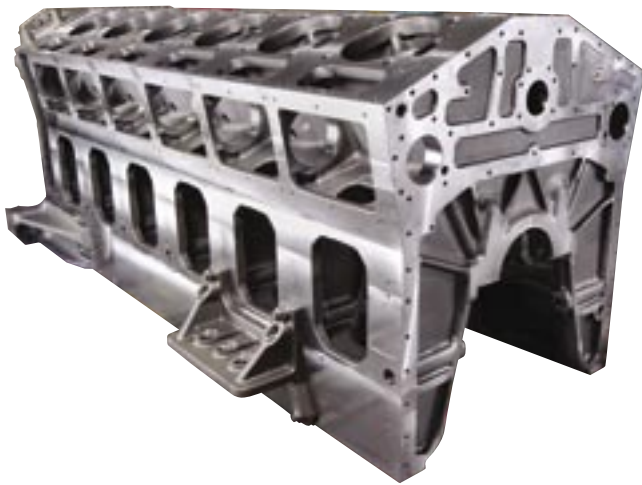
## Sophisticated Control

Our PowerStar™ II controller drives the fuel injection system with advanced closing point detection for better fuel economy and emissions control. The system features improved diagnostics and display of all engine parameters and faults without the need for a laptop computer. Engine protection algorithms predict problems earlier to avoid engine damage.



## Higher-Efficiency Turbocharger

We have taken a proven turbocharger design and leveraged the aerodynamics expertise of our aviation business to enhance it. Improved bearing strength, better rotor dynamics, a cooled housing and integrated packaging create a high-performance, high-reliability system. Turbocharger matching optimizes performance for various speed ratings.



## Sturdy Mainframe

The mainframe of the V250 engine is high-strength ductile-iron construction. The main and connecting rod bearing capacity provides greater reliability and durability, and improved ribbing in the cross-bolt area adds to stiffness and lowers vibration.



## Heavy-Duty Crankshaft

Forged of high quality steel and nitride-hardened for long life, the V250's crankshaft has single-piece construction with no bolted joints. Large journal surface areas minimize loads, and dynamically balanced counterweights reduce stress for longer crankshaft life.



### Improved Power Assemblies

Our redesigned power assembly meets the high-pressure demands as well as the stringent reliability requirements of the V250 engine, while retaining an easy-to-maintain assembly concept. The unit's refined flow path enhances combustion, fuel savings and reduced emissions. The cylinder head, liner, piston and connecting rod can be easily removed as a single assembly.



### One-Piece Liners

The stiff, one-piece, mid-stop liner has an integral external water jacket that removes the possibility of water leaks. An anti-polishing ring provides a durable running surface, improving lube oil consumption and liner life. The top one-third of the liner is cooled.



### Rugged Cylinder Heads

A one-piece casting, wall structure fully supported by the head gasket, thicker flame deck and resizing and relocation of cooling bores has significantly improved the strength and design margins of the assembly's cylinder head.



### New Piston Design

Our new piston meets the increased weight and pressure requirements of the V250 engine. The improved skirt and pin boss provide better lubrication and guidance. With dynamics optimized through secondary motion analysis, the new piston design lowers oil consumption, reduces blow-by and lengthens oil life.



### Forged Connecting Rods

Exceptional strength, high stiffness and large bearings are unique features of our connecting rods. The large bearing width and optimized oil groove in the bearing shell improve oil film thickness and pressure.

### Segmented Camshaft

The camshaft in the V250 is arranged in individual sections for easy inspection and maintenance. Forged and hardened camshaft lobes reduce wear. Oversized journal bearings decrease loads for longer camshaft life.



# V250 engine specifications

	12V250	16V250
<b>Engine Data</b>		
Number of cylinders	12	16
Stroke cycle	4	4
Cylinder arrangement	V	V
Bore	250 mm (9.8 in)	250 mm (9.8 in)
Stroke	320 mm (12.6 in)	320 mm (12.6 in)
Compression ratio	16.8:1	16.8:1
<b>Power Output at 900 rpm</b>		
Continuous <sup>1</sup>	2726 kw (3655 hp)	3632 kw (4870 hp)
Maximum <sup>2</sup>	2998 kw (4020 hp)	3997 kw (5360 hp)
<b>Power Output at 1000 rpm</b>		
Continuous <sup>1</sup>	3028 kw (4060 hp)	4038 kw (5415 hp)
Maximum <sup>2</sup>	3330 kw (4465 hp)	4441 kw (5955 hp)
<b>Power Output at 1050 rpm</b>		
Continuous <sup>1</sup>	3180 kw (4265 hp)	4239 kw (5685 hp)
Maximum <sup>2</sup>	3497 kw (4690 hp)	4661 kw (6250 hp)
<b>Engine Dimensions</b>		
A Length	4154 mm (164 in)	4988 mm (196 in)
B Width	1708 mm (67 in)	1708 mm (67 in)
C Height w/deep sump	2832 mm (112 in)	2917 mm (115 in)
C Height w/shallow sump	2717 mm (107 in)	2717 mm (107 in)
D Crankshaft center line to deep sump	1077 mm (42 in)	1162 mm (46 in)
D Crankshaft center line to shallow sump	962 mm (38 in)	962 mm (38 in)
E Crankshaft center line to mounting feet	536 mm (21 in)	536 mm (21 in)
Exhaust diameter	610 mm (24 in)	610 mm (24 in)
Dry Weight	20,185 kg (44,500 lbs)	23,587 kg (52,000 lbs)

1. At standard reference conditions per ISO 3046-1:2002E, ISO8665

2. One hour per twelve-hour period

## To learn more

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