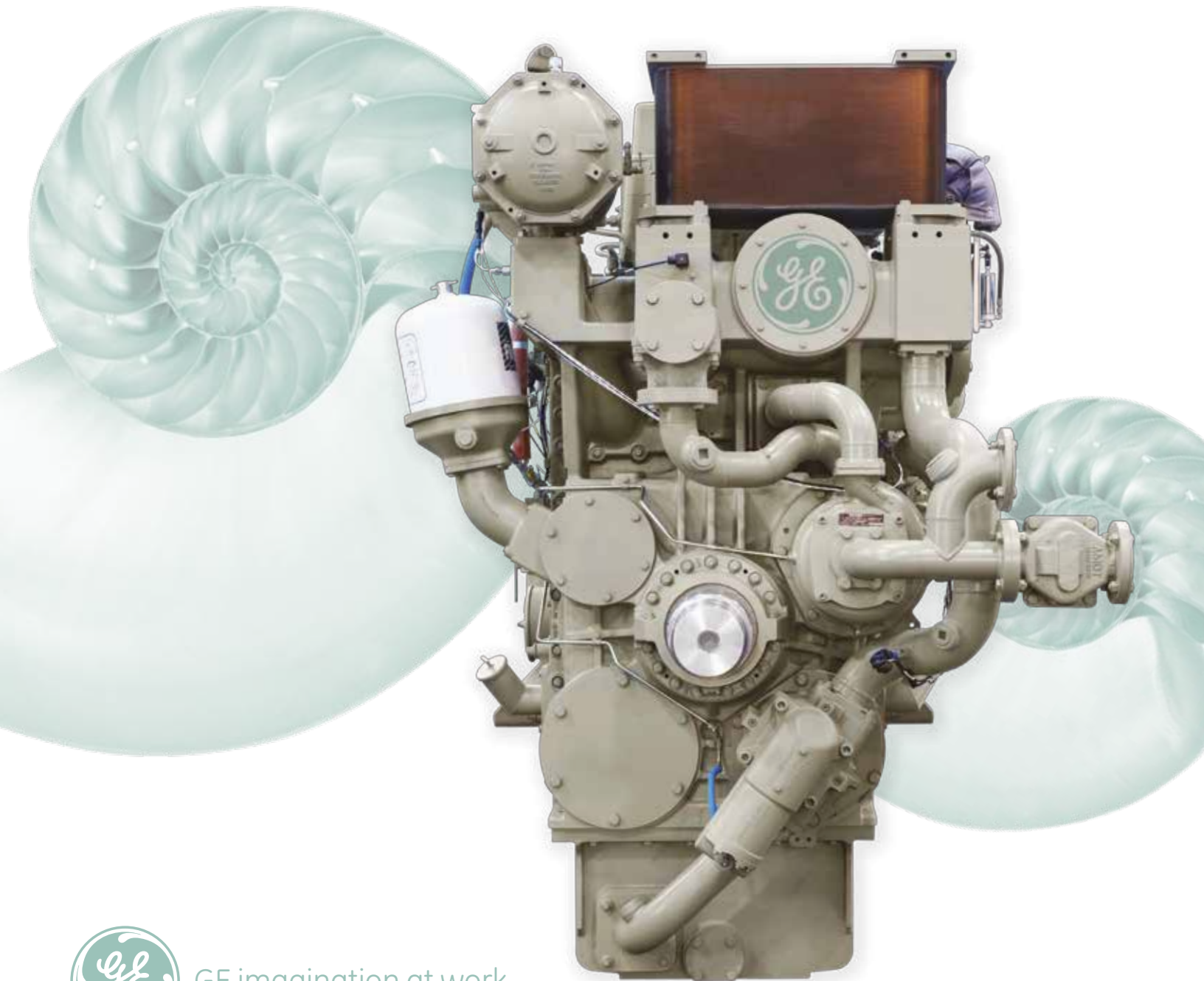


GE Marine

# Clean, lean marine

GE's L250 EPA Tier 3 inline diesel engine



GE imagination at work

# GE's marine-class engines

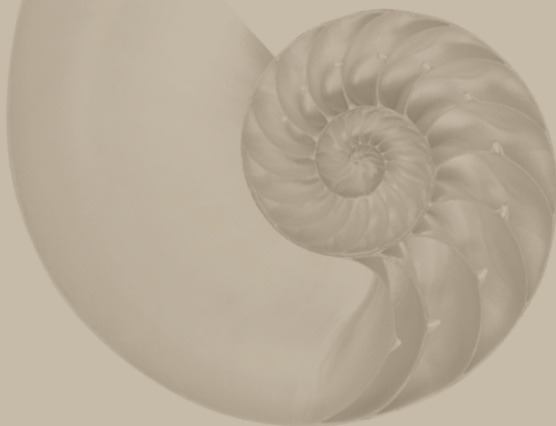
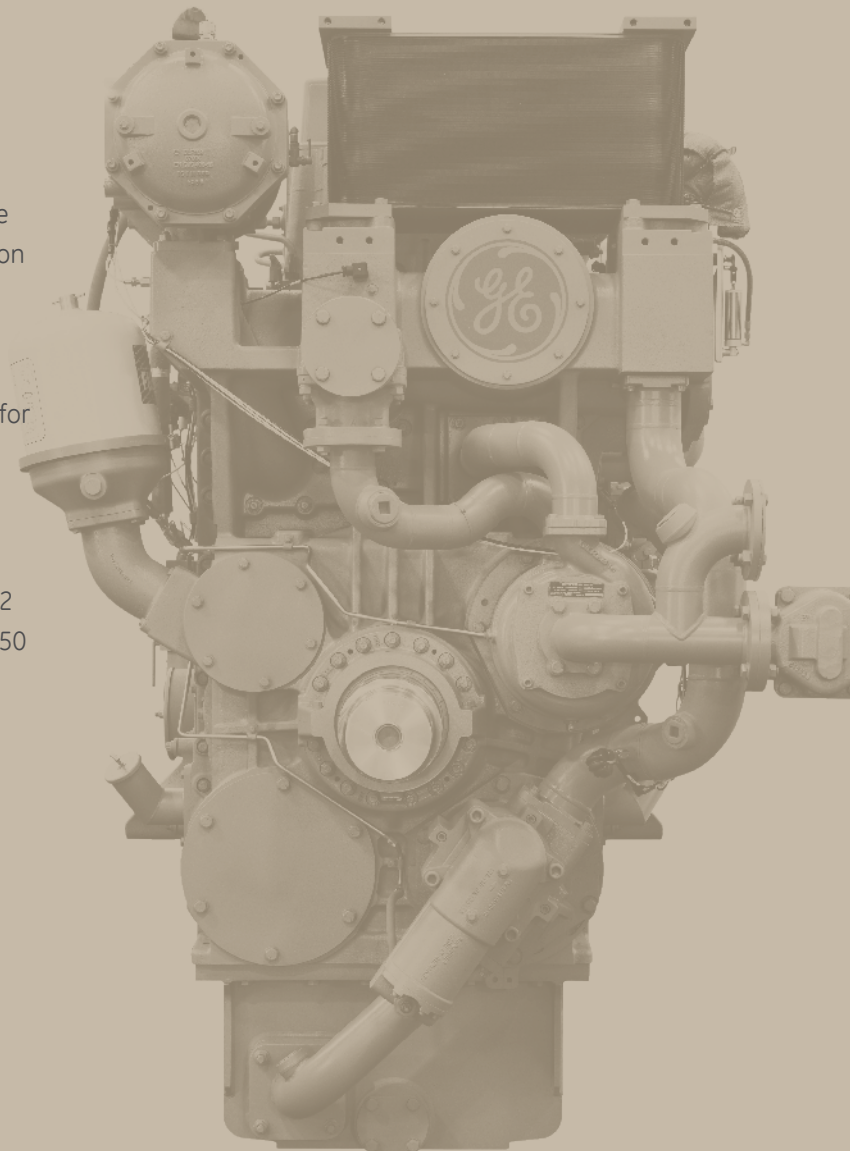
## A history of proven performance

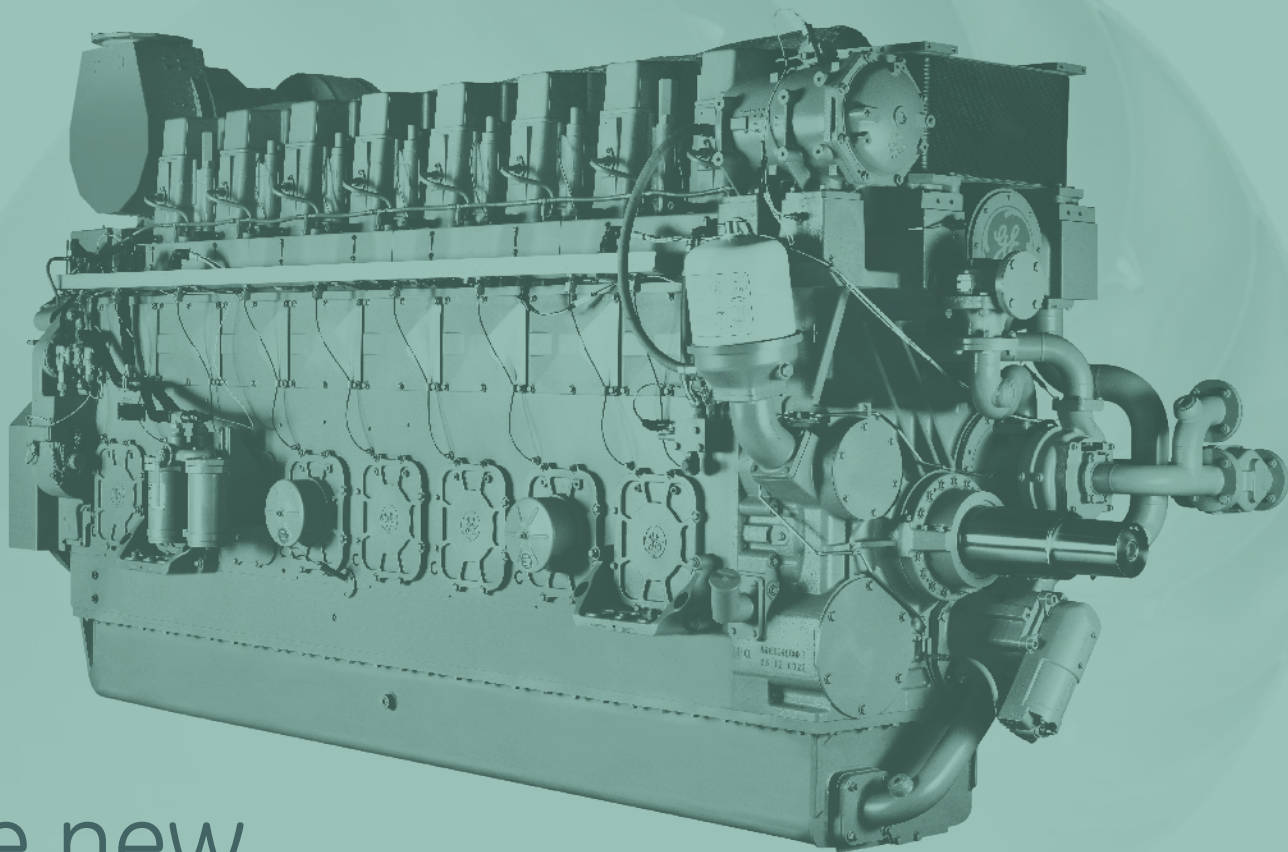
GE Transportation has been serving the transportation industry for more than a century. For nearly 50 years, we have designed and built high-performance diesel engines and have become one of the largest manufacturers of medium-speed engines in the world.

GE Marine, a division of GE Transportation, is one of the world's leading manufacturers of marine products that help tackle the most important challenges facing the marine industry today through integrated solutions, breakthrough technologies and process innovations. You can rely on GE's experience, innovation and proven performance to help you succeed. We've invested millions to ensure our engines comply with the latest emission standards through technological advancements that will exceed your expectations. The L250 engine series is just one example of our dedication to a sustainable environment and supporting our customers with GE's efficient, reliable and economic diesel engines. Where applicable, the L250 engines meet EPA Tier 3 emission standards without the need for exhaust after treatment.

Along with the new L250 EPA Tier 3 engine, GE's family of medium-speed engines include 8-, 12- and 16-cylinder V configurations, all of which are EPA Tier 2 and/or IMO Tier II certified with future plans for our L250 and V250 engines to meet EPA Tier 4 and IMO Tier III emission levels.

With more than 15,000 engines operating worldwide in some of the most challenging industrial environments, GE's medium-speed engines are dependable, long-lasting, durable and efficient. From tugboats in Turkey and fishing vessels in Peru to offshore construction vessels in Norway and ferries in Texas, GE's marine engines are supported by an extensive global parts, distribution and service network.





# The new L250 EPA Tier 3 inline diesel engine

GE's new L250 inline diesel engine offers a streamlined design that is fuel-efficient and delivers continuous power from 1,518 to 1,999 kW. The L250 is specifically engineered for marine applications with its accessories mounted on the engine for maintenance ease and offers a full-power PTO option.

The L250 is marine-class compliant and meets U.S. EPA Tier 3 emission requirements (certified to EPA Tier 2 during 2013) — a proactive approach to fuel savings and emissions reduction natural to GE. Depending on the application and duty cycle, the L250 offers an average 12% fuel savings when compared to the V228 engine.

The engine, available in 6- and 8-cylinder models, also offers ease of re-power as its narrow inline footprint takes in mind marine engine room constraints where space is at a premium. The narrower frame uses a similar footprint as competitive engines for minimum design change.

GE designed the L250 engine based on the successful V250 engine platform using the Six Sigma Quality design process. Together, with flexible installation and maintenance options, proven parts performance and support from GE's worldwide distribution network, the L250 offers customers reliability and limited downtime.

→ FUEL-EFFICIENT

→ EPA TIER 3 EMISSIONS-COMPLIANT

→ COMPACT POWER

→ NARROW FOOTPRINT

→ EASY TO MAINTAIN

# L250 components — Marine class. Inline design.

## Sturdy mainframe

The L250's mainframe is a rugged one-piece iron casting which provides excellent vibration-dampening characteristics and long-term stability to minimize line bore distortion. Further strength and rigidity are added by bolting main bearing caps both vertically and horizontally. The lube oil gallery and passages are cast or drilled into the frame to provide lubrication to all vital engine areas with no pipe or hose connections within the frame, to help eliminate leaks or loss of lubrication.



## Turbocharger

The L250 uses a new, high-efficiency, radial flow and water-cooled turbocharger to achieve EPA Tier 3 emissions without sacrificing engine performance. Depending on duty cycle and application, response time and fuel efficiency have improved over the L250 Tier 2 engines and fuel consumption improved 5% to 6% at 85% of MCR.

## Crankshaft and engine drive train

The crankshaft is press-forged, high-quality alloy steel. Oil passages drilled in the crankshaft allow oil delivery to connecting rod bearings and pistons. A flywheel with ring gear for the starting motor is bolted directly to the crankshaft flange.

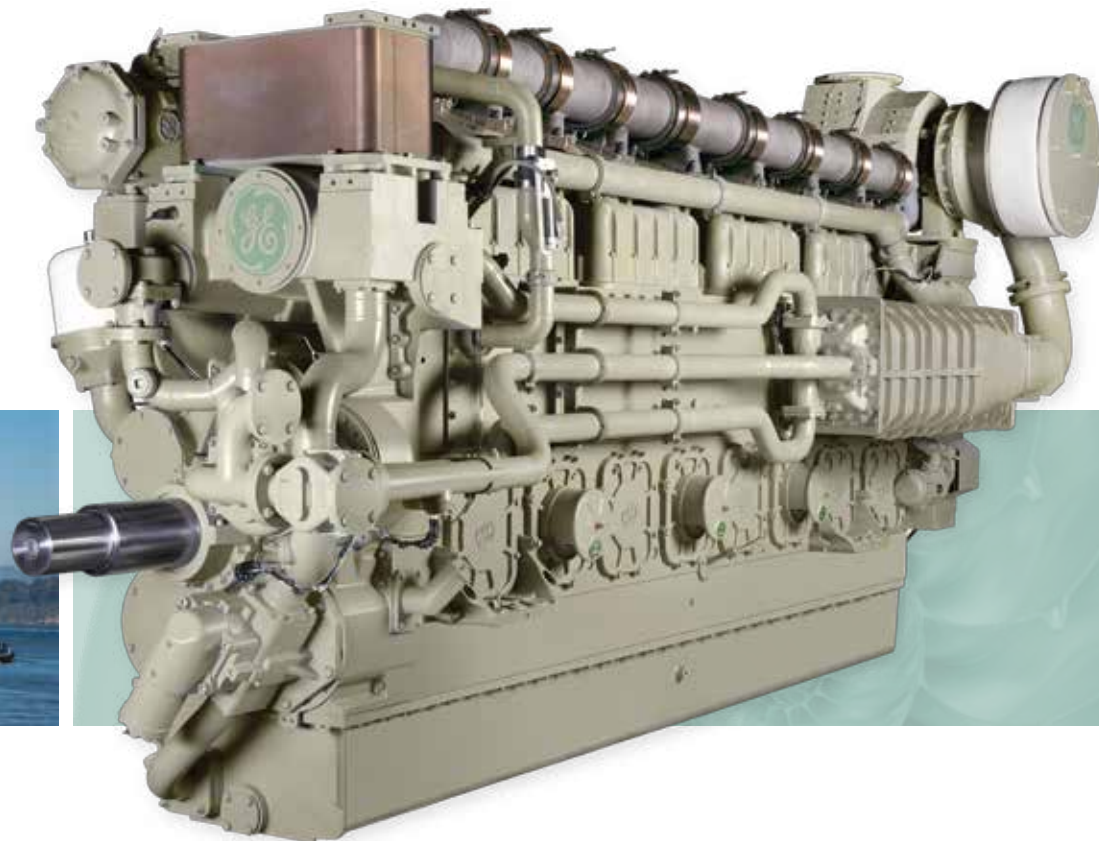
## One-piece liners

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.



## Power assemblies

The L250's power assemblies are designed to meet the high-pressure demands of the engine while adhering to strict reliability requirements and an easy-to-maintain assembly concept. Unitized cylinder assembly enables quick change-outs and increased engine uptime. Each assembly is mounted directly to the mainframe and includes liner assembly, cylinder head, intake and exhaust valves, valve linkage and a high-pressure fuel-injection pump and nozzle. This design enables excellent flow paths for combustion, lower fuel consumption and reduced emissions. Design improvements will result in a significant reduction in lube oil consumption over L250 Tier 2 engines.



### Exhaust manifold

The exhaust manifold provides increased transient response and better efficiency under pulse and constant pressure operation. It is modularized with identical piping and bellows sections for all of the cylinder assemblies. The bellows sections help lower the thermal and vibration-induced stresses on the exhaust system.

### Intercooler and air-intake manifold

The L250's combustion air-intake system includes one intercooler mounted on the mainframe between the turbo outlet and air manifold inlet. This allows for lower fuel consumption, emissions and exhaust temperatures. For servicing, the intercooler can be removed without dismantling other engine components.

### Pistons

Our pistons are ruggedly designed to accommodate the high-peak firing pressure requirements of L250 engines. The pin and skirt components are also designed to yield better piston lubrication and guidance as it travels within the liner.



The design helps minimize oil consumption and blow-by as well as lengthen oil life.

### Connecting rod assembly

The forged-steel connecting rods are exceptionally strong and exhibit high stiffness, which is beneficial during the engine's lifetime. Large bearing widths with optimized oil grooves also help improve oil-film thickness and pressure, allowing for optimum performance and lower friction losses.

### Advanced EFI

Designed for greater efficiency at varying speeds and loads, the L250'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.



### Camshafts

The camshafts on the L250 are made of sectional carbon steel forgings joined by dowel-bolted flanges, a design that simplifies component removal and replacement. Individual sections of the camshaft, rather than the entire camshaft, can be serviced or replaced.



# L250 EPA Tier 3 inline diesel engine specifications

	6L250	8L250
<b>Engine data</b>		
Number of cylinders	6	8
Stroke cycle	4	4
Cylinder arrangement	inline	inline
Bore	250 mm (9.84 in)	250 mm (9.84 in)
Stroke	320 mm (12.60 in)	320 mm (12.60 in)
Compression ratio	15.7	15.7
<b>Power output at 900 rpm</b>		
Maximum continuous rating*	1,518 kw (2035 hp)	1,998 kw (2679 hp)
<b>Power output at 1,000 rpm</b>		
Maximum continuous rating*	1,687 kw (2261 hp)	N/A
<b>Power output at 1,050 rpm</b>		
Maximum continuous rating*	1,771 kw (2374 hp)	N/A
<b>Engine dimensions</b>		
Length	5,095 mm (200 in)	5,985 mm (235 in)
Width	2,032 mm (80 in)	2,032 mm (80 in)
Height including sump	2,962 mm (116 in)	2,962 mm (116 in)
Crankshaft center line to sump	940 mm (37 in)	940 mm (37 in)
Crankshaft center line to mounting feet	308 mm (12 in)	308 mm (12 in)
Exhaust diameter	457 mm (18 in)	457 mm (18 in)
Dry weight	15,909 kg (35,000 lbs)	19,090 kg (42,000 lbs)

\*Maximum continuous rating (MCR):

Maximum speed and load conditions at which the engine is capable of operating continuously for an unlimited number of hours per year; between the normal maintenance intervals stated by GE, under standard ambient conditions and with the maintenance prescribed by GE having been carried out. Engine overload is limited for U.S. EPA Tier 3 (40 CFR Part 1042) regulations.

Dimensions and weights are approximate and include all engine mounted accessories.

GE Marine

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visit [www.getransportation.com](http://www.getransportation.com).



GE imagination at work

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