Toughness and technology come together in an ocean-ready diesel propulsion engine with Northern Lights' state-of-the-art features - the Lugger L6125H.

Real horse power, for real world applications

Based on a heavy-duty off-road engine block, the L6125H is designed and built for the unforgiving marine environment. The L6125H cranks 470 Horsepower (high output) at 2300 RPM. Continuous duty operators will appreciate the engine's ability to crank out 350 HP at a low 1800 RPM. Keeping revolutions low minimizes wear and tear, as does the attractive power-to-weight ratio of 6.1 lbs/HP and the engine's impressive torque rise.

Big power in a manageable package

The anvil-tough four-cycle, in-line six cylinder L6125H displaces 674 cid, but fits in a footprint suited to most engine rooms making it a strong re-power candidate. The liquid-cooled turbocharger maximizes the engine's power and effeciency while ensuring operator safety.

Lugger's trademark features

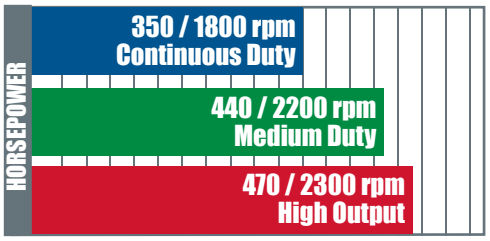
Lugger by Northern Lights is the brand trusted by the world's most demanding boat builders. Lugger's custom marinization features are designed for long-life and high-performance, with no sacrifice to onboard comfort or fuel economy. Cast iron exhaust manifold, cupro-nickel heat exchanger with removable end covers, individual cylinder heads: all the trademarks of Lugger's world class engineering are present in this remarkably small and light-weight package.

Fuel economy and cleanliness in a Lugger

Designed for clean, efficient use, the L6125H features an industry-renowned high pressure common rail (HPCR) fuel delivery system.

Legendarily simple to maintain and service

Ease of maintenance has been a Lugger hallmark for over fifty years. All service points are on a common, easily accessed side. Belts and hoses are minimized. If it isn't there - it can't break.



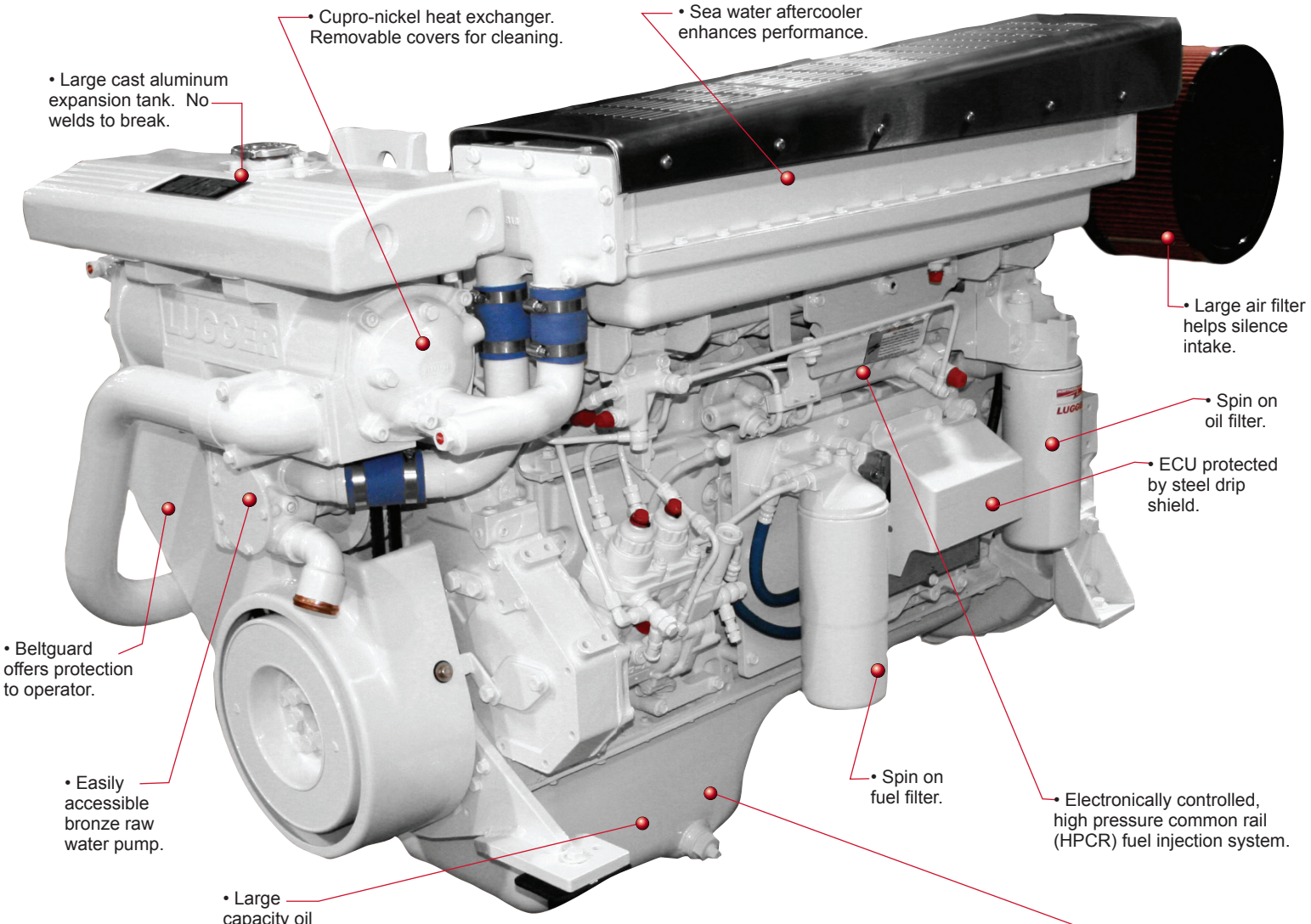
Replaceable wet liners allow in-boat rebuilds. Durable, white polyurethane paint increases visibility and cleans easily. All this amounts to less time on maintenance and more time on the water.

Power Take Off options increase versatility

You can take power off the front end of your L6125H with an optional electric clutch, pump mount PTO - ideal for powering your hydraulic system.

Fully tested and backed by the industry leader

All Luggers are dyno tested after marinization, then tested again upon installation of transmission. Luggers are backed by a three year limited warranty, with no hour limits in the first year; making the L6125H the best built, best backed and most easily serviced propulsion system on the market.



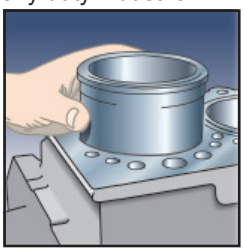
L6125H

Service points are grouped on this side for ease of maintenance.

These are the features that make a good engine block into a gr

Engine Block

- Komatsu six cylinder, four cycle, four overhead valve, heavy duty industrial engine block.



- Replaceable wet cylinder liners for heat dissipation, enhanced life expectancy and lower rebuild costs.
- Single piece forged steel crankshaft with induction hardened journals. Rigid seven bearing crankshaft support.
- Robust forged steel connecting rods.
- Roller cam followers reduce friction and extend life of valve train.
- Four valves per cylinder for superior "breathing." Double valve springs. Replaceable valve seats and guides. Intake valve rotators provide even wear.
- Nodular cast iron pistons

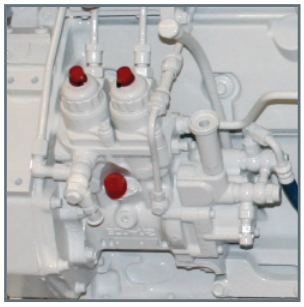
Cooling System

- Jacket water heat exchanger has flexible impeller-type seawater pump. Heat exchanger housing has removable end caps. Cupro-nickel tube bundle can be removed for cleaning without disturbing other cooling system components.
- Centrifugal jacket-water pump is gear driven, eliminating issues caused by drive belt failures.
- One piece, cast iron exhaust manifold is jacket-water cooled. No welds to fail. No gasketed connections between water and exhaust passages reduce chances of water entering the cylinders.
- Coolant connections are pipe with o-ring seals to eliminate hoses.
- Two thermostats for safety, quick warm-ups and even temperature control.
- Zinc anodes help prevent electrolysis in heat exchanger cooling system.

Air System

- Large capacity aftercooler uses seawater to cool the intake air compressed by the turbocharger. This dense, cool air provides more efficient combustion, increases horsepower, and meets emissions regulations.
- Turbocharger is liquid cooled for safety. No need to carry heat blankets that can become oil soaked and combustible.
- Large capacity air filter and closed crankcase breather (Airsep® system).

Fuel System



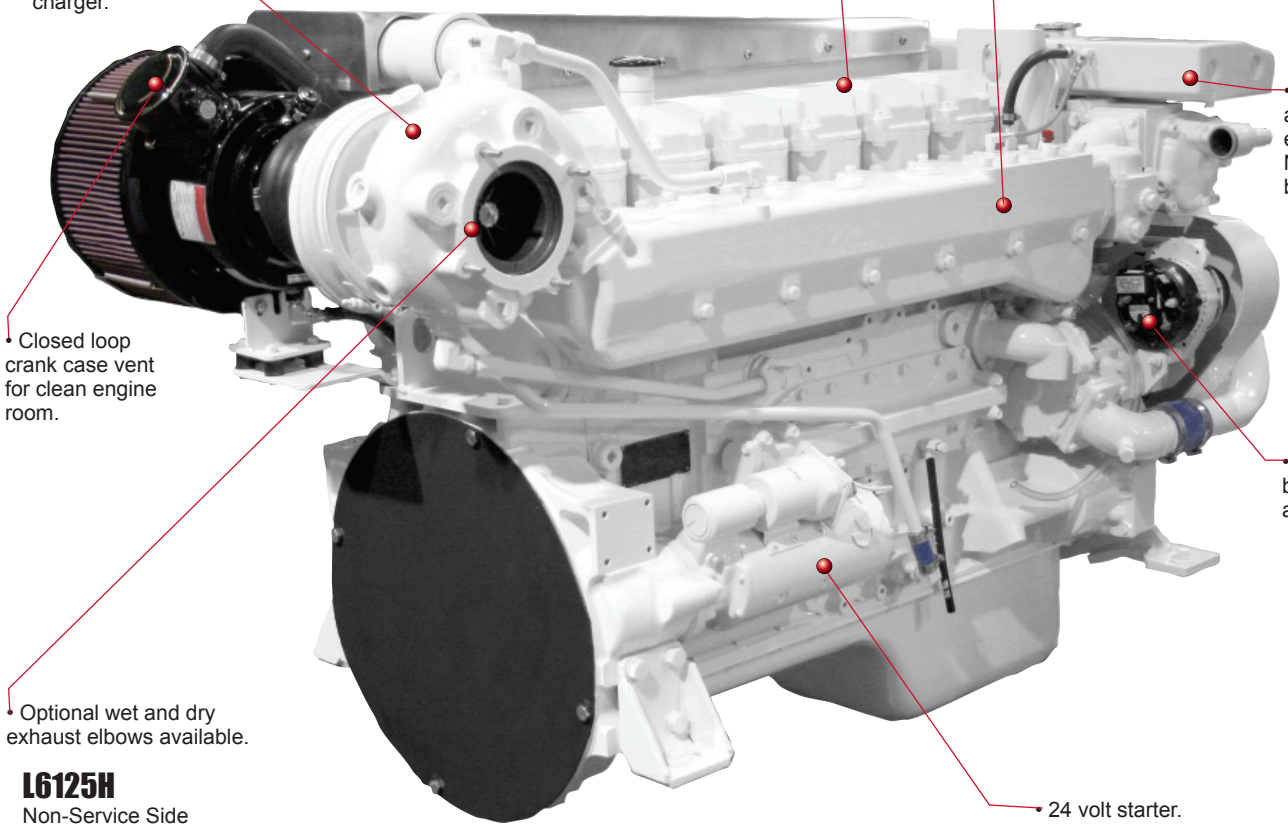
- Electronic fuel injection for improved economy and faster starts - even cold.
- HPCR for better fuel atomization.
- Electronic unit injectors are placed in the center of the cylinder for the most efficient fuel spray pattern and improved economy.
- Fuel system design is self-venting
- Large spin-on fuel filter element.
- Gear driven, positive displacement mechanical fuel transfer pump.
- Remote mounted primary fuel filter.

Lubrication System

- Gear type high capacity oil pump.
- Internal oil passages to prevent leaks.
- Plate type, jacket water oil cooler with thermostat. Cooler controls oil temperature. Cooler is integrated into block to eliminate hoses.
- Full flow, spin on oil filter.

Electrical System

- 24 volt, negative ground, marine grade electrical system includes starter and 24V/40A battery charging alternator. See Accessories column for more alternator options.



L6125H
Non-Service Side

eat marine engine.

- The Engine Control Unit (ECU) is housed in a water resistant module, and controls the electronic fuel injection system. The ECU supplies a SAE J1939 engine information data stream that is accessible through a CANbus plug for the Electronic System Profiler (ESP) monitor screen. Service diagnostics and error codes are automatically stored.

Special Features

- White polyurethane paint for long life finish and service visibility.
- Operator's and parts manuals standard on CD/ROM. Printed versions available as options.

L6125H Accessories and Options

Use these components to make your Lugger into an integrated power system that fits your vessel's special requirements.

- Flybridge and auxiliary instrument panels with wire harness plug-ins are easy to install.
- Engine mount stop-start panel.
- 10, 20 and 40 foot wiring harness extensions.

- High output primary alternators: 24V-75A and 24V-100A.
- Add a second alternator: 12V-65A, 12V-140A, 24V-35A, 24V-75A.
- DC electrical systems. 24V isolated ground.
- Wet Exhaust: 6" and 8" stainless steel wet exhaust elbow. Rotate 0-15° and 15/75° from vertical.
- Dry exhaust: 5" and 6" dry exhaust elbows. 5" and 6" stainless exhaust flex. Turbo outlet weld flange.
- Oil change pump for engine and gear.

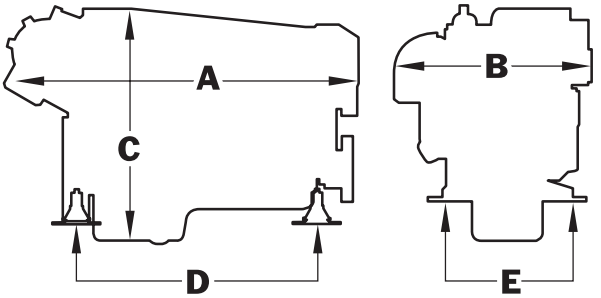
- Duplex Racor primary fuel filters.
- Spare parts kit.
- Twin Disc or ZF gears. Trolling valves. Shaft couplings.
- Coolant level sensor.
- Chrome valve covers.
- Vibration isolating flexible engine mounts. Sets of 4 or 6.
- Crankshaft pulleys: 8" 4-A/B or A grooves.
- Front PTO with 12 or 24V electric clutch and SAE C splined, 2 or 4 bolt pump mount pad. Provides up to 1,000 ft-lbs of torque for hydraulics.

Specifications & Installation Data

Output rating	Continuous	Medium	High Output
FWHP (kW)	350 (261)	440 (328)	470 (350)
Maximum RPM	1800	2200	2300
Cylinders/Configuration/Cycle		All: 6 / Inline / 4	
Displacement CID (ltr)		All: 674 (11)	
Aspiration		All: Turbocharged - Aftercooled	
Bore x Stroke in (mm)		All: 4.92 x 5.91 (125 x 150)	
Cooling (Heat Exchanger)			
Seawater pump flow - US gpm (lpm)	58 (219)	71 (269)	74 (280)
Heat rejection to sea water - BTU-min	8040	11350	13390
Freshwater system capacity - US gal (ltr)		All: 9 (34)	
Raw water intake dia. - in (mm)		All: 2 (51)	
Raw water discharge dia. - in (mm)		All: 2 (51)	
Max. raw water temp. at inlet -°F (°C)		All: 86° (30°)	
Electrical			
Voltage		All: 24V standard ground	
Min. battery capacity		All: 200 amp hours - 800 CCA	
Battery cable size up to 10 ft run		All: 00	
Standard panel harness length - ft (m)		All: 20 ft (6m)	
Air and Exhaust			
Engine air consumption - cfm (m^3/min)	590 (16.7)	936 (26.5)	1024 (29)
Exhaust gas flow at - cfm (m^3/min)..	1715 (49)	2323 (66)	2508 (71)
Exhaust gas temperature -°F (°C)	961 (516)	777 (414)	759 (404)
Max. exhaust back pressure - in (mm) H_20		All: 30 (762)	
Suggested dry exhaust I.D. - in (mm)		All: 6	
Suggested wet exhaust I.D. - in (mm)		All: 8	
Fuel and Oil			
Minimum fuel suction line - in (mm)		All: 0.5 (12)	
Minimum fuel return line - in (mm)		All: 0.38 (10)	
Maximum fuel pump head - in (m)		All: 39 (1)	
Crankcase oil capacity - US qts (ltr)		All: 34 (32)	
Other Data			
Engine rotation (facing flywheel)		All: Counter-Clockwise	
Flywheel housing size		All: #1 SAE	
Optional front PTO size SAE # - inch		All: 4 -8", 4 -10" or 3 -11.5"	
Maximum operating angle any direction		All: 35° for less than 2 minutes	
Maximum installed operating angle		All: 10° rear down - 0° front down	
Heat Exchanger Weight - without gear		2867 lbs (1300 kg)	

Dimensional Data: Do NOT use for installation. Contact factory for installation drawings.

All specifications and dimensions are preliminary and are subject to change without notice.



Dimensions	inch (mm)
A length	69 (1758)
B width	33.0 (840)
C height	45.0 (1143)
D mounts	44 (1115)
E mounts	26.5 (673)

Contact factory for current installation drawings and performance data and torque curves.

L6125H Performance Data

High Output Rating[1]	FWHP / kW / @ rpm	470 / 350 / 2300
Medium Duty Rating[1]	FWHP / kW / @ rpm	440 / 328 / 2200
Continuous Duty Rating	FWHP / kW / @ rpm	350 / 261 / 1800

RATING	CONTINUOUS				
Curve	A	B	C		D
RPM	ft/lbs	fwhp	pdhp	RPM	gph
700	644	86	21	1800	16.5
800	687	105	31	1640	12.6
900	788	135	44	1442	8.4
1000	875	167	60	1137	4.4
1100	926	194	80		
1200	984	225	104		
1300	1085	269	132		
1400	1165	310	165		
1500	1143	326	203		
1600	1121	342	246		
1700	1070	347	295		
1800	1021	350	350		

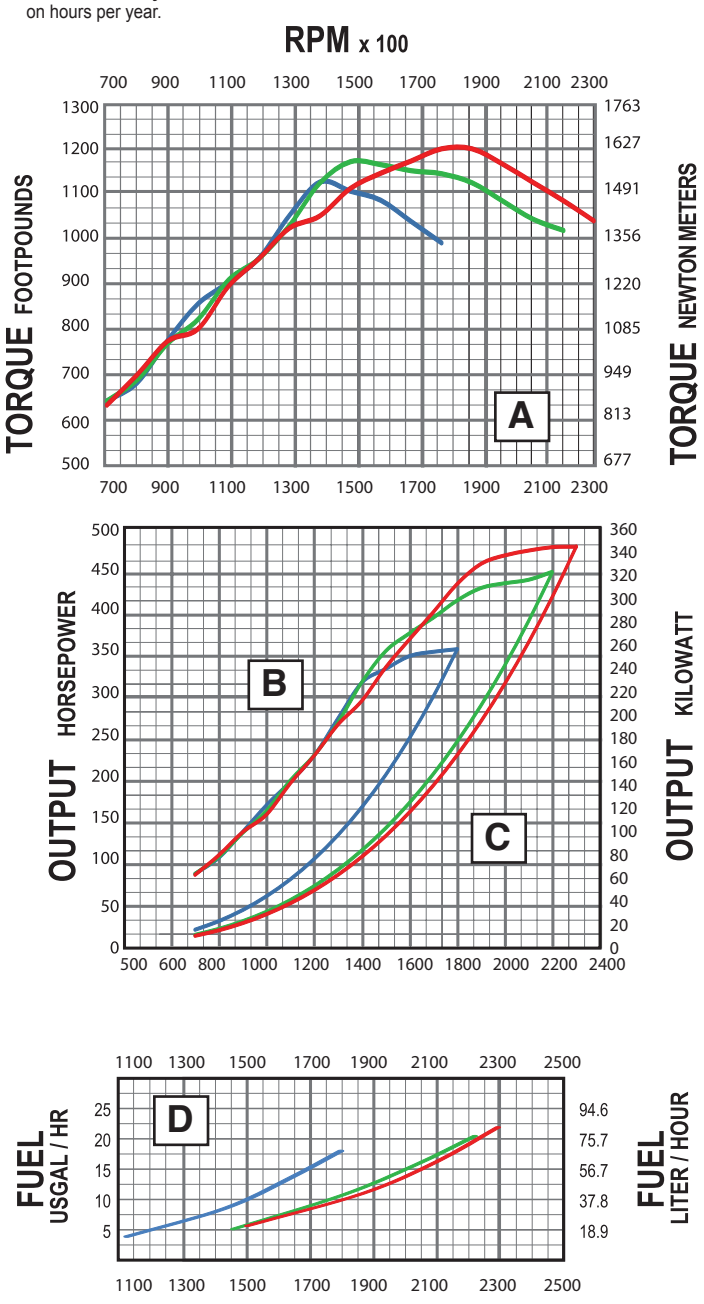
RATING	MEDIUM DUTY[1]				
Curve	A	B	C		D
RPM	ft/lbs	fwhp	pdhp	RPM	gph
700	644	86	14	2200	20.3
800	694	106	21	2003	15.7
900	781	134	30	1757	10.8
1000	839	160	41	1389	5.3
1100	933	195	55		
1200	984	225	71		
1300	1063	263	90		
1400	1165	310	112		
1500	1215	347	139		
1600	1208	368	169		
1700	1193	386	203		
1800	1186	407	241		
1900	1165	421	283		
2000	1121	427	331		
2100	1078	431	383		
2200	1051	440	440		

RATING	HIGH OUTPUT[1]				
Curve	A	B	C		D
RPM	ft/lbs	fwhp	pdhp	RPM	gph
700	637	85	13	2300	22.3
800	709	108	20	2093	16.6
900	788	135	28	1842	11.3
1000	817	156	39	1450	5.9
1100	919	192	51		
1200	984	225	67		
1300	1056	261	85		
1400	1085	289	106		
1500	1150	328	130		
1600	1186	361	158		
1700	1215	393	190		
1800	1244	426	225		
1900	1244	450	265		
2000	1208	460	309		
2100	1165	466	358		
2200	1121	470	411		
2300	1073	470	470		

Notes: 1. Cruise rpm for is 200 rpm below max attainable rpm or 2100 RPM for High Output and 2000 RPM for Medium Duty.

Performance Data and Specifications

Rating Definitions: *Following are the definitions of duty ratings for Luggers. Please contact your Lugger representative to verify your application.*
High Output: Based on a load factor of 20% or less. A maximum of five minutes at full throttle, followed by not less than ten minutes at cruise power or below.
For applications up to 200 total hours per year.
Medium Duty: Based on a load factor of 66% or less. A maximum of two hours at full throttle, followed by at least one hour at cruise power or below.
For applications up to 4000 total hours per year.
Continuous Duty: Based on a load factor of 100%. No limit on time at full throttle. No limit on hours per year.



Curves:
A. Maximum torque at flywheel.
B. Flywheel power. Prop shaft power is 3-3.5% lower due to marine reduction gears.
C. Theoretical Propeller Power Draw. Prop shaft 3.0 - 3.5% Lower due to marine reduction gear / power loss.
D. Fuel consumption based on theoretical propeller power draw. Your fuel consumption will vary based on vessel and operating conditions.

Dealer

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