

Reliability, simplicity and durability from more cubic inches and lower RPM.

High rpm, high performance throw-away diesels have their place in planing pleasure craft that rarely get too far from the local yacht club. But why put one of these engines, even a derated version, in your commercial boat or long range cruising yacht? These vessels need a real, heavy duty diesel that produces high, prop twisting torque at a rational rpm. They need a conservatively rated engine with long life features like the L1276A2.

A commercial heritage

Initially designed for Alaskan fishermen, Luggers have always been dependable. Used as prime movers on Northern Lights marine generator sets, they are well known by commercial and pleasure craft owners for long life and smooth, quiet operation. Today, electronic fuel injected engines like this L1276A2 are adding US EPA Tier II compliance to Lugger's reputation for reliability, simplicity and durability.



Ironclad marinization

The L1276A2 has a heavy-duty, overhead cam tractor block. This high torque design provides a strong foundation; but a marine engine is only as good as its marinization. The materials used must be strong. The design must be clean. Look at the photo below. Note the lack of hoses, belts, gaskets and welded cooling components. The liquid-cooled exhaust manifold is cast iron to

withstand temperature fluctuations and resist electrolysis. Unlike some engines that only use bypass water, the 1276 manifold is integrated into the cooling system mainstream, and two-pass water flow assures even temperature control and eliminates hot spots. The piping is stainless steel or bronze as is the gear driven raw water pump. The heat exchangers for the engine and gear have cupro-nickel elements.

Low rpm horses vs. Paper ponies.

Light-duty, small-displacement diesels are rated at speeds up to 3000 rpm. This means high piston speeds, more wear and short life.

The 1276's power comes from its big 766 cubic inch displacement and long stroke design. Max rpm is only 2100. Cruise RPM is 1800 for the continuous rating or 1900 for medium and high output. Lower rpm also means less noise and wear, more complete fuel combustion and longer life.

Wet liners protect your investment.

Lugger cylinder liners are surrounded by coolant for better heat dissipation. The liners are replaceable to reduce overhaul costs. Unlike "linerless" throwaways, a Lugger can be rebuilt to factory specs in the boat.

Gently turbocharged and aftercooled.

The turbocharger is liquid-cooled for safety. The aftercooler uses jacket water so the intake air temp is controlled thermostatically to avoid over cooling. Over cooling can cause incomplete combustion and smoke.

HORSEPOWER	340 /1800 rpm Continuous
	425/2100 rpm Medium Duty
	525/2100 rpm High Output

Electronic engine control lower fuel costs.

ECU controlled, direct fuel injection, four valves per cylinder, centered unit injectors and precise fuel metering all add up to excellent fuel economy.

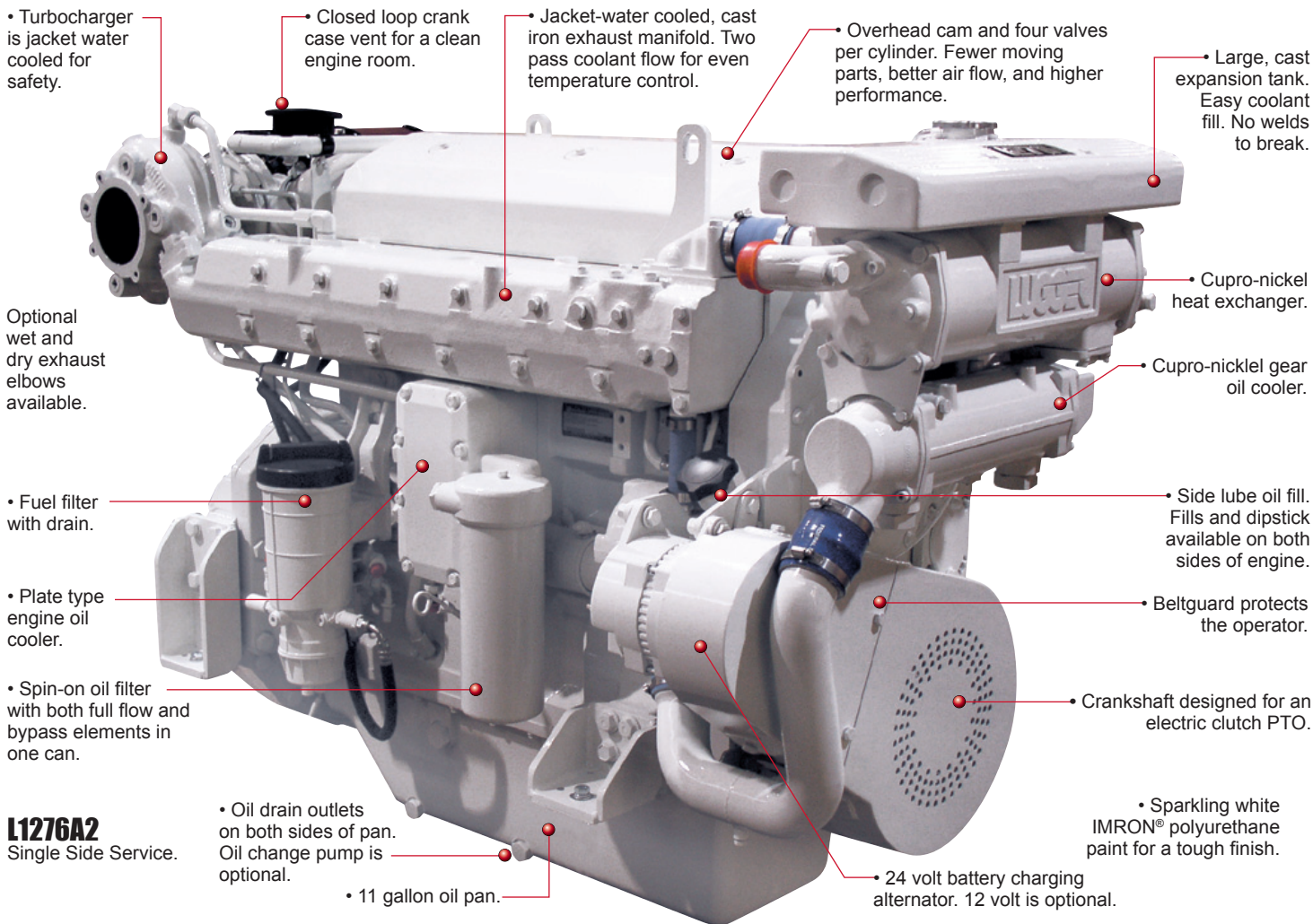
Easy to live with.

Low rpm Lugger engines are naturally quiet. No high rpm whine. Just a steady rhythm. A special silencer-filter reduces air intake noise. Quiet and smooth; 1276's torsional dampener decreases engine vibration.

Easy to maintain too. Service points are on one side for easy access. The in-line design gives you elbow room in the engine space.

Take power from both ends.

The full line of options and accessories lets you design an engine that is custom built to match your vessel's needs. With an optional front power-take-off your Lugger can power your vessel's hydraulic auxiliary systems. It's more than an engine, your L1276 is a total marine power system.

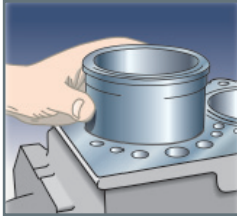


- Turbocharger is jacket water cooled for safety.
- Closed loop crank case vent for a clean engine room.
- Jacket-water cooled, cast iron exhaust manifold. Two pass coolant flow for even temperature control.
- Overhead cam and four valves per cylinder. Fewer moving parts, better air flow, and higher performance.
- Large, cast expansion tank. Easy coolant fill. No welds to break.
- Cupro-nickel heat exchanger.
- Cupro-nickel gear oil cooler.
- Side lube oil fill. Fills and dipstick available on both sides of engine.
- Beltguard protects the operator.
- Crankshaft designed for an electric clutch PTO.
- Sparkling white IMRON® polyurethane paint for a tough finish.
- 24 volt battery charging alternator. 12 volt is optional.
- 11 gallon oil pan.
- Oil drain outlets on both sides of pan. Oil change pump is optional.
- Spin-on oil filter with both full flow and bypass elements in one can.
- Plate type engine oil cooler.
- Fuel filter with drain.
- Optional wet and dry exhaust elbows available.

L1276A2
Single Side Service.

Engine Block

- Six cylinder, in-line, four cycle, liquid cooled, overhead cam, four valve, marine diesel with a heavy-duty, cast iron, industrial-grade engine block.
- Replaceable, wet type cylinder liners are hardened and precision machined for long life. Engine is rebuildable to original factory specifications.
- Liquid cooled cylinder liner top reduces temperatures by up to 130°F (72°C) for durability and head gasket life.
- Balanced, forged crankshaft with induction hardened journals for long life.
- Replaceable valve seats and guides.
- Four valves per cylinder increase air flow and allow unit injector to be placed in the center of the cylinder for an optimal fuel spray pattern. Electronic fuel valve for precise fuel delivery.



- Overhead camshaft reduces the valve train parts and improves performance. Camshaft is gear driven; no chains or timing belt to worry about. Large camshaft journals and bearings for long life. Large roller cam followers.
- Cast aluminum, "floating" valve cover blocks valve train noise. Cover is removable with three bolts for quick service access.
- Articulated pistons with high strength steel crown and aluminum skirt for long life under high loads.
- Torsional crankshaft vibration damper.
- SAE 1 flywheel housing is standard.

Electronic Fuel Injection System

- Electronic engine control unit includes fuel temperature compensation
- Engine diagnostics, monitors critical engine functions.

- Electronically controlled unit injectors provide precise fuel delivery with variable timing for excellent fuel economy and performance. Pilot injection reduces cold start smoke and noise.
- Camshaft driven, gear type fuel pump.
- High capacity fuel filter with air bleed, drain, manual fuel priming pump and water sensor.



Cooling System

- Cooling system available in heat exchanger or keel cooled configuration.
- Two thermostats for safety and quicker warm-ups.
- Cast-iron exhaust manifold has double pass jacket water flow for even temperature control, fast warm-up and no hot spots. Manifold is in the main, full flow, jacket water circuit.
- Gear driven, coolant circulation pump.

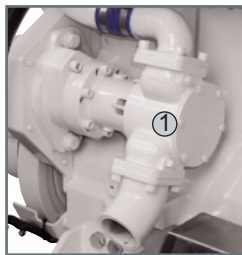


- Large, cast expansion tank. Easy coolant fill. No welds to break.
- Electronically controlled, unit type, fuel injectors protected by valve cover. Precise fuel injection, improved fuel economy and low emissions.
- Closed loop crankcase vent keeps oil vapors inside engine.
- Air filter silences intake.
- Cupro-nickel engine cooling heat exchanger.
- Cast bronze and stainless steel seawater piping.
- Cupro-nickel gear oil cooler
- Jacket water aftercooler for increased output.
- 24 volt starter placed high and dry.
- Gear driven, SAE A, 9 tooth auxiliary drive provides up to 75 foot pounds of torque to power hydraulic pumps.
- Beltguard for operator safety.
- Electronic controls. Water resistant module protects engine control unit for electronic fuel injection and ESP engine system profiler.
- Gear driven, bronze and stainless seawater pump. No belt. Easy impeller change.
- Optional secondary oil fill

L1276A2 Non Service Side

Make a good engine block into a great marine engine.

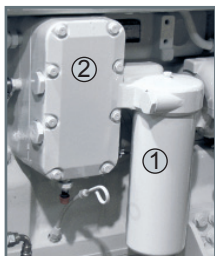
- Heat exchanger cooling includes: (1) Gear driven, flexible impeller seawater pump; no belts to replace. (2) Easy to clean, tube-type heat exchanger is cupro-nickel for long life. (3) Cast expansion tank. No welds to break. Brass filler neck. (4) Bronze and stainless steel seawater piping.



- Cupro-nickel transmission oil cooler (5) uses thermostatically controlled engine coolant for constant gear temperature to prevent condensation.
- Zinc anodes for electrolysis protection.

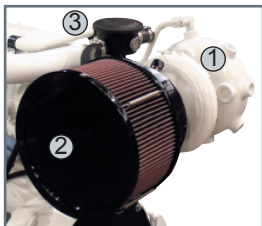
Lubrication System

- (1) Spin-on oil filter has a full flow and a bypass element to trap both small and large contaminants and water.
- (2) Plate-type, full flow oil cooler uses engine coolant to reduce oil temperature and thermal breakdown.
- 500 hour oil change when using specified oil and fuel.
- Multiple oil fill and dip stick locations provide either side service access.
- Positive displacement gear-type oil pump.
- Oil spray cooling reduces piston crown temperature for longer life.
- Large capacity oil pan.



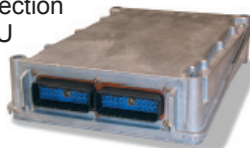
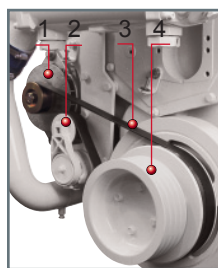
Air System

- US EPA Tier II and IMO exhaust emissions compliant.
- Turbocharged and aftercooled for increased power and performance.
- Turbocharger turbine housing (1) is jacket water cooled for safety.
- Dry air filter (2) protects engine and silences intake noise.
- Air-Sep® closed crankcase vent (3) returns oil vapor to engine oil pan for a clean engine room.
- Two pass, jacket water cooled, charge air aftercooler. Using thermostatically controlled jacket-water instead of seawater normalizes combustion air temperatures to avoid over cooling under light load conditions.



ESP and DC Electrical System

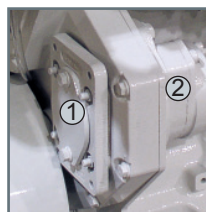
- 24 volt, standard ground electrical system with 24-volt / 75-amp alternator (1) and starter.
- Eight groove poly-vee drive belt (3) with self tensioner (2) powers the alternator.
- 4 groove pulley (4) is optional.
- The Engine Control Unit (ECU) is housed in a water resistant module. It controls the 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.



- Instrument panel has tachometer, DC volt meter, hour meter, coolant temperature and oil pressure gauges, light rheostat, stop button and key switch. Warning lights and audible alarm for low oil pressure and high water temperature.
- Engine and panel are prewired. 20-foot wire harness with plug-ins is standard.

Special Equipment

- Alternator belt guard protects operator.
- Sparkling white IMRON® polyurethane paint protection. Excellent service visibility.
- Operator's and parts manuals.
- Auxiliary Drives: Gear driven, SAE A, 9 tooth spline auxiliary drive (1) provides up to 75 foot lbs of torque to run hydraulic pumps. On keel cooled engines only, an additional gear driven, SAE B, 13 tooth spline, auxiliary drive (2) provides up to 131 foot lbs of torque. **Note:** if both drives are used the maximum combined total torque available is 131 ft lbs.



L1276A2 Accessories and Options

Use these components to make your Luger 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.
- 40 and 60 foot wiring harness extensions.

- High output primary alternators: 24V/100 A or 24V/175 A.
- Second alternator: 24V/75A or 12V/140A
- DC electrical systems. 24 V isolated ground. 12V isolated or standard ground.



- Wet Exhaust: 0-15° and 15-75° from vertical, 6" and 8" stainless steel wet exhaust elbows.



- Dry exhaust: 5" and 6" dry exhaust elbows. 5" x 24" and 6" x 24" stainless steel exhaust compensators. 5" x 24" and 6" x 24" stainless steel exhaust flex. Turbo outlet weld flange.

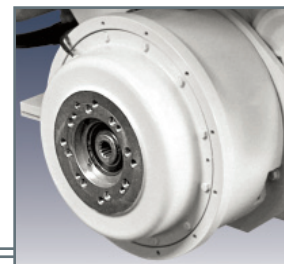


- Oil change pump.
- SAE 1 rear flywheel housing Std. SAE 2 Opt.
- Racor fuel filters.

- Crankshaft pulleys: 3-A/B or 4-A grooves.
- Twin Disc or ZF marine gears. Trolling valves. Shaft couplings.
- Spare parts kits.
- Flexible vibration isolating engine mounts.

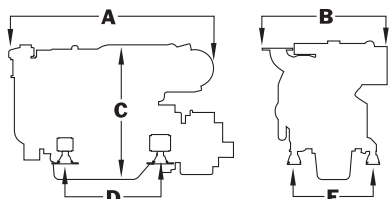


- Coolant level sensor.
- Front PTO with 12 or 24 volt electric clutch and SAE C splined pump mount pad. Provides up to 475 foot pounds intermittent, 400 continuous of torque to power your vessel's hydraulic system.



L1276A2 Specifications and Installation Data

Output rating	CONTINUOUS	MEDIUM	HIGH OUTPUT
FWHP (kW)	340 (252)	425 (315)	525 (389)
Maximum RPM	1800	2100	2100
Cylinders / Configuration / Cycle	6 / Inline / 4	6 / Inline / 4	6 / Inline / 4
Displacement CID (ltr)	763 (12.5)	766 (12.5)	766 (12.5)
Aspiration	All Models: Turbocharged Aftercooled		
Bore x Stroke in (mm)	All Models: 5 x 6.5 (127 x 165)		
Cooling (General)			
Coolant circ pump flow - US gal (ltr)	73 (232)	85 (277)	85 (277)
Heat rejection to jacket water - BTU-min	6,690	8,363	10,331
Cooling (Heat Exchanger)			
HE engine coolant capacity - US gal (ltr)	14.25 (54)	14.25 (54)	14.25 (54)
Rawwater intake/discharge dia. - in (mm)	3 (75)	3 (75)	3 (75)
Rawwater pump flow - gpm (lpm)/rpm	92 (348)	99 (374)	99 (374)
Rawwater pump max. suction head - in (m)	39 (1)	39 (1)	39 (1)
Max. raw water temp. at inlet -°F (°C)	86° (30°)	86° (30°)	86° (30°)
Cooling (Keel Cooled)			
Based on 70° F seawater and minimum full boat speed of 8 knots.			
Return water from keelcooler	70°-130° F.	70°-130° F.	70°-130° F.
KC engine coolant capacity - US gal (ltr)	11.75 (44)	11.75 (44)	11.75 (44)
Water hose inside diameter - in (mm)	3 (75)	3 (75)	3 (75)
Head diameter - in	All Models: 2" NPT or 3" hose barb		
Turbo tube length - ft (m)	48 (14.6)	64 (19.5)	80 (24.4)
1 in. plain round tube length - ft (m)	112 (34.1)	140 (42.7)	174 (53)
Skin cooler aluminum - sq ft (m ²)	51 (4.7)	64 (5.9)	80 (7.4)
Skin cooler steel - sq ft (m ²)	170 (15.8)	212 (19.7)	263 (24.4)
Electrical			
Voltage	All Models: 24V standard (12V optional)		
Min. battery capacity - 24 volt	All Models: 2 x 225 amp hours - 1150 CCA		
Battery cable size up to 10 ft run	"00"	"00"	"00"
Standard panel harness length - ft (m)	All Models: 20 ft (6m) std, 40 & 60 ft optional		
Air and Exhaust			
Engine air consumption - cfm (m ³ /min)	816 (23.1)	1029 (29.1)	1264 (35.8)
Min. engine room vent area - sq in (m ²)	240 (0.16)	301 (0.19)	370 (0.24)
Exhaust gas flow at - cfm (m ³ /min)	1819 (52)	2243 (63.5)	2815 (79.7)
Exhaust gas temperature -°F (°C)	738 (392)	725 (385)	736 (391)
Max. exhaust back pressure - in (mm) H ₂ O	30 (762)	30 (762)	30 (762)
Suggested dry exhaust I.D. - in (mm)	5(125)	6(150)	6(150)
Suggested wet exhaust I.D. - in (mm)	8(203)	8(203)	8(203)
Fuel and Oil			
Minimum fuel suction line - in (mm)	0.5 (12)	0.5 (12)	0.5 (12)
Minimum fuel return line - in (mm)	0.375 (10)	0.375 (10)	0.375 (10)
Maximum fuel pump head - in (m)	39 (1)	39 (1)	39 (1)
Crankcase oil capacity - US qts (ltr)	44 (42)	44 (42)	44 (42)
Other Data			
Engine rotation (facing flywheel)	All Models: Counter-Clockwise		
Flywheel housing size	All Models: Std. SAE 1, 14" Std. (SAE 2, 11.5" opt)		
Optional front PTO size	All Models: SAE 4, 10" or SAE 3, 11.5"		
Max operating down angle - front/rear	0°/12°	0°/12°	0°/12°
Approximate Weight*			
Dry weight with HE, no gear - lbs (kg)	3210 (1456)	3210 (1456)	3210 (1456)
Dry weight, KC, no gear - lbs (kg)	3093 (1403)	3093 (1403)	3093 (1403)

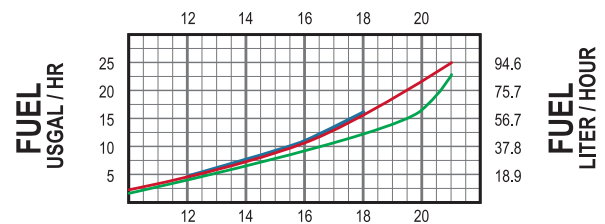
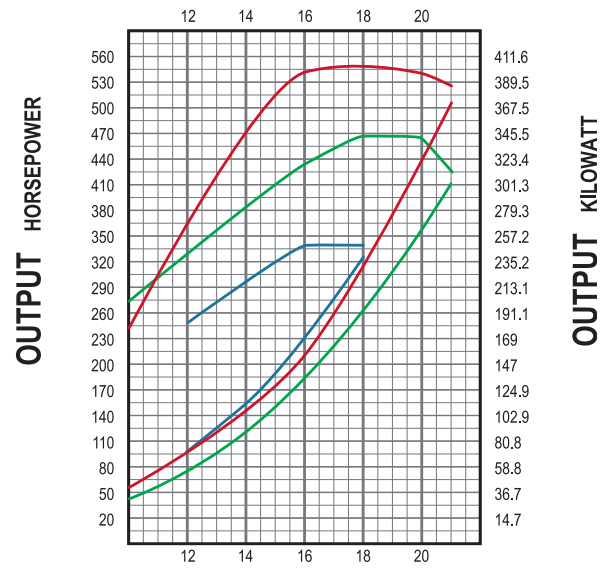
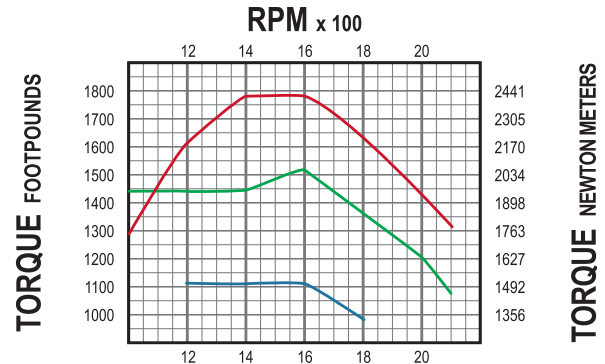


Dimensions	inch (mm)
A length	69.94 (1776)
B width	46.02 (1169)
C height	41.31 (1049)
D mounts	34.55 (878)
E mounts	26.0 (660)

*Do NOT use for installation. Contact factory for current installation drawings.

L1276A2 Performance Data

High Output Rating ¹ FWHP / kW / @ rpm	525 / 389 / 2100
Medium Duty Rating ¹ FWHP / kW / @ rpm	425 / 315 / 2100
Continuous Duty Rating FWHP / kW / @ rpm	340 / 252 / 1800



RATING	CONTINUOUS				MEDIUM DUTY ¹				HIGH OUTPUT ¹			
	A	B	C	D	A	B	C	D	A	B	C	D
Curve												
RPM												
ft/lbs												
fw hp												
pdhp												
gph												
1000	--	--	--	--	1439	274	44.4	2.2	1291	246	55	2.8
1200	1120	256	97.5	4.9	1440	329	76	3.8	1609	368	95	4.6
1400	1114	297	154	7.5	1441	384	122	6.1	1775	473	151	7.3
1600	1116	340	231	11.4	1517	432	181	9.2	1775	541	224	11.4
1800	992	340	328	16.3	1351	463	259	12.6	1628	558	318	16.1
2000	--	--	--	--	1211	461	354	17.3	1435	546	438	22.0
2100	--	--	--	--	1062	425	410	23.4	1315	525	507	25.5

Notes: 1. Max. cruise rpm for High Output and Medium Duty ratings is 1900 or 200 rpm below highest attainable rpm-whichever is lower.
 Curves: A. Maximum torque at flywheel. B. Flywheel power. Prop shaft power is 3-3.5% lower due to marine reduction gear power loss. C. Theoretical prop power draw (3.0 exponent).
 D. Fuel consumption based on theoretical propeller HP draw. Your fuel consumption will vary higher or lower depending on your vessel and operating conditions.

Dealer

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