M99A13L

FEATURES AND BENEFITS

ENGINE BLOCK

- US EPA Tier III compliant.
- Four cylinder, four cycle, in-line, liquid cooled, overhead valve, marine diesels based on heavy-duty industrial engine blocks.
- Balanced, forged crankshaft with induction hardened journals and rolled fillets for long life.
- Replaceable, wet cylinder liners for long life and low rebuild costs.
- Bimetallic valves with chrome stems and rotators.
- Replaceable valve seats and guides.
- Three ring aluminum alloy pistons with Ni-Resist insert for the top ring. Keystone piston ring reduces carbon buildup under light loads.
- A single poly-vee drive belt powers the alternator and jacket-water pump.

FUEL SYSTEM

- High pressure common rail fuel injection for smooth, clean delivery.
- Direct fuel injection system.
- Ring clamp fuel filters with air bleed and drain.
- Electric fuel pump integrated into primary fuel filter. Computer controlled priming for ease of operation.

LUBRICATION SYSTEM

- Positive displacement gear-type oil pump.
- Full flow, spin-on oil filter.
- Oil spray cooling reduces piston crown temperature.
- Jacket-water, plate-type, full flow oil cooler.
- Large capacity oil pan.
- Closed loop crankcase vent.

AIR SYSTEM

- Dry air filter silences intake noise.
- Turbocharger with jacket water cooled turbine housing.

COOLING SYSTEM

- Heat exchanger with keel cooled option.
- Gear driven sea water pump with self-priming flexible impeller. Bronze with stainless steel shaft.
- Cast iron expansion tank.
- Two thermostats for quick warm-ups and safety.
- Cast-iron exhaust manifold for reliable temperature control.

ESP AND DC ELECTRICAL SYSTEM

- Negative ground, 12 volt DC system has circuit breaker, starter motor and alternator with regulator.
- Low oil pressure and high coolant temperature safety shutdowns.
- Optional control panels help you specify the amount and type of information required. Comprehensive list of optional alarms and safety shutdowns.
- Optional DC logic system for simplified maintenance.
- Optional pre-wired engine, panel with terminal strips.

AC GENERATOR

- Direct coupled, single bearing, 12 lead, reconnectable AC generator. Maintenance free brushless design.
- All NL generators meet or exceed class society standards with Class "H" insulation, accessible diodes, oversized ball bearings, marine grade shafts and conservative 90°/50° heat rise ratings.
- Engines and generators are torsionally matched for long life.
- Automatic voltage regulator; ±0.5% regulation over the entire range from no load to full load.
- Configured for 0% isochronous droop with integral electronic governor control supplied by ECU.

SPECIAL EQUIPMENT

- PMG option for 300% short circuit protection.
- Welded steel base frame.
- Sparkling white IMRON® polyurethane paint.
- Operator's and parts manuals.
- Optional sound enclosure for industry best sound and vibration attenuation in a compact design.

AC Output⤫	**M99A13L**
60 Hz, 1800 RPM* kW	**99 kW**
Voltage regulation	1%
Frequency droop control	Isochronous 0%
Phase and power factor	Three phase -0.8 power factor std.
Generator full load temperature rise	90°C temperature rise at 50°C ambient
Lugger Diesel Engine Data	
Inline cylinders/aspiration/operating cycle**	I-4 / Turbo & Aftercooled / 4
Displacement - cid (liter)	276 (4.5)
Bore/stroke - inches (mm)	4.19/5 (106/127)
Fuel injection pump type and control	Electronic (HPCR)
Cooling System (Heat exchanger standard)	
Heat rejection to jacket water - BTU min	7,001
Freshwater pump capacity - gpm (lpm)***	40.9 (155)
Approximate keel coolant capacity - gal (ltr)	5.2 (20)
Heat exchanger connection size in/out - inch	2.0
Heat exchanger approx. coolant capacity - gal (ltr)	4.4 (17)
Seawater pump capacity - gpm(lpm)	52 (197)
Max seawater pump suction head lift - ft (m)	10 (3)
Sea water pump inlet hose ID - in (mm)	2.0 (51)
Min. seawater inlet/discharge thru-hull - in (mm)	2.0 (51)
DC Electrical (12V standard, 24V optional)	
DC starting voltage - standard (optional)	12 (24)
Min battery capacity - amp hr/12V CCA (24V CCA)	200/1100 (750)
Starter rolling amps @ 0°C - 12VDC (24VDC)	920 (600)
12 Volt battery cable size up to 10 ft (3m)	2/0
Air	
Air consumption - cfm (m^3/m)	301 (8.5)
Approx heat radiated to air - BTU/min	826
Generator cooling air flow 1&3Ø - cfm	700
Exhaust gas volume - cfm (m^3/m)	685 (19.4)
Exhaust gas temp - F° (C°)	813 (434)
Max. exhaust back Pressure - inch H^2O (mm H^2O)	30 (762)
Wet exhaust elbow OD- in (mm)	4.5 (114)
Dry exhaust elbow in (mm)	4 (102)
Fuel	
Fuel injection pump type and control	HPCR
Min suction line I.D. - in (mm)	3/8 (10)
Min return line I.D. - in (mm)	1/4 (6)
Max fuel transfer pump suction lift - in (mm)	80 (2032)
Max fuel flow to transfer pump - gph	40.0
Specific fuel consumption max load (110%) - lbs.hp.hr	0.366
Approx. fuel rate✓ at full load (100%) - gph (lph)	7.3 (27.8)
Max Engine Operating Angle	
Continuous (with separate expansion tank)	30°
Intermittent (2 minutes)	45°
Dimensions and Weight (Do not use for installation. Contact factory for installation drawings and info)	
Length - inches (mm)	75.0 (1905)
Width - inches (mm)	38.0 (965)
Height - inches (mm)	39.4 (1001)
Weight - pounds (kilograms)	3107 (1409)
Dimensions and Weight w/Optional Sound Enclosure (Contact factory for installation drawings and info)	
Length - inches (mm)	75.0 (1905)
Width - inches (mm)	38.0 (965)
Height - inches (mm)	40.9 (1039)
Weight - pounds (kilograms)	3599 (1632)

⤫ Prime kW ratings for 3Ø at 0.8 power factor. Consult factory for deration factors.
✓ Based on prime kW rating at 1800 and 1500 RPM. Fuel rate may vary depending on operating conditions.

Northern Lights, Inc. is ISO 9001 certified through Lloyds Register Quality Assurance

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