M116A13L

FEATURES AND BENEFITS

ENGINE BLOCK

- Six 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.
- Torsional crankshaft dampers help ensure smooth operation.
- 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 systems
- 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.
- Jacket-water, plate-type, full flow oil cooler reduces heat and prevents lube oil breakdown.
- Large capacity oil pan.
- A closed loop crankcase vent traps oil vapor to keep the engine room clean.

AIR SYSTEM

- Dry air filter silences intake noise.
- Turbocharger with jacket water cooled turbine housings for safety.
- Jacket water aftercooler provides optimized combustion and output.

COOLING SYSTEM

- Heat exchanger cooled.
- Gear driven sea water pump with flexible impeller made of bronze and stainless steel.
- Cast iron expansion tank with brass filler neck.
- 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. Relay board and senders for gauged panels standard.
- Standard S-3B remote control panel with engine hour meter, coolant temperature gauge, oil pressure gauge, DC voltage meter, start-stop and shutdown bypass switches. Additional optional panels help you specify the amount and type of information delivered.
- Low oil pressure and high coolant temperature safety shutdown system.

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 isochronous operation with integral electronic governor control supplied by ECU. Frequency droop available upon request.

SPECIAL EQUIPMENT

- IMO Tier 3 exempt
- US EPA Tier III compliant (60 Hz)
- IMO Tier 2 compliant (50 Hz)
- Welded steel base frame
- Belt guard
- Hydrolastic vibration isolation mounts
- Sparkling white two-part polyurethane paint
- Operator's and parts manuals

AC Output *		
60 Hz, 1800 RPM	**116 kW**	
50 Hz, 1500 RPM	**116 kW**	
Voltage regulation	+/- 0.5%	
Frequency droop control	Isochronous, 0.5 Hz, 1.7 Hz, 3.0 Hz	
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-6 / Turbo & Aftercooled / 4	
Displacement - cid (liter)	414 (6.8)	
Bore/stroke - inches (mm)	4.19/5 (106/127)	
Fuel injection pump type and control	Electronic (HPCR)	
Cooling System (Heat exchanger cooled)	**60 Hz**	**50 Hz**
Heat rejection to jacket water - BTU min	9,580	7,980
Freshwater pump capacity - gpm (lpm)	52.0 (197)	42.9 (162)
Approximate coolant capacity - gal (ltr)	9.0 (34)	9.0 (34)
Seawater Pump Flow - gpm(lpm)	51 (192)	43 (162)
Max seawater pump suction head lift - ft (m)	9.8 (3)	9.8 (3)
Sea water pump inlet hose ID - in (mm)	2.0 (51)	2.0 (51)
Min. seawater inlet/discharge thru-hull - in (mm)	2.0 (51)	2.0 (51)
DC Electrical (12V standard, 24V optional)		
DC starting voltage - standard (optional)	12 (24)	
Min battery capacity - 12V CCA (24V CCA)	925 (625)	
Starter rolling amps @ 0°C - 12VDC (24VDC)	920 (600)	
12 Volt battery cable size up to 10 ft (3m)	000	
Air	**60 Hz**	**50 Hz**
Air consumption - cfm (m^3/m)	510 (14.4)	325 (9.2)
Approx heat radiated to air - BTU/min (kW)	1,085 (19)	966 (17)
Generator cooling air flow 1 & 3 Ø - cfm (m^3/m)	1,100(31)	915 (26)
Exhaust gas volume - cfm (m^3/m)	1,036 (29.3)	747 (21.2)
Exhaust gas temp - F° (C°)	694 (368)	822 (439)
Max. exhaust back pressure - inch H^2O (mm H^2O)	30 (762)	30 (762)
Wet exhaust elbow OD- in (mm)	5 (127)	5 (127)
Dry exhaust elbow in (mm)	4 (102)	4 (102)
Fuel		
Fuel injection pump type and control	High Pressure Common Rail	
Min suction line size - in (mm)	0.31 (8)	
Min return line size - in (mm)	0.31 (8)	
Max fuel transfer pump suction lift - ft (m)	7.9 (2.4)	
Max fuel flow to transfer pump - gph	42.8	
Specific fuel consumption full load 60 hz - lbs/hp-hr	0.411	
Specific fuel consumption full load 50 hz - lbs/hp-hr	0.365	
Approx. fuel rate** at 60 Hz full load - gph (lph)	10.0 (38.0)	
Approx. fuel rate** at 50 Hz full load - gph (lph)	8.9 (33.8)	
Max Engine Operating Angle		
Continuous (with separate expansion tank)	25	
Intermittent (2 minutes)	35	
Dimensions and Weight^	**Open Genset**	**w/ Enclosure**
Length - inches (mm)	84.4 (2144)	90.0 (2286)
Width - inches (mm)	38.3 (973)	42.0 (1067)
Height - inches (mm)	39.84 (1012)	42.0 (1067)
Weight - pounds (kilograms)	3405 (1544)	4122 (1869)

***.** Prime kW ratings for 3 Ø 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.

^ Dimensions provided for information only. Do not use for installation. Contact factory for installation drawings and info.

4420 14th Ave. NW., Seattle WA 98107
Tel: (206) 789-3880 • 1-800-762-0165 • Fax: (206) 782-5455

LRQA CERTIFIED ISO 9001