



# M150A13

## 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

- 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 \*

|                                      |                                       |
|--------------------------------------|---------------------------------------|
| <b>60 Hz, 1800 RPM kW</b>            | <b>150 kW</b>                         |
| <b>50 Hz, 1500 RPM kW</b>            | <b>125 kW</b>                         |
| 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)             |              |
| <b>Cooling System (Heat exchanger cooled)</b>     | <b>60 Hz</b>                  | <b>50 Hz</b> |
| Heat rejection to jacket water - BTU min          | 10,473                        | 8,498        |
| Freshwater pump capacity - gpm (lpm)              | 51.2 (194)                    | 42.4 (161)   |
| Approximate cooling capacity - gal (ltr)          | 9.0 (34)                      | 9.0 (34)     |
| Seawater Pump Flow - gpm(lpm)                     | 46 (173)                      | 33 (124.9)   |
| 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

|                                                 |              |              |
|-------------------------------------------------|--------------|--------------|
|                                                 | <b>60 Hz</b> | <b>50 Hz</b> |
| Air consumption - cfm (m³/m)                    | 547 (15.5)   | 353 (10.0)   |
| Approx heat radiated to air - BTU/min           | 2,040        | 1,700        |
| Generator cooling air flow 1 & 3 Ø - cfm (m³/m) | 1,100(31)    | 915 (26)     |
| Exhaust gas volume - cfm (m³/m)                 | 1,123 (32)   | 828 (23)     |
| Exhaust gas temp - F° (C°)                      | 703 (373)    | 849 (454)    |
| Max. exhaust back pressure - inch H²O (mm H²O)  | 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 - in (mm)                                | 0.31 (8)                  |  |
| Min return line - 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 max load 60 hz - lbs/hp-hr | 0.388                     |  |
| Specific fuel consumption max load 50 hz - lbs/hp-hr | 0.363                     |  |
| Approx. fuel rate** at 60 Hz full load - gph (lph)   | 12.2 (46.1)               |  |
| Approx. fuel rate** at 50 Hz full load - gph (lph)   | 9.5 (36.1)                |  |

### Max Engine Operating Angle

|                                           |    |
|-------------------------------------------|----|
| Continuous (with separate expansion tank) | 25 |
| Intermittent (2 minutes)                  | 35 |

### Dimensions and Weight

|                             |                    |                     |
|-----------------------------|--------------------|---------------------|
|                             | <b>Open genset</b> | <b>w/ enclosure</b> |
| 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) | 3495 (1585)        | 4212 (1911)         |

\*. 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.



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