

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.
- Diaphragm-type, mechanical fuel transfer pump with manual priming lever.

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 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 housing for safety.

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.

× 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.

AC Output[×]

60 Hz, 1800 RPM¹ kW

| | |
|-------------------------|-----------------------------------|
| Voltage regulation | 0.5% |
| Volts/amperes | 240V/208A |
| Frequency droop control | Isochronous 0% |
| Phase and power factor | Three phase 0.8 power factor std. |

Generator full load temperature rise

Lugger Diesel Engine Data

| | |
|---|-----------------------|
| Inline cylinders/aspiration/operating cycle | I-4 / Turbocharged/ 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, keel cooling optional)

| | |
|---|------------|
| Heat rejection to jacket water - 1800 rpm BTU min | 4,548 |
| Freshwater pump capacity - 1800 rpm/gpm (lpm) | 30.9 (117) |
| KC approximate cooling capacity - gal (ltr) | 4.5 (17) |
| HE approximate cooling capacity - gal (ltr) | 3.7 (14) |
| Seawater pump capacity - 1800 rpm/gpm(lpm) | 24 (91) |
| Max seawater pump suction head lift - ft (m) | 10 (3) |
| Sea water pump inlet hose ID - in (mm) | 1.25 (32) |
| Min. seawater inlet/discharge thru-hull - in (mm) | 1.25 (32) |

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 - 1800 rpm/cfm (m³/m) | 215 (6.1) |
| Approx heat radiated to air - 1800 rpm/BTU/min | 596 |
| Generator cooling air flow 1&3Ø - 1800 rpm cfm | 700 |
| Exhaust gas volume - 1800 rpm/cfm (m³/m) | 521 (14.7) |
| Exhaust gas temp - 1800 rpm/F° (C°) | 846 (452) |
| Max. exhaust back pressure - inch H ² O (mm H ² O) | 30 (762) |
| Wet exhaust elbow OD- in (mm) | 4 (102) |
| Dry exhaust elbow in (mm) | 4 (102) |

Fuel

| | |
|---|---------------------------|
| Fuel injection pump type and control | High Pressure Common Rail |
| Min suction - in (mm) | 3/8 (10) |
| Min return line - in (mm) | 3/8 (10) |
| Max fuel transfer pump suction lift - ft (m) | 7.9 (2.4) |
| Max fuel flow to transfer pump at 1800 rpm - gph | 19.5 |
| Specific fuel consumption max load 1800 rpm - lbs.hp.hr | 0.394 |
| Approx. fuel rate ✓ at 1800 RPM full load - gph (lph) | 4.3 (16.3) |
| Fuel supply and return- max pressure PSI. Height - ft (m) | 2.9 |
| Fuel supply and return. Height - ft (m) | 7.9 (2.4) |

Max Engine Operating Angle

| | |
|---|-----|
| Continuous (with separate expansion tank) | 30° |
| Intermittent (2 minutes) | 45° |

Dimensions and Weight - Low Profile 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) | 38.2 (970) |
| Weight - pounds (kilograms) | 2315 (1050) |

Dimensions and Weight - w/optional enclosure 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) | 40.9 (1039) |
| Weight - pounds (kilograms) | 2849 (1292) |

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Information and dimensions subject to change without notice.

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