

### 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<sup>×</sup>

#### 60 Hz, 1800 RPM<sup>1</sup> 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 (m <sup>3</sup> /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 (m <sup>3</sup> /m)	521 (14.7)
Exhaust gas temp - 1800 rpm/F° (C°)	846 (452)
Max. exhaust back pressure - inch H <sub>2</sub> O (mm H <sub>2</sub> 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)