

## P222LE-II G-DRIVE

### ◎ POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
<b>1500</b>	<b>Standby Power</b>	<b>652</b>	<b>886</b>



- The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271.
- This Engine should be applied only to provide a basic support function to a building electrical supply in the event of a main power network failure. This Engine should never be applied except in true emergency power outages.
- Standby power is available up to a maximum of 100 hours per year. The permissible average power output over 24 hours of operation shall not exceed 70% of the standby power rating.
- The 100% load capability is available for a period of 1 hour within a 12 hour period of operation. Total operating time at the 100% load power shall not exceed 10 hours per year.
- No overload is permitted.

### ◎ MECHANICAL SYSTEM

○ Engine Model	P222LE-II
○ Engine Type	V-type 4 cycle, water cooled Turbo charged & intercooled (air to air)
○ Combustion type	Direct injection
○ Cylinder Type	Replaceable wet liner
○ Number of cylinders	12
○ Bore x stroke	128(5.04) x 142(5.59) mm(in.)
○ Displacement	21.927 (1,338.0) lit.(in <sup>3</sup> )
○ Compression ratio	14.0 : 1
○ Firing order	1-12-5-8-3-10-6-7-2-11-4-9
○ Injection timing	13° BTDC (50Hz)
○ Compression pressure	Above 28 kg/cm <sup>2</sup> (398 psi) at 200rpm
○ Dry weight	Approx. 1,591 kg (3,507 lb)
○ Dimension (LxWxH)	1,717 x 1,389 x 1,288 mm (67.6 x 54.7 x 50.7 in.)
○ Rotation	Counter clockwise viewed from Flywheel
○ Fly wheel housing	SAE NO.1
○ Fly wheel	Clutch NO.14

### ◎ MECHANISM

○ Type	Over head valve
○ Number of valve	Intake 1, exhaust 1 per cylinder
○ Valve lashes at cold	Intake 0.3mm (0.0118 in.) Exhaust 0.4mm (0.0157 in.)

### ◎ VALVE TIMING

	Opening	Close
○ Intake valve	24 deg. BTDC	36 deg. ABDC
○ Exhaust valve	63 deg. BBDC	27 deg. ATDC

### ◎ FUEL CONSUMPTION

○ Standby Power (lit/hr)	<b>1,500 rpm</b>
25%	41.7
50%	79.5
75%	119.3
100%	162.6

### ◎ FUEL SYSTEM

○ Injection pump	Bosch in-line "P" type
○ Governor	Electric type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi hole type
○ Opening pressure	285 kg/cm <sup>2</sup> (4,054 psi)
○ Fuel filter	Full flow, cartridge type
○ Used fuel	Diesel fuel oil

### ◎ LUBRICATION SYSTEM

○ Lub. Method	Fully forced pressure feed type
○ Oil pump	Gear type driven by crankshaft
○ Oil filter	Full flow, cartridge type
○ Oil pan capacity	High level 40 liters ( 10.6 gal.) Low level 33 liters ( 8.7 gal.)
○ Angularity limit	Front down 20 deg. Front up 20 deg. Side to side 15 deg.
○ Lub. Oil	Refer to Operation Manual

◎ **COOLING SYSTEM**

- Cooling method Fresh water forced circulation
- Water capacity 23 liters ( 6.07 gal.)  
(engine only)
- Pressure system Max. 0.5 kg/cm<sup>2</sup> ( 7.11 psi)
- Water pump Centrifugal type driven by belt
- Water pump Capacity 508 liters ( 134.2 GPM)/min  
at 1,800 rpm (engine only)
- Thermostat Wax – pellet type  
Opening temp. 71°C  
Full open temp. 85°C
- Cooling fan Blower type, plastic  
915 mm diameter, 7 blade

◎ **ELECTRICAL SYSTEM**

- Charging generator 24V x 45A alternator
- Voltage regulator Built-in type IC regulator
- Starting motor 24V x 7.0kW
- Battery Voltage 24V
- Battery Capacity 200 AH (recommended)
- Starting aid (Option) Block heater

◎ **ENGINEERING DATA**

- Water flow 433 liters/min @1,500 rpm
- Heat rejection to coolant 59.4 kcal/sec @1,500 rpm
- Heat rejection to CAC 25.7 kcal/sec @1,500 rpm
- Air flow 40.3 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas flow 119.9 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas temp. 635 °C @1,500 rpm
- Max. permissible restrictions
  - .Intake system 220 mmH<sub>2</sub>O initial  
635 mmH<sub>2</sub>O final
  - .Exhaust system 600 mmH<sub>2</sub>O max.

◆ **CONVERSION TABLE**

- in. = mm x 0.0394                      lb/ft = N.m x 0.737
- PS = kW x 1.3596                      U.S. gal = lit. x 0.264
- psi = kg/cm<sup>2</sup> x 14.2233                kW = 0.2388 kcal/s
- in<sup>3</sup> = lit. x 61.02                        lb/PS.h = g/kW.h x 0.00162
- hp = PS x 0.98635                      cfm = m<sup>3</sup>/min x 35.336
- lb = kg x 2.20462

