

# P222LE-S G-DRIVE

## ◎ POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Prime Power	625	850
	Standby Power	682	927
1500	Prime Power	552	750
	Standby Power	603	820



- . The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271.
- . Ratings are based on ISO 8528. (If you need more information, contact the sales organization.)
  - **Prime power** is available for an unlimited number of hours per year in a variable load application.  
The permissible average power output over 24 hours of operation shall not exceed 70% of the prime power rating.
  - **Standby power** is available in the event of a utility power outage or under test conditions for up to 200h of operation per year.  
The permissible average power output over 24 hours of operation shall not exceed 70% of the standby power rating.  
No overload is permitted.

## ◎ MECHANICAL SYSTEM

- Engine Model P222LE-S
- 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.(in3)
- Compression ratio 14.6 : 1
- Firing order 1-12-5-8-3-10-6-7-2-11-4-9
- Injection timing 19° BTDC (60Hz) / 20° BTDC (50Hz)
- Compression pressure Above 28 kg/cm2(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

- | ○ Prime Power (lit/hr)   | 1,500 rpm | 1,800 rpm |
|--------------------------|-----------|-----------|
| 25%                      | 38.0      | 42.1      |
| 50%                      | 68.3      | 76.0      |
| 75%                      | 99.8      | 112.3     |
| 100%                     | 130.0     | 151.6     |
| ○ Standby Power (lit/hr) | 1,500 rpm | 1,800 rpm |
| 25%                      | 41.0      | 45.3      |
| 50%                      | 73.8      | 82.5      |
| 75%                      | 107.4     | 122.8     |
| 100%                     | 142.2     | 166.1     |

## ◎ 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/cm2 (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

# P222LE-S G-DRIVE

## ◎ 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   56.6 kcal/sec @1,500 rpm
- Heat rejection to CAC      15.1 kcal/sec @1,500 rpm
- Air flow                    31.8 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas flow          93.9 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas temp.         598 °C @1,500 rpm

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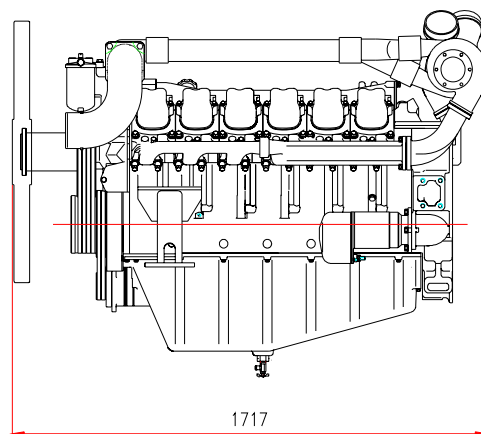
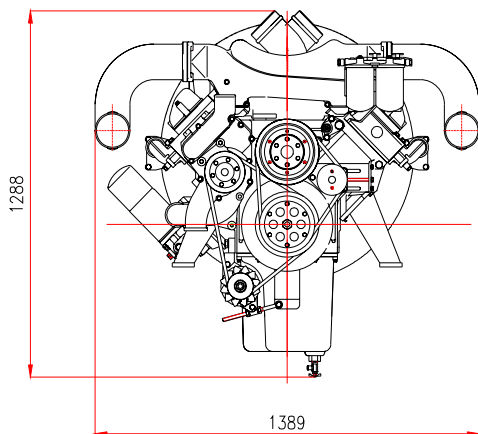
- Water flow                508 liters/min @1,800 rpm
- Heat rejection to coolant   55.7 kcal/sec @1,800 rpm
- Heat rejection to CAC      26.5 kcal/sec @1,800 rpm
- Air flow                    47.1 m<sup>3</sup>/min @1,800 rpm
- Exhaust gas flow          129.4 m<sup>3</sup>/min @1,800 rpm
- Exhaust gas temp.         548 °C @1,800 rpm

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- 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.
- Max. permissible altitude   1500 m

## ◆ 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                  |                                    |



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※ Specifications are subject to change without prior notice