

## P158LE-S G-DRIVE

### ◎ POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Prime Power	441	600
	Standby Power	481	654
1500	Prime Power	402	546
	Standby Power	441	600



Note : -. The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271.

-. Ratings are based on ISO 8528.

→ **Prime power** available at variable load. The permissible average power out put (during 24h period) shall not exceed 70% of the prime power rating.

→ **Standby power** available in the event of a main power network failure. No overload is permitted.

The permissible average power out put (during 24h period) shall not exceed 70% of the Standby power rating.

### ◎ MECHANICAL SYSTEM

○ Engine Model	P158LE-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	8
○ Bore x stroke	128(5.04) x 142(5.59) mm(in.)
○ Displacement	14.618(892.0) lit.(in <sup>3</sup> )
○ Compression ratio	14.6 : 1
○ Firing order	1-5-7-2-6-3-4-8
○ Injection timing	16° BTDC (60Hz) / 12° BTDC ( 50Hz )
○ Compression pressure	Above 28 kg/cm <sup>2</sup> (398 psi) at 200rpm
○ Dry weight	Approx. 961 kg (2,119 lb)
○ Dimension (LxWxH)	1,484 x 1,389 x 1,161.5 mm (58.4 x 54.7 x 45.7 in.)
○ Rotation	Counter clockwise viewed from Flywheel
○ Fly wheel housing	SAE NO.1
○ Fly wheel	Clutch NO.14

### ◎ FUEL CONSUMPTION

○ Prime Power (lit/hr)	<b>1,500 rpm</b>	<b>1,800 rpm</b>
25%	25.9	32.5
50%	49.3	55.2
75%	74.0	82.1
100%	99.5	111.5
○ Standby Power (lit/h)	<b>1,500 rpm</b>	<b>1,800 rpm</b>
25%	28.2	34.8
50%	54.0	59.5
75%	81.5	89.9
100%	109.7	122.7

### ◎ 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

### ◎ 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

### ◎ 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 28 liters ( 7.40 gal.) Low level 26 liters ( 6.86 gal.)
○ Angularity limit	Front down 35 deg. Front up 35 deg. Side to side 35 deg.
○ Lub. Oil	Refer to Operation Manual

### ● COOLING SYSTEM

- Cooling method Fresh water forced circulation
- Water capacity 20 liters ( 5.28 gal.)  
(engine only)
- Pressure system Max. 0.9 kg/cm<sup>2</sup> ( 12.8 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     | 37.2 kcal/sec @1,500 rpm                                       |
| ○ Heat rejection to CAC         | 16.1 kcal/sec @1,500 rpm                                       |
| ○ Air flow                      | 29.3 m <sup>3</sup> /min @1,500 rpm                            |
| ○ Exhaust gas flow              | 82.6 m <sup>3</sup> /min @1,500 rpm                            |
| ○ Exhaust gas temp.             | 560 °C @1,500 rpm  |
| <hr/>                           |  |
| ○ Water flow                    | 508 liters/min @1,800 rpm                                      |
| ○ Heat rejection to coolant     | 41.7 kcal/sec @1,800 rpm                                       |
| ○ Heat rejection to CAC         | 20.3 kcal/sec @1,800 rpm                                       |
| ○ Air flow                      | 34.7 m <sup>3</sup> /min @1,800 rpm                            |
| ○ Exhaust gas flow              | 94.4 m <sup>3</sup> /min @1,800 rpm                            |
| ○ Exhaust gas temp.             | 530 °C @1,800 rpm  |
| <hr/>                           |  |
| ○ Max. permissible restrictions |  |
| - Intake system                 | 220 mmH <sub>2</sub> O initial<br>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                  |                                    |

