

◎ POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Prime Power	497	676
	Standby Power	540	734
1500	Prime Power	443	602
	Standby Power	496	674



- 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	P180LE
○ 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	10
○ Bore x stroke	128(5.04) x 142(5.59) mm(in.)
○ Displacement	18.273(1,115.02) lit.(in3)
○ Compression ratio	15 : 1
○ Firing order	1-6-5-10-2-7-3-8-4-9
○ Injection timing	16° BTDC
○ Compression pressure	Above 28 kg/cm2(398 psi) at 200rpm
○ Dry weight	Approx. 1,175 kg (2,590 lb)
○ Dimension (LxWxH)	1,557 x 1,389 x 1,248 mm (61.3 x 54.7 x 49.1 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 0.25mm (0.0098 in.) Exhaust 0.35mm (0.0138 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%	29.6	34.9
50%	54.8	63.3
75%	81.3	93.4
100%	111.6	128.2
○ Standby Power (lit/hr)	1,500 rpm	1,800 rpm
25%	33.1	38.0
50%	62.0	69.8
75%	93.5	104.8
100%	128.7	144.6

◎ 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/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 35 liters (9.2 gal.) Low level 28 liters (7.4 gal.)
○ Angularity limit	Front down 24 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 21 liters (5.54 gal.)
(engine only)
- Pressure system Max. 0.5 kg/cm² (7.11 psi)
- Water pump Centrifugal type driven by belt
- Water pump Capacity 410 liters (108.2 gal.)/min
at 1,800 rpm (engine)
- 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

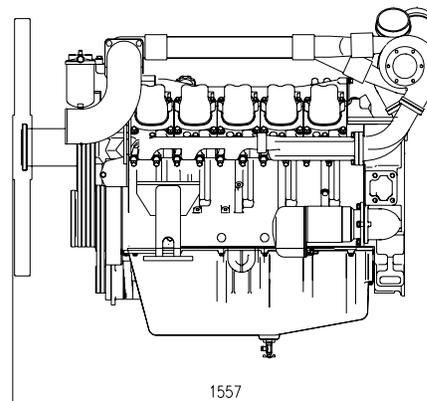
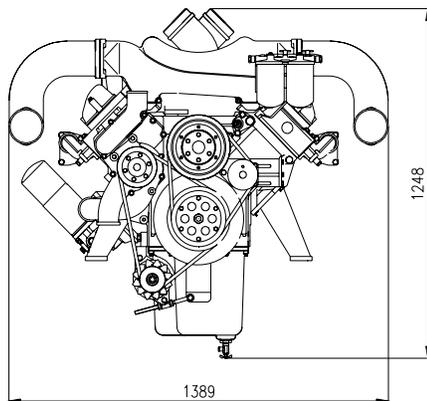
- Charging generator 24V x 45A alternator
- Voltage regulator Built-in type IC regulator
- Starting motor 24V x 7.0kW
- Battery Voltage 24V
- Battery Capacity 200 AH (recommended)
- Starting aid (Option) Block heater

◎ ENGINEERING DATA

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|---------------------------------|--|
| ○ Water flow | 342 liters/min @1,500 rpm |
| ○ Heat rejection to coolant | 43.8 kcal/sec @1,500 rpm |
| ○ Heat rejection to CAC | 19.5 kcal/sec @1,500 rpm |
| ○ Air flow | 31.6 m ³ /min @1,500 rpm |
| ○ Exhaust gas flow | 97.9 m ³ /min @1,500 rpm |
| ○ Exhaust gas temp. | 580 °C @1,500 rpm |
| ○ Water flow | 410 liters/min @1,800 rpm |
| ○ Heat rejection to coolant | 50.2 kcal/sec @1,800 rpm |
| ○ Heat rejection to CAC | 23.3 kcal/sec @1,800 rpm |
| ○ Air flow | 38.9 m ³ /min @1,800 rpm |
| ○ Exhaust gas flow | 114.1 m ³ /min @1,800 rpm |
| ○ Exhaust gas temp. | 606 °C @1,800 rpm |
| ○ Max. permissible restrictions | |
| -. Intake system | 220 mmH ₂ O initial
635 mmH ₂ O final |
| -. Exhaust system | 600 mmH ₂ O max. |
| ○ Max. permissible altitude | 1500 m |

◆ CONVERSION TABLE

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|------------------------------------|------------------------------------|
| 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 ² x 14.2233 | kW = 0.2388 kcal/s |
| in ³ = lit. x 61.02 | lb/PS.h = g/kW.h x 0.00162 |
| hp = PS x 0.98635 | cfm = m ³ /min x 35.336 |
| lb = kg x 2.20462 | |



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※ Specifications are subject to change without prior notice