D1146 G-DRIVE

◎ POWER RATING

Engine Speed rev/min	Type of Operation	Engine Power	
		kWm	Ps
1800	Continuous Power	87	118
	Prime Power	96	130
	Standby Power	105	143
1500	Continuous Power	70	95
	Prime Power	77	105
	Standby Power	85	116

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) shell not exceed 70% of the prime power rating.

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

◎ MECHANICAL SYSTEM

○ Engine Model	D1146
○ Engine Type	In-line 4 cycle, water cooled
	Naturally aspirated
○ Combustion type	Direct injection
○ Cylinder Type	Replaceable dry liner
○ Number of cylinders	6
○ Bore x stroke	111(4.37) x 139(5.47) mm(in.)
○ Displacement	8.071(492.49) lit.(in^3)
○ Compression ratio	17.5 : 1
○ Firing order	1-5-3-6-2-4
○ Injection timing	15° BTDC
○ Compression pressure	Above 28 kg/cm2(398 psi) at 200rpm
○ Dry weight	Approx. 720 kg (1,587 lb)
○ Dimension (LxWxH)	1,224 x 727 x 973 mm (48.2 x 28.6 x 38.3 in.)
○ Rotation	Counter clockwise viewed from Flywheel
○ Fly wheel housing	SAE NO.2
○ Fly wheel	Clutch NO.11 1/2

◎ FUEL CONSUMPTION

○ **Prime Power** (lit/hr)	**1,500 rpm**	**1,800 rpm**
25%	7.5	8.9
50%	11.3	13.6
75%	15.9	19.0
100%	20.6	24.7
○ **Standby Power** (lit/h	**1,500 rpm**	**1,800 rpm**
25%	7.7	9.2
50%	11.6	14.9
75%	16.1	20.8
100%	20.8	26.6

◎ FUEL SYSTEM

○ Injection pump	Zexel in-line “AD” type
○ Governor	RSV type (all speed control)
○ Feed pump	Mechanical type
○ Injection nozzle	Multi hole type
○ Opening pressure	214 kg/cm^2 (3,044 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 0.30mm (0.0118 in.)
	Exhaust 0.30mm (0.0118 in.)

◎ 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 15.5 liters (4.09 gal.)
	Low level 12 liters (3.17 gal.)
○ Angularity limit	Front down 25 deg.
	Front up 25 deg.
	Side to side 25 deg.
○ Lub. Oil	Refer to Operation Manual

◎ VALVE TIMING

	Opening	**Close**
○ Intake valve	16 deg. BTDC	36 deg. ABDC
○ Exhaust valve	46 deg. BBDC	14 deg. ATDC

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◎ COOLING SYSTEM

○ Cooling method	Fresh water forced circulation
○ Water capacity (engine only)	14 liters (3.70 gal.)
○ Pressure system	Max. 0.9 kg/cm^2 (12.8 psi)
○ Water pump	Centrifugal type driven by belt
○ Water pump Capacity	150 liters (39.6 gal.)/min at 1,800 rpm (engine)
○ Thermostat	Wax – pellet type Opening temp. 71°C Full open temp. 85°C
○ Cooling fan	Blower type, steel 590 mm diameter, 6 blade

◎ ENGINEERING DATA

○ Water flow	130 liters/min @1,500 rpm 150 liters/min @1,800 rpm
○ Heat rejection to coolant	16.5 kcal/sec @1,800 rpm
○ Air flow	5.8 m^3/min @1,500 rpm 6.9 m^3/min @1,800 rpm
○ Exhaust gas flow	18.8 m^3/min @1,800 rpm
○ Exhaust gas temp.	620 °C @1,800 rpm
○ Max. permissible restrictions	
−.Intake system	220 mmH_2O initial 635 mmH_2O final
−.Exhaust system	1,000 mmH_2O max.

◎ ELECTRICAL SYSTEM

○ Charging generator	24V x 45A [or 12V x 26A] Aalternator
○ Voltage regulator	Built-in type IC regulator
○ Starting motor	24V x 4.5kW [or 12V x 2.5kW]
○ Battery Voltage	24V [or 12V]
○ Battery Capacity	100 AH [or 150 AH] (recommended)
○ Starting aid (Option)	Block heater

◆ 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/cm2 x 14.2233	kW = 0.2388 kcal/s
in3 = 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