

# 6DWD- 140

## DWD Series for Diesel Generator application

### POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	105	143
	Standby Power	112	152
1800 rpm	Prime Power	108	147
	Standby Power	115	156

- The engine performance is as per ISO 3046. Type of operation is based on ISO 8528.
- 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 80% of the prime power rating.

### Engine Specifications

○ Engine Type	In-Line type, 4 strokes, water-cooled Turbocharged air-to-air intercooled
○ Combustion type	Direct injection
○ Cylinder Type	Wet liner
○ No. of Cylinders	6
○ Bore x stroke	105 x125 mm
○ Displacement	6.49 liter
○ Compression ratio	16 : 1
○ Firing order	1 – 5 – 3 – 6 – 2 – 4
○ Injection timing	15 °BTDC
○ Dry weight	Approx. 650 kg
○ Dimension(LxWxH)	1381 x 740 x1274 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 3
○ Fly wheel	SAE NO.11.5
○ Ring Gear Tooth	130 EA

### Fuel Consumption Data

Speed	( Liter/ Hour )			
	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	105 kW	112 kW	108 kW	115 kW
100% Load	28.8	30.5	30.4	33.2
75% Load	21.1	22.3	22.3	24.3
50% Load	15.5	16.3	16.5	17.8
25% Load	9.8	10.4	10.4	11.4

### Fuel System

○ Injection pump	Direct Injection type
○ Governor	Electronic type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi-hole type
○ Opening pressure	250 kg/cm <sup>2</sup> (3556 psi)
○ Fuel filter	Full Flow, Cartridge type
○ Used fuel	Diesel fuel oil

### Mechanism

○ Type	Overhead valve
○ Number of valve	Intake 1, exhaust 1 per Cylinder
○ Valve lashes at cold	Intake. 0.3 mm Exhaust 0.5 mm

### Lubrication System

○ Lub. Oil Grade	CF-4 oil
○ Lub. Oil Pan Capacity	16 liter
○ Max. allowable Oil Temp	120 degree C.
○ Oil pressure	Min. 294 kPa Max. 490 kPa
○ Oil Consumption Rate	≤ 1.2 g/kWh

### Cooling System

- Cooling method Fresh water forced type
- Water Pump Centrifugal, Belt driven
- Water capacity 13.8 liter (engine only)
- Max. Water Temp 99 degree C.
- Thermostat Open 76°C / Full 90°C
- Water in/outlet Dia 45 mm
- Cooling Fan Blade 10EA - Ø 560 mm

### Engineering Data

		1500 rpm		1800 rpm	
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	8.6	9.2	8.6	9.5
Exhaust Gas	m3/min	21.6	22.8	21.6	23.6
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	86	92	88	98
to Coolant	kW	49	52	50	54
to Intercooler	kW	18	19	19	21
to radiation	kW	8	9	8	9

### Intake & Exhaust System

- Max air restriction Clean 2 kPa / Dirty 5 kPa
- Exhaust back pressure Max 6 kPa

### Electric System

- Charging generator 28 V × 36 A (1008 W)
- Voltage regulator Build-in type IC regulator
- Starting motor 24 V × 7.5 kW
- Battery Voltage 24 V
- Battery Capacity 120 AH

### Conversion Table

in. = mm × 0.0394	lb/ft = N.m × 0.737
PS = kW × 1.3596	U.S. gal = lit. × 0.264
psi = kg/cm <sup>2</sup> × 14.2233	kW = 0.2388 kcal/sec
in <sup>3</sup> = lit. × 61.02	lb/PS.h = g/kW.h × 0.00162
HP= PS × 0.98635	Cfm = m3/min × 35.336
lb = kg × 2.20462	

### Engine Layout & Dimension

