

# 6DWD- 180

## DWD Series for Diesel Generator application

### POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	142	193
	Standby Power	148	201
1800 rpm	Prime Power	145	197
	Standby Power	155	211

- 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	110 x125 mm
○ Displacement	7.12 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 x 1380 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
100% Load	142 kW	148 kW	145 kW	155 kW
75% Load	38.1	38.5	39.8	41.8
50% Load	27.4	26.5	26.6	28.3
25% Load	20.2	19.4	21.0	20.7
	12.8	12.4	13.4	13.1

### 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	15 liter (engine only)
○ Max. Water Temp	99 degree C.
○ Thermostat	Open 71°C / Full 82°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	11.5	11.6	11.2	11.8
Exhaust Gas	m3/min	28.4	28.8	29.8	26.6
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	117	121	119	127
to Coolant	kW	60	62	61	65
to Intercooler	kW	27	28	28	30
to radiation	kW	10	10	10	11

### Intake & Exhaust System

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

### Electric System

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

### 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/sec
in <sup>3</sup> = lit. x 61.02	lb/PS.h = g/kW.h x 0.00162
HP= PS x 0.98635	Cfm = m3/min x 35.336
lb = kg x 2.20462	

### Engine Layout & Dimension

