

# 16DWG-2500

## DWG Series for Diesel Generator application

### POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	<b>2000</b>	2720
	Standby Power	<b>2220</b>	3019
1800 rpm	Prime Power	<b>2220</b>	3019
	Standby Power	<b>2442</b>	3321

- 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	V-type, 4 strokes, water-cooled Turbocharged air-to-air intercooled
○ Combustion type	Direct injection
○ Cylinder Type	Wet liner
○ No. of Cylinders	16
○ Bore x stroke	170 x 195 mm
○ Displacement	70.8 liter
○ Compression ratio	13.5 : 1
○ Firing order	1-15-6-12-8-5-15-6- 11-4-9-2-14-10-3-13
○ Injection timing	14.5 °BTDC
○ Dry weight	Approx. 6400 kg
○ Dimension(LxWxH)	3596 x 1459 x 1820 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 00
○ Fly wheel	SAE NO. 21
○ Ring Gear Tooth	218 EA

### Fuel Consumption Data

Speed Rating	( Liter/ Hour )			
	1500 rpm		1800 rpm	
	Prime 2000 kW	Standby 2220 kW	Prime 2220 kW	Standby 2442 kW
100% Load	453	503	527	580
75% Load	343	380	399	439
50% Load	240	267	279	307
25% Load	144	160	168	184

### Fuel System

○ Injection pump	Direct Injection type
○ Governor	Electronic type
○ Feed pump	Mechanical Type
○ Injection nozzle	Multi-hole type
○ 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	

### Lubrication System

○ Lub. Oil Grade	AFI - CF-4 oil
○ Lub. Oil Pan Capacity	240 liter
○ Max. allowable Oil Temp	110 degree C.
○ Oil pressure, Warning	≤ 300 kPa
○ Oil pressure, Shut-down	≤ 200 kPa
○ Oil Consumption Rate	≤ 1.2 g/kWh

### Cooling System

○ Cooling method	Fresh water forced type
○ Water Pump	Centrifugal, belt driven
○ Water capacity	140 liter (engine only)
○ Max. Water Temp	98 degree C.
○ Thermostat	Open 71°C / Full 90°C
○ Cooling fan loss	90 kW @ 2220 kW
In separate radiator	110 kW @ 2442 kW

### Engineering Data

		1500 rpm	1800 rpm		
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	222.3	246.7	244.2	275.3
Exhaust Gas	m3/min	555.2	616.8	610.5	687.5
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	1401	1551	1556	1710
to Coolant	kW	682	754	756	733
to Intercooler	kW	599	664	667	733
to radiation	kW	159	176	177	195

### 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 55 A
○ Voltage regulator	Build-in type IC regulator
○ Starting motor	24 V x 13 kW – 2set
○ Battery Voltage	24 V
○ Battery Capacity	4 ea x 200 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

