16DWG-2220

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DWG Series for Diesel Generator application

POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	**1776**	2415
	Standby Power	**1988**	2704
1800 rpm	Prime Power	**2000**	2720
	Standby Power	**2220**	3019

- 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 × stroke	170 ×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 × 1459 × 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

(Liter/ Hour)

Speed	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	1776 kW	1988 kW	2000 kW	2220 kW
100% Load	404	452	476	529
75% Load	306	342	361	401
50% Load	214	239	252	280
25% Load	128	144	151	168

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	80 kW@ 1988 kW
In separate radiator	100 kW@ 2220 kW

Intake & Exhaust System

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

Electric System

○ Charging generator	28 V × 55 A
○ Voltage regulator	Build-in type IC regulator
○ Starting motor	24 V × 13 kW – 2set
○ Battery Voltage	24 V
○ Battery Capacity	4 ea x 200 Ah

Engineering Data

○ **Media Flow**		1500 rpm Prime	1500 rpm S/B	1800 rpm Prime	1800 rpm S/B
Combustion Air	m3/min	198.8	223.6	222.2	246.6
Exhaust Gas	m3/min	497.1	556.8	555.1	616.4
Cooling Fan	m3/min				
○ **Heat Rejection**					
to Exhaust	kW	1245	1392	1401	1556
to Coolant	kW	604	676	681	755
to Intercooler	kW	533	596	599	665
to radiation	kW	142	159	161	178

Conversion Table

in. = mm × 0.0394	lb/ft = N.m × 0.737
PS = kW × 1.3596	U.S. gal = lit. × 0.264
psi = kg/cm2 × 14.2233	kW = 0.2388 kcal/sec
in^3 = lit. × 61.02	lb/PS.h = g/kW.h × 0.00162
HP= PS x 0.98635	Cfm = m3/min x 35.336
lb = kg x 2.20462	

Engine Layout & Dimension