

# 12DWV-825

## POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	<b>660</b>	<b>897</b>
	Standby Power	<b>725</b>	<b>985</b>
1800 rpm	Prime Power	<b>756</b>	<b>1028</b>
	Standby Power	<b>832</b>	<b>1131</b>



- 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	12
○ Bore × stroke	128 × 142 mm
○ Displacement	21.93 liter
○ Compression ratio	14.6 : 1
○ Firing order	1-12-5-8-3-10-6-7-2-11-4-9
○ Injection timing	16 °BTDC
○ Dry weight	Approx. 2100 kg
○ Dimension(LxWxH)	1950 × 1389 × 1288 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 1
○ Fly wheel	SAE NO. 14

### Fuel Consumption Data

Speed	( Liter/ Hour )			
	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	660 kW	725 kW	756 kW	832 kW
100% Load	165.2	181.5	193.4	212.9
75% Load	118.2	129.6	138.2	152.1
50% Load	86.5	95.2	101.3	111.5
25% Load	55.1	60.4	64.4	71.0

### Fuel System

○ Injection pump	Direct Injection type
○ Governor	Electronic type
○ Feed pump	Mechanical Type
○ Injection nozzle	Multi-hole type
○ Injection pressure	27 MPa (270 kg/cm <sup>2</sup> )
○ 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 0.4 mm

### Lubrication System

○ Lub. Oil Grade	AFI - CF-4 oil
○ Lub. Oil Pan Capacity	Min 41, Max 57 liter
○ Max. allowable Oil Temp	120 degree C.
○ Oil pressure	Min. 300 kPa (3.0 kg/cm <sup>2</sup> ) Max. 650 kPa (6.5 kg/cm <sup>2</sup> )
○ Oil Consumption Rate	≤ 1.2 g/kWh

### Cooling System

- Cooling method Fresh water forced type
- Water Pump Centrifugal, belt driven
- Water capacity 23 liter (engine only)
- Max. Water Temp 99 degree C.
- Thermostat Open 71°C / Full 83°C
- Water Pump flow 650 liter/min
- Cooling Fan Blade 7, Dia 915 mm

### Engineering Data

		1500 rpm		1800 rpm	
		Prime	S/B	Prime	S/B
○ Media Flow					
Combustion Air	m3/min	52.2	57.4	61.1	67.4
Exhaust Gas	m3/min	135.8	149.1	159.0	174.9
Cooling Fan	m3/min				

### Heat Rejection

to Exhaust	kW	548	602	629	692
to Coolant	kW	218	239	249	275
to Intercooler	kW	165	181	190	208
to radiation	kW	67	73	76	84

### Electric System

- Charging generator 28 V × 45 A (1260 W)
- Voltage regulator Build-in type
- Starting motor 24 V × 9 kW
- Battery Voltage 24 V
- Battery Capacity 200 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

