

# 16DWV-995

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## DWV Series for Diesel Generator application

### POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	<b>795</b>	1081
	Standby Power	<b>880</b>	1197
1800 rpm	Prime Power	<b>880</b>	1197
	Standby Power	<b>965</b>	1312

- 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	128 x 142 mm
○ Displacement	29.24 liter
○ Compression ratio	14.6 : 1
○ Firing order	1-15-6-12-8-5-16-7- -11-4-9-2-14-10-3-13
○ Injection timing	16 °BTDC
○ Dry weight	Approx. 2100 kg
○ Dimension(LxWxH)	1950 x 1389 x 1288 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 0
○ Fly wheel	SAE NO. 18
○ Ring Gear Tooth	160 EA

### Fuel Consumption Data

Speed Rating	( Liter/ Hour )			
	1500 rpm		1800 rpm	
	Prime	Standby	Prime	Standby
100% Load	199.2	220.4	224.8	246.5
75% Load	142.1	157.4	160.6	176.1
50% Load	104.3	115.5	117.8	129.1
25% Load	66.4	73.5	74.9	82.2

### 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 60, Max 78 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 26 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 8, Dia 1450 mm

### Engineering Data

		1500 rpm		1800 rpm	
		Prime	S/B	Prime	S/B
○ <b>Media Flow</b>					
Combustion Air	m3/min	62.9	69.6	71.0	77.9
Exhaust Gas	m3/min	163.5	181.0	184.6	202.5
Cooling Fan	m3/min				

### ○ Heat Rejection

to Exhaust	kW	636	703	704	772
to Coolant	kW	284	264	265	290
to Intercooler	kW	183	202	201	222
to radiation	kW	72	79	80	87

### Intake & Exhaust System

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

### Electric System

- Charging generator 28 V × 45 A (1260 W)
- Voltage regulator Build-in type
- Starting motor 24 V × 11 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

