

8DWV- 505

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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	405	551
	Standby Power	445	605
1800 rpm	Prime Power	440	598
	Standby Power	480	653

- 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	8
○ Bore x stroke	128 x142 mm
○ Displacement	14.618 liter
○ Compression ratio	14.6 : 1
○ Firing order	1-5-7-2-6-3-4-8
○ Injection timing	12 °BTDC
○ Dry weight	Approx. 1050 kg
○ Dimension(LxWxH)	1484 x 1389 x 1288 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 1
○ Fly wheel	SAE NO. 14
○ Ring Gear Tooth	160 EA

Fuel Consumption Data

Speed	(Liter/ Hour)			
	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	405 kW	445 kW	440 kW	480 kW
100% Load	101.4	111.5	112.4	122.6
75% Load	72.5	79.6	80.3	87.6
50% Load	53.1	58.4	58.9	64.2
25% Load	33.8	37.2	37.5	40.9

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 ²)
○ 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 17, Max 21 liter
○ Max. allowable Oil Temp	120 degree C.
○ Oil pressure	Min. 300 kPa (3.0 kg/cm ²) Max. 650 kPa (6.5 kg/cm ²)
○ Oil Consumption Rate	≤ 1.2 g/kWh

Cooling System

- Cooling method Fresh water forced type
- Water Pump Centrifugal, belt driven
- Water capacity 20 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

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
- Voltage regulator Build-in type
- Starting motor 24 V × 7 kW
- Battery Voltage 24 V
- Battery Capacity 2 ea × 200 Ah

Engineering Data

		1500 rpm		1800 rpm	
		Prime	S/B	Prime	S/B
○ Media Flow					
Combustion Air	m3/min	32.0	35.2	35.5	38.7
Exhaust Gas	m3/min	83.3	91.5	92.3	100.7
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	352	387	396	432
to Coolant	kW	154	169	172	187
to Intercooler	kW	81	89	92	101
to radiation	kW	36	40	40	43

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 ² × 14.2233	kW = 0.2388 kcal/sec
in ³ = 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

