

16DWV-1160

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DWV Series for Diesel Generator application

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	893	1214
	Standby Power	980	1333
1800 rpm	Prime Power	1000	1360
	Standby Power	1100	1496

- 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 x142 mm
○ Displacement	29.24 liter
○ Compression ratio	15.0 : 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. 2250 kg
○ Dimension(LxWxH)	1950 x 1389 x 1162 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 0
○ Fly wheel	SAE NO. 18
○ Ring Gear Tooth	204 EA

Fuel Consumption Data

Speed	(Liter/ Hour)			
	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	893 kW	980 kW	1000 kW	1100 kW
100% Load	220.4	245.3	260.0	281.0
75% Load	160.6	175.4	182.8	200.7
50% Load	117.4	128.6	133.9	147.2
25% Load	74.5	81.9	85.2	93.7

Fuel System

○ Injection pump	Direct Injection type
○ Governor	Electronic type
○ Feed pump	Mechanical Type
○ Injection nozzle	Multi-hole type
○ Injection pressure	30 MPa (300 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. 0.5 mm Exhaust 0.6 mm

Lubrication System

○ Lub. Oil Grade	AFI - CF-4 oil
○ Lub. Oil Pan Capacity	Min 48, Max 78 liter
○ Max. allowable Oil Temp	110 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 32 liter (engine only)
- Max. Water Temp 95 degree C.
- Thermostat Open 79°C / Full 83°C
- Water Pump flow 51.96 m3/h
- Cooling Fan Blade 8, Dia 1450 mm
39 kW

Intake & Exhaust System

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

Electric System

- Charging generator 28 V × 55 A (1540 W)
- Voltage regulator Build-in type
- Starting motor 24 V × 9 kW
- Battery Voltage 24 V
- Battery Capacity 200 Ah × 2

Engineering Data

		1500 rpm		1800 rpm	
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	71	78	81	89
Exhaust Gas	m3/min	184	201	209	232
Cooling Fan	m3/min				
○ Heat Rejection		1500 rpm		1800 rpm	
to Exhaust	kW	715	784	799	879
to Coolant	kW	268	293	301	330
to Intercooler	kW	205	226	229	249
to radiation	kW	81	88	90	99

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

