12DWV-695

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POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	555	755
	Standby Power	606	824
1800 rpm	Prime Power	620	843
	Standby Power	682	928

- 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
○ Ring Gear Tooth	160 EA

Fuel Consumption Data

(Liter/ Hour)

Speed	1500 rpm		1800 rpm	
Rating	Prime 555 kW	Standby 606 kW	Prime 620 kW	Standby 682 kW
100% Load	139.1	151.7	159.8	174.1
75% Load	99.2	108.4	114.1	124.4
50% Load	72.7	79.5	83.7	91.2
25% Load	46.3	50.5	53.2	58.1

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	API - 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^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	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

○ **Media Flow**		1500 rpm Prime	1500 rpm S/B	1800 rpm Prime	1800 rpm S/B
Combustion Air	m3/min	43.9	47.9	50.4	55.0
Exhaust Gas	m3/min	114.2	124.7	131.3	143.0
Cooling Fan	m3/min				
○ **Heat Rejection**					
to Exhaust	kW	461	503	520	566
to Coolant	kW	183	199	207	225
to Intercooler	kW	139	151	157	170
to radiation	kW	56	61	63	68

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/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