

12DWV-695

DWV Series for Diesel Generator application

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 x stroke	128 x 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. 1575 kg
○ Dimension(LxWxH)	1717 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)				
	Rating	1500 rpm		1800 rpm	
		Prime	Standby	Prime	Standby
		555 kW	606 kW	620 kW	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	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 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

		1500 rpm		1800 rpm	
○ Media Flow		Prime	S/B	Prime	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

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 × 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 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

