

# 12DWV-790

## POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	<b>630</b>	<b>857</b>
	Standby Power	<b>700</b>	<b>952</b>
1800 rpm	Prime Power	<b>718</b>	<b>975</b>
	Standby Power	<b>790</b>	<b>1075</b>



- The engine performance is as per ISO 3046. Type of operation is based on
- Prime power is available for an unlimited number of hours per year in a varia
- 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

### 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

### Fuel Consumption Data

Speed	( Liter/ Hour )			
	1500 rpm		1800 rpm	
Rating	Prime 630 kW	Standby 700 kW	Prime 718 kW	Standby 790 kW
100% Load	157.7	175.4	183.4	201.9
75% Load	112.8	125.3	131.2	144.1
50% Load	82.6	91.9	96.0	105.8
25% Load	52.5	58.5	61.2	67.3

### 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

### 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<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 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	
		Prime	S/B	Prime	S/B
○ Media Flow					
Combustion Air	m3/min	49.8	55.4	57.9	63.7
Exhaust Gas	m3/min	129.6	144.1	150.6	165.8
Cooling Fan	m3/min				

### Heat Rejection

to Exhaust	kW	523	581	595	655.5
to Coolant	kW	208	231	237	261
to Intercooler	kW	158	175	179	197
to radiation	kW	63	70	71	79

### 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 <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

