

# 3DWY- 15

## DWY Series for Diesel Generator application

### POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	<b>10</b>	14
	Standby Power	<b>11</b>	15
1800 rpm	Prime Power	<b>12</b>	16
	Standby Power	<b>13</b>	18

- 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 In-Line type, 4 strokes,  
Natural Aspiration  
Water cooled
- Combustion type Direct injection
- Cylinder Type Dry type
- No. of Cylinders 3
- Bore x stroke 85 x90 mm
- Displacement 1.532 liter
- Compression ratio 18 : 1
- Firing order 1 – 3 – 2
- Injection timing 16 °BTDC
- Dry weight Approx. 175 kg
- Dimension(LxWxH) 625 x 600 x 695 mm
- Rotation Anti-clockwise  
(Face to the flywheel)
- Fly wheel housing SAE NO. 4
- Fly wheel SAE NO. 7.5
- Ring Gear Tooth 115 EA

### Mechanism

- Type Overhead valve
- Number of valve Intake 1, exhaust 1 per  
Cylinder
- Valve lashes at cold Intake 0.20~0.25 mm  
Exhaust 0.25~0.30 mm

### Fuel Consumption Data

Speed Rating	( Liter/ Hour )			
	1500 rpm		1800 rpm	
	Prime 10 kW	Standby 11 kW	Prime 12 kW	Standby 13 kW
100% Load	3.3	3.5	4.1	4.3
75% Load	2.8	3.0	3.4	3.6
50% Load	2.3	2.5	2.9	3.1
25% Load	1.5	1.7	1.8	2.0

### Fuel System

- Injection pump Direct Injection type
- Governor Mechanical type
- Feed pump Mechanical type
- Injection nozzle Multi-hole type / 0.23 mm
- Opening pressure 22 +0.5 MPa
- Fuel filter Single Stage, Paper
- Used fuel Diesel fuel oil

### Lubrication System

- Lub. Oil Grade CD-4 oil
- Lub. Oil Pan Capacity 4 liter
- Max. allowable Oil Temp 110 degree C.
- Oil pressure Min. 294 kPa  
Max. 490 kPa
- Oil Consumption Rate ≤ 1.2 g/kWh

### Cooling System

- Cooling method Fresh water forced type
- Water Pump Centrifugal, Belt driven
- Water capacity 3.15 liter (engine only)
- Max. Water Temp 95 degree C.
- Thermostat Open 71°C / Full 82°C
- Cooling Fan Blade 7EA - Ø 410 mm

### Engineering Data

		1500 rpm		1800 rpm	
		Prime	S/B	Prime	S/B
○ <b>Media Flow</b>					
Combustion Air	m3/min	0.75	0.83	0.9	1.0.
Exhaust Gas	m3/min	1.87	2.1	2.3	2.4
Cooling Fan	m3/min				
○ <b>Heat Rejection</b>					
to Exhaust	kW	8.3	9.0	9.8	10.6
to Coolant	kW	7.2	7.9	8.6	9.3
to Intercooler	kW	-	-	-	-
to radiation	kW	2.0	2.2	2.5	2.7

### Intake & Exhaust System

- Max air restriction Clean 2 kPa / Dirty 5 kPa
- Exhaust back pressure Max 6 kPa

### Electric System

- Charging generator 14 V x 36 A (500 W)
- Voltage regulator Build-in type IC regulator
- Starting motor 12 V x 3 kW
- Battery Voltage 12 V
- Battery Capacity 80 Ah

### Conversion Table

in. = mm x 0.0394	lb/ft = N.m x 0.737
PS = kW x 1.3596	U.S. gal = lit. x 0.264
psi = kg/cm <sup>2</sup> x 14.2233	kW = 0.2388 kcal/sec
in <sup>3</sup> = lit. x 61.02	lb/PS.h = g/kW.h x 0.00162
HP= PS x 0.98635	Cfm = m3/min x 35.336
lb = kg x 2.20462	

### Engine Layout & Dimension

