

4DWY- 48

DWY Series for Diesel Generator application

POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	35	48
	Standby Power	38	52
1800 rpm	Prime Power	40	54
	Standby Power	45	61

- 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 4
- Bore x stroke 105 x 118 mm
- Displacement 4.1 liter
- Compression ratio 17 : 1
- Firing order 1 – 3 – 4 – 2
- Injection timing 18 ° BTDC
- Dry weight Approx. 330 kg
- Dimension(LxWxH) 885 x 630 x 810 mm
- Rotation Anti-clockwise
(Face to the flywheel)
- Fly wheel housing SAE NO. 3
- Fly wheel SAE NO.10
- Ring Gear Tooth 126 EA

Fuel Consumption Data

Speed Rating	(Liter/ Hour)			
	1500 rpm		1800 rpm	
	Prime	Standby	Prime	Standby
100% Load	9.5	10.5	11.6	13.4
75% Load	7.1	7.8	9.6	12.0
50% Load	5.2	5.7	7.2	8.2
25% Load	3.3	3.6	4.5	5.2

Fuel System

- Injection pump Direct Injection type
- Governor Mechanical type
- Feed pump Mechanical type
- Injection nozzle Multi-hole type
- Opening pressure 250 kg/cm² (3556 psi)
- 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. 0.35~0.40 mm
Exhaust 0.40~0.45 mm

Lubrication System

- Lub. Oil Grade CD-4 oil
- Lub. Oil Pan Capacity 11 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 6 liter (engine only)
- Max. Water Temp 99 degree C.
- Thermostat Open 71°C / Full 82°C
- Cooling Fan Blade 7EA - Ø 450 mm

Engineering Data

		1500 rpm		1800 rpm	
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	2.0	2.2	2.3	2.5
Exhaust Gas	m3/min	5.0	5.4	5.7	6.4
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	24.9	27.3	28.8	32.4
to Coolant	kW	19.0	21.0	21.8	24.8
to Intercooler	kW	-	-	-	-
to radiation	kW	5.2	5.8	6.0	6.8

Intake & Exhaust System

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

Electric System

- Charging generator 12 V × 65A
- Voltage regulator Build-in type
- Starting motor 12 V × 3.7 kW
- Battery Voltage 12 V
- Battery Capacity 240 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

