

4DWY- 60

DWY Series for Diesel Generator application

POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	48	65
	Standby Power	53	72
1800 rpm	Prime Power	53	74
	Standby Power	58	79

- 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, water-cooled Turbocharged
○ Combustion type	Direct injection
○ Cylinder Type	
○ No. of Cylinders	4
○ Bore x stroke	108 x125 mm
○ Displacement	4.6 liter
○ Compression ratio	16 : 1
○ Firing order	1 – 3 – 4 – 2
○ Injection timing	18 °BTDC
○ Dry weight	Approx. 480 kg
○ Dimension(LxWxH) (with Radiator)	1092 x 720 x 1109 mm (1302 x 720 x 1109 mm)
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 3
○ Fly wheel	SAE NO.11.5
○ Ring Gear Tooth	130 EA

Fuel Consumption Data

Speed	(Liter/ Hour)			
	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	48 kW	53 kW	53 kW	58 kW
100% Load	12.8	14.2	14.6	17.0
75% Load	10.4	12.4	12.8	13.8
50% Load	7.40	9.1	9.4	10.2
25% Load	4.58	5.8	6.0	6.5

Fuel System

○ Injection pump	Direct Injection type
○ Governor	Mechanical type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi-hole type
○ Opening pressure	250 kg/cm ² (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. 0.3 mm Exhaust 0.5 mm

Lubrication System

○ Lub. Oil Grade	CF-4 oil
○ Lub. Oil Pan Capacity	14 liter
○ Max. allowable Oil Temp	120 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 8 liter (engine only)
- Max. Water Temp 99 degree C.
- Thermostat Open 76°C / Full 90°C
- Water in/outlet Dia 45 mm
- Cooling Fan Blade 10EA - Ø 530 mm

Engineering Data

		1500 rpm		1800 rpm	
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	2.7	2.9	3.2	3.3
Exhaust Gas	m3/min	6.7	7.6	7.7	9.0
Cooling Fan	m3/min				
○ Heat Rejection					
to Exhaust	kW	39	43	43	47
to Coolant	kW	25	27	27	30
to Intercooler	kW	-	-	-	-
to radiation	kW	4	4	4	5

Intake & Exhaust System

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

Electric System

- Charging generator 14Vx65A (910W)
- Voltage regulator Build-in type IC regulator
- Starting motor 12V x 3.7 kW
- Battery Voltage 12 V
- Battery Capacity 120 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 ² x 14.2233	kW = 0.2388 kcal/sec
in ³ = 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

