

4DWY- 35

DWY Series for Diesel Generator application

POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	23	31
	Standby Power	25	34
1800 rpm	Prime Power	27	37
	Standby Power	30	41

- 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	98 x 105 mm
○ Displacement	3.2 liter
○ Compression ratio	18 : 1
○ Firing order	1 – 3 – 4 – 2
○ Injection timing	14 ° BTDC
○ Dry weight	Approx. 250 kg
○ Dimension(LxWxH)	800 x 635 x 765 mm
○ Rotation	Anti-clockwise (Face to the flywheel)
○ Fly wheel housing	SAE NO. 4 (option 3)
○ Fly wheel	SAE NO.7.5 (option 10/11.5)
○ Ring Gear Tooth	120 EA

Fuel Consumption Data

Speed Rating	(Liter/ Hour)			
	1500 rpm		1800 rpm	
	Prime	Standby	Prime	Standby
	23 kW	25 kW	27 kW	30 kW
100% Load	6.7	7.6	8.1	9.0
75% Load	5.8	6.6	7.0	7.8
50% Load	4.5	5.2	5.6	6.0
25% Load	3.1	3.5	3.8	4.0

Fuel System

○ Injection pump	Direct Injection type
○ Governor	Mechanical type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi-hole type
○ Opening pressure	210 kg/cm ²
○ Fuel filter	Single Stage, Paper
○ 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	6.5 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 5 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	
○ Media Flow		Prime	S/B	Prime	S/B
Combustion Air	m3/min	1.4	1.5	1.7	1.8
Exhaust Gas	m3/min	3.5	3.8	4.2	4.3
Cooling Fan	m3/min				

○ Heat Rejection

to Exhaust	kW	17.5	19.5	21.0	23.4
to Coolant	kW	14.0	153.8	16.9	19.9
to Intercooler	kW	-	-	-	-
to radiation	kW	3.8	4.2	4.6	5.1

Intake & Exhaust System

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

Electric System

- Charging generator 14 V × 36 A (500 W)
- Voltage regulator Build-in type IC regulator
- Starting motor 12 V × 3.7 kW
- Battery Voltage 12 V
- Battery Capacity 120 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

