4DWY- 18

www.daewoo-engine.com

DWY Series for Diesel Generator application

POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	13	18
	Standby Power	14	19
1800 rpm	Prime Power	16	22
	Standby Power	17	23

- 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	
○ No. of Cylinders	4
○ Bore × stroke	80 ×90 mm
○ Displacement	1.809 liter
○ Compression ratio	18 : 1
○ Firing order	1 – 3 – 4 – 2
○ Injection timing	16 °BTDC
○ Dry weight	Approx. 195 kg
○ Dimension(LxWxH)	742 × 494 × 636 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

Fuel Consumption Data

(Liter/ Hour)

Speed	1500 rpm		1800 rpm	
Rating	Prime	Standby	Prime	Standby
	13 kW	14 kW	16 kW	17 kW
100% Load	4.0	4.9.	5.0	5.4.
75% Load	3.2	4.0	4.3	4.6
50% Load	2.5	2.9	3.1	3.7
25% Load	1.7	1.7	2.2	2.5

Fuel System

○ Injection pump	Direct Injection type
○ Governor	Mechanical type
○ Feed pump	Mechanical type
○ Injection nozzle	Multi-hole type / 0.23 mm
○ Opening pressure	226 +0.5 MPa
○ 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 0.20~0.25 mm Exhaust 0.25~0.30 mm

Lubrication System

○ Lub. Oil Grade	CD-4 oil
○ Lub. Oil Pan Capacity	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 t
○ Water capacity	3.5 liter (engine only)
○ Max. Water Temp	95 degree C.
○ Thermostat	Open 71°C / Full 82°C
○ Cooling Fan	Blade 7EA - Ø 410 mm

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 kW
○ Battery Voltage	12 V
○ Battery Capacity	80 Ah

Engineering Data

○ **Media Flow**		1500 rpm Prime	1500 rpm S/B	1800 rpm Prime	1800 rpm S/B
Combustion Air	m3/min	0.9	1.0	1.1	1.1
Exhaust Gas	m3/min	2.3	2.4	2.8	2.9
Cooling Fan	m3/min				
○ **Heat Rejection**					
to Exhaust	kW	13.5	11.3	12.9	13.7
to Coolant	kW	8.5	9.4	10.7	11.4
to Intercooler	kW	-	-	-	-
to radiation	kW	2.3	2.4	2.9	3.1

Conversion Table

in. = mm × 0.0394	lb/ft = N.m × 0.737
PS = kW × 1.3596	U.S. gal = lit. × 0.264
psi = kg/cm2 × 14.2233	kW = 0.2388 kcal/sec
in^3 = lit. × 61.02	lb/PS.h = g/kW.h × 0.00162
HP= PS x 0.98635	Cfm = m3/min x 35.336
lb = kg x 2.20462	

Engine Layout & Dimension