

# 4DWY- 40

## POWER RATING

Engine Speed	Type of Operation	Engine Gross Power	
		kW	PS
1500 rpm	Prime Power	30	40
	Standby Power	33	45
1800 rpm	Prime Power	36	49
	Standby Power	40	54



- 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 × stroke 102 × 118 mm
- Displacement 3.875 liter
- Compression ratio 18 : 1
- Firing order 1 – 3 – 4 – 2
- Injection timing 18 ° BTDC
- Dry weight Approx. 320 kg
- Dimension(LxWxH) 885 × 630 × 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

### 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

### Fuel Consumption Data

Speed Rating	( Liter/ Hour )			
	1500 rpm		1800 rpm	
	Prime 30 kW	Standby 33 kW	Prime 36 kW	Standby 40 kW
100% Load	8.2	9.2	10.7	11.8
75% Load	6.1	6.8	9.1	10.0
50% Load	4.5	5.0	7.0	7.6
25% Load	2.8	3.1	4.5	4.9

### Fuel System

- Injection pump Direct Injection type
- Governor Mechanical type
- Feed pump Mechanical type
- Injection nozzle Multi-hole type
- Opening pressure 210 kg/cm<sup>2</sup>
- Fuel filter Single Stage, Paper
- Used fuel Diesel fuel oil

### 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 t
- Water capacity 5. liter (engine only)
- Max. Water Temp 95 degree C.
- Thermostat Open 71°C / Full 82°C
- Cooling Fan Blade 7EA - Ø 450 mm

### Engineering Data

		1500 rpm		1800 rpm	
		Prime	S/B	Prime	S/B
○ Media Flow					
Combustion Air	m3/min	1.8	1.9	2.1	2.3
Exhaust Gas	m3/min	4.4	4.8	5.2	5.8
Cooling Fan	m3/min				

### ○ Heat Rejection

to Exhaust	kW	21.9	28.7	26.1	29.2
to Coolant	kW	16.8	18.5	20.0	22.4
to Intercooler	kW	-	-	-	-
to radiation	kW	4.6	4.95	5.4	6.0

### Electric System

- Charging generator 14 V × 65 A (910 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 <sup>2</sup> × 14.2233	kW = 0.2388 kcal/sec
in <sup>3</sup> = 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

