

4DWY- 60

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 | 72 |
| | 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 Natural Aspirated
- Combustion type Direct injection
- Cylinder Type
- No. of Cylinders 4
- Bore × stroke 108 × 135 mm
- Displacement 4.9 liter
- Compression ratio 17 : 1
- Firing order 1 – 3 – 4 – 2
- Injection timing 16 °BTDC
- Dry weight Approx. 350 kg
- Dimension(LxWxH) 890 × 630 × 810 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

Mechanism

- Type Overhead valve
- Number of valve Intake 1, exhaust 1 per Cylinder
- Valve lashes at cold Intake. 0.35~0.40 mm Exhaust 0.304 mm

Fuel Consumption Data

| Speed Rating | (Liter/ Hour) | | | |
|--------------|-----------------|---------|----------|---------|
| | 1500 rpm | | 1800 rpm | |
| | 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 | 7.4 | 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/cm² (3556 psi)
- Fuel filter Full Flow, Cartridge Type
- Used fuel Diesel fuel oil

Lubrication System

- Lub. Oil Grade CF-4 oil
- Lub. Oil Pan Capacity 14 liter
- Max. allowable Oil Temp 105 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 6 liter (engine only)
- Max. Water Temp 99 degree C.
- Thermostat Open 71°C / Full 82°C
- Cooling Fan Blade 7EA - Ø 510 mm

Engineering Data

| | | 1500 rpm | | 1800 rpm | |
|----------------|--------|----------|-----|----------|-----|
| | | Prime | S/B | Prime | S/B |
| ○ Media Flow | | | | | |
| 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

| | | 1500 rpm | 1800 rpm | 1500 rpm | 1800 rpm |
|----------------|----|----------|----------|----------|----------|
| to Exhaust | kW | 39 | 43 | 43 | 47 |
| to Coolant | kW | 25 | 27 | 27 | 30 |
| to Intercooler | kW | - | - | - | - |
| to radiation | kW | 4 | 4 | 4 | 5 |

Electric System

- Charging generator 14 V × 65 A (910 W)
- Voltage regulator Build-in type
- 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

