

# SC12E500D2

Used for 325kVA generator



## ◎ POWER RATING

| Engine Speed | Type of Operation | Engine Power |     |
|--------------|-------------------|--------------|-----|
|              |                   | kW           | Ps  |
| 1500 rpm     | Prime Power       | 339          | 461 |
|              | Standby Power     | 373          | 507 |

-. The engine performance is as per GB/T2820.

-. Ratings are based on GB/T1147.1.

---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.

---Standby power is available in the event of a utility power outage or under test conditions for up to 200 hours of operation per year.

The permissible average power output over 24 hours of operation shall not exceed 80% of the standby power rating.

## ◎ SPECIFICATIONS

|                        |  |
|------------------------|--|
| ○ Engine Model         | SC12E500D3   |
| ○ Engine Type          | In-line,4 strokes, water-cooled<br>4 valves, Turbo charged<br>air-to-air intercooled |
| ○ Combustion type      | Direct injection   |
| ○ Cylinder Type        | Wet liner  |
| ○ Number of cylinders  | 6  |
| ○ Bore × stroke        | 128(5.04) × 153(6.03) mm(in.)  |
| ○ Displacement         | 11.8(720) lit.(in <sup>3</sup> )   |
| ○ Compression ratio    | 17 : 1   |
| ○ Firing order         | 1-5-3-6-2-4  |
| ○ Injection timing     | Electronic control   |
| ○ Dry weight           | Approx. 1164 kg (2,566 lb)   |
| ○ Dimension<br>(L×W×H) | 1787×918×1294 mm<br>(70.4×36.2×51 in.)   |
| ○ Rotation             | Counter clockwise viewed from<br>Flywheel  |

## ◎ FUEL CONSUMPTION

|         |        |
|---------|--------|
| ○ Power | lit/hr |
| 25%     | 21.3   |
| 50%     | 39.3   |
| 75%     | 58.8   |
| 100%    | 78.6   |
| 110%    | 87.0   |

## ◎ FUEL SYSTEM

|                    |                           |
|--------------------|---------------------------|
| ○ Injection pump   | Longkou in-line “P” type  |
| ○ Governor         | Electronic control        |
| ○ Feed pump        | Electronic control        |
| ○ Injection nozzle | Multi hole type           |
| ○ Fuel filter      | Full flow, cartridge type |
| ○ Used fuel        | Diesel fuel oil           |

- Fly wheel housing SAE NO.1
- Fly wheel SAE NO.14

◎ **MECHANISM**

- Type Over head valve
- Number of valve Intake 2, exhaust 2 per cylinder
- Valve lashes at cold  
Intake 0.40mm (0.0158 in.)  
Exhaust 0.65mm (0.0256 in.)

◎ **VALVE TIMING**

|                 | Opening      | Close        |
|-----------------|--------------|--------------|
| ○ Intake valve  | 15 deg. BTDC | 30 deg. ABDC |
| ○ Exhaust valve | 45 deg. BBDC | 13 deg. ATDC |

◎ **COOLING SYSTEM**

- Cooling method Fresh water forced circulation
- Water capacity 23.2 liters ( 6.12 gal.)  
(engine only)
- Pressure system Max. 0.5 kg/cm<sup>2</sup> ( 7.11 psi)
- Water pump Centrifugal type driven by belt
- Water pump Capacity 515 liters ( 136 gal.)/min  
at 1,500 rpm (engine)
- Thermostat Wax–pellet type  
Opening temp. 85°C  
Full open temp. 95°C
- Cooling fan Blower type, plastic  
840 mm diameter, 8 blades

◎ **LUBRICATION SYSTEM**

- Lub. Method Fully forced pressure feed type
- Oil pump Gear type driven by crankshaft
- Oil filter Full flow, cartridge type
- Oil pan capacity High level 41 liters ( 10.82 gal.)  
Low level 33 liters ( 8.71 gal.)
- Angularity limit Front down 25 deg.  
Front up 35 deg.  
Side to side 35 deg.
- Lub. Oil Refer to Operation Manual

◎ **ENGINEERING DATA**

- Water flow 515 liters/min @1,500 rpm
- Heat rejection to coolant 34.1 kcal/sec @1,500 rpm
- Heat rejection to CAC 21.3 kcal/sec @1,500 rpm
- Air flow 24.3 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas flow 57.5 m<sup>3</sup>/min @1,500 rpm
- Exhaust gas temp. 600 °C @1,500 rpm
- Max. permissible restrictions  
Intake system 3 kPa initial  
6 kPa final  
Exhaust system 10 kPa max.
- Max. permissible altitude 2,000 m
- Fan power 8 kW

◎ ELECTRICAL SYSTEM

- Charging generator 28V×70A
- Voltage regulator Built-in type IC regulator
- Starting motor 24V×5.5kW
- Battery Voltage 24V
- Battery Capacity 180 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/s
- in<sup>3</sup> = lit. × 61.02
- lb/PS.h = g/kW.h × 0.00162
- hp = PS × 0.98635
- cfm = m<sup>3</sup>/min × 35.336
- lb = kg × 2.20462

