

DIESEL ENGINE

MODEL 3DSP-23

Performances

| Ratings | | 3000 rpm | |
|--------------|-----|----------|----------|
| | | PRIME | STAND-BY |
| Rated Output | kWm | 21 | 23 |

Note:

PRIME POWER: The prime power is the maximum power available with varying loads for an unlimited number of hours. The average power output during a 24h period of operation must not exceed 80% of the declared prime power between the prescribed maintenance intervals and at standard environmental conditions. A 10% overload is permissible for 1 hour every 12 hours of operation.

STAND-BY POWER: The stand-by power is the maximum power available for a period of 500 hours/year with a mean load factor of 90% of the declared stand-by power. No kind of overloads is permissible for this use.

Specifications

Mechanical system

| | |
|---|--|
| Engine model | 3DSP-23 |
| Engine type | In-line, 4 stroke, water cooled |
| Combustion type | Direct Injection |
| Cylinder type | Wet liner |
| Air intake type | Normally Aspirated |
| Cylinder No. | 3 |
| Bore*Stroke(mm) | 80*90 |
| Total displacement(L) | 1.357 |
| Compression ratio | 18:1 |
| Firing order | 1-3-2 |
| Injection timing | 15°±1° |
| Speed governor | Mechanical ≤8% |
| Exhaust temperature (°C) | ≤600 |
| Mean Effective Pressure (KPa) | 627 |
| Noise Level(dBA) | ≤93 |
| Exhaust gas back pressure(KPa) | 3.3 |
| Exhaust flow (m ³ /h) | 385 |
| Cooling air flow (m ³ /h) | 210 |
| Air for combustion flow (m ³ /h) | 160 |
| Piston Speed(m/s) | 9 |
| Dry weight (kg) | 165 |
| Dimension(L*W*H)(mm) | 567*494*610 (without radiator) |
| Rotation | Counter clockwise viewed from flywheel |
| Flywheel housing/flywheel | SAE4/ 7.5" |

Mechanism

| | |
|------------------------|---|
| Type | Over head valve |
| Valves per cylinder | 2 |
| Valve lash(cold state) | Air intake valve 0.20-0.30mm Exhaust valve 0.25-0.35mm |

Valve timing (crankshaft rotating angel)

| | |
|------------------------|--------------------------------|
| Air intake valve open | 14.5° before top dead center |
| Air intake valve close | 37.5° after bottom dead center |
| Exhaust valve open | 56° before bottom dead center |
| Exhaust valve close | 12° after top dead center |

Specific fuel consumption

| | |
|--------------------------|------|
| rpm | 3000 |
| Fuel consumption (g/kWh) | ≤265 |

Oil consumption

| | |
|------------------------|--------|
| Oil consumption(g/kWh) | ≤0.795 |
|------------------------|--------|

Fuel system

| | |
|--------------------|---------------------|
| Fuel injector pump | BQ pump |
| Governor model | RSV full range type |
| Feed pump | Mechanical type |
| Injection nozzle | multi holes type |
| Fuel filter | Spin-on type |
| Fuel | Diesel |

Lubrication system

| | |
|---|---|
| Type | Mixed type, pressure and splash lubrication |
| Oil pump Displacement/speed (L/min/r/min) | Inner and outer rotor type 21/1500 |
| Oil filter | Spin-on type |
| Lube oil total system capacity | 7.5L including pipes, filters etc. |

Cooling system

| | |
|-------------------------------|----------------------------------|
| Cooling method | Water cooled, forced circulation |
| Coolant capacity: engine only | 4L |
| Engine + radiator | 9L |
| Water pump type | Centrifugal type driven by belt |
| Water pump capacity(L/min) | ≥80 |
| Thermostat | Opening temp.73°C |
| Cooling fan | Φ380mm, 7blades, PA |
| Belt | Twin for safety |

Electronic system

| | |
|---------------------|---------------|
| Charging alternator | 14v/350w |
| AVR | Built-in type |
| Starting motor | 12v/3.8kW |
| Battery capacity | 12v/100Ah |