

DIESEL ENGINE

MODEL 4DSG-33

Performances

Ratings		1500 rpm		1800 rpm	
		PRIME	STAND-BY	PRIME	STAND-BY
Rated Output	kWm	30	33	36	39.6

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

	4DSG-33 (50Hz)	4DSG-33 (60Hz)
Engine model	4DSG-33 (50Hz)	4DSG-33 (60Hz)
Engine type	In-line, 4 stroke, water cooled	
Combustion type	Swirl chamber	
Cylinder type	Wet liner	
Air intake type	Normally Aspirated	
Cylinder No.	4	
Bore*Stroke(mm)	100*115	
Total displacement(L)	3.61	
Compression ratio	19:1	
Firing order	1-3-4-2	
Injection timing	15°±2°	17°±2°
Speed governor	Mechanical ≤5%, (If choose Electronic governor, ≤1%)	
Exhaust temperature (°C)	≤540	
Mean Effective Pressure (KPa)	650	
Noise Level(dBA)	≤95	
Exhaust gas back pressure(KPa)	9	
Exhaust flow (m³/h)	550	
Cooling air flow (m³/h)	300	
Air for combustion flow (m³/h)	228	
Piston Speed(m/s)	5.75	6.9
Dry weight (kg)	340	
Dimension(L*W*H)(mm)	1018*624*980(with radiator)	
Rotation	Counter clockwise viewed from flywheel	
Flywheel housing/flywheel	SAE3/ 11.5"	

Mechanism

Type	Over head valve
Valves per cylinder	2
Valve lash(cold state)	Air intake valve 0.35-0.45mm Exhaust valve 0.35-0.45mm

Valve timing (crankshaft rotating angel)

Air intake valve open	$12^{\circ} \pm 3^{\circ}$ before top dead center
Air intake valve close	$36^{\circ} \pm 3^{\circ}$ after bottom dead center
Exhaust valve open	$56^{\circ} \pm 3^{\circ}$ before bottom dead center
Exhaust valve close	$12^{\circ} \pm 3^{\circ}$ after top dead center

Specific fuel consumption

rpm	1500	1800
Fuel consumption (g/kWh)	≤ 258.4	

Oil consumption

Oil consumption(g/kWh)	≤ 2.04
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Fuel system

Fuel injector pump	No.1 pump
Governor model	RSV full range type
Feed pump	Mechanical type
Injection nozzle	Single hole type
Fuel filter	Spin-on type/water separator
Fuel	Diesel

Lubrication system

Type	Mixed type, pressure and splash lubrication
Oil pump Displacement/speed (L/min/r/min)	Inner and outer rotor type 35/2350
Oil filter	Spin-on type
Lube oil total system capacity	13L including pipes, filters etc.

Cooling system

Cooling method	Water cooled, forced circulation
Coolant capacity: engine only	7L
Engine + radiator	13L
Water pump type	Centrifugal type driven by belt
Water pump capacity(L/min)	≥ 100
Thermostat	Opening temp.60°C
Cooling fan	$\Phi 450$ m, 6blades, PA

Electronic system

Charging alternator	14v/500w
AVR	No AVR for meter panel or monitor controller / Built-in type
Starting motor	12v/3.0kW
Battery capacity	12v/120Ah