

DIESEL ENGINE

MODEL 12DSG-510

Performances

Ratings		1500 rpm		1800 rpm	
		PRIME	STAND-BY	PRIME	STAND-BY
Rated Output	kWm	464	510	464	510

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

	12DSG-510 (50Hz)	12DSG-510 (60Hz)
Engine model	12DSG-510 (50Hz)	12DSG-510 (60Hz)
Engine type	In-line, 4 stroke, water cooled	
Combustion type	direct injection	
Cylinder type	Dry liner	
Air intake type	Turbocharger and intercooler	
Cylinder No.	12	
Bore*Stroke(mm)	135*150	
Total displacement(L)	25.765	
Compression ratio	16:1	
Firing order	1-12-5-8-3-10-6-7-2-11	
Injection timing	14°±1°	16°±1°
Speed governor	Electronic governor, ≤1%	
Exhaust temperature (°C)	≤600	
Mean Effective Pressure (KPa)	2898	2415
Noise Level(dBA)	≤117	
Exhaust gas back pressure (KPa)	5	
Exhaust flow (kg/h)	1410	1690
Cooling air flow (m³/h)	59400	70200
Air for combustion flow (m³/h)	2180	2616
Piston Speed(m/s)	8.25	9.9
Dry weight (kg)	1750	
Dimension(L*W*H)(mm)	4260*1300*1640 (with radiator)	
Rotation	Counterclockwise viewed from flywheel	
Flywheel housing/flywheel	SAE1/ 14"	

Mechanism

Type	Over head valve
Valves per cylinder	4
Valve lash(cold state)	Air intake valve 0.30mm Exhaust valve 0.40mm

Valve timing (crankshaft rotating angel)

Air intake valve open	34°-39° before top dead center
Air intake valve close	61°-67° after bottom dead center
Exhaust valve open	76°-81° before bottom dead center
Exhaust valve close	26°-34° after top dead center

Specific fuel consumption

rpm	1500	1800
Fuel consumption (g/kWh)	≤196	

Oil consumption

Oil consumption(g/kWh)	≤0.792
------------------------	--------

Fuel system

Fuel injector pump	In-line "PW" type
Governor model	RSV full range type
Feed pump	Mechanical type
Injection nozzle	BOSCH brand, multi hole type
Fuel filter	Double and spin-on type/water separator
Fuel	Diesel

Lubrication system

Type	Fully forced pressure feed type
Oil filter	Spin-on type
Lube oil total system capacity	35L including pipes, filters etc.

Cooling system

Cooling method	Water cooled, forced circulation
Coolant capacity: engine only	40L
engine+radiator	55L
Water pump type	Centrifugal type driven by belt
Thermostat	Opening temp.71±2℃ full open temp.82℃
Cooling fan	Φ1600 mm

Electronic system

Charging alternator	28v/1000w
AVR	Built-in type brushless
Starting motor	24v/8.0kW brushless
Battery capacity	2pcs 12v/150Ah