

DIESEL ENGINE

MODEL 4DSP-99

Performances

Ratings		3000 rpm	
		PRIME	STAND-BY
Rated Output	kWm	90	99

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	4DSP-99
Engine type	In-line, 4 stroke, water cooled
Combustion type	Direct Injection
Cylinder type	Dry liner
Air intake type	Turbocharger
Cylinder No.	4
Bore*Stroke(mm)	105*118
Total displacement(L)	4.087
Compression ratio	17.5:1
Firing order	1-3-4-2
Injection timing	15°±1°
Speed governor	Mechanical ≤8%
Exhaust temperature (°C)	≤550
Mean Effective Pressure (KPa)	840
Noise Level(dBA)	≤93
Exhaust gas back pressure(KPa)	8.0
Exhaust flow (m ³ /h)	1485
Cooling air flow (m ³ /h)	810
Air for combustion flow (m ³ /h)	615
Piston Speed(m/s)	11.8
Dry weight (kg)	380
Dimension(L*W*H)(mm)	990*550*970 (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 0.30-0.40mm Exhaust valve 0.30-0.40mm

Valve timing (crankshaft rotating angel)

Air intake valve open	24.5° before top dead center
Air intake valve close	55.5° after bottom dead center
Exhaust valve open	54° before bottom dead center
Exhaust valve close	26° after top dead center

Specific fuel consumption

rpm	3000
Fuel consumption (g/kWh)	≤218

Oil consumption

Oil consumption(g/kWh)	≤1.63
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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 50/2000
Oil filter	Spin-on type
Lube oil total system capacity	9L including pipes, filters etc.

Cooling system

Cooling method	Water cooled, forced circulation
Coolant capacity: engine only	6L
Engine + radiator	14L
Water pump type	Centrifugal type driven by belt
Water pump capacity(L/min)	≥150
Thermostat	Opening temp.73℃
Cooling fan	Φ450mm, 7blades, PA

Electronic system

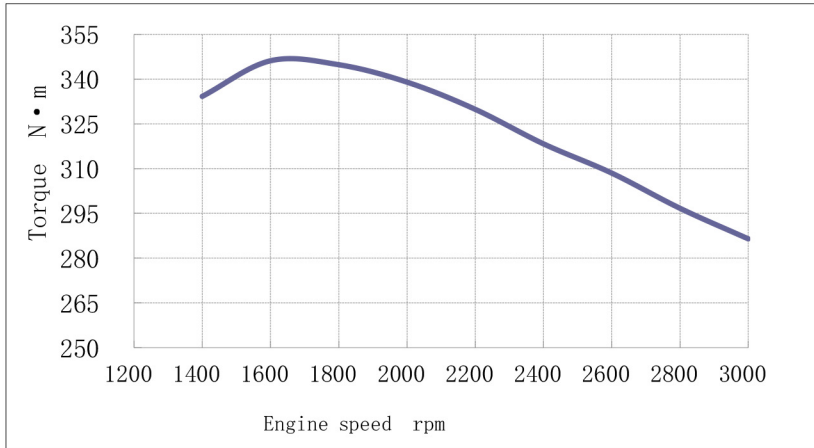
Charging alternator	14v/500w
AVR	Built-in type
Starting motor	12v/3.7kW
Battery capacity	12v/100Ah

DESSUN DIESEL ENGINE CURVE PERFORMANCE

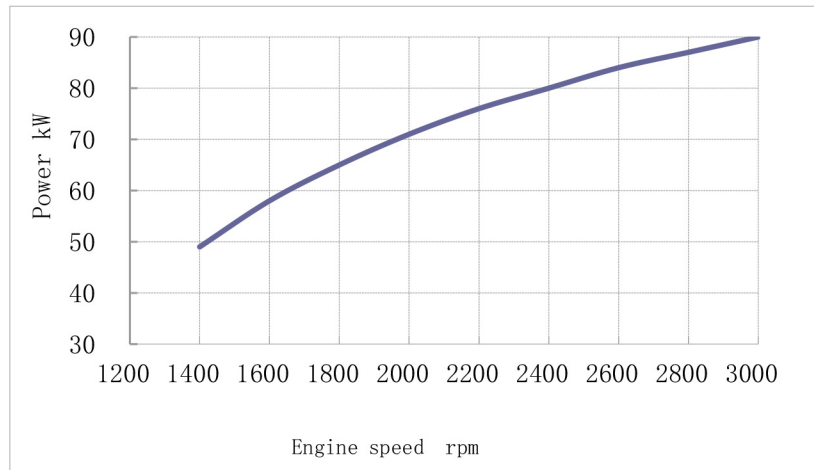
Power @ rpm		125HP(90KW) @ 3000RPM	
Max Torque@rpm		346N.m @1600RPM	
Series	DSP	Engine Model	4DSP-99

Intake Way: Natural Aspirated Compression ratio: 17.5:1 engine number:
 Bore(mm): 105 Stroke(mm): 118 Displacement(L): 4.088 Cylinder: 4
 Fuel System Direct injection Speed Rate: 3%

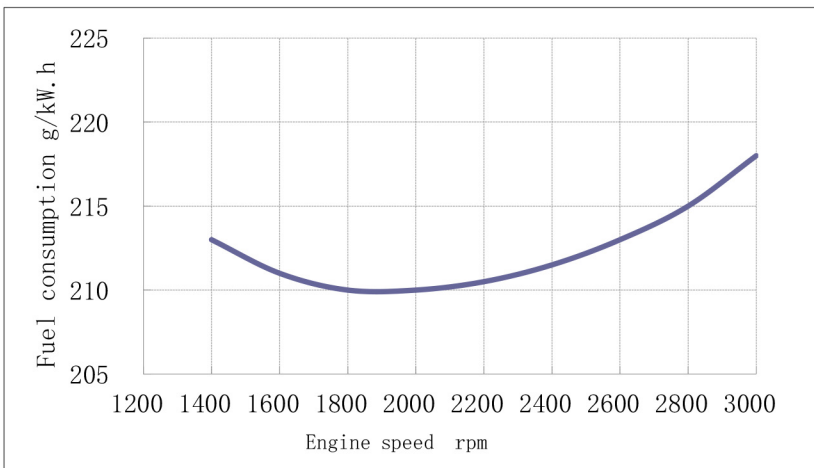
All data is based on the engine operating with fuel system, water pump, and 10 in H2O (2.488 kPa) inlet air restriction with 5.98 in(152mm) inner diameter, and with 2.01 in Hg(7 kpa) exhaust restriction with 4.02 in(108mm) inner diameter, not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.



Torque	
rpm	N.m
3000	286
2800	297
2600	309
2400	318
2200	330
2000	339
1800	345
1600	346
1400	334

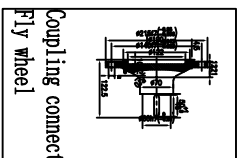
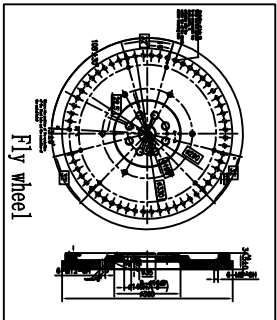
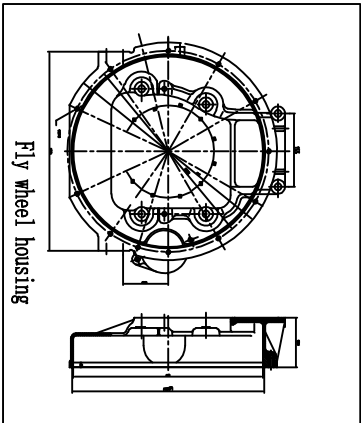
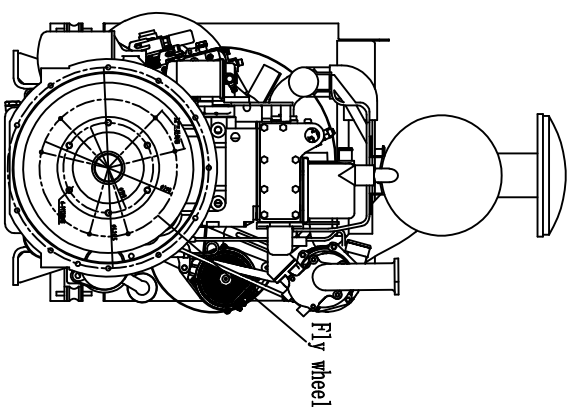
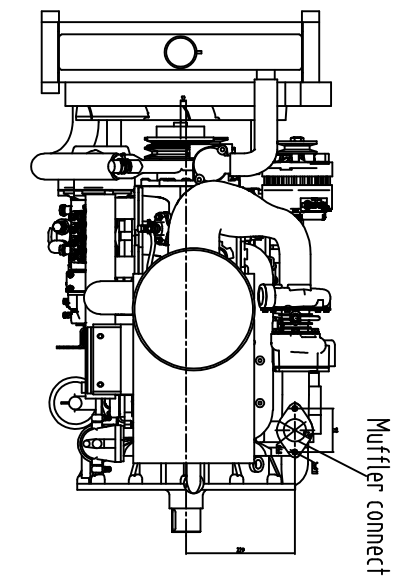
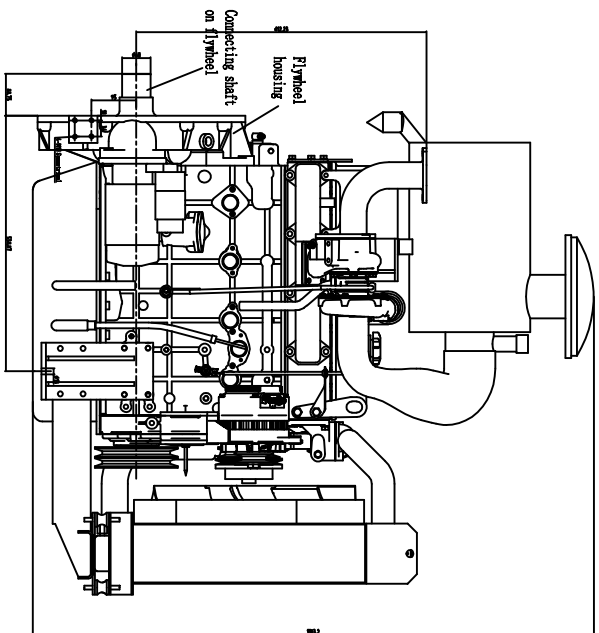
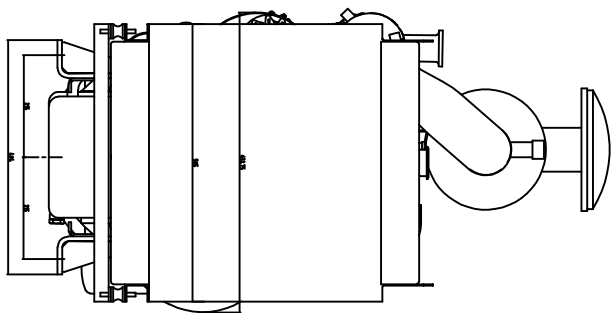
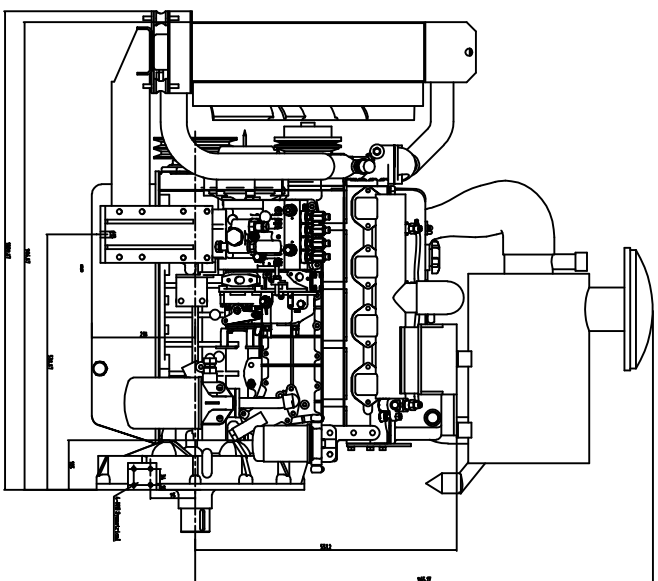


Power	
rpm	kW
3000	90.0
2800	87.0
2600	84.0
2400	80.0
2200	76.0
2000	71.0
1800	65.0
1600	58.0
1400	49.0



Fuel consumption	
rpm	g/kW.h
3000	218
2800	215
2600	213
2400	212
2200	211
2000	210
1800	210
1600	211
1400	213

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.61 in.Hg) barometric pressure [80m (263ft.) altitude], 25°C (77°F) inlet air temperature, and 1 kPa(0.30 in. Hg) water vapor pressure with NO.2 diesel fuel. The engine may be operated without changing the fuel setting up to 4000m(13,123ft.) altitude. For sustained operation at high altitudes, the fuel rate of the engine will be adjusted to limit performance by 4% per 305m(1,000ft.) above 2255m(7,400ft.) altitude and 2% per 11 °C above 38°C(1% per 10°F above 100°F)



CUSTOMER	-		
TITLE	DESSIN ENGINE ASSEMBLY		
SCALE	1/5	DATE	18/09/20
DRAWN BY	-	CHECKED BY	-
APPROVED BY	-	CONTRACT NO.	4DSP-99
CLIENT APPROVAL	-	JOB NO.	2018090-00

REVISION	NO.	DESCRIPTION
1	1	INITIAL Dwg.