

# DIESEL ENGINE

# MODEL 4DSP-38

## Performances

Ratings		3000 rpm	
		PRIME	STAND-BY
Rated Output	kWm	38	41

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-38
Engine type	In-line, 4 stroke, water cooled
Combustion type	Direct Injection
Cylinder type	Wet liner
Air intake type	Normally Aspirated
Cylinder No.	4
Bore*Stroke(mm)	90*100
Total displacement(L)	2.545
Compression ratio	18:1
Firing order	1-3-4-2
Injection timing	15°±1°
Speed governor	Mechanical ≤8%
Exhaust temperature (°C)	≤600
Mean Effective Pressure (KPa)	539
Noise Level(dBA)	≤93
Exhaust gas back pressure(KPa)	3.5
Exhaust flow (m <sup>3</sup> /h)	550
Cooling air flow (m <sup>3</sup> /h)	320
Air for combustion flow (m <sup>3</sup> /h)	250
Piston Speed(m/s)	9.5
Dry weight (kg)	265
Dimension(L*W*H)(mm)	735*455*1100 (with muffler)
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)	≤240

**Oil consumption**

Oil consumption(g/kWh)	≤0.72
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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**

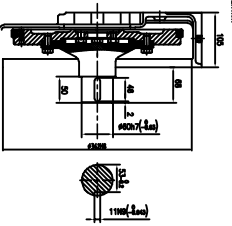
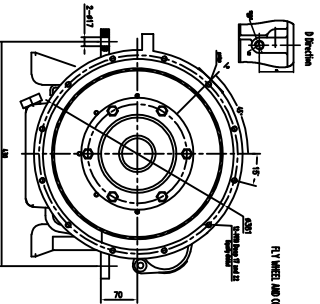
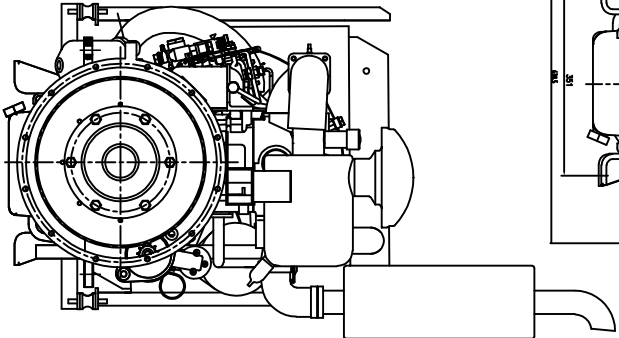
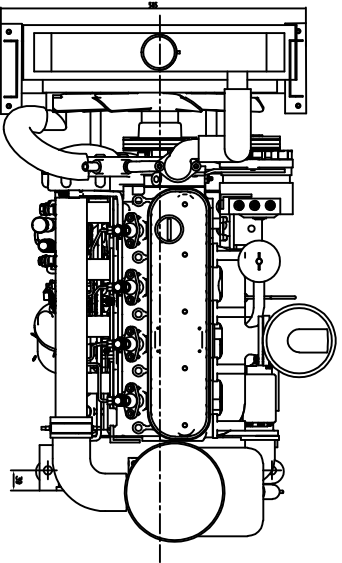
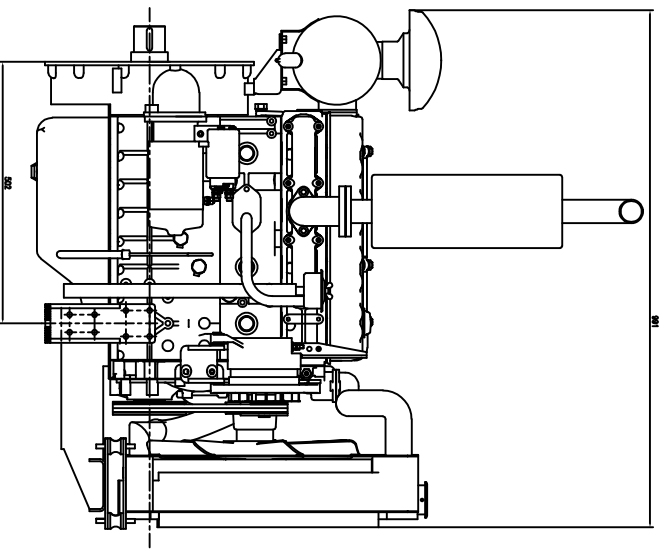
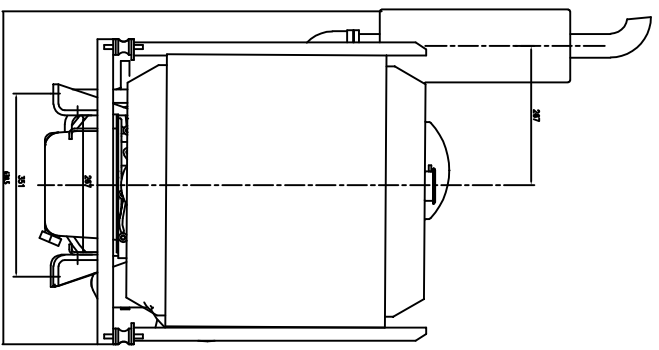
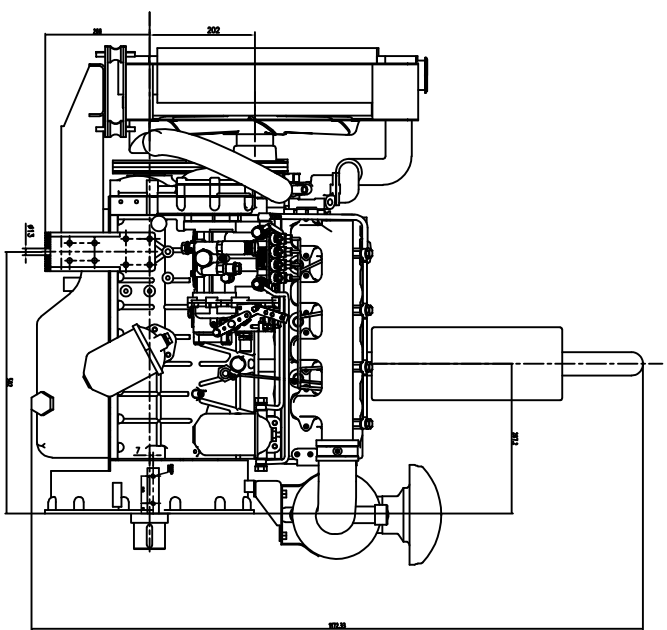
Type	Mixed type, pressure and splash lubrication
Oil pump Displacement/speed (L/min/r/min)	Inner and outer rotor type 21/1500
Oil filter	Spin-on type
Lube oil total system capacity	9L including pipes, filters etc.

**Cooling system**

Cooling method	Water cooled, forced circulation
Coolant capacity: engine only	5.5L
Engine + radiator	12L
Water pump type	Centrifugal type driven by belt
Water pump capacity(L/min)	≥80
Thermostat	Opening temp.73°C
Cooling fan	Φ400mm, 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



Flywheel and connecting rod

CUSTOMER		TITLE	
-		DESSIN ENGINE ASSEMBLY	
SCALE	1/5	DATE	18/09/20
DRAWN BY	-	DESIGNED BY	-
CHECKED BY	-	APPROVAL	-
CLIENT APPROVAL	-	CONTRACT NO.	01DSP-38
REVISED	-	JOB NO.	2018090-30

