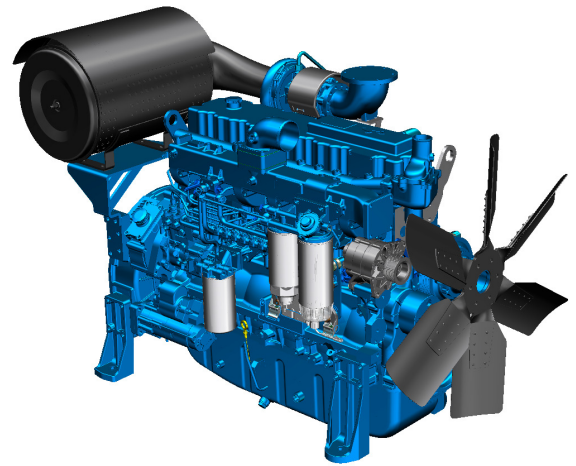


YC6MJ500L-D21

Prime power: 334kW @ 1500 r/min

Standby power: 367 kW @ 1500 r/min



Definitions

Prime Power

It corresponds to the prime rated power (PRP) of GB/T 2820 and ISO 8528, and refers to the maximum power accessible at the variable load for an unlimited running hours per year, with the maintenance intervals and procedures being carried out as prescribed by Yuchai, and the allowed average output power within 24 h shall not be higher than 70% of the prime power.

Standby Power

It corresponds to the emergency standby power (ESP) of GB/T 2820 and ISO 8528, and refers to the maximum power accessible at a certain variable load series in the event of a utility power outage or under test conditions for an limited running hours up to 200 h per year, with the maintenance intervals and procedures being carried out as prescribed by Yuchai. The allowed average output power within 24 h shall not be higher than 70% of the standby power.

Main technical parameters

Number of cylinders	6
Configuration	Vertical, in-line
Aspiration	Turbocharged, air-air intercooled
Combustion system	Direct injection
Compression ratio	16.8:1
Bore	131 mm
Stroke	145 mm
Displacement	11.73 L
Rotation	Counterclockwise (viewed from the flywheel end)
Firing order (viewed from the belt pulley end)	1-5-3-6-2-4
Dry weight (without radiator)	1050 kg
Wet weight (without radiator)	1100 kg

Overall dimensions

Length (from front end of radiator to rear end of air filter)	2146 mm
Width	1125 mm
Height (with radiator and mounting support)	1450 mm

Centre of gravity (dry engine, with the center of the rear end face of the flywheel shell as the origin)

From the rear end face of the flywheel	586 mm
Height relative to the center of the crankshaft	181 mm

Centerline deviation relative to the crankshaft center gravity	23 mm
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Moments of rotation inertia

Engine	3.02 kg·m ²
Flywheel	2.35 kg·m ²

Performance rating

Speed droop	≤ 3 %
Steady state speed band	≤ 0.5 %

Test conditions

Ambient temperature	25 °C
Atmospheric pressure	100 kPa
Relative humidity	30 %
Max. operating intake resistance	≤ 5 kPa
Exhaust backpressure limit	≤ 10 kPa
Fuel temperature (fuel inlet pump)	38±2 °C

Attention: Unless otherwise explicitly specified, all parameter data are measured under standard test condition as above. If the engine is operated under other test conditions rather than the test condition above, it shall be adjusted properly according to the actual environment. Contact the Yuchai Technical Service Department for details.

Matching parameters

Designation	Unit	Matching parameters	
		Standby	Prime
		50 Hz @ 1500 r/min	
Gross engine power	kW	370	336
Net engine power	kW	357	323
Fan power consumption (belt pulley driven)	kW	13	13
Other power loss	kW	3	3
Mean effective pressure	MPa	2.52	2.29
Intake air flow	m ³ /min	18.88	18.72
Exhaust temperature limit (after turbocharger)	°C	550	550
Exhaust flow	m ³ /min	47.7	46.6
Boost pressure ratio		3.62	3.32
Thermal efficiency	%	41.6	41.5
Mean piston speed	m/s	7.25	7.25
Coolant flow	L/min	365	365
Cooling fan air flow (duct allowance:631.4kPa)	m ³ /min	619.4	619.4
Typical gen-set electrical output (power factor:0.8)	kW	330	300
	kVA	412	375
Assumed generator efficiency	%	92.4	92.9

Energy balance parameters

Note: The calorific value of diesel is 42,770 kJ/kg

Designation	Unit	Energy balance parameters	
		Standby	Prime
		50 Hz @ 1500 r/min	
Total fuel chemical energy	kW	883	805
Output power (gross)	kW	370	336
Output power (net)	kW	357	323
Fan power consumption	kW	13	13
Other power loss	kW	3	3
Heat dissipation capacity(coolant circulation)	kW	213	184
Heat dissipation capacity(intake intercooled system)	kW	73	67
Heat dissipation of exhaust	kW	215	207
Heat dissipation of thermal radiation	kW	9	8

Heat dissipating capacity of Yuchai engine with radiator at an ambient temperature of 50 °C is as follows:

Designation	Unit	Energy balance parameters	
		Standby	Prime
		50 Hz @ 1500 r/min	
Total fuel chemical energy	kW	937	844
Output power (gross)	kW	367	332
Output power (net)	kW	354	319
Fan power consumption	kW	13	13
Other power loss	kW	3	3
Heat dissipation capacity(coolant circulation)	kW	123	92
Heat dissipation capacity(intake intercooled system)	kW	84	72
Heat dissipation of exhaust	kW	283	259
Heat dissipation of thermal radiation	kW	77	86

Cooling system

Total coolant capacity.....	62 L
Engine coolant capacity.....	18 L
Radiator coolant capacity.....	40 L
Pipeline coolant capacity.....	4 L
Engine max. outlet coolant temperature.....	99℃
Thermostat operation temperature	
Initial open.....	(80±2)℃
full open.....	<90℃
Max. coolant temperature rise:	
-Standby power.....	8.5℃
-Prime power.....	8℃

Radiator

Cooling area.....	120m ²
Dry weight.....	163kg
Core material.....	Aluminum
Width of core.....	1035 mm
Height of core.....	1010 mm
Min. pressure of pressure cap.....	(50±5)kPa
Coolant resistance limit.....	30 kPa

Intercooler

Cooling area.....	60 m ²
Core material.....	Aluminum
Width of core.....	1040 mm
Height of core.....	1010 mm
Air resistance limit.....	12.5 kPa

Coolant pump

Rotation speed.....	2460 r/min
Drive mode.....	Pulley driven

Fan

Diameter.....	914 mm
Drive ratio.....	1.04:1
Material.....	Steel
Number of blades.....	6
Type.....	Blowing

Intake system

Air filter

Max. intake resistance:	
-Clean air filter	3.5 kPa
-Dirty air filter	5 kPa
-Warning of intake resistance	6.2 kPa
-Air filter type.....	Dry-type, filter cartridge of paper

Inclination

Transverse inclination/longitudinal inclination (volume of engine oil sump: 28 L)	10°/ 10°
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Fuel system

Injection system.....Mechanical pump+electronic governor

Injector

Type.....	P-type, with multiple jets
Injector opening pressure	(26~27) MPa

Fuel pump

Drive mode	Gear driven
Fuel delivery pump flow @1,500 rpm	4.1 L/min
Max. fuel inlet temperature limit.....	70 ℃
Allowed fuel inlet pressure of front end of fuel delivery pump (absolute pressure).....	(-100~150) kPa
Maximum fuel return pressure of fuel pump	20 kPa

Fuel filter

Pre- filter

Rated flow.....	7 L/min
Max. original resistance	12 kPa
Water separation efficiency at the rated flow	≥95 %
Filter efficiency:	
For particles of ≥25 μm	≥99 %
For particles of 10 μm.....	≥85 %

Fine- filter

Rated flow.....	7 L/min
Max. original resistance	10 kPa
Filtering efficiency:	
For particles of ≤4 μm	≥99.6 %
For particles of (4~6) μm	≥99.9 %
For particles of ≥14 μm	≥99.99 %

Fuel consumption

Note: The density of diesel is 0.835 kg/L.

Load condition	1500 r/min	
	g/(kW·h)	L/h
Standby	203.7	89.7
Prime	201.7	81.4
75% prime	200.8	61.1
50% prime	205.3	41.7

Lubricating system

Total oil capacity(dry engine)37 L
 Total oil capacity(oil change)35 L
 Oil sump capacity - low level/high level28/35 L
 Max. oil temperature (in oil sump)120 °C
 Operating oil temperature(in oil sump)..... (90~115) °C
 Oil pressure(idle speed) ≥120 kPa
 Oil pressure(rated speed)..... (300~600) kPa
 Oil-fuel consumption ratio <0.1 %

Oil filter

The filtering efficiency at the rated flow of 60 L/min and the assembly initial resistance ≤25 kPa:
 For 15µm≤particles<20µm.....>75%
 For 20µm≤particles<30µm.....>95%
 For 30µm≤particles<40µm.....>99%
 For particles≥40µm.....>99.9999%

Electric system

Type.....Negative ground

Charger

Voltage 28V
 Output current 55A

Starter

Type Electric start, 1
 Voltage 24V
 Power9kW
 Number of teeth of flywheel..... 119
 Number of teeth of starter..... 11

Cold start (test data, for reference only)

24 V					
Battery specification×quantity:12V/200Ah×2					
Starting temperature	°C	25	-15	-25	-30
Starting speed	r/min	183	142	101	86
Starting current	A	203	374	421	504
Starting voltage	V	21.8	21.4	18.9	16.9
Starting time	s	1.3	7.2	2.1	4.5
Preheating time	s	0	0	40	50

Auxiliary intake heater

Type..... Grating-type
 Specification 2.2 kW

Water preheater

Recommended specification.3 kW/220 V
 Engine preheater water outlet interface (thermostat)..... NPT 1/2
 Engine preheater water inlet interface (distributor)..... M14×1.5

Oil heater

Recommended specification. 300 W/220 V
 Interface (oil sump, 1)..... M22×1.5

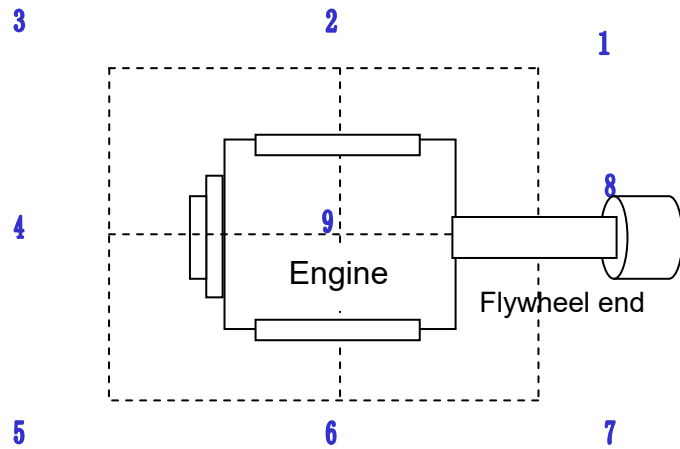
Exhaust system

Max. exhaust backpressure..... 10 kPa
 Inner diameter of exhaust port pipe.....Φ125 mm

Noise

Noise data (334 kW @ 1500 r/min)

Position	Noise, dB(A)
1	92.6
2	100.1
3	94.6
4	94.4
5	91.4
6	95.9
7	92.3
8	94.5
9	96.9



Noise spectrum (334 kW @ 1500 r/min)

Frequency, Hz	Noise, dB(A)
63	53.9
125	61.5
250	67.5
500	79.8
1k	87.3
2k	86.5
4k	82.9
8k	77.6
16k	75.8

