JIANGHAO GENERATOR

➢Engine: Perkins 2506C-E15TAG1

➢Alternator:Stamford/Leroy Somer /Hengsheng

➢Controller:DeepSea/SmartGen /DEIF/ComAp

Genset

Model	JHP5-360GF
Voltage	230/400V
Frequency&Speed	50HZ;1500RPM
Prime Power	364kW/455kVA
Standby Power	400kW/500kVA

Basic technical data

Number of cylinders 6
Cylinder arrangement ..... Vertical, In-line
Cycle ..... 4 stroke
Induction system ..... turbocharged, air to air charge cooling
Combustion system ..... direct injection
Compression ratio 16:1
Bore ..... 137 mm
Stroke ..... 171 mm
Cubic capacity ..... 15 litres
Direction of rotation ..... anti-clockwise viewed on flywheel
Firing order (cylinder 1 furthest from flywheel) 1, 5, 3, 6, 2, 4

Total weight of ElectropaK

-dry (engine only) ..... 1633 kg
-wet ..... 1714 kg

Overall dimensions

-height ..... 1718 mm
-length ..... 2657 mm
-width ..... 1120 mm

Moments of inertia (mk²)

Engine
-1500 rev/min ..... 2·3291 kgm²
-1800 rev/min ..... 2·3291 kgm²
Flywheel
-1500 rev/min ..... 1·96355 kgm²
-1800 rev/min ..... 1·96355 kgm²

Performance

Note: All data based on operation to ISO 3046/1, BS5514 and DIN 6271 standard reference conditions.

Cyclic irregularity

Engine / Flywheel maximum:
-1500 rev/min 1:44
-1800 rev/min 1:60

Ratings

Steady state stability at constant speed ..... ± 0·25 %
Electrical ratings are based on average alternator efficiency and are for guidance only (0.8 power factor being used)

Operating point

Engine speed ..... 1500 & 1800 rev/min
Cooling water maximum exit temperature ..... < 107 °C

Fuel data

To conform to ..... BS2869 class A2 or BS EN590

Test conditions

-air temperature ..... 25 °C
-barometric pressure ..... 100 kPa
-relative humidity 30%
-air inlet restriction at maximum power (nominal) ..... 2,5 kPa
-exhaust back pressure at maximum power (nominal) ..... 6,0 kPa
-maximum fuel temperature (inlet pump) ..... 40 °C
Note: If the engine is to operate in ambient conditions other than those of the test conditions, suitable adjustments must be made for these changes. For full details, contact Perkins Technical Service Department. For test conditions relevant to data on load acceptance, refer to the bottom of page 14.

Sound level

Estimated sound pressure level at 1 metre:
-1500 rev/min ..... 103,1 dB(A)
-1800 rev/min ..... 105,2 dB(A)

2506C-E15TAG1

Designation	Units	Type of operation and application			
		Prime	Standby	Prime	Standby
		50 Hz @ 1500 rev/min		60 Hz @ 1800 rev/min	
Gross engine power	kWb	412	451	458	514
Fan power	kWm	8,8		15,5	
Restriction losses	kWm	7,2	7,8	8,0	8,8
ElectropaK nett engine power	kWm	396	435	435	490
Gross brake mean effective pressure	kPa	2197	2405	2036	2284
Combustion air flow	m³/min	33,0	35,8	34,3	38,0
Exhaust gas temperature (max)	°C	N/A	550	N/A	550
Exhaust gas flow	m³/min	85,0	94,0	96,0	105,3
Boost pressure ratio	-	3,20	3,40	3,00	3,25
Overall thermal efficiency (nett)	%	39,9	39,7	44,0	43,4
Friction and pumping power losses	kWm	45		51	
Mean piston speed	m/s	8		10	
Engine coolant flow	l/sec	6,1		7,2	
Cooling fan air flow (zero duct allowance)	m³/min	722		866	
Typical Gen Set electrical output (0.8 pf)	kWe	364	400	400	450
	kVA	455	500	500	563
Assumed alternator efficiency	%	92		92	

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Cooling system

Recommended coolant:
50% inhibited ethylene glycol or 50% inhibited propylene glycol and 50% clean fresh water. Where there is no likelihood of ambient temperatures below 10 °C, clean 'soft' water may be used, treated with 1% by volume of Perkins inhibitor in the cooling system. The inhibitor is available from all Perkins Distributors.

Total system coolant capacity ..... 58,0 litres
Maximum pressure:
-in crankcase water jacket. ..... 276 kPa
Maximum top tank temperature ..... 107 °C
Maximum static pressure on pump ..... 170 kPa
Maximum permissible restriction:
-to coolant pump flow ..... 30 kPa
Temperature rise across engine with inhibited coolant:
-standby power @ 1500 and 1800 rev/min ..... 10 °C
-prime power @ 1500 and 1800 rev/min ..... 9 °C
Thermostat operation range ..... 88 to 98 °C

Radiator

-face area ..... 1·238 m²
-weight (dry) ..... 132 kg
-rows and materials ..... 2 rows, Aluminium
-matrix density and material ..... 12 fins per inch, Aluminium
-width of matrix ..... 1048 mm
-height of matrix ..... 1100 mm
-pressure cap setting (minimum) ..... 69 kPa

Charge cooler with integral radiator

-face area ..... 1·006 m²
-number of rows and material ..... 1 row, Aluminium
-matrix density and material ..... 12,5 fins per inch, Aluminium
-width of matrix ..... 915 mm
-height of matrix ..... 1100 mm

Coolant pump

Speed:
-1500 rev/min ..... 1622 rev/min
-1800 rev/min ..... 1946 rev/min
Method of drive ..... gear

Fan

-diameter ..... 927 mm
-drive ratio ..... 0·92:1
-number of blades 9
-material ..... B3WG6 or PA6GF30 Nylon 6 glass filled 30%
-type ..... ACS 367500

Cooling clearance

Ambient cooling clearance (standby power) based on air temperature at fan of 6 °C above the ambient

2506C-E15TAG1 maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow			
Duct allowance with inhibited coolant at 50 °C			
Description	**rev/min**	**Units**	**Standby**
Duct allowance	1500	kPa	0·125
	1800	kPa	0·125
Minimum airflow	1500	m³/min	660
	1800	m³/min	822
Duct allowance with 50% glycol at 43 °C			
Duct allowance	1500	kPa	0·200
	1800	kPa	0·200
Minimum airflow	1500	m³/min	576
	1800	m³/min	792

2506C-E15TAG2 maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow			
Duct allowance with inhibited coolant at 50 °C			
Description	**rev/min**	**Units**	**Standby**
Duct allowance	1500	kPa	0·125
	1800	kPa	0·125
Minimum airflow	1500	m³/min	660
	1800	m³/min	822
Duct allowance with 50% glycol at 43 °C			
Duct allowance	1500	kPa	0·200
	1800	kPa	0·200
Minimum airflow	1500	m³/min	576
	1800	m³/min	822

Electrical system

Type ..... 12V negative earth
Alternator
-type 22SI
-voltage ..... 24 volts
-output ..... 70 amps
Starter
-type 42MT
-motor voltage ..... 24 volts
-motor power ..... 7,5 kW
Number of teeth
-on the flywheel 113
-on starter pinion 11
Minimum cranking speed ..... 100 rev/min
Pull-in current of starter motor solenoid
@ -25 °C max (1) ..... 57 amps
Hold-in current of starter motor solenoid
@ -25 °C max (1) ..... 16 amps

1. All leads to rated at 10 amps minimum

- ✧ NEMAMG1.JIANGHAO,and ANSl standards compliance for temperature rise and motor starting.
- ✧ Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- ✧ Sustained short-circuit current enabling down stream circuit breakers to trip without collapsing the generator field.
- ✧ Self-ventilated and dripproof construction.
- ✧ Superior voltage waveform from two-thirds pitch windings and skewed stator.
- ✧ Digital solid-state.volts-per-hertz voltage regulator with +1% no-load to full-load regulation.

Alternator

Pole No.	4-Pole
Exciter Type	Single bearing, Brushless, Self-excited
Power factor	0.8
Voltage adjust range	≦5%
Insulation Grade	H
Protection Grade	IP23/22
Phase / wire	3 phase 4 wires

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Control Panel




The control module gives digital readouts of:

Generator voltage;

Output frequency;

Engine speed;

Battery voltage;

Engine hours run.

The **control panel** is an Digital Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the module will display warnings, shutdown and engine status information on the back-lit LCD screen and illuminated LEDs.

The control module has indicators for failure information:

Over speed/Low speed,

Emergency stop

Low oil pressure;

High water temperature

Failure to start

Battery charger failure

Automatic shutdown occurs under:

Low engine oil pressure;

High engine water temperature;

Over speed/Low speed;

Failure to start after three attempts.

Dimension:3700*1200*2000mm

Weight:3400kg

Dimension:4700*2100*2400mm

Weight:6300kg

Fuel Tank Capacity:1000L

Electrical system

- Maintenance-free and anti-explosion battery
- Standard breaker
- ABB breaker (optional)
- ATS (optional)
- Battery charger (optional)
- GMS monitoring (optional)

Packing

- Wrapping film packaging
- Tray packaging
- plywood box packaging

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