JIANGHAO GENERATOR

- ➢Engine: Perkins 1106A-70TAG3
- ➢Alternator:Stamford/Leroy Somer /Hengsheng
- ➢Controller:DeepSea/SmartGen /DEIF/ComAp

Genset

Model	JHP-150GF
Voltage	277/480V
Frequency&Speed	60HZ;1800RPM
Prime Power	158kW/197kVA
Standby Power	175kW/219kVA

Basic technical data

Number of cylinders 6
Cylinder arrangement ..... Inline
Cycle ..... 4 stroke
Induction system ..... Turbocharged and air charge cooled
Combustion system ..... Direct injection diesel
Compression ratio ..... 16 : 1
Bore ..... 105 mm
Stroke ..... 135 mm
Cubic capacity ..... 7.01 litres
Direction of rotation ..... Anticlockwise when viewed from flywheel
Firing order 1, 5, 3, 6, 2, 4
Estimated total weight (dry) ..... 743 kg
Estimated total weight (wet) ..... 777 kg

Overall dimensions (ElectropaK)

Height ..... 1092 mm
Length (air cleaner fitted) ..... 1706 mm
Width ..... 756 mm

Moments of inertia

Engine rotational components ..... 0.27 kgm²
Flywheel ..... 1.26 kgm² (SAE2)

Centre of gravity, ElectropaK

Forward from rear of block (wet) ..... 476 mm
Above crankshaft centre line (wet) ..... 176 mm
Offset to RHS of crankshaft centre line (wet) ..... -16 mm

Performance

Speed variation at constant load ..... ± 0.75%
Cyclic irregularity at standby power 0.028
All ratings within ..... ± 5%

Note: All data based on operation to ISO 3046-1:2002 standard reference conditions.

Sound level

Average sound pressure level for prime power @ 1 m ..... TBA dB(A)

Test conditions

Air temperature ..... 25°C
Barometric pressure ..... 100 kPa
Relative humidity 31.5%
Air inlet restriction at maximum power ..... 3 kPa (maximum)
Exhaust back pressure at maximum power ..... 6 kPa (maximum)
Fuel temperature ..... 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.

General installation

General Installation	Units	Prime	Standby
Gross engine power	kW	180.5	199.7
Brake mean effective pressure	kPa	1716.6	1899.2
Mean piston speed	m/s	8.1	
ElectropaK nett engine power	kW	172.5	191.7
Engine coolant flow (against 35 kPa restriction)	litres/min	170	
Combustion air flow (at STP)	m³/min	15.45	16.37
Exhaust gas flow (maximum)	m³/min	35.42	38.35
Exhaust gas temperature (maximum) in manifold (after turbocharger)	°C	485	
Nett engine thermal efficiency	%	37.6	37.6
Typical genset electrical output (0.8pf 25°C)	kWe	157.5	175
	kVA	196.9	218.75
Regenerative power (estimated)	kW	9	
Assumed alternator efficiency	%	91.3	91.3
Energy balance			
Heat in fuel	kW	458.5	510.2
Power to cooling fan	kW	8	
Power to coolant and lubricating oil	kW	81.5	88.3
Power to exhaust	kW	142.1	159.9
Energy to charge coolers	kW	37.2	42.8
Power to radiation	kW	17.2	19.5

Prime power: Unlimited hours usage, with an average load factor of 80% over each 24 hour period. A 10% overload is available for 1 hour in every 12 hours operation.

Standby power: Limited to 500 hours annual usage, with an average load factor of 80% of the published standby power rating over each 24 hour period. Up to 300 hours of annual usage may be run continuously. No overload is permitted on standby power.

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Cooling system

Cooling pack

Overall weight (wet) ..... 45 kg
Overall face area ..... 469,200 mm²
Width ..... 684 mm
Height ..... 690 mm

Radiator

Face area ..... 303,600 mm²
Number of rows and materials ..... 4 rows, Aluminium
Matrix density and material ..... 11.3 fins per inch, Aluminium
Width of matrix ..... 440 mm
Height of matrix ..... 690 mm
Pressure cap setting (minimum) ..... 110 kPa

Charge cooler

Face area ..... 151,800 mm²
Number of rows and materials ..... 2 rows, Aluminium
Matrix density and material ..... 10 fins per inch, Aluminium
Width of matrix ..... 220 mm
Height of matrix ..... 690 mm

Fan

Diameter ..... 635 mm
Drive ratio 1.25:1
Number of blades 7
Material ..... Nylon
Type ..... Pusher
Air flow @ 1800 rpm ..... 282 m³/min
Power @ 1800 rpm ..... 8 kW

Coolant

Total system capacity ..... 20.5 litres
System drawdown capacity 10%
Engine capacity ..... 9.5 litres
Maximum top tank temperature ..... 110°C
Temperature rise across engine
(Maximum rating dependent) ..... 6°C - 12°C
Maximum permissible external system resistance ..... 35 kPa
Thermostat operation range ..... 82°C to 93°C
Shutdown switch setting ..... 118°C
Coolant pump method of drive ..... Gear
Recommended coolant immersion heater rating (minimum) ..... 0.75 kW
Recommended coolant .....
..... BS6580 - 1992, ASTM D3306 and ELC coolants to 1E1966

Duct allowance

Maximum additional restriction (duct allowance to cooling airflow and resultant minimum air flow) - Standby power

Description	rpm	kPa	m³/min
Duct allowance with inhibited coolant at 53°C			
Minimum air flow	1800	0.12	258
Duct allowance with inhibited coolant at 46°C			
Minimum air flow	1800	0.200	228

Electrical system

Alternator 8SI
Alternator voltage ..... 12 volts
Alternator output ..... 65 amps
Starter ..... 38 MT
Starter motor voltage ..... 12 volts
Starter motor power ..... 5.0 kW
Number of teeth on the flywheel 134
Pull-in and hold-in current of starter motor solenoid
@ 25°C maximum [1] ..... 12 volts 320 amps
Hold-in current of starter motor solenoid
@ 25°C maximum [1] ..... 12 volts 25 amps
Engine stop method ..... Solenoid

[1] All leads to rated at 10 amps minimum

Cold start recommendations

Minimum required cranking speed over TDC ..... 60 rpm

	5 to -10°C	-10 to -20°C	-20 to -25°C
Oil	15W40	10W40	5W40
Starter	38 MT		
Battery	2 x 950 CCA		
Cranking current	850 A		
Aids	None	Glowplugs	
Minimum mean cranking speed	130 rpm	100 rpm	100 rpm

Note: Battery capacity is defined by the 20 hour rate.

Note: If a change to a low viscosity oil is made, the cranking torque necessary at low ambient temperatures is much reduced. The starting equipment has been selected to take advantage of this. It is important to change to the appropriate multigrade oil in anticipation of operating in low ambient temperatures.

Exhaust system

Maximum back pressure - 1800 rpm ..... 6.0 kPa
Exhaust outlet, internal diameter ..... 72 mm

Fuel consumption

Load	Type of operation and application	
	g/kWh	litres/hr
110% Prime power	212.5	50.5
Prime power	214.2	46.4
75% Prime power	218.4	35.3
50% Prime power	210.9	22.7
25% Prime power	229.5	12.4

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

- ✧ NEMAMG1.JIANGHAO,and ANSI 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.

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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:2300*950*1300mm

Weight:1300kg

Dimension:3300*1300*1800mm

Weight:2350kg

Fuel Tank Capacity:360L

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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