JIANGHAO GENERATOR

- ➢Engine: Perkins 403A-15G2
- ➢Alternator:Stamford/Leroy Somer /Hengsheng
- ➢Controller:DeepSea/SmartGen /DEIF/ComAp

Genset

Model	JHP-14GF
Voltage	277/480V
Frequency&Speed	60HZ;1800RPM
Prime Power	14kW/18kVA
Standby Power	16kW/20kVA

Basic technical data

Number of cylinders 3
Cylinder arrangement ..... Vertical in-line
Cycle ..... 4 stroke
Induction system ..... Naturally aspirated
Compression ratio 22.5:1
Bore ..... 84 mm
Stroke ..... 90 mm
Displacement ..... 1.496 litres
Direction of rotation when viewed from flywheel ..... Anticlockwise
Firing order 1, 2, 3

Weight of ElectropaK

Dry (estimated) ..... 197 kg
Wet (estimated) ..... 215 kg

Overall dimensions of ElectropaK

Height ..... 793 mm
Length ..... 820 mm
Width ..... 469 mm

Centre of gravity

Forward from rear of block ..... 139 mm
Above centre line of block ..... 67 mm

Moments of inertia

Engine rotational components ..... 0.45 kgm²
Flywheel ..... 2.01 kgm²

Cyclic irregularity for engine standby power

At 110% ..... TBA

Ratings

Steady state speed stability at constant load ..... ± 0.75%

Performance

Average sound pressure level for bare engine (without inlet and exhaust) at 1 metre ..... 76.7 dB(A)

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

Note: For engines operating in ambient conditions other than the standard reference conditions stated below, a suitable derate must be applied

Note: Derate tables for increased ambient temperature and/or altitude are available, please contact Perkins Applications Department.

Test conditions

Air temperature ..... 25°C
Barometric pressure ..... 100 kPa
Relative humidity 31.5%
Air inlet restriction at maximum power (nominal) ..... 3 kPa
Exhaust back pressure at maximum power (nominal) ..... 10.2 kPa
Fuel temperature (inlet pump) ..... 40°C
All ratings certified to within ..... ± 5%

General installation, 403A-15G2 ElectropaK @ 1800 rpm

Designation	Units	Type of operation and application	
		Prime power (60Hz)	Standby power (60Hz)
Gross engine power	kWb	16.33	17.96
Gross BMEP	kPa	728	800
Mean piston speed	m/s	5.4	
ElectropaK nett engine power	kW	16.1	17.77
Engine coolant flow against 35 kPa restriction	litres/min	55.2	
Combustion air flow	m³/min	1.2	TBA
Exhaust gas flow (max.) at atmospheric pressure	m³/min	2.6	TBA
Exhaust gas temperature (max.)	°C	480	590
Overall thermal efficiency	%	33.04	33.10
Typical Generator sets electrical output (0.8pf 25°C)	kWe	14.01	15.62
	kVA	17.51	19.52
Assumed alternator efficiency	%	87	

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Cooling system

Recommended coolant: 50% anti freeze / 50% water.

For details of recommended coolant specifications, please refer to the Operation and Maintenance Manual (OMM) for this engine model.

Total coolant capacity

ElectropaK (with radiator) ..... 6.0 litres
ElectropaK (without radiator) ..... 2.6 litres
Maximum top tank temperature ..... 112°C
Maximum static pressure head on pump ..... 30.4 kPa
Temperature rise across engine ..... 5.1°C
Maximum permissible external system resistance ..... TBA kPa
Thermostat operation range ..... 82 - 95°C

Radiator

Radiator face area ..... 0.167 m²
Material and number of rows ..... Aluminium, 2 rows
Material and fins per inch ..... Aluminium, 4.5 fins/inch
Width of matrix ..... 334.2 mm
Height of matrix ..... 500 mm
Pressure cap setting ..... 90 kPa
Estimated cooling air flow reserve ..... 0.125 kPa

Fan

Type ..... Pusher
Diameter ..... 320 mm
Number of blades 6
Material ..... Plastic
Drive ratio 1.25:1
Airflow at rated speed ..... 49 m³/min

Duct allowance - Maximum additional restriction to cooling airflow and resultant minimum airflow		
Ambient clearance 50% Glycol	Duct allowance (Pa)	m³/sec
53°C	65	48.6
46°C	125	48.6

Fuel system

Type of injection ..... Indirect injection
Fuel injection pump ..... Cassette type
Fuel injector ..... Pintle nozzle
Nozzle opening pressure ..... 14.7 MPa
Maximum particle size ..... 25 microns
Fuel lift pump type ..... Mechanical (camshaft driven)
Flow/hour ..... 63 litres/hr
Pressure ..... 10 kPa
Maximum suction head ..... 0.8 m
Maximum static pressure head ..... 3.0v m
Maximum fuel temperature at lift pump inlet ..... 40°C
Maximum fuel filter service interval ..... 1000 hrs
Governor type ..... Mechanical
Speed control conforms to G2

Fuel specification

USA Fed Off Highway EPA2D 89.330-96
Europe Off Highway ..... CEC RF-06-99

Note: For further information on fuel specifications and restrictions, refer to the OMM fuels section for this engine model.

Fuel consumption

Power rating %	18 kW/1800 rpm	
	g/kWh	litres/hr
25	375	1.55
50	272	2.25
75	250	3.10
100	261	4.32
110	282	5.12

Cold start recommendations

Minimum cranking speed @ 1800 rpm

Minimum starting temperature	Grade of engine lubricating oil	Battery specifications			
		BS3911 Cold start amps	SAEJ537 Cold cranking amps	Number of batteries required	Commercial reference number
0°C	20W	420	590	1	72
-15°C	10W	420	590	1	72
-20°C	5W	540	740	1	647

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 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.

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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,

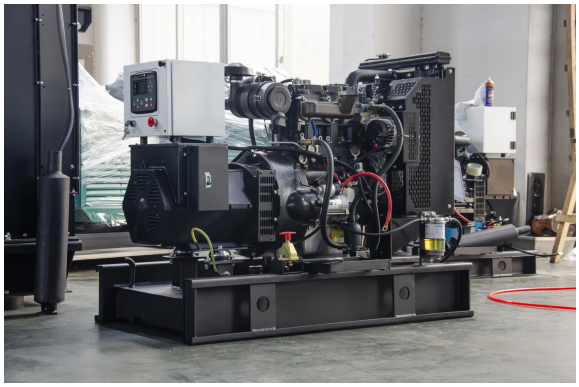
Emergency stop

Low oil pressure;

High water temperature

Failure to start

Battery charger failure



Dimension:1250*700*1100mm

Weight:350kg

Automatic shutdown occurs under:

Low engine oil pressure;

High engine water temperature;

Over speed/Low speed;

Failure to start after three attempts.

Electrical system

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

Dimension:2200*1000*1550mm

Weight:900kg

Fuel Tank Capacity:180L

Packing

- Wrapping film packaging
- Tray packaging
- plywood box packaging

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