JIANGHAO GENERATOR

- ➢Engine: Perkins 403D-11G
- ➢Alternator:Stamford/Leroy Somer /Hengsheng
- ➢Controller:DeepSea/SmartGen /DEIF/ComAp

Genset

Model	JHP5-7GF
Voltage	230/400V
Frequency&Speed	50HZ;1500RPM
Prime Power	7kW/9kVA
Standby Power	9kW/11kVA

Basic technical data

Number of cylinders 3
Cylinder arrangement ..... Vertical inline
Cycle ..... 4 stroke
Induction system ..... Naturally aspirated
Compression ratio 23:1
Bore ..... 77 mm
Stroke ..... 81 mm
Cubic capacity ..... 1.131 litres
Direction of rotation when viewed from flywheel ..... Anticlockwise
Firing order 1, 2, 3

Weight of ElectropaK

Dry (estimated) ..... 129.2 kg

Overall dimensions of ElectropaK

Height ..... 700 mm
Length ..... 776 mm
Width (including mounting brackets) ..... 449 mm

Moments of inertia (mk²)

Engine rotational components ..... 0.12 kgm²
Flywheel ..... 1.51 kgm²

Centre of gravity

Forward from rear of block ..... 98 mm
Above centre line of block ..... 67 mm
Offset to RHS of centre line ..... 2 mm

Ratings

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

Performance

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%

Sound level

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

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.

Emissions Statement: Certified against the requirements of EU2007 (EU 97/68/EC Stage II) legislation for nonroad mobile machinery, powered by constant speed engines.

General installation, 403D-11G ElectropaK @ 1500 rpm

Designation	Units	Type of operation and application	
		Prime power (50 Hz)	Standby power (50 Hz)
Gross engine power	kWb	8.6	9.5
ElectropaK nett engine power	kWm	8.4	9.3
Gross BMEP	kPa	610	672
Engine coolant flow (Water pump ratio 1.285:1)	litres/min	27.3	
Combustion air flow	m³/min	0.7	
Exhaust gas flow (maximum)	m³/min	1.66	1.8
Exhaust gas temperature outlet (maximum)	°C	368	420
Overall thermal efficiency (nett)	%	32	31
Typical Generator sets electrical output (0.8 pf 25°C)	kWe	7.2	8.0
	kVA	9.0	10
Assumed alternator efficiency	%	86	

Energy balance

Designation	Units	Type of operation and application	
		Prime power (50 Hz)	Standby power (50 Hz)
Energy in fuel (heat of combustion)	kWt	25.9	29.5
Energy in power output (gross)	kWb	8.6	9.5
Energy to cooling fan	kWm	0.2	
Energy in power output (nett)	kWm	8.4	9.3
Energy to coolant and lubricating oil	kWt	8.3	9.5
Energy to exhaust	kWt	7.3	8.0
Energy to radiation	kWt	1.7	2.5

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Cooling system

Radiator

Radiator face area ..... 0.147 m²
Material and number of rows ..... Aluminium, 2 rows
Material and matrix density ..... Aluminium, 14.5 fins/inch
Width of matrix ..... 334 mm
Height of matrix ..... 440 mm
Pressure cap setting ..... 90 kPa
Estimated cooling air flow reserve ..... 0.125 kPa

Fan

Diameter ..... 320 mm
Drive ratio 1.25:1
Number of blades 7
Material ..... Plastic
Type ..... Pusher

Total coolant capacity

ElectropaK (with radiator) ..... 5.2 litres
ElectropaK (without radiator) ..... 1.9 litres
Maximum top tank temperature ..... 112°C
Maximum static pressure head on pump ..... 30.4 kPa
Thermostat operation range ..... 75-87°C

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

For complete details of recommended coolant specifications, refer to the Operation and Maintenance manual for this engine model

Duct allowance

Maximum additional restriction to cooling airflow and resultant minimum airflow		
Ambient clearance 50% Glycol	Duct allowance (Pa)	m³/sec
53°C	0	0.67
46°C	125	0.44

Electrical system

Alternator ..... 15 amps, 12 volts
Starter motor ..... 1.4 kW, 12 volts
Number of teeth on flywheel 96
Number of teeth on starter pinion 9

Exhaust system

Maximum back pressure ..... 10.2 kPa

Exhaust outlet size

Horizontal ..... 34 mm
Vertical ..... 40 mm

Engine mounting

Maximum static bending moment at rear face of block ..... 500 Nm

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

Fuel lift pump type ..... Mechanical (camshaft driven)
Flow/hour ..... 63 litres/hour
Pressure ..... 10 kPa
Maximum suction head ..... 0.8 m
Maximum static pressure head ..... 3.0 m
Maximum fuel temperature at lift pump inlet ..... 65°C
Maximum fuel filter service interval ..... 500 hours
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

Fuel consumption for 403D-11G @ 1500 rpm				
Power rating	110%	100%	75%	50%
g/kWh	261	252	258	286
Litres/hour	3.1	2.7	2.1	1.5

Cold start recommendations

Minimum cranking speed @ 1500 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	340	540	1	069
-15°C	10W	340	540	1	069
-20°C	5W	420	590	1	072

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

Automatic shutdown occurs under:

Low engine oil pressure;

High engine water temperature;

Over speed/Low speed;

Failure to start after three attempts.

Dimension:1100*650*1050mm

Weight:300kg

Dimension:2200*1000*1550mm

Weight:850kg

Fuel Tank Capacity:180L

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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