



Genset

Model	JHP5-110GF
Voltage	230/400V
Frequency&Speed	50HZ;1500RPM
Prime Power	108kW/135kVA
Standby Power	120kW/150kVA

Basic technical data

Number of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged
Combustion system	Direct injection diesel
Compression ratio	18.2:1
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)	738.7 kg
Estimated total weight (wet)	761.7 kg

Overall dimensions, ElectropaK

Height	1092 mm
Length (air cleaner fitted)	1648 mm
Width	760 mm

Moments of inertia

Engine rotational components	0.27 kgm ²
Flywheel	1.2 kgm ²

Centre of gravity, ElectropaK

Forward from rear of block (wet)	426 mm
Above crankshaft centre line (wet)	159 mm
Offset to RHS of crankshaft centre line (wet)	14 mm

General installation

General installation	Units	Prime	Standby
Gross engine power	kW	127.2	139.9
Gross BMEP	kPa	1400.3	1549.8
Mean piston speed	metres/s	6.8	
ElectropaK net engine power	kW	118.3	131.4
Engine coolant flow (against 35 kPa restriction)	litres/min	142.0	
Combustion air flow (at STP)	m ³ /min	7.64	8.09
Exhaust gas flow (maximum)	m ³ /min	20.75	22.66
Exhaust gas temperature (maximum) in manifold (after turbocharger)	°C	576.0	
Net engine thermal efficiency	%	39.0	39.0
Typical generator set electrical output (0.8pf 25°C)	kW/e	108.0	120.0
	kVA	135.0	150.0
Regenerative power (estimated)	kW	6.1	
Assumed alternator efficiency	%	91.3	
Expansion Tank Volume	Litre	Not Required	
Charge air at turbo exit temperature (before charge cooler)	°C	122	136.7
Manifold charge air temperature (after charge cooler)	°C	55	
Engine air flow	kg/min	8.84	9.26
Induction manifold pressure	kPa	100.2	100.2
Maximum total pressure drop including pipes	kPa	3	

Rating definitions

Prime power

Unlimited hours usage, with an average load factor of 80 percent over each 24 hour period. A 10 percent 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 percent 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.

➤ Engine: Perkins 1106A-70TG1

➤ Alternator: Stamford/Leroy Somer
/Hengsheng

➤ Controller: DeepSea/SmartGen
/DEIF/ComAp

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

Estimated sound power level for standby power @ 1800 rpm	113.04 dB(A)
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Test conditions

Air temperature	25°C
Barometric pressure	100 kPa
Relative humidity	31.5%
Air inlet restriction at maximum power	5 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.

Cooling system

Radiator

Overall weight (wet)	35 kg
Face area	464025 mm ²
Number of rows and materials	2 rows, aluminium
Matrix density and material	12.7 fins per inch, aluminium
Width of matrix	672.5 mm
Height of matrix	690 mm
Pressure cap setting (minimum)	110 kPa

Fan

Diameter	558.8 mm
Drive ratio	1.25:1
Number of blades	7
Material	Nylon
Type	Pusher
Air flow, 1800 rpm @ 200 Pa air side restriction	182 m ³ /min
Power, 1800 rpm @ 200 Pa air side restriction	4.6 kW

Coolant

Total system capacity	21 litres
System 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	112°C
Coolant pump method of drive	Gear
Recommended coolant immersion heater rating (minimum)	0.75 kW
Recommended coolant	Perkins ELC, or an antifreeze that meets "ASTM D6210" specification

Duct allowance

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

Description	rpm	kPa	m ³ /min
Duct allowance with inhibited coolant at 50°C			
Minimum air flow	1800	0.120	252
Duct allowance with inhibited coolant at 46°C			
Minimum air flow	1800	0.200	234

Fuel consumption

Load	Type of operation and application	
	g/kWh	litres/hr
110% prime power	205.9	33.8
Prime power	203	30.3
75% prime power	204.5	22.7
50% prime power	213.9	15.9
25% prime power	242.7	9.0

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

Electrical system

Alternator	8SI
Alternator voltage	12 volts
Alternator output	65 amps
Starter	AZF
Starter motor voltage	12 volts
Starter motor power	4.2 kW
Number of teeth on the flywheel	126
Pull-in and hold-in current of starter motor solenoid	
@ 25°C maximum ⁽¹⁾	68 amps at 12 volts
hold-in current of starter motor solenoid	
@ 25°C maximum ⁽¹⁾	20 amps at 12 volts
Engine stop method	Solenoid

1. All leads to rated at 10 amps minimum

Cold start recommendations

Minimum required cranking speed over TDC

	5 to -10°C	-10 to -20°C	-20 to -25°C
Oil	15W40	10W40	5W40
Starter	AZF		
Battery	2x 1200 CCA		
Cranking current	960		
Aids	None	Glow plugs	
Minimum mean cranking speed	130 rpm	100 rpm	100 rpm

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

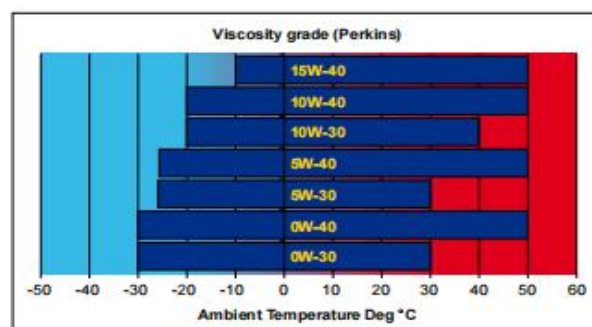
Note: If a change to a low viscosity oil is made, the cranking torque necessary at low ambient temperatures is much reduced. The starting equipment has been selected to take advantage of this. It is important to change to the appropriate multigrade oil in anticipation of operating in low ambient temperatures.

Exhaust system

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

Recommended SAE viscosity

A multigrade oil must be used which conforms to API CH4 or CI4 ACEA E5 must be used, see illustration below.



- ✧ 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.

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:2500*950*1450mm
Weight:1250kg



Dimension:3300*1300*1800mm
Weight:2300kg
Fuel Tank Capacity:360L

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)

Packing

- Wrapping film packaging
- Tray packaging
- plywood box packaging

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