



Genset	
Model	JHP5-140GF
Voltage	230/400V
Frequency&Speed	50HZ;1500RPM
Prime Power	144kW/180kVA
Standby Power	160kW/200kVA

### 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 kgm <sup>2</sup>
Flywheel	1.26 kgm <sup>2</sup> (SAE2)

➤ **Engine: Perkins 1106A-70TAG3**

➤ **Alternator: Stamford/Leroy Somer**

**/Hengsheng**

➤ **Controller: DeepSea/SmartGen**

**/DEIF/ComAp**

### 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 (nominal)
Exhaust back pressure at maximum power	6 kPa (nominal)
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	162.7	180.2
Gross BMEP	kPa	1856.8	2056.5
Mean piston speed	metres/s	6.8	
ElectropaK nett engine power	kW	157.7	175.2
Engine coolant flow (against 35 kPa restriction)	litres/min	142	
Combustion air flow (at STP)	m <sup>3</sup> /min	13.1	13.87
Exhaust gas flow (maximum)	m <sup>3</sup> /min	31.55	33.85
Exhaust gas temperature (maximum) in manifold (after turbocharger)	°C	491	
Nett engine thermal efficiency	%	38.7	39.4
Typical genset electrical output (0.8pf 25°C)	kV <sub>A</sub>	144	160
	kVA	180	200
Regenerative power (estimated)	kW	8.1	
Assumed alternator efficiency	%	91.3	

## Rating definitions

### 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.

## Energy balance

Designation	Units	Prime	Standby
Heat in fuel	kW	407.5	444.7
Power to cooling fan	kW	5.0	
Power to coolant and lubricating oil	kW	74.2	76.4
Power to exhaust	kW	128.1	140.3
Energy to charge coolers	kW	31.1	35.4
Power to radiation	kW	11.4	12.4

## Cooling system

### Cooling pack

Overall weight (wet)	45 kg
Overall face area	469,200 mm <sup>2</sup>
Width	684 mm
Height	690 mm

### Radiator

Face area	303,600 mm <sup>2</sup>
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 mm <sup>2</sup>
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 @ 1500 rpm	222 m <sup>3</sup> /min
Power @ 1500 rpm	4.5 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

### Fuel consumption

Load	Type of operation and application	
	g/kWh	litres/hr
110% Prime power	207.3	45.1
Prime power	209.2	41.4
75% Prime power	211.3	32.0
50% Prime power	200.2	20.2
25% Prime power	214.8	11.0

## 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

## Duct allowance

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

Description	rpm	kPa	m <sup>3</sup> /min
Duct allowance with inhibited coolant at 53°C			
Minimum air flow	1500	0.125	204
Duct allowance with inhibited coolant at 46°C			
Minimum air flow	1500	0.200	184

## 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 <sup>(1)</sup>	12 volts 320 amps
Hold-in current of starter motor solenoid	
@ 25°C maximum <sup>(1)</sup>	12 volts 25 amps
Engine stop method	Solenoid

<sup>1</sup> 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	850A		
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 - 1500 rpm	6.0 kPa
Exhaust outlet, internal diameter	72 mm

- ✧ 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:2300\*950\*1300mm

Weight:1300kg

### 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:3300\*1300\*1800mm

Weight:2350kg

Fuel Tank Capacity:360L

### Packing

- Wrapping film packaging
- Tray packaging
- plywood box packaging

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