



**RUGGED SERIES  
INDUSTRIAL GRADE  
DIESEL GENSETS**



Optional enclosure Pictured

**Perkins 403D.11G Engine**  
10 kWe

**POWERHOUSE DIESEL GENERATORS**  
**RUGGED. RELIABLE. POWERFUL.**

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[www.PDGPOWER.com](http://www.PDGPOWER.com)

# 400 Series 403D-11G ElectropaK

11.4 kWm @ 1800 rpm

The Perkins® 400 Series engine family continues to set new standards in the compact engine market. Developed alongside customers to fulfill their needs in the generator set, compressor, agricultural and general industrial markets.

The 400D range of ElectropaKs has been designed to fully comply with stringent EU emissions regulations, providing an emissions compliant power solution for the future

These ElectropaKs provide compact power, from a robust family of 3 and 4 cylinder diesel engines designed to provide economic and durable operation at prime and standby duties, hitting the key power nodes required by the power generation industry.



## Emissions statement

Constant Speed Engines for use in Industrial, IOPU and ElectropaK applications: Certified against the requirements of EU Stage IIIA (Directives 97/68/EC, as last amended, for mobile applications).

Specification		
Number of cylinders	3 vertical in-line	
Bore and stroke	77 x 81 mm	3 x 3.2 in
Displacement	1.131 litres	69 in <sup>3</sup>
Aspiration	Naturally aspirated	
Cycle	4 stroke	
Combustion system	Indirect injection	
Compression ratio	23:1	
Rotation	Anti-clockwise, viewed on flywheel	
Total lubricating capacity	4.9 litres	1.3 US gal
Cooling system	Water cooled	
Total coolant capacity	5.2 litres	1.4 US gal

[www.perkins.com](http://www.perkins.com)

Photographs are for illustrative purposes only and may not reflect final specification.  
All information in this document is substantially correct at time of printing and may be altered subsequently.  
Final weight and dimensions will depend on completed specification.

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 **Perkins®**

THE HEART OF EVERY GREAT MACHINE

# 400 Series 403D-11G ElectropaK

11.4 kWm @ 1800 rpm

## Features and benefits

### Powered by your needs

- The 403D-11G ElectropaK is a powerful but quiet 1.1 litre naturally aspirated 3-cylinder compact package

### Compact, clean, efficient power

- Design features on the 400D range of ElectropaKs ensures clean rapid starting in all conditions whilst delivering impressive performance with low operating costs in a small, efficient package size

### Lower operating costs

- Approved for operation on biodiesel\* concentrations of up to 20%
- Oil and filter changes are 500 hours, dependent on load factor
- Engine durability and reliability, the warranty offering and ease of installation combine to drive down the cost of ownership
- **Warranties and Service Contracts**

We provide one-year warranties for constant speed engines and two-year warranties for variable speed models, as standard. These are supported by multilevel Extended Service Contracts that can be bought additionally

Discover more: [www.perkins.esc](http://www.perkins.esc)

### Product support

- With highly trained Perkins distributors in thousands of communities in over 180 countries, you are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition
- To find your local distributor: [www.perkins.com/distributor](http://www.perkins.com/distributor)

\*Subject to conformance with ASTM D6751 and EN14214

[www.perkins.com](http://www.perkins.com)

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THE HEART OF EVERY GREAT MACHINE

# 400 Series 403D-11G Electropak

11.4 kWm @ 1800 rpm

## Technical information

### Air inlet

- Mounted air filter

### Fuel system

- Mechanically governed cassette type fuel injection pump
- Split element fuel filter

### Lubrication system

- Wet steel sump with filler and dipstick
- Spin-on full-flow lub oil filter

### Cooling system

- Thermostatically-controlled system with belt driven coolant pump and pusher fan
- Mounted radiator, piping and guards

### Electrical equipment

- 12 volt starter motor and 12 volt 15 amp alternator with DC output
- Oil pressure and coolant temperature switches
- 12 volt shut-off solenoid energised to run
- Glow plug cold start aid and heater/starter switch

### Flywheel and housing

- High inertia flywheel to SAE J620 Size 6½ Heavy
- Flywheel housing SAE 5 Long

### Mountings

- Front and rear engine mounting brackets

### Optional equipment

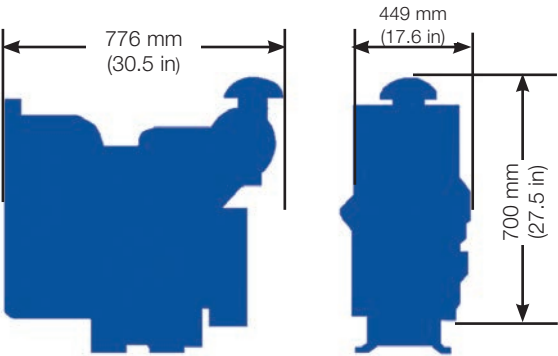
- Parts book

### Option groups

A selection of optional items is available to enable you to prepare a specification precisely matched to your needs.

# 400 Series 403D-11G Electropak

11.4 kWm @ 1800 rpm



Engine package weights and dimensions		
Length	776 mm	30.5 in
Width (including mounting brackets)	449 mm	17.6 in
Height	700 mm	27.5 in
Weight (dry)	129.2 kg	284.8 lb

# STAMFORD

S0L2-G1 Winding 06 / 706

## S0L2-G1 - Technical Data Sheet

### Standards

Stamford industrial alternators meet the requirements of IEC EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSA C22.2-100 and AS1359. Other standards and certifications can be considered on request.

### Quality Assurance

Alternators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.



### Excitation and Voltage Regulators

Excitation System	
<b>AVR Type</b>	<b>AVR Power</b>
AS540	Self-Excited / Aux winding
Voltage Regulation	$\pm 1\%$
No Load Excitation Voltage (V)	12 V
Full Load Excitation Voltage (V)	48 V

# STAMFORD®

## S0L2-G1 Winding 06 / 706

Electrical Data		
Insulation System	Class H	
Stator Winding	Double Layer Concentric	
Winding Pitch	Two Thirds	
Winding Leads	4	
Winding Number	06 / 706	
Number of Poles	4	
IP Rating	IP23	
RFI Suppression	EN 61000-6-2 & EN 61000-6-4, refer to factory for others	
Waveform Distortion	NO LOAD < 2.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	
Short Circuit Ratio	1/Xd	
Steady State X/R Ratio	5.2	
	60 Hz	
Telephone Interference	TIF<75	
Voltage Series/ Voltage Parallel	240/120	240/120
Power Factor	0.8	1.0
kVA Base Rating (Class H)	14.5	15.6
Saturated Values in Per Unit at Base Ratings and Voltages		
Xd Dir. Axis Synchronous	0.940	1.011
X'd Dir. Axis Transient	0.109	0.117
X''d Dir. Axis Subtransient	0.108	0.116
Xq Quad. Axis Reactance	0.834	0.897
X''q Quad. Axis Subtransient	0.139	0.150
XL Stator Leakage Reactance	0.075	0.081
X2 Negative Sequence Reactance	0.212	0.228
X0 Zero Sequence Reactance	0.071	0.076
Unsaturated Values in Per Unit at Base Ratings and Voltages		
Xd Dir. Axis Synchronous	1.250	1.345
X'd Dir. Axis Transient	0.125	0.135
X''d Dir. Axis Subtransient	0.126	0.136
Xq Quad. Axis Reactance	0.859	0.924
X''q Quad. Axis Subtransient	0.167	0.179
XL Stator Leakage Reactance	0.085	0.091
X2 Negative Sequence Reactance	0.254	0.274
X0 Zero Sequence Reactance	0.083	0.089
Time Constants (Seconds)		
T'd TRANSIENT TIME CONST.	0.025	
T''d SUB-TRANSTIME CONST.	0.001	
T'do O.C. FIELD TIME CONST.	0.508	
Ta ARMATURE TIME CONST.	0.012	

**STAMFORD**  
**S0L2-G1 Winding 06 / 706**

Resistances in Ohms (Ω) at 22°C	
Stator Winding Resistance (Ra)	0.141Ω per phase series connected
Rotor Winding Resistance (Rf)	0.644Ω
Exciter Stator Winding Resistance	14.624 Ω
Exciter Rotor Winding Resistance	0.135 Ω per phase
Positive Sequence Resistance (R1)	0.176 Ω
Negative Sequence Resistance (R2)	0.203 Ω
Zero Sequence Resistance (R0)	0.176 Ω
Aux Winding Resistance (with winding 706 only)	2.731 Ω
Mechanical data	
Cooling Air	0.126 m³/sec (50Hz)
Shaft and Keys	All alternator rotors are dynamically balanced to better than BS6861: Part 1 Grade 2.5 for minimum vibration in operation.
Bearing	Single Bearing
Weight Complete Alternator	104.6kg
Weight Wound Stator	40.5kg
Weight Wound Rotor	36.8 kg
Moment of Inertia	0.127kgm²
Shipping weight in a Crate	143 kg
Packing Crate Size	930X590X760 mm
Maximum Over Speed	2250 RPM for two minutes
Bearing Drive End	N/A
Bearing Non-Drive End	Ball Bearing, 6305-2RS1

**S0L2-G1 Winding 06 / 706**  
**RATINGS AT 0.8/1.0 POWER FACTOR**

Class - Temp Rise		Standby - 163/27°C		Standby - 150/40°C		Cont. H - 125/40°C		Cont. F - 105/40°C	
<b>60 Hz</b>	Series (V)	240	240	240	240	240	240	240	240
	Parallel(V)	120	120	120	120	120	120	120	120
	Power Factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	kVA	15.8	17.1	15.4	16.6	14.5	15.6	13.1	14.1
	kW	12.6	17.1	12.3	16.6	11.6	15.6	10.5	14.1
	Efficiency (%)	77.9	81.6	78.2	82.0	79.1	82.8	80.2	83.7
	kW Input	16.2	21.0	15.8	20.2	14.7	18.8	13.1	16.8

**De-Rates**

All values tabulated above are subject to the following reductions:

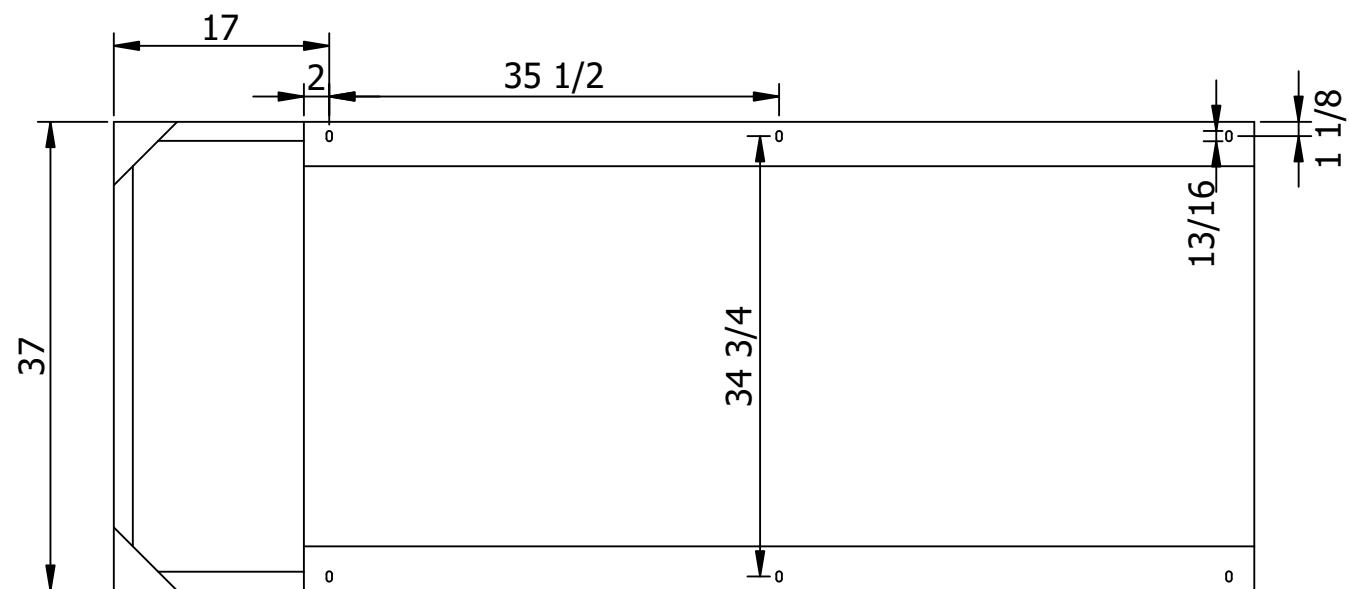
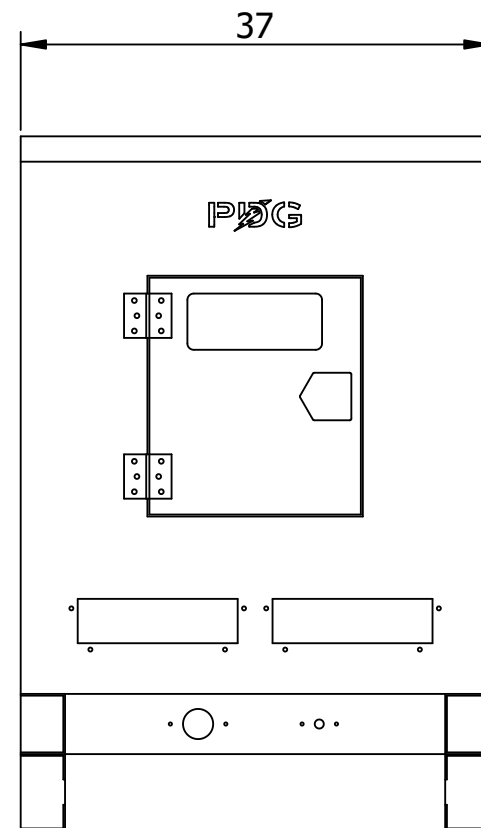
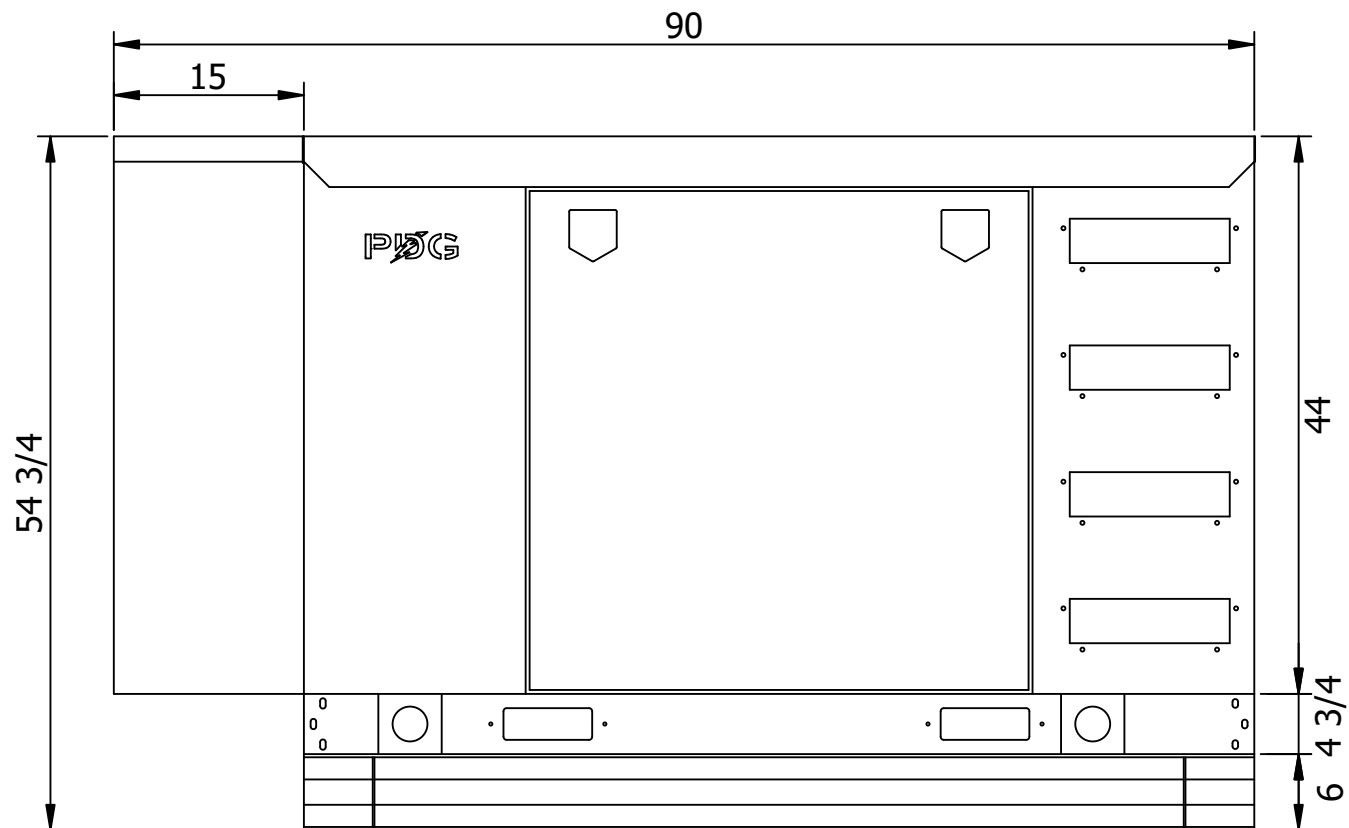
- 3% for every 500 meters by which the operating altitude exceeds 1000 meters above mean sea level
- 3% for every 5°C by which the operational ambient temperature exceeds 40°C
- For any other operating conditions impacting the cooling circuit please refer to applications

Note: Requirement for operating in an ambient exceeding 60°C and altitude exceeding 4000 meters must be referred to applications.

**Note:** Continuous development of our products means that the information contained in our data sheets can change without notice, and specifications should always be confirmed with Cummins Generator Technologies prior to purchase.



# Optional Enclosure



## Fuel Tank Options Available



Custom D.O.T. and UL Tanks For all Applications

## Enclosures Available



PDG Enclosures are made with Aluminum and are coated with industrial grade synthetic powder coat for maximum durability . All fasteners, hinges, hardware are stainless steel.



Standard Enclosure Color is PDG Tan. Additional Colors are Available Upon Request

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