POLAR POWER INC.

Exceeding Military Standards without the Cost

8340P-40415

20 kW Diesel DC Generator

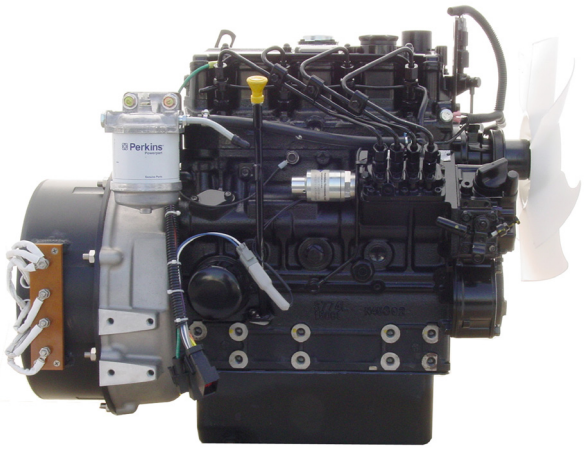
The Most Efficient Means to Charge Batteries and Power Loads using Diesel

Fully Automatic Battery Charging Options

Hybrid Electric Vehicles
Rapid Electric Vehicle Charging
Conventional Hybrid Power
Solar Hybrid Power
Oil Field
Telecommunications
Military APU

Features

- Maximum continuous output is 20 kW at 2900 RPM
- Available in all voltages from 48 to 500 Vdc
- Variable speed with a typical 500 RPM span from full load to no load
- Lower engine speed options available
- 4 cylinder diesel, quiet and with very low vibration
- Engine operational life is 10,000 to 16,000 hours based on selected engine RPM and load
- Temperature compensated battery charging
- Oil change at 500 hours standard with 1,000 hour option
- Very light weight
- Alternator exceeding 85% efficiency



Polar Power
249 E. Gardena Blvd
Carson, CA 90248 USA
Tel: (310) 830 - 9153
Fax: (310) 830 - 9825

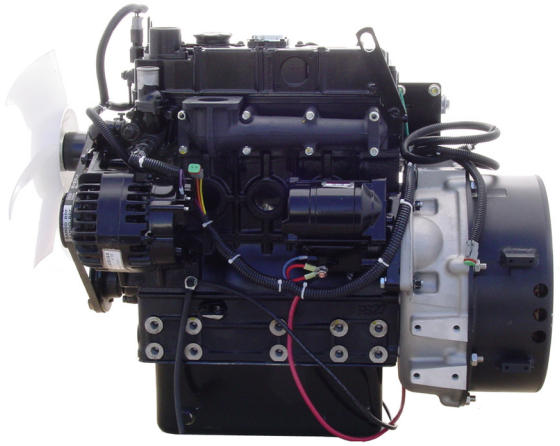
8340P-40415
20 kW Diesel DC Generator

Description

Combining our lightweight 8340 alternator with this light weight Perkins 404D-15 engine delivers a DC power solution that offers significant advantages over DC generators from other manufactures or AC generators with battery chargers. This is an ideal package covering the power range of 14 to 20 kW.

This engine is the same one offered by Caterpillar, Perkins, and ISM / Shibaura under different engine colors and model numbers. So, there are many prominent manufactures whose reputations stand behind this engine.

To configure a DC Generator system we start with the DC generator then add the accessories as the application requires including: Engine monitoring, Load Battery monitoring, Communication options, Enclosure or Frame, Cooling system, Lubrication system, etc.



Accessories

Electric Fuel Pump
The mechanical fuel pump that is supplied reliable, but an electric fuel pump is more reliable and facilitates a rapid start.

Oil Refining Pack Filter
This is a bypass filter that processes a partial flow of oil to remove particles in the sub-micron level. This filter is also effective in removing moisture that the oil absorbs from the combustion process and marine air. Using synthetic oil and this refining pack filter, you can change oil at 1,000 hour intervals.

Automatic Oil Adder
This option automatically replaces oil that is normally consumed in the lubrication / combustion process. It's recommended for when you are not able to inspect oil at 300 to 500 hour intervals.

Fuel Refining Pack
The same filter that is used for refining the oil can be used for refining the fuel. This filter is used in conjunction with the present fuel filter as supplied. This filter process the fuel before it reaches the filter on the engine. This filter uses 185 grams of paper, which is typically more than most diesel filters. An electric fuel pump is required for this filter.

Fluid Cooled Alternator
This option allows the alternator to run more efficiently when installed inside compartment with poor air circulation. We recommend air cooling over fluid cooling because it is a simpler system.

Oil Cooler
This option is used for generators installed in poorly ventilated compartments and provides additional cooling to the engine through oil.

24 Vdc Generator Electrical System
This option upgrades the starter and glow plug to 24 Vdc.

24 Vdc Starting Battery Alternator
Standard alternator voltage is 12 Vdc. In special applications it may be desirable to upgrade the engine alternator to 24 Vdc for charging the starter battery. In most applications the the alternator is not requrired, starter battery charging is accomplished through a DC to DC power supply or in military 24 / 28 Vdc applications the starting battery and the load battery are combined in function.

Polar Power
249 E. Gardena Blvd
Carson, CA 90248 USA
Tel: (310) 830 - 9153
Fax: (310) 830 - 9825

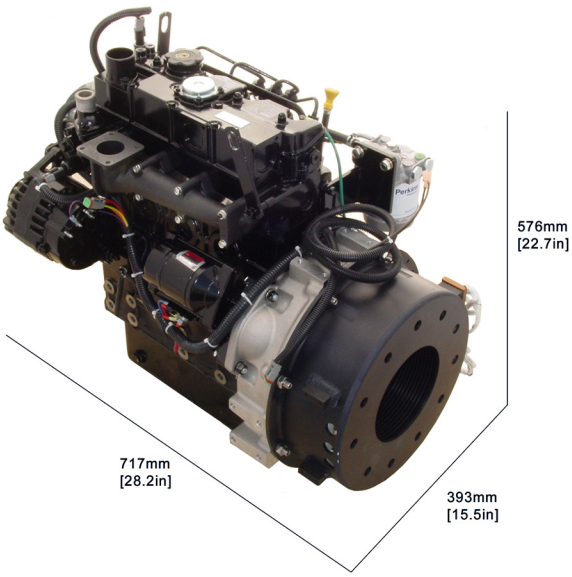
8340P-40415

20 kW Diesel DC Generator

For details regarding engine, alternator, and battery monitoring and control options please see the data sheets on the Supra System.

There are specific data sheets on Output Power Filters, Electric Radiator, Frames and Enclosures, Lubrication, and Starting Accessories.

For engine speeds verses electrical loads please see Alternator data sheets.



Engine Specifications

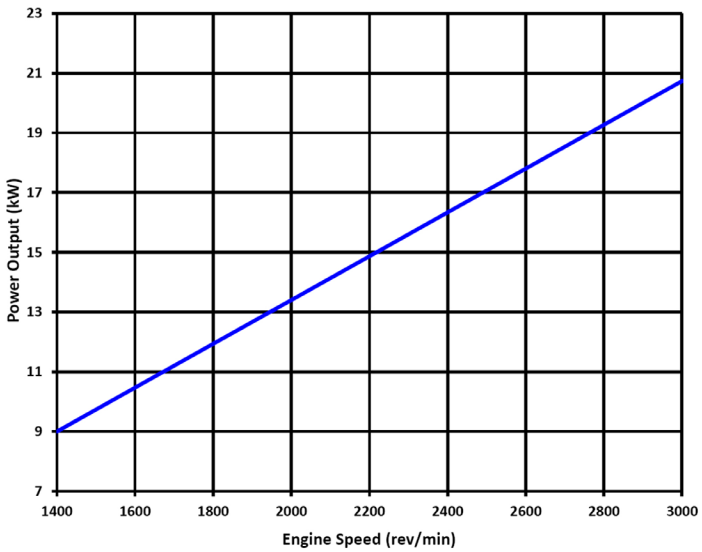
- Cast iron engine block
- 6 1/2” flywheel and SAE5 flywheel housing
- Fuel injection pump
- Spin on fuel filter
- Glow plug starting aid
- Cast iron exhaust manifold - side outlet
- Coolant pump belt driven
- Starter battery alternator - 12 volts, 40 amps
- Lube oil pressure switch
- Standard cold starting capacity to -20°C
- Coolant pump belt driven
- Standard cold start capacity to -20°C
- Gradeability 35°C continuous
- Naturally aspirated

Polar Power
249 E. Gardena Blvd
Carson, CA 90248 USA
Tel: (310) 830 - 9153
Fax: (310) 830 - 9825

8340P-40415

20 kW Diesel DC Generator

8340P- 40415	
Ratings kW (continuous)	**20 kW @ 2900 rpm**
Output DC voltage	**24 - 500**
Perkins Engine	**404D-15**
Cylinders	**4 in-line**
Cylinder Volume	**1.5 liters**
Weight (dry)	**145 kg [320 lb]**
Coolant Capacity	**2.4 liters**
Oil Capacity	**6 liters**
Operating Temperature (Ambient/Compartment)	**-40C° to 72°C**
Fuel Consumption	**252 g/kWhr (calculated)**
Emmisions Certification	**Tier 4**
Dimensions	**Length: 717mm [28.2in] Width: 393mm [15.5in] Height: 576mm [22.7in]**



Generator must be derated for Fuel, Altitude and Temperature.

4 to 6% derate for JP-8
3% Derate for every 300 m (1000 ft) above 91 m (300 ft)
1% Derate for every 5.6 C (10 F) above 25 C (77 F).

Polar Power
249 E. Gardena Blvd
Carson, CA 90248 USA
Tel: (310) 830 - 9153
Fax: (310) 830 - 9825

Limited Warranty

Polar Power Inc. (hereinafter “Polar”), hereby warrants goods manufactured and sold by it to be free from defects in material and workmanship for 24 months after the date of shipment.

The warranty is limited to repair or replacement at 249 E. Gardena Blvd, Carson, CA 90748 or other point designated by Polar of such parts as they appear to Polar, upon inspection, to be defective in material or workmanship. This warranty is extended to the first user only and no warranty is made or authorized to be made assignable on resale by the first end user.

The above warranty includes a pass-through warranty from the engine and controller manufacturers for whatever period and warranty is in effect by the manufacturer at that time. The above warranty only extends to applications and installations which are approved by mutual agreement between Polar and the first end users.

To obtain performance of any obligation under this warranty, contact must be made with Polar in writing at 249 E. Gardena Blvd, Carson, CA 90748. Submission of a claim does not obligate Polar to accept such claim in full or in part.

No bills for service, labor or other expenses that have not been previously approved and authorized by Polar will be allowed.

No goods or materials may be returned until authorized in writing by Polar and, where the return of the material is authorized, it shall be F.O.B. to whatever point Polar designated within the U.S.A.

Repairs or alterations made to the goods without Polar written concurrence or the operation of the goods in excess of rated capacity will invalidate this warranty.

There is no implied warranty or condition of merchantability. There is no other warranty or condition expressed or implied, statutory or otherwise, except such as is expressly set forth herein. Neither Polar nor manufacturers will be liable for any general, consequential or incidental damages, including without limitation any damages for loss of use or loss of profits, for any breach of warranty or condition or for negligence; Polar’s and manufacturer’s liability and the buyer’s exclusive remedy being expressly limited to the repair or replacement of the goods sold by polar as provided herein.