



Commercial Emerald 4500 GenSet



Gasoline
 4.5 kW 60 Hz
 4.0 kW 50 Hz
 LP
 4.5 kW 60 Hz
 4.0 kW 50 Hz

Commercial GenSet

- Improved Reliability and Durability for Tough Commercial-Mobile Applications
- Two-Year/2000 Hour Limited Warranty
- Environmentally Protected Electronics
- Heavy-Duty Solenoid-Shift Starter
- Corrosion Resistant Fasteners
- 10-Amp Regulated Battery Charging
- Convenient LED Indicator/Diagnostic Lights
- Optional Full-Power PTO

Models and Ratings

Model	Fuel	Hz	Watts	Voltage	Amps	PF	Phase	Circuit Breaker
4.5BGD-FB/1	Gasoline	60	4500	120/240	38/19	1.0	1	(1) 20A, 2P, 1T
4.5BGD-FB/30502*	Gasoline	60	4500	120/240	38/19	1.0	1	(1) 20A, 2P, 1T
4.5BGD-FD/1	Gasoline	60	4500	120/240	22/11	0.8	3	(1) 15A, 3P, 1T
4.5BGD-FD/30502*	Gasoline	60	4500	120/240	22/11	0.8	3	(1) 15A, 3P, 1T
4.5BGD-FB/7512	LPG (vapor)	60	4500	120/240	38/19	1.0	1	(1) 20A, 2P, 1T
4.0BGD-FN/1	Gasoline	50	4000	120/240	34/17	1.0	1	(1) 20A, 2P, 1T
4.0BGD-FT/1	Gasoline	50	4000	220/380	10.5/6	0.8	3	Sold separately

*Full Power PTO

All 60 Hz models operate at 1800 r/min. All 50 Hz models operate at 1500 r/min.

Additional models are available in 50 and 60 Hz, single and three phase, and with or without full power PTO.

Ratings apply to altitudes up to 500 ft (153 m), 85° F (29.4° C).

Derating: power output will decrease 3.5% for each 1000 ft (305 m) above sea level and 1% for each 10° F (5.5° C) increase in ambient temperature above 85° F (29° C).

Weight, Size and Sound Level

- 217 lb (98 kg)
- Length 25.1 in (637.5 mm), Width 18.8 in (477.5 mm), Height 14.0 in (355.6 mm)
- 60 Hz, 75 dB(A) at 10 ft (3m) before installation, full load

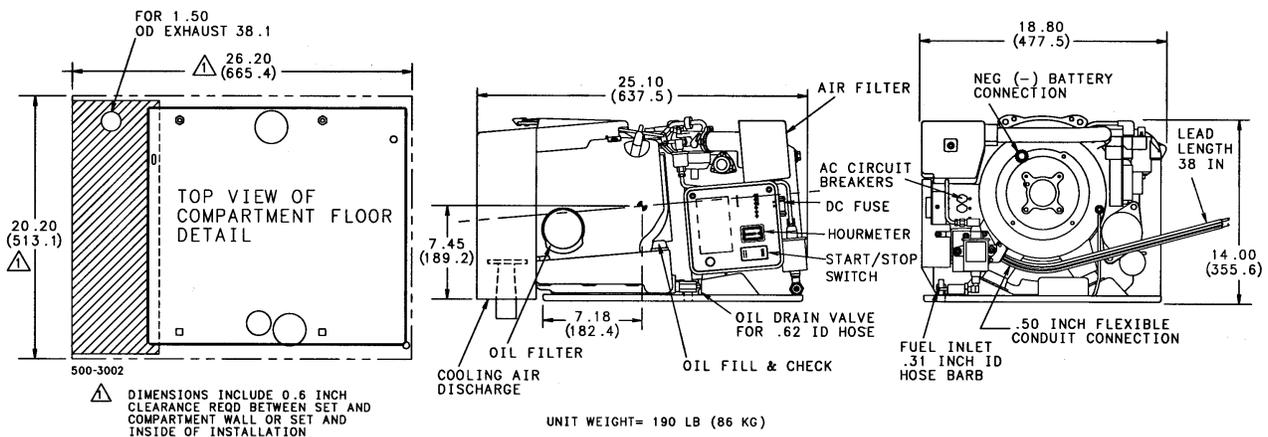
Standard Features

- Onan® engine
- Electronic ignition
- Vacu-Flo® cooling system with thru flow generator
- 3-point heavy duty mounting system with vibration isolators
- Control board mounted diagnostic LEDs and hourmeter
- Splash resistant control box
- Waterproof connectors
- Drip controlling steel base
- Enclosed exhaust manifold
- Automotive type solenoid shift electric starter
- Automatic start disconnect circuit
- Connector for remote 3-wire start
- 38 in (965 mm) generator output leads
- 10 A nominal, regulated battery charging (note: 3 A parasitic genset load)
- Insulated battery terminal
- Electric fuel pump with positive fuel safety shutoff (3 psi)
- Steel fuel line
- Automatic choke
- Carburetor air preheater for cold weather starting
- Mechanical governor
- Air cleaner with replaceable dry element
- Spin-on full flow lube oil filter
- Automatic low oil pressure shutdown
- Winter/summer air intake selector
- Electronic voltage regulator

Accessories

- Remote start/stop rocker switch (part #300-4936)
- Remote control with start/stop switch and running time meter (part #300-4937)
- Remote control with start/stop switch and DC voltmeter (part #300-4938)
- Remote control plug and wire harness, 10 ft (part #338-3489-01), 30 ft (part #338-3489-02)
- Electronic governor kit (part #151-0760)
- Battery 12 V 420 cold cranking amps at 0°F (-18°C) (part #416-0579)
- Remote control harness pigtail at set (part #305-0979)
- Remote control pigtail at control panel (part #338-3572)
- Underfloor kit (part # 405-5754); converts compartment mount to underfloor configuration, complete with all necessary hardware
- Start enable relay kit (part #542-0336)
- LPG vapor regulator kit (part #148-1107)
- Muffler kit, under unit mounting, exhausts to the left (part #542-0327)
- Muffler kit, under unit mounting, exhausts to the right (part #542-0337)
- Muffler kit, left side mounting, exhausts to front of set (part #542-0469)
- Muffler kit, left side mounting, exhausts to rear of set (part #542-0482)

Basic Dimensions



This outline drawing is provided for general reference only and is not intended for design or installation. For more information see installation manual or obtain outline drawing 500-3002 and wiring diagram from your Distributor/Dealer.

Engine Detail

Model: B43 gasoline engine
Design: 4-cycle, L-head
Cylinders: 2, horizontally opposed
Bore: 3.250 in (83 mm)
Stroke: 2.875 in (73 mm)
Displacement: 47.7 in³ (781.8 cm³)
Compression ratio: 6.9:1
Oil capacity: 3.5 qt (3.3 L), including filter
Power (max):
 at 1800 r/min: 10.3 hp with muffler
 at 1500 r/min: 8.3 hp with muffler
Cooling: Vacu-Flo[®]
 Cooling air volume:
 60 Hz: 480 ft³/min (13.6 m³/min) at 1800 r/min
 50 Hz: 400 ft³/min (11.3 m³/min) at 1500 r/min
Fuel system: Sidedraft carburetor; altitude adjustment; electric fuel pump with positive fuel shutoff (3 psi); fuel lift 3 ft (914 mm); automatic choke with vacuum pull off; carburetor air preheater
 Combustion air volume: 60 Hz: 20 ft³/min (0.57 m³/min) at 1800 r/min; 50 Hz: 16.7 ft³/min (0.47 m³/min) at 1500 r/min

Typical fuel consumption

	Gasoline, Gal/hr (L/hr)		
	No load	Half load	Full load
4.5BGD	0.4 (1.5)	0.6 (2.3)	0.8 (3.0)
4.0BGD	0.35 (1.3)	0.53 (2.0)	0.73 (2.8)
	LPG, Gal/hr (L/hr)		
	No load	Half load	Full load
4.5BGD	0.52 (2.0)	0.80 (3.03)	1.32 (5.0)

Starting system: Remote, 12 V, 3-wire, negative ground automotive type starter with steel pinion gear and iron ring gear
 Automatic start disconnect
 Connector for remote start cable
 Water resistant start-stop rocker switch on control
Ignition system: Water resistant 12 V battery ignition with resistor plugs
Lubrication: Full pressure system, positive displacement lube oil pump, low oil pressure shutdown
Cylinder-crankcase: Alloy aluminum with iron cylinder liners cast into the block, aluminum oil base
Cylinder head: Alloy aluminum, removable
Air cleaner: Replaceable dry element with foam wrapper
Valves: Austenitic steel alloy exhaust valves
Valve seats: Replaceable
Valve rotators: Free rotating

Alternator Detail

Design: Revolving field, AC, 4-pole, self-excited, permanently aligned to engine by a tapered shaft, drip-proof construction
Insulation system: Class F, per NEMA MG1-1.65 and BS 2757
Cooling: Direct drive centrifugal blower
 Cooling air volume: 60 Hz: 90 ft³/min (2.5 m³/min) at 1800 r/min; 50 Hz: 75 ft³/min (2.1 m³/min) at 1500 r/min
 Cast aluminum housing for excellent heat transfer

Exciter: Power Scan[®] regulator and bridge rectifier supply field current through slip rings
Rotor: Laminated electrical steel assembly press fitted for shaft; balanced; heavy insulated copper wire windings
Stator: Laminated electrical steel assembly skewed for excellent waveform; heavy insulated copper wire windings
DC brushes: Electrographic; long life, easily serviced
Bearing: Double sealed, prelubricated ball bearing

GenSet Detail

	No load - full load	Constant load
Voltage regulation:	±7%	±2%
Frequency regulation:	±5%	±2%

Values valid with mechanical governor. Voltages and frequency regulation ±0% with electronic governor.

- **Battery charging:** 10 A nominal fully regulated temperature compensated
- **RFI/EMI:** Meets RFI/EMI requirements SAE J551 and CSA C108.4-1978
- **TIF (Telephone influence factor):** 40, based on 1960 weighting scale; NEMA specifications

Warranty Policy

The ONAN limited warranty covers virtually everything except routine maintenance for the first two years you own your generator set, or the first 2,000 hours of operation, whichever comes first. In addition, it includes a free 90-day adjustment policy, which provides that Onan will make minor adjustments to your new genset during the first three months you own it - free of charge!

For complete Onan limited warranty details see your certified Onan Distributor/Dealer.

After Sale Support

EASY TO LOCATE CERTIFIED ONAN SERVICE AND PARTS DEALERS - Onan has the largest and best-trained worldwide certified Distributor/Dealer network in the industry, offering on-time parts and service, and installation assistance. Cummins Onan Distributor/Dealers stock and sell commonly used Onan GenSet maintenance parts, accessories and products, plus operator manuals and literature on current Onan GenSets. They can help you select and install the right genset or accessories on older models, or provide answers to questions on proper operation and maintenance procedures.

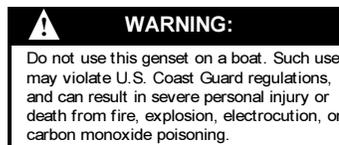
MANUALS - Installation and operators manuals are shipped with the genset. To obtain additional copies or other manuals for this model, see your Cummins Onan Distributor/Dealer and request the following part numbers: Operators Manual (965-0175), Parts Manual (965-0228), Service Manual (965-0500), and Installation Manual (965-0632).

Standards and Testing

Tested at extremes of temperature -20° F to 120° F for starting and operation.
Tested with commercial loads.
Tested in high humidity conditions.
Tested in salt spray conditions.
Tested in heavy air borne dust conditions.
Field Test Program.

This generator set meets emissions regulations for U.S. EPA PH1 Small Engines and 1995-2001 California SI SORE.

This generator set was designed and manufactured in facilities certified to ISO 9001.



Contact your Distributor/Dealer for more information:



To locate the nearest Onan Distributor/Dealer, or for more information, contact Onan at 1-800-888-ONAN or 763-574-5000; 1400 73rd Avenue N.E., Minneapolis, MN 55432 U.S.A.; fax 763-574-5298; www.onan.com.

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WARNING: Backfeed to utility systems can cause electrocution or property damage. Do not connect to building electrical except through approved device and after building main breaker is opened.