



# Service Manual

Our energy working for you.™



**Power  
Generation**

## Generator Set

GRCA (Spec A-B)

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# Safety Precautions

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**Thoroughly read the OPERATOR'S MANUAL before operating the genset. Safe operation and top performance can be obtained only when equipment is operated and maintained properly.**

The following symbols in this manual alert you to potential hazards to the operator, service person and equipment.

**▲ DANGER** alerts you to an immediate hazard which will result in severe personal injury or death.

**▲ WARNING** alerts you to a hazard or unsafe practice which can result in severe personal injury or death.

**▲ CAUTION** alerts you to a hazard or unsafe practice which can result in personal injury or equipment damage.

Electricity, fuel, exhaust, batteries and moving parts present hazards which can result in severe personal injury or death.

## GENERAL PRECAUTIONS

- Keep ABC fire extinguishers handy.
- Make sure all fasteners are secure and torqued properly.
- Keep the genset and its compartment clean. Excess oil and oily rags can catch fire. Dirt and gear stowed in the compartment can restrict cooling air.
- Before working on the genset, disconnect the negative (–) battery cable at the battery to prevent starting.
- Use caution when making adjustments while the genset is running—hot, moving or electrically live parts can cause severe personal injury or death.
- Used engine oil has been identified by some state and federal agencies as causing cancer

or reproductive toxicity. Do not ingest, inhale, or contact used oil or its vapors.

- Do not work on the genset when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.

## GENERATOR VOLTAGE IS DEADLY!

- Generator output connections must be made by a qualified electrician in accordance with applicable codes.
- The genset must not be connected to the public utility or any other source of electrical power. Connection could lead to electrocution of utility workers and damage to equipment. An approved switching device must be used to prevent interconnections.
- Use caution when working on live electrical equipment. Remove jewelry, make sure clothing and shoes are dry and stand on a dry wooden platform.

## FUEL IS FLAMMABLE AND EXPLOSIVE

- Keep flames, cigarettes, sparks, pilot lights, electrical arc-producing equipment and switches and all other sources of ignition well away from areas where fuel fumes are present and areas sharing ventilation.
- Fuel lines must be secured, free of leaks and separated or shielded from electrical wiring.
- Leaks can lead to explosive accumulations of gas. Natural gas rises when released and can accumulate under hoods and inside housings and buildings. LPG sinks when released and can accumulate inside housings and basements and other below-grade spaces. Prevent leaks and the accumulation of gas.

### **ENGINE EXHAUST IS DEADLY!**

- Learn the symptoms of carbon monoxide poisoning in this manual.
- The exhaust system must be installed in accordance with the genset Installation Manual.
- Do not use engine cooling air to heat a room or compartment.
- Make sure there is ample fresh air when operating the genset in a confined area.

### **BATTERY GAS IS EXPLOSIVE**

- Wear safety glasses and do not smoke while servicing batteries.

- When disconnecting the battery cables, always check for a battery charger and disconnect it first then disconnect the negative (–) battery cable.
- When reconnecting battery cables, always reconnect the negative (–) battery cable after the positive (+) cable, then reconnect the battery charger to reduce arcing.

### **MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH**

- Do not wear loose clothing or jewelry near moving parts such as fans.
- Keep hands away from moving parts.
- Keep guards in place over fans.

# 1. Introduction

## ABOUT THIS MANUAL

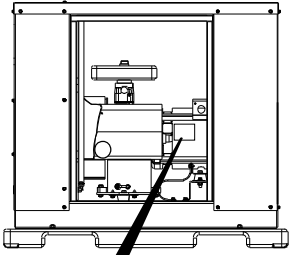
This is the Service Manual for the Series GRCA generator set (genset). Read and carefully observe all of the instructions and precautions in this manual. For quick reference, this manual includes Operation and Periodic Maintenance, which are also covered in the Operator's Manual.

See the Parts Catalog for part identification numbers. Genuine Onan® replacement parts are recommended for best results. When contacting Onan for parts, service or product information, be ready to provide the model number and the serial number, both of which appear on the genset nameplate (Figure 1-1). (The serial number is in the row marked "S/N", just below the model number. The last character of the model number is the specification letter, which is important for obtaining the right parts.)

**▲WARNING** Improper service or parts replacement can lead to severe personal injury or death and to damage to equipment and property. Service personnel must be qualified to perform electrical and mechanical service.

**▲WARNING** Unauthorized modifications or replacement of fuel, exhaust, air intake or speed control system components that affect engine emissions are prohibited by law in the State of California.

See the Installation Manual for important recommendations concerning the installation and for a list of the installation codes and standards for safety which may be applicable.



**IMPORTANT ENGINE INFORMATION**

**Onan**  
CUMMINS POWER GENERATION  
1400 73rd Ave. NE  
Minneapolis, MN 55432  
Made in U.S.A.

Model No: 12GRCA-4229  
S/N: 000000000

AC Volts: 120/240	KVA: 11.0	PH: 1
Amps: 45.8	Pf: 1.0	KW: 11.0
Fuel:	HZ: 60	RPM: 3600
		Bat: 12V

Options: B241 B274 C053 Wire Diagram: 0611-1266  
F172 L688 R104

Insulation: NEMA Class H Ambient 40 C

THIS ENGINE MEETS U. S. EPA PH1 AND 1995-1999 CALIFORNIA EMISSION REGULATIONS FOR ULGE ENGINES  
XN5XS.9802EL 980 CC

REFER TO OPERATOR'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS 98-2495 URC

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Thank you very much!**