

Onan

Service Manual

**UR
Generator**

**UR Generator
with Torque Match-2™ Regulator**

Safety Precautions

The following symbols in this manual highlight conditions potentially dangerous to service personnel, or equipment. Read this manual carefully. Know when these conditions can exist. Then take necessary steps to protect personnel as well as equipment.

⚠ DANGER *This symbol warns of immediate hazards which will result in severe personal injury or death.*

⚠ WARNING *This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.*

⚠ CAUTION *This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.*

PROTECT AGAINST MOVING PARTS

Avoid moving parts of the unit. Avoid use of loose jackets, shirts or sleeves due to danger of becoming caught in moving parts.

Make sure all nuts and bolts are secure. Keep power shields and guards in position.

If you must make adjustments while the unit is running, use extreme caution around hot manifolds, moving parts, etc.

Do not work on this equipment when mentally or physically fatigued.

GUARD AGAINST ELECTRIC SHOCK

Disconnect electric power before removing protective shields or touching electrical equipment. Use rubber insulative mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surfaces to be damp when handling electrical equipment.

Disconnect batteries to prevent accidental engine start. Jewelry is a good conductor of electricity and should be removed before working on electrical equipment.

Use extreme caution when working on electrical components. High voltages cause injury or death.

Follow all state and local codes. To avoid possible personal injury or equipment damage, a qualified electrician or an authorized service representative must perform installation and all service.

⚠ WARNING

EXHAUST GAS IS DEADLY!

Exhaust gases contain carbon monoxide, an odorless and colorless gas. Carbon monoxide is poisonous and can cause unconsciousness and death. Symptoms of carbon monoxide poisoning can include:

- Dizziness
- Nausea
- Headache
- Weakness and Sleepiness
- Throbbing in Temples
- Muscular Twitching
- Vomiting
- Inability to Think Coherently

IF YOU OR ANYONE ELSE EXPERIENCE ANY OF THESE SYMPTOMS, GET OUT INTO THE FRESH AIR IMMEDIATELY. If symptoms persist, seek medical attention. Shut down the unit and do not operate until it has been inspected and repaired.

Protection against carbon monoxide inhalation includes proper installation and regular, frequent visual and audible inspections of the complete exhaust system.

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Section 1. Introduction

ABOUT THIS MANUAL

This manual provides troubleshooting and repair information for the Onan series UR generator with a Torque Match-2 (VRAS-2) voltage regulator. For further operation, service, and troubleshooting information regarding engine or controller components, refer to support manuals specific to your generator set.

Study all manuals carefully and observe all warnings and cautions found on page ii and throughout this manual. Knowing your generator set, using it properly, and following a regular maintenance schedule will help you obtain longer unit life, better performance, and safer operation.

Repair information in this manual for printed circuit board components other than fuses is not extensive as solid state printed circuit boards lend themselves more to replacement than repair. Application of meters or hot soldering irons to printed circuit boards by other than qualified personnel can cause unnecessary and expensive damage. Repair of the printed circuit boards is not recommended except by the factory.

⚠ CAUTION *High voltage testing or high potential (or Megger) testing of generator windings can cause damage to solid state components. Isolate these components before testing.*

TEST EQUIPMENT

Most of the test procedures in this manual can be performed with an AC-DC multimeter such as a Simpson Model 260 VOM or a digital VOM. Some other instruments to have available are:

- Onan Multitester
- Jumper Leads
- AC Voltmeter
- DC Voltmeter
- Frequency Meter
- Wheatstone or Kelvin Bridge

See Onan Tool Catalog 900-0019.

HOW TO OBTAIN SERVICE

In the event the generator requires servicing beyond the scope of information contained in this manual, contact an Onan Distributor for assistance. Onan factory trained Parts and Service representatives are ready to handle all your service needs.

When contacting an Onan Distributor, always supply the complete Model number and Serial number as shown on the Onan nameplate. The Onan nameplate is located on the side of the generator control box.

Onan

Model No. _____

Serial No. _____

Important - Give above no.'s when ordering parts

Service Rating: _____

Hertz: _____ RPM: _____

Single Phase kW _____ KVA _____

Three Phase kW _____ KVA _____

Volts:		110/190	110/220	115/200	115/230	120/208
Amps:						
120/240	127/220	139/240	220/380	230/400	240/416	
240/480	254/440	277/480	347/600	115/230 1Ø	120/240 1Ø	

For Elec Eqpt Only _____ PF: _____ Bat: _____

Insul - NEMA Class **F** Amb 40°C

Onan Corp
Minneapolis Mn
55432 USA
Made in USA 99 1034

M-1641

FIGURE 1-1. ONAN NAMEPLATE

⚠ WARNING

INCORRECT INSTALLATION, SERVICE, OR REPLACEMENT OF PARTS CAN RESULT IN SEVERE PERSONAL INJURY AND/OR EQUIPMENT DAMAGE. SERVICE PERSONNEL MUST BE QUALIFIED TO PERFORM ELECTRICAL AND MECHANICAL COMPONENT INSTALLATION.

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