Onan

Service Manual

300 to 750 kW

UV

Generators And Controls

Troubleshooting and Test Procedures For

- **Generators**
- **Regulator**
- **Controls**

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SAFETY PRECAUTIONS

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

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

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

⚠DANGER ***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. Loose jackets, shirts or sleeves should not be worn because of the danger of becoming caught in moving parts.

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

If adjustments are made 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 electrical codes. Have all electrical installations performed by a qualified licensed electrician.

ABBREVIATIONS

To avoid repetitious use of terms or designations, abbreviations have been used as follows:

R-S-R	Run-Stop-Remote
N.C.	Normally closed
N.O.	Normally open
VDC	Volts Direct Current
VAC	Volts Alternating Current
LOP	Low Oil Pressure
HET	High Engine Temperature
K	Relay
Q	Transistor
R	Resistance/Rheostat
C	Capacitor
O/S	Overspeed
O/C	Overcrank
LET	Low Engine Temp
CR	Crystal Rectifier (diodes)
VR	Voltage Regulator
CB	Circuit Breaker
L	Reactor
T	Transformer
T.D.	Time Delay
LED	Light Emitting Diode
SCR	Silicon Controlled Rectifier

INTRODUCTION

FOREWORD

This manual provides troubleshooting and repair information for ONAN series UV generators. It is intended to provide the maintenance technician, serviceman or Onan distributor with a logical procedure to enable him to systematically locate and repair malfunctions in the generator and control systems. This information is not applicable to the prime mover; refer to the engine manufacturer's manual.

Repair information is not extensive because solid-state printed circuit modules lend themselves more to replacement than repair. ONAN does not recommend repair of the printed circuit module, except at the factory and has initiated a return/exchange service obtainable through distributors, whereby faulty modules can be returned and exchanged for good units. For more information, contact your distributor or the ONAN service department.

CAUTION **Application of meters or high heat soldering irons to modules by other than qualified personnel can result in unnecessary and expensive damage.**

CAUTION **The use of high potential test equipment (meggers) on generator windings can cause damage to solid state components. Isolate these components prior to testing.**

This manual is divided into two sections as follows:

1. **GENERATOR**—Consists of general specifications on the UV generator, troubleshooting guides, and procedures for testing and repairing the systems.
2. **CONTROLS**—Troubleshooting guides, procedures for testing and repairing the system are contained in this section. A description of components and an analysis of module circuitry are included.

TEST EQUIPMENT

Most of the tests outlined in this manual can be performed with an AC-DC multimeter such as a Simpson 260 or 262 VOM.

CAUTION **Exercise care when purchasing a foreign made VOM. Some units deliver +9VDC, others, +22VDC to the circuit under test on R x 1 scale. Maximum recommended voltage is +1.5VDC. Damage to solid state devices can result from excessive voltage application.**