

Onan

Service Manual

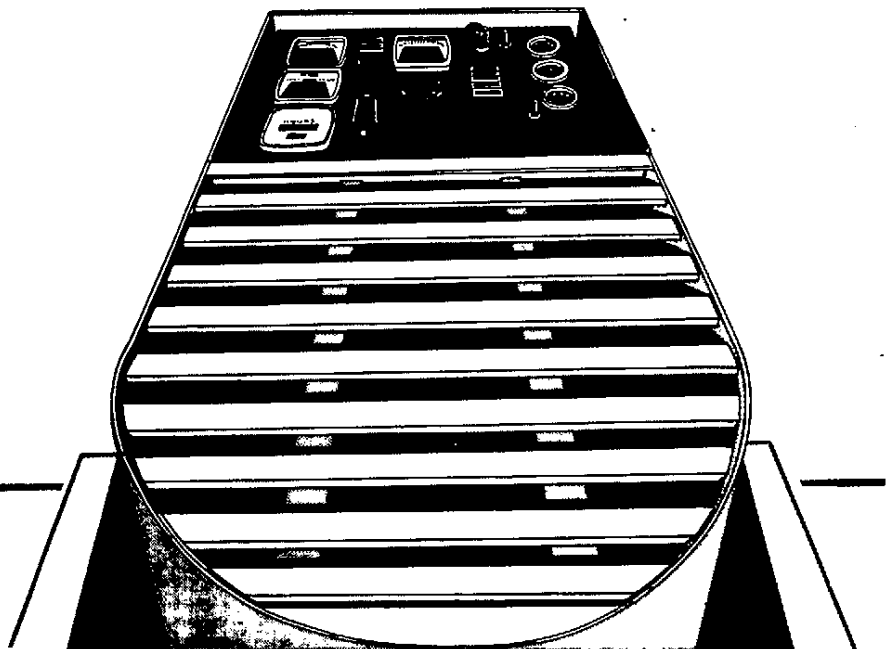
200 to 350 kW

YB

Generators
And Controls

**Troubleshooting and
Test Procedures For**

- Generators
- Regulator
- Controls



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Printed in U.S.A.

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.

▲ 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.*

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.

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.

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Introduction

FOREWORD

This manual provides troubleshooting and repair information for ONAN series YB 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 engine; refer to the engine manufacturer's manual.

Repair information on printed circuit modules is not extensive because the plug-in 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. For more information, contact your distributor or the ONAN service department.

Application of meters or high heat soldering irons to printed circuit boards by other than qualified personnel can result in unnecessary and expensive damage.

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.

This manual is divided into two sections as follows:

1. **GENERATOR** - Consists of general specifications on the YB 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 the components and an analysis of the module circuitry are included.

TEST EQUIPMENT

Most of the tests outlined in this manual can be performed with—

- Simpson VOM, Model 260, 262 or equivalent.
- Kelvin or Wheatstone bridge ohmmeter.

CAUTION An equivalent VOM to a Simpson 260 or 262 should have a maximum battery voltage of 6VDC (preferably with size AA batteries), on ranges other than R x 1. Some VOM's have outputs of 9VDC or 22.5VDC, which are sufficiently high to damage solid state devices.

WARNING

ONAN RECOMMENDS THAT ALL SERVICE INCLUDING INSTALLATION OF REPLACEMENT PARTS ONLY BE DONE BY PERSONS QUALIFIED TO PERFORM ELECTRICAL AND/OR MECHANICAL SERVICE. FROM THE STANDPOINT OF POSSIBLE INJURY AND/OR EQUIPMENT DAMAGE IT IS IMPERATIVE THAT THE SERVICE PERSON BE QUALIFIED.

ABBREVIATIONS

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

R-S-R	Run-Stop-Remote	O/S	Overspeed
NC	Normally closed	O/C	Overcrank
NO	Normally open	LET	Low Engine Temp
VDC	Volts Direct Current	CR	Crystal Rectifier (diodes)
VAC	Volts Alternating Current	VR	Voltage Regulator
LOP	Low Oil Pressure	CB	Circuit Breaker
HET	High Engine Temperature	L	Reactor
K	Relay	T	Transformer
Q	Transistor	TD	Time Delay
R	Resistance/Rheostat	LED	Light Emitting Diode
C	Capacitor	SCR	Silicon Controlled Rectifier

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