

Onan

Service Manual

UN

Generator and Controls

- **Description**
 - **Troubleshooting Chart**
 - **Testing Procedures**
 - **Repairs**
 - **Wiring Diagrams**
-

Safety Precautions

Before operating the generator set, read the Operator's Manual and become familiar with it and the equipment. Safe and efficient operation can be achieved only if the unit is properly operated and maintained. Many accidents are caused by failure to follow fundamental rules and precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or the 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.

FUEL AND FUMES ARE FLAMMABLE. Fire, explosion, and personal injury can result from improper practices.

- DO NOT fill fuel tanks with the engine running unless tanks are outside the engine compartment. Fuel contact with hot engine or exhaust is a potential fire hazard.
- DO NOT SMOKE OR ALLOW AN OPEN FLAME near the generator set or fuel tank. Internal combustion engine fuels are highly flammable.
- Fuel lines must be adequately secured and free of leaks. Fuel connections at the engine should be made with an approved flexible line. Do not use copper piping on flexible lines as copper will work harden and become brittle.
- Be sure that all fuel supplies have a positive shutoff valve.
- DO NOT SMOKE while servicing batteries. Lead acid batteries emit a highly explosive hydrogen gas that can be ignited by electrical arcing or by smoking.

EXHAUST GASES ARE DEADLY

- Provide an adequate exhaust system to properly expel discharged gases. Inspect the exhaust system daily for leaks per the maintenance schedule. See that exhaust manifolds are secure and are not warped. Do not use exhaust gases to heat a compartment.
- Be sure the unit is well ventilated.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Keep your hands away from moving parts.
- Before performing any maintenance on the generator set, disconnect the starting battery negative (-) ground lead first. This will prevent accidental starting.
- Make sure that fasteners on the generator set are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.

- Do not wear loose clothing or jewelry while servicing any part of the generator set. Loose clothing and jewelry can become caught in moving parts. Jewelry can short out electrical contacts and cause shock or burning.
- If adjustment *must* be made while the unit is running, use extreme caution around hot manifolds, moving parts, etc.

ELECTRICAL SHOCK WILL CAUSE SEVERE PERSONAL INJURY OR DEATH

- Remove 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.
- Use extreme caution when working on electrical components. High voltages can cause injury or death. DO NOT tamper with interlocks.
- Follow all state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag open switches to avoid accidental closure.
- DO NOT CONNECT THE GENERATOR SET DIRECTLY TO ANY BUILDING ELECTRICAL POWER SYSTEM. Hazardous voltages can flow from the generator set into the utility line. This creates a potential for electrocution or property damage. Connect only through an approved device and after building main switch is open. Consult an electrician in regard to emergency power use.

GENERAL SAFETY PRECAUTIONS

- Provide appropriate fire extinguishers and install them in convenient locations. Consult your local fire department for the correct type of extinguisher to use. Do not use foam on electrical fires. Use extinguisher rated ABC by NFPA.
- Used engine oils have been identified by some state or federal agencies as causing cancer or reproductive toxicity. When checking or changing engine oil, take care not to ingest, breathe the fumes, or contact used oil.
- Benzene and lead, found in some gasoline, have been identified by some state and federal agencies as causing cancer or reproductive toxicity. When checking, draining or adding gasoline, take care not to ingest, breathe the fumes, or contact gasoline.
- Make sure that rags are not left on or near the engine.
- Remove all unnecessary grease and oil from the unit. Accumulated grease and oil can cause over heating and engine damage, and present a potential fire hazard.
- Keep the generator set and the surrounding area clean and free from obstructions. Remove any debris from the set and keep the floor clean and dry.
- Do not work on this equipment when mentally or physically fatigued, or after consuming any alcohol or drug that makes the operation of equipment unsafe.

Table Of Contents

SECTION	TITLE	PAGE
	SAFETY PRECAUTIONS	Inside front cover
1	INTRODUCTION	1-1
	Test Equipment	1-1
	Load Wire Connections	1-2
	Reconnectible Single-Phase Generator	1-4
	Three-Phase Delta Wound Generator	1-4
	Three-Phase Wye Connected Generator	1-6
2	GENERATOR	2-1
	Generator Disassembly	2-1
	Generator Troubleshooting	2-3
	Generator Service Procedures and Tests	2-4
	Generator Assembly	2-11
3	CONTROL SYSTEM	3-1
	Operation Description	3-1
	NB Models	3-1
	MCCK (Spec D) and NH (Spec A through C) Models	3-2
	CCK (Spec R), MCCK (begin Spec E), and NH (Spec D through F) Models	3-4
	BF, CCK (begin Spec U), LK (begin Spec M), and NH (begin Spec J) Models	3-6
	BFA (Spec A), BGA (Spec A), and NH (Spec K) Models	3-7
	MCCK Spec H Models	3-8
4	TROUBLESHOOTING	4-1
	NB Models	4-1
	MCCK (Spec D) and NH (Spec A through C) Models	4-5
	CCK (Spec R), MCCK (begin Spec E), and NH (Spec D through F) Models	4-9
	BF, CCK (begin Spec U), LK (begin Spec M), and NH (begin Spec J) Models	4-16
	BFA (Spec A), BGA (Spec A), and NH (Spec K) Models	4-20
5	POWER DRAWER MODELS	5-1
	Generator Disassembly	5-1
	Generator Troubleshooting Guide	5-2
	Generator Service Procedures and Tests	5-4
6	WIRING DIAGRAMS	6-1

BUY NOW

**Then Instant Download
the Complete Manual
Thank you very much!**