



**Home Generator Systems**

## **Operator's Manual**



**100 Amp NEMA 3R  
Automatic Transfer Switch  
with AC Power Control Module™**

Thank you for your purchase of this Briggs & Stratton® automatic transfer switch. This product is designed for use with specific home standby generators and may not function with generators produced by other manufacturers. Seek a qualified electrical professional to determine applicability of this equipment to equipment manufactured by others. When operated and maintained according to the instructions in this manual, your system will provide many years of dependable service.

This manual contains safety information to make you aware of the hazards and risks associated with this system and how to avoid them. We have made every effort to provide for a safe, streamlined and cost-effective installation. As each installation is unique, it is impossible to know of and advise of all conceivable procedures and methods by which installation might be achieved. We do not know all possible hazards and/or the results of each possible method or procedure. It is important that you read and understand these instructions thoroughly before attempting to install or operate this equipment. **Save these original instructions for future reference.**

This transfer switch requires professional installation before use. Refer to the Installation Manual for instructions on installation procedures. Only licensed electrical contractors should install transfer switches. Installations must strictly comply with all applicable federal, state and local codes, standards and regulations. Your installer should follow the instructions completely.

### **Where to Find Us**

You never have to look far to find Briggs & Stratton support and service for your system. Consult your Yellow Pages. There are many authorized service dealers who provide quality service. You can also contact Technical Service at [BRIGGSandSTRATTON.COM](http://BRIGGSandSTRATTON.COM), which provides a list of authorized dealers.

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# Save These Instructions

## Important Safety Instructions

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation of the equipment.

### Safety Symbols and Meanings



Electrical Shock



Read Manual

⚠ The safety alert symbol indicates a potential personal injury hazard. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to designate a degree or level of hazard seriousness. A safety symbol may be used to represent the type of hazard. The signal word **NOTICE** is used to address practices not related to personal injury.

⚠ **DANGER** indicates a hazard which, if not avoided, will result in death or serious injury.

⚠ **WARNING** indicates a hazard which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** indicates a hazard which, if not avoided, could result in minor or moderate injury.

**NOTICE** addresses practices not related to personal injury.

The manufacturer cannot possibly anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and the tags and decals affixed to the unit are, therefore, not all-inclusive. If you use a procedure, work method or operating technique that the manufacturer does not specifically recommend, you must satisfy yourself that it is safe for you and others. You must also make sure that the procedure, work method or operating technique that you choose does not render the equipment unsafe.

**NOTICE** Only qualified, licensed electricians should attempt installation of this equipment, which must strictly comply with applicable codes, standards and regulations.

⚠ **WARNING** Shock Hazard. Installing low and high voltage wire in same conduit could result in death, serious injury and/or property damage.

- Do not run low and high voltage wire in the same conduit unless the insulation rating on ALL wiring is rated for 600V.

⚠ **WARNING** Failure to properly ground equipment could cause electrocution resulting in death or serious injury.



- Do not touch bare wires.
- Do not use equipment with worn, frayed, bare or otherwise damaged wiring.
- Do not handle electrical cords while standing in water, while barefoot, or while hands or feet are wet.
- If you must work around a unit while it is operating, stand on an insulated dry surface to reduce shock hazard.
- Do not allow unqualified persons or children to operate or service equipment.
- In case of an accident caused by electrical shock, immediately shut down all sources of electrical power and contact local authorities. Avoid direct contact with the victim.

⚠ **WARNING** Shock hazard. Equipment contains high voltage that could result in death, serious injury and/or property damage.

- DO NOT operate this equipment imprudently or neglect its maintenance.

**NOTICE** Improper treatment of equipment could damage it and shorten its life.

- Use equipment only for intended uses.
- If you have questions about intended use, ask dealer or contact Briggs & Stratton Power Products.
- Do not expose equipment to excessive moisture, dust, dirt, or corrosive vapors.
- Remain alert at all times while working on this equipment. Never work on the equipment when you are physically or mentally fatigued.
- If connected devices overheat, turn them off and turn off their circuit breaker/fuse.

## Installation

We sincerely appreciate your patronage and have made significant effort to provide for a safe, streamlined and cost-effective installation. Because each installation is unique, it is impossible to know of and advise the trade of all conceivable procedures and methods by which installation might be achieved. Neither could we know of possible hazards and/or the results of each method or procedure.

For these reasons, **only current licensed electrical professionals should attempt system installations. Installations must strictly comply with all applicable codes, industry standards and regulations.**

Your equipment is supplied with this Operator's Manual and an Installation Manual. These are important documents and should be retained by the owner after the installation has been completed.

Every effort has been made to make sure that the information in this manual is both accurate and current. However, the manufacturer reserves the right to change, alter or otherwise improve the system at any time without prior notice.

### Owner Responsibilities

To help you make informed choices and communicate effectively with your installation contractor(s), **read and understand Owner Orientation before contracting or starting your equipment installation.**

To arrange for proper installation, contact the store at which you purchased your equipment, your dealer, or your utility power provider.

**The equipment warranty is VOID unless the system is installed by licensed electrical professionals.**

### Owner Orientation

Local codes, appearance, and distances are the factors that must be considered when negotiating with an installation professional. As the distance from the existing electrical service increases, compensation in wiring materials must be allowed for. This is necessary to comply with local codes and overcome electrical voltage drops.

**These factors will have a direct effect on the overall price of your equipment installation.**

Your installer must check local codes AND obtain permits before installing the system.

- Read and follow the instructions given in this manual.
- Follow a regular schedule in caring for and using your equipment, as specified in this manual.

### Installing Dealer/Contractor Responsibilities

- Read and observe the Important Safety Instructions.
- Read and follow the instructions given in this manual.
- The installer may need to provide appropriate rated contactors based on loads to be controlled.
- Discuss with owner their load priority preferences to decide on remote module priority settings.
- Check federal, state and local codes and authority having jurisdiction, for questions on installation.
- Ensure generator is not overloaded with selected loads.

## Equipment Description

The transfer switch is designed to transfer selected loads found in normal residential installations to standby power in the event of a primary power outage. The load is connected either to utility power (normal) or standby power (generator). The transfer switch monitors utility and generator voltages and will automatically connect loads to the appropriate source of power.

Only a licensed electrician should complete a standby installation. Service conduit and conductors can be wired directly from the watt-hour meter to the transfer switch. A separate service entrance disconnect and associated wiring is not required when installed per applicable federal, state and local codes, standards and regulations.

Major components of the transfer switch is, one, double pole, double throw transfer switch, transfer switch control circuit board, fused utility terminals and interconnecting wiring. All of these components are housed in a NEMA 3R enclosure that is suitable for both indoor and outdoor installations.

The transfer switch is solenoid-operated from utility or generator inputs and contain suitable mechanical and electrical interlock switches to eliminate the possibility of connecting the utility service to the generator output. It has ratings capable of switching full utility power into the residence. In addition, a manual override lever is provided for the transfer function.

The control board has active circuits sensing utility and generator voltages. It creates a signal for generator start-up, switch transfer and retransfer when utility is restored. The control board also contains red and green LEDs indicating the power source available and two relay operated contacts that provide supervisory control of external loads.

## Delivery Inspection

After opening the carton, carefully inspect the transfer switch components for any damage that may have occurred during shipment.

If loss or damage is noted at time of delivery, have the person(s) making delivery note all damage on the freight bill and affix his signature under the consignor's memo of loss or damage. If loss or damage is noted after delivery, contact the carrier for claim procedures. Missing or damaged parts are not warranted.

### Shipment contents:

- Automatic transfer switch
- Installation and operator's manuals
- Current transformers (2)

### To be supplied by installer:

- Connecting wire and conduit
- Various specialty tools/equipment

## Testing the Automatic Transfer Switch



**WARNING** Testing must only be performed by qualified personnel. Equipment contains high voltage that could cause personal injury or death.

- Despite the safe design of the system, operating this equipment imprudently, neglecting its maintenance or being careless can cause possible injury or death.

Turn utility service disconnect circuit breaker feeding the transfer switch contactors to the **OFF** position. The system's automatic sequence described below will initiate. To return to utility power, turn utility service disconnect circuit breaker to the **ON** position.

### Utility Fail

The generator senses when utility voltage is below 70 percent of nominal. Engine start sequence is initiated after 6 second time delay.

### Engine Warm-Up

Time delay to allow for engine warm-up before transfer. Use jumper on transfer switch control board to select delay of 20 seconds or 50 seconds.

### Transfer

Transfer from utility to generator supply occurs after voltage is above set levels. Minimum engine run time is 5 minutes after transfer.

### Utility Pickup

Voltage pickup level is 80 percent of nominal voltage.

### Retransfer

Retransfer from generator to utility power is approximately 10 seconds after utility voltage supply is above pickup level and minimum run time is completed. All remote module(s) will remain OFF for five minutes after the power transfer.

### Engine Cool Down

Engine will run for 60 seconds after retransfer.

## Controls

Other than a Manual Override lever, there are no operator controls because this is an automatic transfer switch. The manual override is to be used only by licensed professionals.

## Operation

To select automatic transfer operation, do the following:

1. Set utility disconnect circuit breaker to **ON** position.
2. Set generator disconnect circuit breaker to **ON** position. (optional)
3. Install 15 Amp fuse in generator's control panel.
4. Set generator's circuit breaker to **ON** position.
5. Set generator's system switch to **AUTO** position.

The system will now be in automatic operation mode.

When the generator is providing power to the transfer switch, the transfer switch control board is constantly monitoring generator power. If the air conditioner is called to run, and there is sufficient generator power available, the controller will close contacts "A-A" to air conditioner contactor. Contacts "B-B" will open before contacts A-A close. If loads are too great for the generator, contacts A-A and/or B-B will open. When air conditioning is not needed, A\_A will open. If enough power is available, B-B will close.

## Maintenance

The transfer switch is designed to be maintenance free under normal usage. However, inspection and maintenance checks should be made on a regular basis. Maintenance will consist mainly of keeping the transfer switch clean.

Visual inspections should be done at least three times each year. Access to the transfer switch and optional remote modules must not be obstructed. Keep 92 cm clearance around transfer switch. Check for an accumulation of dirt, moisture and/or corrosion on and around the enclosure, loose parts/hardware, cracks and/or discoloration to insulation, and damaged or discolored components.

Only suitably qualified persons can install, repair or maintain the inside of the transfer switch. Before any maintenance or repair work is done to the transfer switch, it must be isolated from both the utility and the generator by following these steps:

1. Remove 15 Amp fuse from generator control panel and set the system switch and circuit breaker to OFF.
2. Isolate the utility supply to the transfer switch.

Only reset the system, by following the reverse sequence, once all work has been completed and the transfer switch enclosure is closed.

**NOTICE** The generator will automatically start-up if the generator is reset before resotring the utility connection.

## When Calling for Assistance

You must have the Model Number and Serial Number from each transfer switch or remote module ID label at hand if it is necessary to contact a local service center regarding service or repair. Obtain this information from the unit ID labels located on or inside device. For convenience, record the information on the inside front cover of this manual.

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