EmerGen Switch®
Manual Transfer Switch

Manufactured by
CONNECTICUT ELECTRIC
SWITCH MFG. CO.
1-800-730-2557

OWNER'S MANUAL & INSTALLATION INSTRUCTIONS

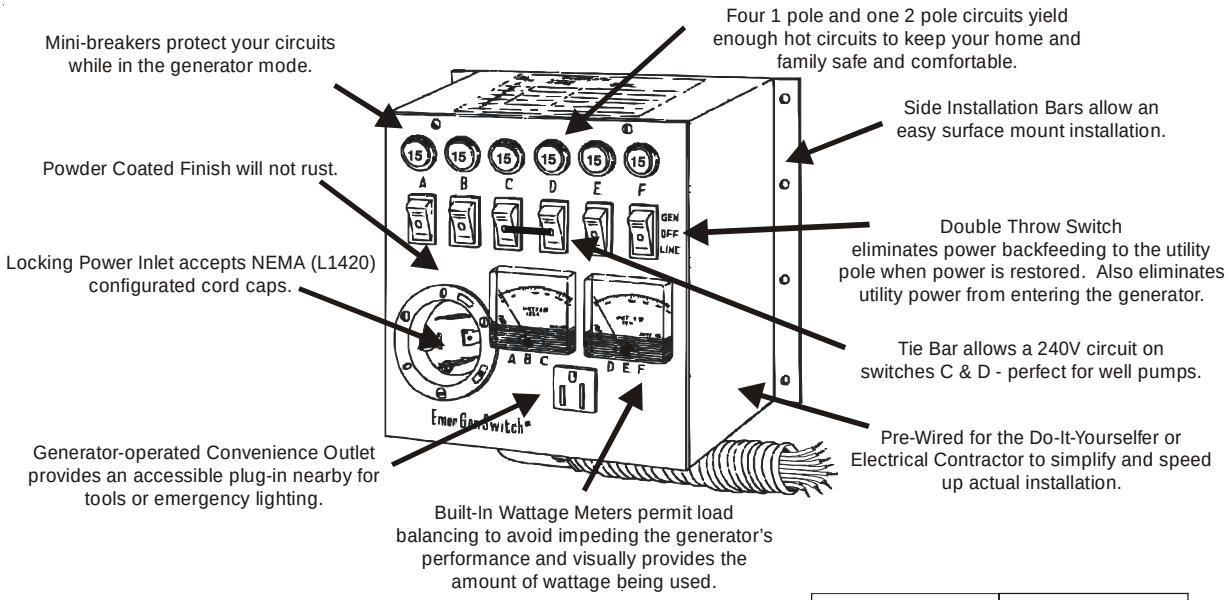
For Models #6-5001, #6-7501, #10-7501 & #10-12K1

PLEASE READ THIS MANUAL IN ITS ENTIRETY
BEFORE INSTALLING AND/OR OPERATING YOUR EMERGEN SWITCH®.
RETAIN THIS MANUAL FOR FUTURE REFERENCE.

Congratulations on the purchase of your new EmerGen Switch®!

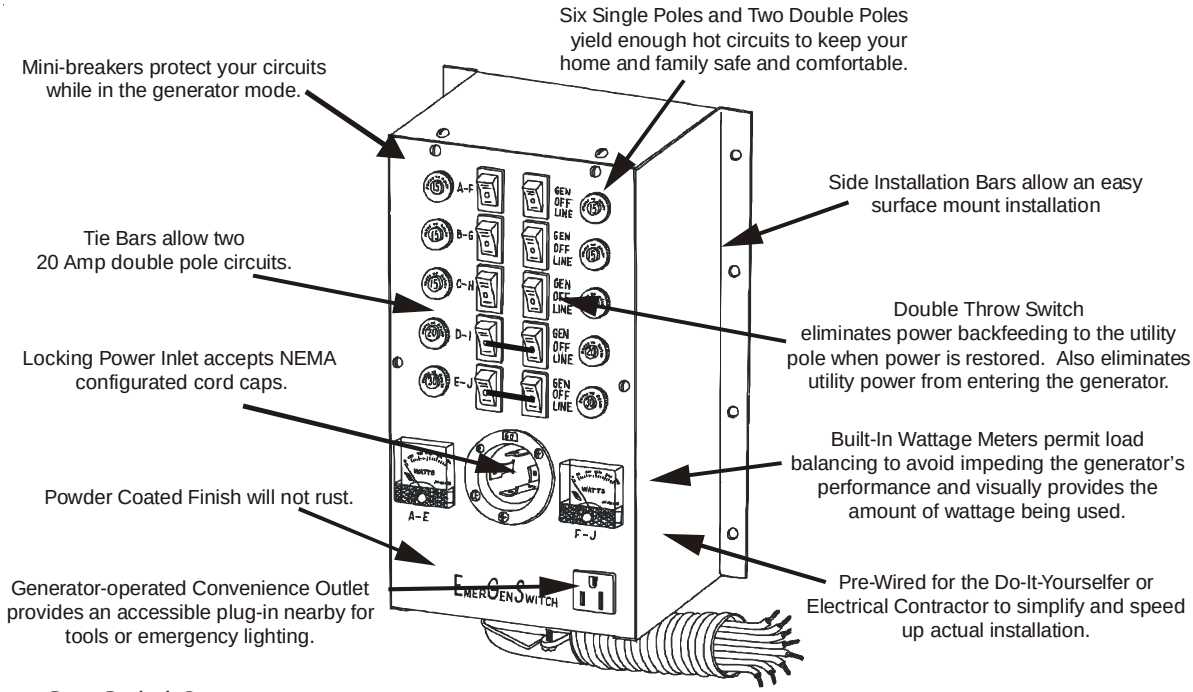
Your new EmerGen Switch will provide you with a way to safely utilize generator power through your existing electrical wiring during a power outage. You will install your switch next to your home's electrical panel and then you will connect circuit breaker wires to the circuits within the transfer switch. Once you power up your portable generator, you will manually turn on each switch and that generator energy is transferred as electrical power and goes through the house circuits you have previously chosen.

Your EmerGen Switch is easy for a licensed electrician or qualified professional to install, safe for a homeowner to operate, and will work with 120/240 Volt AC single phase generators, factory equipped with a NEMA (National Electrical Manufacturer's Association) type receptacle; L14-20R, L14-30R or Calif. Style 50 Amp Twist Lock, depending on the size EmerGen Switch you have chosen. Your EmerGen Switch will not permit connection to both utility and generator power at the same time.



	#6-5001 EmerGen Switch	#6-7501 EmerGen Switch
Maximum Watts (Including Surges)	5000 Watts	7500 Watts
Number of Circuits	4 Single Poles 1 Double Pole	4 Single Poles 1 Double Pole
Maximum Combined Loads at 250VAC	20 Amps	30 Amps
Max. Load Per Circuit from Generator	15 Amps	15 Amps
Max. Load Per Circuit from Load Center	20 Amps	20 Amps

	#10-7501 EmerGen Switch	#10-12K1 EmerGen Switch
Maximum Watts (Including Surges)	7500 Watts	12,500 Watts
Number of Circuits	Six Single Poles Two Double Poles	Six Single Poles Two Double Poles
Maximum Combined Loads at 250VAC	30 Amps	50 Amps
Max. Load Per Circuit from Generator	15 Amps-A,B,C,F,G,H 20 Amps - D, I, E, J	15 Amps-A,B,C,F,G,H 20 Amps - D, I, E, J
Max. Load Per Circuit from Load Center	20 Amps-A,B,C,F,G,H 20 Amps - D, I, E, J	20 Amps-A,B,C,F,G,H 20 Amps - D, I, E, J



SAFETY INFORMATION

1. The National Electrical Code states the connection of a generator to any electrical circuit normally powered by an electrical utility, must be by means of an approved transfer switch so as to isolate the electrical circuit from the utility system when the generator is operating. Your EmerGen Switch is approved by UL which accomplishes the isolation this code is requiring.

2. Your EmerGen Switch is for indoor use only.

3. A licensed electrician or qualified professional must install this EmerGen Switch according to local code. Some areas require the use of a junction box. Note that additional items will be needed for installation if a junction box is used (conduit, fittings, wire nuts, etc.).

4. To reduce the risk of electrical shock, the MAIN circuit breaker in the load center must be OFF, during the course of installation. After installation, it stays on - even during power outages.

GENERATOR

1. The portable generator used with your EmerGen Switch must be operated outside of any building.

2. Always plug the power cord set into your generator and into the EmerGen Switch before starting your generator and always shut the generator down before detaching the power cord set.

3. Do not overload your generator circuit breaker or it will trip. Using the EmerGen Switch's built-in wattage meters, you can balance the loads to avoid impeding your generator's performance.

INSTALLATION PREPARATION

1. Decide which circuits will be powered by the generator during a power outage. The recommended circuits include the fireplace fan or furnace fan (gas or oil only), sump pump, refrigerator, freezer, one lighting or kitchen appliance circuit and perhaps one lighting circuit elsewhere. Most well pumps are 240 volt - or any other 240 volt appliance - will utilize two EmerGen Switch circuits (C & D on the 6-circuit models and D & I or E & J on the 10-circuit models).

2. Plan ahead: Identify the load center circuits you've determined are less than 15 amps. Designate each EmerGen Switch circuit that will be used. The plan should also identify circuits that exceed 15 amps so that the two circuits to be used can be designated.

WARNING: If a circuit you have selected is a GFCI circuit breaker, it will NOT be a GFCI circuit while it is powered by the generator.

WATTAGE REQUIREMENTS

1. Most appliances and motors have current ratings noted directly on the units. Light bulb wattages are noted on the bulbs.

2. Some electric motors surge in power when first started. Your EmerGen Switch has watt meters so that you can monitor the flow of these start up surges without impeding your generator's performance.

3. Load balance is obtained by the pre-determination of chosen circuits. On the 6-circuit models, for instance, use circuit A for your refrigerator and circuit E for your freezer. Since both appliances have induction type motors, they can be easily balanced on separate phases of the EmerGen Switch.

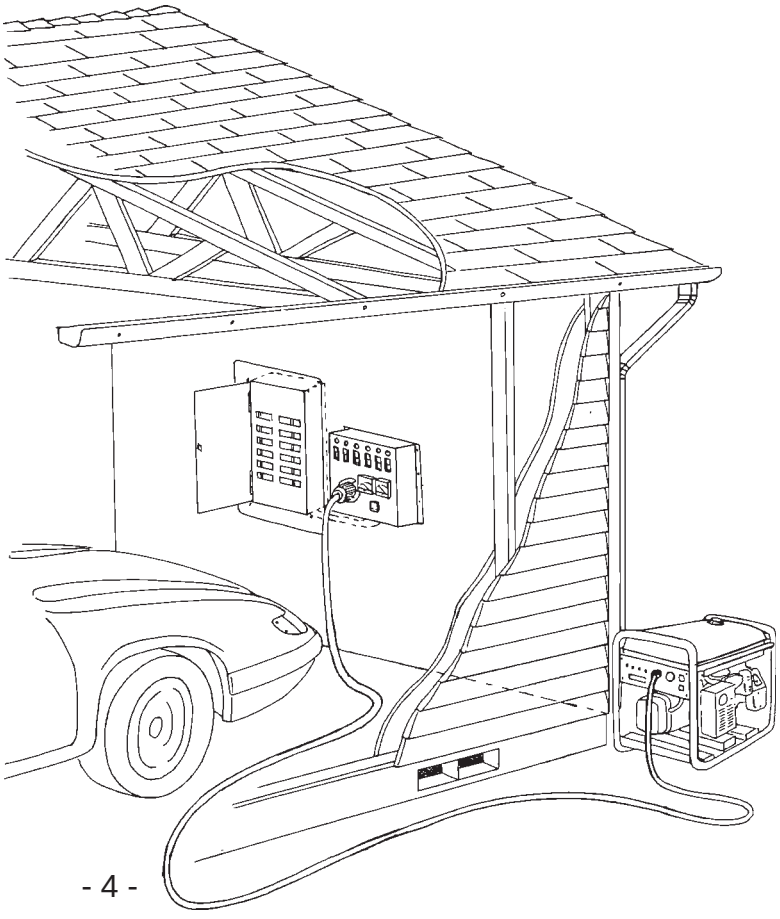
USE THIS GUIDELINE TO DETERMINE YOUR WATTAGE REQUIREMENTS

APPLIANCE	WATTS	
1/2 HP PUMP MOTOR	600	❑ ____
1/4 HP PUMP MOTOR	400	❑ ____
COFFEE MAKER	1000	❑ ____
FIREPLACE FAN	300	❑ ____
FREEZER	500	❑ ____
FURNACE FAN	700	❑ ____
GARAGE DOOR OPENER	600	❑ ____
LIGHT CIRCUIT	300	❑ ____
LIGHT CIRCUIT	300	❑ ____
MICROWAVE OVEN	800	❑ ____
REFRIGERATOR	900	❑ ____
TV SET	350	❑ ____
WATER HEATER	3500	❑ ____

TOTAL WATTS: _____

TYPICAL INSTALLATION

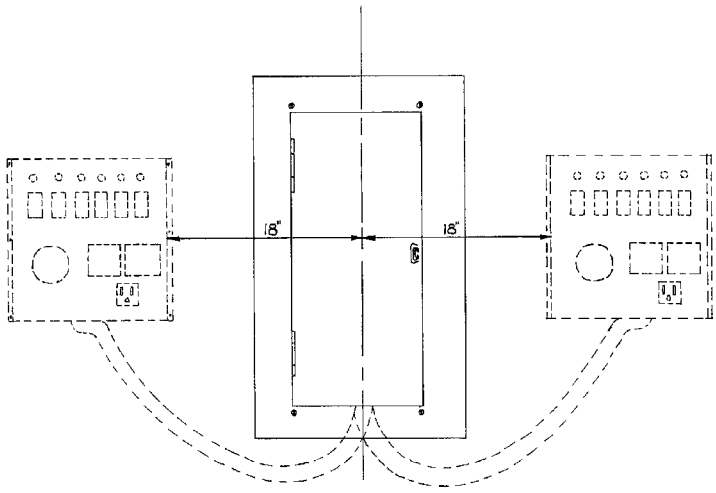
ALWAYS CHECK LOCAL CODES BEFORE INSTALLATION!



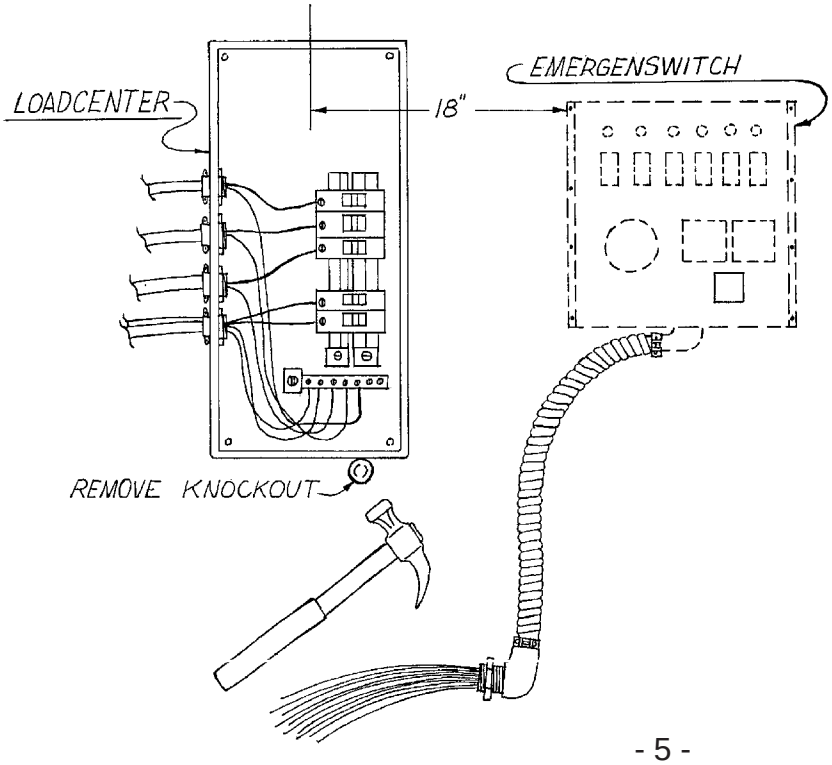
INSTALLATION INSTRUCTIONS

WARNING: Installer must be knowledgeable with residential wiring methods and subsequent electrical local codes. Neither the manufacturer nor distributor accepts responsibility for accidents caused by misuse or incorrect installation.

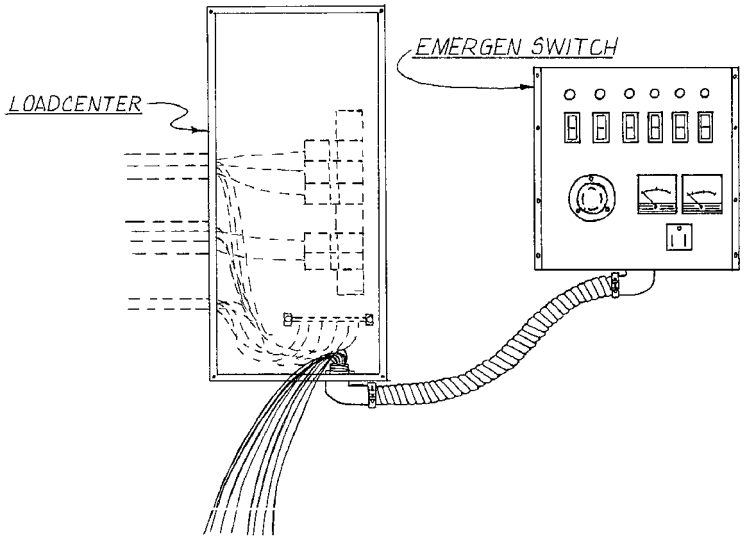
1. Determine where you want your EmerGen Switch located, either to the left or the right of your load center. The switch should be no more than 18" from the center of your load center, making sure there is plenty of room to properly connect the flex conduit whip.



2. TURN OFF POWER. Main circuit breaker should be switched to the OFF position. This does not affect the wires on the line side of the main breaker - they will remain live! Remove the cover of the load center.



3. Identify an appropriate knockout to remove: 3/4" for the 6-circuit models and 1" for the 10-circuit models.



4. Insert the wires from the flex conduit up through the knock-out; take care to not nick or gouge the wires on the metal edge. Tighten the locknut securely onto the load center. The wires can hang freely.

5. Without over-manipulating the flex conduit, secure your EmerGen Switch to the wall with fasteners appropriate to the wall's construction.

6. From your plan, locate the circuit breaker that is to be connected to EmerGen Switch circuit "A". Turn that circuit breaker to its OFF position. Loosen the lug securing the wire and remove the wire. (If the circuit you have chosen is a GFCI circuit breaker, it will not be a GFCI circuit while it is powered by the generator.)

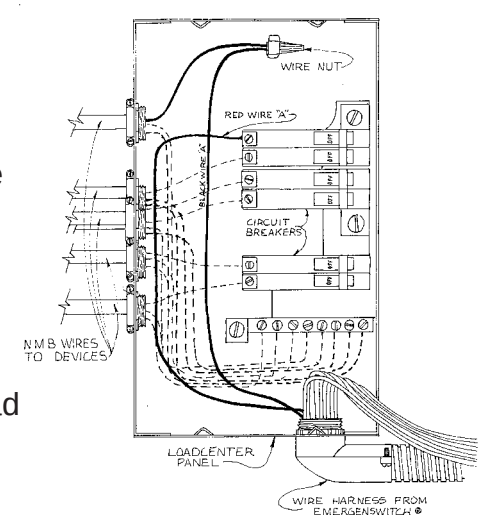
7. Find both the red and the black EmerGen Switch wires labeled "A". Using good workmanship, route both of these wires close to the selected circuit breaker.

Always cut and strip wires appropriately.

a. The red EmerGen Switch "A" wire is trimmed, stripped and installed into the circuit breaker, securely tightening the breaker lug.

b. The black EmerGen Switch "A" wire <u>and</u> the hot wire from the circuit breaker are placed up the side of load center together.

c. After removing 5/8" of the wire insulation, insert both wires into a yellow wire nut and set them up neatly into the corner of the load center.



Note: A 6-circuit, 125 amp panel was used for illustration purposes only.

Installation Instructions (cont'd)

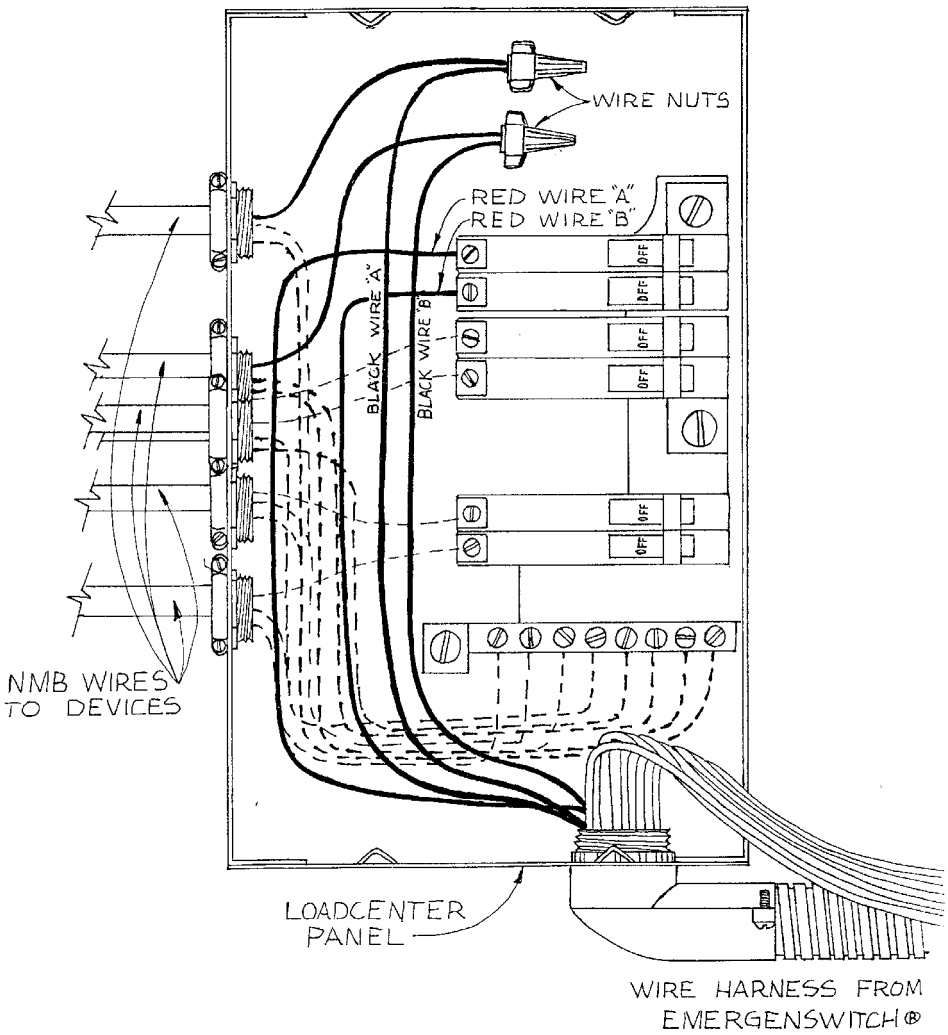
8. From your plan, select the "B" circuit breaker and corresponding EmerGen Switch "B" wires (keeping in mind that if the circuit is a GFCI circuit breaker, it will not be a GFCI circuit while it is powered by the generator). Turn that breaker to the OFF position and remove its wire by unscrewing the lug.

a. The red EmerGen Switch "B" wire is trimmed, stripped and installed into the circuit breaker, securely tightening the breaker lug.

b. The black EmerGen Switch "B" wire and the hot wire from the circuit breaker are placed up the side of load center together.

c. After removing 5/8" of the wire insulation, insert both wires into a yellow wire nut and set them up neatly into the corner of the load center.

Always cut and strip wires appropriately.



Note: A 6-circuit, 125 amp panel was used for illustration purposes only.

9. These steps are continued for each desired circuit (keeping in mind that if the circuit is a GFCI circuit breaker, it will not be a GFCI circuit while it is powered by the generator). In the event that a 240 volt (2 pole) circuit will be used, the same concept is used.

a. The red EmerGen Switch "C" wire is trimmed, stripped and securely installed into one side of the two pole circuit breaker.

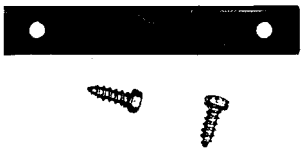
b. The black EmerGen Switch "C" wire and the hot wire from the circuit breaker are placed up the side of load center together. Insert both wires into a yellow wire nut and set them up neatly into the corner of the load center.

c. The red EmerGen Switch "D" wire is trimmed, stripped and securely installed into the other side of the two pole circuit breaker.

d. The black EmerGen Switch "D" wire and the hot wire from the circuit breaker are placed up the side of load center together. Insert both wires into a yellow wire nut and set them up neatly into the corner of the load center.

Note: A 6-circuit, 125 amp panel was used for illustration purposes only.

If two single poles are desired, rather than a double pole, simply remove the tie bar and wire the single circuits as in steps 7 - 8.



Note: On 6-circuit models, the double pole circuit is on "C" and "D" and On 10-circuit models, the double pole circuits are "D" & "I" and "E" & "J".

10. When the above steps have been completed for all desired circuits, the **WHITE** (neutral) wire needs to be installed.

a. Select any unused hole in the neutral bar of the load center.

b. Cut and strip the wire appropriately, insert the wire into the hole and tighten securely.

Always cut and strip wires appropriately.

11. The **GREEN** (ground) wire needs to be installed into an unused hole in the ground bar in the load center.

a. Select any unused hole in the ground bar of the load center.

b. Cut and strip the wire appropriately, insert the wire into the hole and tighten securely.

12. Replace the load center cover. All circuit breakers can now be turned on, including the main breaker.

13. All EmerGen Switches should be in the "LINE" position. The "OFF" position is generally not used.

14. Fill out the chart supplied with your EmerGen Switch describing each emergency circuit and corresponding circuit breaker. Place this sticker on or near your EmerGen Switch for easy reference.

EMERGEN SWITCH

EGS Circuit	Circuit No. at Load Center	Circuit Description
A	8A	Freezer
B	5B	Rec Room Lights
C	2 | A	Barn Pump
D	3 |	
E	4B	Lights
F	10B	Furnace Fan

OPERATION/TEST PROCEDURE

1. Switch positions should remain in the “LINE” position under normal utility power. “OFF” is generally not used. “GEN” positions are used when connecting circuits to your generator power source.

2. When testing and/or switching to generator power after a power outage, ensure all switches are in the “LINE” position. (There is no need to turn off any load center circuit breakers.)

3. Plug your power cord set into your generator by aligning the male prongs with the female terminals of your generator’s receptacle, push the connector in and twist clockwise to lock (Some connectors do not twist). Align the female socket of the cord set into your EmerGen Switch, push it in and turn clockwise to lock.

4. Move your generator outdoors before starting it up. Check to see fluids and fuel are adequate and start your generator following its instruction manual.

5. At your EmerGen Switch, move one circuit to the “GEN” position, making a note of how much wattage is used on the meter. While monitoring the load, flip each circuit- one at a time - to the “GEN” position. You do not need to go “in order” and you want to balance the loads so that both meters read approximately the same. Do not switch on more loads than your generator can supply.

Note: Wattage must not exceed the maximum rating printed on the meters.

6. During a power outage and after your generator is powered up, you may first want to plug in a lamp or worklight to the receptacle on the front of your EmerGen Switch. This plug-in is internally wired to switch “F” on all models.

LOAD MANAGEMENT

1. All circuits can be used simultaneously only if your generator has sufficient wattage capacity. If an electrical load is exceeded by its capacity, the mini-breaker may trip. To reset:

   a. Eliminate the overload condition.

   b. Move the switch with the tripped breaker to the “OFF” position.

   c. Re-set the breaker by pressing it in; make sure it stays in.

   d. Move the switch back to the “GEN” position. It should now operate properly. If it does not, you may need to contact an electrician or qualified professional.

PRODUCT WARRANTY

Every EmerGen Switch® is guaranteed against mechanical or electrical failure due to manufacturing defects for a period of one year following shipment from factory.

Connecticut Electric warrants to the Purchaser that this product will be free from defects in material or workmanship and will be of the kind and quality designated. This warranty shall apply only to defects appearing within one year from the date of shipment by Connecticut Electric.

The liability of Connecticut Electric under this warranty, or for any loss or damage to the equipment shall not in any case exceed the cost of correcting defects in the equipment and upon the expiration of the warranty period, all such liability shall terminate.

Connecticut Electric warrants that at the time of shipment the products manufactured and sold shall be in conformity with applicable written specifications, free from defects in material and workmanship, merchantable, and suitable for a particular purpose, provided such is implied by state law under the circumstances of this sale.

- Connecticut Electric agrees to repair or furnish a replacement for, but not remove or install, any product or component thereof which, within one year from the date of shipment by Connecticut Electric shall, upon test and examination by Connecticut Electric, prove to be defective within the above warranty.
- Buyer shall notify Connecticut Electric of any defect within this warranty no later than thirty (30) days after a defect is discovered.
- No product shall be accepted for return or replacement without authorization from Connecticut Electric.

This warranty is limited solely to the above and applies only for the period set forth. Connecticut Electric will not be liable for any loss, damage, incidental or consequential damages of any kind, whether based upon warranty contact, or negligence, and/or arising in connection with the sale, use, installation or repair of this product. Connecticut Electric's maximum liability shall not, in any case, exceed the contract price for the products claimed to be defective or unsuitable.

This warranty does not extend to any product manufactured by Connecticut Electric, which has been subjected to misuse, neglect, accident, improper installation or use in violation of instructions furnished.

This warranty does not extend to or apply to any unit which has been repaired or altered, either to the product or to the components manufactured by any other supplier other than Connecticut Electric.

TROUBLE SHOOTING

Problem	Cause	Solution
Generator is running, but no AC output is available.	1. Generator circuit breaker has tripped. 2. Poor connection or defective cord set. 3. Connected device is bad. 4. Fault in generator.	1. Reset circuit breaker. 2. Check and repair. 3. Select a different load or appliance that is in good condition. 4. Contact a qualified professional.
Generator runs but bogs down when loads are connected.	1. Short circuit in a connected load. 2. Generator is overloaded.	1. Disconnect shorted electrical load. 2. Review monitoring the loads to rearrange.
Switches are not working with generator power.	1. Switches are in OFF or LINE position. 2. Generator circuit breaker has tripped. 3. Poor connection or defective cord set. 4. Connected device is bad. 5. Fault in generator.	1. Move switches to GEN. 2. Reset circuit breaker. 3. Check and repair. 4. Select a different load or appliance that is in good condition. 5. Contact a qualified professional.
Circuits do not operate after utility power is restored.	1. Switch is in GEN or OFF position. 2. Load center circuit breaker tripped.	1. Set switch to LINE position. 2. Reset circuit breaker in load center.
Only some loads work on generator power.	1. EGS mini-breaker tripped.	1. Reset EGS mini-breaker.