

# PowerStay™ BY GEN/TRAN

## INDOOR MANUAL TRANSFER SWITCHES

For Models 200660, 301060, 501210, 601210

### INSTALLATION AND OPERATING INSTRUCTIONS

**Warning:** Gen/Tran transfer switches should be installed by a professional electrician familiar with electrical wiring and codes, and experienced in working with generators. Gen/Tran accepts no responsibility for accidents, damages or personal injury caused by incorrect installation. These transfer switches are intended for surface or flush mounting **INDOORS** only.

**Caution:** If using the generator and transfer switch for larger appliances, such as electric water heaters, clothes dryers, electric ranges and small air conditioners, check the labels on the appliances to be sure they do **NOT** exceed the rating of the generator. No appliance should have an amperage rating that exceeds the "GENERATOR MAIN" rating in the transfer switch.

Thank you for purchasing the finest manual transfer switch available today. Gen/Tran's PowerStay™ Manual Transfer Switches are designed to safely connect generators to load centers in homes and light commercial buildings (single phase only) for standby power applications. Features include:

- ◆ Generator Main and Utility Main are mechanically interlocked preventing utility or generator power back feed
- ◆ Full branch circuit protection with Siemens® circuit breakers
- ◆ Dual wattmeters on models 200660, 302060, 501210 to monitor and balance generator load, prolonging generator life
- ◆ Pre-assembled wire harness for easy connection to the load center
- ◆ Optional GFCI, Arc Fault or Surge Protection circuit breakers to further protect your home and electronic equipment (Available from Gen/Tran)
- ◆ Optional dust cover for a clean, professional look (Available from Gen/Tran PN 501069)

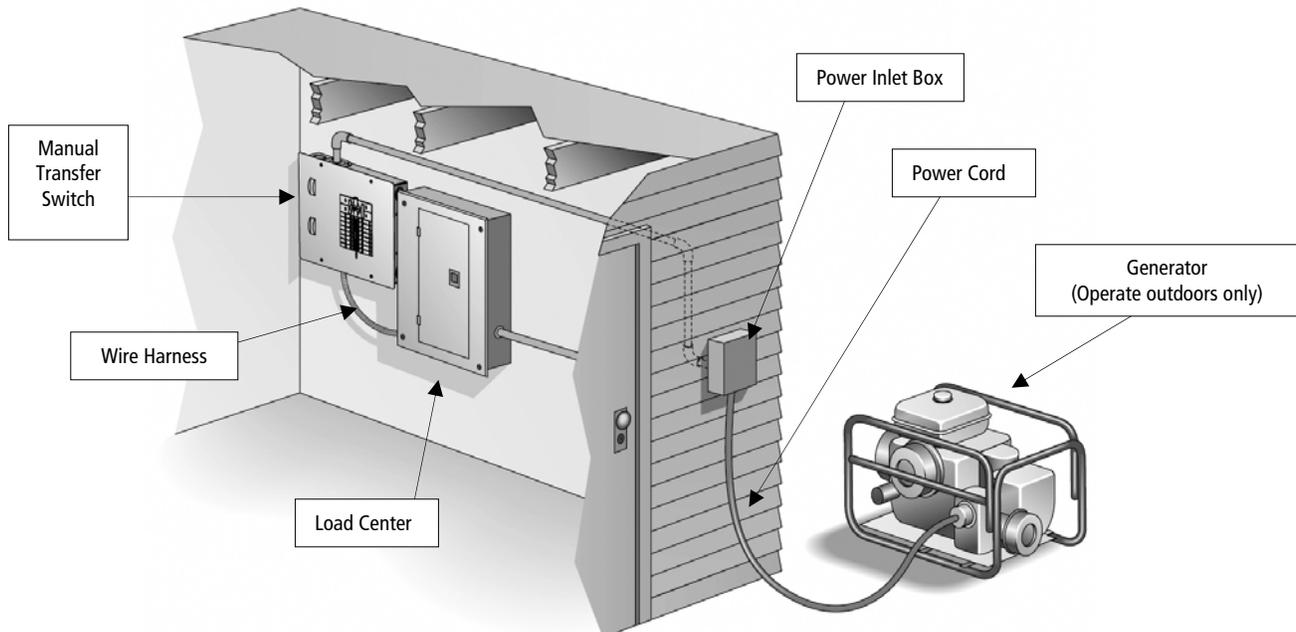
#### Tools Needed for Installation:

- ◆ ¼" and 11/32 nut drivers, 2-1/8" hole saw (if flush mounting)
- ◆ Straight blade and Phillips screwdriver
- ◆ Electric drill
- ◆ Wire cutter/stripper

#### Other Items Needed:

- ◆ New 2-pole, 240V Breaker to mount in main load center – amperage to match utility breaker (see specifications Table I for Utility Main Breaker size – should be manufactured by same as Main load center).
- ◆ Anchors and screws to mount switch to wall
- ◆ PVC cement (to secure connectors onto flexible conduit)
- ◆ Additional wire connectors if switch is "hard-wired". See Table 2 for correct size.
- ◆ May need Arc-fault, GFCI or Surge protection circuit breakers. If Arc-fault, GFCI or Surge protection circuit breakers are used as the branch circuit protector in the main load center, they **MUST** be used in the manual transfer switch. See Table 3 for compatible breakers. (Available through Gen/Tran).
- ◆ Power Inlet Box – for "hard-wired" installations. (Available through Gen/Tran).
- ◆ Power Cord to connect generator to switch or power inlet box. (Available through Gen/Tran).
- ◆ PVC Cement (to secure connectors onto flexible conduit)

#### Typical Installation (Hardwired to generator using a power inlet box):





switch. The unmarked BLACK wires in the harness are to be inserted into the NEW 2 pole breaker (as required in the Other Items Needed section). Remove two adjacent single pole breakers from which the appliance/load wires were removed. The 2-pole breaker should be located in a bus bar location where two adjacent full size single pole circuit breakers were removed. Terminate the WHITE and GREEN wire in the harness in an open position in the Neutral and Ground bars respectively. If there is no separate ground bar, insert the GREEN wire into an open position in the NEUTRAL bar, and tighten.

5. Reinstall the load center cover, and turn ON the MAIN breaker. Then turn ON ALL circuit breakers in both boxes. Turn on the UTILITY MAIN in the manual transfer switch. Check that power is restored to all appliances.

### For Surface Installation – “Hard-wired” Generator Connection (All Models):

1. After removing the cover from the transfer switch and before attaching the harness, remove the three screws that secure the power inlet to the top of the transfer switch. Pull the power inlet out of the transfer switch, and loosen the four screws that secure the wires in the power inlet. Discard the power inlet. Secure the provided cover over the hole where the power inlet was removed using the three screws securing the power inlet. (Model 601210 does not have a power inlet, so the cover is attached at factory.)
2. After attaching the harness and securing the transfer switch to the wall as described in STEPS 1 & 2 in the above section, the wiring to the generator can be done. This wiring should only be done through one of the three KO’s on the top or upper ends of the transfer switch. The four wires removed from the power inlet should be connected together with the appropriate wires coming from the generator using installer provided wire connectors. (For 601210, install generator wires directly to “GEN MAIN” breaker and neutral and ground bars.
3. The balance of the installation, as described in STEPS 3, 4 & 5 above, can now be completed.

### For Flush Installation – New Construction:

1. The transfer switch should be installed at the same time as the main load center in adjacent stud openings in the wall. Remove the six screws that secure the interior assembly of the transfer switch to the switch enclosure. Remove the power inlet as described STEP 1 of in the “Surface Mount – Hardwiring” section above, except model 601210.
2. The width of the transfer switch enclosure is 14.25”; it should fit between standard 16” wall studs. Slots on the sides of the box allow the enclosure to be mounted to the studs. Install the enclosure with nails or screws; be sure the front edge of the box extends forward to be flush with the thickness of the finished drywall. Adjustment is difficult once the interior assembly is reinstalled.
3. The harness is installed by drilling a 2 1/8” diameter hole in the stud between the load center and the transfer switch. The exact location is determined by which KO’s in each box are selected. The ideal location is the lower side corner of the load center and the bottom KO on the transfer switch. After removing the KO’s and drilling the hole, cement the connectors and install the flexible conduit.
4. After the walls have been finished and painted (if applicable), reinstall the interior assembly of the transfer switch and complete the wiring as described in STEP 2 of “Surface Installation – Hardwired” and STEPS 3, 4 & 5 in the “Surface Installation – Plug-In” section above.

### For Flush Installation – Retrofit with Walls Finished:

1. Remove the cover of the main load center. Ensure that there are no wires going thru the side of the load center into the space where you want to mount the transfer switch. Use a “stud finder” to determine if you have at least 14.25” between the studs to mount the transfer switch.
2. After determining where to install the transfer switch (keep in mind the length and flexibility of the conduit provided and where the generator wires will enter), remove the cover, the power inlet and the six screws that secure the interior of the transfer switch as described in STEP 1 of the “Surface Installation – Hardwired” section above. Hold the transfer switch enclosure in the desired position on the wall and mark the exact dimensions of the box. Set the enclosure aside and cut the hole in the drywall. Remove a 1” or 1-1/4” KO in the lower side of the load center. Drill a pilot hole through the stud in the center of the KO removed. Then, reach down inside the wall and drill a 2 1/8” diameter hole in the stud using the pilot hole as a guide. Assuming you are mounting the transfer switch above the bottom corner of the load center, remove the bottom KO in the transfer switch, cement the connectors on the flexible conduit, and install the flexible conduit and fasten to both cabinets with locknuts.
3. It is recommended that only the three KO’s in the upper portion of the transfer switch enclosure be used for entry of the generator wires. If this is impractical in your installation, other holes may be drilled on the top, bottom or back to accommodate the incoming wires from the generator.
4. Insert the transfer switch enclosure box into the hole in the drywall and install with nails or screws; be sure the front edge of the box extends forward to be flush with the thickness of the finished drywall. Adjustment is difficult once the interior assembly is reinstalled.
5. Reinstall the interior assembly of the transfer switch and complete the wiring as described in STEP 2 of “Surface Installation – Hardwired” and STEPS 3,4 and 5 in the “Surface Installation – Plug-In” section above.

### TABLE 1 - SPECIFICATIONS:

MODEL #	200660	301060	501210	601210
UTILITY MAIN breaker, Included	60 Amp	60 Amp	100 Amp	100 Amp
GEN MAIN breaker, included	20 Amp	30 Amp	50 Amp	60 Amp
Max Load per Circuit	As marked	As marked	As marked	As marked
Max Load Combined	20 Amp	30 Amp	50 Amp	60 Amp
Max Watts @ 250 Volt	5000	7500	12,500	15,000
Max Watts @ 125 Volt	5000	7500	12,500	15,000
Max 1-pole Circuits *	16	16	16	16
Max 2-pole Circuits *	8	8	8	8
NEMA Config. of Inlet	L1420	L1430	CS6375	N/A
Min. gauge Cord Size	12/4 wire	10/4 wire	6/4 wire	none

**\*Note:** If Ground Fault Circuit Interrupters (GFCI) circuit breakers, Arc Fault Circuit Interrupters, or Surge Protector Circuit Breakers were used as the branch circuit protector in the main load center, they MUST be used in the PowerStay unit. Because these circuit breakers typically take up more than one space, the overall maximum number of circuits may be reduced from the number shown. Contact Gen/Tran for more information on these circuit breaker types.

# Operating Your PowerStay™ Manual Transfer Switch and Generator:

## Transferring from Utility Power to Generator Power:

1. Move generator outdoors. **WARNING: Operating a generator indoors or in a garage could result in injury or death.**
2. Insert the male connector of the Power Cord into the correct outlet on the generator.
3. Plug in the female connector of the Power Cord to the Power Inlet Box OR the inlet on the top of the PowerStay Manual Transfer Switch. Turn all circuit breakers in the transfer switch to their OFF position.
4. Start the generator outdoors, following the procedures described in the generator's owner's manual furnished by the manufacturer. Turn on the GENERATOR MAIN circuit breaker in the transfer switch. Turn ON circuit breakers in the manual transfer switch one at a time alternating from phase "A" and phase "B". If meters are provided in your unit, watch as you turn on successive circuits that the meters do not continuously exceed the maximum wattage of the generator. It may be necessary to alternate the use of larger loads (furnace motors, well pumps, freezers, etc.) to avoid overloading the generator. Try to "balance" the loads on each "phase" (A and B). To promote generator life, loads should be balanced so that the wattage reading on each meter is within about 1000 watts of the other.
5. Test your circuits by using the wattmeters or determine wattage from that shown on each appliance. Make a note of any excessive loads which must be removed from a given circuit during generator operation in an emergency.

## Transferring from Generator Power to Utility Power:

1. On the transfer switch, turn Generator MAIN breaker OFF and turn Utility MAIN breaker ON.
2. Turn ON any branch circuit breakers in the transfer switch that are OFF.
3. Shut down the generator, following the procedures in the generator Owner's Manual.
4. Unplug the power cord from the generator and then the power inlet.
5. Cool off the generator and store in a dry, secured location.
6. To ensure that your generator will work properly when you need it, it is important to start and run your generator under load regularly and keep the tank filled with fresh fuel. Perform the above steps at least ONCE A MONTH to keep the generator properly "exercised." It is not necessary to turn off any circuits in the MAIN load center when supplying generator power to the transfer switch.

**TABLE 2 - Wire Connector Usage Chart:**

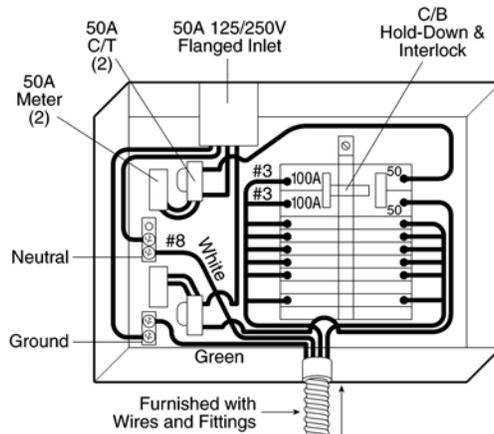
WIRE SIZE	12	10	8	6
14	Red	NA	NA	NA
12	Red	Red	NA	NA
10	NA	Red	NA	NA
8	NA	NA	Blue	Blue
6	NA	NA	Blue	Blue

**TABLE 3 - Compatible Circuit Breaker Types:**

- ◆ Siemens QP, QT, QPH, HQP, QPF, QPHF, QFP, QE, QEH
- ◆ Westinghouse Series BD, BR, BQ, GFC
- ◆ Challenger Type A, C, HAGF
- ◆ Square D Series HOM
- ◆ GE Series THQL

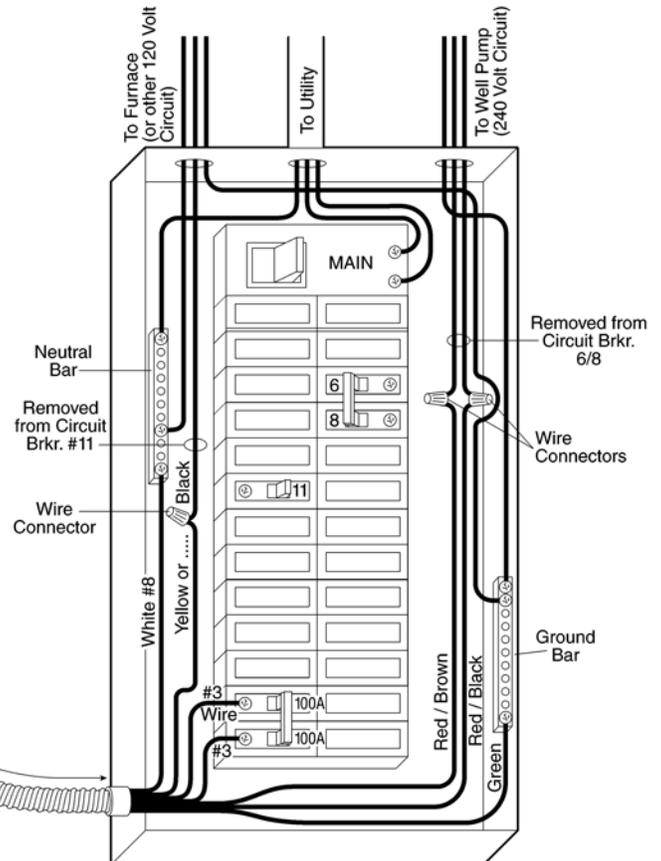
**Compatible GFCI, Arc-Fault/ Surge Protection Circuit Breakers:**

- ◆ Siemens: QPF (GFCI), QAF (Arc Fault), QP (Surge Protector)



**Circuit ID for Model 501210**

A4	20A	A6	15A
A5	20A	A3	20A
B4	15A	B3	20A
B5	20A	B6	15A
A1	50A	A2	30A
A7	—	A8	30A
B1	50A	B2	30A
B7	—	B8	—



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[www.gen-tran.com](http://www.gen-tran.com)  
PN 50050 Rev B 1-11/03

# PowerStay™ BY GEN/TRAN OUTDOOR MANUAL TRANSFER SWITCHES

For Models R200660, R301060, R501210, R601210

## INSTALLATION AND OPERATING INSTRUCTIONS

**Warning:** Gen/Tran transfer switches should be installed by a professional electrician familiar with electrical wiring and codes, and experienced in working with generators. Gen/Tran accepts no responsibility for accidents, damages or personal injury caused by incorrect installation. These transfer switches are intended for surface mounting outdoors or indoors.

**Caution:** If using the generator and transfer switch for larger appliances, such as electric water heaters, clothes dryers, electric ranges and small air conditioners, check the labels on the appliances to be sure they do NOT exceed the rating of the generator. No appliance should have an amperage rating that exceeds the "GENERATOR MAIN" rating in the transfer switch.

Thank you for purchasing the finest manual transfer switch available today. Gen/Tran's PowerStay™ Manual Transfer Switches are designed to safely connect generators to load centers in homes and light commercial buildings (single phase only) for standby power applications. Features include:

- ◆ Generator Main and Utility Main are mechanically interlocked preventing utility or generator power back feed
- ◆ Full branch circuit protection with Siemens® circuit breakers
- ◆ Pre-assembled wire harness for easy connection to the load center
- ◆ Optional GFCI, Arc Fault or Surge Protection circuit breakers to further protect your home and electronic equipment (Available from Gen/Tran)
- ◆ High Corrosion-resistant aluminum cabinet

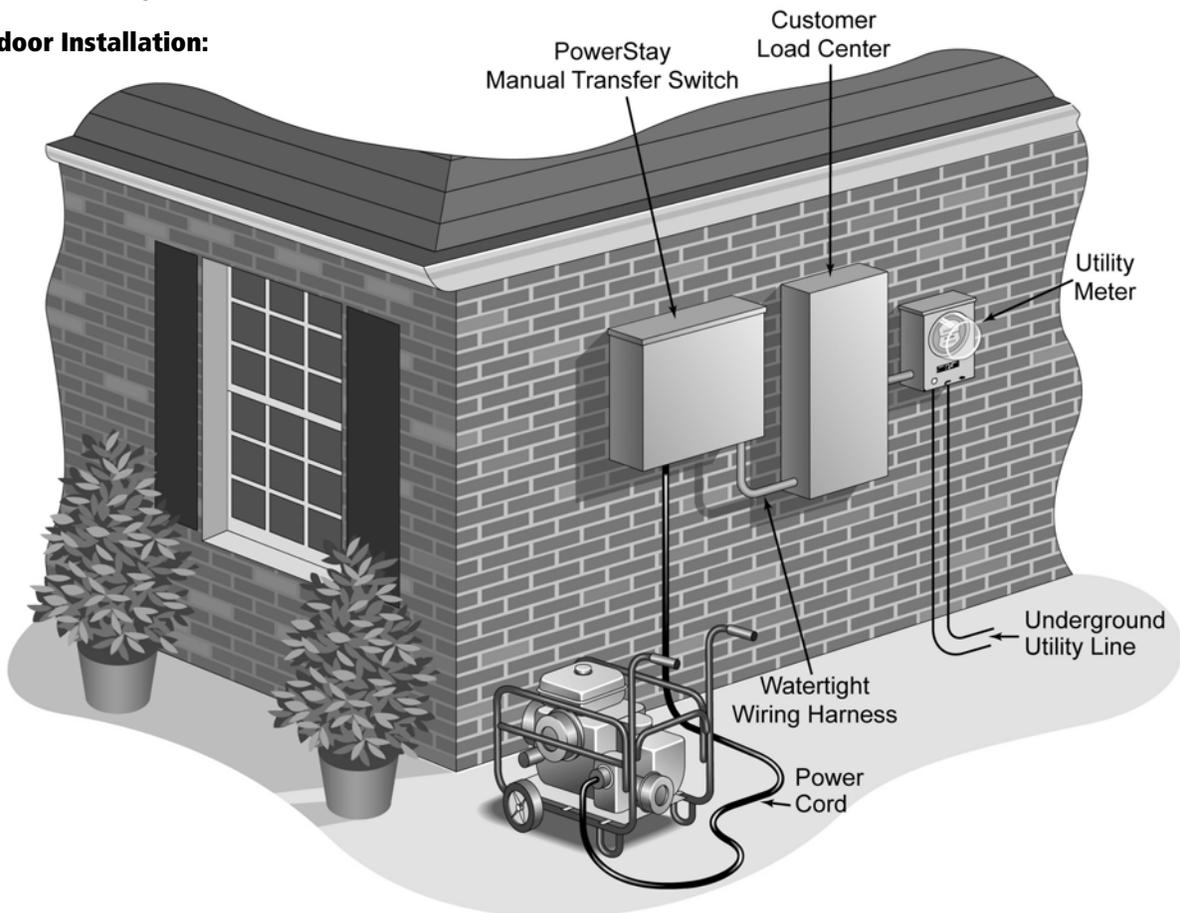
### Tools Needed for Installation:

- ◆ ¼" and 11/32 nut drivers
- ◆ Straight blade and Phillips screwdriver
- ◆ Electric drill
- ◆ Wire cutter/stripper

### Other Items Needed:

- ◆ New 2-pole, 240V Breaker to mount in main load center – amperage to match utility breaker (see specifications Table I for Utility Main Breaker size – should be manufactured by same as Main load center).
- ◆ Anchors and screws to mount switch to wall
- ◆ Additional wire connectors if switch is "hard-wired". See Table 2 for correct size.
- ◆ May need Arc-fault, GFCI or Surge protection circuit breakers. If Arc-fault, GFCI or Surge protection circuit breakers are used as the branch circuit protector in the main load center, they MUST be used in the manual transfer switch. See Table 3 for compatible breakers. (Available through Gen/Tran).
- ◆ Power Cord to connect generator to switch.

### Typical Outdoor Installation:





the Utility 2-pole breaker in the transfer switch. Attach the WHITE wire to the insulated neutral bar inside the transfer switch, and attach the GREEN wire to the ground bar. Reinstall the dead front to the transfer switch. Cover may be re-installed and padlocked, if desired.

9. RECHECK TO BE SURE THE MAIN CIRCUIT BREAKER HAS BEEN TURNED OFF. The wires from the harness entering the load center can now be terminated. Remove the wires of the appliances/loads that have been assigned to circuits in the transfer switch from the breakers in the load center. Cut the harness wires to a convenient length and strip off approximately 5/8" and connect with the provided wire connectors (see wire connector chart) using the appropriate labeled wire from the transfer switch. The unmarked BLACK wires in the harness are to be inserted into the NEW 2 pole breaker (as required in the Other Items Needed section). Remove two adjacent single pole breakers from which the appliance/load wires were removed. The 2-pole breaker should be located in a bus bar location where two adjacent full size single pole circuit breakers were removed. Terminate the WHITE and GREEN wire in the harness in an open position in the Neutral and Ground bars respectively. If there is no separate ground bar, insert the GREEN wire into an open position in the NEUTRAL bar, and tighten.
10. Reinstall the load center cover, and turn ON the MAIN breaker. Then turn ON ALL circuit breakers in both boxes. Turn on the UTILITY MAIN in the manual transfer switch. Check that power is restored to all appliances.

**For "Hard-wired" Generator Connection:**

1. Model R601210 must be hardwired to the generator. Models R200660, R301060, and R501210 are equipped with power inlets which can be disconnected when hardwiring is desired. The wires from the inlet can be removed from the "GEN MAIN" breaker and the neutral and ground bars. Then run the wires from the generator to the same locations that you removed from the power inlet. The inlet can remain in place – to cover the hole in the bottom of the enclosure OR you may order a knockout closer from 1-888-GEN-TRAN.

**TABLE 1 - SPECIFICATIONS:**

MODEL #	R200660	R301060	R501210	R601210
UTILITY MAIN breaker, Included	60 Amp	60 Amp	100 Amp	100 Amp
GEN MAIN breaker, included	20 Amp	30 Amp	50 Amp	60 Amp
Max Load per Circuit	As marked	As marked	As marked	As marked
Max Load Combined	20 Amp	30 Amp	50 Amp	60 Amp
Max Watts @ 250 Volt	5000	7500	12,500	15,000
Max Watts @ 125 Volt	5000	7500	12,500	15,000
Max 1-pole Circuits *	16	16	16	16
Max 2-pole Circuits *	8	8	8	8
NEMA Config. of Inlet	L1420	L1430	CS6375	N/A
Min. gauge Cord Size	12/4 wire	10/4 wire	6/4 wire	none

**\*Note:** If Ground Fault Circuit Interrupters (GFCI) circuit breakers, Arc Fault Circuit Interrupters, or Surge Protector Circuit Breakers were used as the branch circuit protector in the main load center, they MUST be used in the PowerStay unit. Because these circuit breakers typically take up more than one space, the overall maximum number of circuits may be reduced from the number shown. Contact Gen/Tran for more information on these circuit breaker types.

**Operating Your PowerStay™ Manual Transfer Switch and Generator:**

**Transferring from Utility Power to Generator Power:**

6. Move generator outdoors. **WARNING: Operating a generator indoors or in a garage could result in injury or death.**
7. Insert the male connector of the Power Cord into the correct outlet on the generator.
8. Plug in the female connector of the Power Cord to the inlet on the bottom of the PowerStay Manual Transfer Switch. Turn all circuit breakers in the transfer switch to their OFF position.
9. Start the generator outdoors, following the procedures described in the generator's owner's manual furnished by the manufacturer. Turn on the GENERATOR MAIN circuit breaker in the transfer switch. Turn ON circuit breakers in the manual transfer switch one at a time alternating from phase "A" and phase "B". It may be necessary to alternate the use of larger loads (furnace motors, well pumps, freezers, etc.) to avoid overloading the generator. Try to "balance" the loads on each "phase" (A and B). To promote generator life, loads should be balanced so that the wattage is within about 1000 watts of the other on each phase.
10. Test your circuits by determining wattage from that shown on each appliance. Make a note of any excessive loads which must be removed from a given circuit during generator operation in an emergency.

**Transferring from Generator Power to Utility Power:**

7. On the transfer switch, turn Generator MAIN breaker OFF and turn Utility MAIN breaker ON.
8. Turn ON any branch circuit breakers in the transfer switch that are OFF.
9. Shut down the generator, following the procedures in the generator Owner's Manual.
10. Unplug the power cord from the generator and then the power inlet.
11. Cool off the generator and store in a dry, secured location.
12. To ensure that your generator will work properly when you need it, it is important to start and run your generator under load regularly and keep the tank filled with fresh fuel. Perform the above steps at least ONCE A MONTH to keep the generator properly "exercised." It is not necessary to turn off any circuits in the MAIN load center when supplying generator power to the transfer switch.

**TABLE 2 - Wire Connector Usage Chart:**

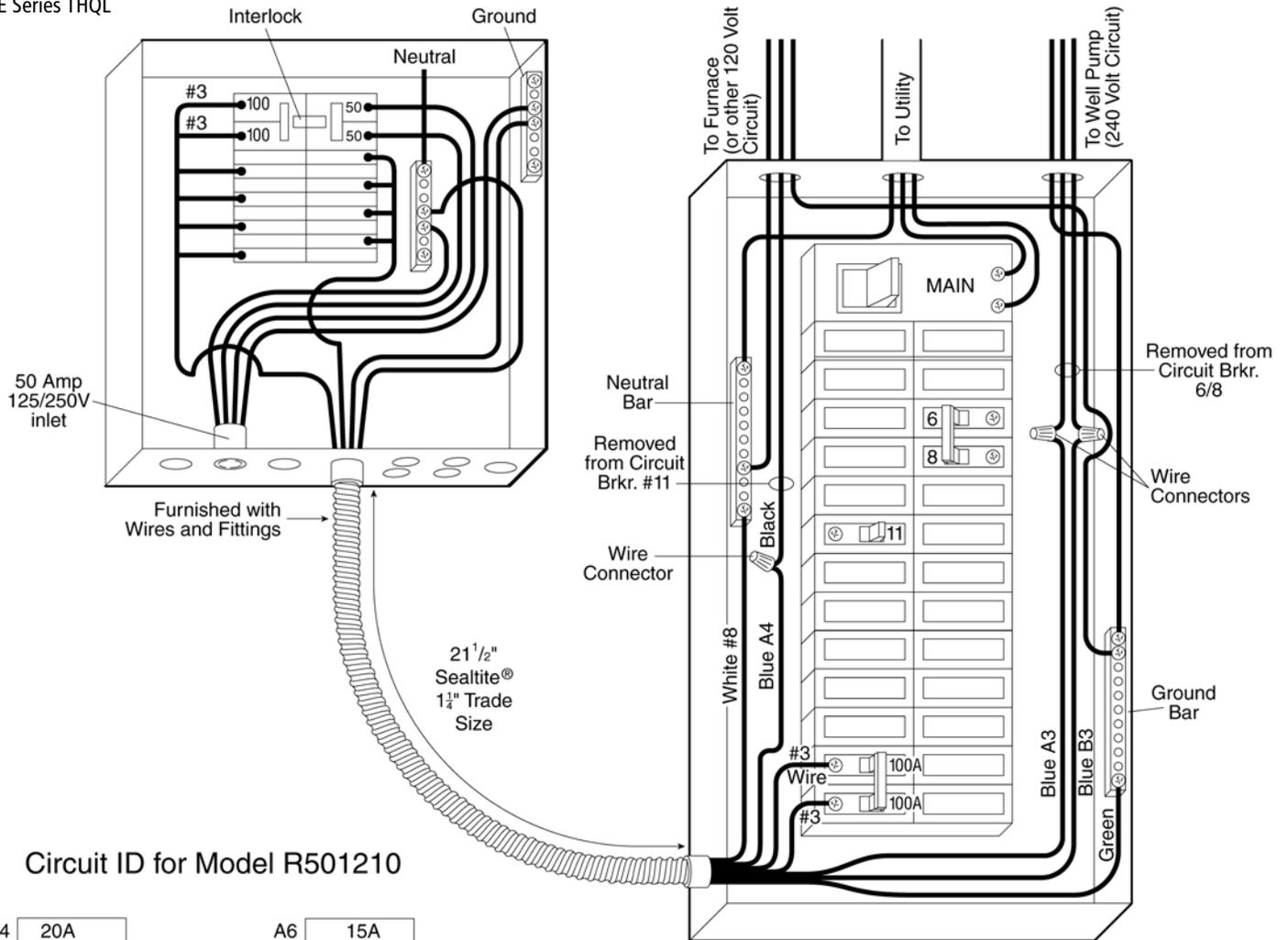
WIRE SIZE	12	10	8	6
14	Red	NA	NA	NA
12	Red	Red	NA	NA
10	NA	Red	NA	NA
8	NA	NA	Blue	Blue
6	NA	NA	Blue	Blue

**TABLE 3 – Compatible Circuit Breaker Types:**

- ◆ Siemens QP, QT, QPH, HQP, QPF, QPHF, QFP, QE, QEH
- ◆ Westinghouse Series BD, BR, BQ, GFC
- ◆ Challenger Type A, C, HAGF
- ◆ Square D Series HOM
- ◆ GE Series THQL

**Compatible GFCI, Arc-Fault/ Surge Protection Circuit Breakers:**

- ◆ Siemens: QPF (GFCI), QAF (Arc Fault), QP (Surge Protector)



**Circuit ID for Model R501210**

A4	20A	A6	15A
A5	20A	A5	20A
B4	15A	B3	20A
B5	20A	B6	15A
A1	50A	A2	30A
A7	—	A8	—
B1	50A	B2	30A
B7	—	B8	—

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