HAYWARD®

poolboss™ Pool System Control

ETL listed
Conforms to UL1563

Certified to
CAN/CSA C22.2 No. 218.1-M89

INSTALLATION INSTRUCTIONS

SAVE THESE INSTRUCTIONS

1302311001 1102

TABLE OF CONTENTS

IMPORTANT WATER SAFETY INSTRUCTIONS

When installing and using these Control Systems, basic safety precautions should always be followed, including those listed below:

READ AND FOLLOW ALL INSTRUCTIONS

1. WARNING - Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the spa or pool to which this Control System is connected unless they are closely supervised at all times.
2. DANGER - To reduce the risk of drowning from hair or body entrapment, assure that the suction fittings, skimmers and main drains in the spa or pool connected to this Control System are approved for the application.
3. DANGER - To reduce the risk of injury, do not remove the suction fittings or main drain covers. Never operate the spa or pool if these covers are broken or missing.
4. WARNING - To reduce the risk of injury:
   A. The water in a spa to which the Control System is connected should never exceed 104° F (40° C). Water temperatures between 100° F (38° C) and 104° F (40° C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
   B. Since excessive water temperatures have high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100° F (38° C).
   C. Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices vary.
   D. Prolonged immersion in water hotter than 104° F (40° C) may cause hyperthermia. Hyperthermia occurs when the internal body temperature reaches a level several degrees above normal body temperatures of 98.6° F (37° C). The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:
      1. Unawareness of impending hazard.
      2. Failure to perceive heat.
      3. Failure to recognize the need to exit the spa.
      4. Physical inability to exit the spa.
      5. Fetal damage in pregnant women.
      6. Unconsciousness resulting in a danger of drowning.
   E. The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.
   F. Leave the spa immediately if nausea, dizziness or headaches occur, immediately cool the body by taking a cool shower or by applying cold towels or ice packs. If the symptoms persist, seek medical attention.
   G. The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
   H. Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
   I. Persons using medication should consult a physician before using a spa since some medication may induce drowsiness or may affect heart rate, blood pressure, and circulation.
5. Occasional users of the spa should be made aware of these important Safety Instructions.
6. WARNING - People with infectious diseases should not use a spa or pool.
7. WARNING - To avoid injury, exercise care when entering and exiting a spa or pool.
8. WARNING - Do not use a spa immediately following strenuous exercise.
9. CAUTION - Maintain water chemistry to provide safe bathing environment.

SAVE THESE INSTRUCTIONS

ELECTRICAL SPECIFICATIONS

INPUT POWER SUPPLY:
-120 vac, 60 Hz, 3A.

SHORT CIRCUIT RATING:
-5000 symmetrical amps.

OUTPUTS:
Valve Actuators - 0.75A max @ 24 vac.
Heater - 1A max @ 24 vac.
Relay Contacts - 25A max @ 120 / 240 vac.
1-1/2 HP max @ 120 vac.
3 HP max @ 240 vac.
1500 Watts Tungsten max @ 120 vac.

PRODUCT SPECIFICATIONS

POOL/SPA CONTROL
WITH STANDARD CONTROL CENTER
ITEMS INCLUDED:

PSC2201 CONTROL CENTER
PSC2223 MASTER PANEL
PSC2221 FREEZE PROTECTION KIT
PSC2222 WATER TEMPERATURE SENSOR KIT
PSA24 VALVE ACTUATOR (2 SUPPLIED)

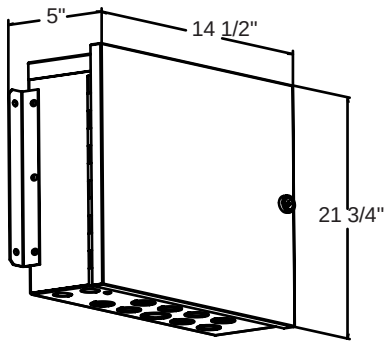
POOL/SPA CONTROL
WITH CONTROL CENTER WITH BREAKER BASE
ITEMS INCLUDED:

PSC2202 CONTROL CENTER WITH BREAKER BASE
PSC2223 MASTER PANEL
PSC2221 FREEZE PROTECTION KIT
PSC2222 WATER TEMPERATURE SENSOR KIT
PSA24 VALVE ACTUATOR (2 SUPPLIED)

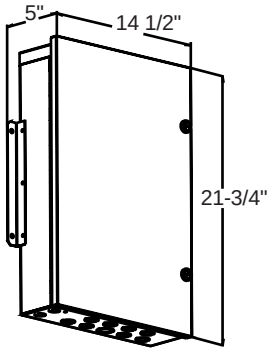
OPTIONS:

PSC2211 3HP RELAY KIT
PSC2212 2HP 2-SPEED RELAY KIT
PSC2213 TIME CLOCK KIT
PSC2214 FIBER OPTICS CONTROL KIT
PSA24 VALVE ACTUATOR

STANDARD CONTROL CENTER
ITEM #-PSC2201

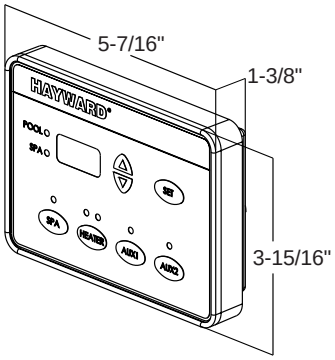


CONTROL CENTER WITH BREAKER BASE
ITEM #-PSC2202

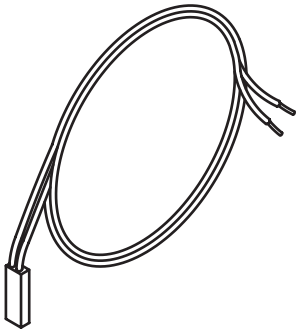


CONDUIT KNOCKOUTS
LOW VOLTAGE COMPARTMENT
(2) 1/2" KNOCKOUTS
HIGH VOLTAGE COMPARTMENT
(8) 1/2" / 3/4" CONCENTRIC KNOCKOUTS
(1) 3/4" / 1" CONCENTRIC KNOCKOUT

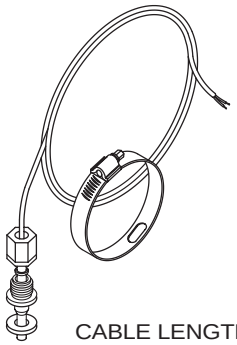
MASTER CONTROL PANEL
ITEM #-PSC2223



FREEZE PROTECTION SWITCH
ITEM #-PSC2221

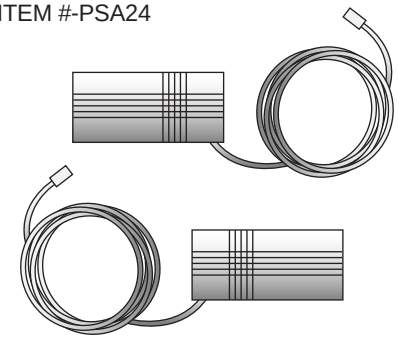


WATER TEMPERATURE SENSOR
ITEM #-PSC2222



CABLE LENGTH - 25'

VALVE ACTUATORS
ITEM #-PSA24



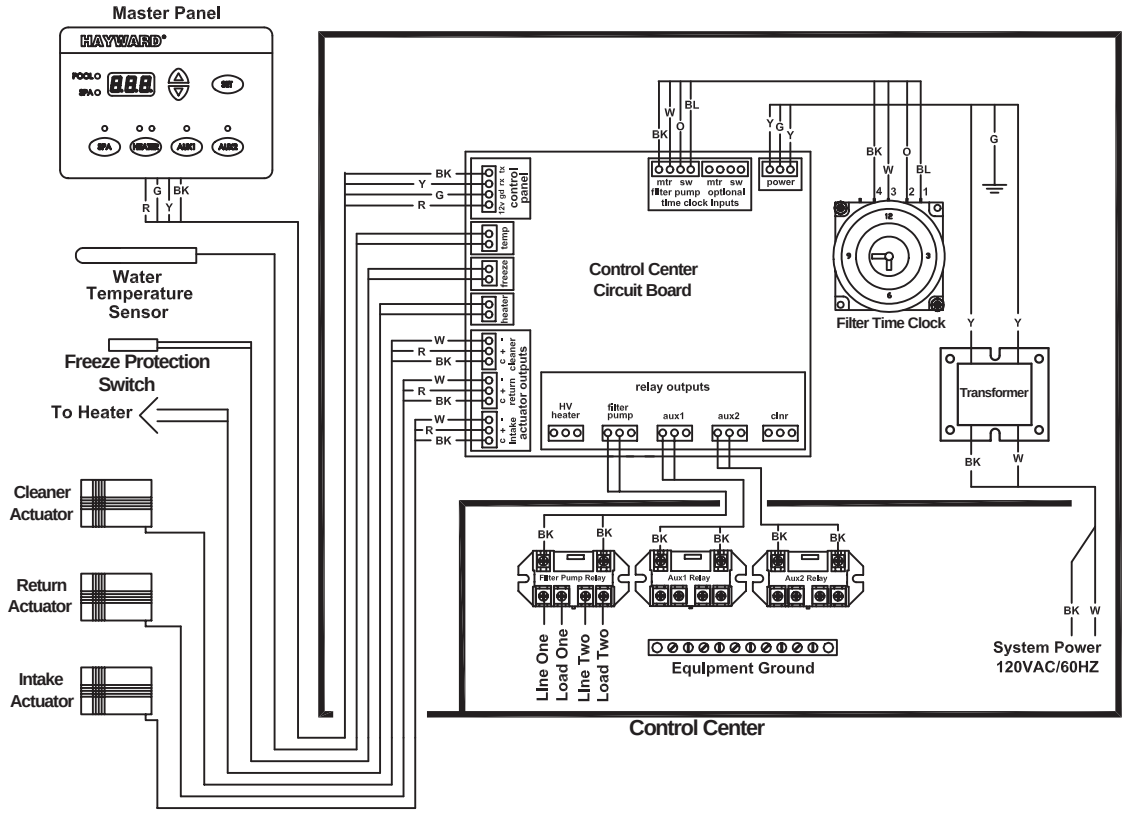
POWER CABLE LENGTH - 10'

IMPORTANT ELECTRICAL SAFETY INSTRUCTIONS

When installing and using these Control Systems, basic safety precautions should always be followed, including those listed below:

1. DANGER - Risk of electric shock. Before making any electrical connections, make certain that the Main Power breaker from the house breaker box has been turned off.
2. DANGER - Risk of Electric Shock. Do not permit any electric appliance, such as a light, telephone, radio, or television within 5' (1.5m) of a pool or spa.
3. All electrical work must be performed by a qualified electrician and must conform to all national, state, and local codes.
4. Do not install or service this equipment if precipitation is present or imminent.
5. Install the Main Control Center in an area that is not prone to flooding.
6. Install the Main Control Center and all other high voltage components at least 5' (1.5m) from the inside wall of the pool or spa. Canadian installations must be installed at least 3 meters from the inside wall of the pool or spa.
7. A terminal marked "GROUND" is provided within the Main Control Center enclosure. To reduce the risk of electrical shock, connect this terminal to the grounding terminal of the electrical supply panel with a continuous insulated copper wire equivalent in size to the circuit conductors supplying this equipment, but no smaller than #12 AWG. Connect a second conductor, min #8 AWG solid copper (#6 AWG in Canada), from this terminal to the local common bonding grid in the spa and pool area. Additionally, any metal equipment, metal ladders, metal enclosure of electrical equipment,metal water pipe, or conduit within 5' of the unit or within 5' of the pool (3 meters in Canada) must be connected to the bonding grid.
8. The electrical supply circuit connected to the Main Control Center must be equipped with a suitably rated disconnect device - a circuit breaker, a GFCI circuit breaker, switch or other device capable of opening all ungrounded conductors in the supply circuit. This disconnect must be installed at least 5' from the pool or spa, but be within sight of and readily accessible to the user.
9. This Control System is intended to control only listed heaters with built-in temperature-limiting and temperature regulating controls.
10. A ground-fault circuit-interrupter must be provided if this device is used to control underwater lighting fixtures. The conductors on the load side of the ground-fault circuit interrupter shall not occupy conduit boxes, or enclosures containing other conductors unless the additional conductors are also protected by a ground-fault circuit-interrupter.

ELECTRICAL SCHEMATIC



TYPICAL PLUMBING SCHEMATIC

BASIC POOL/SPA PLUMBING:

These schematics show the necessary plumbing required to operate a pool and a spa that share common pumps, filters, and heaters. The Motorized Diverter Valves will change position when spa use is desired.

IMPORTANT:
Be sure the valves are synchronized to move simultaneously from pool suction and pool return to the spa suction and spa return. If they are not synchronized, please follow the instructions below:

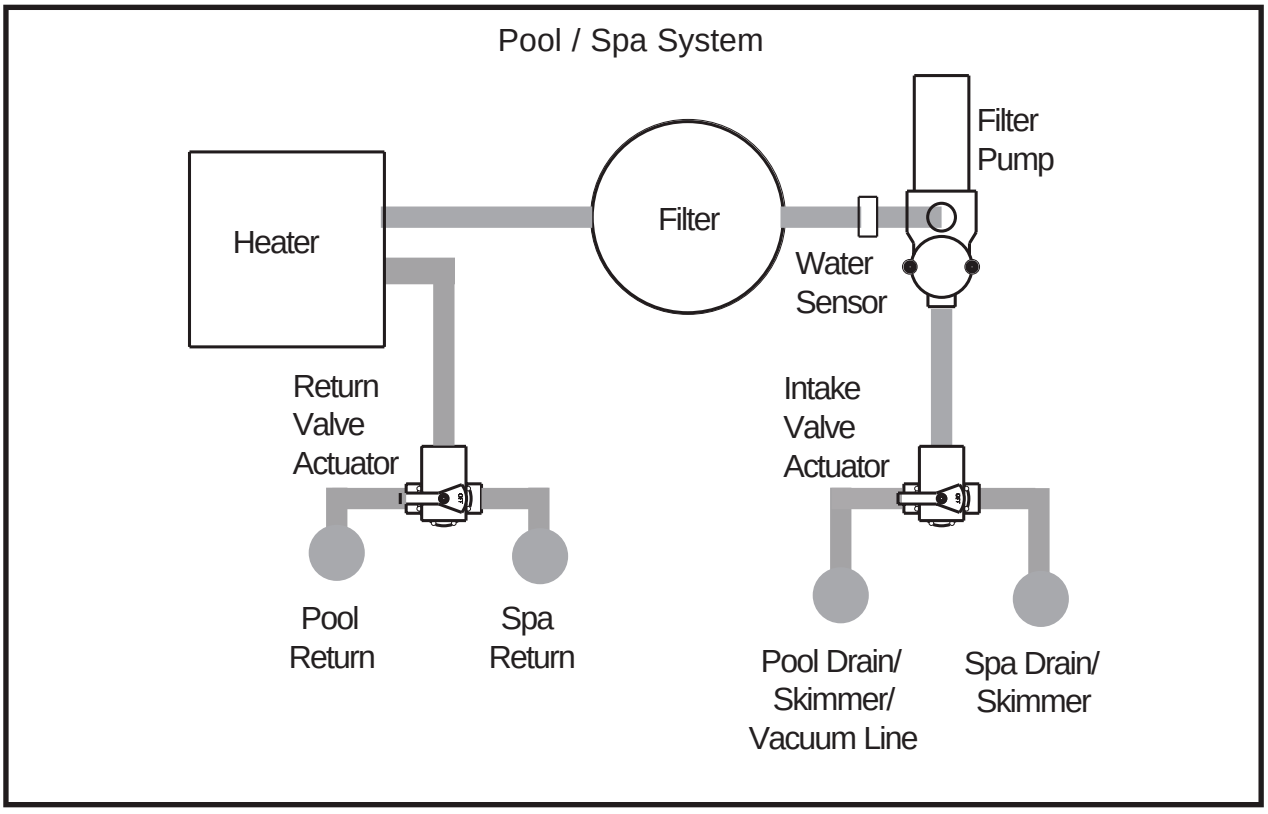
1. Reverse the polarity of the wiring to the valve diverter motor that is out of synchronization. The best way to accomplish this is to reverse the red and white wires inside the valve diverter motor enclosure.

2. Remove the motor enclosure cover, remove the wire nuts, switch the red and white wires, reconnect the wires with wire nuts, and reinstall cover.

NOTE:
The polarity of the wiring to the valve motor that is out of synchronization can also be reversed by changing the position of the toggle switch to the reverse position.

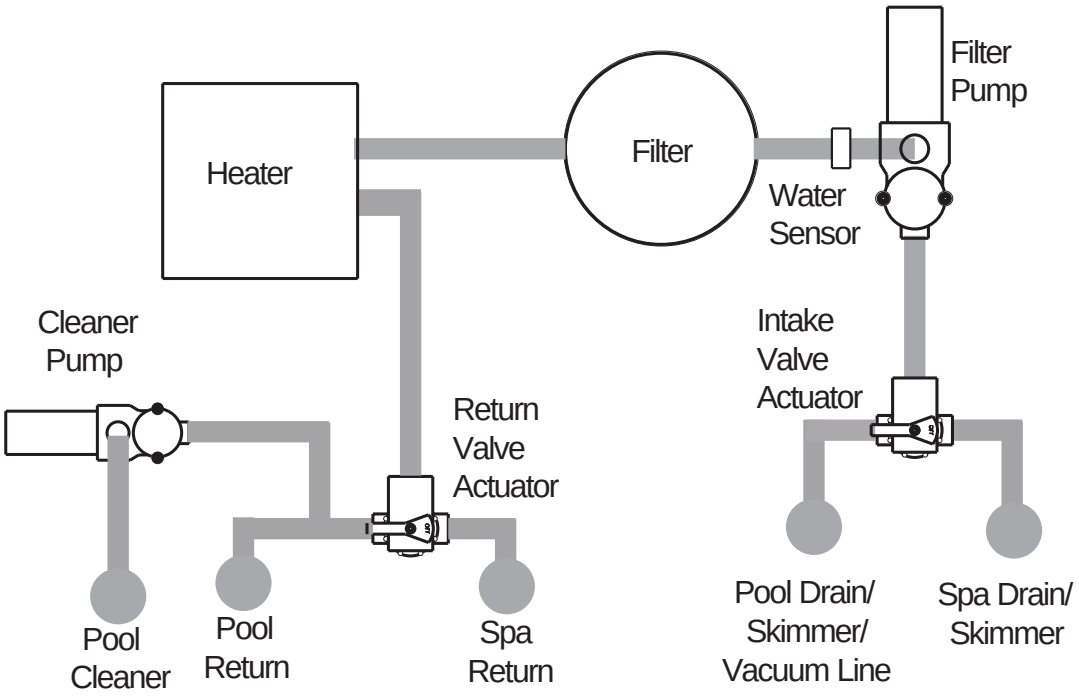
If you select this method to reverse polarity, be sure to change the sticker at the rear of the motor enclosure from the black (Auto-Off-Reverse) sticker to the white (Reverse-Off-Auto) sticker.

You must change the sticker so that users and service personnel know the correct auto position for the valve.

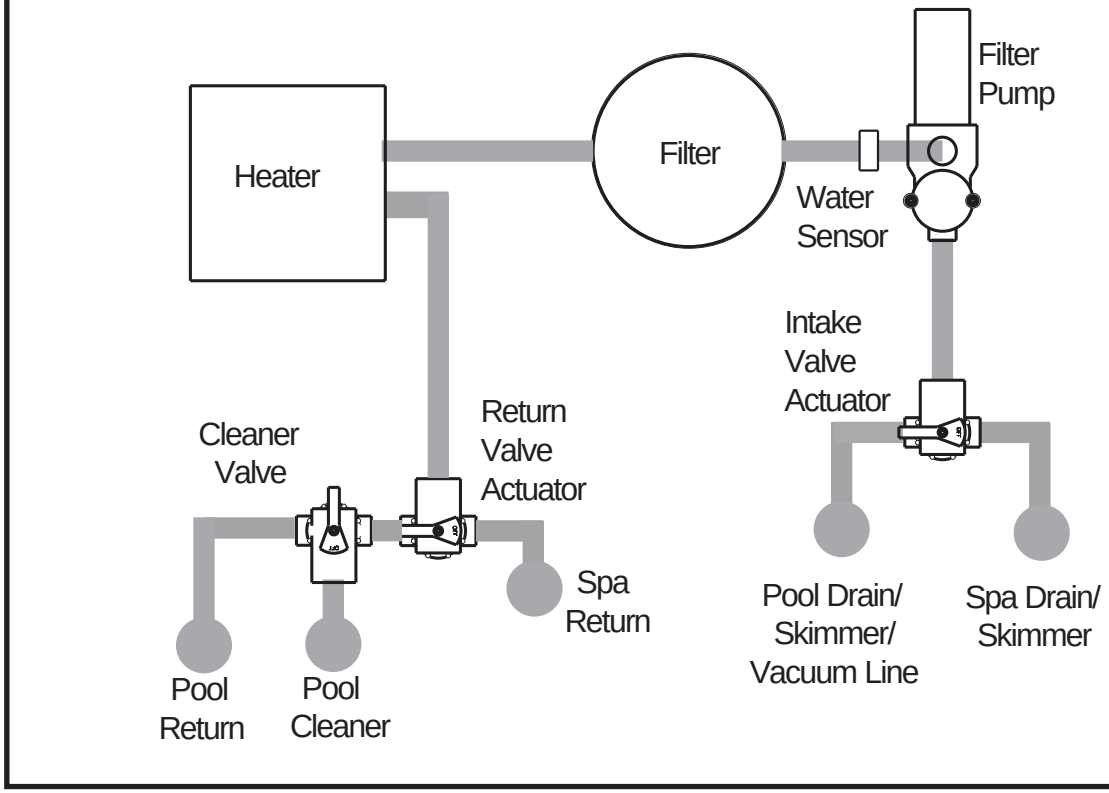


TYPICAL PLUMBING SCHEMATICS

Pool / Spa System with Pump-Operated Cleaner

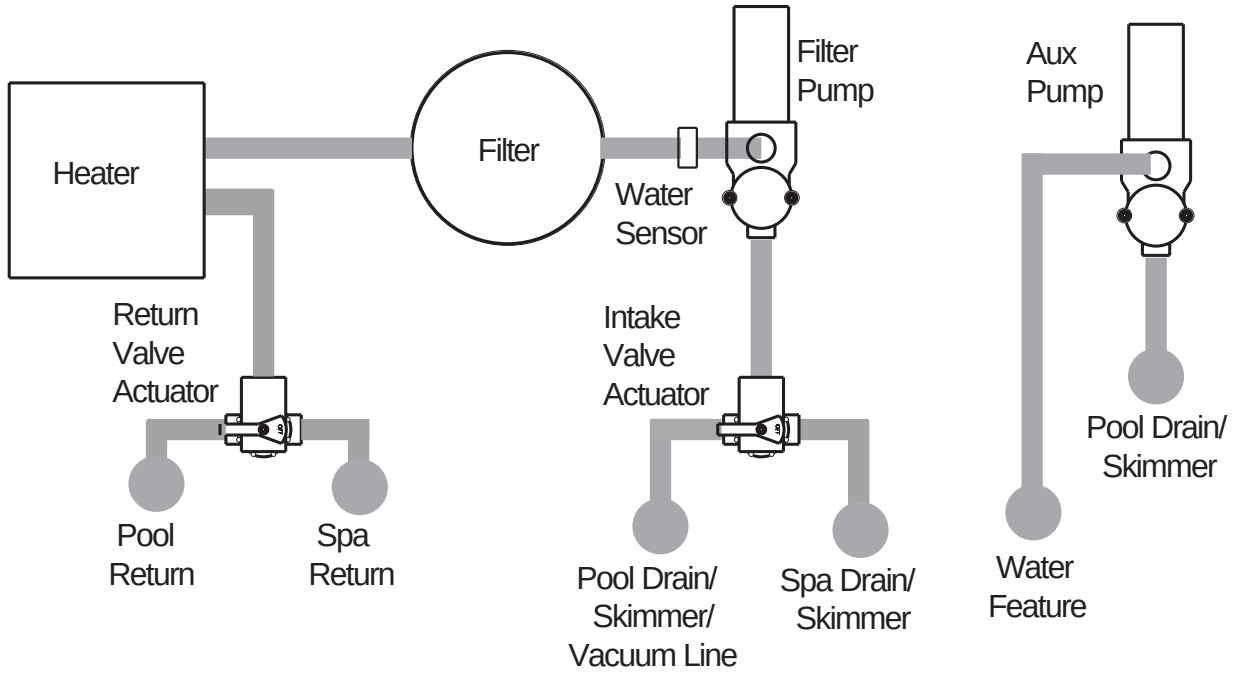


Pool / Spa System with Valve-Controlled Cleaner

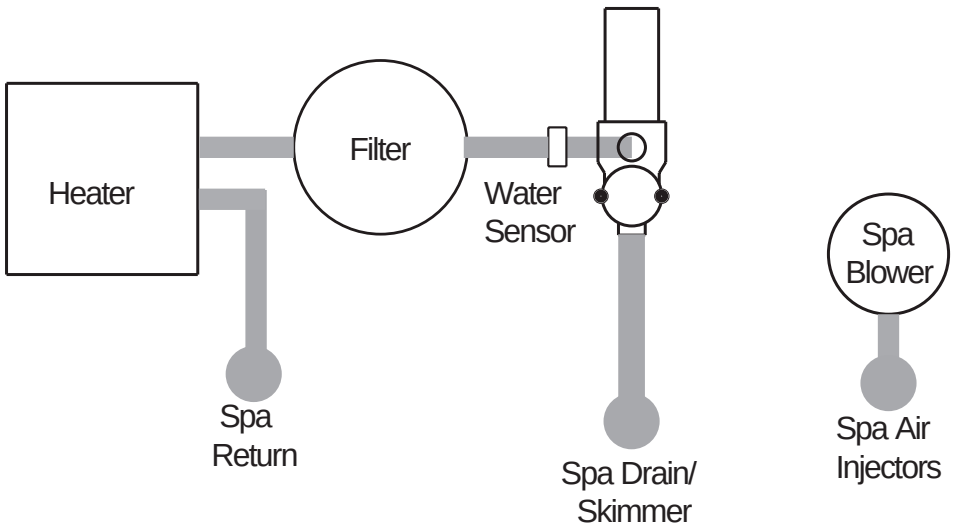


TYPICAL PLUMBING SCHEMATICS

Pool / Spa System with Pump-Driven Water Feature



Spa Only System



INSTALLING TEMPERATURE SENSORS

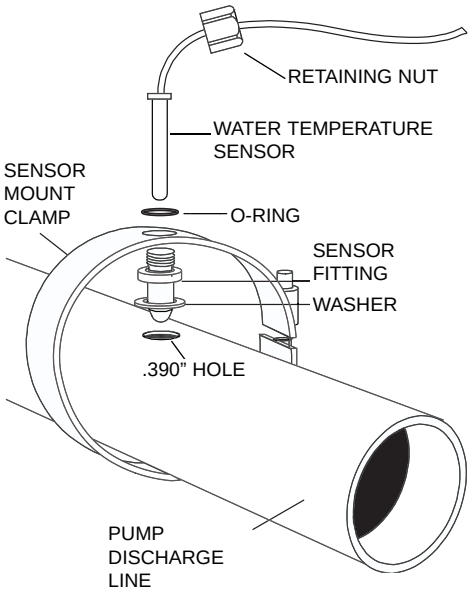
ATTENTION: The water temperature sensor is 25' long. Consider the sensor mounting locations BEFORE mounting the Main Control Center.

TO INSTALL THE WATER TEMPERATURE SENSOR

1. ATTENTION: Before connecting the temperature sensor wire to the Main Control Center circuit board, the sensor wire must be inserted through the sensor retaining nut. Insert the sensor wire through the nut and slide the nut to a poistion adjacent to the sensing bulb.

2. Locate the Water Temperature Sensor in the discharge (pressure) line of the filter pump as shown in the Basic Plumbing Schematic. Drill a .390" (25/64") hole in the pipe and install the sensor mount on the pipe by tightening the sensor mount clamp.

3. Install the O-ring onto the Water Temperature Sensor. Slide the O-ring onto the Water Temperature Sensor so that it is positioned against the plastic flange on the Water Temperature Sensor. With the retaining nut and o-ring installed on the Water Temperature Sensor, insert the Water Temperature Sensor into the sensor mount and tighten the nut, hand tight only. DO NOT OVER TIGHTEN.

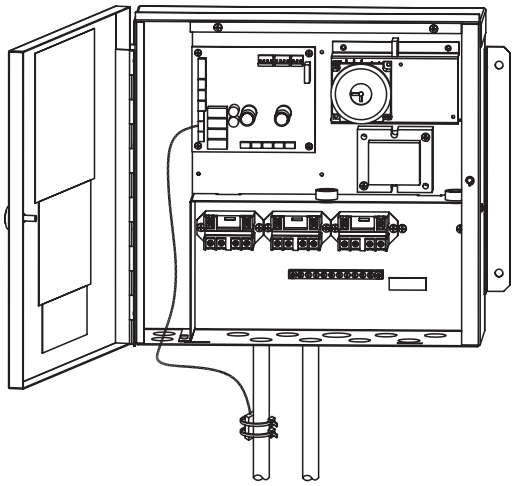


INSTALLING FREEZE PROTECTION SWITCH

FREEZE PROTECTION FEATURE

If the control senses air temperature of 36˚F or lower while the system is off, the filter pump will turn on. After 30 minutes, the valves will turn to Spa. After an additional 30 minutes the valves will return to Pool. The cycle will repeat until the control senses an air temperature of 40˚F or higher.

Note: This feature is designed to protect the pool equipment in the event of unforeseen or unseasonal freezing conditions. It is not intended to take the place of proper winterizing procedures.



TO INSTALL THE FREEZE PROTECTION SWITCH

MAIN CONTROL CENTER LOCATION OPTION

1. If the Main Control Center is not installed in a building, secure the switch to the outside of the field-installed electrical conduit directly below the main control center using the cable ties provided.

INSIDE BUILDING LOCATION OPTION

1. If the Main Control Center is installed in a building, locate the freeze protection switch so that it will be exposed to the outside ambient temperature. Secure the switch using the cable ties provided.

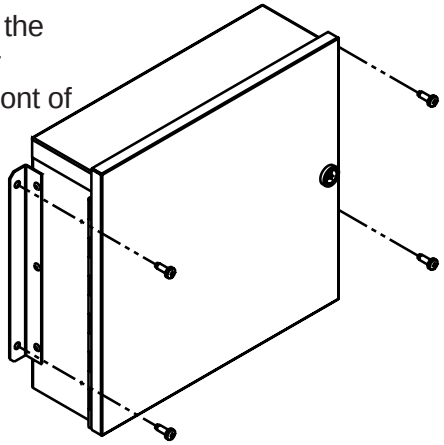
2. Provide 2-conductor cable and route it through the wall of the building to the freeze protection. Splice the wires of the cable to the leads of the switch.

LOCATING AND MOUNTING THE MAIN CONTROL CENTER

ATTENTION: POSITIONING THE ENCLOSURE WITH THE CONDUIT KNOCKOUTS LOCATED AT THE SIDE OR THE TOP OF THE ENCLOSURE MAY ALLOW WATER TO ENTER THE SYSTEM AND CAUSE DAMAGE TO THE SYSTEM AND/OR CREATE AN ELECTRICAL SHOCK HAZARD

The Main Control Center should be located as close as possible to the pumps, heater, valves, and sensors. Preferably, the system should mount inside a pool equipment house or other enclosure. However, the system can be mounted outside. It should mount on a flat vertical wall and be positioned so that the conduit knockouts are located at the bottom of the enclosure. Remember to consider the length of the wires & valve wires when selecting the final location. You should also keep in mind that the cable length on the Water Temperature Sensor is 25' long.

Be sure that the system and all other electrical components are at least 5' from the edge of the pool or spa. Additionally, the location selected should provide clear access in front of the system to permit owner or service personnel to stand in front of the Main Control Center unobstructed by other equipment.



INSTALLATION:

After the location has been selected mount the Main Control Center. If the mounting substrate will allow, mount the Main Control Center by driving mounting screws through the holes provided in the back of the enclosure into the wall. If wall anchors must be used, hold the Main Control Center enclosure in position and mark the hole pattern on the wall. Drill and set the anchors; fasten the enclosure with screws. Be sure to position the Main Control Center level and square for a neat installation.

LOCATING AND MOUNTING THE MASTER CONTROL PANEL

For maximum convenience, the Master Control Panel should be installed inside the home of the user. However, it can be installed outside. It must be mounted on a vertical surface such as a wall and be located at eye level for the user. When choosing the location, plan for routing the cable from the Control Center to the Master Control Panel.

The cable used to connect the Master Control Panel to the Control Center must be a 4-conductor, CAT 3, 24 AWG cable. The cable must be field supplied.

Only one Master Control Panel can be connected to the Control Center.

MOUNTING:

Drill a hole in a hollow wall at a location that will permit the cable to extend through the wall directly behind the Master Panel. Pull the cable through the hole storing any excess cable in the attic or inside the hollow wall. Install wall anchors as needed. Use the template included in these instructions to locate the anchors. Install pan head screws into the anchors and adjust them so that the Master Control Panel rests snugly against the wall when it is installed on the screws. Make wire connections and install on the wall anchor screws.

The cable can also be routed to the Master Control Panel along the surface of the wall. For outdoor installations, be sure to route the cable so that it approaches the panel from the bottom and enters the panel vertically. Secure the cable to the wall to maintain this cable orientation. This will prevent water from running down the cable into the Master Control Panel.

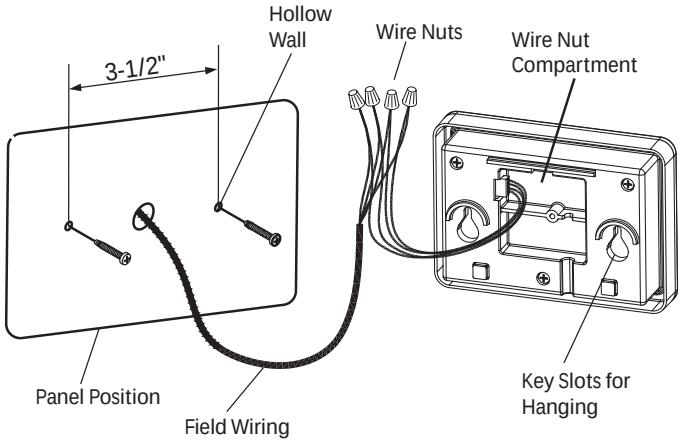
LOCATING AND MOUNTING THE MASTER CONTROL PANEL CONTINUED

WIRING CONNECTIONS:

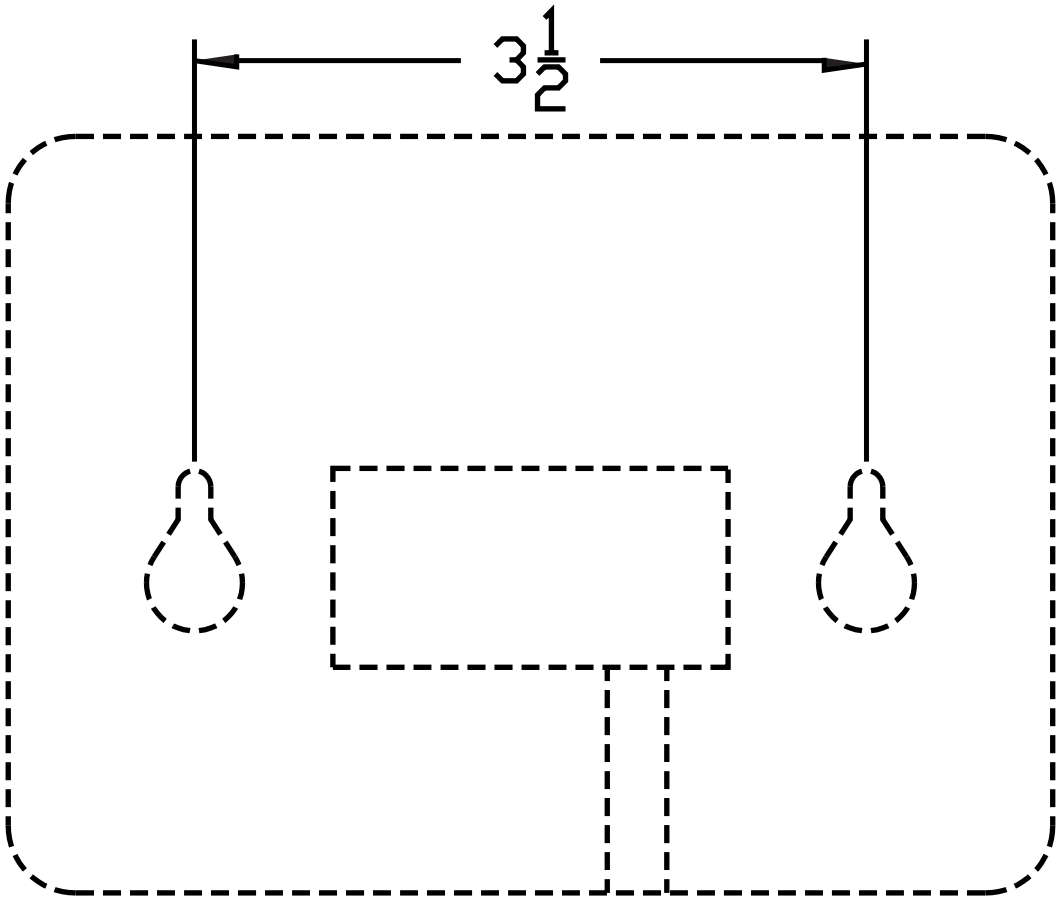
Remove the Cover from the Wire Nut Compartment of the Master Control Panel.
Connect the wire leads of the Master Control Panel to the cable using the Wire Nuts provided.
Place the wire terminations into the Wire Nut Compartment. Route the Cable so that it exits the compartment through the notch in the compartment's lower wall. Reinstall the Cover.

The cable must be connected such that the black lead of the Master Panel is electrically connected to the TX terminal of the Control Center, the yellow lead is connected to the RX terminal, the green lead is connected to the GND terminal, and the red lead is connected to the V+ terminal.

Note: Use of a CAT 3 Cable with black, yellow, green, and red insulated conductors will make it easier to make the proper connections. CAT 3 cables intended for telephone wiring will use these colors. Just simply connect like colors of the cable to like colors of the Master Panel, and then connect the proper colored wire to proper terminal of the Control Center.



USE THIS FULL SIZED TEMPLATE FOR CORRECT POSITIONING OF MASTER CONTROL PANEL ON WALL



HIGH VOLTAGE CONNECTIONS

All electrical equipment must be installed five feet or more from pool or spa. Make sure that the motors on equipment have built-in thermal protection. Bond all equipment including the Control Center to earth ground.

Determine the number and sizes of conductors, the number of conduit runs, and the sizes of the conduit needed for the installation. See Wiring Information Table for wire size recommendations.

Standard Control Center

At the equipment site, install an electrical supply panel with independent breakers for each separate piece of equipment and for the system power supply. A ground-fault circuit breaker is required to protect an underwater lighting circuit. The electrical supply panel should be readily accessible to the spa user, but installed at least five feet from pool or spa.

Open door, and remove deadfront cover from Control Center to expose high voltage compartment. Knockout the appropriate holes at the bottom of the high voltage compartment of the Control Center enclosure. Run electrical conduit from lower side of Control Center to the supply panel and from Control center to each piece of equipment. Pull the appropriate wire.

Connect the system power leads to supply conductors using wire nuts.

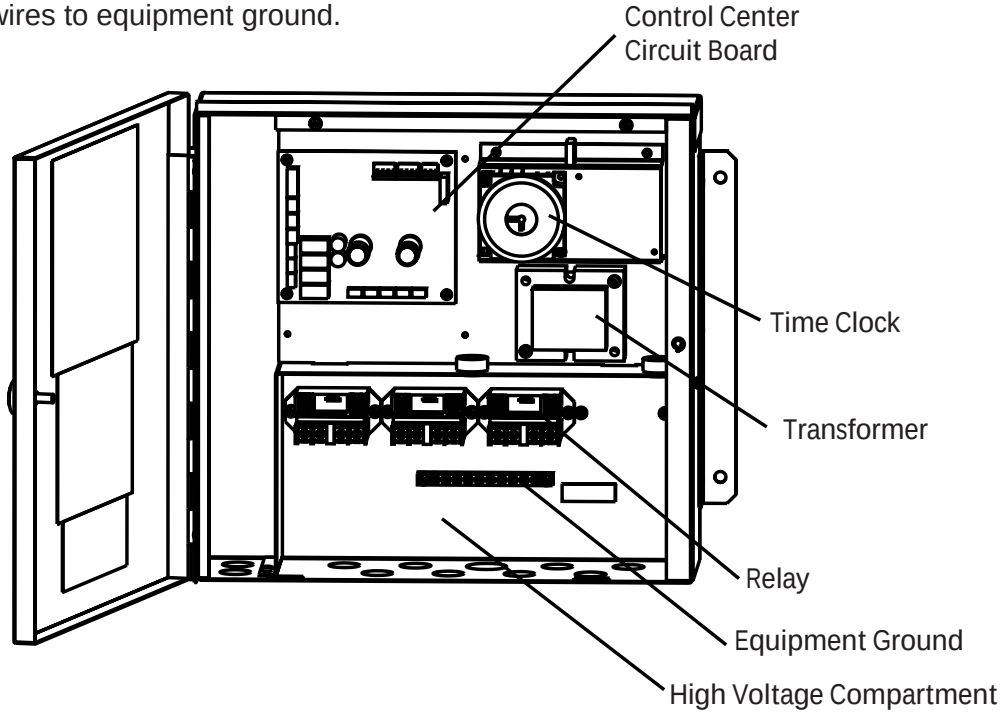
For each piece of 240-volt equipment, connect the supply conductors to LINE1 and LINE2 terminals of a relay, and connect the equipment conductors to the LOAD1 and LOAD2 terminals of the relay. Tighten relay terminal screws to the torque listed in the wiring information table.

Terminal Wire Size Ratings

Terminal	Allowable Wire Size Range
Relay	10 – 14 AWG
Main & Neutral Lugs	2 – 14 AWG
Neutral Bar	4 - 14 AWG
Equipment Ground	4 - 14 AWG

For each piece of 120-volt equipment, connect the 120-volt supply conductor to LINE1 terminal of the relay and connect the 120-volt equipment conductor to the LOAD1 terminal relay. Tighten relay terminal screws to the torque listed in the wiring information table.

Connect ground wires to equipment ground.



STANDARD CONTROL CENTER

HIGH VOLTAGE CONNECTIONS - CONTINUED

Control Center with Breaker Base

Open door, and remove deadfront cover from Control Center to expose high voltage compartment. Knockout the appropriate holes at the bottom of the high voltage compartment of the Control Center enclosure. Run electrical conduit from lower side of Control Center to the supply panel and from the Control center to each piece of equipment. Pull the appropriate wire.

Connect the voltage conductors to main lugs of breaker base, and the neutral conductor to neutral lug of the breaker base. Connect the ground wire to equipment ground. Tighten terminals to the torques listed in the Wiring Information Table.

Install a separate 1-pole circuit breaker to power the system. Connect the black system power lead to the circuit breaker and the white lead to the neutral bar of the breaker base.

Install a 1-pole circuit breaker for each piece of 120-volt equipment and a 2-pole circuit breaker for each piece of 240-volt equipment. Circuit breaker models suitable for installation are listed in the Suitable Circuit Breaker Table.

For each piece of 240-volt equipment, run an appropriately sized wire from the load terminals of the circuit breaker to LINE1 and LINE2 terminals of a relay. Connect the equipment conductors to the LOAD1 and LOAD2 terminals of the relay. Tighten relay terminal screws to the torque listed in the wiring information table.

For each piece of 120-volt equipment, run an appropriately sized wire from the circuit breaker to the LINE1 terminal of a relay. Connect the 120-volt equipment conductor to the LOAD1 terminal of the relay. Tighten the relay terminal screws to the torque listed in the Wiring Information Table. Connect the equipment neutral conductor to the neutral bar of the breaker base.

Connect ground wires to equipment ground.

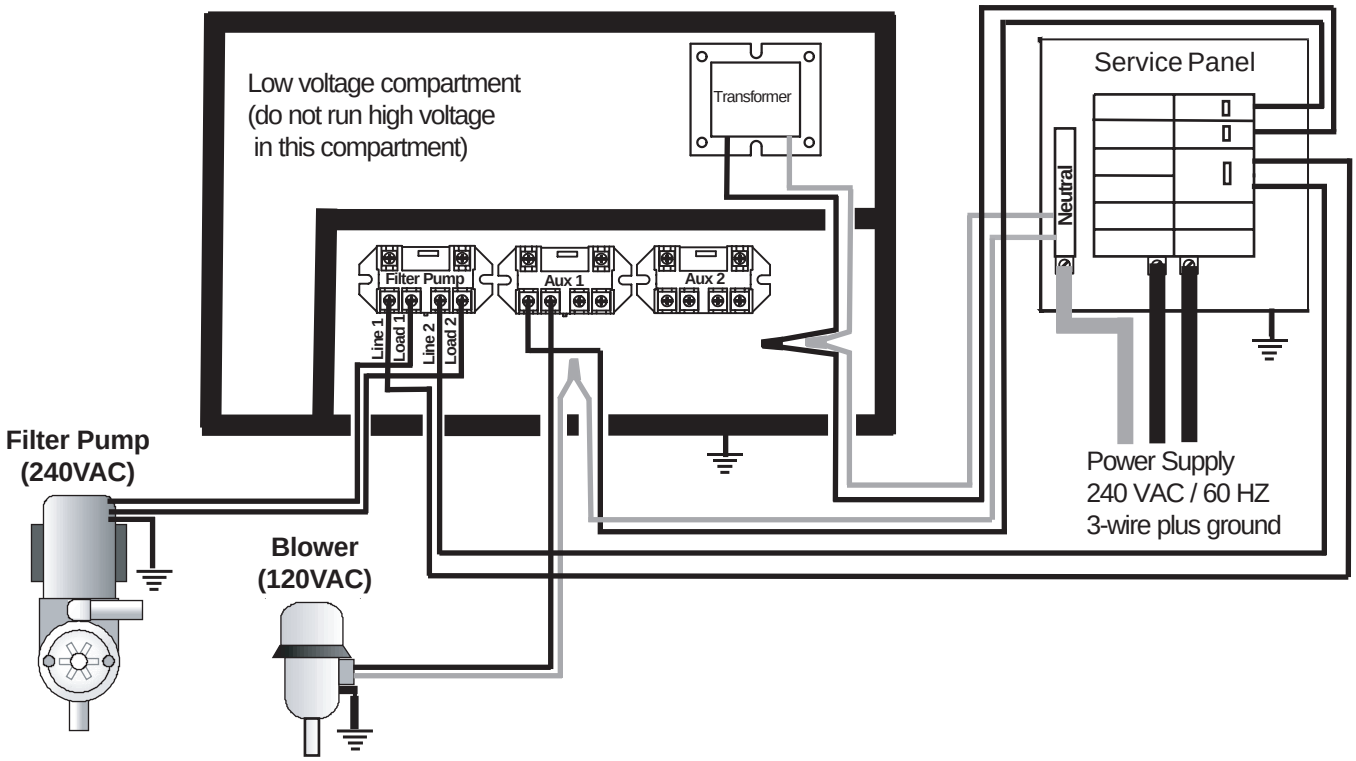
Wiring Information

MInImum Wire Size	Minimum Temperature Rating of Wire	Maximum Current Capacity	Circuit Breaker Rating	Maximum Motor Load 75°C Wire		Relay Terminal Tightening Torque	Main and Neutral Lugs Tightening Torque
				120VAC	240VAC		
14 AWG	60°C	15 AMPS	15 AMPS	1 HP	2 HP	10 LB–IN	20 LB–IN
12 AWG	60°C	20 AMPS	20 AMPS	1–1/2 HP	3 HP	10 LB–IN	20 LB–IN
10 AWG	60°C	30 AMPS	30 AMPS	–	–	10 LB–IN	20 LB–IN
8 AWG	60°C	40 AMPS	–	–	–	–	25 LB–IN
	75°C	50 AMPS	–	–	–	–	
6 AWG	60°C	55 AMPS	–	–	–	–	35 LB–IN
	75°C	65 AMPS	–	–	–	–	
4 AWG	60°C	70 AMPS	–	–	–	–	45 LB–IN
	75°C	85 AMPS	–	–	–	–	
3 AWG	60°C	85 AMPS	–	–	–	–	50 LB–IN
	75°C	100 AMPS	–	–	–	–	
2 AWG	60°C	95 AMPS	–	–	–	–	50 LB–IN
	75°C	115 AMPS	–	–	–	–	

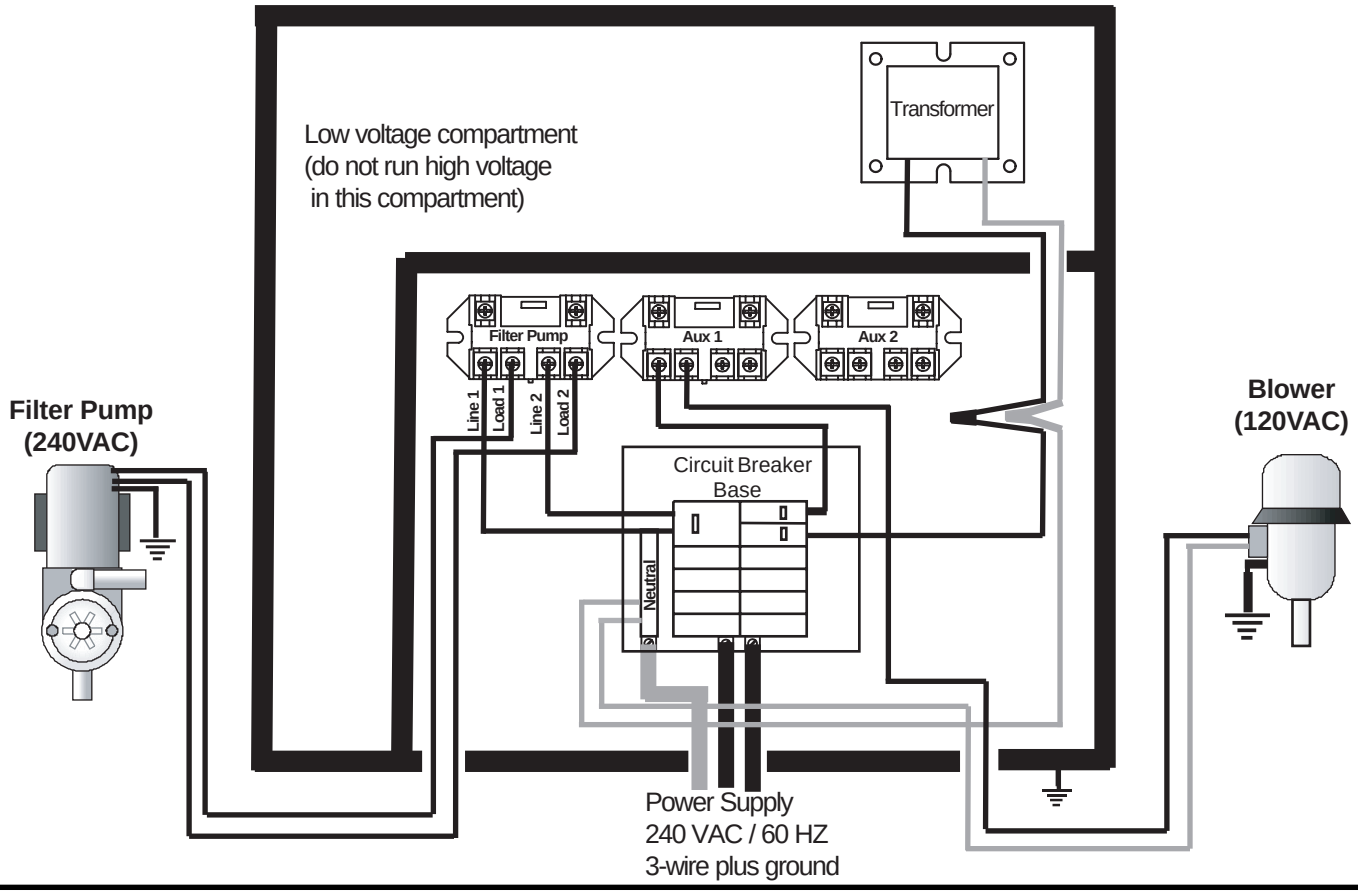
Suitable Listed Breakers

Manufacturer	Circuit breaker				Filler Plate
	STD	TWIN	QUAD	GFCB	
Challenger	C	A	–	C–GF	FP–1C
Crouse–Hinds	MP	MH	–	MP115GF	FP–1
Cutler–Hammer	HQP	–	–	QFGF	BRFP
G.E.	THQL	–	–	THQLGF	THFP
Siemens/ITE	QP	QT	Q2	QPF	QF–3
Square D	HOM	HOMT	–	HOM–GFI	FP
Thomas & Betts	TB	TBBD	TBBQ	GFB	FP
Westinghouse/Bryant	BR	BD	BQ	GFCB	FP–1

HIGH VOLTAGE CONNECTIONS STANDARD CONTROL CENTER



HIGH VOLTAGE CONNECTIONS CONTROL CENTER WITH BREAKER BASE



LOW VOLTAGE CONNECTIONS

Open Control Center door, and remove deadfront cover to expose low voltage compartment. Knockout the appropriate holes at the bottom of the low voltage compartment.

Connecting Valve Actuators

Run the cables from the Valve Actuators to the Control Center. Route the cables through the knockout into the low voltage compartment. Plug the Intake Valve Actuator into the socket on the circuit board labeled INTAKE, and the Return Valve Actuator into the socket labeled RET. If a Cleaner Valve Actuator is used, plug it into the socket labeled CLN. Store excess cable in the low voltage compartment. Check the synchronization of the valves when the system is powered up. See the Valve Actuator Installation Instructions for synchronization instructions.

Connecting the Water Temperature Sensor

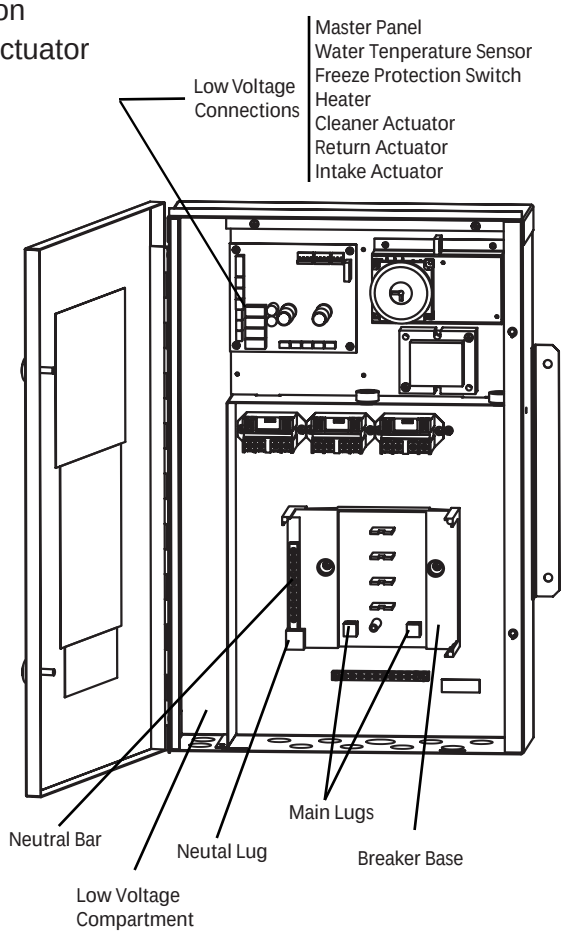
Run the cable from the Water Temperature Sensor to the Control Center. Route the cable through the knockout into the low voltage compartment. Connect the cable to the screw terminals on the circuit board labeled TEMP.

Connecting the Freeze Protection Switch

Run the cable from the Freeze Protection Switch to the Control Center. Route the cable through the knockout into the low voltage compartment. Connect the cable to the screw terminals on the circuit board labeled FREEZE.

Connecting the Master Panel

Run a 4-conductor, CAT 3, 24AWG cable from the Master Panel to the Control Center. Route the cable through the knockout into the low voltage compartment. Connect the cable to the screw terminals on the circuit board. The cable must be connected such that the black lead of the Master Panel is electrically connected to the terminal labeled TX, the yellow lead is connected to the RX terminal, the green lead is connected to the GND terminal, and the red lead is connected to the V+ terminal.



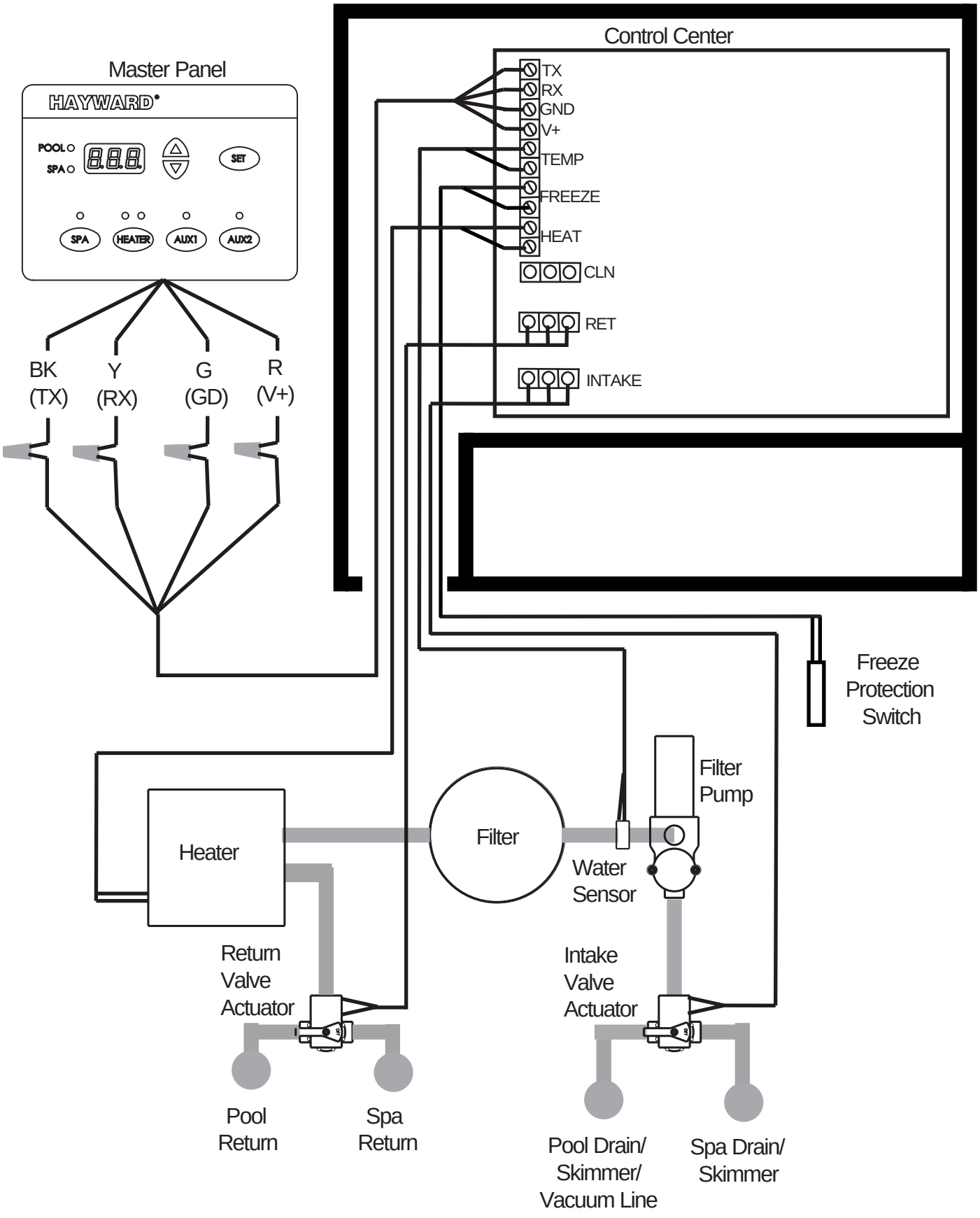
CONTROL CENTER WITH BREAKER BASE

Heater Connection Guidelines

The Control Center provides a means for controlling heaters that utilize millivolt ignition systems as well as 24v ignition systems. Do not connect high voltage heaters to the low voltage heater terminals.

Run a 2-Conductor, 22 AWG cable from the heater to the Control Center. Connect the cable to the heater in accordance with the Heater's Manufacturer's Instructions.
Route the cable through the knockout into the low voltage compartment. Connect the cable to the screw terminals on the circuit board labeled HEATER.

LOW VOLTAGE CONNECTIONS



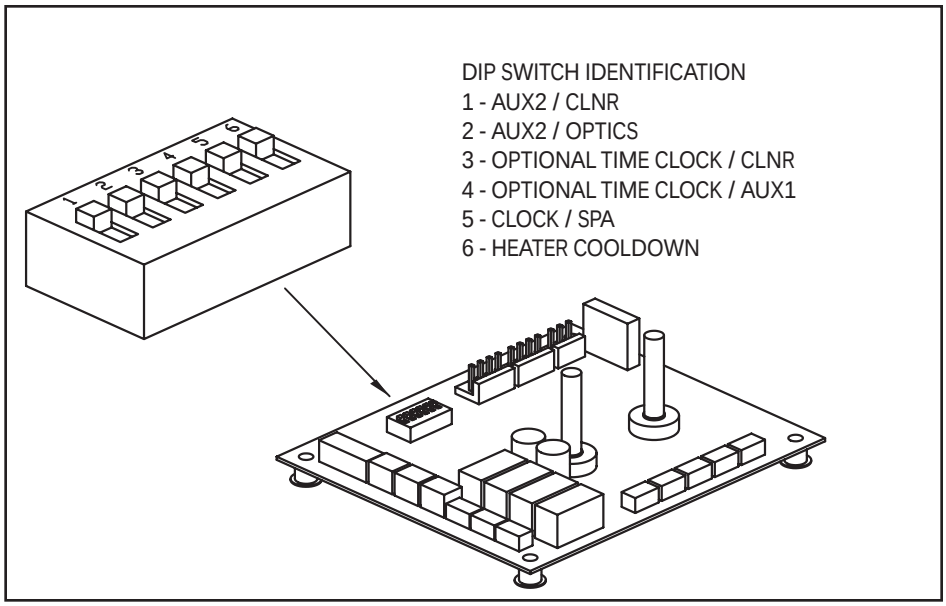
CONFIGURING THE SYSTEM

Relays

Before powering up system, verify that each relay is wired to the proper connector on the Control Center Circuit Board. For example, verify that the relay that the filter pump is wired to is plugged into the filter pump socket. Use the electrical schematic as a guide.

Dip Switch Positions

The circuit board in the Control Center is equipped with dip switches. These switches can be set to configure the system for specific output configurations. Be sure to review these switch positions before power-up to ensure that the system will respond properly.



Aux 2 Configuration Switch

Two switches are available for configuring the Aux 2 function. One switch is labeled CLNR, and the second switch is labeled OPTICS. Only one of the two switches should be in the down position. If both switches are in the down position, OPTICS switch will override the CLNR (Cleaner) switch. Both switches can be in up position.

CLNR & OPTICS in UP position: Aux 2 function will control Aux 2 relay.

CLNR in DOWN position: Aux 2 function will control the Cleaner relay and Cleaner actuator.

OPTICS in DOWN position: Fiber Optics Control Kit is installed. Aux 2 function will control lamp and color wheel outputs of the Fiber Optics Control Kit.

Optional Time Clock Configuration Switch

Three switches are available for controlling the function of the optional time clock.

CLNR switch in DOWN position: Optional Time Clock will control the Cleaner relay and Cleaner actuator.

AUX 1 switch in DOWN position: Optional Time Clock will control Aux 1 function.

SPA switch in DOWN position: Optional Time Clock will control SPA function.

Note that the optional Time Clock can control two or more functions simultaneously. For example, if the Spa and Aux 1 switches are in the down position, the optional time clock will control the Spa and Aux 1 functions.

Heater Cool Down Configuration Switch

COOL DOWN in DOWN position: If the Heater is enabled, the filter pump is kept running for 5 minutes after Spa is turned off, or after the filter pump time clock turns off.

COOL DOWN in UP position: Heater Cool Down is disabled.

BUTTON FUNCTIONS FOR MASTER PANEL

Set Point Adjustment Key - The up or down arrow keys are used to adjust the spa or pool set point temperatures. To adjust a set point, the current set point must be displayed. Use the Set Point Selection key to display the set point to be adjusted. Each set point can be set anywhere between 50 F and 104 F.

Set Point Selection Key - For each press of the Set key, the display will change successively from water temperature, to spa set point, to pool set point. The spa LED will illuminate to indicate the spa set point is being displayed. The pool LED will illuminate to indicate that the pool set point is being displayed.

Spa Key - Pressing the spa key will turn on the intake and return valves to circulate water through the spa. If the filter pump is off, it will be turned on. The display will show the spa water temperature.

Heater Enable Key - Pressing this key will enable the heater for heating. The yellow heater LED will illuminate when the heater is enabled. The green heater LED will illuminate when the heater is on.

Aux 1 Key - Pressing this key will turn the Aux 1 feature on. The Aux 1 LED illuminates when the feature is on.

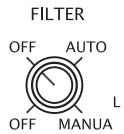
Aux 2 Key

(a) CLNR & OPTICS dip switches in UP position - Pressing this key will turn the Aux 2 feature on. The Aux 2 LED illuminates when the feature is on.

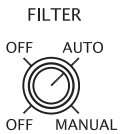
(b) CLNR in DOWN position - Pressing this key will turn the Cleaner features on. The Aux 2 LED illuminates when the feature is on.

(c) OPTICS in DOWN position (Fiber Optics Control Kit is installed) - Pressing this key will turn lamp feature on. Aux 2 LED illuminates when lamp is on. Pressing this key a second time will turn the lamp off. Pressing this key and holding it for 3 seconds will turn lamp and color wheel features on. Aux 2 LED will blink when lamp and color wheel are on. Pressing this key a second time will turn the color wheel off. Pressing it a third time will turn the lamp off.

CONTROL CENTER OVERRIDE SWITCH FUNCTIONS



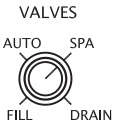
Filter - Off
Keeps filter pump off. Filter pump cannot be turned on by spa key of master panel, time clock, cleaner selection, or by freeze protection switch.



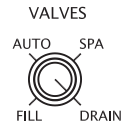
Filter - Auto
Allows for automatic control of filter pump by time clock, freeze protection switch, cleaner selection, or spa selection.

Filter - Manual
Keeps filter pump on. Filter pump cannot be turned off by spa key of master panel, time clock, cleaner selection, or by freeze protection switch.

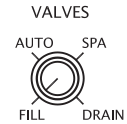
Valves - Auto
Allows for automatic control of actuators from master panel.



Valves - Spa
Turns intake and return valves to spa position, but does not turn on pump



Valves - Drain
Turns intake valve (taking water from the spa) but not the return valve.



Valves - Fill
Turns return valve adding water to the spa) but not the intake valve.

INSTALLATION OF OPTIONAL EQUIPMENT

3HP Relay kit (PSC2211)

The Control Center comes equipped with 3 relays installed. An optional 4th relay can be installed in the Control Center. This relay can be used to control a Cleaner Pump or a High Voltage Heater.

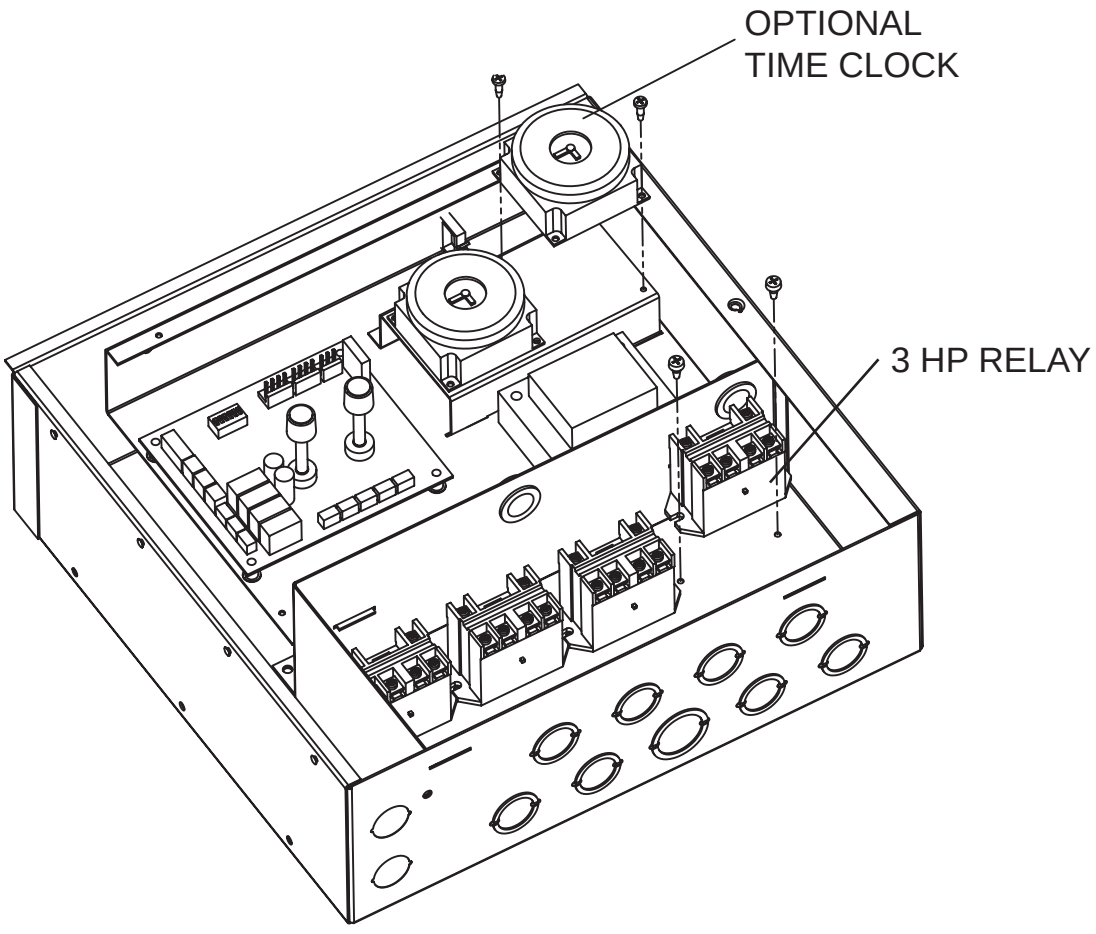
To install the relay, open Control Center door, and remove deadfront cover to expose the high voltage compartment. Mount the relay in the high voltage compartment in the mounting holes provided. Route the relay harness through the bushing in the upper wall of the high voltage compartment into the low voltage compartment.

For control of a cleaner, plug the relay harness into the CLNR socket on the Control Center Circuit Board. For control of a high voltage heater, plug the relay into the HV HEATER socket.

Time Clock Kit (PSC2213)

A second time clock can control the spa switchover, the aux 1 circuit, the pool cleaner pump or cleaner valve actuator. Refer to the instructions for "Configuring the System" that are included in these instructions.

To install the optional time clock, open Control Center door, and remove deadfront cover. Remove the plastic plug from the deadfront cover. Mount the optional Time next to the Filter Pump Time Clock. Plug the Time Clock Harness into Optional Clock socket on the Control Center Circuit Board.



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