

## ONE YEAR LIMITED WARRANTY

Compool Corporation warrants to the purchaser of this electronic control system, for the period of one year from the date of original purchase for use, that any defective product proved to be caused by faulty workmanship or faulty material, will be repaired or replaced at Compool's option for no charge, providing the product is returned to Compool with all transportation charges prepaid.

This warranty covers the **CP-2000 Controller**, **LX-10 Service Center**, **Valve Operators**, and optional **Remote Controls** including all components and parts. It does not include Sensors, batteries or labor for calibration. It extends to the first retail purchaser and any subsequent owners of the system.

This limited warranty applies only to controls which have been installed and maintained in strict accordance with installation and operating instructions provided by Compool Corporation, using installation hardware supplied and/or recommended in writing by Compool, and to controls which have been connected to the correct supply voltage.

This limited warranty does not apply to any controls which have been repaired or altered by anyone other than Compool or a person authorized by it; or which have been subject to misuse, neglect or accident; or which have been damaged by wind, rain, lightning, freezing or other cause, thing, person, or act of God; or which have been subject to damage in transit, during installation, or by someone other than Compool Corporation; or which have been damaged because of a defect in a component or part which is not part of the Compool Control System; or upon which the serial number or manufacture date has been altered, effaced or removed.

This warranty gives you specific legal rights and you may also have other rights which vary from State to State.

Compool Corporation does not authorize any person to create any other obligation or liability in connection with Compool controls.

Compool Corporation makes no warranty of merchantability or fitness for any use.

Any implied warranty applicable to Compool controls is limited in duration to the duration of this written warranty.

Unless state law provides otherwise, Compool Corporation shall not be liable for consequential or incidental damages resulting from breach of this written warranty or any implied warranty, or for any inconvenience, loss of time, or incidental expenses such as telephone calls.

Compool Corporation shall not be liable for any labor charges associated with the removal or reinstallation of any so-claimed defective products.

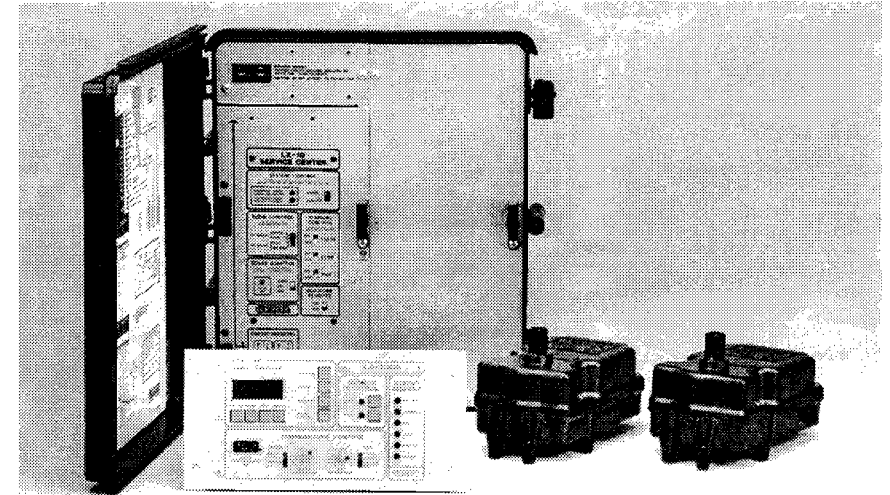
For information on possible Authorized Service Centers within your vicinity, call Compool Corporation at (415) 964-2201.

**To exercise this warranty, send defective unit, with copy of dated receipt and a brief description of the problems encountered, postage prepaid, to :**

**COMPOOL CORPORATION**  
599 Fairchild Drive, Mountain View, California 94043

# OWNER'S MANUAL

## CP-2000 POOL-SPA CONTROL SYSTEM



**The CP-2000 is an electronic control system which is designed to coordinate and operate all of the equipment associated with your swimming pool and spa.**

The system is comprised of three principal components :  
the **CP-2000 CONTROLLER**, two **VALVE OPERATORS**, and the **LX-10 SERVICE CENTER**.

The Controller automatically controls and monitors the timing of all your pool and spa equipment, and the temperature of your pool and spa; the Valve Operators switch the filter and heater from pool to spa, and activate the solar system if applicable; and the Service Center provides easy maintenance for your Pool Serviceperson.

Additionally, the **CP-2000** incorporates important safety features which protect your pool equipment from accidental damage. (See Page 2).

Your system may also include additional Remote Controls and special options which further add to the convenience, safety, and economy of operating your pool equipment.

**Before using this electrical equipment, obtain a copy of the Installation Instructions and a completed EQUIPMENT CHECKLIST from your Pool Builder.**

Additionally, a 6-minute video (VHS format) is provided as an aid for the first-time user of the Compool CP-2000 Control System.

**Compool**  
computerized pool systems

**Compool Corporation**  
599 Fairchild Drive  
Mountain View  
California 94043

## IMPORTANT SAFETY INSTRUCTIONS

### READ AND FOLLOW ALL INSTRUCTIONS.

Basic safety precautions should always be followed when operating and servicing this electrical equipment.

**WARNING :** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

### SAVE THESE INSTRUCTIONS.

## SAFETY FEATURES

### HEATER PROTECTION :

A built-in electronic delay circuit automatically runs the filter pump for an additional four minutes whenever the system is turned off.

This feature enables the heater to cool down, so that the heat exchanger and plumbing are not damaged from overheating.

**For testing and servicing purposes, it is possible to override this delay circuit by pushing the DELAY CANCEL Button at the CP-2000 Controller.**

### POOL CLEANER PROTECTION :

If your system incorporates an automatic pool cleaner, it will have been plumbed in conjunction with the filter pump so that it must have water circulation in order to operate. The CP-2000 incorporates the following protection features against possible pump damage if there is no water circulation:

1. Your pool cleaner will automatically be switched off whenever water is being circulated to the Spa.
2. The filter pump will automatically be activated whenever the pool cleaner is running, even if the filter pump has not been switched on.
3. Additionally, whenever the pool cleaner is turned on, a built-in electronic delay circuit will prevent it from running until 4 minutes have passed. This protects the pump from possible damage caused by air which may have entered the plumbing since the system was last used.

**For testing and servicing purposes, it is possible to override this delay circuit by pushing the DELAY CANCEL Button at the CP-2000 Controller.**

4. If your system incorporates solar, the pool cleaner will automatically be disabled for a period of 4 minutes whenever the solar system turns on. This protects the pool cleaner from possible damage caused by residual air within the solar panels.

### BATTERY BACK-UP :

In case of a power failure, a long-life battery automatically maintains the program and clock functions of your Control System. This safeguards against the equipment operating erratically once power has been restored, and also eliminates the need to reprogram whenever there is a power failure.

## MAINTENANCE

### REPLACING THE BACK-UP BATTERY :

There is a small 3 volt lithium battery located on the backside of the CP-2000 Controller. In the absence of power, this battery will keep the clock running and retain the programming in memory for approximately 48 hours.

While power is connected to the system, the battery will not be drained. However, it is not rechargeable.

To replace the battery :

1. Remove the four mounting screws from CP-2000 Controller (2 at each side).
2. Carefully fold Controller out, still connected to cable.
3. Pry-out old battery from battery clip, and replace it with a new one.  
Pay special attention to the polarity (+ sign).

The Replacement battery is available directly from Compool (model BAT-3), or can be purchased at Radio Shack or your local drug store. (Type CR2032, or equivalent).

### CLEANING THE SPA :

For cleaning or maintenance purposes, it is possible to use the Control System to automatically empty your spa and then to refill with clean water from your pool.

At the LX-10 Service Center:

1. Set **SYSTEM CONTROL Switch** to the "SERVICE" position.
2. Set **FLOW CONTROL Switch** to the "DRAIN" position.
3. At the **MANUAL CONTROL**, set **FILTER Switch** to the "ON" position.
4. The spa will begin to drain into the pool. Do not drain completely, or prime will be lost.  
**CAUTION: Do not leave equipment unattended when draining or filling the spa.**
5. When cleaning is complete, set **FLOW CONTROL Switch** to the "FILL" position.  
The spa will begin to fill with clean water from the pool.
6. When the spa water level has returned to normal, return **FLOW CONTROL Switch** to the "POOL" position, **FILTER Switch** at the **MANUAL CONTROL** to the "OFF" position, and **SYSTEM CONTROL Switch** to the "AUTO" position.

### WINTERIZING THE SYSTEM :

During the winter season, it is possible to drain your pool and disable the pool equipment from your control system, but still be able to use your spa. Consult a qualified service company to drain your pool and protect the plumbing from freeze damage.

The following procedure will disable the pool equipment :

1. At the LX-10 Service Center, turn **SYSTEM CONTROL Switch** to the "SERVICE" position, and **FLOW CONTROL Switch** to the "SPA" position.
2. Unplug cables from Valve Operators.
3. At the LX-10 Service Center, turn **FLOW CONTROL Switch** to the "POOL" position, and **SYSTEM CONTROL Switch** to the "AUTO" position.
4. At the electrical supply panel, turn off the pool cleaner circuit breaker.
5. At the CP-2000 Controller, turn **POOL Heat Select Switch** to the "OFF" position.
6. If your control system incorporates solar, ensure that the panels are completely drained, and, at the LX-10 Service Center, turn **SOLAR CONTROL Switch** to the "OFF" position.

If your system is equipped with Recirculating Freeze Sensors, it may not be necessary to drain the pool. However, it is recommended that all Freeze Sensors be tested by an authorized Serviceperson before the onset of the winter season.

## TEMPERATURE CONTROL :

Separate electronic controls are provided for **POOL** and **SPA** heating. Each control incorporates the following :

### THERMOSTAT Dial :

Used to preset your desired water temperature.

As long as the **Heat Select Switch** is not in the "OFF" position, the water will heat up to the preset temperature whenever the filter pump is running.

### Heat Select Switch :

It is possible to heat your spa and swimming pool using solar energy, conventional heat, or a combination of both. However, no heating will take place unless the filter pump is running:

**SOLAR Position:** Allows heating with solar only.

**S.PREF Position:** Allows preferential heating with solar, but automatically switches to conventional heating when solar energy is unavailable.

**HEATER Position:** Allows heating with gas or electric heater only.  
Note: If you are heating the swimming pool (and also the spa in some custom applications), the solar system may also contribute to the conventional heat whenever solar energy is available.

**OFF Position:** Allows no heating.

### WATER TEMPERATURE Display :

Whenever the filter pump is running, the precise water temperature will be displayed in degrees Fahrenheit.

Pool temperature will be displayed during pool circulation, and spa temperature displayed during spa circulation.

**Note:** Filter pump must be running in order to provide accurate temperature display.

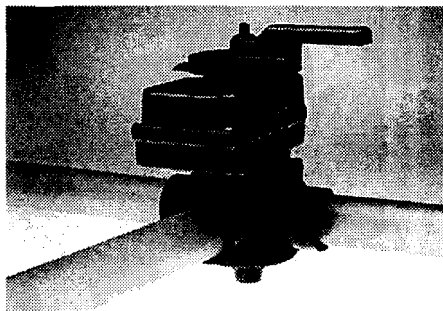
## VALVE OPERATORS

Your control system is designed to actuate two motorized valves, which automatically rotate between pool and spa filtration whenever the **SPA Button** at the CP-2000 is activated.

A motorized valve may also be used to automatically divert the flow of water through your solar panels whenever solar energy is available.

These **Valve Operators** are also activated by the **FLOW CONTROL** and **SOLAR CONTROL Switches** at the LX-10 Service Center.

Your system may also include additional motorized valves for custom hydraulic applications, such as a fountain or waterfall, or (in lieu of a booster pump) to activate your pool cleaner.



## SINGLE OCCURRENCE PROGRAM :

Occasionally, you may wish to use your spa at a time which is different from your normal daily program.

In this instance, it is possible to enter a "**once only**" program step which will occur within the following 24 hour period without having to reprogram the daily equipment sequence. The "**once only**" program will automatically be canceled once the Clock reaches its next program step.

Push **PROGRAM Button** to put the Clock into **Program Mode**.

"**PROG**" will appear on the right of the Display. Continue to push **PROGRAM Button** until a flashing "**ONCE**" appears.

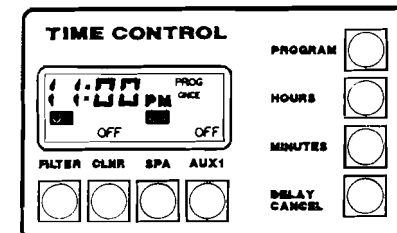
Enter the time that you wish to activate the spa (11:00 pm in our example) by pushing **HOURS** and **MINUTES Buttons**.

Push **SPA Equipment Button**.

"**ON**" will appear directly above the **SPA** and **FILTER Buttons**.

Push **PROGRAM Button** to lock-in program.

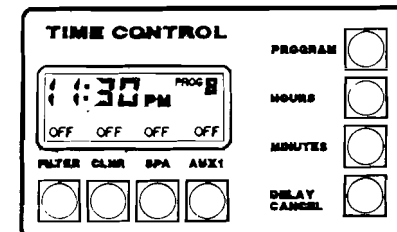
**Remember to manually turn off the spa after use, otherwise it may run all night until the Clock reaches its next program step.**



## EIGHT PROGRAM STEPS :

If the standard six program steps are insufficient for your particular programming requirements, it is possible to modify the Clock so that eight program steps may be entered.

Consult the Installation Manual for details.



## TROUBLE-SHOOTING

### GENERAL :

1. Check all circuit breakers at the electrical supply panel.
2. At the LX-10 Service Center, ensure that **SYSTEM CONTROL Switch** is in the "AUTO" position, all **MANUAL CONTROL Switches** are in the "OFF" position, **FLOW CONTROL Switch** is in the "POOL" position, **SOLAR CONTROL Switch** is in the "AUTO" position, and **OUTDOOR REMOTES Switch** is in the "ON" position.

### NOTHING OPERATES :

1. Check 3 amp circuit breaker which is located above faceplate in LX-10 Service Center. Tripped circuit breaker is indicated by a white tab. Push to reset.
2. If circuit breaker continues to trip, refer to a qualified Service Company.
3. At the LX-10, turn **OUTDOOR REMOTES Switch** to the "OFF" position. If the equipment can now be operated, there may be malfunction at your Spa-side Remote Control.

### FILTER PUMP DOES NOT OPERATE :

1. At the CP-2000, check that **FILTER Status Light** is ON.
2. At the LX-10, turn **SYSTEM CONTROL Switch** to the "SERVICE" position, and **FILTER Switch** at **MANUAL CONTROL** to the "ON" position.
3. If filter pump operates, there is a possible malfunction at the LX-10 circuit board.
4. If filter pump does not operate, pump may require servicing.

### POOL CLEANER DOES NOT OPERATE :

1. At the CP-2000, check that **CLNR** is switched ON, and that four minute "pool cleaner on delay" has expired.
2. At the LX-10, turn **SYSTEM CONTROL Switch** to the "SERVICE" position, and **CLNR Switch** at **MANUAL CONTROL** to the "ON" position.
3. If pool cleaner pump operates, there is a possible malfunction at the LX-10 circuit board.
4. If pool cleaner does not operate, pump may require servicing.
5. If system incorporates a pool cleaner valve, check that cable has not been unplugged from Valve Operator.

### HEATER DOES NOT OPERATE :

1. At the CP-2000, make sure that **POOL** and **SPA Heat Select Switches** are in the "HEATER" or "S. PREF" position, and that **THERMOSTAT Dials** are set correctly.
2. Check the **WATER TEMPERATURE Display**. Three dashes or an unreasonably high temperature indicates that there is a malfunction at the Water Sensor.
3. Check that filter pump is running.
4. Check the filter pressure. If filter is clogged, the heater may not be getting sufficient water flow.
5. Inside the heater, check pilot light and heater controls. Heater must be turned on, and its own thermostat must be turned all the way up.
6. Heater may require servicing.

### SOLAR DOES NOT OPERATE :

**Note:** Ambient air temperature must be approximately 5 degrees warmer than the water temperature before the solar system is activated.

1. Check that filter pump is running.
2. At the CP-2000, make sure that **POOL** and **SPA Heat Select Switches** are in the "SOLAR" or "S.PREF" position, and that **THERMOSTAT Dials** are set correctly.
3. Check that cable has not been unplugged from Solar Valve Operator.
4. At the LX-10, turn **SOLAR CONTROL Switch** to the "ON" position, and check to see if Solar Valve rotates. Return Switch to "AUTO" position at completion of test.

### SPA DOES NOT HEAT UP TO 104° F :

1. Inside the heater, check that thermostat is turned all the way up.
2. High limit control on heater may need adjusting. Refer to a qualified Service Company.
3. If **HEATER Status Light** at the CP-2000 turns off before spa attains the maximum temperature of 104° F, the Controller may need a calibration adjustment.

### SPA DRAINS OR OVERFLOWS :

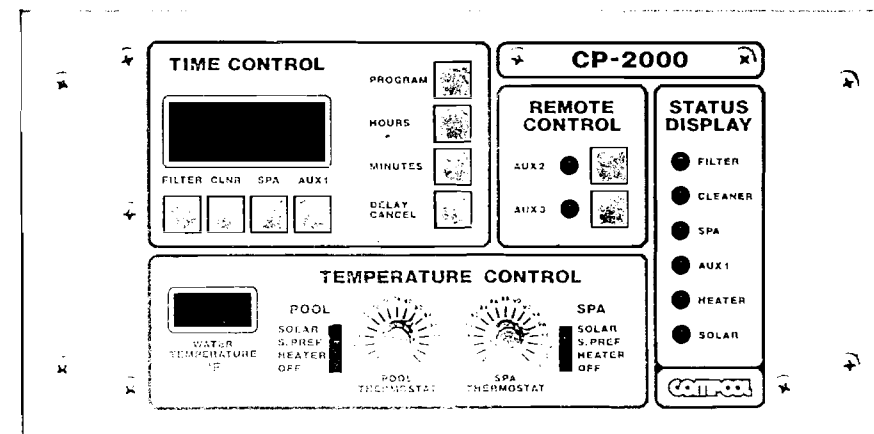
1. At the LX-10, check that **FLOW CONTROL Switch** is not in "FILL" or "DRAIN" position.
2. Check that cables have not been unplugged from Valve Operators.

### SPA WATER LEVEL DROPS SLOWLY :

1. Valves may need servicing.

## CONTROLLER

Installed in a convenient location inside your house, the **CP-2000 CONTROLLER** gives you fingertip control of all the equipment associated with your swimming pool and spa.



### TIME CONTROL :

The Controller houses an electronic time clock for programming the daily operating cycles of your pool equipment.

There are four **Equipment Buttons** which are used for turning the equipment ON and OFF:

**FILTER Button:** Activates filter pump and circulates water for pool filtration. Enables pool to be heated.

**CLNR Button:** Activates pool cleaner (after 4 minute delay), and also filter pump if FILTER Button is not already switched ON.

**SPA Button:** Activates filter pump and rotates valves to spa circulation. Enables spa to be heated. Disables the CLNR Button and turns pool cleaner OFF.

**AUX 1 Button:** Activates auxiliary equipment (such as spa light).

The **PROGRAM, HOURS** and **MINUTES Buttons** are used for setting the Clock and for programming the daily operation of the pool equipment. (See Page 8).

The **DELAY CANCEL Button** is used to override the "Filter Pump Off Delay" or "Pool Cleaner On Delay" circuits (for testing and servicing purposes only).

### REMOTE CONTROL :

Additional remote circuits may have been added to your system to control more auxiliary equipment (such as a pool light, air blower, jet pump, waterfall, etc.)

**Note:** These functions are not controlled by the Programmable Clock.

### STATUS DISPLAY :

**Status Lights** are provided for the various pieces of equipment controlled by the CP-2000. The presence of a light indicates that the equipment has been activated. The absence of a light indicates that the equipment is turned off.

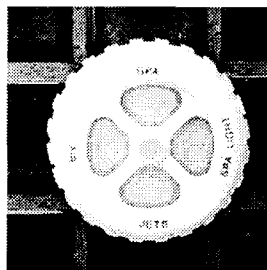
## REMOTE CONTROLS

### SPA-SIDE REMOTE :

One or more 4-button waterproof Remote Controls (called **SUPERSWITCH**) may be located at your spa.

This will enable you to override the CP-2000 Controller, and activate your spa equipment from the convenience of the spa. It is possible to control the following equipment from the Spa-side Remote Control :

1. **SPA.** Activates the filter pump, rotates valves to spa circulation, and enables the spa to be heated.  
(Overrides SPA Equipment Button at CP-2000).
2. **AUX 1.** Activates auxiliary equipment such as spa light.  
(Overrides AUX 1 Equipment Button at CP-2000).
3. **AUX 2.** Activates auxiliary equipment such as pool light.  
(Overrides AUX 2 Equipment Button at CP-2000).
4. **AUX 3.** Activates auxiliary equipment such as air blower.  
(Overrides AUX 3 Equipment Button at CP-2000).
5. **AUX 4.** Activates auxiliary equipment such as jet pump.  
AUX 4 cannot be controlled from the CP-2000.



If an optional Expansion Module (model MOD-BOOST) has been installed, it is additionally possible to activate the following features from the Spa-side Remote Control :

6. **HEAT BOOST.** Overrides the spa thermostat, and activates the spa heater for a five minute period. If the filter pump is not running, this button will be inactive.
7. **AUX 5.** Activates auxiliary equipment such as landscape lights.
8. **AUX 6.** Activates auxiliary equipment such as a fountain. This feature is only possible if a pool cleaner valve is used, and there is no two-speed filter pump or electric heater being used.

A status light is located in the center of each Spa-side Remote Control.

If an optional Status Light Module (model MOD-SS4) has been installed, this light will indicate either:

- 1) whenever the heater is enabled, or 2) whenever the spa is being circulated.

### INDOOR REMOTE :

Your system may include a 3-button or 6-button Indoor Remote Control, which enables you to operate the spa and auxiliary equipment from another remote location inside your house. These Indoor Remotes include a status light for each piece of equipment.

The Indoor Remote Controls are also available with a Digital Temperature Display, which will additionally enable you to monitor your pool and spa temperatures from a convenient indoor location.

### OUTDOOR REMOTE :

The 3-button Remote (with status lights) is also available with a hinged raintight cover for mounting in an outdoor location.

### TELEPHONE REMOTE :

If your system incorporates a Telephone Module (model MOD-PHONE), it is possible to access the control system and activate the equipment from any touch-tone phone. Consult the MOD-PHONE Manual for details.

### UNUSED PROGRAM STEPS :

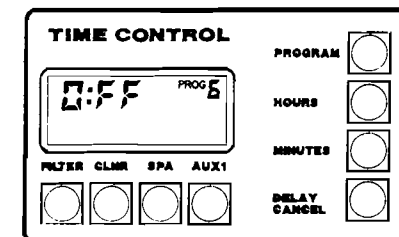
Our sample program utilizes all six programs steps. However your personal program may only require that you use three or four of the available program steps. In this event, we recommend that you disable all unused program steps.

To accomplish this, push **PROGRAM** Button until unused program is displayed. Push and hold down **HOURS** and **MINUTES** Buttons at the same time, and then release simultaneously.

"OFF" will appear on the Display.

To reactivate any disabled program step, simply push **HOURS** Button once.

"OFF" will disappear, and the Clock can then be programmed.



### REVIEWING PROGRAM :

After programming is complete, it is possible to rapidly advance the Clock through a 24 hour period in order to review your program.

Make sure that Clock is in **Time Mode**.

Push and hold down **HOURS** and **MINUTES** Buttons at the same time, and then release simultaneously.

The Clock will rapidly advance through your program, step by step, and the appropriate **STATUS DISPLAY** Lights will turn ON and OFF as each program step is activated.

When the review is complete, the Clock will automatically return to the correct time of day and will also return all equipment to its previous status.

### DELAY CANCEL:

For testing and trouble-shooting purposes, occasionally it may be necessary to temporarily override the built-in "Filter Pump Off Delay" or "Pool Cleaner On Delay" circuits.

To do this, simply push the **DELAY CANCEL** Button.

The Delay will automatically reoccur the next time the filter pump turns off or the pool cleaner turns on.

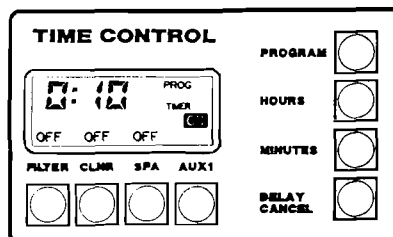
## CUSTOM CLOCK OPTIONS

The standard CP-2000 Controller is provided with the appropriate equipment interlock and safety delays, and enables you to enter a total of six program steps. Your Pool Builder may, however, have incorporated one or more of the following custom features :

### COUNTDOWN TIMER :

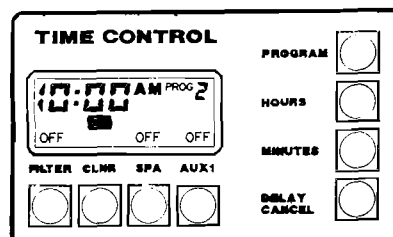
This feature enables you to preset a 10 minute operating cycle for any piece of equipment (FILTER, CLNR, SPA or AUX1). Whenever that equipment is activated, it will run for 10 minutes and then it will automatically switch off.

To better understand this feature, let us look at a typical application :  
For example, we are using the AUX1 circuit to activate a spa jet pump, and we would like the jets to run for a period of 10 minutes whenever they are activated.  
Push **PROGRAM Button** to put Clock into **Program Mode**.  
"PROG" will appear on the right of the Display.  
Continue to push **PROGRAM Button** until a flashing "TIMER" appears.  
Push the **MINUTES Button** once.  
"0:10" will appear on the Display.  
Push appropriate **Equipment Button** (AUX 1 in our example).  
"ON" will appear directly above Equipment Button.  
Push **PROGRAM Button** to lock-in the program.



### ADDITIONAL AUXILIARY CONTROL :

If your Control System does not utilize a pool cleaner, your Pool Builder may have overridden the built-in Pool Cleaner Protection Circuits, so that the **CLNR Equipment Button** can be used to activate an additional auxiliary function (such as landscape lighting).  
In this instance, the equipment will turn on immediately (no 4 minute ON delay), and the filter pump will not be simultaneously activated.



### PROGRAM LOCK :

To safeguard against someone accidentally pushing the **PROGRAM Button** and inadvertently tampering with your daily program, your Pool Builder may have included a Program Lock feature.  
In this instance, you will need to push the **PROGRAM Button** quickly twice in order to put the Clock into **Program Mode**.

## SERVICE CENTER

Located in close proximity to your pool and spa equipment, the **LX-10 SERVICE CENTER** provides your Pool Serviceperson with manual control of the system without having to gain access to the CP-2000 Controller.

**CAUTION:** To prevent possible water damage, the door of the LX-10 must be kept closed at all times.

Equipment Service Switches are located in the left-side compartment. There are no user-serviceable components located behind service panel in the right-side compartment. **Do not remove service panel. Refer service to qualified personnel only.**

### SYSTEM CONTROL :

This Switch should be kept in the "AUTO" position for normal system operation. The "SERVICE" position will disable the CP-2000 Controller and provide your Pool Serviceperson with complete manual-override capability of all pool equipment.

### MANUAL CONTROL :

Separate Service Switches are provided for activating the filter pump, pool cleaner, and auxiliary 1 circuit (lights, jet pump, etc.). However, the **SYSTEM CONTROL Switch** must be in the "SERVICE" position before these Switches can be turned ON.

**Note:** Always return **MANUAL CONTROL Switches** to the "OFF" position after equipment has been serviced.

### FLOW CONTROL :

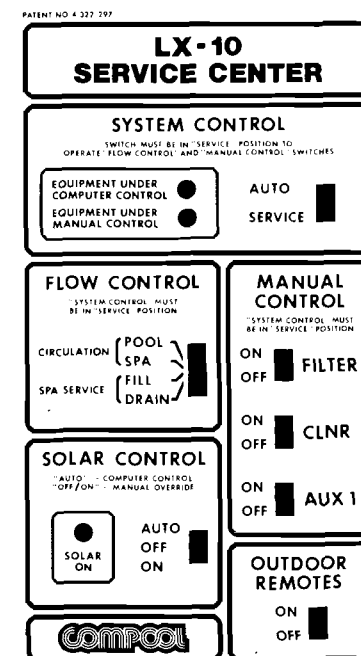
To enable this Switch, the **SYSTEM CONTROL Switch** must be in the "SERVICE" position. The "POOL" and "SPA" positions will automatically rotate the motorized valves to the appropriate water circulation. The "FILL" and "DRAIN" positions are used when cleaning the spa. (See page 16).  
**Note:** It is advisable to return **FLOW CONTROL Switch** to "POOL" position after use.

### SOLAR CONTROL :

This Switch should be kept in the "AUTO" position for normal system operation. The "OFF" and "ON" positions provide manual-override of your solar system, and should be used for servicing and testing purposes only.

### OUTDOOR REMOTES :

This Switch should be kept in the "ON" position for normal system operation. The "OFF" position will disable any optional Remote Controls which may have been added to your system. This feature is particularly convenient if your system includes a Spa-side Remote Control, and you wish to prevent the unauthorized use of your spa while you are away from home.



## PROGRAMMING INSTRUCTIONS

The CP-2000 Controller houses a 24 hour Clock with a digital display, which can be used to program daily pool filtration, cleaning, and other auxiliary functions such as pool and spa lights. It can also be used to program and preheat your spa, so that it is ready for use when you arrive home.

The Clock has two operating modes:

### 1. TIME MODE :

In **Time Mode** (normal operation), the Clock will display the actual time of day, and "TIME" will appear on the right of the Display.

While the Clock is in **Time Mode**, the pool equipment can be manually activated by simply pushing the appropriate **Equipment Button** (FILTER, CLNR, SPA or AUX1). This will temporarily override any preset program which may be in effect.

### 2. PROGRAM MODE :

In order to preselect daily filtration cycles, pool cleaning, spa use, and an auxiliary function (such as spa light), the Clock must be switched to **Program Mode**.

To achieve this, push **PROGRAM Button** once.

Whenever Clock is in **Program Mode**, "PROG" will appear on the right of the Display.

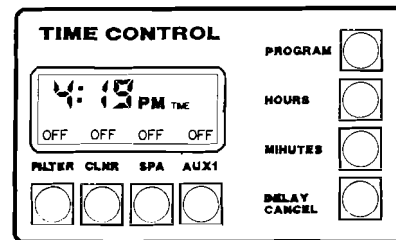
After programming is complete, the Clock will automatically return to Time Mode.

## SETTING THE CLOCK

If the Clock is not already in **Time Mode**, push **PROGRAM Button** until "TIME" appears on the right of the Display.

This indicates that the Clock is in **Time Mode**. Push the **HOURS** and **MINUTES Buttons** until the correct time of day is displayed.

Pay special attention to the AM/PM indicator.



## PROGRAMMING DAILY OPERATING CYCLES :

Programming the daily operating cycles of your pool equipment is a "set and forget" procedure, which is normally implemented by your Pool Builder at the completion of the installation.

Most systems only require that you program the filtration and (in some cases) the cleaning cycles of the pool. However, it is possible to program the spa (if you plan to use it at the same time every day), and also AUX1 (if you are using this circuit to activate lights or some other equipment which you wish to operate at the same times every day).

It is possible to preset six program steps during a 24 hour period.

Each of the six steps can be used for turning equipment ON or OFF.

More than one piece of equipment can be turned ON or OFF at each program step.

However, to turn the same piece of equipment ON and OFF requires two program steps.

Once the programming is complete, the pool and spa equipment will operate at the same times every day.

Before commencing programming, it is advisable to determine at what time you would like the equipment to turn on, and for how long you would like each piece of equipment to run.

To better understand the programming sequence, let's follow a sample program, step by step. For demonstration purposes, our example assumes that we would like to activate all four pieces of equipment on a daily basis, as follows :

Filter the pool from 7:00 am until 12:00 pm.

Turn the pool cleaner on from 10:00 am until 12:00 pm.

Turn the spa on from 6:30 pm until 8:00 pm.

Turn auxiliary 1 (spa light) on from 6:30 pm to 10:00 pm.

To begin programming, push **PROGRAM Button** once.

"PROG 1" will appear on the right of the Display. This indicates that the Clock is in **Program Mode**, and that the first program step is ready to be entered.

Enter the first program time (7:00 am in our example) by pushing the **HOURS** and **MINUTES Buttons**.

In **Program Mode**, minutes are advanced in ten minute increments.

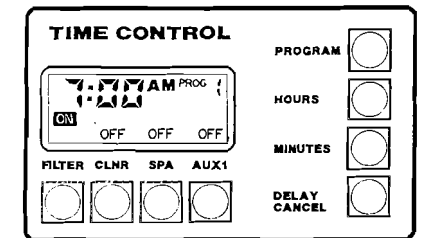
Push **FILTER Equipment Button**.

"ON" should appear directly above **FILTER Button**.

If "ON" is displayed above any of the other **EQUIPMENT Buttons**, push appropriate Button once, and "OFF" will appear.

You have now completed the first program step.

In order to lock-in the program, simply push the **PROGRAM Button** once.



"PROG 2" will now appear on the right of the Display. This indicates that the second program step is ready to be entered.

Enter the second program time (10:00 am) by pushing the **HOURS** and **MINUTES Buttons**.

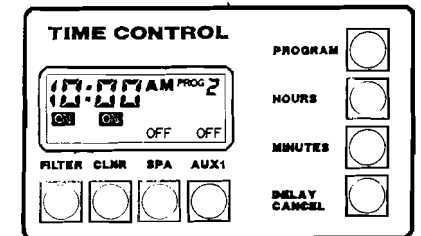
Push **CLNR Equipment Button**.

"ON" should appear directly above **CLNR Button**.

In our example, at 10:00 am the filter pump should still be running. However, it will not be necessary to push the **FILTER Equipment Button**, because the built-in protection circuit will automatically activate the filter pump whenever the pool cleaner is on.

Make sure that "OFF" is still displayed above **SPA** and **AUX1 Equipment Buttons**.

Push **PROGRAM Button** to lock-in the program.

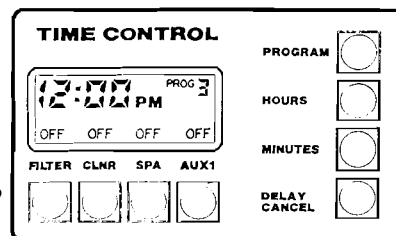


"PROG 3" will now appear on the right of the Display. This indicates that the third program step is ready to be entered.

Enter the third program time (12:00 pm) by pushing the **HOURS** and **MINUTES** Buttons. Pay special attention to the **AM/PM** indicator. In our example, at 12:00 pm the filter pump and pool cleaner should turn off.

Make sure that "OFF" is displayed above each **Equipment Button**.

You have now completed the third program step. Push **PROGRAM** Button to lock-in the program.



"PROG 4" will now appear on the right of the Display. This indicates that the fourth program step is ready to be entered.

Enter the fourth program time (6:30 pm) by pushing the **HOURS** and **MINUTES** Buttons. In our example, at 6:30 pm the spa and auxiliary 1 (spa light) should turn on.

Push **SPA Equipment Button**.

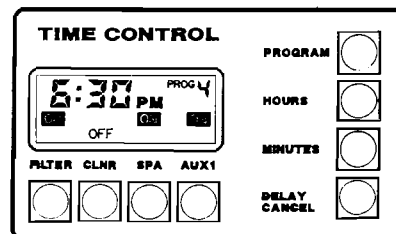
"ON" should appear directly above the **SPA** and **FILTER** Buttons.

Push **AUX1 Equipment Button**.

"ON" should appear above **AUX1 Button**.

You have now completed the fourth program step.

Push **PROGRAM** Button to lock-in the program.



"PROG 5" will now appear on the right of the Display. This indicates that the fifth program step is ready to be entered.

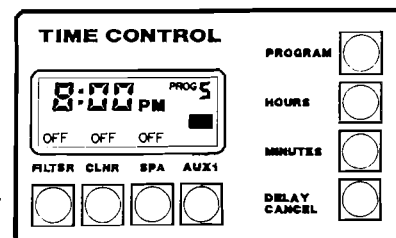
Enter the fifth program time (8:00 pm) by pushing the **HOURS** and **MINUTES** Buttons. In our example, we would like to turn off the spa at 8:00 pm, but the spa light (AUX 1) should still be on.

Push **AUX 1 Equipment Button**.

"ON" will appear above **AUX1 Button**.

You have now completed the fifth program step.

Push **PROGRAM** Button to lock in the program.



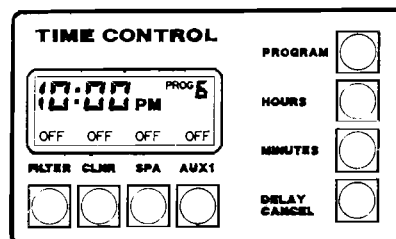
"PROG 6" will now appear on the right of the Display. This indicates that the sixth program step is ready to be entered.

Enter the sixth program time (10:00 pm) by pushing the **HOURS** and **MINUTES** Buttons. In our example, all of the equipment should be turned off at 10:00 pm.

Therefore, make sure that "OFF" is displayed above all of the **Equipment Buttons**.

To lock-in the program and return Clock to **Time Mode**, simply push the **PROGRAM Button** once.

If this is forgotten, the Clock will automatically return to **Time Mode** after two minutes.



## SYSTEM OPTIONS

### TWO SPEED PUMP CONTROL :

If your system incorporates a Two Speed Filter Pump, the CP-2000 has been designed to provide you with the maximum energy-efficient usage of this feature.

Although your Pool Builder may have adjusted the two speed control circuitry to your specific requirements, the CP-2000 typically switches the pump to high speed under any of the following conditions:

1. For two minutes when the filter is first turned on. This feature establishes proper flow through the system, and packs the filter grids. After two minutes, the pump will automatically switch to low speed.
2. Whenever the pool cleaner is running. This provides sufficient flow for the pool cleaner to operate effectively.
3. During spa operation to increase the jet action.
4. Whenever the heater is on. This feature will conserve energy by bringing your pool and spa up to the desired temperature more quickly.
5. Whenever your solar system is operating. This provides high flow rate through your solar panels, which ensures the most efficient usage of the available solar energy.

### SPA WATERFALL CONTROL :

If your spa water level is elevated above that of the pool, your Pool Builder may have included a Spa Waterfall Control (model RLY-WTRFL).

With this feature, you can circulate the pool water back to the spa, creating an overflow (waterfall effect) from the spa to the pool. This effect will cease during spa circulation. Depending upon which circuit has been used to connect the Spa Waterfall Control, either the **AUX1**, **AUX2** or **AUX3 Button** will activate this feature.

### FREEZE PROTECTION :

Recirculating Freeze Sensors (model FPS-C) may have been added to your system. These Sensors protect the plumbing and equipment from possible freeze damage by running the filter pump whenever the temperature falls to approximately 41° F.

Similarly, Auxiliary Pump Freeze Sensors (model FPS-AUX) may have been added to activate auxiliary equipment (such as a fountain or jet pump) during freezing conditions.

**CAUTION :** Freeze Sensors will not provide circulation of water through your solar panels. Solar freeze protection must be accomplished by draining the panels. (See below).

### SOLAR PANEL DRAINDOWN :

If your control system incorporates solar heating, it is advisable that a draindown feature be included to protect the solar panels against potential freeze damage.

For conventional solar systems which permit gravity drainage of panels, the Compool Solar Valve with built-in check valve (model SOL-2T) will automatically drain the panels whenever the solar turns off and the filter pump is not running.

For solar systems with glazed panels, damage can occur from overheating if the solar turns off and the filter pump is still running.

In this instance, a motorized Draindown Valve (model HW-5B) should be plumbed at the solar feed line. This will automatically drain the panels whenever the solar is turned off, even if the filter pump is still running.

This feature may also be incorporated if your solar system does not facilitate gravity drainage of panels, or where panels are located below pool water level.

Consult your Solar Company for more details.