



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 **Time Master 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.

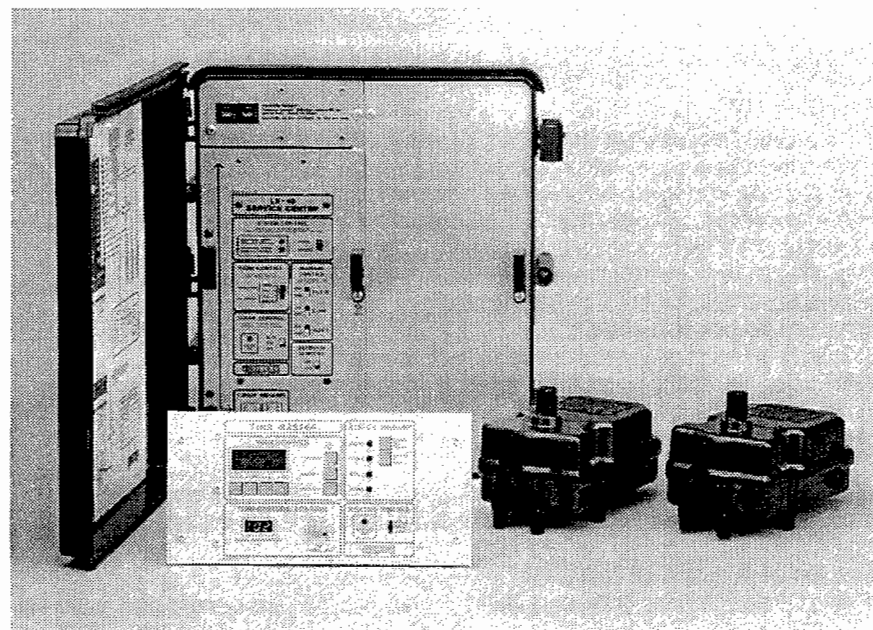
For information on possible Authorized Service Centers within your vicinity, call Compool Corporation at (415) 964-2201.

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

TIME MASTER POOL-SPA CONTROL SYSTEM



INTRODUCTION

The **Time Master** 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 **Time Master 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 the **Service Center** provides easy maintenance for your Pool Serviceperson.

Additionally, the **Time Master** incorporates important safety features which protect your pool equipment from accidental damage. (See Page 3). Your system may also include additional Remote Controls and special options which further add to the convenience, safety, and economy of operating your swimming pool equipment.



Compool Corporation
599 Fairchild Drive
Mountain View
California 94043

MAINTENANCE

REPLACING THE BACK-UP BATTERY :

There is a small 3 volt lithium battery located on the backside of the Time Master 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 Time Master 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. Before the spa has drained completely, set FLOW CONTROL Switch to the "POOL" position, and FILTER Switch to the "OFF" position.
The spa will stop draining, and cleaning can now commence.
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 Time Master Controller, turn HEATER ENABLE Switch to the "SPA" 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.

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 CANCEL OFF DELAY Button at the Time Master Controller.

POOL CLEANER PROTECTION :

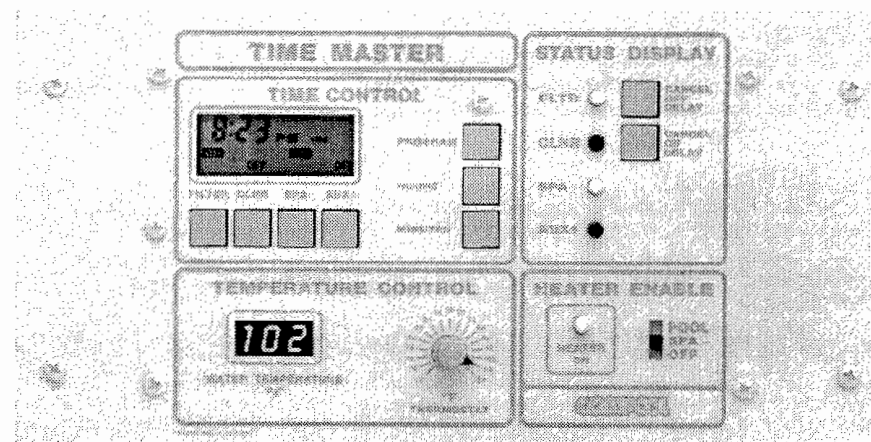
If your system incorporates an automatic pool cleaner, it will have been plumbed in conjunction with the filter pump so that it must have water circulation in order to operate. The Time Master incorporates the following protection features against possible pump damage if there is no water circulation:

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 CANCEL ON DELAY Button at the Time Master Controller.

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.



CUSTOM CLOCK OPTIONS

The standard Time Master 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.

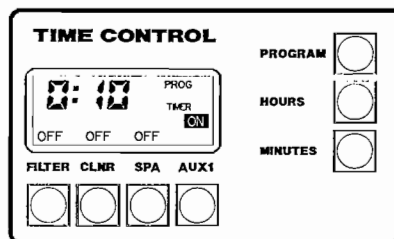
Push the **MINUTES Button** once.

"0:10" will appear on the Display.

Push appropriate **Equipment Button (AUX 1 in our example)**.

"ON" will appear directly above Equipment Button.

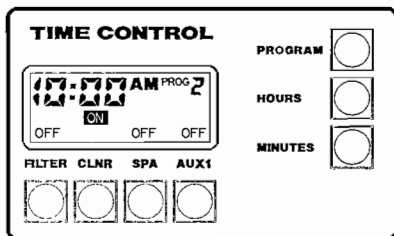
Push **PROGRAM Button** to lock-in the program.



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 Time Master 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 Time Master 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 14).

Note: It is advisable to return FLOW CONTROL Switch to "POOL" position after use.

SOLAR CONTROL :

There is no solar capability available with the Time Master Control System, so this Switch is non-functional.

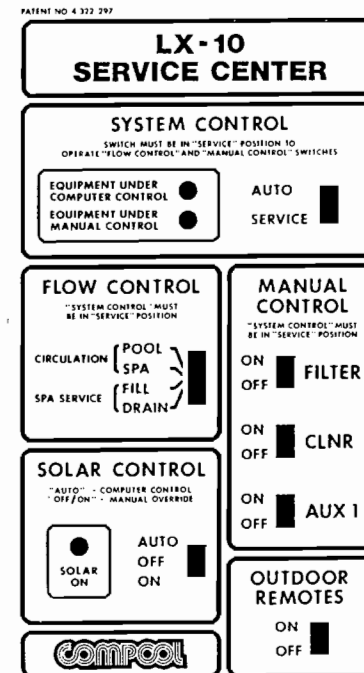
If you wish to add solar panels to your system, it is possible to upgrade the Control System by installing a CP-2000 Controller inside the house.

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.



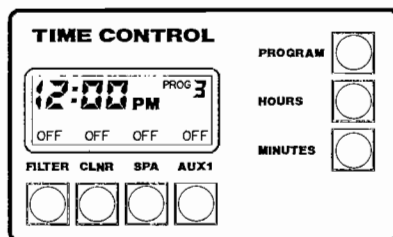
"**PROG 3**" will now appear on the right of the Display. This indicates that the third program step is ready to be entered.

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**.

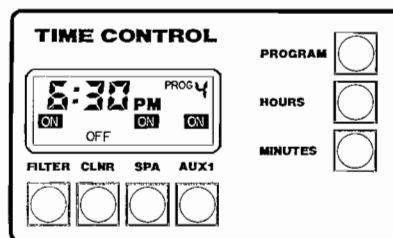
"**ON**" should appear directly above the **SPA** and **FILTER** Buttons.

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.

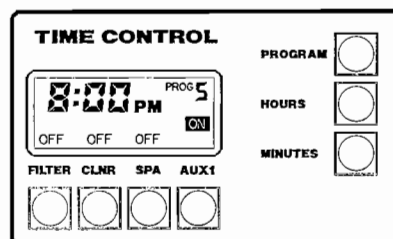
In our example, we would like to turn off the spa at 8:00 pm, but the spa light (AUX 1) should still be on.

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.

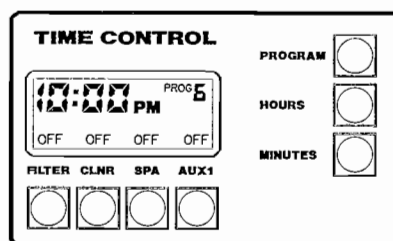
Enter the sixth program time (10:00 pm) by pushing the **HOURS** and **MINUTES** Buttons.

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 Time Master 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 Time Master 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.

FREEZE PROTECTION :

Recirculating Freeze Sensors (**model FPS-C**) may have been added to your control 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 potential freezing conditions.

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. The waterfall effect will cease whenever you are circulating the spa.

The **AUX 1 Button** at the Time Master Controller will activate this feature.

PROGRAMMING INSTRUCTIONS

The Time Master 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 AUX 1).

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.

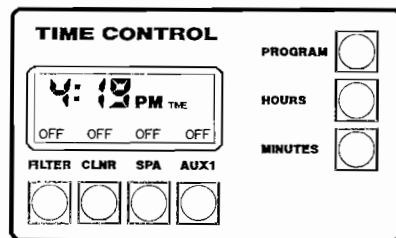
SETTING THE CLOCK :

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 :

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.

In our example, we would like to activate the following equipment:

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.

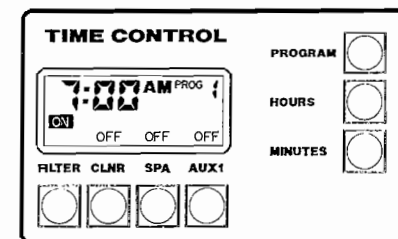
Push **FILTER Equipment Button**.

"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**.

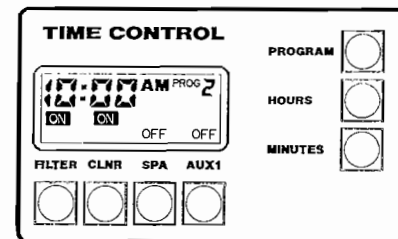
Push **CLNR Equipment Button**.

"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.



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 Time Master is activated.

These **Valve Operators** are also activated by the **FLOW CONTROL Switch** 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.

REMOTE CONTROLS

SPA-SIDE REMOTE :

One or more Remote Controls (called **SUPERSWITCH**) may be located at your spa. This will enable you to override the Time Master Controller, and activate the 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 the Time Master).
2. **AUX 1.** Activates auxiliary equipment such as spa light. (Overrides AUX 1 Equipment Button at the Time Master).
3. **AUX 2.** Activates auxiliary equipment such as pool light.
4. **AUX 3.** Activates auxiliary equipment such as air blower.
5. **AUX 4.** Activates auxiliary equipment such as jet pump.

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 thermostat, and activates the 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.

INDOOR REMOTES :

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.

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

UNUSED PROGRAM STEPS :

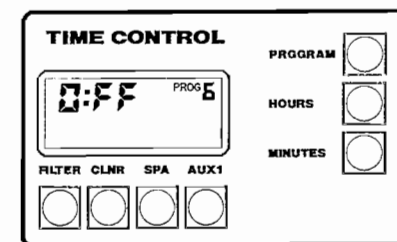
Our sample program utilizes all six program steps. However your personal program may only require that you use three or four of the available program steps. In this event, we recommend that you disable all unused program steps.

To accomplish this, push **PROGRAM Button** until unused program step 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 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.

OVERRIDING THE SAFETY DELAYS :

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 override the "Filter Pump Off Delay", simply push the **CANCEL OFF DELAY Button**.

To override the "Pool Cleaner On Delay", push the **CANCEL ON DELAY Button**.

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

CONTROLLER

Installed in a convenient location inside your house, the **TIME MASTER CONTROLLER** gives you fingertip control of all the equipment associated with your swimming pool.

TIME CONTROL :

Four **Equipment Buttons** are available for turning the pool 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 pool lights or jet pump).

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.**

STATUS DISPLAY :

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

A **CANCEL OFF DELAY Button** is provided to override the "Filter Pump Off Delay" circuit (for testing and servicing purposes).

Similarly, a **CANCEL ON DELAY Button** is provided to override the "Pool Cleaner On Delay" circuit.

TEMPERATURE CONTROL :

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.

THERMOSTAT Dial:

Used to preset your desired pool or spa water temperature.

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

HEATER ENABLE :

A 3-position switch is provided for selecting which body of water you wish to heat.

Please note that no heating will take place unless the filter pump is running:

POOL Position: Allows heating of pool and spa to the preset temperature levels.

SPA Position: Allows heating of spa only to the preset temperature level.

OFF Position: Allows no heating.

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.

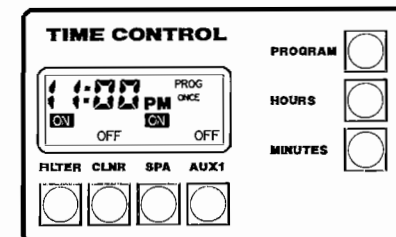
Enter the time that you wish to activate the spa (11:00 pm in our example) by pushing **HOURS** and **MINUTES Buttons**.

Push **SPA Equipment Button**.

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

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

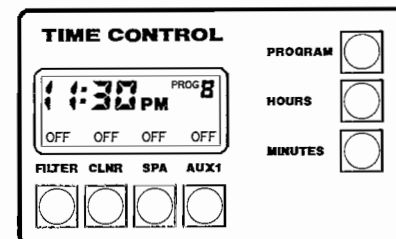
Remember to manually turn off the spa after use, otherwise it may run all night until the Clock reaches its next program step.



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.



IMPORTANT SAFETY INSTRUCTIONS

Basic safety precautions should always be followed when operating and servicing this electrical equipment, and when using the spa.

READ AND FOLLOW ALL INSTRUCTIONS.

Prolonged immersion in hot water may induce hyperthermia.

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6 ° F. 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; and
- 6) unconsciousness, resulting in a danger of drowning.

WARNING: The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia in hot tubs and spas.

The water in a spa or hot tub should never exceed 104 ° F. Water temperatures between 100 ° F and 104 ° F are considered safe for a healthy adult. Lower temperatures are recommended for extended use (exceeding 15 minutes) and for young children. Before entering the spa, the user should always check the water temperature with an accurate thermometer. Since excessive water temperatures have a high potential for fetal damage during the early months of pregnancy, pregnant or possibly-pregnant women should limit spa water temperatures to 100 ° F.

The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning. Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using the spa. Persons using medication should also consult a physician before using the spa, since some medications may induce drowsiness or affect heart rate, blood pressure or circulation.

Before using this electrical equipment, obtain a copy of the Installation Instructions and a completed EQUIPMENT CHECKLIST from your Pool Builder, Electrician, or Start-up Person.

SAVE THESE INSTRUCTIONS.

TROUBLE-SHOOTING

Your Control System is designed to provide years of trouble-free pool and spa enjoyment. However, if at any time the system appears to malfunction, consult the following Check List, which should help to alleviate any problems created by operator error:

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 "POOL" 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 a malfunction at your Spa-side Remote Control.

FILTER PUMP DOES NOT OPERATE :

1. At the Time Master Controller, 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 Time Master Controller.
4. If filter pump does not operate, pump may require servicing.

POOL CLEANER DOES NOT OPERATE :

1. At the Time Master Controller, 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 Time Master.
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 Time Master Controller, make sure that **HEATER ENABLE Switch** is not in the "OFF" position, and that **THERMOSTAT Dial** is 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.

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 ON Light** at the Time Master Controller 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.