

RAIN BIRD HP SERIES CONTROLLER OPERATING INSTRUCTIONS








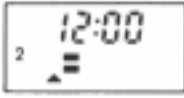
Step 1. SET CURRENT TIME

By pressing the "Hr./Min." Button and then the arrow button to set the hour. Then press the "Hr./Min." button again and then the arrow button to set the minutes in the display.

Step 2. SET DAY CYCLE

With dip switches behind the front panel access door.

- A. 7-DAY Cycle** = all switches down (any day can water)
- B. 5- DAY Cycle** = righthand switch only up (skip 4 days)
- C. 3- DAY Cycle** = middle switch only up (skip 2 days)
- D. 2- DAY Cycle** = lefthand switch only up (skip 1 day)

	DIP Switch Position		Display Shows
7-Day Cycle		All Down	 Cycle 1 2 3 4 5 6 7 S M T W T F S
5- Day Cycle		Right Switch Up	 Cycle 1 2 3 4 5 6 7 S M T W T F S
3-Day Cycle		Middle Switch Up	 Cycle 1 2 3 4 5 6 7 S M T W T F S
2-Day Cycle		Left Switch Up	 Cycle 1 2 3 4 5 6 7 S M T W T F S

Note : If you are using one of these fixed, 2, 3, or 5-day cycles, both programs "A" and "B" will run on the last day of the cycle. A "2", "3" or "5" will be continually displayed to indicate the fixed day cycle that has been selected. Because your cycle is now fixed, skip step 3 below (set Water Days) and step 4 next (set Start Times).

Step 3. SETTING WATER DAYS (For 7-Day Mode)

Use the "A/B Program" switch to indicate the program for which water days are being set. As indicated by the letters to the right of the display, the top row of dashes represents the seven days for Program "A" and the lower row represents Program "B". In the 7-Day mode, "A" and "B" programs can operate on the same day or differing days.

3A. SET WATER DAYS

In the 7-day-mode only, by tapping the "Today" button to move the triangle in the display to each day's position (Sunday through Saturday), and then press "Water Days" to turn that day "On" (dash displayed) or "Off" (blank). If you are setting both programs, move the "A/B Program" switch to the other program and repeat Step 3A. above.

Programming Example. 7-day Mode



"A" Programmed to Water Every Day
 "B" Programmed to Water Monday, Wednesday, Friday

Step 4. SET START TIMES

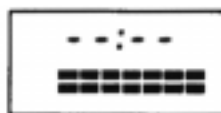
for each program by moving the "A/B Program" switch to the program you want and touching the "Start Times" Button.

"A" program has a default start time of 8:00 a.m. and "B" has a 6:00 p.m. default. These start times are backup start times that operate if your programming is ever lost following a prolonged power outage that outlives your battery. You will be changing these defaults to the start times you wish.

Use the "HR/MIN." button and the arrow buttons to set the hour and minute for the start time as desired. By setting one start time for the "A" program, for example, all "A" stations will water once on each "A" program water day. When the "A" start time arrives on an "A" watering day, the first "A" station will run for the time set on its knob and then all the other "A" stations will operate, in sequence, until the last station is finished. The controller then returns to "AUTO" mode and awaits the next programmed start time. The "B" program works similarly. If you are not going to use the "B" program, call up its default start time and blank it out using the "TO ELIMINATE START TIME" procedure described on the following page. Each program has seven more repeat start times available. Touch "START TIMES" to access these extra start times and use the «HR./MIN.» and arrow buttons to set them. By pressing "START TIMES" repeatedly, you can display each of the start times for the program you are setting. Four dashes in the upper portion of the display means no start time has been set and that there is room in the program to add another. When you see the four dashes in the display, you have seen the last start time. When you push "START TIME" again, the first programmed start times appears again.



Controls for Setting Start Times



No Start Time, or Start Time Eliminated

Multiple start times are good for scheduling short watering cycles repeated several times per day for such applications as propagating new lawns or establishing new plant materials.

TO ELIMINATE A START TIME,

press the "START TIME" button repeatedly until the unwanted start time is in the display. Then press the "WATER BUDG." Button to blank out the start time. Four dashes will be displayed. Then press "MONITOR" to close up the gap where the start time was removed. The next time you review the start times for the program, the HP will present the list without the gap and the start times will be in chronological order.

NOTE : With a total of 16 start times and therefore, watering cycles possible per day, be careful not to schedule programs that will overlap. If you have inadvertently schedules a program to start before another in operation is finished, the HP controller will «stack» the latest start onto the cycle that is running. When the current cycle is finished, the HP will run the program that is «stacked». The HP will stack programs on layer deep. If you program 2 cycle start times to occur while a program is in operation the HP will stack the first one and ignore the second.

Step 5. SET EACH STATION

to the "A" or "B" program with the "A/B" slide switch under each station knob.

Step 6. SET STATION RUN TIMES

With the knob for each station. Normal timing range is from 2 minutes to 2 hours per station. Zero is the "Station Off" position.

Using the Water Budget key to change the timing range will be discussed later.



Station 5
Set for 2 Minutes
on "A" Program

Step 7. SET THE CURRENT DAY

with the "Today" button by moving the triangle in the display to today's position.

For the 7-day, weekly cycle, Sunday through Saturday are abbreviated below the display.

The numbers below the display are for the fixed day cycle. The controller will water both programs on the last day of a fixed day cycle (where 2 dashes appear).

You can make today any number you wish. For example, if you have established a 3-day cycle, but you want tomorrow to be the first watering day, set the triangle in the display at day 2. Watering will begin tomorrow, the last day of a 3-day cycle.

Step 8. SET "OFF /AUTO" switch to "AUTO" and touch "MONITOR" once or twice to display current time. Programming is complete.

OTHER FUNCTIONS

SYSTEM OFF

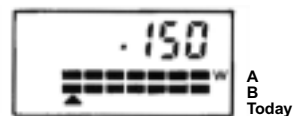
Set the "OFF/AUTO" Switch to "OFF".

In the "OFF" position, the controller will continue through its normal, automatic programs, however, there will be no electrical output to the control valves in the system. The "OFF" setting is good for system shutdown during rainy weather, for seasonal shutdown when watering is not necessary and for shutdown during system maintenance.

WATER BUDGETING

The HP series controller has a separate Water Budgeting for each program. Use the water budget if the area covered by the stations on a program looks a little too wet or a little too dry. The Water budget feature saves you from having to adjust the timing knobs on all stations of the program. Adjusting your irrigation system for seasonal changes (more humid or drier, cooler or hotter weather) is easy using water budget for cutting back or adding watering time.

Set the "Program" switch to the desired program and press "Water Budget", "100" in the display means "100% of actual time set". Use the arrow buttons to change the percent of time for all stations on that program, in 10% steps, anywhere from "000" (program off) to "200" (200% of actual time set).



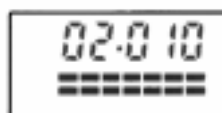
Program "A"
Water Budgeted to 150%

A "W" will be displayed continually to indicate that a program is in the water budget mode. The operator of the controller can check the water budget level for a program at any time by simply moving the "A/B Program" switch to the «budgeted» program and pressing the "Water Budget" button.

Water budgeting operates in the automatic and "Manual Cycle" modes only. In the manual single station mode of operation, described below, the operator will get the actual time set on the station knob.

MANUAL STATION

To manually start a station, repeatedly tap the "MAN.START" button to advance to the desired station. The station on which you stop will begin watering (after it has been in the display for about 2 seconds).



Station 2
10 Minutes Watering "To go"

The manually-started station will run for the actual time set on its knob and then shut off. The controller will then reset itself in the auto mode and await its next scheduled automatic start.

ONE-TIME MANUAL STATION OPERATION AT A DIFFERENT RUN TIME

If you wish to run a station manually for a shorter or longer time than you have it set for in Normal, Automatic Mode, simply set the station's Time knob to the duration you want and the manually start the station. After the station has started and the "TIME TO GO" is in the display, set the station knob back to its regular setting. The station will run, for one time only, at the new time and then shut off. During the next scheduled automatic operation, the station will operate for its original time to which you returned the Time knob.

To cancel a **MANUALLY-STARTED STATION** simply press the "down-arrow/OFF" button. The controller will return to displaying the current time. If you wish, by pressing "MONITOR" you can see the zeros that indicate no station is now operating. Pressing "MONITOR" again returns to the time of the day.

MANUAL SYSTEM CHECK

To run through all the stations to make sure the entire system is operating properly press "MAN STA." And then watch the first station turn on. Before station #1 finishes counting down, depress "MAN.STA." again to activate station #2. By repeating this procedure, you can manually check the operation of all stations. When you have observed the operation of the last station, push "MAN. STA." Again and the time of day will be displayed. The HP has returned to **AUTO** mode. The **MANUAL SYSTEM CHECK** ends whenever it reaches a station with zero time.

MANUAL CYCLE

To manually start a program set the "Program" switch to "A" or "B", and then press "MAN. CYCLE" to activate watering. The number and running time for the first station on that program will appear in the display indicating the cycle has started.

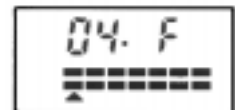
The controller will operate, in sequence, each station assigned to the manually started program and then return to the auto mode and await its next scheduled automatic start.

«F» DISPLAY

The HP series controller are provided with a new automatic "Diagnostic circuit breaker" system. With conventional, mechanical circuit breaker or fuses, a short circuit in a field wire or a valve solenoid will shut down the entire irrigation system. The electrical overload protection system in the HP unit only shut down the station with the electrical problem.

A station number and a "F" in the display means that station has a short circuit or overload trying to feed back into the controller through the field wires. The controller will continue to water with all other operable stations and bypass the problem one. Locate and fix the problem and the controller will return to normal operation of that station at next cycle.

The "F" however will remain in the display until you push the "MONITOR" button.



Station 4
Electrical Fault Display