SEMI-AUTOMATIC WATERING — In this mode any station can be activated and the unit will sequentially water the remainder of the stations for the programmed Watering Times. Only stations with Watering Times entered in the program will water.

Press the "ADVANCE" button to first station, then press the "ON" button to start watering sequence.

LOW BATTERY INDICATOR — If batteries are low or if power is disconnected for a short period of time, the IBOC controller will display LO: When this occurs, it is necessary to reset the controller.

To reset the controller:
1. Disconnect power supply
2. Set Function Dial to Set Time position
3. Hold down either ▲ Increase or ▼ Decrease buttons until display clears completely
4. Install new batteries (verify that display is still clear before hook-up of wires).

ADDITIONAL FEATURES OF THE IBOC CONTROLLER

The IBOC additional features are described below. The selectable ASBP, hours mode and loop mode are all user selectable features. The switches which select these features are located beneath the lower panel on the right hand side of the terminal strip. Remove panel to expose switches.

These dip switches read directly into the micro-processor. Therefore, each time a switch is activated or de-activated, power to the IBOC controller must be disconnected; see instructions below.

To Set:
1. Set switches to desired position
2. Disconnect power supply
3. Hold down the ▲ Increase button until display clears completely
4. Wait 5 minutes
5. Re-connect power.

SWITCH #1/SELECTABLE ASBP — When de-activated (down position), if a power failure* occurs the controller will NOT operate the Automatic Safety Back-up Program. All information will be erased from the program.

*POWER FAILURE — Power to the controller is disconnected for longer than 5 minutes or batteries become inactive.

PROGRAM B SELECTABLE WATERING TIMES

SWITCH #2/HOURS MODE — When activated (up position) it will change the Watering durations in Program B to hours. The programmed watering duration for each station will be from 0-9.9 hours with .1 hour (6 minutes) increments.
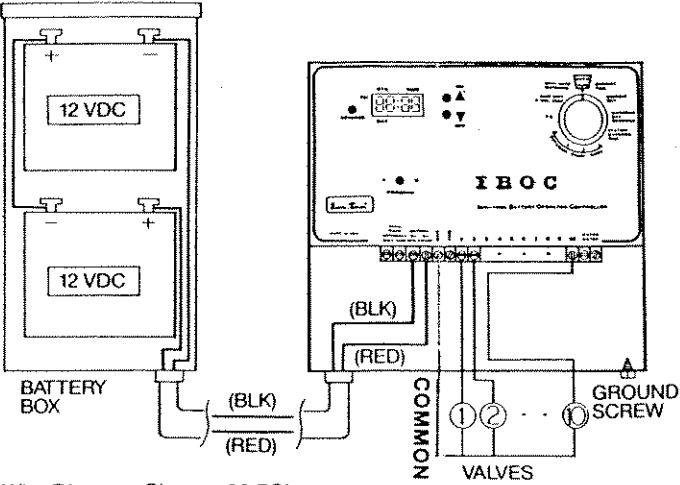
SWITCH #3/LOOP MODE — When activated (up position) it will allow loop capability in Program B. Watering Start Time number 1 will initiate the loop and Watering Start Time number 2 will terminate the loop. Watering Start Times 3 & 4 will remain standard watering starts, cycling only once.

WINTER NOTICE

To insure trouble-free service from the IBOC controller please remove all batteries during prolonged OFF periods. Store batteries in a cool dry place and check them before re-installing.

Check the battery compartment for corrosion from battery leakage. Any battery leakage MUST be cleaned before new batteries can be installed.

To make re-programming easier next spring, check to be sure the program copy attached to the front door is correct before removing batteries.

Wire Distance Chart at 80 PSI
(Controller to Valves)

Wire Size (Awg)	20	18	16	14	12
Distance (Feet)	100	160	250	400	630

INSTALLATION
1. Mount IBOC and battery box or pedestal in a cool, dry, and stable environment.
2. Install two (2) 12VDC heavy duty lantern batteries in battery box.
3. Remove IBOC lower panel.
4. Wire solenoid and 24VDC supply to proper terminals as shown in Fig. #1. Note: Polarity is critical on all hook-ups, so re-check before applying 24VDC supply.
5. Re-install lower panel.

WARNING:
1. All hook-ups must be performed as instructed or warranty is void. Follow all applicable electrical wiring codes.
2. To insure proper operation of unit, the controller box must be properly grounded.
3. Power supply must be disconnected prior to service of controller.
4. A cool, dry, and stable environment will increase battery life. Check batteries frequently.
5. Remove batteries during prolonged "OFF" periods (i.e., winter months).

WIRING OF D.C. LATCHING SOLENOIDS:
RED WIRE-TO STATION TERMINAL
BLK WIRE-TO COMMON WIRE

Hardie Irrigation
A James Hardie Company
El Paso, TX 79924

IBOC

IRRI-TROL BATTERY OPERATED CONTROLLER

OPERATING INSTRUCTIONS

Irritrol

INSTRUCTIONS FOR AUTOMATIC, SEMI-AUTOMATIC AND MANUAL OPERATIONS

SELECT PROGRAM A

CURRENT TIME — The current time of day.

To Set:
1. Set Function Dial to Current Time position
2. Use ▲ to increase or ▼ to decrease time
3. If Current Time is during the p.m. period make sure PM indicator (') is displayed.

CURRENT DAY — The current day of the week.

To Set:
1. Set Function Dial to Current Day position
2. The Current Day will appear in the left side of the display as a number, 1 = SUN...7 = SAT
3. Press the ADVANCE button repeatedly until number corresponding to the current day appears in the display.

AUTOMATIC SAFETY BACK-UP PROGRAM (ASBP)

At this point, the IBOC controller will automatically operate the factory preset ASBP, each station will water for 10 minutes, every day, starting at 4:00 a.m. Please note that the ASBP is in Program A only.

If you wish to establish your own program, use the instructions that follow.

Before reprogramming, you may use the Program Erase, PE feature to erase the ASBP.

PROGRAM ERASE (PE) — To erase all the Watering Times, Watering Start Times, and the Watering Day Schedule:
1. Set Function Dial to the P.E. position
2. Press both the ▲ and ▼ buttons at the same time
3. The PE colon (:) on display will flash, indicating that the existing program(s) have been erased (both programs will be erased regardless of program switch position).

ESTABLISHING YOUR OWN PROGRAM

When establishing your own program you must tell the IBOC controller three things:

STEP I — Watering Day Schedule — What days of the week you want to water

STEP II — Station Watering Time — How long you want each station to water

STEP III — Watering Start Time — What time of day you want each program to start watering

STEP I — WATERING DAYS SCHEDULE — The IBOC has a standard 14 Day Watering Schedule. Please refer to the chart below for the numbers on the display corresponding to the days of the first and second weeks.

	SUN	MON	TUE	WED	THU	FRI	SAT
1st Week	1	2	3	4	5	6	7
2nd Week	8	9	10	11	12	13	14

To Set:
1. Set Function Dial to Watering Day Schedule position
2. Press ADVANCE button to select day of week

3. Press ON ▲ button to schedule a day on and OFF ▼ to schedule a day off
4. Repeat steps 2 & 3 above for each day.

To Display Watering Day Schedule:
1. Set Function Dial to Watering Day Schedule position
2. Press ADVANCE button repeatedly, display will indicate days on and days off.

EXAMPLE: 1:On = Sun of 1st week is a scheduled day on
8:OF = Sun of 2nd week is a scheduled day off

Note: OF = OFF.

STEP II — STATION WATERING TIME — The length of time each station will water. The watering duration can be set from 0 to 99 minutes in one minute increments.

To Set:
1. Set Function Dial to Watering Time position
2. Display will indicate station number (left side) and station watering time (right side)
3. Use ▲ button to increase or ▼ to decrease watering time
4. Press the ADVANCE button to the next station number
5. Repeat steps 3 & 4 for each station.

To Display Station Watering Time:
1. Follow steps 2 & 4 listed above.

Note 1: To skip a station enter zero (0) as Watering Time.
Note 2: In the Auto Run position, if a station is currently watering, the station number and remaining watering time will be displayed.

STEP III — WATERING START TIME — In each position (1-4), the Watering Start time can be displayed or changed. Up to four (4) Watering Start times per day in each program can be entered. Each Watering Start time entered will initiate sequential watering of all programmed stations, within a program.

To Water Once a Day:
1. Set Function Dial to Watering Start Time position 1
2. Use ▲ to increase or ▼ to decrease time
3. Be sure PM indicator (') is displayed if Watering Start time is in the p.m. period.

To Water More Than Once a Day:
1. Set Function Dial to Watering Start Time position 2, 3 or 4
2. Repeat steps 2 & 3 listed above.

To Display a Watering Start Time:
1. Set Function Dial to Watering Start Time position 1, 2, 3 and 4
2. Display will indicate time.

Note: To cancel a Watering Start time set time to zero.

HOW TO USE PROGRAM B

Watering Start times and the Watering Day schedule are programmed once for all stations in a program. This can limit the system versatility; that is why we have added Program B.

You can use Program B together with Program A, allowing up to 8 Watering Start times. You can also use Program B to provide Watering Start Times, a Watering Day Schedule, and Station Watering Times that are different than those on Program A.

EXAMPLE: You have programmed stations 1, 2 & 3 on Program A, to water 10 minutes, every day, starting at 6:00 a.m. You now want to add a fourth station and you need it to water once a week, on Fridays, for 30 minutes, at 7:00 p.m. You would need to program station 4 on Program B.
1. Set Program switch to Program B
2. Following programming Step I (Watering Day Schedule), enter 6 and 13 (1st and 2nd weeks)
3. Follow programming Step II (Watering Time) for station 4 only, enter 30 minutes
4. Follow programming Step III (Watering Start Time), enter 7:00 p.m.

Note: Station 4 is the only station with Watering Time, therefore it will be the only station operating on Program B.

You may also overlap Watering Start times using Programs A & B (two stations will be watering at the same time, one on Program A and one on Program B).

EXAMPLE: Stations 1, 2, 3 & 4 are programmed on Program A to water for 10 minutes each, every day starting at 7:30 a.m. You now want station 1 to repeat watering on Saturdays, for 45 minutes at 8:00 a.m.

To program station 1 on Program B you would:
1. Set Program switch to Program B
2. Follow programming Step I (Watering Day Schedule), enter 7 and 14 (1st and 2nd weeks)
3. Follow programming Step II (Watering Time) for station 1 only, enter 45 minutes
4. Follow programming Step III (Watering Start Time), enter 8:00 a.m.

Note: Station 1 and station 4 will be watering at the same time.

When programming of the IBOC controller is completed the Function Dial should be returned to the AUTO RUN position.

OPERATING INSTRUCTIONS

IMPORTANT — During normal operation, the colon (:) on the display will always flash. If the colon is not flashing, follow instructions for resetting the IBOC, listed under LOW BATTERY INDICATOR.

MANUAL OR EMERGENCY STATION SHUT DOWN — To shut down a station that is currently watering:
1. Set Function Dial to Semi-automatic or Rain Off/2 Min. Test position
2. Press the OFF button.

RAIN OFF/2 MIN. TEST — This position has a dual function.
1. The Rain Off will not allow any automatic watering starts.
2. 2 Min. Test: Press the "ON" button to water each station for 2 minutes sequentially, regardless of programmed watering time (even if station watering time is zero).

Note 1: This mode will not alter the program presently entered. The 2 Min. Test can be used in Program A only.

Note 2: If you wish to return to the Rain Off mode after completion of the 2 Min. Test, the Function Dial must be turned out of the Rain Off position and turned back. There is no need to wait for the 2 Min. Test to end. You may reactivate the rain off immediately after the test is initiated.