

INSTALLATION INSTRUCTIONS

510.XXXP BATTERY OPERATED PROPAGATION AND IRRIGATION CONTROLLER

INTRODUCTION

THANK YOU for purchasing a DIG Controller. Please take the time to read through the enclosed instructions and follow them step by step. If you have any questions, please call our customer service line 1-800-344-6641.

CONTROLLER MAIN FEATURES

- Operates on two 9-volt alkaline batteries
- Weekly or Cyclical program
- Up to four start times per day in weekly mode
- Station run time from 1 second to 12 hours in 1 second increments
- Watering Schedule 7-day weekly program or cyclical from once a day to once every minute, hour, and day
- Simple, four button programming
- Optional manual operation
- Completely waterproof
- Can be mounted on valve or on the wall
- Up to 30 days rain delay



SPECIFICATIONS

OPERATING SPECIFICATIONS

- Station run time: In 1-second increments up to 24 hours
- Watering Schedule: In 1-minute increments up to 5 minutes
In 5-minute increments up to 15 minutes
In 15-minute increments up to 45 minutes
In 1-hour increments up to 23 hours
In 1-day increments up to 30 days
7 days calendar
- Start time in irrigation mode: up to 4 start times per day
- Start time in propagation mode: one start time every minute
- Sensor: on and off
- Irrigation window allows for propagation at a defined part of the day

IMPORTANT: Make sure flow direction arrow is pointed away from water source. Never use the controller unit as a handle for tightening the valve to the pipe.

CONNECTING A RAIN SENSOR

An interrupt type rain sensor can be connected to the controller. The sensor connects directly to the controller wire connection(s). Connect either wire from sensor to the two sensor wires on the controller.

PROGRAMMING THE CONTROLLER

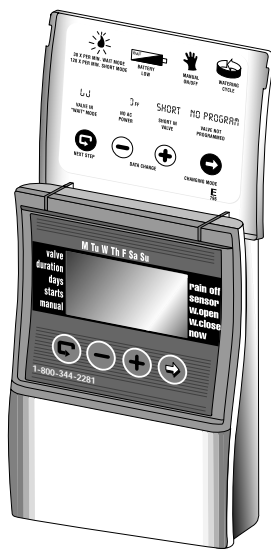
DIG controllers are programmed with the aid of four buttons:

Programming step selector – used to select the desired programming mode (includes clock setting mode)

Next step button – used to select the parameter to be changed (hour, minute, etc.). Only a blinking parameter can be changed.

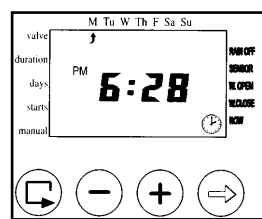
Data increment button (Increase) – Raises the value of the selected parameter (e.g., when time selected from 06:00 to 07:00).

Data increment button (Decrease) – Lowers the value of the selected parameter (e.g., when time selected from 06:00 to 05:00).



PROGRAMMING CURRENT TIME AND DAY OF THE WEEK

Press a number of times until icon appears. Press . The hour digit will flash. Use the or buttons, to set the current time (note: use of AM and PM). A further press of will make the minutes digit flash. Use the or to set the current time. Press . A flashing arrow will appear in the upper portion of the display. Use the or to set the current day. Press to move to the next step.



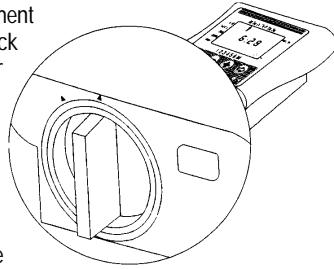
- Open window: AM or PM
- Close window: AM or PM

DIMENSIONS

- Height: 6" (15 cm)
- Width: 4" (10 cm)
- Depth: 2" (5 cm)

BATTERY INSTALLATION

Rotate the battery compartment cover handle to the 11 o'clock position to remove the cover (see drawing). Insert two 9-volt alkaline batteries. All controller display elements will briefly appear on the display, followed by the blinking time "12" – the controller is now ready to be programmed.

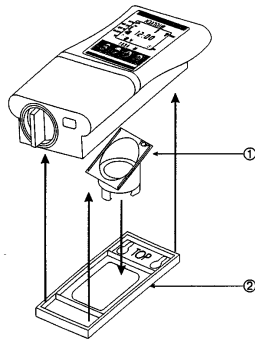


IMPORTANT: To replace the battery compartment cover, insert it with the handle in the "11" o'clock position to avoid possible cover guide pin breakage.

ASSEMBLY AND INSTALLATION OF CONTROLLER UNITS MODELS 510.XXXP AND 510.075P

If the mounting plate [2] is attached to the controller, remove it.

- Insert the mounting coupling [1] into the mounting plate, aligning the words "top", which are stamped on both the coupling, and the plate.
- Press the mounting plate, with the mounting coupling inserted, against the irrigation controller back.



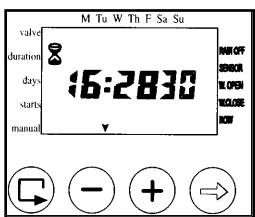
WALL OR VALVE MOUNTING

The controller mounting plate [2] can be mounted on a wall using two screws, in which case mounting coupling [1] is not used. The distance between the controller and the solenoid is limited by the length of its connecting cable. To mount controller on a valve, use plate #1.

If the last data entered stops flashing, press the again to resume programming.

PROGRAMMING WATERING TIME: HOURS, MINUTES AND SECONDS

Press until icon appears. Use and or to set the desired watering time.



Press to move to the next step.

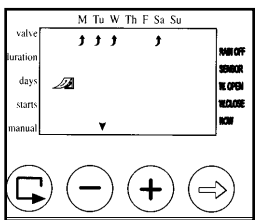
PROGRAMMING WATERING SCHEDULE

Press until icon appears. At this stage you can select one of two program options:

- Watering schedule according to the days of the week.
- Cyclical schedule watering – once, minutes, hours and days.

A. Watering schedule according to the days of the week.

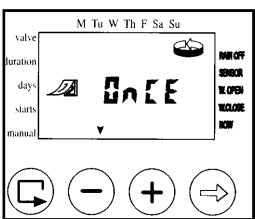
Press , a flashing arrow appears opposite the days of the week. Use the or buttons for the desired day. A non-flashing arrow shows the Watering Day selected. In this way, move along the days of the week and set any day of the week required.



To cancel a Watering Schedule: Press when the arrow is flashing beside that day.

B. Cyclical, ONCE, minutes, hours and days watering

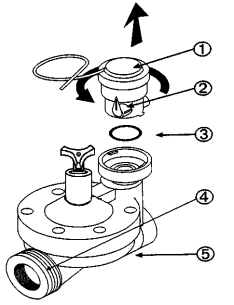
For operating the watering schedule cyclically or ONCE press the a number of times (pass over every day of the week) until the word ONCE appears. ONCE for single watering if required (make sure that no arrow shows on the day of the week).



Cyclical schedule watering – press and the word ONCE will flash. Use or to set the desired watering cycle, from

ASSEMBLY & INSTALLATION OF MODEL 510.075-100 AND 510.000P

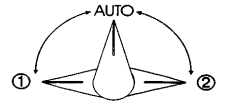
- Shut the main irrigation system valve.
- Before installing the hydraulic valve [5] in the irrigation system, remove the solenoid [1] from the valve with a 90° counter-clockwise turn. Be careful not to lose the seal (O-Ring #2) [3].
- Install the hydraulic valve in the irrigation system, paying attention to the correct water flow direction, as indicated by the arrow [4].



- After installing the hydraulic valve [5], assemble the solenoid with a 90° clockwise turn. Be sure to place the seal (O-Ring #1) [3] in its proper location.

MANUAL-MECHANICAL OPERATION

The valve can be opened and closed independent of controller operation. Manual operation is useful when immediate irrigation is required, without the delay of controller programming.

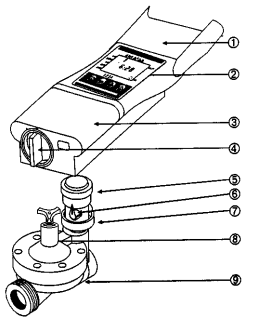


The 3-position valve handle [A] is located on the solenoid Manual valve, and functions as follows: Open [1], Automatic Operation [AUTO], Closed [2].

IMPORTANT: For automatic operation, the valve handle must be in the middle [AUTO] position.

PARTS IDENTIFICATION

- Top Cover
- Controller Display
- Bottom Cover
- Battery Compartment Cover
- Solenoid
- Valve Handle
- Bayonet
- Manual Flow Control
- Hydraulic Valve



INSTALLING THE IRRIGATION CONTROLLER

Your controller can be installed in line directly to PVC pipe fittings, (inlet female pipe thread, outlet female pipe thread)

NOTE: Wrap all fittings with teflon tape. Do not use thread paste on valve as this will damage the valve and void your warranty.

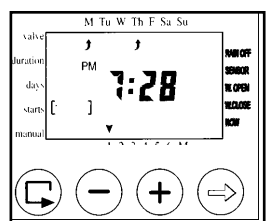
NOTE: The controller can be mounted in any position. We recommend a short test cycle before attaching your lines to the outlet side.

1 minute up to 45 minutes, from 1 hour up to 23 hours and from 1 day up to 30 days. When you leave the ONCE icon on, program will operate one time only, and the controller needs to be programmed again.

Press to move to the next step.

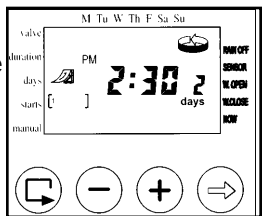
PROGRAMMING A WEEKLY START TIME

(For watering according to the days of the week.) Programming the controller by day of the week allows 4 start times per day. Press for start no. 1. The word FF will appear (or the last start time entered). Press the word FF flashes. Use the or to set the desired start time (note AM and PM). Press to program start no. 2 and repeat the same steps for starts no. 3 and 4. To cancel one of the start times, press . The hour digit flashes. Use the or to display FF.



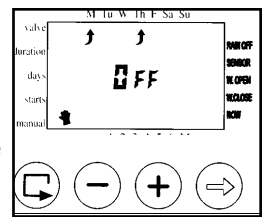
PROGRAMMING A CYCLICAL OR ONCE START TIME WITH START TIME DELAY

Programming a start time with these programs will allow the use of an additional function defined as "number of days". You will be able to set the first start time today (day 0), tomorrow (day 1) or any number of days required (up to 30 days). Press . Use or to set the desired start time, and day. (Only one start time in this mode).

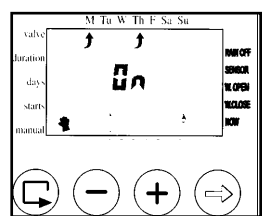


MANUAL OPERATION

Press the . The icon appears. Use and to open or close the valves.

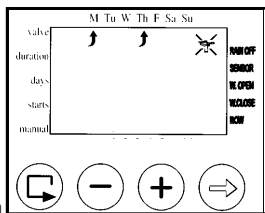


- In manual operation, the valve will close automatically after the programmed watering time.



"RAIN OFF" (SHUTDOWN)

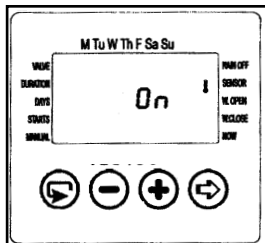
Press . The appears. Press and will appear. The controller is shut down. Press to return to the original programming. (The will disappear.)



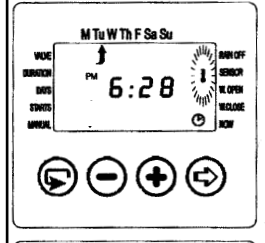
The shutdown mode causes the valve to be suspended. The programming, however, is preserved.

SENSOR OPERATION

1. Press until appears next to SENSOR.

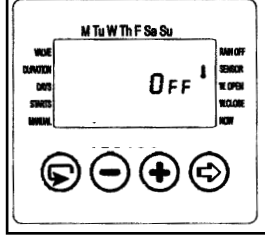


2. Press to activate the sensor in the irrigation program selected.



* With the sensor circuit closed (i.e., the sensor detects the existence of a defined program lockout condition) the symbol blinks on the display. In this situation, irrigation will not take place through the valve.

3. Press to disable the sensor. The word "OFF" appears on the display.



IRRIGATION WINDOW IN THE CYCLICAL PROGRAM MODE

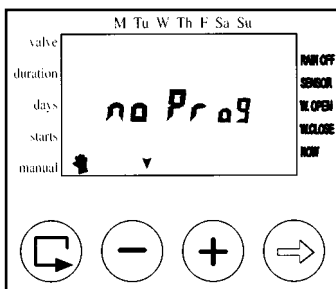
The irrigation window is an advanced feature which enables cyclical irrigation program operations (see Section B) to take place only during a defined part of the day (window). The irrigation window is defined as a part of a day (up to 23 hours), in the cyclical irrigation mode only.

This function is useful when irrigation is only required during the hot hours of the day. For example, open window 9 am, closed window 4 pm.

7

NO PROGRAM

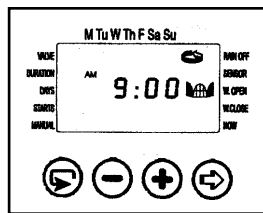
During "manual" irrigation system operation via the irrigation controller, "no prog" appears on the display, meaning that no irrigation period has been set for the valve. In this case, the irrigation controller "does not know" when to close the valve.



In this situation valve opening is disabled.

Make sure that appears on the display

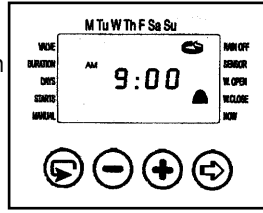
1. Press until appears on the display next to W.OPEN, with the word OFF or last OPEN WINDOW time setting displayed.



2. Press . The word OFF blinks on the display.

3. Press and to set the desired OPEN WINDOW time (pay attention to the AM/PM designation).

4. Press until appears on the display next to W.CLOSE, with the 12 am or the last close window time setting displayed.

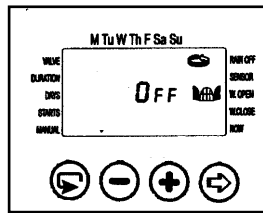


5. Press . The 12 am blinks on the display.

6. Press and to set the desired CLOSE WINDOW time (pay attention to the AM/PM designation).

To disable the irrigation window function

1. Press until appears next to OPEN WINDOW, with the last OPEN WINDOW time setting displayed.



2. Press . The irrigation window open time blinks on the display.

3. Press until OFF appears next to .

8

MAINTENANCE AND TROUBLESHOOTING

PROBLEM: Valve does not open

CAUSE: One of the following not entered: Watering time, watering days, start time
SOLUTION: Check and program as required

CAUSE: Selector on "RAIN OFF" position
SOLUTION: Cancel RAIN OFF

CAUSE: Valve or connection faulty
SOLUTION: Check the valve or replace it

PROBLEM: Sensor icon constantly flashes on display and valve does not open

CAUSE: Sensor is shorted
SOLUTION: Replace sensor or repair sensor connection

PROBLEM: Valve does not close, despite click heard during activation

CAUSE: Dirt or stones in the valve.
SOLUTION: Clean the valve

CAUSE: Valve was opened manually
SOLUTION: Move the handle to automatic position

CAUSE: Valve faulty (torn diaphragm)
SOLUTION: Replace valve or part

CAUSE: 5mm seal (O-ring) is missing between the valve and the valve coupling
SOLUTION: Install a new seal (O-ring)

PROBLEM: Display "disappears"

CAUSE: Batteries are weak
SOLUTION: Check the batteries

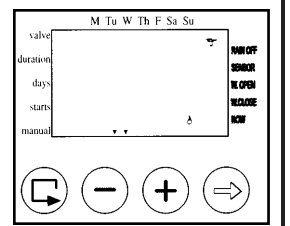
PROBLEM: Water leak from solenoid-valve adapter

CAUSE: O-ring is missing
SOLUTION: See assembly and installation

VALVE IN OPERATION

A icon will appear. If the flashes, the valve has not opened, the possibilities are:

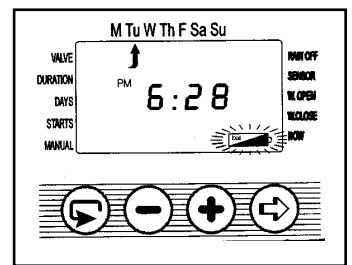
- Valve is in "short mode". The icon will flash once every 1/2 second (120 times every minute).



BLINKING LOW BATTERY WARNING

A blinking battery icon appears on the display when the batteries are weak. In this state, a limited amount of energy still remains in the batteries for valve operation, and they should be promptly replaced.

Press any button after replacing the batteries to resume irrigation controller activity. Program data will be retained for approximately 20 seconds during battery changing.

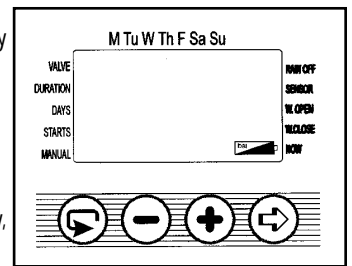


CONSTANT LOW BATTERY WARNING

When weakened batteries are not replaced in a timely manner, the battery icon appears constantly. All other display elements disappear and all valves are closed.

Replace batteries promptly, then press any button to resume irrigation controller activity.

Program data will be retained for approximately 20 seconds during battery changing.



9

DIG CORPORATION 3 YEAR WARRANTY

DIG CORPORATION warrants these products to be free from defects in material and workmanship for a period of three years from date of purchase. This warranty does not cover damage resulting from accident, misuse, neglect, modification, improper installation or subjection to line pressure in excess of 150 lbs. per square inch. This warranty shall extend only to the original purchaser of the product for use by the purchaser. This warranty shall not cover batteries or any malfunction of the product due to battery failure. The obligation of DIG CORPORATION under this warranty is limited to repairing or replacing at its factory this product which shall be returned to the factory within one year after the original purchase and which on examination is found to contain defects in material and workmanship.

DIG CORPORATION SHALL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND; THE SOLE OBLIGATION OF DIG BEING LIMITED TO REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Unattended use for prolonged periods without inspection to verify proper operation is beyond the intended use of this product, and any damage resulting from such use shall not be the responsibility of DIG CORPORATION. There are no warranties which extend beyond the description on the face hereof. In the case of purchase of the product for use other than, for irrigation purposes, DIG CORPORATION hereby disclaims any implied warranties including any warranties of merchantability and fitness for a particular purpose. In the case of the purchase of the product for personal, family or household purposes, DIG CORPORATION disclaims any such warranties to the extent permitted by law. To the extent that any such disclaimer or implied warranties shall be ineffectual, then any implied warranties shall be limited in duration to a period of one year from the date of the original purchase for use by the purchaser. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

In order to obtain performance under this warranty, the unit must be returned to the factory, along with proof of purchase indicating original date of purchase, shipping prepaid, addressed as follows:

DIG CORPORATION, 130 Bosstick Blvd., San Marcos, CA 92069. Repaired or replaced units will be shipped prepaid to the name and address supplied with the unit returned under warranty. Allow four weeks for repairs and shipping time. Repair of damaged units not otherwise within warranty may be refused or done at a reasonable cost or charge at the option of DIG CORPORATION.

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

TO ORDER PARTS:

1-800-322-9146 FAX: 760-727-0282



130 Bosstick Blvd.
San Marcos, CA 92069
www.digcorp.com/asdig
e-mail: asdig@electriciti.com
© 1999 DIG CORP 26-034

