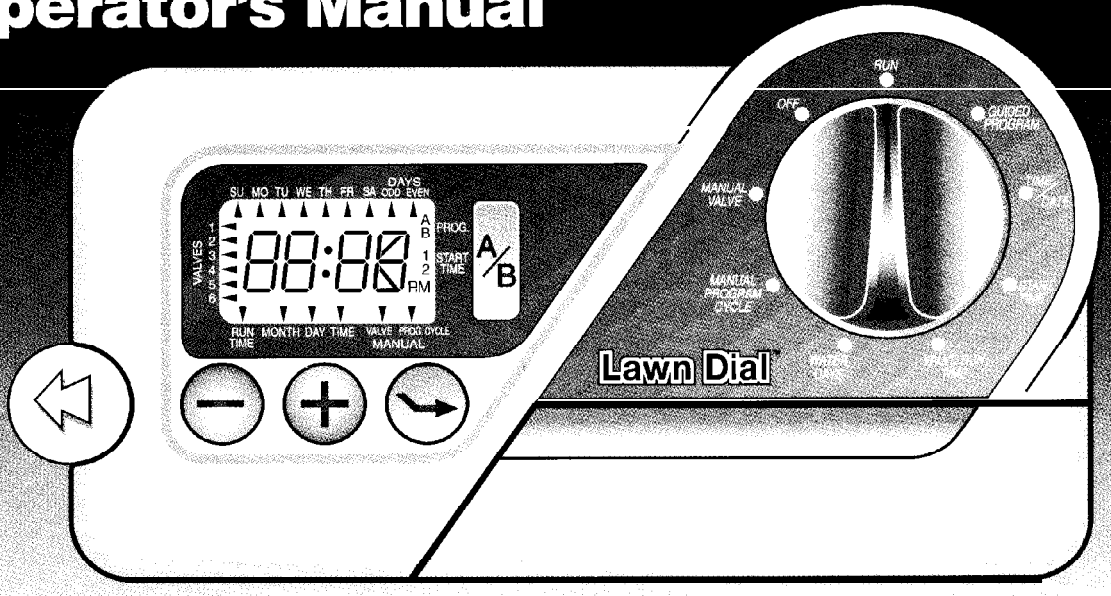
Lawn Dial
Operator's Manual



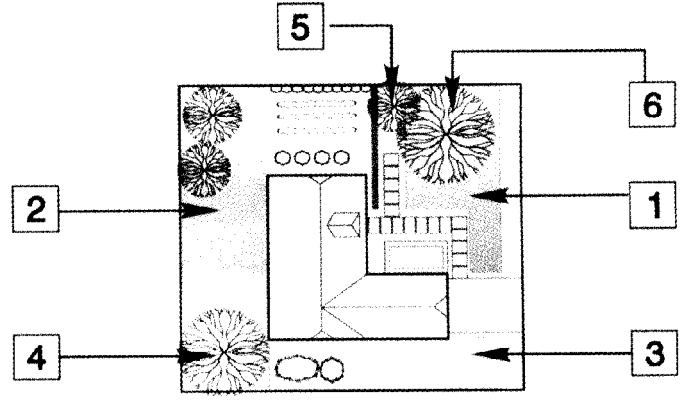
LD-4 *4 Valve Controller*

LD-6 *6 Valve Controller*

Lawn Genie
Premium Watering Systems

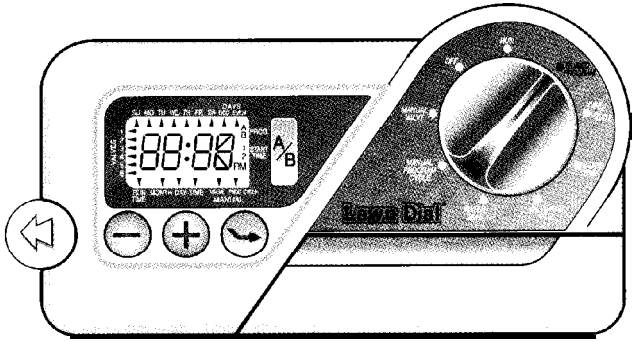
I. Introduction: What is a Watering Cycle?

Each watering cycle opens and closes all the valves assigned to a program, in sequence, starting with the lowest valve number. For example, in the sample watering plan shown, program **A** has two start times which initiate two watering cycles. All four valves in the program water in sequence, two times each day, once at 7:00am and once at 5:00pm. The LD4 is designed to operate up to four valves. The LD6 is designed to operate up to six valves. Each can be set to start two watering cycles per program. Each of the two programs are completely independent of each other giving you the freedom to include any combination of valves in each program and the ability to select different watering days and start times for each program. After programming, write your watering plan in pencil on the back of the programming reference card, located in the controller pull-out pocket. For the days you have selected in programs **A** and B. each programmed start time turns on each selected valve in sequence, from the lowest valve number to the highest valve number.



Sample Watering Plan

Program	Days	Water Start Times	Valves	Valve Run Time Duration
A	Su, Mo, Tu, We, Th, Fri, Sa	(1) 7:00am	**1,2,3,4**	10 minutes (1,3,4) 15 minutes (2)
		(2) 5:00pm		Same as above
B	Odd Days	(1) 5:00am	**4,5,6**	30 minutes each (4,5,6)



II. Guided Programming (Optional)

In guided programming, the controller display prompts you to enter data for items by flashing the appropriate A. It automatically prompts you to supply information about the current time and date, program start time(s), valve run time(s) and watering days for program **A** and program **B.** After all items are entered , an **"OK"** will be flashed five times to verify programming is complete. If you have not entered the required data during the guided programming session, the controller will flash the message "----", and prompt you for the missing data. The purpose of guided programming is to allow you to enter a program without this manual.

To begin, set dial to GUIDED PROGRAM. This will lead you through five easy ***steps*** Use the + and - buttons to increase or decrease times. Use the ↪ button to enter your selection and to advance to the next step. After setting the time and date, program **A** (or **B) A** will flash. You will be prompted to complete program **A.** If required, you may continue with program **B** by pressing the **A/B** button. After the final programming step, the controller will flash **"OK". You** will then be prompted to set-up the other program, **B** (or **A),** if desired. After all desired programming is done, set dial to RUN position to begin automatic operation.

Hint: ***Plug in 9 volt alkaline battery t allow programming at your kitchen table install controller after programming by battery.***

Guided Programming Steps

1. ***T/ME/DAET*** **-** Enter the year, the month, the date and the time. This will set the controller's internal timing. Use + and - buttons to increase or decrease values and the ↪ button to go to the next step.
2. ***PROGRAM Ar o B*** **-** Select either program **A** or **B.** Press the **A/B** button to select. Press ↪ button to go to the next step.
3. ***START TMI*** **-** Enter the program watering start time(s). Each program can have up to two start times. (Two start times allow watering twice a day.)
4. ***VALVE RUN T/ME*** **-** Enter the length of time that each valve is to run. You may select a few minutes for a light sprinkling, or you may set the valve to remain open for up to four hours for applications such as drip. (The valve is off when the run time is set to zero minutes and the display shows "OFF"). Press + or - buttons to increase or decrease the minutes of run time per valve. Press ↪ button to go to the next valve or to the next step.
5. ***WATER DASY*** **-** Enter which days should be watering days. You may select particular days of the week, all odd days or all even days. Press the + button to turn days on and the - button to turn days off. Press the ↪ button to go to the next day or to the next step.

Return the dial to the ***Run*** position after you have completed programming.

Note: ***Programs A and B - Each program is simply a set of instructions that direct which valve to run for how long and on which days. If you need four start times or extra long watering times, you will need to use both programs. However, in most cases one program will be sufficient.***

lll. Dial Programming

Use dial programming to set all elements of your program without the help of guided programming or to simply review and update existing program information.

Setting Time and Date

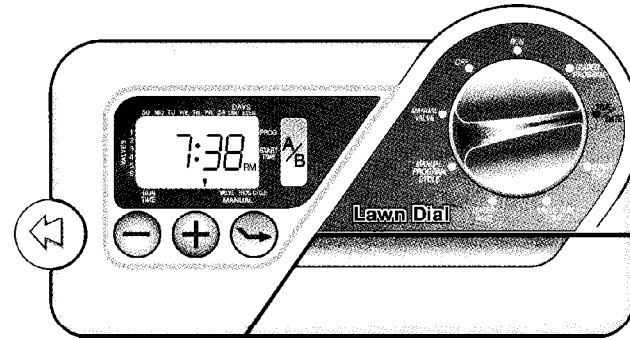
1. Set the dial to the TIME/DATE position.

2. **Year:** Use the + and - buttons to change the year.

3. **Month:** Press the ↪ button to set the month. Use the + and - buttons to change the month.

4. **Day:** Press the ↪ button to set the day of the month. Use the + and - buttons to change the day of the month. The day of the week, (e.g. Sunday, Tuesday, etc.), is automatically indicated by the A pointing to the correct day.

5. **Time:** Press the ↪ button to set the time. The hour, minute and AM or PM will flash. Use the + and - buttons to change the hour and minute time shown on the display. (Continuous pressure on the button longer than 3 seconds causes rapid change.)



Selecting Program Stati Times

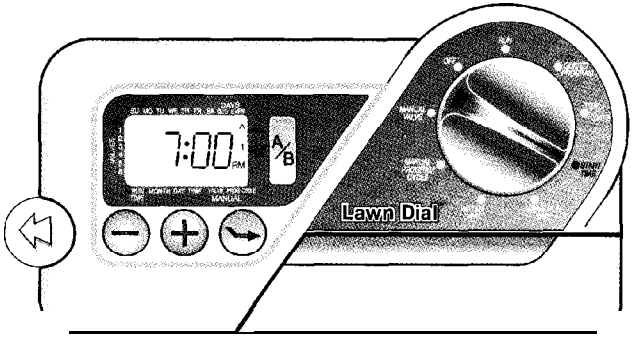
Each program has two start times available. You may use the second start time to water more than once per day.

1. Set the dial to the ***START TIMES*** position.

2. Select program **A** or **B** by pressing the **A/B** button.

3. Use the + and - buttons to change the start time. (Continuous pressure on the button, longer than 3 seconds, causes rapid change.)

4. Press the ↪ button to select the next start time.



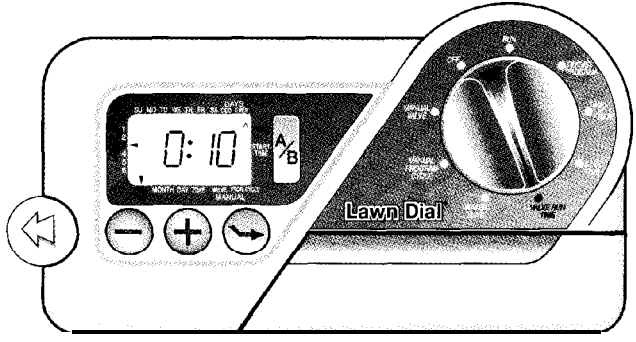
Canceling a Program Start Time

1. With the dial set to the START TIME position, use the + and - buttons to set the start time to Off, (which is between the times of 1159pm.. .OFF.. .12:00am.. .12:01 am.. .). To accomplish this, you can go forward or backward in time.
2. If a program has both start times turned off, then that program is Off. (All other program details are retained). Because there are no start times, there will be no watering with that program. This is a convenient way to stop one program without turning the dial to the ***OFF*** position. You may need the other program to water.

Setting *Valve* Run Times

Follow the steps below to program how long each valve will water.

1. Set the dial to the ***VALVE RUN T/ME*** position.
2. Select program A or B.
3. The display will flash the valve number A, the run time for that valve, and will show the program letter selected (A or B).
4. Use the + and - buttons to change the time shown on the display. (Continuous pressure on the button, longer than 3 seconds, causes rapid change.)
5. Press ↪ to advance to the next valve.
6. Repeat steps 4 and 5 for each valve.
7. You may set valve run times from zero minutes to four hours.



Selecting Days to Water

1. Set the dial to ***WATER DAYS.***

2. Select program **A** or **B.**

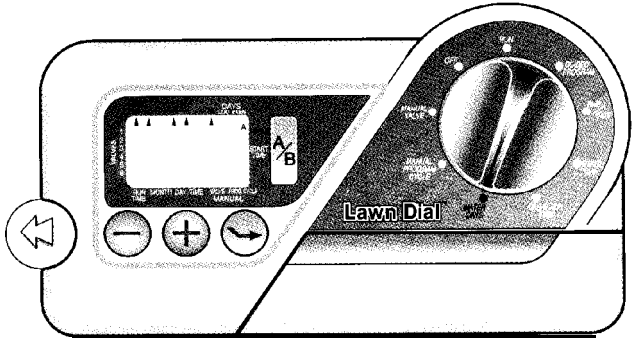
3. The controller displays currently programmed day information. This dial position provides three different water day options: specific days of the week, odd days, or even days.

Selecting Specific Days of the Week

1. Press the + button to turn on a particular day of the week to water. Press the - button to turn watering off for that day.

2. Press the ➘ button to advance to the next day of the week/

3. Repeat steps 1 and 2 until all desired days have been selected. The selected days will show at the top of the display to indicate their status as ON.



Selecting Odd or Even Days

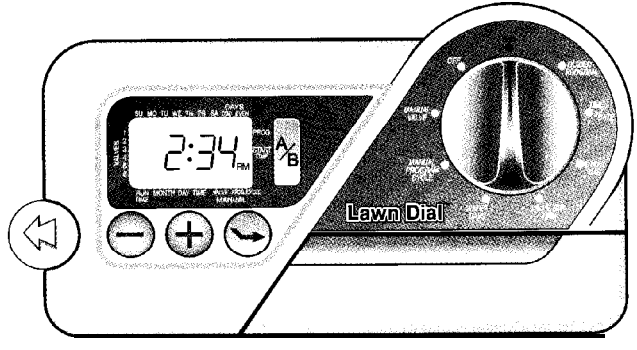
1. Press the ➘ button for **Odd Days** and once again for Even Days. The A will flash under your choice.

2. Press the + button to select or the - button to cancel either **Odd Days** or **Even Days.** The previously selected days of the week will revert to active if **Odd Days** or **Even Days** is canceled.

Note: ***The 31st of any month and the 29th of February of a leap year, are always treated as Off days in Odd Days watering.***

Run

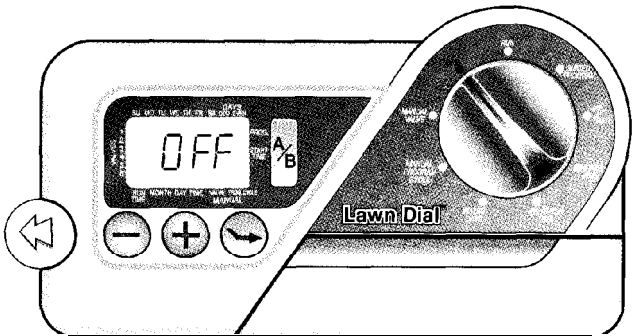
After programming, set dial to ***RUN*** to enable automatic execution of all selected programs and start times.



Note: ***During the operation you will notice a 10 second delay between the time a valve shuts off and the next valve opens. This is to prevent water pressure damage to your system.***

Off

Use this dial position to turn off watering, such as when it is raining or you don't want watering. As long as the dial is in the OFF position, watering programs will not be activated automatically. The ***OFF*** position is also used to terminate all running program **A** or B watering cycles, whether manual or automatic.



1. Set the dial to the ***OFF*** position. Valves currently watering will be turned off after dial is in ***OFF*** position for at least two seconds. All active programs are discontinued and watering is stopped.
2. To return controller to normal automatic operation, simply return dial to RUN position.

Warning: In warm weather you may experience landscape damage if the dial is left unintentionally in the OFF position for extended periods of time. Always return the dial to RUN position if automatic operation is desired.

IV. Manual Programming

Manual Program Cycle

Use this feature to manually start a program. For example, this can be used to start a program an extra time on a particularly hot day.

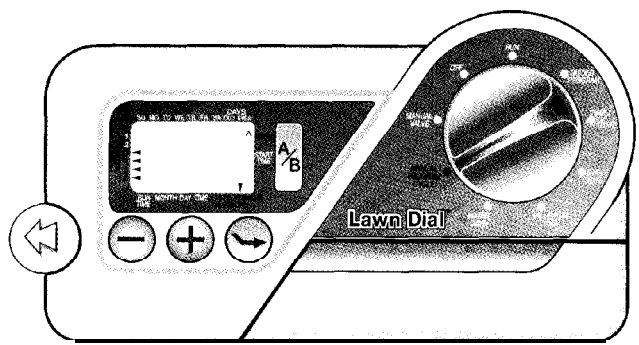
1. Set the dial to the ***MANUAL PROGRAM CYCLE*** position.

2. Select program **A** or **B.**

3. Press the + button to select manual program cycle.

4. Press the ↪ button until the desired starting valve is displayed. That valve and all subsequent valves in the selected program will water in sequence.

5. Return the dial to the ***RUN*** position to begin the manual watering cycle. Display shows **MANUAL PROGRAM CYCLE A,** program **A** or **B,** valve number A, and counts down the remaining run time for each active valve.



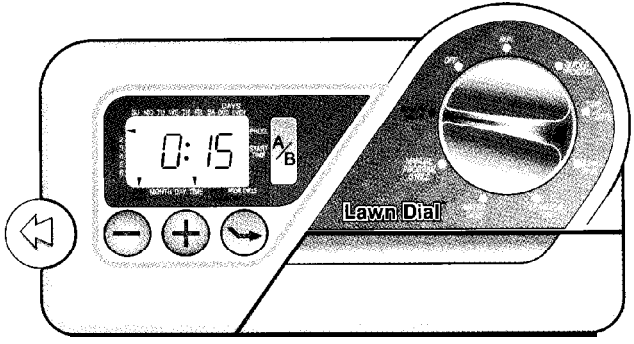
6. Turn the dial to the OFF position for longer than 2 seconds to discontinue the manual program cycle. (Always return dial to RUN position to enable automatic operation.)

Manual Valve

Use this feature to start one or more valves watering sequentially for a selected period of time.

To Select Valves for Timed Manual

1. Set the dial to the ***MANUAL VALVE*** position.
2. The valve 1 A will flash. You may use the + and - buttons to select the amount of time for valve 1 to water or skip to the next desired valve by pressing the ↪ button.
3. Select the valves to water and their watering duration by repeating step 2 for the remaining valves.



4. Set the dial to the RUN position. Valves will water sequentially for the set time with the operating valve's A blinking during its manual watering operation.
5. Turn the dial to ***OFF*** position for longer than 2 seconds to discontinue the manual valve program. (Always return dial to RUN position to enable automatic operation).

Note: ***You may advance through a running cycle by pressing the ↪ key to skip any undesired valve(s).***

V. Installation

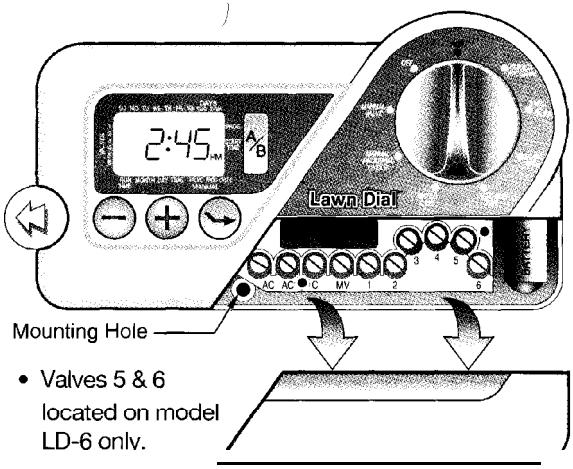
Selecting an Installation Site

Install the controller with the display at eye level. The controller ***must be mounted at least 15 feet away from your pump start relay and pump. Do not plug the controller into any power circuit serving a refrigerator, a pump or an air conditioner.***

WARNING: ***This controller is designed for indoor installation only. Installing this controller outdoors will void the warranty and may result in an electric shock hazard.***

Mounting the Con troller

1. Determine mounting height and center position. From this location mark a point 2 I/4" (57 mm) to the right and 2 I/4" (57mm) to the left. Drive a screw into the wall at each point leaving approximately I/8" (3mm) of the screw exposed. Hang the controller on the two exposed screw heads.
2. To secure the controller, remove door and drive the third screw through the bottom mounting hole in the controller.



Do not plug transformer into power source until the controller is mounted and ALL valves have been connected.

3. If you have not already done so, connect a 9-volt alkaline battery clip. DO NOT use a rechargeable battery. The display will illuminate under normal conditions. If any unexpected display characters show, simply disconnect and reconnect the battery. After a few minutes the display will go blank under battery power. Turn dial to illuminate display. The battery is designed as a memory retention feature only. Valves will only operate with power supplied by the transformer.

Connecting the Valves & Transformer

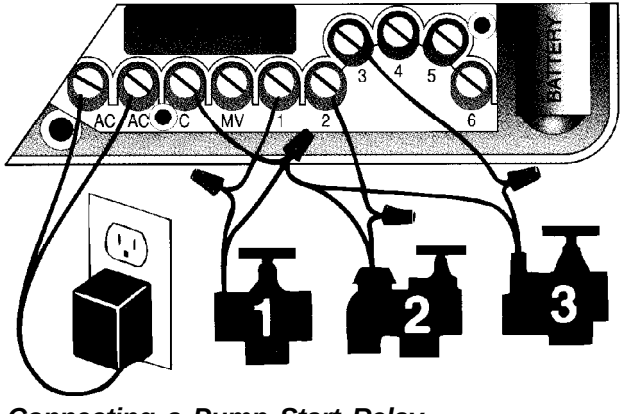
DO NOT try to connect the controller directly to an outlet. This WILL destroy the controller and may result in electric shock or fire hazard. Please use only single strand multi-colored irrigation wire for your installation.

1. Connect the transformer wires to the two screws marked AC. *Do not plug in transformer until after all valves have been connected.*
2. Connect valve #I wire to screw marked 1 and the "valve common" wire to main common wire which feeds back to the controller. Typically, you will have all of your valves grouped together. From this valve group you will send your multi-colored wire bundle back to the controller. Then, the single common wire is connected to the common terminal screw marked C. (See diagram.) In some cases, you may have more than one common wire. One from the front yard and one from the back yard. All commons get connected to the terminal screw marked C. If a number of commons are required, you may need to use a "wire nut" to combine these commons together with a lead wire. The single lead wire is then connected to the common terminal screw marked C. Back screw out until head is 1/8" above plastic partition. Bend bare copper wire in clockwise hook (only expose I/2" of bare copper from end of wire to reduce short circuiting of two adjacent wires). Slip wire hook under screw head and tighten screw until wire is secure.
3. Repeat step 2 for all valves.

WARNING: ***Make sure the power transformer is unplugged while making connections to any station or master valve/pump output terminal.***

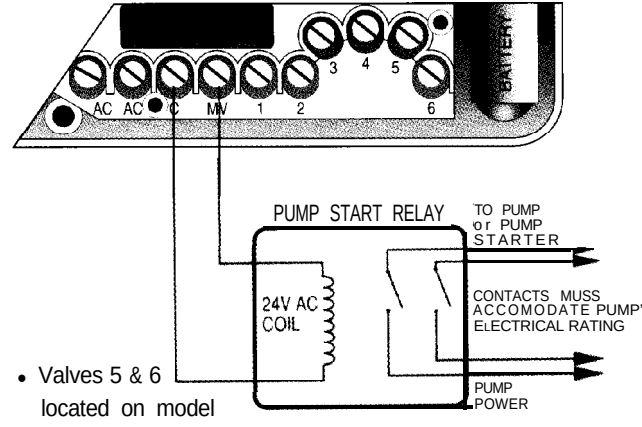
WARNING:

A maximum load of 6VA, (which is equivalent to one Lawn Genie, Hardie, or Richdel valve), may be connected to each numbered valve terminal. A maximum load of 12 VA may operate simultaneously (i.e. one valve at a time in addition to the master valve).



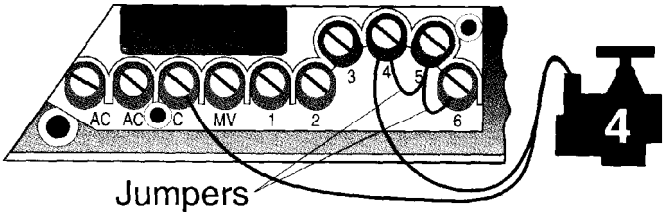
Connecting a Pump Start Relay

The controller must be mounted at least 15 feet away from both the pump start relay and the pump. When a pump is to be operated by the controller, a pump start relay must be used. The relay coil should be connected to the master valve output terminal marked MV and the common terminal C at the controller. The relay coil must be rated for 24 VAC at 250 MA maximum. The relay contacts will be connected to the pump start terminals and must be rated for use with your particular pump. (See diagram). In addition, a high pressure relief mechanism is recommended. See your pump dealer for more information.



- Valves 5 & 6 located on model LD-6 only.

WARNING: ***If a pump start is installed you must use a jumper wire from each unused terminal screw to a numbered terminal screw in use. This is critical to avoid damaging your pump, (i.e. running it dry, which may burn out the pump motor.) Neglecting to jumper all unused terminal screws may seriously damage your pump during default program execution.***



DO NOT connect the master valve output terminal directly to the pump start terminals. This WILL damage the controller.

Master Valve/ Pump Start

The Master Valve/Pump Start will operate whenever any valve is on. This allows a pump to draw water from a well or other source, or opens the master valve whenever watering occurs. The practice of using a pump is common in some areas and rare in others. (If you do not have a pump start or master valve installed, you will not notice this feature,)

Power Failures

Due to the possibility of power failures, the controller has a factory set safety default program which assures watering even if your programs have been lost due to a discharged or missing back-up battery. The default program is set to run all valves for ten minutes each, every day of the week. The default is factory set in Program **A.**

Note: You ***may change Program A to suit your needs without affecting the default. You may change all the programs to suit your specific needs, without affecting the factory default values. There is no factory default for program B.***

Note: ***This controller is only intended for use in an automatic irrigation sys tern.***

Fuse (1amp)

A replacement fuse is provided with this controller. Further replacements can be obtained from the dealer who supplied this controller.

WARRANTY

Limited Warranty: Hardie Irrigation warrants to its customers that this product will be free from defects in materials and workmanship for a period of three years from the date of purchase. We will replace, free of charge, the part, or parts found to be defective under normal use and service for a period of three years after purchase, proof of purchase required.

We reserve the right to inspect the defective part prior to replacement. Hardie Irrigation will not be responsible for consequential or incidental cost or damages caused by product failure.

For additional assistance, call our Customer Service Hot-line at **I**-800-231-5117.

FCC

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been verified to comply with the limits for a class B computing device, pursuant to FCC rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cable is likely to result in interference to radio and TV reception. This user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Lawn Genie®
Premium Watering Systems

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For Technical Support Call: I-800-231 -5117

Part Number LD-4/6 MAN Rev.B