RainJet®

Dual-Program and Single-Program Electronic Controllers
Installation and Operation Guide

➡️ *For Models RC-206P, RC-204P, RC-106P, and RC-104P*

➡️ *Please read instructions completely before attempting to install or operate controller.*

Contents

Introduction
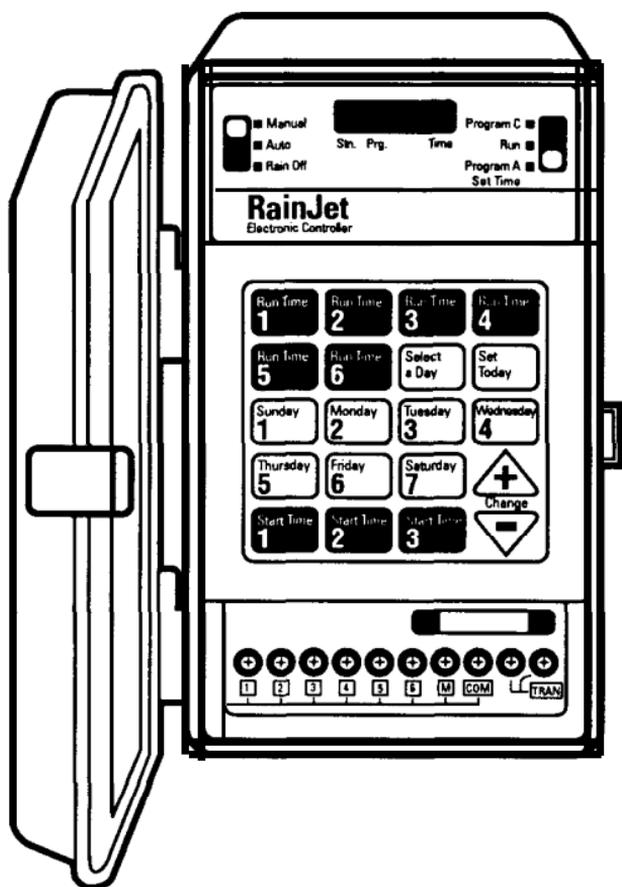
This booklet explains how to install your RainJet electronic controller and how to program it to water your yard when and where you want. It covers operation of the following four controllers:

- RC-206P (two programs, six zones)
- RC-204P (two programs, four zones)
- RC-106P (single program, six zones)
- RC-104P (single program, four zones)

For best results, follow the steps in the order shown.

Your RainJet sprinkler controller is the brains of Your automatic watering system. With it, You can water different parts of Your lawn and garden exactly when and how long they need it. Once You have programmed Your system. the controller does the work for You.

The RainJet electronic controller provides four ways to control how You distribute water to various parts of Your Yard. Here's how they work:

Zone (station) control
Lawns shrubs. flower beds and other foliage all need different amounts of water. To do this, you will divide your Yard into "zones;" these correspond to stations on the controller. Each station runs a valve and the sprinklers it controls. The controller lets You divide your Yard into as many as six stations (four stations on models RC-204P and RC-104P). Each station can be watered for a different amount of time.

Programming options (RC-206P and RC-204P only)
Some parts of Your Yard may need water every day. Other parts may need water only twice a week. The RainJet RC-206P and RC-204P models offer two programs- A and C- so You can water different parts of Your yard at different intervals, You decide which stations to water in program A and which to water in program C. For example, program A may water stations 1.3.4 and 5 every third day, and program C may water stations 2 and 6 daily.

Start times
Each program can water all the stations assigned to it up to three times a day. For example, program A could water its stations three times a day, at 6 AM, 5 PM and 11 PM, while program C waters its stations twice a day, at 8 AM and 7 PM.

Watering run times
You control how much water is delivered to each station by programming its run time. You set each station to shut off after a specified period of time--from 1 to 99 minutes.

Here's how the controller connects to your system
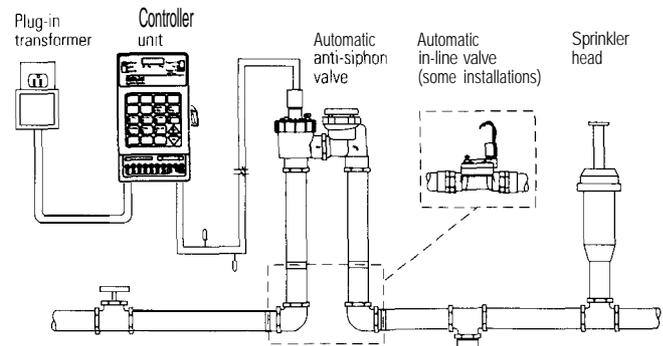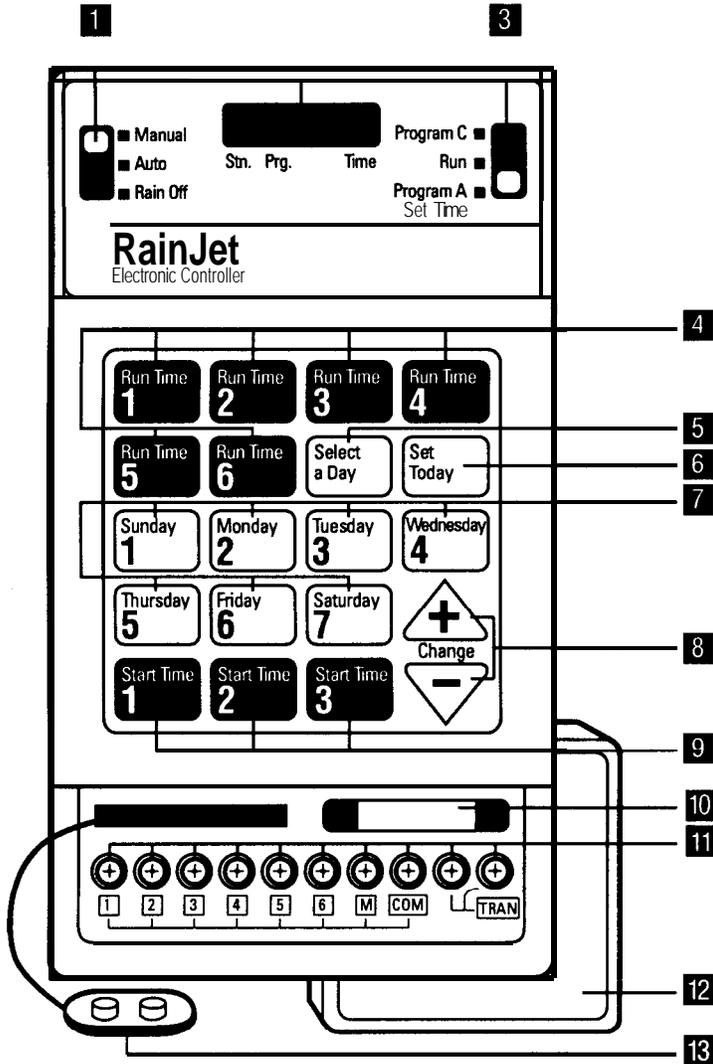
1 **Switch 1**
For selecting Manual, Automatic, or Rain Off run mode.
Manual- Used to start unscheduled watering. Station will continue to water until you turn it off.
Auto- Used during pogramming and to water according to the programmed watering schedule when Switch 2 is in Run position,
Rain Off- Stops watering any station currently on but does not affect the watering program.

2 **Display**
Shows station being watered, program, and current time of day.

3 **Switch 2**
For selecting program A or C when programming watering schedules. Also used to set current time of day (Set Time) and to run scheduled watering programs (Run).

4 Run **Time Keys**
For programming how long to water each of six stations (four stations for the RC-204P and RC-104P).

5 **Select a Day**
When ON, used for programming watering intervals (such as every third day). When OFF, used for programming days of the week to water (such as Thursdays and Saturdays).

6 **Set Today**
For setting the current day of the week.

7 **Days of the Week Keys**
Used with Select a Day key to program watering on specific days of the week or to select the watering interval (such as Tuesday-3 to water every third day).

8 + **and - Arrows**
For increasing or decreasing the display number.

9 **Start Time Keys**
Used with the + and - arrows for selecting the time(s) of the day to start watering. Each key corresponds to a different watering start time.

10 **Fuse**
By breaking the electrical circuit, it protects the controller from excessive current draw caused by solenoid or wiring shorts. Fuse must be replaced after fixing short.

11 **Terminal Screws**
For connecting valve wires to controller.

Plug-In Transformer
For converting 120-volt household current into safe, low-voltage power.

13 **Battery Connector**
For installing 9-volt battery for backup power in case of power failure.

Select the location

Choose an inside location near a standard 120-volt electrical outlet.
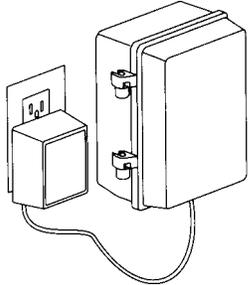
> CAUTION: 00 *NOT place the controller where temperatures may exceed 130°F. on a circuit controlled by a switch, or on the same circuit as a high power user (refrigerator, air conditioner, garage door opener, etc.) Malfunctions may result.*

Mount the controller

1. Install a screw at eye level in the wall, preferably in a wall stud. If necessary. use a toggle bolt or masonry shield. Leave I/8" of screw head projecting.

2. Slip the keyhole opening on the back of the controller over the screw head.

3. Install second screw in the notch at the base of the controller.

> *Caution: Be sure the controller is unplugged before connecting the valves.*

Wire the valves

1. Run valve wiring underground whenever possible. For lines less than 800 feet long, use I8-gauge. plastic jacketed thermostat control wire; over 800 feet, use 14-gauge wire. Your dealer can provide this wire in 2,3, 4. 5. 6.7, and 8-wire color-coded strands.

2. Connect a single common wire to one of the wires from each valve

3. Solder or join all splices with wire nuts; then seal with vinyl or waterproof cement to ensure a water-resistant connection.

> *IMPORTANT: Use 24VAC. 5VA solenoid operated valves. A maximum of two valves or solenoids per station may be on at any one time (such as two valves connected to station 4, or one station and the master valve). Current requirements should not exceed 0.32 Amp. for each solenoid.*

Connect the valve wires to controller

1. Run all valve wires up through hole in left bottom of controller case.

2. Connect the wire from valve number 1 to the terminal screw marked 1 on the controller, the wire from valve number 2 to terminal 2. and so on. This allows Your controller to water the station controlled by each valve.

3. Connect the common wire to the terminal marked COM.

4. If using a water pump or master valve, refer to page 16 for installation details.

Wires to individual controller terminals
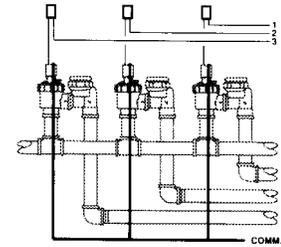
One wire from each valve connects to a single common wire running to the controller
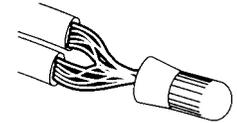
CONTROLLER
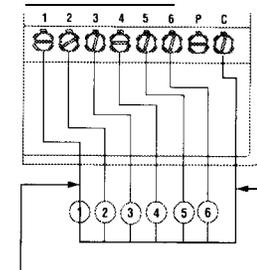
Individual wires connect valves to separate terminals

Single common wire connects all valves to COMM terminal

Connect the transformer

1. Run the power cord from the transformer up through the hole in the right bottom of controller case.

2. Connect one lead to each terminal screw marked TRAN.

3. Plug in the transformer.

> CAUTION: Use *with the supplied transformer ONLY! in* areas with **frequent power** *surges, install a surge protector (not supplied) between the* **transformer** *and outlet.*

Connect the battery

A battery backup is built into Your RainJet controller. This maintains your programmed watering schedule in case of temporary power failure.

1. Connect a 9-volt alkaline battery (not supplied) to the battery terminal.

> NOTE: DO NOT use a NiCad battey   Use alkaline battery   only.   The battery will not operate the valves.

2. Place the battery in the holder on the door of the controller   case.

3. Replace the battery at least once a Year, more often if frequent power failures occur.

> CAUTION: *DO NOT* allow *the battery connector to touch the terminal* screws. *Also, do not connect or disconnect* valve wires while *any stations are in operation.*

> NOTE: Check local codes to ensure that wiring and installation meet all requirements.
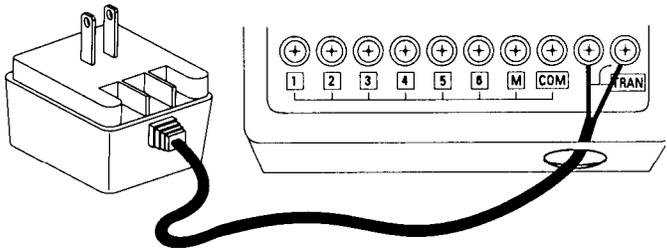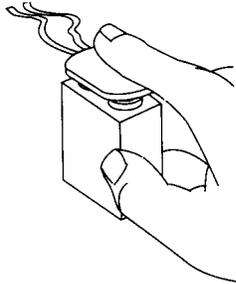
Before you can program watering schedules, you need to set the controller's clock to the current time and day of the week.

> NOTE: This controller uses military time, e.g. 7:00 AM = 700 1:00 PM = 1300.

Set the current time

Setting the current time is easy. Here's how you'd do it if the time were now 3:42 PM.

1. Set switch 1 to AUTO.

2. Set switch 2 to PROGRAM A/ SET TIME.

3. Press the + or – arrow until the current time (1542) shows in the display.

set today

1. Press and hold SET TODAY.

2. Press the + or – arrow until the current day of the week shows in the display. (SUN = 1, MON = 2, etc.)

Controller display of AM time

```
| 1 . 1 5 |
```
Stn. Prg.   Time

In military time 14:30=2:30PM

```
| 14.30 |
```
Stn. Prg.   Time

Controller displays number corresponding to the day of the week; i.e. *4* - Wednesday

```
|              4 |
```
Stn. Prg.   Time

Program C ■
Run ■
Program A ■
Set Time

Program C ■
Run ■
Program A ■
Set Time

NOTE: The information on this page applies to dual-program controllers, models RC-206P and RC-204P ONLY!
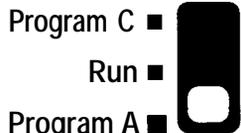
Divide up your yard

To meet the water needs of different parts of Your Yard, you can use two watering programs A and C. Each program has its own watering days and start times. Each program waters all the stations assigned to it. You decide which stations to water with program A and which to water with program C. Use program A for Your primary watering schedule (lawns, etc.).
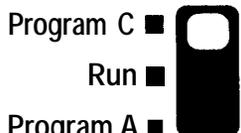
For example, You might decide stations covering lawn areas need water every third day, while stations covering shrubs and ground cover need water every day. You could assign all lawn stations to program A and all shrub/ground cover stations to program C.

Assign each station to a program

HINT: *To make programming easier, write down your watering schedule first, using the chart on the back cover of this manual.*

1. Set switch 2 to program A.

2. Follow the programming steps on pages 11 through 13 to create the watering schedule for program A.

3. Set switch 2 to program C.

4. Repeat programming steps to create the watering schedule for program C.

Program A

Program C
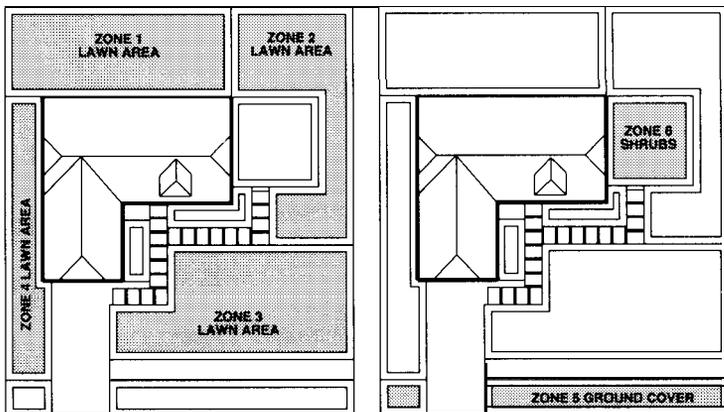
You can choose from two ways to set up watering schedules:
* Water on specific days of the week (such as Thursdays and Saturdays).
* Water at specific intervals (every other day, every third day. **every fourth day. etc.).**

    NOTE: If you have a dual-program controller [model RC-206P or RC-204P). each program can have its own watering day schedule.

To water on specific days of the week

Select a Day

O F F.

sm. Prg.   Time

To water at specific intervals

Select a Day

O n

Stn. Prg.   Time

Select the days of the week to water

To water on specific days of the week:

1. Press and hold SELECT A DAY. At the same time, press the – arrow until the display indicates OFF.

2. For each day You want watering to occur, press the corresponding DAY OF THE WEEK key and press the + arrow until the display shows ON.

3. For each day you **do not** want to water, press the corresponding DAY OF THE WEEK key and press the + arrow until the display shows OFF.

Select the interval between watering days

To water at specific intervals:

1. Press and hold SELECT A DAY. At the same time, press the – arrow until the display indicates ON.

2. Press the DAY OF THE WEEK key that corresponds to the desired interval (Sunday = everyday; Monday = every other day; Tuesday = every third day. and so forth). At the same time, press the + arrow until the display shows ON.

3. Make sure all other DAY OF THE WEEK keys are OFF. To turn off, press the DAY OF THE WEEK key and the press the + arrow until the display shows OFF.

    NOTE: **Only** *one DAY OF THE WEEK* **key** *should* display ON when pressed.

    HINT: The controller assumes today is day 1 of the interval. You can use SET TODAY to set today as another day of the interval. For example, assume you program the controller to water every third day. Watering will start day after tomorrow (controller skips day 1 and day 2 and starts watering day 3). To start watering tomorrow instead, press SET TODAY: then press 3. Now today is day 2 of the watering cycle. Watering will begin tomorrow and then water every third day after that.

Setting start times

You can set as many as three start times per day per program. (RC-106P and RC-104P controllers have only one program.) If you use all three start times, all stations in the program will be watered three times on the scheduled watering days. It is not necessary to use all start times available.

> NOTE: *If you have a dual-program controller (model RC-206P or RC-204P) each program can have its own start times (i.e.. a total of six separate start times).*

Set the start times

1. Press the START TIME **1** key and at the same time press the + or – arrow until the desired start time is displayed.

2. Repeat this procedure using the START TIME 2 and START TIME 3 keys for additional start times.

3. Set unused START TIME keys to OFF (not 0.00, which is midnight).

All stations in a program water in sequence, beginning with the lowest numbered station. Be sure program start times are far enough apart to prevent watering cycles from overlapping. If overlap occurs, the controller will skip the overlapped cycle.

Setting run times

Set the watering run time-how long to water

You control the amount of water to each station by setting the run time, that is. how long to water. Settings may vary from 1 to 99 minutes, Oepending on your controller model, you have four run times (RC204P. RC-104P) or six run times (RC206P. RC-106P). Each station has its own run time.

Stn. **Prg.** **Time**

1. Press and hold the first RUN TIME key. At the same time press the + or – arrow until the desired run time for the first station is displayed.

2. Repeat for each station you wish to water.

3. Set all stations not being used to "00."

Starting the timer

Return switch 2 to RUN and you're done!

If you have a dual-program controller and are using both programs, be sure to repeat programming steps for those stations on program C.

RainJet
Electronic Controller

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Here's how you might use your RainJet controller to program a watering schedule for a typical lawn and garden. Refer to instructions on the preceding pages for details on specific keystroke procedures.

The example is for the following watering schedule:

	Program A	Program C
Start times	6:00 AM, 5:00 PM daily	8 AM every third day
Stations	1.3.4.5	2.6
Run times	All stations 15 minutes	All stations 30 minutes

Set program A

1. Move switch 2 to program A

2. Set the watering day schedule to water every day in program A.

3. Set the start times in program A.

   a. Press START TIME 1 and the + or - arrow until controller displays "600." Watering cycle will start at 6:00 AM in station **1** and progress sequentially through stations 3,4 and 5.

   b. To set the second start time, press START TIME 2 and the + or - arrow until controller displays "1700." Watering cycle will start at 5:00 PM in station 1 and progress sequentially through stations 3.4 and 5.

   c. Set the third start time to "OFF."

4. Set run times for each station in program A.

   a. Set stations 1.3.4.5 to water for 15 minutes.

   b. Set unused stations 2 and 6 to 00.

Set program C

5. Move switch 2 to program C.

6. Set the watering day schedule to water every third day in program C.

7. Set the start times in program C.

   a. Press START TIME 1 and the + or – arrow until controller displays "800."

   b. Set the second and third start times to "OFF".

8. Set run times for each station in program C.

   a. Set stations 2 and 6 to water for 30 minutes.

   b. Set unused stations 1.3.4.5 to 00.

9. Move switch 2 to RUN.

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To connect your controller to a well pump or master valve

If your water doesn't come from the pipes of a standard public water supply, You may be using an electrically operated master valve or pump to draw directly from a well, pond, or similar source. In these cases, you'll need to make the following wiring connections so your sprinkler controller can activate the valve or pump.

> NOTE: The controller's pump output will turn on whenever a station is watering manually or automatically.

1 Bring two wires up through the same hole in the controller cabinet used for the valve wiring.

2 Connect one wire to the terminal marked M.

3 Connect the second wire to the terminal marked COM.

4. For master valve installations, connect both wires to a master valve with a 24-VAC, 5-VA solenoid.

5. For pump start relay installations, connect the two wires to an auxiliary relay with a coil rate at 24 VAC and a current no greater than 0.25 amperes. Then wire the relay's contact to supply voltage to the pump's contractor. A qualified electrician can make these connections for you.

6. To prevent pump burnout. use a jumper wire to connect any unused stations to a station terminal being used.

> CAUT'ION: Without the jumper wire, unused stations can be activated, causing the pump to run against a "dead head." This happens when power outages or a dead battery activate the "fail safe" program (see page 17). It can also happen if an unused station has programmed run time.
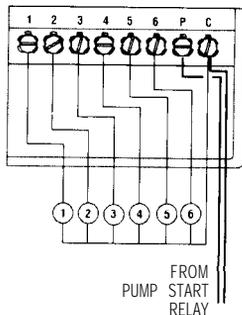
Manual watering
To water a single station at a time:
1. Move switch 1 to MANUAL.
2. Press and hold the RUN TIME key for the station you want to water (example: RUN TIME 4 for station 4). At the same time, move switch 2 to PROGRAM (in dual-program controllers, either A or C), then back to RUN. The station will continue to water until You cancel manual watering.

To cancel manual watering
1. Move switch 1 to RAIN OFF.
2. Return switch to AUTO to resume the programmed watering schedule.

Semi-automatic watering
To water all stations in a program, starting right now:
1. Move switch 1 to MANUAL.
2. Move switch 2 to PROGRAM (in dual-pogram controllers, either A or C).
3. Return switch 1 to AUTO.

> NOTE: Stations must have programmed water time to water. Each station in the program will water in sequence. When all stations in the program have been watered, the controller automatically returns to the programmed watering schedule.

Turning off the system
Move switch 1 to RAIN OFF. Any station currently watering will stop watering. Controller will remain off until switch 1 is returned to AUTO. Programming is not affected.

Fail-safe program watering
Your controller is equipped with a special program that waters all stations (program A stations only on dual-program models) even if your battery backup fails. The battery backup may fail if:
- No battery is installed
- The battery is dead
- A severe power spike destroys your watering program

The "fail safe" program waters each station for 10 minutes, starting every day at 7:00 AM.

Checking and replacing the fuse.
If the wire inside the fuse is broken. replace the fuse with a new 1 -amp, 250-volt fuse.

> CAUTION: A blown fuse may be caused by improper controller installation. Make sure the steps on page 6 have been completed correctly.

If the fuse is blown and a 9V backup battery is not installed, anything programmed will be lost. The controller uses its "fail-safe" program (see page 15). If the 9V battery is installed and a fuse is blown, the display will flash the time. Replace the fuse and press either the + or – arrow to reset the controller. Scheduled watering will resume as pogrammed.

Best water times

If possible, schedule watering cycles in the early morning, when water pressure is at highest. This allows ample time for water to soak in while evaporation and wind drift are low. Evening watering can leave foliage **damp** for too long, leading to mildew under some circumstances.

ASK YOUR LOCAL NURSERY OR GARDEN CENTER FOR A SCHEOULE SUITED TO THE SPECIAL WEATHER AND SOIL CONDITIONS IN YOUR AREA.

Trouble Shooting

Problem	Possible Cause
One or more stations do not water	1. Faulty solenoid 2. Poor wire connection 3. Possible break in wire 4. Valve flow stem screwed down too far 5. Total combined run times have overlapped with another start time
Display is flashing	1. Check fuse
Clock won't keep correct time	1. Controller on circuit controlled by a switch 2. Controller on same circuit as high power user (refrigerator, air conditioner, garage door opener, etc.)
Clock has correct time and stations appear to be functioning properly, but no valve will turn on	1. The common wire is not connected 2. Valve flow stem is screwed down too far
One station will not shut off automatically	1. Switch 1 is in MANUAL position 2. Faulty valve 3. Particles of dirt or debris are stuck in valve 4. Accidental programming of multiple start times *WARNING: Do not link two or more controllers using a common transformer or common wire.*

1-Year limited warranty

LIMITED WARRANTY
RainJet warrants to the purchaser of its products for a period of one (1) year from the date of original purchase that any defective product proved to be caused by faulty workmanship or faulty materials, when installed per instructions and used in a normal manner, will be repaired or replaced at RainJet's option at no charge, providing the product is received at the RainJet factory, or authorized factory service center, with all transportation charges prepaid within one year of the date of original purchase. This warranty does not apply to damages or malfunctions resulting from accidents, misuse or neglect. RainJet will not pay labor or other costs of removal or reinstallation of any so-called defective products.

NO IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO) FITNESS FOR A PARTICULAR PURPOSE, WHERE APPLICABLE, AND MERCHANTABILITY SHALL EXTEND BEYOND THE PERIOD OF THE EXPRESS WARRANTY DESCRIBED ABOVE. IN NO EVENT SHALL RAINJET BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES TO PROPERTY WHICH MAY ARISE FROM OR RELATE TO THE PURCHASE OF ANY RAINJET PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so one or both of the above limitations may not apply to you.

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

To exercise your warranty, send unit, with photocopy of dated receipt, postage prepaid to:

RainJet®
788 Fairview Drive
Carson City, Nevada 89701
(702) 882-6786
(800)231-5117

Zone Legend

Station	Watering Days	Run Time	Location
1			
2			
3			
4			
5			
6			

Program	Start Times
A	
C	

RainJet®/ Lawn Genie"/ Drip Mist"

Hardie Irrigation
A James Hardie Company

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