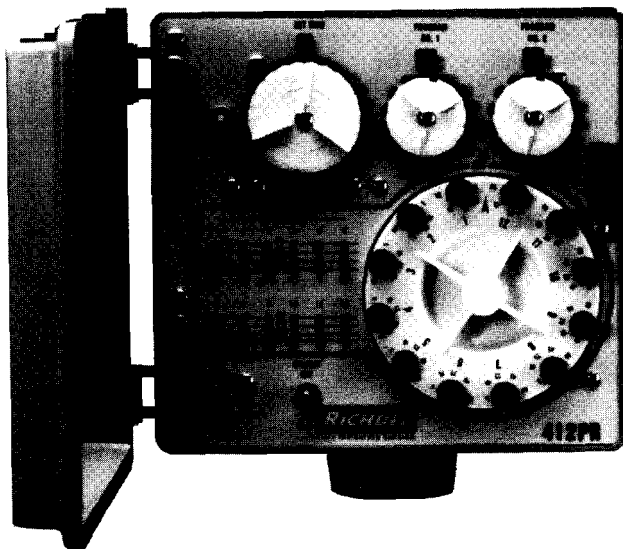


# Hardie™

## 12 STATION OUTDOOR CONTROLLER



INSTALLATION AND OPERATING GUIDE  
MODEL 412PR

# INSTALLATION INSTRUCTIONS

The 412 PR is a 12 station controller that can be set to water from twenty-four times a day to once every two weeks. The watering time can be adjusted from approximately 5 to 60 minutes for each circuit. The controller is in a weather resistant case that can be mounted on a two inch pipe pedestal or against a wall with wood screws. The controller has a lockable cover, with two keys, to discourage unauthorized adjustment.

## STEP 1: WALL MOUNTING

Open the cover of the controller and open the panel by unscrewing the latch screw (see Figure 3). Disconnect the wiring connector and rotate the panel until it can be lifted up off the hinges. Punch through the three mounting holes so No. 8 wood screws can pass through the back of the case. Place the empty controller box against the wall and screw the No. 8 wood screws through the back and into the wall.

NOTE: To install the timer on a plaster or masonry wall, use plastic or lead shield to secure screws.

## STEP 2: CONNECT THE TRANSFORMER

Using the 7/8 inch conduit hole in the bottom of the cabinet, run the 120V AC power wires into the wiring cavity. Remove the Caution High Voltage plate and use wire nuts to connect the white wire as the common, the black wire as the power, and the green wire as earth ground.

CAUTION: **Make sure** the 120V circuit breaker is turned to the Off position prior to wiring the controller.

After the electrical wires are attached, replace the Caution High Voltage plate before turning the circuit breaker on.

## STEP 3: CONNECT THE VALVE WIRES

Run the valve wires through the 2 inch hole and connect them to the terminal strip inside the controller. Connect the wire from valve No. 1 to the terminal marked No. 1, valve No. 2 to terminal 2, etc. (see Figure 2). Connect the valve common wires to any terminal marked C. If the valve wires are to be run through a conduit, a conduit junction box can be used by placing a reducer (from 2 inch on one end) and screwing the 2-inch reducer into the hole.

## STEP 1: PEDESTAL MOUNTING

The pedestal should be mounted on a level concrete base about 10 x 10 x 8 inches with the top of the concrete base at least two inches above ground level. Position a 2-inch elbow and a 1/2 inch conduit in the concrete form as shown (see Figure 1). The elbow and conduit must be in position before the concrete is poured. Four hold down bolts must be positioned in the concrete before it sets. Feed the 120VAC power wires through the conduit. Screw the 2-inch pedestal pipe into the controller and run the ring nut up tight against the controller to lock its position on the pedestal. Do not use pipe dope as a sealing compound.

Lower the controller with pedestal attached down upon the concrete base, at the same time feeding the conduit with power wires inside into the controller's conduit opening. Secure the conduit to the controller and tighten pedestal base nuts.

## STEP 2: CONNECT THE TRANSFORMER

Open the cover of the controller and loosen the latch screw (see Figure 3) to swing out the control panel. Remove the Caution High Voltage plate and use wire nuts to connect the white wire as the common, the black wire as the power, and the green wire as earth ground.

CAUTION: Make sure the 120V circuit breaker is turned to the Off position prior to wiring the controller.

After the electrical wires are attached, replace the Caution High Voltage plate before turning the circuit breaker on.

## STEP 3: CONNECT THE VALVE WIRES

Run the valve wires through the 2-inch pedestal pipe and connect them to the terminal strip inside the controller. Connect the wire from valve No. 1 to the terminal marked No. 1, valve No. 2 to terminal No. 2, etc. Connect the valve common wires to any terminal marked C (see Figure 2).

## STEP 1: VALVE WIRING

Wiring to the valve can be placed underground alongside the pipes. Use approved underground type wire and be sure all splices are soldered or jointed with wire nuts and sealed with vinyl cement or other suitable water-proofing cement. Use 18 gauge solid wire plastic jacketed thermostat control wire for runs up to 800 feet and 14 gauge for runs over 800 feet.

IMPORTANT: The power rating of the transformer is 40VA at 24V and is protected by a circuit breaker. Do not connect more than 2 valves to each circuit or use a valve that requires more than 1 amp at 24VAC.

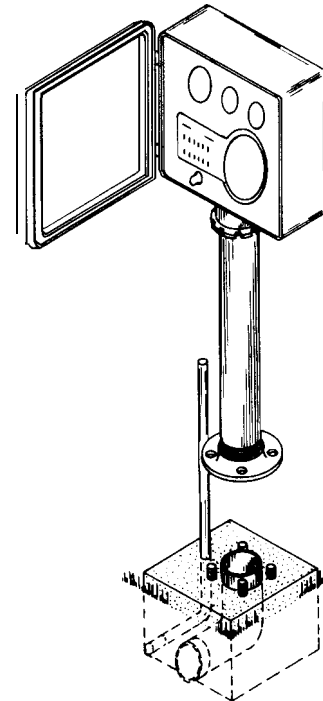


FIGURE 1

# NIGHT WATERING & PUMP USE

## STEP 2: PUMP START RELAY WIRING

When a pump is to be operated by the controller, a pump start relay must be used. The relay coil must be connected to the terminal marked "P" and to one of the common terminals marked "C" (Figure 2.) The relay coil should be rated for 24 VAC, 60Hz at 9.0 VA maximum.

In addition, for systems operated by a pump, we recommend installing a high pressure relief valve matched in flow and pressure to the system and pump. Please consult a qualified pump dealer for information and details.

**Caution:** To prevent pump damage in the event the controller reverts to the default program after a power outage, use a jumper wire to connect unused stations to a station that is being used. If unused stations are not jumpered, when they are turned on by the default program, the pump will operate with no flow (dead-head), and the pump could overheat, burn out, or burst a pipe.

FIGURE 2

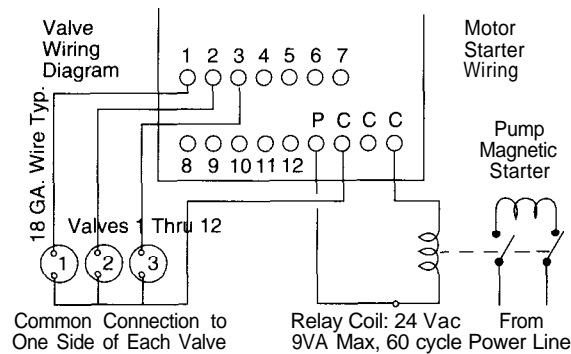
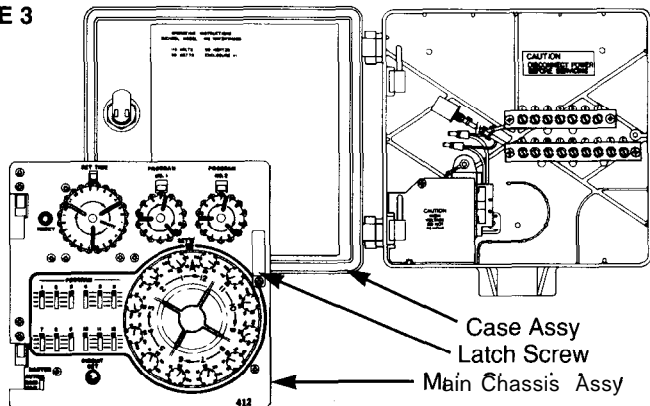


FIGURE 3



It is possible to change the 412PR's day changeover time from 12:00 AM (midnight) to 12:00 PM (noon). This will alleviate any watering problems that arise if there is a need to water past midnight.

## INSTRUCTIONS

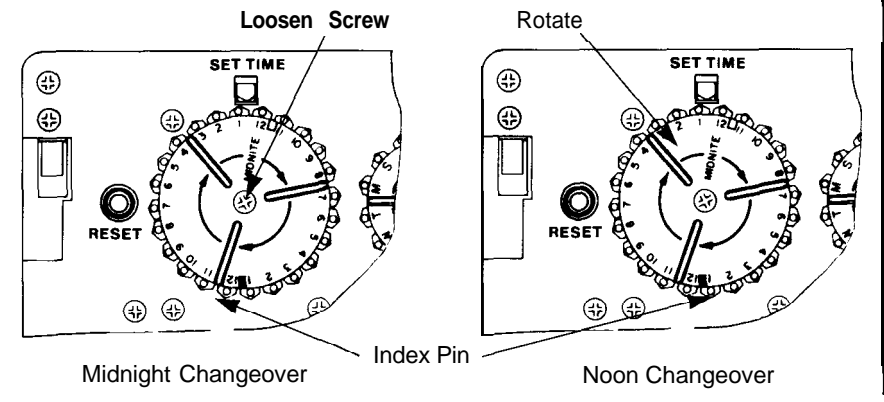
To have the day changeover occur at 12:00 PM (noon):

1. Lay the controller down on a flat surface.

CAUTION: Controller must lay flat.

2. Loosen the screw that holds the "set time" wheel about two (2) turns. Do not remove the screw.
3. Pick up the numbered dial plate and gently rotate it until the notch at 12:00PM (noon) is aligned with the black index pin.

FIGURE 4



4. Set the dial plate into position and tighten the screw. Do not over tighten.

REMINDER: Be sure that your combined watering times end before the day changeover occurs. Any remaining cycles will be **cancelled** at that time.

# OPERATING INSTRUCTIONS

## STEP 1: TO SET TO CURRENT TIME OF DAY]

Rotate the Day Dial (1) clockwise until the current time of day lines up with the point of the Day Switch Arm (2).

## STEP 2: TO SET THE PROGRAM DIALS (Skip-a-day)

Rotate the Program 1 Dial (3) clockwise until the current day lines up with the center of the Program Switch Arm (4). Program 2 Dial (5) will rotate with the Program 1 dial.

## STEP 3: TO SET WATERING START TIME

Pull the Day Dial's Switch Lug (6) out at the time of day watering is required to start. More than one Switch Lug may be pulled out for multiple waterings in a 24 hour period. All other Switch Lugs must be pushed in so they will not start the Day Switch Arm.

## STEP 4: TO SET THE WATERING PROGRAM

Pull out Program 1 and Program 2 Dials' Switch Lugs (7) representing the days of the week of watering for both programs. All other lugs must be pushed in so the Program Switch Arms will not be started on days to be skipped.

## STEP 5: TO SET PROGRAM CIRCUIT SWITCHES & CIRCUIT WATERING TIMES

Place each of the twelve Circuit Switches (8) to the desired program: Program 1, Program 2, or Off. Before adjusting the watering time, place the Master Switch (9) in the Rain position. Each of the twelve circuits can then be individually adjusted for watering time. To change the time simply rotate the selected Circuit Timing Knob (10) until its raised line matches up with the minutes required on the Circuit Selector Wheel (11). If while making these adjustments the Circuit Selector Wheel is moved off of its set point, it must be returned to the set point before placing the Master Switch to its Automatic position. Rotate the Circuit Selector Wheel clockwise until its pointer lines up with the solid mark to the left of the Set Arrow. When the Master Switch is placed in Automatic, the wheel will move to its set position and stop.

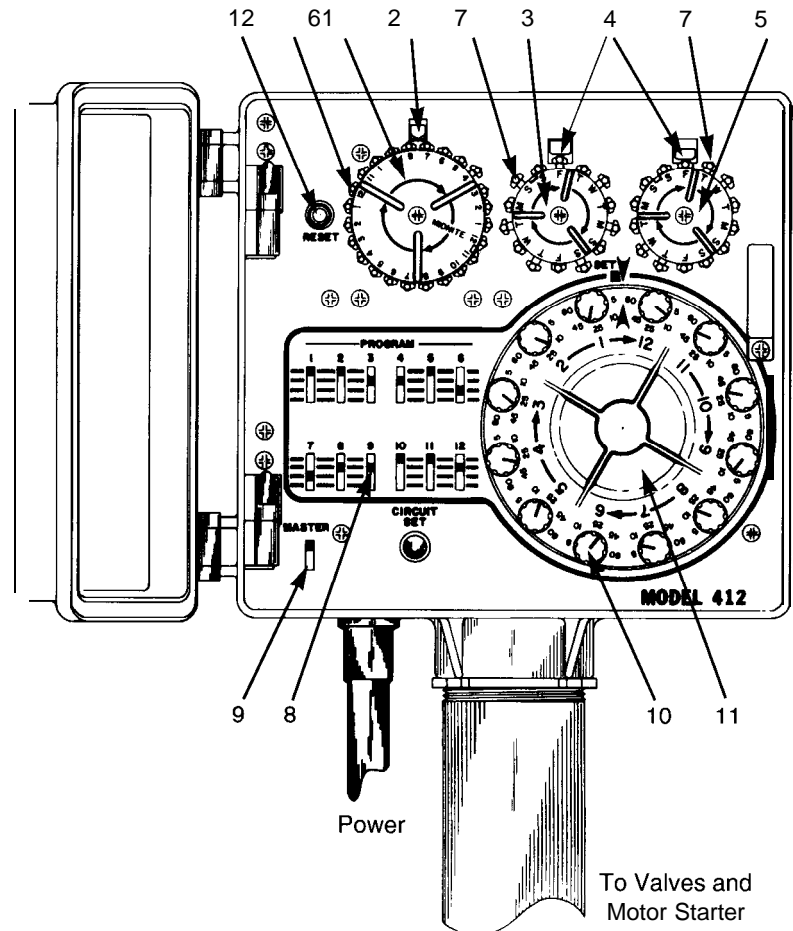
CAUTION: Move Selector Wheel clockwise only.

## STEP 6: MASTER SWITCH

For programmed watering, move the Master Switch (9) to the Automatic position. To shut down the system (rain), move the Master Switch to the Rain position. For manual watering, move the Master Switch to the Manual position, then move the desired Program Circuit Switch to the Manual position. The selected circuit will run as long as both switches are in their Manual positions. If the Master Switch is moved back to the Automatic position and an automatic cycle starts with a Program Circuit Switch left in the Manual position, the Circuit Selector Wheel will move past the circuit without watering.

## STEP 7: CIRCUIT BREAKER

A tripped circuit breaker (12) indicates an electrical problem in the wiring to the valves or in the valve. If the circuit breaker trips, the controller will stop on the circuit causing the problem. To reset the circuit breaker, push the Reset button.



## ZONE LEGEND

ZONE	TIME	LOCATION
1		
2		
3		
4		
5		
6		

ZONE	TIME	LOCATION
7		
8		
9		
10		
11		
12		

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:

- Re-orient 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 shielded cables is likely to result in interference to radio and TV reception.

The 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.

James Hardie Irrigation offers an entire family of products  
for commercial and residential applications:

Controllers and Controller Accessories

Valves and Valve Accessories

Sprinklers, Nozzles and Sprayheads

Micro (Drip) Irrigation Components



James Hardie  
Irrigation

Product Inquires  
27631 La Paz Road  
Laguna Niguel, CA 92656

Manufacturing  
9455 Railroad Drive  
El Paso, TX 79924