

Controlling the amount of water used in irrigation is key to an efficient system that will keep the watered areas healthy without using an excess. Apart from the obvious environmental and conservation considerations, using excessive amounts of water can be expensive.

The controller we are using is one of Rainbird's E series which gives us the capacity to control up to six different zones with a choice of three programs. More of this later, the control of flow starts way back with the selection of the equipment that will carry out the actual watering. In this series we have concentrated on watering lawns with pop-ups. In future issues we will move onto borders and hanging baskets/pots, which require different watering regimes but for now we shall confine ourselves to the pop-ups.

In the last issue we looked at the way you set up Rainbird's 5000 series pop-ups to meet the radius and rotational requirements of the lawned area.

We also touched on the problems of different pop-ups being set to different arcs, meaning one pop-up could be watering at a much higher rate than another. This is where control starts. It is essential for all areas to receive a similar volume of water. Golf courses and top landscape projects often call for a watering rate of 24-28Lpm² per

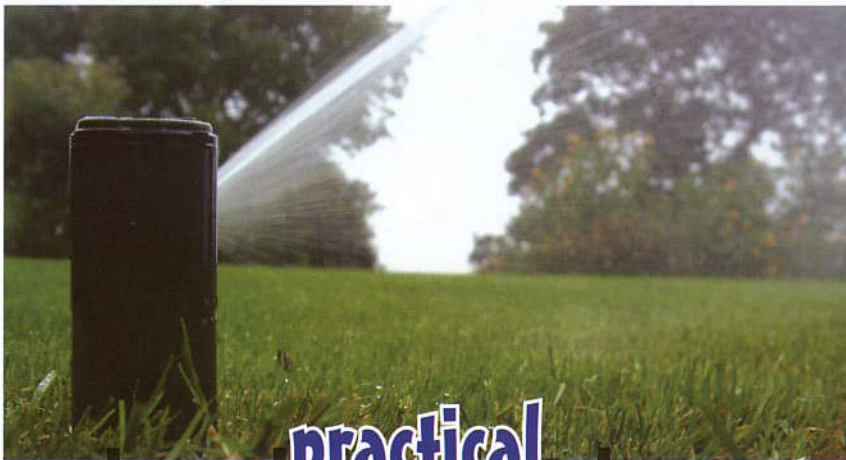
week (litres per square metre - this is also given as 24-28mm which is the same). For projects that don't have the same demand as your average golf green, such as general landscaping and domestic uses, then a more realistic figure is 10Lpm². This is the sort of figure your irrigation supplier will work to when calculating the requirements for a particular job.

In practice, what this means is that each pop-up needs to be set to achieve this rate. We covered setting last issue

so I won't delve into that again, but one point I didn't cover was what to do in those situations where it isn't possible to reasonably match the area each pop-up is covering. In Rainbird's case, there are special nozzles available to, for example distribute only half the volume for a given radius as the pop-up is only going to operate for half the angular movement. Check this out with your supplier if you are concerned, but basically it allows you to have the odd pop-up covering a very different pattern to the other pop-ups.

The pop-up manufacturer will supply a table which will indicate the volume of water that will be delivered by each sprinkler depending on flow, pressure and the nozzle used. In our case, we have 5 pop-ups, we are using number 2 nozzles and we have it split into two zones (2 pop-ups on one zone and 3 on the other). The reason we haven't placed all 5 on the same zone is that we haven't the flow to feed all five at the same time effectively. This is one of the benefits of a controller that offers multi-zones - you can split the watering to suit your supply.

I don't want this article to get carried away in calculations because it isn't an exact science. Our pop-ups are all set to water at 11m radius and with arcs between 90° and 120°. I am not suggesting I look at special nozzles because of the difference in arcs. All the sprinklers go head to head so this amount of angular difference should



practical irrigation 5

With all the plumbing in place the only thing left to do is work out how much water you need and the watering regime you plan to follow. Then it's just a matter of wading through the Rainbird instruction manual and set the programs as required.

Rainbird's Ec controllers

This series of controllers is aimed at the residential landscape market and offers features that would have previously only be found in top end systems. On our model, the EC6 you not only have 6 independent zones you can control but you have three different regime functions. This means you can have lawns being watered with a lot of water once a week and still have your baskets being watered with very small amounts every hour for example. The facility to program makes for a very flexible system.

What Is a Program?

According to Rainbird's instruction book, programming is the process of telling the controller exactly when and how long you want to water. The controller opens and closes the remote control valves (which we covered in a previous article according to the program you set. Rainbird's Ec has three separate programs; A, B, and C. Each program controls from one to six zones, and lets you customize your watering schedules to meet the needs of different types of plants, soil conditions, slopes, shady or sunny areas, etc.

The terminology you need to understand to program a controller includes:

Watering day cycle

The period of days in which the controller repeats the program you set.

Watering days

The specific days within the watering day cycle when watering takes place.

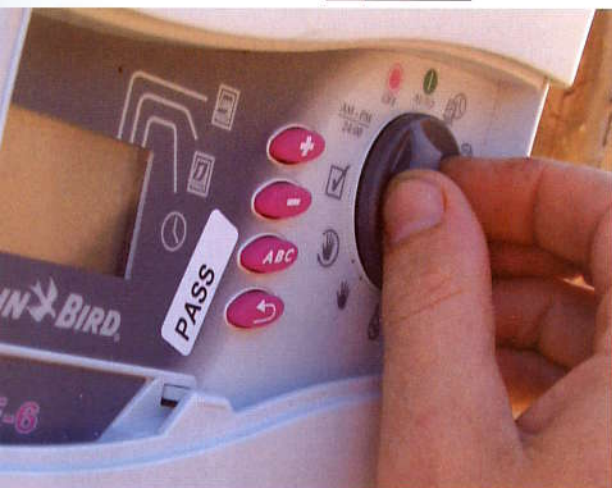
Start time

This is the time, or times, the first zone in a program begins watering. All other zones in the program then follow in sequence.

Run time

The number of minutes that each zone runs





Programming the controller is not that complicated and once done is easy to vary or to override manually as required. So, provided the capacity is there - you shouldn't go wrong!

be OK, as the coverage from adjacent sprinklers will even out the variations caused.

My supply is provided by its own pump, a Dab 81M. According to Rainbird's chart, my sprinklers, in one hour will distribute approximately 450L each at 3 bar on the zone with 3 pop-ups and 490L each at 3.5 bar on the 2 pop-up zone. I know the size of the lawn is approximately 250m² and I want to achieve a watering rate of 10Lpm² each week. The requirement from the five sprinklers will be 2500L per week or 500L from each sprinkler. It isn't hard to see the sprinklers need to run in the 3 pop-up zone for a little over an hour each week and the 2 pop-up zone for just the hour. This is as accurate as it need to be. You can get the calculator out and work out that it is one hour and 6.667 minutes for the 3 pop-up zone, but it really isn't that critical.

Now we know how long we have to water for, we

have to decide what our regime will be. If you are just wanting to keep a healthy, good quality lawn, then a weekly watering for the hour required is probably best as a good soaking means roots will be driven down to get the water. On the other hand, if the ground is very free draining, then it may be better to split the hour into two half hour stints or three 20 min stints. Perhaps there is a lot of clay and a full hour would cause water logging. Maybe it would be better to run four 15 minute sessions throughout the week. The beauty of programmable controllers is that the regime can easily and quickly be changed and fine tuned. The soil at this location is free draining so I going to set the controller to water for half and hour twice a week.

We tend to get our fair share of rain in this country and it is pointless watering wet grass. To solve this I am installing a rain sensor, so should

nature have already done the job, the controller will not operate the sprinkler. Rainbird's rain sensor can be adjusted to hold anything from 5mm to 20mm. This allows the unit to be adjusted for areas of low infrequent rains to areas where heavy rains are more commonplace. On the lower settings, a very light rainfall will operate the sensor and stop the controller from watering. There is also a vent ring which can be adjusted to vary the length of time, after rain that the sensor will operate. At the time of writing I hadn't had this working so I will see how effective it is and report back.

In the next issue we shall recap on what has happened so far before moving onto watering hanging baskets and troughs. In the meantime, anyone with questions can email me on chris@tecpublishations.com



A rain sensor will ensure that watering only takes place when it is required. Rainbird's sensor is adjustable to allow for different climatic conditions.

We are not alone

When I started this series, I had not carried out any previous irrigation installation.

I have found the process relatively straight forward, thanks to the help and expertise of Simon Edginton, General Manager at Landscape Watering Systems Ltd.

The key to getting it right is to use people who know what they are doing.

LWS looked at what I wanted to achieve, and designed the system for me - it was all very simple. Simon gave me the answers to the majority of 'stupid' questions before I had even thought of them, and when those moments arose where I couldn't see the wood for the trees, a quick phone call soon put me straight. Simon explained, "It is essential that we provide a support package to customers which includes system design and installation training."

I can personally recommend the services of LWS from experience but there are a plenty of professional suppliers to the trade, who should be happy to give you this level of service.

LWS can be contacted on: 01722 716 969 www.lws.uk.com