



POPE DIY GUIDE



INSTALLATION OF LAWN POP-UPS

BASIC IRRIGATION SYSTEM

To help you better understand what your irrigation system is made of, and how it will operate, take a look at the following diagram. The following components will bring your system to life. This guide will focus on lawn pop-ups.



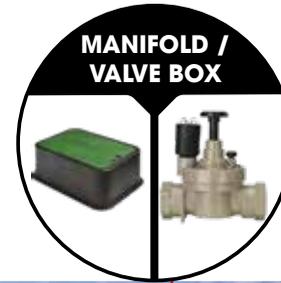
The controller is the "brains" of the system. It determines which watering zone operates, when it turns on and how long it runs for. External controllers are fine to be mounted outside in the weather, but should be mounted close to a 240 volt power source.



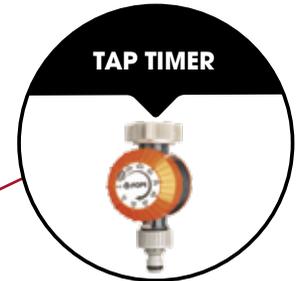
Drip Eze tubing is the most efficient way to water garden beds and other small areas. It is made up of inbuilt drippers at fixed flow rates, which are placed at fixed spacings to give even coverage throughout the garden bed.



Drippers and sprays are two different ways to water small parts of your garden. A dripper will slowly release water over time that sinks deep within the soil. This is better for established plants with deeper root bowls, in windy areas. Sprays involve spraying water over a small area in an uncontrolled manner. This is great for getting leaf and top soil coverage. Perfect for ferns or other plants that have leaves built for catching water droplets.



The manifold/valve box is a sealable box that is mounted in the ground on a bed of pebbles. The valve manifold sits inside this, with outlets to all of your watering zones. Manifolds consist of a PVC or poly manifold and multiple solenoid valves. These are the gateways of water to your zones and are controlled by irrigation cable that is run from the controller. The manifold/valve box can be mounted in the most convenient location for your installation, but should be located centrally to all your zones.



Tap timers offer basic operation to your irrigation system. They don't require any additional valves or wiring so are often considered an easy way to get into automated watering. They can be connected to a standard garden tap and often come with 25mm/20mm adaptors. You can remove the bottom 12mm hose connector and add tap nuts, directors or pressure reducers. They don't offer as much individual programming so may not suit complicated watering setups.



Pop-up sprinklers are designed to distribute water evenly over lawn surfaces. The spray mimics a soaking rain. Pop-ups normally have 15mm inlet threads and come with variable arc nozzles or fixed spray nozzles. Both have various throw characteristics. Pop-ups should be placed evenly apart with the spray reaching from the head of one sprinkler, to the head of the next sprinkler. This ensures full coverage and no dry spots.

Pop-ups are the ultimate in water delivery systems for your lawn and garden. They offer great usability while being concealed when not in use and are specifically designed as part of a system to offer maximum water efficiency. Pop-up sprinkler systems are ideal for many different types of gardens. They can be used to water grass areas to flower beds and borders too.

CALCULATING YOUR FLOW RATE

How many sprinklers your system can run at one time depends on how much your home can supply. Your flow rate will determine the total number of pop-up sprinklers you can use at any one time. Different pop-up sprinklers will have their own flow rate. An easy way to calculate your flow rate is by doing a bucket test. All you need is your garden tap, a standard 9 litre bucket and a stopwatch. Before you start, make sure you measure your water flow at times of peak water usage. If using a tap timer or pressure reducer, make sure you measure the flow with the device fitted.

BUCKET TEST INSTRUCTIONS

- 1 Place your 9 litre bucket under your garden tap, and turn the tap on full boar.
- 2 Using your stopwatch, time how long it takes the water to reach the 9 litre mark.

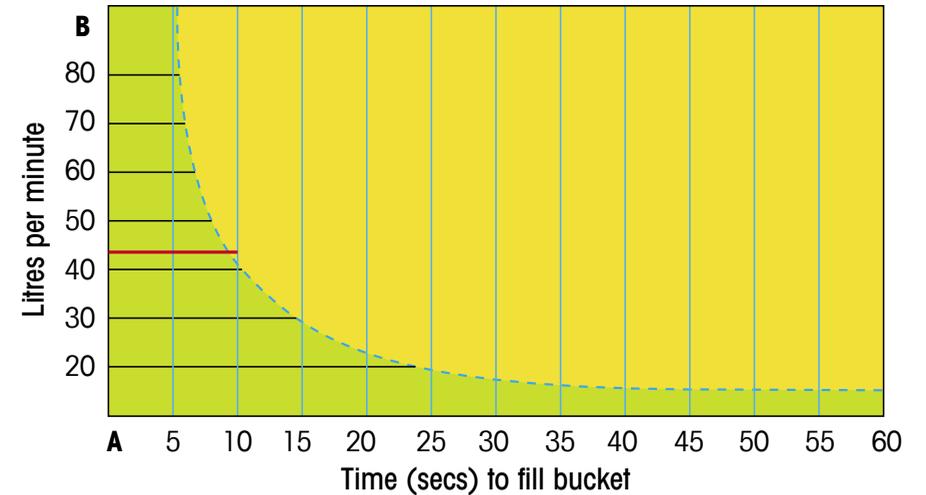


- 3 Use the following formula to calculate the flow rate:
 $60 \div (\text{seconds taken to fill bucket}) \times (\text{bucket size in litres}) = \text{flow rate}$
 E.g. $60 \div 12 \times 9 = 45$ litres per minute

You can also use this chart to determine your flow rate.

For example, if it takes 10 seconds to fill your 9 litre bucket, move along the horizontal axis of the chart (A) to the 10 second point to the dotted line, and across the horizontal red line to the vertical axis of the chart (B).

This shows that your flow rate is 43 litres per minute.



Note: It's important to ensure that when the flow rates for each pop-up sprinkler are added together, the total flow rate (or litres per minute) does not exceed your garden taps flow rate.

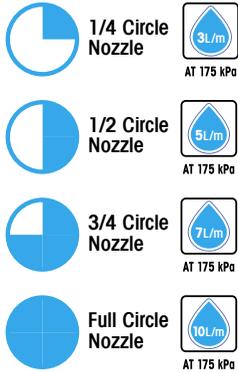


Selecting the Most Suitable Pop-up Sprinkler



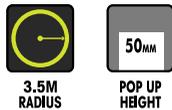
MASTER

SUITABLE FOR SMALL LAWNS



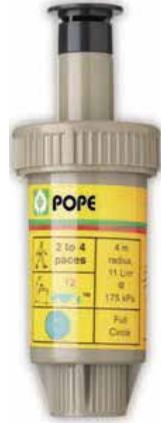
FEATURES

- Fixed spray pattern.
- Available in 1/4, 1/2, 3/4 or full circle patterns.
- Suitable for small lawn areas.
- 50mm pop-up height.
- Adjustable spray radius.



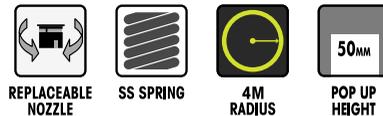
PROFESSIONAL

SUITABLE FOR SMALL TO MEDIUM LAWNS



FEATURES

- Fixed spray pattern.
- Uniform coverage.
- Low maintenance.
- Available in 1/4, 1/2, 3/4 or full circle patterns.
- Suitable for small or medium lawn areas.
- 50mm pop-up height.



PRECISION

SUITABLE FOR SMALL TO MEDIUM LAWNS



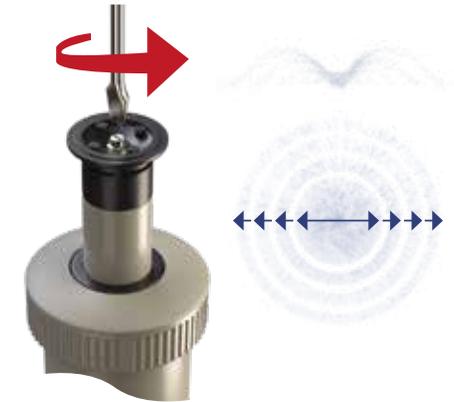
FEATURES

- Variable arc nozzle.
- Adjustable pattern nozzle for greater water flexibility.
- Pattern adjustment from 0° to 360°.
- Uniform coverage.
- 50mm and 75mm pop-up height.
- Suitable for small to large lawn areas.



ADJUSTING SPRAY

Use a screwdriver to adjust the water flow for the Master, Professional and Precision Series. To reduce the throw, turn screw to the right. To increase, turn screw to the left.



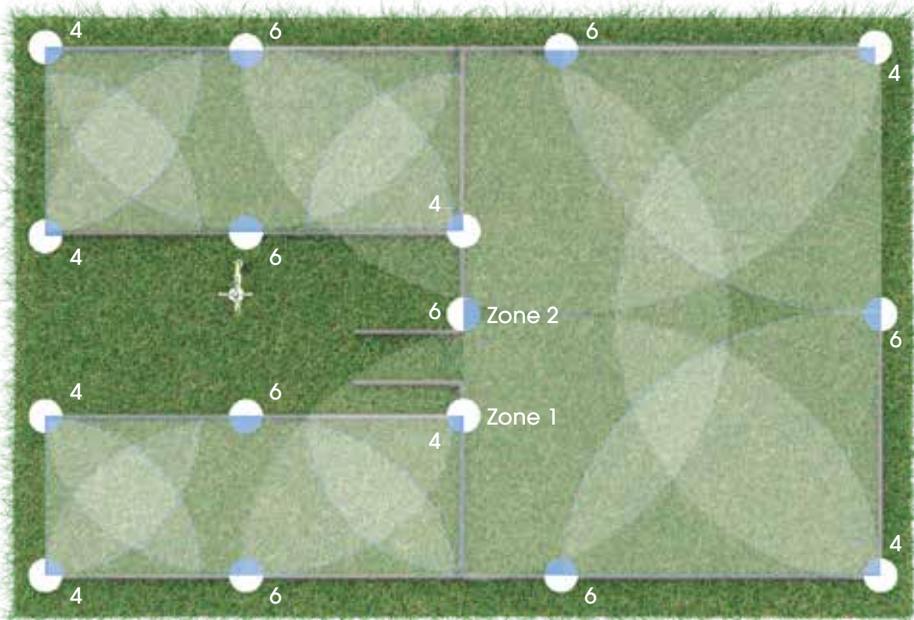
To adjust the arc for the Precision Series, simply twist the nozzle.



CALCULATING THE NUMBER OF POP-UPS REQUIRED

HEAD TO HEAD WATERING

For proper coverage, space your sprinklers so that the watering patterns overlap. Sprinklers must always be spaced at distances equivalent to their radius of throw. For example, if your sprinkler has a radius of 2 metres you should place your sprinklers two metres apart, so that the edge of the "throw" touches the head of the next sprinkler.



INSTALLATION TIPS FOR POP-UP SYSTEMS

- Avoid utility and communication lines when digging.
- Use 19mm locking clamps on all barbed fittings and place your pop-up heads level with the base of your grass.
- Low density poly pipe can only withstand pressure of 300kPa. If your water pressure exceeds 300kPa, you should use a pressure reducer. Pope's Inline Timer Pressure Reducer is suitable for all applications and will reduce your available pressure to 300kPa. This will relieve longer term problems such as leaking, that may arise with your irrigation system downstream.



INLINE TAPS

If you do not want to install solenoid valves to separate your zones, you can use manual inline taps. These will allow you to get the required pressure to operate your required number of pop-ups.



WARNING: When pipes are damaged, back flow occurs polluting household water. Please contact your local water authority for advice on installing an approved back flow prevention device.

HOW LONG AND WHEN SHOULD I WATER?

Getting the amount of water right is just a combination of knowing what type of soil you have, how long you need to water, and how often you need to water. Different soils hold different levels of water.



This guide has been put together using average weather conditions. Use the locality guide below to adjust your watering for your area.



During periods of Water Restrictions, consult your local water authority for compliance to local restrictions.

Please Note: Water distribution rates vary from sprinkler to sprinkler and from manufacturer to manufacturer. This guide has been precisely calculated for Pope sprinklers, jets and drippers. Using these guidelines for products not listed may result in under or over watering.

Water your garden for the time length below, each time you water. Use the "When should I water" chart to determine how often you should water.

	POP-UPS	HOSE AND SPRINKLERS			
	Professional Pop-up 	Partner Sprinkler 	Canberra Sprinkler 	Oscillator Sprinkler 	Impact Sprinkler 
SAND	5-10 minutes	1-5 minutes	5-10 minutes	15-25 minutes	5-15 minutes
CLAY	10-20 minutes	5-10 minutes	20-25 minutes	40-60 minutes	20-30 minutes
LOAM	20-30 minutes	5-10 minutes	10-15 minutes	30-50 minutes	15-25 minutes

	Very hot > 35 	Hot 30-35 	Very Warm 25-30 	Warm 20-25 	Mild 15-20 	Rain - Cold 
SAND	Every 1 Day	Every 1 Day	Every 2nd Day	Every 3rd Day	Every 4th Day	X
CLAY	Every 3rd Day	Every 3rd Day	Every 4th Day	Every 5th Day	Every 6th Day	X
LOAM	Every 3rd Day	Every 4th Day	Every 5th Day	Every 6th Day	Every 7th Day	X

Please Note: This Publication is presented as a **guide only** and while every care has been taken in recommending **when to water** and for **how long**, the guide can not account for every situation, weather condition, soil type and plant type. There is no substitute for careful observation and local experience. Please ensure you follow any local water restrictions in place. Water conservation principles including deep and infrequent watering have been used to formulate the guide.

For further information about water conservation please contact your local water authority.

FREQUENTLY ASKED QUESTIONS

Q: Do I need to install a timer to my irrigation system?

A: No, it is possible to install an irrigation system without a timer, but the benefits of having one will be greater as part of your watering system.

Q: Why is my sprinkler head not popping up?

- A:**
- Clean the sprinkler head and the plastic screen basket so it is not clogged with dirt or other debris.
 - Check your water pressure to make sure it is not too low. Make sure that the valves on your backflow device are fully open. You may need to separate the system into Zones to make sure each pop-up is getting the required pressure and flow.
 - Check for any leaks in the water line which can cause low water pressure and keep water from flowing to the sprinkler head.
 - One of the most common reasons is a broken sprinkler head, if it is cracked or has broken pieces it will need to be replaced. Consider using a sprinkler surround or sinking the sprinkler lower so your mower doesn't hit the sprinkler head.

Q: Can I install sprinklers on slopes?

A: Yes, when installing sprinklers on slopes position heads closer together on the uphill side of the pattern because gravity will shorten the spray throw. Also, to prevent erosion and uneven watering uphill, align sprinkler heads perpendicular to the slope.

Q: How many pop-ups can I run?

A: This depends on the flow rate you are able to achieve from your water source. Check page 3 for details on how to get your flow rate. You then need to look at the flow consumption of the pop-up sprinkler.
 e.g. if you have a 45LPM flow rate, you can run 7.5 Half Circle Professional sprinklers as they use 6 lpm ($45 / 6 = 7.5$).

Q: How do I maintain my pop-up watering system?

- A:**
- Trim back grass or prune vegetation growing around the pop-up heads.
 - Clean the mesh filter monthly by removing the filter and rinsing it thoroughly.
 - At least once a year take apart, clean, inspect and replace any damaged parts.

CLEANING AND FLUSHING YOUR SYSTEM

Your irrigation system needs to be cleaned after your initial installation and also occasionally to remove dirt and debris.

The below shows how to disassemble a precision pop-up without removing it from the system. Other pop-ups may have the components arranged in a different way.



Step 1
Unscrew the pop-ups cap.



Step 2
Pull up the riser by gripping the wiper seal.



Push down and hold the wiper Then twist to unscrew the nozzle

Step 3
Hold the wiper seal down and unscrew the nozzle. Be careful not to let the spring go.



Step 4
Remove the filter, wiper seal, spring and ratchet ring.

Step 5
Clean all debris and grit from all parts and re-assemble.



Step 6
Flush the system until water runs clear.

Step 7
Re-assemble all parts

1

WATER SOURCE

At this stage, you need to decide what water source you will be running your irrigation system from.



Taps have different outlet sizes from 15mm to 25mm.



The water meter or water source is installed by your local council on your property. You may need to consult a qualified plumber or irrigation installer if you want to connect to this source.

2

SOURCE CONNECTION

Next, you need to choose how or if you will automate your irrigation system. You can use either a tap timer, or a solenoid valve connected to a controller. Please see the 'Automating Your System' guide for more information.



A tap timer is an alternative to a full automatic system. It will allow you to run separate programs and start times. Tap timers have limited flow compared to a 25mm solenoid valve which means you may need to run more zones. You may also have less control over watering times than a full auto system.



Solenoids act like gates that control the flow of water into your system. A coil magnetises and pulls open a rubber diaphragm letting water pass through. 25mm solenoid valves should be used when considering pop-ups or other systems that require a large amount of water flow.

3

SYSTEM CONNECTION

Depending on your source connection, you will then choose how to connect to the rest of the system.



Tap nuts have a thread to meet the input device and then the tail has a barbed adaptor to run into your system. Secure the barb connection with a locking clamp.



Directors have a threaded end to attach to solenoid valves. The barbed end (tail) then connects to your system. These come in multiple configurations to suit your valve size but also the size of your poly tube.

4

SOURCE TO SYSTEM FITTINGS

These fittings are used to connect from your source into the start of your irrigation system. For pop-up systems, it is recommended to use Loc-Sure® clamps. You will need to use these for each connection in the rest of your irrigation system.



Loc-Sure® clamps ensure a long lasting connection for use when products are buried under ground. As a general rule, metal clamps under ground, plastic clamps above ground.



Poly pipe is used throughout your irrigation system as the connector between devices.



Tap nuts have a thread to meet the input device and then the tail has a barbed adaptor to run into your system. Secure the barb connection with a locking clamp. These can also be used in the middle of a system to connect to filters or pressure reducers.

5

SYSTEM PROTECTION

You should then consider how you will protect your system from pressure, ingress or leaks. You should consider using a combination of all 3 protection devices for your irrigation system.



A pressure reducer is used to limit the amount of pressure that the system receives. This helps with fittings blowing out, poly tube breaking or emission devices from misting or not performing as specified. Every irrigation should try to add a pressure reducer to ensure long life and correct performance.



Filters are used to stop dirt and particles from clogging the emission devices in your system. If you are having problems with pop-ups not rising or drippers not dripping, it could be clogged with debris.



Inline taps are an easy way to add emergency control to your irrigation system. They can be added with locking or Loc-Sure® clamps at any point in the system before the pop-up sprinklers.

6

LAYOUT FITTINGS

You will then need a collection of fittings and pipes to layout and connect your system. Choose from a variety of fittings to direct water where it is required.



Threaded fittings are used to connect to threaded watering devices. The thread type will depend on what your output device uses. Threaded fittings come as tees and elbows to suit your system design.

8

EMISSION DEVICES

Your final step is to choose an emission device (sprinkler). Your sprinkler choice will depend on the pattern or spray type that you require.

CHOOSE FROM THE FOLLOWING



NOTE

Thread tape is used around thread connections to add an extra membrane of leak prevention. You will need to do multiple wraps to get a tight fit. Do not over-tighten.





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