



# POPE

## DIY GUIDE



INSTALLATION OF LAWN POP-UPS



## How to use these guides

**FACT:**

Most people tend to over water rather than under water and that means big water bills

**FACT:**

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.

The type of watering device you use will also affect how long you water. Different sprinklers have different water output rates. For example:

**PROFESSIONAL POP-UP**



Up to **11 PRP's™**  
Pope Rating Points

**IMPACT IN CANISTER**



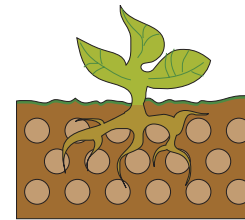
Up to **8 PRP's™**  
Pope Rating Points

**MULTI STREAM GEAR DRIVE**

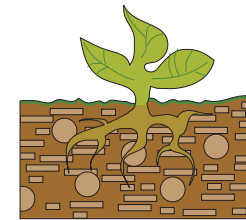


Up to **23 PRP's™**  
Pope Rating Points

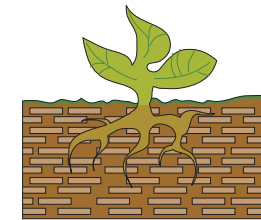
And different soils hold different levels of water.



SAND

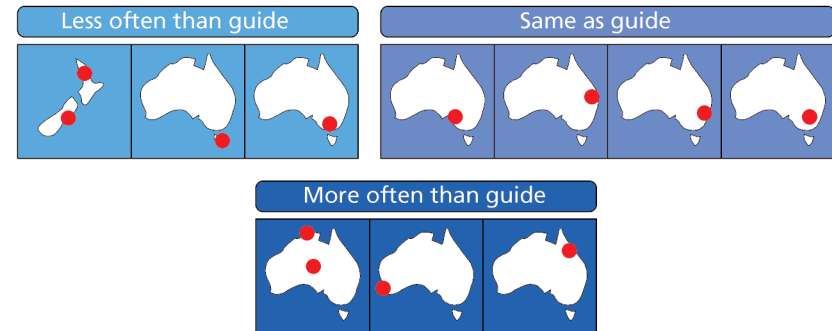


LOAM



CLAY

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 product not listed may result on under or over watering.

## Lawns

### How long should I water?

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







	POP-UPS				HOSE AND SPRINKLERS			
	Professional Pop-Up 	Impact In Canister 	Multistream Gear Drive 	Capitol Sprinkler 	Canberra Sprinkler 	Oscillator Sprinkler 	Impact Sprinkler 	
SAND	5-10 minutes	10-20 minutes	10-20 minutes	10-15 minutes	1-5 minutes	5-10 minutes	15-25 minutes	5-15 minutes
CLAY	10-20 minutes	30-40 minutes	30-40 minutes	30-40 minutes	5-10 minutes	20-25 minutes	40-60 minutes	20-30 minutes
LOAM	20-30 minutes	35-50 minutes	20-30 minutes	20-30 minutes	5-10 minutes	10-15 minutes	30-50 minutes	15-25 minutes

**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.

### When should I water?

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

# Lawn Pop-ups

## Testing for water flow and pope rating points (PRP's™)

### 1 BUCKET TEST

Note the time to fill a standard 9 litre household bucket, from the tap to be used for your watering with the tap turned on full.



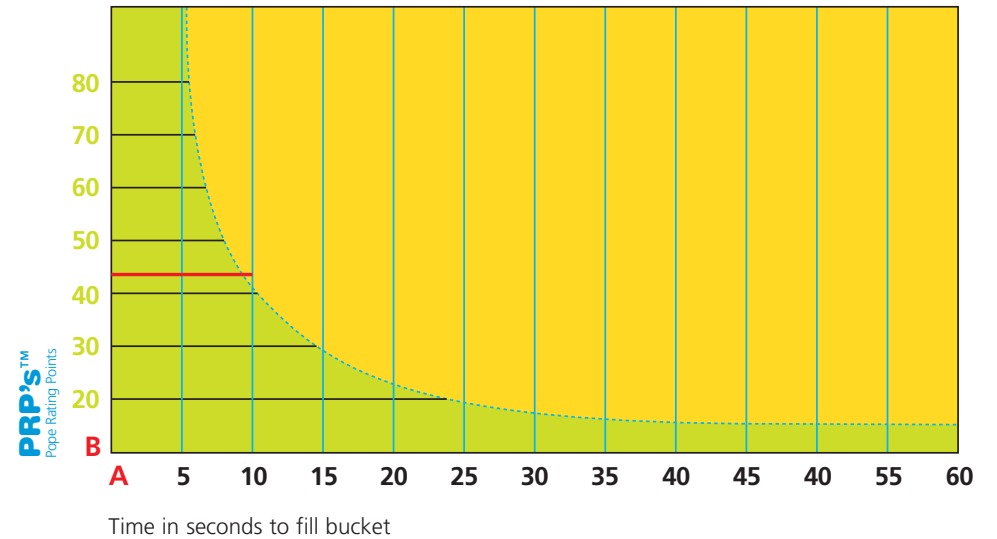
PLEASE NOTE:

1. Ensure water flow is measured at times of peak water usage, and
2. If using a tap timer or pressure reducer, ensure water flow is measured with the device fitted.

### 2

The total number of Pop-Ups you can use at one time is limited by the water flow from your tap. Read off the number of Pope Rating Points PRP's™ you have available from your tap.

For example if it takes 10 seconds to fill your 9-litre bucket, move along the bottom line of the chart **A** to the 10 second point. Move up the blue vertical line from the 10 second point to the dotted line and across the horizontal red line to the PRP's™ **B**. This shows that this tap has 43 Pope Rating Points PRP's™ available for use.



### 3

Each Pop-Up details its Pope Rating Points PRP's™, refer to "Performance Specifications" chart on page 13. The Pop-Up PRP's™ must be added together to ensure they do not exceed the total PRP's™ available from your tap. In our example, 43 PRP's™ were available.



**PRP's™**  
Pope Rating Points

$6 + 6 + 6 + 6 + 4 + 12 = 40$ 
**PRP's™**  
Pope Rating Points

$6 + 6 + 6 + 4 + 6 + 6 + 12 = 46$ 
**PRP's™**  
Pope Rating Points

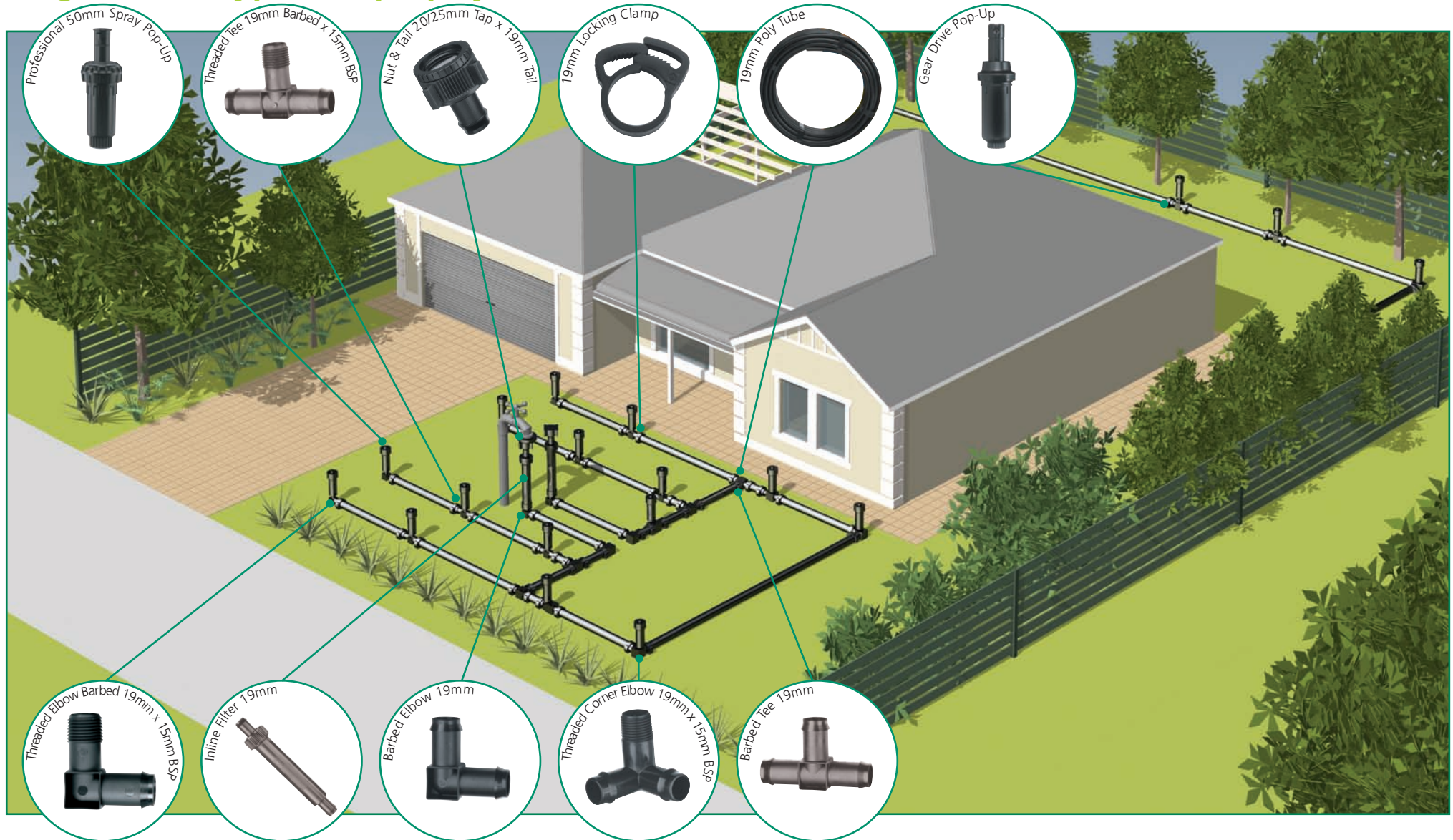
PLEASE NOTE: This chart is a guide only. If your bucket takes longer to fill than 20 seconds, we recommend you assemble your system above ground, before digging trenches, to confirm that it works correctly.



# Lawn Pop-ups

## Diagram of a typical Pop-up system

Pop-up systems run on 19mm polytube and fittings





# Selecting the most suitable Pop-up sprinkler

## Lawn Pop-ups - Sprays

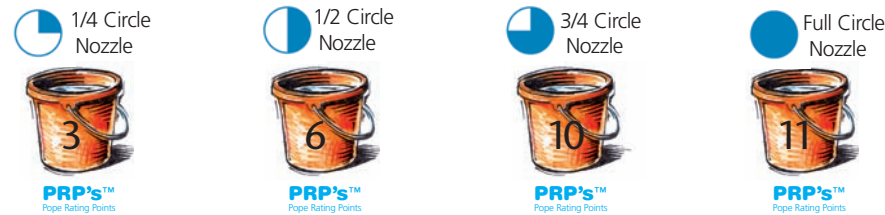
### Professional - Suitable for smaller lawns



#### DISTANCE BETWEEN POP-UPS



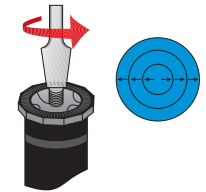
#### CALCULATING WATER FLOW



The PRP's™ represent minimum water flow required to operate a Spray Pop-Up.

#### FEATURES

- Fixed spray pattern
- Uniform coverage
- Low maintenance
- Available in 1/4, 1/2, 3/4 or full circle patterns
- Suitable for small or large lawn areas
- For large areas, more pop-ups are required which may mean two or more separate watering lines are needed
- Best for small lawns
- 50mm pop-up height
- To reduce the throw (between 3 and 4 metres) turn screw to the right. To increase, turn screw to the left.



### Precision - Suitable for smaller lawns



#### DISTANCE BETWEEN POP-UPS



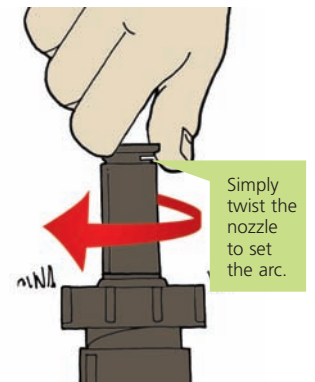
#### CALCULATING WATER FLOW



The PRP's™ represent minimum water flow required to operate a Spray Pop-Up.

#### FEATURES

- Fixed spray pattern
- Adjustable pattern nozzle for greater watering flexibility
- Pattern adjustable from 0° to 360°
- Uniform coverage
- 50mm and 75mm pop-up height
- Suitable for small or large lawn areas
- For large areas, more pop-ups are required which may mean 2 or more separate watering lines are needed
- To reduce the throw (between 2 and 4m) turn screw to the right. To increase, turn screw to the left.



DO NOT mix different Pop-Ups on the same line.



# Selecting the most suitable sprinkler

## Lawn pop-ups - Gear Drives

### Multi Stream Gear Drive - Suitable for small to medium sized areas



#### DISTANCE BETWEEN POP-UPS



#### CALCULATING WATER FLOW



The PRP's™ represent minimum water flow required to operate a Spray Pop-Up.

#### FEATURES




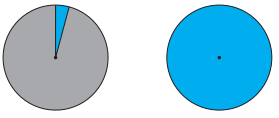
- Driven by a series of gears within the sprinkler
- Quiet operation makes it perfect for early morning watering
- Nine different watering patterns to choose, by installing an arc disc
- Economical with water - uses 1/3 less water than fixed spray pop-ups
- Unique "fingers of water" ensure even water distribution
- Less water run-off or pooling
- Easy radius adjustment
- Premium construction quality
- 100mm pop-up height



**DO NOT** mix different Pop-Ups on the same line.

# Selecting the most suitable sprinkler

## Lawn Pop-ups - Gear Drive

<b>Impact in Canister Gear Drive</b> - Suitable for large open areas		
	<p><b>DISTANCE BETWEEN POP-UPS</b></p> <p>← 10 metres minimum</p>  <p>13 metres maximum. →</p> <hr/> <p><b>CALCULATING WATER FLOW</b></p>  <p><b>PRP's™</b> Pope Rating Points</p> <p><small>The PRP's™ represent minimum water flow required to operate a Spray Pop-Up.</small></p>	<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• Water stream is automatically rotated by the impact arm</li> <li>• Best for large open areas of lawn</li> <li>• Large droplet size makes them good performers in windy conditions</li> <li>• Don't use an impact to spray over garden borders as plants may be damaged</li> <li>• Weighted spray arms for even coverage</li> <li>• Side or bottom inlet for poly pipe</li> <li>• Fully adjustable pattern - 15° to 360°</li> <li>• Adjust pattern by moving rotation pins around the collar</li> </ul> <div style="text-align: right;">  <p>Adjustable spray pattern ranging from 15° to 360°</p> </div>

**DO NOT** mix different Pop-Ups on the same line.



# How to plan your system

## Drawing your plan

### 1 BUCKET TEST

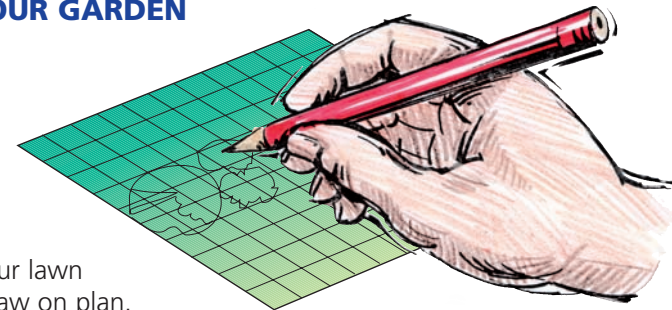
Use the Bucket Test (previously explained on page 2) to see how many available PRP's you have to use for your system.

For our example we have 43 available PRP's™.



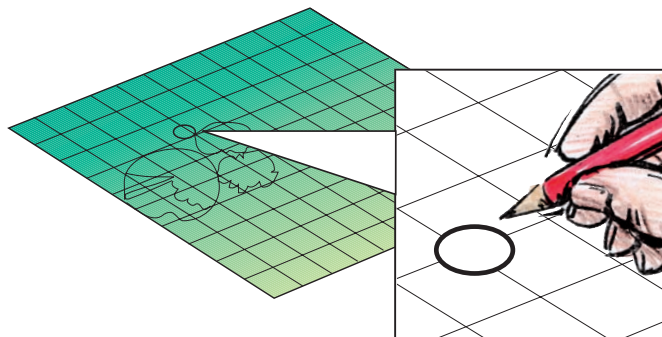
### 2 DRAW YOUR GARDEN

Measure your lawn area and draw on plan.

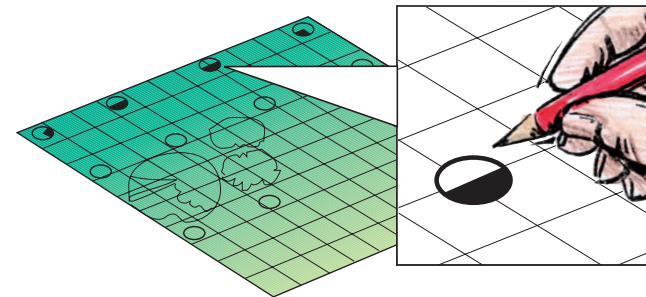


### 3 PLAN YOUR SYSTEM

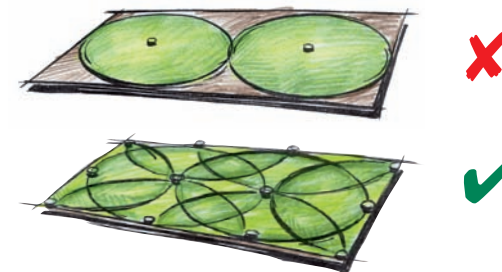
- A** Select your preferred sprinkler type, choosing the pop-up that best suits your garden size. Draw a circle for each Pop-Up, based on the number of metres between Pop-Ups.



- B** Mark each circle with required spray pattern.



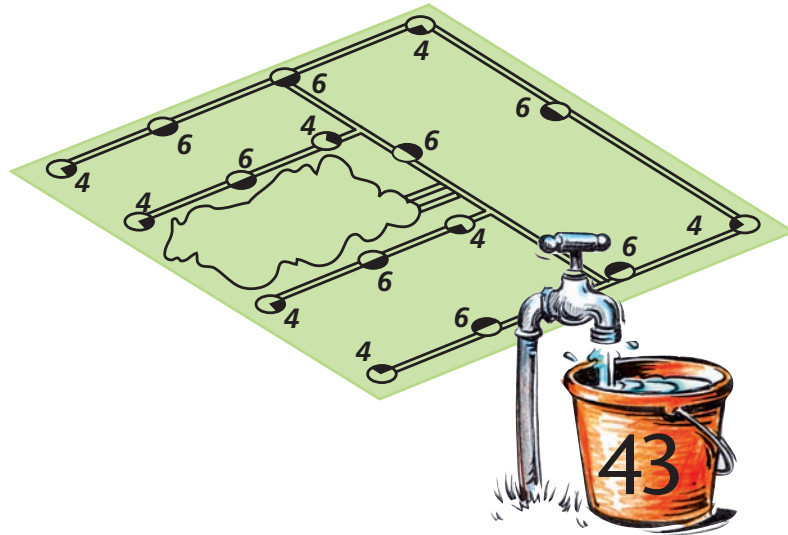
- C** It is **extremely important** that you set your sprinklers up correctly. Sprinkler patterns must overlap to water effectively and efficiently. This overlapping is called "head to head" watering. (See notes on page 12)



# How to plan your system

## Calculating how many Pop-ups can fit on one line

D Write the PRP™ rating for each Pop-Up.



Total the number of **PRP's™** on Pop-Ups to be used for your lawn area.  
In our example the total is 80 **PRP's™**.

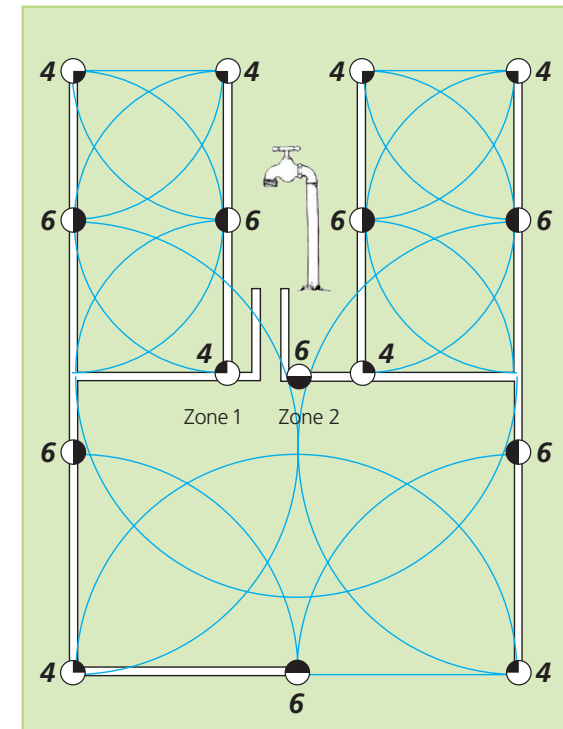
$$4 + 6 + 6 + 4 + 6 + 4 + 6 + 6 + 4 + 4 + 6 + 4 + 4 + 6 + 4 + 6 = 80 \text{ PRP's™}$$

In our example, 43 **PRP's™** were available from the tap.

This plan with 80 **PRP's™** requires 2 separate lines to work all of these Pop-Ups.

### 4

#### IDENTIFY YOUR WATERING ZONES.



If your available PRP's are less than you need to operate your watering system you may need to split your system into two or more zones. This design is based on our example of 43 **PRP's™** available from the tap.

$$\text{Zone 1 } 4 + 6 + 4 + 4 + 6 + 6 + 6 + 4 = 40 \text{ PRP's™}$$

$$\text{Zone 2 } 4 + 6 + 4 + 4 + 6 + 6 + 6 + 4 = 40 \text{ PRP's™}$$

# How to plan your system

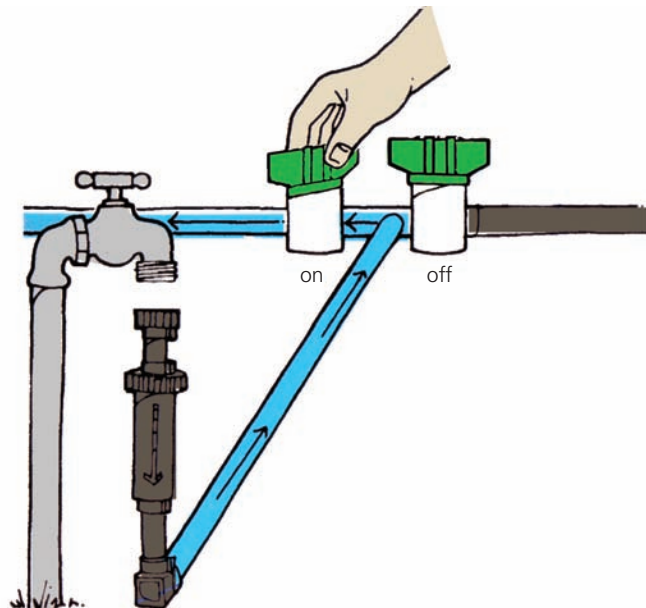
## For gardens with multiple watering zones

### 5 INLINE TAPS

Inline Tap fittings can be used to water separate areas of your garden. They must be manually turned on or off to isolate each watering zone.

Inline Taps can also aid in distributing your PRP's, especially when your total available PRP's are not sufficient to water your whole area at once.

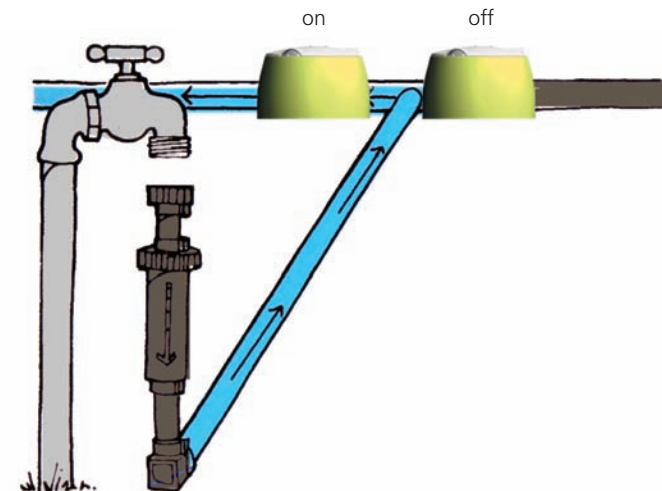
Note: Inline Taps are not designed to withstand constant high pressure in the "off" position. Always ensure one Inline Tap is turned to the "on" position when operating the system. When system is not in use ensure the main garden tap is turned off.



### 6 INLINE TIMERS

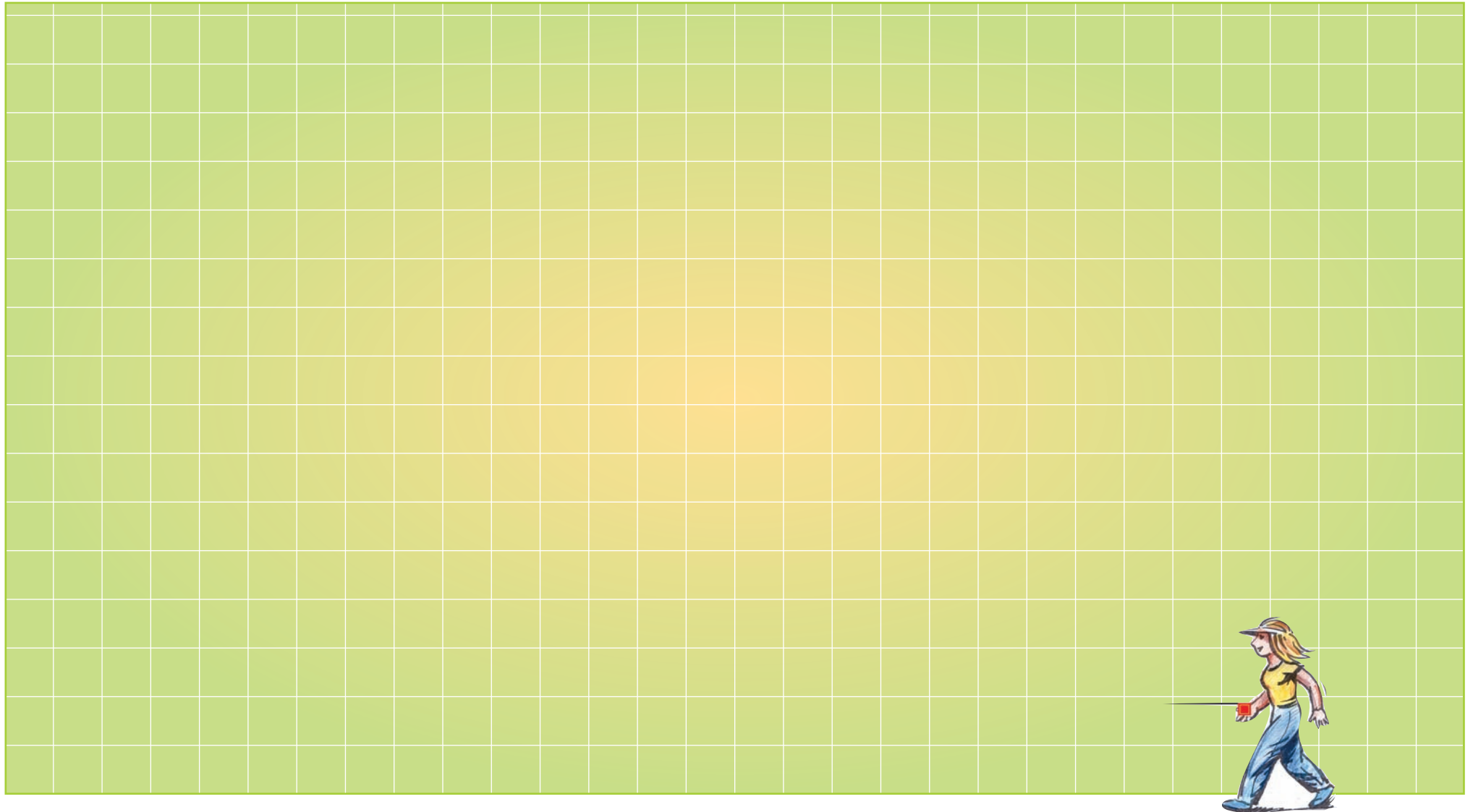
Inline Timers can be simply installed to water separate areas of your garden. By setting the timer mechanism, the water will turn on and off according to the program you set. So it works just like a fully automated watering system, whether you're at home or not.

See the booklet "Automating Your Watering" for more information.



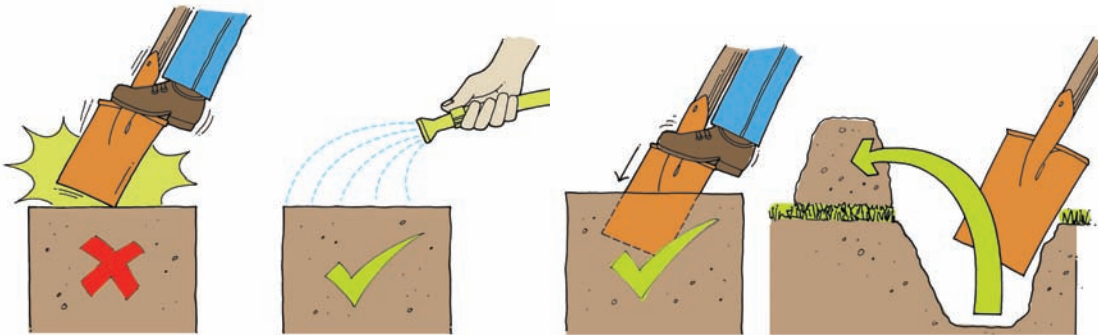
# How to plan your system

**Drawing to scale** Use a tape measure to measure your borders. One square equals one metre.

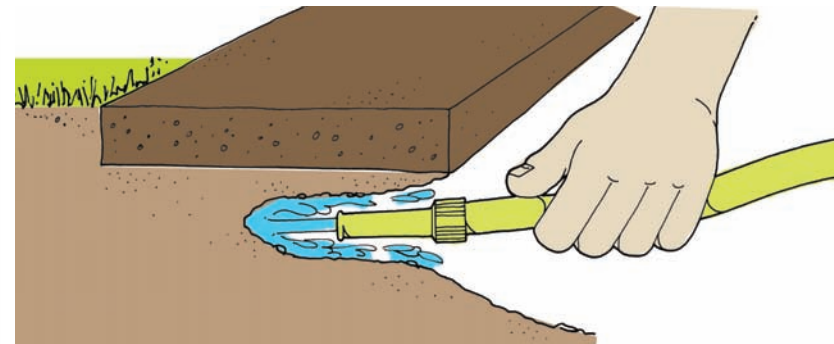


## Installation tips for Pop-up systems

**1** Pre-soak ground to soften digging.



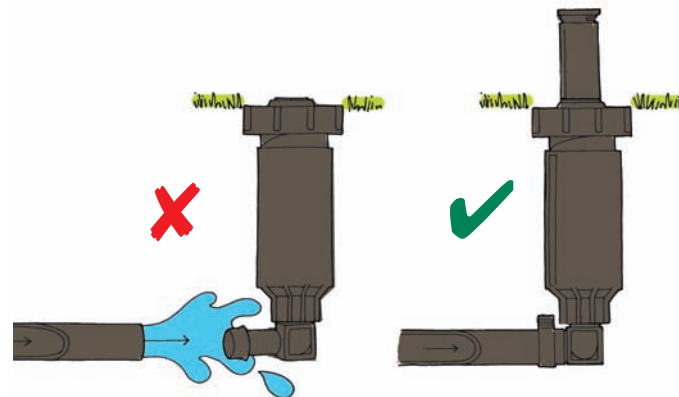
**2** Use a hose to make a trench underneath driveways.



**3** Avoid utility and communication lines when digging.



**4** Use 19mm Locking Clamps on all Barbed Fittings and place Pop-Up head level with base of grass.



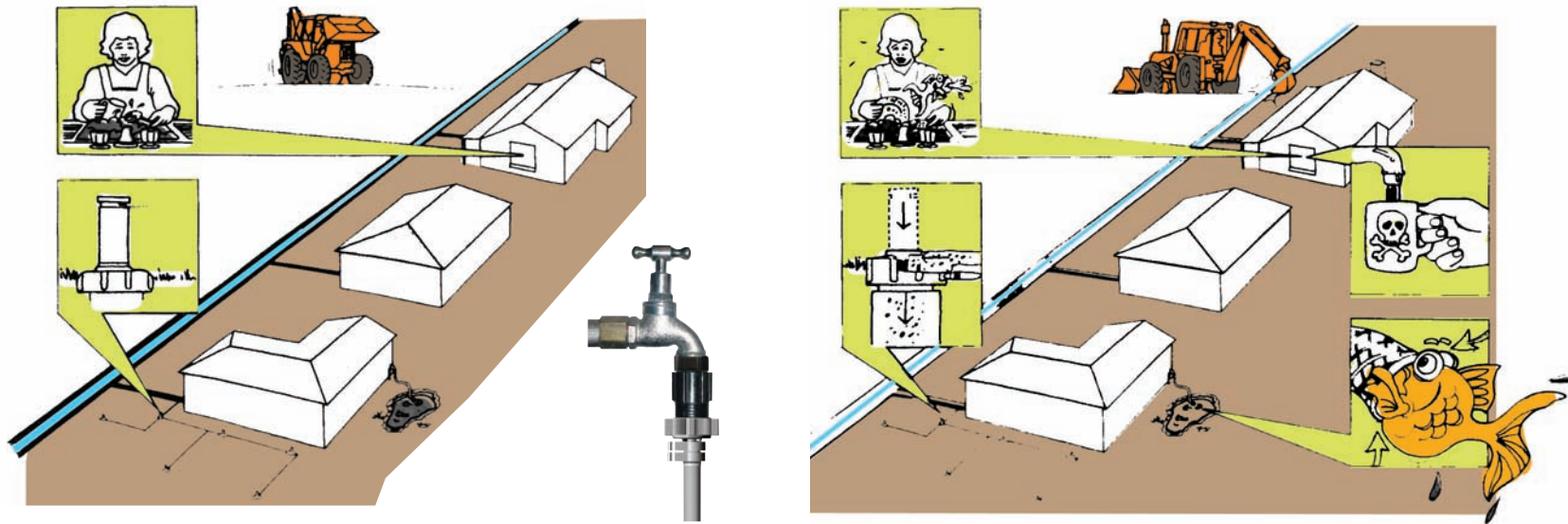
**5** Low density poly pipe can only withstand pressure of 300kPa. If water pressure is in excess of 300kPa you should use a Pressure Reducer. Pope's Inline Timer Pressure Reducer is suitable for all applications and will reduce your available pressure to 300kPa. This will relieve longer term problems (such as leaking) that may arise with your irrigation system downstream.





## Installation tips for Pop-up systems

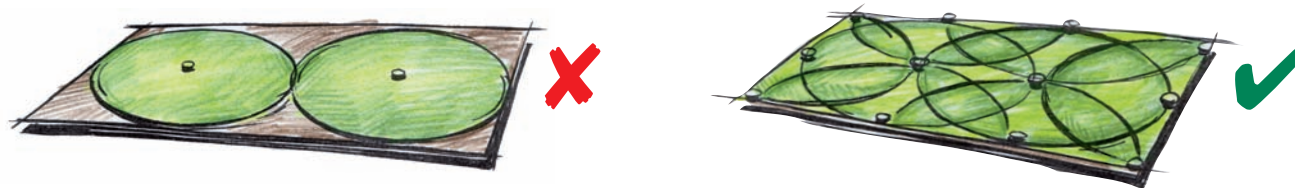
**6 BACK FLOW PREVENTION** is recommended for all underground installations.



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

**7 HEAD TO HEAD WATERING**

Head to head watering is spacing the sprinklers so that the watered patterns overlap. Sprinklers must always be spaced at distances equivalent to their radius of throw. So, for example, if your sprinkler has a radius of two metres (and a diameter of four metres) you should place your sprinklers two metres apart, so that the edge of the "throw" touches the head of the next sprinkler.





# Lawn Pop-ups

## All the technical stuff

### PERFORMANCE SPECIFICATIONS

#### Pop-Up Sprinkler Type      PRP's      Radius (m)

##### Professional

Based on Operating Pressure of 175kPa

1/4 Circle	3	3.0 – 4.0
1/2 Circle	6	3.0 – 4.0
3/4 Circle	10	3.0 – 4.0
Full Circle	11	3.0 – 4.0

##### Pope Precision

Based on Operating Pressure of 150kPa

1/4 Circle	5	2.0-4.0
1/2 Circle	8	2.0-4.0
Full Circle	12	2.0-4.0

##### Multi Stream Gear Drive (New)

Based on Operating Pressure of 350kPa

1/4 Circle	3	4.5
1/2 Circle	6	4.5
Full Circle	12	4.5
1/4 Circle	4	6.0
1/2 Circle	8	6.0
Full Circle	16	6.0
1/4 Circle	6	8.5
1/2 Circle	12	8.5
Full Circle	23	8.5

#### Pop-Up Sprinkler Type      PRP's      Radius (m)

##### Single Stream

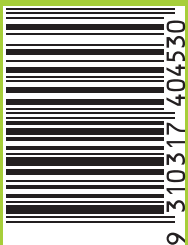
Based on Operating Pressure of 300kPa

Orange Nozzle	6	10.0-13.0
Black Nozzle	13	10.0-13.0
Green Nozzle	23	10.0-13.0

##### Impact in Canister

Full Circle	8	10.0-13.0
-------------	---	-----------

Note: PRP's are calculated using the optimum operating pressure.



**TORO** **Toro Australia Pty Ltd**

Pope® is a registered trademark of Toro Australia Pty Ltd.

For further information on any Pope product see contact details below.

Toro Australia Pty Ltd,  
53 Howards Road, Beverley  
South Australia 5009  
[www.toro.com.au/pope](http://www.toro.com.au/pope)  
A.C.N.001310443

© Toro Australia Pty Ltd 2005

All rights reserved. No part of the publication may be reproduced, or transmitted in any form or by any means without the prior permission of Toro Australia Pty Ltd. Apply in writing to Toro Australia Pty Ltd.

As we are constantly updating our products, the products contained within may have changed after the date of publication. Toro Australia will not be held responsible for any consequential loss or damage from any information, correct or otherwise, contained within this publication.