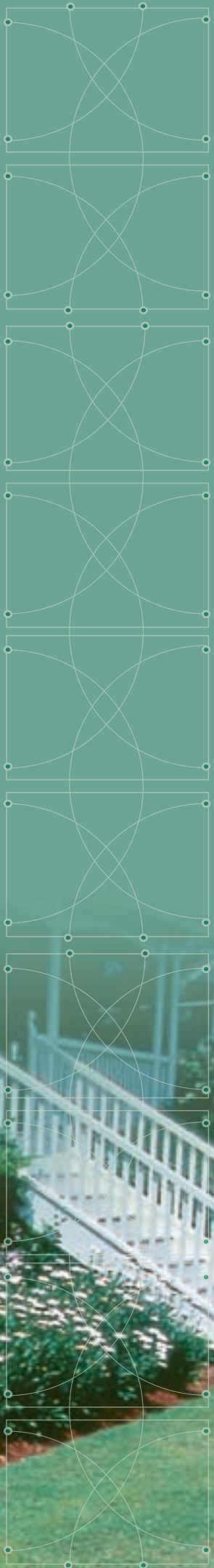


Home Irrigation Installation Planner

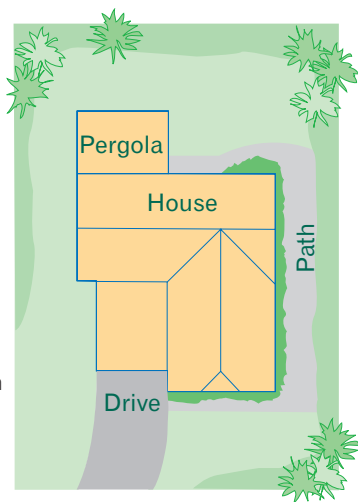
DIY



I N S T R U C T I O N S

1. Measure and draw your home and garden

Draw a plan to scale on the graph paper inside this planner, including your gardens, pathways, lawns, garden shed, pergola, patios and driveways. Choose a scale and write this in the box on the graph paper. Measure your home and gardens accurately.



2. Measure your Water Supply Capacity

Measure the available water from the tap that will supply the system. Turn the tap on fully. Slide a 9 litre bucket under the tap and time how long it takes to fill. Determine your water supply capacity by using the calculation below. Write the result under 'Water Supply Capacity' in the 'Calculate the Number of Lines' table.

In the example:

Time to Fill = 14 Seconds.

Water Supply Capacity = $9 \times 60 \div 14 = 38.6$ LPM

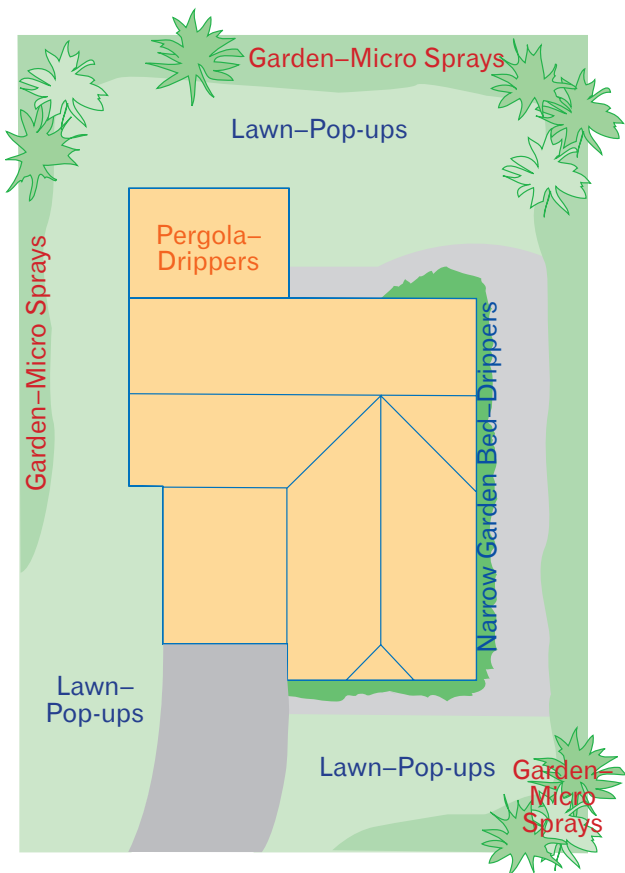
This means the capacity of the water supply has a maximum of 38.6 LPM (litres per minute) to use at any one time when designing a system. Decrease the result by 10% for a safety margin. A 38.6 LPM supply would therefore be 34.7 LPM.

3. Mark on your plan where each Watering Method will be used

Match the different plant groups in your yard to different Watering Methods.

- Use Micro Sprays for flower beds, garden beds, shrubs and ground cover.
- Use Drippers or Misters for pots and hanging baskets.
- Use Drippers for shrubs and ground cover.
- Use Pop-ups Sprinklers in your lawn.

In the example, Micro Sprays are written where there are garden beds, Pop-ups where there are Lawns and Drippers in the Pergola. Note the use of Drippers in the garden bed along the side of the house because the garden bed is too narrow for Micro Sprays. They would spray onto the path wasting water.



4. Select Watering Methods from the Shopping List

Selecting Nozzles is a personal choice. Use the Nozzle Pattern and Radius to make these decisions. Aim to have the least number of Nozzles possible. Use 90° nozzles in the corner of lawns and gardens. Use 180° nozzles along the edges and against fences or buildings. Place 360° nozzles in the centre of large areas.

Micro Sprays, Drippers, Spray Head Pop-ups and Gear Drive Pop-ups should not be mixed together on the same watering line.

5. Mark the position of nozzles on your plan

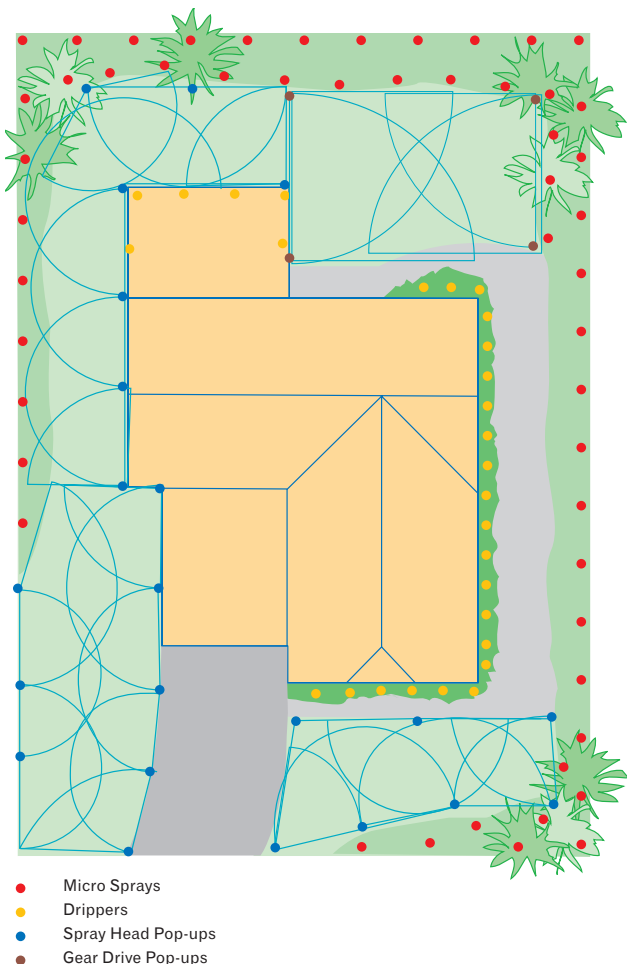
Space nozzles apart by the same distance as their spray radius. This ensures that the water spraying from one micro spray should just reach the next micro spray. This overlapping of spray patterns achieves the most even water coverage for your garden. The spacing between nozzles is not critical, plus or minus 20% is fine.

In the example over the page, Two-Piece Micro Sprays, Micro Sprinklers, Adjustable Drippers, Gear Drive Pop-ups and Spray Head Pop-ups are used.

In the garden, that runs around the perimeter of the yard, 180° Two-Piece Micro Sprays are positioned. In wider parts of the garden Two-Piece Micro Sprays are staggered to provide full coverage. Where the garden is very narrow Adjustable Micro Sprays are positioned.

Drippers are positioned at each plant in the garden bed running along the side of the house. It is too narrow for Two-Piece Micro Sprays. Drippers are also used in the Pergola.

The Lawn areas use both Spray Head and Gear Drive Pop-ups.



6. Calculate the number of lines

The average suburban home will normally have 4 to 8 watering lines.

- Count the number of each type of Pop-up, Micro Spray or Dripper.
- Write the total number of each type in the No. of Nozzles column on the Shopping List.
- Multiply the number of each type of Pop-up, Micro Spray or Dripper by its LPM and write this in the LPM column.
- Add the LPM for all Pop-ups, Micro Sprays or Drippers and write it in the Total LPM box at the bottom of each column.
- For each watering method divide the Total LPM by your Water Supply Capacity and write the answer in the box provided. Round this figure up to the nearest whole number to work out the number of lines required.

In the example, 2 lines are required for the Two-Piece Micro Sprays running around the perimeter of the yard.

Micro Spray Total LPM (A)	36.4 LPM
Water Supply Capacity (B)	34.7 LPM
Dividing A by B	1.1
Round up for Number of Lines	2 Lines

The Two-Piece Micro Sprays used in the example are: three 90° Two-Piece Micro Sprays and forty-nine 180° Two-Piece Micro Sprays.

7. Preparing lines

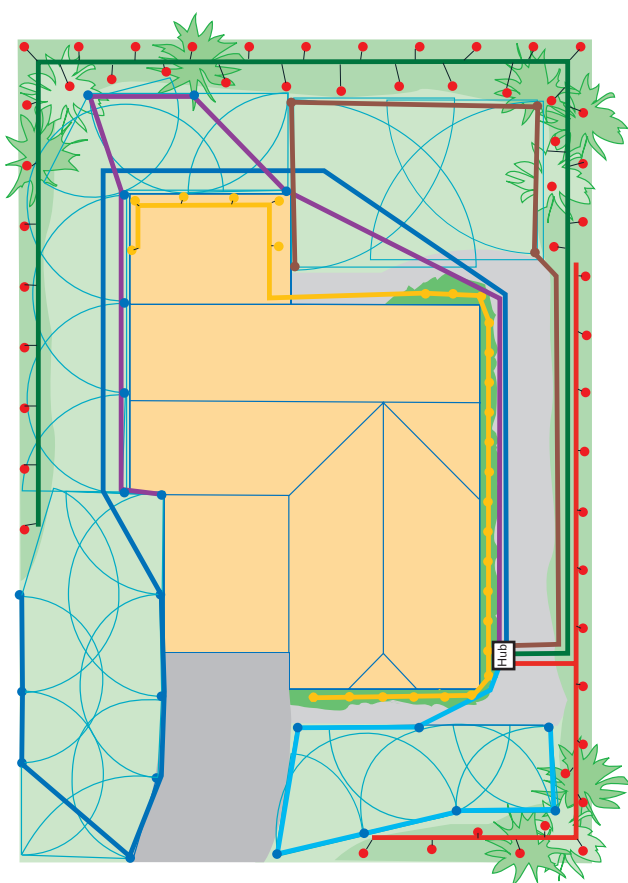
Divide the nozzles for each watering method into groups. There should be the same number of groups as lines. The total LPM of each group of nozzles should be below that of the water supply.




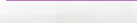
Mark the position of your system HUB. The HUB is the heart of your system where you control the operation of each line. It is normally located at a central garden tap. For each line select the most convenient route from the HUB to the area being watered. Mark these lines on your plan.

In the example, there is only 1 line for the pergola and garden along the side of the house using Drippers.

The Lawn needs 4 lines. The first line is an isolated area in the front yard. It deserves its own line because of the difficulty of running a line under the driveway. One line in the back yard is devoted to Gear Drive Pop-ups, because it is a large clearly defined area.

The total capacity of Spray Head Pop-ups along the side yard requires 2 lines. Experiment with a few options. It is easier to make changes now rather than later.



-  1 Line for Garden & Pergola
-  2 Lines for Gardens
-  3 Lines for Spray Head Pop-ups in the Lawn
-  1 Line for Gear Drive Pop-ups in the Back Yard Lawn

THE HUB

There is a variety of different ways to connect your pipe lines to the water supply, from the most basic garden tap to a full automated electronic system.

One single watering line could just be connected directly to your existing garden tap. Or up to 4 lines could be watered by simply adding a multi outlet tap to your garden tap. For more control over watering times, add a manual or electronic tap timer. However, the ultimate, time saving, home irrigation system is a fully automatic hub and controller.



Automation takes full advantage of the benefits offered by a home irrigation system. An automatic hub consists of an electric solenoid valve for each line, a back flow prevention valve and the associated fittings to put it all together. Then the Neta electronic controller remembers when and how long to water the different areas of your lawn and garden.

An automatic hub can either be installed externally near your garden tap, or buried underground and connected directly into your water supply pipe.

For detailed information on connecting your home irrigation system, download the free [Neta Home Irrigation Guide](#) from www.homeirrigation.com.au or www.homeirrigation.co.nz.



WATERING CHART









Watering only when your plants need moisture is the key to water conservation and healthy plants. The ideal situation is to apply just enough water to wet the root zone of your plants and no more. Then encourage deep root growth by allowing the soil to dry out, before watering again. How often and how long to water depends on a number of factors, including your climate, plant types, soil texture, water pressure, sprinkler type and the season.

As a general guide, flowers and vegetables will only need short, frequent watering. Whereas lawns, trees and shrubs will need a deeper soaking, but less often.



The chart below gives you a basic guide to watering times for various plant groups and watering methods, however you should vary watering times according to your observations.

		CLIMATE		
LAWNS				
Watering Method	Soil type	Cool to Warm 15–25°C	Warm to Hot 25–35°C	Very Hot <35°C
Spray Head Pop-ups	Clay	20–30 mins every 8 th day	20–30 mins every 6 th day	20–30 mins every 4 th day
	Loam	10–20 mins every 6 th day	10–20 mins every 5 th day	10–20 mins every 3 rd day
	Sandy	5–10 mins every 4 th day	5–10 mins every 2 nd day	5–10 mins every day
Gear Drive Pop-ups	Clay	40–60 mins every 8 th day	40–60 mins every 6 th day	40–60 mins every 4 th day
	Loam	30–40 mins every 6 th day	30–40 mins every 5 th day	30–40 mins every 3 rd day
	Sandy	20–30 mins every 4 th day	20–30 mins every 2 nd day	20–30 mins every day
GARDENS				
Micro Sprays & Sprinklers	Clay	30–40 mins every 6 th day	30–40 mins every 5 th day	30–40 mins every 3 rd day
	Loam	20–30 mins every 5 th day	20–30 mins every 3 rd day	20–30 mins every 2 nd day
	Sandy	10–20 mins every 3 rd day	10–20 mins every 2 nd day	10–20 mins every day
Drippers	Clay	4–6 hours every 6 th day	4–6 hours every 5 th day	4–6 hours every 3 rd day
	Loam	2–4 hours every 5 th day	2–4 hours every 3 rd day	2–4 hours every 2 nd day
	Sandy	1–2 hours every 3 rd day	1–2 hours every 2 nd day	1–2 hours every day
POTS AND BASKETS				
Drippers & Misters	Potting mix	Until full every 3 rd day	Until full every 2 nd day	Until full every day






SHOPPING LIST






Watering Method	Pattern	Radius	LPM	No. of Nozzles	LPM
	360° 	3.5m	10.0		
	270° 	3.5m	7.5		
	180° 	3.5m	5.0		
	90° 	3.5m	3.0		
	Adjustable arc 25° to 360° 	3.5m	*		
	Centre strip 	1x8m 4m apart	5.0		
	Narrow strip 	1x8m 4m apart	5.0		




* Estimate from patterns. Example: An arc between 90° and 180° is 4Lpm. Total LPM





Watering Method	Pattern	Radius	LPM	No. of Nozzles	LPM
	Adjustable arc 40° to 360° 	7m	4.5		

Total LPM

Watering Method	Pattern	Radius	LPM	No. of Nozzles	LPM
	360° 	2.2m	0.7		
	180° 	2.2m	0.7		
	90° 	2.2m	0.7		
	Strip 	0.6x6m 3m apart	0.7		





	360° 	0-3.5m	0-1.5		
	180° 	0-2.4m	0-1.5		
	90° 	0-2.4m	0-1.5		
	Strip 	up to 0.6x9m	0-1.5		

	360° 	3.7m	1.5		
	360° 	0-3.7m	0-1.5		

	360° 	1.8m	0.6		
	180° 	1.8m	0.6		
	90° 	1.8m	0.6		

		0.5m	0.5		
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Total LPM

Watering Method	Pattern	Radius	LPM	No. of Nozzles	LPM
		-	0-0.6		
		-	0.1		

Total LPM









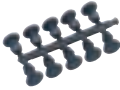







SHOPPING LIST

CALCULATE THE NUMBER OF LINES

	Total LPM		Water Supply Capacity		Equals		Number of lines (Round up)
Example: Micro Sprays	36.4	÷	34.7	=	1.1	↑	2
Spray Head Pop-ups		÷		=		↑	
Gear Drive Pop-ups		÷		=		↑	
Micro Sprays		÷		=		↑	
Drippers		÷		=		↑	

Product		Quantity
13mm Neta Garden-Pol		m
19mm Neta Garden-Pol		m
4mm Riser Tube Low Density		m
4mm Riser Tube Flexible PPVC		m
13mm Joiner		
19mm Joiner		
19mm x 13mm Reducing Joiner		
13mm End Plug		
13mm Tee		
19mm Tee		
13mm x 19mm Increasing Tee		
13mm Elbow		
19mm Elbow		

SHOPPING LIST

Product		Quantity
19mm x 1/2" Male Threaded Tee		
19mm x 1/2" Male Threaded Elbow		
13mm Ratchet Clip		
19mm Ratchet Clip		
13mm Saddle & Nail		
19mm Saddle		
200mm Rigid Riser with Adaptor		
300mm Rigid riser with Adaptor		
Rigid Riser Stake		
13 mm Riser/Pipe Stake		
4mm Goof Repair Plug (10 pack)		
4mm Joiner		
4mm Tee		
4mm Elbow		
4mm Cross		
4mm Saddle & Nail		
Punch & Spanner		1
Gear Drive Clamp		
Gear Drive Multi-tool		

PIPE

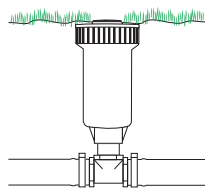
- Use a combination of fittings and pipe to lay out your system according to the lines on your plan.
- Use 19mm pipe for Pop-up lines and 13mm pipe for Micro Sprays and Drippers.
- To straighten pipe, unroll and place in the sun with bricks securing each end.
- The pipe will bend around a corner, but if it looks like kinking use an elbow.
- Use secateurs or a Stanley Knife to cut pipe.

PIPE FITTINGS

- If it is difficult to fit elbows and tees, dip the pipe into hot water to make it soft.
- Ratchet Clips should be used at every joint.
- Run water through all lines to remove debris before attaching nozzles.

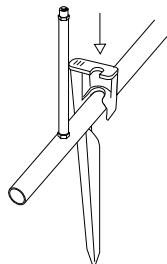
POP-UPS

- The simplest way to connect a pop-up sprinkler is to screw it directly into a male threaded tee or elbow.
- For more flexibility, Articulated Risers offer many benefits. They can be swivelled to allow easy installation, they protect sprinklers from damage if run over and they offer quick height adjustment if soil subsides or lawn is top dressed.
- Always ensure that the top of the sprinkler is set slightly above ground level and not at the level of the grass.



MICRO SPRAYS

- Micro Sprays screw into the top of Rigid Risers. This allows pipe to be hidden under mulch and ensures the spray is above the height of plants.
- Use a stake to keep Risers upright. A Riser Pipe Stake will also secure the main pipe to the ground. A Rigid Riser Stake is best when using 4mm tube to locate the spray away from the 13mm pipe.

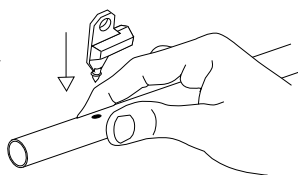


DRIPPERS

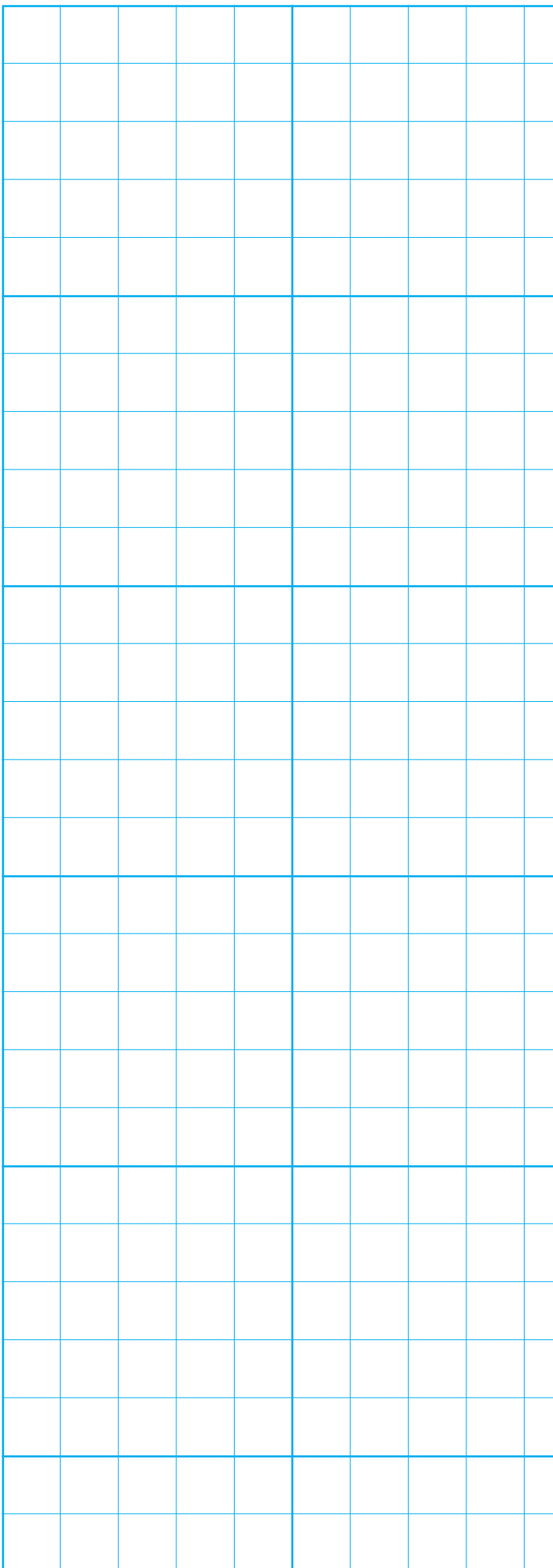
- Drippers are also available with stakes attached, for positioning in a pot or next to a plant.
- Use the Adjustable Dropper if you believe plants or pots require different amounts of water. This is normally due to different pot sizes.
- Use a Pressure Reducer for each Dripper watering line.
- Use 4mm Riser Tube to run from 13mm pipe – it can be easily hidden to become unobtrusive.
- There are 2 types of 4mm Riser Tube: 4mm Low Density Riser Tube and 4mm Flexible Riser Tube. The Flexible Tube is easier to bend and weave through your plants.

PUNCH SPANNER

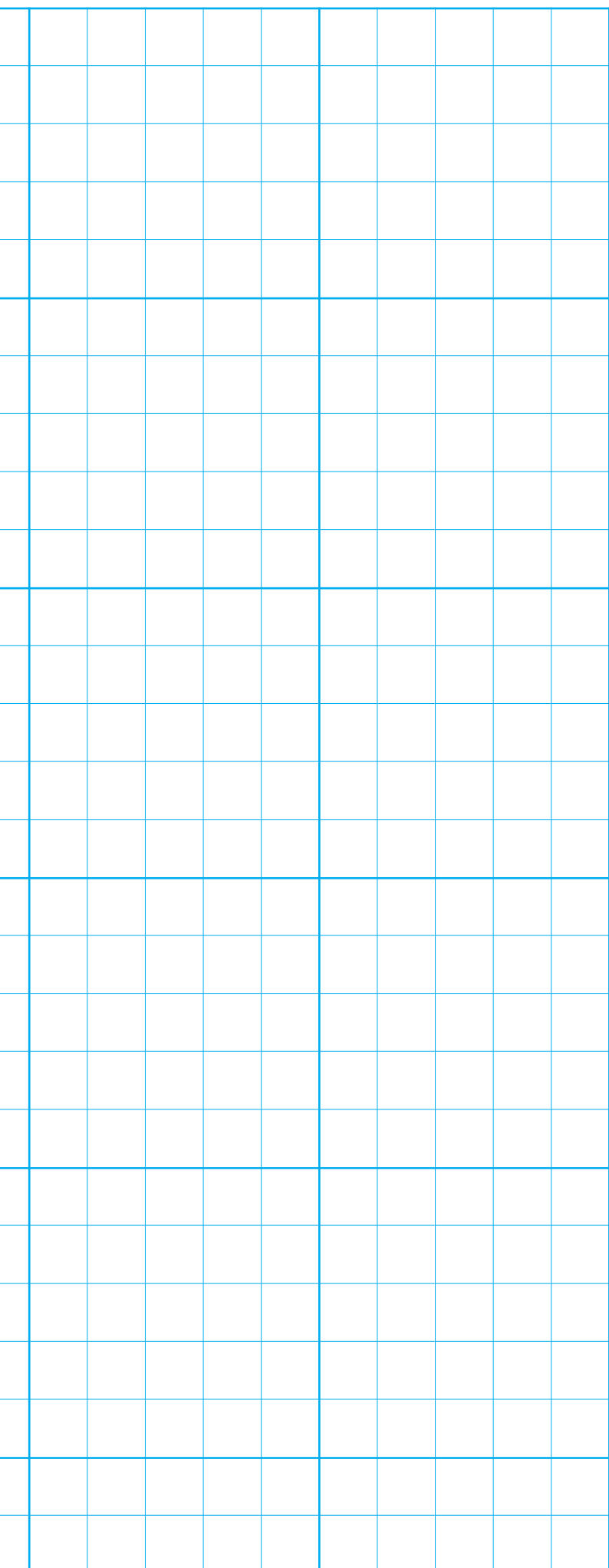
- Use the Punch Spanner to pierce a hole in the pipe for Rigid Risers or 4mm Joiners.
- Use the Punch Spanner to screw Micro Sprays or Spray Jets into Rigid Risers.
- Use the hole in the handle of the Punch Spanner to pull apart Micro Sprays for cleaning.
- If you punch a hole in the wrong place use a Goof Plug to re-seal it.



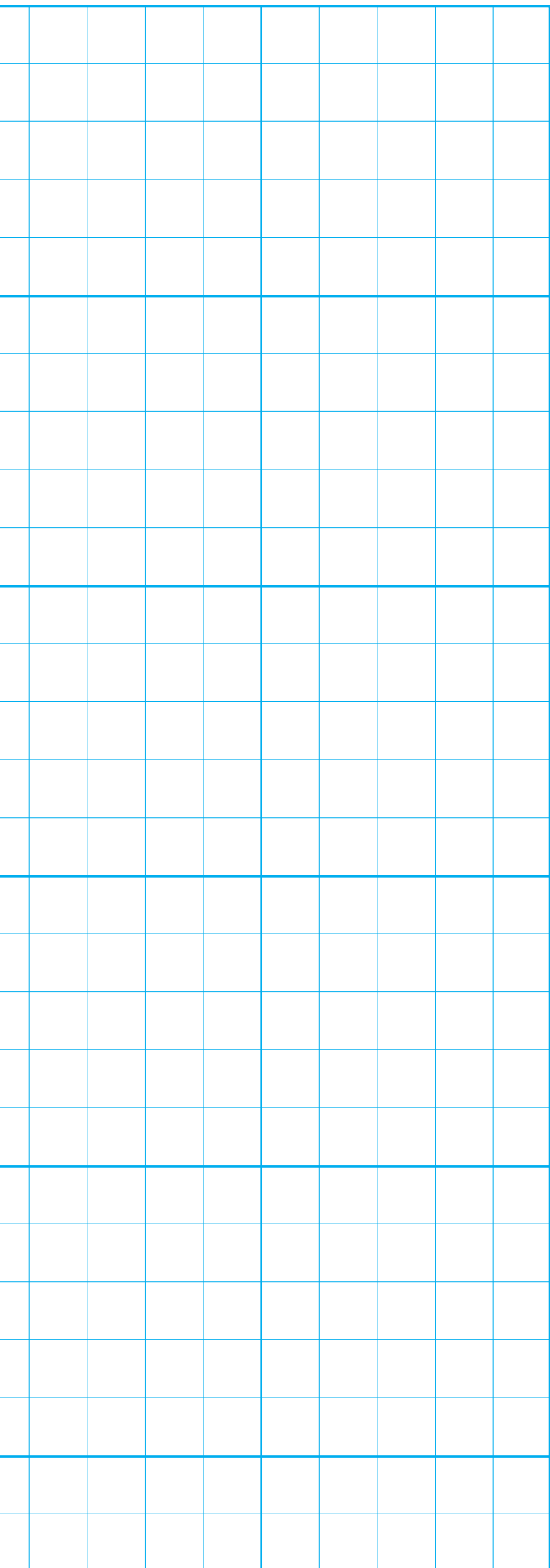
TEAR-OFF THIS GRAPH PAPER TO DESIGN A



SCALE: One small square = metres



BACK & TAKE IT TO YOUR NETA STOCKIST.



Neta provides further information on all aspects of designing an automatic system for the home garden at the Neta Home Irrigation website. For more information on using automatic watering systems wisely, please consult the **Neta Home Irrigation Guide's** section on Water Conservation, by pressing the Blue Droplet link. Download the Guide for FREE from www.homeirrigation.com.au



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