



ADDITIONAL PRODUCTS

TO MAKE YOUR IRRIGATION DESIGN COMPLETE



RAIN SENSORS



CABLE & JOINERS



VALVE BOXES



PIPE -
POLY AND PVC



FITTINGS



ACCESSORIES



PLUMBING

NOTE: For more detailed information regarding Irrigation system set up please refer to our website:
www.hrproducts.com.au

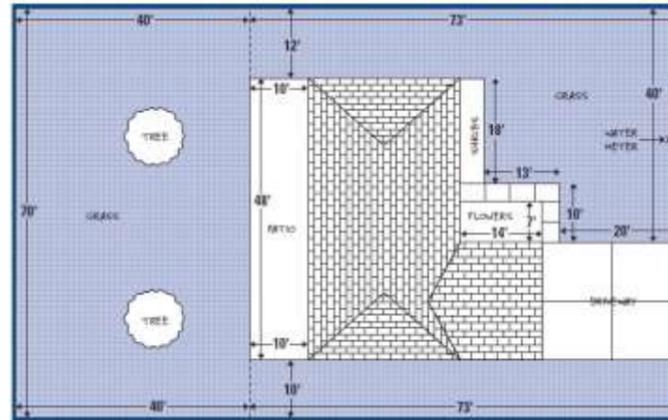


DIY IRRIGATION PLANNING GUIDE



1 PLAN & MEASURE

- Using the grid graph paper provided measure your property boundaries. Add in an outline of your home, driveway, paved areas, pool trees and any other fixed structures.
- Mark on your drawing the location and type of water supply you will be connecting to i.e. garden tap, mains service or tank.
- Measure and identify the different areas you wish to water - lawn, shrubs, garden beds and any other areas that may need watering.
- Confirm the type of control system you require - Manual or Automatic (If automatic confirm available power source for position of controller)



2 FLOW TEST AND PRODUCT SELECTION

- Calculate your design water flow - refer to Water Capacity flow test. water capacity determines the size of your system - How many sprinklers you can run at the one time depends on how much water you have available.



WATER CAPACITY FLOW TEST

This simple bucket test can be measured by timing in seconds how long it takes to fill a 9 litre household bucket. Important points -

- Testing should be done at times when you plan to run your system (i.e 6.00am)
- Do your bucket test closest to the water meter
- Ensure all other taps are turned off
- Take 20% of the flow to allow for friction loss and pressure variances in main lines

9 LITRE BUCKET CONTAINER TEST					
TIME TAKEN	LITRES MINUTE	TIME TAKEN	LITRES MINUTE	TIME TAKEN	LITRES MINUTE
7 sec	62	11 sec	39	18 sec	24
8 sec	54	12 sec	36	19 sec	21
9 sec	48	13 sec	31	20 sec	20
10 sec	43	14 sec	27	21 sec	18

PRODUCT SELECTION TABLES - CONTROLLER AND VALVES

Manual Timers	Yard Watering Kit	Automatic Controller	Ball Valves	Solenoid Valves
Mechanical timer to suit most outdoor taps. 15 –120 minutes timed watering	Fully Automatic Yard Watering Kit turns your tap into a 4 station sprinkler system	An automatic controller ensures your watering will be done on a regular basis	The use of ball valves in an irrigation system allows isolation for ease of maintenance	Range of Solenoid Valves designed for use in domestic irrigation systems

FLOW TEST & PRODUCT SELECTION CONT'D

PRODUCT SELECTION TABLES - SPRINKLERS

Drip Irrigation	Micro Sprays	Sprays	Medium Area Gear Drive Sprinklers	Large Area Gear Drive Sprinklers
Efficient way to deliver water slowly to the plants root system	2 metre to 3 metre spacing	Small area 3.7 - 5.5 metre spacing	5.5 metre to 9.1 metre spacing	10.7 metre to 15.2 metre spacing

- Decide which irrigation method best (sprinkler selection) suits the areas you want to water - Spray pop-up, Rotors or Drip. Refer to your Product Selection Guide.

DESIGN & LAYOUT

- Layout sprinklers on plan, start with part circle sprinklers which throw away from the house, driveway, fences and other boundaries, then plot the full circle sprinklers. Ensure you are achieving a head to head coverage by using the Performance Charts. (Sprinkler spacing should be set to achieve sprinkler to sprinkler coverage).
- Identify your irrigation zones based on your watering capacity flow test. Calculate your total water usage per zone by using your sprinkler flow charts e.g. 4 x 5415A uses 26.4lpm in a half circle pattern.

Note: Do not exceed design flow capacity, larger areas may need to be broken into more than one zone.

- If you have decided to go with an automatic watering system you will require a sprinkler timer, solenoid valves and cable. Cable is required to run between solenoid valves and the controller. The cable only carries 24 volts so it is easy to do yourself. Cable sizes are determined by the distance between the solenoid valves and the controller e.g. 0.5mm² maximum distance 100m. Cables should be layed in the trenches with pipework, and wire joints should be connected with waterproof electrical cable connectors.

SPRINKLER PERFORMANCE CHARTS

VOYAGER PERFORMANCE CHART - LARGE AREA GEAR DRIVE			
Nozzle Number	KPA	Radius (m)	L/min
1	350	9.8	6.4
2	350	10.4	7.8
4	350	12.2	16.2
8	350	13.7	32.6
LOW ANGLE NOZZLES			
L1	350	8.5	8.0
L2	350	10.1	10.6
L3	350	10.7	13.3
L4	350	10.7	16.6

SATURN PERFORMANCE CHART - MEDIUM AREA GEAR DRIVE			
Nozzle Number	KPA	Radius (m)	L/min
0.75 RED	275	5.50	2.80
1.5 BLUE	275	7.30	5.70
3.0 GREEN	275	9.10	11.40

5400 SERIES SPRAY PERFORMANCE CHART							
Metric Adj. Nozzle	GREEN - 12A Rad - 3.7m Adj 25° - 360°	BLACK - 15A Rad - 4.6m Adj 25° - 360°	GREY - 17A Rad - 5.2m Adj 25° - 360°				
Rad. Arc	Flow KPA	Rad. m	Flow l/m	Rad. m	Flow l/m	Rad. m	Flow l/m
45°	172	3.7	1.1	4.6	1.7	5.2	2.1
90°	172	3.7	2.1	4.6	3.3	5.2	4.3
180°	172	3.7	4.2	4.6	6.6	5.2	8.5
360°	172	3.7	8.5	4.6	13.2	5.2	17.0

4 SYSTEM INSTALLATION TIPS

TOOLS REQUIRED

• Marking Stakes	• String Line
• Trenching Shovel	• Multi Grips
• Rake	• Poly Cutter or Sharp Knife
• Tape Measure	• Hacksaw
• Spade	• Axe

Important Note - Consult local authorities for buried cables, water pipes, backflow prevention laws (backflow prevention and isolating valves must be installed by a certified plumber/contractor where required by state laws) underground power supplies and gas pipes.

CONNECTION OPTIONS

OPTION 1 - MAINLINE WATER SUPPLY

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 advice on installing an approved back flow prevention device.

OPTION 2 - PUMPS

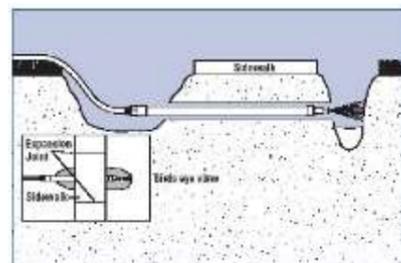
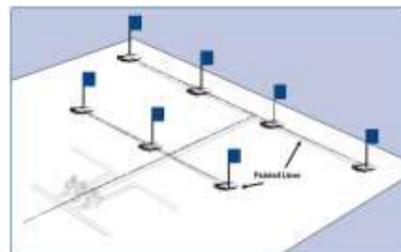
1. When the water source is a tank, lake, well or bore hole the irrigation system is usually pressurized by a pump.
2. A check valve and manual control valve should be installed on the discharge line to prevent backflow and regulate flow.

MARKING OUT

Use stakes and string line to mark position of trenches and sprinklers

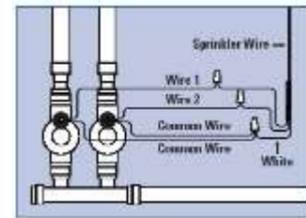
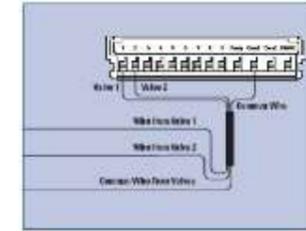
TIPS

1. Pre-soak ground to soften digging
2. Use a hose to make a trench underneath paths and driveways



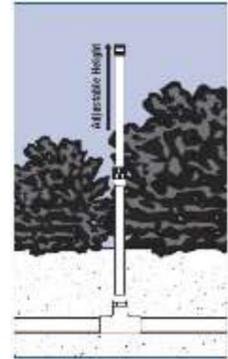
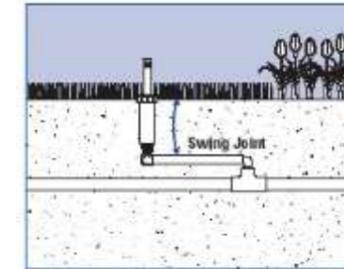
INSTALLING THE CONTROLLER

1. Decide where you would like to locate the controller.
2. Follow the installation instructions that come with the controller.
3. Use colour-coded irrigation wire to connect the valves to the controller.
4. The total number of wires you need is one for each of the valves, plus one common wire.
5. Connect wires to valves with waterproof connectors.



INSTALLING SPRINKLER HEADS

1. Use a flexible riser to install sprinklers for ease of height adjustment when installing.
2. Install all the heads but the last head on a run. (Leave off for flushing)
3. Flushing system: Allow water to flush out any dirt that may have entered the system when installing.
4. After flushing is complete install the remaining sprinkler heads
5. Make sure sprinklers are just level with ground to prevent low head operation and to avoid sprinkler damage from lawn mowers.



Important: Adjust heads for proper spray pattern and check for adequate head to head coverage

BACKFILLING TRENCHES

1. Do not directly bury the valves.
2. Install a valve box for easy access to valves.
3. Wait until you are backfilling the trench to set the valve box.
4. Check system again before filling the trenches, this time looking for any leaks in the pipe work and adjust sprinklers for coverage.
5. If joints and sprinkler performance is satisfactory, fill in the trenches.





PLAN YOUR SYSTEM

