

IRRIGATION

Many environmental-conscious countries have already started to limit water usage for a sustainable future. Prince's has begun an efficient use of water for irrigation. With a strong background in plants and landscape maintenance, we can provide professional input and practices for irrigation based on specific situations.

Irrigation can be manual, semi-automatic, or fully automatic. For manual watering, we can provide irrigation advice on the quantity, frequency, and method for a specific site and plant conditions. For semi-automatic and automatic irrigation, we design and install different irrigation systems including drip and sprinkler systems.

We also provide advice on fertigation and chemigation. Fertigation is an automatic system to apply liquid fertilizer while chemigation is an automatic system to apply liquid insecticide and fungicide.

We give assurance on our projects for best quality and service. Together with our clients and partners, we can work together for our sustainable and bright future.

FREQUENTLY ASKED QUESTIONS

WHAT KIND OF IRRIGATION SYSTEM SHOULD I USE?

Prince's irrigation engineer will be able to advise the best system given the project specifications – ie plant spacing, and plant type, etc.

WHY USE DRIPPER SYSTEM?

Drippers allow water to be delivered directly to the plant root zone.

- Direct application to plants – especially when wider spaced
- Reduces water wastage
- Limits overspray onto buildings, walkways, etc
- Minimizes risk of mosquito breeding
- Reduces water loss through evaporation
- Design flexibility – can take water directly to the plant
- Avoids fungal infections in susceptible plants
- Different emitters are used to ensure watering needs of different plants are met. (A “spider” system can also be used in conjunction with a dripper to increase the accuracy of water application.)

WHY USE SPRINKLER SYSTEM?

- When plants are very small
- Plants are very close together
- When there is a shallow root zone
- What is the drip irrigation operation pressure?
- It varies from 1 bar to 1.5 bars depending on the design.

WHAT IS THE SPRINKLER IRRIGATION OPERATING PRESSURE?

It varies from 2 bars to 3.5 bars depending on the type of sprinklers.

WHAT IS PUB?

PUB stands for Public Utilities Board. Standard PUB water pressure is 3 to 3.5 bars.

WHY DO WE NEED TO REGULATE THE PRESSURE IN THE SYSTEM?

If the pressure is more than the designated pressure, the velocity of the water in the system is high and the components may become loose or fall out during operation/ or the system may develop leaks.

HOW DO WE REGULATE THE PRESSURE?

By using a gate valve/pressure regulating valve and a pressure gauge in succession. Increasing or decreasing the pressure on the pressure gauge is done by adjusting the gate valve/pressure regulating valve.

WHEN IS ZONING REQUIRED?

For larger projects, zoning might be required when the area is divided and watered at different times.

- Area to be irrigated is large
- Dripper discharge is high (l/hr)
- Water availability is low
- When is a pump required?
- When discharge and pressure required is higher than available pressure.

WHY IS ELECTRICITY REQUIRED?

Electricity is needed when a pump is used to pump water into the system.

HOW IS FERTILIZER APPLIED?

Liquid fertilizer is applied via the irrigation system using a fertigator / fertigation pump/ venturi assembly or a dosatron.

WHAT FERTILIZER IS USED?

The type of fertilizer applied depends on the plant species. Nitrogen fertilizer is good for vegetative growth, and phosphate and potash are often used for the root growth and flowering. An all-round fertilizer is generally used with added micronutrients.

WHEN IS A TANK REQUIRED?

If the water quantity and pressure is not enough to supply the entire system, then a tank is required to store sufficient water for pumping. A tank is also used to avoid pumping directly from a PUB outlet.

WHAT WILL AN IRRIGATION SYSTEM COST?

Different system requirements will influence the cost of the system – eg whether a tank is needed, how many zones, type of system, etc.

WHAT KIND OF MAINTENANCE IS REQUIRED FOR IRRIGATION SYSTEMS?

Removal of Blockages, cleaning of filters and drippers/ sprinklers, flushing of lateral lines ensuring all plants are getting adequate water.

WHAT SERVICES DOES PRINCE'S PROVIDE?

Quote, Design, Installation, User manual and schematic Maintenance

TORO IRRIGATION PRODUCTS



INLINE DRIPLINE

- Available in 1.6, 2.0, 2.4 and 4.0 lph flow rates at 15 psi
- Dripper spacing available in 0.3, 0.4, 0.5, 0.6, 0.75, 0.9, 1, 1.5
- Tubing sizes of 16, and 20 mm OD



LLDPE TUBE

- Used in micro-sprinkler irrigation system and drip irrigation system
- Micro sprinkler stake and online emitters connect to this tube
- Available in various diameter(ID) 10 mm - 35 mm



ONLINE EMITTER

- Directly connects to LLDPE tube
- Flow rate 2- 8 lph at 15 psi
- Available in various designs as per purpose



MICRO SPRINKLER

- Overhead application in orchard, vineyards and nurseries
- Diameter of throw 5-11.2 m
- Flow rate 34.4-246.4 lph at 20 psi(8 flow rates)



POP UP SPRINKLER

- Used in Turf areas
- Wide range of products
- Wetted radius 0.6- 33 m
- Discharge 0.2-234 lpm
- Recommended operating pressure-1.5- 6.9 bar
- Flow circle adjustment



SOLENOID VALVE

- 24 V a c
- Available in 25 mm, 40mm, 50 mm, 75 mm size
- Pressure range 10- 200 psi(varies by models)



FILTERS

- Media – plastic disc and stainless steel screen
- Available in ¾" 1" & 1 ½"NPT
- Flow range 1.1- 18 m3/hr



IRRIGATION CONTROLLER

- 4 station base expandable up to 16 station
- 3 irrigation schedules
- 3 scheduling choices
- Compatible with toro weather station and sensors



IRRIGATION TIMER

- Battery operated(9V)
- Indoor/outdoor use
- Max 8 starting time/day
- Connects directly to either a 20mm or 25mm tap
- Operating pressure 1 to 7 bar
- Up to 8 start times per day

