DRIP IRRIGATION SYSTEM

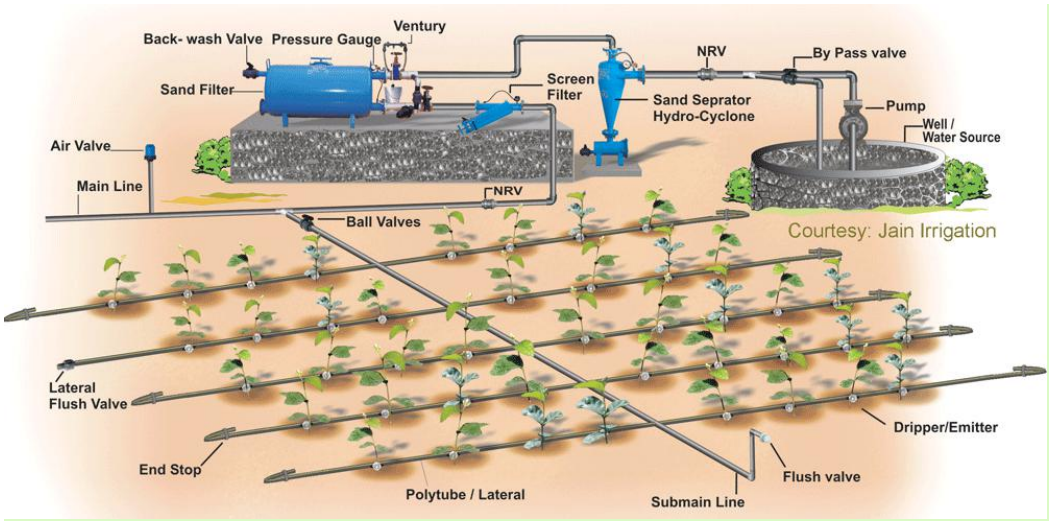
DRIP IRRIGATION SPARES ALSO AVAILABLE

- ✓ *Drip irrigation is the most efficient method of irrigating. While sprinkler systems are around 75-85% efficient, drip systems typically are 90% or higher.*
- ✓ *What that means is much less wasted water! For this reason drip is the preferred method of irrigation for water scarce regions.*
- ✓ *But drip irrigation has other benefits which make it useful almost anywhere.*
- ✓ *It is easy to install, easy to design, can be very inexpensive, and can reduce disease problems associated with high levels of moisture on some plants.*
- ✓ *Drip irrigation (sometimes called trickle irrigation) works by applying water slowly, directly to the soil.*
- ✓ *The high efficiency of drip irrigation results from two primary factors.*
- ✓ *The first is that the water soaks into the soil before it can evaporate or run off.*
- ✓ *The second is that the water is only applied where it is needed, (at the plant s roots) rather than sprayed everywhere.*
- ✓ *While drip systems are simple and pretty forgiving of errors in design and installation, there are some guidelines that if followed, will make for a much better drip system.*
- ✓ *The purpose of this tutorial is to guide you toward materials and methods that will increase the benefits of your new drip system,*

while steering you away from some common misconceptions and practices that can cause you trouble.

COMPONENTS AND OPERATION :

- *Pump or pressurized water source*
- *Water filter(s) or filtration systems: sand separator, Fertigation systems (Venturi injector) and chemigation equipment (optional)*
- *Backwash controller (Backflow prevention device)*
- *Pressure Control Valve (pressure regulator)*
- *Main line (larger diameter pipe and pipe fittings)*
- *Hand-operated, electronic, or hydraulic control valves and safety valves*
- *Smaller diameter polytube (often referred to as ‘‘laterals’’)*
- *Poly fittings and accessories (to make connections)*
- *Emitting devices at plants (emitter or dripper, micro spray head, inline dripper or inline driptube)*



WHY DRIP IRRIGATION ?

- *Fertilizer and nutrient loss is minimized due to localized application and reduced leaching.*
- *Water application efficiency is high if managed correctly*
- *Field leveling is not necessary.*
- *Fields with irregular shapes are easily accommodated.*
- *Recycled non-potable water can be safely used.*
- *Moisture within the root zone can be maintained at field capacity.*
- *Soil type plays less important role in frequency of irrigation.*
- *Soil erosion is lessened.*
- *Weed growth is lessened.*
- *Water distribution is highly uniform, controlled by output of each nozzle.*
- *Labor cost is less than other irrigation methods.*
- *Variation in supply can be regulated by regulating the valves and drippers.*
- *Fertigation can easily be included with minimal waste of fertilizers.*
- *Foliage remains dry, reducing the risk of disease.*
- *Usually operated at lower pressure than other types of pressurized irrigation, reducing energy costs.*

INSTALLATION STEPS :

LAY OUT IRRIGATION GRID :

• Lay out a grid with hoses and emitters showing the plants you want to water and how far apart they are.

• Each plant will get an emitter, a tiny sprinkler, for its own watering needs, and each emitter will be attached to the water source with a network of drip irrigation lines, 1/4- and 1/8-inch plastic tubing that runs from the main hose to your plants.

• For continuous coverage, place emitters every 12 inches apart in sandy soil, 18 inches in loamy soil and 24 inches in clay soil.

ASSEMBLE THE HOSES

• Install a backflow preventer valve to the outdoor faucet to keep groundwater from backing up into your drinking water.

• Attach a hose adapter to fit the diameter of the system's main line.

• Connect the system's main line to the backflow preventer and run it to the garden.

INSTALL TEES FOR BRANCH LINES

Place a tee in the line for each branch line and secure with band clamps.

• Cut lengths of line long enough to extend through the garden to each tee.

INSTALL EMITTERS AND FEEDER LINES

• Punch holes in the line for each emitter with emitter tool and place emitters in the desired location.

• If plants to be irrigated are more than 1 foot away from the line, cut an appropriate length of 1/8-inch emitter tubing and attach the feeder line to the emitter on the branch line and then attach an emitter to the end of the feeder line.

• Plug the ends of the individual lines with caps and secure with band clamps.

• Flush the system every four to six months by removing the end caps and turning on the water, allowing it to run until the water flows clear.