

Installation of drip emitters

When buying emitters, buy the simple drip emitters. 1 gallon per hour emitters are recommended. 1/2 gallon per hour emitters clog and 2 gallon per hour emitters change the water requirements, possibly straining the well.

If you have a lot of elevation change in your design, pressure compensating emitters may be the way to go.

The emitters with the sharp points are easier to install and do not require any other tools for installation.

Start running water through the pipe lines, this will flush the lines and make it easier to pop in the emitters. Once all emitters are in, install the end caps. Wait for the lines to pressurize, while checking for leaks.

Maintenance

Remove the cap from the filter while the system is on. This will flush out any sediment. Replace cap and check for any missing emitters or rodent damage.

Make any repairs as needed and be sure to check the system weekly. Winterization of the drip system is as easy as removing the end caps from the end of the pipe and flushing out the lines until water runs clear.

Remove filter assembly and store for the winter. Drip irrigation parts are made to take the harsh sunlight outdoors for years.

Replace end caps after a few days to keep insects and dirt out of the pipe.



Advantages

- Drip irrigation conserves water
- Drip irrigation is a more efficient method of watering
- Drip irrigation takes no special tools to install
- Drip irrigation requires less maintenance
- Drip irrigation works better on rough terrain
- Drip irrigation is less expensive over the life of the windbreak
- Drip irrigation increases the survival rate and growth rate of the windbreak, increasing energy benefits



Drip Irrigation System Installation & Parts List



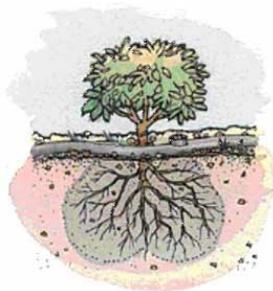
**LARAMIE COUNTY
CONSERVATION DISTRICT**



**11221 US HWY 30
CHEYENNE, WY 82009
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Drip Irrigation Systems

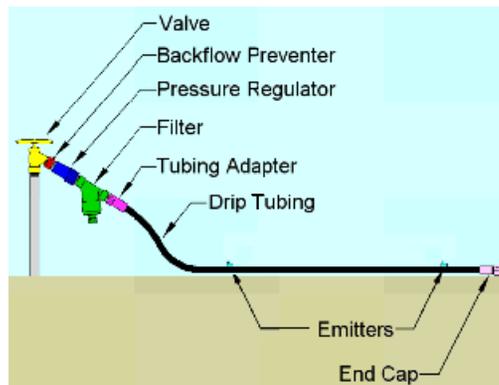
Drip Irrigation Systems save up to 50% on water. Drip irrigation systems are up to 90% efficient, with no erosion and evaporation compared to aerial sprinklers. Drip irrigation delivers a precise amount of water slowly, saturating the root of the plant, encouraging deep healthy roots. With drip irrigation, you can water anytime of the day and in any condition, delivering the water when and where you need it. Growth and survival of trees in a windbreak increases with frequent and recommended watering on new seedling trees. They establish better, grow more quickly and are healthier.



Setup

The size of the windbreak and the water source are the biggest components in designing a drip system. You need to first find out how much water the trees in the windbreak are going to require. Calculated this way: the number of trees divided ($/$) by 60. This will give you the amount of water needed per minute to water all of the trees. Go to your water source and time how long it will take to fill a 5 gallon bucket. Divide the number (time) by 5. Now divide 60 by that total. This will give you what your water source produces in gallons per minute. Compare this to your water requirements for you trees. DO NOT exceed 2/3 of your water supply. If so, look at zoning your windbreak.

Next, figure what size pipe will deliver enough water to the trees. As a rule of thumb, do not run $\frac{1}{2}$ in. drip pipe more than 400 feet constant. This includes the supply line. (The line from the hydrant to the start of the tree rows). Also, do not run $\frac{3}{4}$ in. drip pipe more than 1000 feet constant (including the supply line to the tree rows). As a preventative measure for the future, use $\frac{3}{4}$ in. drip pipe for expansion of the tree row or any other expansion plantings that will tie into the drip system. The price difference between $\frac{1}{2}$ and $\frac{3}{4}$ is not much greater.



Parts

The photo above shows the parts that are essential to a well-running drip system.

Anti-siphon valve acts as a back flow preventer; preventing dirty irrigation water from backing into your well.

Pressure regulator reduces the water pressure for a drip system. All drip system parts work at a low pressure.

Filter is essential to the drip system, it can be installed above or below the pressure regulator. It uses a 150 or 200 mesh screen to keep sediments and scale from clogging small openings in the drippers and other parts.

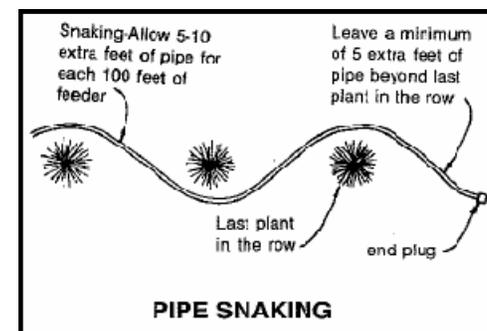


Swivel adaptor may be referred to as tubing adapter, attaches all of these parts to your drip pipe.

Tighten all parts by hand, not using glue. Push together fittings that don't require any fancy tools. You want to be able to take these parts apart for cleaning and winter storage.

Snaking

Roll the pipe out, snaking in and around the trees using landscape staples to hold pipe in place. Snaking the pipe will compensate for expansion and contraction from water and air temperature changes. This also gives you the ability to move the drip line away from the trees as they grow.



*Never bury drip irrigation pipe among the trees.

Rodents like to chew on drip pipe and if there are leaks or clogging of the emitters. (Causing more work for the home owner). You have to dig up the pipe, thus putting holes in the fabric allowing weeds to grow.

Water Requirements

Using the formula of 10 gallons per inch of diameter, you will know how much water each tree needs. Simply leave the system on for one hour for each gallon of water needed, or for each inch in diameter of the tree.

