

A Basic Drip Irrigation System

1 Connect your system to any **outdoor faucet**. Knowing the delivery rate of the emitters (13), the water needs of your trees, and the kind of soil you have (clay requires more watering time than a loam or sandy soil), you can open the valve for the necessary length of time during dry periods. Automatic timers can be inserted here.

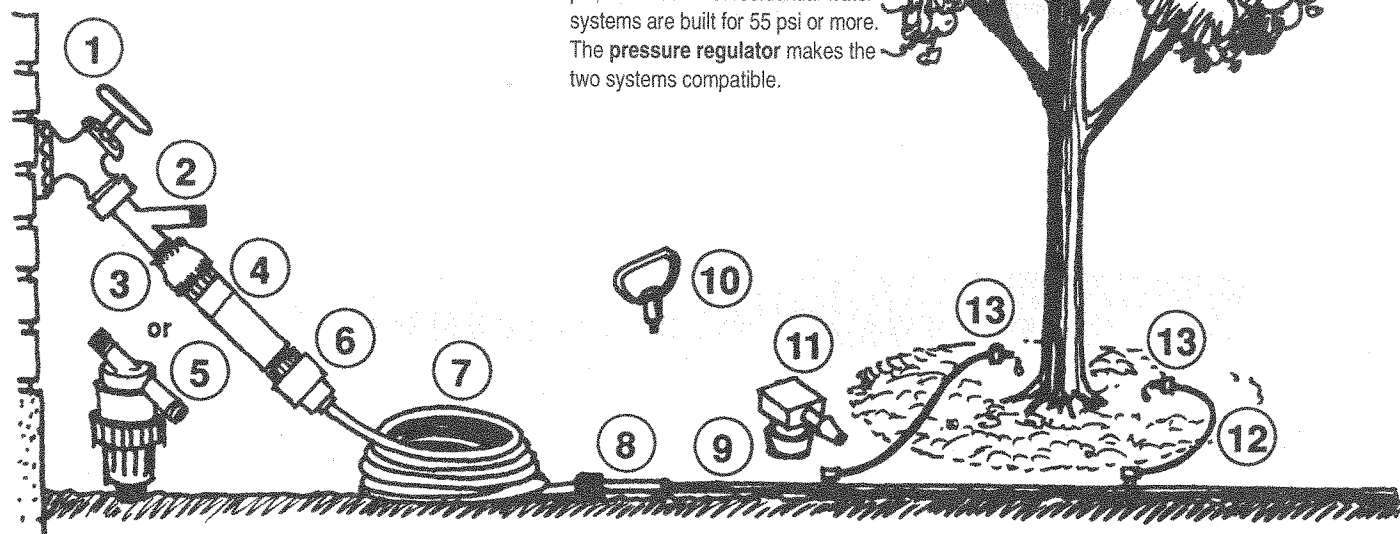
2 A **hose Y** provides an outlet for a second irrigation supply line or a hose for other uses.

3 A **vacuum breaker** prevents water from backing up into the home drinking water.

4 **Filters** are essential for screening out dirt particles that can clog tubes or the tiny openings of emitters. Filters vary widely in sophistication, but all must be maintained carefully. This is the heart of trouble-free operation.

5 Units are available that allow the continual or periodic **feeding of fertilizer** in just the right amounts.

6 Most drip systems operate best at pressures of between 15 and 40 psi, whereas most residential water systems are built for 55 psi or more. The **pressure regulator** makes the two systems compatible.



7 & 8 Ordinary garden hose (7) can be used to span the distance from water source to the irrigation site. An **adapter** (8) then connects the hose to the polyethylene or "plastic" pipe (supply line). Or you can begin directly with the polyethylene pipe.

9 For home use, the **supply line** is usually 1/2" or 3/4". Polyethylene is reasonably flexible, so you can arrange it to advantage among your trees. T- and Y- shaped connectors allow for an infinite variety of arrangements.

10 A **hole punch** allows you to put the small, lateral tubes exactly where they are needed.

11 **Emitters** are tiny devices that portion out the water at a slow, known rate. Usually this is 1/2" or 1 gallon per hour. There are many kinds of emitters. One is the "point source" emitter (pictured) that drips or trickles. Another kind is a miniature sprayer that is elevated on a stake and covers a wider area with water. This one is best suited to watering ground covers.

For trouble-free operation, be sure to use emitters that are self-flushing (to prevent clogging) and pressure-compensating (so the rate of drip does not vary due to distance from the water source).

12 **Small diameter tubing**, sometimes called spaghetti tubing, distributes water from the main supply line to the exact spot where it is needed. These tubes can be eliminated if the main supply line passes over the point of watering. In this case, water can be allowed to trickle directly from the emitter.

13 A **bug protection cap** keeps out intruders that can cause clogging.

Tips to Prevent Problems

- Until you are skilled in the use of drip irrigation, leave buried lines and emitters to the professionals.
- Hide lines and emitters in vegetation and under mulch to prevent vandalism, accidental damage, or tripping.
- Check emitters frequently and maintain the filter as directed by the manufacturer.
- Buy for quality! Cutting corners with drip irrigation equipment does not pay in the long run.