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Initial Start-Up

Once you have a firm grasp on the components of the assembly head and drip line, it's time for the initial installation. When installing your head assembly, there are a few different configurations and material options to consider. This section will help you determine what method is best for you based on your irrigation needs and what materials and components are available to you.

What We Will Cover

- Installing the Head Assembly
- Lateral Layout Method
 - Poly Tubing
 - PVC Pipe
 - Micro Tubing
 - Drip Fitting Installation
 - Punch Tools
 - Drip Emitters
 - Drip Line
 - Micro Sprinkler, Fogger and Sprayer Installation
 - Retro-Fitting

Initial Start-Up

Installing Head Assembly

All properly designed drip systems begin with what is called the “drip zone”, which consists of three vital components: a control valve (manual or automatic), a filter, and a pressure regulator. This assembly can be attached to a faucet, anti-siphon or in-line valve, or sprinkler riser.

Option 1: Connect to Outdoor Faucet

Begin the installation by connecting to an outdoor faucet (hose thread). First attach the backflow device (if your faucet already has a brass backflow attached, this is not required). If you are planning to use a battery operated controller, install the backflow device after the controller. Then attach the fertilizer applicator, filter a pressure regulator followed by the 3/4” swivel adapter. All these fittings have “hose” type threads and are sealed by a washer so they should be turned clockwise until they are “hand tight” only. Tightening with a wrench is not recommended and is usually not necessary.

Option 2: Retrofit with 1/2” Riser

Begin the installation by retrofitting an existing 1/2” riser. Install a drip system to an existing 1/2” riser by first unscrewing the sprinkler head from the riser and then screw on conversion elbow. Next, attach a pressure regulator (hose thread) and finally the 3/4” swivel adapter. Now connect either 1/2” poly tubing or a drip line and secure the tubing or the drip line using tubing holder stake. When combining drip irrigation with an existing sprinkler system, be sure to use high flow 4GPH drippers or adjustable drippers with 0 to 20 GPH. After installing the drippers, open the valve and flush out the line and then close off the end with an end cap or a figure eight. If used with 1/4” micro tubing after the pressure regulator, add an adapter, connect the 1/4” micro tubing and add 1/4” tee as needed; use with 4 GPH drippers to a maximum flow rate of 35 GPH.



Option 3: Connect to Existing Mainline

Begin the installation by connecting to an existing main line.

Note

This method requires basic plumbing skills, inexperienced installers should contact a plumber or irrigation contractor for this connection.

First tap into the water service line. This can be done at a faucet or by cutting to your service line before the faucet. You can avoid cutting the service line by removing the faucet and installing a brass threaded "Tee" (line size) just upstream of the faucet. Shut off the water supply and unscrew the faucet from the brass fitting or, if necessary, cut the copper pipe before the faucet. Install the Tee with the side outlet facing down and screw the faucet back into the end of the Tee. Below the Tee, install a manual shut-off valve (for emergency shut-off), then 3/4" PVC male adapter, then connect 3/4" Sch. 40 PVC pipe and run it out to the location of the drip system control valve(s) (Copper should be used in a freezing area).

Select Which Type of Control Valve to Install

The Drip Store provides several different types of automatic control valves; each one is designed for the low-flow hydraulic conditions of drip systems. If your irrigation design calls for more than one control valve, use the same type for each zone. This may involve building a manifold with a series of tees branching off to each valve. Always end the manifold with a PVC cap to make future valve additions easier. Choose either in-line battery operated valves, in-line AC (electric) valves, battery operated anti-siphon valves or manual anti-siphon valves. Please note that AC valve installations will involve running underground control wires back to an electric controller.

1. Underground installation using in-line battery operated controller (Pipe thread): Use model C001 and complete the head assembly by attaching 150 mesh filter and pressure regulator. Use 3/4" swivel adapter if a poly tube is connected to the assembly. If connecting to a PVC pipe, use a 3/4" PVC female adapter. Note: valve and head assembly should be installed into one standard rectangular valve box.
2. Underground in-line installation using an AC valve: Use the Drip Store model VA015 valve assembly, which is a complete drip zone head assembly, (includes 3/4" electric valve, filter, pressure regulator and swivel adapter) or build your own system using the same parts individually. This assembly can be connected via electric wire to any available station on your irrigation controller or to our model # C016 AC controller with an independent program for each valve.
3. Above the ground installation using a battery operated controller with anti-siphon valve: Use anti-siphon valve and install it on a 3/4" schedule 80 nipple so it is at least 6" to 12" above the highest dripper or sprayer. Complete the head assembly by attaching a 3/4" filter with 150 mesh, a pressure regulator to the downstream outlet. Finally attach a 3/4" swivel adapter if using poly tubing, or 3/4" PVC female adapter if used with PVC pipe.
4. Above ground installation using a manual anti-siphon valve: Use any 3/4" manual anti-siphon valve and install it 8" to 12" above grade. The downstream will consist of the 150 mesh filter, pressure regulator and the swivel adapter if using poly tubing, or a 3/4" PVC female adapter if using PVC pipe. These valves can be easily converted to automatic operation by installing a battery-operated controller. Note: backflow device are not required on systems controlled by anti-siphon valves.

Choose Lateral Layout Method

Poly Tubing as the Main Lateral

Install a 1/2" poly pipe above or below grade from the hose end, in-line controller or in-line valve to the area to be watered. Use 1/2" tee, 1/2" elbow where needed, and from the tee or elbow extend additional poly pipe to the plants. Use the 1/4" as the feeder line and secure all 1/2" poly tubing to the ground using holder stakes. Add drippers and micro sprinklers to the 1/2" poly tubing and to the feeder line as needed, or use a PC drip line.

Option 1: Using a PVC Pipe

Install a 3/4" PVC pipe below grade from the controller or in-line valve to the area to be watered and connect the PVC pipe to the in-line valve or to the battery operated controller. In each area to be watered, add a 3/4" PVC tee (3/4" slip x 1/2" female thread) and a 6" or 8" 1/2" riser. To the riser, add a conversion elbow and then a swivel adapter or swivel tee. Attach the 1/2" poly tubing or a drip line and secure all 1/2" poly tubing and drip lines to the ground using holder stakes. To the 1/2" poly tubing, add drippers or micro sprinklers as needed for your plant layout or use the 1/4" micro tubing as the feeder line to the plants. Add the drippers at the end of the micro tube (see figure 4a).

Option 2: 1/2" Poly Tubing and 1/4" Micro Tubing

Unroll the 1/2" poly tubing and lay it out in direct sunlight to make it easier to work with. Use stakes to secure the poly tubing to the ground. If the poly tubing is installed below grade, dig trenches 6" to 8" deep to keep the poly tubing safe from cultivation practices. Leave the end of the poly tubing above surface for periodic flushing.

If the installation requires crossing under a concrete walk or driveway, first dig two holes on opposite sides of the walkway. Next, connect a 3/4" PVC pipe to a garden hose with an adapter and a 3/4" PVC female adapter, then turn on the water and begin forcing it through the soil. When the end of the pipe reaches the other side, turn off the water and cut the pipe so the hose and fittings can be removed. Now use the PVC pipe as a sleeve and push the poly tubing through the pipe until it appears on the other side.



Once the 1/2" poly tubing has been installed, then the 1/4" micro tubing can be connected. First attach the micro tubing to the 1/4" barb (or 1/4" tee), then use the punch to make a hole in the 1/2" poly tubing and then insert the barb into the hole. Install a dripper or micro-sprayer at the end of the micro-tubing and use it as a feeder line to reach remote plants or clusters of plants that are away from the main 1/2" tube.

Attach a 3' to 5' piece of PVC pipe to your hose using a PVC 3/4" thread, slip hose into pipe thread adapter, turn the water on and push the pipe through the dirt using the water pressure to blast a tunnel. Be careful to avoid damage to the concrete walk or driveway.

Once you have installed the 1/2" poly tubing, use a 1/4" barb to connect the 1/4" micro tubing to the 1/2" poly tubing and use the 1/4" micro tubing as the feeder line to an individual plant or cluster of plants.



Option 3: Drip Fitting Installation

To connect poly tubing using the compression fitting, cut the poly tubing with a hand pruner, being careful to keep dirt from entering the poly tubing. Hold the fitting in one hand and the tubing in the other and force the tubing into the fitting while moving the tubing from side to side. "Walk" the tubing into the fitting until about 1/2" to 3/4" of tubing is inside the fitting.

Note

For other size tubing use the fitting with blue insert for Toro blue stripe tubing (.710 OD) Barb fittings can be used to connect 1/4" to 1/2" or to connect two ends of 1/4" micro tubing. Insert the barb into the end of the 1/4" micro tubing by forcing the micro tubing over the 1/4" barb. To connect 1/2" poly tubing to 1/4" micro tubing, punch a hole in the 1/2" poly tubing and insert one side of the 1/4" barb or tee. Then insert the other side of the barb or tee into the end of the 1/4" micro tubing by forcing the micro tubing over the 1/4" barb.

To connect various sizes of 1/2" poly tubing with different OD's, use our reducer coupling for blue stripe with blue x black insert or use our nut-lock fittings for any size by removing the nut and inserting it over the poly tubing. Insert the barb side of the nut-lock into the ID side of the poly tubing and insert the other side of the barb into the nut-lack housing. Then thread the nut lock to secure.

Option 4: Punch Tool

The Drip Store offers two different punches to use with your drip installation. Both are easy to use. For a small number of drip emitters use our low cost punch. For a large number of emitters or for ease of operation use the larger gun punch.

To use the small punch, hold the poly tubing in one hand and with the other apply just enough pressure on the punch while at the same time rotating the punch back and forth to create a hole in the poly tubing. To use the large gun punch, insert the poly tubing to the punch and press the handle to punch a hole.



Option 5: Drip Emitters

The drip emitters can be installed using either one of the two methods. Both methods can be used in any installation. The first method is for plants that are close to the 1/2" poly tubing. Punch a hole in the 1/2" poly tubing and snap the barb side of the dripper into the poly tubing. Make sure that the minimum spacing between the drippers is not less than 10".

The second method is used for individual plants and plants that are far off from the 1/2" poly tubing. Punch a hole in the 1/2" poly tubing and insert a 1/4" barb or a 1/4" tee into the 1/2" poly tubing. Unroll and attach the 1/4" micro tubing to the 1/4" barb or 1/4" tee and then lay the micro tubing out to the individual plant or group of plants. Push the dripper into the end of the micro tubing and secure the dripper using a holder stake.

Option 6: Drip Line

The drip line can be installed below or above the ground. If used above the ground, they can be covered with mulch to blend it with the landscape. Our PC drip line can be used for installation in planters, islands, or landscape areas. To connect the drip line to the poly tubing, use compression fittings tee or elbow, and close the end of the line using end cap. Starting from a 1/2" PVC riser, screw conversion elbow. Next attach a pressure regulator, then 3/4" swivel adapter. Connect the drip line in any configuration using tees and elbows. We recommend using our PC drip line in 12" to 16" spacing between the lines on sandy soil, and 18" to 24" between the lines on loamy soil for the best coverage.



Option 7: Micro Sprinkler, Fogger and Sprayer

To install micro sprinklers, micro sprayers, foggers, spray jets and adjustable sprayers, first select the unit diameter and pattern, then the flow rate. You can use some of the extensions to connect the threaded sprayers and foggers to the system. Foggers and spray jets may be installed directly into the 1/2" poly tubing by the same method as used for installing drippers. They should be raised a minimum of 6" above the ground for the best uniformity and coverage. To raise the sprayers or foggers 4" to 8" above the ground use, 6", 8" or 12" long riser with barb. To raise the sprayers 8" above the ground, use universal clip stake assembly. To have the ability to adjust the flow rate use adjustable flow spike assembly.

Tip

For a quick solution from a single water source to irrigate an open field, use #97 on 20 x 20 spacing for a distance of up to 170' with a maximum of 7 compact micro sprinklers on one line of poly tubing or split it using a 1/2" tee and double the distance for a total coverage of 3200 SF.

Option 8: Retrofit with Your Sprinkler System

Remove the sprinkler from the riser that will be used for the drip system. Add the adapter with 1/4" barb and reattach the sprinkler back to the riser. To the adapter with the 1/4" barb, connect the micro tubing and lay out the micro tubing to the area to be watered. Near each plant, add a 1/4" tee and from the tee add micro tubing to the plant. Then add a high flow dripper or adjustable dripper and secure the dripper to the ground using a holder stake.



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Chapter in Review

Initial Start-Up

To install a successful head assembly, it is important to consider a few different configurations and material options. We hope that this chapter has explained what method is best for you based on your irrigation needs. Use the list on the right to insure that you have everything you need for a successful start-up.

If you ever have any questions regarding which materials or components to use, you can always call our Customer Care team at The Drip Store. We're available Monday through Friday, 7 a.m.-4.p.m. (PST) at 760-597-1669 or toll free at 877-597-1669.

My Initial Start-Up Plan

Installing Head Assembly

- Connect to Outdoor Faucet
- Retrofit with 1/2" Riser
- Connect to Existing Mainline

Choose Lateral Layout Method

- Using a PVC Pipe
- 1/2" Poly Tubing and 1/4" Micro Tubing
- Drip Fitting Installation
- Punch Tool
- Drip Emitters
- Drip Line
- Micro Sprinkler, Fogger and Sprayer
- Retrofit with Your Sprinkler System

