

HIP DRIP TIPS FOR STARTER KIT

Fedco's Guide to Getting Started with Drip Tape

Design Your Layout

Before setting up a Drip Tape (**9158**) system, determine how much water is available for your plan. Calculate the rate of **flow** of water from your well or city system by measuring the time needed to fill a 1 gallon jug or pail from your spigot. There are 3600 seconds in an hour, so in order to determine your **flow** in gallons per hour (GPH) divide 3600 by the number of seconds it takes to put out 1 gallon: that number will be your gallons per hour. For example, it took 15 seconds to fill the pail; $3600/15 = 240$, so your flow is 240 GPH.

Important note: don't plan to use more than 80% of the flow you calculate for your system. If your flow is 240 GPH, 80% of 240 is 192, so make sure your layout doesn't use more than 192 GPH.

In your layout drawing (**see Figure 1 as an example**), use ½" Mainline Tubing (**9119**) as a supply line that runs perpendicular to the length of your rows or beds. At each row/bed, use lines of Drip Tape that run parallel to the length of your row/bed (the Drip Tape is what ultimately releases water via drips). Depending on the width of the bed and the water needs of the crop, you'll use 1-3 lines of Drip Tape for each bed. Once you've drawn the lines you plan to lay, you'll need to add up all the lengths of Drip Tape you are going to use. Next, calculate how much water this will require. The Drip Tape we carry uses 20 GPH per 100' at average pressure (8 psi), so a layout using 1000' of Drip Tape would use 200 gallons of water each hour it is running. If your layout would require more gallons per hour than you can supply to the whole area all at once, you can divide your layout into smaller zones and limit the irrigation to a subsection of the total area (**see Figure 2**). This will require more than the kit supplies: Mainline Tubing T-couplers (**9143**) and Shut-off Valves (**9115**) and some additional Mainline Tubing. If you do decide to divide your layout to water in zones, consider planning your planting so that species with similar watering requirements are in the same zone. If your garden is on a slope, it's best to place the Mainline Tubing at the top of the slope so that water flows downhill instead of uphill through the Drip Tape lines.

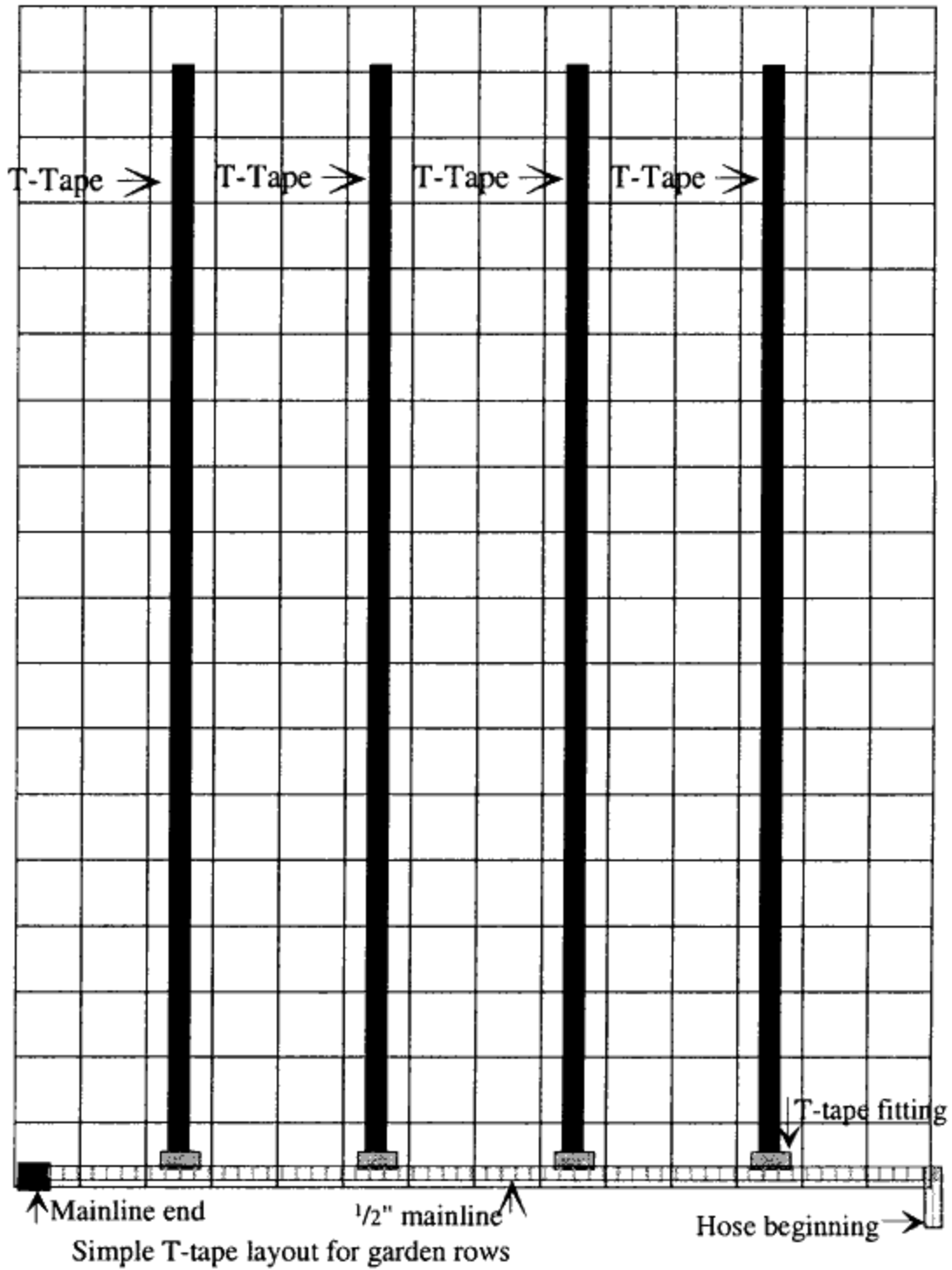


Figure 1

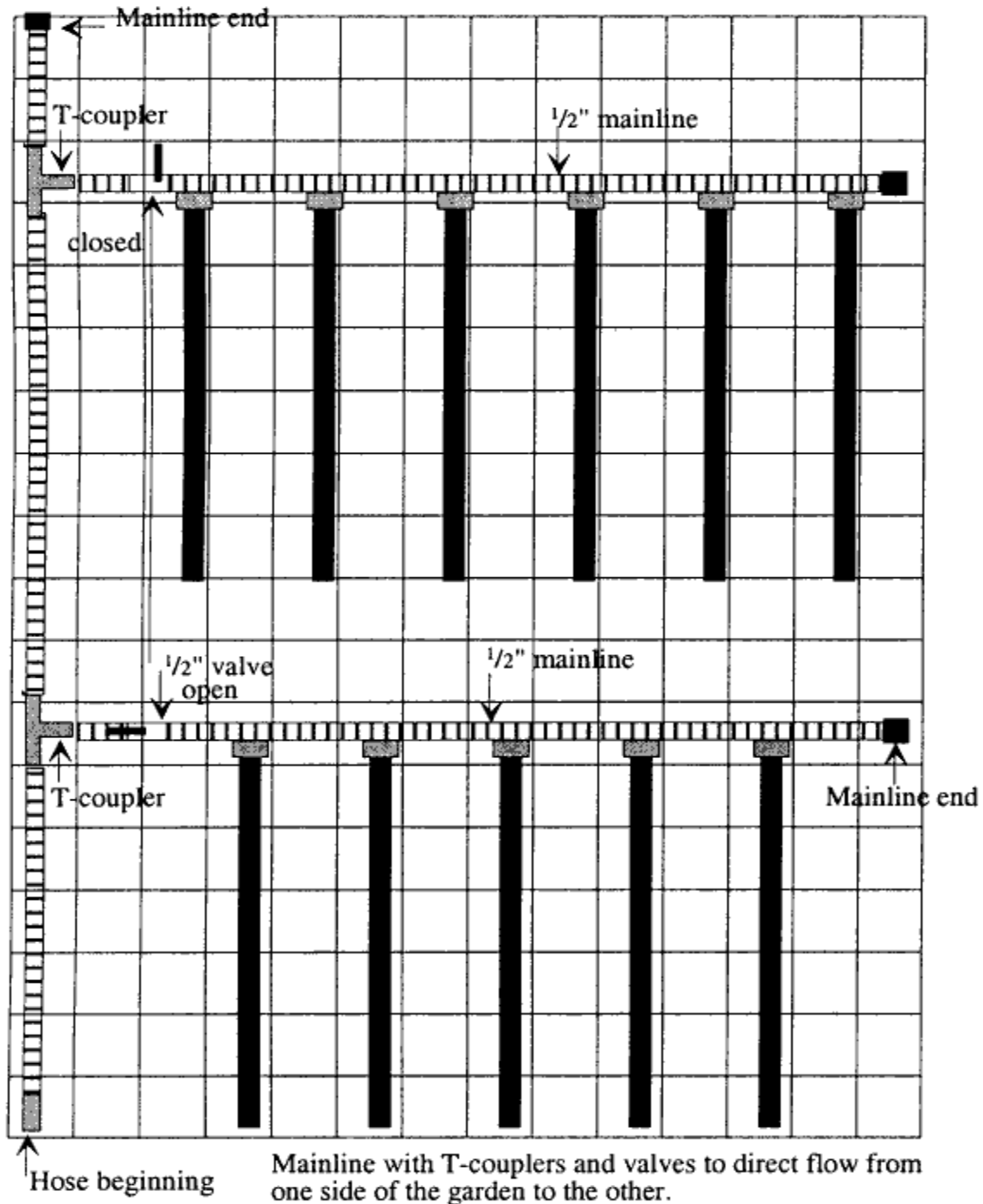


Figure 2

Assemble a system using Drip Tape

There are 3 components essential to the beginning of any Drip Tape system:

- 1) Vacuum Breaker (**9113**): prevents backflow into your water supply from your drip irrigation system
- 2) 200 Mesh Drip Filter (**9110**): even municipal water or clean well water should be filtered to avoid particulate buildup and clogging
- 3) 10 psi Pressure Regulator (**9116**): ensures the water pressure doesn't exceed the capacity of the drip tape

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Attach the Vacuum Breaker directly to the spigot. If you are using a Hose Y-spigot w/ Valves (**9200**—not part of kit) to split your spigot into two outlets, attach the Vacuum Breaker to whichever outlet you'll use for drip irrigation.

Attach the 200 Mesh Drip Filter to the Vacuum Breaker. Attach the 10 psi Pressure Regulator to the 200 Mesh Drip Filter.

If your garden is a significant distance from the spigot and/or there is no straight route from spigot to garden, you may want to use a length of garden hose to direct the water from the spigot assembly to the garden. Otherwise, if you determine you have enough length of Mainline Tubing (**9119**) to get from spigot to garden (make sure you have enough for your garden itself), you can transition immediately from the 3-component spigot assembly to Mainline Tubing by screwing the Smart Loc Beginning (**9128**) to the Pressure Regulator.

If you chose to use garden hose to get from spigot to garden, attach the female end of the garden hose to the male end of the 10 psi Pressure Regulator. On the opposite end of the garden hose (male end), attach the Smart Loc Beginning (**9128**).

Once you've laid out the Mainline Tubing according to your drawing/plan, you can connect the Mainline Tubing to the Smart Loc Beginning.

For working with Mainline Tubing (**9119**), it is helpful to have a warm, sunny day so that it is more supple/flexible. If possible, "preheat" the Mainline Tubing: a few hours before you begin working with it, set the roll of it in a spot with full sun.

Lay out the Mainline Tubing and cut it to length with sharp pruners, the Punch N Cut (**9195**—not included in kit), or heavy-duty scissors (a sharp tool is key for clean, square cuts that don't result in leaks).

Lay out your Drip Tape (**9158**) along the garden beds according to your plan. *Make sure the white stripe on the Drip Tape faces up to the sky*; the white-striped face of the Tape has the slits that emit water. Any particulate matter that gets into the Drip Tape will settle to the bottom when the water is turned off, so if the slits are at the bottom of the tape, they could get plugged with particulate matter. To cut Drip Tape to the lengths you need, use sharp scissors that will allow you to make clean, square cuts (to prevent leaks!). The slits in the Drip Tape (every 8") are visible; when you're cutting the Tape to length, make sure your cut is halfway between 2 slits. If a Drip Tape Fitting or a Drip Tape End overlaps with a slit in the tape, this could result in a leaky connection.

How to use Smart Loc fittings (Mainline Tubing fittings) and Drip Tape fittings:

- Turn the fitting's collar counterclockwise until it bottoms out on the body of the fitting, exposing the barb as much as possible.
- Slide the Mainline Tubing or Drip Tape over the barb and push it as far as it will go toward the body of the fitting.
- Turn the collar clockwise over the Mainline Tubing or Drip Tape until the collar is tight. Hand tight should be sufficient. Tug to test the connection.
- Troubleshooting (for Drip Tape fittings only): if there is a leak around the collar of a Drip Tape Fitting, *keep the water running* as you loosen the collar of the Fitting and then try to push the Tape further over the large barb of the Fitting. This may sound strange, and you may get a little wet in the process, but the force of the running water helps the Drip Tape to stay more rigid (rather than collapsing), allowing you to push the Tape further over the large barb of the fitting. After you try this, and if you are sure that the cut is clean & square, and that the barb of the Drip Tape Fitting is inserted fully into the Tape, yet there is still leaking, it may be necessary to tighten the collar further with pliers (they give you a better grip; but be careful, the collar is merely plastic).

To make holes in the Mainline Tubing where the Drip Tape Fittings will be inserted, use the Manual Punch (**9197**), the Punch N Cut (**9195**), or the Miracle Punch (**9194**). *Punch all your holes into the blue stripe* that appears on the Mainline Tubing (this ensures proper alignment).

If you're having trouble getting the tool to punch a proper hole (rather than simply making a dimple), try using your other hand to pinch the Mainline Tubing so that the blue stripe protrudes outward/towards the punch. Be careful: the punch tip is sharp!

To seal the end of the Mainline Tubing, use the Smart Loc End with Cap (**9134**).

To connect a line of Drip Tape to Mainline Tubing, insert the smaller barb end of the Drip Tape Fitting (**9161**) into a punched hole. Connect the Drip Tape with the Fitting as described above. Repeat for each line of Drip Tape. If you have a hole punched in the wrong location along the Mainline Tubing, insert a Two-Way Plug (**9191**) to plug the hole.

To seal off the end of each line of Drip Tape, use a Drip Tape End (**9164**). Again, it is important that you make a clean & square cut to end the line of Drip Tape, and as noted above, the Drip Tape End should not overlap with a slit in the Tape.

If you punched any holes that are too large for the small barbs of the Drip Tape Fittings, it will become apparent once you've connected everything & turned the water on: you'll see water dribbling/spraying out of the Mainline Tubing. Wherever this leak is, use a sharp cutting tool as described above to remove that leaky sliver of Mainline Tubing; to reunite the severed Mainline Tubing, connect the freshly trimmed ends with a Mainline Coupler (**9140**).

Drip Tape expands & contracts readily in response to temperature fluctuation; this means that even if you lay out your Tape straight as an arrow, it will likely bend out of shape. Use the Wire Holddowns (**9212**) to keep the Drip Tape in place. It is recommended to use at least one Holddown every 10 feet. For example, a 20' length of Tape would need at least two Holddowns: one securing the Drip Tape End, and one around the midpoint of the length of tape (10' from the Mainline).

Drip Irrigation Winterization Tips

- 1) Turn off water source. Remove the vacuum breaker, filter, and pressure regulator from the water source. Drain and store these components indoors in a heated space; do not let them freeze.
- 2) Without unscrewing the Drip Tape Fittings from the Drip Tape, pull all the Drip Tape Fitting barbs out of the Mainline Tubing. Water will drain out of the barbed end. Once the Drip Tape has drained, you can choose to fold/roll it up and store in a covered area for the winter.

OR you can choose to leave the Drip Tape where it lies in the garden. If you choose this approach, it is still recommended that you pull all the Drip Tape Fitting barbs out of the Mainline Tubing and lift the ends of the Drip Tape to drain the water through the barbed end of the Drip Tape Fittings.

The “leave where it lies” approach is easier than folding & storing, of course; just beware that rodents may chew holes into the Drip Tape, and if there is no snow cover, the Drip Tape will have that much more exposure to the degrading effects of UV rays in the fall & winter (unless you mulch over it). Once the water has been drained from the Drip Tape, the Drip Tape Fittings can be re-inserted into the Mainline Tubing.

- 3) Unscrew the cap(s) from any Smart Loc End(s) with Cap (**9134**). Lift the Mainline Tubing to drain it. Replace the caps so that insects & dirt can't enter; exclude them from entering the Smart Loc Beginning (**9128**) by taping or tying a piece of fabric over it, or buy a Smart Loc Beginning Cap (**9131**)—not included in starter kit.



