

# **Irrigation Kit**

9/11/23

## **Water Source**

Water should come from a clean pressurized water source. A range of 12 - 50 PSI pressure is needed when tested at the hoop house.

Water pressure testers can be found at hardware store plumbing sections. When running water to your hoop house, consider installing a frost free hydrant in or near your hoop house for easy access. From the water source, attach a Y splitter with built in shut offs for each line. Low side of the splitter will be for drip irrigation. High side will be for the overhead lines or an open line.

### Installation

This kit is composed of three subsections

- A supply line which takes the water from the water source to irrigation space
- Drip line manifolds that tees off from the ½" supply line to supply each row
- Drip row lines (3 lines) for each 30" bed

## **Supply Line**

First build the supply line.

NOTE: These measurements are for 30" beds. If you have wider or narrower beds, run one down the center and then center additional lines between the edge and the center irrigation line.



\*Note: The drip irrigation line does not need a backflow preventer or a pressure reducer as the drip hose is pressure compensated at the emitters and will not suck water in after 5 PSI when water is turned off.

- From the Y splitter, attach the mesh water filter (IR\_FILTER\_MESH\_0.75) as shown.
- Next, attach the adapter (IR\_ADAPTER\_SW\_0.630x0.75\_FPT) which comes with a prebuilt blue washer and screen. Cut off a 12 inch piece of the brown supply line (IR\_TUBE\_0.57\_500).
- Connect the cut piece to the barbed shut off valve (IR SHUTOFF 0.6 BARB)
- Cut another 12 inch piece of the brown supply line (IR\_TUBE\_0.57\_500)
- Attach this piece to the other end of the barbed shut off valve (IR\_SHUTOFF\_0.6\_BARB) and the elbow (IR\_ELB\_0.7). This begins the row supply line.



## **Drip Line Manifolds**

 Continuing from the supply line elbow: determine placement of lines and row configurations.



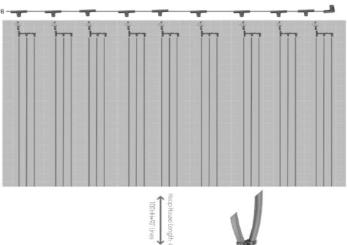
\*It is best to cut each segment as needed rather than all at once. This makes it easier to make adjustments as you are building.

- 2. Cut off a piece (size based on your row spacing) of the brown supply line (IR TUBE 0.57 500)
- 3. Attach this piece to connect the (IR\_ELB\_0.7) and (IR\_TEE\_0.63). Continue connecting these tees to create the desired amount of drip rows for your layout.

### **Drip Row Lines**

Each tee from the manifold branches into 3 lines per row. The three sets of tubes are connected to the manifold and include a shut-off valve connected to the tee (IR\_TEE\_0.63). The number of rows is based on your needs. This layout is based on 30" beds. If you have narrower beds you may consider adding more lines to your kit. Call our tech line at 888-406-1982 ext. 1 for help with layouts.

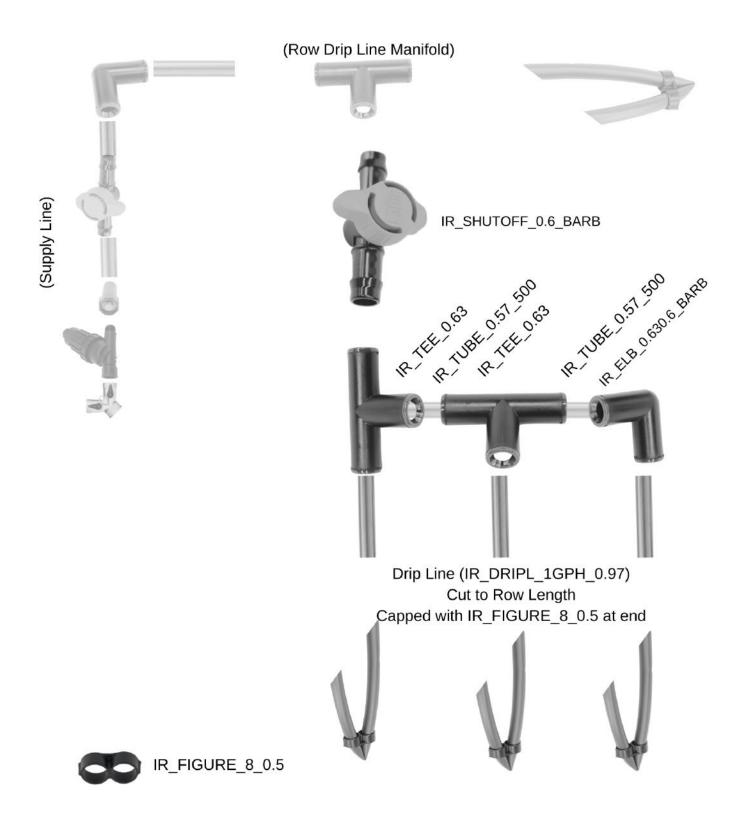




- 1. Cut a piece of ½" poly drip line (IR\_TUBE\_0.57\_500) to connect a shut-off valve to the supply line manifold tee.
- 2. Cut another 3 equal pieces of ½" poly drip line (IR\_TUBE\_0.57\_500) to connect the shut-off valve to (IR\_TEE\_0.63).
- 3. Connect the (IR\_TEE\_0.63) with another (IR\_TEE\_0.63) followed by one Elbow (IR\_ELB\_0.7).
- 4. Connect Drip Tubing (IR\_DRIPL\_1GPH\_0.97) to each tee and the one elbow following the length of the bed.
- 5. Stake the lines down as needed, particularly at the beginning and ends of connections, terminate at the end with figure 8.



# **Layout Overview**



# **Overhead Irrigation**

#### NOTE:

For hoop houses up to 20' wide a single supply line is attached at the center of the hoops with 15 GPH Radius Micro- Sprinkler.

For 30' Hoop Houses a double row of 9 GPH is spaced approximately at the 60° and 120° area of the hoops.

This placement could be affected by your water pressure and number of sprinklers. Some adjusting of line placement may be needed. The easiest way to install the lines are 8" zip ties. Look for UV resistant black zip ties when purchasing.

If you make a mistake or want to change the location of the lines you can use a goof plug to seal up the old punched hole and re-punch a hole for the sprinkler. To install sprinklers, simply punch a hole with the hole punch tool provided on the bottom side of the installed supply line. See next page for sprinkler placement.



Hole Punch



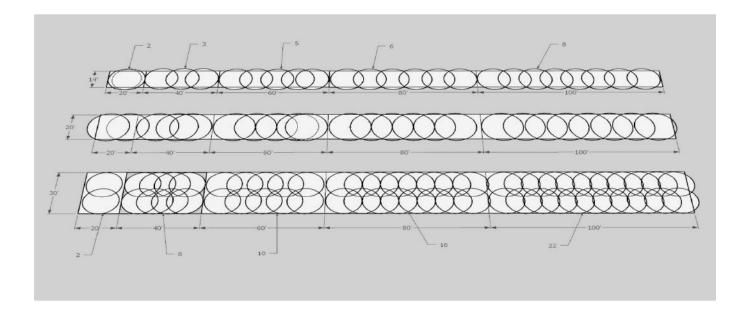
Overhead Sprinkler Details



# **Overhead Irrigation Placement**

### How to read this table:

- Top illustration is for a 14' wide hoop house.
  - This depicts 14' wide tunnels and then lengths of 20, 40, 60, 80, & 100' long. So the 14' x 40' shows you would need a single overhead supply line with 3 sprinklers and approximate placement.
- Middle illustration is for a 20' wide hoop house. Similar to a 14' wide hoop house the 20' uses a single supply line
- Last illustration is for a 30' wide hoop house.
  - o Example: A 30' x 80' would need 16 sprinklers over two supply lines.





# **Overhead Irrigation Supply Line**



Y from water source (Left side for drip irrigation)



IR\_BACKFLOW\_PREV\_0.75



IR ADAPTER SW 0.630x0.75 FPT (BLUE WASHER/BLACK CAP)



IR\_TUBE\_0.57\_FT



IR\_ADAPTER\_SW\_0.630x0.75\_FPT NO WASHER/GREY CAP



IR ADAPTER SW 0.630x0.75 FPT



IR\_ADAPTER\_SW\_0.630x0.75\_FPT NO WASHER/GREY CAP

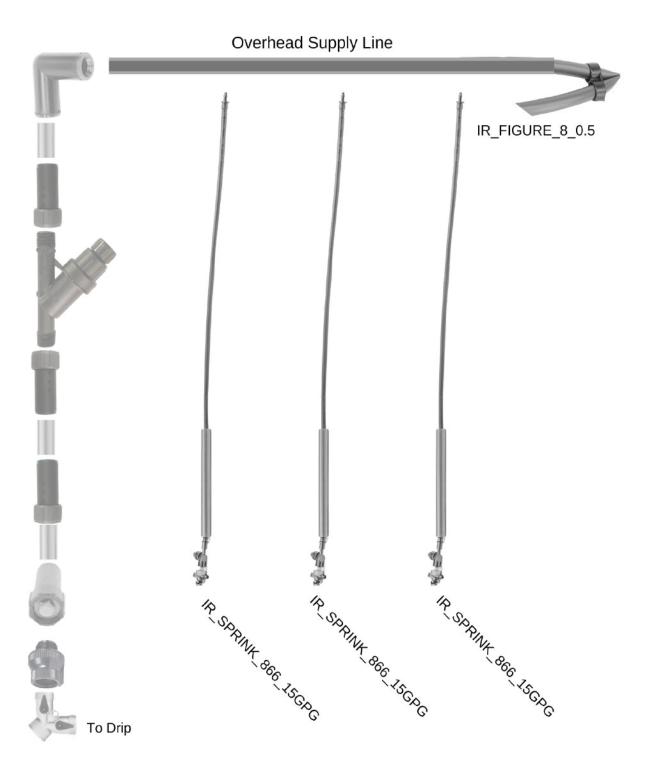


IR ELB 0.630.6 BARB



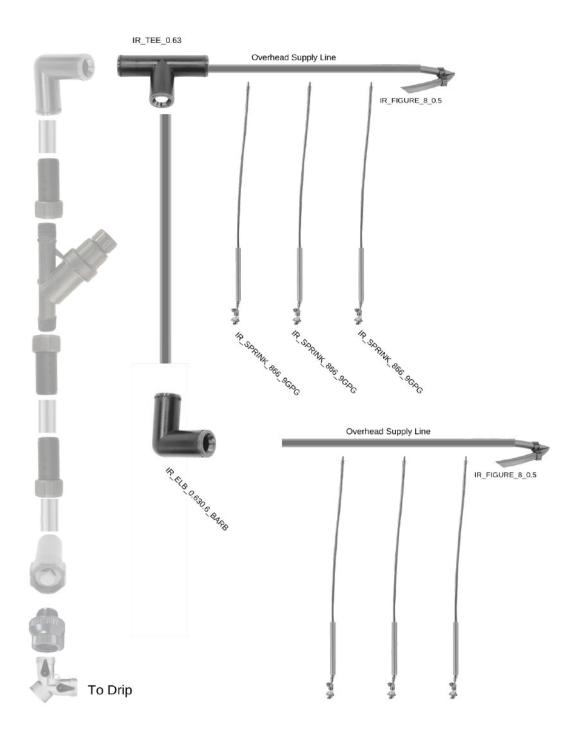
To Overhead Supply Line

# Overhead Irrigation Up to 20' Wide Hoop Houses





# **Overhead Irrigation 30' Wide Hoop Houses**



## **Timer Options**



that can last for up to one year.

You can automate watering schedules by adding timers to the lines directly after the water source Y.

#### Two-Dial Hose End Timer with DC solenoid

The B092A, 3/4" Two-Dial Hose End Timer is a rugged line of battery operated controllers and timers. With a higher flow rate at lower inlet pressures and a range of simple programming features, the B092A delivers a reliable and cost-effective solution for residential uses. The timer has up to four start times per day with a two minute to four hour programming duration and an operating flow range of .1 to 6.3 gallons per minute for use in a wide range of applications, including drip irrigation or micro sprinkler systems connected to a garden hose or faucet/spigot. It uses one 9-volt alkaline battery

#### LEIT 1

LEIT 1 with 3/4" or 1" Anti-Siphon Valve LEIT 1™ ASV single-station solar powered controller with a two-wire DC latching solenoid is available on a 3/4" or 1" heavy duty anti-siphon valve for use in residential and commercial applications. Powered by a photovoltaic module with a patented microelectronic energy management system, the LEIT 1™ requires no batteries or direct sunlight to operate, and it is used above grade in any location where there is light. Distinguished among the LEIT-1™ features are 20 preset monthly historical Evapotranspiration (ET) programs for spray heads and drip irrigation, with an editing feature that can be used as part of the controller programming.



## **Troubleshooting & Maintenance**

## **Compression Fitting Notes**

Compression fittings will have a tight fit. If you are having trouble connecting the fittings try these tips:

- Lay the tubing out in the sun to warm it up. Grip the tubing in your dominant hand just below the fitting and rock back side to side until the tube is fully inserted.
- Add a lubricant such as soapy water, a water displacing solution like WD-40, or hand sanitizer.
- Add a little heat with a heat gun or a blow dryer but use sparingly as over softening will have negative results.

## **Maintenance**

- Flush All Overhead Supply & Drip Lines once a season or after working soil.
- Clean Filters on Drip and Overhead lines by unscrewing canisters and running screens under warm water to clean small debris from mesh. If water flow is slow, check this first. If clogged, check upstream from the water source for potential broken pipes or supply connections.
- Check/clean Drip line adapter screens when cleaning filters.
- Uneven spray patterns may present at overhead sprinklers if debris gets caught in the small holes at the spinner.
- Simply pull from Overhead Line and flush.
- You will find a welder torch tip cleaning tool especially effective for cleaning small holes in WIRE screens and spinner holes.





## **Manufacturer Warranty**

Individual components are warranted that these products be free from defects in material and workmanship for a period of three years from date of purchase. This warranty does not cover damage resulting from accident, misuse, neglect, modification, improper installation, or subjection to line pressure in excess of 50 lbs. per square inch. This warranty shall extend only to the original purchaser of the product for use by the purchaser. This warranty shall not cover batteries or any malfunction of the product due to battery failure. The obligation of the manufacturer under this warranty is limited to repairing or replacing at its factory this product which shall be returned to the factory within three years after the original purchase and which on examination is found to contain defects in material and workmanship. The manufacturer SHALL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND; THE SOLE OBLIGATION OF THE MANUFACTURER IS LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. Unattended use for prolonged periods without inspection to verify proper operation is beyond the intended use of this product, and any damage resulting from such use shall not be the responsibility of the manufacturer. There are no warranties that extend beyond the description on the face hereof. In the case of purchase of the product for use other than, for irrigation purposes, the manufacturer hereby disclaims any implied warranties including any warranties of merchantability and fitness for a particular purpose. In the case of the purchase of the product for personal, family, or household purposes, the manufacturer disclaims any such warranties to the extent permitted by law. To the extent that any such disclaimer or implied warranties shall be ineffectual, then any implied warranties shall be limited in duration to a period of one year from the date of the original purchase for use by the purchaser. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In order to obtain performance under this warranty, the unit must be returned to the factory, along with proof of purchase indicating the original date of purchase, shipping prepaid, addressed as follows: Bootstrap Farmer 960 TX Hwy 24, Paris, TX 75462. Repaired or replaced units will be shipped prepaid to the name and address supplied with the unit returned under warranty. Allow four weeks for repairs and shipping time. Repair of damaged units not otherwise within warranty may be refused or done at a reasonable cost or charge at the option of the manufacturer. . This warranty gives you specific legal rights, and you may also have other rights which vary from state to state

