



# Irrigation Kits

ASSEMBLY AND INSTRUCTION MANUAL







I just want to say a personal “Thank You” for doing business with us. Our team has worked hard to develop the best caterpillar tunnel on the market, and I’m excited to share it with you!

I grew up on a small farm so I know firsthand how hard each of you works at what you do; market gardening is not for the faint of heart. I also know how important it is to have the right tools for the job. My goal at Farmers Friend is to make well-designed, high-quality tools to improve your efficiency, profitability and quality of life.

I see us all on the same team. You are growing the food and flowers to make our world a healthier, happier place, and we are developing the tools to make your work more productive and enjoyable. Your success is our success.

From the whole team here at Farmers Friend, I want to wish you a happy and extended growing season. May your days be filled with more veggies and flowers and less stress! Thank you again for your trust in us.

A handwritten signature in black ink that reads 'Jonathan' in a cursive script.

Jonathan Dysinger,  
*Owner & Chief Innovator*



**P.S.** Don’t hesitate to contact us with ideas on how we can make your work more enjoyable.



Watch the video!

SCAN THE CODE OR VISIT:

[fmfr.io/overhead-irrigation/v](http://fmfr.io/overhead-irrigation/v)



## Basic Overhead Irrigation Kits Include:

	50' Kit	100' Kit	Part
<b>A</b>	15'	15'	Black Polyethylene Tubing, 1"
<b>B</b>	53'	103'	White Polyethylene Pre-Punched Tubing, 1"
<b>C</b>	16	32	Hanging Assemblies ( <i>Quonset tunnels: 12"; Gothic tunnels: 18"</i> )
<b>E</b>	40	40	Black UV Stabilized Nylon Cable Ties
<b>D</b>	16	32	SpinNet™ Sprinkler Heads
<b>F</b>	1	1	Flush Valve
<b>G</b>	1	1	Hose Adapter
<b>H</b>	1	1	Elbow
<b>I</b>	1	2	Goof plugs, 10-pack

### Complete Kits Also Include:

<b>H</b>	1	1	Additional Elbow
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And one of the following filter/valve/pressure regulator assemblies:

<b>J1</b>	1	1	Screen Filter/Manual Valve Assembly
<b>J2</b>	1	1	Screen Filter/Automatic Valve Assembly
<b>J3</b>	1	1	Disc Filter/Manual Valve Assembly
<b>J4</b>	1	1	Disc Filter/Automatic Valve Assembly

### Tools and Parts Needed:

- Pliers
- Knife or polyethylene tubing cutter
- Water filter and pressure regulator (*required if one of J1-J4 were not purchased*)



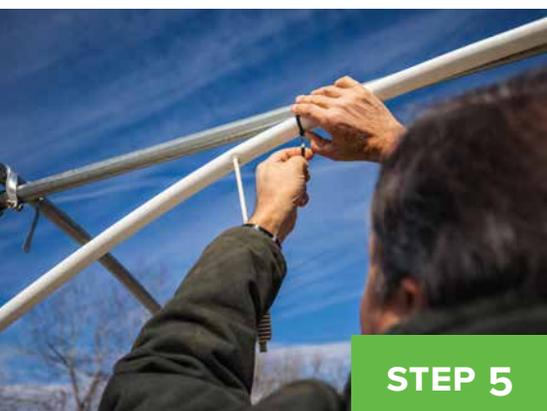


### WATER SUPPLY REQUIREMENTS

- Water pressure of *at least 30 psi*.
- *10 gpm for 100-ft and 5 gpm for 50-ft*
- The 100' kit works best with a 1" or greater supply line.
- The 50' kit works best with a ¾" or greater supply line.
- Supplying your own filter and pressure regulator?
  - Pressure should be regulated to *no more than 35 psi*.
  - Filtration at least *130 microns* or *120 mesh*.



# Assembly Instructions



1. Lay **White Polyethylene Pre-Punched Tubing** down the center length of the tunnel. *Tip: Tubing is much easier to handle if it is warm. Ideally you will want to unroll it on a warm, sunny day (or warm it up in some other way).* Note: Tubing is actually 103' in length, which gives you some adjustability in determining where you want the first and/or last sprinkler. Excess can be cut off.
2. Connect the **Elbow** to the supply end of pre-punched tubing.
3. Connect the **Flush Valve** to far end of pre-punched tubing. Remove cap until you have flushed the line in step 14.
4. Use pliers to push each **Hanging Assembly** into pre-punched hole in the tubing. Don't attach the sprinkler heads yet.
5. Cable tie white pre-punched tubing (with hanging assemblies) to the metal center purlin of tunnel (use **Cable Ties** at least every 3'). *Note: If you don't have the metal center purlin, cable tie sprinkler tubing to the peak of each bow.*
6. Connect the **Black Polyethylene Tubing** to the supply end of the **Elbow**. *Note: If you only have the basic kit, skip to step 13.*
7. Cable tie the **Black Polyethylene Tubing** to the top half of the end bow.
8. Choose a location for your **filter/valve/pressure regulator assembly** and cut the **Black Polyethylene Tubing** at the desired height.
9. Connect both ends of the cut **Black Polyethylene Tubing** (supply and distribution side) to the **filter/valve/pressure regulator assembly** with the attached couplings.
10. Cable tie the tubing and **filter/valve/pressure regulator assembly** to the remainder of the end bow.

11. At ground level, cut the **Black Polyethylene Tubing** and attach the second **Elbow**.
12. Attach the remainder of the **Black Polyethylene Tubing** to the other end of the **Elbow** and point it in the direction of your water supply.
13. Connect the **Hose Adapter** to the supply end of the **Black Polyethylene Tubing** and then hook up to your water supply.
14. Flush the system to get rid of any debris in the lines. First, open the water supply and flush the main line. Then, screw the cap on the end of the **Flush Valve** and allow water to flush each base assembly.
15. Finally, attach each **SpinNet™ Sprinkler Head** to a **Hanging Assembly**. Your irrigation system should be ready to go!

*(Note: If water pressure is not sufficient to run all sprinklers, you can replace every other sprinkler with the supplied goof plugs.)*



STEP 8



STEP 10



STEP 11



STEP 14



STEP 15

## Maintenance

### 1. Regular Filter Cleaning

- Unscrew the cap on the screen or disk filter. Remove the screen or disk assembly and rinse thoroughly in clean water. Replace.
- If you are using a well or city water, this may only need to be done occasionally. If you are using surface water, you will probably need to rinse the filter assembly out before every use.

### 2. Before you expect freezing temperatures

- Disconnect from your supply line and open all valves. Allow gravity to drain the system.
- Unscrew the couplings on both sides of the filter/valve/pressure regulator assembly and remove the entire assembly. Store in an area which will not freeze.
- Take off the SpinNet™ sprinkler heads from hanging assemblies. This will allow the hanging assemblies to drain fully.



**Watch the video!**  
SCAN THE CODE OR VISIT:  
[fmfr.io/drip-irrigation/v](https://fmfr.io/drip-irrigation/v)

## Basic Drip Irrigation Kits Include:

- A** 15' × Black Polyethylene Tubing, 1"
- B** 1500' × Drip Tape (3 lines x 4 beds)
- C** 10 × Metal Staples
- D** 12 × Drip Tape Valves
- E** 12 × Drip Tape Flush Valve
- F** 10 × Repair Couplers
- G** 1 × Header Flush Valve
- H** 2 × Large Goof Plugs, 4-pack
- I** 1 × Elbow



8mm Flat tube punch  
sold separately

## Tools and Parts Needed:

- 8mm Flat tube punch\*
- Knife or polyethylene tubing cutter
- Water filter and pressure regulator (required if one of **K1-K4** were not purchased)

\*Sold separately

## Complete Kits Also Include:

One of the following filter/valve/pressure regulator assemblies:

- K1** 1 × Screen Filter/Manual Valve Assembly
- K2** 1 × Screen Filter/Automatic Valve Assembly
- K3** 1 × Disc Filter/Manual Valve Assembly
- K4** 1 × Disc Filter/Automatic Valve Assembly





A

B1

B2

C



D

E

F

G

H



K1

I

## WATER SUPPLY REQUIREMENTS

- Water pressure of at least 8 psi.
- Supplying your own filter and pressure regulator?
  - Pressure should be regulated to no more than 12 psi.
  - Filtration at least 130 microns or 120 mesh.



K2

K3

K4

# Assembly Instructions



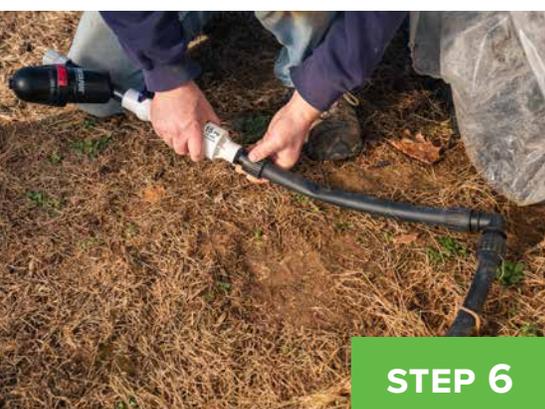
STEP 1



STEP 2



STEPS 4 AND 5



STEP 6



STEP 7

1. Connect the **Header Flush Valve** to one end of your polyethylene tubing (take the cap off until you have flushed the line in **Step 13**)
2. Beginning at the flush valve, use the wire staples to fasten the **Black Polyethylene Tubing** across the supply end of your caterpillar tunnel. This is your “Header” line.
3. On the opposite (supply) end of **Black Polyethylene Tubing**, cut the tubing to about 3" narrower than the width of your tunnel (or pad).
4. Connect the **Elbow** to the supply (cut) end of your polyethylene tubing—pointing out of the tunnel.
5. Attach the remaining piece of polyethylene tubing to the supply end of the **Elbow** (cut shorter if preferred).
6. Connect the **filter/valve/pressure regulator assembly** to the polyethylene tubing.
7. Using an **8mm Flat Tube Punch**, punch holes into the polyethylene tubing at the desired spacing (we recommend 3 lines/30" bed — at approximately 5", 15" and 25" in the bed). *(Note: In the case of a misplaced hole, while punching the black tubing with the flat tube punch, we have provided **goof plugs**. To insert, push the small end of the goof plug into the hole until you hear a “pop”.)*
8. Push a **Drip Tape Valve** into each hole.
  - A. Make sure the black and blue collars are both screwed all the way toward the valve.
  - B. The valve should make a “popping” sound when it fully seats in the tubing
  - C. Snug the black collar onto the polyethylene pipe.
9. Roll out the drip tape for each line and attach the supply end of the drip tape to the drip tape shutoff valve (see **tip #3**). **Make sure the drip emitters are facing up.**

10. Return to the far end of the bed. Pull the drip tape snug and cut to length.
11. Repeat **Steps 9** and **10** for each drip line.
12. Connect your water supply to the **filter/valve/pressure regulator assembly**.
13. Flush system to remove any dirt or debris.
  - A. First, close all **Drip Tape Valves** and allow water to flush out the polyethylene header line.
  - B. Then, screw the cap on the end of the **Header Flush Valve**.
  - C. Next, open one **Drip Tape Valve** at a time until water comes out the far end of the drip tape. Close valve.
  - D. Repeat **Step 13C** until all drip lines have been flushed.
14. Finally, attach a **Drip Tape Flush Valve** to the end of each drip line. Your assembly is now complete!



STEP 8



STEP 9



STEP 10



STEP 13



STEP 14

## Installation Tips

1. The *polyethylene tubing* is easiest to handle if it is warm. Preferably **set it out in the sunshine** (or place it by the wood stove) for an hour or two before handling it.
2. Conversely, the polyethylene tubing is **easiest to punch holes** in if it is cold. You can try to punch it in the cool of the morning, or, if it is really warm out, turn the water on (not full blast). If you don't mind getting a little wet, we find the resistance of the water in the pipe helps to make it easier to punch. With practice, you can punch and plug the hole without soaking yourself. Then turn the drip tape valve on partway before attaching the drip tape. Again, the water in the tape will make it easier to slide fully on the fittings.
3. For **rolling out drip tape**, it is easiest to put a piece of pipe or re-bar through the roll of drip tape and have one person hold the pipe/bar at the far end of the row while the second person pulls the tape down to the header. If working alone, you can set up two cement blocks or some other jig to hold the pipe/bar while you pull the drip tape.
4. The *drip tape flush valves* not only help to **flush unwanted particles out of the system**, but also help you to know how many lines you can operate at one time. **If the flush valves are not closing properly**, then you don't have enough pressure in the system. You may need to clean your filter and/or turn off some lines. You may also try closing all your drip tape shutoff valves, and then opening them up one at a time.



**Watch the video!**  
 SCAN THE CODE OR VISIT:  
[fmfr.io/field-irrigation/v](http://fmfr.io/field-irrigation/v)



## Basic Field Irrigation Kits Include:

- A1** 5 × Xcel Wobbler MA w/ lavender nozzle
- A2** 5 × Meganet 24D Green Head
- B** 2 × Road Guard (*optional if using Meganet heads*)
- C** 1 × Flush Valve
- D** 1 × Hose Adapter
- E** 100' × Black Polyethylene Tubing, 1"
- F** 1 × Large Goof Plugs, 4-pack
- G** 5 × Female x Barb Connector for Sprinkler Stand
- H** 5 × Stake Adapter
- I** 5 × Sprinkler Stand
- J** 5 × 48" Stakes



8mm Flat tube punch  
 sold separately.

## Tools and Parts Needed:

- 8mm Flat tube punch\*
- Hammer
- 25-ft Tape Measure

\*Sold separately

### WATER SUPPLY REQUIREMENTS

- Meganet 24D Green Head *at least 29 psi.*
- Xcel Wobbler MA *at least 10 psi.*

### MINIMUM FLOW RATE

- Meganet 24D Green Head *at least 8.6 gpm.*
- Xcel Wobbler MA *at least 7.7 gpm.*



A1



A2



B



C



D



E



F



G



H



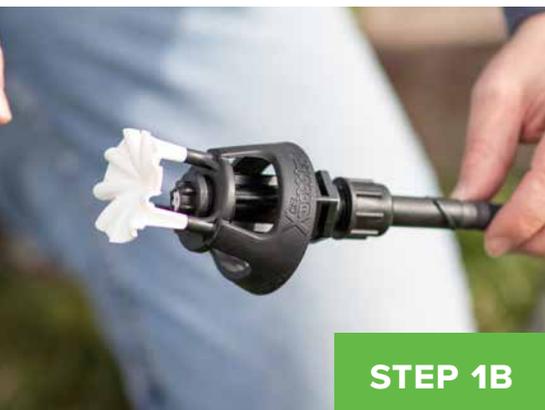
I



J



STEP 1A



STEP 1B



STEP 1C



STEP 3



STEP 4

# Assembly Instructions

1. First, build the sprinkler assemblies.
  - A. Attach the **Stake Adapter** to a stake by putting the stake on a hard surface and using a hammer to tap the adapter on. **Note:** You can tell if the adapter is fully seated by looking in the little “window” under the adapter head. The stake should fully fill the window.
  - B. Next, screw the **Sprinkler Head** onto the **sprinkler stand**. Hand tighten.
  - C. Finally, snap the sprinkler stand onto the stake adapter—making sure to line up the angles on the stand and adapter.
2. Lay the **Polyethylene Tubing** down the center of your field block. **Note:** The sprinklers effectively cover eight 30" beds with 12-18" pathways. So, you would want to run the tubing between the fourth and fifth beds.
3. Using an **8mm Flat Tube Punch**, make holes in the polyethylene tubing. If you are using 4 sprinklers/row, you will want to punch the holes at approximately 12' 6", 37' 6", 62' 6", and 87' 6". If you are using 5 sprinklers/row, you will punch the holes at approximately 0' (as close to the supply line as possible), 25', 50', 75' and then as close to the end as possible.  
*(Note: In the case of a misplaced hole, while punching the black tubing with the flat tube punch, we have provided **goof plugs**. To insert, push the small end of the goof plug into the hole until you hear a “pop”.)*
4. Push a **Brown Grommet** into each punched hole.
5. Attach the **Hose Adapter** to the supply end of your polyethylene tubing and hook up to your water supply.

6. Flush the line by turning on your water supply and running the water until it comes out the end of the polyethylene tubing.
7. After flushing, attach the **Flush Valve** to the end of the polyethylene tubing.
8. Push the sprinkler stakes into the ground by each of the brown grommets and then insert the sprinkler tube into the brown grommet. Don't push too hard—it is a friction fit. If you ordered the **Meganet Road Guards**, you can snap them on the first and last Meganet sprinklers.



STEP 5



STEP 8

## Maintenance

1. **Sprinkler clogging:** In the case of sprinkler clogging, turn off your water supply and do one of the following:
  - A. For **Senninger Wobblers**, unscrew and remove sprinkler head. Use a paper clip or other small wire to push down through the top of the nozzle hole. Bang the sprinkler head on your hand to dislodge any foreign objects.
  - B. For **Netafim Meganets**, hold base of sprinkler and unscrew the top. There is a plastic filter cage inside the sprinkler. Remove the filter cage and rinse under clean water. Reassemble.
2. **Moving sprinkler setup:** When you first try to move the sprinkler stands, you may find that the sprinkler tubes will not easily pull out of the grommets. You may need to use a pair of pliers to hold onto the grommet while you twist the tubing out. With repeated use, this problem usually takes care of itself, but remember not to be overzealous in pushing the tubing into the grommet.



MAINTENANCE 1A



MAINTENANCE 1B



MAINTENANCE 1B



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