

DIY Portable Low Tunnel Instructions

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Tools Needed:

- 4' Bootstrap Farmer Bender
- Spanner wrench or Crescent wrench
- Hacksaw or electric saw - to cut EMT

Supplies included with your kit:

10' Low Tunnel Kit

- 16 - pack $\frac{3}{4}$ " EMT Cross connectors
- 20 - pack $\frac{3}{4}$ " Snap-on clamps

20' Low Tunnel Kit

- 30 pack - $\frac{3}{4}$ " EMT Cross Connectors
- 40 - pack $\frac{3}{4}$ " Snap-on Clamps
- 3 - $\frac{3}{4}$ splices
- 10 - #8 x $\frac{3}{4}$ screws

Supplies Needed:

- For 10' tunnel: 8 qty - $\frac{3}{4}$ " EMT Electrical Metal Tubing (Purchased Locally)
- For 20' tunnel: 15 qty - $\frac{3}{4}$ " EMT Electrical Metal Tubing (Purchased Locally)
- Optional: $\frac{1}{2}$ " by one-foot rebar. 8 qty for a 10' tunnel, 16 qty for the 20'
 - There are two ways to attach your tunnel to the ground. Both are outlined in the assembly instructions below. If you choose to sink the hoops themselves into the ground, you will not need the rebar.

Optional Covering Materials:

- 6 mil. Greenhouse plastic
- Insect netting
- Shade Cloth
- Frost Blanket - Comes in 100' lengths, so you must cut to fit.

Introduction

Low tunnels can be assembled in multiple lengths. They can be as short as two feet and as long as you want to make them. Keep in mind that the longer it is, the less portable it is.

The EMT is purchased in 10' sections. It can be cut down to make shorter tunnels. For example, if you have two 5' raised beds, you could make two smaller tunnels from your kit.

The assembly process and the supplies needed are the same for longer tunnels. EMT couplers can be used to extend the tunnel longer than 10'.

Assembly

1. Mount your 4' bender according to the instructions and bend four of the 10' EMT poles into 4' wide hoops.
2. Attach one piece of 10' long EMT to the top of one 4' hoop with a $\frac{3}{4}$ " cross connector. This will be the ridge pole for the low tunnel. You can push the hoop into the ground to hold it vertically, get someone to hold it for you, or use some clamps at the base of the hoop to hold it upright.
3. Attach another 4' hoop at the opposite end of the EMT.
4. Space out the other two hoops equally divided from each end. Attach them with the $\frac{3}{4}$ " cross connectors.
5. You will now have 4 hoops attached with a ridge pole to form a 10' long low tunnel.
6. Add a piece of 10' EMT horizontally to each side of the hoops.
 - If you will be using rebar to anchor your tunnel, place the horizontal support at or near the base with more cross-connectors to complete the low tunnel.
 - If you plan on pushing your hoops down in the soil for a more permanent low tunnel, mount your horizontal bars higher (6"). This allows the hoop to be pushed into the soil.
7. The last piece to install is a horizontal bar on each end. This allows you to clip your covering closed on each end.
8. Measure the width of your end hoops and cut (2) pieces of EMT 52" " long to attach to the end hoops.
9. Mount the horizontal bar at the bottom of the arch, and use two $\frac{3}{4}$ " cross connectors on each end. The end wall horizontal bar should be mounted above the two long side horizontal bars.

Extending the low tunnel

To extend the structure, EMT couplers can be added to your ridge pole and the long horizontal bars.

- Insert the EMT coupler into the ridge pole and install a #8 self-tapping screw through each piece of EMT to lock the splice in place.
- As outlined above, additional hoops and horizontal bars can now be added to extend the low tunnel.

Installing the low tunnel

There are two ways to install the low tunnel over your rows or raised beds. You can use rebar or sink the hoops themselves into the ground.

Installation with rebar

1. Position your low tunnel over the row or bed on which you will install it.
2. Mark where each hoop touches the ground.
3. Remove the low tunnel and sink a ½ x 1-foot piece of rebar at each mark.
4. The rebar should stick out of the ground approximately 6 inches at each mark.
5. Place the hoops over the rebar and down to the ground just above the soil line. This step is much easier with a buddy.
6. Cover your low tunnel as outlined below, and then push the hoops to the ground the rest of the way.

Installation in soil

1. When installing in the soil, your horizontal bars should be 6 inches from the bottom of your hoops all the way around.
2. Place the low tunnel over the installation area and push it down until the horizontal bars are just above the soil line.
3. Cover your low tunnel as outlined below, and then push the hoops to the ground the rest of the way. Again, this step can be much easier with a buddy.

Installing Covers on the Low Tunnel

Once you choose the material to cover your low tunnel with, drape it over the tunnel and pull it even on all sides. Try to get equal lengths of overhang on all sides. Use the snap clamps to attach your covering to the end hoops and the horizontal bars.

Greenhouse Plastic

Instructions for Attaching Greenhouse Plastic to a Low Tunnel

Materials:

- For a 10' tunnel length: (1) 12' x 24' greenhouse plastic sheet
- For a 20' tunnel length: (1) 12' x 32' greenhouse plastic sheet
- 3/4" snap clamps

Procedure for Attaching Greenhouse Plastic:

1. For a 10' Length Tunnel:

Position the Plastic:

- Unfold the 12' x 24' plastic sheet and drape it over the tunnel structure, ensuring it covers the hoops from end to end. The width of the plastic should allow it to extend down to the ground on both sides, providing full coverage.

Secure the Plastic:

- Attach the plastic to the hoops at regular intervals using 3/4" snap clamps placed every 2 to 3 feet. Start from one end of the tunnel and move to the other to ensure the plastic is evenly distributed and taut along the length of the tunnel.
- Pleat fold the end wall and clamp.

2. For a 20' Length Tunnel:

Position the Plastic:

- Spread the 12' x 32' plastic sheet over the hoops, covering the entire length of the tunnel. Make sure that the plastic reaches the ground on both sides to seal off the tunnel completely.

Secure the Plastic:

- Use 3/4" snap clamps to fasten the plastic onto the hoops, spacing them every 2 to 3 feet. Begin at one end and work your way to the other, pulling the plastic tight to prevent any sagging or wrinkling.
- Pleat fold the end wall and clamp.

Procedure for Attaching Frost Blanket:

Frost blanket comes in 100' length, cut to size before installation.

1. For a 10' Length Tunnel:

Position the Frost Blanket:

- Unfold the 10' x100' frost blanket and drape it over the tunnel structure, ensuring it covers the hoops from end to end. The width of the blanket should allow it to extend down to the ground on both sides, providing full coverage.
- It should barely touch the ground on one side, with all of the excess on the opposite end.

Secure the Frost Blanket:

- Attach the frost blanket to the hoops at regular intervals using 3/4" snap clamps placed every 2 to 3 feet.
- Start from one end of the tunnel and move to the other to ensure the blanket is evenly distributed and taut along the length of the tunnel.
- Pleat fold the first end wall and clamp.
- Leave enough blanket for the second end wall to be pleat folded and clamped.
- Cut off the excess frost blanket and refold until you are ready to deploy it over other tunnels or crops.
- Pleat fold the second end wall and clamp.

2. For a 20' Length Tunnel:

Position the Frost Blanket:

- Spread the 10' x100' frost blanket over the hoops, covering the entire length of the tunnel. Ensure the blanket reaches the ground on both sides to seal off the tunnel completely.
- It should barely touch the ground on one side, with all of the excess on the opposite end.

Secure the Frost Blanket:

- Use 3/4" snap clamps to fasten the frost blanket onto the hoops, spacing them every 2 to 3 feet. Begin at one end and work your way to the other, pulling the frost blanket to prevent any sagging or wrinkling.
- Pleat fold the first end wall and clamp.
- Leave enough blanket for the second end wall to be pleat folded and clamped.
- Cut off the excess frost blanket and refold until you are ready to deploy it over other tunnels or crops.
- Pleat fold the second end wall and clamp.

Shade Cloth

Instructions for Attaching Shade Cloth to a Low Tunnel

Materials:

- For a 10' tunnel length: (1) 12' x 20' shade cloth
- For a 20' tunnel length: (1) 12' x 30' shade cloth
- 3/4" snap clamps

Procedure for Attaching Shade Cloth:

1. For a 10' Length Tunnel:

Position the Shade Cloth:

- Spread the 12' x 20' shade cloth over the entire structure. Arrange it so that it covers the hoops from one end of the tunnel to the other. The extra width (12') of the shade cloth should allow it to drape over the sides of the tunnel, reaching the ground to provide complete shade coverage.

Secure the Shade Cloth:

- Start at one end of the tunnel and attach the shade cloth to the hoops using 3/4" snap clamps. Place clamps every 2 to 3 feet along the hoop to ensure the cloth is securely fastened and remains taut.
- Ensure the cloth is evenly distributed and sag-free. The edges should touch the ground to prevent sunlight from entering the sides.

2. For a 20' Length Tunnel:

Position the Shade Cloth:

- Use the 12' x 30' shade cloth to cover the structure. Like the 10' tunnel, ensure the cloth covers from one end to the other, and the sides reach the ground.

Secure the Shade Cloth:

- Attach the cloth with snap clamps every 2 to 3 feet along the hoops. Start securing from one end to the other, ensuring the cloth is pulled tight to avoid creases or sagging.
- Double-check that the entire structure is shaded, with the sides of the cloth touching the ground for optimal sun protection.

Insect netting

Instructions for Attaching Insect Netting to a Low Tunnel

Materials:

- For a 10' tunnel length: (1) 6.5' x 33' insect netting
- For a 20' tunnel length: (2) 6.5' x 33' insect netting
- 3/4" snap clamps
- Scissors or sharp utility knife

Procedure for Attaching Insect Netting:

1. For a 10' Length Tunnel:

Prepare the Netting:

- Lay the 6.5' x 33' netting flat and cut it in half lengthwise to make two 6.5' x 16.5' pieces.

Attach the First Piece:

- Drape one piece over the hoops, letting it touch the ground on one side, and extend it to overlap at the tunnel's apex by at least 6 inches.
- Secure with 3/4" snap clamps every 1 to 2 feet, ensuring the netting is taut and well-anchored from one end to the other.

Attach the Second Piece:

- Place the second piece so it overlaps the first by 6 inches along the center top of the tunnel to cover any gaps.
- Use snap clamps to secure the netting along the hoops, especially at the overlap zone, for increased stability and protection.

Maintenance:

- Regularly check and adjust the clamps and netting to ensure a tight and effective barrier against pests.

2. For a 20' Length Tunnel:

Installation:

- Use two 6.5' x 33' pieces of netting at full length. Follow the same steps as for the 10' tunnel, ensuring each piece overlaps along the center by 6 inches and is securely clamped.

Securing and Maintenance:

- Same as for the 10' tunnel, with added attention to the middle section where the two netting pieces overlap, use additional clamps to secure the overlap thoroughly.



Scan to watch the video

Or visit:

<https://youtu.be/WzBYFeNj2j0>