

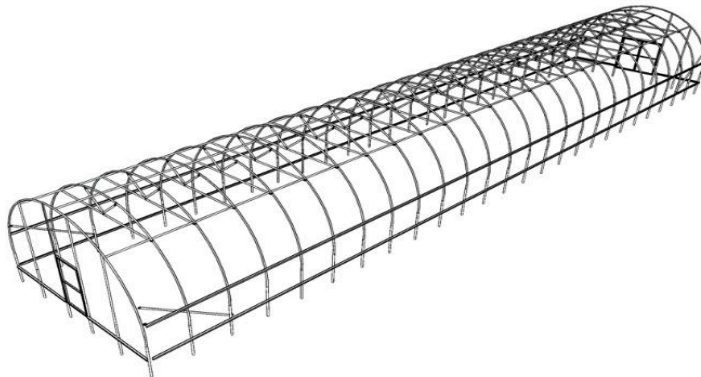


Essential Round High Tunnel Kit

Instructions & Owner's Manual

Please read ALL instructions before beginning your build.

Rev. Date 9/13/26



Thank you for choosing Bootstrap Farmer for your farm's equipment needs. Our Essential High Tunnel Kit is manufactured with 100% USA-made steel and aluminum for maximum strength and durability.

Our team strives to provide quality products that are built to last. From all of us at Bootstrap Farmer, we thank you for putting your trust in us.

If you have any questions, please reach out. We are available 7 days a week by phone, email, and chat.

1(888)-406-1982 contact@bootstrapfarmer.com www.bootstrapfarmer.com

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Getting Started

BEFORE BEGINNING INSTALLATION, PLEASE CAREFULLY READ THROUGH ALL INSTRUCTIONS. CONTACT OUR TECH TEAM WITH ANY QUESTIONS YOU HAVE BEFORE BEGINNING YOUR BUILD. WE ARE AVAILABLE VIA EMAIL, CHAT, OR PHONE 7 DAYS A WEEK 888-406-1982 EXT. 2

CAD DRAWINGS



Recommended Tool List

For your safety: Follow all necessary safety precautions when using power tools and building equipment. Personal protective gear, such as gloves, eye protection, earplugs, and closed-toe shoes, are recommended.

- Clamps
- Drill & drill bits (1/4-inch bit included). **Impact drivers are not recommended for driving self-tapping screws.**
- Extension cord
- Ground post driver (included)
- Levels (long, magnetic & string line)
- Roll of mason line
- Metal file
- Metal saw (reciprocating, chop, or hack saw)
- Grinder
- Slip joint pliers
- Scissors/blade
- Sledgehammer (double jack)
- Single jack (3-pound hammer)
- Center hole punch
- Socket set & adjustable wrench - (1/2" ratchet or nut driver)
- Spare rope & tennis balls
- Stakes/markers
- Step ladders (at least one tall enough to reach the peak of your roofline; see height warning below).
- Tape measure
- Extendable painter's pole

HEIGHT WARNING: The 20' kit has a center height of 11'4", which means you will have to work 12-14' from the ground. The 14' kit has a center height of 9'4". BOOTSTRAP FARMER cannot be held liable for unsafe work practices. Installers and farm owners are encouraged to rent a lift from your local equipment rental company. Refer to their safety equipment recommendations and best practices for the unit you rent during use, loading, unloading, and transport. On the build site, keep the lift level and on packed solid ground. **Do not operate in inclement weather.**



Scan the QR Code for information on tools or visit

https://youtu.be/kGID3JRKwLQ?si=7oPFhyvI_kSCdm6T

Location of Greenhouse

We recommend selecting a flat area of land, free of trees, and far enough from existing structures to avoid runoff and snow drifts. Pay attention to the drainage in the area. Additional groundwork may be required to divert runoff from regular greenhouse watering. Make sure you can access the area with water.

****Always call 811 before you dig or install ground posts to have gas and utility lines marked or check your site map.**



Scan QR for info on **Greenhouse Orientation and Site Prep before you build** or visit <https://www.bootstrapfarmer.com/blogs/building-a-greenhouse/ideal-location-for-a-greenhouse>

Parts List - Kit Components

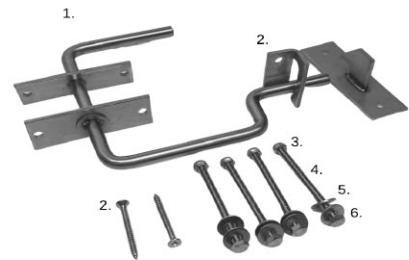
Unpack the shipment and verify against the packing list to ensure all materials are included. If any discrepancies are noted, please notify us immediately at (888) 406-1982 so we can get parts to you as soon as possible.

Door Hardware

****Upgraded double door will include additional hardware**

Door Latch Kit

1. Handle (1 per frame), latch plate, and two attachment plates
2. Strike plate w/ 2 screws
3. (8) $\frac{1}{4}$ nut galvanized
4. (8) $\frac{1}{4}$ x 3" bolt galvanized
5. (8) $\frac{1}{4}$ split lock washer galvanized
6. (16) $\frac{1}{4}$ flat washer galvanized



Door Frame Hardware

7. Cane Bolt (1 per door)
8. Spring (1 per door)
9. Door mounting kit
10. Hinges (4 per door)



Single Door/ Door Frame - Optional

*Double door upgrade available

1. Single greenhouse door
2. Single frame

End Wall Parts

End Wall Hardware

1. Kit with tools (in zipper bag) - 2 1/4" jobber length drill bit (1), 1" hole saw, nut drivers for #8 & #10 self-tapping screws
2. (200) #8 x 3/4 zinc self-tapping screws
3. (50) #10 x 3/4 zinc self-tapping screws
4. (10) 1/4 x 2" bolt galvanized
5. (10) 1/4 nut galvanized
6. (10) 1/4 split lock washer galvanized
7. (20) 1/4 flat washer



Endwall Frame Hardware

1. (8) brace band clamp 1.35
2. (2) pipe strap 1.375



Frame Hardware Kit

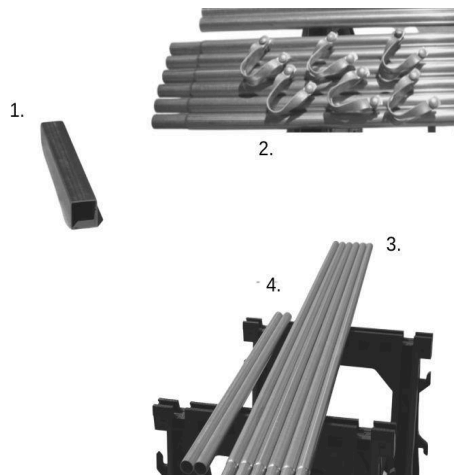
** Check your pick-list as hardware/part quantities are dependent on kit size.

1. ¼ x 2" bolt galvanized
2. ¼ nut galvanized
3. ¼ split lock washer galvanized
4. ¼ flat washer galvanized
5. #8 x ¾ zinc self-tapping screws
6. #10 x ¾ zinc self-tapping screws
7. Sidewall hardware kit



Hoop House Frame Parts

1. 10" splice (Not included in essential kit)
2. Cross connector 1.375
3. 75-inch swaged ridge pole
4. 36-inch extension ridge pole
5. 48-inch 1.66 drilled ground post*
6. Hat channel (Not included in essential kit)
7. Lock channel & spring wire
8. Banded Hoop Packs**



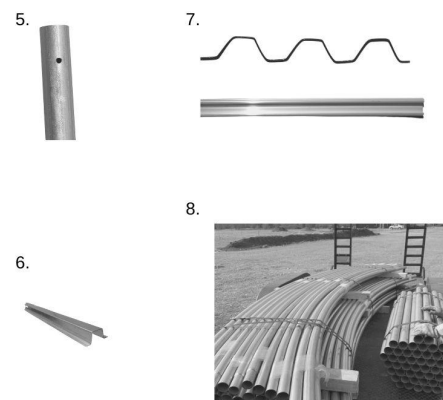
*Ground Post Pack Options

14/20- (18) 14/40- (28) 14/60- (38) 14/80- (48)
14/100- (58)

20/20- (20) 20/40- (30) 20/60- (40) 20/80- (50)
20/100- (60)

**Hoop Pack Options

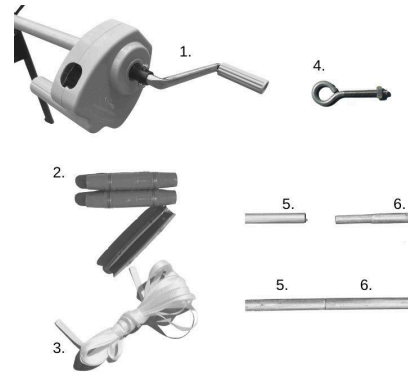
- 14' Hoop Pack (2) 96" swaged & (1) 99" Pole
- 20' Hoop Pack (3) 96" swaged & (1) 99" Pole



Optional Upgrade Parts

Roll-up Sidewalls

1. (2) Sidewall hand crank
2. Snap clamps
3. Strapping
4. Eye bolt
5. EMT 0.5-inch 2ft
6. 78-inch 0.922 EMT pole with swaged end



Corner Brace Kit

1. (4) flat open 75-inch brace 1.315
2. (4) flat swage 36-inch brace 1.315
3. (11) #8 HEX self-tapping screws 1-inch
4. (4) 1 $\frac{3}{8}$ brace band for hoops
5. (4) 1 $\frac{5}{8}$ brace band for ground posts

Purlin Kit

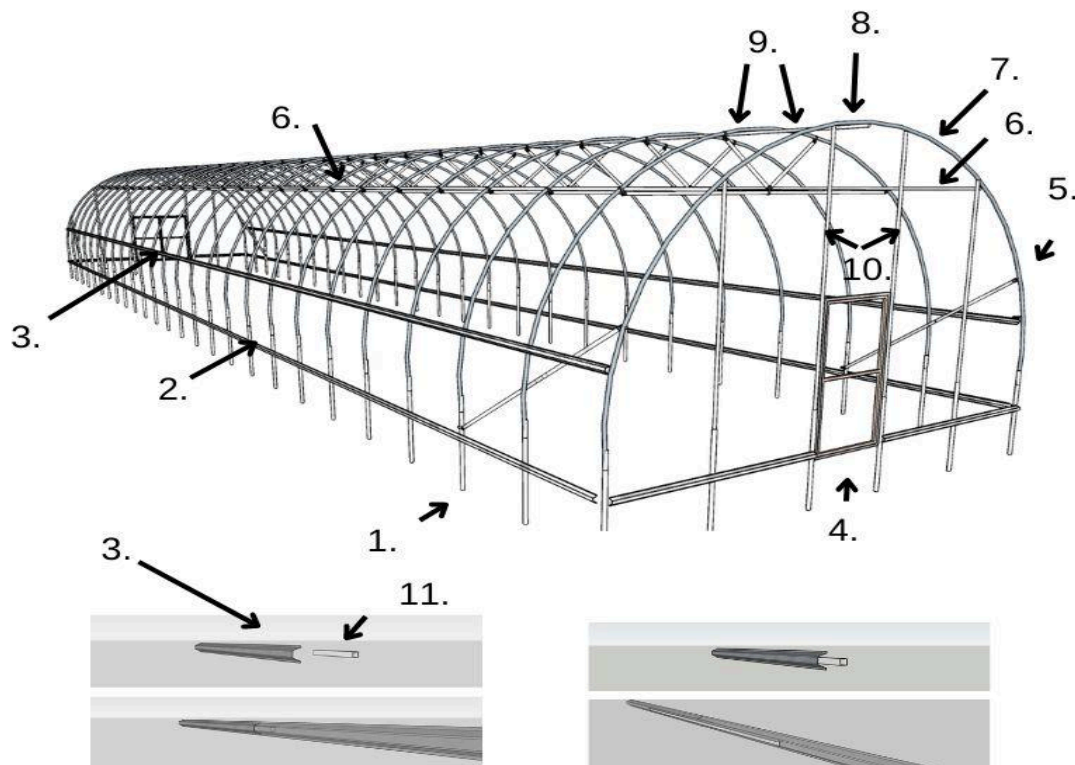
- Cross connector 1.375 (2 per hoop)
- 75-inch swaged ridge pole (# dependent on length of kit)
- 36-inch extension ridge pole (2)



Scan QR for info on **unboxing a hoop house** or visit
<https://youtu.be/bEwLjCWjbL0?si=o8-HuczwtgHmOn-u>

Labeled CAD Drawings

1. 48-inch 1.66 drilled ground post
2. Base brace/baseboard (wood purchased locally)
3. Hip brace (wood purchased locally)
4. Single door/door frame
5. Optional corner brace
6. Optional purlins
7. Endwall hoop
8. Ridge pole
9. Optional truss kit 36-inch flat bar with (2) brace bands
10. Vertical uprights (36-inch extension & 75-inch ridgepole)
11. 10-inch splice channel (not included in Essential kit)



Ground Posts

Optional: Install landscape fabric before installing ground posts. Line the perimeter of the greenhouse 1' inside and 3' outside with landscape fabric, to prevent erosion from the water the greenhouse sheds. This also eliminates mowing and string trimming next to your greenhouse and prevents debris from accidentally being thrown through your greenhouse plastic.



Scan **QR Code** for information on **Landscape Fabric** or visit

<https://youtu.be/spzkFIPTOWE>

Tools

- Sledgehammer/double jack
- Single jack (a smaller sledgehammer with a handle under 2' in length)
- Tape measures; ideally, at least one that measures the full length of the diagonal between the corner posts.
- Levels: a line level and a magnetic level.
- Mason line
- Stakes
- Pencil, paper, and a calculator

Every kit we sell comes with a specialized tool called a ground post driver. It is placed on the top of the post to keep it from mushrooming when you hit it with a sledgehammer.



Parts

- 48x1.66 pre-drilled posts*

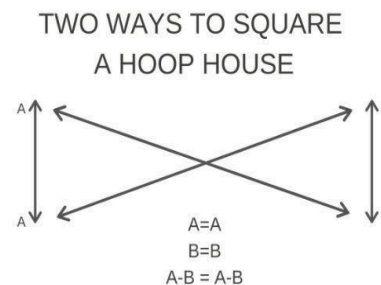
* Quantity of posts dependent on kit size.

Squaring the Structure

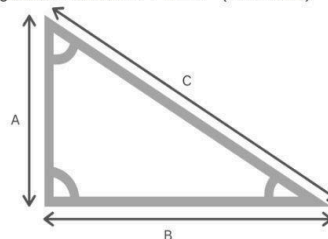
Making sure that your four corner stakes are square will provide a solid base to work from. This ensures the rest of the stakes are easy to install plumb and level.

Tools

- Sledgehammer
- Tape measure
- Bubble levels of various lengths
- String line
- Wooden stakes or marking flags
- Ground stake driver (include



Pythagorean Theorem $A^2 + B^2 = C^2$ (3 4 5 Rule)



Set your corners using one of the following methods.

Measure method - First measure length to length. Then mark the width. It should be 14' or 20', depending on your kit. Then measure diagonally, making sure the diagonal measurements are equal. Double-check that all length, width, and diagonal measurements are equal, then install stakes. This ensures your greenhouse will be square.

Pythagorean Theorem method - Sink a marking stake starting at your first desired post location. Use your tape measure to measure and mark a line at 3 feet and a second line at 4 feet perpendicular to the first. Then place a line directly across both marks. The third line should measure 5 feet and give you a square corner.

You can extrapolate from this triangle to the desired length and width to sink your second and third stakes for the corners. Use a mason line from both the second and third stakes to intersect at a right angle for the location of the final corner stake. Check all measurements.

Installing the Ground Posts

Once your area is measured out with temporary stakes in place, install each corner ground post from the previous step. Place your posts where you previously marked the corners, then drive them into the ground.

While driving posts into the ground, ensure the poles are plumb in all directions. Check for levelness on the front and sides and adjust as needed.

After the corner ground posts are installed, re-measure length, width, and diagonals one last time. If you made a mistake, it's not too late to fix it with minimal effort. Once you are satisfied, tie a string line around the outside of the corner posts.

This will help keep all your ground posts aligned so you don't get wavy hoops later on. Install ground posts every 4' on center following your line, keeping approximately 2' into and 2' above ground.

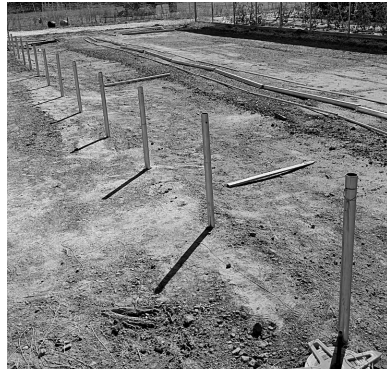
Driving the Ground Posts

Read each step thoroughly before driving the ground stakes

1. Position and install corner stakes: Place the corner ground posts at your pre-marked spots. Start driving these posts into the ground, ensuring they're correctly positioned where you initially marked. Each stake should be 2' in the ground and 2' out of the ground. The hole should be facing parallel to the length of the hoop house
2. Check for vertical alignment: As each post is driven into the ground, continuously check to ensure it's perfectly upright (plumb) from all angles using a level. Make adjustments as needed to keep the posts straight.
3. Verify measurements: Once the corner posts are in place, re-measure the length, width, and diagonal distances to confirm accuracy. It's easier to correct any discrepancies at this point.
4. Use a string line for alignment: Tie a string line around the outer side of the corner posts, positioning it 2 inches below the top. This string line will guide the installation of the remaining ground posts, ensuring they are all at a uniform height.

5. Install additional posts: Following the string line as a guide, install the remaining ground posts every 4 feet on center. Each stake should be 2' in the ground and 2' out of the ground. (If your ground isn't level, adjust the depth of the ground stake so you have enough sticking out of the ground to bolt the hoop and base board to.)

6. Maintain post orientation: During installation, check each stake for levelness on the front and sides and adjust as necessary.



Scan QR for info on **Installing Ground Posts** or visit

<https://youtu.be/S0iSPnsYVi0>

Hoops

The hoops will come bundled together, and you will need to construct them.

Tools

- Drill (Impact drivers are not recommended for self-tappers)
- #8 self-tapping screws

Parts

14' WIDE HOOP set contains:

- (2) 96" swaged pole (bent)
- (1) 99" pole (bent)

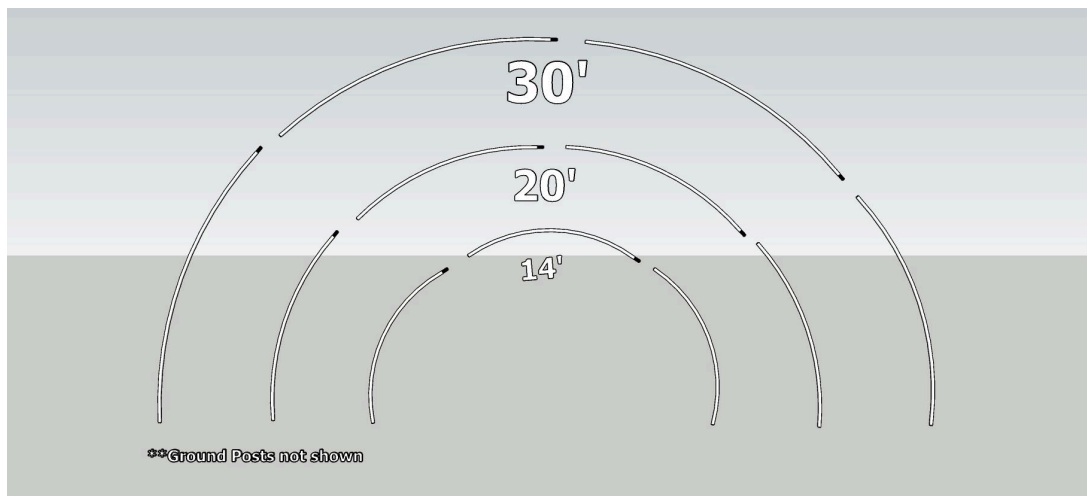
20' WIDE HOOP set contains:

- (3) 96" swaged pole (bent)
- (1) 99" pole (bent)

Pole Layout for Hoops

Our pre-bent poles (96" swaged) have one open end and one swaged end to reduce the diameter, similar to a pipe nipple. This allows you to connect poles without fittings. The final hoop section (99" open) is open on both ends. When properly constructed, the bottom of the hoops will be open, allowing them to slide into the ground posts snugly.

****Always drill on the side of the hoop so that the screw will end up parallel to the ground when the hoop is placed upright to protect the plastic from damage.****

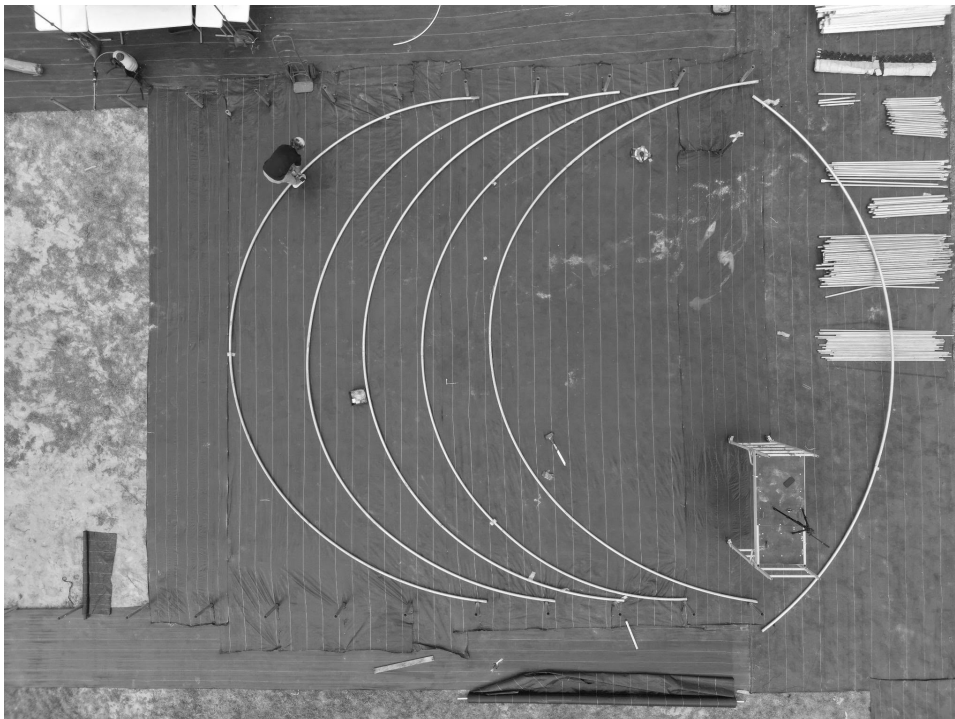


Connect and Install Hoops

- Piece your hoop set together on a flat surface. For consistency, assemble all your hoops in the same spot so they match.
- Using two #8 self-tap screws at each junction, connect the hoop together to prevent twisting and separation. Screwing straight down while the hoop is lying flat will ensure the screw is parallel to the ground once you raise the hoop.
- When all of the hoops are connected, place them near the ground posts.
- With a partner, stand the hoops up and place one side into a ground post and then the other. For consistency, have the same person go first. At this point do not force the hoops down into the ground posts all the way. Adjustments will come on the next couple of steps.



Scan **QR** for info on **Setting Hoops** or visit <https://youtu.be/eXq7C5LAeVQ>



Installing Hoops to Ground Posts

1. While on a ladder, one person eyeballs the top of the hoops as a partner adjusts the height of the hoops at the ground posts. (20' has a center height of 11'4". The 14' has a center height of 9'4")
2. Adjust the height and sides until they align and remain level along the structure.
3. When you are satisfied with the hoops being aligned, drill a 1/4" hole through the hoop at the hole in the ground post. Secure with 1/4"x2" bolt, flat washers, a lock washer, and a 1/4" nut.



NOTE: If you purchased optional bracing, installing it on the ground posts now will be much easier. SKIP TO PAGE 38 for install instructions.

Do not stress out about the hoops looking uneven when in the ground posts at this point. Adjustments will come later.



Scan **QR** for info on **Installing Hoops to Ground Posts** or visit

<https://youtu.be/S0iSPnsYVi0>

Ridge Poles

End Wall Pipe Strap

The end wall pipe strap helps to keep the ridgepole from extending past the end hoops and poking the plastic end walls.

Note: Since each hoop will be connected to the first end wall, it should be carefully made plumb and held that way as you make the connections. You can do this easily using stakes and rope. Wrap a rope around the hoop. Using a magnetic level, stake the rope securely on either side of the hoop with the hoop directly perpendicular to the ground. If needed, move the stakes slightly left or right to secure the hoop in the proper position.

Tools/Parts

- Ladder
- Clamps
- 5/16" nut driver
- Drill
- #10 self-tapping screws
- (2) pipe strap 1.375

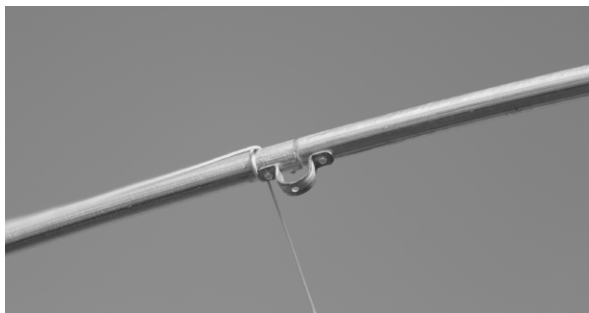


Scan **QR** for info on **Stabilizing Your End Wall** or visit

<https://youtu.be/eXq7C5LAeVQ?t=300>

Installing End Wall Pipe Straps

1. Secure the pipe strap to the underside of the center of the end wall hoop by predrilling and loosely securing it with #10 self-tapping screws.
2. Insert the ridge pole through the strap until it is about 1/8-inch short of the outside of the end hoop. This is to prevent the ridge pole from sticking out past the last hoop.
3. Pre-drill and screw the pipe clamp into the hoop using the center hole on the pipe strap using #10 self-tapping screws. Tighten all 3 screws until they are secure.



Cross Connectors and Ridge Poles

Ridge poles and cross connectors work together to connect and stabilize the hoops. Optional purlins and additional cross connectors further stabilize and are installed the same way. See page 21 for pictures.

Tools	Parts (PER 20FT)
• Rope/stakes • Drill w/ ¼" bit • Stepladder • Saw • Ratchet and sockets • Tape measure • Wrench • Cross connector 1.375" • 75" swage ridge pole • 36" extension ridge pole	• (15) ¼ x 2" bolt galvanized • (15) ¼ nut galvanized • (15) ¼ split lock washer galvanized • (30) ¼ flat washer galvanized • End wall band clamp 1.375" • #10 self-tapping screw

Installing Ridge Pole and Connectors

1. Loosely place a cross connector on top of the remaining hoops.
2. Starting at one end wall, carefully verify that it remains plumb.
3. Connect the ridge poles with two #8 self-tapping screws at each junction, driven from the bottom or from the side at the swaged connection. Insert the pole into the end wall cross connector and the next hoop cross connector.
4. Continue adding ridge poles until the other endwall is reached. It will help to drill pilot holes in the open end of the poles before handing them up the ladder for ease of attachment.
5. Center the loose assembly at the top of the hoop, double-check the plumb of the end wall, and tighten the connector bolt with a ratchet.
6. Measure 4' on center from the first tightened connector to the next connector and secure at that point.

7. Repeat this process for each hoop as you make final plumb adjustments while keeping cross-connectors 4' apart. Depending on the length of your greenhouse, use a 36" extension on the end of the ridge pole or a 75" ridge pole, then cut off the excess.



Scan **QR** for info on **Ridge Poles** or visit

<https://youtu.be/AfTKTvcqw20>

Hip & Base Braces

Installing Baseboards

For baseboards, we use the 2" x 6" x 8' boards. These will be in contact with the ground, so using a water-resistant wood like cedar, redwood, or pine is ideal. We also recommend coating the boards with latex paint.

1. For the first baseboard, we cut off the first foot so the board doesn't end on a ground post.
2. Line up the cut board with the front of the first ground post.
3. Clamp the board to the post and use your 1/4" drill bit and drill through the wood and the ground post.
4. Insert a 3.5" x 1/4" carriage bolt & tighten with a lock washer & nut on the outside.
5. Where two pieces of wood butt together, connect them with a scrap piece of 2" x 8" and attach with 2-1/2" wood screws (Phillips flat headed #8).
6. Be sure not to overdrive these screws as you don't want the screw tip poking out the other side where it could pierce your greenhouse plastic.

Installing Hip Boards

There is no hard rule regarding where to place your hip boards. You want to set hip boards as high as you want your roll-up sides to go (if you are using them).

If you are NOT using roll-up sidewalls, you still want to install the hip board for stability. However, it gets mounted on the INSIDE with the bolt flush with the outside (so it doesn't interfere with the plastic).

1. For our hoop houses, we typically place the bottom of the hip board about 36 inches from the top of the ground post. (4'-5' from the ground)
2. Mark each hoop at your desired height
3. Similar to your baseboards, you want to cut the first 1 foot off your hip board so the butt joints don't land on a hoop.
4. Line up your boards on the marks and use a clamp to hold them in place.
5. Drill a 1/4" hole through your board and then through the hoop.
6. Place a zinc-plated 3.5" x 1/4" carriage bolt through the wood and attach it with a washer and nut on the hoop end.
7. Once you have all the side baseboards attached, you can install the baseboards on the non-door end wall with 2" x 6" boards and a carriage bolt and lock washer and nut.

Bootstrap Tips for Installing the Hip Brace

- Begin on the same end you installed the ridge pole.
- The hip brace will be installed between 3-1/2' and 6' above the baseboard. Mark this height on each of your end walls and run a line level to guide your hip board installation.
- If your line is not level, raise the lower side until it is level.
- This will give your roll-up sides a large opening to cross-ventilate and will also work with the optional insect netting and the appropriately sized shade cloth for your structure.
- Keep the hip board level and check hoops for plumb as you go.

End Walls

See pictures on the next page.

Tools	Parts
• Ladder • Mason line • Drill • Ground post driver • Bubble level • Tape measure • Clamp	• Ground post • Lock channel • Ridge pole • Endwall hardware kit • 1$\frac{3}{8}$ Brace bands • 75" Flat to Open pole • 75" Flat to Swage pole • 1.25x5/16" carriage bolt • 5/16" nut

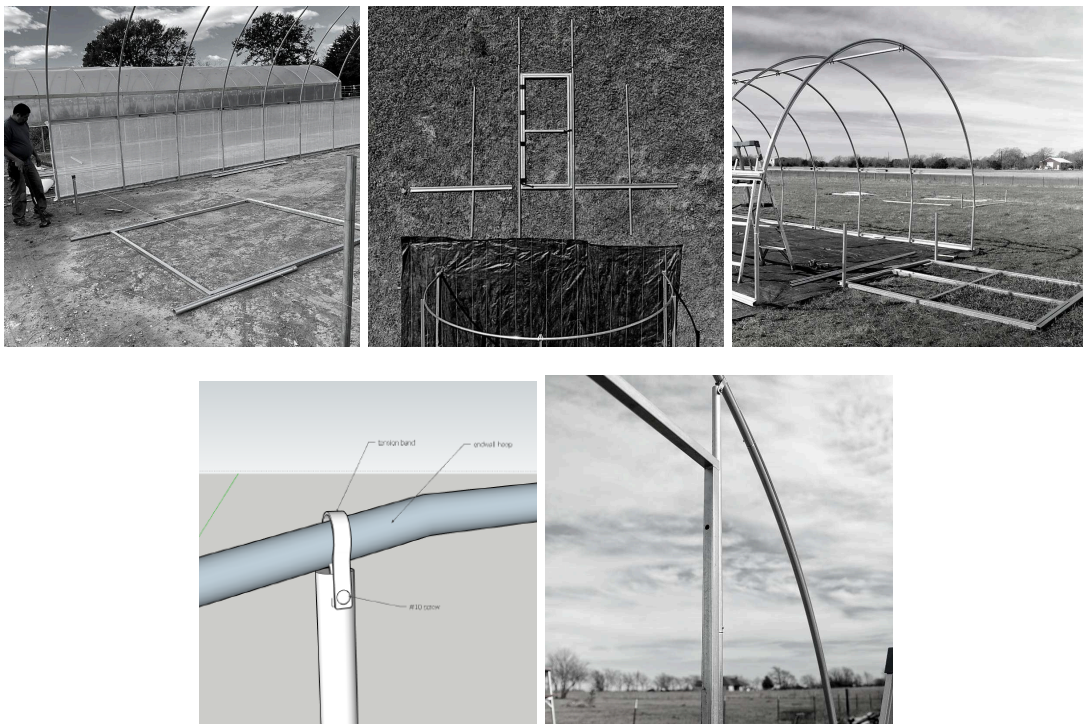
Installation of End Wall

1. Run a mason line across the end hoop on the outside of the structure.
2. Center the door frame in the middle of the hoop. If using a double door, you must build the frame before installing uprights.
3. Install ground posts inside the string line, immediately to the left and right of the door frame, at 2' in the ground and 2' above.
 - a. You will need to measure for your door frame to install these in the correct position. Review your door frame option below before installing.
4. For 20' houses, center additional vertical supports halfway between the hoop and the door. This will be the location to install additional ground posts.
5. Attach the hat channel to the ground posts with #10 screws. Keep the hat channel level along the ground to all ground posts, then cut off the excess.

**There will be no hat channel across the door frame.

6. To create your upright, insert a 36" ridge pole extender onto the bottom of the Flat Swage 75" pole (door uprights only) and secure with (2 qty) #8 self-tapping screws through the side of the swaged connection.
7. Place the assembled upright into the ground post.
8. Install a brace band over the endwall hoop. Slide the upright up to meet the installed brace band and attach the upright to the brace band using the 1.25x5/16" carriage bolt and 5/16" nut.
9. (20ft only) For additional uprights, use a 75" flat to open pole, repeating step 8 to attach them to the hoop.
10. Once attached to the hoop, drill a 1/4" hole through the upright at the hole in the ground post. Secure with 1/4"x2" bolt, flat washers, a lock washer, and a 1/4" nut.

If building an end wall without a planned door, place supports the same way that you did for the side with the door.



Scan **QR** for info on **Building End Walls** or visit

<https://youtu.be/zJ34EQjeBMU>

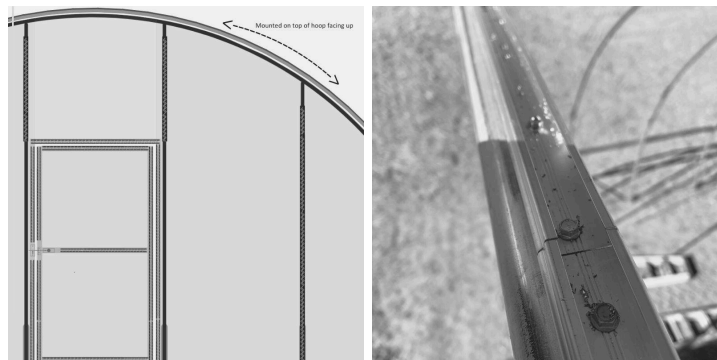
End Wall Lock Channel

For the hoops:

- On the end walls, install the lock channel from baseboard to baseboard, going over the outside/top of the hoop. The channel will bend with the curve of the hoop with ZERO modifications. **Do not notch the channel.**
- Keep your clamps ready to assist with bending and holding the channel while you drive #8 self-tapping screws directly into the center of the channel. Use the grooves in the lock channel to keep your screws centered.
- At the hip brace, cut off the lock channel, then continue on the other side to the bottom base brace on both sides.

For the end wall uprights:

- Attach the lock channel to all vertical end wall supports from the baseboard up to 12 inches below the top of your hoops.



Doors

See pictures on the next page.

Tools	Parts
• Drill • Level • Step ladder • Tape measure • Clamp	• (8) ¼ x 2" bolt • (8) ¼-inch nut • (8) ¼-inch split lock washer • (16) ¼-inch flat washer • Door frame GH • (1) Door GH • (4) #12 self-tapping screws

Door Frame

The frame for the double door ships in two halves. You will join the two halves together to make a single large frame. The single door frame is installed as is and you can skip to door frame installation.

1. Find a flat surface to assemble the door frame on.
2. Pre-drill (8) 3/16" holes into the door frame. (See drawing for details). All holes will be drilled into the same side of the door frame.
3. Mark a line on the center of the 10-inch splice. Install the splice into one side of the door frame, up to the centerline.
4. Install (4) #12 self-tapping screws through the 3/16" holes, into the splice. Do this for both sides of the same half door frame.
5. Install the other half of the door frame onto the splices and clamp the two halves together.
6. Install (4) #12 self-tapping screws through the last 4 3/16" holes into the splice, joining both halves of the door frames together.

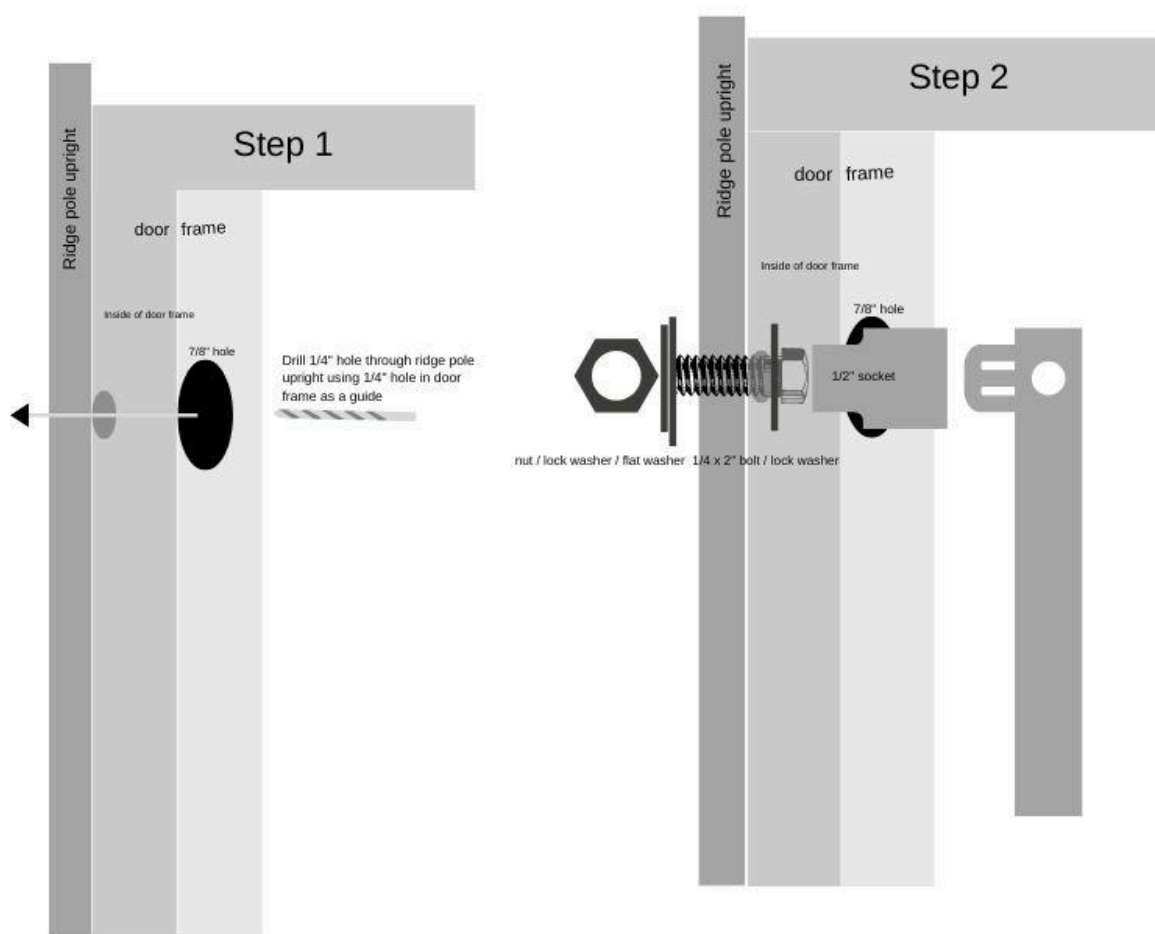
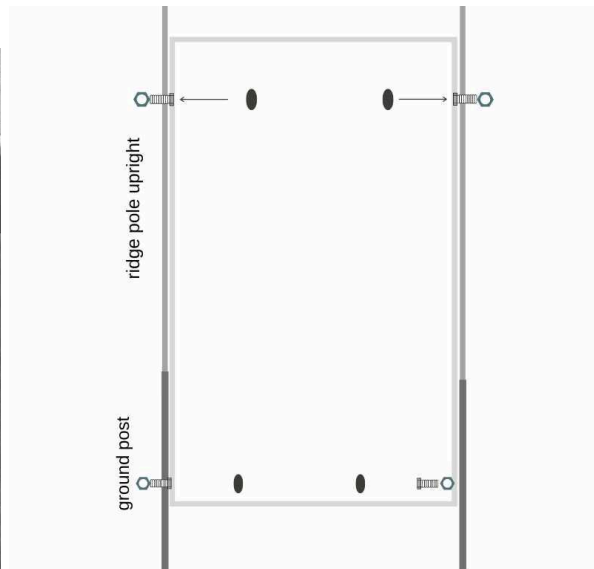
Metal Door Frame Option Installation

1. Once the verticals (ground posts, ridge poles, ridge pole extensions, and brace brace bands) have been secured with #10 self-tapping screws, stand the door frame up and temporarily hold it to the verticals with clamps.
2. Confirm plumb along door verticals and level along door frame horizontals. Use shims or scrap wood to adjust the door frame until the door frame is plumb, level, and secure.
3. Drill a 1/4-inch hole through the ridge pole uprights from inside of the door frame using the 1/4"-inch hole on the outside of the door frame and up against the upright. (Picture marked Step 1 on the next page.)
4. Secure with a 1/4" x 2" bolt, lock washer, flat washer, and 1/4-inch nut placed on both sides of the frame. Most 1/2-inch-deep sockets will fit into the larger hole in the door frame. (Picture marked Step 2 on the next page.)



Scan **QR** for info on **Building Double Doors** or visit

<https://youtu.be/b2n0s7Ua7PQ?si=07TCIHGYix6kd9nd>



Door Hanging and Latch Installation

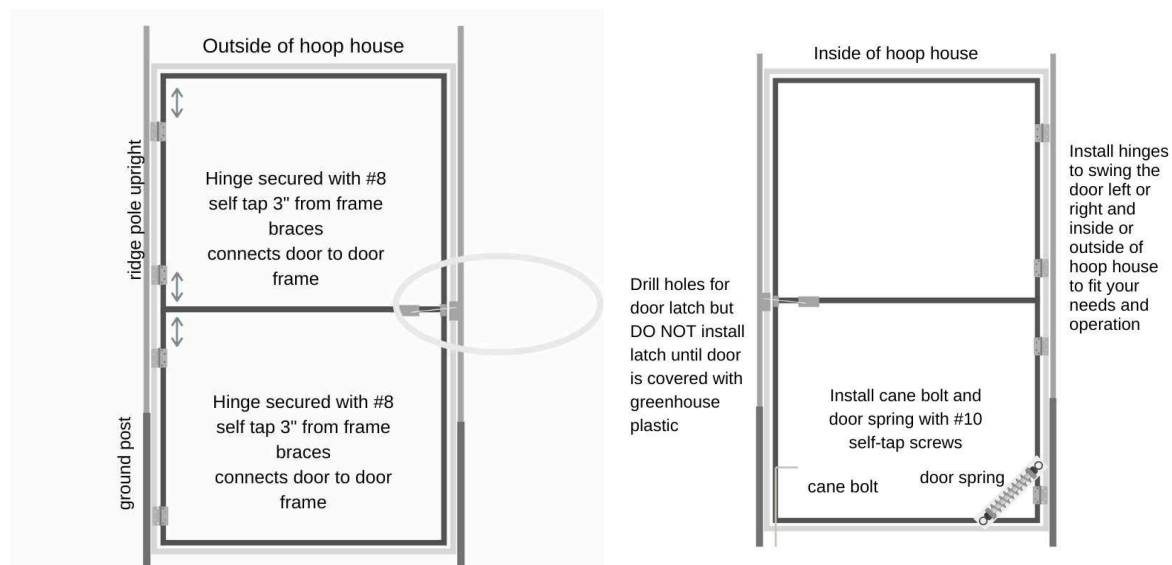
NOTE: YOU WILL DRILL THE 1" HOLE FOR THE LATCH BEFORE HANGING THE DOOR. THEN HANG THE DOORS AND ATTACH ALL LOCK CHANNEL. AFTER ALL OF THE PLASTIC IS IN PLACE COVERING THE ENTIRE HOOP HOUSE, YOU WILL COME BACK AND INSTALL THE LATCH. (Future kits will have this hole already drilled for you in the door crossbar. On your second door, you can cover the hole with lock channel)

Tools	Parts
• ¼" drill bit • ⅛" drill bit • 1" hole saw (included with hardware pack) • 7/16" sockets or adjustable wrench (you will need two) • ¼" driver for #8 self-tapping screws • Shims	• Hinges (4 per door) • Cane bolt (1 per door) • Spring (1 per door) • Latch (1 per frame) • ¼" x 3" bolts • Nuts • Lock channel and spring wire bundle

1. With the door flat on a hard surface, drill a 1-inch hole 5 inches from the door edge, centered on the door frame's center brace. (This is part of the door latch, but the rest of the door latch installation takes place after the plastic installation.)
2. Decide whether you want the doors to swing toward the interior or the exterior of the house. If using a single door, decide whether you want it to open to the left or the right.
3. Using the hinge as a guide mark and drill guide holes in the door frame using the ⅛-inch bit. Each hinge should be placed 3 inches away from the closest horizontal crosspiece of the frame.
4. Attach all hinges to the frame using the #8 self-tapping screws.

5. Using shims and clamps, position the door so it has clearance to swing freely once attached.
6. Attach all hinges using #8 self-tapping screws. Drill guide holes for ease of installation.
7. Completing door latch installation: **These steps will be completed after you finish installing the plastic.**
 - a. Cut a small hole through the plastic over the 1-inch hole that you drilled back in Step 1.
 - b. Thread the latch through the hole and align the plate horizontally.
 - c. Secure front and back latch mounting plates with #8 self-tapping screws.
 - d. Mount the door latch receiving plate with #8 self-tapping screws against the door frame edge so that the latch lies flat. (For double doors, this goes on the other door.)
 - e. The guide plate can be used to limit latch mobility.

NOTE: Some hardware from the kit will not be used. Guide plates and 3-inch bolts are included in case you will be customizing your door.

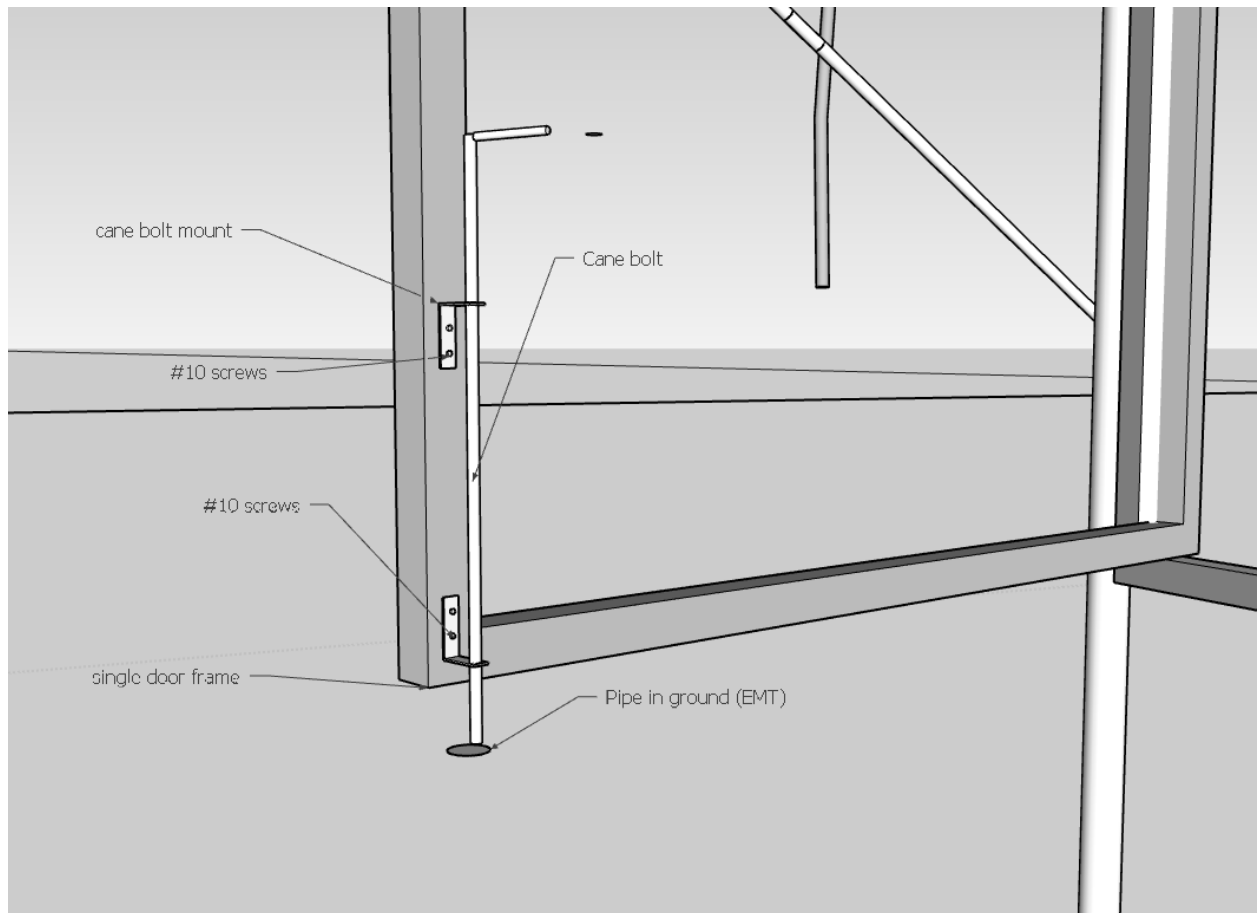
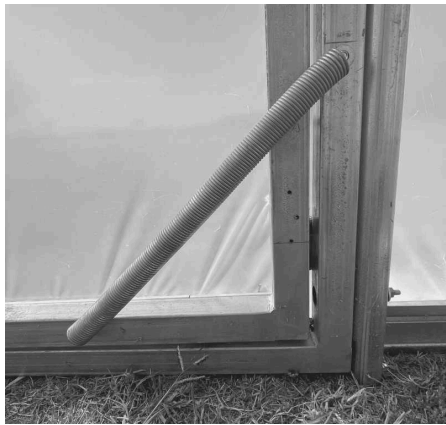


Attaching Spring and Cane Bolt

A cane bolt allows you to secure a single door in the open position or one section of a double door in the closed position. The spring will close the door if left open, but given the tightness of the latch, the latch will need to be secured by hand.

1. Attach the top of the spring to the frame using a #10 self-tapping screw.
2. Attach the bottom of the spring to the door using a #10 self-tapping screw.
3. The cane bolt installs on the inside of the door. Line up your cane bolt brackets at least ½-inch above the bottom of the door and directly in line with the vertical part of the door.
4. Install the second cane bolt bracket above the first, so that you can guide the cane bolt into the pipe at least 2 inches below ground. If installed too high, the cane bolt will not drop down enough to protrude into the ground.
5. Secure cane bolt brackets with #10 self-tapping screws, as pictured below.
6. Install a small piece of scrap pipe or EMT into the ground 4-8 inches deep below the cane bolt, where the door is in your preferred open position. Inserting the cane bolt into the brackets and the pipe will hold the door open.

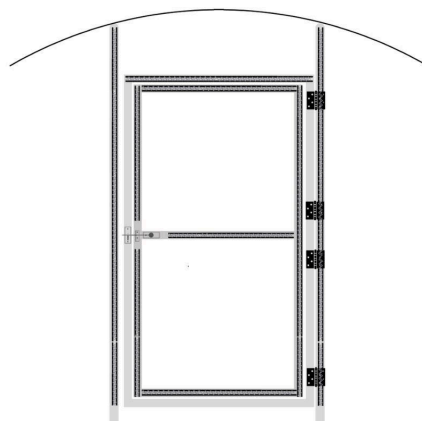
NOTE: Wood screws will be used to install on customized doors.



Door Lock Channel

Install the lock channel OVER the hinges on both the door and the frame. The lock channel you installed on the vertical supports in the previous step will secure the outer edge of the plastic.

1. Cut the lock channel to fit across the top of the door frame, the door top, the door bottom, and the cross-bar support from the inside edge to the beginning of the latch mounting plate. (Verticals will need to be comprised of at least two pieces of lock channel.)
2. Attach the lock channel on the door frame across the top edge.
3. Install lock channels across the top and bottom of the door(s).
4. Install the vertical door lock channel on both sides, but do not install it over the latch mounting plates.
5. Install the cross-bar lock channel.
6. When installing plastic, insert spring wire into all lock channels, then cut along the edge between the door and the frame.



Before installing your covering, use a broom or shop vacuum to remove any metal filings from lock channel installation.

Door Frame Kit Option

Tools	Parts
• metal saw • Tape measure • Level • Step ladder • Socket set or adjustable wrench • ¼" driver for #8 self-tapping screws	• Clam Shell 1-$\frac{3}{8}$" (4) • 36" piece of 1-$\frac{3}{8}$ pipe (1) • 3.5" x 5/16 carriage bolts (2) • 5/16 Nuts (2) • Lock channel and spring wire bundle • Bolts/screws for 2"x4" boards (locally-sourced)

This kit is designed to create a rigid metal frame for attaching to wood, allowing you to install a conventional 32' to 36" screen/storm door. (Storm door not included)

The kit consists of the following:

Two pairs of clam shells, a 36" piece of tubing and the carriage bolts and nuts. These attach to your uprights on the endwall.

A horizontal bar ties the two verticals together with clamshell fittings. The horizontal bar creates the header for the door frame. We attached 2x4s to the metal frame with 2" self-tapping screws to make a wood frame for our door.

1. Measure the distance between the baseboards on each side and find the center of the end wall. Mark this spot.
2. Depending on the door you choose, the measurements will be specific to your application. Determine the "rough in" measurements and add the thickness of the wood used to construct the frame.
3. In our case, the "rough in" is 36". We used 39" as our measurement, since we used 2x4s for the frame, and their combined thickness is 3 inches.

4. Once you have this measurement, divide that measurement in half and measure that distance on both sides from the center mark you already made. This will determine the outer edges of your door opening.
5. Install a ground post on either side of the opening you have marked, and keep the ground posts in line with the end of the end hoop. Leave approximately 24 inches of the ground post sticking out.
6. Slide the upright into the ground posts you measured from and attach it to the brace band that you installed on the hoop. Drill a ¼" hole through the side of the pipe. Use a carriage bolt and nut to attach this to the brace band on the hoop. Use a level while doing this to make sure the upright is plumb.
7. Repeat steps 5-7 for the other upright.
8. Make sure the distance between the top of the uprights matches the base of the uprights at ground level.
9. Mark your uprights for the up and down rough in measurements, plus the thickness of the header board. This is where the crossbar will be installed.
10. Collect all four of the clamshell pieces and a 36" pole. These will be used to create the crossbar.
11. If the distance between the uprights is less than 36", cut down the 36" pole to fit with the clamshells installed.
12. Use a 2 ½ " carriage bolt to secure the clamshells around the cross bar and uprights. When installing these to the uprights, put on one side at a time and loosely assemble until the crossbar is installed.



13. Tighten the carriage bolt until it is snug, then repeat on the other side.
14. Position the crossbar where you marked the uprights, then tighten the carriage bolts.

15. Measure, cut, and install the baseboards to the bottom of the end wall.
 - 15.1. Measure from the outside edge of the left baseboard to the inside of the left door upright. This is the length of the left baseboard.
 - 15.2. Measure from the outside edge of the right baseboard to the inside of the right door upright.
 - 15.3. Make sure to measure both sides before cutting, as the measurements may differ.
16. Using a clamp to hold the wood in place, drill a $\frac{1}{4}$ " hole through the wood and the bottom of the hoop and door frame upright.
17. Install a 3 $\frac{1}{2}$ " by $\frac{1}{4}$ " carriage bolt to secure the board to the base of the uprights.
18. The material used to rough in the door will dictate how you connect those materials to the uprights and crossbar. We recommend 2x4" material.
19. Install a lock channel along the baseboard on both sides of the door, on the uprights, and the crossbar around the door.
20. Install the end wall plastic in the lock channel with spring wire.
21. Cut the plastic off the area around the door frame.
22. Install the door.

Optional Upgrades

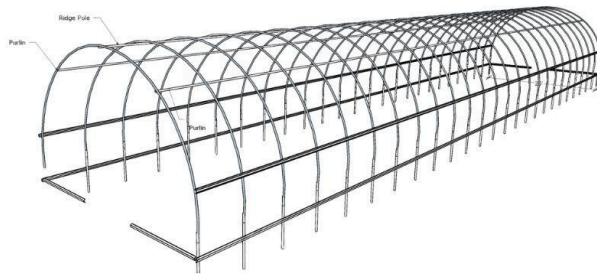
If you did not order any additional upgrades, skip to the section on attaching your plastic, starting on page 44. Many upgrades are installed before the plastic installation.

Purlin Kit

****The Purlin Kit is installed the same way as the ridge poles.****

Tools	Parts
• Drill with ¼-inch bit • Step ladder • Saw • Ratchet and sockets	• Cross connector 1.375" (2 per hoop) • 75-inch swaged ridge pole (# dependent on length of kit) • 36-inch extension ridge pole (2) • End wall cross connectors

Purlin Kit Installation

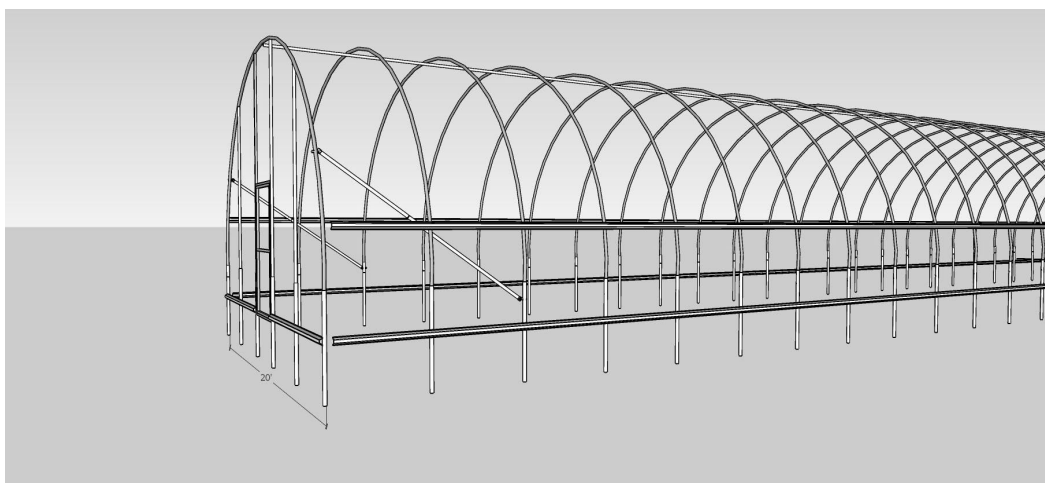


Purlin poles will be installed approximately at the 50° mark, halfway between the ridge pole and your hip braces. Depending on your end wall options, it may or may not align with the vertical end wall supports. This is okay as they are not dependent on each other.

You may notice the hoops may still need adjusting as you work your way down. Use a clamp to help pull the purlin to the hoop so you can install the cross connectors.

Corner Brace Kit

Tools	Parts (hardware included)
• Ladder • Tape measure • Drill • Saw • Ratchet and sockets	• 1 $\frac{3}{8}$" brace band • Flat swage 36-inch brace • Flat open 75-inch brace • 1 $\frac{5}{8}$" brace band



NOTE: Situate carriage bolt threads toward the inside of the hoop house.

Corner Brace Kit Installation

1. Insert the swaged end of the 36-inch brace into the open end of the 75-inch brace. Make sure the flats are aligned, then screw them together.
2. 1 $\frac{3}{8}$ " brace bands wrap around endwall hoops and secure with bolts through the brace band and the hole in the flat end of the brace pole.
3. 1 $\frac{5}{8}$ " brace bands go around the third hoop's ground post and are secured with bolts through the brace band and the hole in the flat end of the brace pole.
4. Repeat steps for each corner.

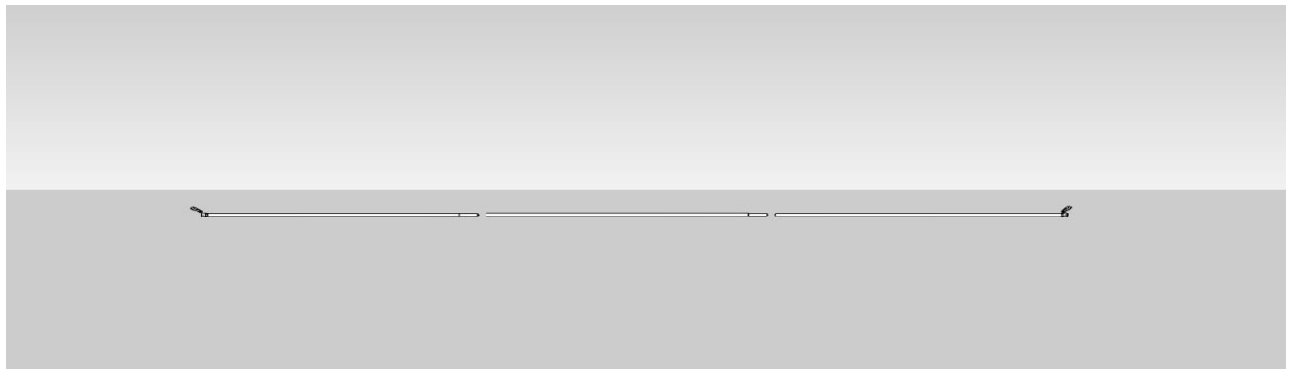
Truss Kit

Tools	Parts
• Pliers • Level (level with magnetic base is recommended) • Step ladder • Tape measure • Adjustable wrench • Wrenches or ratchet and sockets (optional)	• (6) ¼ x 1" bolt galvanized • (6) ¼ nut galvanized • #8 self-tapping screws • (6) 1 ⅜" brace bands • 75-inch flat to open • 75-inch flat to swage • 75-inch swage ridge pole • 36-inch flat to flat (for 20' Truss)

Pole Layout

The truss consists of several components. Below is the horizontal crossbar, consisting of:

- 75-inch flat to swage
- Ridge pole(s)
- 75-inch flat to open



Determining Truss Height

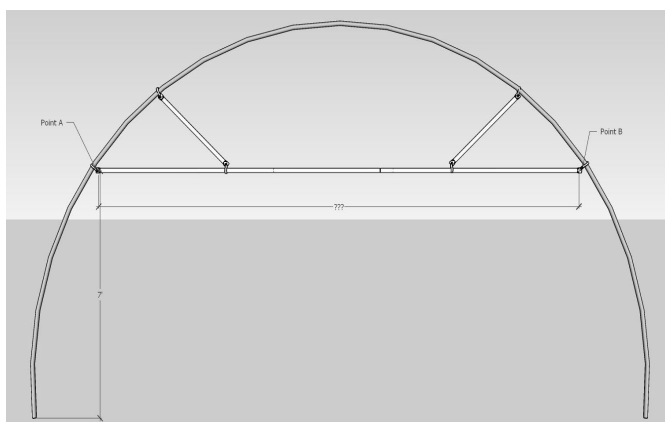
The crossbar length will determine its height when installed in the greenhouse. The longer it is, the closer to the ground. The shorter it is, the taller it will be in the greenhouse. Shorten the length by cutting the ridge pole(s). Install the truss system with the hoops in the vertical position so you can level them.

While you can install them on the hoops before standing them up in the ground posts, you will need to leave all the hardware loose so you can level the truss after installation of the hoop.

Truss Kit Installation

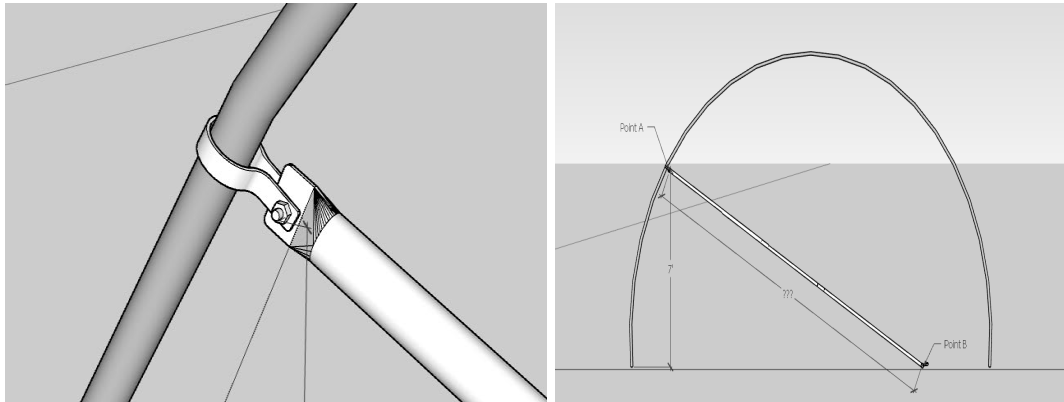
1. Determine the desired height of the horizontal crossbar from the ground.

Measure from one side of the hoop to the other (point A to point B) to determine the length of the horizontal crossbar.

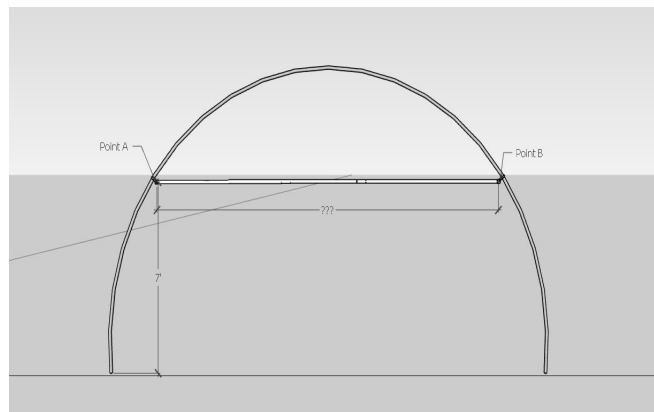


2. Cut the ridge pole to shorten the crossbar to your desired length.
3. Connect the 75-inch flat to swage, to the ridge pole, then attach these to the 75-inch flat to open. Align the flat sections so they are on the same plane.
4. Once connected, use #8 x $\frac{3}{4}$ " self-tapping screws at the joints to prevent twisting and separation.

5. Install a brace band over the hoop. Connect the band to the flat section with a bolt and nut inserted through the brace band and the hole in the flat section, as shown in the picture below.

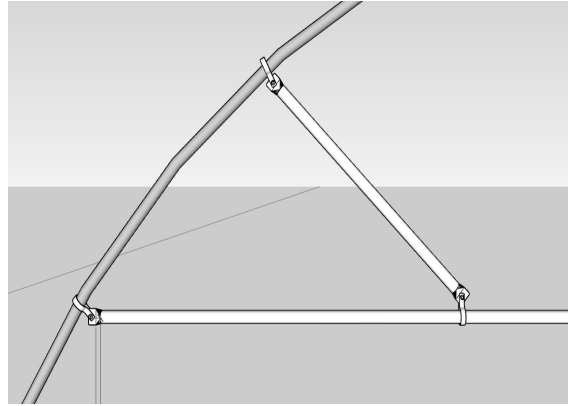


6. Raise the opposite side of the crossbar to the hoop and attach it with a brace band, as in step 5.

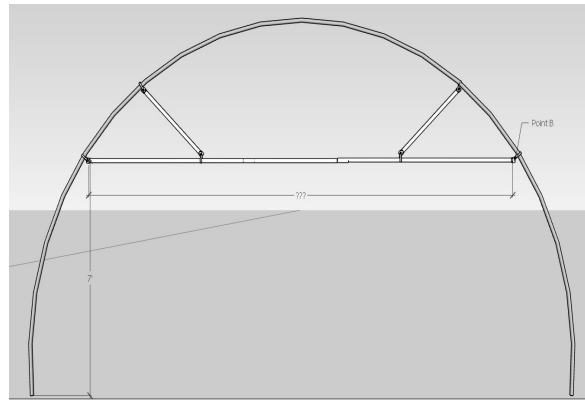


7. Adjust the bar until it's level, then tighten the bolts at the brace bands.

8. **Installing the diagonal supports on the 20' wide kit** is similar to the steps you have already taken. Install a brace band over the hoop, use a bolt to attach the brace band to the diagonal, and secure with the nut. Install a brace band on the horizontal crossbar. Install the other end of the diagonal with a bolt and nut to the brace band. Position the bar at a 45-degree angle, as shown below.



9. Tighten bolts on brace bands holding the diagonal brace in place. You should have a truss that resembles the one pictured below.



Insect Netting

Insect netting is installed after the frame is fully assembled, but before installing the plastic. The sidewall insect netting will protect your crops from pests when the roll-up sides are open.

Insect Netting Installation

1. Hold the insect net against the exterior walls and secure it with the lock channel and spring wire. Install your insect netting **BEFORE** the plastic layer.
2. Work along the hip brace, securing it into the lock channel with spring wire.
3. Secure in the lock channel down the end wall and across the baseboard.
4. Cut off excess netting a few inches away from the lock channel.



Scan **QR** for info on **Installing Insect Netting** or visit

<https://youtu.be/V8VKpNeF7BA>

Installing Greenhouse Plastic

Your kit will come with two pieces of plastic. The larger one will be used to cover the top of your structure, and the smaller one will be used to cover the endwalls. Make sure you finish securing the plastic before you stop for the day, so it doesn't blow away.



Installing plastic can be the most intimidating part of your build, but once you get going, you will find it to be pretty straightforward. Having 2-4 people will make the job go faster and easier. Pick a time when there is little to no wind to interfere with installation. Keep a rounded broom handle or painter's pole handy to help gently push the plastic over hoops in the middle. Use a tennis ball or tape to round any sharp edges on your pole so you do not puncture the new plastic.



***This label should be on the inside of your structure.**

A wiffle ball has been included in your kit. It will be used to help with pulling the plastic over the structure. Put the wiffle ball in the plastic about 12 inches from each end, in the corner you will be pulling to the opposite end of your greenhouse. Wrap the plastic over the ball, similar to how a wrapper is put over a candy sucker. You can then tie a piece of rope around the base of the wiffle ball. This provides a large surface area for the rope to

pull against, preventing it from leaving stress marks on the plastic. The rope can now be thrown over the structure and pulled to help cover it with plastic.

The optimal temperature for installing plastic is above 70°F. Leave 6-12" of plastic around the perimeter when cutting/trimming. If you need to tighten it, this will leave sufficient area to hold. Ideally, you want the plastic as tight as a drum. Pull out all wrinkles and sags. It is not uncommon to remove the spring wire in areas to stretch and tighten the plastic. Over time, you may need to retighten the plastic to maintain proper tightness. Tight plastic resists being damaged by wind or by sliding on hoops and metal parts.

Securing the Plastic

1. Install the spring wire from the top center of the hoop to the hip brace.
2. Install the spring wire from the top down on the other side of the hoop.
3. On the opposite end wall, pull the plastic tight and repeat Steps 1 and 2
4. Pull the plastic tight and attach with spring wire along the hip braces, one side at a time. NOTE: If you have roll-up sides, skip Steps 6 and 7. Move on to Step 8.
5. Attach the end wall hoops from the hip brace to the baseboard.
6. Pull tight and attach the plastic with the spring wire along the baseboards of the hoop house.
7. Cut the plastic 3-4 inches away from the lock channel on both end walls.

For areas with severe winters or hurricanes: If you will be removing the plastic during the winter, leave 6-12" of plastic all the way around to make reinstallation easier.

8. Cut the plastic along the baseboard, 3-4 inches from the lock channel. (For roll-up sides, leave at least 6" past the baseboard.)

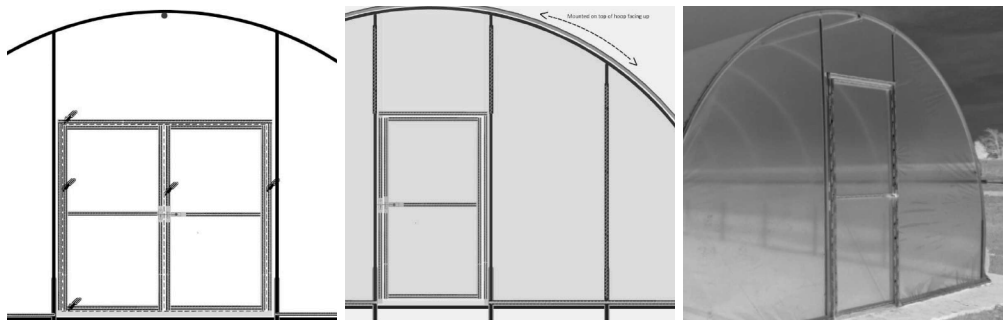


Scan **QR** for info on **Installing Plastic** or visit <https://youtu.be/qxApDmKXYyo>

Installing End Wall Plastic

Once the top/long sides are covered and you have trimmed the excess plastic from the hoop at the lock channel, you can begin endwall installation.

1. While ensuring the "inside" label faces the inside of the house, install spring wire along the baseboard, keeping the plastic stretched left and right.
2. Next, stretch the plastic up and work from the top of the hoop to one side. You will keep pressure by pulling up and out. You will install this spring wire into the same lock channel that you secured the top plastic into.
3. Now repeat for the other side.
4. Install spring wire to attach the plastic to the uprights.
5. Install spring wire into all door lock channels.
6. Cut the plastic 3-4 inches away from the lock channel along the hoop. The remaining piece will be used to cover the other end wall.
7. Carefully cut the seam between the door and the door frame to allow access. Cut out door access only AFTER all plastic is secured with spring wire in all vertical and horizontal lock channels.
8. Follow the instructions on page 30 for the door latch and install it over the plastic.
9. Repeat steps 1-8 for the opposite end wall if the wall has doors on both ends.
Repeat steps 1-3 for an end wall with no door.



Installing Ventilation

These steps cover installing either a powered ventilation fan or an intake shutter on a hoop house end wall using an installation rail kit. The goal is to create a solid horizontal mounting surface and a clean opening for airflow while maintaining plastic tension on the end wall.

This installation creates two horizontal rails:

- One upper rail for the fan or shutter to rest on
- One lower rail to provide a solid surface for fastening

Lock channel is then installed around the opening so the plastic can be secured tightly and cut cleanly after installation.

Tools • Metal cutting tool • Drill with 5/16" nut driver • Level, preferably magnetic • Two clamps • Ladder • Ratchet with 1/2" drive • Multiple tape measures • Tape or zip ties for cable management if installing a powered fan	Parts Shutter Exhaust fan hardware kit • (8) Rail Clamps • (4) 1/4" x 2.5 Carriage Bolts • (4) 1/4" Nuts
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- 1. Choose the location**

Install the fan or shutter as high as possible on the end wall to improve airflow.
- 2. Measure the opening width**

Measure between the vertical end wall posts. Cut one horizontal pipe to this length for the top rail.
- 3. Install the top rail**

Attach end rail clamps to each vertical post. Insert the pipe, level it, and tighten the clamps. Keep carriage bolts on the inside of the structure.

4. **Mark the lower rail height**

Measure down from the top rail the height of your fan or shutter. Add about 1/8 inch for clearance and mark both sides.

5. **Install the lower rail**

Attach end rail clamps at your marks. Insert the second horizontal pipe, level it, and tighten the clamps.

6. **Mount the fan or shutter**

Center the unit between the rails. Clamp it in place, then secure it with self tapping screws. Make sure shutters open freely.

7. **Install lock channel**

Add lock channel along the top, bottom, and sides of the opening so the plastic can be secured tightly.

8. **Final check**

Confirm everything is level and tight. Lubricate moving shutter parts as needed. After the plastic is installed, cut out the opening inside the lock channel.



Scan **QR** for info on **Installing Ventilation** or visit
https://youtu.be/AefXohJZ8H0?si=tr_oyce8vIrBZlyq

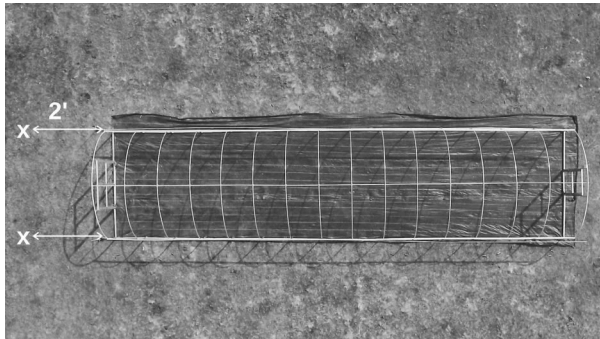


Roll-Up Sides (Optional)

1. Drive $\frac{1}{2}$ x 2' EMT into the ground 2' from the house on the x to help secure the $\frac{3}{4}$ hand crank guide rod. (One for each side)

NOTE: Instructions in the hand crank box ask you to put the crank less than 2 feet, but we have had better performance 2 feet away from the building.

2. Place a $\frac{3}{4}$ x 5' EMT on the $\frac{1}{2}$ " and gently drive it into the ground until the top reaches your hip board height.
3. Connect your EMT pieces and secure them at each connection point with a #8 self-tapping screw.
4. Place your snap clamps next to your long EMT sections to use during the covering process.
5. Following instructions in the box, install the hand crank on the $\frac{3}{4}$ EMT.



Scan to Watch Video

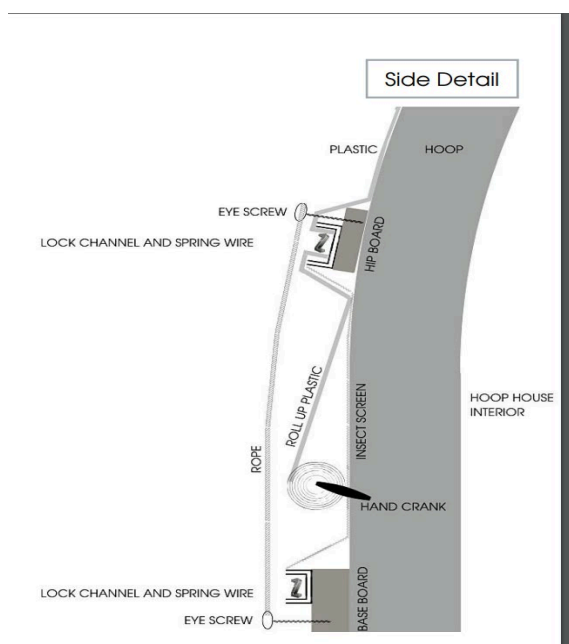


Scan **QR** for info on **Roll-up Sides** or visit

https://youtu.be/zdIP_L-fAYg

Roll-Up Sides Installation

1. Roll the end of the plastic onto the EMT pipe you made earlier. Make sure you roll it under the pipe, as shown in the diagram, so the rolled plastic does not collect rainwater.
2. Install eyebolts on every other hoop. These will serve as attachment points for the strapping material.
3. Install snap clamps every 1 inch or so, with the ends slightly closer together. The first time you slowly roll it up, it will likely not roll up evenly. As you roll it up and down, pull down on the higher parts to tighten up your roll.
4. Roll it up and down a few times during this process, and it will work out the loose sections and become straighter.
5. Repeat the process on the opposite side.



Trellis bars can be installed after the plastic has been installed. It is the final step in

construction. It will be easier if installed before the plastic. **It is recommended at minimum, you have a truss for every 20' span, to support the trellis cable. (i.e. one truss for a 20' long green house, 2 truss for a 40' long green house.

Before installing your Wire Trellis Kits, determine where your beds will be located. The most common way to trellis for a bed is a single line in the middle of each bed. Common bed spacing width-wise is 2 to 3 feet from the edge of the sidewalls and 3 feet between rows.

1. Horizontal Bar

Included Parts

14' & Under - (5) 72" x 1½" horizontal bar, (4) 8" x 1-3/8" round splice, (25) #10 Self Tap Screws, (8) ¾" x 3½" Hex Bolt with Nut & Washer

20' - (7) 72" x 1½" horizontal bar, (6) 8" x 1-3/8" round splice, (35) #10 Self Tap Screws, (8) ¾" x 3½" Hex Bolt with Nut & Washer

30' - (10) 72" x 1½" horizontal bar (8) 8" x 1-3/8" round splice, (40) #10 Self Tap (20) ¾" x 3½" Hex Bolt with Nut & Washer

2. Determine Horizontal Bar Sizing



This kit is installed onto end wall vertical uprights. This allows independent placement of wire trellis anywhere along the width of the structure (not just where vertical supports are located.) You will need a tape measure, level, and marker/center punch for this step.

Height

Stand flat-footed in a comfortable working stance. Determine the height at which you can easily squeeze roller hooks during lower and lean operations. The trellis bar should be 4"-6" above this measurement. It is common for this height to be within 10" of the top of the door frame.

*The horizontal bar must be placed above the door frame at a minimum. Measure and mark desired height with center punch or marker.

Width

Using your marked height, measure the width from the outer edges of the hoop. Use a bubble level to ensure the bar will be installed level.

The trellis bar should span the width of the hoop house, ending just shy of touching the end wall hoops on the top corners.

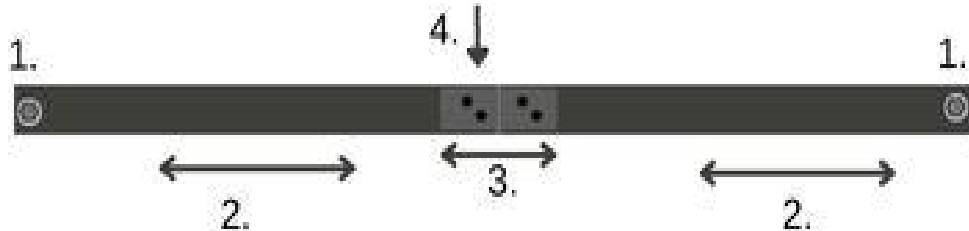
3. Installing Horizontal Bar to Endwall

After determining the desired length, the horizontal bar kit can be attached to the end wall using your marks from the previous step.

Tools Needed: Bubble Level, Drill, $\frac{3}{8}$ " Drill Bit, $\frac{1}{2}$ " Drill Bit, Ratchet Wrench & Sockets, Tape Measure, Metal Saw, Safety Goggles & Gloves, Clamps, Step Stool, Center Punch, String line at least the length of your hoop house and hanging level.

Parts Needed: #10 Self-tap screws, $\frac{3}{8}$ " x $3\frac{1}{2}$ " hex bolt with washer & nut, $1\frac{1}{2}$ " x 72" endwall trellis bar, 1.25" x 6" trellis bar joiner

Horizontal Bar Assembly



Pictured: 1. 1/2" Access holes, 2. horizontal bar, 3. Round trellis bar joiner, 4. #10 self-tap screws

1. Slide the Endwall Trellis Bars 3" into the Trellis Bar Joiner from each end and secure with (4) #10 Self Tap in the pattern pictured above. (install all screws on the same side of the bar)
2. Continue the process until you make a bar longer than needed.
3. Cut down to desired length from the previous step with a metal saw. Be sure to only cut the open side to adjust length for desired height.
4. Drill a 1/2" access hole on either end of the assembled bar 1/2" from each end. Drill on the inside face of the bar through one wall of the bar but not both. This will be the guide hole for attaching the bar to the hoop in the next step.



Horizontal Bar Attachment

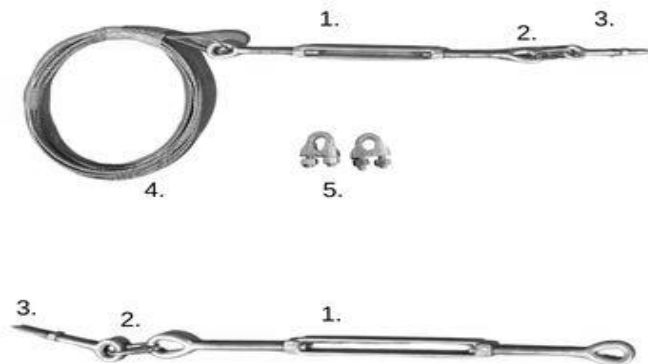
1. Clamp Horizontal Bar into place inside your house using your marks as a guide. (screws on the splice should face the plastic)
2. Secure the bar to vertical uprights with $\frac{3}{8}$ x $3\frac{1}{2}$ " hex bolts by drilling holes through the middle of the existing lock channel and vertical supports on the outside of end wall. (Drilled and installed outside to inside)
3. Secure end of bar to the hoop with #10 Self Tap through the $\frac{1}{2}$ " access hole.
4. Repeat the entire process for the opposite side of the hoop house ensuring that the two bars are installed at the same height.

Trellis Bar Layout

1. 20' endwall hoop
2. Trellis bar joiner
3. 78" ridgepole
4. Optional purlin
5. Horizontal trellis bar

Wire Trellis Kit (Optional)

Upon receiving your kit, get started by checking your parts list. If anything is missing, reach out to our customer service department for assistance.



Included Parts for Each Row

1. 9" Turnbuckle (2)
2. Quick link (2)
3. $\frac{3}{8}$ " x 4" Eye bolts with nut & washer (2)
4. $\frac{1}{4}$ " 7x19 CABLE 304 Galvanized SS pre-cut to your specified length. (barrel crimp on one end)
5. $\frac{1}{4}$ " Wire Crimps (2)

Determining Trellis Wire Row Spacing

Trellis can be placed anywhere beds are required along the width of the hoop house.

Once the center of the rows is determined, drill a $\frac{3}{8}$ " hole through the face of the Trellis Bar along the center of the bar through both side walls.

*If your $\frac{3}{8}$ " drill bit is over 3" long, use a backer board to avoid puncturing your greenhouse plastic.

Repeat for each row and again on the opposite end wall.

Installing Trellis Wire Turnbuckles

Tools Needed: Drill, $\frac{3}{8}$ " Drill Bit, $\frac{1}{2}$ " Drill Bit, Wrenches, Ratchet & Sockets,

1. Turn all turnbuckles to fully open before installation.
2. Place the eye bolt through the trellis bar and secure the nut between the greenhouse plastic and the trellis bar.
3. Carefully uncoil the wire rope to the opposite side.
4. Install the eye bolt of the second turnbuckle into the horizontal bar on the opposite side as you did on the first side.
5. Coil loose wire through turnbuckle. Pull as tight as possible to remove slack in the cable.
6. Use two wire clamps to secure the wire rope, one near the turnbuckle and the other to secure additional cable out of the way. Turn one side's turnbuckle until the wire is tight. Once all lines are installed, adjust for even tightness. Wrap the ends of the wire with electrical tape to avoid scratching.

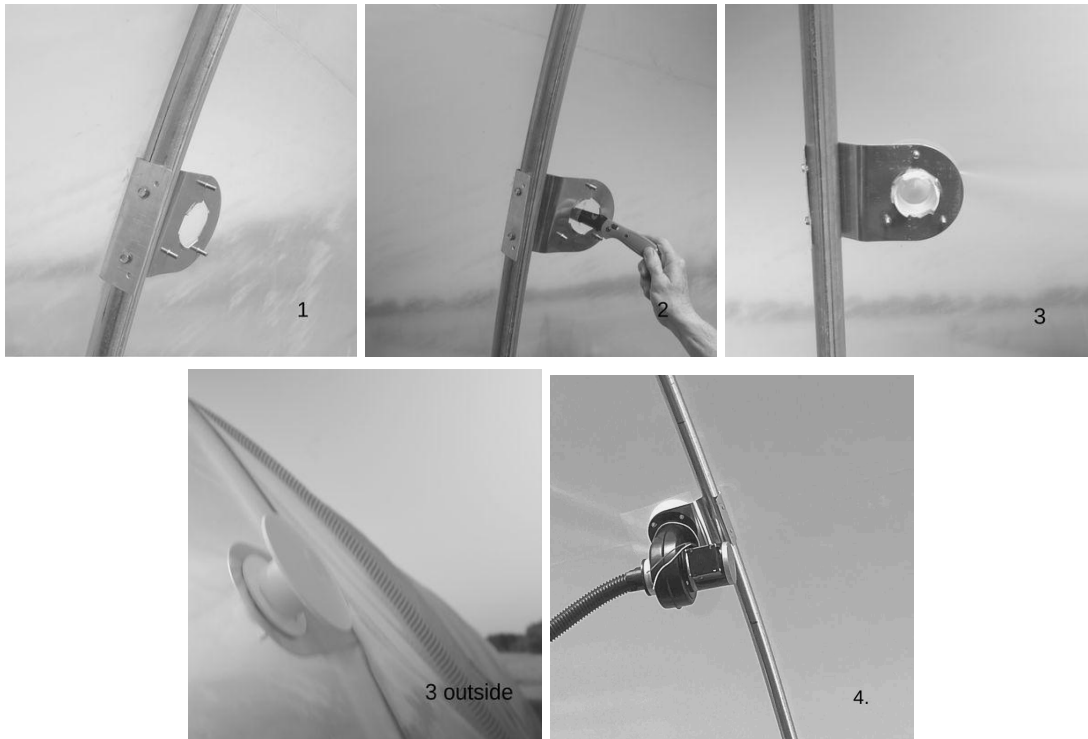


As the season progresses and plants are trellised, growing, and bearing fruit you can adjust for weight and slack in the wire by tightening the turnbuckles.

Double Layer Inflation Kit (Optional)

We recommend pulling outside fresh air with the inflation fan. If you draw air from inside the hoop house to inflate your double layers, all that excess moisture from the humidity will end up trapped between the plastic layers.

Step 1: Attach the Mounting Bracket and Fan

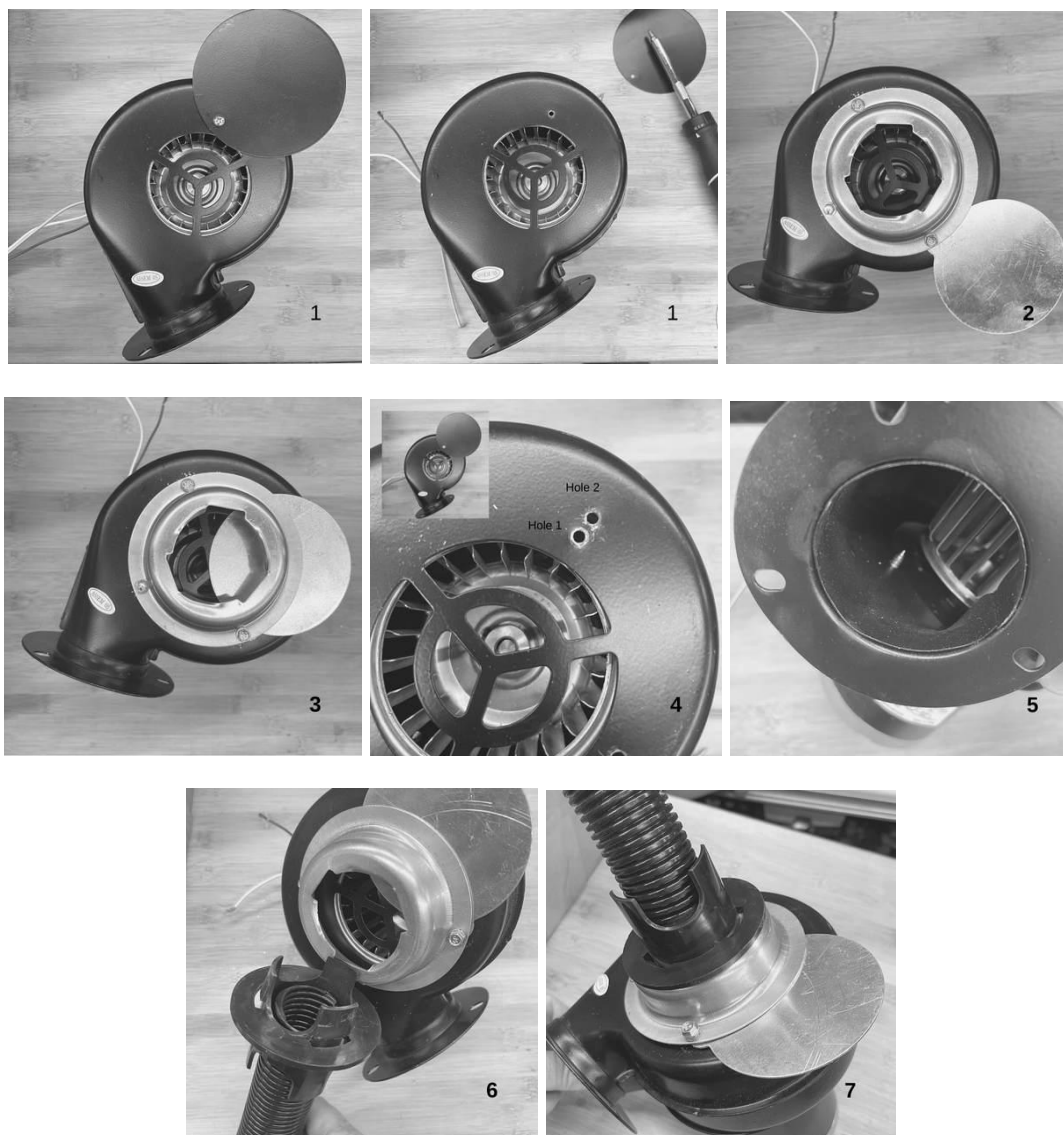


1. Attach the bracket to the first hoop (not the endwall) on the inside of the structure.
2. Gently cut out the film from the center of the hole.
3. Place the plastic dome from the outside into the bracket and turn to the right
4. Install the fan onto bolt studs with nuts.

Wiring Notes

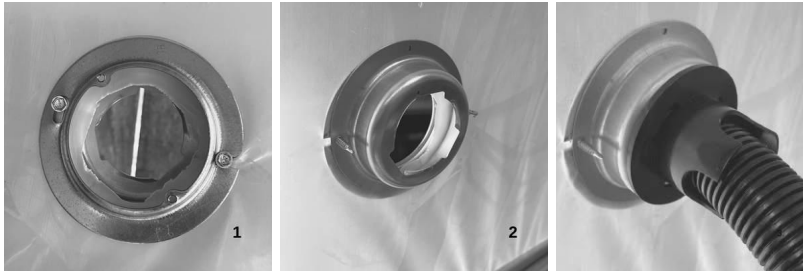
- Add a three-prong cord long enough to reach the nearest 110V outlet with a GFCI.
- Wire directly to an outlet box
- Refer to local building codes and consult a licensed electrician if in doubt about electrical work.

Step 2: Installing Hose Hook Up to Motor



1. Remove baffle cover.
2. Install the metal ring to the motor with #8 self-tapping screws. Note the new baffle position.
3. Adjust the screw tightness to open/close the new baffle, being careful not to over-tighten.
4. Hole 1 is the original baffle cover hole. Hole 2 is where the ring spacing will be. Note, this IS NOT where the mounting will occur. This is just an example of how far to space the ring so the screws do not interfere with the squirrel cage inside. See picture 4.
5. Location of correctly spaced self-tapping screws.
6. Once the motor is installed inside the house, in the previously installed bracket, insert the hose tips into the bracket and twist.

Step 3: Installing Hose to Endwall Flange



1. Sandwich the flange plate (on the inside) and flat plate (on the outside) between the end wall film, in line with the mounted fan on the next hoop from the end wall. Secure with #8 self-tapping screws.
2. Gently cut the plastic from the hole.
3. Attach the air hose from the motor to the endwall flange, then twist it.

Step 4: Installing the Second Layer of Plastic

Install the inflation blowers before installing the 2nd layer of greenhouse plastic.

Double-layer greenhouse film is applied exactly as the first layer. The only thing to keep in mind is that the double layer inflates only from end wall to end wall and from hip brace to hip brace. The spring wire will fit into the end wall hoops that already have the two springs and two layers that make up the 1st film piece and end wall piece.

Note: When inflating your double-layer for the first time, start with the baffle fully open and adjust as needed.

Shade Cloth Installation (Optional)

- Unfold and orient the shade cloth to match the hoop house.
- Slide the shade cloth up and over the hoop house and center it.
- Secure the shade cloth using either pieces of spring wire or shade cloth clips
- Securing the Shade Cloth
 - **Spring Wire and Lock Channels (the preferred method)** - Center the shade cloth over your structure and secure it with short lengths of spring wire at intervals of every few feet. Use the same lock channel as your plastic on the end walls and hipboards (or baseboards if you have roll-up sides).
 - **Shade Cloth Clips** - A plastic clamshell with spikes that grip the shade cloth with a loop to strap it down with a polyethylene rope. This method works best if your shade cloth doesn't reach your hipboards. Install clips at least every 24 inches, and extra at the corners. When using clips, you can just secure the sides. Tie the securing rope to stakes in the ground or to eyebolts (not included) on your baseboards.



Scan **QR** for info on **Shade Cloth** or visit

<https://youtu.be/KIJ0sz6FJJE>

Greenhouse Maintenance

Once installed, hoop houses are a low-maintenance option for season extension. This does not mean they have no maintenance, though.

- Here are a few things you will need to do to keep your house in good working order and extend its life: an intentional walk around your house to look for any problems. Do this monthly and after any major weather events. This is one of those times that an ounce of prevention is worth a pound of cure.
- Look for any rips or holes in the plastic, clogged drainage ditches, loosening of the plastic, and anything near your house that has the potential to cause damage, ie. fallen branches, tools leaning on the side of the house, etc.
- Keep your plastic tight. Lock channel and spring wire make it easy to tighten individual sections as needed. Loose plastic is more likely to tear during inclement weather. Do not allow unpainted PVC to come into contact with plastic. PVC reacts with the plastic, and contact between the two will void your warranty.
- Keep chemical sprays away from the plastic. If you need to spray your plants, try to limit overspray by using a more directed stream instead of misting. Turn off circulation fans while you spray. If chemicals do get on the plastic, clean them off with mild soap and lots of water ASAP. **This is particularly important for sulfur and chlorine, as both can damage the plastic and may void your warranty.** If you live near a large farm or vineyard that regularly sprays its crops, ask them to notify you so you can rinse your hoop house afterward.

Hoop houses are a major investment. Doing these simple tasks will ensure that you get the most from your investment. Although most coverings have a 4-year warranty, well-maintained plastic can last far longer.

Repairing Holes

Keep a roll of repair tape on hand at all times. Taping up a small hole when it first appears will prevent a big tear the next time the wind picks up.

When repairing a tear or small hole, prepare the area by washing both sides of the plastic with mild soap and water. Rinse and completely dry the plastic before attaching tape. Place a piece of tape large enough to extend a few inches beyond the damage on both the inside and outside of the plastic. Make sure the tape sticks to itself through the hole for a more secure repair. Taped repairs should be checked every 6-8 months to ensure the tape is not coming loose.



Scan QR for info on **Greenhouse Plastic Repair** or visit

https://www.youtube.com/watch?v=_bgqxoFMsqo

Seasonal Considerations

Once a season, run through this list to head off eventual problems.

1. Tighten bolts and screws.
2. Oil hinges and moving parts.
3. Tighten batten tape and roll-up side ropes as needed.
4. Tighten any sways in your plastic.
5. Keep any drainage trenches and lines clear of debris.
6. Re-dig trenches if necessary, particularly in late fall once rain begins.

Special Weather Conditions

During weather events:

1. Brush off any snow buildup during storms.
2. During heavy rainfall, check for puddling on your plastic and tighten as needed.
3. Clear storm debris from ditches.
4. Brush off fallen leaves and branches.
5. If hurricane-force winds are predicted for your area, remove the plastic to avoid damage to your structure.