

ASSEMBLY INSTRUCTIONS

12' X 8' X 8'9" Garden Master

G-512-SP (5mm)

This kit includes (3) double-decker benches, (2) hanging rods and (1) Louver.
(Assembly Required).

All pipe has been precut - no cutting is required.

It is important to panel the greenhouse frame once it is completed and before it is rained on.

The protective coating on the fittings is to protect the fittings from rust due to moisture or condensation. The protective coating was not designed for the volume of water produced when the fittings are rained on for a period of time with out the paneling on the greenhouse.

TOOLS PROVIDED:

- A. ¼" nut driver (Included in the screw bag.)

TOOLS NEEDED:

- A. VARIABLE SPEED DRILL
- B. SCREWDRIVER
- C. LONG SHARP KNIFE
- D. TAPE MEASURE
- E. STEP LADDER
- F. PLIERS
- G. 2-3 tubes "Clear" 100% silicone (We recommend IS800 Silicone Rubber Adhesive Sealant) & a Caulking Gun
- H. 8 oz. can of "Clear" PVC CEMENT (Available at a hardware store). **
- I. DUCT TAPE

**Follow the instructions on the glue can. Do not apply glue if it is colder than the instructions indicate for proper use.

► **NOTE: GLUE DRIES VERY QUICKLY! Hold pipe into fitting for 30 seconds until the glue has set.**

Please read instructions carefully and refer to the diagrams.

►► **Attention:**

There are two types of frame tubing in your kit. Composite tubing which is a heavier thick-walled tubing that has a gray fiber weave throughout (looks like a fiber texture) while the PVC tubing is a thin-walled tubing. The super strong Composite Tubing will be used for the structural areas of the greenhouse frame. The PVC is used in areas where the pipe needs to be flexible to bend or in non-structural areas.

PARTS LIST

Jan 21

12'X 8'X 8'9" Garden Master With 5mm Solexx Paneling

G-512-SP (5mm)

*Please make sure your kit includes all the following parts before you begin assembly

ROLL BOX 1 148 lbs (24" x 24" x 51")

_____	2	49 1/2" x 145" 5mm Panels
_____	4	42" x 145" 5mm panels
_____	1	42" x 115" 5mm Panel
_____	1	29" x 42" 5mm Panel
_____	7	44" <u>Composite</u> Tubing - Red
_____	3	35 3/4" <u>Composite</u> Tubing - White
_____	2	28" <u>PVC</u> pipes - Green
_____	1	33" Composite Tubing- Cross Bar with Snap T (for door) - Slotted

NOTE: To conserve shipping space, U-Trim and 1/2" diameter tubing are sometimes inserted into 3/4" tubing. Please check frame pieces before assembly.



INNER BOX 2 (10" x 10" x 50")

Bag 1 _____	8	4-Way 120° Metal-T's
Bag 2 _____	7	4-Way 120° Metal-T's
Bag 3 _____	6	3-Way 120° Metal Corner Post
Bag 4 _____	8	Metal Corner Posts
Bag 5 _____	8	4-way metal-T's
Bag 6 _____	8	4-way metal-T's
Bag 7 _____		

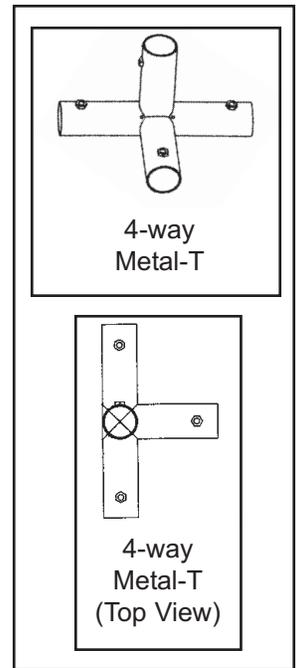
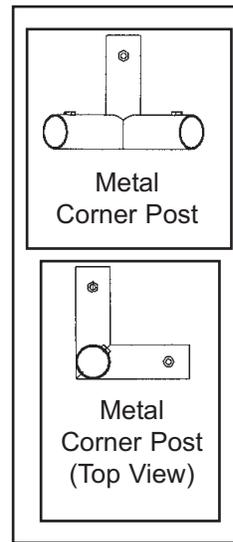
_____	4	90° Metal Elbow
_____	8	Metal Rings
_____	8	1 1/2" x 3/16" Machine Screw
_____	8	3/16" Wing Nuts
_____	5	Yellow Banding
_____	5	Metal Banding Clips
_____	35	Small Phillips Screws
_____	1	<u>Door Parts Bag:</u>

Outside Handle, Inside Handle, 3-point Cam

Hinge Bag: 1/4" x 1-3/4" Bolts (4), Lock Nuts (4), Hinge halves and pins (2), Flat Washers (2)

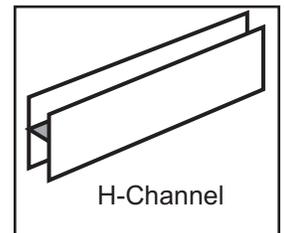
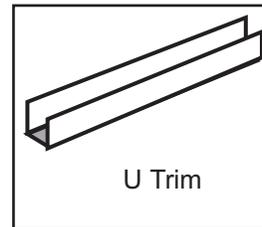
Door Parts Bag: 8/32 Hex Lock Nut, 3/8" Lock Nut, 32 x 1-3/4" Machine Screw, 1" Metal Screw, 4mm Allen Wrench

Door Cable Bag: Turnbuckle, 76" Wire Cable, 1/16" Wire Cable Clamps (2)



BOX 3 with sleeve 33 lbs (18" x 18" 32")

_____	4	31" x 94 1/2" 5mm Panels
_____	1	36 1/2" x 80" 5mm Door Panel
Bags		
1, 2, 3 & 4 _____	100	Snap-T's (25 per bag)
Bag 5 _____	4	<u>PVC</u> Elbows
_____	4	<u>PVC</u> 2" Nipples
_____	9	Large Black Zip Ties
_____	545	1" Screws
_____	1	1/4" Driver

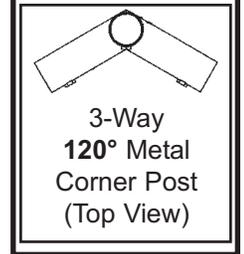
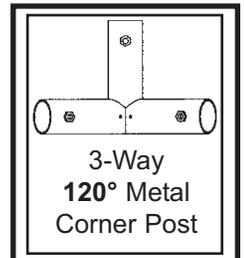
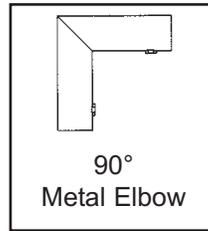


G-512-SP (5mm)

Jan 21

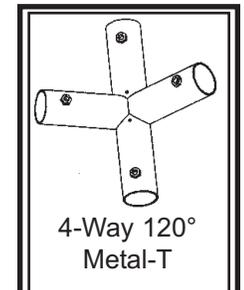
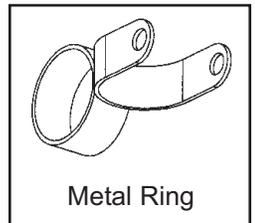
BOX 4 56 lbs (99" x 7 1/4" x 5")

- _____ 3 94 1/2" Composite Tubing - Green
- _____ 3 94 1/2" Composite Tubing - Green (**Double-Slotted**)
- _____ 13 92" Composite Tubing - Red
- _____ 4 90" Composite Tubing- Yellow
- _____ 4 56" U-Trim
- _____ 4 78" U-Trim
- _____ 1 36" U-Trim



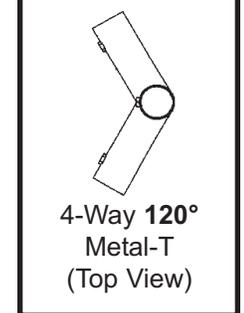
BOX 5 42 lbs (99" x 7 1/4" x 5")

- _____ 2 90" Composite Tubing - Yellow (**Single-Slotted**)
- _____ 14 54 1/4" PVC pipes - Yellow
- _____ 3 35 3/4" PVC pipes - White
- _____ 2 33" Composite Tubing - Black
- _____ 3 24" Composite Tubing - Orange (**Double-Slotted**)
- _____ 4 12 1/2" PVC pipes - White
- _____ 6 H-Channel Clips
- _____ 20 28" Composite Tubing- Green (**Double-Slotted**)
- _____ 12 22" Composite Tubing - White (**Double-Slotted**)
- _____ 6 18" PVC pipe - 1/2" diameter



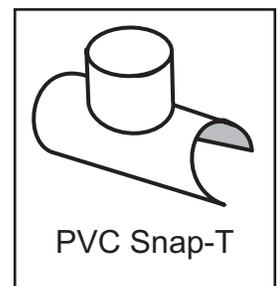
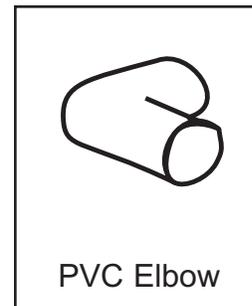
BOX 6 40 lbs. (77" X 7 1/4" X 5")

- _____ 12 6' H-Channel
- _____ 8 75" Composite Tubing- Orange (**Single-Slotted**)
- _____ 6 75" Composite Tubing- Orange
- _____ 1 74" Composite Tubing- BLACK (**With holes for Hinges**)
- _____ 1 74" Composite Tubing- BLACK (**No holes**)
- _____ 2 76" Side Door Casing
- _____ 1 38" Top Door Casing
- _____ 1 3' H-Channel



BOX 7 6 lbs (28" x 15" x 5")

- _____ 1 Louver Assembly

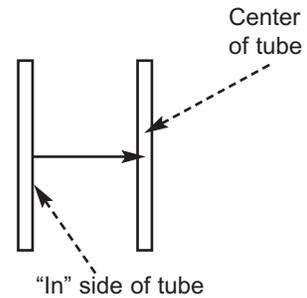


Packed
by: _____
Date: _____

Hints for Preassembly

A.

▶▶ **Note:** All measurements are taken from the “in” side of one tube to the center of the other tube so one person can easily take the measurement by her/himself.



B.

▶▶ **NOTE:** Attaching Snap-T's this way prevents pinched fingers! Use a small pipe and step on the Snap-T.

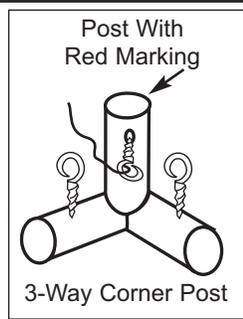


C.

▶▶ **Note:** Tubes that are double-slotted have slots on each end. Single-slotted tubes only have slots on 1 end. All Slotted ends attach to Snap-T's.

D.

▶▶ **Note:** The 3-Way Metal Corner posts have a red mark on the “dead end” arm. In order for all measurements to be correct, the 3-Way Metal Corner Posts must be oriented correctly on the Base Frame and on the End Wall Frames. Follow the directions carefully about where the red arm is pointing. Please look at these fittings and check out the arm with the red marking.



E.

▶▶ PVC Pipe is White and flexible. Composite Pipe is white with small gray fibers throughout and will not bend.

F.

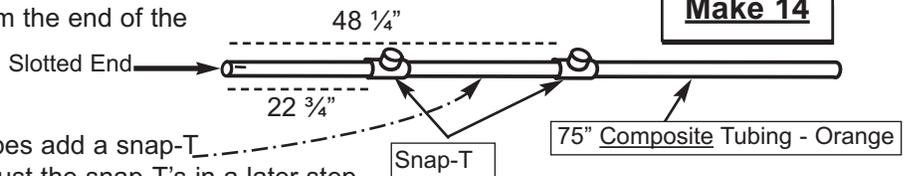
▶▶ Very Important!! NEVER glue the underside of the Snap-T. You need to be able to slide the Snap-T along the pipe. You only glue tubes into the enclosed arm

1. SIDE WALLS

Pieces Required:

- 6 75" Composite Tubing - ORANGE
- 8 75" Composite Tubing - ORANGE (Single-Slotted)
- 30 Snap-T's

1. Attach 1 **Snap-T** about 23" from the end of the **75" tube** and a second Snap-T about 48 ¼" from the end of the tube. (Do this to all 14 tubes - Both slotted and non slotted tubes)



2. On two of the **non-slotted** side wall tubes add a snap-T between the two snap-T's. You can adjust the snap-T's in a later step.

Side Walls are used in step 7.

Step #2 is no longer needed so it has been deleted

Very Important!! NEVER glue the underside of the Snap-T. You need to be able to slide the Snap-T along the tube.

3A. 8' RIDGE FRAMES, BENCH & BASE RODS

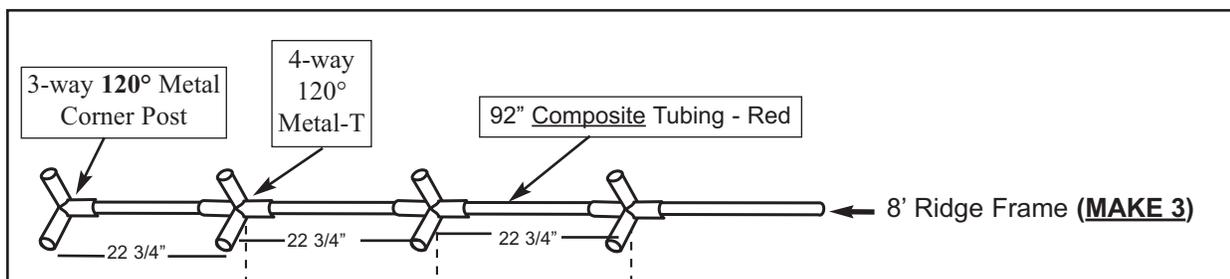
Pieces Required:

9	4-way 120° Metal-T's
3	3-way 120° Metal Corner Posts
11	92" Composite Tubing - RED
26	Snap-T's

Making the 8' Ridge Frames

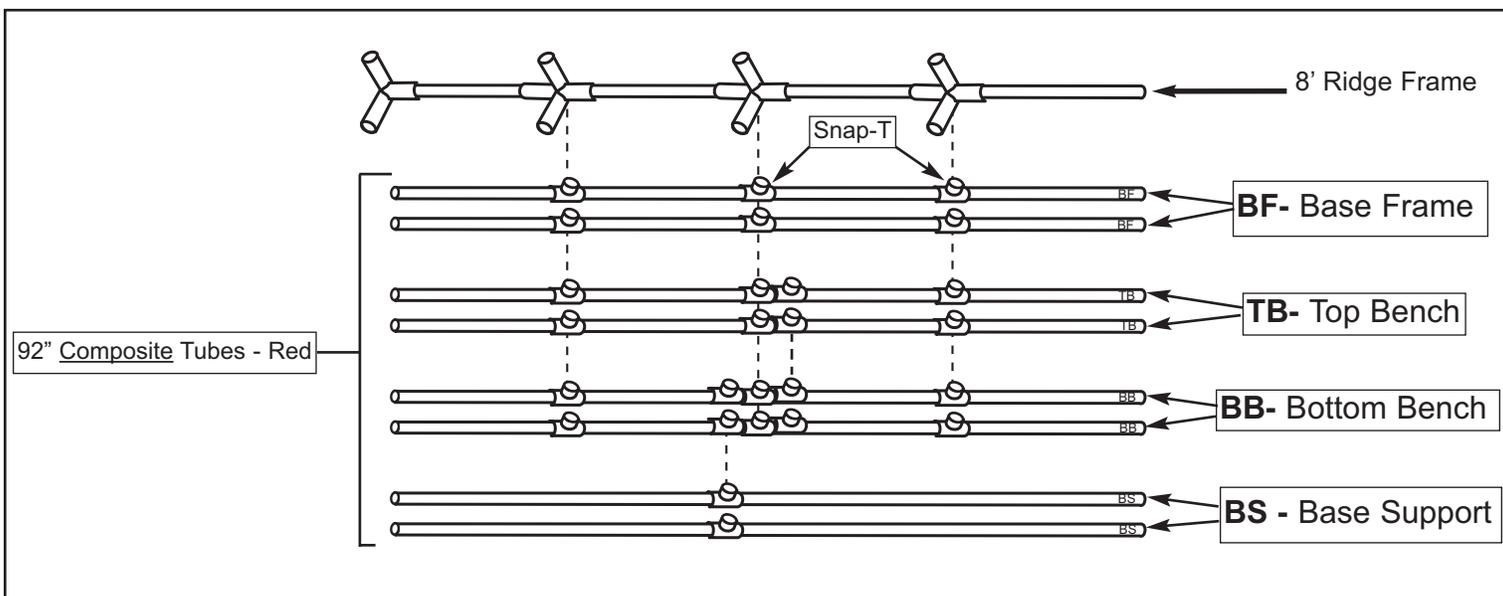
Complete as shown on a level surface so the 8' Ridge Frames will be flat and not twisted. Ridge Frames are used in Step 7, Side Walls and in Step 9, Top Ridge Assembly.

1. Insert 3-way 120° Metal Corner Post snugly on one end of a 92" Composite Tube - (Red) and twist eyebolt until tight. (Insert a screwdriver or long bolt through the eyebolts and twist the eyebolt clockwise.)
2. Slide a 4-way 120° Metal-T over the 92" tube so that the distance from the "in" side of the 3-way 120° Metal Corner Post to the center of the 4-way 120° Metal-T is 22 3/4". Twist the eyebolts tight.
3. Slide over the 2nd 4-way 120° Metal-T so the distance from the inside of the 1st 4-way 120° Metal-T to the center of the 2nd 4-way 120° Metal-T is 22 3/4" - tighten. Slide over the 3rd 4-way 120° Metal-T so the distance from the inside of the 2nd 4-way 120° Metal-T to the center of the 3rd 4-way 120° Metal-T is 22 3/4" - tighten eyebolts
4. Repeat steps 1-3 twice for a total of three 8' Ridge Frames.



Aligning the Snap-T's

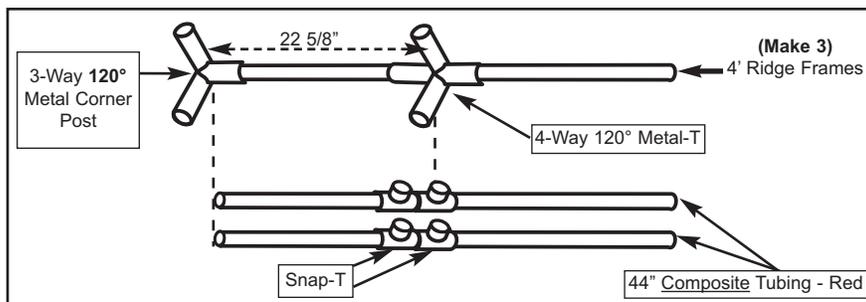
5. Use a Ridge Frame to line up the Snap-T's on the remaining 92" tubes. Follow the pattern below. Label the tubes (BF, base frame; TB, top bench; BB, bottom bench; BS, Base Support) with a permanent marker to lessen confusion about the tubes in later steps.



3B. 4' RIDGE FRAMES & BASE RODS

Pieces Required:

- 3 4-Way 120° Metal-T's
- 3 3-Way 120° Metal Corner Posts
- 4 Snap-T's
- 5 44" Composite Tubing - RED



1. Insert a **3-Way 120° Metal Corner Post** snugly on one end of a **44" Composite Tube - Red** and twist eyebolt until tight. Insert a screwdriver or long bolt through the eyebolt and twist the eyebolt clockwise another 1/2 to full turn.
2. Slide a **4-Way 120° Metal-T** over the 44" composite tube - Red so that the distance from the "in" side of the 3-Way 120° Metal Corner Post to the center of the 4-Way 120° Metal-T is 22 5/8". Twist the eyebolt tight. Repeat for a total of three 4' Ridge Frames.
3. Use a 4' Ridge Frame to line up the **Snap-T's** on the remaining **44" Composite Tubes - Red**. Follow the pattern above.

4. BASE FRAME

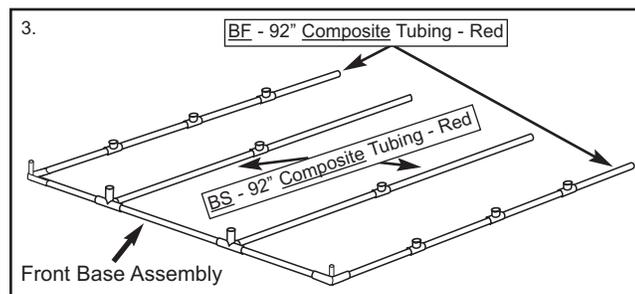
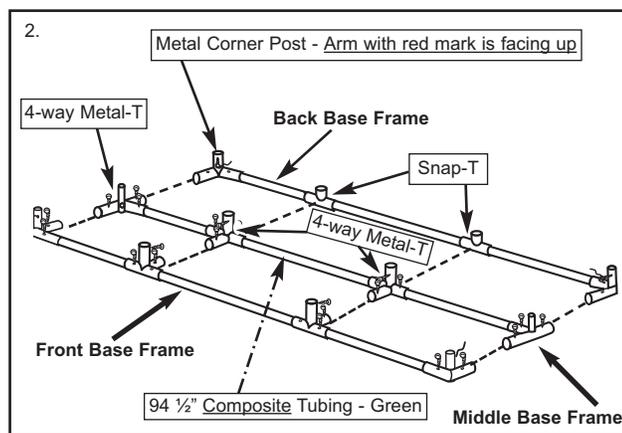
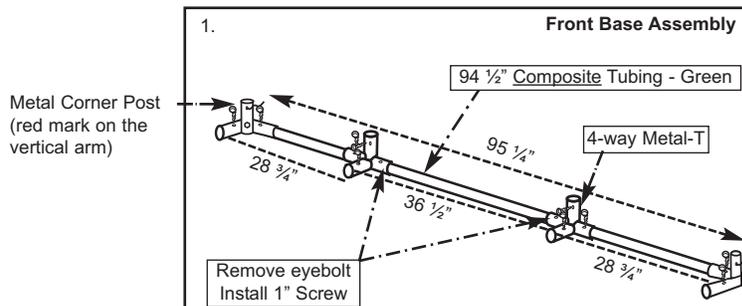
Make sure working surface is clean and level!

Pieces required:

- 4 Metal Corner Posts
- 6 4-way Metal-T's
- 3 94 1/2" Composite Tubing - GREEN
- 1 94 1/2" Composite Tubing - GREEN (**Double-Slotted**)
- 2 **BF** - 92" Composite Tubing - RED (**from Step 3A**)
- 2 **BS** - 92" Composite Tubing - RED (**from Step 3A**)
- 4 Snap-T's
- 2 44" Composite Tubing - RED (**from Step 3B**)
- 2 1" Screws

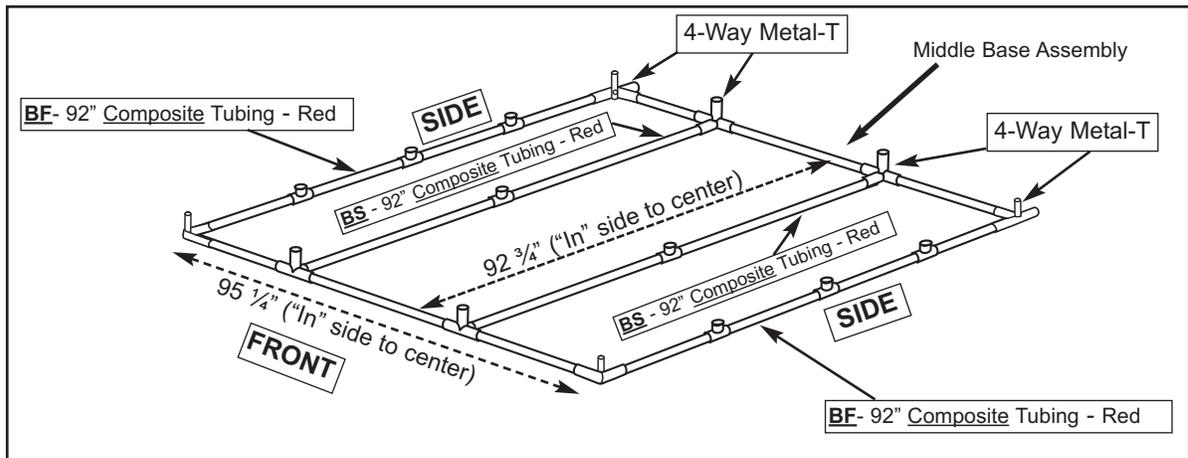
NOTE: It is important that the corner post is put on the right way. (Red Mark is on the vertical arm)

1. Slide two **4-way Metal-T's** onto a **94 1/2" Composite Tube - Green**. Attach a **Metal Corner Post** (arm with the Red Mark is vertical) to one end of the 94 1/2" Composite Tube - GREEN and tighten the eyebolt. Attach a 2nd Metal Corner Post to the opposite end and adjust the Metal Corner Post so that the measurement from the "in" side of one Corner Post to the center of the opposite Corner Post is 95 1/4". Secure each 4-way Metal-T at 28 3/4" ("in" side to center) from each Metal corner Post with eyebolts on the outside arms and 1" Screws on the inside arms (see diagram 1 to the right). This is the Front Base Frame Assembly.
2. Use the **Front Base Frame** assembly as a measuring device to line up the fittings on the Middle and Back Base Frame Assemblies. On the Middle Base Frame, attach four **4-way Metal-T's** onto the 2nd **94 1/2" Composite Tube - Green**. For the Back Base Frame, attach two **Metal Corner Posts** and two **Snap-T's** to the 3rd 94 1/2" Composite Tube - Green (see diagram 2 to the right).
3. Attach both **BF- 92" Composite Tubes - Red** to the Metal Corner Posts of the Front Base Frame assembly. Attach both **BS - 92" Composite Tubes** to the 4-way Metal-T's of the Front Base Frame assembly. (See diagram 3 to the right)

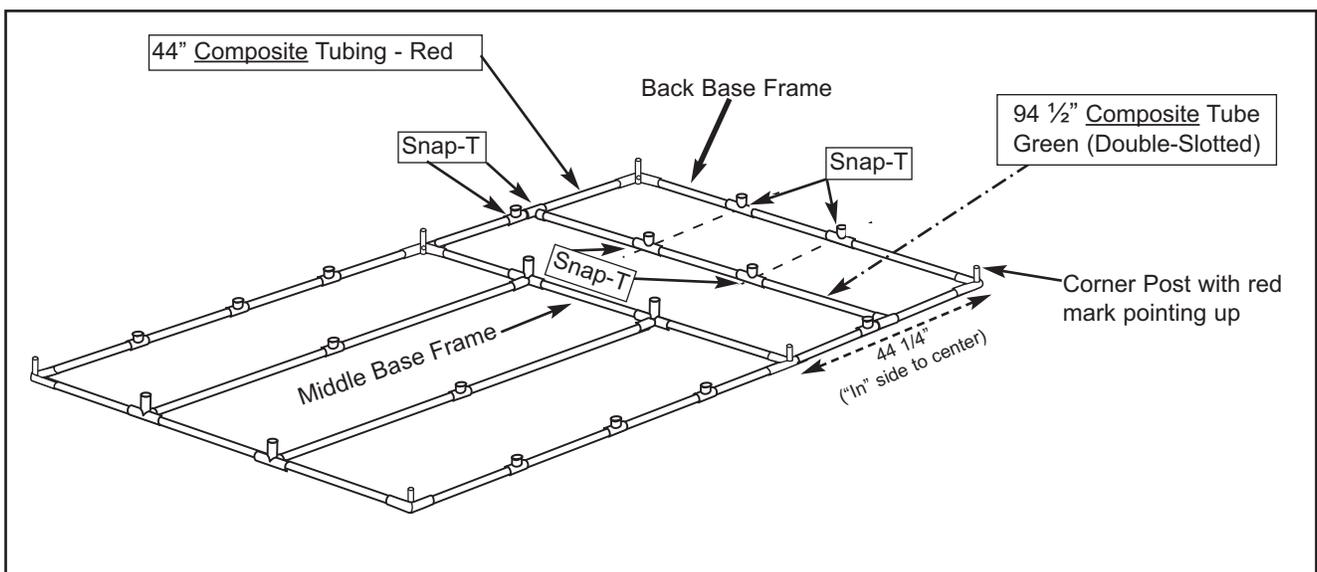


CONT..... BASE FRAME

4. Attach the fittings of the Middle Base Frame assembly (made in step 3B-2) to the open ends of both **BF - 92" Composite Tubes - RED** and both **BS - 92" Composite Tubes - RED**. Push both **BS - 92" Composite Tubes - RED** all the way into the 4-way Metal-T's. Adjust the middle base frame assembly so that the measurements from the "in" side edge of the Front Base Assembly to the center of the Back Base Assembly is $92\frac{3}{4}$ ".



5. Attach both **44" Composite Tubes - Red (with Snap-T's from Step 3B-3)** to the 4-way metal-T's on the ends of the Middle Base Frame.
6. Attach the Metal Corner Posts of the Back Base Frame assembly to the opposite ends of the **44" Composite Tubes - Red** that you just added in the step above (Step 4-5). Making sure the arm with the red mark is facing up on the metal corner posts. Adjust the Back Base Frame Assembly so that the measurement from the $94\frac{1}{2}$ " Composite Tube of the Middle Base Frame Assembly to the $94\frac{1}{2}$ " Composite Tube of the Back Base Frame Assembly is $44\frac{1}{4}$ " from "in" side to center. Tighten the eyebolts.
7. Attach a **94 1/2" Composite Tube - Green (Double-Slotted)** into the Snap-T's on the **44" Composite Tubes** (added in Step 4-5) that are closest to the Back Base Frame Assembly. **Use glue to help lubricate the tube to make it easier to slide into the Snap-T's. The glue does not adhere to the Composite Tubing, so you will have to secure the tubing by drilling a screw through the top of the Snap-T and into the 94 1/2" Composite Tube.** Attach two **Snap-T's** on to the $94\frac{1}{2}$ " Composite Tube - Green. Line up the Snap-T's with the Snap-T's that are on the Back Base Frame assembly.



5. END WALL FRAMES

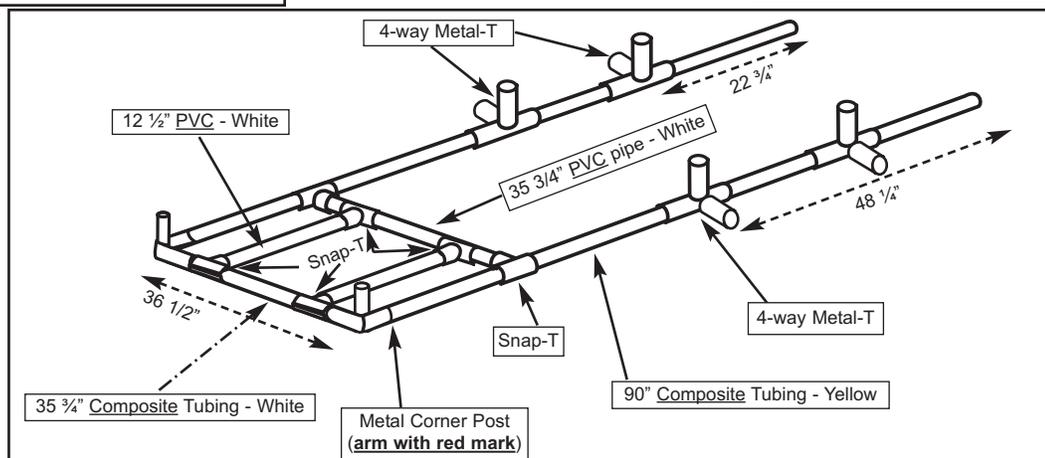
5A. Front End wall Frame

Pieces Required:

- 2 90" Composite Tubing - YELLOW
- 2 Metal Corner Posts
- 1 35 3/4" PVC Pipes. - WHITE
- 1 35 3/4" Composite Tubing - WHITE
- 6 Snap-T's
- 2 12 1/2" PVC pipes -WHITE
- 4 4-way Metal-T's

▶▶ Be sure to get the composite tubing and the PVC pipe in the right spot. Composite tubing has a gray fiber throughout and does not flex. While the PVC is white and flexible

Note: On Metal Corner Posts, the Arm with red mark attaches to 90" Composite Tube.

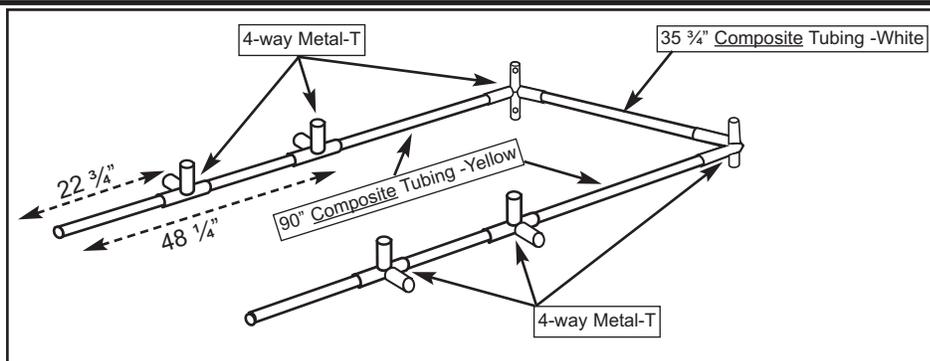


- Slide each 90" **Composite Tube - Yellow** snugly into a **Metal Corner Post** (insert tube into the arm with the red mark) and tighten the eyebolt. Attach a 35 3/4" **Composite Tube** between the Metal Corner Posts on the 90" **Composite Tubes**. Adjust 90" **Composite Tubes** (With metal corner posts on them) so the distance between the Metal Corner Posts is 36 1/2" from "in" side to center - tighten the eyebolts.
- Attach a **Snap-T** on to both 90" **Composite Tubes** about 13" below the Metal Corner Posts. Insert and glue a 35 3/4" **PVC pipe** between these Snap-T's.
- Attach two **Snap-T's** to both 35 3/4" pipes. Attach and glue 12 1/2" **PVC pipes** between the Snap-T's. Slide over each 12 1/2" **PVC pipe** - white (With snap-Ts attached) to the edge of the Metal Corner Posts.
- Slide two **4-way metal-T's** on both 90" **Composite Tubes** - yellow (Note direction of the posts). Tighten both bottom 4-way metal-T's so they are 22 3/4" from the bottom of the 90" **Composite Tube** - yellow to the center of the fitting. Tighten both top 4-way metal-T's so they are 48 1/4" from the bottom of the 90" **Composite Tube** - yellow to the center of the fitting.

5B. Middle End wall Frame

Pieces Required:

- 2 90" Composite Tubes - YELLOW
- 6 4-Way Metal-T's
- 1 35 3/4" Composite Tube - WHITE

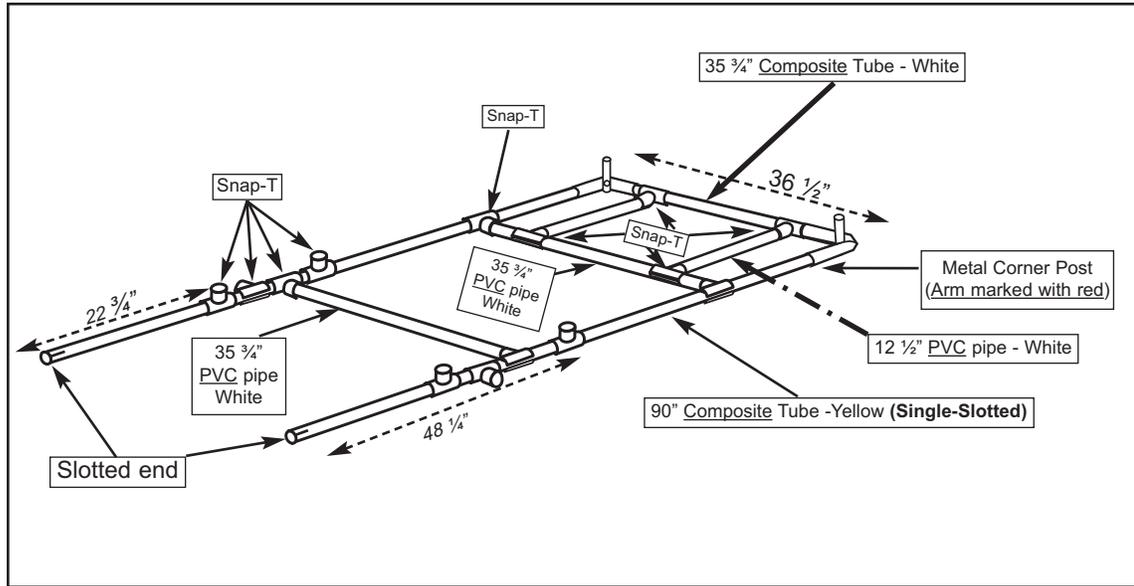


- Slide a 90" **Composite Tube - yellow** snugly into a 4-way Metal-T (As pictured above) and tighten the eyebolt. Do this twice. Attach a 35 3/4" **Composite Tube - White** between the 4-way Metal-T's on the 90" **Composite Tubes** - yellow. Measure the distance between the two 4-way Metal-T's and adjust them so they are 36 1/2" from "in" side to center. Tighten the eyebolts.
- Slide two **4-way Metal-T's** on to each 90" **Composite Tube** - yellow (Note the direction of the posts pictured above). Tighten the eyebolts of the the top 4-way metal-T so the distance from the center of the middle arm to the bottom of the 90" composite tube - yellow is 48 1/4" and the distance from the center of the middle arm of the bottom 4-way metal-T to the bottom of the 90" composite tube - yellow is 22 3/4".

5C. Back End wall Frame

Pieces Required:

- 2 90" Composite Tubes - YELLOW (Single-Slotted)
- 2 Metal Corner Posts
- 2 35 3/4" PVC Pipes. - WHITE
- 1 35 3/4" Composite Tubing - WHITE
- 14 Snap-T's
- 2 12 1/2" PVC pipes - WHITE



1. Slide the non-slotted end of each **90" Composite Tube - Yellow (Single-Slotted)** into a **Metal Corner Post** (Insert tube into the arm with the red mark) and tighten the eyebolt. Attach a **35 3/4" Composite Tube - White** between the Metal Corner Posts attached to the 90" Composite Tubes - Yellow (Single-Slotted). Adjust the 90" Composite Tubes with the metal corner posts attached so the distance between the Metal Corner Posts is 36 1/2" from "in" side to center. Tighten the eyebolts.
2. Attach a Snap-T to each **90" Composite Tube - Yellow (Single-Slotted)** , about 13" below the Metal Corner Post. Insert and glue a **35 3/4" PVC pipe - White** between these Snap-T's.
3. Attach two **Snap-T's** on to both 35 3/4" pipes. Attach and glue a **12 1/2" PVC pipe - White** between these Snap-T's. Slide each 12 1/2" pipe (With snap-t's attached) over so it is 10 1/2" from the "in" side of the 90" tube to the center of the 12 1/2" pipe (leaving about 13 1/2" between the 12 1/2" pipes).

NOTE: This spacing applies when installing a 12" Exhaust Fan. If installing a 16" fan or larger, replace the 12 1/2" pipes with the larger pipes included with the fan (refer to Fan installation instructions).

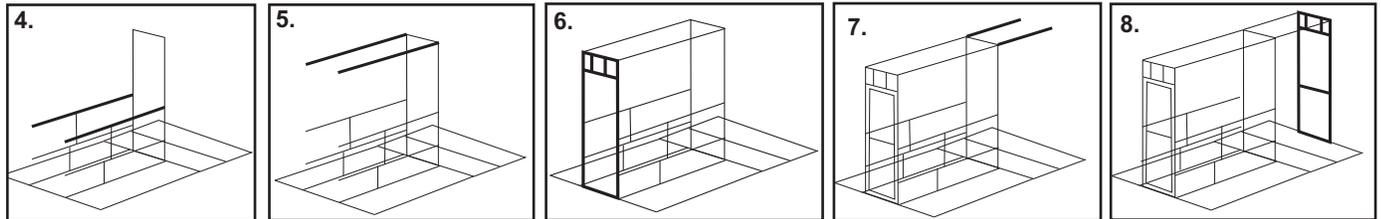
4. Attach two **Snap-T's** on each 90" Composite Tube - Yellow (Single-Slotted). The center of the top Snap-T is at 48 1/4" from the bottom of the 90" composite tube - Yellow (Single-Slotted) and the center of the 2nd Snap-T is at 22 3/4" from the bottom of the 90" Composite Tube - Yellow (Single-Slotted).
5. Attach a **Snap-T** on each 90" Composite Tube - Yellow (Single-Slotted) between (Approximately - it can be adjusted later) the top and bottom Snap-T's attached in the previous step (Step 5C-4). Insert and glue a **35 3/4" PVC pipe - White** into these Snap-T's.
6. Attach an additional Snap-T on each 90" Composite Tube - Yellow (Single-Slotted) below the Snap-T you just put on in step 5C-5.

6. HANGING RODS & BENCH RODS

Pieces Required:

- 2 22" Composite Tube - White (Double-Slotted)
- 1 Middle End wall (from Step 5B)
- 2 BB - 92" Composite Tube - RED (from step 3)
- 2 24" Composite Tube - Orange (Double-Slotted)
- 2 TB - 92" Composite Tube - RED (from step 3)
- 2 92" Composite Tube - RED
- 1 Front End wall (from Step 5A)
- 2 44" Composite Tube - Red
- 1 Back End wall (from Step 5C)
- 8 1" Screws

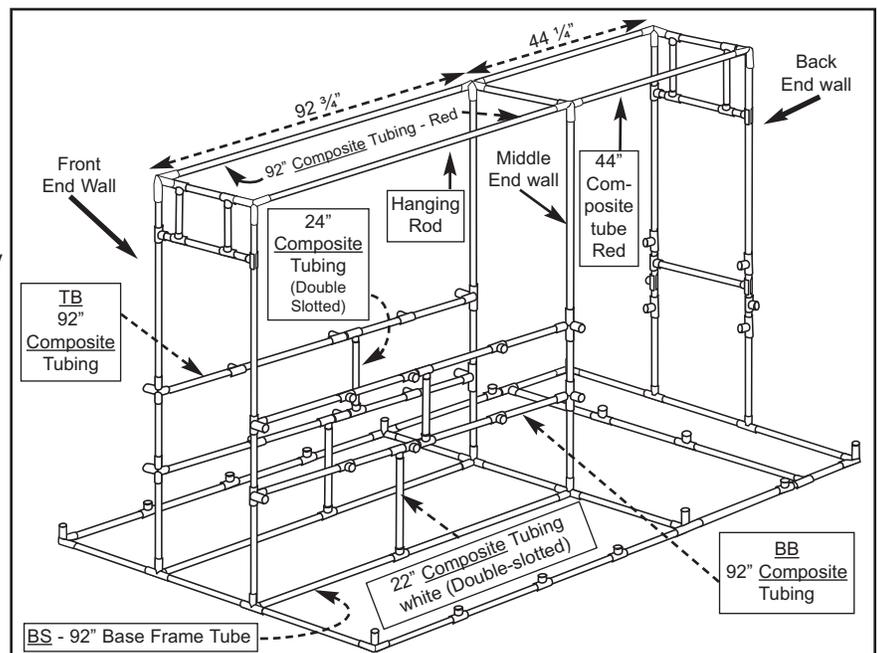
Two people & ladder recommended!



1. Attach a **22" Composite Tube - White (Double-Slotted)** into the Snap-T's on Both **BS - 92"** Base Frame tubes. Secure tubing into the Snap-T's with a 1" Screw. See diagram 1 above.
2. Attach **Middle End wall** to the 4-way Metal-T's on the Middle Base Frame and tighten the eyebolts. (The Lower and middle 4-way metal-T's face towards the front base assembly. See diagram 2 above and diagram below.)
3. Insert the **BB - 92" Composite Tubes** into the bottom 4-way Metal-T's on the 90" Composite Tubes - Yellow (Middle End wall). Attach the end of the **BB - 92" composite tubes** that were marked **BB** from step 3A-5, into the post and tighten the eyebolts. There are 3 snap-T's on the middle of the **BB** tubes, of these three snap-T's, join the snap-T that is farthest from the Middle end wall onto the **22" composite tube - white (Double-Slotted)**, from Step 6-1 above. Next, attach a **24" Composite Tube - Orange (Double-Slotted)** into the Snap-T that is closest to the Middle end wall (on **both** **BB - 92"** Composite tubes). Secure all Snap-T's to the tubes with 1" Screws. See diagram 3 above and diagram below.
4. Insert the **TB - 92" Composite Tubes** into the Middle 4-way Metal-T's on the 90" Composite Tubes - Yellow (Middle End wall). Attach the end of the **TB - 92" composite tubes** that were marked **TB** from step 3A-5, into the post and tighten the eyebolts. Attach the **24" composite Tubes - orange (Double-Slotted)** to the Snap-T's (That are right of center - Closest to the middle end wall) on both **TB - 92"** Composite Tubes. Secure them with 1" Screws. See diagram 4 above and diagram below.
5. Use a marker and draw a line $2\frac{3}{4}$ " in from both ends of the **92" Composite Tubes - Red** (Do this on both tubes). Put **92" Composite Tubes - red** into the top 4-way metal-T's on the Middle End Wall. Slide tubes into the posts until the line you just marked on them is even with the post and tighten the eyebolts. See diagram 5 above and diagram below.
6. Lift and attach the **Front End wall** to the 4-way Metal-T's on the Front Base Frame and tighten the eyebolts. Insert the opposite sides of the **92" Composite Tubes** (Including all **TB** and **BB** assemblies) into the corresponding Metal Fittings and tighten the eyebolts.

Check the measurements of the Hanging Rods. They should be $92\frac{3}{4}$ " from the "in" side of one $35\frac{3}{4}$ " Middle End Wall tube to the center of the $35\frac{3}{4}$ " Front End wall tube. See diagram 6 and diagram to the right.

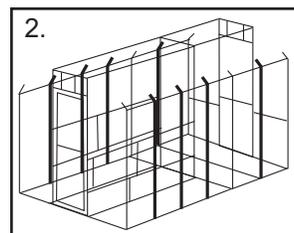
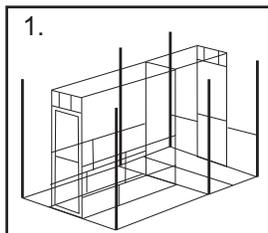
7. Insert both **44" Composite Tubes - Red** into the 4-way Metal-T's at the top of the Middle End Wall. See diagram 7 and diagram to the right.
8. Attach the **Back End Wall (Insert slotted end completely)** into the Snap-T's on the Back base frame. **Use glue to help lubricate the tube to make it easier to slide into the Snap-T's. The glue does not adhere to the Composite Tubing, so you will have to secure the tubing by drilling a screw through the top of the snap-T and into the 90" Composite Tubes.** Insert the opposite ends of the **44" Composite Tubes** into the Metal Corner Posts at the top of the Back End Wall. The measurement from the "in" side of the $35\frac{3}{4}$ " Middle End Wall tube to the center of the opposite $35\frac{3}{4}$ " Back End Wall tube should be $44\frac{1}{4}$ "



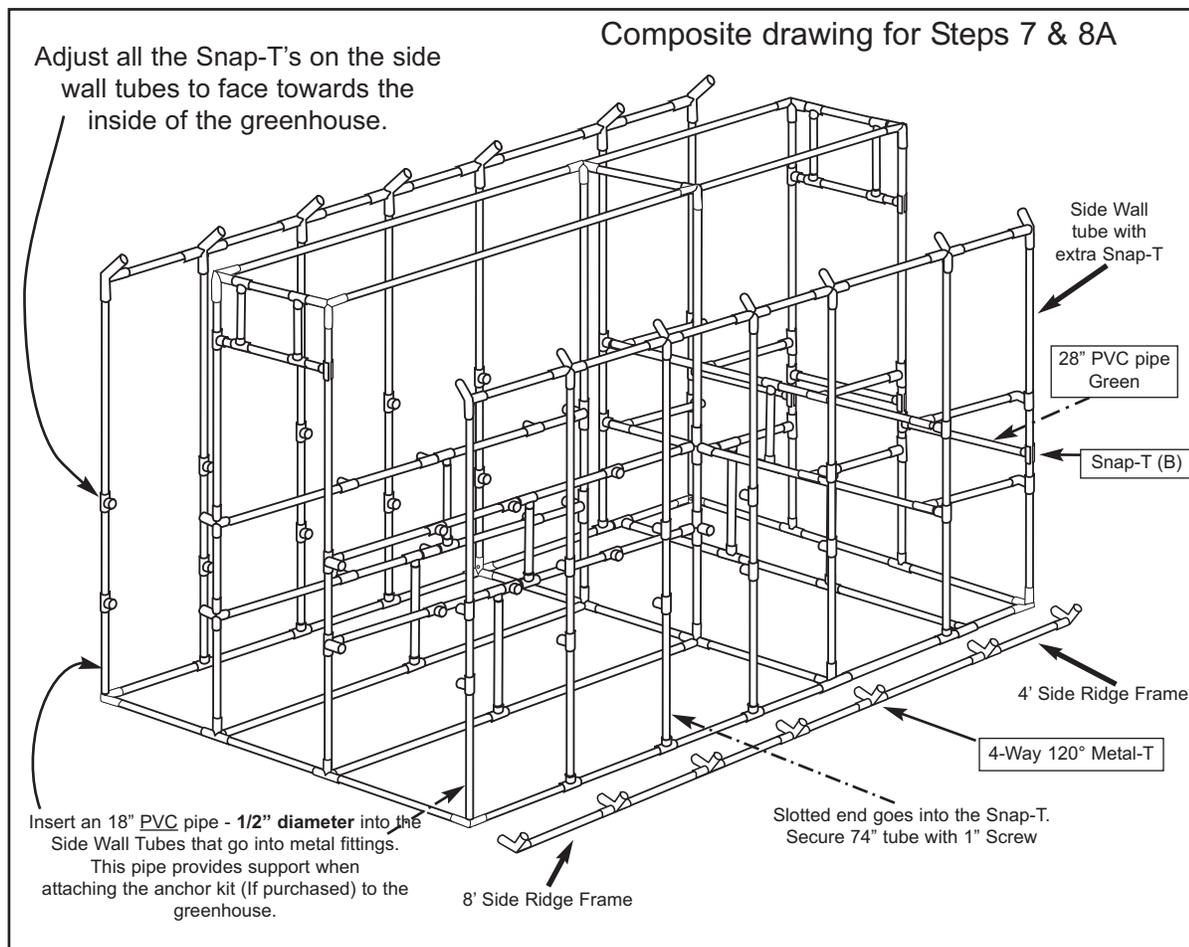
7. SIDE WALL ASSEMBLY

Pieces required:

- 14 Side Walls (**Made in step 1**)
- 2 28" PVC pipes - Green
- 2 8' Side Ridge Frames (**from Step 3A**)
- 2 4' Side Ridge Frames (**from Step 3B**)
- 2 4-Way 120° Metal-T
- 6 18" PVC pipe - 1/2" diameter
- 8 1" Screws



1. Locate the 6 **Side Wall tubes (without slots)** - From step 1). Slip an 18" PVC pipe - 1/2" diameter into the center (bottom) of the Side Wall Tube (It sits loose inside of the tube) and then insert the side wall tube into the **Metal Fitting** on the base frame (Do this for all six side wall tubes - with out slots. Insert the two Side Wall tubes with the extra Snap-T on it, into the Corner Posts on the Back Base Frame. Tighten the eyebolts. Draw a line 2 3/4" down from the top of the corner side wall tubes. Do this on all four corner side wall tubes.
2. Use a 1" Screw to attach the 8 remaining Side Wall tubes (**Single-Slotted**) into the Snap-T's on the BASE FRAME. **Make sure the Side Wall tubes are seated all the way into the Snap-T's.** Adjust the Snap-T's on the side wall tubes so they face towards the inside of the greenhouse.
3. Line up an **8' Ridge Frame** with the 8' base frame of the greenhouse. Make sure the Snap-T's and Metal fittings on the base frame are lined up with the Metal Fittings of the 8' Ridge Frame. Add a **4-way 120° metal-T** to the end of the 8' Ridge Frame and tighten the eyebolt. Insert the **4' Ridge Frame** into the opposite end of the 4-way 120° metal-T making sure that the metal fittings on the 4' ridge frame line up with fittings on the base frame that the side wall tubes go into. tighten the eyebolts. Repeat this step to make two 12' Side Ridge Frames.
4. Place the Metal fittings of a Ridge Frame onto the top of the Side Wall tubes. Tighten the eyebolts. **Note:** On the corner Side Wall tubes, move the ridge frame up or down so the arm of the 3-way 120° Metal Corner Post lines up with the line drawn on the Side Wall tubes in step 7-1 above. Repeat this step for the other side wall.
5. Attach a **28" PVC pipe - Green** between the Snap-T's (B) on the Back End wall and Back Side Wall tubes. See diagram below.



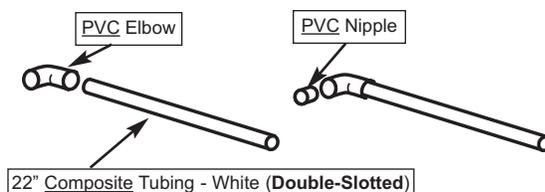
8A. BACK BENCH ASSEMBLY

Pieces Required:

2	94 1/2" Composite Tubing - Green (Double-Slotted)
10	22" Composite Tubing - White (Double-Slotted)
1	24" Composite Tubing - Orange (Double-Slotted)
12	Snap-T's
4	PVC Elbows
4	PVC Nipples
38	1" Screws

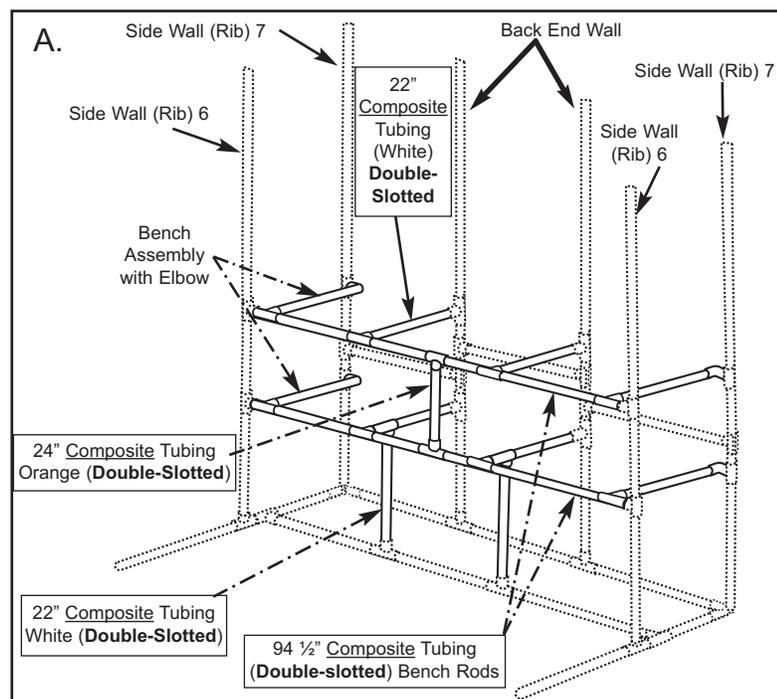
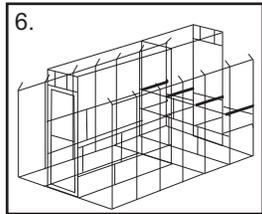
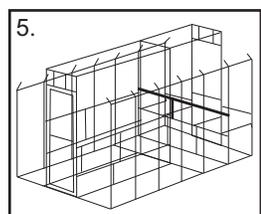
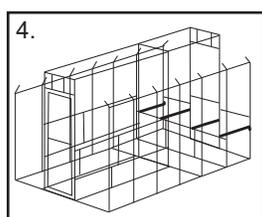
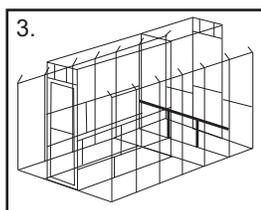
Bench Assembly with Elbow

MAKE 4



Bench Assembly with Elbow:

1. Insert a **PVC Elbow** onto a **22" Composite Tube - White (Double-Slotted)**. Secure with a 1" Screw.
2. Insert and glue a **PVC Nipple** into the **PVC Elbow**. Repeat these two steps to make a total of 4 bench assemblies (with elbow). See diagram to the upper right.
3. Attach two **22" Composite Tubes - white (Double-Slotted)** into the Snap-T's on the 94 1/2" **Composite Tube - green (Double-Slotted)**. The base frame tube added in step 4 - 7. Attach a **Snap-T** to the top of the 22" **Composite Tubes - White (Double-Slotted)**. Secure with 1" Screws. These tubes will support the bench pipes.
4. Attach five **Snap-T's** to a **94 1/2" Composite Tube - Green (Double-Slotted)**. See diagram A below and space the snap-Ts approximately as shown. They can be adjusted as you assemble. Insert this tube into the bottom Snap-T's on both Ribs #6 Secure with 1" screws.
- 4a. Glue the **2" Nipple** of a **Bench Assembly With Elbow** into the bottom Snap-T on Rib 7. Attach the other end of the Bench Assembly to a Snap-T on the **94 1/2" Composite Tube - green (Double-Slotted)** bottom bench rod as shown in diagram A. Repeat for the opposite side. Attach a **22" Composite Tube - White (Double-Slotted)** between the bottom Snap-T's on the Back End Wall and the Snap-T's on the 94 1/2" bottom bench rod. Snap these 22" tubes into the Snap-T's on the vertical 22" **Composite Tubes** you installed in step 8A-3 above.
5. Attach a **24" Composite Tube - Orange (Double-Slotted)** to the remaining center Snap-T on the 94 1/2" **bottom** bench rod installed in step 8A-4 above. Attach five **Snap-T's** to the remaining **94 1/2" Composite Tube - Green (Double Slotted)** and insert the tube into the top Snap-T's on both Ribs #6. Secure with 1" Screws. Attach the 24" **Composite Tube** to the center Snap-T on the top 94 1/2" **Composite Tube - Green (Double-slotted) - Upper bench rod**.
6. Repeat Step 8a-4a (above) for the top bench, except you will use the upper snap-T's on ribs 6 & 7. Secure all Snap-T's to the tubing with 1" Screws.
7. Adjust Bench Frame pipes by sliding the Snap-T's on the Ribs up or down, so that the Snap-T's of each bench frame are at an equal height. *HINT: Use a rubber mallet to tap the pipe up or down.* After everything is level, attach a 1" screw through the "snap" portion of the Snap-T's on the side walls and end walls to prevent the shelf tubes from sliding down.

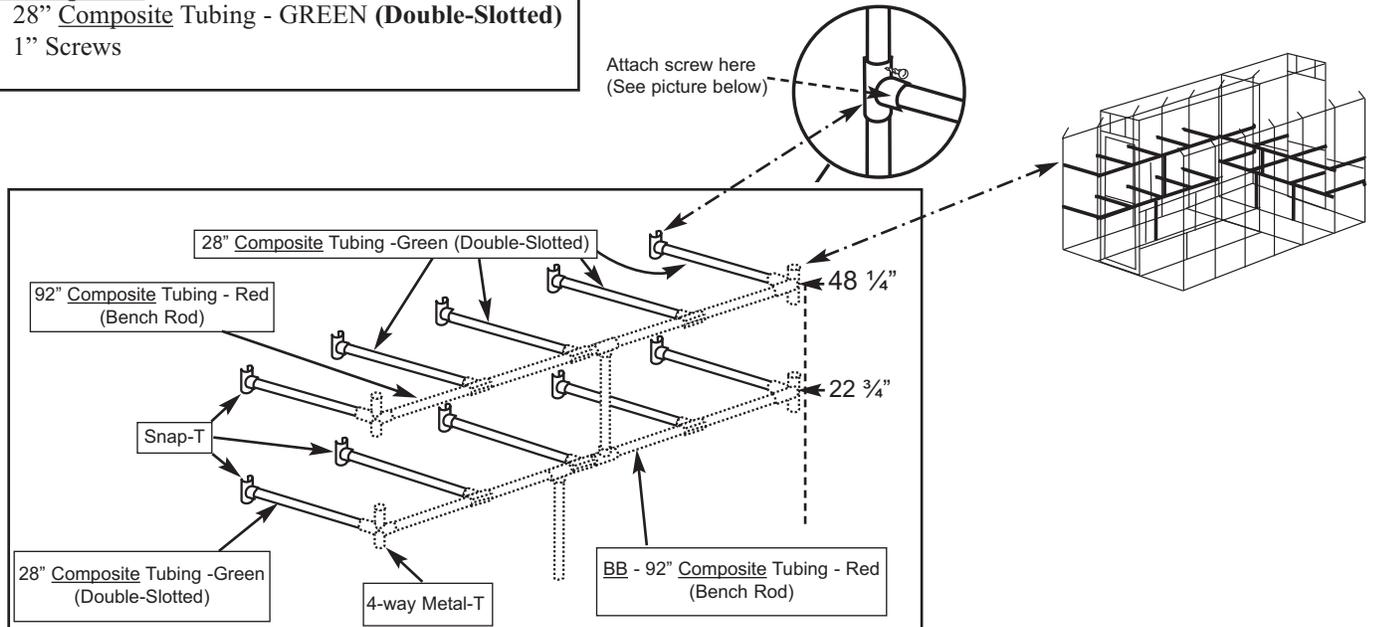


8B. BENCH ASSEMBLY

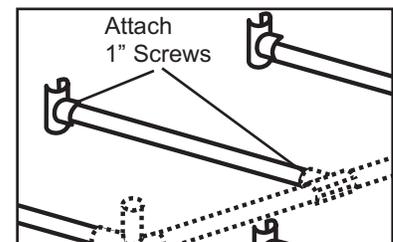
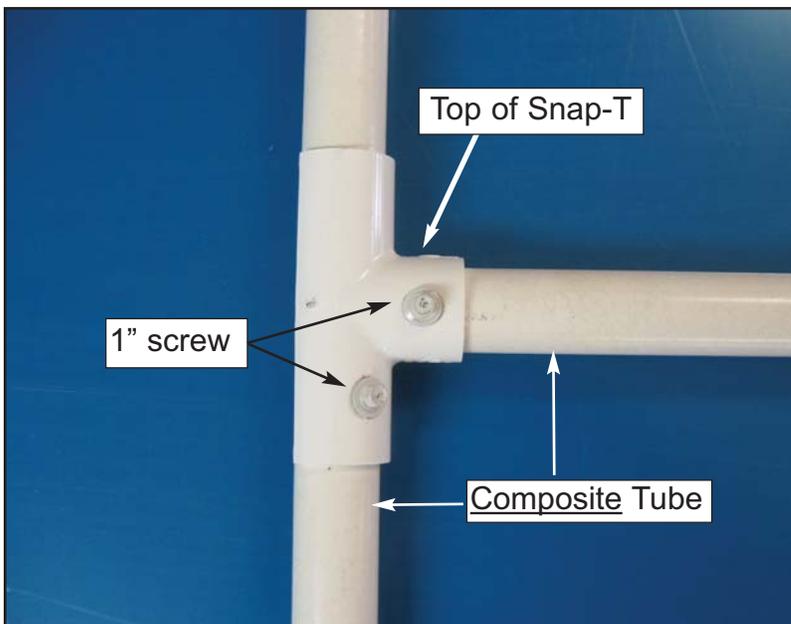
Pieces Required:

20 28" Composite Tubing - GREEN (Double-Slotted)

42 1" Screws



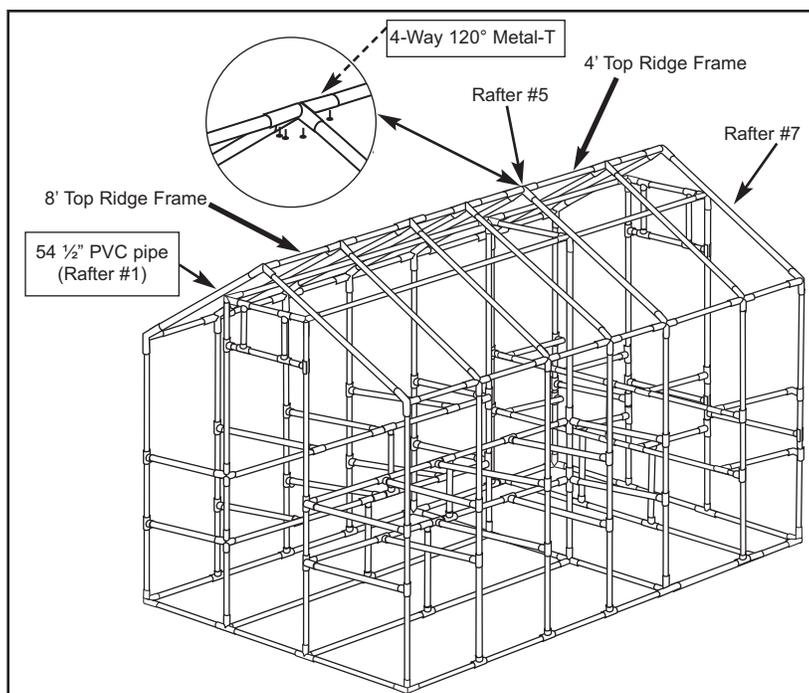
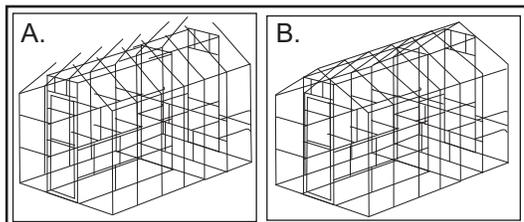
1. Insert **eight 28" Composite Tubes - Green (Double-Slotted)** into the 4-way Metal-T's that are on the end walls. Attach the opposite ends of the 28" Composite Tubes - Green (Double-Slotted) into the snap-T's on the corner side wall tubes. **(NOTE: The glue does not adhere to the Composite Tubing. Apply glue around the outer end of the pipe and inside the top of the Snap-T fitting for lubrication. The tubing will be easier to slide into the Snap-T's.)** You will need to secure the tubing by putting a **1" Screw** through the top of the Snap-T and into the 28" Composite Tubes - Green (Double-Slotted) - See picture below. Attach the remaining 28" Green Composite Tubes between the Snap-T's on the rib pipes and the Snap-T's on the 92" Bench Rods using glue to lubricate and 1" Screws to secure.
2. Double check measurements and make sure that the 4-way Metal-T's on the End walls are at 22 3/4" and 48 1/4" from the top of the BS - 92" Base Frame Tube to the center of the fitting. (See diagram above)
3. Adjust Bench Frame tubes (by moving Snap-T's on the Ribs up or down) so Snap-T's of each bottom bench frame are at an equal height and level with each other. HINT: Use a rubber mallet to tap the snap-T up or down.
4. After everything is level **on the bench frames**, attach a **1" Screw** through the top of the vertical Snap-T's on the Side Wall Tubes to prevent shelf brackets from sliding down (See picture below).



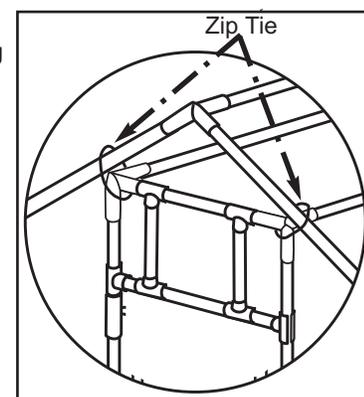
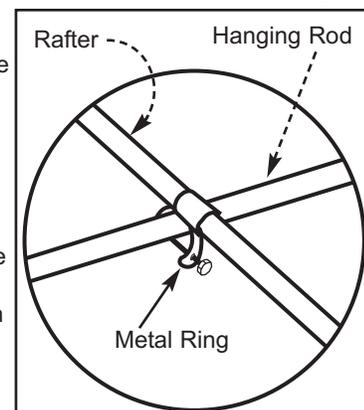
9. TOP RIDGE ASSEMBLY

Pieces required:

- 1 8' Top Ridge Frame, **made in step 3A**
- 1 4' Top Ridge Frame, **made in step 3B**
- 14 54 1/4" PVC pipes - Yellow
- 1 4-Way 120° Metal-T
- 8 Metal Rings
- 8 1 1/2" x 3/16" Machine Screws
- 8 3/16" wing nuts
- 6 Large Black Zip Ties



1. Line up the **8' Top Ridge Frame** with the 8' base frame of the greenhouse (see picture Step 7). Make sure the Snap-T's and the metal fittings on the base frame are lined up with the metal fittings of the 8' Top Ridge Frame. Add a **4-way 120° Metal-T** to the end of the 8' Ridge Frame and tighten the eyebolt. Insert the **4' Top Ridge Frame** into the opposite end of the 4-way 120° Metal-T. Line up the metal fittings of the 4' Top Ridge Frame with the Side Wall tubes and tighten the eyebolt of the 4-way 120° Metal-T.
2. Draw a line 2 3/4" down from the end of a **54 1/4" PVC pipe - Yellow**. Do this on both ends of six 54 1/4" PVC pipes - yellow. Set four 54 1/4" pipes into the 3-way 120° Metal Corner Posts of the Side Ridge Frame (Rafters #1 & 7 - See diagram above) at the front and back of the greenhouse and two 54 1/4" pipes into the 4-way 120° metal-T above the middle end wall (rafter #5). **DO NOT tighten the eyebolts!!!**
3. Set the remaining eight 54 1/4" PVC pipes - yellow into the 4-way 120° Metal-T's of the Side Ridge Frames. **DO NOT tighten the eyebolts!!!** - In the next step you will be pulling these tubes out of the side wall fittings and inserting them into the 12' top ridge frame fittings. Then you will attach the top ridge frame with the 54 1/4" tubes attached back into the side ridge frames to form the roof framing.
4. Balance the 12' Top Ridge Frame on the hanging rods. Starting at rafter #1, pull a 54 1/4" PVC pipe - yellow from the Side Ridge Frame and insert it into the arm of the 3-way 120° Metal Corner Post on the 12' TOP RIDGE FRAME (54 1/4" pipe will pop out of the Metal Fitting on the side Ridge frame - this is OK). Push the 54 1/4" pipe into the 3-way 120° Metal Corner Post (On the top ridge frame) until the line you drew on it in step 9 - 2 is even with the arm of the 3-way 120° Metal Corner Post. Tighten the eyebolt. Repeat on the opposite side and opposite end of the greenhouse, pulling the four corner 54 1/4" pipes - yellow and inserting them into the 12' Top Ridge Frame.
5. Pull out the remaining 54 1/4" PVC pipes - yellow and insert them into the remaining metal fittings on the 12' Top Ridge Frame. Insert the 54 1/4" pipes - yellow all the way into the 4-way 120° Metal-T's until they stop. On rafter #5 & #7 push the 54 1/4" pipes in so the line you drew on it is even with the arm on the post. Tighten the eyebolts.
6. Rest the top Ridge Frame and Rafter (54 1/4" pipe) assembly over the center of the Hanging Rods.
7. Insert the Rafters into the Metal Fittings of the side Ridge Frame one at a time. Slide a **Metal Ring** on Rafters #2, 3, 4 & 6. **Do not tighten the eyebolts until all the Rafters are in place.** Once all Rafters are inserted into the metal fittings of the side Ridge frames, tighten the eyebolts. Adjust Rafters on the front, middle and back end walls so the line drawn is even with the post of the fitting.
8. Slide the Metal Rings up to the Hanging Rods. Adjust the "U" bracket so it straddles the hanging rod. Slide a **1 1/2" x 3/16" machine screw** through the bolt hole of the Metal Rings and attach a **3/16" wing nut**.
9. Attach a **Zip Tie** around the Rafter and Metal Corner Post at each end wall. Do this on Rafters #1, 5 & 7 - Front, middle and back end wall. See diagram to the right.



10 A. SQUARING FRAME

Pieces Required:

- 3 Yellow Banding
- 3 Metal Banding Clips
- 2 76" Side Door Casing (1 with hinges)
- 1 38" Top Door Casing
- 1 1" Screw

1. On the front end wall, loop **Banding 1** through an eyebolt on the Metal Corner Post on the base frame. Loop the other end of the banding through an eyebolt on the opposite 3-Way 120° Metal Corner Post on the Side Ridge Frame.
2. Thread banding through the metal buckle as shown/explained in Fig 10B.
3. Thread **Banding 2** to the opposite diagonals.
4. Tighten Banding 1 & 2 so the diagonals are equal in length. If they are not equal in length. Loosen the shorter one and then tighten the longer band until the two diagonal measurements are the same.
5. Loop **Banding 3** through an eyebolt of the 3-way 120° Metal Corner Post of one Side Ridge Frame to the eyebolt of the 3-way 120° Metal Corner Post on the opposite Side Ridge Frame. Tighten the banding so the measurement from the "in" side of one 3-way 120° Metal Corner Post to the center of the opposite 3-way 120° Metal Corner Post is equal to 95 1/2".

Keep banding in place until Front End wall paneling has been applied.

10 B. Sizing Door Frame for Door Casing

1. Using the Top Door Casing as a measuring device, check to make sure the door opening is 36 7/8" at both the top and bottom **from "in" side to center of the 90" tubes**. (The Top Door Casing fits between the snap-T's on the top of the 90" tubes.)
2. Make sure the door opening is square by measuring diagonally from corner to corner and making sure the measurements are the same. Also check that the 90" tubes are plum (Straight up and down) and the top door frame tube is level.
3. Again place the Top Door Casing over the 35 3/4" tube. Hold in place temporarily with one screw inserted from the front and into the tube.
4. Temporarily place the side Door Casing with the Hinge attached on whichever side you want your door to hinge from.
5. Place the other Side Door Casing on the opposite side of the door opening. All 3 Door Casing pieces should fit snugly.
6. Remove the Door Casing Pieces. They will be used in the Door Assembly **Step #14**. Proceed with paneling.

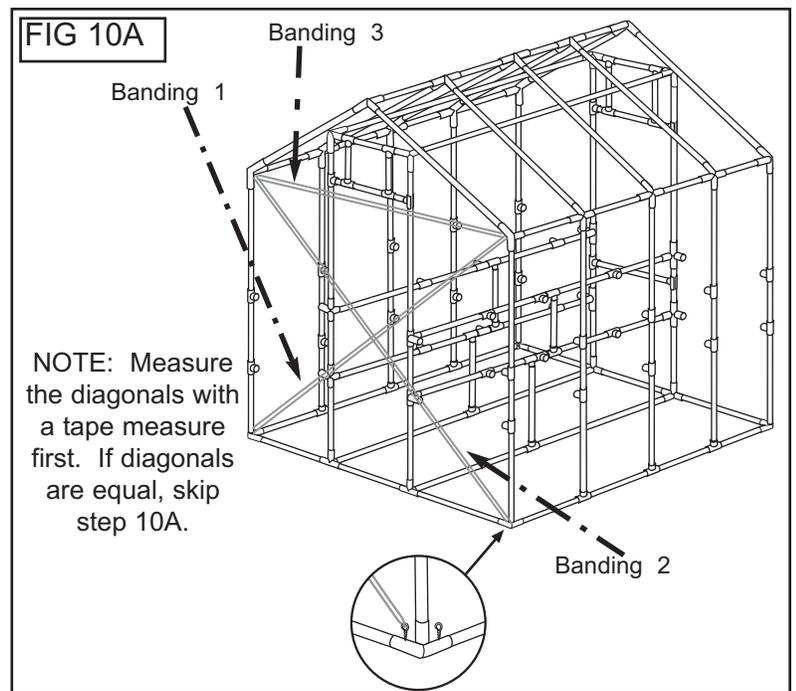
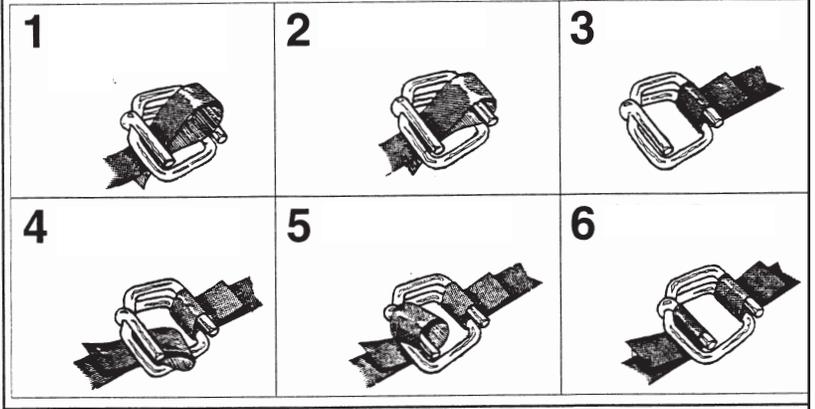


FIG 10B

How to thread metal buckles



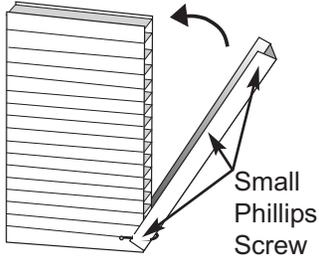
How to thread Metal Buckles

1. Form a 3" loop by folding banding away from you, (short end of banding needs to be on top). With buckle tines facing upright, pass loop up through center of buckle.
2. Slip the loop over the tine (farthest from you).
3. Pull banding down and away.
4. Place banding around specified frame area. Fold a new loop by folding banding toward you.
5. Slip new loop over other tine.
6. Tension by pulling banding coming from coil.
7. To loosen banding, grasp coil with pliers and twist your wrist so banding slides loose from tine.

Hints for Panel Assembly

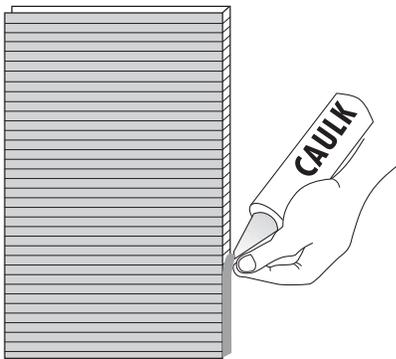
Congratulations, your frame is now finished! All that's left is the paneling application. Listed are several hints that will make paneling your greenhouse much easier. If you have suggestions that would be helpful for future customers we would be happy to hear from you.

1. **PANELS:** Apply paneling when temperature is moderate for your area (not during a cold or hot spell). When attaching panels to the PVC tubing, be careful not to over-torque the screws. The washers should just make a dimple in the panel. The screws should be placed about 12" - 15" apart on the panels and about 6" apart around the perimeter of the walls, roof and any overlapped joint.

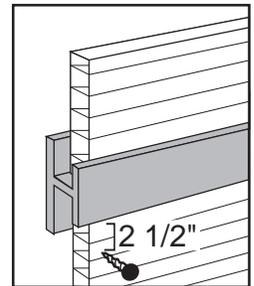


2. **U-TRIM:** Insert ¼" - ½" of 100% silicone caulking into open flutes to prevent water intrusion. Place U-Trim over the 4' ends of panels where specified in the instructions. Secure the U-Trim with **small Phillips Screws** by poking a small pilot hole in the U-trim and screwing through the U-Trim and into the panel. Use about 3 or 4 Screws per U-Trim

► Note: When using caulking, cut tip of tube at an angle. Be careful not to get caulking on nice clothing or jewelry.



3. **H-CHANNEL:** If H-Channel is difficult to slide on, spray panel edges with Pam (Vegetable oil). Also tapping on ends of H-Channel with a rubber mallet helps H-Channel slide on easily. Secure panels by placing screws into pipes 2 ½" from each side of the H-Channel. You can cut H-Channel by scoring on both sides with a knife and then bending at the score or use tin-snips.

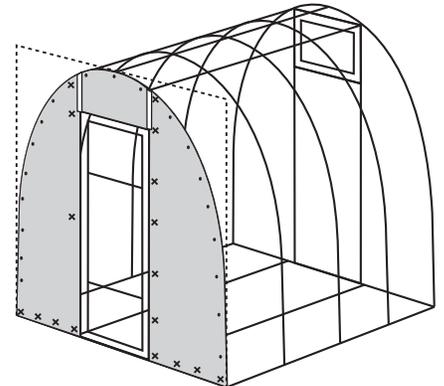


NEVER attach screws into the H-Channel!



4. **SCREWS:** Use the pictures as a guide for placement of screws. Use your discretion on your own greenhouse. The number of screws required for each step in paneling may not exactly coincide with the picture.

5. **CUTTING PANELS:** Panels cut very easily with a long, thin sharp knife or utility knife. Use the Frame or a straight edge for a guide when trimming panels.



6. **TIE DOWN:** Please remember to tie down your greenhouse once you begin paneling. The greenhouse is light enough that on a windy day it could blow over.

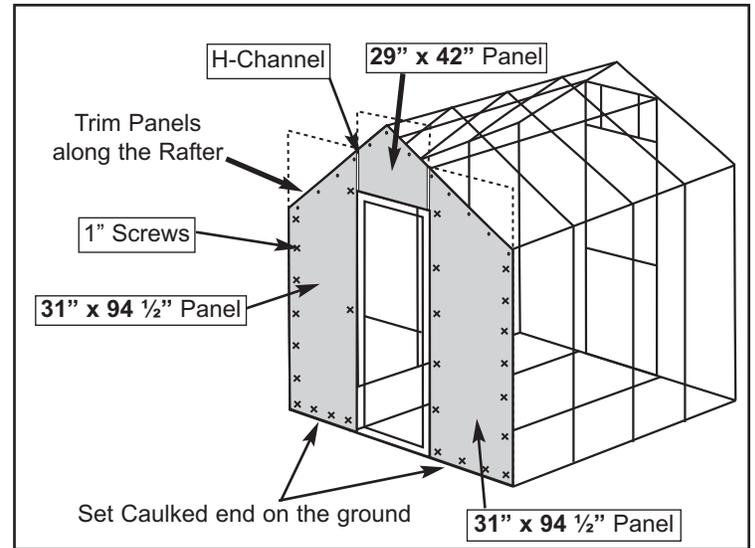
11. FRONT ENDWALL PANEL

Parts Required:

2	31" x 94 1/2" Panels
1	29" x 42" Panels
70	1" Screws
1	3' H-Channel

1. Caulk the open flutes on one end of all three of the panels.
2. Screw the two **31" x 94 1/2" Panels** into place (caulked end on ground) making sure they cover the door end wall tubes. Attach to End wall tubes with 1 or 2 Screws. These screws will be removed later when you assemble the door.
3. Cut panels carefully along the Rafters and Side Walls using a sharp thin knife (use the tubes as a guide).
4. Attach the **29" x 42" panel** above the door. Leaving a 1/4" gap between this panel and the 31" x 94 1/2" Panels, so there is room to slide the **H-Channel** between the panels. Cut the **3' H-Channel** in half and trim to fit.

Don't forget to secure your greenhouse.
The panels create wind resistance.

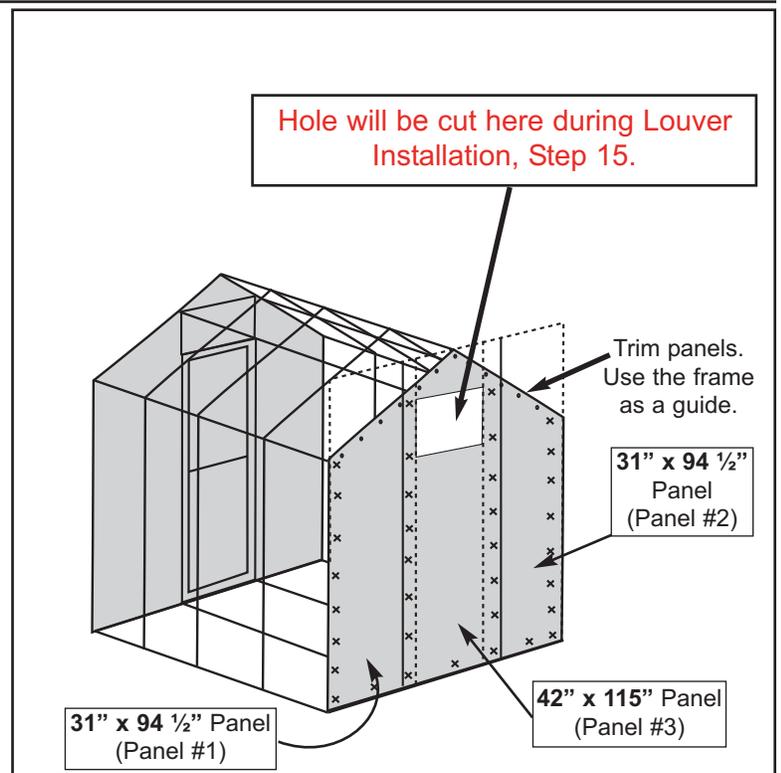


12. BACK END WALL PANEL

Pieces Required:

3	Yellow Banding (from Step 10)
3	Metal Clips (from Step 10)
2	31" x 94 1/2" Panels
1	42" x 115" Panel
87	1" Screws

1. Caulk the open flutes on one end of all three panels.
2. Remove the Banding from the Front end walls, do not cut the banding. Use the banding to square the back end wall. (**see step 10, Squaring the frame**)
3. Attach panel #1 and panel #2 (31" x 94 1/2" panels) vertically (Caulked ends on the ground). Line one side of the panels up with the side wall tubes so they also cover the end wall tubes. This way you should not have to trim the panels at the side wall tubes. Do not attach screws on the end wall tubes yet. Panel 3 will over lap panel 1 & 2. Carefully trim panels along the rafters and side walls (If needed).
4. Attach panel #3 (42" x 115" panel) so it overlaps panels #1 and #2 on the end wall tubes. Attach screws through both layers of paneling and into the end wall tubes. Trim panel along the rafters.
5. Caulk all exposed flutes that are still open on the top of both end walls.



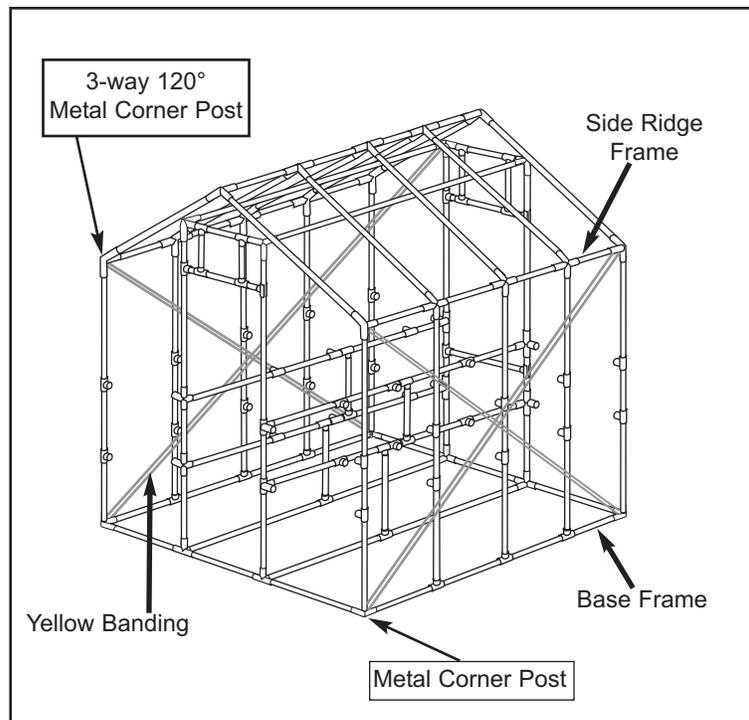
DO NOT CUT HOLE - the Louver will be installed in Step 15. Louver installation instructions included in the Louver Box.

13A. SQUARING SIDE WALLS

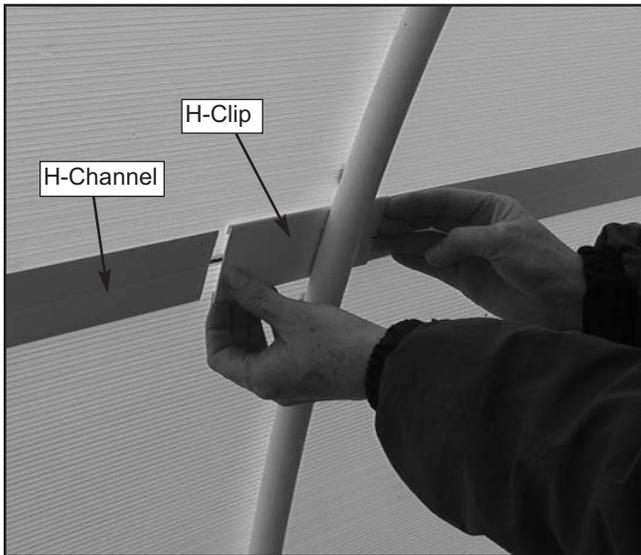
Pieces Required:

- 5 Yellow Banding (3 from Back End wall, Step 12)
- 5 Metal Banding Clips (3 from Back End wall, Step 12)

1. Remove **Yellow Banding** from the Back End wall (**Do not cut**).
2. On the side wall tubes, loop the banding through an eyebolt on the corner post of the base frame and run the banding diagonally across to the 3-way 120° Metal Corner Post of the Side Ridge Frame. Repeat for the opposite diagonal. Attach banding on both sides of the greenhouse. See step 10, Fig. 10B
3. Tighten the banding so the diagonals are equal in length. If one band is longer than the other, loosen the shorter band and tighten the longer band until both diagonals are of equal length.
4. At the middle end wall, measure the distance from the "in" side of one Side Ridge frame to the center of the other Side Ridge frame. If the measurement is greater than 95 ½", attach a Yellow Band and pull the frame in until the measurement is 95 ½".



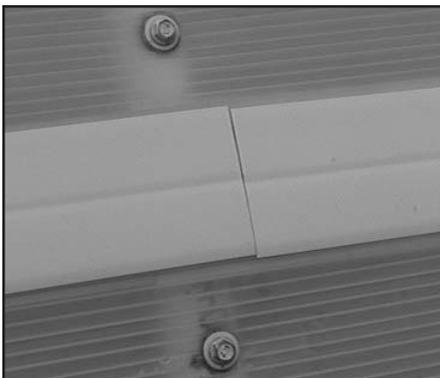
Installation instructions for H-Channel Clips



1. Slide the H-Channel between the panels leaving a couple inches between each piece of H-Channel. From the **inside** of the greenhouse, slide the H-Clip onto each end of the H-Channel pieces.



2. From the **outside** of the greenhouse, insert about a nickel-size gob of **100% silicone** caulking into the area between the H-Channel pieces.



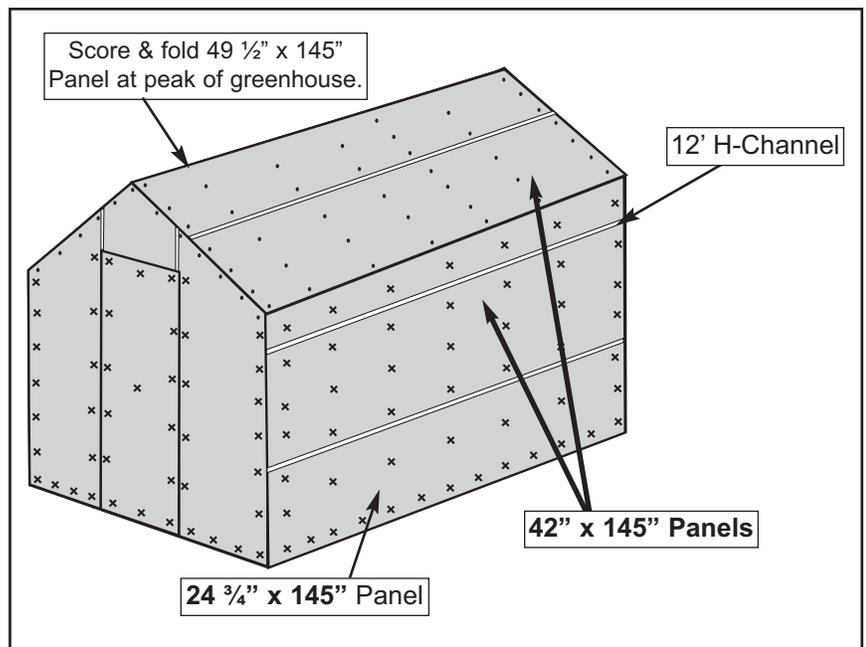
3. Slide the H-Channel pieces in so they butt together.

13B. TOP and SIDE GLAZING

Pieces Required:

2	49 1/2" x 145" Panels
4	42" x 145" Panel
12	6' H-Channel
6	H-Channel Clips
225	1" Screws
4	78" U-Trim
4	56" U-Trim
35	Small Phillips Screws

► **NOTE:** Center the panels so the overhang is equal over the front & back end walls. **Do not cut off the overhang.** It will help keep water out of the end wall panels.



1. Caulk both ends of all six panels.
2. Lay a **49 1/2" x 145" Panel** on the ground and score (using a blunt object such as the back side of a butter knife) down the center of the panel following a flute (Do not cut into the panel. You are only making a slight indenture in the panel, so when you fold the panel, it follows this line.) Center the panel on the peak of the greenhouse, making sure there is equal overhang over each end wall of the greenhouse. Attach with screws.
3. Attach a **42" x 145" panel** 1/4" below the top panel (the 1/4" provides room for the H-Channel to be slide in). Score and fold the panel down over the side ridge frame and down the side wall. - (Where the side of the greenhouse meets the roof.) Repeat with a 42" x 145" Panel on the opposite side of the greenhouse.
4. Attach a **42" x 145" panel** 1/4" below the panel from step 3. Repeat with a 42" x 145" panel on the opposite side of the greenhouse.
5. Cut a **49 1/2" x 145" panel** in half (to make two 24 3/4" x 145" panels) to fill in the the remaining spaces on each side of the greenhouse. Remember to allow for 1/4" between each of the panels for H-Channel.
6. Slide two **6' H-Channels** between each of the panels and join with **H-Channel Clips** (see instructions previous page).
7. Attach **U-Trim** to the panels (refer to hints on page 16). Cut U-Trim to fit when needed. Use two 56" and two 78" pieces on each end of the greenhouse.

**If you have purchased a tie down kit. Install it now!
If not, you will need to secure the greenhouse to the ground.**

Tie Down Kit Instructions for 4 or 6 Anchor kit

Disclaimer: While these ties down augers are effective in most situations, proper conditions are required to prevent failure. Improperly tightened or loose anchors, high winds, loose or sandy soil, waterlogged or flooded soil, or extremely rocky soil can contribute to anchors pulling out of the ground. You will need to determine the best means to anchor the kit for your unique situation. If you have concerns about your conditions, a concrete perimeter, concrete slab, or corner holes are good alternatives to anchoring into soil.

Parts Needed: (4 anchor)

- 4 - 15" or 30" Steel Anchors
- 4 - Turnbuckles
- 4 - Metal Hooks
- 8 - 1 ½ x ¼" bolts
- 8 - ¼" locknuts
- 8 - Washers

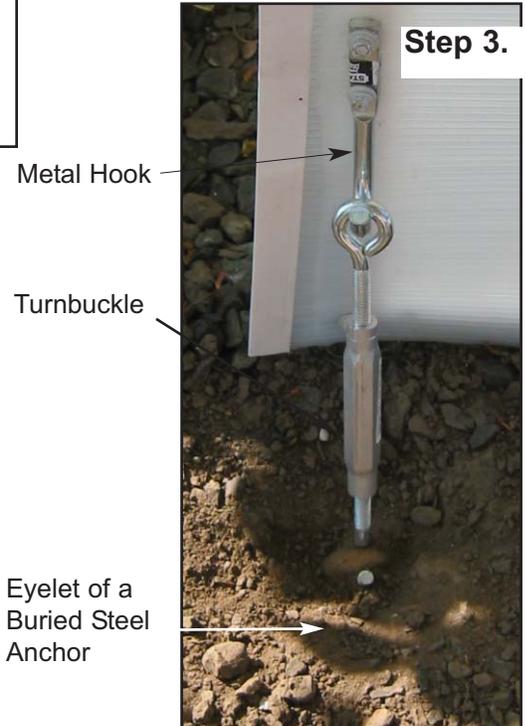
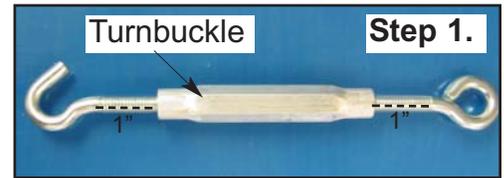
(You need a ¼" drill bit to predrill for the bolt holes)

Parts Needed: (6 anchor)

- 6 - 15" or 30" Steel Anchors
- 6 - Turnbuckles
- 6 - Metal Hooks
- 12 - 1 ½ x ¼" bolts
- 12 - ¼" locknuts
- 12 - Washers

(You need a ¼" drill bit to predrill for the bolt holes)

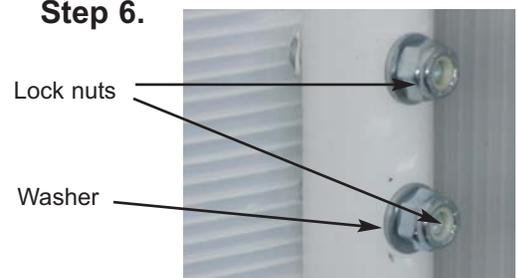
1. Loosen **turnbuckles** so the bolts of the turnbuckle are out about 1" on each side.
2. Screw one 15" or 30" **steel anchor** into the ground using a screwdriver, rod, or pipe inserted through the eyelet of the anchor. This will act as a handle for you to twist the anchor into the ground. The eyelet should be just showing above ground. This will prevent the greenhouse from shifting. Also, make sure the anchor is as close to the greenhouse as possible for the most secure pull. Place 1 anchor at each corner of the greenhouse. For units longer than 8', place one anchor in the middle of the each sidewall or every 8' along the sidewall plus the corners of the greenhouse.
3. Slide the hook of one turnbuckle onto the eyelet of a ground anchor. Slide a **Metal hook** through the eyelet of a turnbuckle.
4. Hold the flat part of the hook up tight against a corner rib outside the greenhouse. Using a ¼" drill bit, drill a hole through each of the holes in the **metal Hook**, clear through the Solexx and the rib including the ½" PVC pipe inside the rib.
5. From outside the greenhouse push a **bolt** through each hole in the **metal hook** and through the rib.
6. From inside the greenhouse, slide a **washer** over each bolt and secure it with a **lock nut**. Tighten the locknuts.
7. Repeat this process on each of the other corners.
8. Tighten the turnbuckles to remove any slack.



Step 4.



Step 6.



14. Door

Pieces Required:

- 1 36 1/2" x 80" Door Panel
- 1 76" Side Door Casing (**Used in Step 11b**)
- 1 76" Side Door Casing with Hinges (**Step 11b**)
- 1 74" Composite Tubing- BLACK (**with holes for Hinges**)
- 1 74" Composite Tubing- BLACK
- 1 38" Top Door Casing (**Used in step 11b**)
- 2 33" Composite Tubes- BLACK
- 1 36" U-Trim
- 4 90° Metal Elbows
- 1 Snap-T's
- 49 1" Screws
- 3 Small phillips Screws
- 1 33" Composite Cross Bar with Snap T (for door) - slotted

Door Parts Bag:

Outside Handle, Inside Handle, 3-point Cam

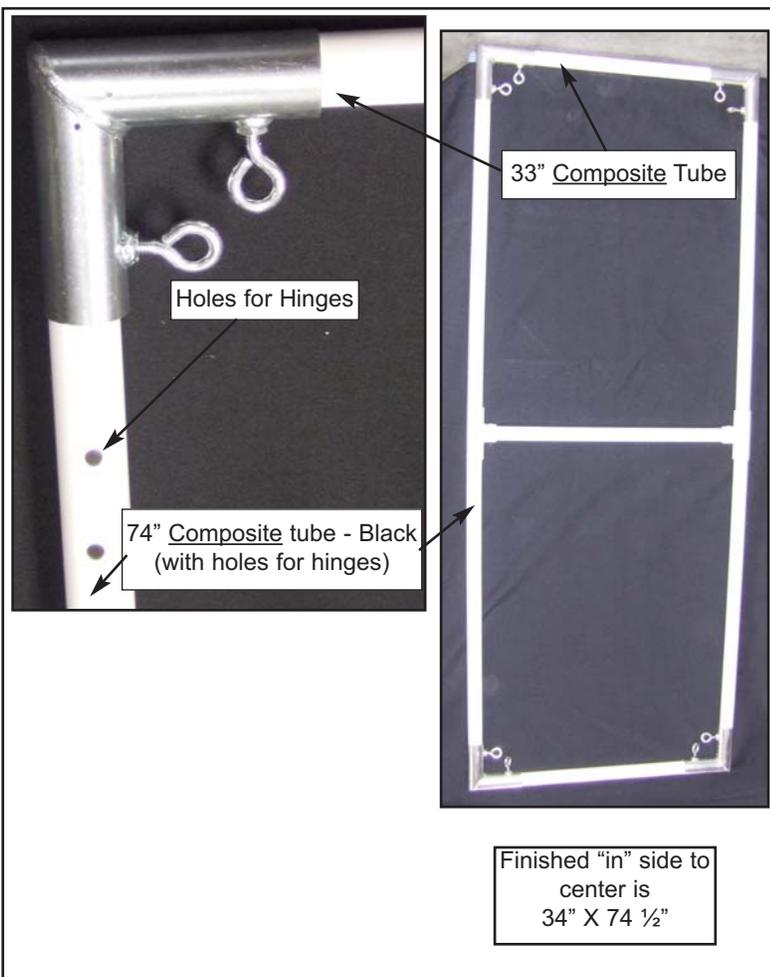
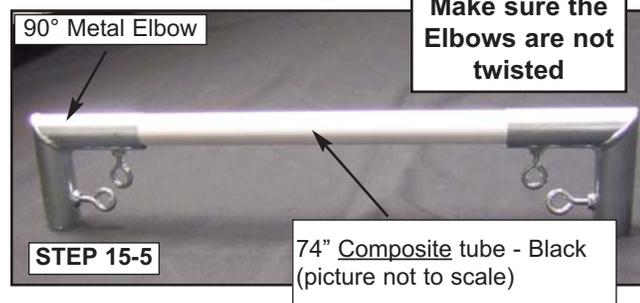
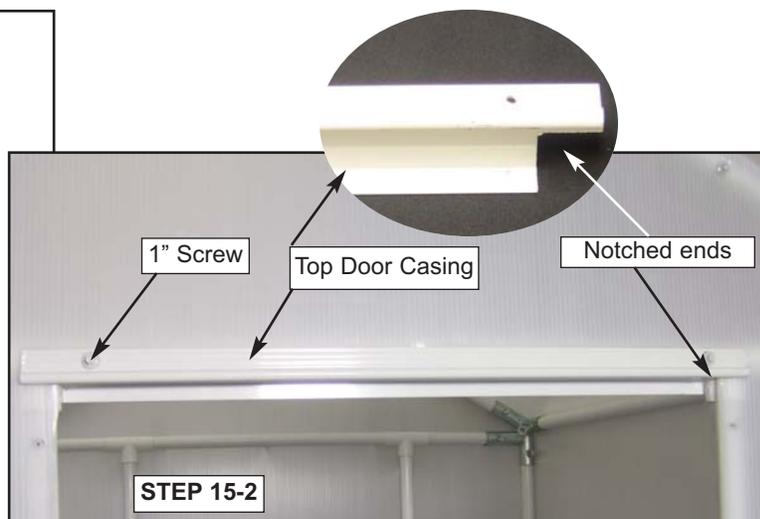
Hinge Bag: 1/4" x 1-3/4" Bolts (4), Lock Nuts (4), Hinge halves and pins (2), Flat Washers (2)

Door Parts Bag: 8/32 Hex Lock Nut, 3/8" Lock Nut, 32 x 1-3/4" Machine Screw, 1" Metal Screw, 4mm Allen Wrench

Door Cable Bag: Turnbuckle, 76" Wire Cable, 1/16" Wire Cable Clamps (2)

1. Remove the temporary screws from around the Door opening.
2. Attach the Top Door Casing to the Tube above door with 1" Screws. Make sure it is level.
3. **Decide which side you want your door to open (as you face the door) and attach the 76" Side Door Casing with hinge halves attached on the side you want the door to hinge.** Attach to the 90" Composite Tube with 1" Screws. Making sure casing is straight up and down.
4. Attach the **Side Door Casing with no hinges** to the opposite side of the door opening with 1" Screws. Making sure casing is straight up and down.
5. Assemble the door frame on a flat surface by attaching one **90° Metal Elbow** to both ends of both **74" Composite Tubes**. Tap the tubing so that it is completely seated into the elbow. Make sure the pre-drilled holes in the 74" tube with holes are facing up as the frame lays on the ground. You will be attaching hinge halves using those holes in a later step. Connect these 2 assemblies using the **33" Composite Tubes**.

Hints: It is important to attach the 74" tubes into the elbows first, followed by the 33" tubes. Line up the holes on the hinge side so they are centered on top. The door frame should measure 34" x 74 1/2" ("In" side to center). Tighten the eyebolts. You will adjust this frame when you hang the door so the measurements don't need to be exact at this time.



6. Attach the snap T end of the 33" PVC Cross bar to the side door tube **WITHOUT** drill holes. **Attach near the center of the tube (you can adjust it up and down later).** **Make sure the holes in the crossbar are facing up and looks like picture A.**

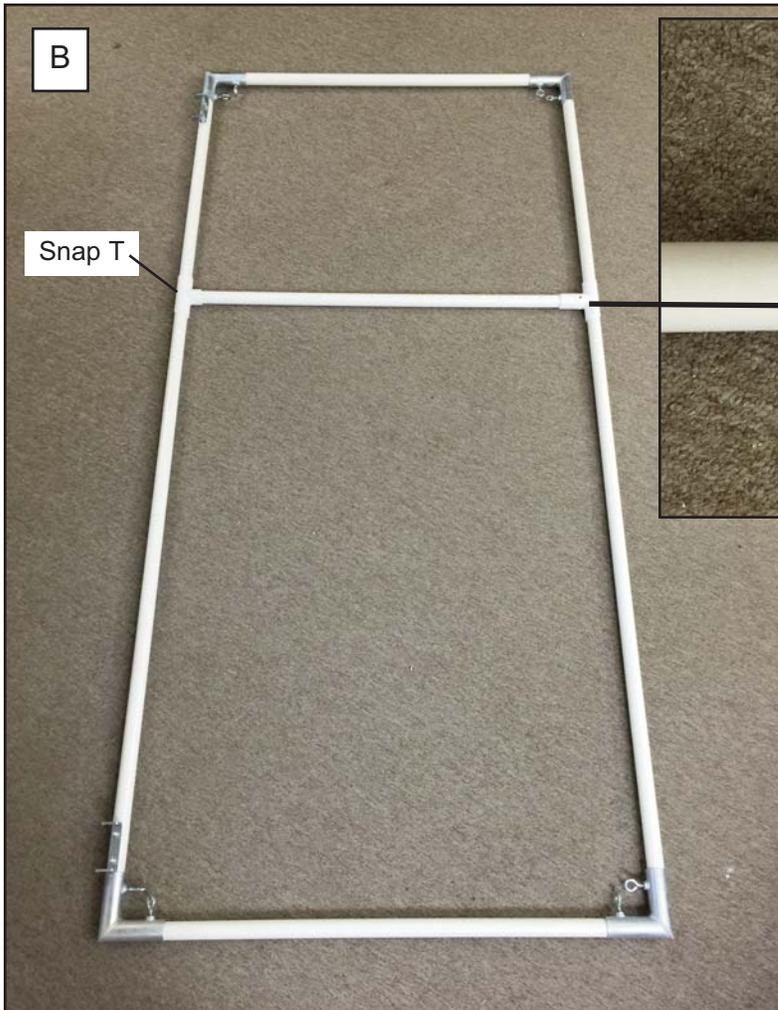
Attach a snap-T to the center of the opposite door tube and then slide the Cross Bar into this snap-T. See picture "B" below. Make sure that this cross bar is not causing the frame to be bowed out in the middle, if so, try compressing the snap-t on the end of the cross bar. If that doesn't work, separate the snap-T from the end of the cross bar and use a hack saw to trim that tube down a little bit. Then insert the end of the cross bar back into the snap-T.



This side of the cross bar for the door faces up (While assembling the door frame or towards the outside of the greenhouse when the door is hung)

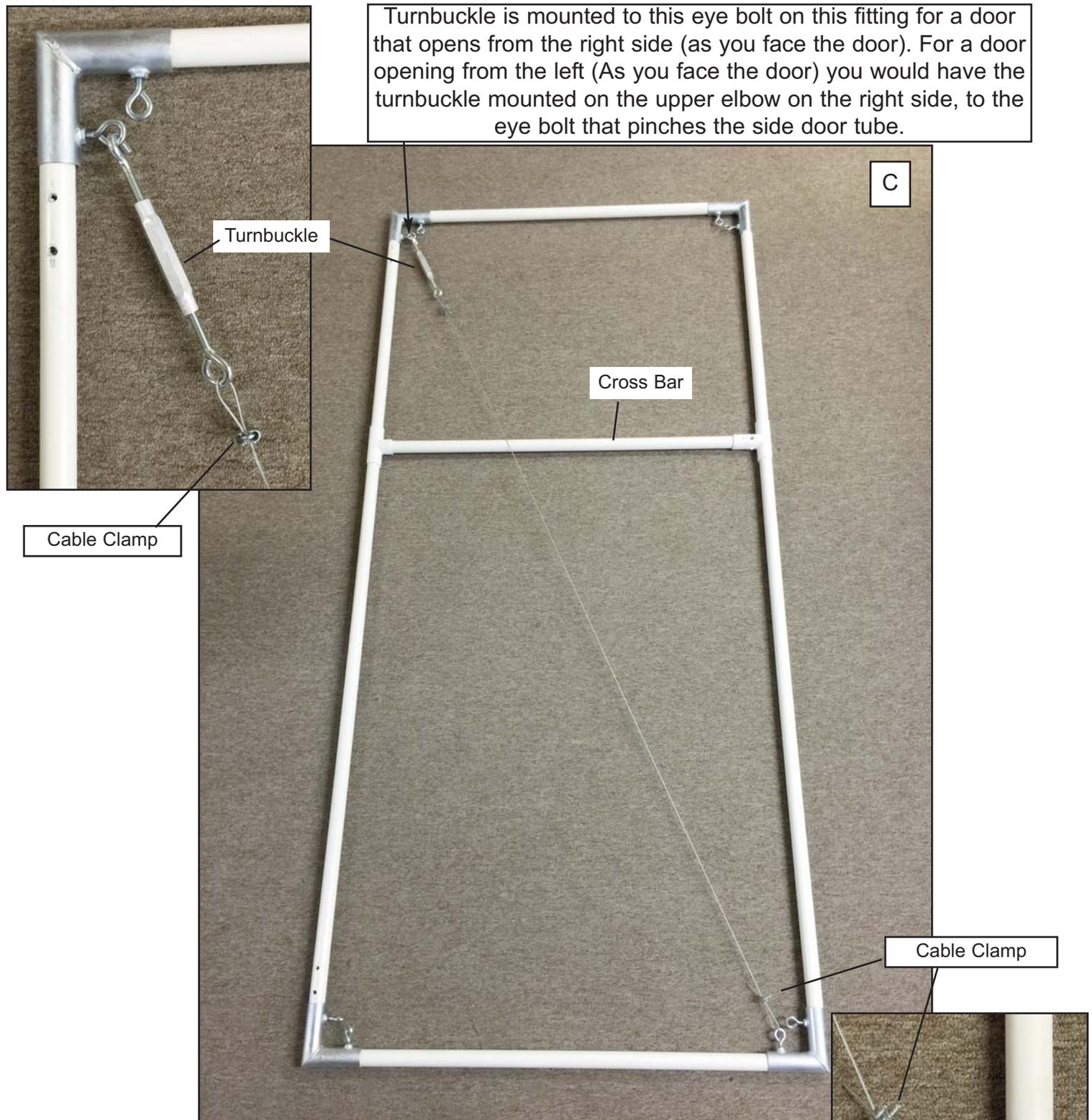
Make sure that the big hole and little hole remain lined up. If they are not aligned, then use the shaft of a screw driver inserted into the large hole and push or pull on the screw driver to move the snap-T on the tube. Once the large hole in the snap-T is aligned, you can use your hand to move and line up the smaller hole. You will insert the lock through the larger hole in a later step. Aligning these holes now will make that easier.

7. **Attaching the cross cable door support.** See Picture "C" next page. You will be using two cable clamps, a turnbuckle and the 76" long - 1/16" diameter cable. These are all grouped together in the door kit bag. Start at the metal elbow that is on top of the side door tube holes. Place the Hook of the turnbuckle through the eye bolt that is pinching the metal elbow fitting onto the side door frame tube, not the eye bolt that goes to the upper tube. Then run the cable through the cable clamp, through the eye bolt of the turnbuckle and back through the cable clamp. Using a pair of Pliers or a socket, tighten the two nuts on the cable clamp so that



it pinches the two sections of the cable together creating a loop that is going through the eye bolt of the turnbuckle.

Cross Cable Door Support (Installed on Door frame)



You will now connect the other end of this cable. **The cable will pass over the top of the cross bar of the door.** Run the cable through the 2nd cable clamp, through the eye bolt and then back through the cable clamp. Using a pair of Pliers, tighten the two nuts on the cable clamp so that it pinches the two sections of the cable together creating a loop that is going through the eye bolt of the metal elbow. See picture to the right.

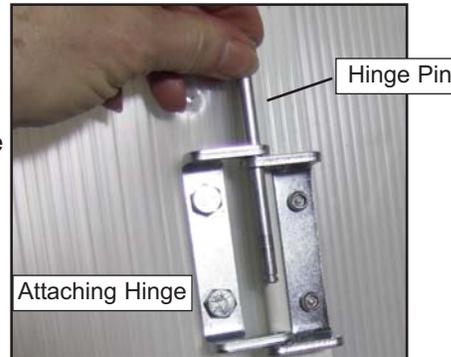


8. Place the **36 1/2" x 80" Door Panel with holes** on the Door Frame, aligning the holes in the Panel with the holes in the **75" Tube**. Measure in from one of the two ends to the first predrilled hole. The side that is 7" from the first predrilled hole is the top of the door panel. If needed, flip this panel over so that this end of the panel is the top of the door.

Once the panel is positioned, attach the **hinge halves** using two **1/4" x 1 3/4" Bolts**, **two lock nuts and one flat washer** for each hinge. **See next page for washer placement and hinge attachment.** From the underside, Insert a bolt through the door frame, through the washer (The washer is only used on one of the two bolts for the hinge half), through the door panel and then put the hinge half on top and attach the nut. Repeat this for the 2nd bolt and 2nd hinge. The nut will be on the side that the hinge half is on. Once all 4 bolts are put in place, they will be holding the door panel to the door frame. **Do not screw the rest of the Panel to the Door Frame yet.**



9. Position the Door into the door opening and align the hinge halves up as shown on next page. The upper hinge half will sit on top of the hinge half on the door casing and it will be opposite for the lower hinge. Once aligned connect the hinge halves on the Door to the hinge halves on the Door Casing using the 2 hinge pins. They are inserted from the top of the hinge for both hinges.



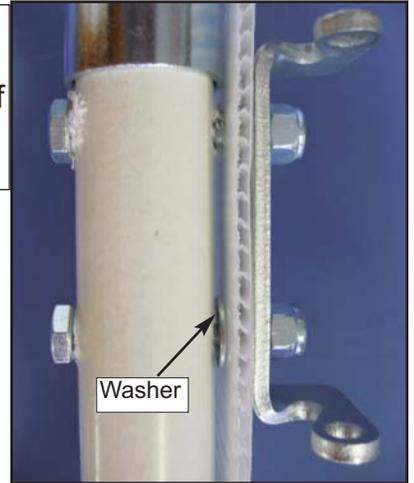
10. Now that the door is hung, close and open the door several times to make sure that none of the metal elbows of the door frame are hitting the metal casings of the door opening. If needed, adjust the door frame so that it fits within the door opening and is not touching the metal casings of the door opening. Make sure the top door tube is approx. 1/8" below the Top Door Casing. Very rarely would you need to trim a tube in the door frame but if trimming is needed, use a hack saw.
11. Tighten the cross cable door support a little bit by rotating the turnbuckle. Be careful not to lift the door very much - you just want to support the door. Verify that the lower tube of the door frame is not hitting the tube under it and that it is parallel with the tube below it. After doing this, repeat step 10 again and make sure that the adjustment on the cross cable door support didn't cause one of the door fittings to now touch the metal casings of the door opening. Once the door opens and closes freely, the fittings are not touching the metal casings of the door opening, and the cable has been snugged up, attach the door panel to the door frame using 1" screws. **Do not put any screws into the cross bar of the door, you will adjust this tube in a step below.**
12. You can leave the door panel oversized or you can trim the panel down so that it fits within the door casings. We prefer to leave the door panel oversized to help keep wind from blowing in around the door. *If you like the look of the door panel snugged into the opening of the door casings, then with the door shut, look through the door panel and mark the corners of the door opening on the door panel from the outside of the house. (keep in mind that you still want to keep the bottom of the door panel down at ground level) and then remove the door and lay it back down on a flat surface. Using a straight edge as a guide and the marks you made on the door panel, cut the top and only the one side (The side opposite of the hinged side of the door) of the door panel down to fit just inside of the door casings.*
13. Caulk the open flutes on the top and bottom of the door panel and reattach the door to the Hinges. Caulking the bottom of the door panel is easiest when the door is removed from the greenhouse.
14. Slide a **36" U-Trim** over the top of the door panel to cover the caulked flutes (cut u-trim to fit if needed). Attach u-trim with 3 **Small Phillips Screws** (see page 15, step 2).

Hinge assembly & location of washer



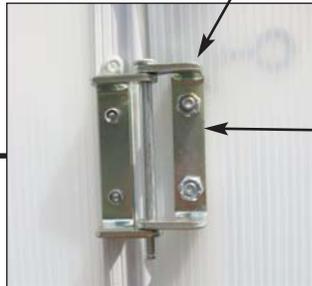
Upper hinge
Inside
greenhouse

Side view of
assembled
upper hinge-half
on door
→



Washer

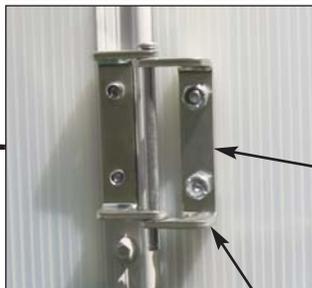
Upper hinge
(**Outside** greenhouse)
Hinge-half on door sits **above**
hinge-half on door casing.



One washer goes in-between the door panel and the door frame to even out the spacing with the fitting. The fitting sits under the door panel and hinge-half on one side of the hinge-half and one washer goes under the door panel and hinge-half on the other side.
(Bolt goes through the washer)

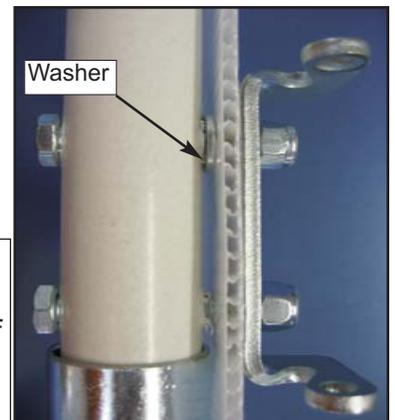


Lower hinge
Inside
greenhouse



Lower hinge
(**Outside** greenhouse)
Hinge-half on door sits **below**
hinge-half on door casing.

Side view of
assembled
lower hinge-half
on door
→



Washer

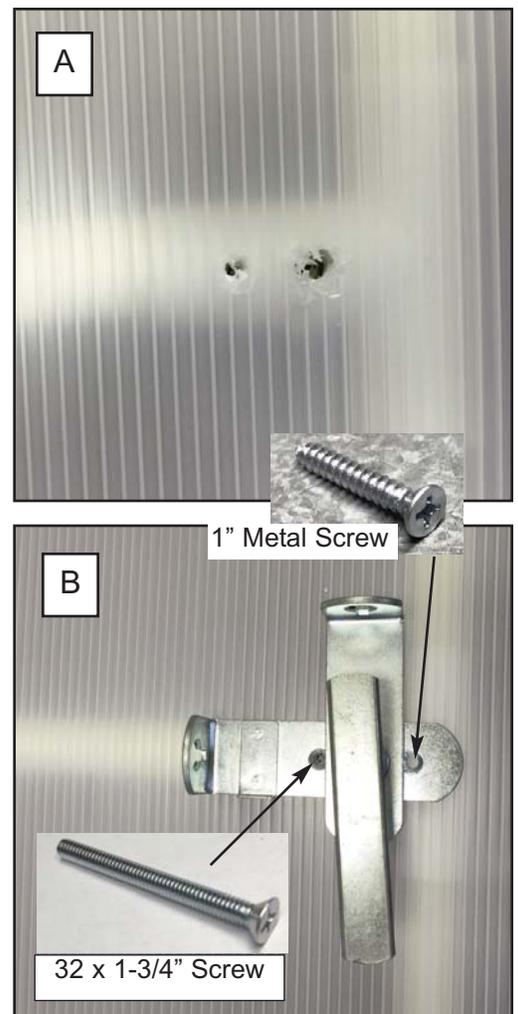
15. **Door lock** - The center cross bar of the door will set the height of your door lock/handle. From the outside of the greenhouse, look through the door panel at the holes in the predrilled snap-T, this would be the height of the outside door handle. To adjust to your preferred handle height, slide the cross bar up or down using a rubber mallet. Make sure to level.

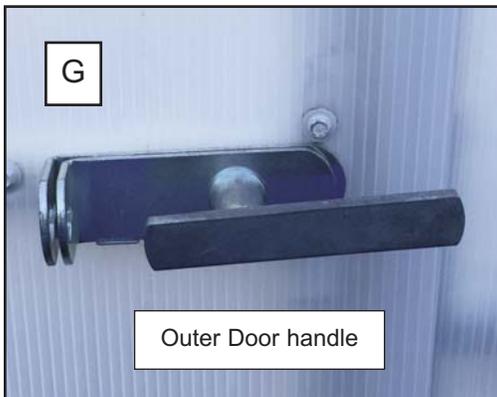
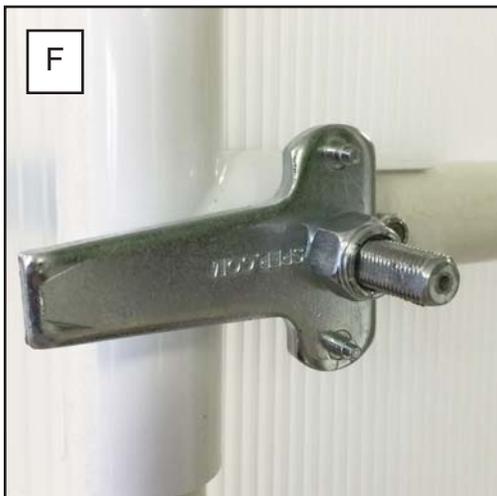
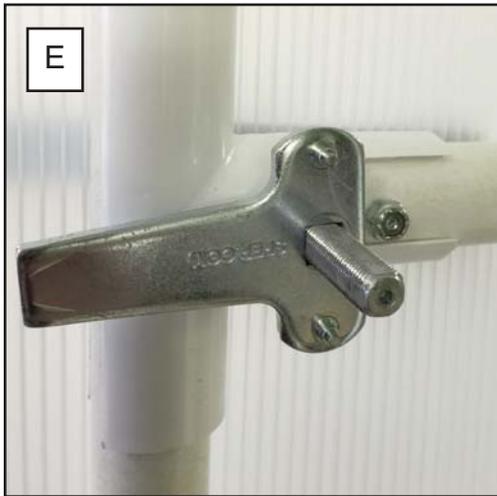
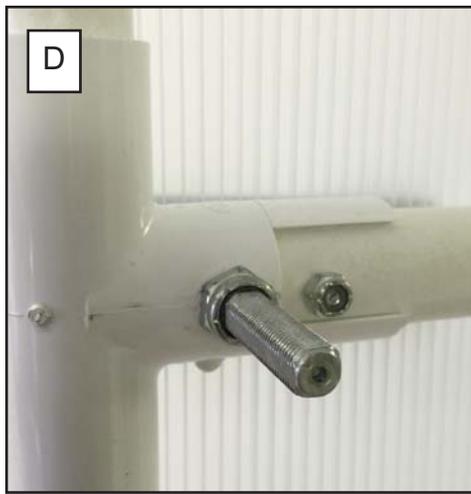
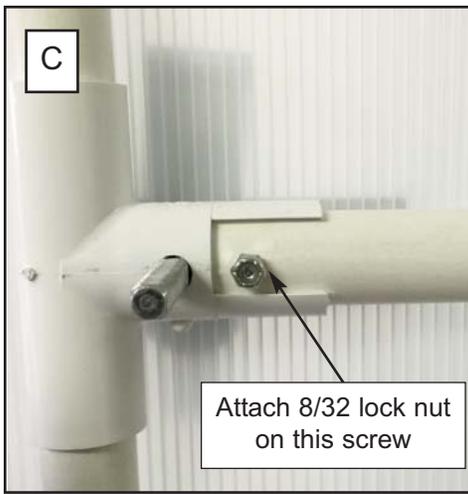
From the outside of the greenhouse, use a sharp thin bladed knife and push the blade of the knife through the panel and into the large predrilled hole. Do this twice so that you are cutting an "X" in the panel right where the predrilled hole is at and then twist the knife when it is in the hole, do the same thing for the smaller predrilled hole. See picture "A" to the right.

Now you will install the outer door handle. This handle has a thin nut included in the bag, remove that nut and keep it close by.

Insert the shaft of the door lock handle through the door panel and into the large hole of the door cross bar. You may need to twist or screw this into the hole. The handle should be flush with the door panel. Next, twist the door handle so that it is perpendicular to the metal plate that is just behind that handle (that plate is a part of the lock, there are two holes in that plate, you cannot see them unless you twist the handle on the outside door handle). See picture "B" to the right.

Insert the 32 x 1 $\frac{3}{4}$ " flat head screw (the long one in the lock kit) through the hole that is closest to the middle of the door, the tube is predrilled behind this hole. Attach the 1" Metal Screw into the other hole (this hole is not pre-drilled) - this will lock cross bar in place - so make sure the bar is level.





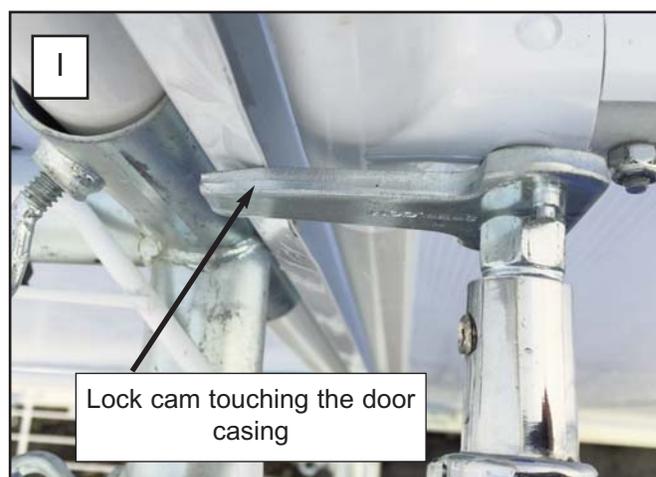
16. **Inside Door Handle** On the inside of the door, attach the 8/32 lock nut (the small nut in the kit) on this screw. See picture “C”.

Attach the nut that came with the outer lock onto the shaft of the lock, snug this nut up against the tube, see picture “D”. Then turn the outer door handle several times, this helps seat the outer door handle on the tube.

Slide the door lock cam onto the shaft. See Picture “E”. Next put the thicker of the two large nuts onto the shaft. Tighten the nut but make sure you can still turn the door handle. See picture “F”.

Install the inner door handle (picture H). Make sure the outer door handle is in the position as shown in picture “G”, then using the 4mm allen wrench included in the door kit, loosen the set screw on the side of the inner door handle, position the handle so that it faces downward when you slide it on the shaft, then hold the handle pressed up against the nut and then tighten the set screw. Your lock is now installed.

Next go inside the greenhouse and shut the door, when the door is shut push the inner door handle down which will swing the door lock cam out so it is now behind the door casing keeping the door from opening. Check to see if there is any space between the door lock cam and the metal door casing, if so, use a pair of pliers and bend the metal door casing (where the door lock cam is next to it) towards the lock cam. This should now put the metal door casing right up against the door cam when the door is closed. See picture “I”. This adjustment keeps the door shut snugly against the door casings.



15. LOUVER

Pieces Required:

1 Louver Box

SEE LOUVER INSTALLATION INSTRUCTIONS IN LOUVER BOX

IMPORTANT: If installing an Exhaust Fan, the fan will go in the back of the greenhouse in place of the Louver and the Louver will be installed above the door. Do not cut a hole for the Louver if you have purchased or are considering purchasing a 16" or larger fan.

Notes:

Other Helpful Hints

1. Caulk any holes from screws or punctures in the panels to help keep bugs and dirt out.
2. Be sure your Greenhouse is properly anchored to the ground or a foundation. **DURING AND AFTER ASSEMBLY**
3. Remove Shade Cloth in the winter.
4. Please call us if you have questions about assembling your greenhouse.
5. We welcome pictures of your greenhouse in use. Send to info@adapt8.us

ENJOY YOUR NEW GREENHOUSE!

P.S. Please share with us any ideas you have on improving our kits. Pictures are appreciated.
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