Sunglo Greenhouses

Series 1000 Greenhouse Assembly Manual

1-800-647-0606 Info@Sunglogreenhouses.com Made in the USA

Thank you for purchasing a Sunglo Greenhouse.

For those of you who are first time greenhouse owners here are a few tips for basic operation of your greenhouse controls. Sunglo greenhouses have a 110 Volt or 220 Volt thermostatically controlled ventilation system. Each system contains an exhaust fan, a motorized fresh air intake shutter and thermostat controls. Once you have wired up your system, we recommend setting your exhaust thermostat between 75 and 85 degrees depending on your location, exposure to the sun and the plants you plan to grow. Refer to a good greenhouse book. *The Greenhouse Gardeners Companion* by Shane Smith, or *The Greenhouse Expert* by Dr D. G. Hessayon are both excellent references.

If you have one of our power panels, the exhaust thermostat will be mounted to it along with any other electrical controls that were purchased such as an electric heater thermostat and light timer. For those who have an electric heater we recommend setting the heater thermostat at 45 to 55 degrees. Turn the heater to the on position and set it to the highest setting so when the power panel thermostat calls for a temperature increase it will produce the maximum amount of heat possible.

If you are planning on using grow lights in your greenhouse and you have a light timer, plug your light into the light timer. Set your timer to the correct time of day then set the on time to be around dusk and your off time to be 4 to 6 hours later. This will increase the available light to your plants by 15% to 25%. If you are in an area that is prone to long overcast periods you may wish to increase this time accordingly.

We recommend keeping the black manual vents closed when you are not in the greenhouse except during periods of exceptionally warm weather. On the hottest days this will increase air circulation. Also if you have a screen style door, lower the screen accordingly.

We hope these general tips are helpful in your greenhouse growing.

Thanks again and enjoy your new Sunglo!

Sunglo Greenhouses

INTRODUCTION

Your Sunglo Greenhouse is sold complete with all the components necessary for assembly without cutting or refitting. Included in the kit are all aluminum structural elements, acrylic glazing, door, air vents, exhaust fan, intake shutter and thermostat. All structural components are marked with a part number in a location that will not show after assembly.

We provide the rivet tool, rivets, drill bits, and screws needed to assemble your greenhouse. The drill bits provided are No. 30 size. Should you need more drill bits you can use a 1/8" diameter drill bit. Follow the assembly sequence steps carefully and do not install rivets until they are specified in the instruction manual and install them only in the locations shown. Rivets installed too early may cause assembly issues later on. Additional riveting for strength can be done at a later time. If you place a rivet wrong and need to remove it, use the same drill bit to drill the rivet out of the hole. Only use the long rivets as recommended.

In addition to a DVD player here is a list of tools to have during the assembly:

1. Tape measure and pencil.
2. Electric hand drill or quality battery hand drill and 5/16" drill bit. (For door latch and weep holes)
3. Framing level 4' or longer for foundation and 9" torpedo level for greenhouse assembly.
4. Framing square. (For foundation assembly and lower "U" rail attachment)
5. Rubber mallet or dead blow hammer.
6. Caulking gun with 2 tubes of silicone caulk.
7. 10" Channel lock pliers.
8. Standard Phillips and flat tip screwdrivers.
9. Blue "painters" masking tape. (3/4 or 1 inch)
10. Small vise grips. (At least 2 needle nose, more if possible)
11. Spray bottle with soapy water. (For lubricant during lower wall installation)

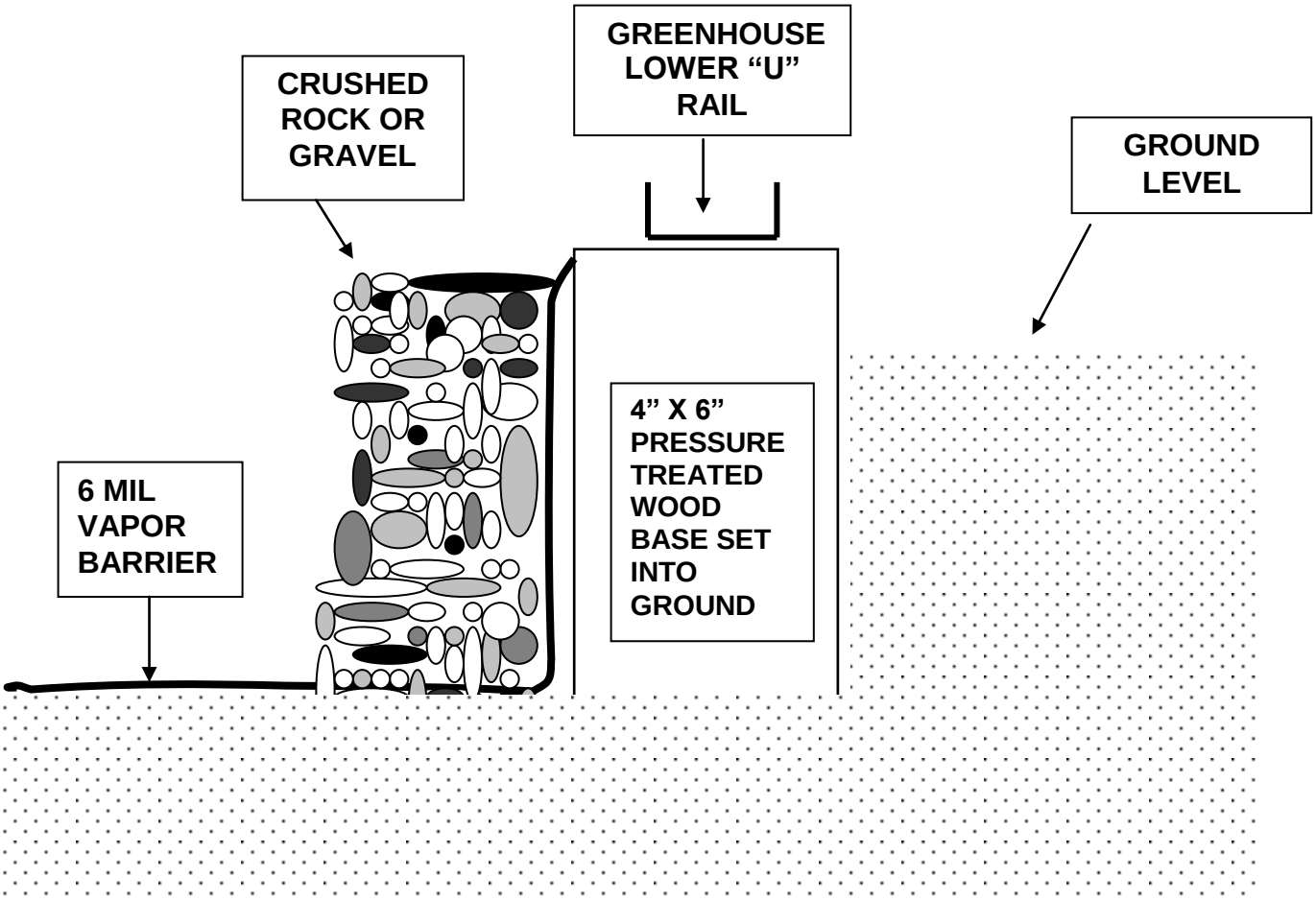
PLEASE PERFORM A COMPLETE INVENTORY OF YOUR KIT BY MATCHING ALL THE PARTS TO THE INCLUDED PACKING LIST BEFORE BEGINNING ASSEMBLY OF YOUR NEW SUNGLO GREENHOUSE. IF YOU DISCOVER ANY ITEM MISSING , PLEASE CALL US AT OUR TOLL FREE NUMBER 1-800-647-0606

PLEASE STUDY THE INSTALLATION DVD AND READ THROUGH THE INSTRUCTION MANUAL BEFORE BEGINNING ASSEMBLY OF YOUR SUNGLO GREENHOUSE. THIS WILL PREPARE YOU FOR THE INDIVIDUAL STEPS AND ALLOW YOU TO PROPERLY ESTIMATE THE TIME NEEDED FOR ASSEMBLY. PLAN YOUR DAY SO YOU HAVE TIME TO INSTALL AT MINIMUM THE LOWER WALLS, GABLE ENDS, RIDGE HEADER AND TRUSSES. THIS WILL ASSURE A STABLE ASSEMBLY IF YOU ARE GOING TO LEAVE THE GREENHOUSE PARTIALLY FINISHED OVERNIGHT. HIGH WINDS COULD DAMAGE A PARTIALLY BUILT GREENHOUSE.

Note: Due to the brittle nature of the glazing material at cold temperatures it is not recommended to assemble the greenhouse when temperatures are near or below freezing.

FOUNDATION GUIDE

TYPICAL 4” X 6” PRESSURE TREATED WOOD FOUNDATION BASE SET IN GROUND



Your choice of your foundation material is dependent upon physical location, intended use and local building codes. Whatever the foundation type used, it must be plumb, square, solid, and level.

Our greenhouses are considered non-habitable shed structures and do not normally require a building permit. However we recommend checking with your city or county building department to see if a permit is required.

Drainage, utilities, insulation and flooring should be considered prior to the installation of the foundation and greenhouse.

FOOTINGS: Sunglo greenhouses are typically installed on a perimeter base frame made of 4” x 6” pressure treated lumber set on its edge and buried into the ground with 1/2" remaining above ground level. In some instances 4” x 4” or even 2” x 4” lumber may be used. If you prefer not to use pressure

treated wood we recommend a high quality Western Red Cedar or Redwood. In colder climates, a concrete footing may be the best alternative due to frost heaves. In any case **a wood plate must be used as a primary attachment for your greenhouse**. The greenhouse is specifically designed to fasten to a wood surface.

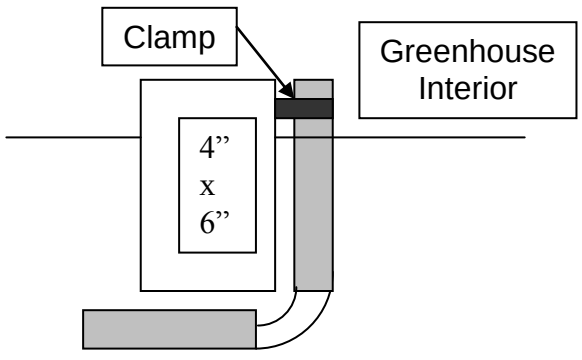
KNEE WALL: The height of your greenhouse can be increased by constructing a knee or pony wall. To accommodate for the knee wall Sunglo can provide a custom door drop extension. Door drop extensions must be ordered directly from Sunglo before greenhouse shipment to avoid additional shipping fees.

INSULATION: Insulating the foundation can help to reduce the energy requirements of your new greenhouse. This is especially important when outside temperatures are below freezing in the winter. Digging a deeper foundation trench below the frost line approximately 12” wide and back filling the trench with solid insulation or gravel to bring the wood foundation height slightly above grade level will give you superior ground freeze protection. You might also want to line the outside of your wood foundation base with heavy plastic. Place the plastic on the outside of the foundation wood to prevent water from entering. Also line the interior of the greenhouse with heavy plastic to act as a vapor barrier. An option would be to use ridged polystyrene insulation installed on the outside of the footings and dug down below the frost line. Home improvement centers or lumberyards carry “pink” or “blue” board in various thicknesses specifically for this purpose.

DRAINS: A drain should be considered for removing excess water from outside the greenhouse. Rain will roll off the roof of the greenhouse and accumulate at the base. By making your foundation trench slightly wider than your wood you can make a French drain on the outside perimeter of the base. If you have clay or hard pan soil you may consider using perforated pipe as a drain to channel water away from the greenhouse foundation. If installation is on a deck, you need to consider a solid floor with a low area for drainage.

FLOORING: A concrete pad is not necessary for the greenhouse installation. For a more natural look, stepping stones, paving stones or even crushed gravel rock will work well.

UTILITIES: Sunglo greenhouses are equipped with an automatic ventilation system. This requires a 110 volt 15 amp service. Other electric accessories in the greenhouse, such as a heater, may require a different level of service. Sunglo recommends a certified electrician handle the electrical connections. It is best to have your electrical service riser be centered on the inside of the back gable end of the greenhouse.

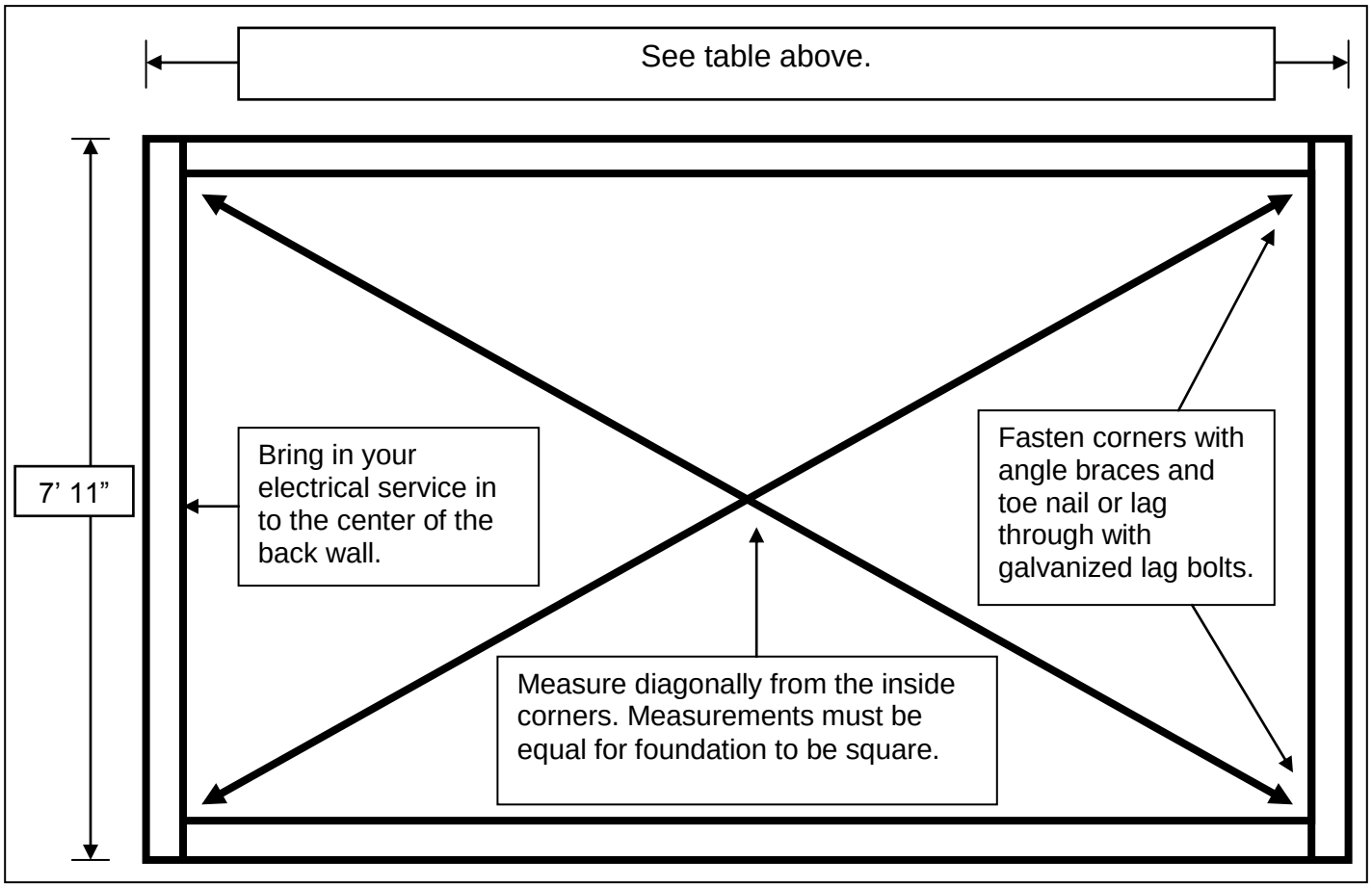


Electrical Service

3/4” or 1” PVC conduit with a 90 degree sweep glued and set below the foundation plate centered on the inside rear wall. Set the riser slightly higher than the foundation plate until the greenhouse is assembled. Then pull your service wire & add the appropriate height riser to the conduit to attach to your thermostat or power panel.

FOUNDATION REQUIREMENTS: Your foundation plate must be level and square. The dimensions listed below are measured from outside to outside of the top wood plates. These dimensions allow for a 1 inch border around the greenhouse.

MODEL	WIDTH	LENGTH
1000A	7' 11"	5' 2"
1000B	7' 11"	7' 8"
1000C	7' 11"	10' 2"
1000D	7' 11"	12' 8"
1000E	7' 11"	15' 2"
1000F	7' 11"	17' 8"
1000G	7' 11"	20' 2"



GREENHOUSE MAINTENANCE: The glazing material allows a very high amount of sunlight to enter the greenhouse, but must be kept clean to maintain maximum efficiency. At a minimum, wash your greenhouse every spring and fall. If mold or mildew becomes a problem, a solution of 2 ounces of laundry bleach per gallon of warm water can be used. The aluminum parts need no care during normal use. If you are close to the ocean and salt air is prevalent, a coating of automobile wax once a year will keep the aluminum components bright and reduce pitting.

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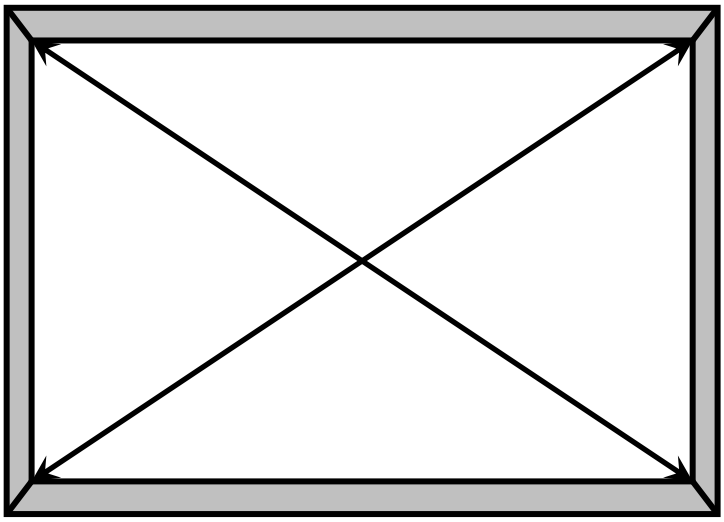
Note: This manual is intended to be used in conjunction with the Sunglo Freestanding Greenhouse Assembly DVD included with your greenhouse kit. Sunglo highly recommends watching the video and reading the manual in their entirety before beginning assembly.

<u>SECTION 1</u>: LOWER "U" RAILS / CORNER and WALL POSTS

SEQ	PART #	DESCRIPTION	AMOUNT
1	SEE PACK LIST	U RAILS (LENGTH SIDES)	2
2	0093	93" U RAILS (WIDTH SIDES)	2
3	#8	FOUNDATION SCREWS	SEE PACK LIST
4	1001-1	48" CORNER POSTS	4
5	1002-1	48" WALL POSTS	SEE PACK LIST
6	1002-2	77" DOOR POSTS - 22° CUT	2
7	1021	SHORT RIVETS	SEE PACK LIST

Diagram 1



Be certain to recheck your foundation for level and square before beginning assembly. Your lower "U" rails are miter cut and come with a plastic boot pre-attached. Place the rails on your base with the miter ends matching. (Sequence 1, 2) With an assistant hold the rails with the miter ends together then check for square by measuring across the diagonal corner points of the rails as shown in **Diagram 1**. Be consistent in the placement of your measuring tape. Both diagonal measurements must be equal in order to be square. Once certain you have the rails "square" and centered on your foundation base mark the location of the lower "U" rails on your wood base with a pencil on the inside and outside corner edges.

It is recommended to place a bead of silicone caulk (not provided) between the plastic lower "U" rail boots and the foundation plate to provide a weatherproof seal.

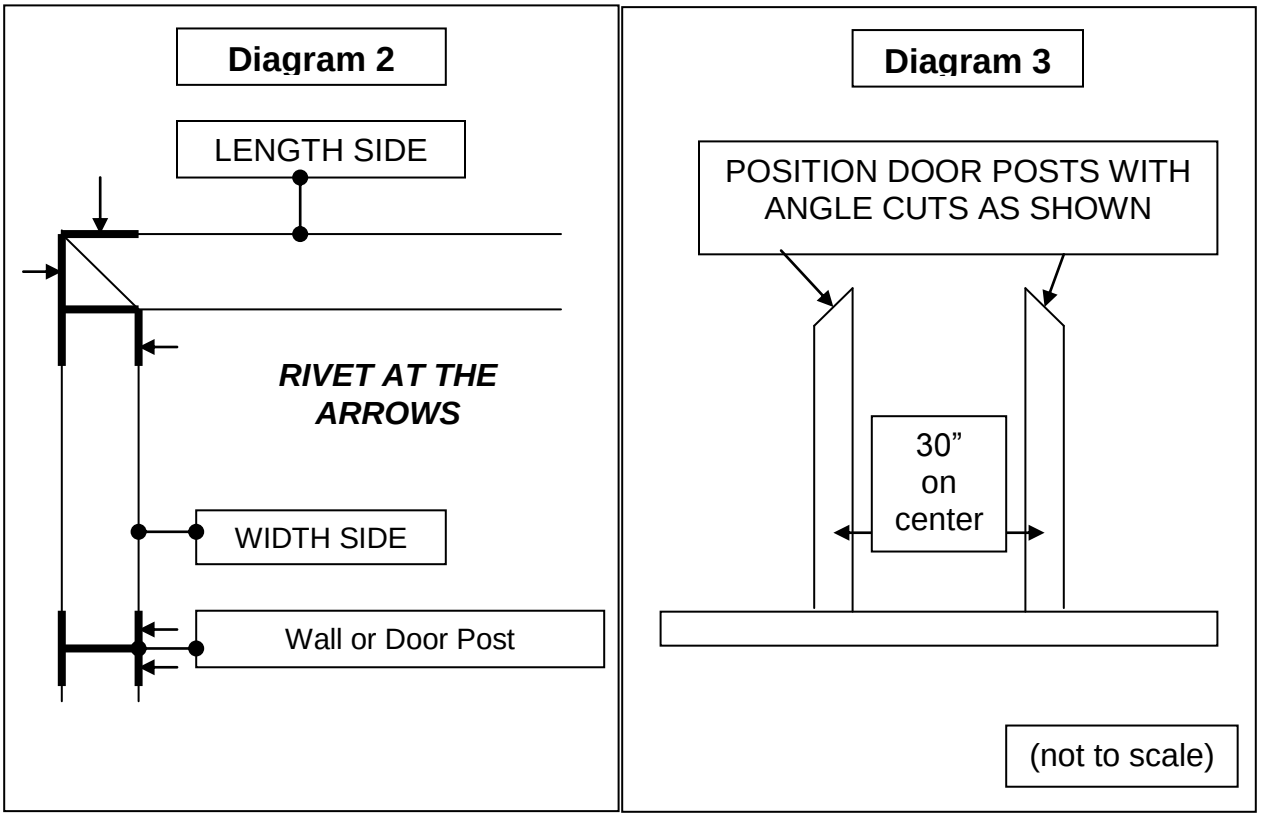
Turn the rails upside down and run a 1/4" thick bead of clear 100% silicon caulking compound to the center of the bottom flat surface of the lower rails. Carefully turn over the rails and position them to your corner pencil marks. Drill a pilot hole with a #30 drill bit through the rails 2" from each corner and fasten the rails to the base with the #8 Phillips foundation screws (Sequence 3). Re-check the rails for square before placing any more screws. If not square remove the screws from one or more corners and slide the lower "U" rails maintaining your corner miters until you are square. Once re-squared allow time for the caulking to set before installing the corner posts.

Corner posts (Sequence 4) are set into the lower "U" rail positioned with the wide flat outer side facing the width (gable) end and the short flat outer side surface facing out toward the length of the greenhouse. Drill and rivet the corner posts to the lower "U" rail using long rivets in 3 locations. The orientation of the corner posts and the rivet locations are shown in **Diagram 2.**

Once the corner posts are installed place your tape measure inside the lower "U" rail and from the inside corner of the corner post place a mark every 30" for the wall/door posts. Also place a mark starting from your initial corner screws every 16" for the remainder of your foundation screws. Be

certain not to place a foundation screw at any 30” marks, as this will interfere with the posts. If you do not finish with a 30” measurement from your last wall post to the opposite corner post you have a corner post in backwards. At the 16” marks pilot drill through the lower “U” rail and set your foundation screws. Place the wall posts over the 30” mark, tap the post into the lower “U” rail with your rubber mallet and rivet in place from the inside using two short rivets (Sequence 5).

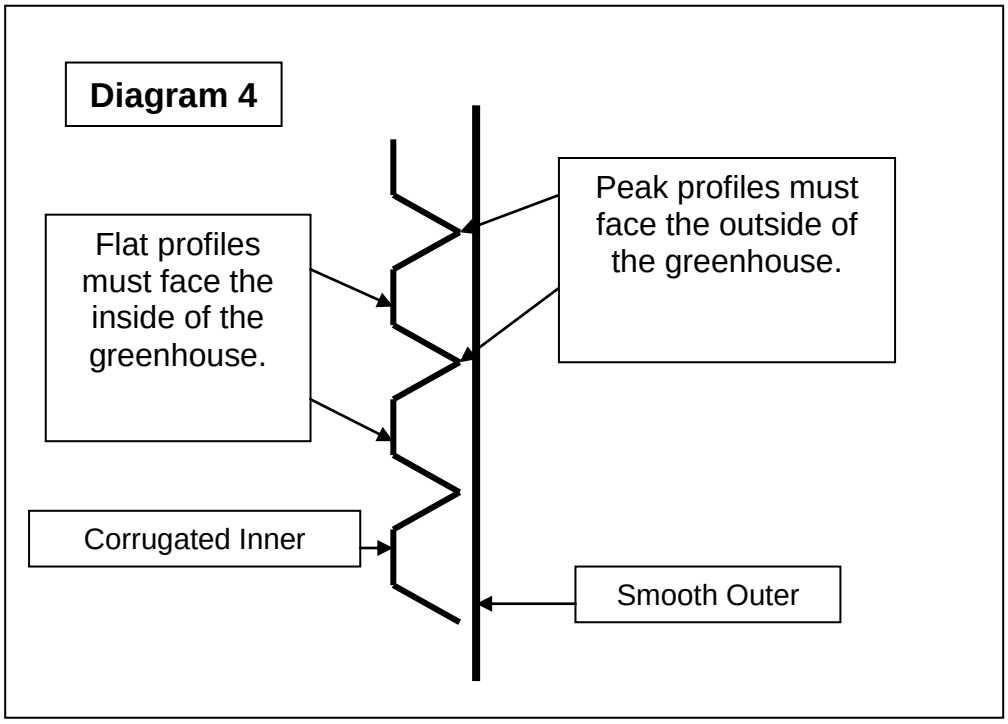
Position the doorposts on a width side of the greenhouse and over a 30” mark. Make sure the cut angle end of the doorpost is facing up and corresponds to the slope of the roof as shown in **Diagram 3** (Sequence 6).



SECTION 2: INSTALLING THE LOWER WALL SECTIONS

SEQ	PART #	DESCRIPTION	AMOUNT
8	1029	WALL OUTERS	SEE PACK LIST
9	1069	PANEL SUPPORT	2 PER WALL SECTION
10	1030	WALL INNERS	SEE PACK LIST

NOTE: During the lower wall assembly it may be helpful to spray the inner channel of the wall post and the inside of the outer wall panel with a light soap and water solution to ease the insertion of the inner corrugated panel. The solution can be made by adding a couple of drops of dish soap to a small spray bottle of warm water.



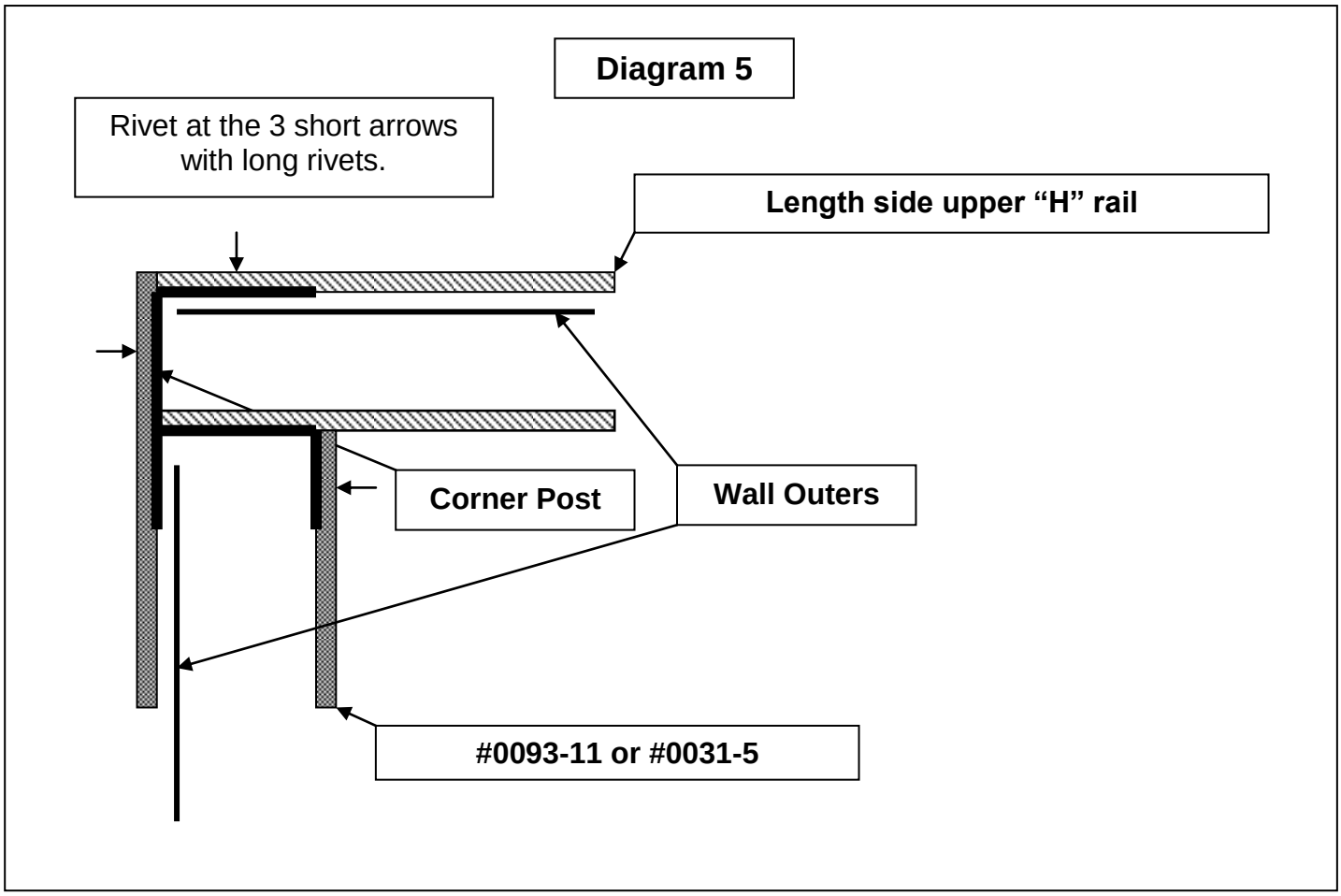
Start from one corner post and work along one of the length sides of the greenhouse. Peel the blue protective film from the wall outer and slide the wall outer into the opening between the corner and wall post. Center the outer wall in this opening and secure the outer wall panel into the lower “U” rail by squeezing in two aluminum panel supports from the inside of the greenhouse (Sequence 8 and 9). The 12” aluminum panel supports should be positioned approximately 2 inches from the wall/corner posts. When installing the panel supports, be sure the flat side is facing down toward the channels they are resting in. Please refer to section 14.

Next install the corrugated inner panel between the corner and wall post (Sequence 10). Be sure the peaks of the inner panel face towards the outside of the greenhouse as shown in **Diagram 4**. Make sure the inner and outer walls are not higher than the corner or wall posts. Repeat this process working your way around the greenhouse until you have all the wall sections on the two length sides and the back gable end of the greenhouse filled with wall outers and wall inners.

During this process it can be helpful to use the blue “painters” tape to temporarily hold the outer walls to the corner and wall posts prior to installation of the upper “H” rails. Place a 6” to 8” piece of tape about 2” down from the top on the outside of each outer wall connecting the wall outer to the wall posts and/or corner posts.

SEQ	PART #	DESCRIPTION	AMOUNT
11	SEE PACK LIST	UPPER H RAILS (LENGTH SIDES)	2
12	0093-11	93" UPPER H RAIL (REAR)	1

Position a length side upper “H” rail (Sequence 11) over a corner post as shown in **Diagram 5**. The outside edge of the upper “H” rail will cover the inner and outer wall panels and the outside surface of the corner post. The inside edge of the upper “H” rail will cover the inner and outer wall panels and rest against the inside of the corner post. With the “H” rail in position over a corner post lower the upper “H” rail over the wall panels and wall posts to the opposite end corner post. With your assistant on the inside of the greenhouse carefully work the Heavy “H” rail over the wall outers and inners and over the wall posts until you have the upper “H” rail in place from corner to corner. Before riveting the “H” rail to the corner posts check the corner posts for plumb with your torpedo level. With the corner post plumb, rivet the length side upper “H” rail to both corner posts as shown in **Diagram 5.** Do not rivet the wall posts to the heavy “H” rails at this time. After completing both length side upper “H” rails install the back wall upper “H” rail (Sequence 12).The #0093-11 has a shaved flange at both ends which will cover the outside face of the corner posts. Drill and rivet the back wall upper “H” rail in place as shown in **Diagram 5.**



SEQ	PART #	DESCRIPTION	AMOUNT
13	MIT1200	INTAKE SHUTTER & MOTOR	1
14	1002-6	SHUTTER POST	1
15	1058	15 1/8” OUTER FILLER PANEL FOR FAN/SHUTTER	1
16	1069	PANEL SUPPORT	1
17	1056	LOWER INNER FILLER PANEL FOR 12” FAN	1
18	1003-11	SLOTTED HEAVY H RAIL	1
19	1277-12*	32 5/8” x 30 “OUTER FILLER PANEL FOR SHUTTER	1
20	1069	PANEL SUPPORT	2
21	1276-12*	32 5/8” x 30” INNER FILLER PANEL FOR SHUTTER	1
22	0031-5	31 1/2" UPPER HEAVY H RAIL	1

* -12 matches with a 12” Shutter. (For larger shutters the last two digits would change according to the shutter size.)

The front wall (door gable end) lower wall sections are next. Place the intake shutter and motor (Sequence 13) on either side of the door opening. Decide now which way the door will swing and place the fresh air shutter on the side the door will not cover when open. Place the intake shutter in the lower “U” rail against the inside of the corner post. Make sure the intake shutter will open to the outside of the greenhouse. Next place the shutter post (Sequence 14) next to the other side of the shutter and tap the post into the lower “U” rail. Hold the shutter post tight against the intake shutter to allow adequate space for the outer and inner shutter filler panels (Sequence 15, 16, 17). Install the outer and inner side filler panels. Cap off the shutter/shutter post and outer and inner shutter side fillers with a #1003-11 (Sequence 18). Do not rivet yet. Next install the inner and outer upper shutter fillers on top of the 30” slotted “H” rail (Sequence 19, 20, 21). The #0031-5 (31 1/2” upper “H” rail with 1 1/2” flange) is used to cap off the assembly (Sequence 22). The 1 1/2” shaved flange end corresponds with the corner posts as shown in **Diagram 5.** The door post corresponds with the two slots in the opposite end of the rail. Check the corner post for plumb, then drill and rivet the #0031-5 to the corner post. Check again for level and the door post for plumb and rivet the #0031-5 to the doorpost. Use **short rivets**.

SEQ	PART #	DESCRIPTION	AMOUNT
23	1029	WALL OUTER PANEL	1
24	1069	PANEL SUPPORT	2 PER SECTION
25	1030	WALL INNER PANEL	1
26	0031-5	31 1/2" UPPER HEAVY H RAIL	1

Insert your last wall inners and outers in the remaining wall section on the opposite side of the door and attach the second #0031-5 as before (Sequence 23, 24, 25, 26).

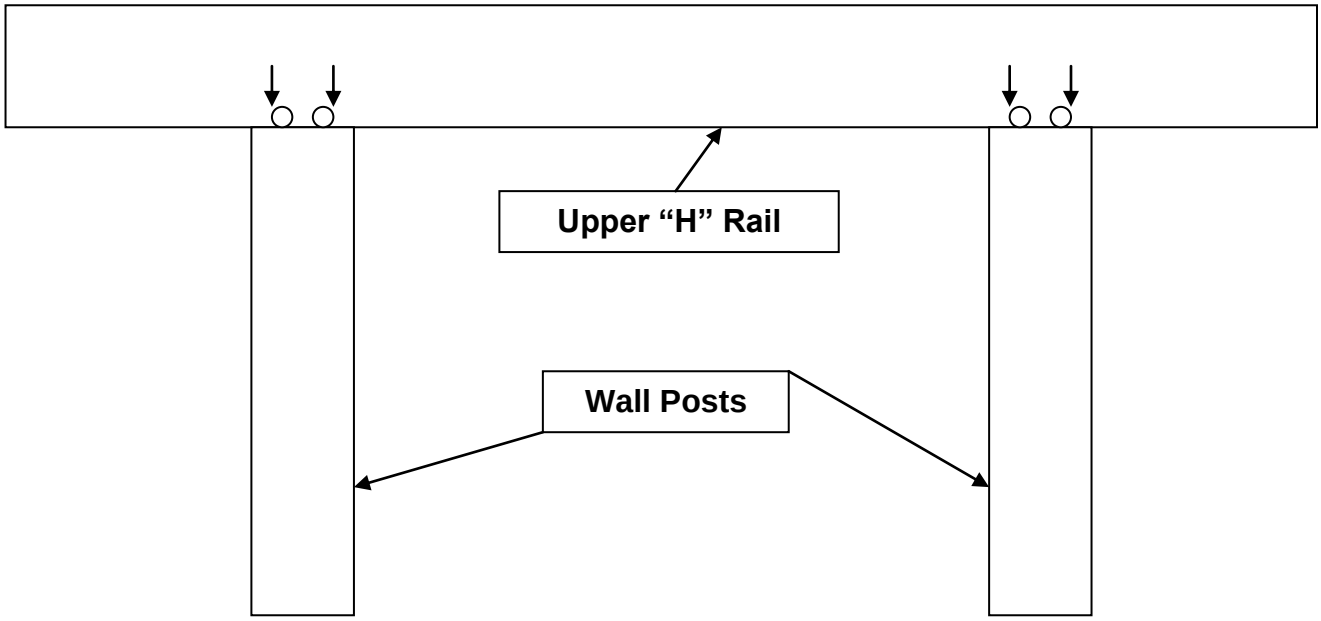
Go back and check the shutter post and rail assembly for plumb and level. Adjust if needed. Rivet the assembly using short rivets. Pull the intake shutter towards the outside or have your assistant push from the inside then drill and rivet the plastic frame to the aluminum frame from the outside using **long rivets**.

You can now drill and rivet the wall posts to the upper “H” rails. From the inside of the greenhouse hold your torpedo level against the wall posts vertically and plumb the posts to the upper “H” rails. A gentle tap with the rubber mallet should help. Hold the upper “H” rail down over each wall post and

using short rivets, rivet all the wall posts to the upper “H” rails as shown in **Diagram 6**. Use **short rivets**.

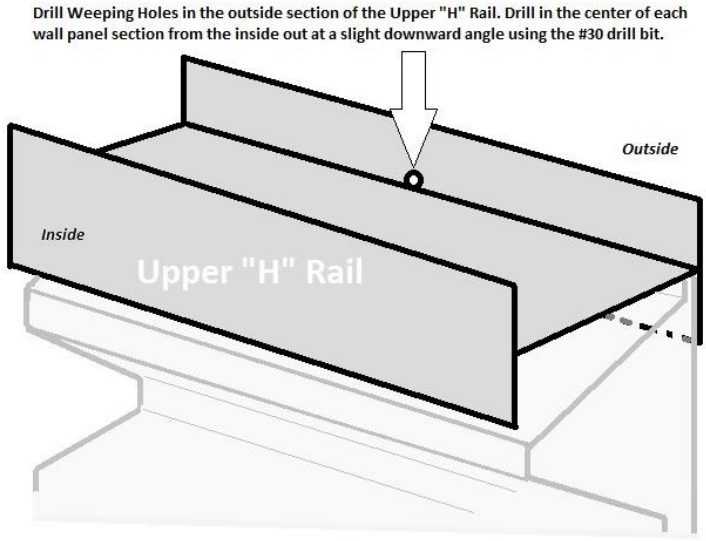
Diagram 6

Plumb the wall posts then hold the upper “H” rail down over the post and rivet the wall posts to the upper “H” rails with 2 short rivets from the inside of the greenhouse.



Weeping Holes

Now is a perfect time to drill the weeping holes in the outside section of the Upper “H” Rails. The purpose of the holes is to drain rain water that would otherwise accumulate in the “H” rail. Drill one hole in the middle of each wall panel section, from the inside out at a slightly downward angle. Use the **#30 drill bit** or a larger one up to 1/4”. The first hole is about 15” from each corner post. The other holes are spaced about 30” apart.



SECTION 3: UPPER BACK GABLE END WALL ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
27	1002-4	22 DEGREE 28 7/8" UPPER WALL POST	2
28	1057	LOWER OUTER PANEL FOR 12” FAN	1
29	1069	PANEL SUPPORT	2
30	1056	LOWER INNER PANEL FOR 12” FAN	1
31	1003-11	30” SLOTTED HEAVY H RAIL	1
32	SFT1200	EXHAUST FAN	1
33	1002-6	FAN POST	1
34	1058	15 1/8” OUTER FILLER PANEL FOR FAN/SHUTTER	1
35	1069	PANEL SUPPORT	2
36	1059	15 1/8” INNER FILLER PANEL FOR FAN/SHUTTER	1
37	1003-11	30" H RAIL	1

Working on the back gable end of the greenhouse place your measuring tape inside the back wall upper “H” rail against the inside edge of a corner post. You should have 90” between these inside edges. Mark 30” and 60” pencil lines for the upper wall posts. Rivet the #1002-4 upper wall posts (Sequence 27) from inside and outside of the greenhouse as shown in **Diagram 7**. Make sure the angle tops correspond with the slope of the roof. The upper wall posts should be aligned with the lower wall posts.

Slide the lower fan filler outer between the upper wall posts and secure with 2 panel supports. Slide in the lower fan filler inner (Sequence 28, 29, 30). Cap the lower fan fillers off with a #1003-11 (Sequence 31). Check for level and rivet the bottom left and bottom right corners only from the inside. Place your exhaust fan on top of the #1003-11 and against the upper wall post (Sequence 32). The exhaust fan should be placed into the side of the opening that is farthest away from the corner where the intake shutter was placed. Make sure the fan opens to the outside then tap in the fan post next to the fan holding the fan tightly to the upper wall post (Sequence 33). Slide in the side fan filler outer and inner panels then cap off the assembly with a #1003-11 (Sequence 34, 35, 36, 37). Check the vertical posts for plumb and the horizontal rails for level then rivet the entire assembly in place from the inside of the greenhouse using **short rivets** as shown in **Diagram 7**. From the outside pull the fan towards you or have your assistant push from the inside and secure the fan to the vertical posts using **long rivets**.

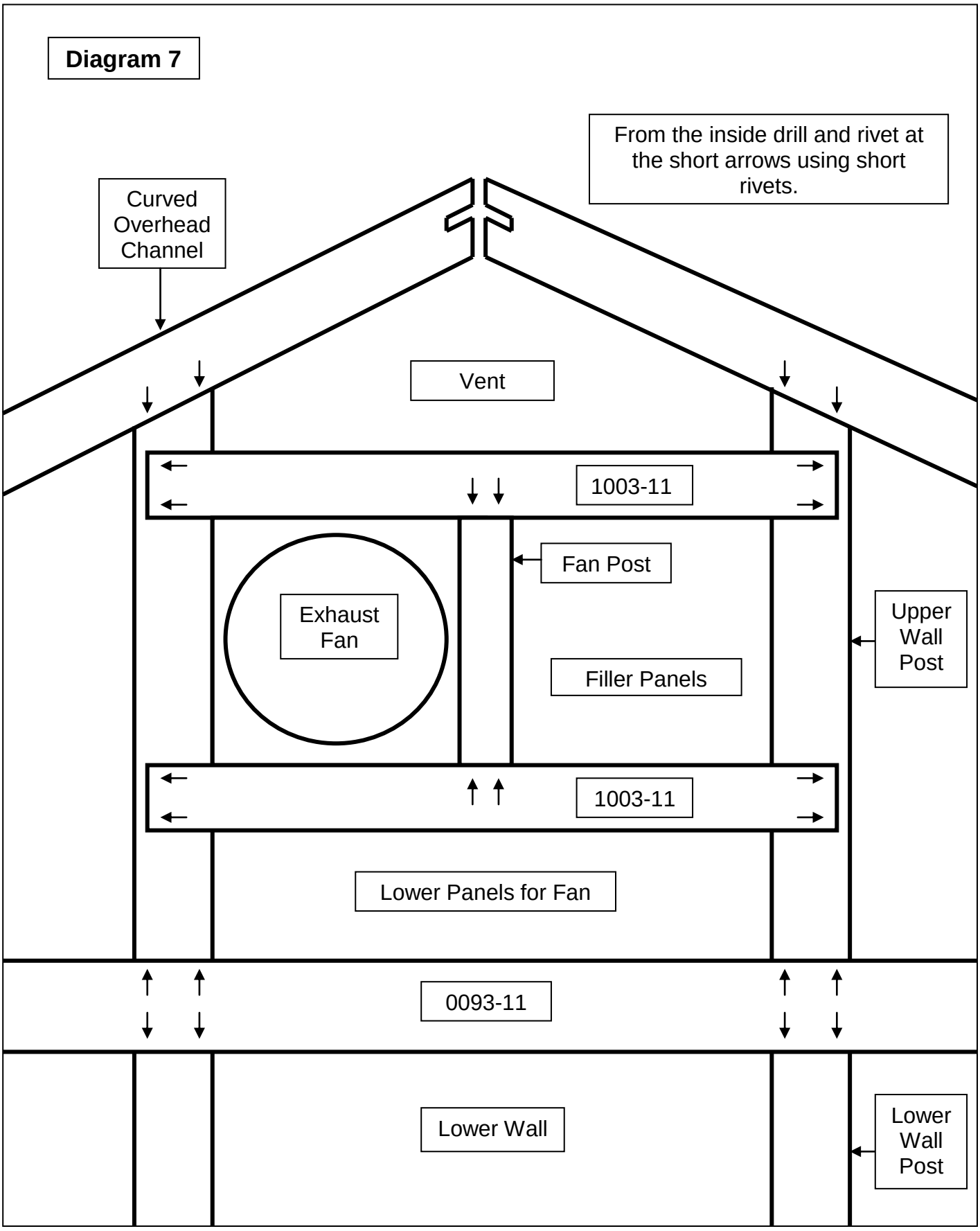
SEQ	PART #	DESCRIPTION	AMOUNT
38	1049	1000 VENT FRAME	1

Position the manual vent frame in the #1003-11 so it will allow the door to open outward (Sequence 38). The vent frame angled slope should be flush even to the top of the upper wall posts. The manual vent door will be installed at a later stage.

SEQ	PART #	DESCRIPTION	AMOUNT
39	1015	22 DEGREE CORNER OUTER	2
40	1069	PANEL SUPPORT	4
41	1042	R.H. 22 DEGREE CORNER INNER	1
42	1043	L.H. 22 DEGREE CORNER INNER	1

Next insert the outer corner panels on both sides of the back upper wall assembly and secure with panel supports (Sequence 39, 40). There is a definite left hand curved corner inner and a right hand curved corner inner (Sequence 41, 42). They can be differentiated by ensuring that the peak profiles of the corrugation are facing towards the outside of the greenhouse as shown in **Diagram 4**.

Diagram 7

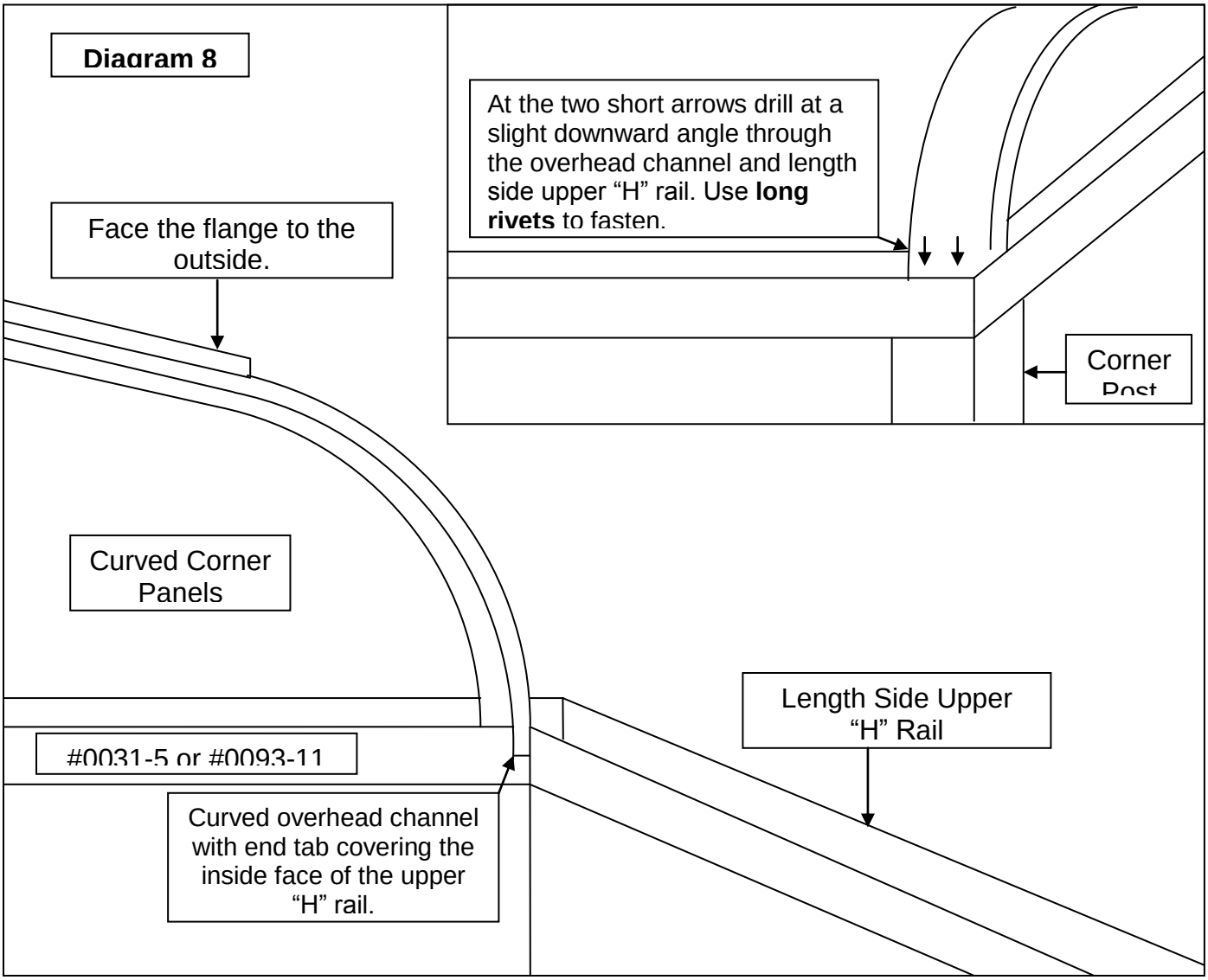

From the inside drill and rivet at the short arrows using short rivets.
Curved Overhead Channel
Vent
1003-11
Fan Post
Exhaust Fan
Upper Wall Post
Filler Panels
1003-11
Lower Panels for Fan
0093-11
Lower Wall
Lower Wall Post

SEQ	PART #	DESCRIPTION	AMOUNT
43	1003-1	CURVED OVERHEAD CHANNELS L.H.	2
43	1003-2	CURVED OVERHEAD CHANNELS R.H.	2

In your kit you will have two left hand and two right hand curved overhead channels. They can be differentiated by the vertical flange halfway up on the straight portion of the channel. When the channel is installed the flange should be on the outermost edge of the channel and face the outside of the greenhouse. (Sequence 43)

With the curved corner outer and inner panels in place, install the curved overhead channels as shown in **Diagram 8** (Sequence 44). Place the channel with the curved end down. The slots in the end of the curved overhead channels interlock with the inside edge of the length side upper “H” rails. The inside tab of the overhead channel rests over the inside face of the #0093-11 or #0031-5 gable end upper “H” rails.

From the outside drill through the overhead channels and length side upper “H” rails at a slight downward angle and secure with two long rivets. With your assistant work the inner and outer curved corner panels into the curved overhead channel.

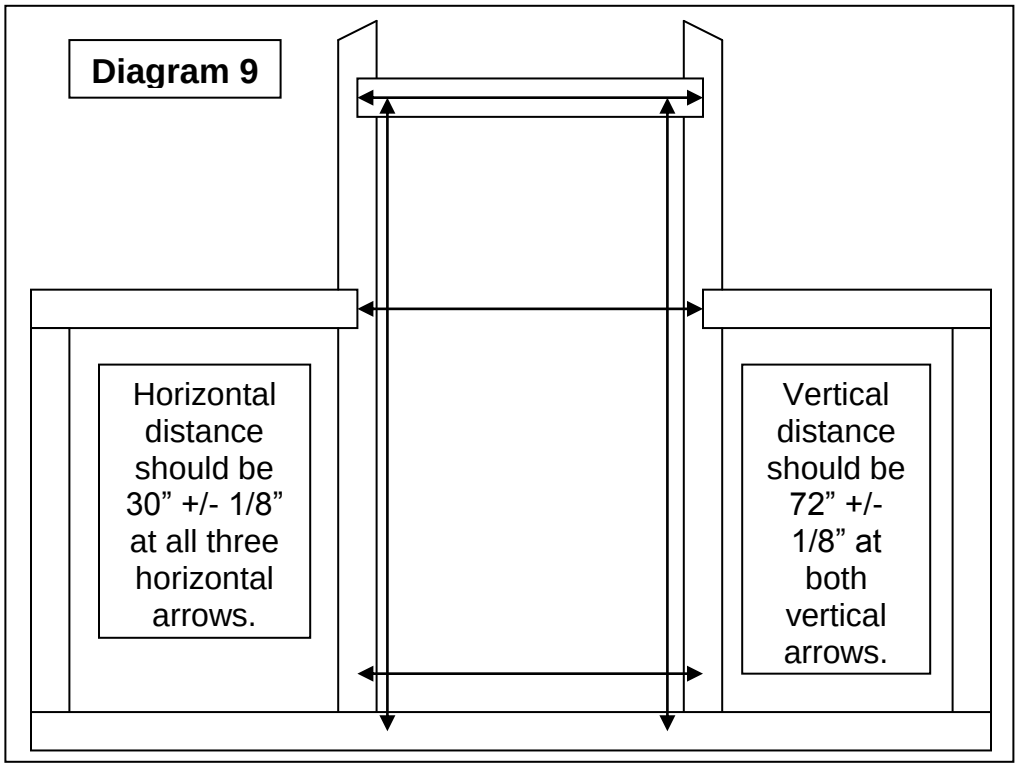


Using the rubber mallet, tap the curved overhead channel down just slightly, ***not all the way***, over the upper wall post. Repeat on the other side. You should now have both curved overhead channels a couple of inches apart over the peak of the vent frame. With your rubber mallet tap the channels down and at a slight angle over the top of the upper wall posts until the left hand and right hand channels are even in height and there is a 1/4" vertical gap between them as shown in **Diagram 7**. Tap up against the flange bottom to help close the gap at the top. Check the upper wall posts for plumb then rivet to the curved overhead channels with two short rivets from the inside of the greenhouse.

SECTION 4: UPPER FRONT WALL ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
44	1015	22 DEGREE CORNER OUTER	2
45	1042	R.H. 22 DEGREE CORNER PANEL	1
46	1043	L.H. 22 DEGREE CORNER PANEL	1
47	1003-1	CURVED OVERHEAD CHANNELS L.H.	1
47	1003-2	CURVED OVERHEAD CHANNELS R.H.	1
48	1049	1000 VENT FRAME	1
49	1003-11	30" SLOTTED HEAVY H RAIL	1

The assembly of the upper front wall assembly is virtually the same as the upper back wall assembly. The inner and outer curved corner panels and curved overhead channels are installed as a mirror image of those in the back wall (Sequence 44, 45, 46, 47).



It is important to maintain plumb with the doorposts to later ease installation of the door. Measure horizontally the distance between the inside of the door posts at 3 points as shown in **Diagram 9**. All measurements should be 30" +/- 1/8". Once the curved overhead channels are in place and the door posts are plumb, fasten them using two short rivets from the inside of the greenhouse.

Next, slide the second manual vent frame (Sequence 48) into the opening between the door posts and tight underneath the curved overhead channels. Slide a #1003-11 (Sequence 49) under the vent frame, level the "H" rail with your torpedo level and clamp into place. Measure vertically the distance between the inside of the "U" rails and the inside of the #1003-11 as shown in **Diagram 9.** This measurement should be 72" +/- 1/8" on both sides of the doorway. Adjust as needed and then rivet the #1003-11 to the door posts from the inside on the top left and top right side only.

SECTION 5: RIDGE CHANNEL ATTACHMENT

SEQ	PART #	DESCRIPTION	AMOUNT
50	1004-*	RIDGE CHANNEL	1

*The Part # varies based on the total length of the greenhouse.

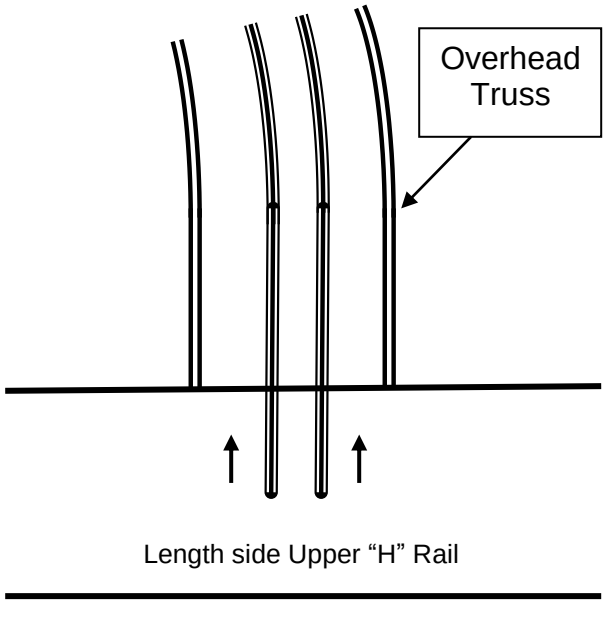
To attach the ridge channel (Sequence 50), position a ladder or step stool on the inside of the greenhouse near the back wall and a ladder in front of the door opening on the outside of the greenhouse. With your assistant slide the ridge channel into the open slots at the upper ends the curved overhead channels until the ends of the ridge are flush with the outside face of the curved overhead channels. The ridge channel will now rest on the slotted apex of the curved overhead channels. Standing on the ladder use your vise grips to clamp one side of the ridge channel to the inside lip of the curved overhead channel. Drill a hole through the lip of the curved overhead channel and the bottom of the ridge channel at a slight angle then rivet the ridge channel to the overhead curved channels using long rivets. Do this twice on each side at each end of the ridge channel.

SECTION 6: OVERHEAD TRUSSES AND HANGER BAR ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
51	1005-1	OVERHEAD TRUSS	SEE PACK LIST

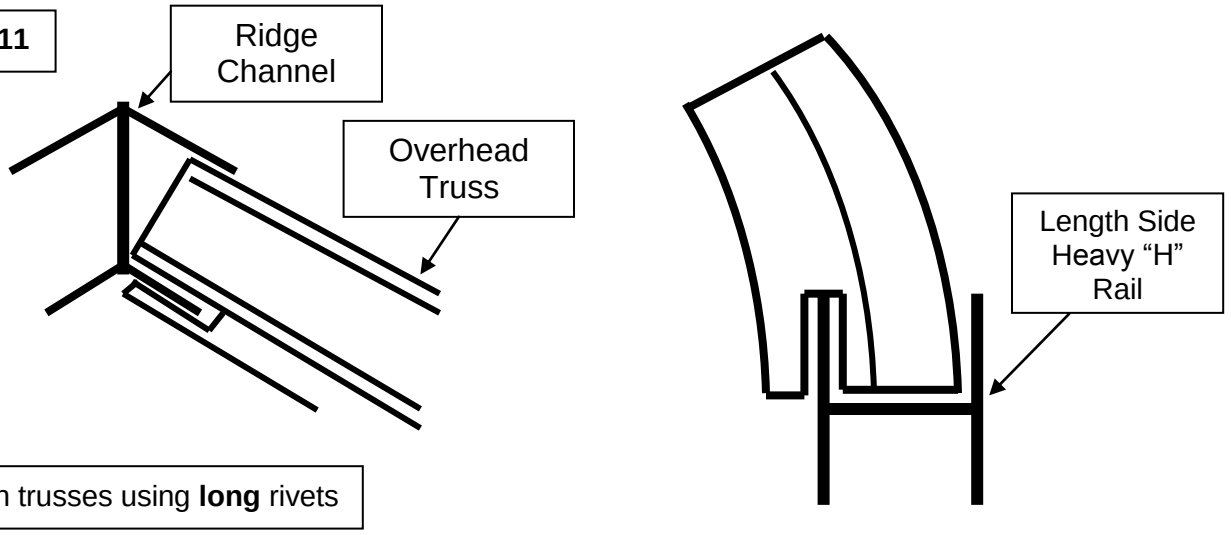
Note: Remember to **wear safety glasses** when drilling overhead trusses, ridge header, and hanger bars.

Diagram 10



The overhead trusses are positioned on 30” centers along the length upper “H” rails directly over the wall posts and corresponding 30” centers in the ridge channel. Starting from one end, measure out 30” centers for the entire length of the greenhouse on both length side upper “H” rails and both inside verticals of the ridge channel. Insert an overhead truss into the “H” rail and ridge channel at one of these marks as shown in **Diagram 11** (Sequence 51). The 2 flanges on the underside of the trusses will cover the inside surface of the upper “H” rails. Drill and rivet the truss to the ridge channel and the upper “H” rails using long rivets as shown in **Diagram 10**. Repeat until all trusses are riveted in place.

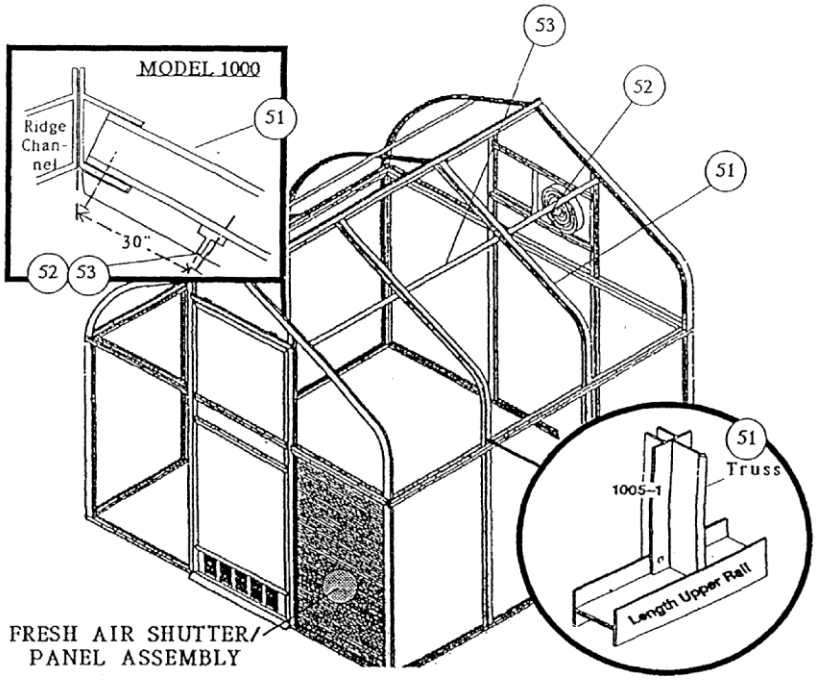
Diagram 11



SEQ	PART #	DESCRIPTION	AMOUNT
52	1806-12	END WALL HANGER BARS	4
53	1806-11	CENTER STRAIGHT CUT HANGER BARS	SEE PACK LIST

Note: Parts labeled 1006 (BENCH T's) can easily be mistaken for those labeled 1806 (HANGER BARS). Please be certain to check the part number of the hanger bars before riveting them into place since they are slightly shorter in length than the bench T's.

Diagram 12



Hanger bars provide dimensional stability and strength. They also keep the overhead trusses on 30" centers. 1806 -12 hanger bars are installed between the overhead trusses and the curved overhead channels. 1806-11 hanger bars are installed between the trusses. The exact placement of the hanger bars along the length of the truss is not critical, but should be installed approximately 30 inches down from the ridge channel. From inside the greenhouse, measure and mark the overhead trusses and curved overhead channels at 30 inches from the ridge channel. Clamp and rivet the hanger bars to their marked locations as shown in **Diagram 12** (Sequence 52, 53).

SECTION 7: OVERHEAD ACRYLIC PANELS and PANEL LOCK ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
54	1032	1000 ROOF INNERS	SEE PACK LIST
55	1031	1000 ROOF OUTERS	SEE PACK LIST
56	1069	PANEL SUPPORTS	2 PER PANEL
57	1009-1	1000 PANEL LOCKS	SEE PACK LIST

Note: If your greenhouse is a model 1000E or larger (15 feet or more in length) please perform the support post assembly before installing the overhead panels. The support posts will prevent ridge channel sag and simplify the overhead panel and panel lock assembly. Please see Section 13: Support Post Assembly.

Please refer to **Diagram 13** during overhead panel and panel lock assembly. The following description assumes that the process will be carried out by two people. When completing this assembly with only one person please refer to the Sunglo Freestanding Greenhouse Assembly DVD.

Starting at the rear of the greenhouse and with your assistant on the inside of the greenhouse place an overhead roof inner panel in between the vertical flange of the curved overhead channel and the overhead truss so the ends of the panel are in the ridge channel and the upper “H” rail. Make sure the flat profiles of the corrugated overhead roof inner panel are facing towards the inside of the greenhouse as shown in **Diagram 4**. From the outside lay an overhead outer panel over the overhead inner panel. Have your assistant pull the bottom of the inner panel out of the upper “H” rail and slide it down a couple of inches allowing you room to slide the outer panel into the ridge channel. Position the outer panel evenly in between the truss and the curved overhead end. The upper edge of the outer panel should be tight to the inside peak of the ridge channel. From the inside push 2 panel supports into the ridge channel to secure the outer roof panel. Slide the inner overhead panel over top of the rivet heads and back into the ridge channel. From the outside slide the inner and outer roof panel into the upper “H” rail. Repeat this process for the adjacent roof section (Sequence 54, 55, 56).

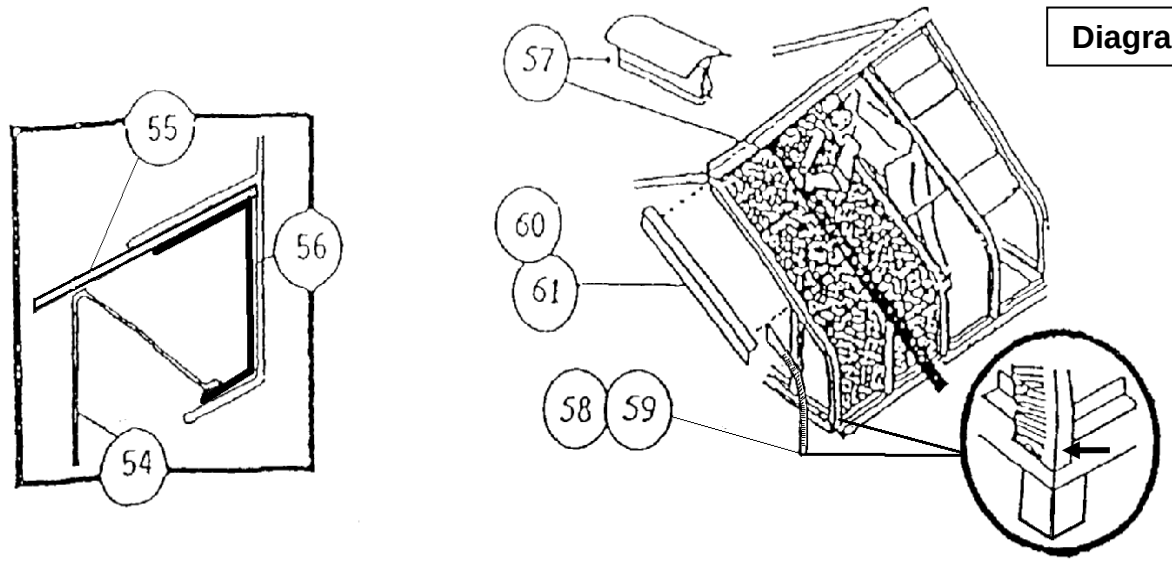
With 2 adjoining roof sections complete you can install a panel lock (Sequence 57). Panel locks have a lock rib in the center of the bottom surface that mates to the overhead truss. The lock ribs are shaved back at one end. The shaved portion will cover the outside surface of the upper “H” rail and the non-shaved portion slides up into the ridge channel.

With an assistant aiding from outside the greenhouse, place the ladder below the next adjacent open roof section. With the installer standing through the open roof section reach over the second completed roof section and place the panel lock even with the ridge channel. Be certain to center the lock rib over the corresponding male flange of the overhead truss and gently tap the panel lock down with a rubber mallet to mate approximately 6” of it with the truss. With the panel lock positioned straight out over the overhead truss have your assistant gently tap the shaved back end of the panel lock with the rubber mallet to slide it up underneath the ridge channel. You will need to press the outside edges of the panel lock firmly down to the roof so the panel lock can slide under the ridge channel. With the panel lock securely under the ridge channel continue tapping the panel lock down over the straight portion of the truss making sure the roof inner and roof outer have not changed position. Only secure the panel locks along the straight portion of the overhead trusses. The remaining portions will be secured later.

Continue this process until all roof sections on both sides of the greenhouse are completed. To finish securing the panel locks bend them down over the curved portion of the overhead truss. Have your assistant hold the roof panels down while gently tapping the remaining panel lock portions into place. When fully secured approximately 1” of the panel lock will cover the outer surface of the upper “H” rail.

Note: At this point all overhead roof outer panels should be secured by panel supports in the ridge channel. After completing installation of the overhead curved and straight trim the panel supports securing the lower edge of the overhead outer panels into the upper "H" rail can be installed as explained in Section 8.

Diagram 13



SECTION 8: OUTSIDE ROOF TRIM PIECES INSTALLATION

SEQ	PART #	DESCRIPTION	AMOUNT
58	1014-1	L.H. OVERHEAD CURVED TRIM	2
59	1014-2	R.H. OVERHEAD CURVED TRIM	2
60	1051-1	L.H. STRAIGHT TRIM	2
61	1051-2	R.H. STRAIGHT TRIM	2
62	1069	PANEL SUPPORTS	2 PER PANEL

To complete the roof assembly, attach the overhead curved trim and straight trim to each gable end of the greenhouse as shown in **Diagram 13**.

First install the overhead curved trim on all four corners of the greenhouse (Sequence 58, 59). The corrugated end of the trim piece corresponds with the corner of the greenhouse where the upper "H" rails meet. Starting at the bottom place the overhead curved trim over the heavy "H" rails, the roof inner and outer, and the curved overhead channel. The curved trim will cover down to approximately 1 to 1 1/2 inches of the outer surface of the heavy "H" rails.

After determining the appropriate position of the curved trim, drill and rivet it into place at the short arrow depicted in **Diagram 13.** Using 10" channel lock pliers, position the pliers' teeth over the bottom edge of the curved overhead channel and the uppermost surface of the curved trim. Beginning 6" from the bottom and working around the curve gently squeeze the two together with the pliers till the outside edges of both are flush. It is best to clamp the entire curved trim piece to the outermost surface of the curved overhead channel using small needle nose vise grips before drilling and riveting to make any needed adjustments easier.

The corrugated curved trim should be riveted to the vertical outermost surface of the curved overhead channel using long rivets every 6". The straight portion of the curved trim should lie flat and snug

against the overhead roof outer. Only 2 rivets are needed beyond the corrugated section of the overhead curved trim.

The left and right hand straight trim pieces should be installed simultaneously to insure proper placement (Sequence 60, 61). Slide both pieces of straight trim in between the ridge channel and the overhead roof outer on their corresponding sides of the peak until they meet. Using a rubber mallet gently tap the straight trim into the ridge channel until it is snug against the end of the ridge channel and outermost surface of the curved overhead channel. Together they should fully cover the outside edge of the ridge channel profile. Starting from the top rivet the straight trim pieces to the curved overhead channel every 6" using long rivets.

SEQ	PART #	DESCRIPTION	AMOUNT
62	1069	PANEL SUPPORTS	2 PER PANEL

Now that the curved and straight trim pieces are in place the panel supports can be placed into the upper "H" rails to secure the bottom edges of the overhead roof outers (Sequence 62). It is best to wear gloves during this process to protect against being cut by the bottom edge of the inner roof panels.

Note: When lifting the inner roof panel for panel support installation be careful not to lift it to far or damage may occur.

From the inside of the greenhouse position yourself in the center of one roof section. Gently lift the bottom of the inner roof panel straight up about 1 1/2 inches. Place a panel support under the lifted edge of the roof inner so the roof inner will eventually rest over the panel support. Keeping the panel support out of the upper "H" rail as much as possible, slide it to either side until it is approximately 2 inches from the overhead truss. Push the panel support into the upper "H" rail until it is flush to the top of the upper "H" rail. Place the edge of the inner roof panel back into the upper "H" rail being certain that it does catch on the panel support. Repeat this procedure using 2 panel supports per roof section until all outer roof panels are secured.

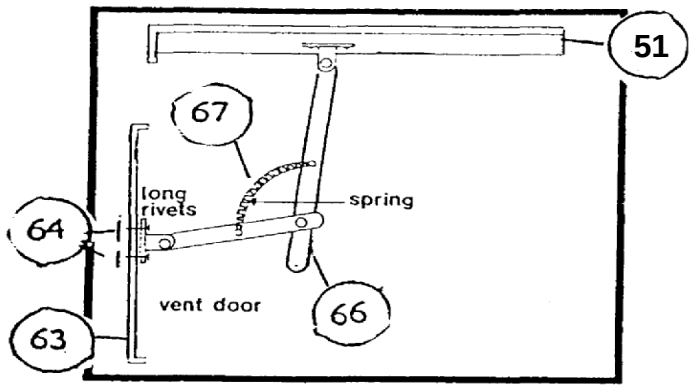
SECTION 9: VENT DOOR INSTALLATION

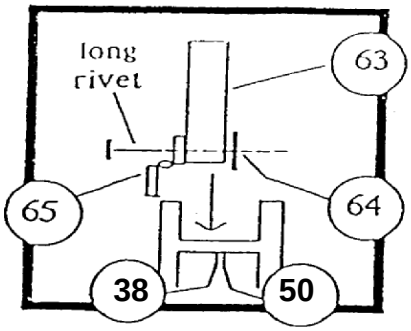
SEQ	PART #	DESCRIPTION	AMOUNT
63	1016	MANUAL VENT DOORS	2
64	3003	BACK-UP WASHERS	16
65	1017-1	VENT HINGE (OFFSET)	2 PER DOOR
66	1047	VENT LATCHES	1 PER DOOR
67	1046	CLOSER SPRINGS	1 PER DOOR

Using long rivets, rivet the hinges (Sequence 65) to the vent door (Sequence 63) under the "S" and "O" in "SUNGLO". The hinge rivets should be backed on the inside with a washer (Sequence 64) where the rivets pass through the vent door to prevent the plastic from cracking.

Once both hinges are riveted in place, center the vent door in the vent frame and rivet the bottom portion of the hinges to the 30" slotted "H" rail as shown in **Diagram 14**. To attach the vent latch position the latch so it will swing open to the outside. With your assistant holding the vent door closed from the outside position the vent latch at 90 degrees to itself. Hold one end of the latch to the

underside of the ridge channel and the other end to the vent door then clamp to the ridge channel. Drill 2 holes in the ridge channel corresponding with the holes in the vent latch and rivet using long rivets. Holding the vent latch at **a 90 degree angle** to itself and tight to the vent door rivet the latch to the door using **long rivets** and backup washers. Work the latch to make sure the latch or door does not bind. Install the closure spring into the 2 holes in the vent latch.





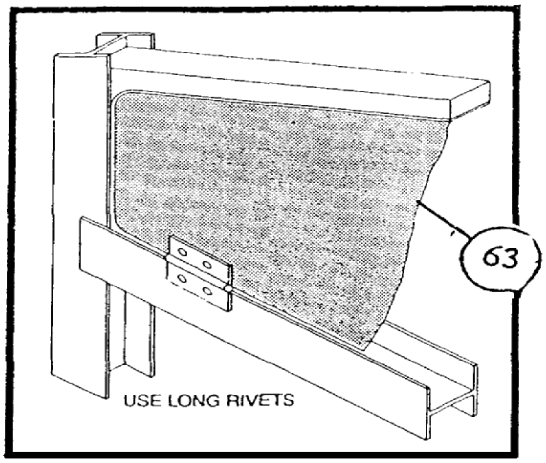


Diagram 14

SECTION 10: CEDAR SLAT BENCH INSTALLATION

SEQ	PART #	DESCRIPTION	AMOUNT
68	1006-1	BENCH T (LENGTH)*	SEE PACK LIST
69	1006-2	30" BENCH T	SEE PACK LIST
70	1006-15	BENCH LEGS	SEE PACK LIST

*The Part # varies based on the total length of the benches.

Your kit may include the materials needed to install two full length benches in your greenhouse. You can adjust the height of the benches from approximately 28 to 34 inches up from the lower “U” rail. Once you determine your optimal height measure and mark this distance up from the lower “U” rail on each of the wall, door and corner posts. On the front and back gable end walls drill and rivet a #1006-2 to the corner post and adjacent wall/door post at these marks in all four corners (Sequence 69). The flat surface of the bench “T” that forms the top of the “T” should be placed flat against the wall and

corner posts. **Short rivets** should be used both above and below the flange created by this orientation.

Place a length side bench "T" (Sequence 68) flat against the length side wall posts with its flange lying on top of those of the previously installed #1006-2 pieces. Holding it tight against one corner drill from the top down though both flanges and secure using a short rivet. When securing the opposite end it is helpful to have an assistant pushing the gable end wall in toward you from the outside, but it is not critical to have the length side bench "T" tight into each corner as long as the flanges create enough of an overlap to firmly accommodate a short rivet. With both ends secured clamp the length side bench "T" to each of the length side wall posts at the previously measured marks. Check for level then attach the length side bench "T" to each wall post using **short rivets** above and below the flange. Repeat this process on both sides of the greenhouse.

Bench legs (#1006-15) have a 45 degree angle flange at each end. Clamp the flange flat against a length side wall post directly above the lower "U" rail and secure using 2 short rivets. Repeat this process until each length side wall post has a bench leg attached (Sequence 70).

With all the bench legs attached, place a length side bench "T" on top of the flanges at the innermost ends of the #1006-2 pieces previously riveted to the gable end walls. Secure as before using 1 short rivet at each end (Sequence 68).

Measure and mark each length side bench "T" 28 1/2 inches in from the gable end walls. Clamp a #1006-2 across the rectangular bench frame at each mark and secure using 2 short rivets at each intersection. Hold a bench leg up to the bottom of each cross bench "T" at an approximate 45 degree angle and clamp them together at the base of the 45 degree flange. Check for level then secure each with 2 short rivets. Each remaining 30 inch cross bench "T" will correspond with the remaining bench legs and be placed at 30 inch spacing.

SECTION 11: DOOR AND LATCH ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
71	1018	28 5/8" THRESHOLD	1
72	3002	2" #8 PHILLIPS HEAD THRESHOLD SCREWS	3
73	1013-3	30" TOP DOOR JAMB	1
74	1013-1	70.5" L.H. DOOR JAMB	1
75	1013-2	70.5" R.H. DOOR JAMB	1
76	1048	DOOR ASSEMBLY	1
77	1017-2	DOOR HINGE (FLAT)	4
78	1019	DOOR LATCH SET	1
79	1045	DOOR LATCH STRIKE PLATE MOUNT	1

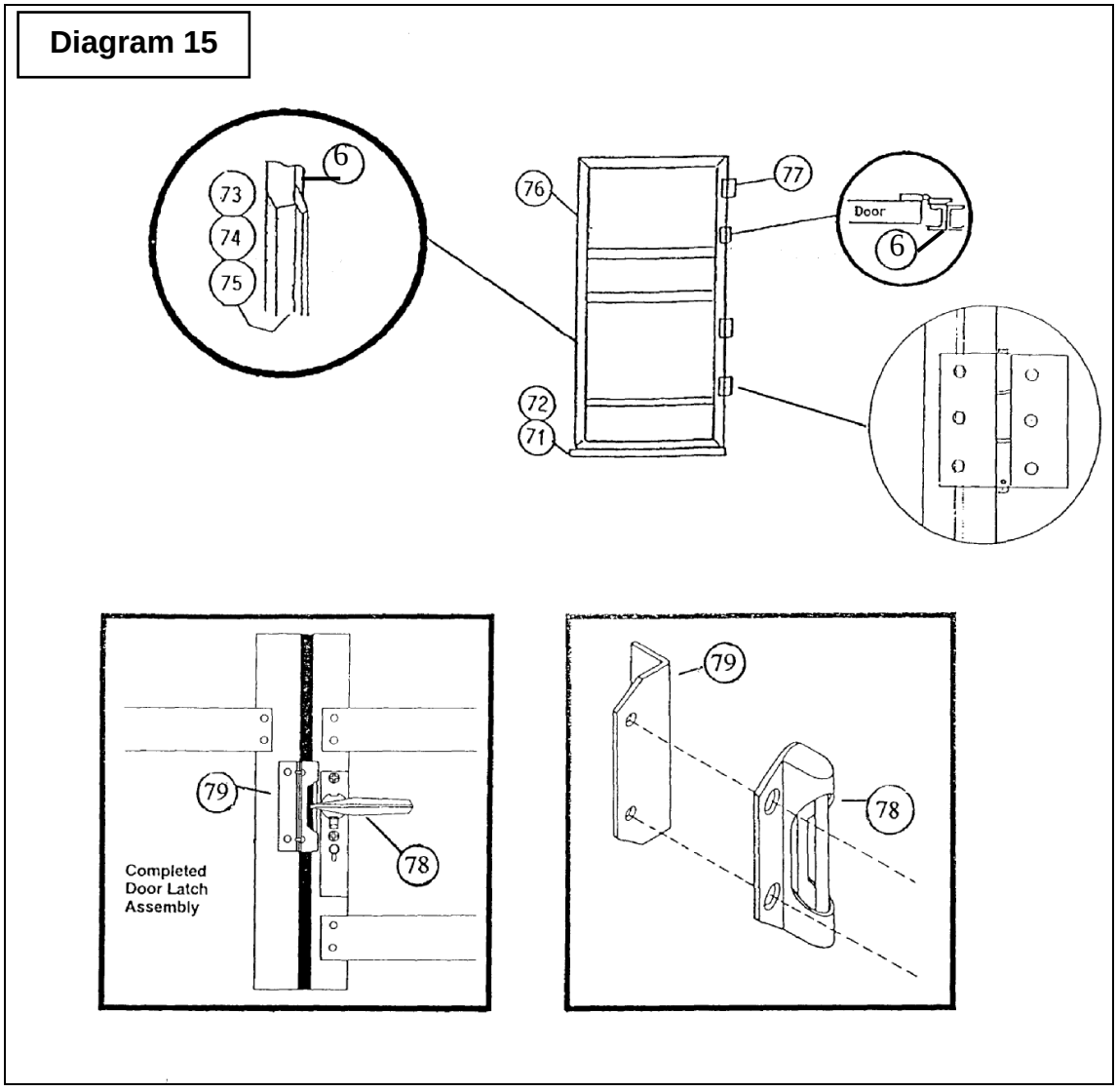
After checking the door posts for plumb the threshold can be installed (Sequence 71). Center the threshold in the door opening with the raised "lip" of the threshold towards the inside of the greenhouse. The lower "U" rail mates into the channel on the bottom of the threshold. Secure the threshold using the #8 x 2" Phillips self-tapping threshold screws provided (Sequence 72).

With the threshold secured the door jambs can be installed, but it is best not to rivet them into place until the door is secured to the greenhouse. The doorjambs should be installed so that the "rest stop"

edges are to the back of the doorframe as shown in **Diagram 15**. First insert the left hand door jamb into the door post on the left side of the doorway with the straight cut end resting on the threshold (Sequence 74). Next insert the top door jamb into the #1003-11 above the doorway (Sequence 73). Finally insert the right hand door jamb into the door post on the right side of the doorway with the straight cut end resting on the threshold (Sequence 75).

It is best to hang the door so that it swings out toward the side of the greenhouse opposite where the intake shutter was installed. This will prevent the door from blocking or damaging the shutter when it is open.

Diagram 15



To attach the door assembly first measure and mark the door approximately 4 to 6 inches from both the top and bottom (Sequence 76). All door hinges should be attached so that the raised side of the hinges will face the outside of the greenhouse (Sequence 77). Fold 2 of the door hinges to a 90 degree angle and place them to the inside of the previously made marks. Using the hinges as a template mark and drill three holes for each hinge. Attach the door hinges using long rivets.

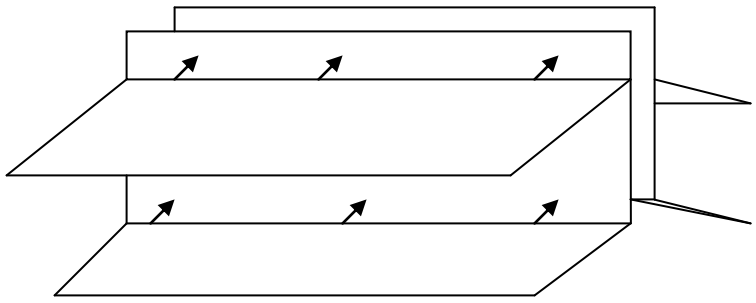
With the 2 door hinges riveted to the door place a piece of cardboard over the threshold to “prop” the door up approximately 1/4 inch. Bend the hinges back to a flat position and set the door into the doorway. Check the door for plumb and check the gap or “reveal” around the door edge making sure it is even and about 1/16 inch on the left, top and right sides of the door. With the door closed in the opening rivet the previously attached hinges using long rivets. Remove the cardboard and carefully swing the door open checking to see if it will swing freely. Adjust if needed. Using long rivets, attach the 2 remaining door hinges between and equidistant from the top and bottom hinges and re-check that the door swings freely.

With the door closed, use the template found in the door latch package and position the template on the door so that the dotted line is folded over the outside edge of the door (Sequence 78). Adjust the height of the template so the latch will be at a convenient height. Mark the exact position of the holes on the door surface. Pilot a hole at these marks with the #30 drill bit then bore straight through both sides of the door using a 5/16 inch drill bit. To insure free movement of the door latch spindle clear the holes of any burrs. Follow the instructions included with the door latch set to install it onto the door. Rivet the strike plate in the door latch package to the door latch strike plate mount (Sequence 79) as shown in **Diagram 15**. Position the strike plate mount assembly so that it will correctly engage with the door latch and rivet it to the door post.

SECTION 12: RIDGE CHANNEL ASSEMBLY (Not necessary for 1 piece ridge)

Diagram 16

Drill and rivet every 4 to 6 inches at the short arrows using long rivets.



Your Sunglo ridge channel may be 1 piece requiring no assembly or a 2 piece unit requiring preassembly.

Greenhouses longer than 15 feet may come with a 2 piece ridge. The ridge pieces need to be preassembled before installation. Match the “back to back” ridge pieces so that they are even and the proper length for the greenhouse as shown in **Diagram 16**. Caulk one back and clamp the two ridge halves together. Rivet together using **long rivets** every 4 to 6 inches on both the top fin and the inside of the ridge**.** Avoid placing rivets on 30” center marks where they will interfere with the trusses. Allow the caulk to dry before installation.

SECTION 13: SUPPORT POST ASSEMBLY

SEQ	PART #	DESCRIPTION	AMOUNT
80	1071*	1" x 1" VERTICAL SUPPORT POST	SEE PACK LIST
81	1023	OVERSIZED RIVETS	SEE PACK LIST
82	2184**	17 ½” TRUSS SUPPORT BAR	SEE PACK LIST
83	3006	#11 DRILL BIT	SEE PACK LIST

- Only on greenhouses 15’ or longer. **Special order for additional support.

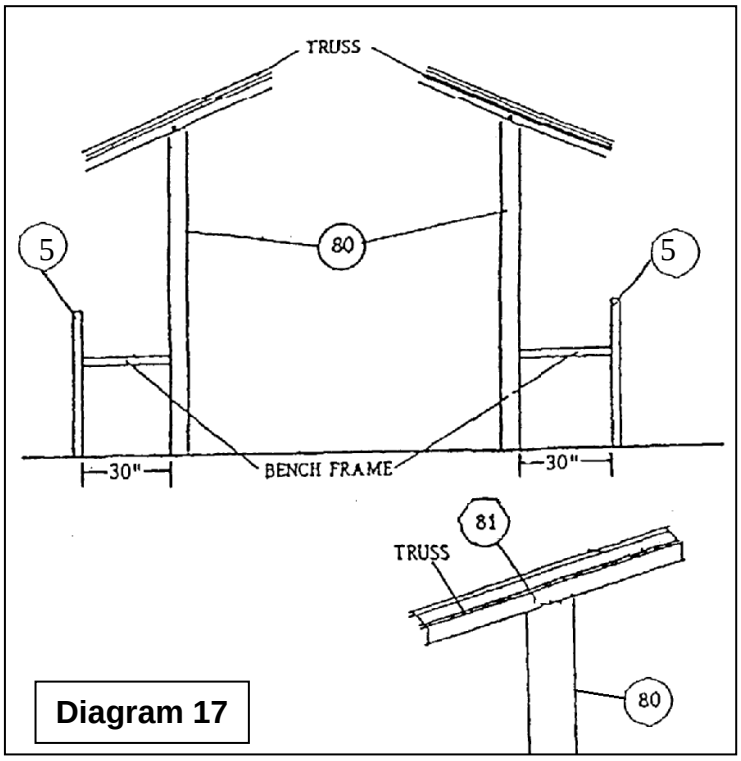


Diagram 17

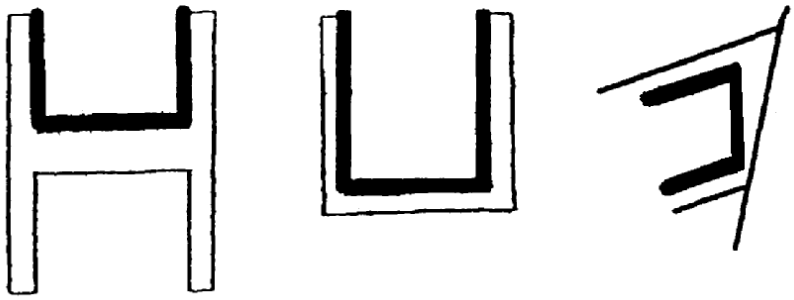
Greenhouse models 1000E or longer will have center truss support posts and truss support bars. These are designed to support the weight of the roof and ridge channel and eliminate ridge sag. The support posts are positioned to the inside edge of the benches on each side from the ground to the trusses in the middle of the length of the greenhouse.

Pre-load the ridge channel at the center of the ridge with a 2”x 4” propped up inside the greenhouse so the ridge channel has a slight 1/2” visible bow on the outside center of the ridge channel. Measure 30 inches from the wall post at the “mid section” of one side of the greenhouse. Position one of the support posts under a truss at that marked location. If the inside flooring is not level, place a brick or a block under the support post leg to bear the load correctly. Rivet the support post where it meets the truss with one **oversized rivet**. The area where the support post meets the bench frame section will be riveted after the bench frame installation. Install the remaining support post on the other side of the greenhouse in the same manner. Once you have the support posts plumb and riveted in place. Remove the 2”x 4” prop to release the load on to the support posts. Check to make sure the ridge channel is level.

SECTION 14: PANEL SUPPORT INSTALLATION

Panel supports are 12” long U shaped aluminum pieces and are used to secure the outer glazing panels. To install the panel supports, install the outer panels first. Insert the panel supports inside the aluminum channels. Be sure the flat bottoms are facing towards the channels they are placed in as shown in **Diagram 18**. Install the corrugated inner panels to complete the assembly. Each wall and filler panel requires 2 panel supports. Each roof section requires 2 panel supports in the ridge channel and 2 panel supports in the upper “H” rail.

Diagram 18

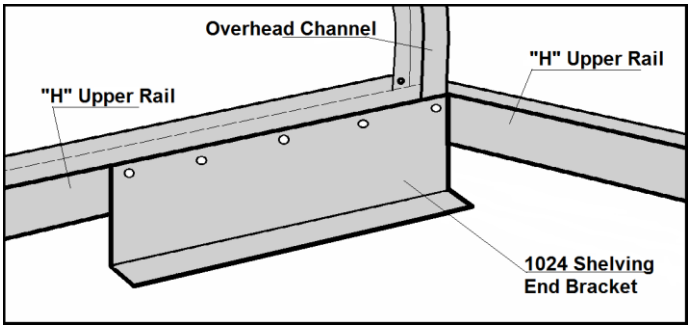


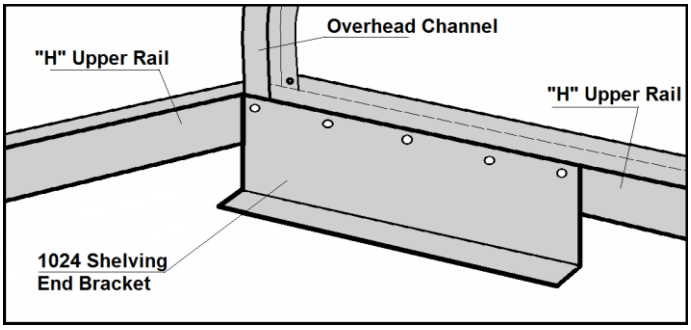
SECTION 15: CEDAR SLAT SHELF INSTALLATION

SEQ	PART #	DESCRIPTION	AMOUNT
84	1024	SHELF END BRACKET	SEE PACK LIST
85	1006-*	SHELF T (LENGTH SIDE)	SEE PACK LIST
86	1006-13	SHELF LEG 14”	SEE PACK LIST
87	1006-4	12” SHELF T	SEE PACK LIST

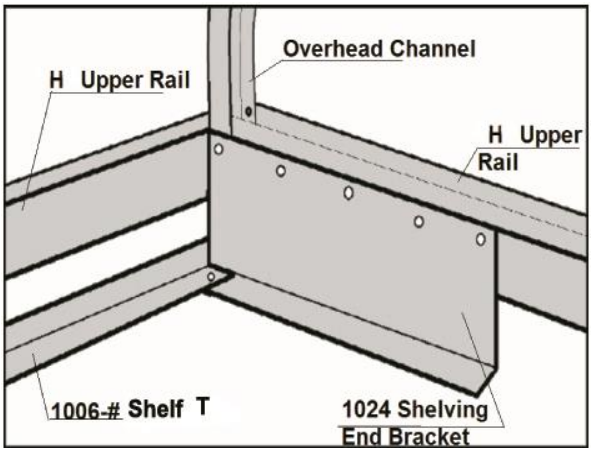
*The Part # varies based on the total length of the shelves.

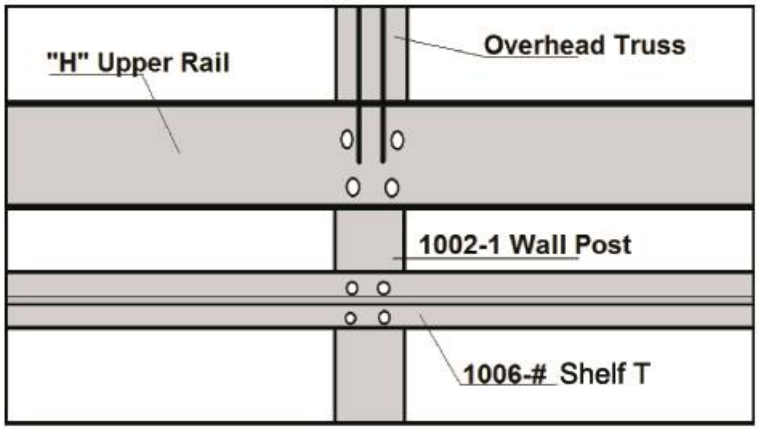
Your kit may include the materials needed to install one or two full length shelves in your greenhouse. To install the shelves first install the #1024 shelf end brackets to the H upper Rail in the corner of the front and back gable end walls using **short rivets**. (Sequence 84)





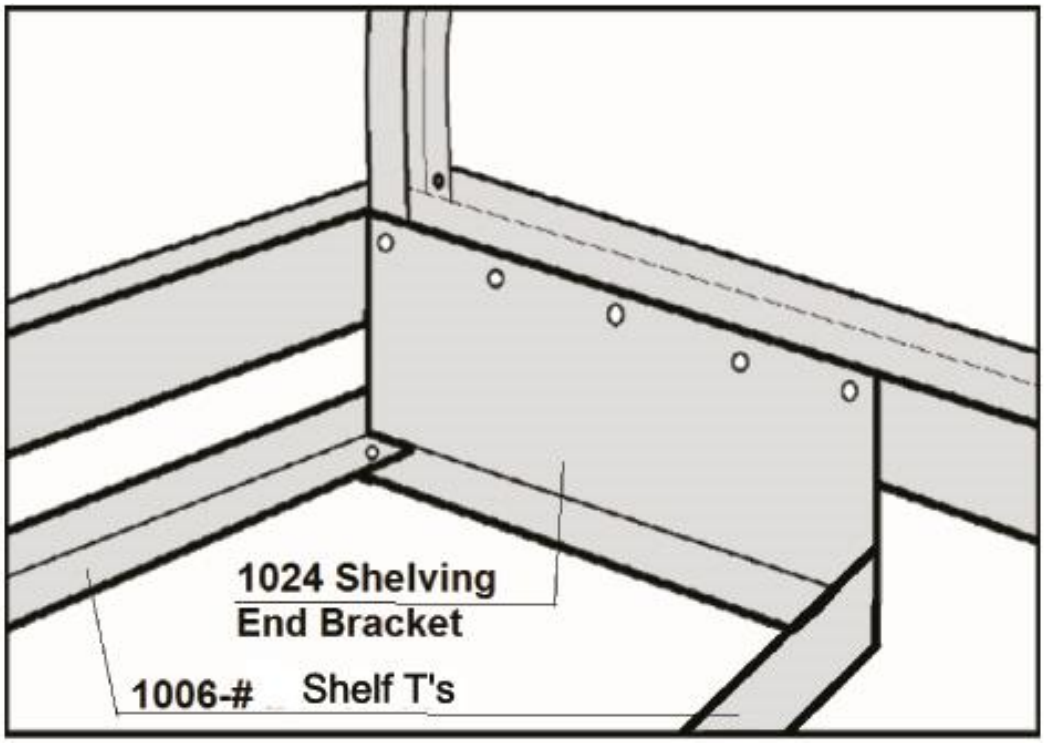
Place a length side shelf T flat against the length side wall posts with its flange lying on top of the #1024 pieces (Sequence 85). Holding it tight against one corner with vise grips drill from the top down though both flanges and secure using a **short rivet**. It is not critical to have the length side shelf T tight into each corner as long as the flanges create enough of an overlap to firmly accommodate a short rivet.



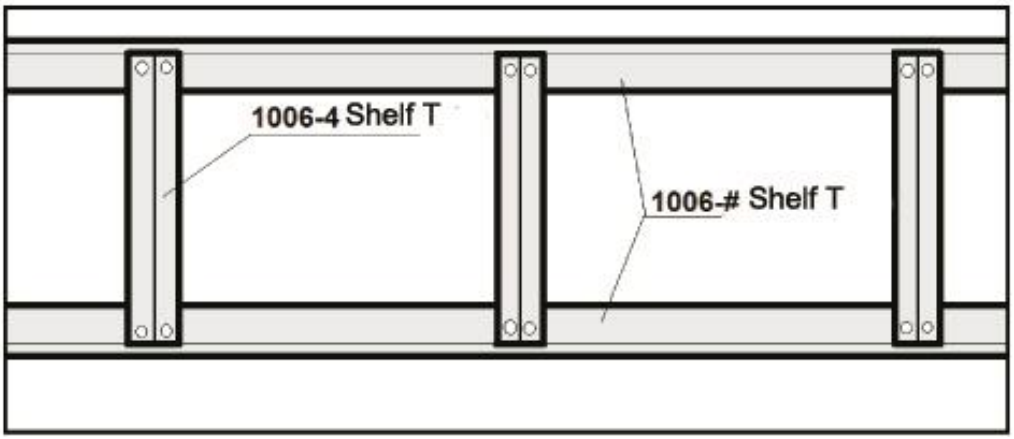


Using vise grips clamp and a torpedo level rivet the 1006-# Shelf T level to each 1002-1 Wall Post using two short rivets on each side of the T.

Using a vise grip position the second 1006-# length side Shelf T to the other end of the Shelf End Bracket #1024. Use a **short rivet** on both ends.

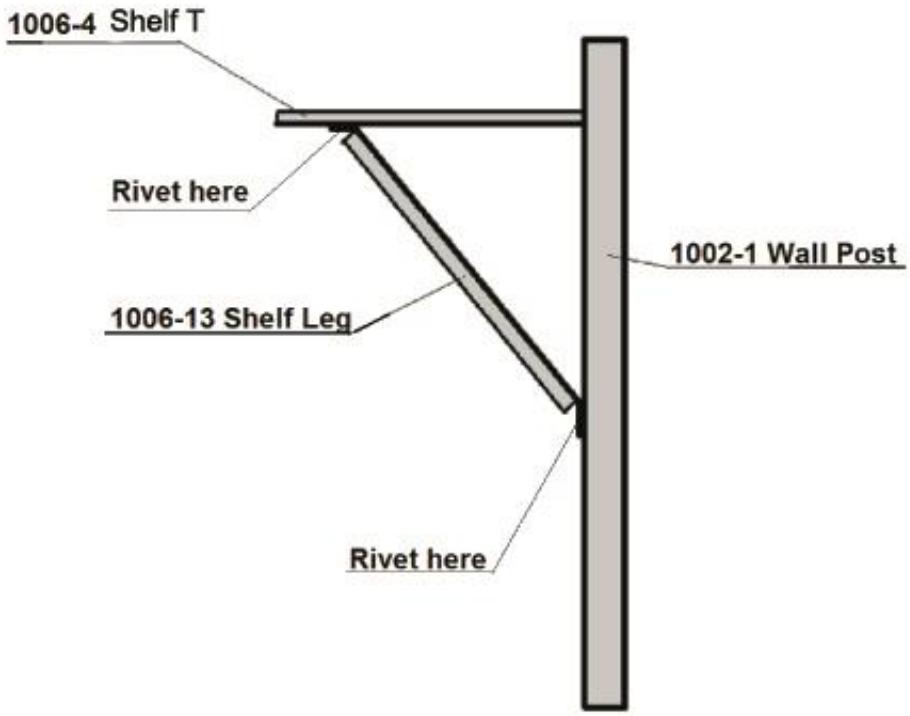


Use the wooden slats as your guide to position the 1006-4 shelf T's in place. Clamp and rivet each one using **short rivets**. Be aware that the corner cedar slats are slightly shorter than the center cedar slats.

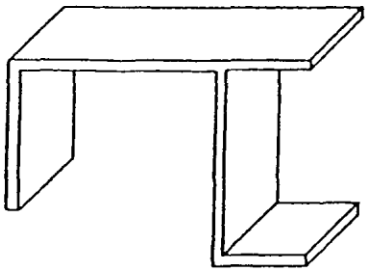


Shelf legs (#1006-13) have a 45 degree angle flange at each end. Clamp the flange flat against a length side wall post directly under the lower U rail and secure using 2 **short rivets**. Repeat this process until each length side wall post has a bench leg attached (Sequence 86).

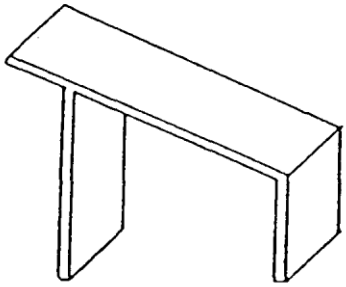
Hold a shelf leg up to the bottom of each cross shelf T at an approximate 45 degree angle and clamp them together at the end of the 45 degree flange. Check for level then secure each with 2 **short rivets**. Finish all Shelf legs and place the Cedar Slats in their place to finish the shelf.



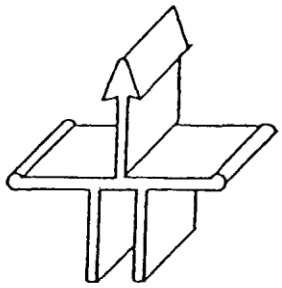
SECTION 16: ALUMINUM EXTRUSION SHAPE GUIDE



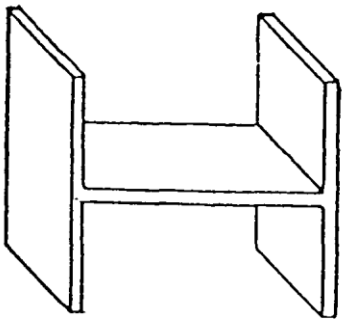
CORNER POST CHANNEL



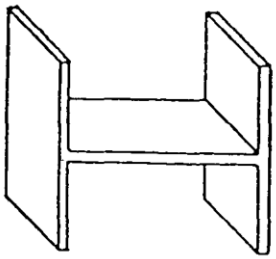
RIDGE CHANNEL



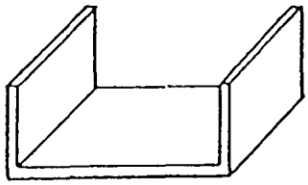
OVERHEAD TRUSS



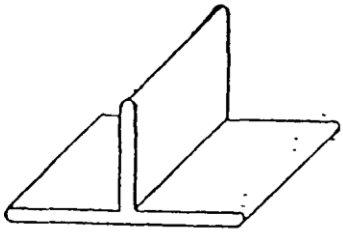
HEAVY “H” CHANNEL



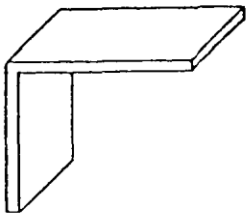
LIGHT “H” CHANNEL



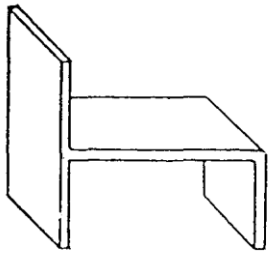
“U” CHANNEL



BENCH T & SHELF T



STRAIGHT TRIM



CURVED OVERHEAD CHANNEL