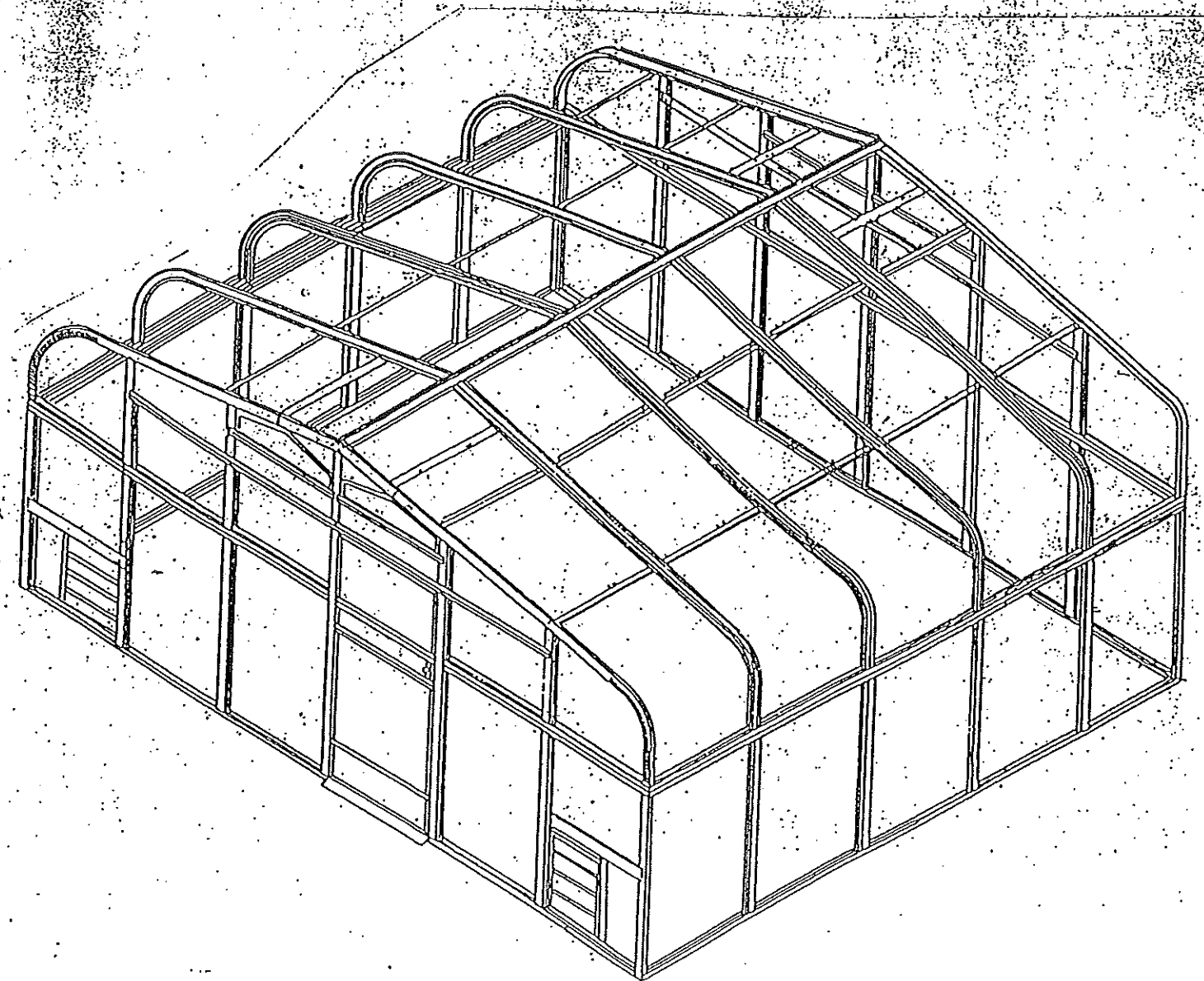


SUNGLO SOLAR GREENHOUSES
FREESTANDING GREENHOUSES (SERIES 2100)
INSTRUCTION MANUAL

(REVISED 7/92)



SUNGLO SOLAR GREENHOUSES SERIES

2100 INTRODUCTION

Your Sunglo Greenhouse is sold complete with all the components necessary for assembly without cutting or refitting. Included in the kit is all aluminum structural elements, acrylic glazing, door, air vents, exhaust fan shutter, thermostat and bench frame work. Optional extras include grow trays, vinyl shelving, automatic light control and a deluxe power panel. We urge you to contact us for a complete description of these options and prices.

STUDY THE SUNGLO VIDEO BUILD TAPE AND READ THROUGH THE INSTRUCTION MANUAL AND SEQUENCE RUN LIST BEFORE BEGINNING THE CONSTRUCTION OF YOUR SUNGLO GREENHOUSE. THIS WILL PREPARE YOU FOR THE INDIVIDUAL STEPS AND ALLOW YOU TO ESTIMATE THE TIME YOU WILL NEED.

REVIEW YOUR PACKING CHECK LIST BEFORE ASSEMBLING YOUR GREENHOUSE KIT. NOTIFY US IMMEDIATELY IF YOU DISCOVER ANY MISSING ITEMS.

All components are marked with a part number in a location that will not show after assembly. Do not remove the part numbers since they will be required for ordering replacement parts. You have been provided with a rivet gun, rivets and drill bits to assemble your greenhouse. You will also need a tape measure, level, pencil, electric drill and a framing square. The drill bits we provide are No. 30 rivet drill bits. Should you break your drill bits, another standard No. 30 bit will be satisfactory. If a No. 30 is unavailable, you may use a 1/8" diameter drill bit.

For a more weather proof greenhouse, we recommend a bead of silicon caulk (not provided), between the bottom rail "U" channels and the foundation plate to provide a weather proof seal.

Follow the assembly sequence steps carefully and do not install rivets until they are specifically mentioned in the instruction manual and install them only in the locations shown. Rivets installed prematurely may cause assembly problems later. Do not install rivets on the outside where acrylic panels will rest when assembling the greenhouse. Use the minimum number of rivets recommended as assembly progresses. Additional riveting for strength may be added at a later time. Should you install a rivet and for some reason find it necessary to remove it, the same drill bit used to drill the rivet hole will drill out the misplaced rivet. Long rivets are provided for use in places where the shorter rivets are inadequate, such as when securing overhead trusses.

THE FOOTINGS

IT IS CRITICALLY IMPORTANT YOU START WITH A SQUARE SOLID AND LEVEL FOOTING TO ATTACH YOUR GREENHOUSE BUILDING. Most of our greenhouses can be installed on 4 X 6 pressure treated lumber set on the 4" edge and buried in the ground with approximately 1" showing above grade. Some people have successfully used 2 X 4 pressure treated lumber. However, we recommend the additional weight of the 4 X 6. If you are using a concrete footing you must attach a 2 X 4 wood plate to the top of the concrete footing. Our greenhouses are designed for fastening to a wooden surface.

In some cases you may wish to raise the greenhouse for additional height. In order to do this a "Pony or Knee wall" built of conventional framing, or built-up timbers will be adequate. You may want to keep your Sunglo door at the ground level, (this can be accomplished by notching the foundation 30 1/4" wide for the door opening). Please refer to diagram #2 - foundation guide for door drop, or call your Sunglo representative for more information on this procedure. THIS MUST BE SPECIFIED WHEN YOU ORDER YOUR GREENHOUSE. MODIFICATIONS ARE DONE AT THE FACTORY.

DRAINAGE

Drainage should be considered for removing excess water inside the greenhouse. Water spills are quite common in greenhouses, therefore inside drainage will be a benefit. We recommend gravel, a French drain or rock and perforated pipe, to help direct water away. If you are installing your greenhouse on a deck or lanai and drainage is a concern, you might consider placing a heavy layer of plastic down and provide routing for the water.

If your greenhouse foundation site has a high moisture content, high water table, sand, clay etc., it will be necessary to install a vapor barrier. The vapor barrier will keep excess moisture from accumulating in your greenhouse. The first step is to use a heavy plastic liner to line your site, then place on the liner 2 to 4" of drain gravel. The liner will prevent ground moisture from wicking-up into your greenhouse that will cause excess humidity in the air. If you find the air to be too dry inside your unit, just poke a couple of holes in the liner for additional humidity.

If you are pouring a concrete slab foundation you must allow proper time for the concrete to cure, or dry-out. Non-cured concrete can wick-up moisture from the ground and deposit it into your greenhouse causing excessive humidity.

UTILITIES

All Sunglo Greenhouses come standard with an automatic ventilation system. This includes the thermostatically controlled exhaust fan and the automatic fresh air shutter. Sunglo Solar Greenhouses also carries many other accessories for your growing needs.

Sunglo recommends that a **certified electrician handle the electrical connections**. When passing conduit from within the greenhouse to your power supply, drill a hole through or under the foundation. This should be done prior to assembling the greenhouse.

FLOORS

A concrete pad is not necessary for your greenhouse installation. For a natural look you can use crushed stone and stepping stones. A row of concrete paving blocks along with gravel under the benches is inexpensive, easy to install and looks great. Stone or concrete pavers also provide a thermal mass helping to balance the greenhouse temperature to the outside.

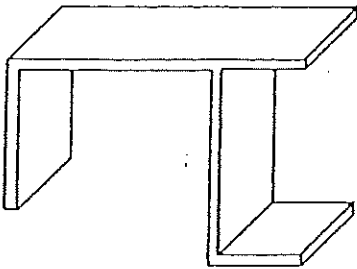
SUNGLO SOLAR GREENHOUSES SERIES 2100:
MAINTENANCE OF ACRYLIC AND ALUMINUM COMPONENTS

SUNGLO SOLAR GREENHOUSES
4441 26 Avenue West • Seattle, Washington 98199 • (206) 284-8900
Out of State Toll Free: 1-800-647-0606

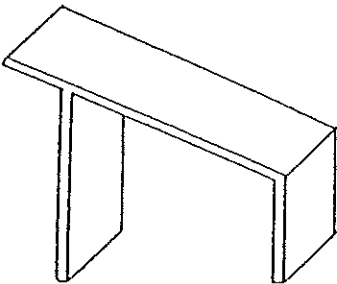
The acrylic skin of the greenhouse is made of DR-Acrylic and has a life expectancy in excess of 15 years in direct sunlight. In order to maintain the acrylic skin at the maximum efficiency, it should be kept clean so the maximum amount of sunlight can enter the greenhouse. This means a general washing off is occasionally required. Hosing with a garden hose is a good satisfactory method of cleaning, providing that your water is not unusually hard and would leave a film on the surface. Do not wipe with a rag, as dust particles will eventually scratch the surface and give a very poor appearance from the exterior of the greenhouse. If you wash the greenhouse, pre-wash with a jet of water from a garden hose to remove the dust particles and then wash the surface with a very soft cloth and a mild dish detergent. Turtle wax soap is a good cleaner. Hose off all traces of detergent residue. If you have difficulty reaching parts of the roof you may want to get a long handled soft brush from your local auto parts store. If mold or mildew is a problem in your area, rise your greenhouse with a mild solution of bleach and water.

The aluminum framing needs no care in normal use. If your greenhouse is located near salt water and salty air is prevalent, a coating of plastic wax once a year will keep the aluminum framing bright and resistant to pitting. If salt water should come in contact with the greenhouse rinse with clean water as soon as possible to prevent pitting from occurring. Pitting will be reduced by the application of a coat of wax on the framing.

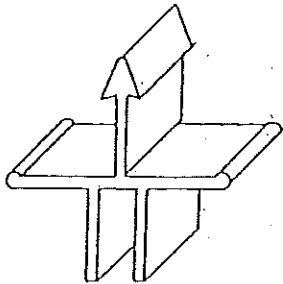
ALUMINUM EXTRUSION SHAPE GUIDE
(REVISED 7/92)



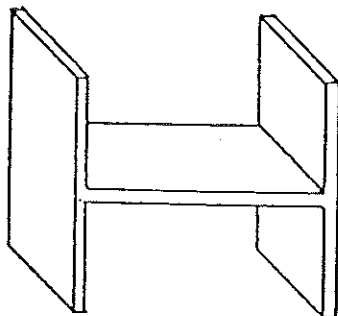
CORNER POST CHANNEL



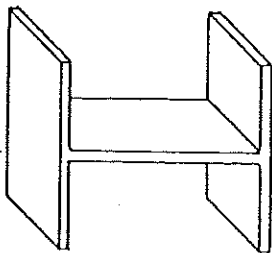
RIDGE CHANNEL



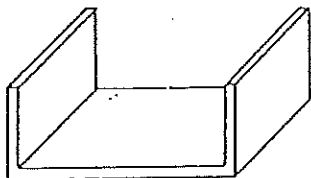
OVERHEAD TRUSS



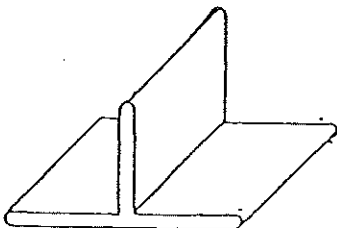
HEAVY "H" CHANNEL



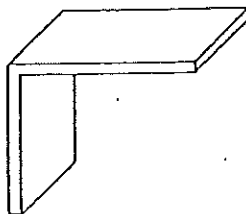
SMALL "H" CHANNEL



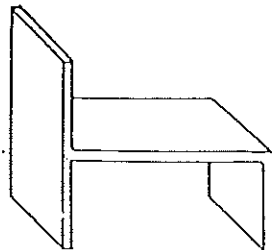
"U" CHANNEL



BENCH TEE, HANGER BAR



STRAIGHT TRIM



CURVED OVERHEAD CHANNEL

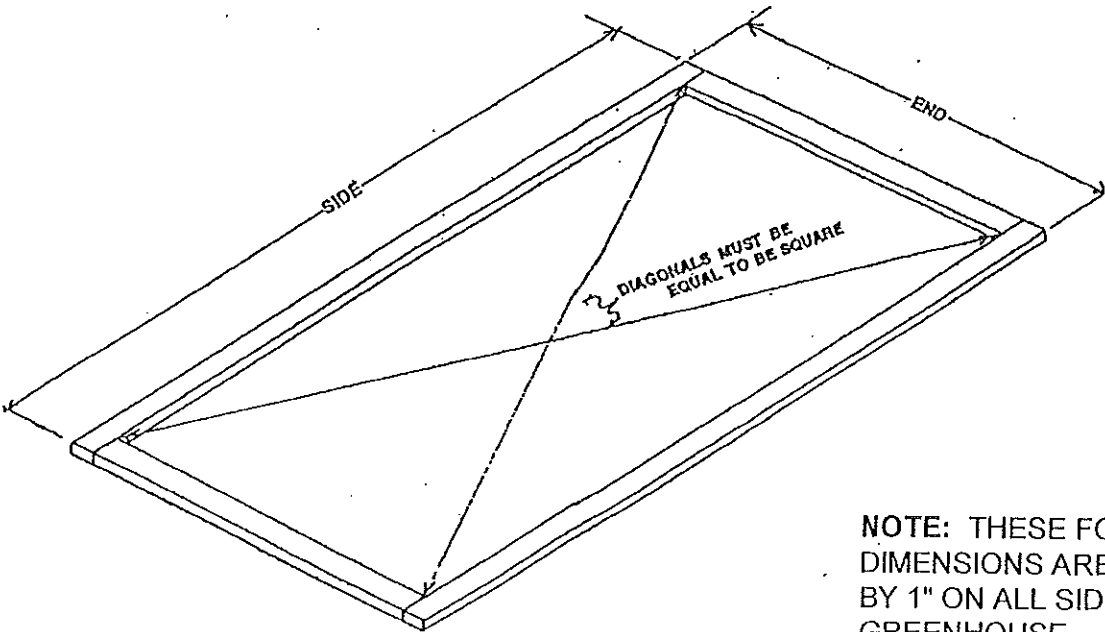
FOUNDATION REQUIREMENTS

Your foundation plate needs to be level and square. A true and level foundation will reduce challenges later when installing the Sunglo Greenhouse. The dimensions listed below are measured from the outside of the top plates. These dimensions will allow a 1" border around the completed greenhouse (see diagram #1). If your greenhouse is on top of a "pony" wall and requires a door drop, see diagram #2 for the requirements. Drainage, utilities, pavers and gravel should all be considered prior to the actual installation of the greenhouse. These requirements will be easier to install at this time.

PRIOR TO BUILDING ON THE FOUNDATION, RE-CHECK YOUR FOUNDATION TO BE SURE IT IS SQUARE AND LEVEL. The unit will not join correctly if the foundation is not square and level. You may have to shim the foundation to assure a level surface.

MODEL	END	SIDE
2100E	15' - 5"	15' - 2"
2100F	15' - 5"	17' - 8"
2100G	15' - 5"	20' - 2"
2100H	15' - 5"	22' - 8"
2100I	15' - 5"	25' - 2"
2100J	15' - 5"	27' - 8"
2100K	15' - 5"	30' - 2"

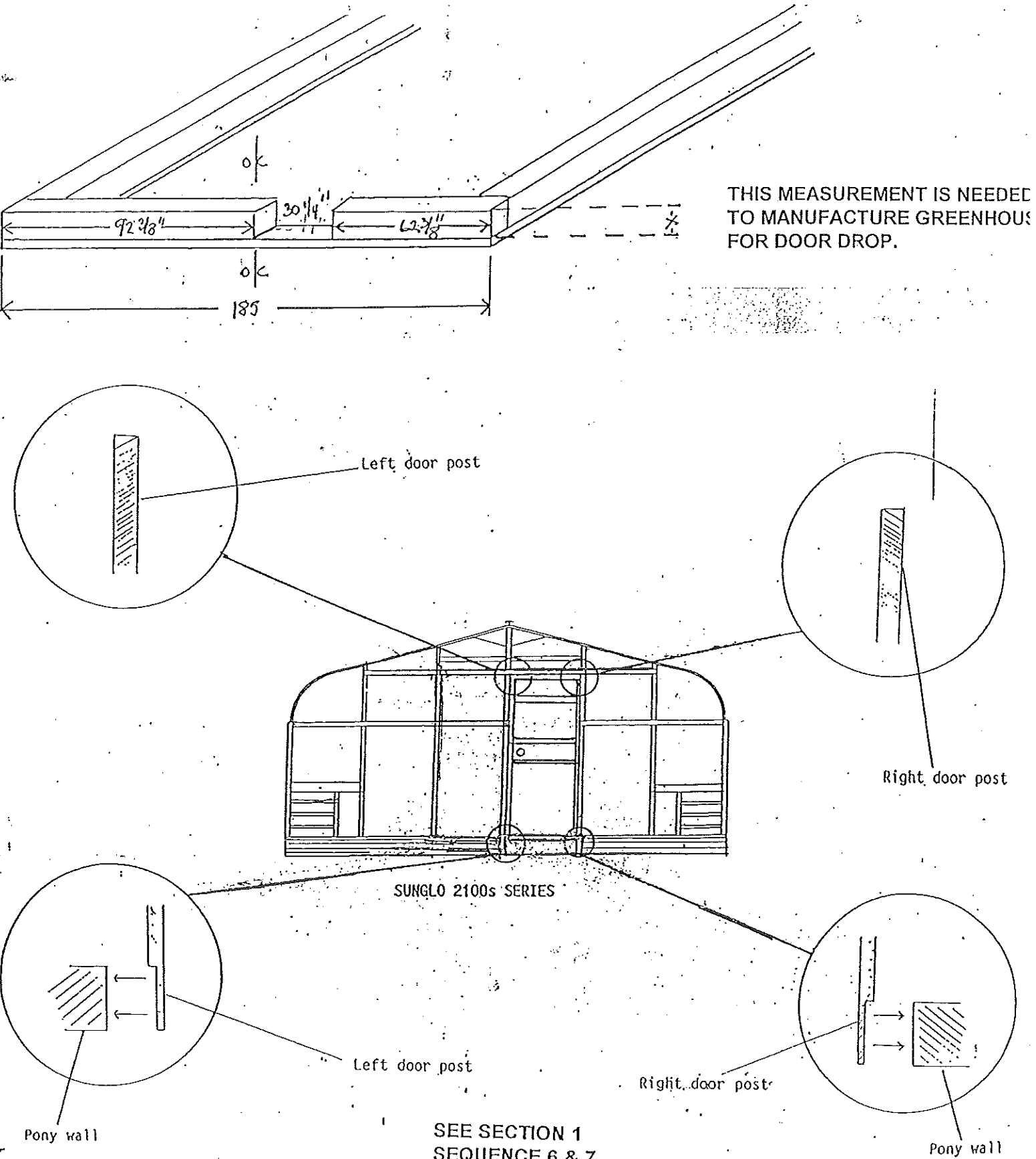
DIAGRAM 1



NOTE: THESE FOUNDATION DIMENSIONS ARE OVERSIZED BY 1" ON ALL SIDES OF THE GREENHOUSE.

NOTE WHERE YOU WANT THE GREENHOUSE DOOR FROM THE CENTER LINE, (O.C. LINE), WHEN ORDERING. RIGHT SIDE OR LEFT SIDE. RIGHT SIDE AS SHOWN IN DIAGRAM.

DOOR DROP INSTALLATION



SUNGLO SOLAR GREENHOUSES SERIES 2100

SECTION 1: Fastening the lower frame assembly to the wooden foundation/wall and door post assembly

(Sequence run list section 1)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
1.	SEE PACK LIST	"U" LOWER RAILS	2	
2.	0183	"U" LOWER RAILS	2	
3.	#8	FOUNDATION SCREWS	SEE PACK LIST	

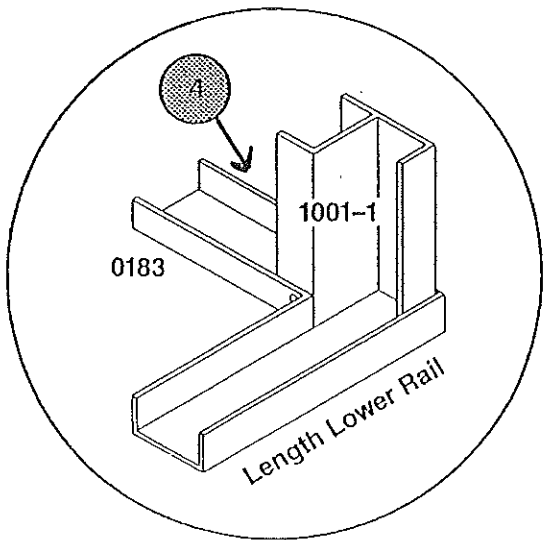
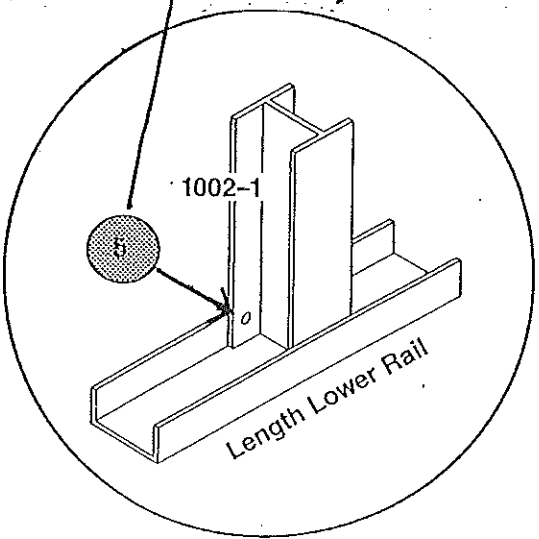
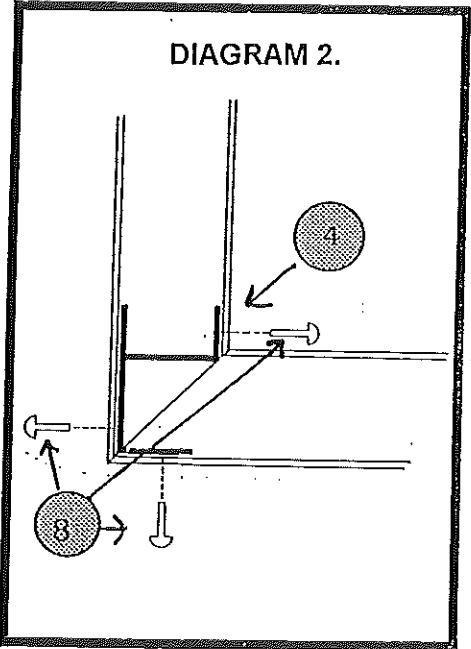
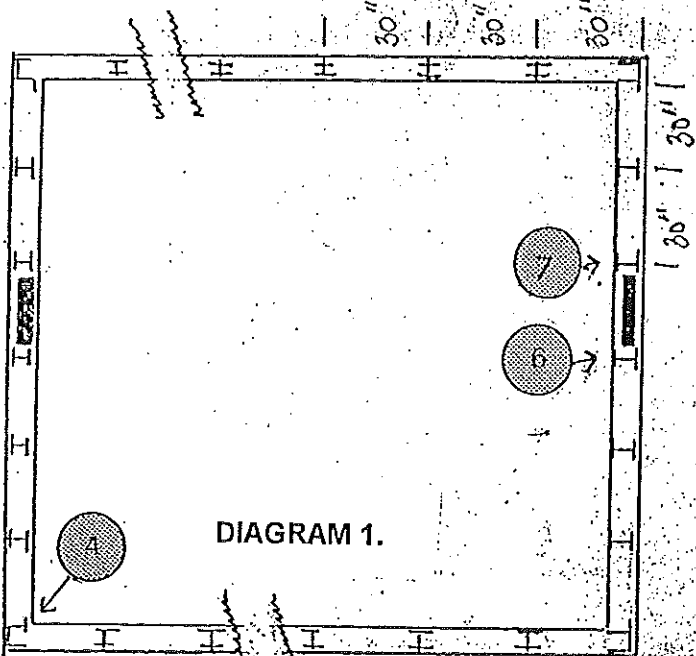
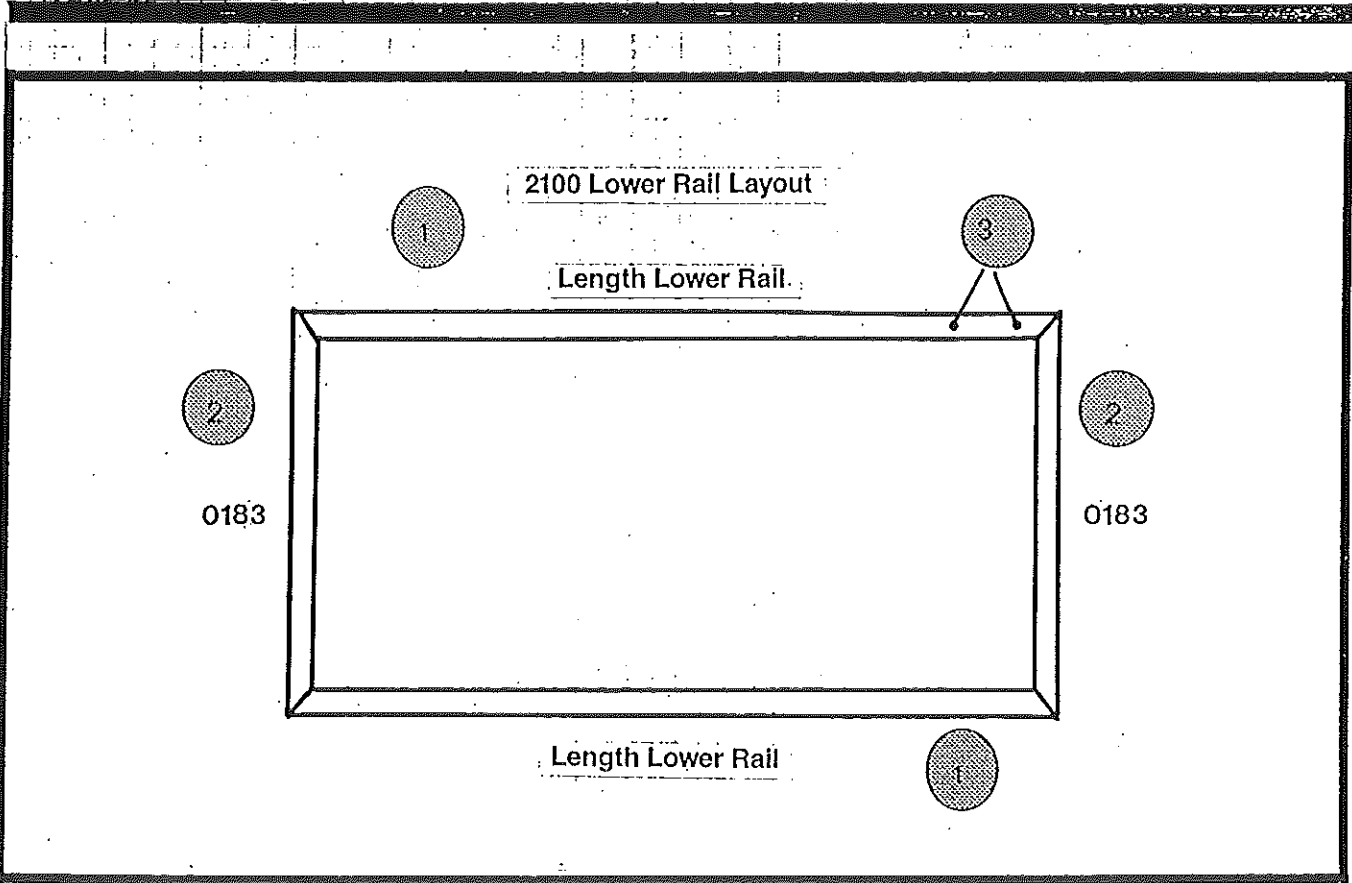
Lay the "U" rails onto your foundation and check their diagonals to see if they are square. Apply a bead of caulking compound (not provided) to the flat surface on the "U" lower rails that will connect to the foundation. Using a #30 drill bit drill holes approximately 3" from the corners and every 16". Secure the "U" lower rails to the foundation using the #8 screws (sequence steps 1, 2 & 3).

(Sequence run list section 1)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
4.	1001-1	48" CORNER POSTS	4	
5.	1002-1	48" WALL POSTS	SEE PACK LIST	
6.	1202-6	72" DOOR POST	1	
7.	1202-6	72" DOOR POST	1	
8.	1021	SMALL RIVETS	SEE PACK LIST	

Install all corner posts in the lower frame and rivet in 3 locations as shown in **diagram 2** (sequence step 4). Wall posts are installed inside the lower frame ("U" lower rails) on 30" center from the corner posts. Rivet all wall posts from the inside of the greenhouse as shown in **diagrams 1, 1A** (sequence step 5). Use 2 rivets for each wall post. Next install the door posts on either side of the opening. Be sure the opening is 30" to allow the threshold to fit (sequence steps 6, 7).

2100 SERIES



SUNGLO SOLAR GREENHOUSES SERIES 2100

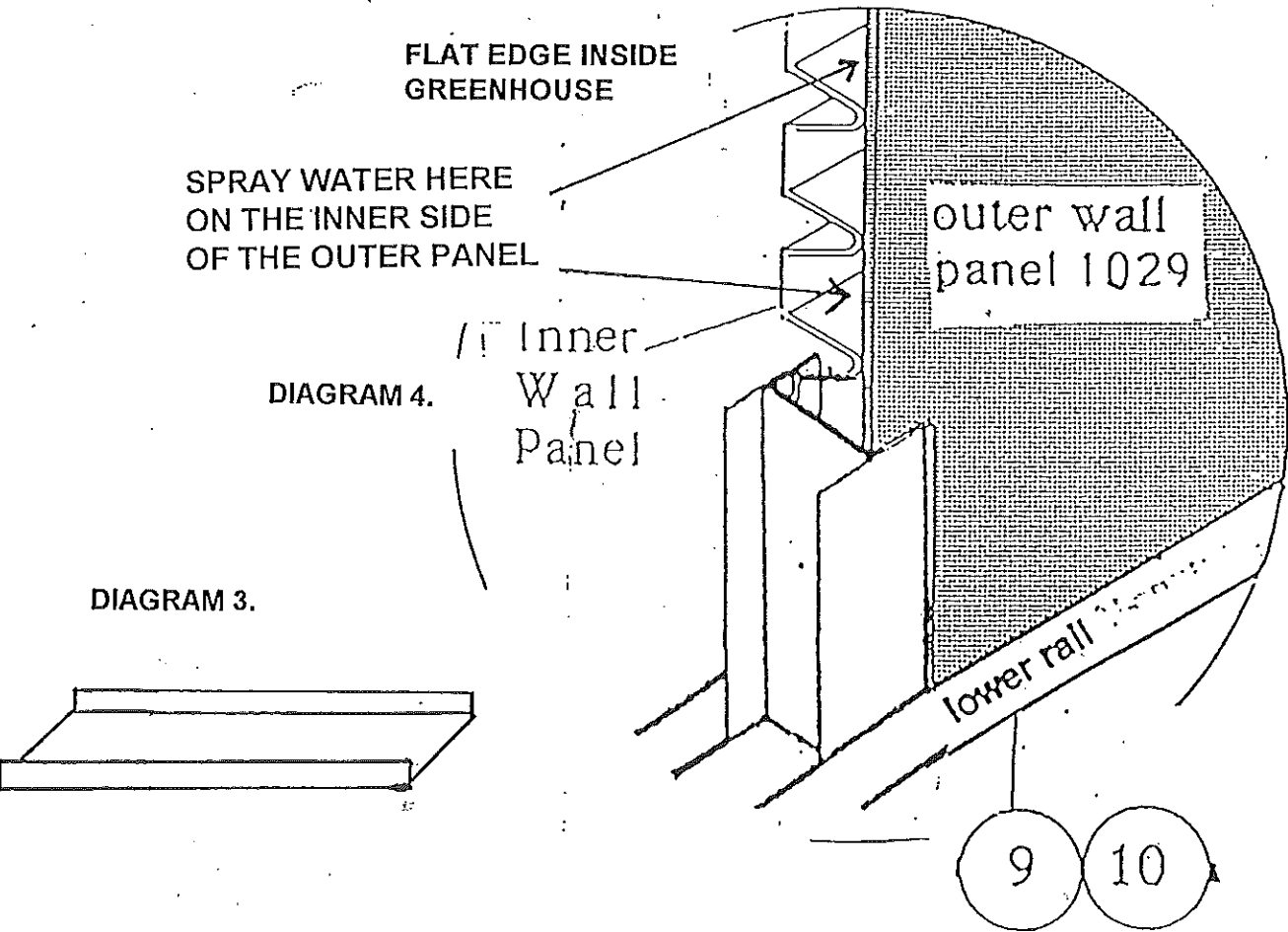
SECTION 2: Installing the lower wall sections

(Sequence run list section 2)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
9.	1029	48" OUTER WALL PANELS	SEE PACK LIST	
10.	1069	PANEL SUPPORTS	2 PER BAY	
11.	1030	48" INNER PANELS	SEE PACKING LIST	

It will be helpful to have an assistant when installing the lower wall sections. Starting out from the corner post on one full length side wall install the flat outer wall panel (sequence step 9) between the corner post and the wall post. Secure wall panel into lower rail ("U" rail) using two panel supports (sequence step 10). Panel supports are "U" shaped aluminum pieces as shown in diagram 3. When installing the panel supports, be sure the flat side is facing toward the channels they are resting on. REFER TO SECTION 12 ON PANEL SUPPORTS INSTALLATION.

Next install the inner panel (sequence step 11), between the corner post and the wall post. Be sure the flat edge of the corrugated acrylic sheet is facing towards the inside of the greenhouse as shown in diagram 4. Repeat this procedure until the wall is completed.

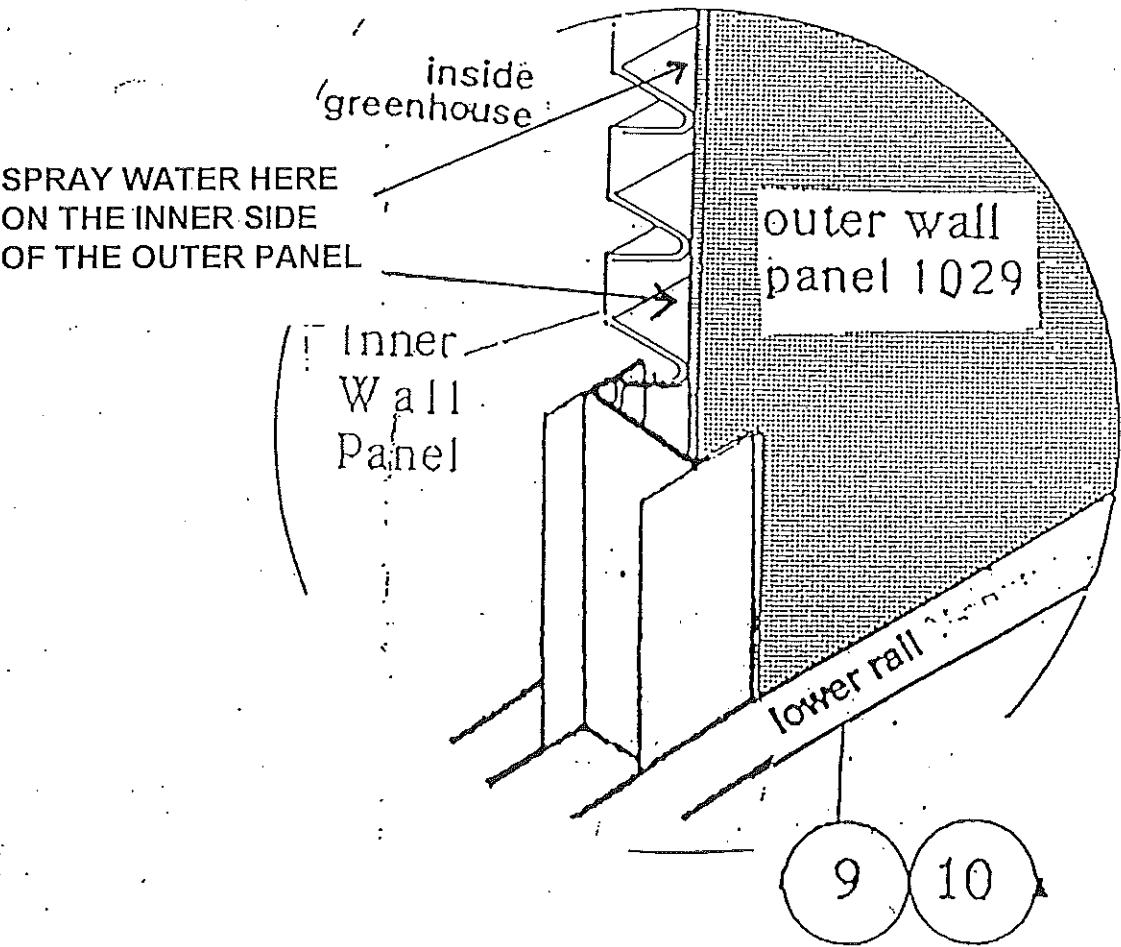


SECTION 2: Installing the lower wall section

During the lower wall assembly it will be helpful to use a spray bottle of water on the inner channel of the wall post upright and the outer panel (part #1029) to ease the entry of the inner corrugated wall panel into the upright wall posts.

Note the area to spray water in the diagram below.

NOTE: During the wall assembly you may find it helpful to use two strips of masking tape to temporarily hold the wall panel outers to the wall and corner posts.



PS. You may substitute Armorall or WD-40 instead of water. However please use these products very, very sparingly

(Sequence run list section 2)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
12.	SEE PACK LIST	UPPER "H" RAILS (SIDES)	2	
13.	0183-11	183" UPPER "H" RAIL (REAR)	1	
14. *	4C557	16" SHUTTER	2	NOTE: ON MODEL 2100H AND LARGER SEE NOTE BELOW FOR PARTS # 14 THRU # 23
15.	2C831	SHUTTER MOTOR	2	
16. *	1002-7	19 3/16" SHUTTER POST	2	
17. *	1060	19 1/8" X 8 5/8" OUTER FILLER PANEL	2	
18.	1069	PANEL SUPPORT	2	
19. *	1061	19 1/8" X 8 5/8" INNER FILLER PANEL	2	
20.	1003-11	30" SLOTTED "H" RAIL	2	
21. *	1277-16	28 5/8" X 30" OUTER SHUTTER PANEL	2	
22.	1069	PANEL SUPPORT	4	
23. *	1276-16	28 5/8" X 30" INNER SHUTTER PANEL	2	
24.	0061-5	61 1/2" UPPER "H" RAIL	1	
25.	0091-5	91 7/16" UPPER "H" RAIL	1	

Now cap off the full length wall with the upper rail "H" channel (sequence step 12). Rivet the upper rail "H" channel to both corner posts. This will secure the "H" channel temporarily. At a later state the upper rail "H" channel will be rivets to all wall posts. Repeat this procedure on the second full length side wall.

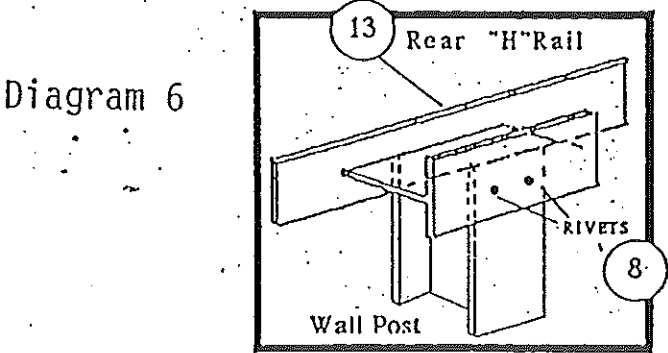
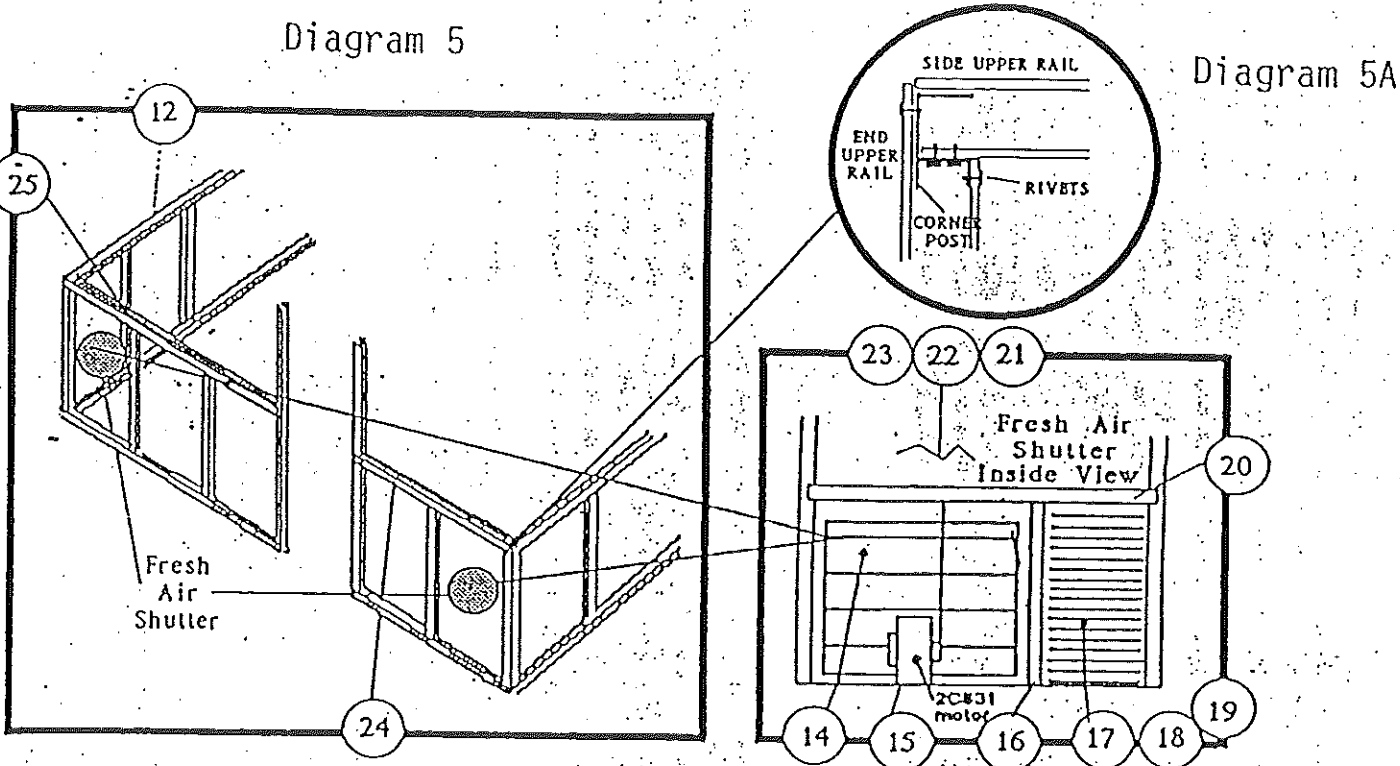
After completing both full length side walls, it is time to install the lower back wall section. This is installed in the same manner as the full length side walls. When the outer and inner panels and the panel supports are in place, cap them off with an upper rail "H" channel (sequence step 13), and rivet the ends of the rail "H" to both corner posts. See diagram 5A.

* NOTE: ON MODEL 2100 H AND LARGER SUBSTITUTE THE FOLLOWING PARTS.

14.	4C558	18" SHUTTER	2
16.	1202-1	21 1/8" SHUTTER POST	2
17.	1279	21 1/8" X 8 5/8" OUTER FILLER PANEL	2
19.	1078	21 1/8" X 8 5/8" INNER FILLER PANEL	2
21.	1277-18	26 5/8" X 30" OUTER SHUTTER PANEL	2
23.	1276-18	26 5/8" X 30" INNER SHUTTER PANEL	2

The lower front wall (door end) is now ready to be installed. First install the fresh air shutter motor to the fresh air shutter per the manufacturers' instructions. Two fresh air shutter systems are used. The fresh air shutter system is located at the 2 outside bays of the greenhouse. See diagram 5. Place the fresh air shutter inside the lower frame ("U" rail) and against the corner posts. Making sure the fresh air shutter will open outward (not inward), rivet it to both the corner post and the lower frame. Next, install the shutter post by riveting it to the lower frame ("U" rail). Be sure the shutter post is tight against the fresh air shutter to allow adequate spacing for the outer and inner filler panels. Install the outer and inner panels in the same manner as the wall outer and inner panels. When the outer and inner panels are installed, cap them off with a horizontal "H" channel and rivet it to both wall post and corner post. Install the outer and inner shutter panels in the same manner as the outer and inner wall panels. Install the other fresh air shutter system in the same manner. Install the outer and inner panels to the 3 remaining openings of the front lower wall section. When it is completed, cap the front lower wall section off with 2 horizontal "H" channels, and rivet them to both door posts and corner posts (sequence steps 14 thru 25).

The last step in the completion of the lower wall section is to rivet the upper rail "H" channels to the wall posts as shown in diagram 6. Be sure the upper rail "H" channels are completely down on the wall posts, and the wall posts are at 30" centers at the upper rail "H" channels. Prior to riveting minor adjustments may be needed to properly align the wall posts.



SUNGLO SOLAR GREENHOUSES SERIES 2100

SECTION 3: Upper back wall and Ridge channel
(Sequence run list section 3)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
26.	1804-1	RIDGE CHANNELS	SEE PACK LIST	NOTE: ON MODEL 2100H AND LARGER SEE DIAGRAM 7A
27.	1022	LONG RIVETS	SEE PACK LIST	
28.	1802-4	28 3/4" UPPER WALL POSTS	2	
29.	2002-1	24" UPPER WALL POSTS	3	
30.*	1062	29 7/8" X 4 9/16" LOWER OUTER PANEL	2	NOTE: ON MODEL 2100H AND LARGER SEE ADJACENT PAGE FOR STEPS #30 THRU 38.
31.*	1069	PANEL SUPPORTS	2	
32.*	1063	29 7/8" X 4 9/16" LOWER INNER PANEL	2	
33.*	1003-11	30" SLOTTED "H" RAIL	2	
34.*	2C713	16" FAN	2	
35.*	1002-7	19 3/16" FAN POST	2	
36.*	1060	19 1/8" X 10 5/8" FAN OUTER PANEL	2	
37.*	1069	PANEL SUPPORTS	2	
38.*	1061	19 1/8" X 10 5/8" FAN INNER PANEL	2	

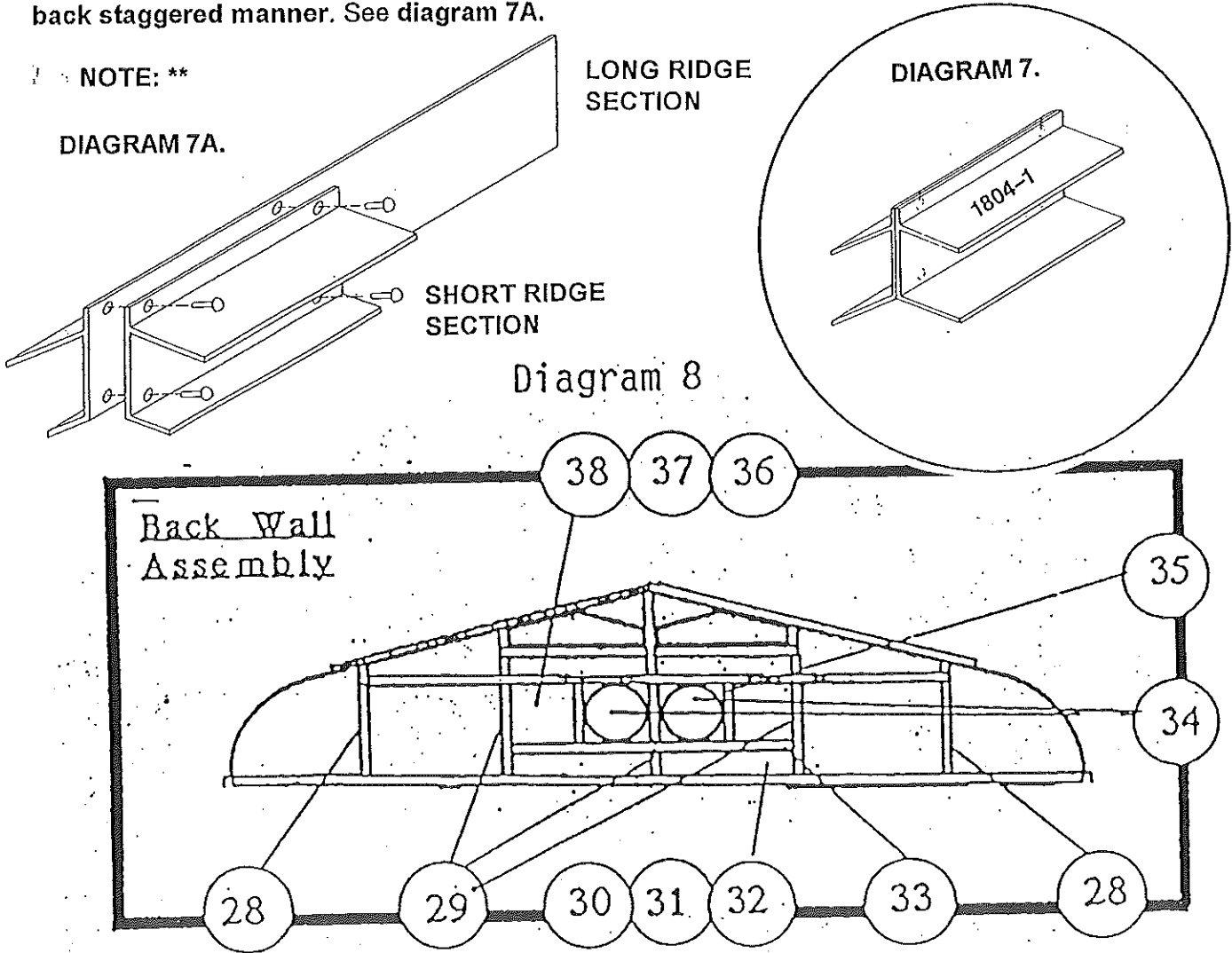
Ridge channel is a pre-assembly step. It is used later in the greenhouse construction. Assemble the ridge channels back to back as shown in diagram 7. Apply a bead of caulking (not provided) down one channel to assure a waterproof Sunglo Greenhouse. Using C-clamps to clamp the ridge channels tight together, secure the ridge channels with long rivets provided. Rivets should be spaced every 4 - 6 inches for strength. Remember to allow adequate time for the caulking to set (sequence steps 26, 27).

In completing the upper back wall of the Greenhouse, first position the upper wall posts and rivet them to the upper rail "H" channel as shown in diagram 8 (sequence steps 28, 29). Be sure these upper wall posts are in alignment with the bottom wall posts, and correspond to both roof slopes. When the lower outer and inner panels are installed in the 2 center bays (sequence steps 30, 31, 32), cap it off with a horizontal "H" channel (sequence step 33). Series 2100 uses 2 exhaust fans. Place the exhaust fan (sequence step 34), inside the horizontal "H" channel and against the center upper wall post. Be sure the fan will open outward. Secure the exhaust fans by installing the fan posts (sequence step 35). Be sure the fan posts are tight against the exhaust fans to allow adequate spacing for the fan outer & inner panels (sequence step 36, 37, 38).

* NOTE: ON MODEL 2100 H AND LARGER SUBSTITUTE THE FOLLOWING PARTS.

30.*	1281	29 7/8" X 2 9/16" LOWER OUTER PANEL	2	NOTE: ON MODEL 2100H AND LARGER USE THESE PARTS FOR STEPS #30 THRU #38.
31.*	1069	PANEL SUPPORTS	2	
32.*	1280	29 7/8" X 2 9/16" LOWER INNER PANEL	2	
33.*	1003-11	30" SLOTTED "H" RAIL	2	
34.*	2C708	18" FAN	2	
35.*	1202-1	21 1/8" FAN POST	2	
36.*	1279	21 1/8" X 8 5/8" FAN OUTER PANEL	2	
37.*	1069	PANEL SUPPORTS	2	
38.*	1278	21 1/8" X 8 5/8" FAN INNER PANEL	2	

NOTE: Ridge channel assembly for models 2100H and larger need to be assembled as follows. You will have two sets of different length ridge channels. These ridge channels need to be assembled in a back to back staggered manner. See diagram 7A.



(Sequence run list section 3)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
39.	1040	23 7/8" X 29 7/8" OUTER UPPER WALL	2	
40.	1069	PANEL SUPPORTS	2	
41.	1041	23 7/8" X 29 7/8" INNER UPPER WALL	2	
42.	0120-11SS	120" "H" SLOTTED RAIL	1	
43.	1802-5	10 3/4" UPPER WALL POST	2	
44.	2102-5	16 1/2" UPPER WALL POST	1	
45.	1873	4 3/8" X 29 7/8" OUTER WALL PANELS	2	
46.	1069	PANEL SUPPORTS	4	
47.	1874	4 3/8" X 29 7/8" INNER WALL PANELS	2	
48.	1003-11	30" SLOTTED "H" RAIL	2	
49.	1849-1	LEFT HAND VENT FRAME	1	
50.	1849-2	RIGHT HAND VENT FRAME	1	
51.	1877	TRIANGLE OUTER PANEL FILLER	2	
52.	1069	PANEL SUPPORTS	4	
53.	1879-1	L.H. TRIANGLE INNER PANEL FILLER	1	
54.	1879-2	R.H. TRIANGLE INNER PANEL FILLER	1	
55.	1815	OUTER CORNER PANELS	2	
56.	1069	PANEL SUPPORTS	4	
57.	1842	RIGHT HAND INNER CORNER PANEL	1	
58.	1843	LEFT HAND INNER CORNER PANEL	1	
59.	1703-1	CURVED OVERHEAD CHANNELS RH & LH	2	

After installing the outer and inner upper wall panels (sequence step 39, 40, 41), cap all 4 panel sections with a final horizontal "H" channel (sequence step 42). Align the short wall post (sequence steps 43, 44), and rivet them in place. Install the inner and outer wall panels (sequence steps 45, 46, 47), and cap them off with a horizontal "H" channel (sequence step 48). Install the air vent frames as shown in diagram 9. The inner parts of the air vents will be installed at a later stage. Making sure the air vent frames will open outward, apply caulking along the bottom of the air vent frames and rest them inside the "H" channels (sequence steps 49, 50). Install the triangle inner and outer panels (sequence steps 51, 52, 53, 54). After installing the outer and inner corner panels (sequence steps 55, 56, 57, 58) on both sides, attach the curved channels to both ends (sequence step 59) by riveting them first to the upper rail "H" channels using long rivets. Work the curved channels up over the corner panel, corner post, and the air vent frames as shown in diagram 10. A gentle tap may be needed to hold the curved channels in place. Both curved channels will rest in this position temporarily until the ridge channel is attached.

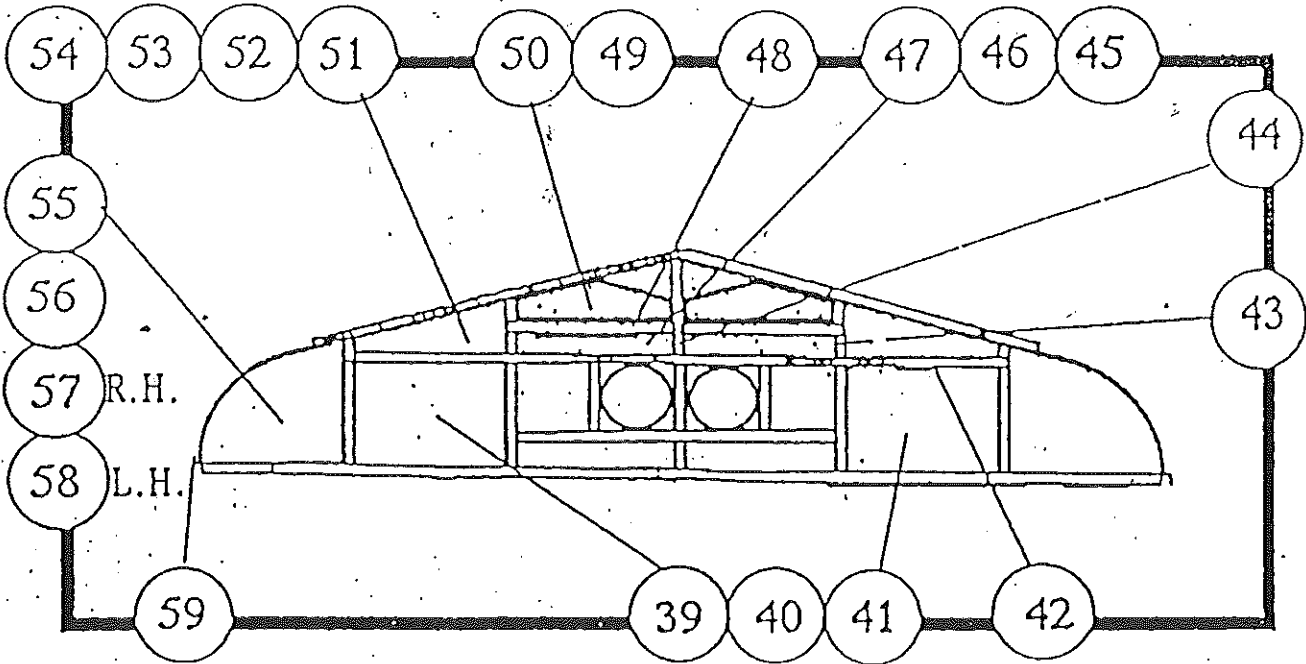


DIAGRAM 9.

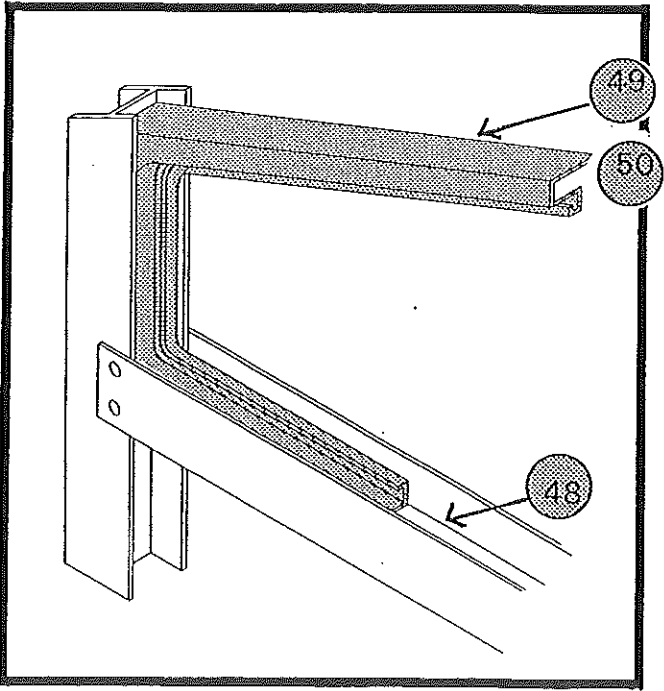
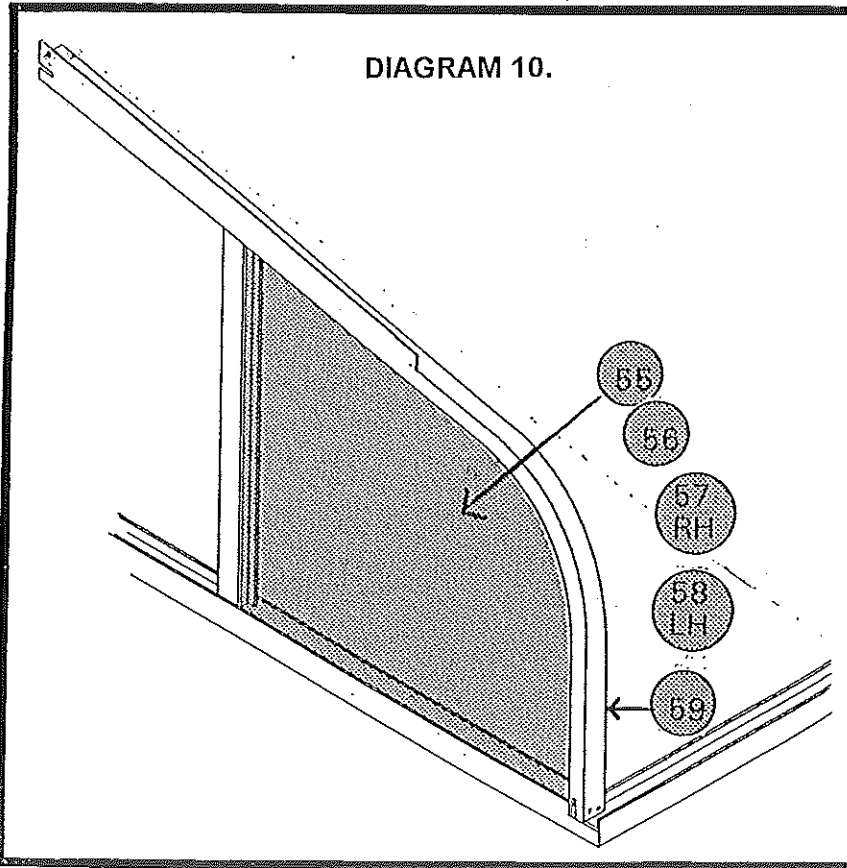


DIAGRAM 10.



SUNGLO SOLAR GREENHOUSES SERIES 2100

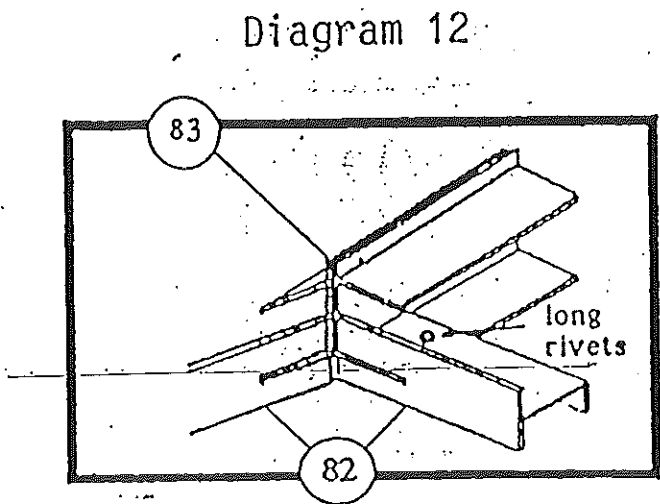
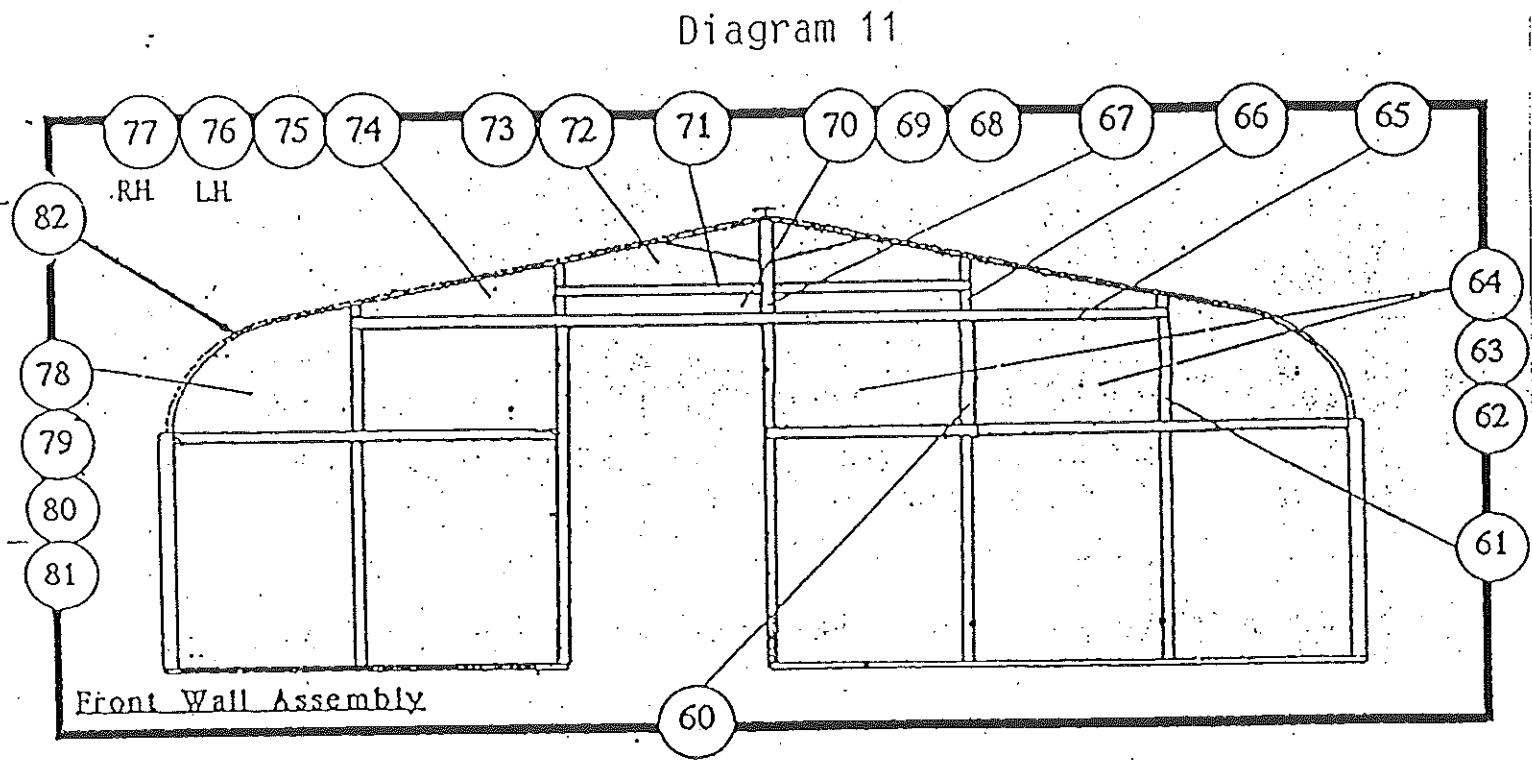
SECTION 4: Upper front wall assembly and ridge channel attachment

(Sequence run list section 4)

60.	2002-1	24" UPPER WALL POST	1
61.	1802-4	28 3/4" UPPER WALL POSTS	2
62.	1040	23 7/8" X 29 7/8" OUTER WALL PANELS	3
63.	1069	PANEL SUPPORTS	2
64.	1041	23 7/8" X 29 7/8" INNER WALL PANELS	3
65.	0120-11SS	120" SLOTTED "H" RAIL	1
66.	1802-5	10 3/4" UPPER WALL POSTS	2
67.	2102-5	16 1/2" UPPER WALL POST	1
68.	1873	4 3/8" X 29 7/8" OUTER WALL PANELS	2
69.	1069	PANEL SUPPORTS	4
70.	1874	4 3/8" X 29 7/8" INNER WALL PANELS	2
71.	1003-11	30" SLOTTED "H" RAILS	2
72.	1849-1	LEFT HAND VENT FRAME	1
73.	1849-2	RIGHT HAND VENT FRAME	1
74.	1877	TRIANGLE OUTER PANEL FILLERS	2
75.	1069	PANEL SUPPORTS	4
76.	1879-1	L.H. TRIANGLE INNER PANEL FILLER	1
77.	1879-2	R.H. TRIANGLE INNER PANEL FILLER	1
78.	1815	OUTER CORNER PANELS	2
79.	1069	PANEL SUPPORTS	4
80.	1842	RIGHT HAND INNER CORNER PANEL	1
81.	1843	LEFT HAND INNER CORNER PANEL	1
82.	1703-1	CURVED OVERHEAD CHANNELS (R & L)	2
83.	1804-1	RIDGE CHANNEL ASSEMBLY	1

The construction of the upper front wall assembly is the same as the upper back wall assembly. The parts used for both are identical. When the upper front wall assembly is completed, it will leave a rough opening for the door assembly at a later stage (sequence steps 60 thru 82). See diagram 11.

In attaching the ridge channel, it may be helpful to have an assistant. From the front end of the Sunglo Greenhouse, mount the ridge channel on the apex of the curved edge of the channel parts. Slide the lower flange of the ridge channel through the slots in the curved channels. Making sure the curved channel is completely in, rivet the channels together using the long rivets as shown in diagram 12. (sequence step 83). Perform the same procedure for the back end.



SUNGLO SOLAR GREENHOUSES SERIES 2100
SECTION 5: OVERHEAD TRUSSES AND HANGER BAR ASSEMBLY

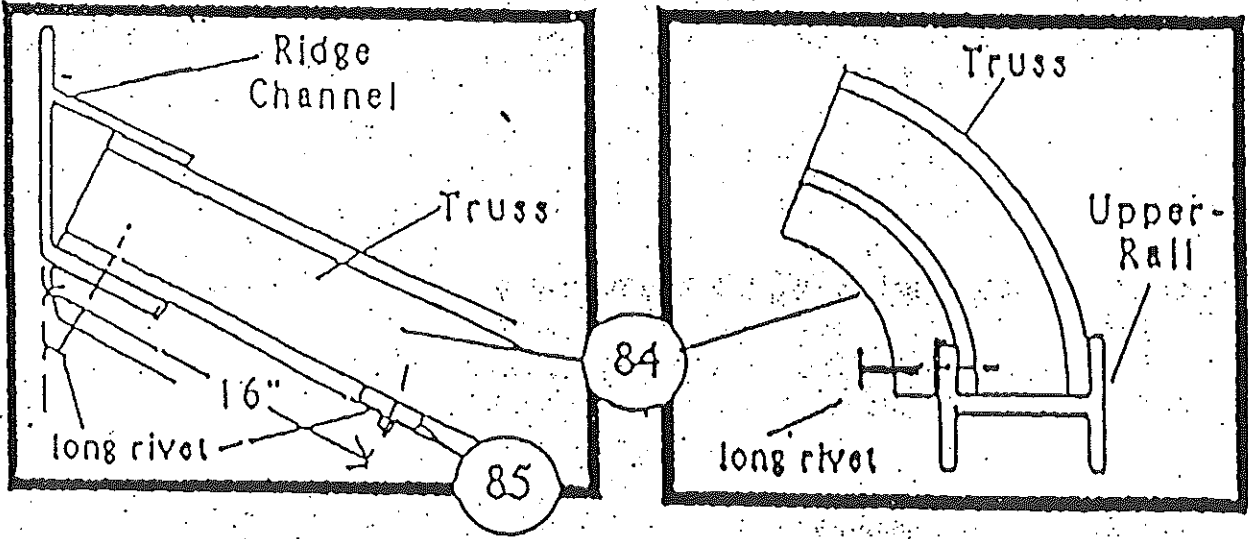
(Sequence run list section 5

SEQUENCE	PART #	PART NAME	QUANTITY	✓
84.	1705-1	OVERHEAD TRUSS	SEE PACK LIST	
85.	1806-12	HANGER BARS	8	
86.	1806-13	HANGER BARS	SEE PACK LIST	
87.	1806-14	HANGER BARS	SEE PACK LIST	
88.	1806-11	HANGER BARS	SEE PACK LIST	

The overhead trusses are located on 30" centers on the upper rail "H" channels and the ridge channel. Starting from one end, measure out 30" centers for the entire length of the Sunglo Greenhouse. Insert the overhead trusses to these marks as shown in diagrams 13, 14, 15. (sequence step 84).

Diagram 13

Diagram 14



Hanger bars provide dimensional stability and strength to the Sunglo Greenhouse. They also keep the overhead trusses to 30" center. Hanger bars are installed between the overhead trusses and between the curved end channels and trusses. From inside the Sunglo Greenhouse, measure down 30" and 60" from the ridge channel and mark the overhead trusses and curved end channels. Then rivet the hanger bars to the marked locations. For Sunglo series 2100, 4 additional hanger bars are used for the air vent door assembly at a later stage. These hanger bars (sequence step 85), are installed 16" down from the ridge channel on the 4 outside roof bays of the Sunglo Greenhouse as shown in diagram 15.

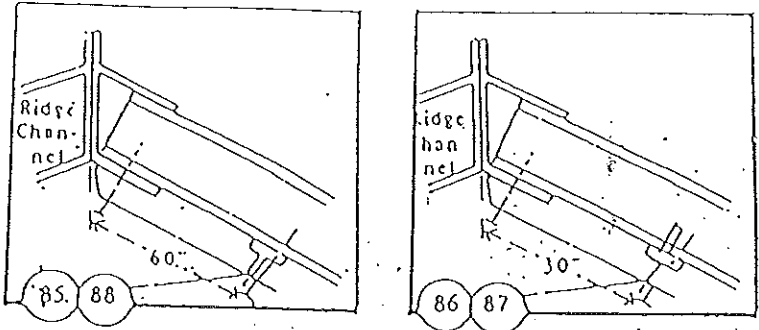
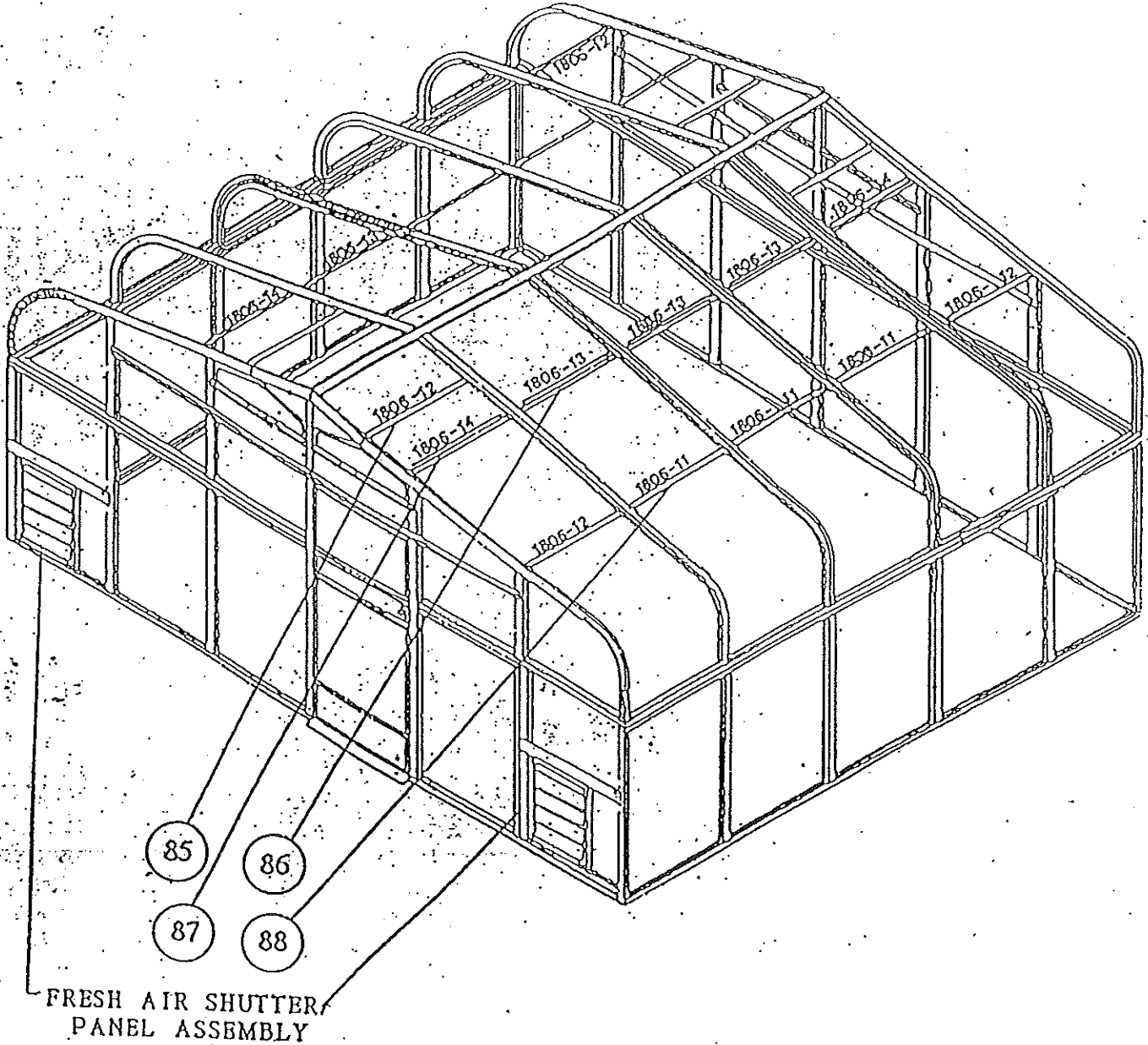


Diagram 15

NOTE: All distance to hanger bars are measured from the inside of the ridge channel



SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 6: OVERHEAD ACRYLIC PANELS AND PANEL LOCKS ASSEMBLY

NOTE: IF YOUR SUNGLO GREENHOUSE IS A 2100E OR LONGER (15' IN LENGTH OR LONGER), PERFORM SECTION 11 (SUPPORT POSTS ASSEMBLY) PRIOR TO SECTION 6. THE SUPPORT POSTS WILL SUPPORT THE RIDGE CHANNEL AND WILL PREVENT SAGGING DURING OVERHEAD ACRYLIC PANEL AND PANEL LOCKS ASSEMBLY. THIS WILL SIMPLIFY THE OVERHEAD ACRYLIC PANELS AND PANEL LOCKS ASSEMBLY.

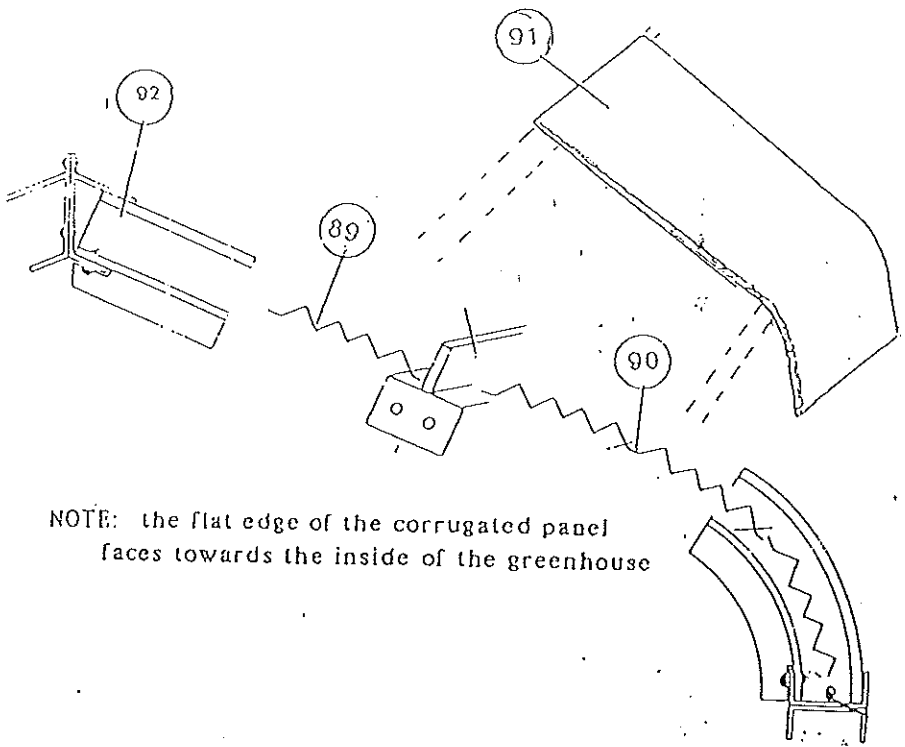
(Sequence run list 6)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
89.	1732	30 1/2" X 29 1/2" OVERHEAD INNERS	SEE PACK LIST	
90.	1532	77 3/4" OVERHEAD INNERS	SEE PACK LIST	
91.	1731	110" OVERHEAD OUTERS	SEE PACK LIST	
92.	1069	PANEL SUPPORTS	2 PER BAY	
93.	1709-1	PANEL LOCKS	SEE PACK LIST	

Starting at one end of the roof, lay the corrugated inner panel between the end curved channel and the overhead truss. Be sure the flat edge of the corrugated overhead inner panel is facing the inside of the Sunglo Greenhouse. The shorter piece is installed first, follow with the longer piece corrugated overhead inner panel. The top hanger bar will separate the two corrugated overhead inner panels. Lay the flat overhead outer panel over the corrugated overhead inner panel, sliding its upper edge into the ridge channel, and its lower edge into the upper rail "H" channel as shown in diagram 16 (sequence steps 89, 90, 91, 92, 93). Remember to install the panel supports in the overhead acrylic panel's assembly. Move to the next roof opening and perform the same process.

Once the two roof bays are completed, the panel locks can now be installed. Prior to installing the panel locks apply the supplied gasket material to the entire length of the panel lock's underside as shown in diagram 16A. Panel locks should be installed from within the greenhouse as shown in diagram 17A. Place the panel lock even with the top flanges of the ridge channel, centered directly over the overhead truss. With a rubber mallet gently tap the panel lock down until it snaps and locks on the overhead truss as shown in diagram 17. Panel locks should be installed only half way down the roof at this time for possible roof re-alignment at a later stage. Seal the top of the panel lock where it meets the ridge channel with a dab of silicone. Perform the same procedures for the entire roof section on both sides. Before tapping all the panel locks all the way down to the upper rail "H" channels, be sure that the overhead outer's have not slipped down during the panel lock installatio. If this has occurred, the problem can be solved by re-aligning the overhead outer panels or cutting off the excess of the overhead outer panel at the bottom with a sharp razor knife.

When the entire roof section is completed, finish installing the panel locks by tapping slowly down on the overhead truss till the panel locks locking fin meets the upper rail "H". There will be approximately 1 3/4" of the panel lock hanging over the upper rail "H" , drill a hole on each side of the panel lock and rivet it to the upper rail "H".



NOTE: the flat edge of the corrugated panel faces towards the inside of the greenhouse

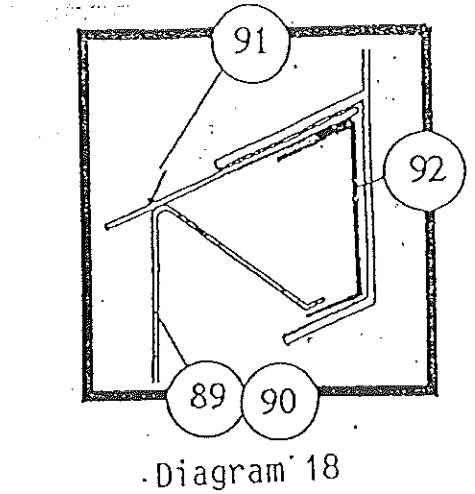


DIAGRAM 16A.



DIAGRAM 17A.

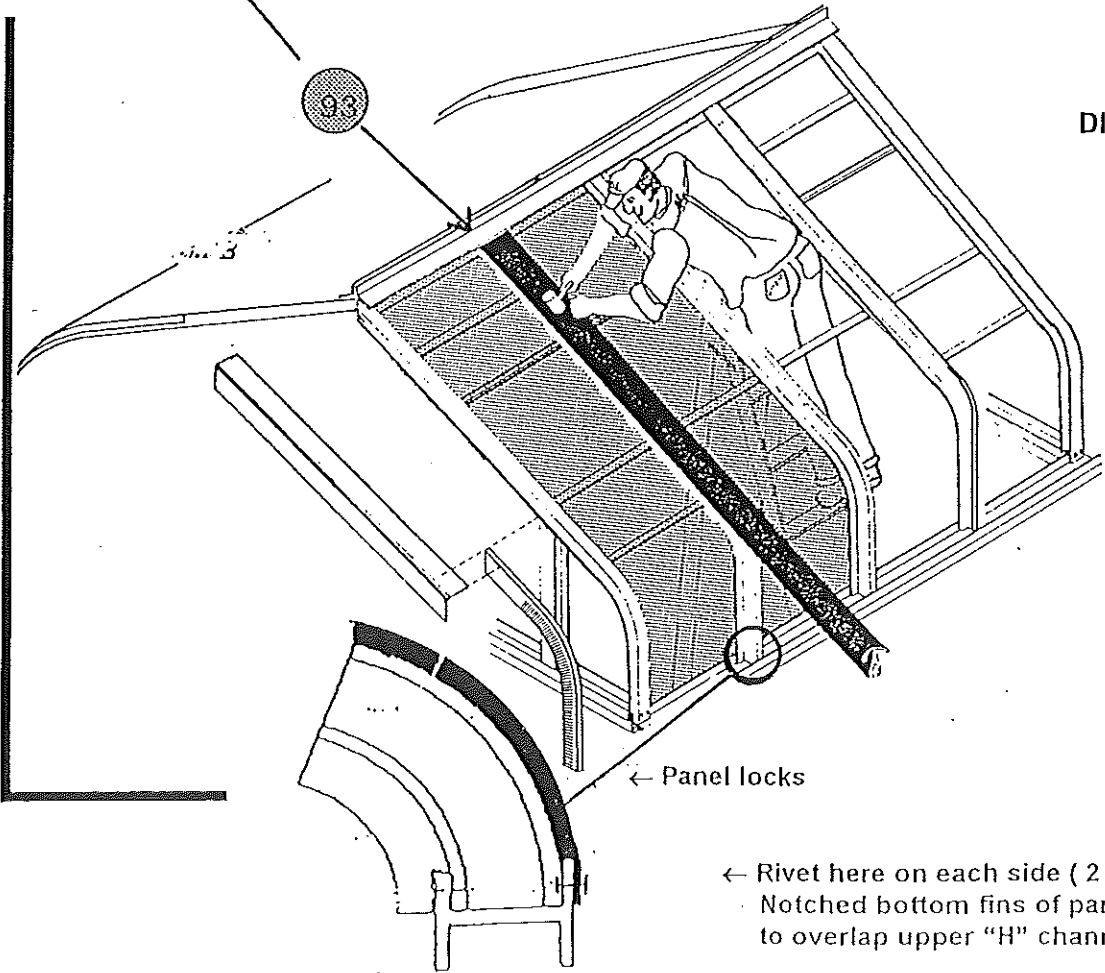


DIAGRAM 17.

← Rivet here on each side (2 rivets)
Notched bottom fins of panel lock to overlap upper "H" channel.

SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 7: OUTSIDE ROOF TRIM PIECES INSTALLATION

(sequence run list 7)

To complete the roof assembly, attach the two outside roof pieces (a long curved corrugated piece and a short straight piece) to each end of the Sunglo Greenhouse as shown in diagram 17. Starting at one end, rivet the curved corrugated section of the trim (sequence steps 94, 95) as shown in diagram 17A. Pressing the curved corrugated trim snug against the edge of the curved channel, rivet up the side of the curved corrugated trim to the curved channel every 6". To install the short straight piece (sequence steps 96, 97), press the straight trim firmly into the ridge channel at the top of the peak. Starting from the top, press the straight trim snug against the edge and place 2 rivets every 6" all the way to the bottom using the long rivets provided. Continue this process until you have completed all four sides. Now you can complete the roof section by installing the panel supports in the upper "H" channels (sequence step 98).

SEQUENCE	PART #	PART NAME	QUANTITY	✓
94.	1814-1	L.H. OVERHEAD CURVED TRIMS	2	
95.	1814-2	R.H. OVERHEAD CURVED TRIMS	2	
96.	1714-4	LEFT HAND STRAIGHT TRIMS	2	
97.	1714-5	RIGHT HAND STRAIGHT TRIMS	2	
98.	1069	PANEL SUPPORTS	2 PER BAY	

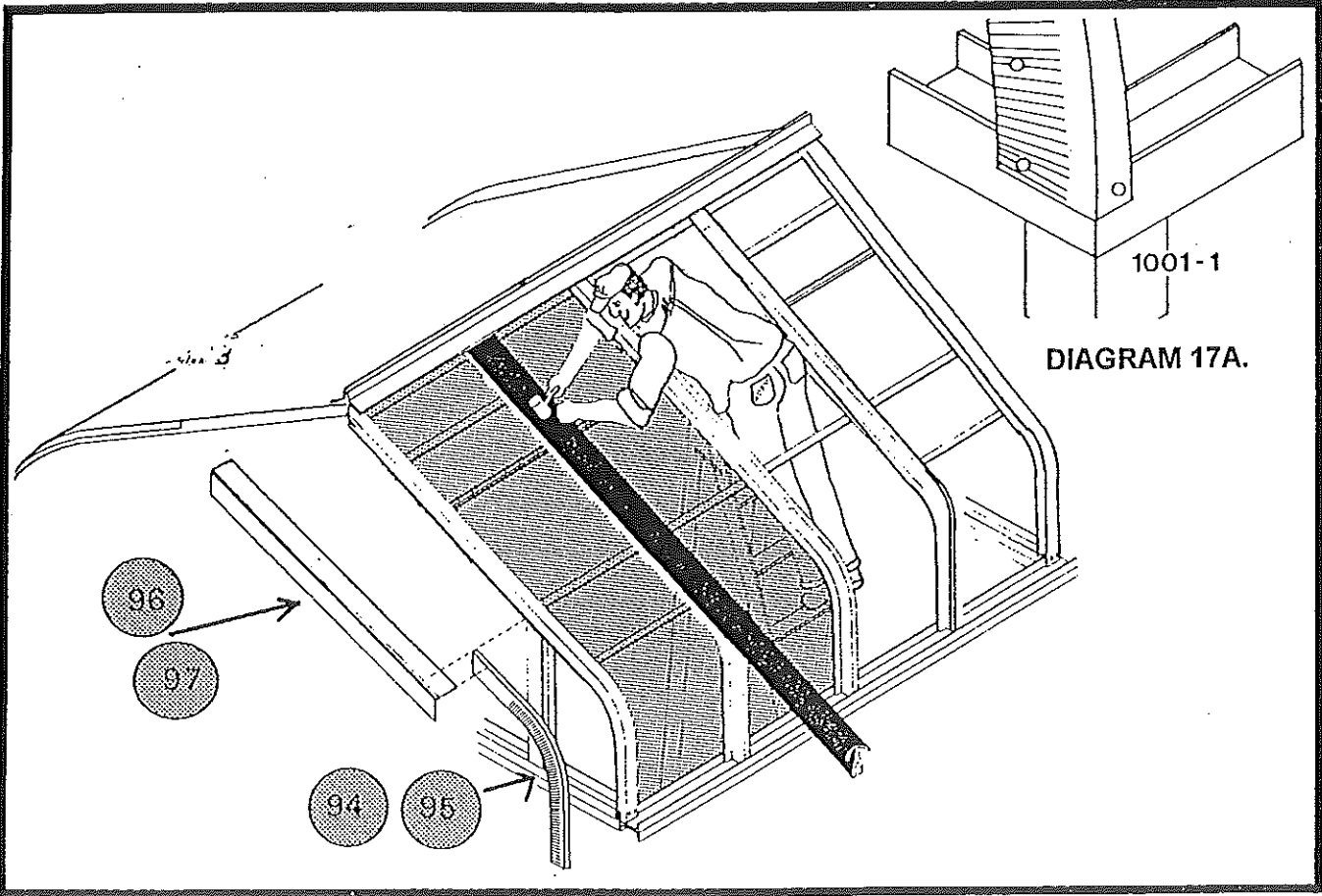


DIAGRAM 17A.

SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 8: AIR VENT DOORS INSTALLATION

(Sequence run list section 8)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
99.	1021	LONG RIVETS	SEE PACK LIST	
100.	1816	MANUAL VENTS	4	
101.	1027	BACK UP WASHERS	32	
102.	1017	VENT HINGES	8	
103.	1047	VENT LATCHES	4	
104.	1046	VENT LATCH SPRINGS	4	

Using long rivets and backing washers, rivet the hinges to the vent door about 6" from each end of the air vent door before securing the door into the vent frame. The hinge rivets should be backed with a washer (provided) where the rivet passes through the plastic to prevent the plastic from cracking. Center the vent door into the vent frame and rivet the hinges to the channel as shown in diagram 19, 20, 21. Attach one end of the vent door latch to the hanger bar by riveting it to the hanger bar, then attach the other end of the latch to the vent door with rivets and washers (sequence steps 99 thru 103). Install the vent latch spring as shown in the diagrams. Perform this process until all air vent doors are completed.

DIAGRAM 19.

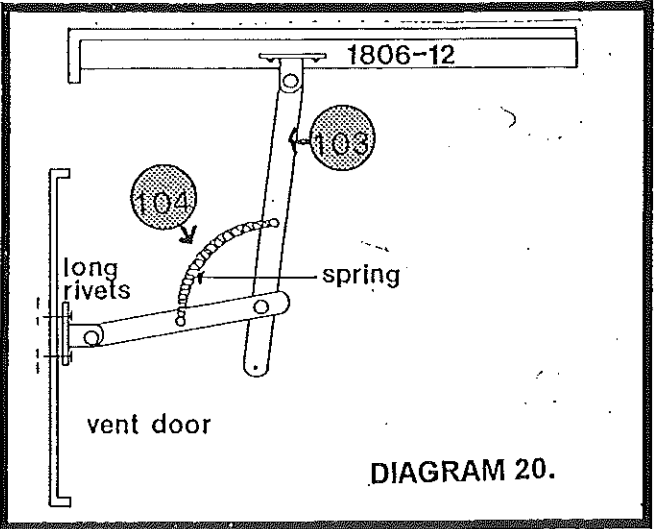
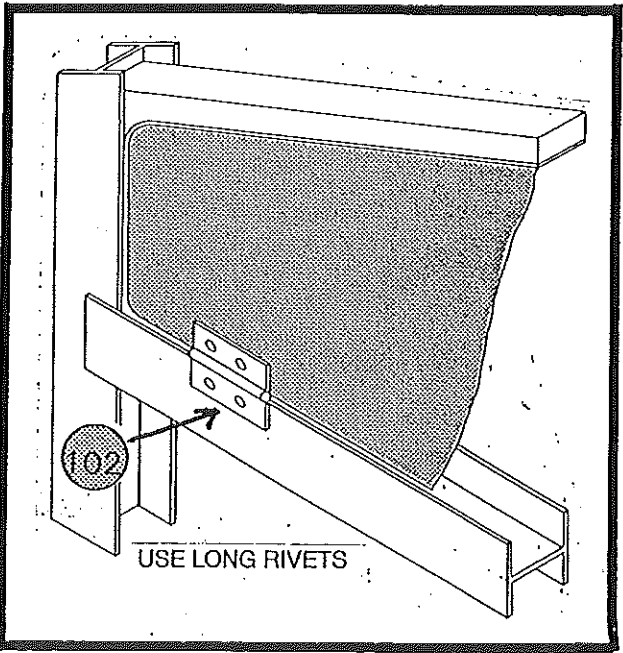
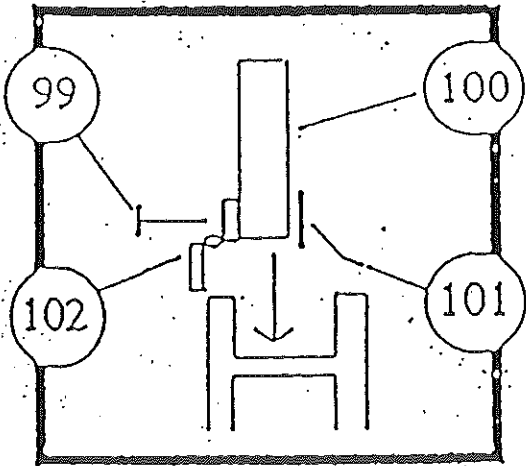


DIAGRAM 20.

DIAGRAM 21.



SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 9: BENCH FRAME INSTALLATION

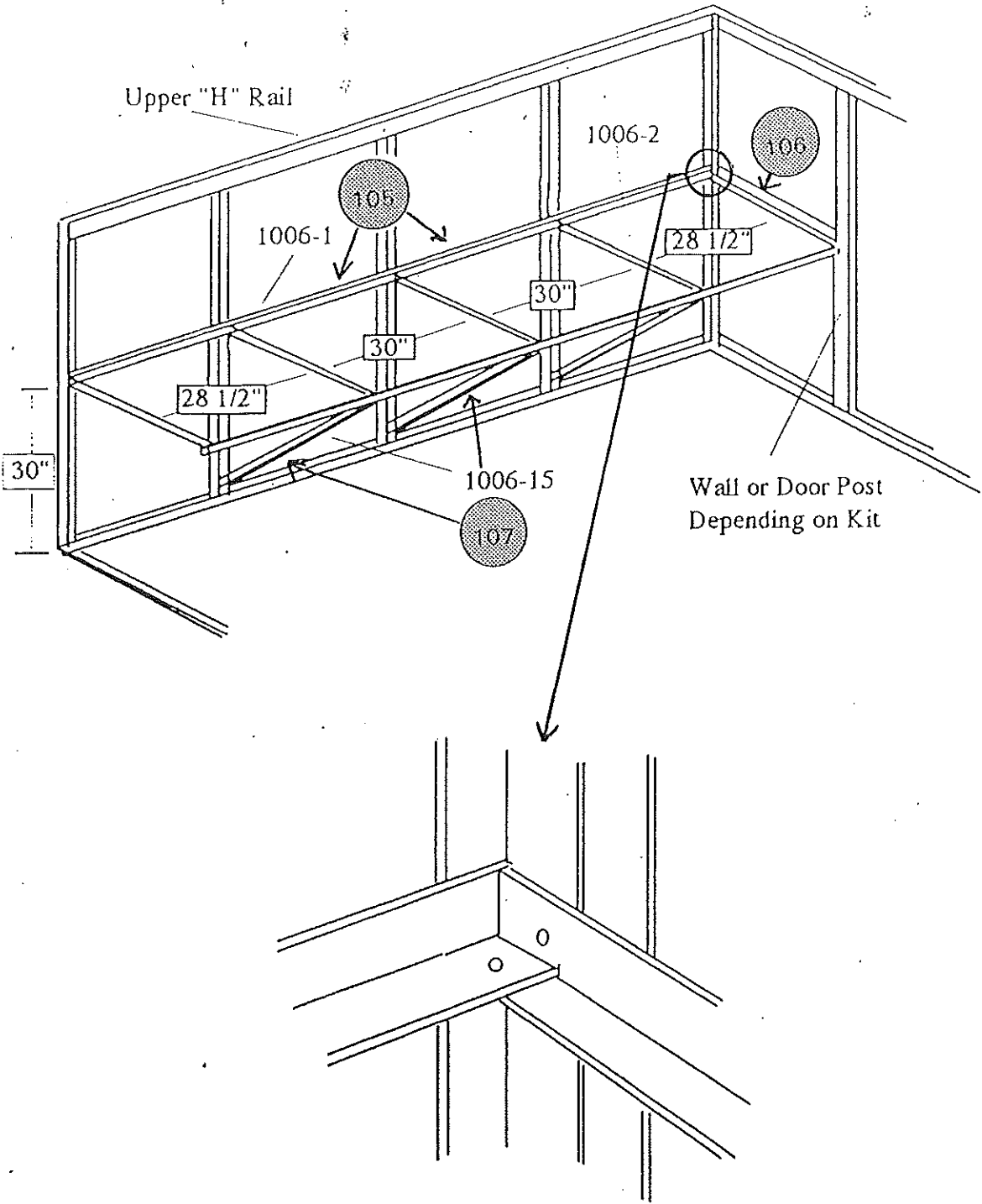
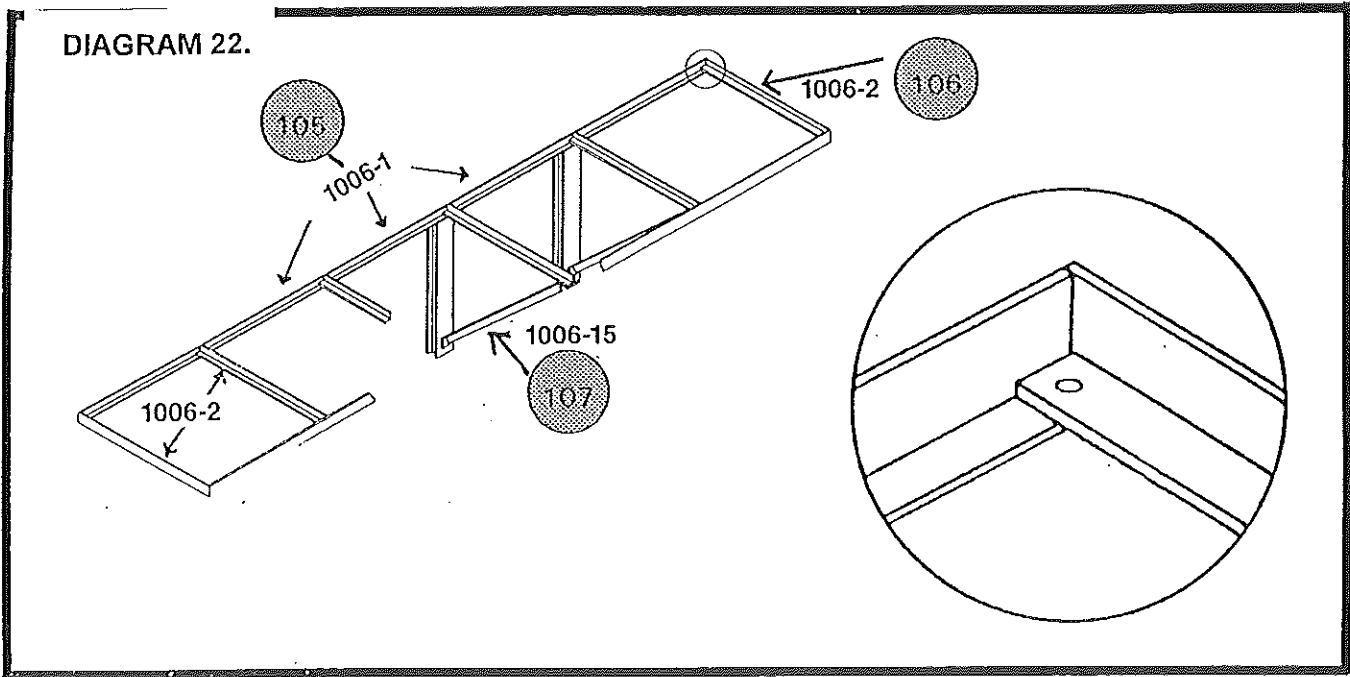
(Sequence run list section 9)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
105.	1006-1	BENCH TEES	4	
106.	1006-2	30" BENCH TEES	SEE PACK LIST	
107.	1006-15	BENCH TEES	SEE PACK LIST	

You have been furnished with a complete set of bench frame work to run lengthwise down both sides of your Sunglo Greenhouse. You may wish to alter the configuration shown **diagram 22** to suit your needs.

From the ground level, measure up and mark 30" in height on the wall and corner posts. This will be the height of the bench frame work. If you so desire it is optional to have the bench frame work set at a different height.

First secure one of the long bench tee (**sequence step 105**) against the back wall by riveting it to the wall posts. Two rivets are to be used for each wall post. Rivet the bench frame legs (**sequence step 107**) to the wall posts while resting above the bottom rail "U" channel on the foundation plate so that a 45 degree angle is formed away from the wall as shown in diagram 22. Install the 30" bench tee (**sequence step 105**) by riveting them outward from the wall and corner posts. Rivet another long bench tee to the 30" bench tees. To complete the bench frame work, place a level on top of the bench frame work. Making sure each bench frame work is level, rivet the bench frame legs to the bottom of the 30" bench tees. Perform this process for the other side of the greenhouse.



SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 10: DOOR AND LATCH ASSEMBLY

(Sequence run list section 10)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
108.	1018	THRESHOLD	1	
109.	#8	THRESHOLD SCREWS	3	
110.	1013-3	TOP DOOR JAMB	1	
111.	1013-1	LEFT HAND DOOR JAMB	1	
112.	1013-2	RIGHT HAND DOOR JAMB	1	
113.	1048	DOOR ASSEMBLY	1	
114.	1017	DOOR HINGES	4	
115.	1019	DOOR LATCH SET	1	
116.	1045	DOOR LATCH PLATE	1	

NOTE: THE DOOR LATCH IS PACKAGED WITH A SEPARATE INSTRUCTION SHEET. PLEASE DISREGARD THESE PACKAGED INSTRUCTIONS. PLEASE FOLLOW OUR INSTRUCTIONS BELOW FOR THE DOOR LATCH ASSEMBLY.

The materials required for this phase of the greenhouse assembly include the threshold, door, door latch, hinges and the door jamb material. First install the threshold (**sequence step 108**), using the 3 #8 countersink screws provided (**sequence step 109**). The lip of the threshold should be towards the inside of the greenhouse as the door will close against the lip. See **diagram 23**.

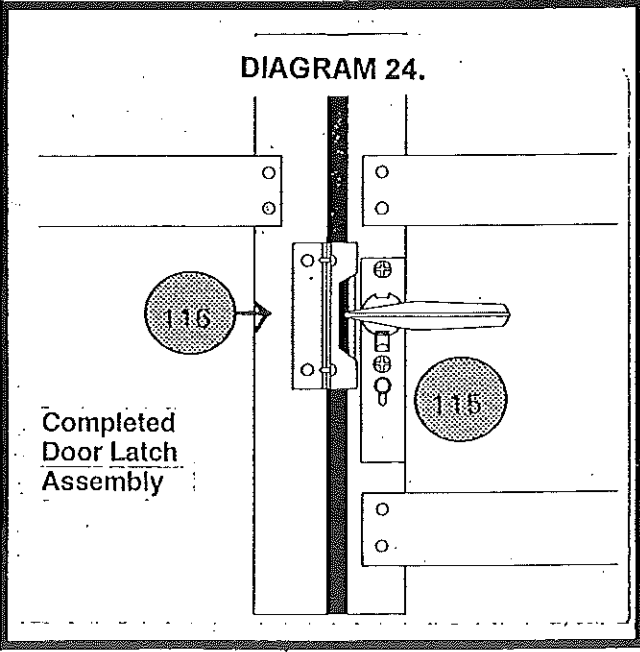
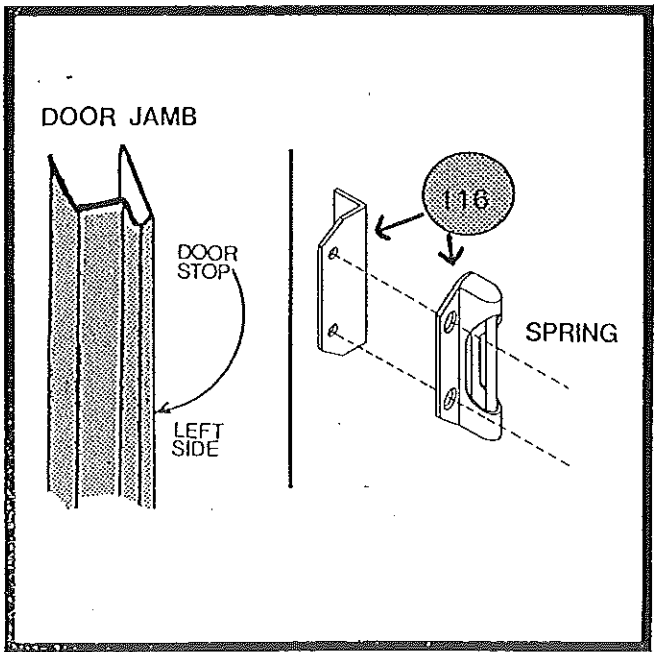
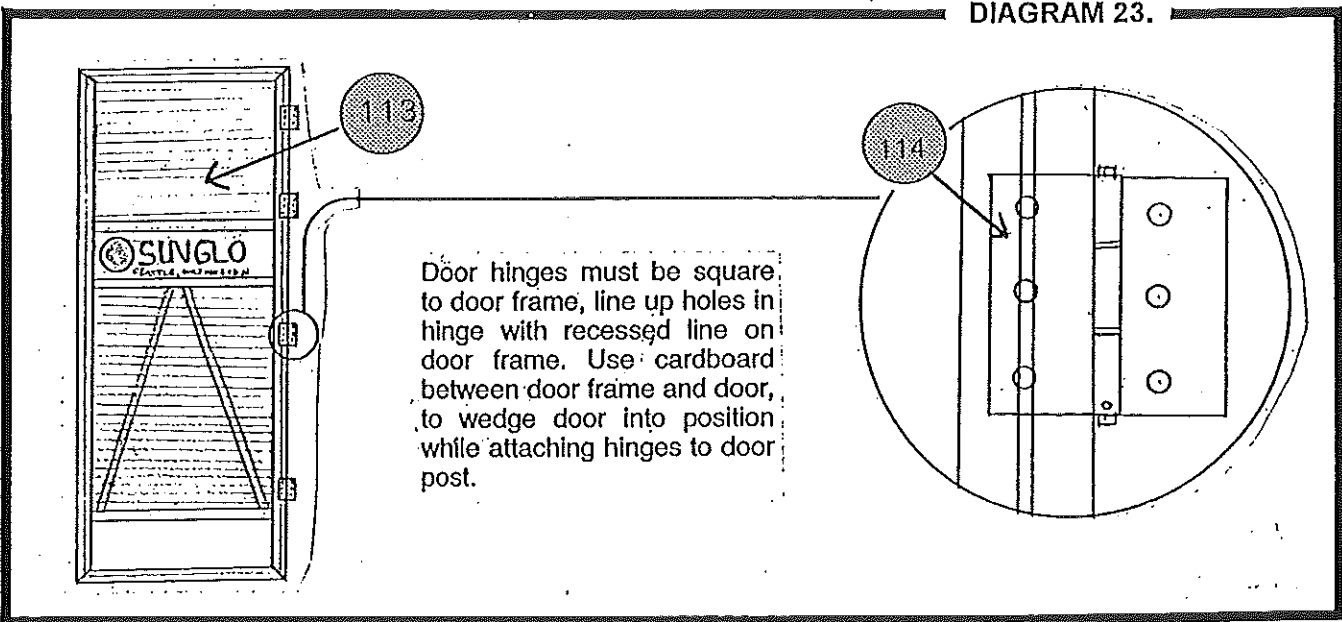
The door jamb is to be installed next. It consists of 3 aluminum strips (**sequence steps 110, 111, 112**). These parts fit only one way and are not be riveted until the door is fitted. Starting at the top, slip the pieces of the door jamb inside the door frame, making sure that the door's resting edge is to the back and provides a stop for the door as shown in **diagram 25**.

Use 4 hinges (**sequence step 114**) and rivet them to the door as shown in **diagram 23**. Make sure that the hinges are square with the door and the raised side of the hinge is on the door as shown in **diagram 23**. (**NOTE:** THE DOOR CAN BE OPENED TO THE RIGHT OR LEFT SIDE DEPENDING ON THE PLACEMENT OF THE HINGES).

To install the door, position the door (**sequence step 113**) into the frame and place a piece of cardboard under the door to get a proper threshold height. We recommend elevating the door approximately 1/4". Making sure the door is parallel with the wall post, rivet the hinges to the door post.

With the door closed, use the template found on the door latch package and position the template on the door so that the dotted line is folded on the outside corner of the door. Adjust the height of the template so that the latch is at a convenient height. Mark the exact position of the 3 holes on the door surface. Using a 1/4" drill bit drill the 3 holes straight through the door. To clear the holes of any flashing, insert the drill bit into the hole and rotate with a straight wobbling action. The spindle must have complete freedom of movement. Install the door latch (**sequence step 115**) to the door. Make sure the screws are to the inside of the greenhouse. Rivet the spring loaded catch to the door latch plate (**sequence step 116**) as shown in **diagram 24** and rivet this whole assembly to the door post. Make sure the door latch will engage correctly with the cylindrical spring-loaded catch.

NOTE: DO NOT USE THE 2 PLASTIC PLATES PACKAGED WITH THE DOOR LATCH ASSEMBLY.

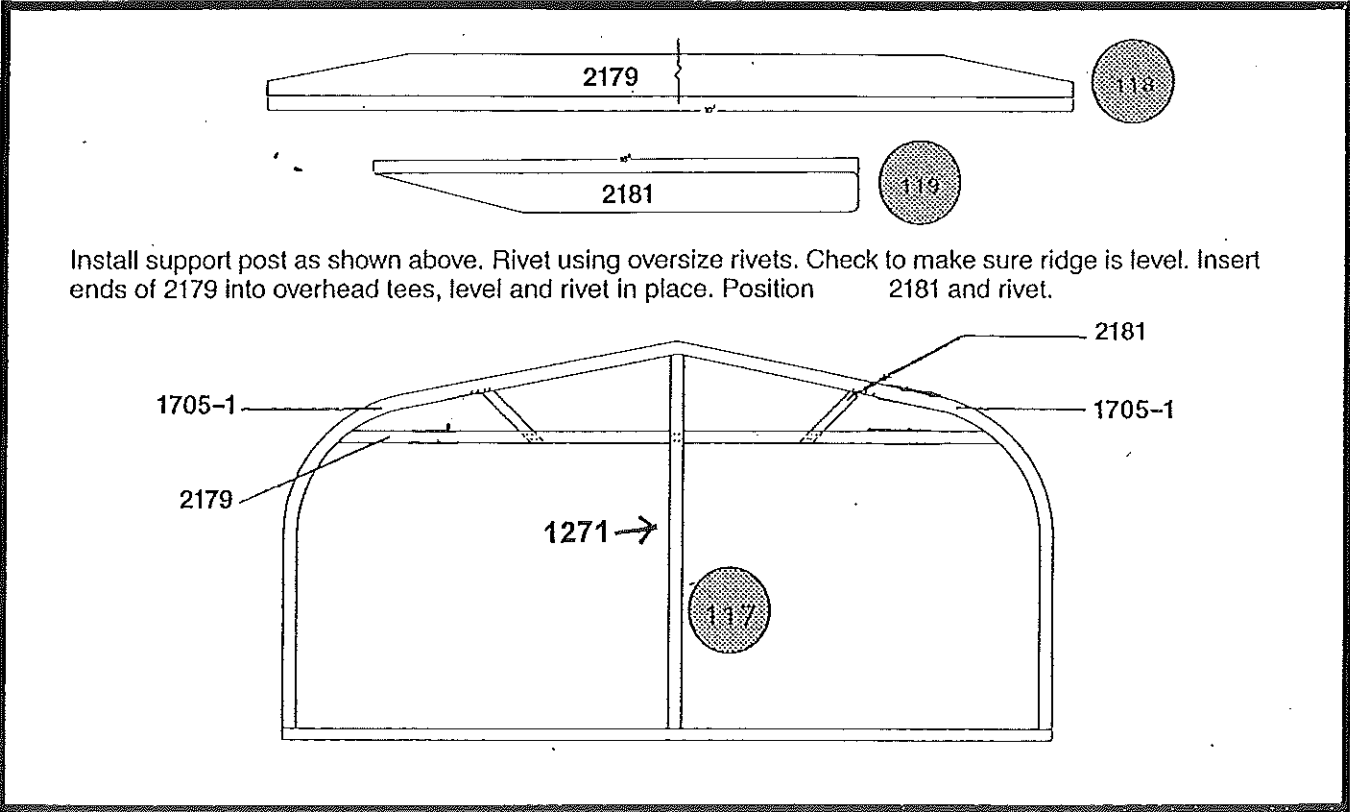


SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 11: SUPPORT POSTS ASSEMBLY

(Sequence run list section 11)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
117.	1271	SUPPORT POSTS	SEE PACK LIST	
118.	2179	BRACE BAR	SEE PACK LIST	
119.	2181	BRACE BARS	SEE PACK LIST	
120.		OVER SIZED RIVETS	SEE PACK LIST	

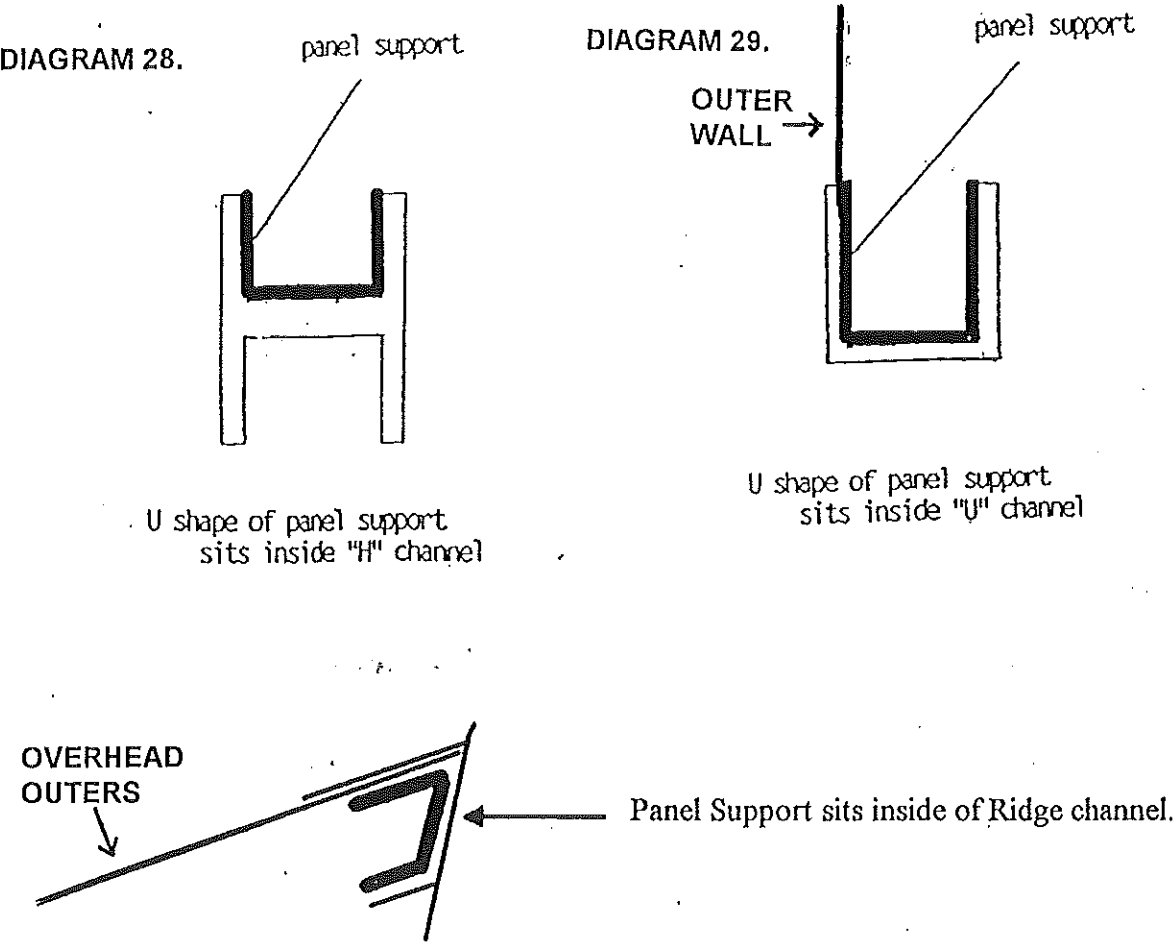
For Sunglo Greenhouses model 2100E or larger (15' in length or longer), support posts (square shaped) are included. The number of support posts used depend on the length of the greenhouse. Refer to the packing list for the amount used. Support posts are slotted and angled. Insert the support post at the ridge into the center of the overhead trusses. Rivet the support post where it meets the overhead truss with the long rivets. The bottom of the support post should be anchored to the floor or footing at the same height as the greenhouse foundation (sequence step 117). Be sure the support post(s) are divided evenly along the length of the greenhouse. Install the brace bars (sequence steps 118, 119) as shown in diagrams 26, 27.



SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 12: PANEL SUPPORTS INSTALLATION

Panel supports are "U" shaped aluminum pieces and are used to assure a tight seal between the acrylic panels and the aluminum channel extrusions. Each Sunglo Greenhouse comes with enough panel supports to the upper ridge, the upper rail assembly and the lower frame assembly.

To install the panel supports, install the outer acrylic panel's first. Insert the panel supports inside the aluminum channels. Be sure the flat top side is facing towards the channels they are resting on as shown in diagrams 28, 29. Install the corrugated inner panels to complete the assembly. Each panel section requires two panel supports. A 2" trim to one of the panel supports is needed when placing the panel supports at the corner panels and at both ends of the roof section.



SUNGLO SOLAR GREENHOUSES SERIES 2100:
SECTION 13: VINYL SHELVING INSTALLATION (OPTIONAL)

(Sequence run list section 13)

SEQUENCE	PART #	PART NAME	QUANTITY	✓
122.		SHELVING END BRACKETS	SEE PACK LIST	
123.		SHELVING HANGER CLIPS	SEE PACK LIST	
124.		10' OR 12' VINYL SHELVING	SEE PACK LIST	
125.		SUPPORT LEGS	SEE PACK LIST	
126.		SHELVING SUPPORT BRACKETS	SEE PACK LIST	
127.		SCREWS	SEE PACK LIST	
128.		NUTS	SEE PACK LIST	
129.		LONG RIVETS	SEE PACK LIST	

The vinyl shelving is an optional accessory offered by Sunglo Solar Greenhouses. The optional vinyl shelving is installed with several components. The shelving end brackets (sequence step 122) are riveted to the ends of the greenhouse as shown in diagram 30. The shelving end brackets provide support on either end of the vinyl shelving. Using long rivets, rivet the shelving hanger clips (sequence step 123), along the upper rail "H" channel. Make sure these shelving hanger clips are divided evenly along the upper rail "H" channel. Install the vinyl shelving (sequence step 124), by placing it on the shelving end brackets and inside the shelving hanger clips. Locating each wall post, install the round end of the support legs (sequence step 125), to the front of the vinyl shelving and rivet the back ends to the wall posts using long rivets. In situations where 2 sections of vinyl shelving's meet, use a shelving support bracket (sequence 126), to support the 2 edges at the front of the vinyl shelving, and use 2 shelving hanger clips (sequence 123), to support the back ends. Perform this process for the other side of the greenhouse.

Support leg normally used for vinyl shelving.

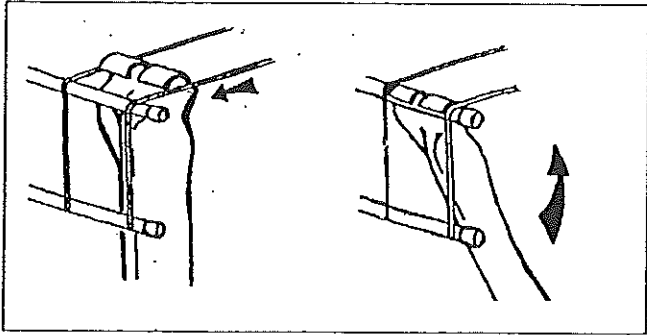
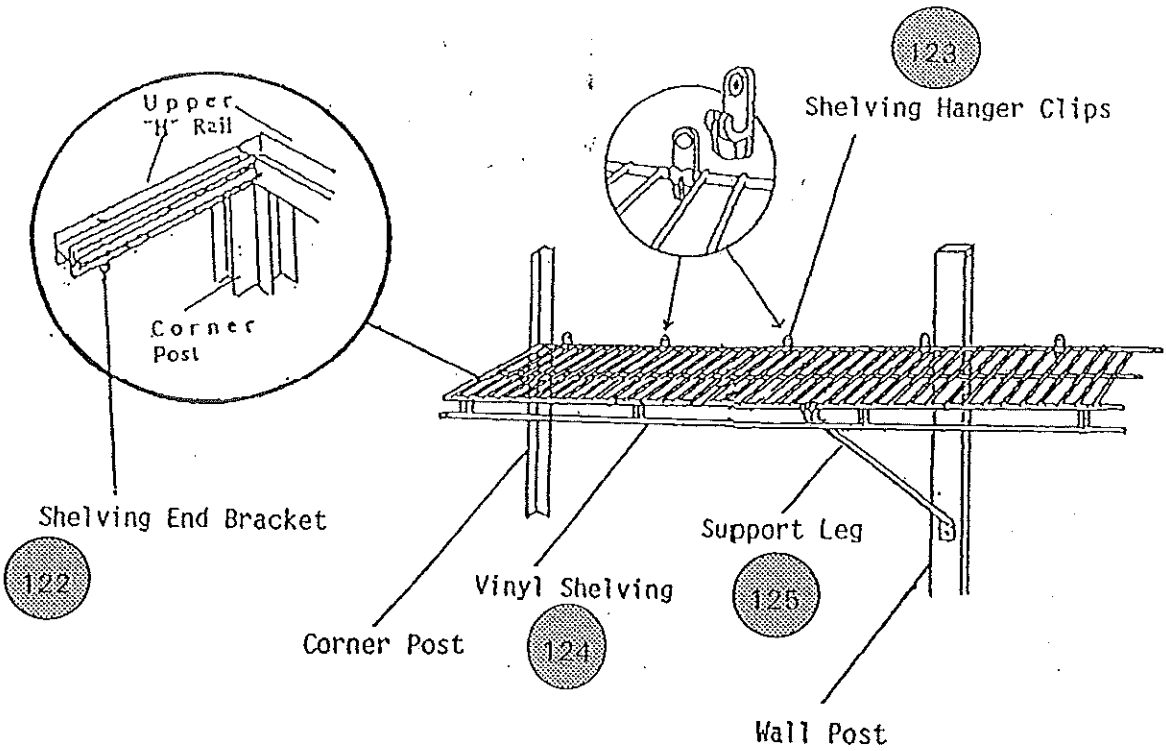


Diagram A



Support post used when two shelves meet (Diagram B)

