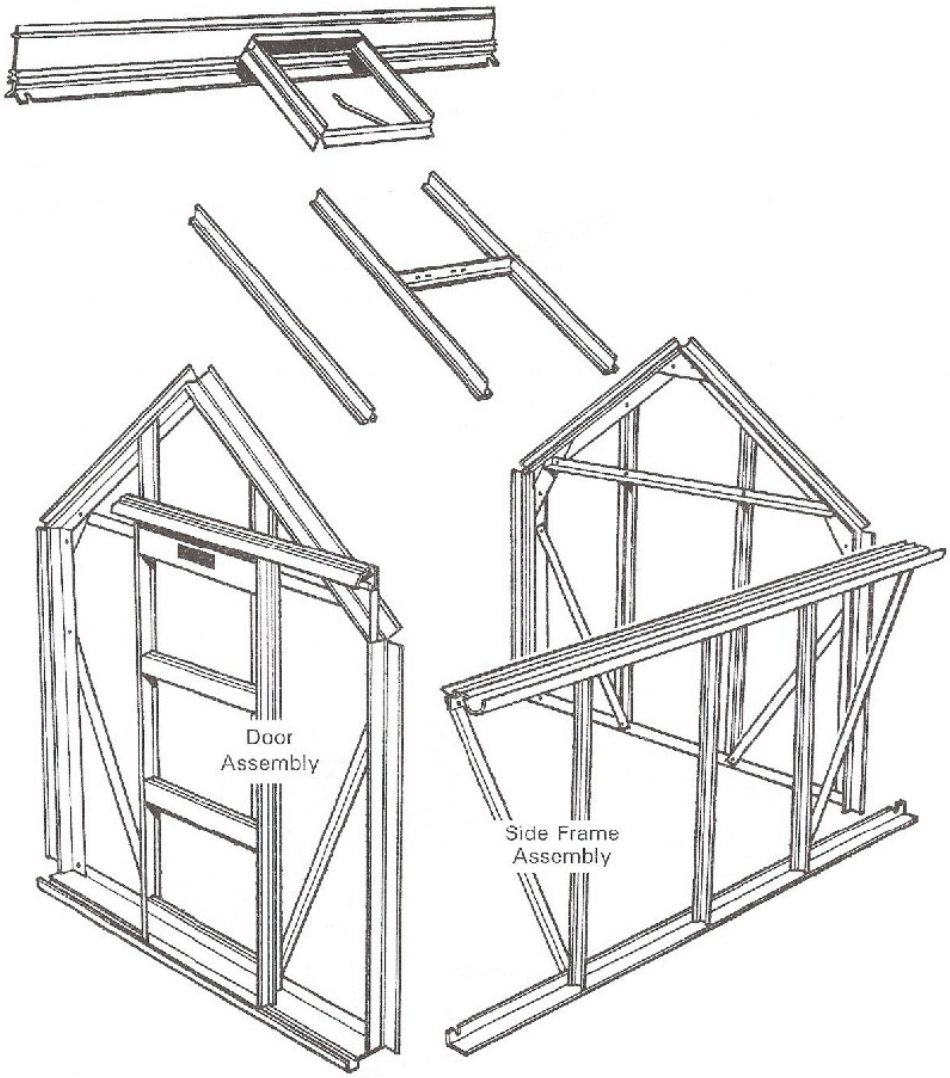
ELITE GREENHOUSES LIMITED

INSTRUCTIONS & ILLUSTRATIONS FOR THE

6'3" WIDE iGROW



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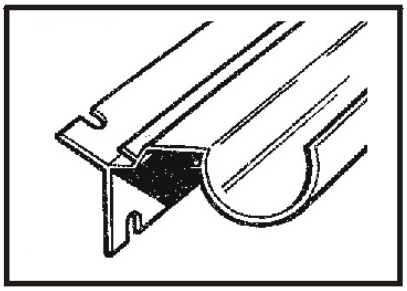
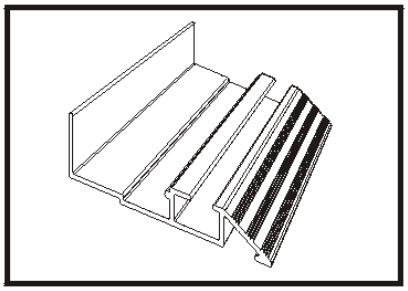
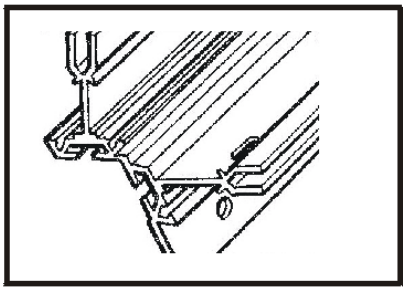
COMPONENT DRAWINGS (NOT TO SCALE)



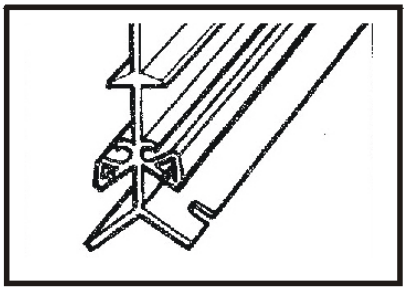
EAVES BAR/GUTTER



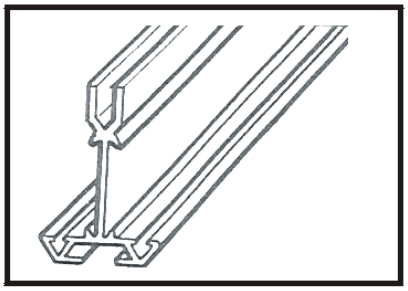
DOOR END CILL



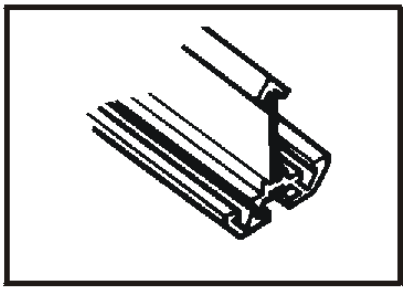
CORNER BAR



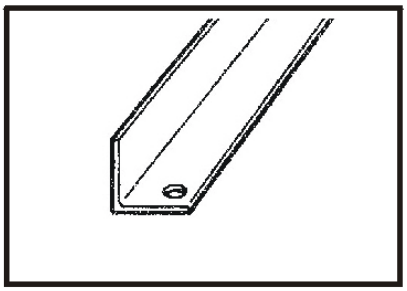
RIDGE



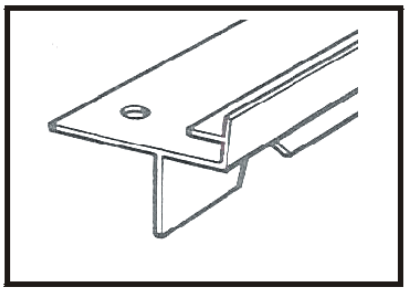
DOOR END GLAZING BARS AND DOOR POSTS



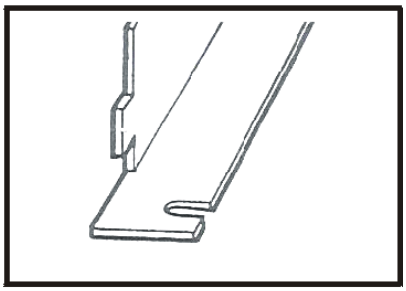
GLAZING BARS



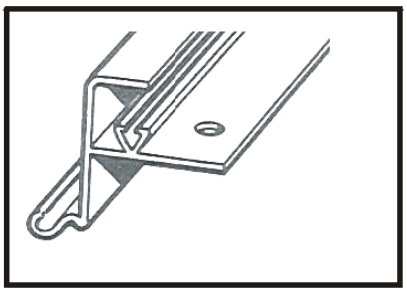
BRACING ANGLE



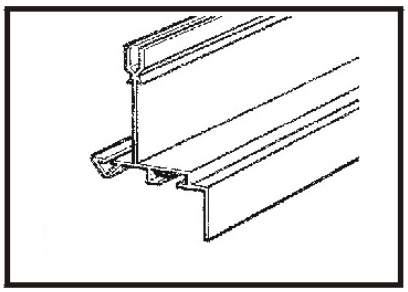
VENT BOTTOM RAIL



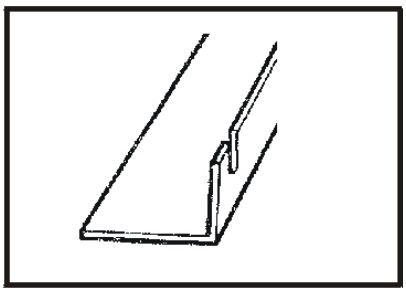
VENT SLAM BAR



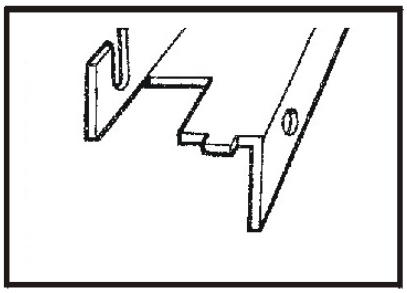
VENT TOP RAIL



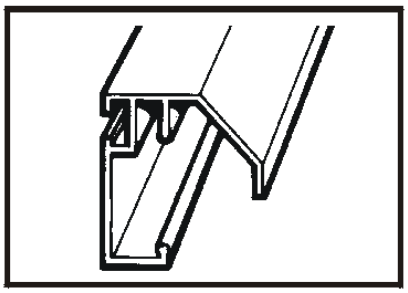
VENT SIDE RAIL



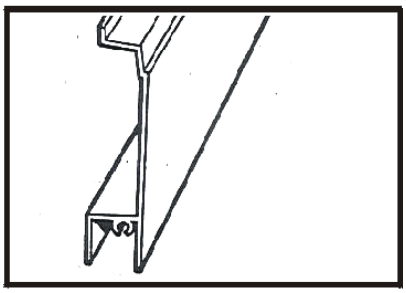
SIDE/REAR CILL



DOOR TRACK SUPPORT

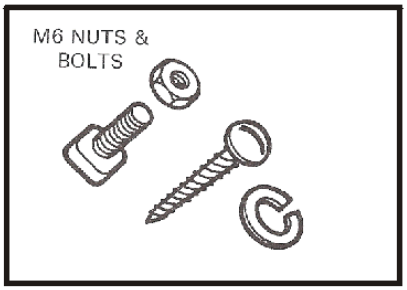


TOP DOOR TRACK

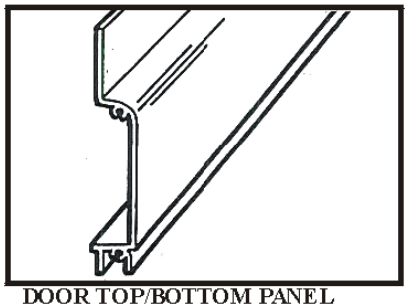


DOOR INFIL PANEL

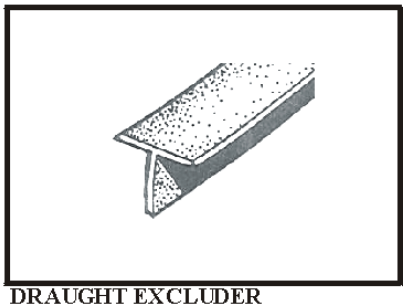
FITTINGS WITHIN THE KIT (NOT TO SCALE)



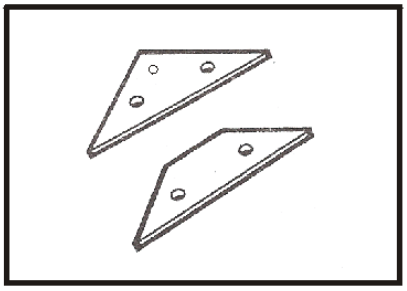
SELF TAPPING SCREWS
SPRING WASHER



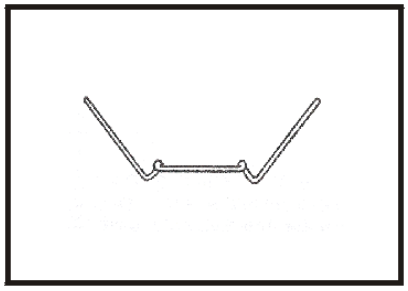
DOOR TOP/BOTTOM PANEL



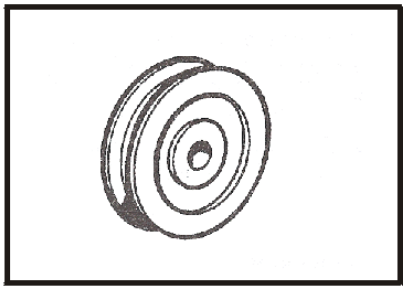
DRAUGHT EXCLUDER



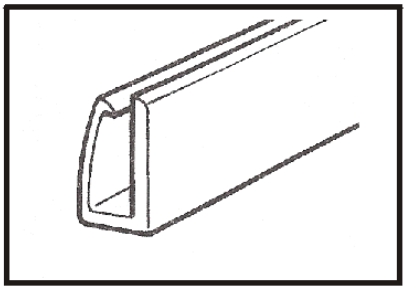
RIDGE & EAVE GUSSET PLATES



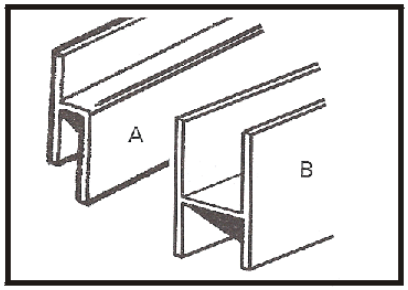
WIRE CLIPS



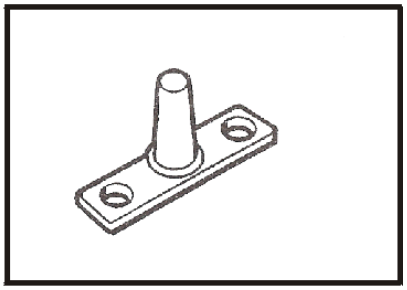
DOOR WHEEL



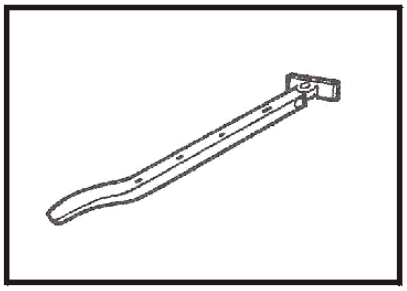
BLACK DOOR SKID



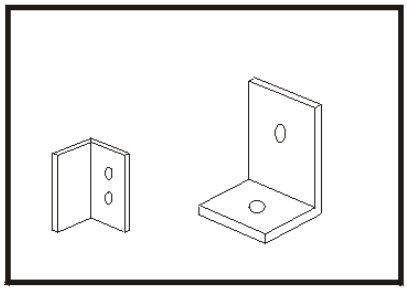
A=MUNTIN B= ROOF SPACERS



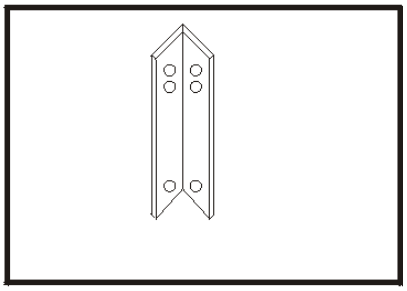
STAY PIN



CASEMENT STAY



DOOR STOP & ANGLE BRACKET



BASE LEGS (CORNER BRACKETS)

MASTIC BEADING

TOOLS NEEDED
SPANNER
HEAVY DUTY SCREWDRIVER
GLOVES
STEP LADDERS

PARTS LIST

			4 x 6	6 x 6	8 x 6
1	Nuts and bolts M6		80	92	106
2	Wire clips		144	176	208
3	Casement stay		1	1	1
4	Stay pins		2	2	2
5	Pins, nuts and bolts M4		6	6	6
6	Door catch		1	1	1
7	Short self tapping screw		13	13	13
8	Long self tapping screw		1	1	1
9	Spring washer		2	2	2
10	Glazing Mastic		150’	200’	200’
11	Door guides		2	2	2
12	**Eave plates**	**Taped together with**	4	4	4
13	**Ridge plates**	**one casement stay**	2	2	2
14	Door wheels and fittings		2	2	2
15	Ridge		1	1	1
16	**Gutter/eave**	**Taped together and**	2	2	2
17	**Side Cill**	**marked "side" ***	2	2	2
18	**Side braces**		2	4	4
19	Door end cill		1	1	1
20	Top door track		1	1	1
21	**Top door panel**	**With name plate taped**	1	1	1
22	**Bottom door panel**	**together and marked**	1	1	1
23	**Middle door panel**	**"door"**	3	3	3
24	**Door track support**		1	1	1
25	Door posts		2	2	2
26	Side glazing bar		2	4	6
27	Roof glazing bar		2	4	6
28	Vent (in packs)		1	1	1
29	**Door end glazing bars**	**Taped together and**	2	2	2
30	**Door end horizontal angle**	**marked "Door end"**	2	2	2
31	**Door end diagonal angle**		2	2	2
32	**Small door track support**		1	1	1
33	Rear end cill		1	1	1
34	**Rear end glazing bars**	**Taped together and**	2	2	2
35	**Rear end horizontal angle**	**marked "Rear end"**	1	1	1
36	**Rear end diagonal angle**		2	2	2
37	Corner bars in two packs		8	8	8
38	Polycarbonate	**See glazing plan at back of booklet**			

HELPFULL HINTS

Please do take your time and be sure to read all instructions carefully before assembling.

Do not assemble frame in high winds.

The greenhouse frame should be anchored to a permanent foundation. This will help secure it against powerful winds.

When building your own brick/concrete foundations ensure that they are level and square otherwise your frame will not be correct and the glazing will not fit.

Be sure all four corners of the constructed greenhouse are square before installing glazing, and do not install any glazing until the greenhouse is on a permanent foundation.

Do not place your greenhouse in vulnerable locations such as under trees, playing areas, etc.

Children should not play near glass greenhouses.

Protective eye glasses should be worn.

Gloves should be worn.

If your greenhouse is a painted one may be a few 1/8" holes in the end of the bars. These are jig holes for painting and have no bearing on construction. **(Key Point).**

When Powder Coated, the sub-frame assembly packages may slightly differ from the standard alloy finish.

Powder coated packages are wrapped in polythene tubing – please be careful when opening e.g. Do not run a knife down the sides as you can scratch the paintwork.

WHEN CONSTRUCTING A PAINTED MODEL PLEASE TAKE CARE NOT TO DAMAGE THE FINISH BY WORKING ON CONCRETE OR PATIOS

N.B. This plan covers the entire iGrow range. The only difference between a 6ft long and an 8ft long for example are a few extra pieces of alloy, glazing, nuts and bolts etc. The construction of the sub-frame assemblies is the same but for the purposes of this booklet we have used the 8 x 6 model as the benchmark. Therefore only one plan is needed.

We reserve the right to alter and improve our products.

INSTALLATION INSTRUCTIONS FOR THE 6'3" WIDE MODEL "iGROW RANGE"

THE CONTENTS OF THIS CARTON ARE DIVIDED INTO DIFFERENT FRAME ASSEMBLIES THAT COLLECTIVELY MAKE UP THE COMPLETED GREENHOUSE FRAMEWORK.

The contents of this carton are divided into the different frame assemblies that collectively make up the completed greenhouse framework.

It is recommended that each framework assembly is fully completed before moving onto the next.

The contents are as follows:

1. Two side frames
2. Rear end frame
3. Door end frame
4. Roof vent
5. Door
6. Bag of fittings containing:

a. Nuts and bolts general assembly
b. Wire clips for glazing
c. Casement stay
d. Casement stay nuts and bolts
e. Four eave plates (not in the main bag, but taped up with the casement stay separately)
f. Two ridge plates
g. Two door wheels
h. Two door guides
i. Small self tapping screws
j. One large self tapping screw
k. One spring washer
l. One door catch

7. Roof bars
8. One length of ridge
9. Two black rubber draught excluders

For clear identification of parts and the number required please carefully refer to he earlier pages of component drawings and parts list.

SIDE FRAME ASSEMBLY

When you come to the greenhouse itself start by assembling the side frames first.

1. Lay out the pieces on the ground as though you were standing inside the house, i.e. with the gutter and cill facing downwards, and the bolt channels of the glazing bar(s) upwards. **(Key Point).**

2. Slide a bolt into each end of each glazing bar. (If you have bought a shelf to go in your greenhouse and you intend to fit it on a side wall, use the ½" headed bolts provided with the shelf fittings - these can be inserted later).

3. Fix the combined eaves bar/gutter to the glazing bar(s) by pushing the bolts through the holes in the eaves bar, and securing with a nut. You do not need to tighten the nuts too much at this stage, but they need to be tight enough to stop the bolts slipping out of the glazing bar.

4. Fix the cill to the middle glazing bar by pushing the bolt through the hole in the cill unit and tightening.

5. Correctly position the cill on the outer most glazing bars by pushing the bolts through the holes in the cill, but do not put the nuts on yet.

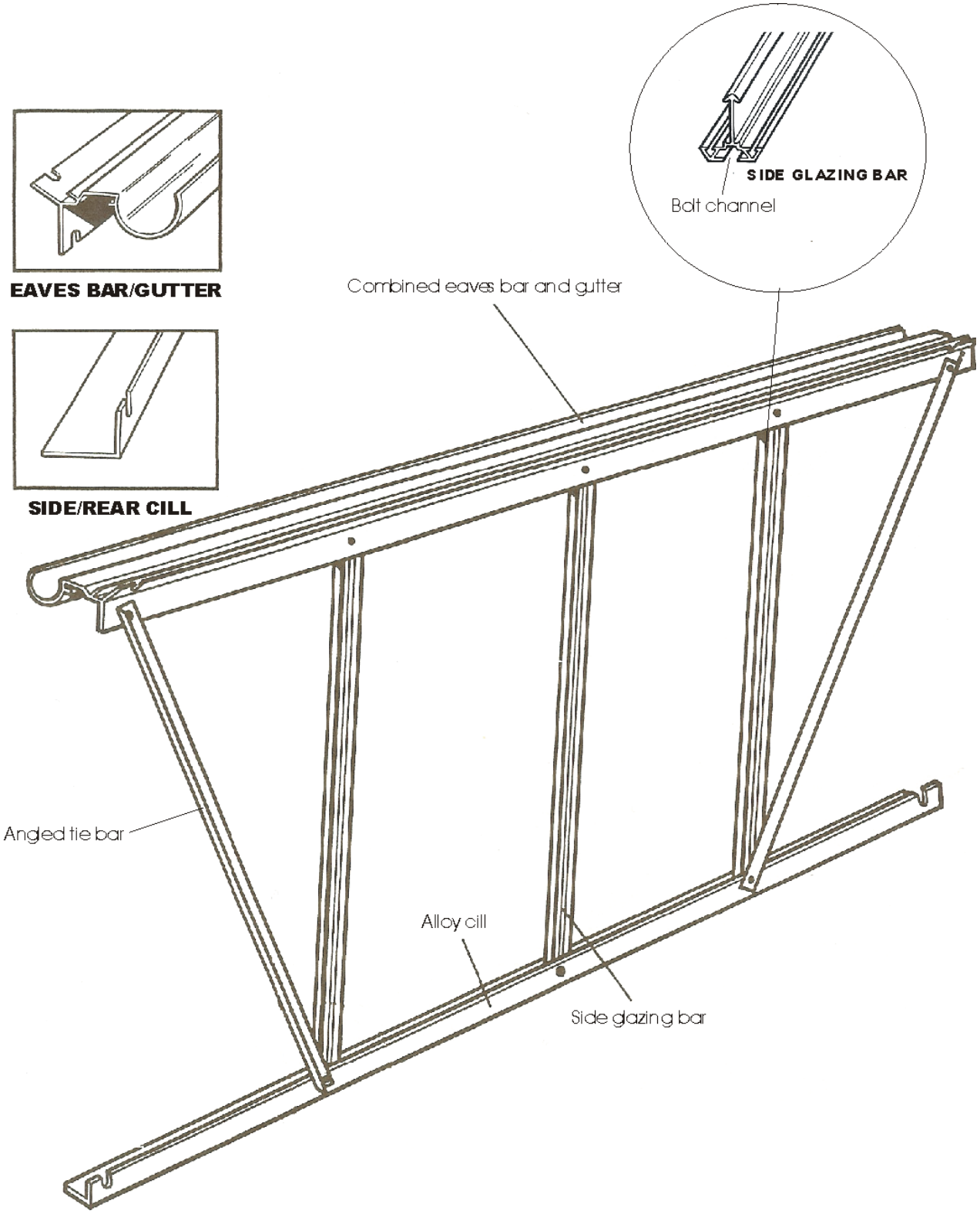
6. Place the angled tie bars over these bolts so that they point outwards towards the ends of eaves bar. They must be so arranged that the flat bit of the angle in each case faces towards the middle of the house (i.e. the elongated slit will be by the eaves in one case and by the cill in the other). **(Key Point).**

7. Put nuts on bottom bolts and lightly tighten.

8. Do the same with the other side frame assembly

9. Make sure that the glazing bars reach both the cill and the eaves in each case. Tighten all nuts.

SIDE FRAME ASSEMBLY



REAR END ASSEMBLY

INSTRUCTIONS

1. Lay out the frame as though you were standing on the inside i.e. with the bolt slots uppermost. Roof corners marked "R" at the apex, opposite each other, facing downwards (i.e. "R" on outside). Roof corner bars are mitred at both ends where as side corner bars are mitred at one end only **(Key Point).** The bolt slot is on the inside and faces inwards during initial construction. If you have a painted greenhouse there is no letter "R" on the corner bar. You **must** ensure that the "middle" hole is nearer to the ridge plate than the eaves plate **(Key Point).**

2. Slide two bolts into the bolt channels of each corner bar (1 each end). These will later be used in the general assembly for fixing the ridge, eave and cill to the ends. Now secure the Ridge Gusset Plate and Eaves Gusset Plates by inserting bolts through the 'plates' and into the holes punched in the flange of the corner bar, at the apex and eave.

3. Attach the bottom cill to the side corner bars by inserting a bolt through the hole in the flange of the corner bar and into the slot in the cill.

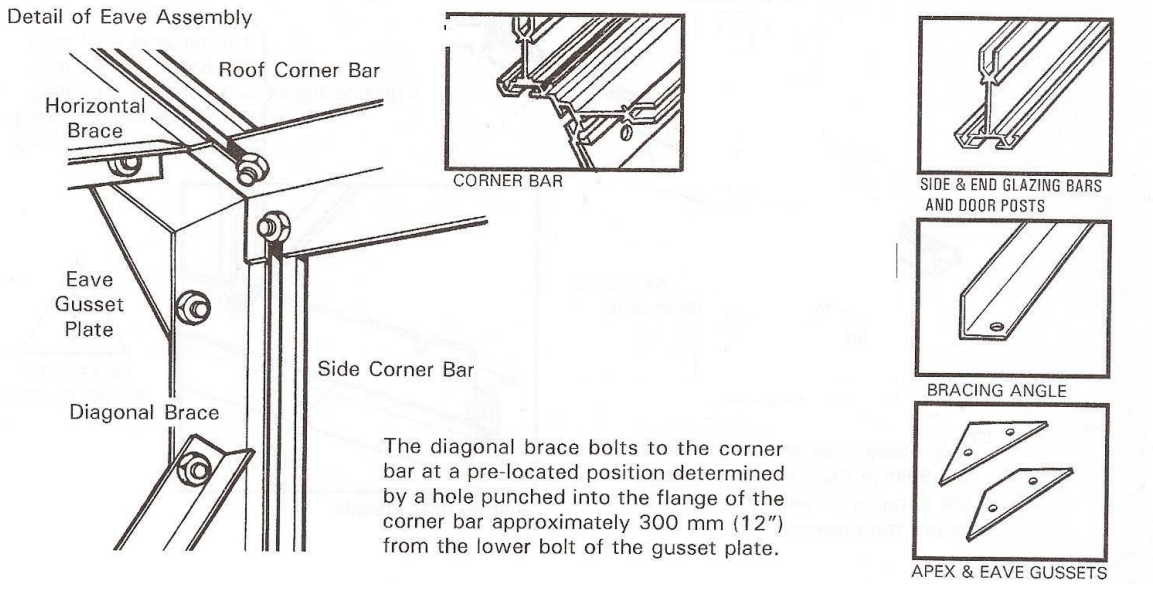
4. Attach the vertical glazing bars to the cill by inserting a bolt into the bolt channel of the glazing bars and locating it with the punched holes in the cill. Before securing the nuts attach the angle diagonal ties to the same bolt as illustrated. The top of the diagonal angle tie now attaches to the hole just below the gusset plate.

5. Slide two bolts into the bolt channel at the top of each vertical glazing bars and secure the second one to the roof corner bars by inserting the bolt through the punched hole in the flange.

6. You can now attach the horizontal angle brace to the **top bolt** of the gusset plate and to the other bolts in the glazing bars you inserted in 5, above.

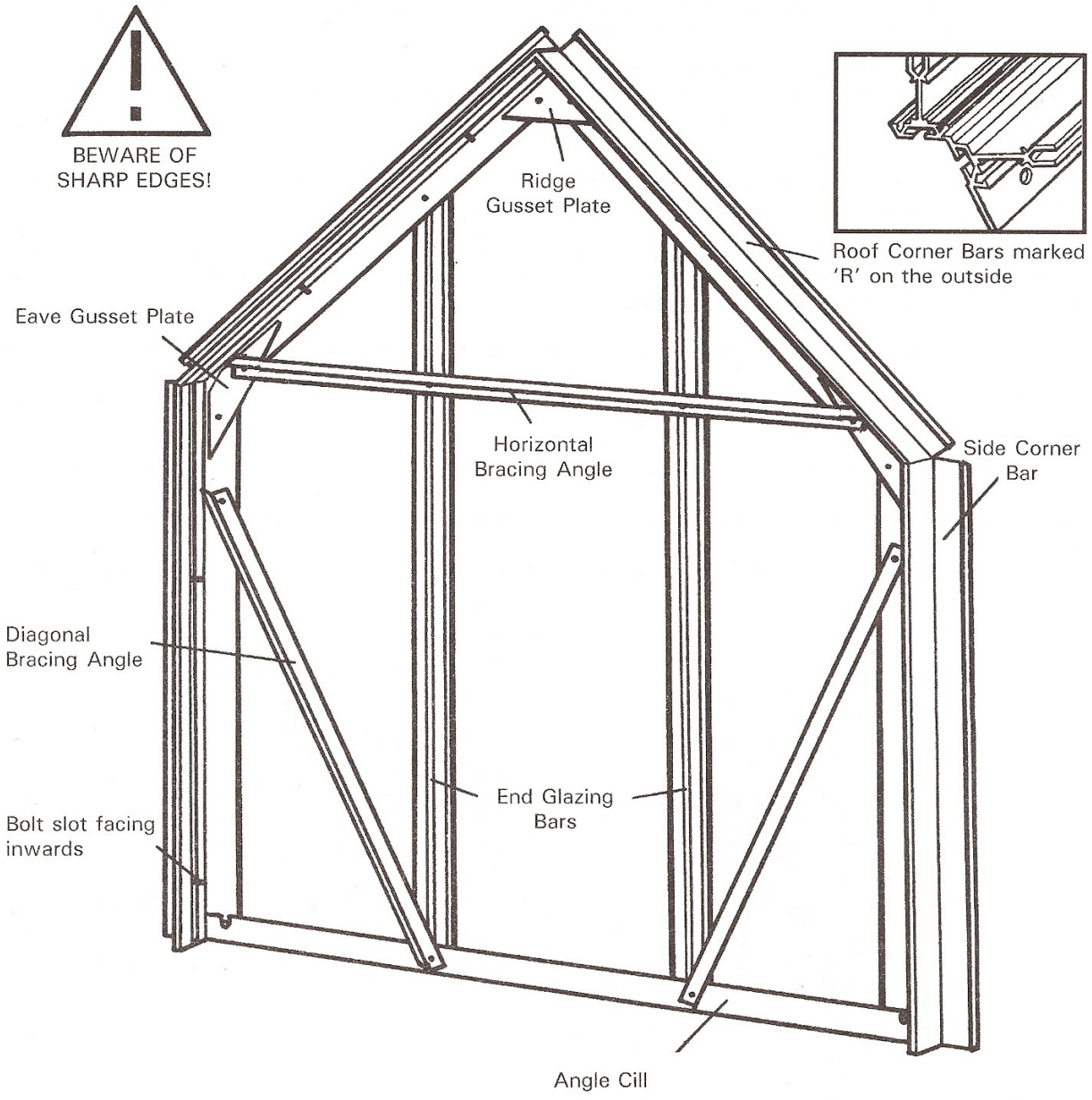
7. Check that all angles between the cill and the vertical members are at right angles and that the glazing bars are right into the angle cill at the bottom. **(Key Point).**

8. Tighten all nuts.



REAR END ASSEMBLY

Viewed from inside.



N.B. Roof corner bars are marked 'R' on the outside, which indicates that they meet at the ridge. They are also mitred at both ends.

If you have a painted greenhouse there is no letter 'R' on the corner bar. You **must** ensure that the 'middle' hole is nearer to the ridge plate than the eaves plate. **(Key Point).**

DOOR END ASSEMBLY

Components
1 door end cill
2 end glazing bars
2 short horizontal braces
2 roof corner bars (marked 'R')
2 side corner bars (unmarked)
1 door track support
1 top door track
1 small angle door track support

From the main bag of fittings you will require the nuts and bolts.

You will also require 2 eave plates and 1 ridge plate. These are packed with the casement stay and are separated from the main bag of fittings.

INSTRUCTIONS

Assemble the frame in exactly the same way as the rear end, up to and including stage 5 of the rear end.

Attach the main door track support (shaped like a letter 'Z' to be found with the door panels) to the two bolts that secure the glazing bars to the corner bars. **(Key Point).** This 'Z' shaped bar must be fitted with the two outside slots facing upwards (as illustrated) **not** downwards.

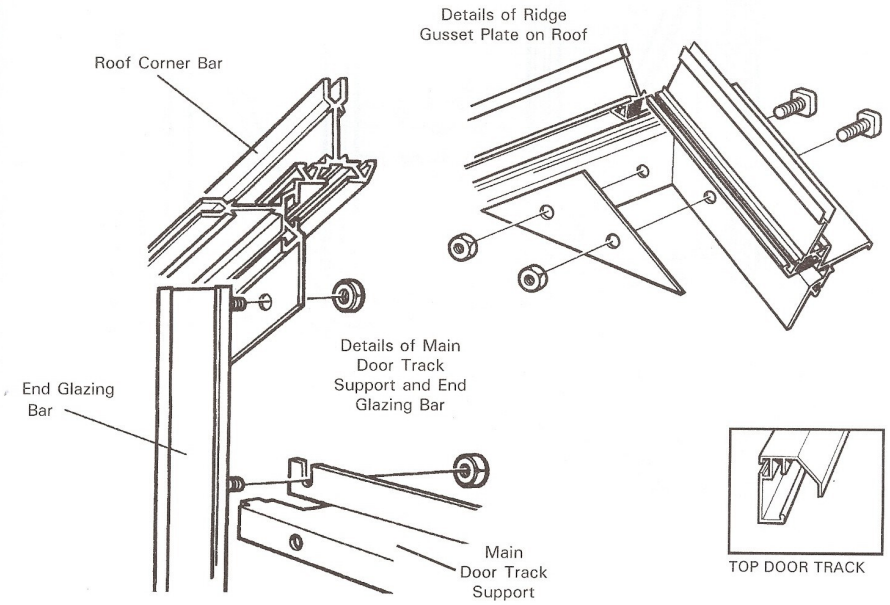
The main door track support attaches into the two long glazing bars and is positioned immediately underneath the upper bolts that hold the glazing bars to the corner bars.

The two horizontal braces attach to the **top bolt** in the gusset plate and the vertical glazing bars.

Stand the frame up and Bolt the door track to the main door track support and the small angle door track support by inserting 4 bolts into the lower bolt slot of the door track. Position 3 of these through the 3 holes in the door track support above the door opening. The small angle door track support has 2 elongated holes at the top and is blank at the bottom. Attach one of the holes to the bolt slot at the back of the door track using the 4th bolt. Do not fix the other end of the small angle door track support yet

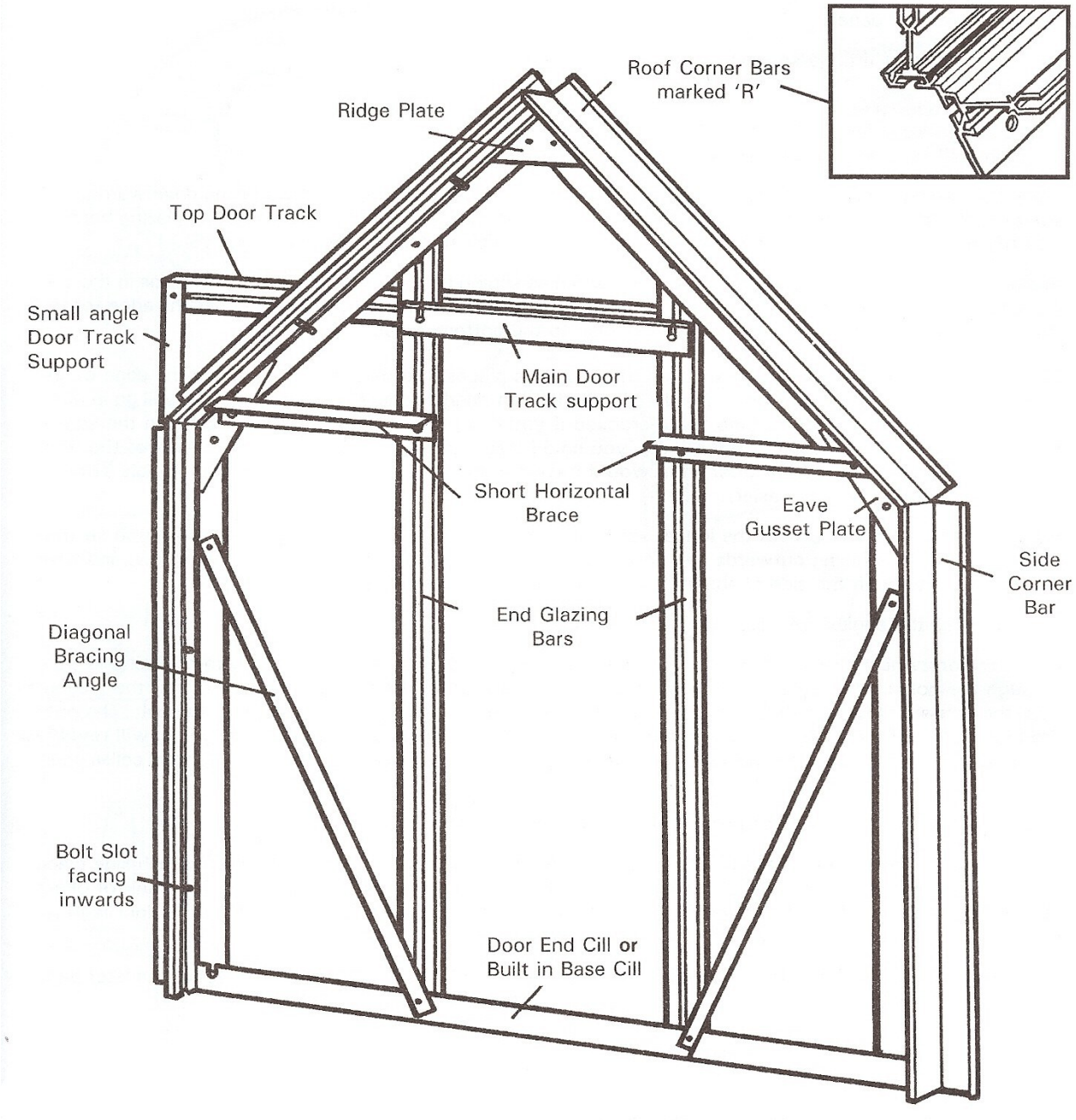
When this has been achieved tighten all nuts.

N.B. Please note carefully the correct position of the main door support. The slotted holes at either end are facing skywards NOT downwards. (**Key Point)**



DOOR END ASSEMBLY

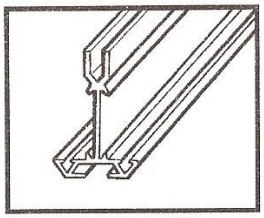
(viewed from inside)

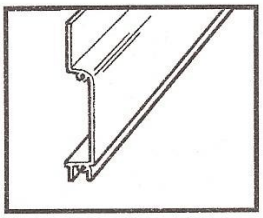


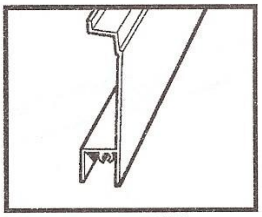
DOOR FRAME ASSEMBLY

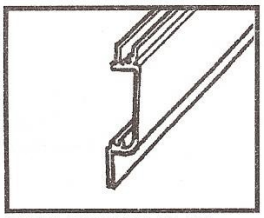
Components consist of:
2 door glazing bars
3 infill panels
2 top panels
2 top and bottom door panels

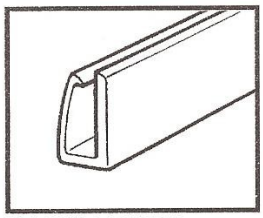
From the main bag of fittings you require
2 door wheels
2 clip on nylon door skids
2 lengths of black rubber draft excluder
Door catch, self tapping screws and spring washers

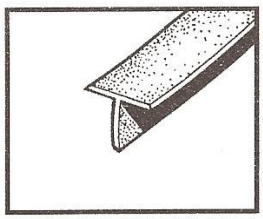

END GLAZING BARS
AND DOOR POSTS


DOOR TOP PANEL


DOOR INFILL PANEL


DOOR BOTTOM PANEL


BLACK DOOR SKID


BLACK DRAUGHT EXCLUDER


BEWARE OF
SHARP EDGES!

1. Place the two side bars on a level service roughly two feet apart with the bolt slots facing downwards. The top of each side bar has two screw holes in it, the bottom has three. **(Key Point).**

2. Place the top, bottom and two infill panels in position as shown by the position of the screw holes in the side pieces and the panels. The top panel has the greenhouse name on it and 2 holes along its length. The bottom panel has the edge for the door skids to fit on. The lower infill panel locks on to the bottom panel.

3. Fix the door together by screwing through the door side pieces into the holes provided in the edge of the panels with the no.8 half-inch self tapping screws. Do NOT fix the top left hand screw yet. The screws will go in more easily and without danger of trying to go crooked if you can put a small about of grease on the panel before assembling the doors. Alternatively, you could insert the screws into the screw eyes of the door panels before assembling the door, this would have the effect of pre-self tapping the panels prior to the assembly making assembly easier.

4. Fix the top left hand side with the 1 ½" screw provided. Put the screw through the door catch so that the serrated part is facing outwards and upwards. Next slip two spring washers on to the screw, and then fit the screw through the side of the door and into the top panel. **(Key Point).**

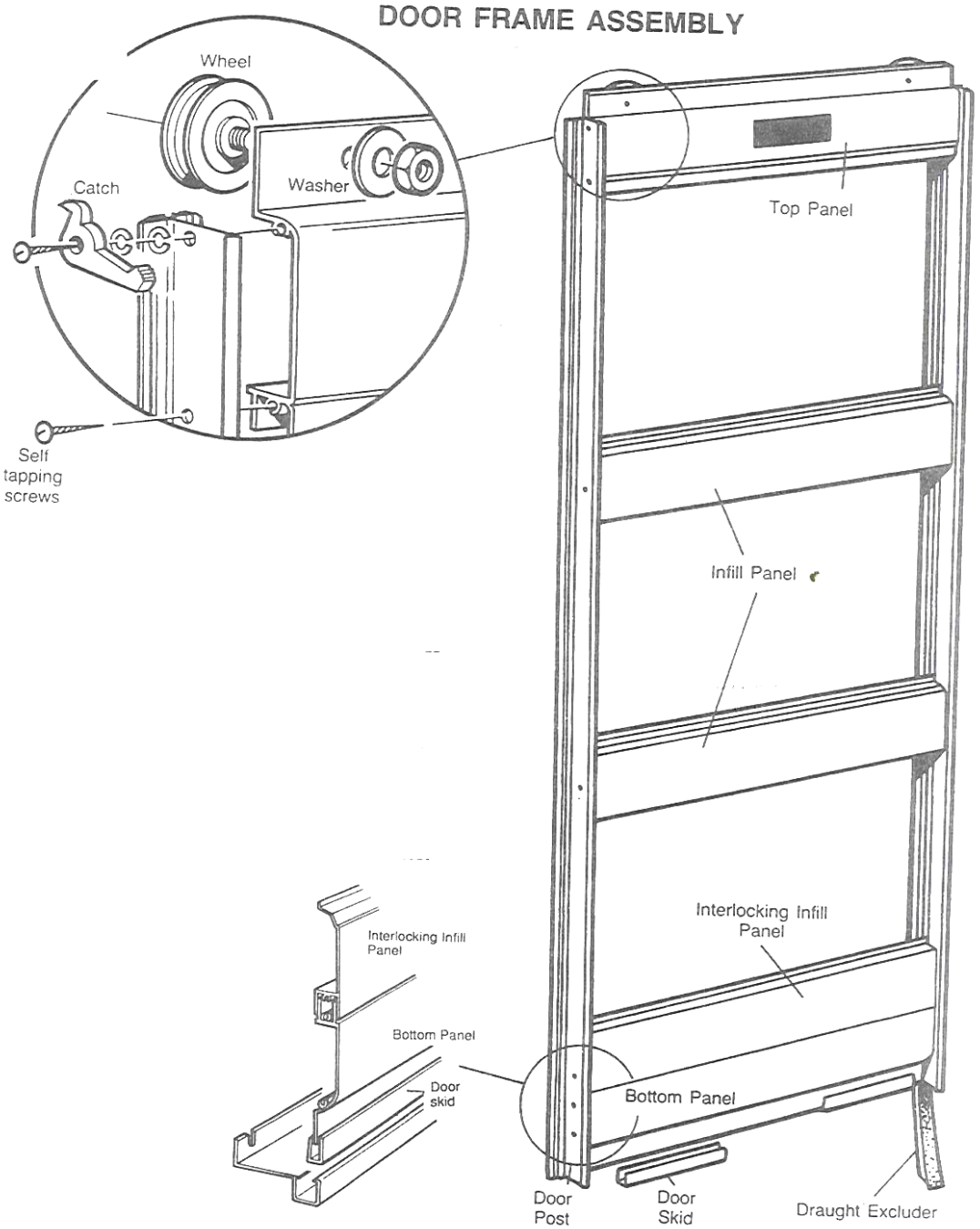
5. Make sure all the angles are square and tighten all the screws.

6. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door). Put the washer over the bolt and secure with the nut provided, tightening until there is no movement on the bolt. The nuts are lock-nuts and are harder to put on than the normal nuts in general assembly. The wheel will revolve freely because it has ball bearings in it.

7. Slip the nylon door skids on each end of the bottom panel.

8. Turn the door over and insert the black rubber draught excluders in the groove (bolt slot) in each side piece of the door. Push up to the top of the door and trim off the surplus at the bottom. With a pair of pliers squeeze the groove together at the bottom so that the rubber will not slip down when the door is in its upright position.

9. Do not fit the door at this stage, see later in the plan for this detail.



ROOF VENT ASSEMBLY

The roof vent pack has 5 pieces of aluminium: and from the main box of fittings you require 6' of glazing beading, 4 nuts and bolts, 2 casement stay pins, 1 casement stay and 6 M4 stainless steel nuts and bolts.

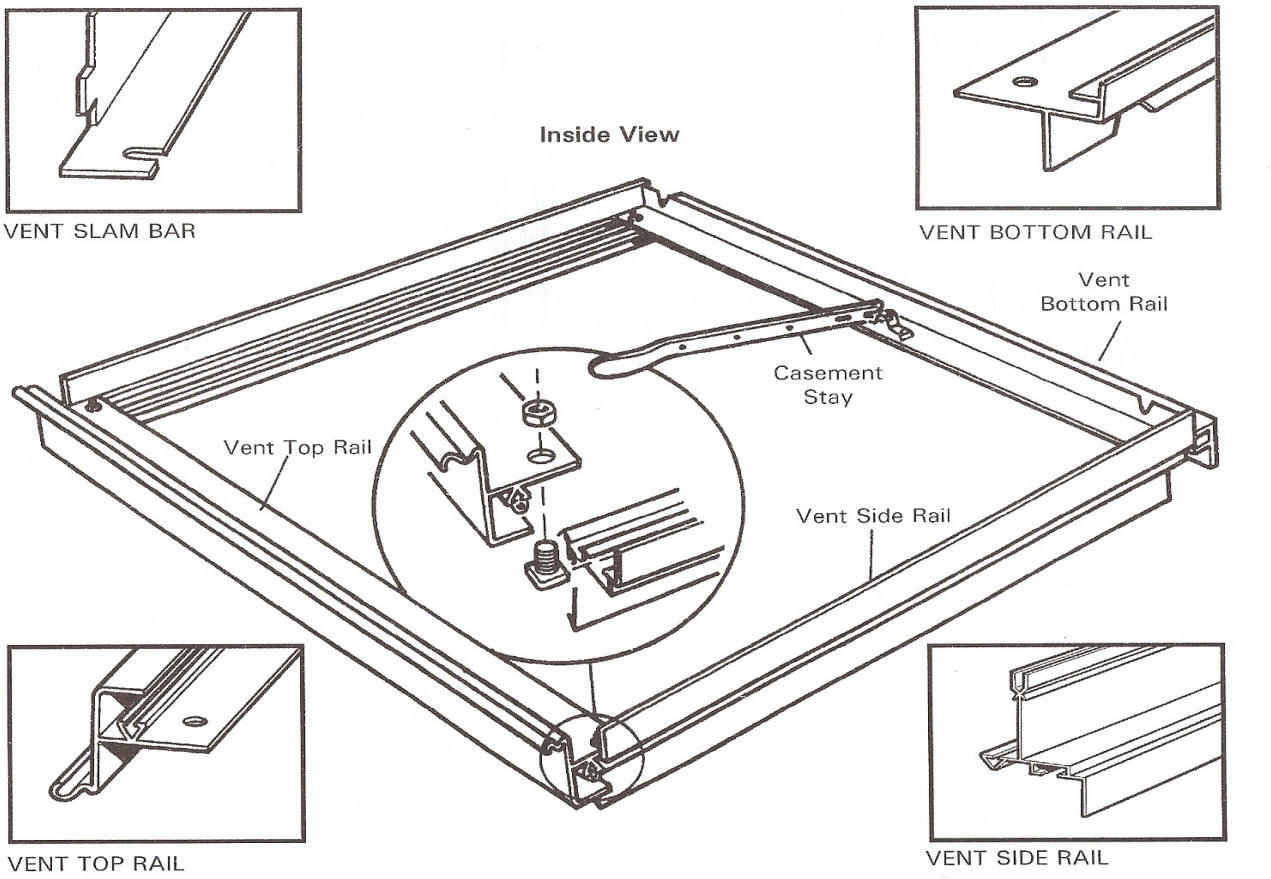
PROCEDURE:

1. Identify the slam bar and attach the 2 stay pins to the outer side of the angle using the M4 stainless steel nuts and bolts.

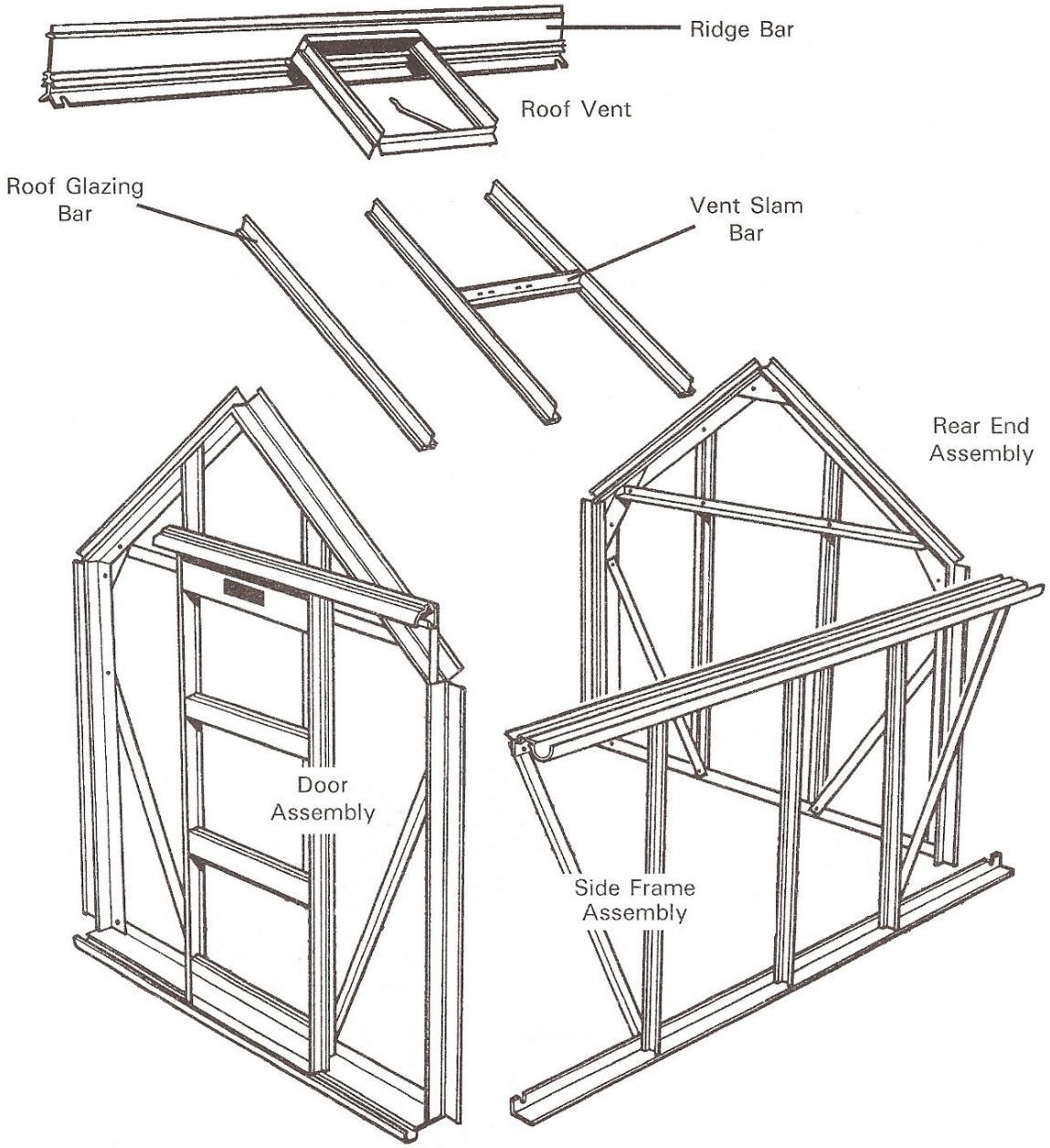
2. Lay the 4 edge pieces of the vent on a level surface as though you were on the inside of the vent (with the bolt slots of the side bars uppermost and the 'v' slots of the bottom rail uppermost. The top rail is arranged in such a way that the squared off end is to the bottom and the hooked hinge uppermost).

3. Insert a bolt into each end of the side rail bolt slots, put these bolts through the holes in the top and bottom rails, add nuts and lightly tighten. Check that all joints are secure and that the vent is square, then tighten up the nuts.

4. Fit the casement stay using the M4 stainless steel nuts and bolts, putting the bolts through the holes in the saddle of the stay through the 2 elongated holes in the bottom rail. Hole the nuts in place and tighten the bolts with a screwdriver.



ASSEMBLY OF GREENHOUSE UNIT



ASSEMBLY OF GREENHOUSE UNIT

The first operation is to connect the two side frames to the end frames to form the outer shape of the completed structure. Another pair of willing hands would be useful at this stage.

1. Lift the first side frame into its position by the rear end.

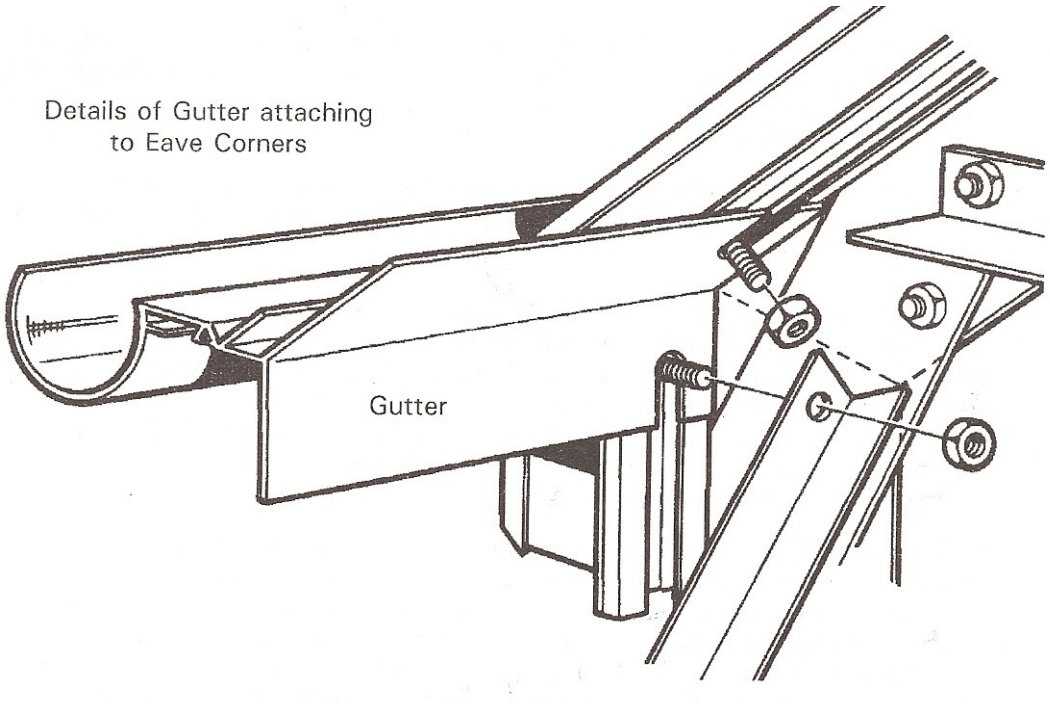
2. Slot the eaves bar into the small space between the roof and side corner bar so that the gutter is outside the end frame and the two flanges that form the angle of the roof and side are inside and tight up against the bolt slots of the roof and side corner bar. **(Key Point).**

3.The extra bolts that were inserted in the bolt slots of the corner bars (during rear end and door end assembly) during the gable end assembly can now be used.

4. Line up the elongated holes in the flanges of the eaves with the bolt slots and slide the bolts into them. Put a nut on the top bolt and tighten up. Place the diagonal side angle onto the bottom bolt, put a nut on and tighten up**. (Key Point).**

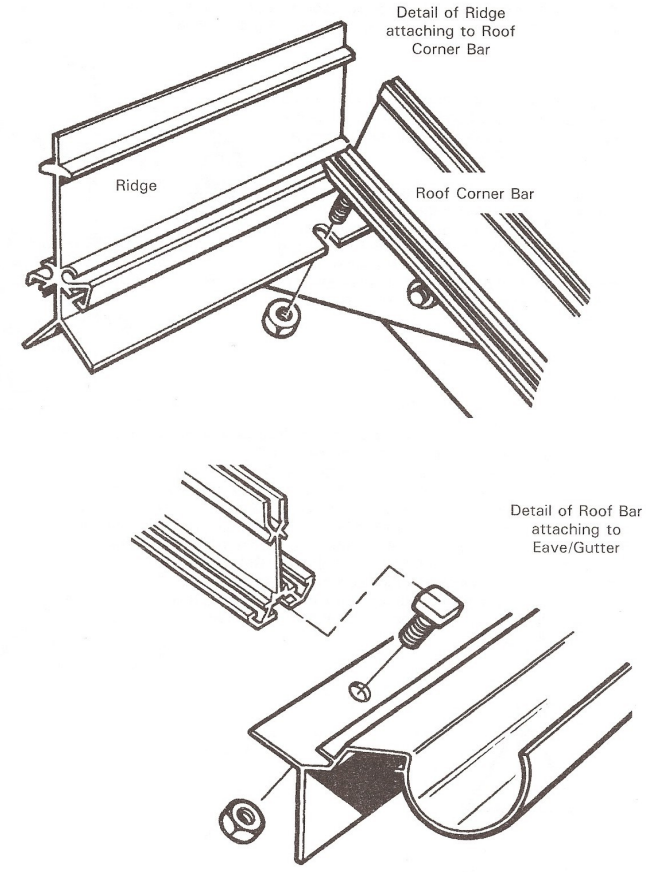
5.The bottom cill attaches to the inside of the corner bar. The bolt placed in the corner bar bolt slot at gable end assembly will slide down into the slotted hole at the end of the cill.

6. Do the same at the other three corners.



7. Attach the ridge to the roof corner bars by inserting the end of the ridge through the small gap in the corner bars at the top. The vertical part of the ridge will be outside and pointing skywards and the two flanges that form the angle of the roof will be inside, tight up against the bolt slots of the roof corner bars.

8.Line up the slotted holes at the end of the ridge with the bolt slots, in the corner bars and push the two bolts, previously inserted during the gable end assembly, into the slots. Put on nut and tighten.



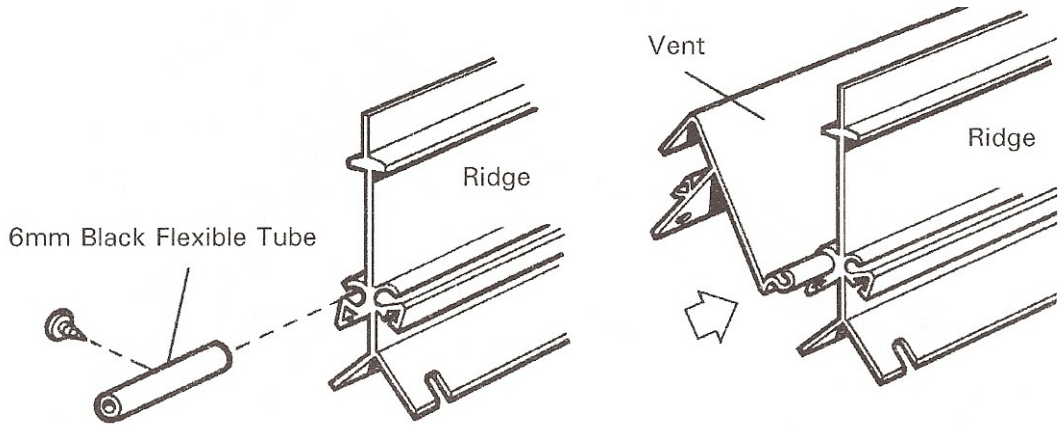
9. The roof bars can now be attached to the ridge and gutter. Attach them to the ridge first by sliding a bolt into the bolt slot of the glazing bar, inserting it through the hole in the flange of the ridge. Put a nut on and tighten up. Do the same with the rest of the roof bars.

10. Before bolting the bottom of the roof bar to the flange of the eave bar, insert final nut and bolt to the eave bar as illustrated.

Where the vent is to be positioned put an extra one bolt per bar i.e. the vent covers two glazing bars so two extra bolts per vent. **(Key Point**). One each bar.

NOW YOU CAN FIT THE VENT TO THE RIDGE

11. Slide the vent onto the ridge from either end and into the desired position. Before sliding the vent into the ridge, slide a piece of black tube into the vent hinge socket. Slide the vent into position, insert a small self tapping screw into the length of the tube approximately ½ way along then tighten the screw. The tube will expand and lock into position thus preventing sideways movement of the vent.



N.B. There is no hole for the screw but it will easily push into the tube and screw up. **(Key Point).** You only require one tube per vent on the left hand side of the vent socket (viewed from inside the greenhouse).

Having slid the vents from the end on the ridge to the desired position, you can now fit the "slam bars" just under the vent allowing the casement stay to effectively close. The slam bar can be adjusted later to facilitate good opening and closing of the vent.

12. Do not fit the door at this stage.

13. The greenhouse is now ready for lifting on to its permanent base.

PATIO FLOOR

You must make sure that the structure is level and square. Put one pane of polycarbonate in each corner of roof, each pane must be level with the small glass retaining lip just above the gutter and be running parallel with the roof glazing bars. Each corner must be the same. If one corner is out the corner diagonally opposite will also be out. By carefully pushing and pulling each corner diagonally you will be able to see the frame move in and out of square with the glass. Having established the square of the greenhouse, drill the patio or concrete in the required positions, fit plastic plugs and screw the brackets (attached during base assembly) firmly to the ground using 35mm x 8mm round head screws.

SOIL FLOOR

Determine the square of the greenhouse as described above, make a mix of concrete and out a couple of shovelfuls around the base of each stake. When the concrete has gone off back fill with the soil excavated earlier on.

BRICK BASE

When anchoring the frame to a brick base you need to drill through the cill and into the brick. Insert a timber or plastic plug into the hole in the brick and screw the cill down using a treated screw. Position the hole in the cill as near to the angle corner as possible so that when you glaze, the screw is on the inside of the glass.

FITTING THE DOOR TO THE STRUCTURE

The door slides onto the frame form the left hand side.
Put the door bottom rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end glazing bars. Carefully ease the door past the glazing bar and feed in the second wheel. Push further to the right until both draught excluders are butting up to both end glazing bars.
Carefully ease the door past the two glazing bars. The door will now run quite freely. To square up the door with the spacing, undo the upper bolts holding the door track. There is a little play to facilitate “fine tuning” of the door. N.B. Sometimes the door can be a little stiff prior to glazing but once the glazing has been inserted (the last job of the construction) the extra weight will make for smooth running. **(Key Point).**
When you are happy that the door is running smoothly, you need to attach the small angle door track support to the vertical side corner bar. Line the vacant end of the support up to the corner bar, and then drill a 7mm diameter hole in a convenient position through both the corner bar and the support. Attach a nut and bolt and tighten. Fitting this bar will support the weight of the door when in the open position to maintain smooth running

MASTIC BEADING

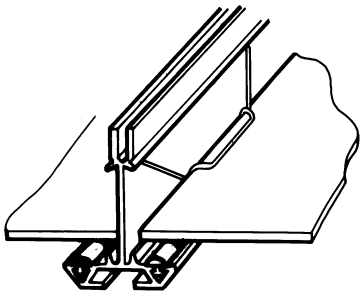
Before commencing glazing you must insert the putty bead onto each glazing bar. There are several strands on a paper backed roll.

Roll out the beading on a flat surface and cut the paper and beading to the length of the glazing bar.

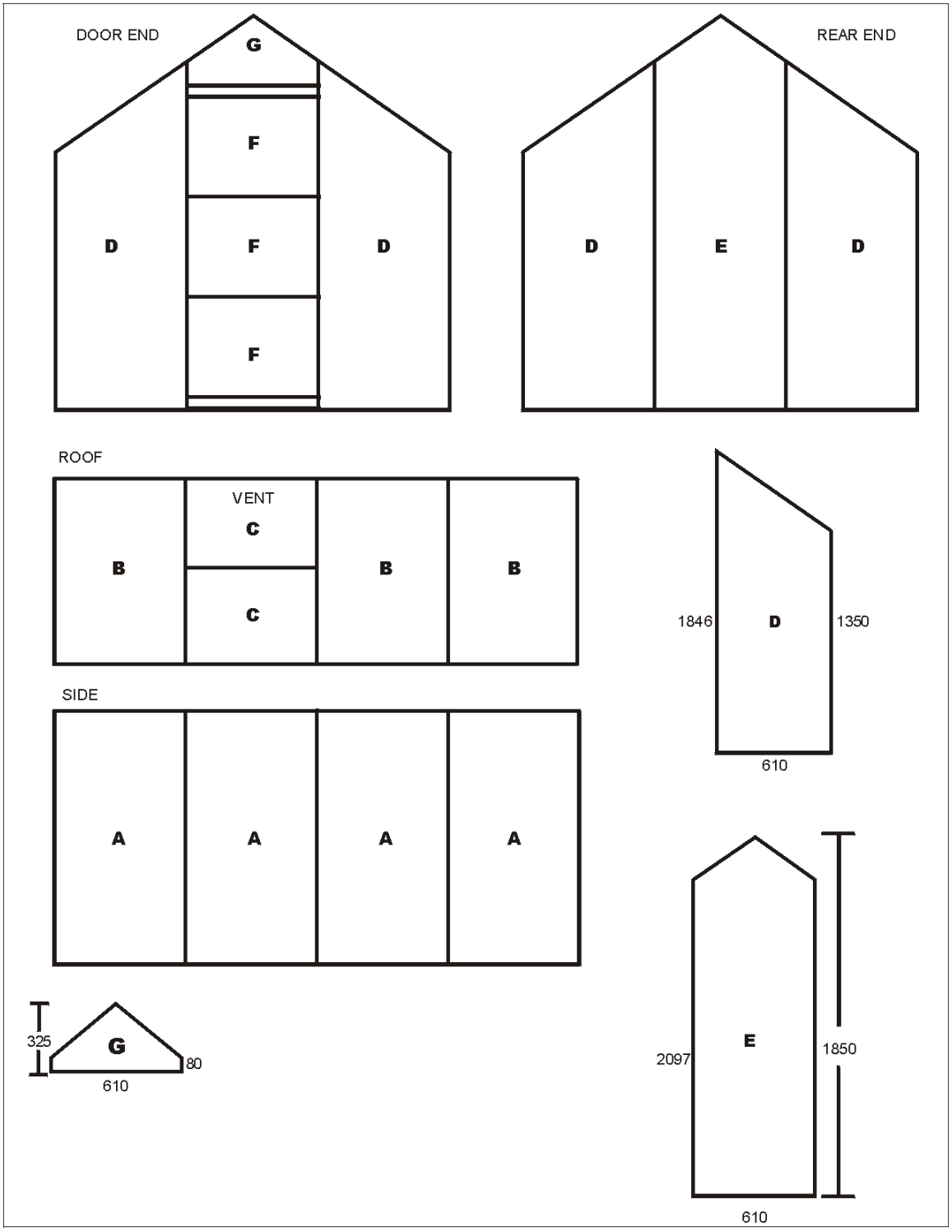
Peel off strands from the paper and lightly press the bead onto the grooves in each bar. You do not need to press it fully in, just tacked on every 6-8 inches. A wet finger when pressing the beading will prevent it from sticking and will make fitting to the greenhouse a lot easier.

GLAZING THE STRUCTURE

The polycarbonate is UV treated on one side only. Each panel has a sticky plastic cover which indicates the treated side. The plan on page 22 indicates which piece of polycarbonate is fitted in which position on the greenhouse.
The mastic bead will be sticky, so ensure the polycarbonate panel is fitted correctly before pressing to reinforce the bond.
Each panel is fitted with wire glazing clips. See picture below for correct fitting of the clip. You have enough clips in your pack for 12 clips per large shaped panel, 8 clips per large rectangular pane, and 4 clips per small door pane.



GLAZING PLAN



A = 610 X 1350
B = 610 X 1211
C = 610 X 610
F = 610 X 457

MODEL	A	B	C	D	E	F	G
4'5"	4	3	2	4	1	3	1
6'5"	6	5	2	4	1	3	1
8'5"	8	7	2	4	1	3	1

D - 2 left handed/2 right handed