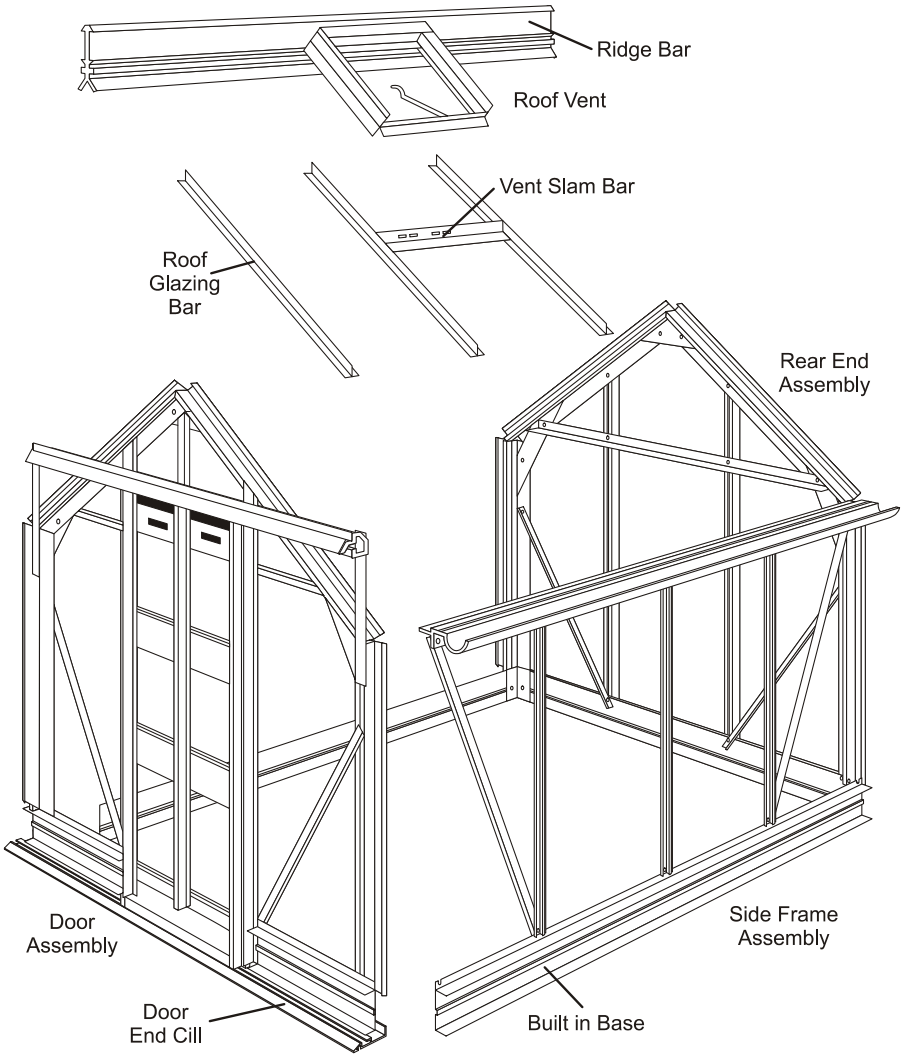
ELITE GREENHOUSES LIMITED

INSTRUCTIONS & ILLUSTRATIONS FOR THE

6’3” WIDE STRATA



ELITE GREENHOUSES LTD

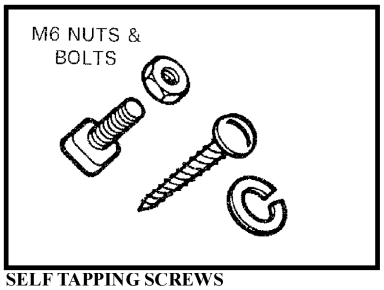
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

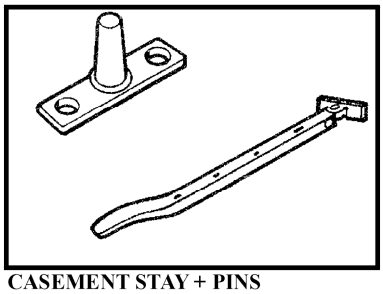
enquiries@elite-greenhouses.co.uk

www.elite-greenhouses.co.uk

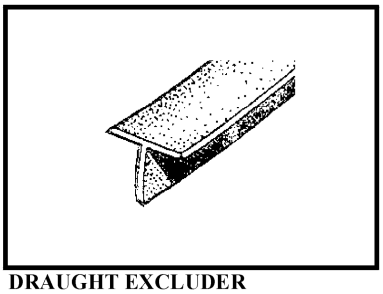
FITTINGS WITHIN THE KIT (NOT TO SCALE)



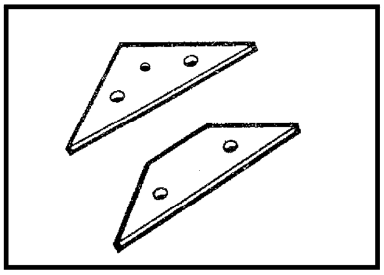
SELF TAPPING SCREWS
SPRING WASHER



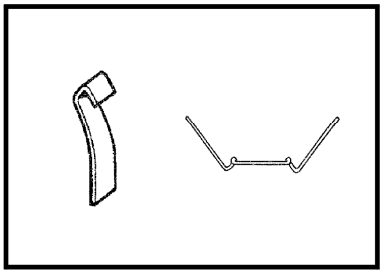
CASEMENT STAY + PINS



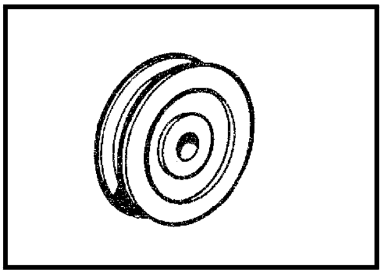
DRAUGHT EXCLUDER



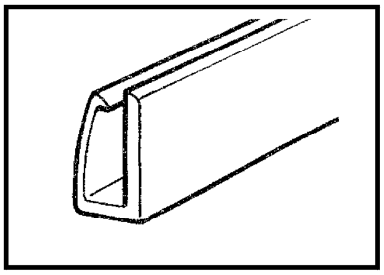
APEX & EAVE GUSSET PLATES



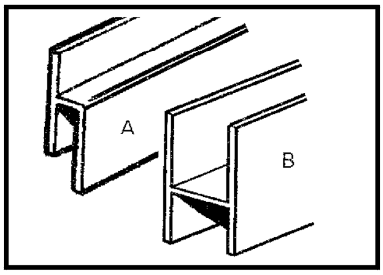
OVERLAP + WIRE CLIPS



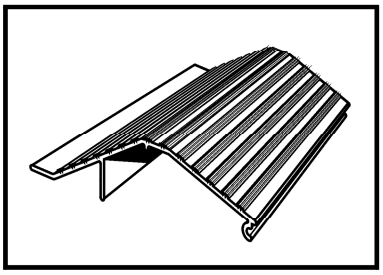
DOOR WHEEL



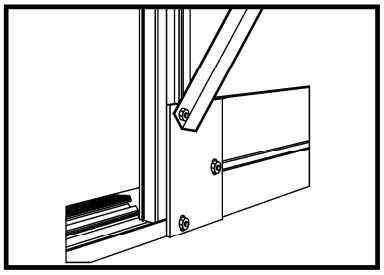
BLACK DOOR SKID



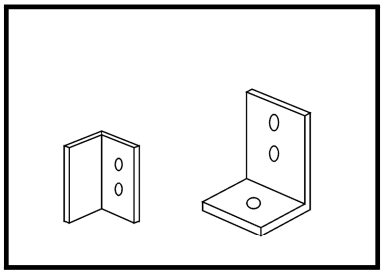
A=MUNTIN B= ROOF SPACERS



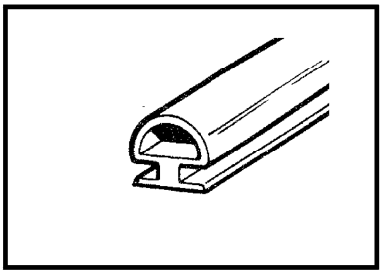
RAMP



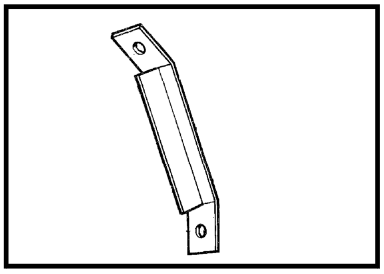
DOOR END PLATE



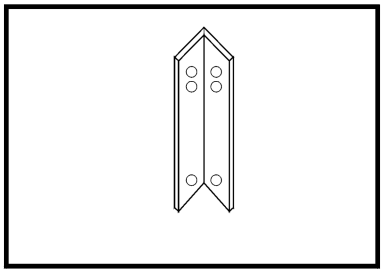
DOOR STOP & ANGLE BRACKET



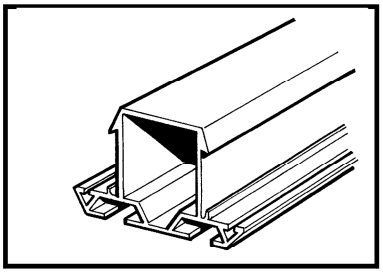
NEOPRENE BEADING



CANTILEVER BRACE

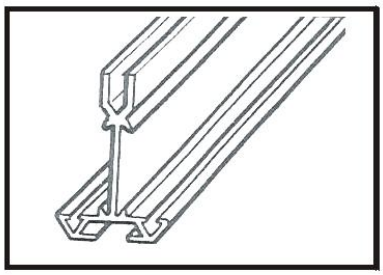


BASE LEGS (CORNER BRACKET)

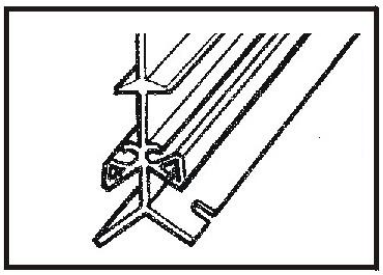


BLOCK BAR

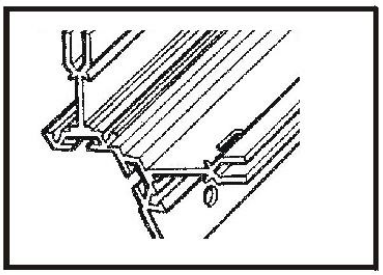
COMPONENT DRAWINGS (NOT TO SCALE)



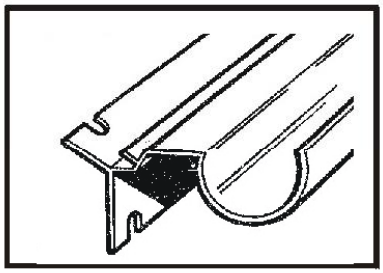
GLAZING BARS AND DOOR POSTS



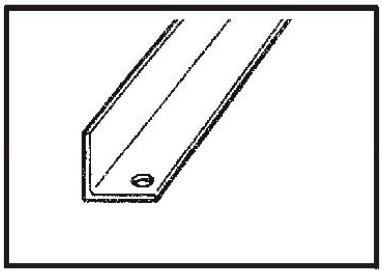
RIDGE



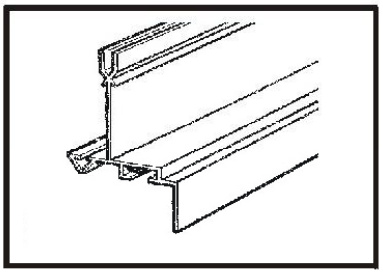
CORNER BAR



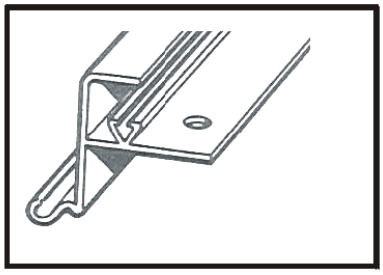
EAVES BAR/GUTTER



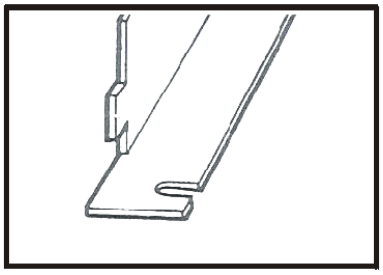
BRACING ANGLE



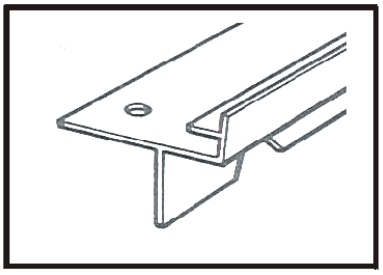
VENT SIDE RAIL



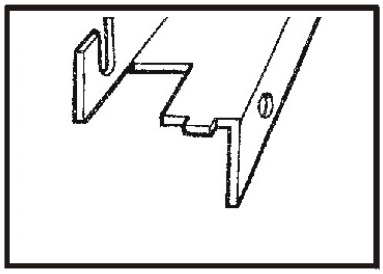
VENT TOP RAIL



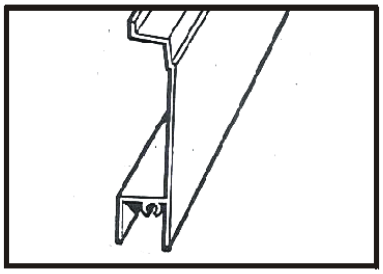
VENT SLAM BAR



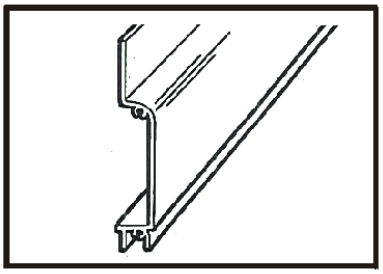
VENT BOTTOM RAIL



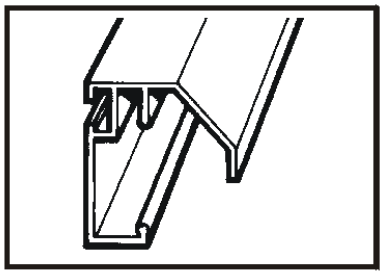
DOOR TRACK SUPPORT



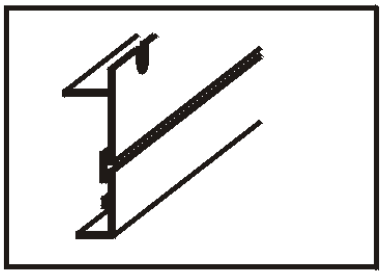
DOOR INFIL PANEL



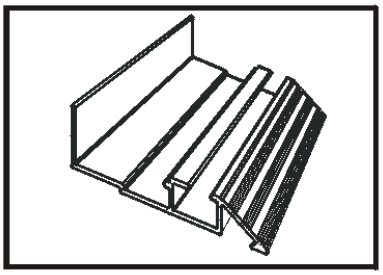
DOOR TOP/BOTTOM PANEL



TOP DOOR TRACK



BUILT IN BASE



DOOR END CILL

PARTS LIST

			4 x 6	6 x 6	8 x 6	10 x 6	12 x 6
1	Nuts and bolts M6		92	102	115	132	148
2	Wire clips		212	252	292	332	372
3	Overlap clips		28	34	40	46	52
4	Casement stay		1	1	2	2	2
5	Stay pins		2	2	4	4	4
6	Nuts and bolts M4		6	6	12	12	12
7	Double door catch		1	1	1	1	1
8	Short self tapping screw		28	28	28	28	28
9	Glazing beading (m)		48	59	71	89	100
10	Door wheels and guides		4	4	4	4	4
11	**Eave gusset plates**	**Taped together with**	4	4	4	4	4
12	**Ridge gusset plates**	**one casement stay**	2	2	2	2	2
13	Ridge		1	1	1	1	1
14	Gutter/eave		2	2	2	2	2
15	Built in base side		2	2	2	2	2
16	Side braces		2	2	4	4	4
17	Door end cill		1	1	1	1	1
18	Top door track		1	1	1	1	1
19	**Top door panel**	**With name plate taped**	2	2	2	2	2
20	**Bottom door panel**	**together and marked**	2	2	2	2	2
21	**Infill door panel**	**"door"**	6	6	6	6	6
22	**Door track support**		1	1	1	1	1
23	Door posts (handed and unhanded)		2/2	2/2	2/2	2/2	2/2
24	Door angle		1	1	1	1	1
25	Side glazing bar		2	4	6	8	10
26	Roof glazing bar		2	4	6	8	10
27	Vent (in packs)		1	1	2	2	2
28	**Door end BLOCK glazing bars**	**Taped together and**	2	2	2	2	2
29	**Door end horizontal angle**	**marked "Door end"**	2	2	2	2	2
30	**Door end diagonal angle**		2	2	2	2	2
31	**Small door track support**		2	2	2	2	2
32	Rear end built in base		1	1	1	1	1
33	**Rear end glazing bars**	**Taped together and**	2	2	2	2	2
34	**Rear end horizontal angle**	**marked "Rear end"**	1	1	1	1	1
35	**Rear end diagonal angle**		2	2	2	2	2
36	Corner bars in two packs		8	8	8	8	8
37	Door end built in base		2	2	2	2	2
38	Base legs (corner brackets)		4	4	4	4	4
39	Door end base plates		2	2	2	2	2
40	Angle brackets		8	10	12	14	16
41	Cantilever brace		-	-	2	4	6
42	Door end ramp		1	1	1	1	1
43	Glazing bar over double doors		1	1	1	1	1
44	Glass: See back of plan for details						

HELPFUL HINTS

- Please do take your time and be sure to read all instructions carefully before assembling.
- Consider purchasing the Elite Construction pack to help with the installation ï contact dealer for details.
- Do not assemble frame in high winds.
- The greenhouse frame should be anchored to a permanent foundation. This will not only help secure it against powerful winds but will help prevent breakage of the glass caused by the freezing and thawing process of the earth.
- When building your own brick/concrete foundations ensure that they are level and square otherwise your frame will not be correct and the glass will not fit.
- Be sure all four corners of the constructed greenhouse are square before installing glass, and do not install the glass 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.
- REMEMBER: glass is fragile, handle with care!
- Protective eye glasses should be worn.
- Gloves should be worn.
- If your greenhouse is a powder coated one there are a few 1/8ò (3mm) holes in the end of the bars. These are jig holes for the process 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 ï please be careful when opening e.g. Do not run a knife down the sides as you can scratch the paintwork.
- **WHEN CONSTRUCTING A POWDER COATED MODEL PLEASE TAKE CARE NOT TO DAMAGE THE FINISH BY WORKING ON CONCRETE OR PATIOS.**
- **N.B. This plan covers the entire Strata range. The only difference between a 6ft long and an 8ft long for example are a few extra pieces of alloy, glass, 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 "STRATA" RANGE"

THE CONTENTS OF THIS CARTON ARE DIVIDED INTO 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 (two for 8ðò, 10ðò & 12ðò models)
5. Doors
6. Bag of fittings containing:
   a. Nuts and bolts general assembly
   b. Overlap clips for glass
   c. Wire clips for glass
   d. Casement stay (1 for 4ðò& 6ðò models) (2 for 8ðò,10ðò & 12ðò models)
   e. Casement stay nuts and bolts
   f. Four eave plates
   g. Two ridge plates
   h. Four door wheels
   i. Four door guides
   j. Small self tapping screws
   k. 1 Double door catch
7. Roof bars
8. Glazing beading
9. One length of ridge
10. Two black rubber draught excluders
11. Small angle brackets for anchoring down
12. 2 Rectangular plates (door end plates) with 3 slots (for door end assembly)

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

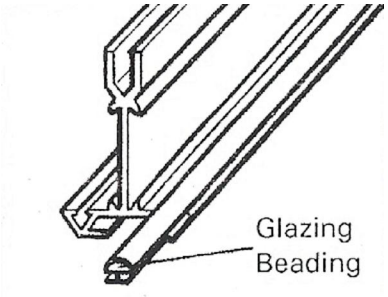
SIDE FRAME ASSEMBLY PARTS LIST

1) Combined eave/gutter bar
2) Built in base section
3) Glazing bars 1.489m long (1 for 4', 2 for 6', 3 for 8', 4 for 10', 5 for 12')
4) Side braces 1.601m long (1 for 4' and 6', 2 for 8, 10 and 12')
5) Glazing beading
6) Nuts and bolts

SIDE FRAME ASSEMBLY

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

The base is integrated with the cill for each side of the greenhouse, and is assembled onto each sub-assembly rather than separately laid out.



1. Lay out the pieces on the ground as though you were standing inside the house, i.e. with the gutter and built in base facing downwards, and the bolt channels of the glazing bar(s) upwards. **(Key Point). Slide the glazing beading into the V grooves of the glazing bars.**

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 ½ò headed bolts provided with the shelf fittings- these can be inserted later). For the 8ô model, slide 1 extra bolt into the middle glazing bar of each side. For 10ô models, slide an extra bolt into the 2nd and 3rd glazing bar (and also the 4th bar for 12ô long models). These will enable the fitting of a cantilever brace during general assembly later in the plan, page 21 paragraph 10.

3. Fix the combined eaves/gutter bar to the glazing bar(s) by pushing the bolts through the holes in the combined eaves/gutter 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 built in base to the middle glazing bar by pushing the bolt through the hole in the built in base unit and tightening.

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

6. Place the side braces 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 built in base in the other). **(Key Point).**

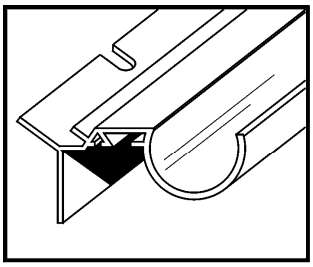
7. Put nuts on bottom bolts and lightly tighten.

8. Do the same with the other side frame assembly.

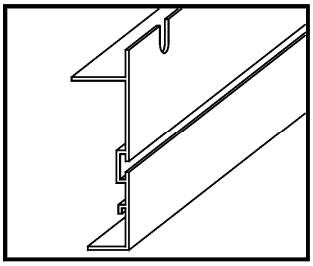
9. Make sure that the glazing bars reach both the built in base and the combined eaves/gutter bar in each case. Tighten all nuts.

10. If you intend to fit any Elite accessories (louvres, shelf, staging) they will be packed with ½ head bolts to enable them to be retro fitted. You do not need to pre insert any bolts for these accessories.

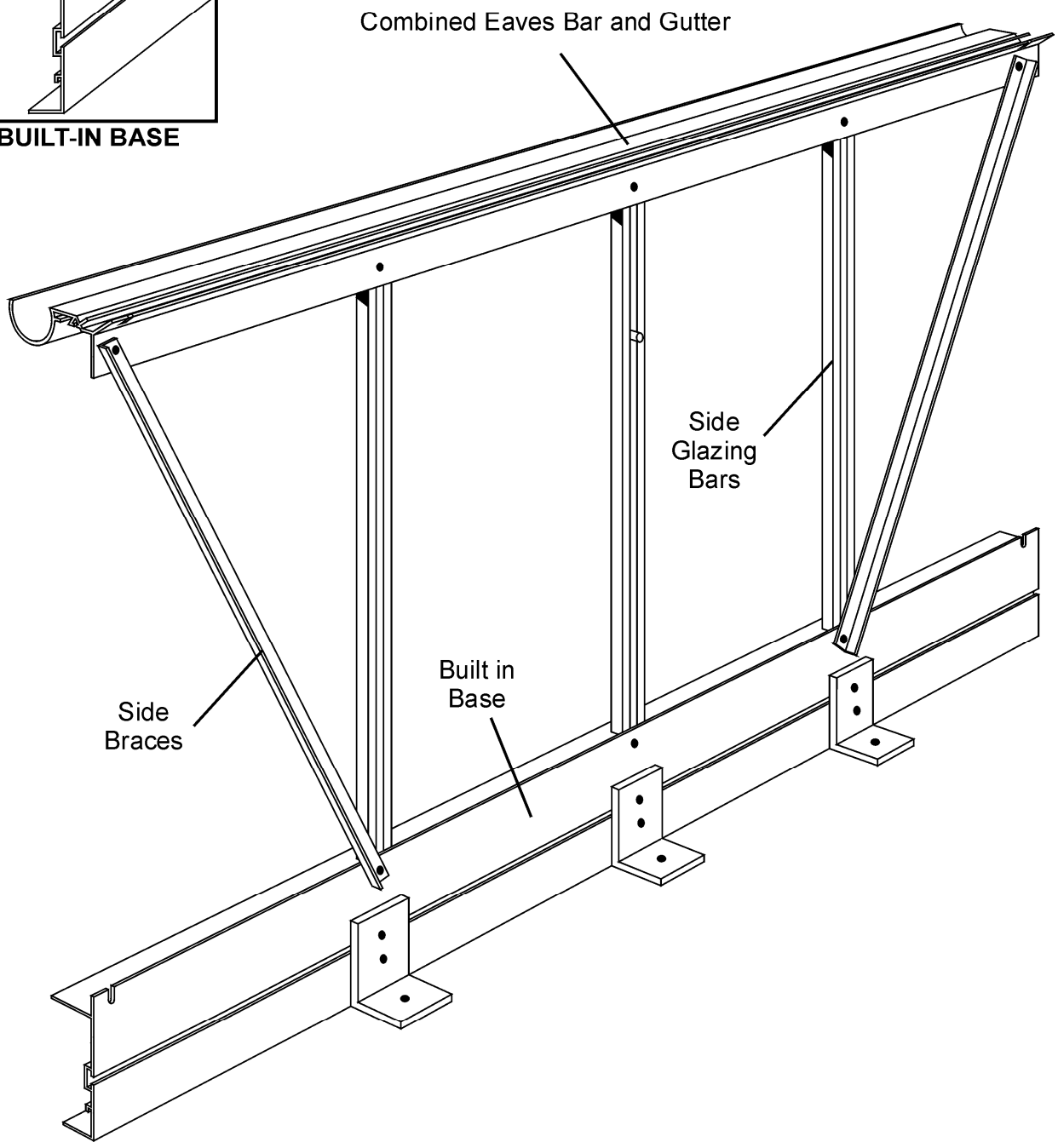
11. If you are fitting your greenhouse onto hard standing (flags, concrete etc.), then insert bolts into the bolt channel of the built in base (generally 1 every 2ô). These will be used to anchor the greenhouse to the floor during general assembly.



EAVES BAR GUTTER



BUILT-IN BASE



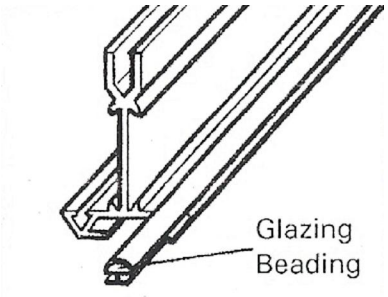
REAR END ASSEMBLY

Components
1 Built in base ñmarked rear endò
2 Glazing bars
2 Roof corner bars (marked ñRò at the apex)
2 Side corner bars
2 Diagonal angles
1 Horizontal angle

From the main bag of fittings you will require the nuts and bolts. You will also require 2 eave gusset plates and 1 ridge gusset plate. These are packed with the casement stay and are separate from the main bag of fittings.

INSTRUCTIONS

1. Lay out the frame as though you were standing on the inside i.e. with the bolt slots uppermost. Roof corners marked ñRò at the apex, opposite each other, facing downwards (i.e. ñRò 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 powder coated greenhouse there is no letter ñRò on the corner bar. You **must** ensure that the ñmiddleò hole is nearer to the ridge gusset plate than the eave gusset plate **(Key Point). Slide the glazing beading into the V groove of the glazing bar and the corner bars. (Do not put beading into the middle V slot of the corner bar).**



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 built in base to the ends. Now secure the ridge gusset plate and eaves gusset plates by inserting bolts through the ópatesô and into the holes punched in the flange of the corner bar, at the apex and eave.

3. Attach the built in base 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 built in base. (Make sure bolt channel of the built-in-base section is facing upwards). **(Key Point).**

4. Attach the vertical glazing bars to the built in base by inserting a bolt into the bolt channel of the glazing bars and locating it with the punched holes in the built in base. Before securing the nuts attach the diagonal angle to the same bolt as illustrated. The top of the diagonal angle now attaches to the hole in the side corner bar approx. 300mm from the top of the bar.

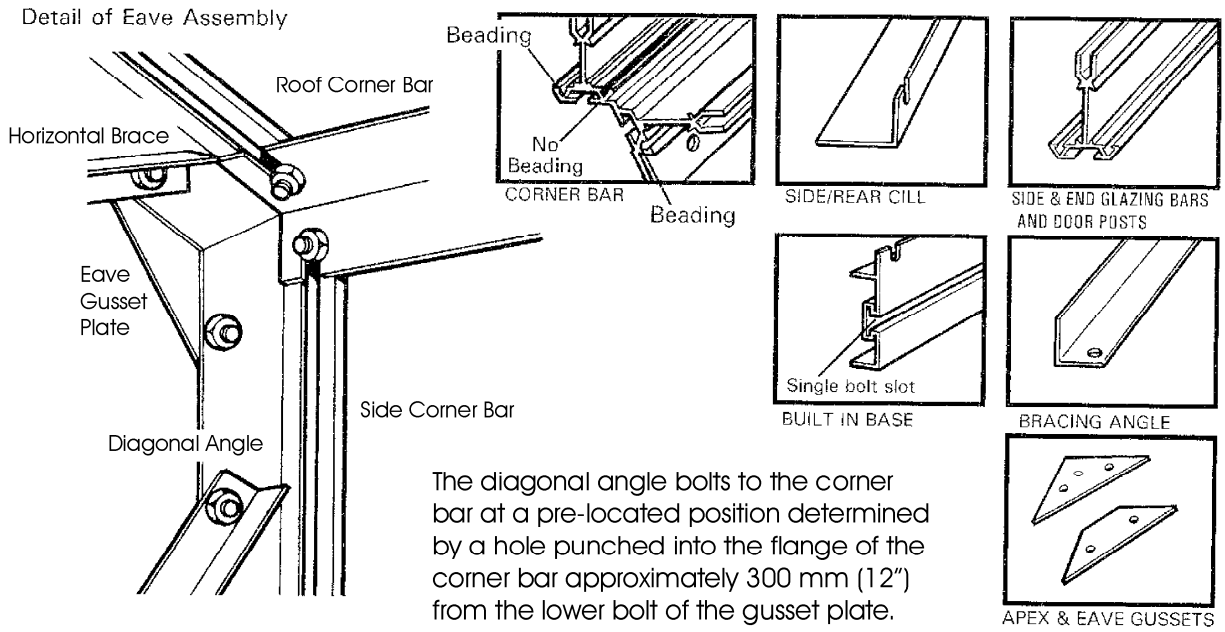
5. Slide two bolts into the bolt channel at the top of the two vertical glazing bars and secure the second one to the roof corner bars by inserting the bolt through the punched hole in the flange.

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

8. Check that all angles between the built in base and the vertical members are at right angles and that the glazing bars are right into the built in base at the bottom. **(Key Point).**

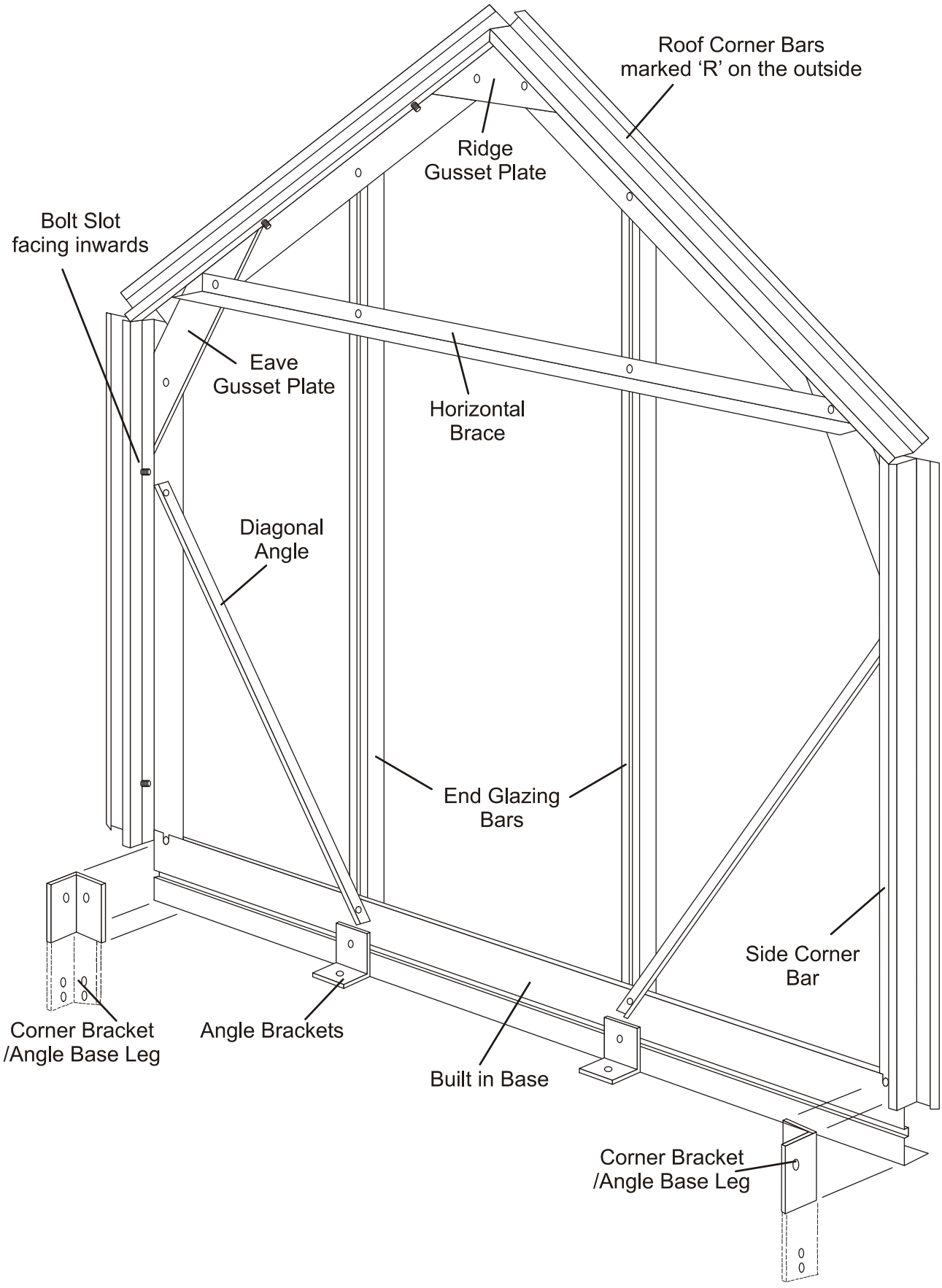
9. Tighten all nuts.

10. Slide a bolt into the bolt slot in the built in base section, one at each end. The corner bracket/ angle base leg is approx. 400mm long and has 6 holes (4 at 1 end and 2 at the other). Attach the corner bracket/angle base leg so that it is pointing downwards by using the end of the bracket that has 2 holes (not 4) to the bolt channel of the base section. If you are fitting your greenhouse onto soft ground, then do not fit the corner bracket/angle base leg yet. If you are on a patio, you will need to cut the bracket off level with the bottom of the built in base and slide extra bolts into the bolt channel to be attached to the angle brackets (generally 1 every 2ô). If you are on soil, the corner bracket/angle base leg will go into the ground during general assembly.

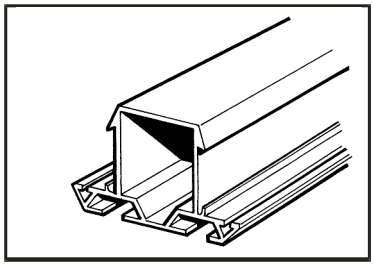


N.B. Roof Corner Bars are marked ñRò on the outside, which indicates that they meet at the ridge. They are also mitred at both ends.
If you have a powder coated greenhouse there is no letter ñRò on the corner bar. You **must** ensure that the ñmiddleò hole is nearer to the ridge plate than the eaves plate. **(Key Point).**

REAR END ASSEMBLY

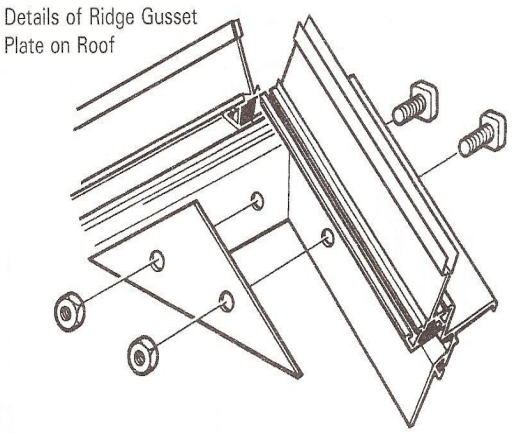


DOOR END ASSEMBLY



BLOCK BAR

Components
1 Door end cill
2 Built in base
2 End BLOCK glazing bars (mitred at 1 end)
2 Rectangular plates with 3 slotted holes
2 Short horizontal angles
2 Roof corner bars (marked óRô)
2 Side corner bars (unmarked)
1 Door track support
1 Top door track
2 Small angle door track support
2 Diagonal angles



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

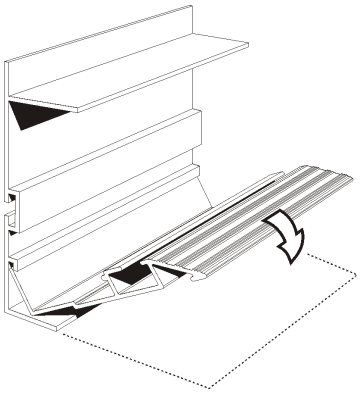
You will also require 2 eave gusset plates and 1 ridge gusset plate. These are packed with the casement stay and are separated from the main bag of fittings.

INSTRUCTIONS

1. Assemble the frame in exactly the same way as the rear end, up to and including stage 3 of the rear end. The difference with the door end is that instead of 1 long built in base piece, the door end has 2 smaller pieces (1 either side of the door opening) and 1 door end cill.

2. Now engage the door end cill with the 2 built in base pieces by pushing the angle of the cill under the locator as shown in the diagram. At this stage the cill will move freely left and right but will remain located to the built in base.

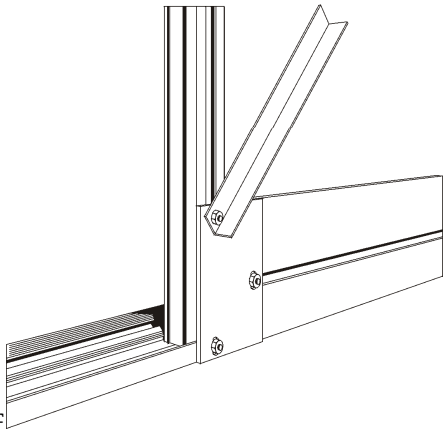
N.B: The short door end built in base sections have an extra slotted hole at the other end which will not be utilised in the assembly, but is there so that the built in base pieces do not require handing i.e. left can go on right and visa versa.



3. The door end block glazing bar has 2 continuous bolt channels along its length. During construction the bolt channels will always be on the inside of the greenhouse. For description purposes we shall refer to these as the ‘inside channel’ and the ‘outside channel’. Viewed from the inside, the left hand block bar will have the outside channel on the left of the bar, and the inside channel will be on the right hand side of the bar, and visa versa on the right hand block bar.

4. Slide 2 bolts into the outside bolt channel bottom of each block glazing bar, and 3 bolts (only 1 if greenhouse to be sited on soft ground) into the free end of each built in base section. Attach the 2nd bolt in the block glazing bar to the hole in the door end cill, but do not put a nut on yet. **The Block glazing bars do not sit on top of the base (as the rear end glazing bars do) they go down the side of the base and attached to the bottom cill. (Key Point).**

5. Attach the rectangular plate (with 3 holes) to the 2 bolts inserted in the outside bolt channel of the block glazing bars and the last bolt inserted into the base ensuring that the glazing bar is tight down into the angle of the door end cill. Attach the diagonal angle to the top bolt of the rectangular plate. The 2 unoccupied bolts in the built in base sections will be used to anchor the greenhouse to the floor.



6. The inside bolt channel of each block bar is not fitted to the bottom door cill, and consequently there is no hole in the bottom door cill to receive a bolt.

7. Slide 2 bolts into the outside bolt channel of each block glazing bar at the top, and 1 bolt into the inside bolt channel of each block glazing bar at the top. Locate the top bolt in each bolt channel with the prefabricated holes in the roof corner bar. Do not put a nut onto the bolt inserted in the inside bolt channel yet.

8. Attach the main door track support (shaped like a letter ‘Z’) to the 2 vertical block glazing bars. The door track support attaches to the frame at the point where the block bar meets the roof corner bar utilising the previously inserted bolt in the inside bolt channel which as yet does not have a nut on. **(Key Point).** This ‘Z’ shaped bar must be fitted with the two outside slots facing upwards **not** downwards.

9. The two horizontal braces attach to the **top bolt** in the gusset plate and the outside bolt channel of the vertical block glazing bars, using the 1st bolt inserted in the bar above.

10. Stand the frame up and bolt the door track to the main door track support and the small angle door track supports by inserting 5 bolts into the bolt slot of the door track. Position the middle 3 of these through the 3 holes in the door track support above the door opening. The small angle door track supports (which are to be fitted after the greenhouse is completely assembly, but prior to glazing) 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, and then by using a self tapping screw, you can attach the blank end of the bar to the continuous screw groove on the corner bar. See door end assembly.

11. Now fit the small door end glazing bar to the unoccupied hole in the upper flange of the main door track support, and the other end to the middle hole of the ridge gusset plate.

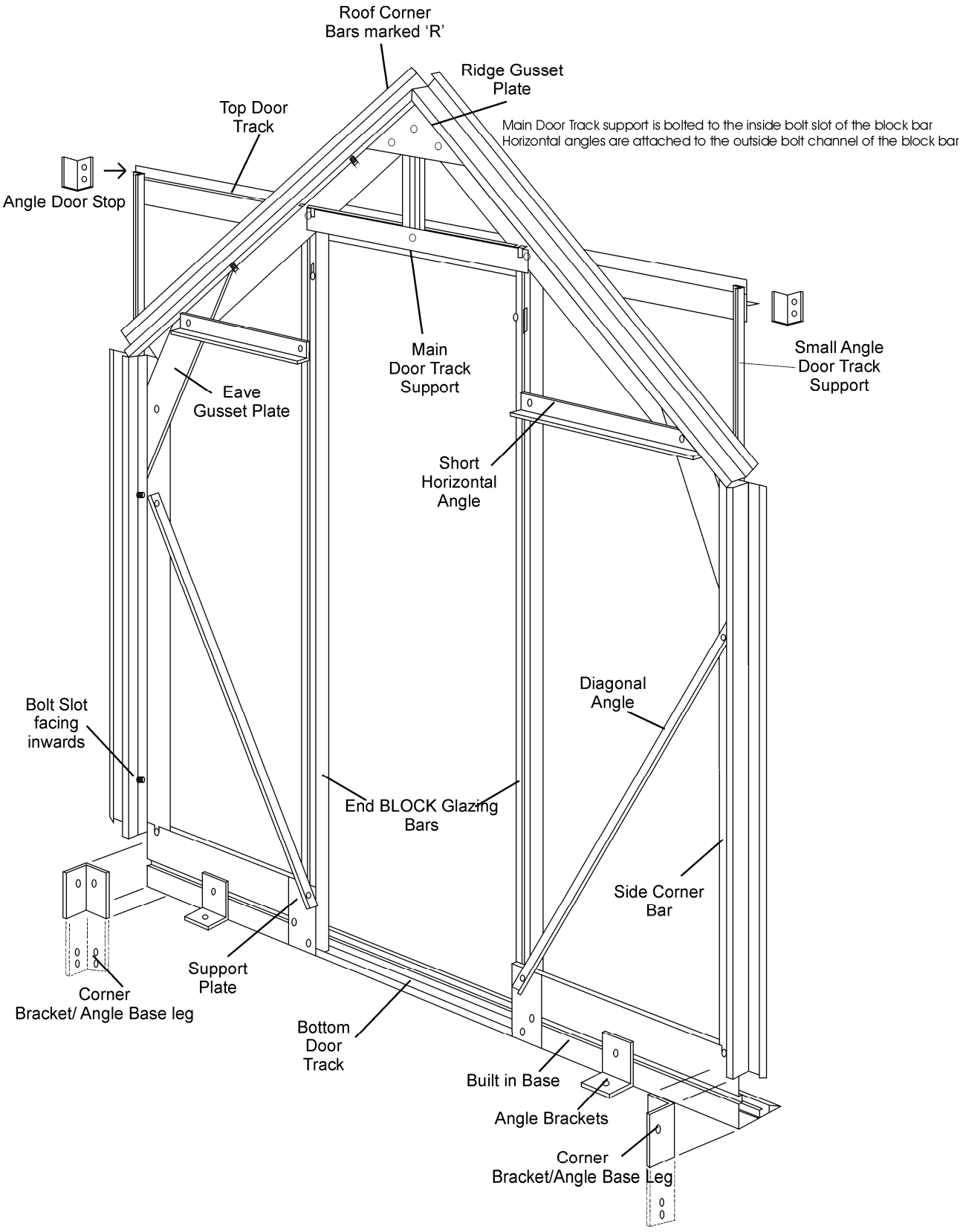
12. When this has been achieved tighten all nuts.

13. Slide a bolt into the bolt slot in the built in base section, one at each end. Attach the angle base leg/corner bracket so that it is pointing downwards. If you are fitting your greenhouse onto soft ground, then do not fit the corner bracket yet. If you are on a patio, you will need to cut the bracket off level with the bottom of the built in base and slide extra bolts into the bolt channel to be attached to the anchor bracket (generally 1 every 2ô). If you are on soil, the bracket will go into the ground at general assembly.

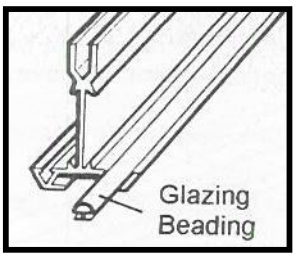
N.B. Please note carefully the correct position of the main door support. The slotted holes at either end are facing skywards NOT downwards **(Key Point).**

Please note, you only require approx. 150mm of beading in the inside óvô groove of the door end glazing bars.

DOOR END ASSEMBLY



DOOR FRAME ASSEMBLY



Follow the procedure below for each door.

Components consist of:
2 door glazing bars for each door (1 handed, 1 unhanded)
(handed posts of each door meet in the middle)
3 infill panels
2 top and bottom door panels

From the main bag of fittings you require for **each door**:
2 door wheels
2 clip on nylon door skids
1 length of black rubber draft excluder
12ô glazing beading and self tapping screws

BEWARE OF SHARP EDGES!

1. Place the two door glazing bars on a level surface roughly 12ò (305mm) apart with the bolt slots facing downwards. The top of each door glazing bar has two screw holes in it, the bottom has three. **(Key Point).**

2. Looking at the handed door posts in profile with the 2 holes at the top (3 holes at the bottom) the open box part of the section goes to the outside i.e. on right hand door ï left hand upright, on left hand door ï right hand upright.

3. Slide glazing beading into the channels of the door glazing bars, apart from the outside channels of the two outer bars.

4. Place the top, bottom and 3 infill panels in position as shown, lining up the screw holes in the door glazing bars and panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skids to fit on. The lower infill panel locks on to the bottom panel. N.B. The top and bottom panels are the same profile section.

5. Fix the door together by screwing through the door glazing bars into the holes provided in the edge of the panels with the self-tapping screws. 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 screw before assembling the doors. Alternatively, you could insert the screws into the screw eyes (semi-circular grooves that run the length of the door panel) 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.

6. Make sure all angles are square and tighten all screws.

7. 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. The door wheels have a shoulder in the middle that protrudes on one side. The shoulder, when fitted to the door goes against the inside edge of the top door panel.

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

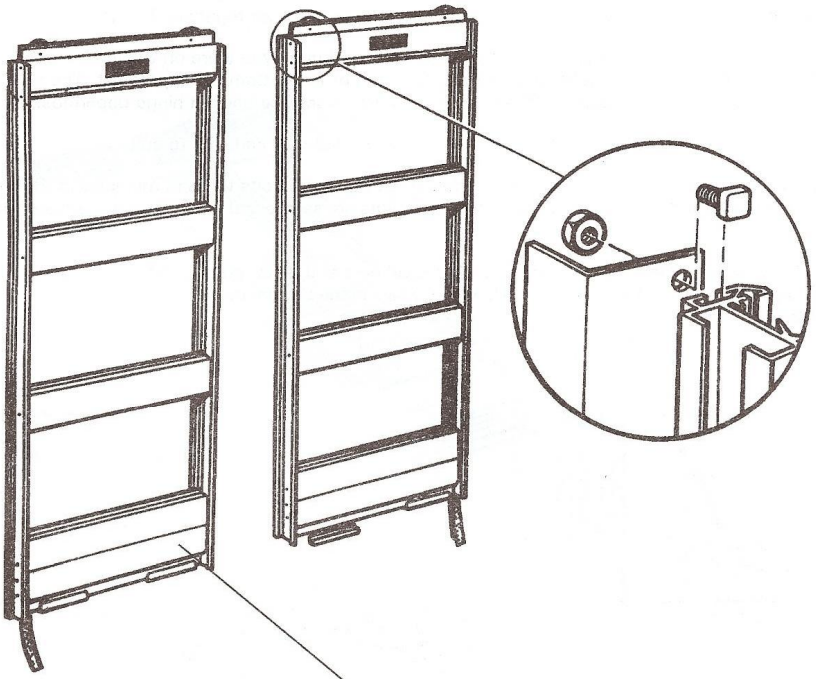
9. Turn the door over and insert the black rubber draught excluders in the groove (bolt slot) in each unhanded door glazing bar. Push up to the top of the door glazing bar and trim off the surplus at the bottom. With a pair of pliers squeeze the groove together at the bottom so that the rubber will not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

10. Do exactly the same with the right hand door remembering that the draught excluder is inserted into the right hand door glazing bar i.e. the unhanded one.

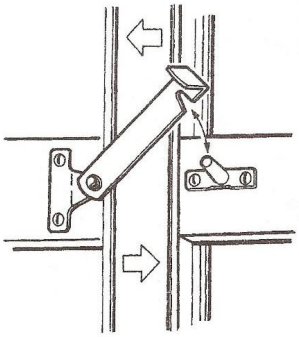
11. Do not fit the doors to the gable at this stage ï wait until the structure is fully assembled prior to glazing.

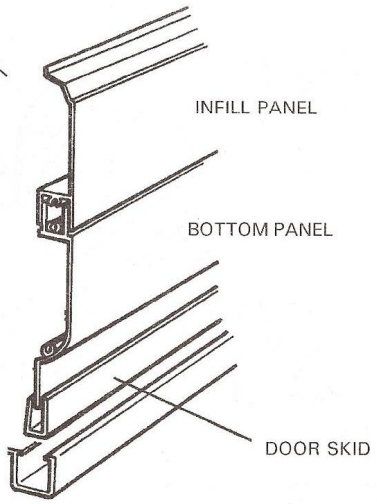
12. Having assembled both doors you need to attach a piece of alloy angle to the rear of the right hand door. The angle is equal in length to the door glazing bar and has 3 holes equally spaced. Insert bolts into the bolt slot of the left hand upright of the right hand door, attach the angle, put on and tighten the nuts.

13. The door catch is better fitted when the greenhouse is fully erected (prior to glazing) and the doors are fitted. You will need to locate the catch in your desired position and drill 4 holes to accommodate the catch as illustrated below.



Door Catch Detail





ROOF VENT ASSEMBLY

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

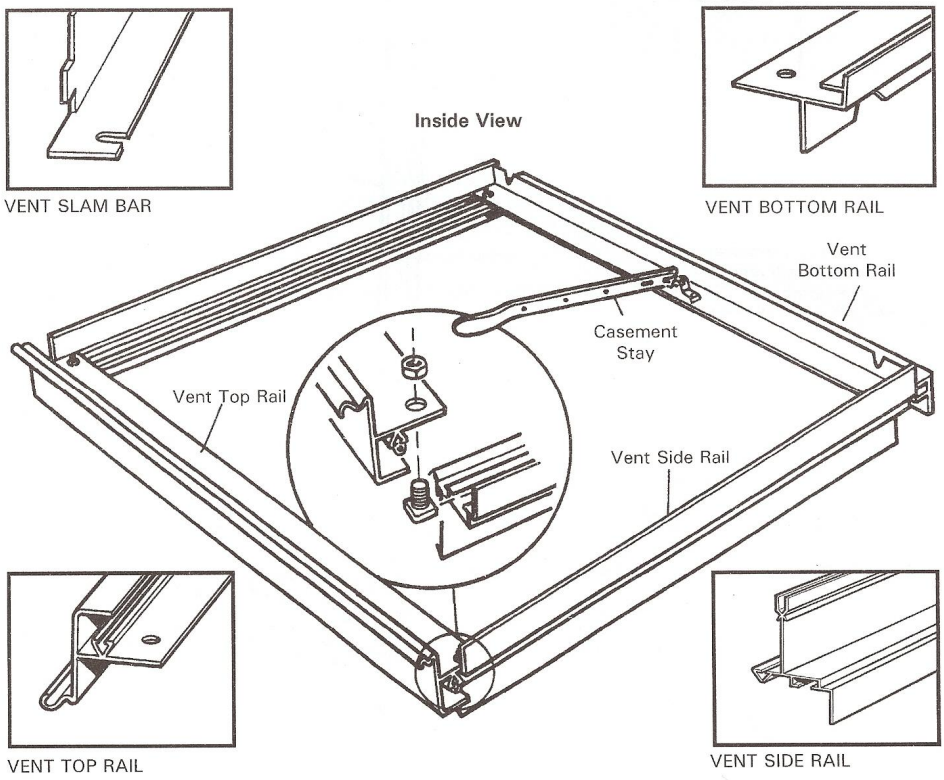
2. Lay the 4 edge pieces of the vent on a level surface as though you were on the inside of the vent (with the bolt slots of the side bars uppermost and the óvô slots of the bottom rail uppermost. The top rail is arranged in such a way that the squared off end is to the bottom and the hooked hinge uppermost).

3. Slide the glazing beading into the beading groove in the side and top rails and trim to suit.

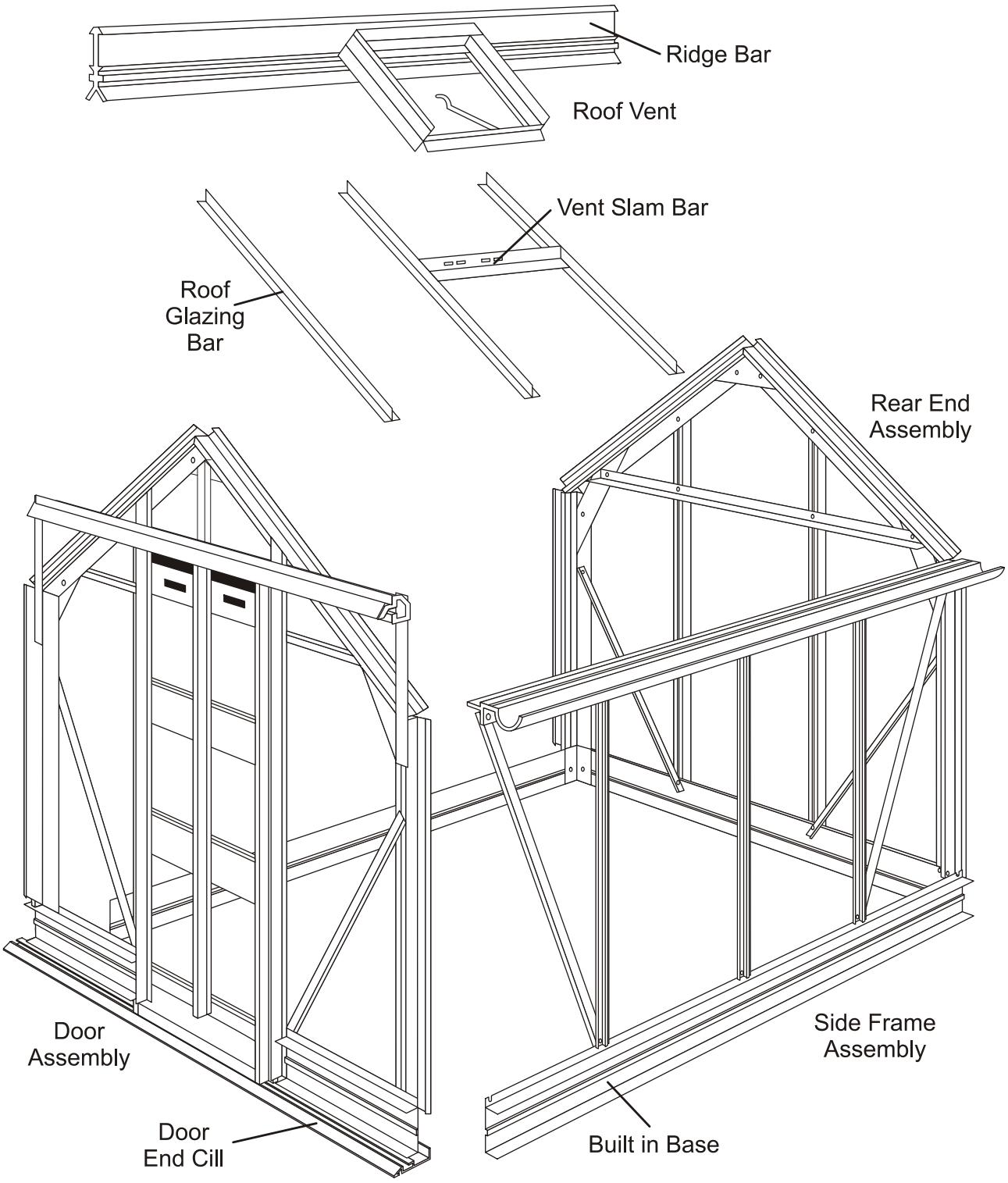
4. Insert a bolt into each end of the side rail bolt slots, put these bolts through the holes in the top and bottom rails, add nuts and lightly tighten. Check that all joints are secure and that the vent is square, and then tighten up the nuts.

5. 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. Hold the nuts in place and tighten the bolts with a screwdriver.

6. Do the same with the other vents.



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.

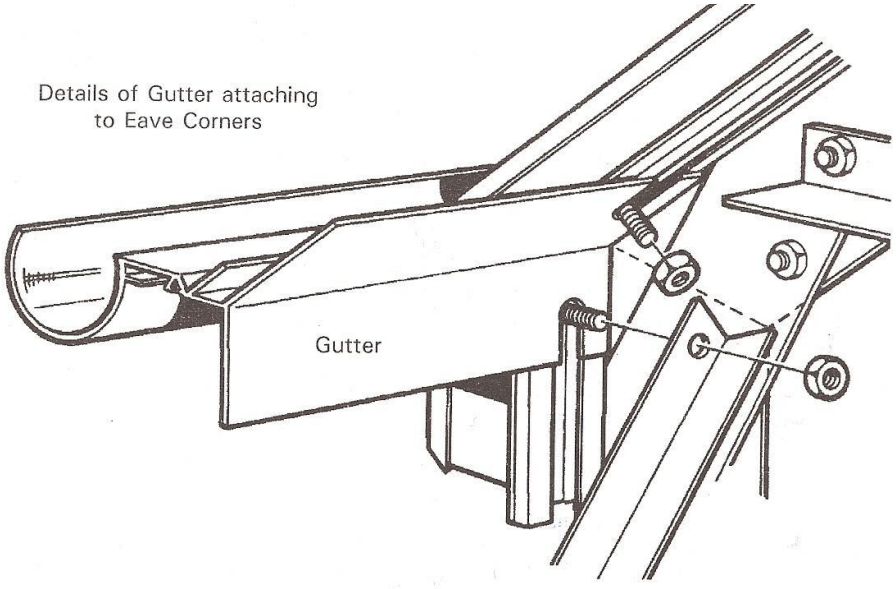
2. Slot the eaves bar into the small space between the roof and side corner bar so that the gutter is outside the end frame and the two flanges that form the angle of the roof and side are inside and tight up against the bolt slots of the roof and side corner bar. **(Key Point).**

3. The extra bolts that were inserted in the bolt slots 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 side braces onto the bottom bolt, put a nut on and tighten up**. (Key Point).**

5. The built in base 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 built in base. The angle base leg/corner bracket attached at frame assembly can now be attached to the gable end, in a similar way to its attachment to the side frame.

6. Do the same at the other three corners.

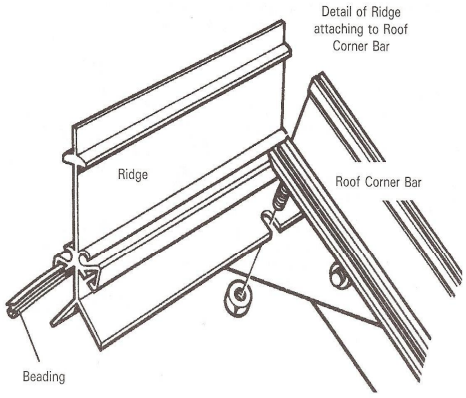


7. Slide the beading into the two V slots of the ridge, and then attach the ridge to the roof corner bars by inserting the end of the ridge through the small gap in the corner bars at the top. The vertical part of the ridge will be outside and pointing skywards and the two flanges that form the angle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

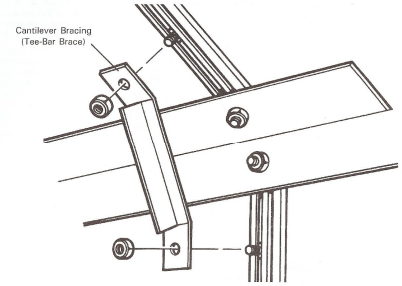
8. Line up the slotted holes at the end of the ridge with the bolt slots, in the corner bars and push the two bolts, previously inserted during gable end assembly, into the slots. Put on nut and tighten.

9. Slide the glazing beading into the V groove of the roof glazing bars. They 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 bar. N.B. remember to omit two roof bars if you have a partition, one each side.

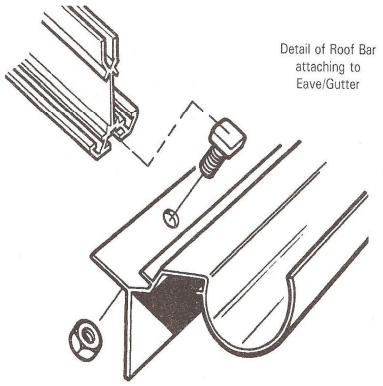
10. Before bolting the bottom of the roof bar to the flange of the eave bar, insert extra bolts as follows. Then attach the final nut and bolt to the eave bar as illustrated.



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.

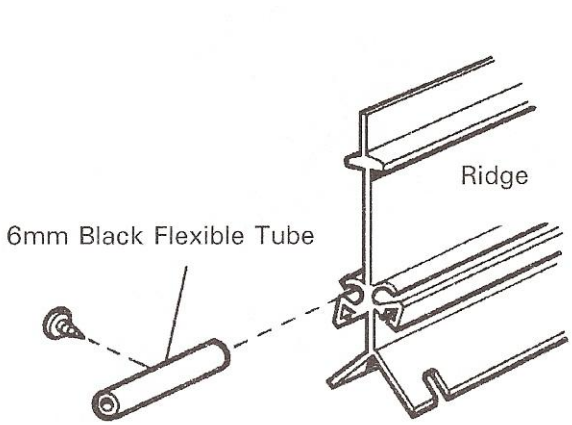


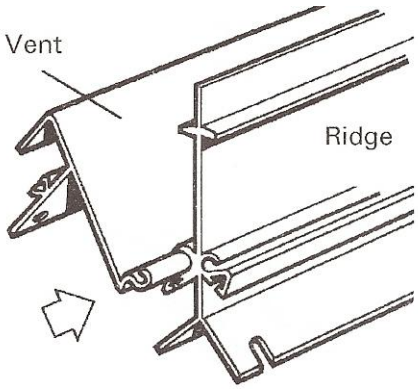
If your greenhouse is 8õ ò, 10õ ò or 12õ ò long you have additional cantilever bracing at the eave, 2 brackets for 8õ ò, 4 for the 10õ ò and 6 for the 12õ ò.



Put an extra bolt into the 2nd glazing bar (8ô model), 2nd and 3rd for 10 model, and 2nd, 3rd and 4th for 12ô model before attaching the glazing bar to the eave. **(Key Point).**

11. Slide the vent onto the ridge from either end and into the desired position.





The hinge is a ball and socket joint, the ball being on the top rail of the vent, the socket on either side if the ridge running the full length of the structure. **(Key Point).**

The vent can go in any position (but if you have 2 or more, they cannot be adjacent) on either side of the ridge.

When the vent is in position and it opens and closes correctly, you can now insert a black flexible tube into the same channel of the ridge that the vent slides. Move the tube along the ridge until it meets the vent. Now insert a self tapping screw into the long side of the tube to expand the tube to remain in position. This will prevent the vent from moving. See previous diagram.

Fit the slam bar immediately under the vent bottom rail and secure with the bolts previously inserted in the roof bars. The precise position of the slam bar can be determined by inserting a pane of glass ref A (horticultural glass) or ref 18 (toughened glass) under the vent and moving the slam bar down to touch the glass.
N.B. With a 4ô long building or if your vent is next to an end the flexible tube will only function if the vent is in either bay No 1 or on right hand side or last bay on left hand side. (Viewed when walking through the door).

12. Do not fit the doors at this stage.

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

14. If you are fitting the greenhouse onto soft ground, you now need to dig 1 hole (approx. 1 spade width) in each of the 4 corners.

15. Lift the greenhouse into position. For soft ground fixing, you now need to attach the corner bracket/angle base leg to the bolt slot of the side and end using the end of the bracket that has 2 holes as oppose to 4. The bracket must be attached in such a way that the end with 4 holes is pointing down into the hole previously dug. You will need a flag-stone or soft ground support sunk to ground level underneath the door opening in order to attach the bottom cill and threshold so they are permanently anchored to something solid to stop any movement.

SQUARING UP

You must make sure that the structure is level and square. Put one pane of glass (a 610 x 610mm piece would be sufficient) 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 or pulling each corner diagonally you will be able to see the frame move in and out of square with the glass.

HARD STANDING

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 subassembly) 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 put out a couple of shovelfuls around the base of each corner bracket/angle base leg. When the concrete has gone off back fill with the soil excavated earlier on.
N.B. Do not concrete the corner brackets/angle base legs unless you are certain the structure is LEVEL & SQUARE.

FITTING THE DOORS TO THE STRUCTURE

The doors slide onto the frame form opposite sides of the door tracks. For the left hand door put the door bottom rail into the bottom door guide which is also the door end cill and slide to the right, feed the first wheel into the top door track and move further to the right, carefully ease the door past the glazing bar and feed in the second wheel until the black draught excluder butts up to the end glazing bars.

Repeat the process for the right hand door. (Ensure handed door posts meet in the middle). It may help in the fitting of the doors to remove the angle on the back of one of the doors and refit it once the doors are on. The doors 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 ñfine tuningò of the doors. N.B. Sometimes the doors can be a little stiff prior to glazing but once the glass has been inserted (the last job of the construction) the extra weight will make for smooth running.

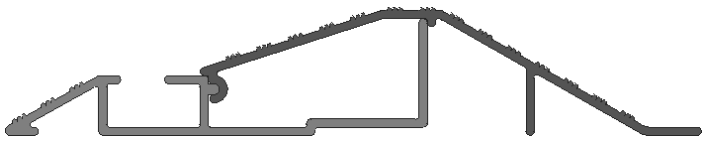
The door angle you attached to one of the doors may need to be removed to ease installation of the door ï it can quite easily be taken off and re-attached when doors are fitted.

You can now fit the two small door track supports which are made from flat bar, about 150mm long. They have two holes in. One is a 7mm hole the other is a 4mm hole. Insert 2 bolts into the top door track approximately 100mm from the door opening on both sides of the door opening end attach the flat bars using the end with the larger hole, leave finger-tip tight. Let the flat bar hang down then slide them left/right until the smaller hole at the bottom of the flat bar is in-line with the facing groove of the roof corner bars. Insert a self-tapping screw through the hole and into the groove and tighten up with a screwdriver. Tighten the nuts with a spanner.

Attach two small angles (1ò x 1 ½ò) to the ends of the top door track, these will act as stops when opening the door. The part of the angle with 2 holes is attached to the bolt slot at the back of the top door track. This in turn will allow the blank side to cap the end of the track preventing the door from sliding off the track.

FITTING THE RAMP

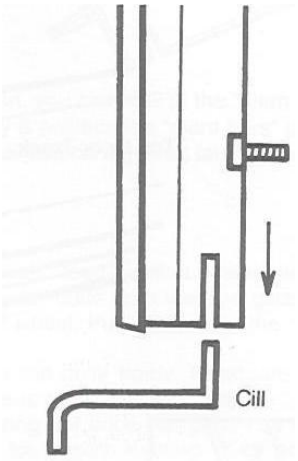
The final aluminium piece of the greenhouse is the door end ramp cill. The ramp is attached to the door end cill by engaging the nub of the door end cill to the óCô groove of the ramp. The ramp is now rotated to horizontal. Drill a hole at each end approx. 20mm in from the end of the ramp and into the floor. Plug and screw.



If you are fitting onto soft ground, you must ensure that a solid material is underneath the ramp to avoid damage when you step on the ramp to enter the greenhouse. You can lay a row of bricks sunk to ground level, a concrete flag, a piece of aluminium base pressed into the ground to ground level or something similar. You can then screw the ramp into the support material for a secure fixing. (See note 15 on page 22).

PARTITION

If you have purchased a partition it is at this point that you construct the frame in situ. In the box you will find packs marked;

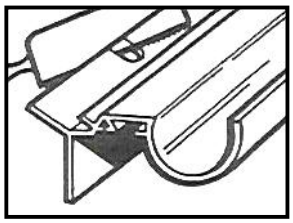


Partition corner bars
Partition door end cill
Partition door end
Partition door track
Partition door panels
Partition door posts
Partition built in base

You will also require a number of fittings from the box

2 eave gusset plate
1 ridge gusset plate
Glazing beading
Nuts and bolts
2 rectangular base plates

PROCEDURE:



1. Starting with the corner bars, identify the roof and side, left and right hands as you did earlier during door or rear end assembly.

2. Each bar has a saw cut approx. 20mm into the bar from each end, but apart from that they are identical. Insert glazing beading as before but this time into all 3 grooves of the corner bar **(Key Point).**

3. Having established where the partition is going you will need to make the holes in the gutter, ridge and cill into slots. Do this by carefully hack sawing down into the hole to form the slot.

4. Take the left hand side bar, insert 2 bolts into the bolt slot, and then offer it up to the eave/ gutter and cill so that the flange of the cill and the eave are inserted into the saw cuts. **(Key Point).**

5. Slide the 2 bolts into the bolt slot facing inwards, to the holes in the cill and eave/gutter. Put a nut on and finger tip tighten. Do the same with the left hand roof corner bar, having first inserted 2 bolts into each bolt slot. (Donôt forget to ensure that ôRôis at the ridge and not at the eave) now do the same with the other side and roof corner bars.

6. Next, offer the gusset plates to the corner bar at the point where they meet. Line up the holes in the gusset plate with the bolt holes in the facing flange of the corner bar. Insert 2 bolts through the gusset plate and flange, put a nut on ï finger tip tight. Do not put the nuts on the upper and lower bolts of the eave gusset plates at this stage. **(Key Point).**

7. The built in base can now be attached to the facing bolt slot of the partition corner bar (in the same way you did in the original door end assembly). N.B. <u>If you have a brick base you will need to trim off</u> with a hacksaw the first 2ò of the overlapping part of the cill to facilitate a snug fit.

8. Firstly bolt a corner bracket/angle base leg on each end of the partition built in base. If you are on flags or concrete cut off the surplus metal of the corner bracket/angle base leg. Attach it to the side built in base walls by inserting a bolt into the slot of the side built in base. Line up the angle base leg/ corner bracket with the bolt slot, put nuts on and prior to tightening up, make sure the partition built in base and side built in base are tight up against each other. Do the same with the other part of the partition door end base. Now attach the bottom cill as you did at original door end assembly. Tighten the nuts.

9. Thread the glazing beading into the channels and trim to suit. Put 3 bolts into each bolt slot, attach to the bottom cill by inserting another bolt into the slot and pushing it through the hole in the bottom cill. Moving to the top of the bar, insert another bolt into the bolt slot and out through the hole in the roof corner bar. Put a nut on finger tip tight. Do the same with the other glazing bars. Attach the glazing bar to the cill/bottom door track and the built in base, utilising the door end base plates (rectangular plate with 3 elongated holes) see diagram on page 15. (It is identical to the door end assembly.)

10. Utilising the 3 extra bolts inserted into each bar, attach the horizontal and diagonal bracing bars in the same way as the original door end. Likewise with the door track support (to be found with the door panels) attach as before. The doors in a partition are a little shorter than a standard door to facilitate full opening. They are assembled and hung in the same way.

PARTITION DOOR TRACK

This top door track has no holes in but one bolt slot. Insert 3 bolts into the bolt slot and line them up with the 3 holes in the door track support, put the nuts on and tighten up. To position the doors track into the correct position fit the partition doors onto the track and by slightly releasing the 2 nuts holding the door track support you can move the doors up and down until it is correctly into the bottom guide. The doors should now run smoothly. If not you can ñfine tuneò its operation by re-adjusting the bolts up and down slightly.

GLAZING THE STRUCTURE

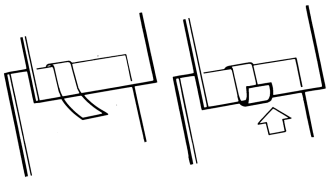
Always handle glass with extreme care as failure to do so can result in injury.

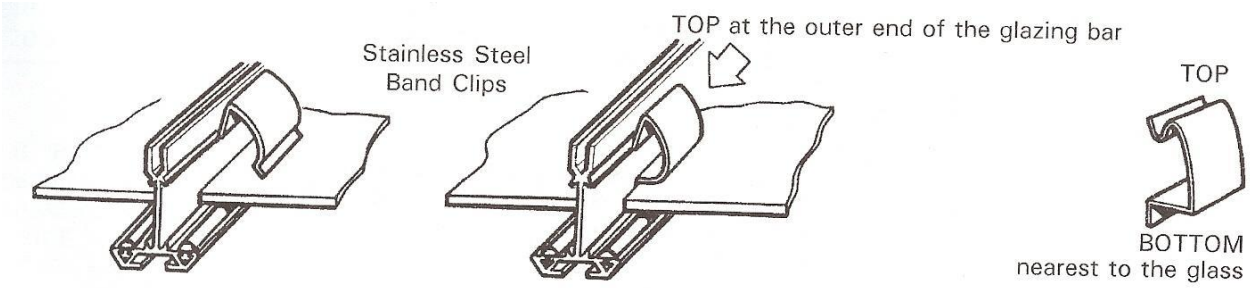
HORTICULTURAL GLASS and MULTI-SHEET TOUGHENED GLASS

1. Starting with the bottom pane of one side, offer the pane to the glazing bars. Hold it in place by inserting two of the stainless steel clips six inches from the bottom of the glass. Fit the curved lip under the glazing bar and then rotate it so that the other lip (the end that has a distinct 90 degree bend) clips over the edge of the glass. **(Key Point).**

2. Secure the glass by inserting another two clips in the same way half an inch from the top edge of the glass. **N.B. The side panels will require a larger overlap of approx ¾" (20mm).**

3. Hook **one** overlap clip on the middle of the pane of glass. **(Key Point).**



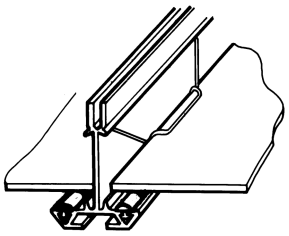


4. Offer the next pane of glass to the glazing bars, resting it on the two clips of the bottom pane. Insert two clips six inches from the bottom of the pane. Bend the middle overlap clip upwards to support the glass. Secure the pane by inserting another two clips 20mm approx. from the top of the pane. Then do the same with the top pane of glass but inserting to upper clips 150mm from the top.

   Repeat this all along this side of the house.

5. Repeat the glazing procedure on the other side of the house.

Stainless steel wire clips



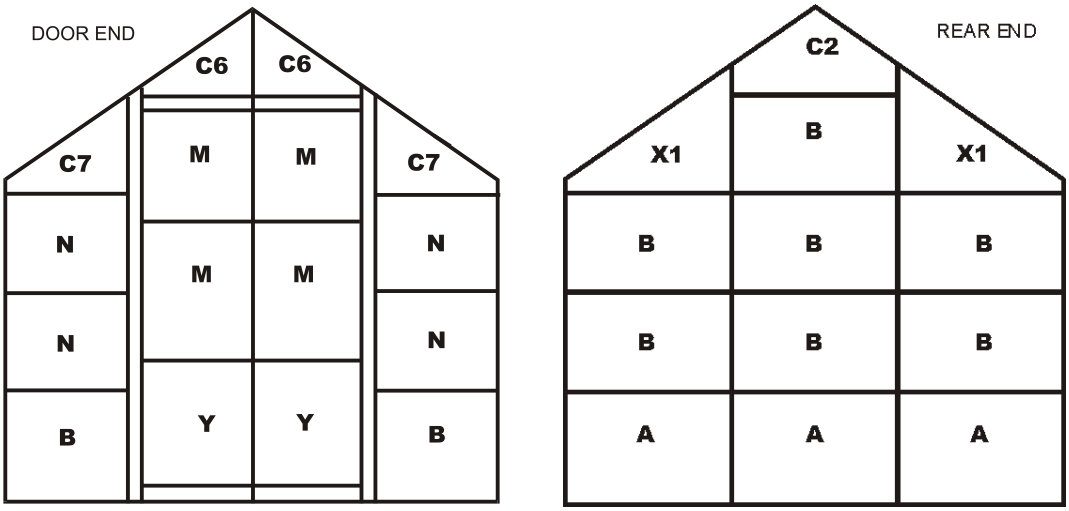
6. Following this, glaze the rear end in a similar fashion.

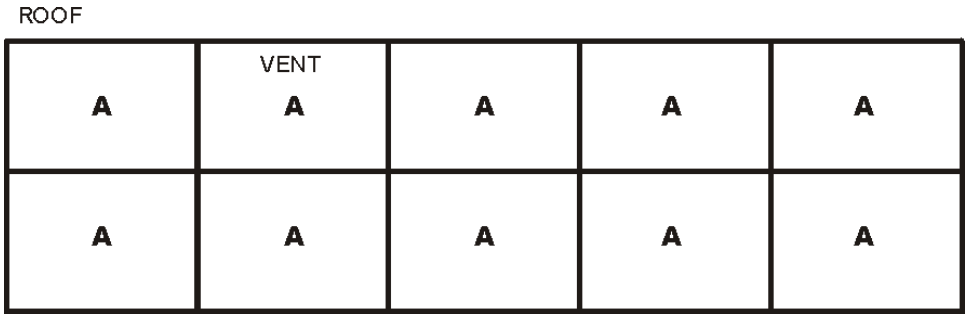
7. Proceed to the door end and glaze that, but use wire clips on the left hand edges of the panes to the left and right hand side of the door opening, so that the door slides open correctly. **(Key Point).**

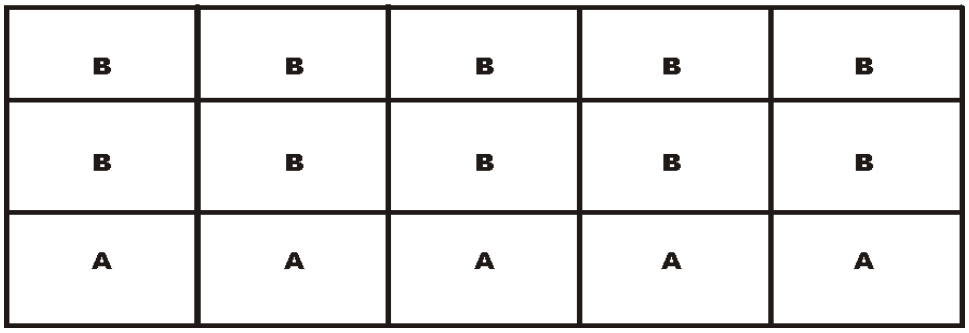
8. Finally, glaze the door.

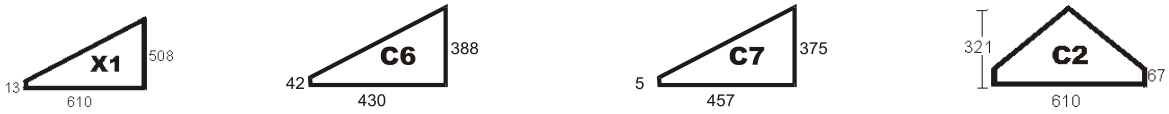
STRATA HORTICULTURAL GLASS & MULTI-SHEET TOUGHENED GLASS

GLASS APPLICATION:
Louvre replaces 1 x A - Louvre glass: 5 @ 573 x 100 x 4mm (Louvre must be sandwiched between two panes of glass) Glass under louvre: 1 @ 610 x 140mm







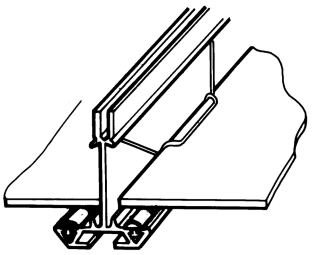


Ref	Width (mm)	Height (mm)
A	610	610
B	610	457
M	450	457
N	457	457
Y	610	450

LENGTH	A	B	M	N	Y	X1	C2	C6	C7
4' 5"	15	17	4	4	2	2	1	2	2
6' 5"	21	21	4	4	2	2	1	2	2
8' 5"	27	25	4	4	2	2	1	2	2
10' 5"	33	29	4	4	2	2	1	2	2
12' 6"	39	33	4	4	2	2	1	2	2

FULL SHEET TOUGHENED GLASS (EN12150).

The main differences in application between the two types of glazing are:



If you have purchased bar capping as an optional extra you do not use the band clips you use the wire clips instead, the capping goes over the bar and hides the wire clips from view. See separate instructions with the capping for fitting instructions.

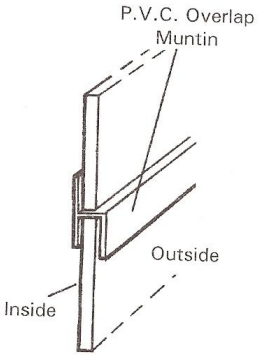
1. Toughened glass is in large sheets.

2. There are no overlaps: where there are two or more panes in a section they are butt jointed with a P.V.C overlap strip ï (called a muntin) ï **you do not use muntins or spacers if you have multi-sheet (or small pane) toughened glass.**

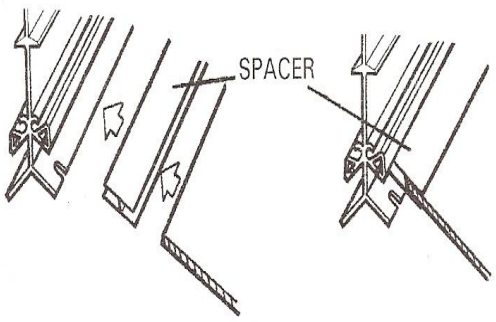
3. See the diagram for the position of the different sizes.

4. The glass is clipped onto the frame in the same way as the horticultural glass is, but use 8 clips per large pane.

5. Put the P.V.C overlap piece on top of the lower pane making sure you have differentiated between the inside and outside of the P.V.C (see diagram below). The next pane sits on top of the overlap and is clipped in as normal.



6. The roof panes have a PVC óspacerô. Fit 1 roof spacer to the top edge of each roof panel (except where a vent is installed). Slide the glass with spacer under the ridge as far as it will go and then lower into the recess in the gutter/eaves bar. The spacer slides underneath the beading channel of the ridge bar.



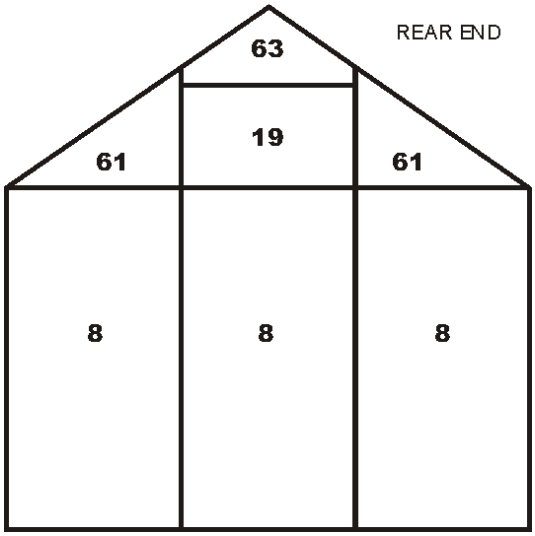
N.B. Spacers and muntins will be found in the packets of cut size glass (where appropriate).

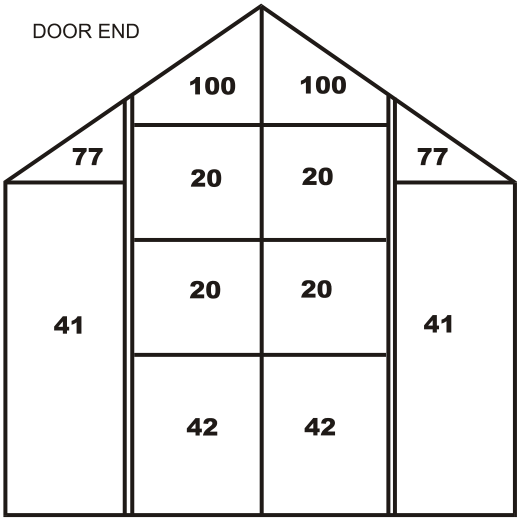
STRATA TOUGHENED GLASS

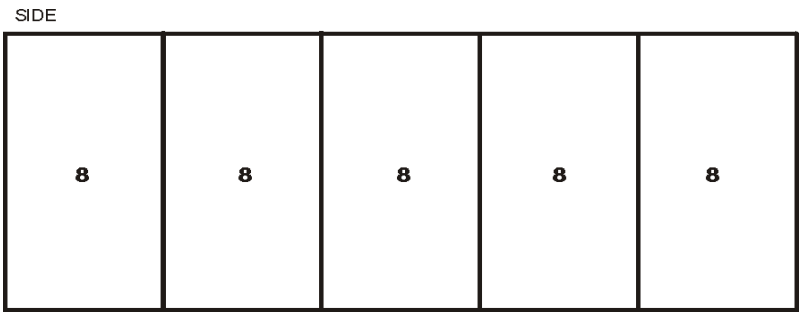
The quantities in the table below are for a greenhouse with standard specification. These figures may change with the addition of extra roof vents and louvres.

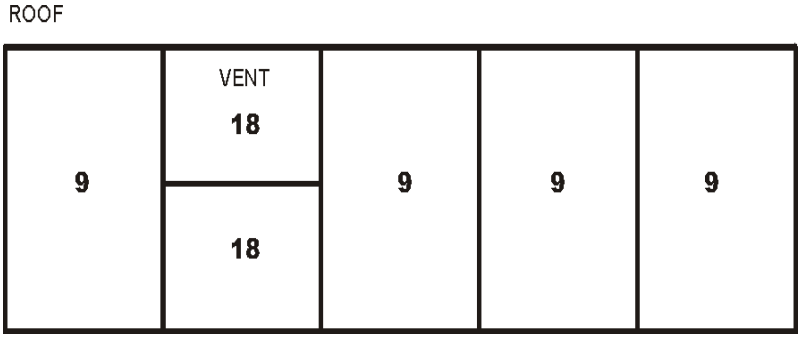
LOUVRE WINDOW
Situated at **side** or **rear** centre =

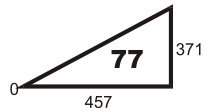
1) Less 1 off ref 8
2) Plus 1 off ref ó10ô & 1 off 610 x 140mm (Louvre must be sandwiched between these 2 panes of glass)
3) Louvre frame and glass 5 off 100 x 573

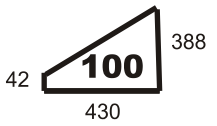


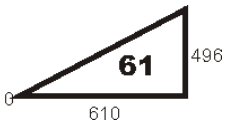


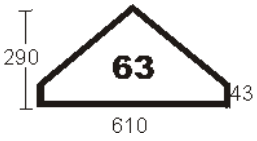










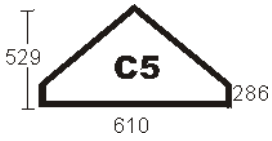


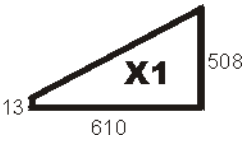
Model	8	9	18	19	20	41	42	61	63	77	100
4'5"	7	3	2	1	4	2	2	2	1	2	2
6'5"	9	5	2	1	4	2	2	2	1	2	2
8'5"	11	6	4	1	4	2	2	2	1	2	2
10'5"	13	8	4	1	4	2	2	2	1	2	2
12'5"	15	10	4	1	4	2	2	2	1	2	2

Ref	Width (mm)	Height (mm)
8	610	1489
9	610	1197
10	610	904
18	610	610
19	610	457
20	450	457
41	457	1489
42	450	610

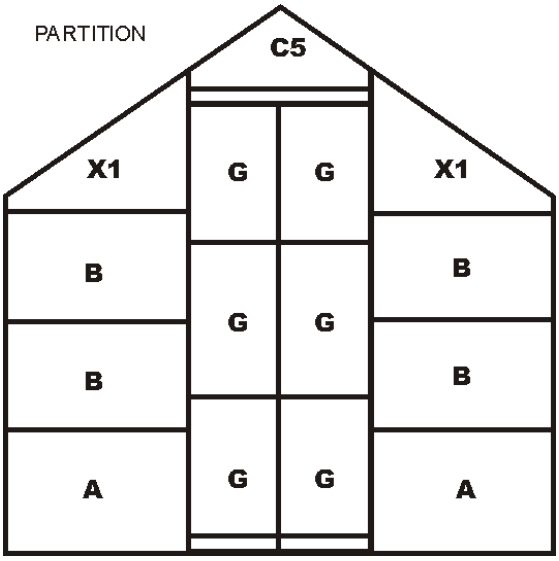
PARTITION GLAZING

HORTICULTURAL GLASS

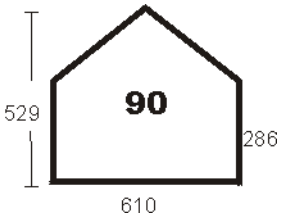


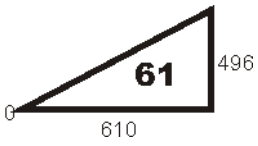


Ref	Width (mm)	Height (mm)
A	610	610
B	610	457
G	300	457

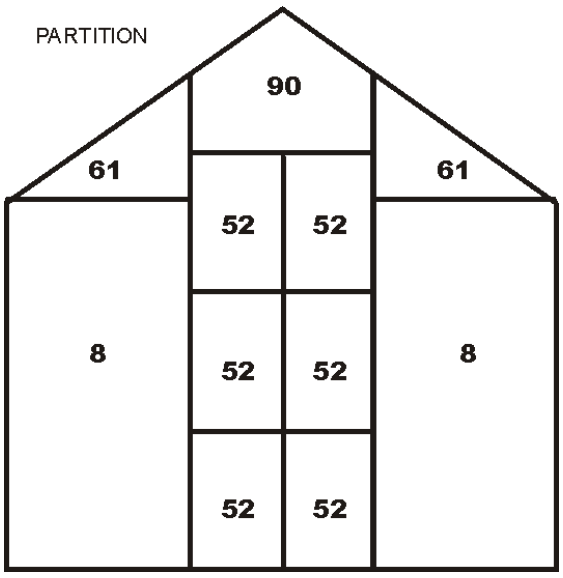


TOUGHENED GLASS



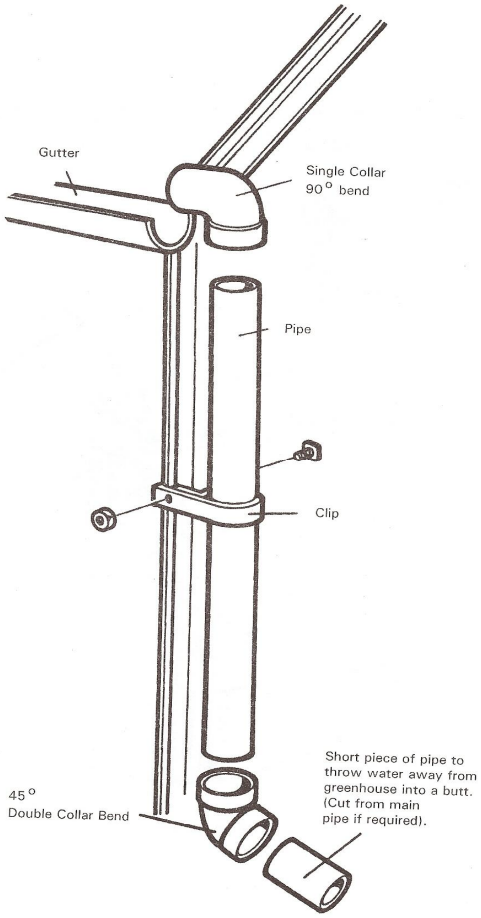


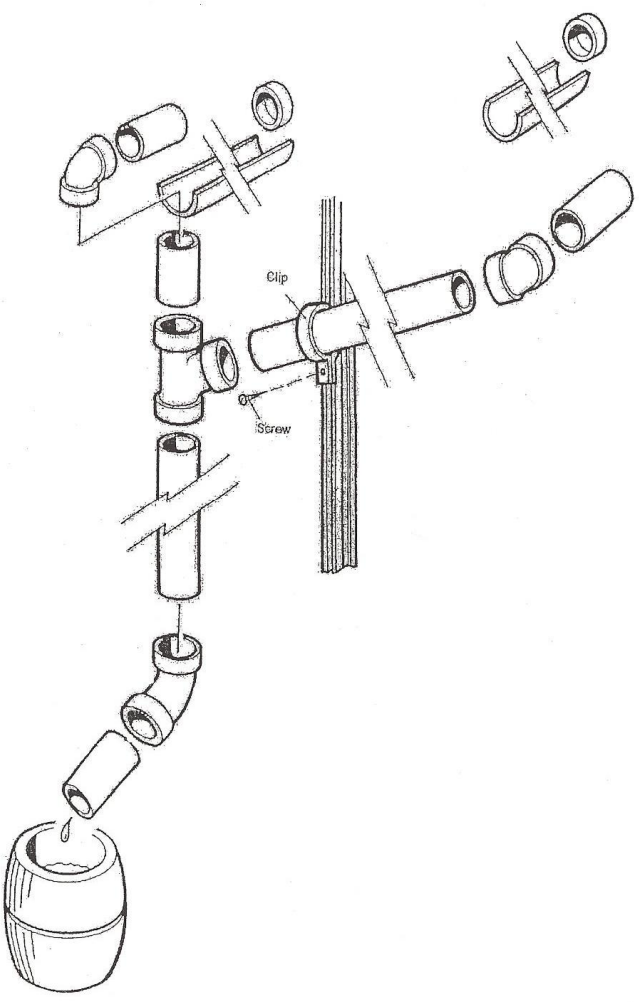
Ref	Width (mm)	Height (mm)
8	610	1489
52	300	457



OPTIONAL EXTRA

RAINWATER KITS





ELITE 1211