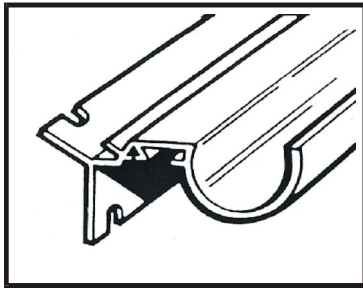
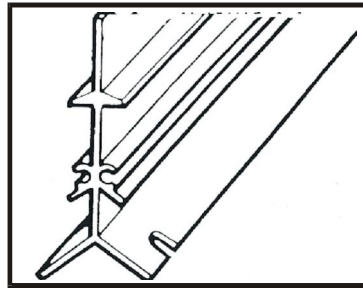


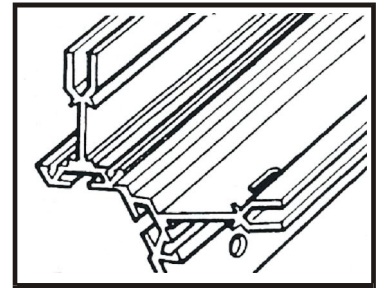
COMPONENT DRAWINGS (Not to scale)



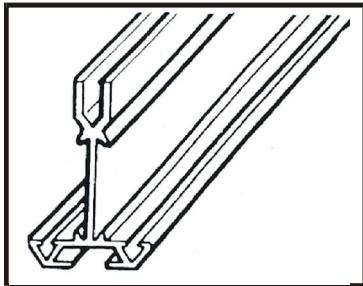
EAVES BAR/GUTTER



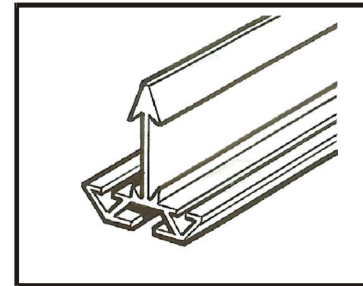
RIDGE



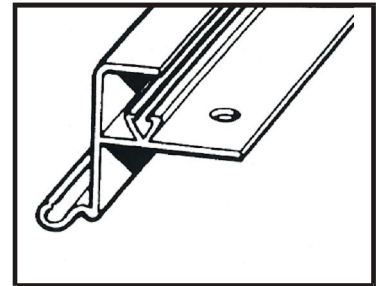
CORNER BAR



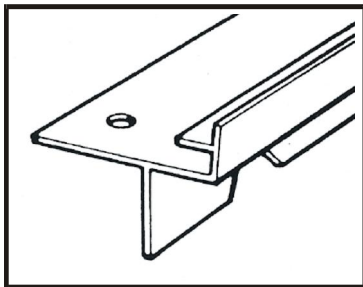
GLAZING BAR



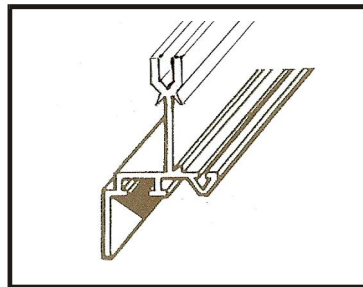
ARROW HEAD GLAZING BAR



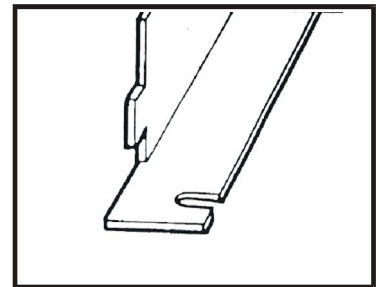
VENT TOP RAIL



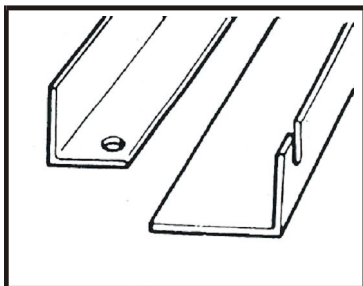
VENT BOTTOM RAIL



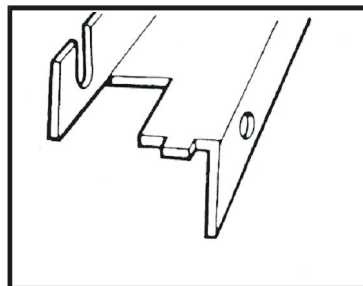
VENT SIDE RAIL



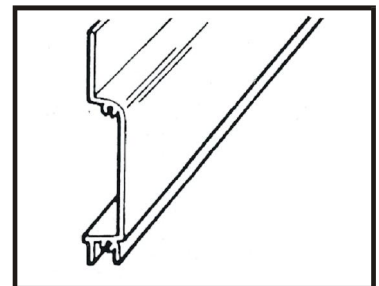
VENT SLAM BAR



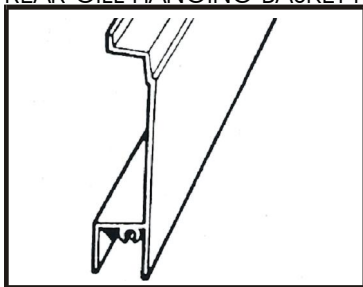
BRACING ANGLE/SIDE +
REAR CILL HANGING BASKET RAIL



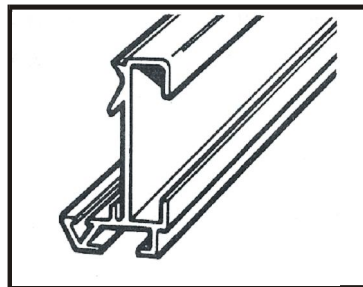
DOOR TRACK SUPPORT



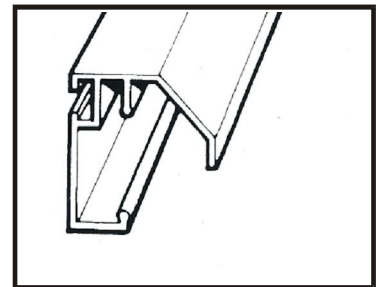
DOOR TOP/BOTTOM PANEL



DOOR INFILL PANEL

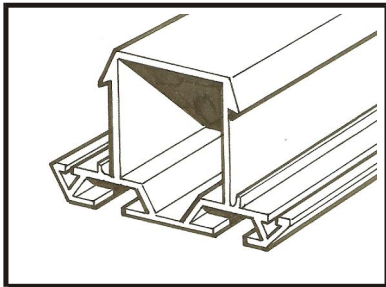


HANDED DOOR POST

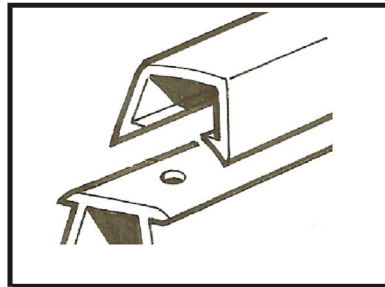


TOP DOOR TRACK

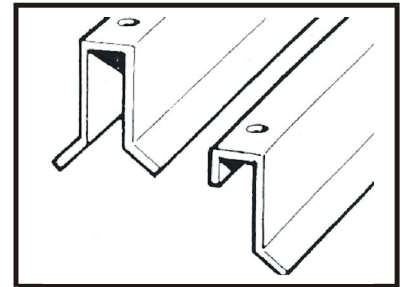
FITTINGS WITHIN THE KIT (Not to scale)



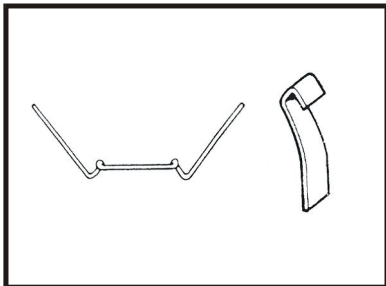
BLOCK GLAZING BAR



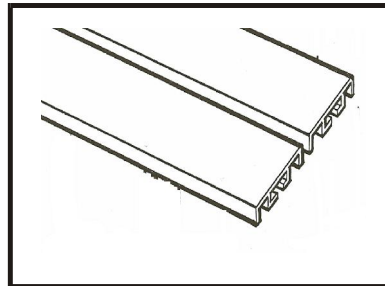
COVER CAPPING



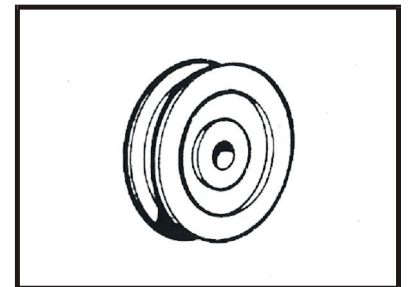
GLAZING CAPPING



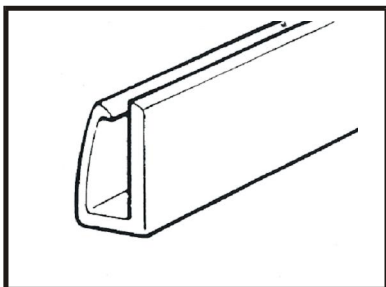
WIRE / OVERLAP CLIPS



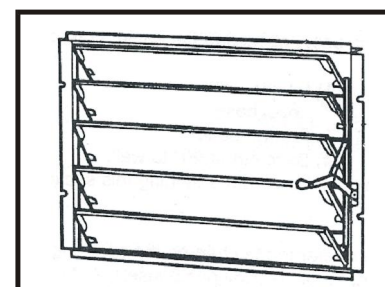
SHELF TOP SECTION



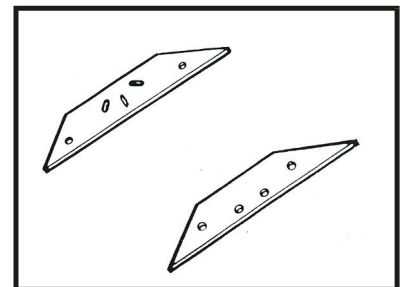
DOOR WHEEL



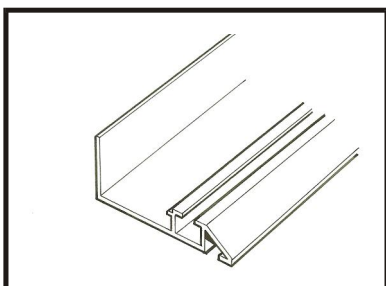
DOOR SKID



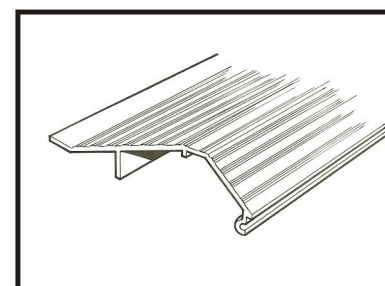
5 BLADE LOUVRE



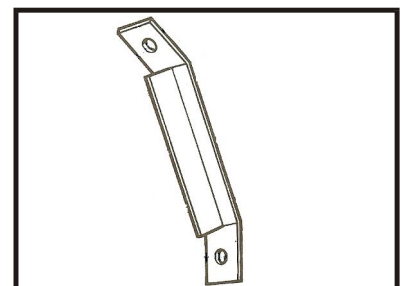
RIDGE/EAVE GUSSET PLATE



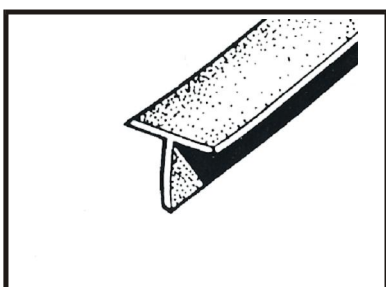
DOOR END CILL



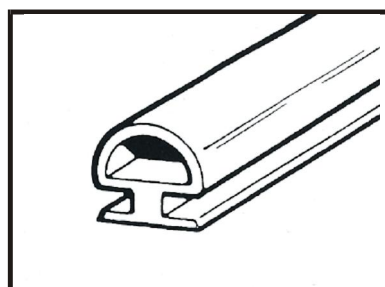
DOOR THRESHOLD CILL



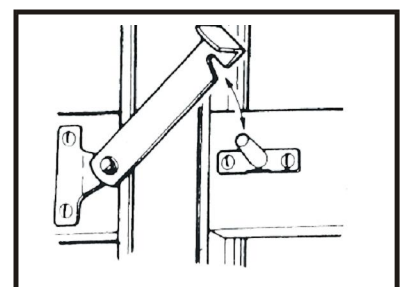
CANTILEVER BRACE



DRAUGHT EXCLUDER



GLAZING BEADING



DOUBLE DOOR CATCH

BASE PREPARATION

If you are constructing the greenhouse on a patio, flagged or concrete area you can utilise the angle brackets which are provided and illustrated later in the booklet headed securing down(page 23).

If you are building a concrete footing you would still anchor down as illustrated later in the booklet, but would build your wall/footing to the following dimensions.

Nominal size	Width (A)	Length (B)	√
4x6	1.936	1.370	2.372
6x6	1.936	1.988	2.775
8x6	1.936	2.606	3.246
10x6	1.936	3.224	3.761
12x6	1.936	3.852	4.311
14x6	1.936	4.470	4.871
16x6	1.936	5.088	5.444
18x6	1.936	5.706	6.025
20x6	1.936	6.324	6.614

These are **exterior** measurements and the outside edge of the cill will be level with the outside of the brick.

If you are constructing on soft standing e.g. soil or lawn you will need to purchase special anchor brackets that you would concrete into the ground and bolt onto the cill and upright glazing bars. Concreting the stakes should be the last job undertaken, after glazing.

HELPFUL HINTS

Tools required:

Spanners (M6 x M4 Bolts)
Screwdriver (posi drive)
Pliers
Drill
Hacksaw
Ladders
For Glazing . Gloves / Goggles/glasses

- 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 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. **(Key point)**

- 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.
- During construction and glazing you may require to use a ladder. You must ensure that all ladders or climbing frames are regularly maintained and that the user is properly trained.
- Do not walk up/down climbing apparatus while carrying glass.
- 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 extreme care! **(Key point)**
- Protective clothing such as gloves, strong outer clothing and eye glasses should be worn.
- Be careful when using agricultural chemicals such as fertilisers, fungicides and insecticides etc. in the greenhouse. Do not use chemicals that are for outside use only. Always read the labels very carefully.
- Do not push or lean on the glass panels.
- Use extra care when moving heavy or awkward objects such as tables, poles, internal frames etc. within or near the greenhouse.
- Do not latch the door when anybody is inside the greenhouse.
- Be aware of the increased temperature in a greenhouse on a sunny day.
- Do not keep pets or other animals in a greenhouse.
- When cleaning glass, do not exert too much pressure.
- If your greenhouse is painted there are a few ø holes in the ends of some bars. These are jig holes for the painting and have no bearing on the construction. **(Key point)**
- 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 GX600 range. The only difference between a 6qlong and an 8qlong for example are a few extra pieces of alloy, glass, nuts and bolts etc. The constructions of the sub-frame assemblies are 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.

DETAILED ASSEMBLY INSTRUCTIONS

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 frame assembly is **fully** completed before moving on to the next.

The contents are as follows:

Side frames . two off

Rear end frame . one off

Door end frame . one off

Double Roof vent(s)

Doors . two off

Additional parts such as the ridge, roof bars, eaves ties etc. are put on loose and are not pre-constructed into an independent frame. The partition, if appropriate is constructed in situ and not as an independent frame, see pg 24.

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

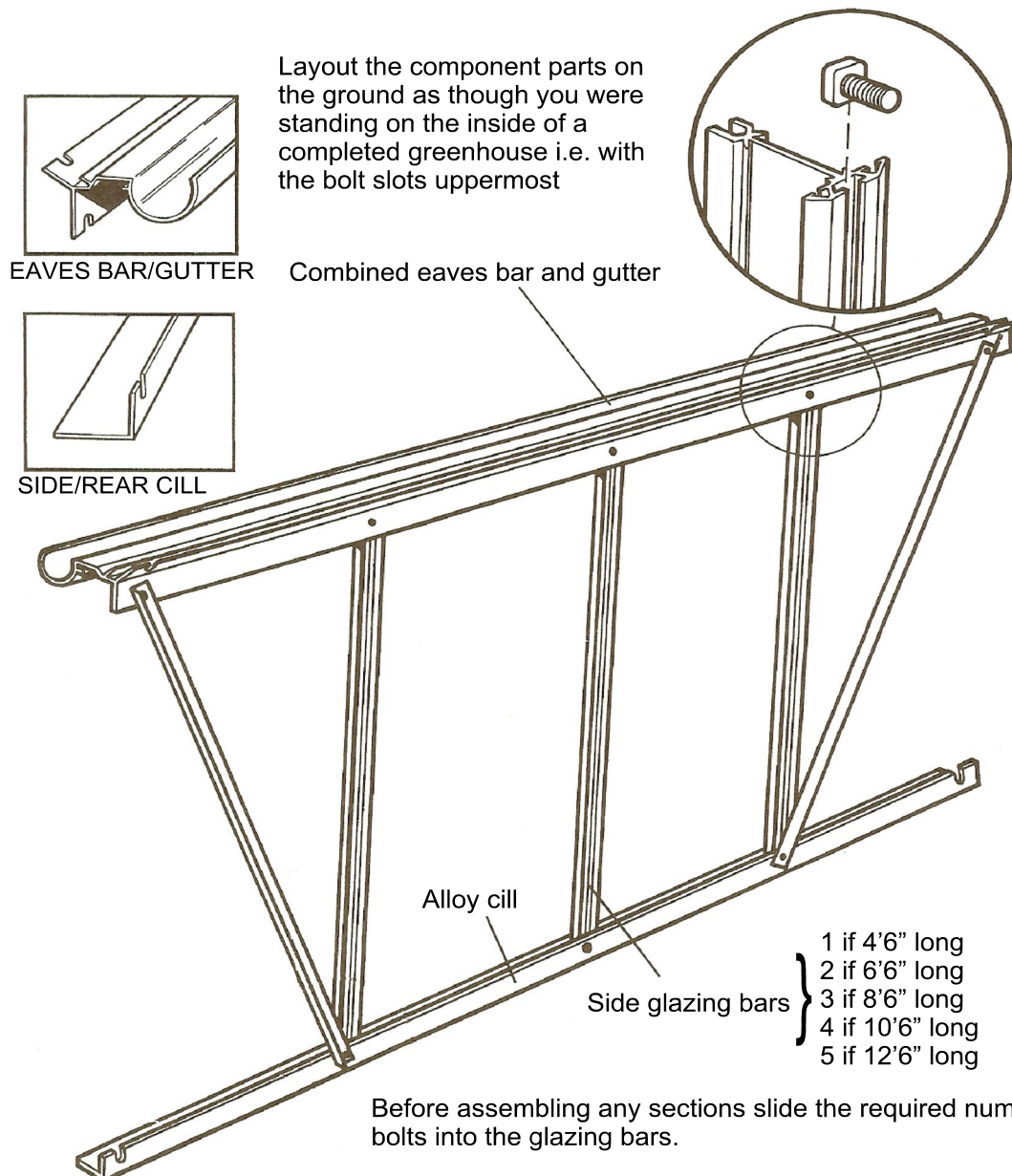
WE CAN NOW COMMENCE WITH THE ASSEMBLY

SIDE FRAME ASSEMBLY

From the main box you require: 1 gutter/eave bar, 1 side cill, 2 side diagonal angles, cantilevers and glazing bars (quantity dependent of length).

From the pack of fittings you need: nuts and bolts and glazing beading.

PROEDURE: For the point of this plan we have used an 8 x 6 side as an illustration. The procedure is identical for a 4 x 6 and 20 x 6 apart from, an alteration for more or less side bars, nuts and bolts, glazing beading and longer or shorter gutters and cills. **(Key point)** If you have purchased a **partition** with your greenhouse you will have 2 less roof and 2 less side glazing bars. These are replaced with an extra set of corner bars. You must decide where the partition is to be situated and at that point **leave out** one side bar on each of the side frames. **(Key point)** The partition is constructed when the greenhouse is fully erected prior to glazing. Full details of this procedure given later on page24, but for the time being do nothing apart from the omission of the side bar. If you have not purchased a partition disregard this and future notes relating thereto.



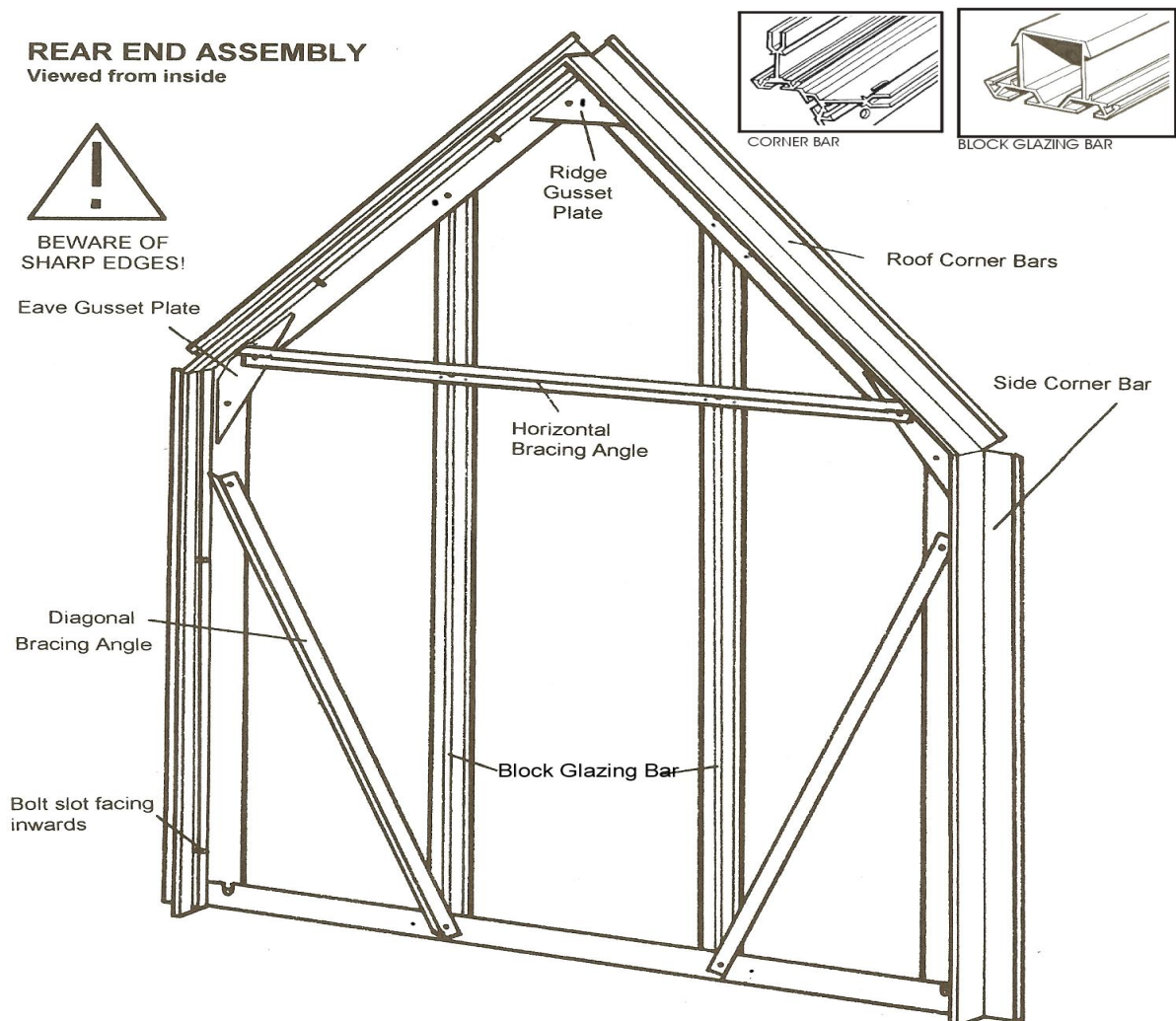
1. Lay out the pieces on the ground as though you were standing inside the house, i.e. with the gutter and cill facing downwards and the bolt channels of the glazing bars upwards. Before assembling any sections slide the required number of bolts into the glazing bars. **(Key point)** Slide the glazing beading into both glazing channels of each side bar taking care not to stretch the material. Trim off any surplus level with the ends of the glazing bars.
2. Slide a bolt into each end of each glazing bar. Also slide 1 extra bolt down each glazing bar to enable cantilever fixing at a later point. **(Key point)** You must decide the position of the louvre. The louvres can be fitted on either side of the greenhouse (excluding outer bays), and also the centre bay at the rear end of the greenhouse. Once decided, slide 4 extra bolts (2 per bar) into the glazing bar onto which the louvre is attached. The louvre is fitted during glazing. If you have ordered the diamond staging this bolts to the side of the greenhouse, you will need to insert 2 extra bolts per bar, these will be used later in the booklet (see separate staging instructions on page 38).
3. Fix the combined eaves/gutter bar to the glazing bars 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 and tightening as before.
5. Correctly position the cill on the outermost glazing bars by pushing the bolts through the holes in the cill, but do not put the nuts on yet.
6. Place the angle tie bar over these bolts so that they point outwards towards the ends of the eaves bar. They must be arranged so that the inside of the angle in each case faces towards the middle of the house (i.e. the elongated slot will be by the eaves in one case and by the cill in the other). **(Key point)**
7. Put nuts on the 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. The bolts are made of high tensile alloy and are approximately 2 ½+ times stronger than standard alloy bolts.

If you have ordered Elite Diamond single tier built in staging to be fitted to the side – see separate staging instructions on page 38.

REAR END ASSEMBLY

Components: 1 Alloy Cill, 2 Block Glazing Bars, 2 Roof Corner Bars (marked \mathbb{R} at the apex, unless painted), 2 Side Corner Bars (un-marked), 2 Diagonal Bracing Angle and 1 Heavy Angle Brace. From the main bag of fittings you will require the nuts and bolts and glazing beading.

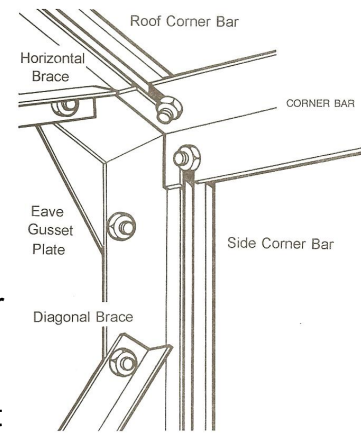
You will also require 2 Eave plates and 1 Rear End Ridge Plate. **(Key point)** Rear End Plate only has 2 holes, Door End has 3. These are packed with the Casement Stay and are separate from the main bag of fittings.



PROCEDURE:

1. Lay out the frame as though you were standing on the inside, i.e. with the bolt slot up-permost, roof corner bars marked \mathbb{R} at the apex, opposite each other facing downward, i.e. \mathbb{R} on outside. The roof corner bars are mitred at both ends whereas the 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 \mathbb{R} on the corner bars. You must ensure that the \mathbb{m} iddleholes are nearer to the ridge plate than the eaves plate. **(Key point)** Slide the glazing beading into the \mathbb{g} roove of the block glazing bars and corner bars. (Do not put the beading into the middle slot of the corner bars) **(Key point)**

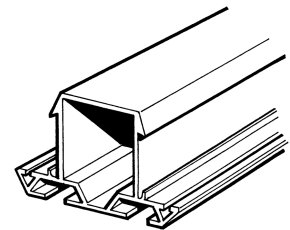
2. Slide 3 bolts into the bolt channels of each corner bar. These will be used later in the general assembly for fixing the ridge, eave, basket rails and cill to the ends. Now secure the Ridge Gusset Plate and Eaves Gusset Plates by inserting bolts through the plates and into the holes punched in the flange of the corner bar at the apex and eave. N.B. if you have a 4q long greenhouse insert an extra bolt into the roof corner bar bolt slot which will be used later for the roof vent. The same applies if your vent is to be positioned on the external bay of your greenhouse, when longer than 4q



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. Make sure the angle cill is facing downwards. **(Key point)**

4. Attach the vertical block glazing bars to the cill by inserting a bolt into each bolt channel of the block glazing bars and locating it with punched holes in the cill. Before securing the nuts attach the diagonal angle ties to the **inside** bolts as illustrated on previous page. The top of the diagonal angle tie now attaches to the prefabricated holes in the side corner bar. **(Key point)** The diagonal braces on the rear end attach to the **inside** of the double bolt slot in the horizontal angle cill.

5. Slide 2 bolts along the inside bolt channel of the 2 vertical block glazing bar. The second will be used to attach to the roof corner bar. Slide 4 bolts into the outside bolt channel at the top of the two vertical block glazing bars and secure the fourth one to the roof corner bars by inserting the bolt through the punched holes in the flange. The 3 unoccupied bolts will be used to fix the horizontal angle and rear shelf.



6. If one of your 5 blade louvres is to be fitted in this gable slide 2 additional bolts into the inside bolt slots of each block bar. i.e. the bolt slot nearest the centre of the rear end.

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

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

9. The diagonal brace bolts to the corner bar at a pre-located position determined by a hole punched into the flange of the corner bar.

See next instruction for shelf installation, then the rear end assembly is complete.

SHELF FITTING

The Diamond shelf is intended to fit on the rear gable end of the greenhouse. Not only is it very useable, but it adds lots of strength to the greenhouse.

The parts required for the shelf are:-

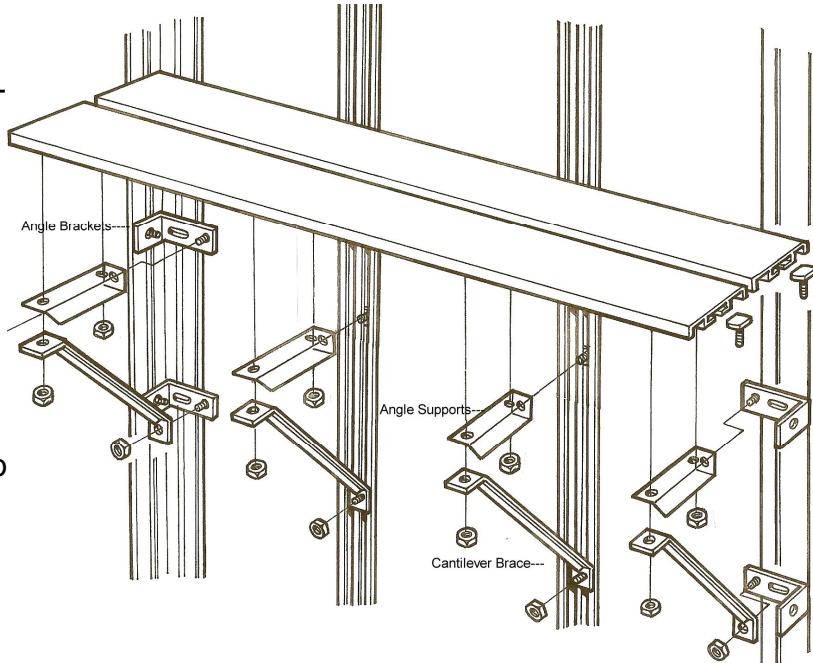
- 2 Shelf top sections
- Various numbers of the following dependent on shelf length:
 - 10+ cantilever braces
 - Angle brackets
 - Angle supports with 45° mitre at one end.
- Nuts/bolts

You must decide the height you want your shelf to be fitted. Fix one of the small angle supports to each vertical glazing bar at the desired height utilising the pre-inserted bolts (with the square edge against the greenhouse wall, mitred edge sticking out).

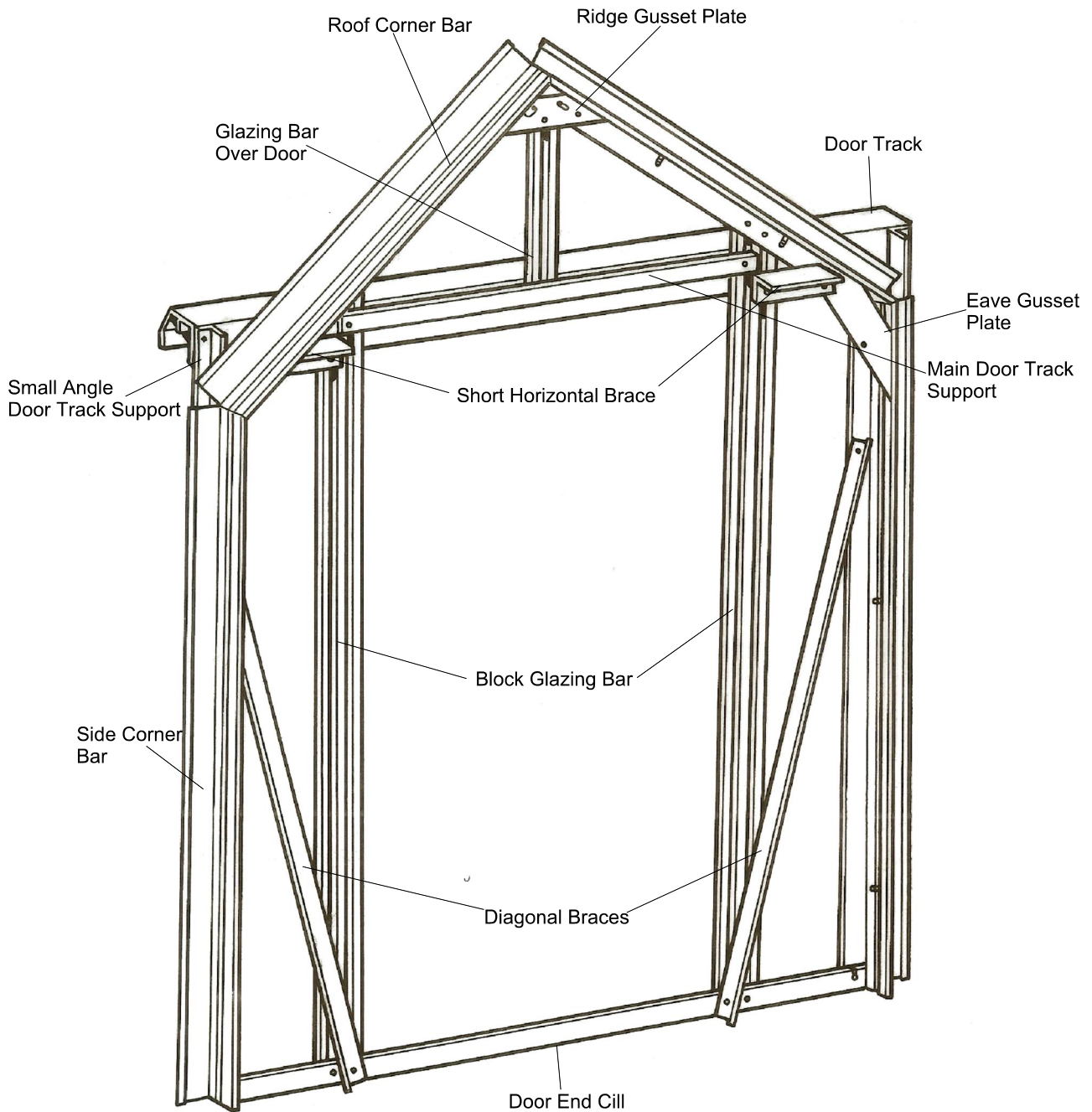
The angle supports must be exactly the same height. For the 6qwide model, attach an angle bracket to each of the side corner bars to the bolt slot on the side. The longer edge of the bracket should come along the back of the greenhouse towards the block glazing bar as illustrated.

Attach a cantilever brace to mitred edge of the angle support, and bolt the vacant end of the cantilever to the bolt channel of the glazing bar onto which the angle bracket is fitted. To fit the cantilever to the extremes of the shelf you attach to the shelf as already mentioned. Attach an angle support bracket in the same way to the corner bar bracket (longest edge) to come across the greenhouse (as above). The vacant end of the cantilever is fitted to the angle support bracket. Tighten all nuts.

The shelf runners are fitted to the angle supports utilising the bolt slot on the underside of the shelf. Insert bolts into the bolt slot of the shelf. Move into position where it will line up with the pre-drilled hole in the angle support. Put a nut on and tighten. Do the same with all of the angle supports for both shelf runners. You will notice that the shelf is approx. ½+ from the back wall. This is to enable the diagonal angles to remain in position. Your shelf is now complete.



DOOR END ASSEMBLY



Components: 1 Door End Cill, 2 Block Glazing Bars, 2 Short Horizontal Braces, 2 Roof Corner Bars (marked $\mathbb{R}\text{q}$), 2 Side Corner Bars (unmarked), 1 Main Door Track Support (2 Door Track Angle Stay (small door track support), 1 Glazing Bar over the door.

From the main bag of fittings you will require the beading and nuts and bolts. You will also require 2 Eave Plates and 1 Door End Ridge Plate. These are packed with the casement stay and are separate from the main bag of fittings.

Procedure:

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

2. Attach the main door track support (shaped like a letter **z**) to the two glazing bars around 6" down the bar as shown. This **z**-shaped bar must be fitted with the two outside slots facing upwards (as illustrated) **not** downwards. **(Key point)**

3. The two short horizontal braces attach to the top bolt in the gusset plate and the outside bolt slot of the vertical glazing bars.

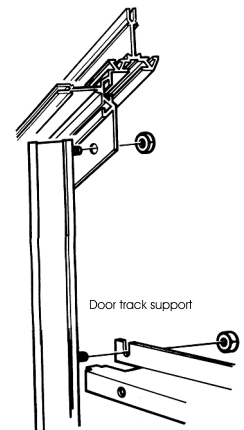
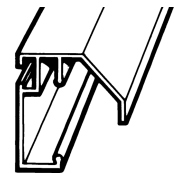
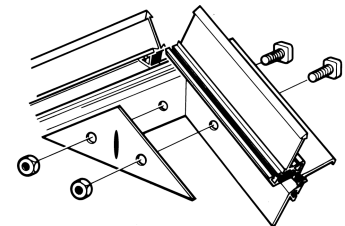
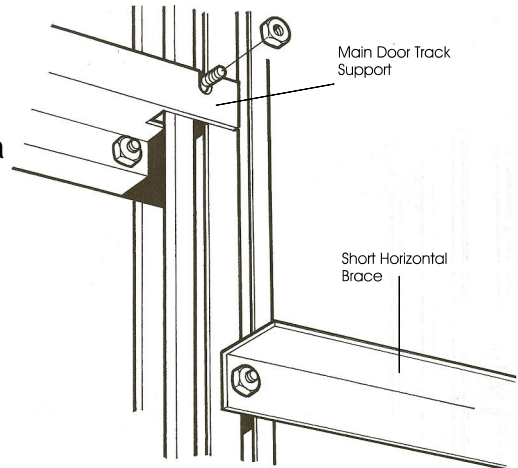
4. Attach the glazing bar over the door to the centre hole of the ridge gusset plate and the centre hole in the main door track support. (Mitred end of the glazing bar to the top). You may need to adjust the position of the main door track support to enable fixing to the glazing bar.

5. Bolt the door track to the main door track support and the door track support angle stay by inserting 5 bolts into the bolt slot of the door track. Position these through the 3 holes in the main door track support above the door opening and the upper hole of the small angle door track support. When this has been achieved tighten all nuts. The two remaining bolts are attached to the door track support angle, 1 each end of the track. The upper door track position may require **fine tuning** moving slightly up/down to facilitate free movement of the doors. This can be done later, when fitting the doors.

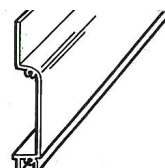
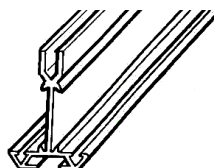
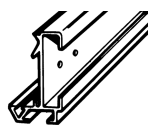
6. The top of the small angle door track support has 2 fabricated holes. The lower end of the small angle support is to be attached to the self tapping screw groove of the corner bar. You need to fix this support to the corner bar in 2 locations 1 at the top and 1 near the end of the angle support. There are no holes in the bottom of the angle so 2 small holes need to be drilled.

N.B. Please note carefully the correct position of the main door track support, the slotted holes at either end are facing skywards **not** downwards.

In the fitting kit are 2 small angles with 2 holes on one side and none on the other side. Attach 1 to each end of the door track in such a way as to block the open ends of the track. **Door end assembly is now complete!**



DOOR FRAME ASSEMBLY



Infill Panel

Handed Door Post

Unhanded Door Post

Door Top/Bottom Panel

Components consist of:

4 door glazing posts (2 handed, 2 un-handed) . The handed post only has 1 beading channel.

6 infill panels

2 top and 2 bottom door panels (The top panel has the name and address label and 2 holes)

1 door angle (same length as door glazing posts)

From the main bag of fittings you require:

4 door wheels

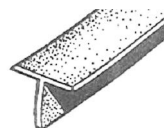
4 clip on nylon door skids

2 lengths of black rubber draught excluder

1 double door catch

Self tapping screws

Glazing beading

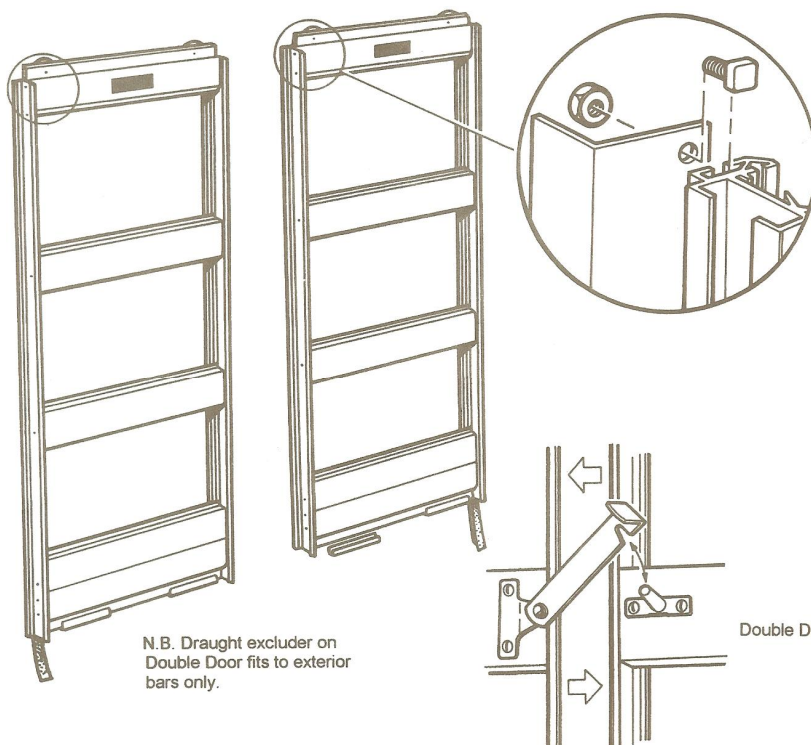


Draught Excluder

The following instruction is to be followed for both doors. The first instruction is related to the left hand door (viewed from outside).

Place the two side posts (1 handed, 1 un-handed) on a level surface roughly 18+apart with the bolt slots facing downwards ensuring the handed door post is on the right hand side. The top of each side post has two screw holes in it; the bottom of the post has three.

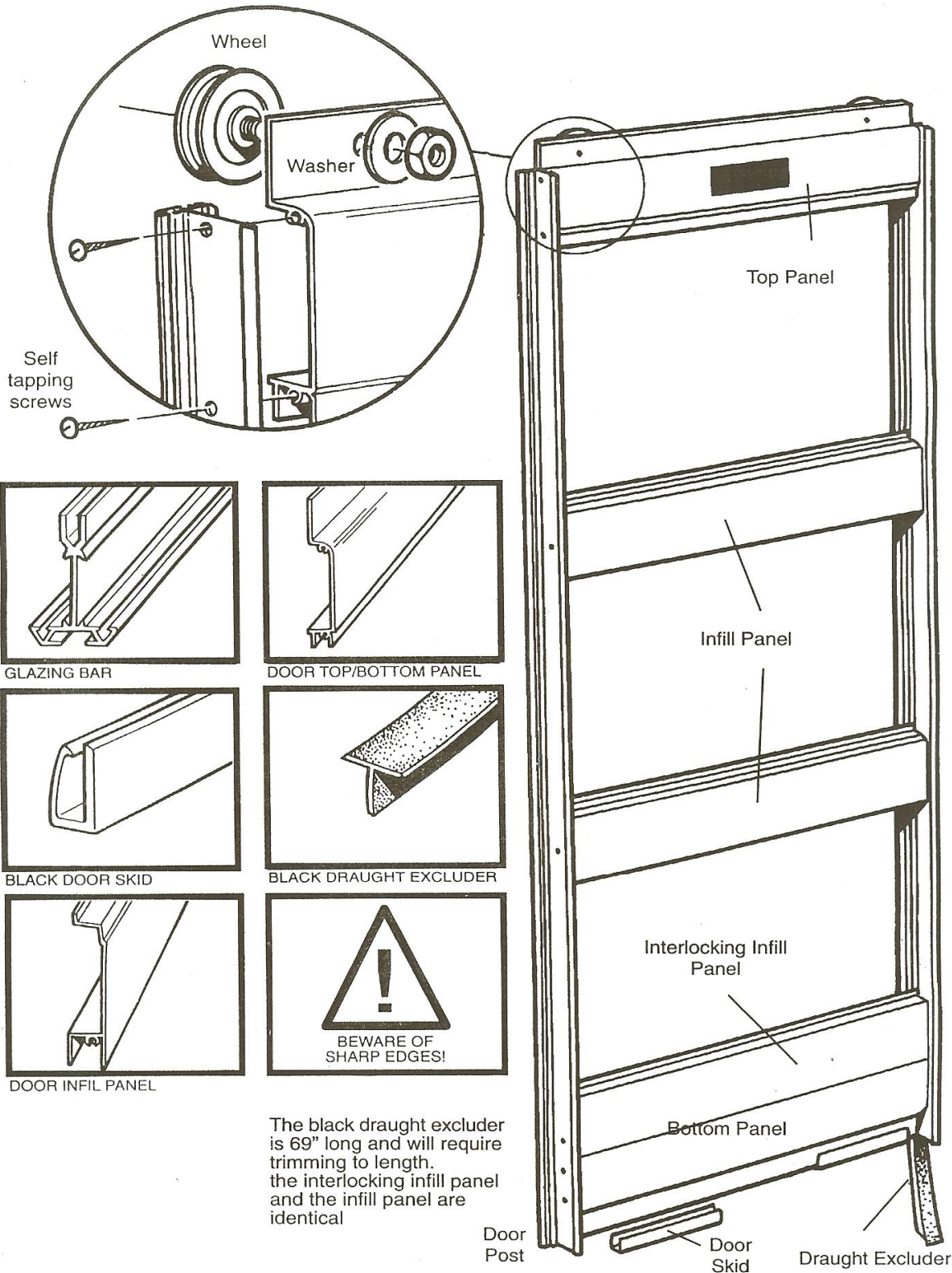
(Key point) Slide the glazing beading into the inner groove of each bar i.e. only one length of glazing beading per bar. Ensure that the glazing groove on the handed post is on the inside of the door. **(Key point)**



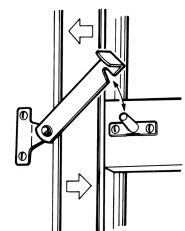
N.B. Draught excluder on Double Door fits to exterior bars only.

Double Door catch

DOOR FRAME



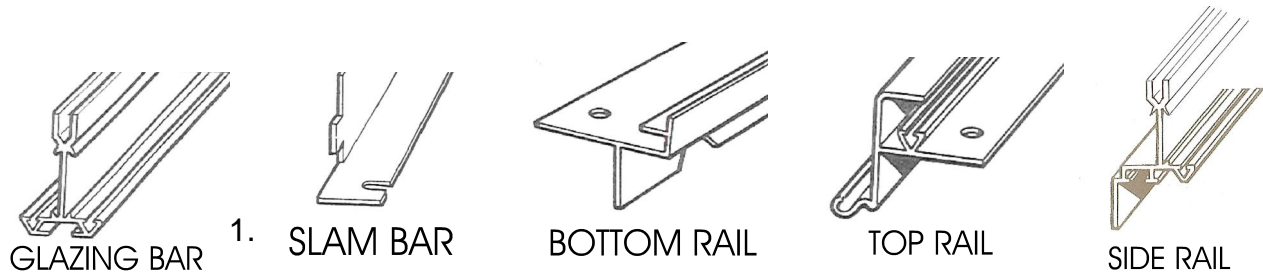
2. Place the top, bottom and 3 infill panels in position as shown by the position of the screw holes in the side posts and the panels. The top panel has the greenhouse name and address label on. The bottom panel has the edge for the door skids to fit on. The lower infill panel inter-locks on the bottom panel.
3. Fix the door together by screwing through the door side pieces into the screw eyes, in the edge of the panels with the No. 8 half inch self-tapping screws. The screws will go in more easily and without danger of trying to go crooked if you put a small amount of grease on the screw 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 assembly, making assembly easier. Make sure all the angles are square, and tighten all the screws.
4. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in 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 contains ball bearings. The door wheels have a shoulder in the middle that protrudes on one side. This shoulder goes against the inside edge of the top door panel (**Key Point**).
5. Slip the nylon door skids on each end of the bottom panel. (**Key Point**) Handed door posts meet in the middle when doors are closed. Un-handed door posts are fitted on extremes left and right of the doors.
6. Repeat the steps 1-6 for the second door. Make sure the handed door post is on the left hand side of the right hand door, and the glazing groove is on the right of the post.
7. Turn the door over and insert the black rubber draught excluders in the groove (bolt slot) in each unhandled doorpost. Push up to the top of the door and trim off the surplus at the bottom. With a pair of pliers squeeze the groove at the bottom so that the rubber will not slip down when the door is in its upright position. Do not fit the door to the gable at this stage . wait until the structure is fully assembled prior to glazing.
8. 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 . left hand upright, on left hand door . right hand upright. The door catch is attached to the infill panels at the height of your choice. Drill the left hand door panel to fit the latch side of door catch. You must then line up the pin onto the right hand door panel as illustrated. Having assembled both doors you need to attach a piece of alloy angle to the rear of one of the handed door posts. Insert bolts into the bolt slot of one of the handed door posts, attach the angle and put on and tighten the nuts. (See diagram on page 15 for the angle position). The angle is equal in length to the door posts and will have several holes fabricated.



ROOF VENT ASSEMBLY

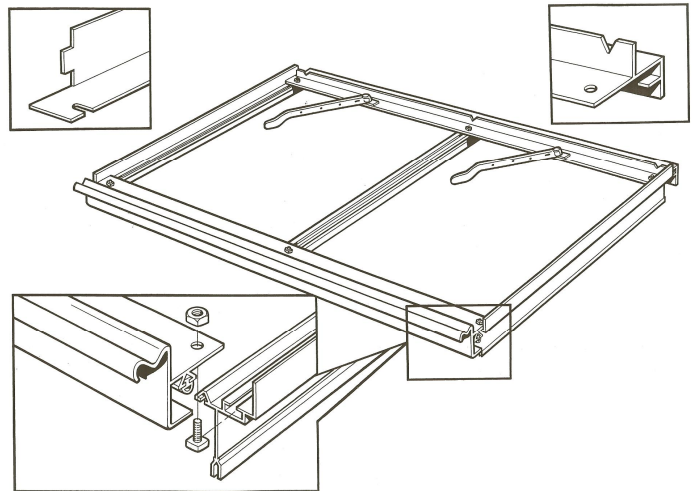
The roof vent has 6 pieces of aluminium (made up of 2 side rails, 1 top rail, 1 bottom rail, 1 slam bar, and 1 intermediate glazing bar. The glazing bar below and behind vent will be found with the roof bars. From the main box of fittings you require glazing beading, nuts and bolts, 4 casement stay pins, 2 casement stays and M4 stainless steel nuts and bolts.

PROCEDURE:



1. Identify the slam bar and attach the 4 stay pins to the outer side of the angle using M4 stainless steel nuts and bolts and the pre-fabricated holes.

2. Lay the other 5 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 ∇ 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 slots 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 the nuts.

5. Now attach the intermediate glazing bar to the holes in the top and bottom rail by utilising the bolt slot of the glazing bar.

6. Fit the casement stays using the M4 stainless steel nuts and bolts, putting the bolts through the holes in the saddle of the stay and through the 2 elongated holes in the bottom rail. Hold the nuts in place and tighten the bolts with a screwdriver. Do the same with the other vents.

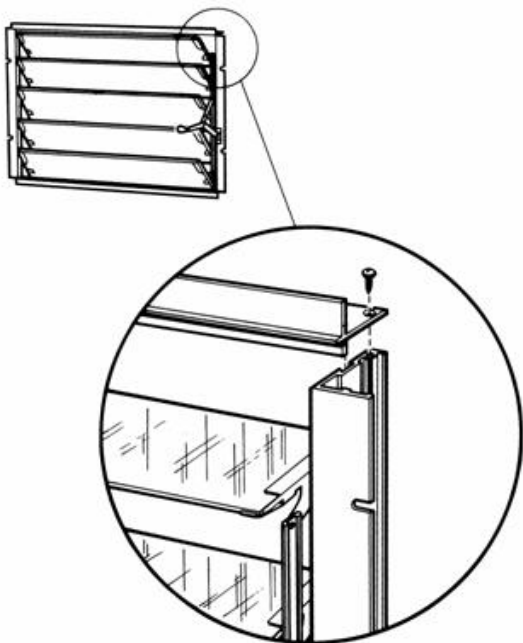
The vents can be positioned onto the ridge **after** general assembly by sliding them along the ridge from the end and locating them to the desired position.

Do not fit the vents at this stage (see page 28).

5 BLADE LOUVRE

For the louvre assembly you will need.

1 top cill, 1 bottom cill, 2 side jambs (one with handle), 4 self tapping screws, 4 ½ headed nuts and bolts and glass blades.



PROCEDURE:

Place top cill into position on side jamb of louvre and secure with self tapping screws.

Do same on the other top corner.

Do same with bottom cill.

Please note that the handle is on the right hand side. The diagrams are viewed from inside.

You attach the louvre to the frame during the glazing of the greenhouse. For the position of louvres, we assume 1 in gable and 1 in side if not specified at time of ordering.

INSTALLATION OF LOUVRE TO THE STRUCTURE

The louvre is fitted after the unit is fully assembled and during glazing. The louvre is fitted to the vertical glazing or corner bars utilising either 4 unoccupied bolts previously inserted, or the 4 half head bolts supplied with the louvre kit

The louvre is fitted from inside the structure with the angle jambs fitting around the vertical greenhouse bars concerned. Louvres can be fitted in the centre rear, or any side panel that does not have a diagonal brace on the side.

The louvre handle is on the inside of the greenhouse and is fitted to the right of the louvre (as viewed from the inside)

To determine the height, place the relevant piece of glass below the louvre position. This position will vary (see greenhouse glazing plan on pages 29-35)

Offer the louvre frame to the bolts; add a nut to each bolt and fingertip tighten.

Slide the louvre frame to the top of the pane of glass so that the bottom cill of the louvre rests on the glass

Tighten all nuts

Louvre frame installation is now complete.

Glazing the louvre

The louvre must be glazed **after** it has been installed to the structure

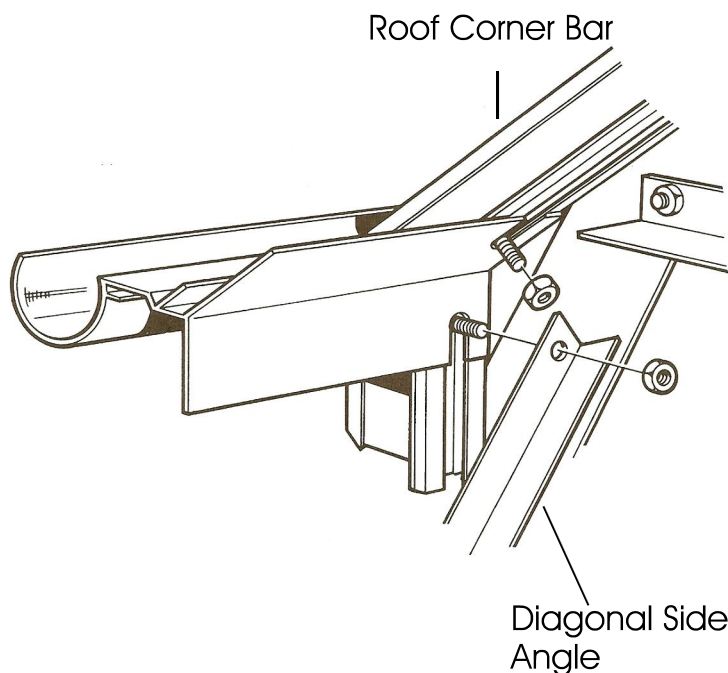
Open the louvre using the handle

Slide each individual blade of glass between the jambs into the aluminium holders. The glass will come to rest in the holder at the bottom of the jambs.

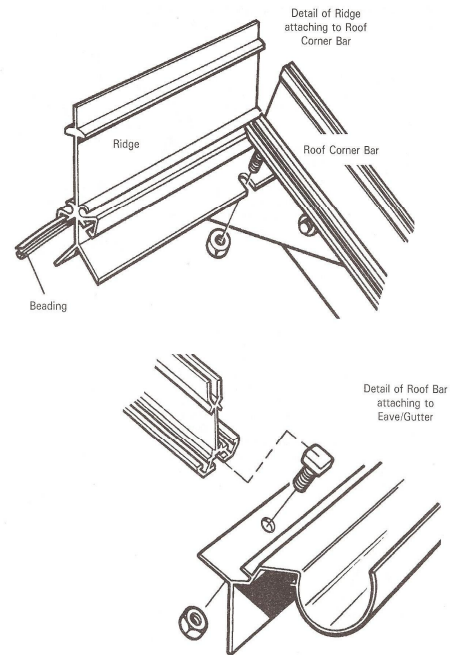
ASSEMBLY OF THE GREENHOUSE UNIT

The first operation is to connect the two side frames to the two 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 and rear end frame into position.
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 into the bolt slots during the gable end assembly can now be used. (See Rear End Assembly . page 10) The middle bolt is not used yet.
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 in a similar way. 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 for the other three corners.
7. Insert glazing beading into both glazing channels of the ridge.
8. 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.
9. 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 a nut and tighten.



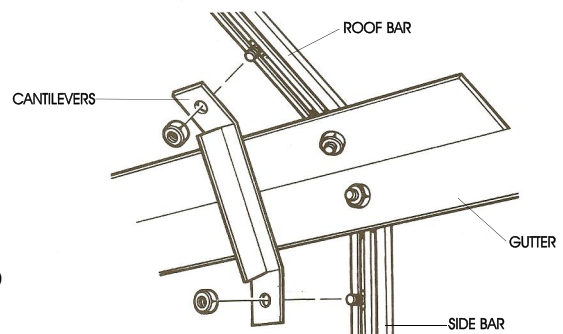
10. Slide the glazing beading into the glazing channels of the roof glazing bars. They can now be attached to the ridge and gutter. To allow for the fixing of the roof cantilever and hanging basket rail you must slide 2 nuts and bolts down the bolt slot of each glazing bar. Attach them to the ridge first by sliding another 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. N.B. Remember to omit two roof bars if you have a partition, one on each side. See partition instructions on page 24. A full length roof glazing bar is not required where it would have intersected the middle of a double vent. The full length roof glazing bar will be replaced by 2 bars joined onto the slam bar . detail later. (pg 28)



11. 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 roof vent is to be positioned put one extra bolt per bar i.e. the double vent covers three glazing bars so three extra bolts per vent. **(Key point)** One per bar.

You have additional cantilever bracing at the eave and the ridge, put an extra bolt into the glazing bars before attaching the glazing bar to the eave. **(Key point)** Secure the cantilever bar across the gutter (i.e. from roof glazing bar to side glazing bar) on each side as shown in diagram, and similarly across the ridge from roof to roof glazing bar.

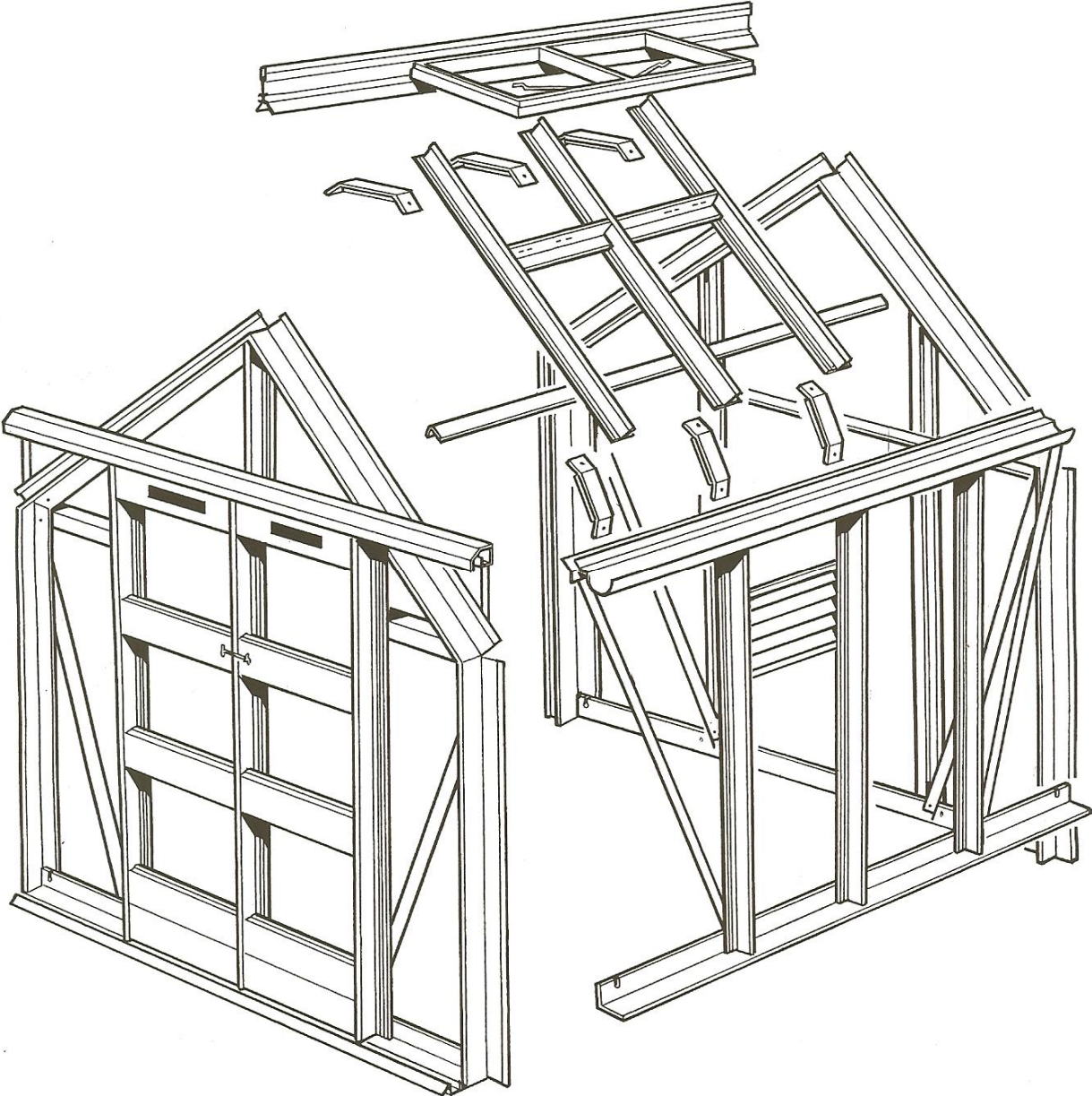


12. Now attach the hanging basket rails (1 to each side of the roof) to the unoccupied bolt on each glazing bar and corner bar. The position of this rail is your decision (i.e. nearer the ridge or gutter).

13. The roof vent is fitted later, see page 28

14. Do not fit the doors at this stage.

14. The greenhouse is now ready for lifting onto its permanent position before securing down.



SECURING DOWN

For securing to a concrete/flagged area you will need to utilise the angle brackets (found in the bag of fittings). You must ensure that the structure is square and flat on the ground before anchoring down. Failure to get the greenhouse square will make glazing the roof very difficult.

The securing is done on the inside of the greenhouse, utilising the pre-drilled holes in the 4 bottom cill sections. The pre-drilled holes are already currently in use with the attachment of all the vertical bars on the greenhouse.

You must remove the nut from the bolts in the bottom cill, and then place the angle bracket over the bolt before returning the nut to position.

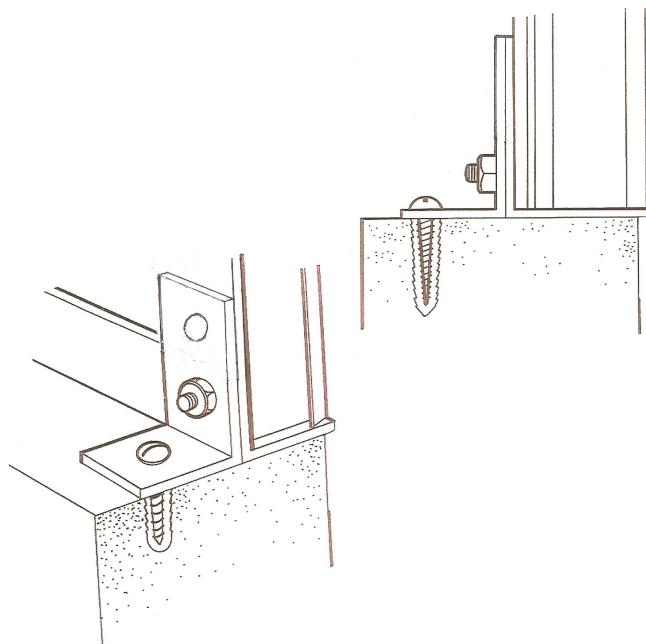
When all the angle brackets have been attached you can drill the concrete/flagged area to suit. Insert plastic plug, then screw down.

For securing to a soft area (grass, soil etc.) you must utilise extra anchors (purchased separately). These anchors are approx 14+long. One anchor must be positioned in each corner of the greenhouse and at least every 2nd glazing bar thereafter. You must use the angle with 4 holes at one end to attach to the bolt slot of the corner bar, (you will need to use ½ headed nuts and bolts) and also the holes in the cill which attach to the corner bars.

You will see that a large proportion of the angle is lower than the cill of the greenhouse. You must dig small holes in which the surplus aluminium can be buried underground.

When you are happy that the greenhouse is square and you have glazed the building to satisfaction, (see glazing plan later) you must concrete the anchors into the ground.

In the kit of fittings you will find a number of cropped head or half head bolts. Insert a cropped head bolt into the glazing channel of each vertical bar onto which a securing bracket is mounted. Line up the bolt with the 2nd unoccupied hole in the angle bracket. Put a nut on and tighten.



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:

Corner bars

Door end cill

Door track

Door panels

Door posts

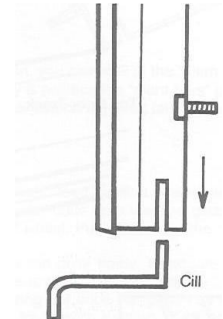
You will also require a number of fittings from the box:

2 Eave gusset plates

1 Ridge gusset plate

Glazing beading

Nuts and bolts

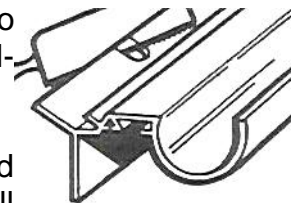


PROCEDURE:

1. Starting with the corner bars, identify the roof and side, left and right hands as you did earlier.

2. Each bar has a saw cut approx 20 mm 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. (as illustrated)



4. Take the left hand side bar, insert 2 bolts into the bolt slots, 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 cut. **(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 the bolt slot. (Don't forget to ensure that the ~~R~~qs is at ridge and **not** at the eave) now do the same with the other side and roof corner bars.

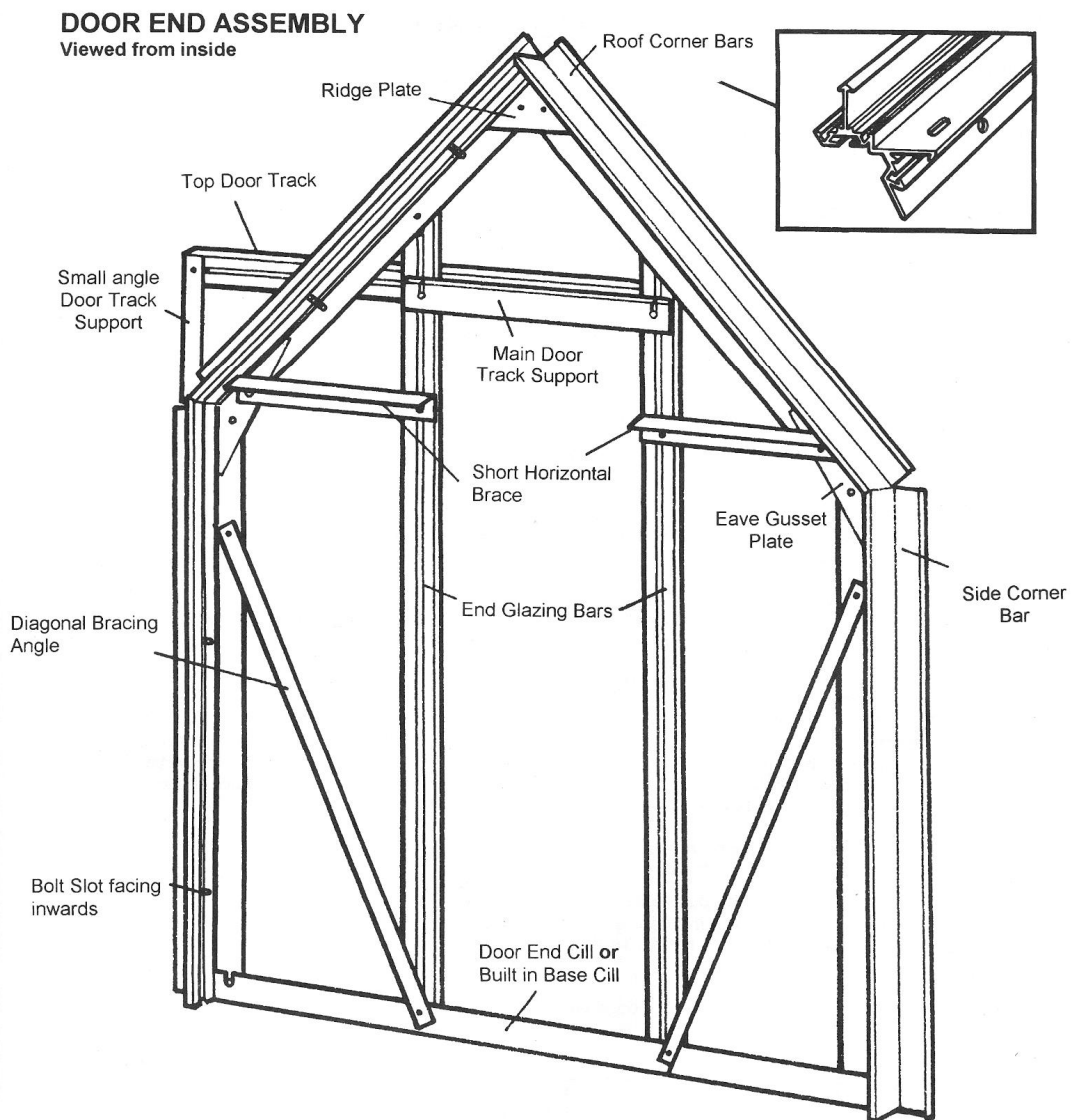
6. Next offer the gusset plates to the corner bar at the point where they meet. Slide the bolts in the facing bolt slot towards the gusset plates and line up the holes in the gusset plate with the bolts in the facing bolt slot and in the flange of the corner bar. Insert 2 bolts through the gusset plate and flange (middle 2 holes), put a nut on. 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 cill can now be attached to the facing bolt slot of the partition corner bar (in the same way you did during the original door end assembly)

8. The cill can now be bolted to the corner bars.

9. You can now attach the 2 vertical glazing bars. 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. **(Key point)** The glazing bar attaches to the inside of the double hole in the bottom cill. Moving to the top of the bar, insert another bolt into the bolt slot and put through the inside hole of each pair of holes the roof corner bar. Put a nut on finger tip tight. Do the same with the other glazing bars.

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. **(Key point)** The diagonal is attached to the same bolt hole as the glazing bar on the bottom cill.



11. The partition doors are built in exactly the same way as the outer doors. The main difference is each door is 12+wide (305mm) and they are 50+ tall (1725mm). These doors do not require small angle door track supports.

Likewise with the door track support 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.

For both double door and partition door you can now fit the upper door track.

EXTERIOR DOOR TRACK

This top door track has no holes in, but 1 continuous 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 door track into the correct position fit the doors onto the track and by slightly releasing the 2 nuts holding the door track support you can move the door up and down until they are correctly into the bottom guide. Having achieved the correct position of the doors you can now attach the small angle door track supports to the right hand and left hand side of the door track. The top has 2 fabricated holes. The lower end of the small angle support is to be attached to the self tapping screw groove of the corner bar. You need to fix this support to the corner bar in 2 locations 1 at the top and 1 near the end of the angle support. There are no holes in the bottom of the angle so 2 small holes need to be drilled.

The doors should now run smoothly. If not you can fine-tune its operation by re-adjusting the bolts up and down slightly.

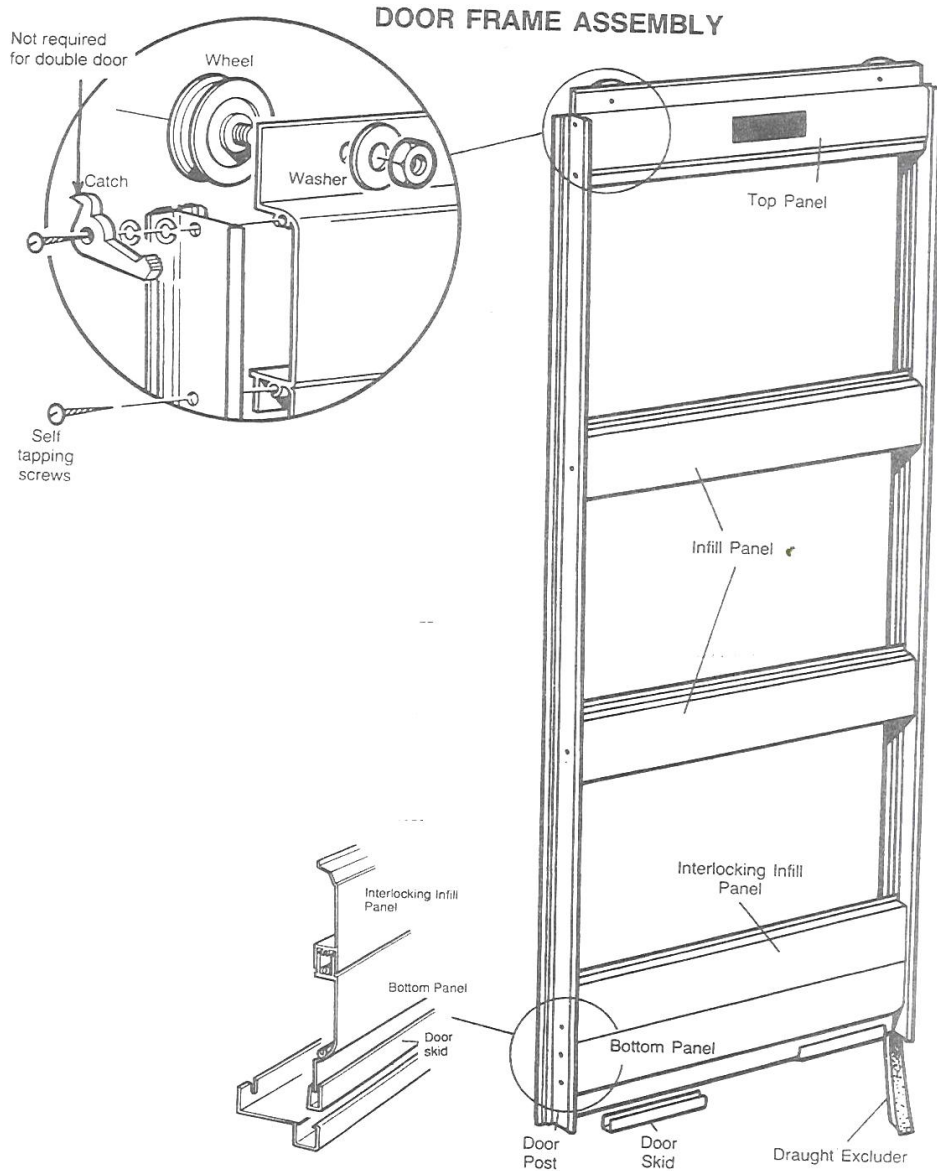
The small glazing bar above the middle of the door can now be fitted. Put the glazing beading into the v grooves and trim to suit. Insert 2 bolts into the bar and put them through the holes in the top track and apex gusset plate. Put nuts on and tighten up.

Partition door is fitted together in the same way as the other doors except both doors posts are unhandled.

FITTING THE DOOR TO THE STRUCTURE

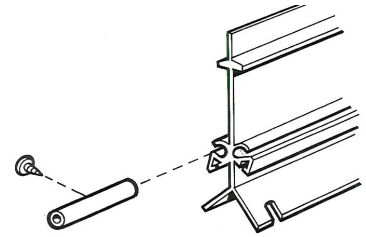
The doors slide onto the frame from the left and right hand sides. Starting with the left-hand door, put the door bottom rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the door post butts up to the end glazing bars. Carefully ease the door past the glazing bar and feed in the second wheel. Push further to the right until the draught excluder is butting up to the left hand glazing bar.

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 glass has been inserted (the last job of the construction) the extra weight will make smooth running (**Key point**).

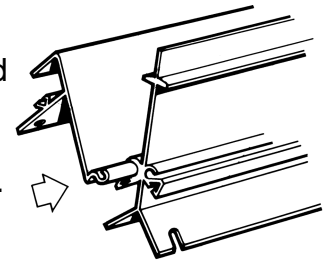


NOW YOU CAN FIT THE VENT TO THE RIDGE

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 tube approximately $\frac{1}{2}$ way along and 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)**



Having slid the vents from the end on the ridge to the desired position, you can now fit the slam bars to the 3 glazing bars. Utilise the bolts you inserted during general assembly and position the slam bars just under the vent allowing the case-ment stay to effectively close. The slam bar can be adjusted later to facilitate good opening and closing of the vent. When you have fitted the slam bar, you can now fit the glazing bar underneath the slam bar. It is fitted in the same way as the other roof bars. You must make sure it is tight down to the gutter/eave and bottom of slam bar. The glazing bar underneath the vent can also be fitted to the ridge and top of slam bar. This bar is a different profile to the standard glazing bar . see picture. (Key point)



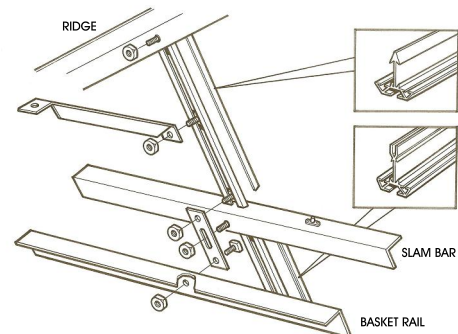
To join the 2 glazing bars either side of the slam bar, you must use the flat plate with 3 holes as illustrated.

FITTING THE DOOR TO THE STRUCTURE

The doors slide onto the frame from the left and right hand sides.

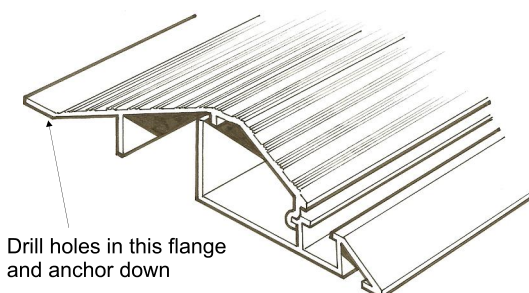
Put the left hand door bottom rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end block glazing bar. Do the same with the right hand door. The door will now run quite freely. To square up the door with the spacing, undo the upper bolts holding the door track. There is 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 glass has been inserted (the last job of the construction) the extra weight will make smooth running **(Key point)**.



DOOR THRESHOLD CILL

The door threshold cill is slotted onto the door end cill from inside the greenhouse as illustrated. You can secure the threshold cill by drilling holes in it and screwing to the floor.



GLAZING THE STRUCTURE

If you have purchased Diamond staging it is best to fit this accessory before glazing see page 38.

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

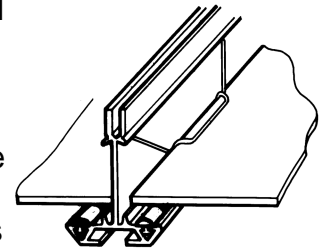
There is a choice of glazing.

1. 3mm horticultural glass in standard panes . multi-sheet overlapping
2. 3mm toughened glass in larger panes . full length panes
3. 6mm Polycarbonate in larger panes . full length panes

HORTICULTURAL GLASS

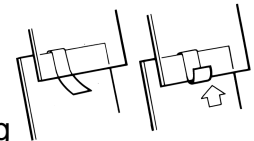
(See glazing plan on pg 30/31)

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 wire clips in the middle of the glass at the sides. Use 4 clips per pane on 610mm x 610mm and 2 per pane for smaller sizes.



2. If you have purchased kick plates for your greenhouse then the kick plates become the bottom pane of glazing. (See kick plate information at back of booklet.) In this case you may have surplus glass.

3. Hook **one** overlap clip on the middle of the pane of glass. (**Key point**) The glass should overlap approx 15mm.



4. Offer the next pane of glass to the glazing bars. Bend the middle overlap clip upwards to support the glass. Secure the pane by inserting another two clips four inches from the top of the pane. When you have successfully clipped in two sections of glass i.e. two full bays (4) you can insert capping if you have ordered this option. Please note that for multi-sheet glass, the capping needs to be cut to the length of each pane of glass, thus reducing the pressure on the overlap clip glaze the next panel and then cap the previous bar. Continue in this manner for the rest of the glazing.

5. Repeat this all along this side of the house, and then repeat it for the roof of this side.

6. Repeat points 3 to 5 on the other side of the house.

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

8. Proceed to the door end and glaze in a similar manner. (**Key point**)

9. Finally glaze the door.

10. Bar capping is now fitted to the greenhouse (see instructions for full sheet toughened glass).

HORTICULTURAL GLASS

SIZE	A	B	C	D	E	F	G	H	L	M	N	Q	U	V	X	Z
4 X 6	13	13	4	2	4	2	4	2	5	2	2	10	2	2	2	1
6 X 6	19	17	4	2	4	2	4	2	7	2	2	10	2	2	2	1
8 X 6	25	21	4	2	4	2	4	2	9	2	2	10	2	2	2	1
10 X 6	31	25	4	2	4	2	4	2	11	2	2	10	2	2	2	1
12 X 6	37	29	4	2	4	2	4	2	13	2	2	10	2	2	2	1
14 X 6	43	33	4	2	4	2	4	2	15	2	2	10	2	2	2	1
16 X 6	49	37	4	2	4	2	4	2	17	2	2	10	2	2	2	1
18 X 6	55	41	4	2	4	2	4	2	19	2	2	10	2	2	2	1
20 X 6	61	45	4	2	4	2	4	2	21	2	2	10	2	2	2	1

For louvre fitting - Louvre + I replace A pane. (Key point)

The above listing does not include partition details.

A = 610 x 610

B = 610 x 457

H = 573 x 100

I = 610 x 140

M = 450 x 457

N = 457 x 457

V = 610 x 155

V1 = 585 x 155

V2 = 457 x 155

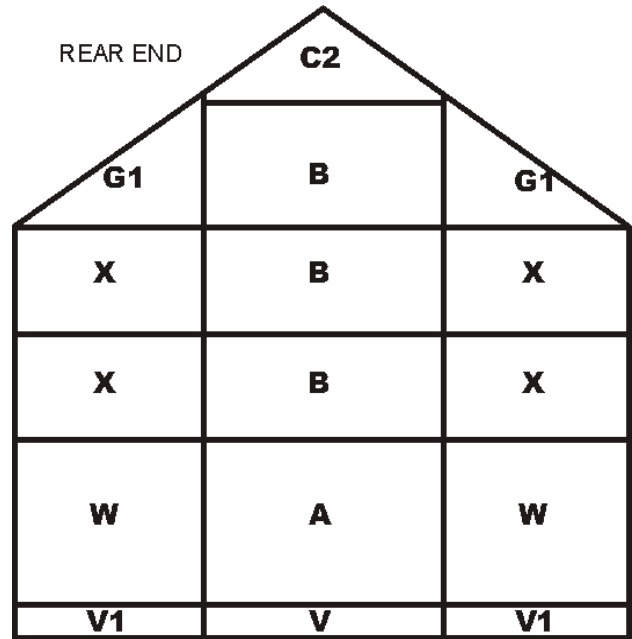
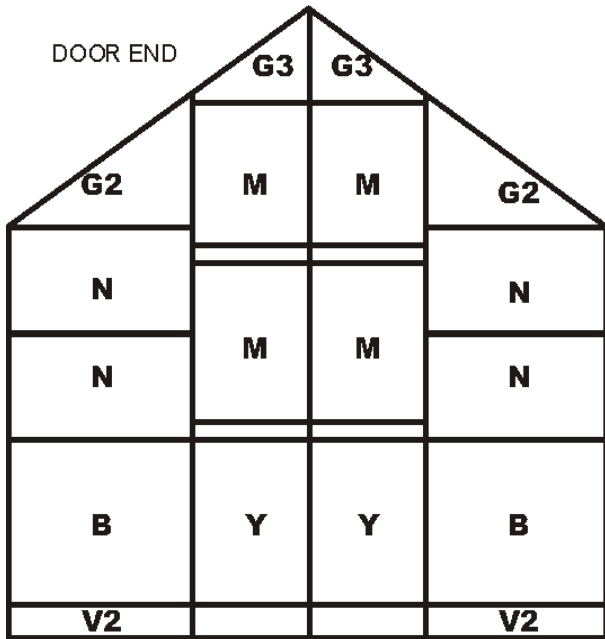
W = 585 x 610

X = 585 x 457

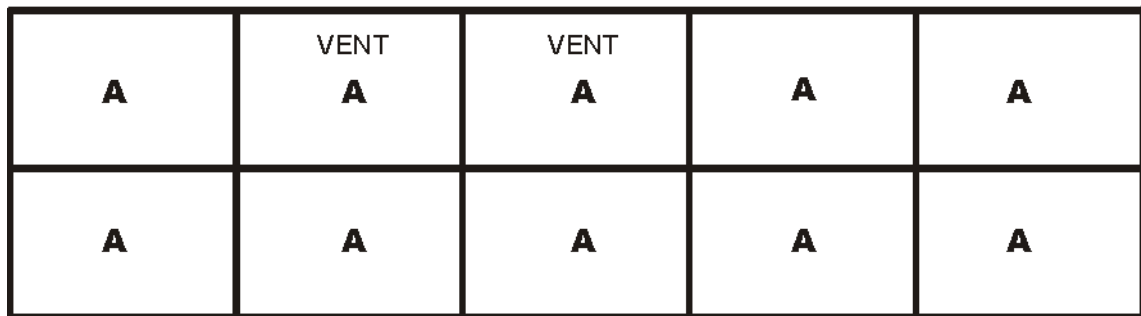
Y = 450 x 610

Can be replaced with kick plate if ordered.

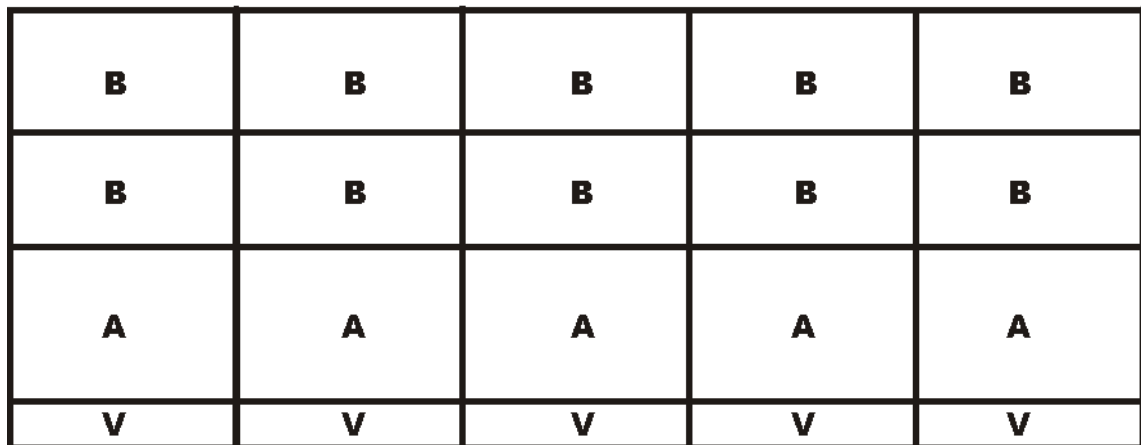
HORTICULTURAL GLASS



ROOF



SIDE



SHAPES



FULL SHEET TOUGHENED GLASS

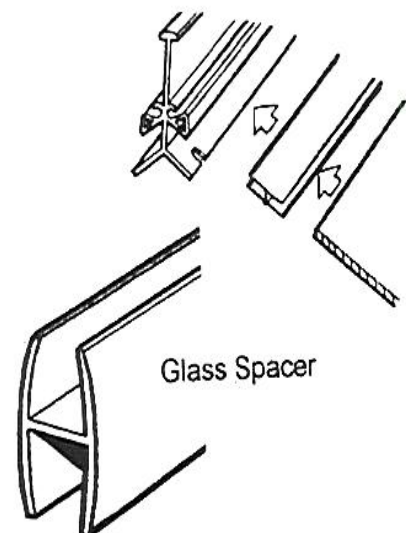
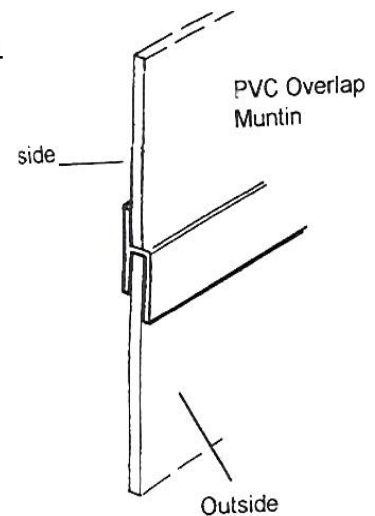
For large panes of toughened glass (over 610mm long) use 6 wire clips per pane, for smaller panes (under 610mm long) use 4 and for very small panes use 2 clips per pane.

With full sheet toughened glass the traditional overlap system used with horticultural glass on the gable ends is replaced by a rigid P.V.C. muntin. Position the muntin on top of the lower pane of glass taking care to have the inside and outside as indicated in the diagram. Put the next pane on top of the muntin (into the rebate) and clip the glass in, as previously described.

There are enough stainless wire clips in your kit for 6 clips per large pane of toughened glass. (Sizes over 610mm x 610mm)

See glazing plan for glass positions. **(Key point)** Some sizes of glass are similar to others so be sure you are fitting the correct panel.

When fitting the roof glass, you must utilise the P.V.C. roof spacer (610mm long). This is fitted to the top edge of the glass and pushed under the ridge flange (see diagram). **The P.V.C. muntins and roof spacers can be found in the cut shape glass packs, and quantities of each will be marked on your delivery note.**

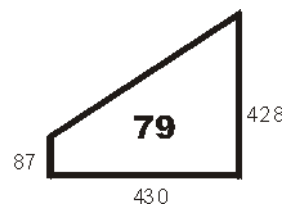
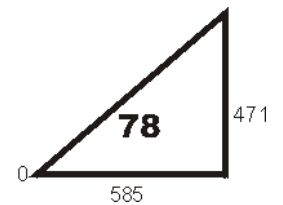
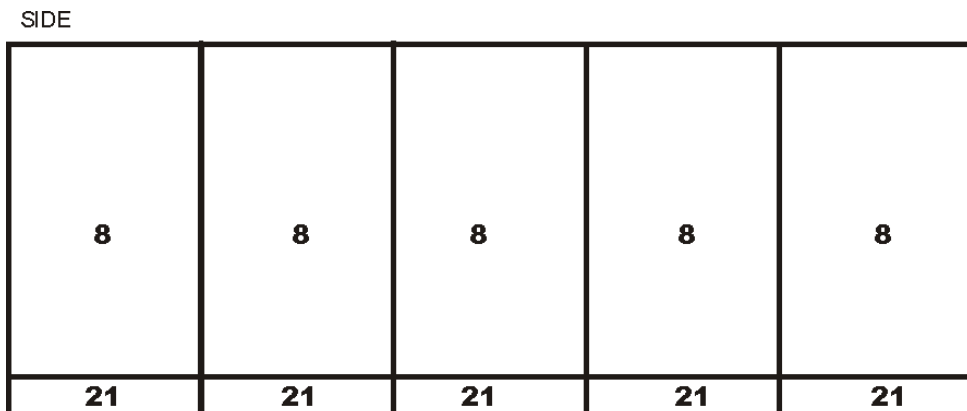
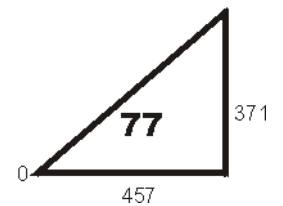
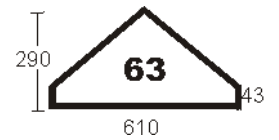
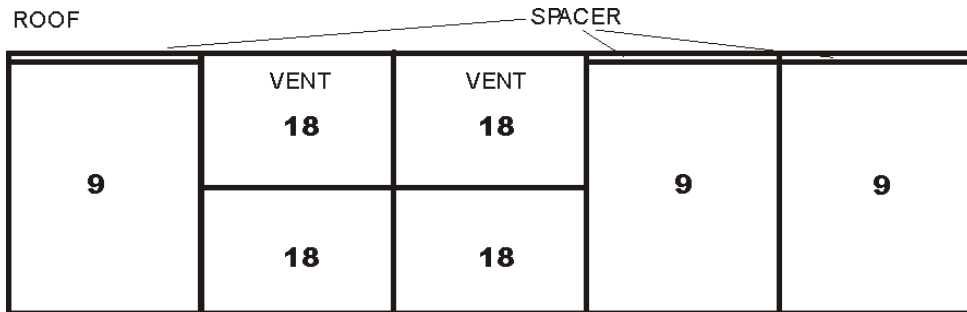
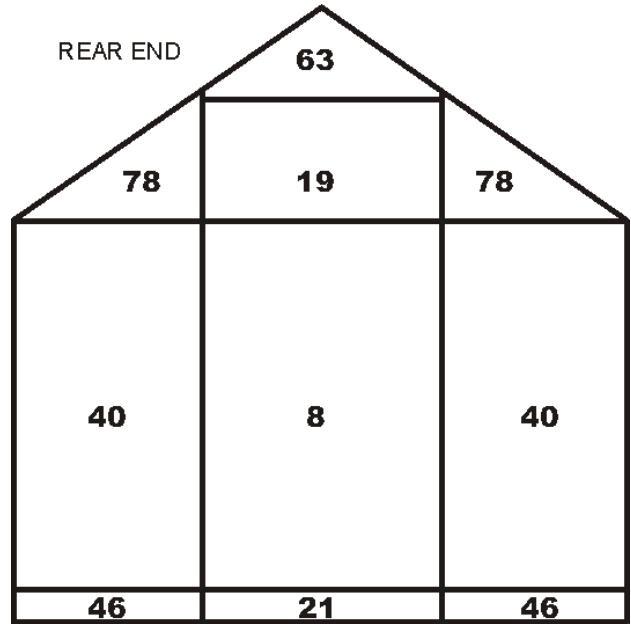
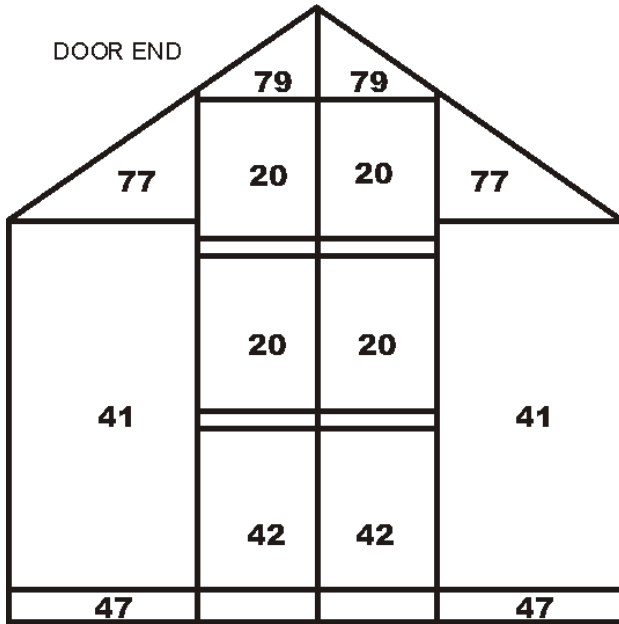


BAR CAPPING

For the fitting of the bar capping please refer to the separate sheet enclosed with the bar capping.

TOUGHENED GLASS FULL SHEET

Key point: Some panels of glass are very similar in size to another; please ensure correct sizes are positioned correctly.



TOUGHENED GLASS FULL SHEET

SIZE	A	B	C	D	E	F	G	L	M	N	Q	R	S	U	V	X	Z
4 X 6	4	1	2	2	4	2	2	7	2	2	10	2	3	2	2	2	1
6 X 6	4	1	2	2	4	2	2	9	2	2	10	4	5	2	2	2	1
8 X 6	8	1	2	2	4	2	2	11	2	2	10	4	7	2	2	2	1
10 X 6	8	1	2	2	4	2	2	13	2	2	10	6	9	2	2	2	1
12 X 6	8	1	2	2	4	2	2	15	2	2	10	8	11	2	2	2	1
14 X 6	16	1	2	2	4	2	2	17	2	2	10	6	13	2	2	2	1
16 X 6	16	1	2	2	4	2	2	19	2	2	10	8	15	2	2	2	1
18 X 6	24	1	2	2	4	2	2	21	2	2	10	6	17	2	2	2	1
20 X 6	24	1	2	2	4	2	2	23	2	2	10	8	19	2	2	2	1

For louvre fitting - Louvre + 10 +21 L replace 8 pane. (Key point)

8 = 610 x 1489

9 = 610 x 1197

10 = 610 x 904

18 = 610 x 610

19 = 610 x 457

20 = 450 x 457

21 = 610 x 140

22 = 573 x 100 (Louvre blade)

41 = 457 x 1489

40 = 585 x 1489

42 = 610 x 450

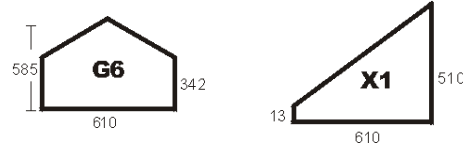
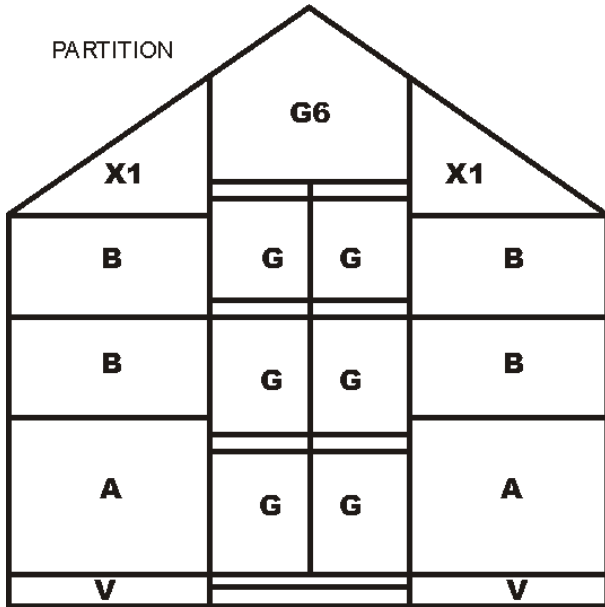
47 = 457 x 140

Can be replaced with kick plate if ordered.

46 = 585 x 140

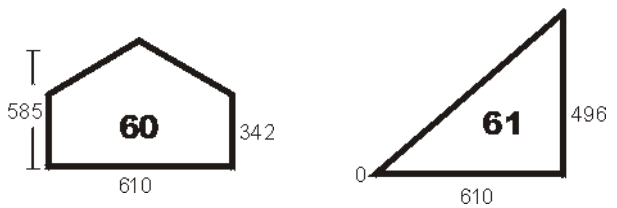
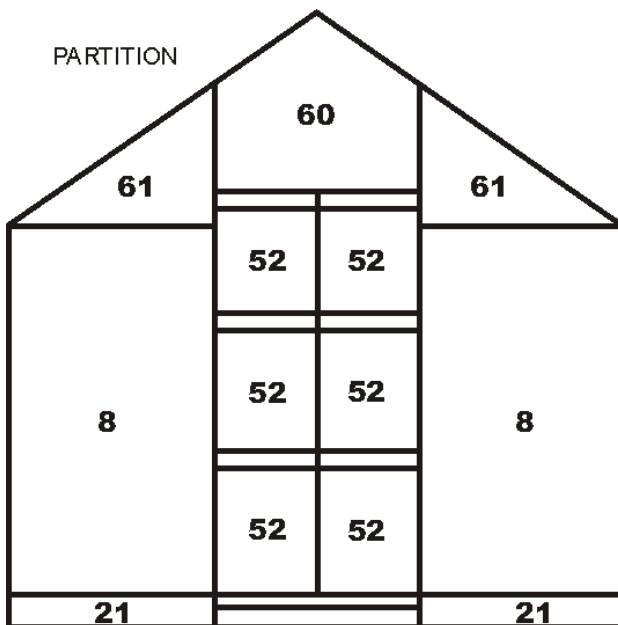
PARTITION WITH DOOR

HORTICULTURAL GLASS



A	610	610
B	610	457
G	300	457
V	610	155

TOUGHENED GLASS



8	610	1489
21	610	140
52	300	457

YOUR GREENHOUSE IS NOW COMPLETE.

If you have purchased any accessories such as staging, auto vents, rainwater kits etc. they will have their own detailed instructions in their packaging.

KICK PLATES

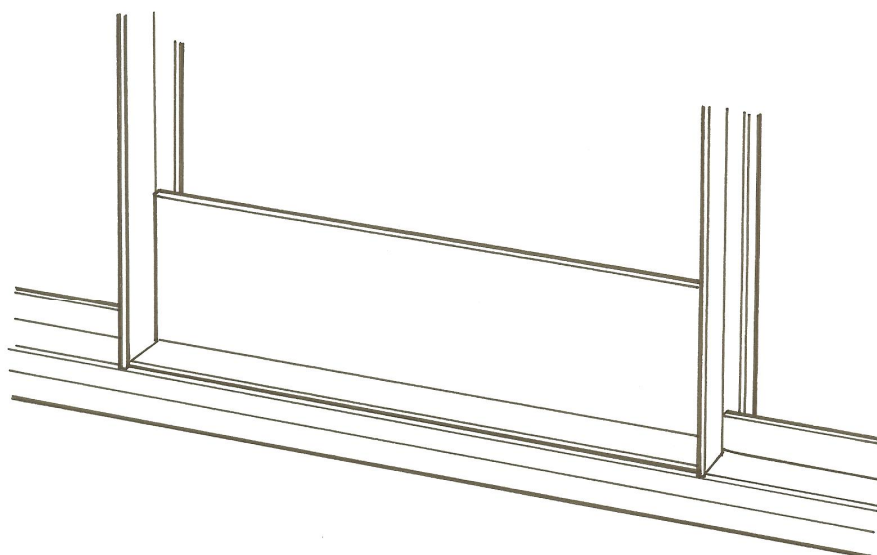
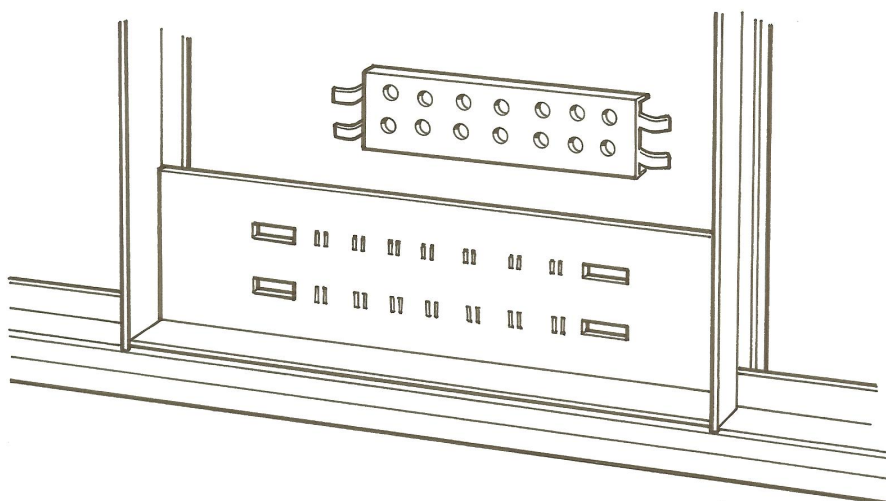
The kick plates can only be fitted at the bottom of each vertical bay of glass (excludes door section).

The kick plate has a 90° fold at the bottom and is fitted on to the bottom cill with the point of the fold, hard against the corner of the bottom cill.

The kick plate is clipped and capped into position in exactly the same way as glass (mentioned earlier). A muntin is placed over the top of the kick plate for toughened glass glazing, while horticultural glass an overlap clip is used.

The information is correct for a vented or un-vented kick plate.

To fit the vent in the vented kick plate, the tabs are inserted into the plate in all 4 positions. When this has been done, the tabs need to be bent manually to ensure the vent cannot fall out of the plate. The vent will now slide to allow ventilation.



DIAMOND STAGING

(Optional extra)

Parts required . Runner Boards 5 for Diamond 19 or 7 for Diamond 26.

Cantilever T Bars

Mitred Angle supports

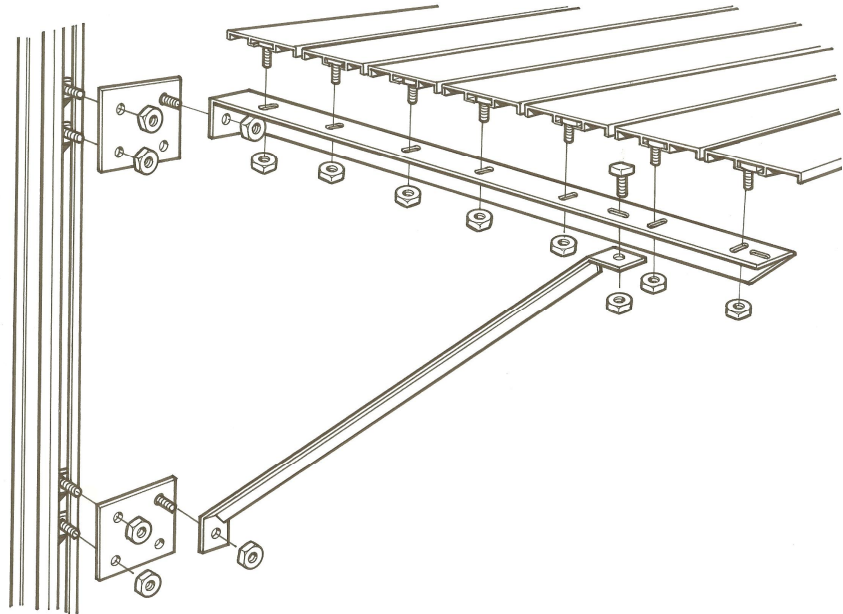
Quantity dependant up on length

Nuts and Bolts

Square plate with 4 holes

1. The angle supports are all handed the same way, and provided the slotted holes are facing skywards, they can be fitted only one way. If the open end of the angle support is to be fitted into a corner of the greenhouse, you may find it easier to fit before glazing the greenhouse.

2. Decide the height you wish the staging to be set, and then using crop head nuts and bolts attach the angle supports to the glazing bars only.



3. At the same height, attach a square plate with 4 holes, to the bolt slot of each corner bar using 2 of the 4 holes. The unoccupied hole at the top of the plate, which is at the same height as the corner bar fixing, is to be used to attach the angle support to allow clearance past the diagonal angle brace. Put a bolt through this hole and attach the folded end of the angle support. *(you may find it easier to attach this nut and bolt before fixing the plate to the corner bar)* Put a nut on and tighten.

4. If your greenhouse has a partition, you will not have the use of a bolt slot on both sides of the corner bar. You must drill a 7mm diameter hole in the partition corner bar at the desired height, and attach the plate **behind** the bar. You will need to use packing (a nut will suffice) to move the plate towards the side of the greenhouse and therefore level with the plates already fitted. From this point proceed as per following instructions.

5. Now put an angle support on the other corner bar in the same way. The angle support for the intermediate glazing bar attach directly to the glazing bar. Ensure all angles are fixed at the same height (**key point**). The height can be increased, by setting the angle supports higher up the glazing bar/corner bar.

6. The plate with 4 holes is used to attach an angle support at **each end** of the staging. Staging does not have to be fitted from corner bar to corner bar, but does require a plate at each end.
7. On the 7 runner (Diamond 26) staging there are 2 slotted holes, which run the opposite way to the other 7 slots. When following step 8, you should use the slot towards the middle of the bar (approx 10+from the mitred end).
8. The cantilever bars can now be attached to the vacant end of the angle supports, and in turn bolted back to the bolt slot of the glazing bar/corner bar utilising the plate if required. (If the corner bar does not have a vacant bolt slot you must attach an angle bracket to the facing bolt slot to enable the cantilever to be secured.-GX 600 **gable** staging fitting only)
9. Now the runner boards can be fitted. The position in which they are fitted, are fixed by the pre-drilled holes in the horizontal angles. Slide a bolt down the bolt channel (on the under side of each runner board) of the runner board. 1 bolt per horizontal angle. Locate the bolt with the pre-drilled hole, put a nut on and tighten.
10. Repeat the process for each runner board. The pre-drilled holes will leave a gap of approx 6mm ($\frac{1}{4}$ +between each board).
11. For aesthetical purposes, ensure that the boards are all in line.
12. For lengths of staging over 8q you must join staging sets together. At the join, you must leave enough room on the slot to fit the end bolt of both staging runners. Due to the fact you have joined staging together it is normal to have a small quantity of components and fitting left over.
13. Tighten all nuts and bolts securely.

Your staging is now complete.

