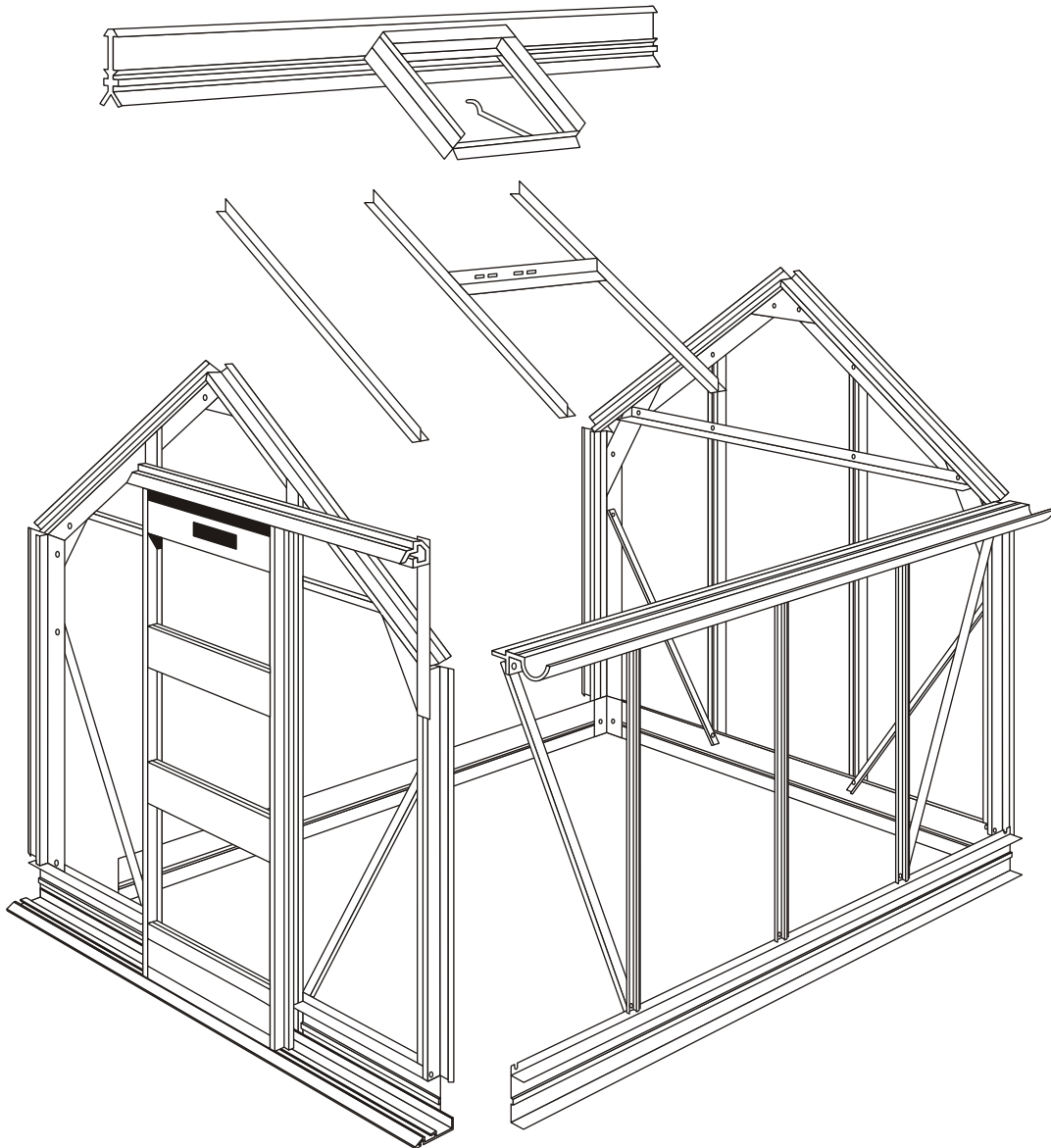




INSTRUCTIONS & ILLUSTRATIONS FOR THE  
**6'3" WIDE HIGH EAVE**



**ELITE GREENHOUSES LTD**

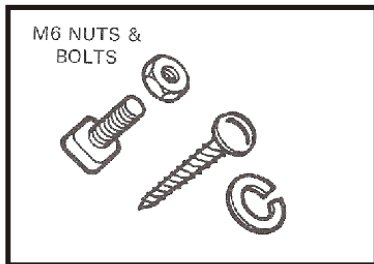
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

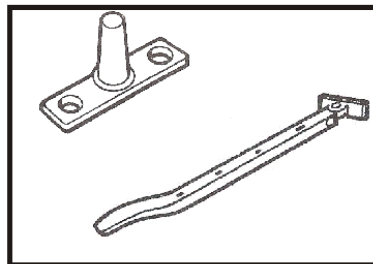
[enquiries@elite-greenhouses.co.uk](mailto:enquiries@elite-greenhouses.co.uk)

[www.elite-greenhouses.co.uk](http://www.elite-greenhouses.co.uk)

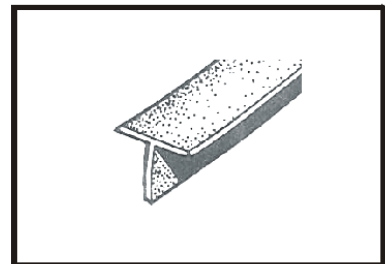
**FITTINGS WITHIN THE KIT (NOT TO SCALE)**



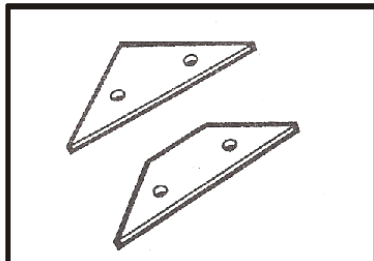
**M6 NUTS & BOLTS  
SELF TAPPING SCREWS  
SPRING WASHER**



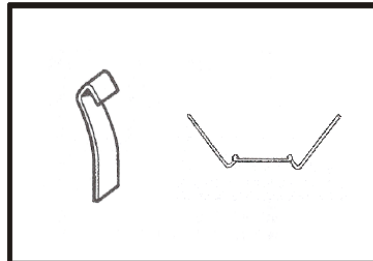
**CASEMENT STAY + PINS**



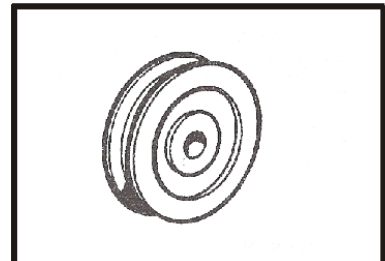
**DRAUGHT EXCLUDER**



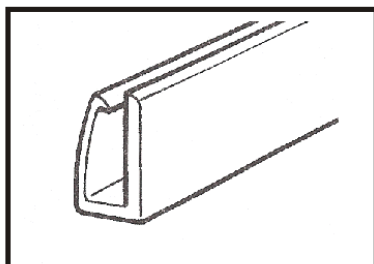
**APEX & EAVE GUSSET PLATES**



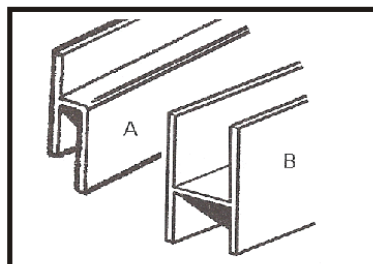
**OVERLAP+ WIRE CLIPS**



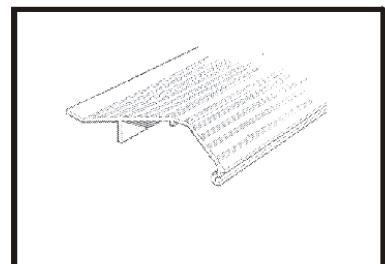
**DOOR WHEEL**



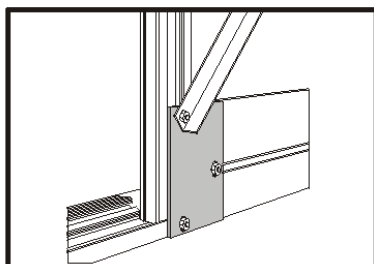
**BLACK DOOR SKID**



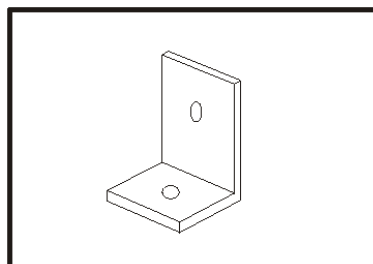
**A=MUNTIN B= ROOF SPACERS**



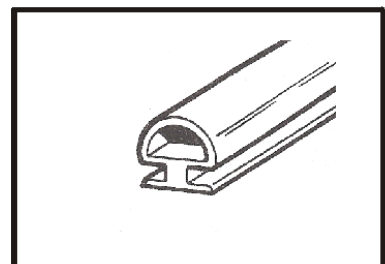
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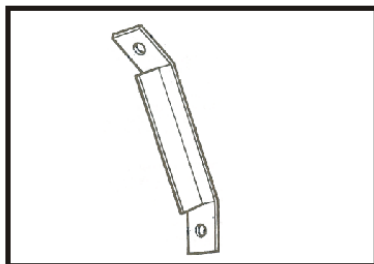
**DOOR END PLATE**



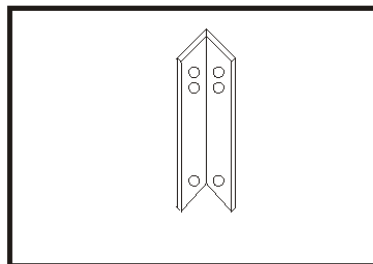
**ANGLE BRACKET**



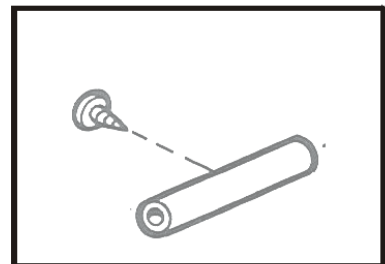
**NEOPRENE BEADING**



**CANTILEVER BRACE**

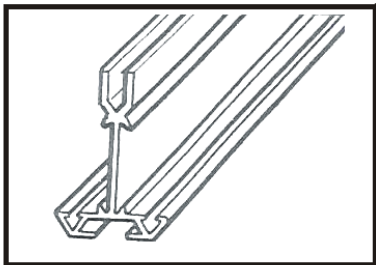


**BASE LEGS (CORNER BRACKET)**

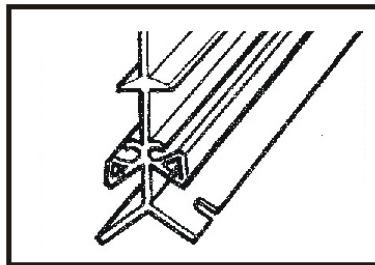


**VENT STOPPER**

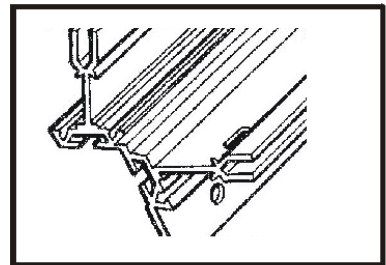
COMPONENT DRAWINGS (NOT TO SCALE)



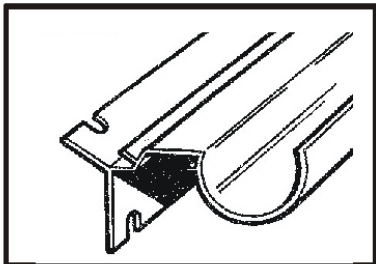
GLAZING BARS AND DOOR POSTS



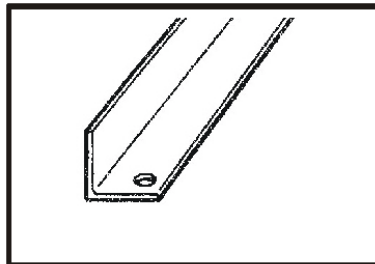
RIDGE



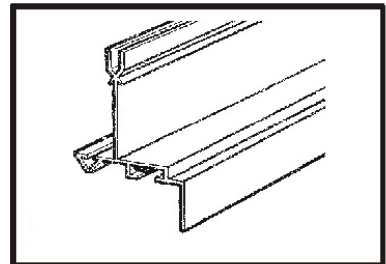
CORNER BAR



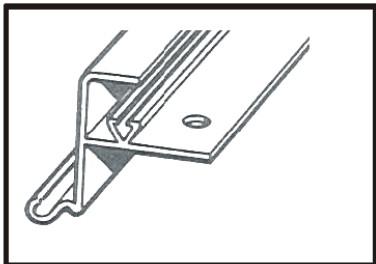
EAVES BAR/GUTTER



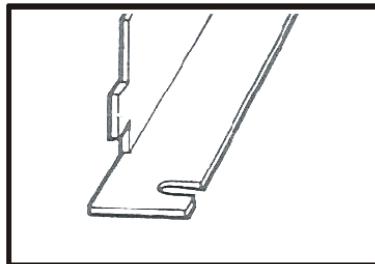
BRACING ANGLE



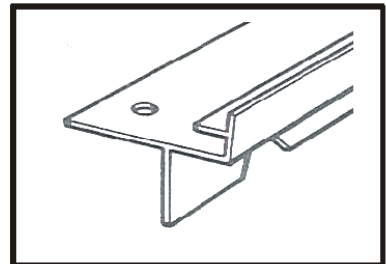
VENT SIDE RAIL



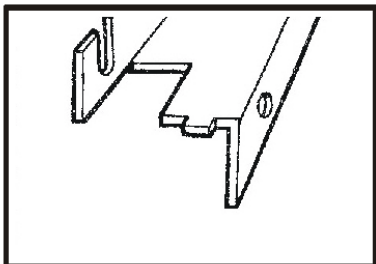
VENT TOP RAIL



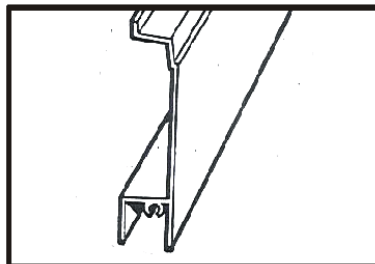
VENT SLAM BAR



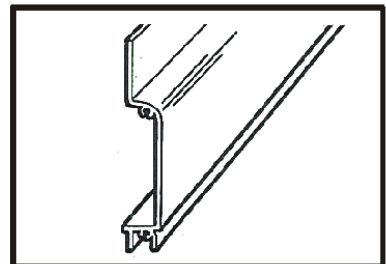
VENT BOTTOM RAIL



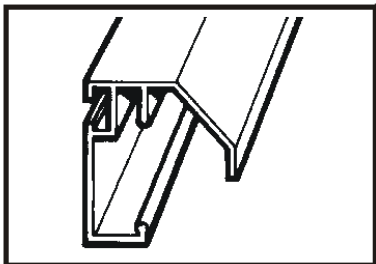
DOOR TRACK SUPPORT



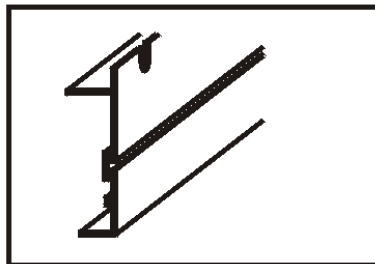
DOOR INFIL PANEL



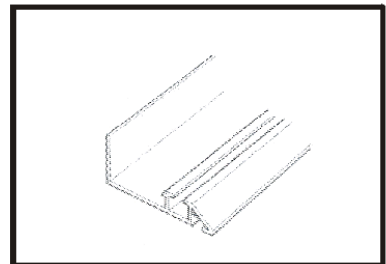
DOOR TOP/BOTTOM PANEL



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
<b>1</b>	Nuts and bolts M6	83	93	103	117	133
<b>2</b>	Band clips	180	220	260	300	340
<b>3</b>	Wire clips	16	16	20	20	20
<b>4</b>	Overlap clips	28	34	40	46	52
<b>5</b>	Casement stay	1	1	2	2	2
<b>6</b>	Stay pins	2	2	4	4	4
<b>7</b>	Pins, nuts and bolts M4	6	6	12	12	12
<b>8</b>	Door lock and fittings	1	1	1	1	1
<b>9</b>	Short self tapping screw	13	13	13	13	13
<b>10</b>	Long self tapping screw	1	1	1	1	1
<b>11</b>	Spring washer	2	2	2	2	2
<b>12</b>	Glazing beading (m)	48	59	71	82	94
<b>13</b>	Door skid (may already be fitted)	1	1	1	1	2
<b>14</b>	<b>Eave plates</b>	4	4	4	4	4
<b>15</b>	<b>Ridge plates</b>	2	2	2	2	2
	Taped together with one casement stay					
<b>16</b>	Door wheels and fittings	2	2	2	2	2
<b>17</b>	Ridge	1	1	1	1	1
<b>18</b>	Gutter/eave	2	2	2	2	2
<b>19</b>	Built in base side	2	2	2	2	2
<b>20</b>	Side braces	2	4	4	4	4
<b>21</b>	Door end cill	1	1	1	1	1
<b>22</b>	Top door track	1	1	1	1	1
<b>23</b>	<b>Top door panel</b>	1	1	1	1	1
<b>24</b>	<b>Bottom door panel</b>	1	1	1	1	1
<b>25</b>	<b>Middle door panel</b>	3	3	3	3	3
<b>26</b>	<b>Door track support</b>	1	1	1	1	1
	With name plate taped together and marked "door"					
<b>27</b>	Door posts	2	2	2	2	2
<b>28</b>	Side glazing bar	2	4	6	8	10
<b>29</b>	Roof glazing bar	2	4	6	8	10
<b>30</b>	Vent (in packs)	1	1	2	2	2
<b>31</b>	<b>Door end glazing bars</b>	2	2	2	2	2
<b>32</b>	<b>Door end horizontal angle</b>	2	2	2	2	2
<b>33</b>	<b>Door end diagonal angle</b>	2	2	2	2	2
<b>34</b>	<b>Small door track support</b>	1	1	1	1	1
<b>35</b>	Rear end built in base cill	1	1	1	1	1
<b>36</b>	<b>Rear end glazing bars</b>	2	2	2	2	2
<b>37</b>	<b>Rear end horizontal angle</b>	1	1	1	1	1
<b>38</b>	<b>Rear end diagonal angle</b>	2	2	2	2	2
<b>39</b>	Corner bars in two packs	8	8	8	8	8
<b>40</b>	Door End Built in base Cill	2	2	2	2	2
<b>41</b>	Base Anchors	4	4	4	4	4
<b>42</b>	Door end Base Plates	2	2	2	2	2
<b>43</b>	Angle brackets	8	10	12	14	16
<b>44</b>	Cantilever brace	-	-	2	4	6

## 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 – 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 1/8” 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 – 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 High Eave 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 "HIGH EAVE" 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 10'6" & 12'6" models)
5. Door
6. Bag of fittings containing:
  - A. Nuts and bolts general assembly
  - B. Overlap clips for glass
  - C. Spring clips for glass
  - D. Casement stay (1 for 4'5", 6'5" & 8'5" models) (2 for 10'5" & 12'5" models)
  - E. Casement stay nuts and bolts
  - F. Four eave plates
  - G. Two ridge plates
  - H. Two door wheels
  - I. One door skid (this may already be fitted to door panel)
  - J. Small self tapping screws
  - K. 1 Door lock and fitting
7. Roof bars
8. Glazing beading
9. One length of ridge
10. Two black draught excluders
11. Small angle brackets for anchoring down
12. 2 Rectangular plates with 3 slots (for door end assembly)



**BEWARE OF  
SHARP EDGES!**

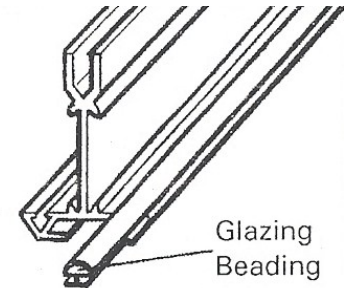
**For clear identification of parts and the number required please carefully refer to the earlier pages of component drawings and parts list.**

## SIDE FRAME ASSEMBLY

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

The base is integrated with the cill for each side of the greenhouse, and is assembled onto each subassembly 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 cill 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 ½" headed bolts provided with the shelf fittings- these can be inserted later). For the 8' model, slide 1 extra bolt into the middle glazing bar of each side. For 10' models, slide an extra bolt into the 2<sup>nd</sup> and 3<sup>rd</sup> glazing bar (and also the 4<sup>th</sup> bar for 12' long models). These will enable the fitting of a cantilever brace during general assembly later in the plan.
3. Fix the combined eaves bar/gutter to the glazing bar(s) by pushing the bolts through the holes in the eaves bar, and securing with a nut. You do not need to tighten the nuts too much at this stage, but they need to be tight enough to stop the bolts slipping out of the glazing bar.
4. Fix the built in base cill to the middle glazing bar by pushing the bolt through the hole in the cill unit and tightening.
5. Correctly position the built in base cill on the outer most glazing bars by pushing the bolts through the holes in the cill, but do not put the nuts on yet.
6. Place the angled tie bars over these bolts so that they point outwards towards the ends of eaves bar. They must be so arranged that the flat bit of the angle in each case faces towards the middle of the house (i.e. the elongated slit will be by the eaves in one case and by the cill in the other). **(Key point).**
7. Put nuts on bottom bolts and lightly tighten.
8. Do the same with the other side frame assembly.
9. Make sure that the glazing bars reach both the built in base cill and the eaves 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 2'). These will be used to anchor the greenhouse to the floor during general assembly.

## SIDE FRAME COMPONENTS LIST

1 Gutter/eave bar

1 Built in base

Glazing bars—1 if 4' long

2 if 6' long

3 if 8' long

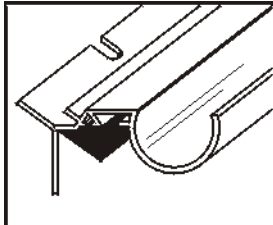
4 if 10' long

5 if 12' long

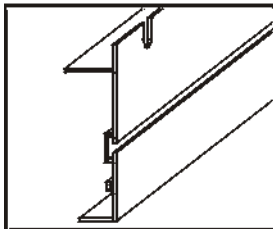
Angle tie bar—1 if 4' long

2 if 6', 8', 10' or 12' long

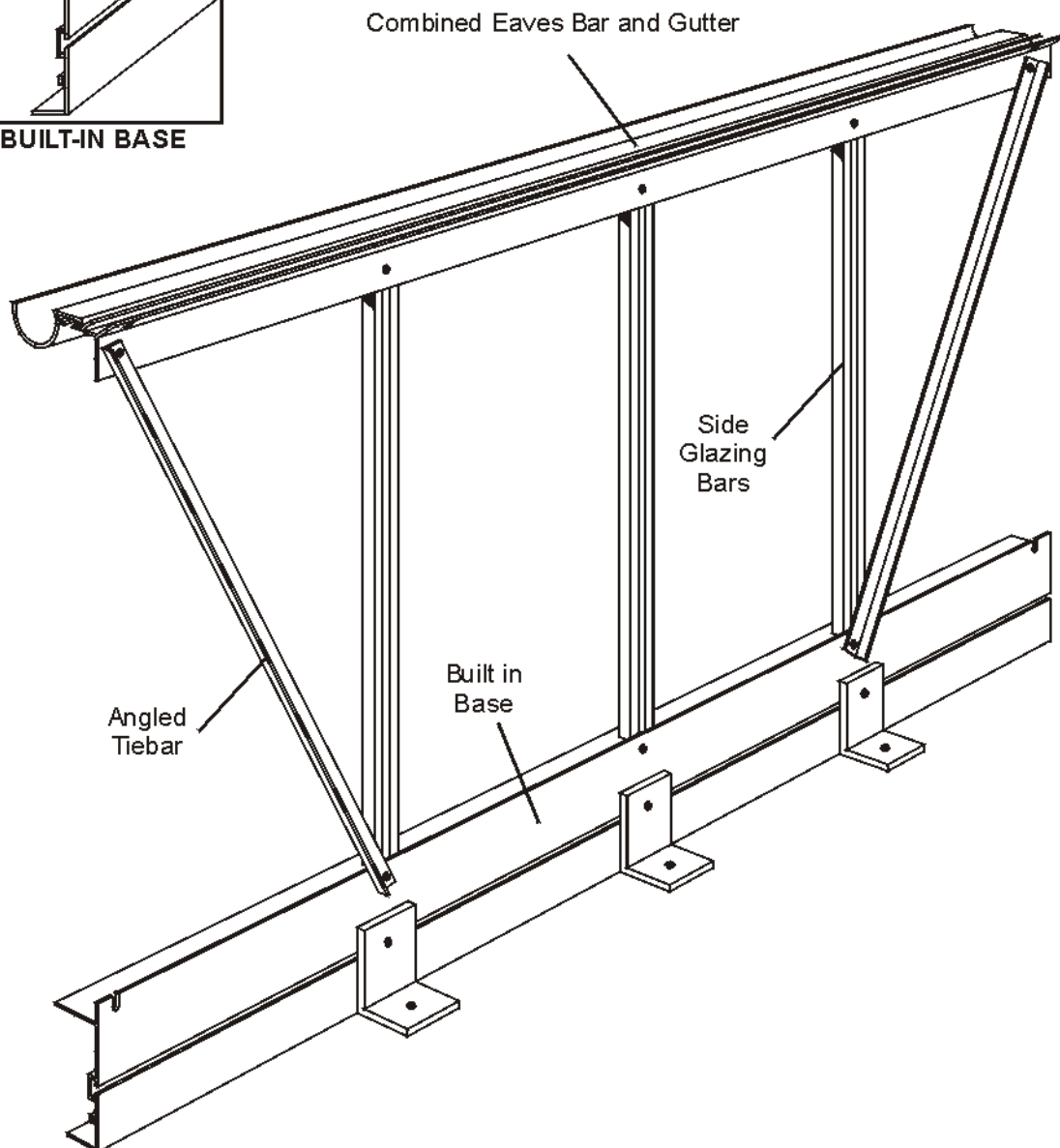
From the fitting list you will require nuts and bolts and glazing beading.



EAVES BAR GUTTER



BUILT-IN BASE





## REAR END ASSEMBLY

### Components

Built in base Cill “marked rear end”

Glazing bars

2 Roof Corner Bars (marked “R” at the apex)

2 Side Corner Bars

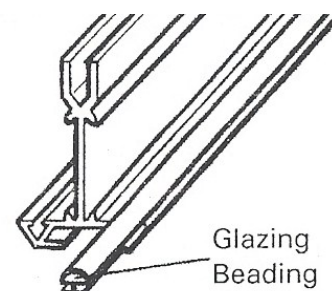
2 Diagonal cross ties

1 Horizontal brace

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

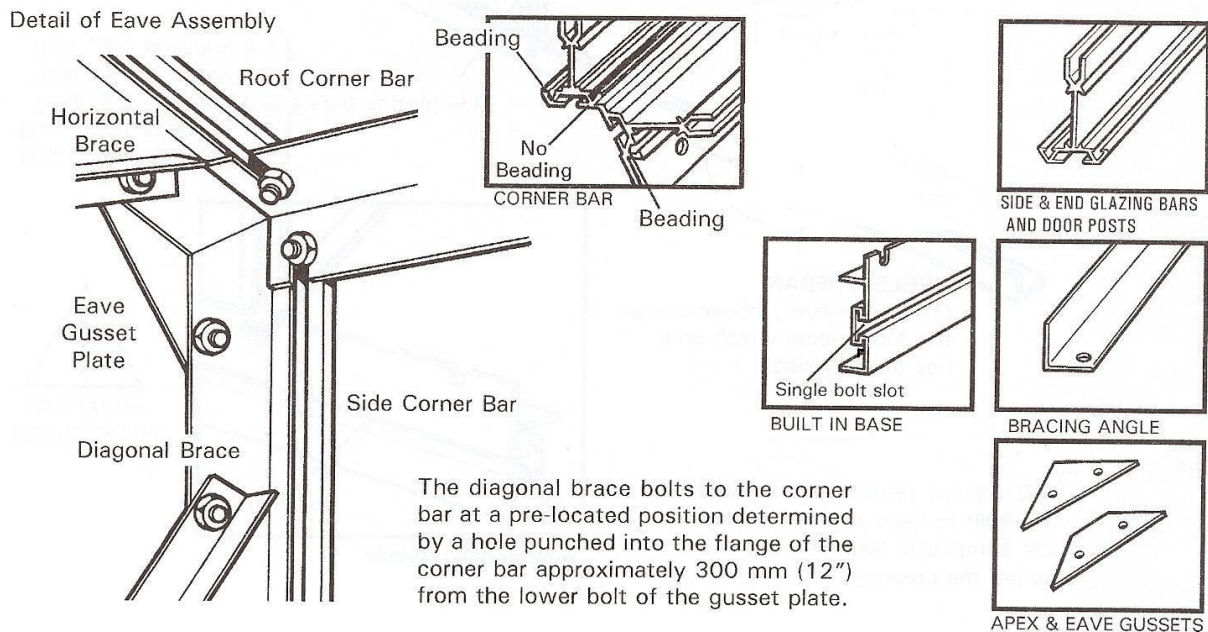
### INSTRUCTIONS

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



- 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 cill to the ends. Now secure the Ridge Gusset Plate and Eaves Gusset Plates by inserting bolts through the ‘plates’ and into the holes punched in the flange of the corner bar, at the apex and eave.
  3. Attach the built in base 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 built in base cill. (Make sure bolt channel of 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 cill. Before securing the nuts attach the angle diagonal ties to the same bolt as illustrated. The top of the diagonal angle tie now attaches to the hole 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 brace to the **top bolt** of the gusset plate and to the other bolts in the glazing bars you inserted in 5, above.

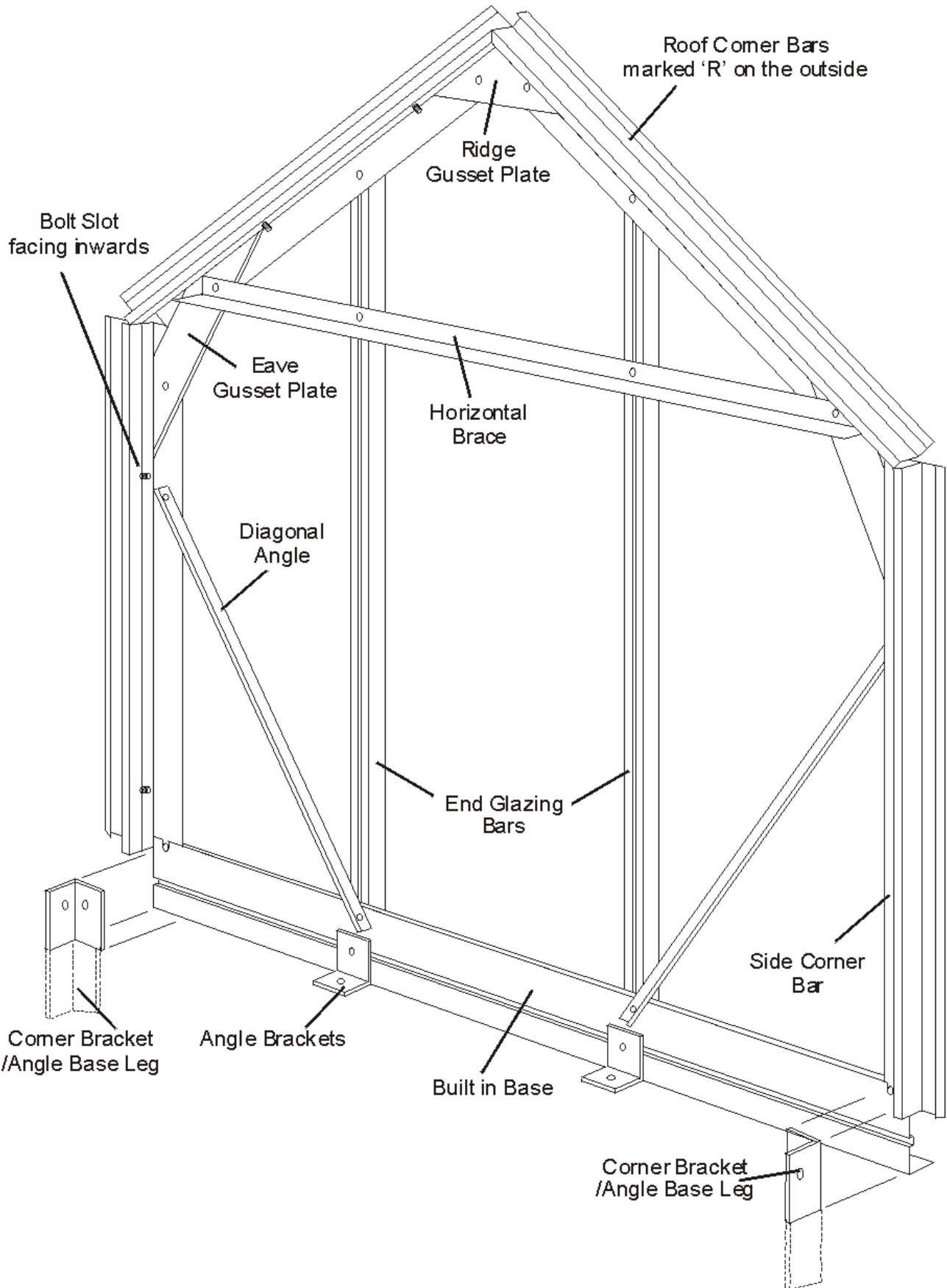
7. Check that all angles between the built in base and the vertical members are at right angles and that the glazing bars are right into the angle cill at the bottom. **(Key point).**
8. Tighten all nuts.
9. Slide a bolt into the bolt slot in the built in base section, one at each end. **The corner bracket is approx 400mm long and has 6 holes (4 at 1 end and 2 at the other). Attach the corner bracket (base anchors) 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 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 2'). If you are on soil, the bracket will go into the ground at general assembly. (Key point).**



N.B. Roof Corner Bars are marked "R" on the outside, which indicates that they meet at the ridge. They are also mitred at both ends.

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

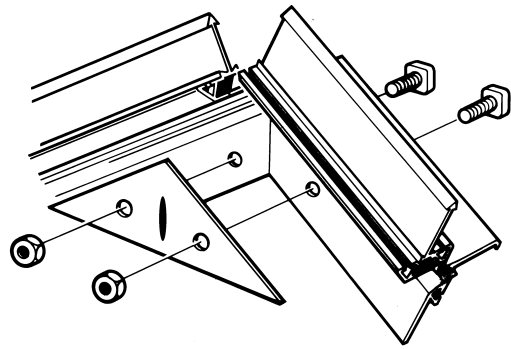
# REAR END ASSEMBLY



## DOOR END ASSEMBLY

### Components

- 1 Door end cill
- 2 Built in base cill
- 2 End glazing bars (longer than rear end glazing bars)
- 2 Rectangular plates with 3 slotted holes
- 2 Short horizontal braces
- 2 Roof corner bars (marked 'R')
- 2 Side corner bars (unmarked)
- 1 Door track support
- 1 Top door track
- 1 Small angle door track support



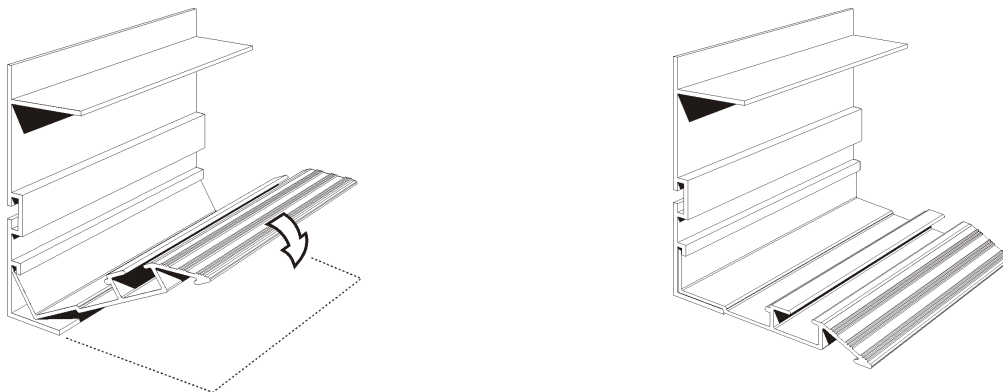
From the main bag of fittings you will require the nuts and bolts.

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

### INSTRUCTIONS

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 base piece, the door end has 2 smaller pieces (1 either side of the door opening) and 1 door end cill. The end glazing bars on the door end are longer than the rear end glazing bars.
2. Now engage the door end cill with the 2 built in base cills 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 cill.

NB: The short door end 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 base pieces do not require handing i.e. left can go on right and visa versa.



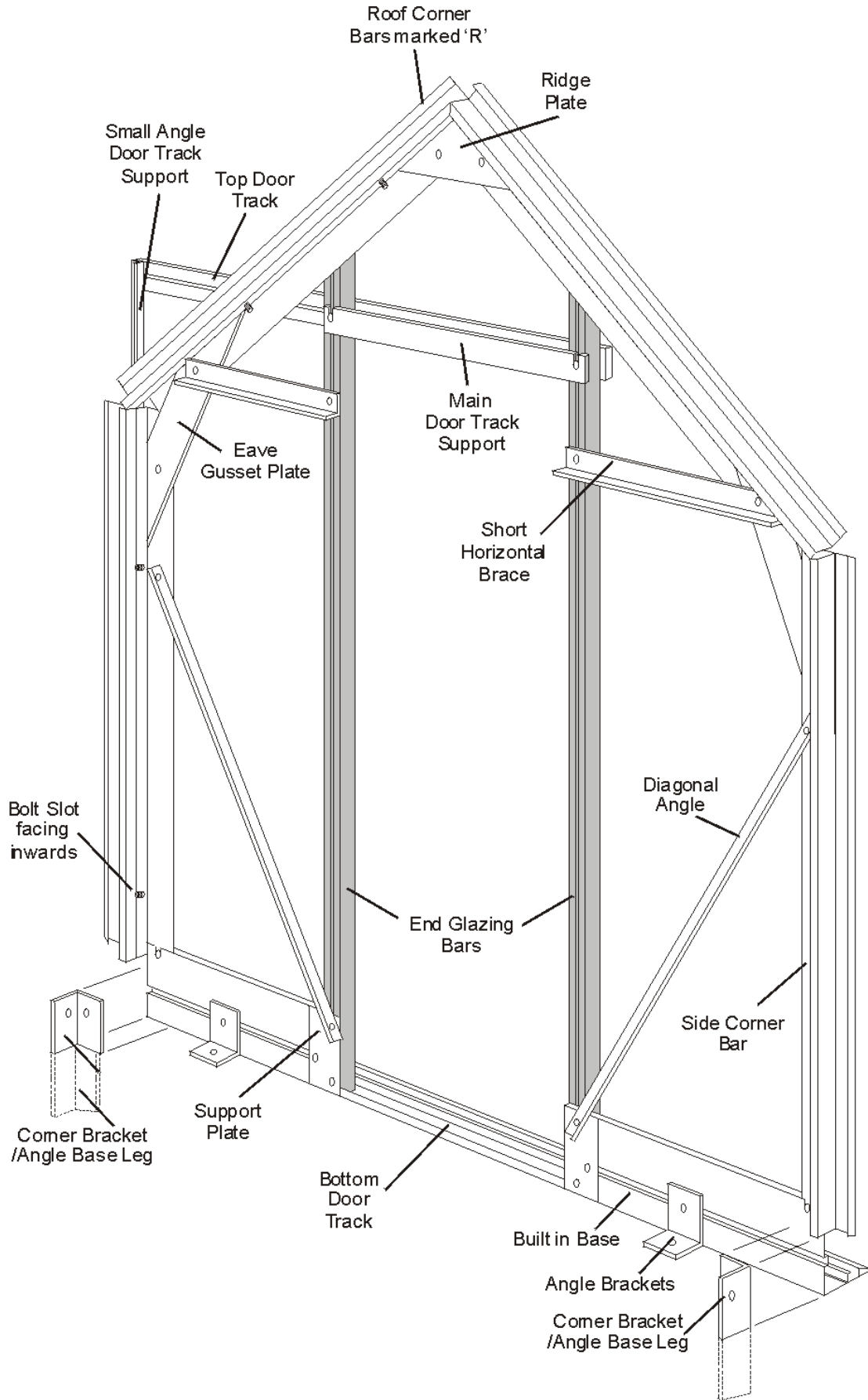
3. Slide 2 bolts into the bottom of each glazing bar and 3 bolts (only 1 if greenhouse to be sited on soft ground) into the free end of each built in base section. Attach the 2<sup>nd</sup> bolt in the glazing bar to the hole in the door end cill, but do not put a nut on yet.

- **Remember, the door end glazing bars are 95 mm longer than the rear end ones and 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)**
4. Attach the rectangular plate (with 3 holes) to the 2 bolts inserted in the 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 base sections will be used to anchor the greenhouse to the floor.
  5. Attach the main door track support (shaped like a letter 'Z' to be found with the door panels) to the 2 vertical glazing bars approx. 130mm below the point where they meet the corner bars. **(Key point)**. This 'Z' shaped bar must be fitted with the two outside slots facing upwards **not** downwards.
  6. The two horizontal braces attach to the **top bolt** in the gusset plate and the vertical glazing bars.
  7. Stand the frame up and bolt the door track to the main door track support and the small angle door track support by inserting 4 bolts into the bolt slot of the door track. Position 3 of these through the 3 holes in the door track support above the door opening. The small angle door track support (which is 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 4<sup>th</sup> 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.
  8. When this has been achieved tighten all nut.
  9. Slide a bolt into the bolt slot in the built in base section, one at each end. Attach the base anchor 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 2'). 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 'v' groove of the door end glazing bars.

# DOOR END ASSEMBLY



At a later stage, when the top door track has been attached, the precise height and position of the track and support can be established.

## SINGLE DOOR FRAME ASSEMBLY

Components consist of:

2 door glazing bars

3 infill panels (1 with oval hole for lock barrel)

2 top and bottom door panels

From the main bag of fittings you require

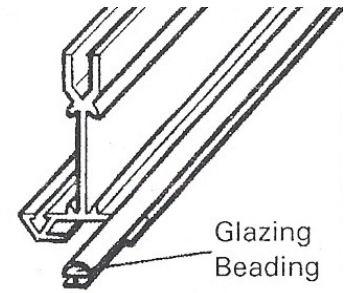
2 door wheels

1 clip on nylon door skid (this might already be clipped to the bottom door panel)

2 lengths of black brush draft excluder inserted into a pvc extrusion

Door Lock, cam and pin

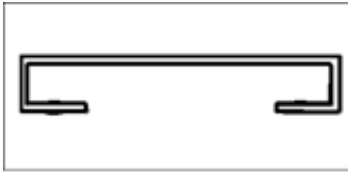
Door handle and keep



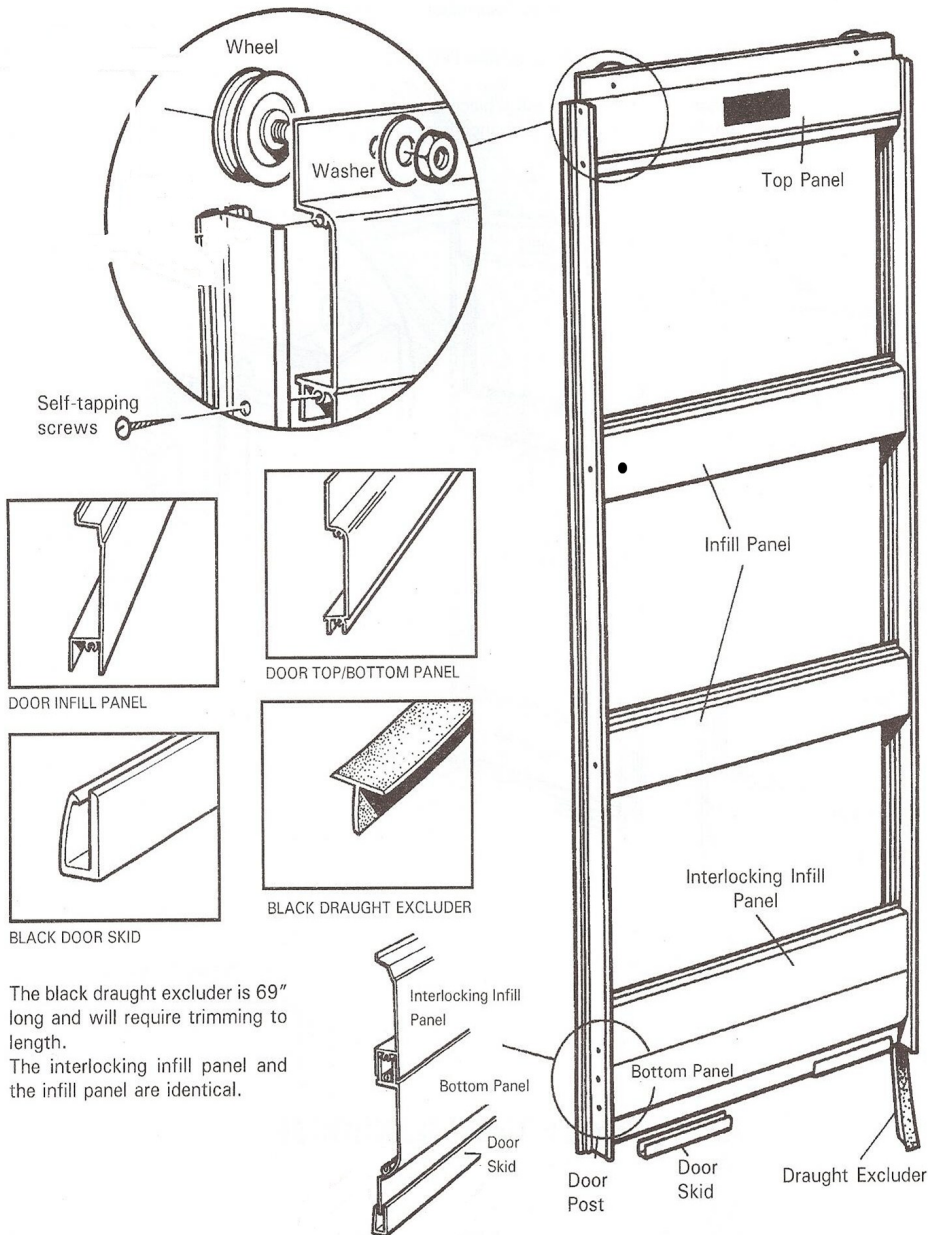
1. Place the two side bars on a level surface roughly two feet apart with the bolt slots facing downwards. The top of each side piece has two screw holes in it, the bottom has three (**Key point**). Slide the glazing beading into the V grooves that face inwards towards the door panels. (Not in the outside V groove).
2. Place the top, bottom and three infill panels in position as shown by the position of the screw holes in the side pieces and the panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skids to fit on. The lower infill panel interlocks with the bottom panel. The infill panel with lock can fit on either the 2<sup>nd</sup> or 3<sup>rd</sup> panel down
3. Fix the door together by screwing through the door side pieces 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 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 the assembly making assembly easier.
4. Make sure all the angles are square and tighten all the screws.
5. 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 wheel has a collar protruding from the centre, this collar goes against the inside face of the top door panel.**
6. Slip the nylon door skid on the bottom panel (this might have been done for you). If you find the door does not engage properly with the bottom door cill, simply lower the door skid and fix using a self tapping screw
7. Turn the door over and insert the black brush draught excluders in the groove (bolt slot) in each side piece of the door. Push up to the top of the door and trim off the surplus at the bottom. Insert a nut and bolt at the bottom of each door post and tighten so that the brush will not slip down when the door is in its upright position.
8. Do not fit the door at this stage, wait until the structure is fully assembled prior to glazing, as instructed later in the booklet. The lock should be fitted to the door after the door is in position on the greenhouse.

# FITTING THE DOOR HANDLES

The handle is fitted to the infill panel on the door (choose between 1st or 2nd panel down). Position the handle centrally, and mark the hole position. Drill 7mm diameter holes (2 holes per door), then fit the handle, and secure with a nut and bolt.



DOOR HANDLE



The black draught excluder is 69" long and will require trimming to length. The interlocking infill panel and the infill panel are identical.

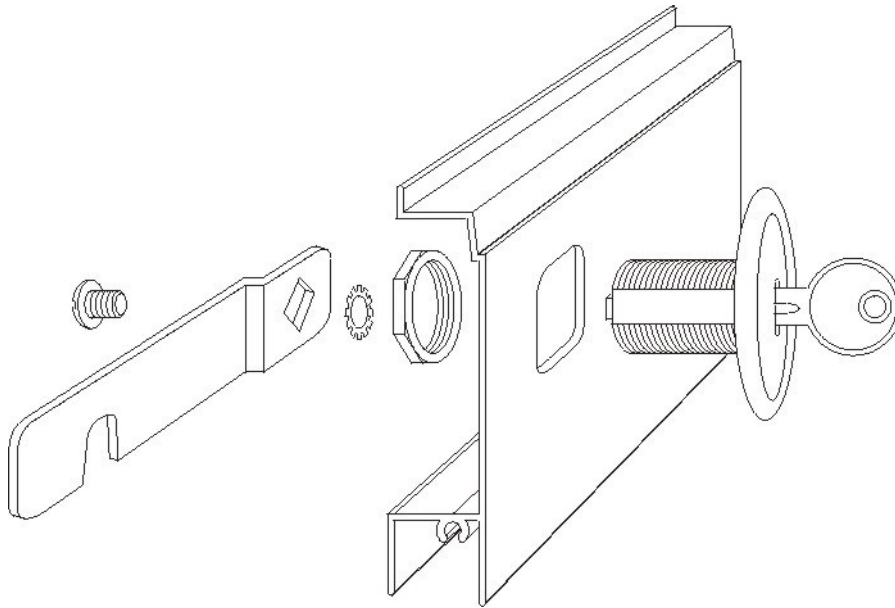


## FITTING THE DOOR LOCK

The door lock must be fitted after the door is in position (**Key Point**). Undo the ring bolt from the door lock, and insert the barrel through the hole in the panel from the outside. Reattach the ring bolt to the barrel on the inside, and tighten.

Now attach the cam lever and screw. Check before tightening that the cam moves in the correct direction to lock when the key is turned.

The key can be taken out of the lock when in the lock or unlock position.



## FITTING THE KEEP FOR THE LOCK



The cam on the lock must locate onto a door keep which is fitted to the left hand glazing bar (when viewed from outside) of the door gable end.

The keep has 2 horizontal slots on one face. Insert 2 cropped head bolts into the bolt channel of the left hand glazing bar and line up with the slots in the keep.

Close the door to the keep and adjust the height of the keep until the cam on the lock locates in the long oval slot

The picture shown is viewing the keep from the inside.

## FINISHING OFF

To prevent the door from sliding past its opening, you must fix 2 angle brackets to the door end assembly.

Insert a cropped head bolt into the bolt channel at the top of the left hand glazing bar (viewed from the inside) and fix an angle bracket as shown in the picture below.

The bracket must be fitted at the same height as the door panel so that, as the door moves left or right, the bracket prevents the door from moving too far along the top door track.

Repeat at the bottom of the door.



## ROOF VENT ASSEMBLY

The roof vent pack has 5 pieces of aluminium: and from the main box of fittings you require:

6' of glazing beading

4 nuts and bolts

2 casement stay pins

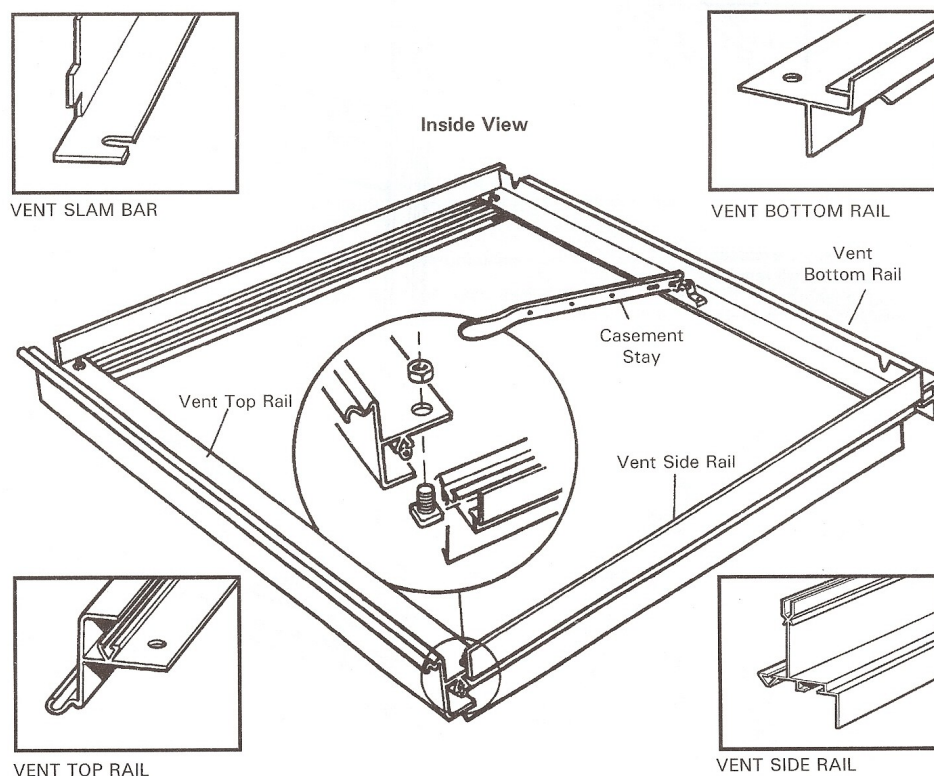
1 casement stay

6 M4 stainless steel nuts and bolts.

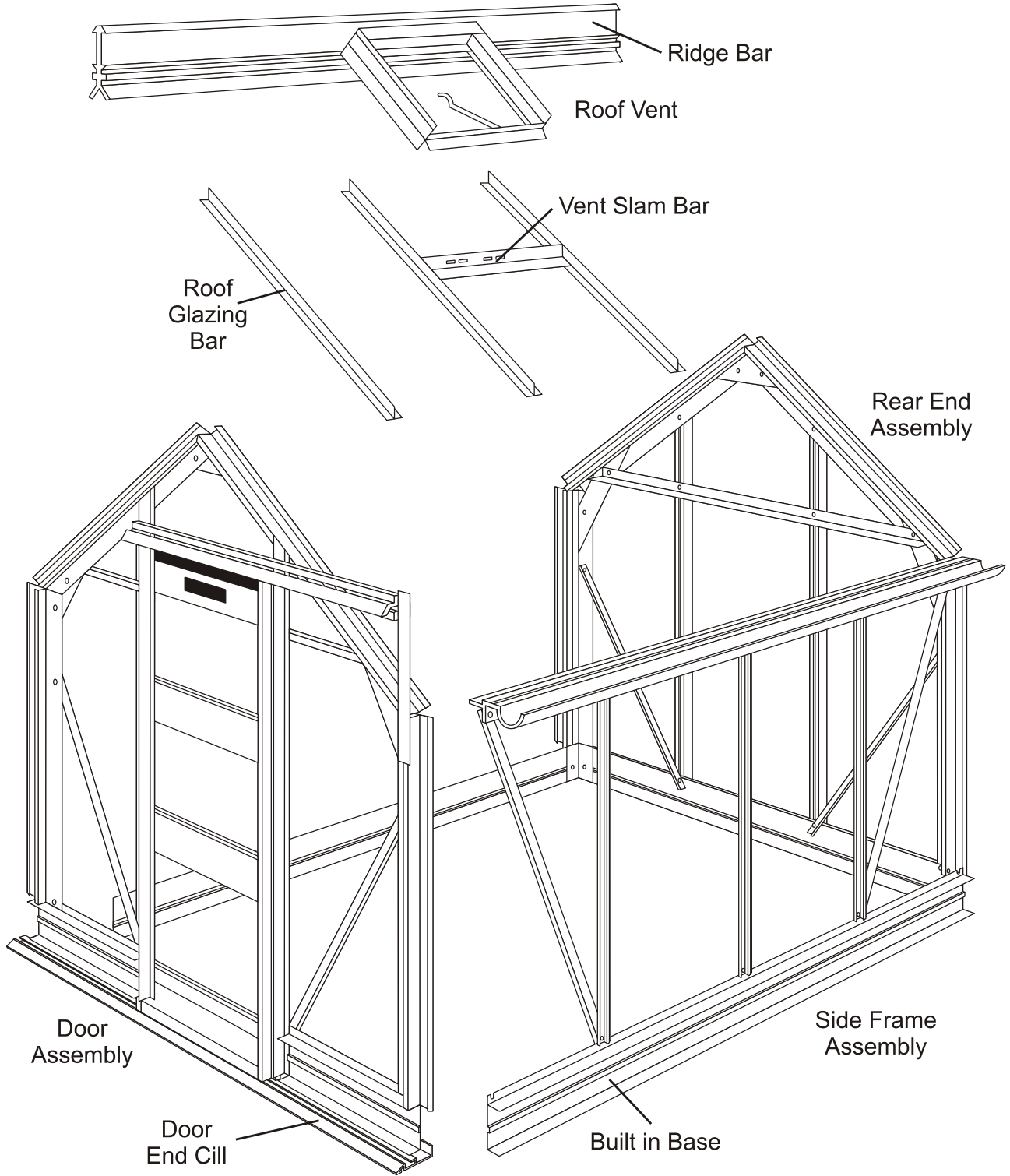
### PROCEDURE:

1. Identify the slam bar and attach the 2 stay pins to the outer side of the angle using the M4 stainless steel nuts and bolts.
2. Lay the 4 edge pieces of the vent on a level surface as though you were on the inside of the vent (with the bolt slots of the side bars uppermost and the 'v' slots of the bottom rail uppermost. The top rail is arranged in such a way that the squared off end is to the bottom and the hooked hinge uppermost).
3. 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 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.

Do the same with the other vents.



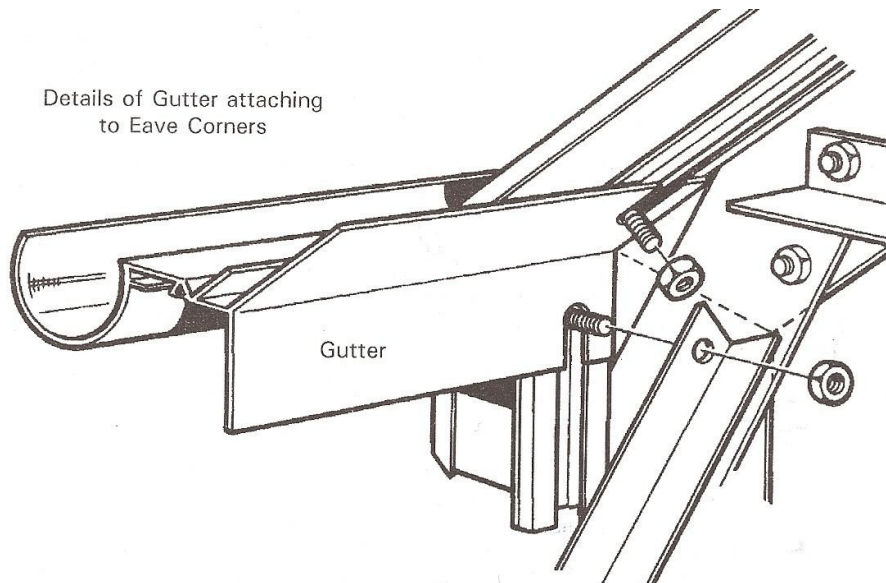
# ASSEMBLY OF GREENHOUSE UNIT



## 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 diagonal side angle 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 cill. The base anchor (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.

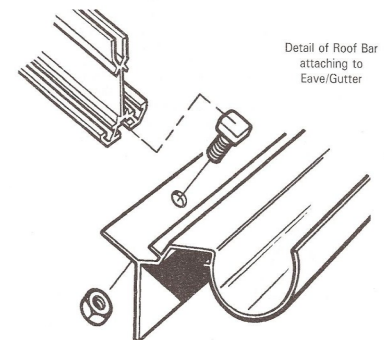
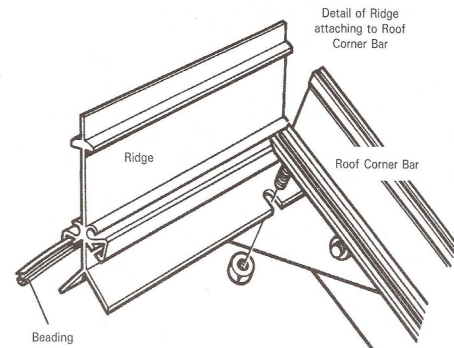
- Slide the glazing beading into the V groove of the roof glazing bars. They can now be attached to the ridge and gutter. Attach them to the ridge first by sliding a bolt into the bolt slot of the glazing bar, inserting it through the hole in the flange of the ridge. Put a nut on and tighten up. Do the same with the rest of the roof bar. N.B. remember to omit two roof bars if you have a partition, one each side.

- 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.

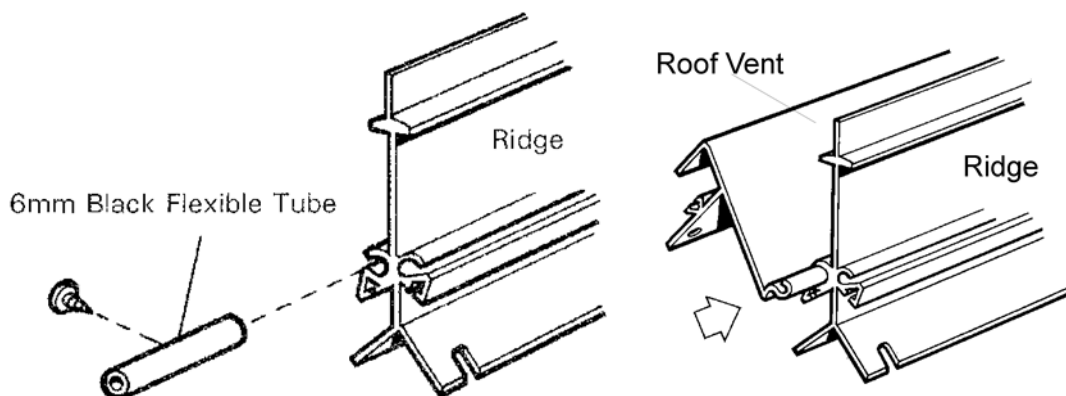
Where the vent is to be positioned put an extra one bolt per bar i.e. the vent covers two glazing bars so two extra bolts per vent. **(Key point)**. One each bar.

If your greenhouse is 8'5", 10'5" or 12'5" long you have additional cantilever bracing at the eave, 2 brackets for 8'5", 4 for the 10'5" and 6 for the 12'5".

Put an extra bolt into the 2<sup>nd</sup> glazing bar (8' model), 2<sup>nd</sup> and 3<sup>rd</sup> for 10 model, and 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> for 12' model before attaching the glazing bar to the eave. **(Key point)**.



- Before sliding the vent onto the ridge, slide a piece of vent tube into the vent hinge socket. 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. 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 under the vent and moving the slam bar down to touch the glass.

- Do not fit the door 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 (base anchor) 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 made.

### **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 and 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 dig out a couple of shovelfuls around the base of each stake. When the concrete has gone off back. Fill with the soil excavated earlier on.

## **FITTING THE DOOR TO THE STRUCTURE**

The door slides onto the frame from the left hand side.

Put the door bottom rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end glazing bars. Carefully ease the door past the glazing bar and feed in the second wheel. Push further to the right until both draught excluders are butting up to both end glazing bars.

Carefully ease the door past the two glazing bars. The door will now run quite freely. To square up the door with the spacing, undo the upper bolts holding the door track. There is a little play to facilitate “fine tuning” of the door. N.B. Sometimes the door can be a little stiff prior to glazing but once the glass has been inserted (the last job of the construction) the extra weight will make for smooth running. **(Key point).**

## 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 'C' 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.



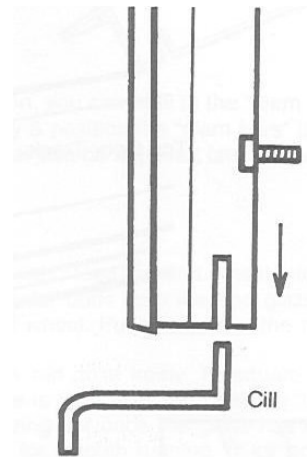
# PARTITION

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

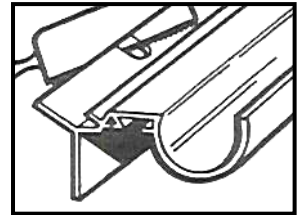
You will also require a number of fittings from the box

2 eave gusset plate  
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 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. (Don't forget to ensure that 'R' is 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 – 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 in the original door end assembly). N.B If you have a brick base you will need to trim off with a hacksaw the first 2" of the overlapping part of the cill to facilitate a snug fit.



8. Now attach the aluminium base to the 2 side base sections of the greenhouse. Firstly bolt an anchor bracket on each end of the partition base. If you are on flags or concrete cut off the surplus metal of the corner bracket. Position the base under the partition cill and attach it to the side base walls by inserting a bolt into each bolt slot of the side base. Line the corner bracket angle up with the bolt slots, put nuts on and prior to tightening move the partition base in or out to line up with the built in base cill. 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 bar.
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. For door assembly refer to double door fitting sheet, this can be found with the bag of fittings for the partition.

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

## **PARTITION DOOR TRACK**

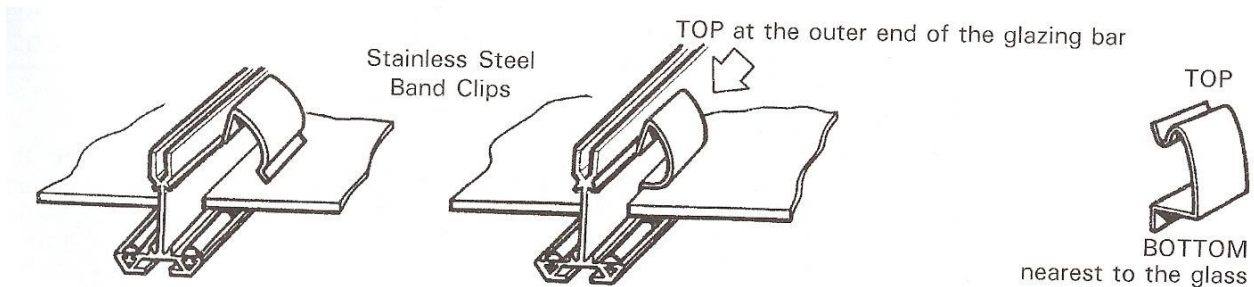
This top door track has no holes in but one bolt slot. Insert 3 bolts into the bolt slot and line them up with the 3 holes in the door track support, put the nuts on and tighten up. To position the door track into the correct position fit the partition doors onto the track and by slightly releasing the 2 nuts holding the door track support you can move the door up and down until it is correctly into the bottom guide. Having achieved the correct position of the doors you can now attach the angle bracket to the right hand roof corner bar to support the end of the door track. The door should now run smoothly. If not you can “fine tune” 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

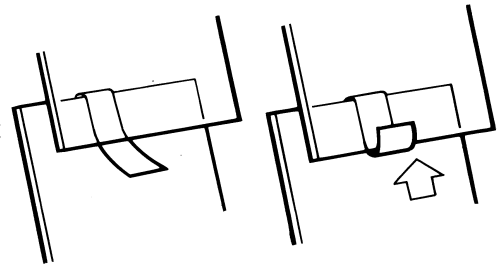
## HORTICULTURAL AND MULTI-SHEET TOUGHENED GLASS

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 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.  $\frac{3}{4}$ " (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 to hold it 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  $\frac{1}{2}$ " inch from the top of the pane. Then put 1 overlap clip in the middle. Put the top pane of glass under the gutter, and then rest it on the 2 clips at the top of the middle pane. Now put 2 clips approx 6" up from the bottom of the final piece of glass and 2 clips 4" from the top



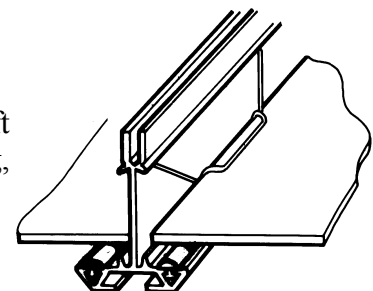
5. Repeat this all along this side of the house,, then repeat it for the roof of this side (remembering that there are only 2 panes of glass in each roof section and only 1 overlap clip, but note that you have to use two of the stainless steel wire clips on the sides of the panes nearest to the roof vent so that the vent will close correctly. (See illustration for the correct way to fit these). **(Key point).**

6. Repeat the glazing procedure 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 that, but use wire clips on the left hand edges of the panes to the right hand side of the door opening, so that the door slides open correctly. **(Key point).**

9. Finally, glaze the door.

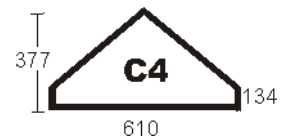
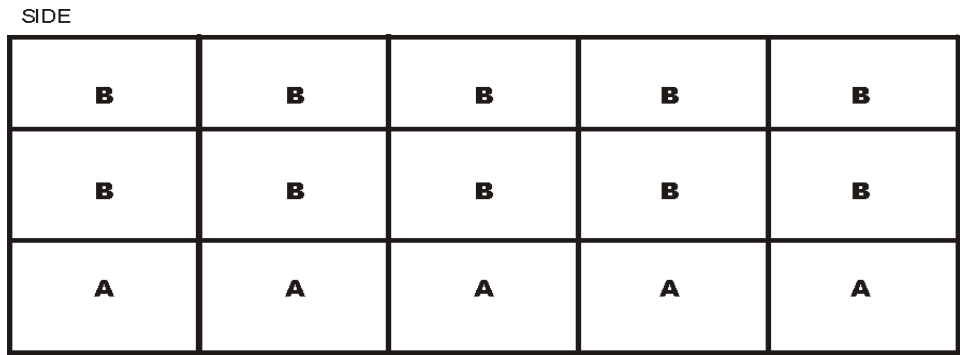
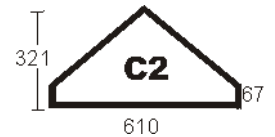
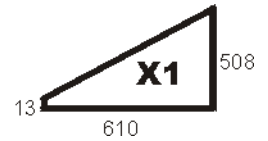
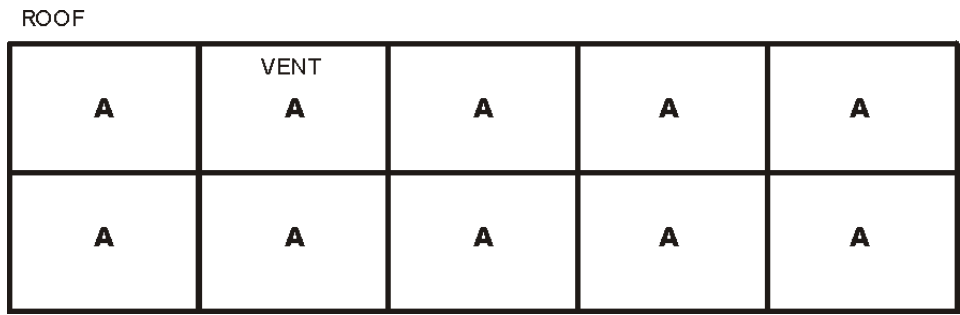
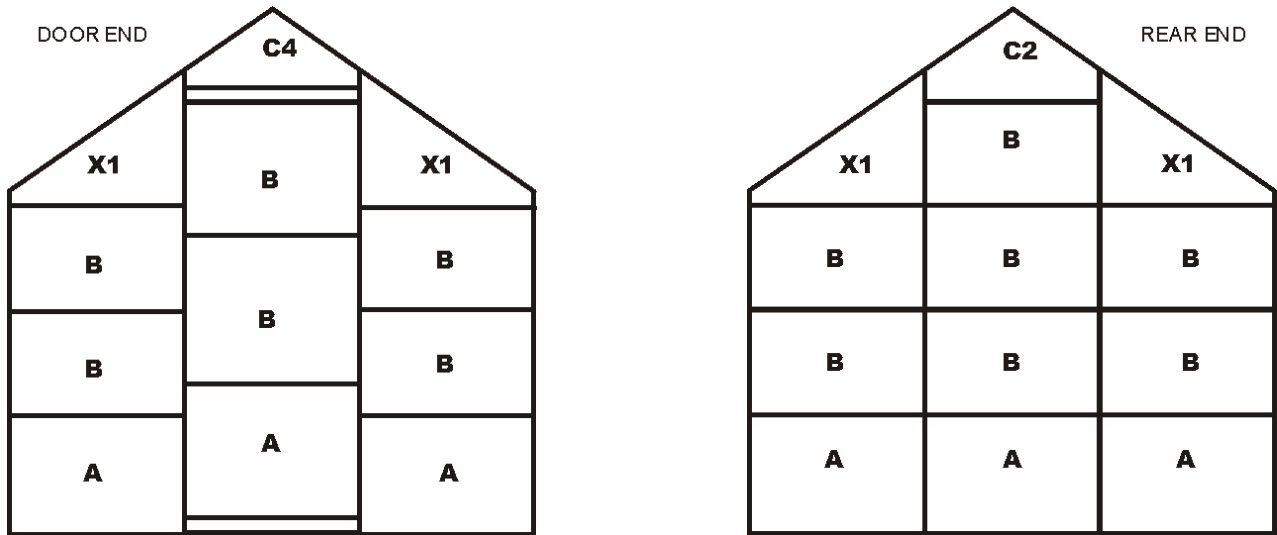


# HIGH EAVE HORTICULTURAL GLASS & MULTI-SHEET TOUGHENED GLASS

## GLASS APPLICATION:

Louvre glass: 5 @ 573 x 100 x 4mm (Louvre must be sandwiched between two panes of glass)

Glass under louvre: 1 @ 610 x 140mm



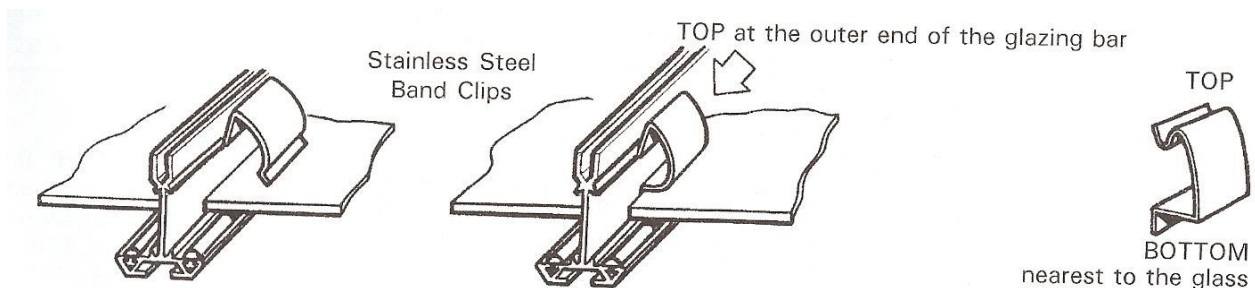
LENGTH	A (610 X 610mm)	B (610 X 457mm)	X1	C2	C4
4'5"	18	21	4	1	1
6'5"	24	25	4	1	1
8'5"	30	29	4	1	1
10'5"	36	33	4	1	1
12'6"	42	37	4	1	1

## FULL SHEET TOUGHENED GLASS (EN12150).

If you have purchased bar capping as an optional extra, see separate instructions with the capping for fitting instructions. A wire clip is used when bar capping is fitted and these clips will be found inside the bar capping box.

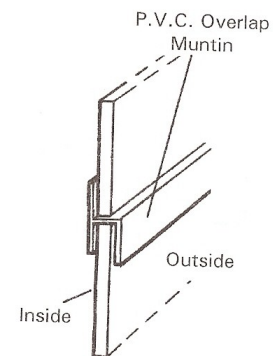
The main differences in application between the two types of glazing are:

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 – (called a muntin) – **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

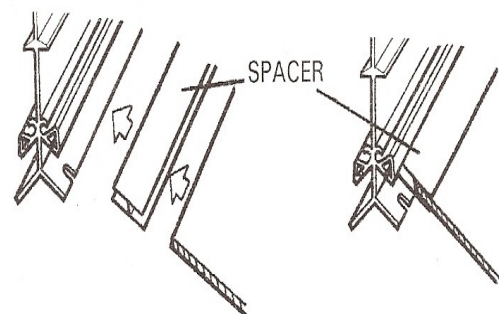


clips per large pane.

5. Put the P.V.C overlap piece (muntin) 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 'spacer'. 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).**

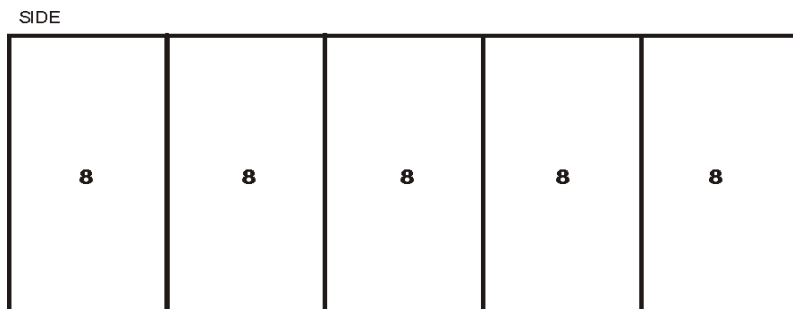
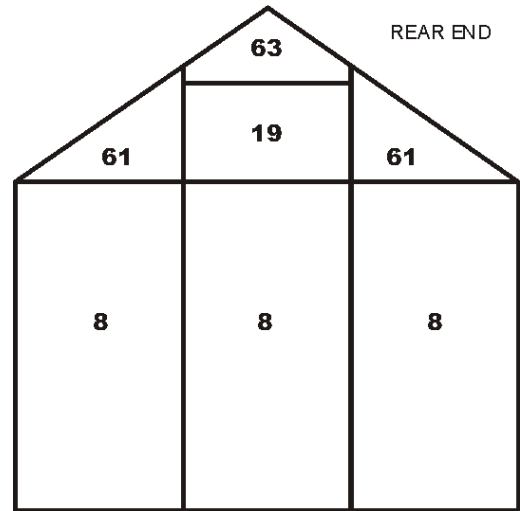
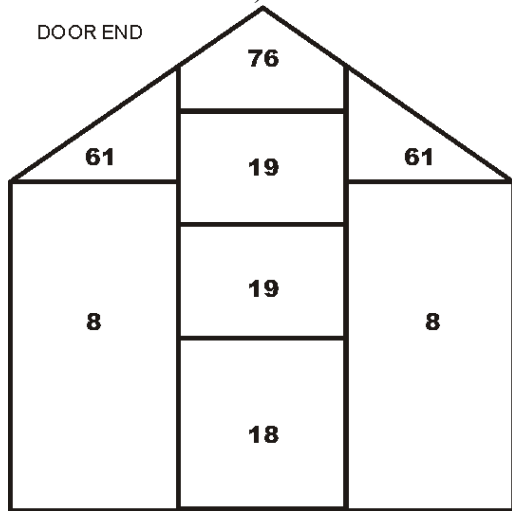
# HIGH EAVE TOUGHENED GLASS

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

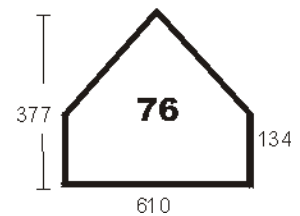
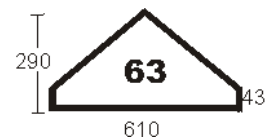
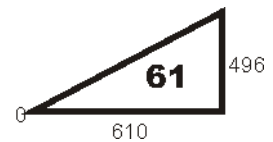
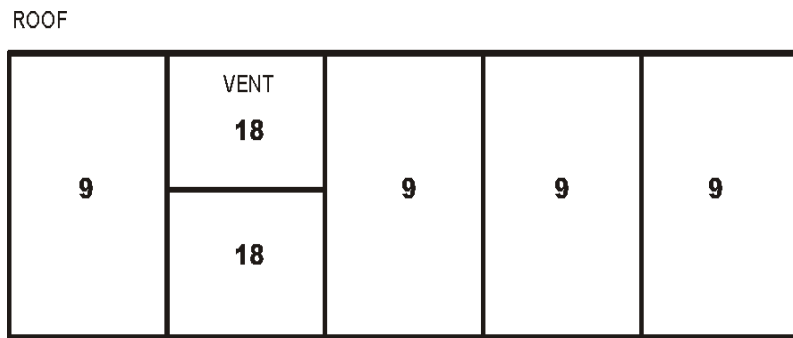
## LOUVRE WINDOW

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

- 1) Less 1 off ref 8
- 2) Plus 1 off ref '10' & 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



REF	WIDTH (mm)	HEIGHT (mm)
8	610	1489
9	610	1197
10	610	904
18	610	610
19	610	457
52	300	457



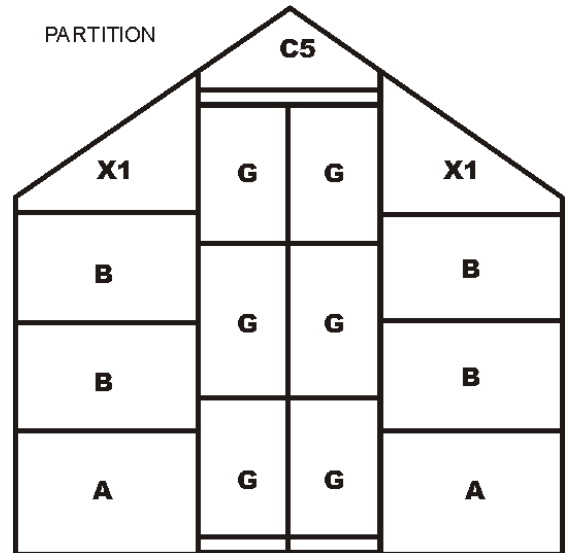
MODEL	8	9	18	19	61	63	76
4'5"	9	3	3	3	4	1	1
6'5"	11	5	3	3	4	1	1
8'5"	13	6	5	3	4	1	1
10'5"	15	8	5	3	4	1	1
12'6"	17	10	5	3	4	1	1

# PARTITION GLAZING

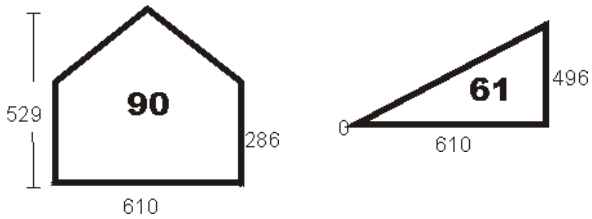
## HORTICULTURAL GLASS



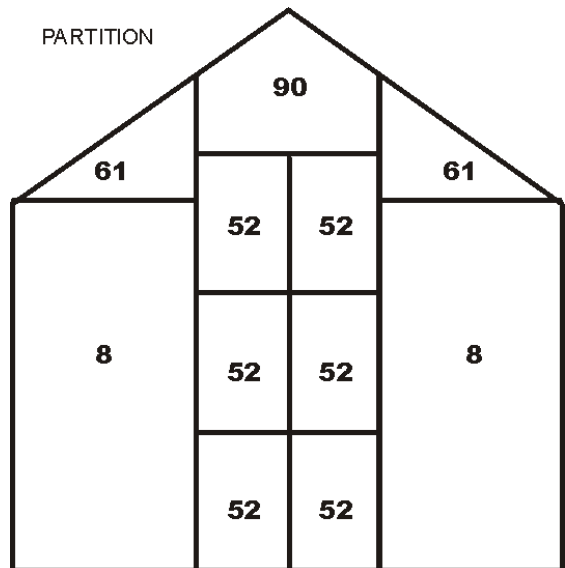
REF	WIDTH (mm)	HEIGHT (mm)
A	610	610
B	610	457
G	300	457



## TOUGHENED GLASS



REF	WIDTH (mm)	HEIGHT (mm)
8	610	1489
52	300	457



**ELITE 1407**