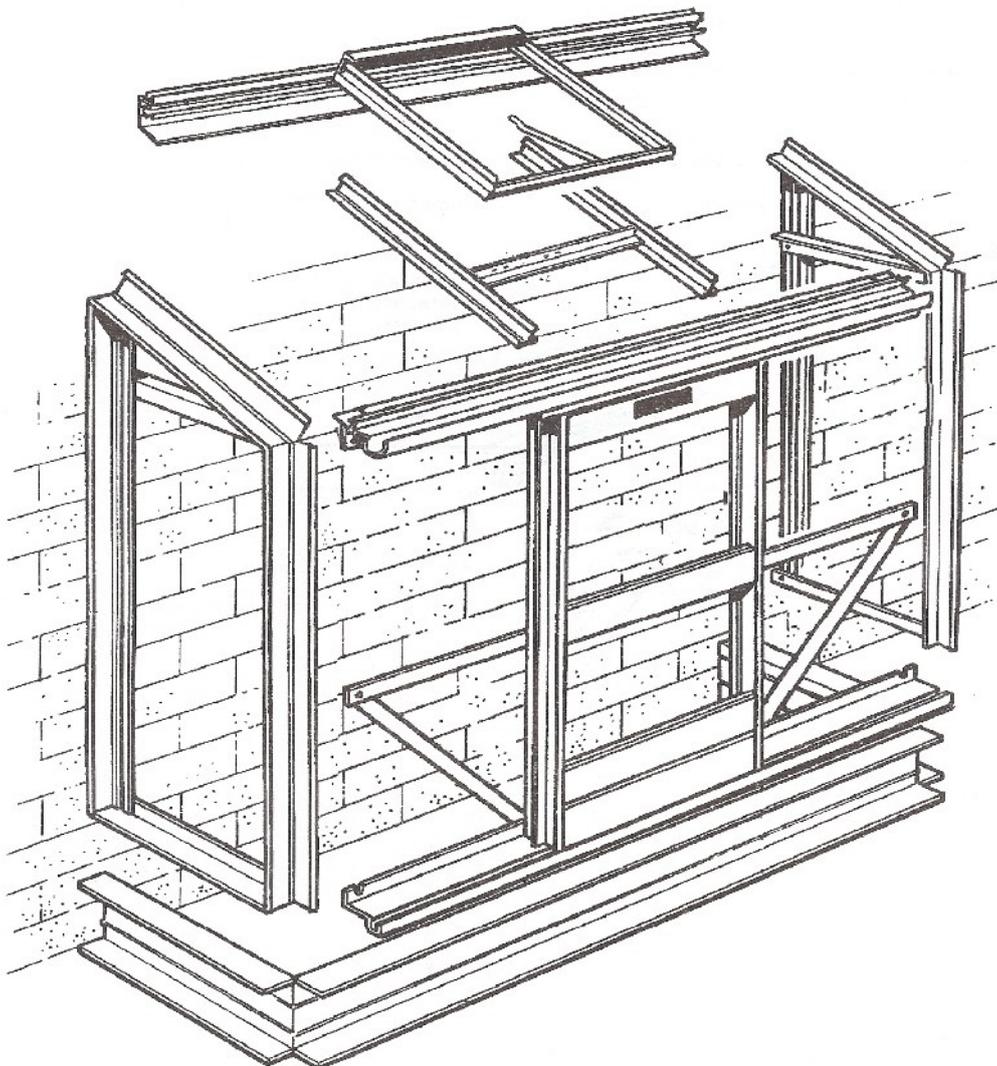




INSTRUCTIONS & ILLUSTRATIONS FOR THE
2'3" WIDE EASY GROW



ELITE GREENHOUSES LTD

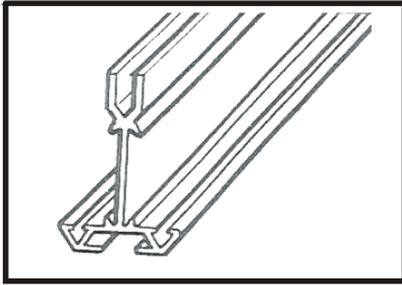
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

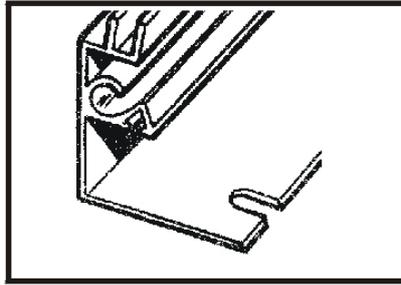
enquiries@elite-greenhouses.co.uk

www.elite-greenhouses.co.uk

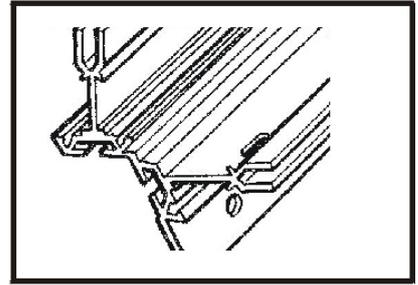
COMPONENT DRAWINGS (NOT TO SCALE)



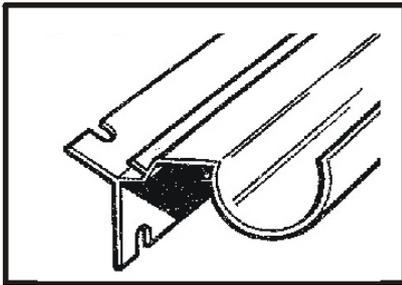
GLAZING BARS



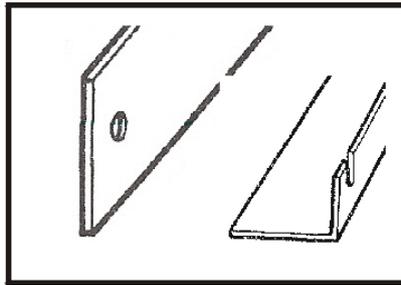
LEAN-TO RIDGE



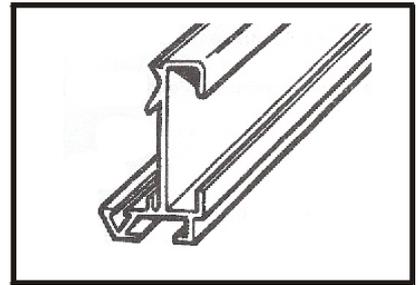
CORNER BAR



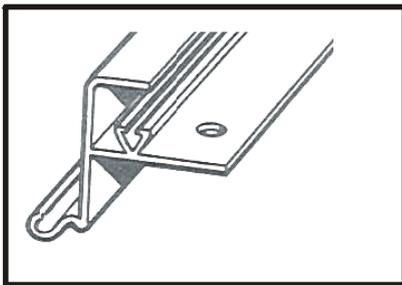
EAVES BAR/GUTTER



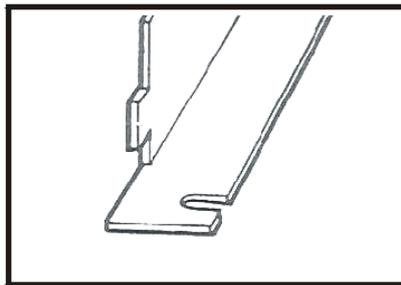
FLAT BAR & HORIZONTAL BRACE



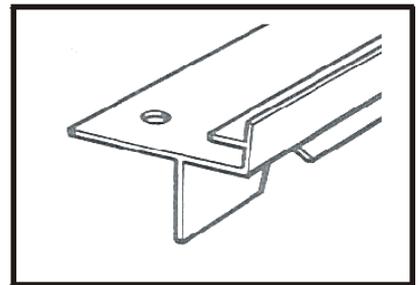
WALL BAR & DOUBLE DOOR POST



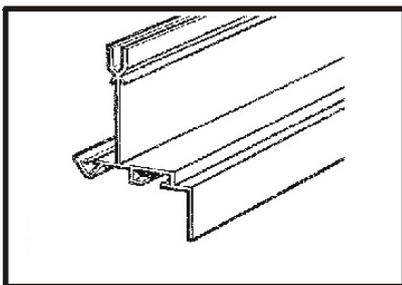
VENT TOP RAIL



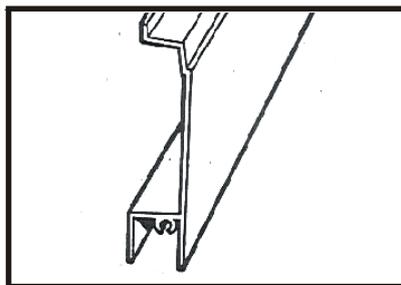
VENT SLAM BAR



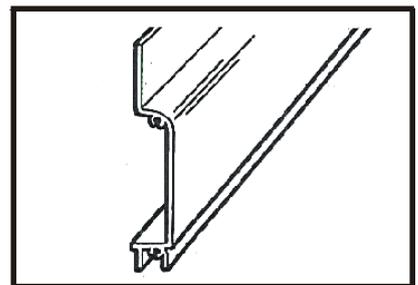
VENT BOTTOM RAIL



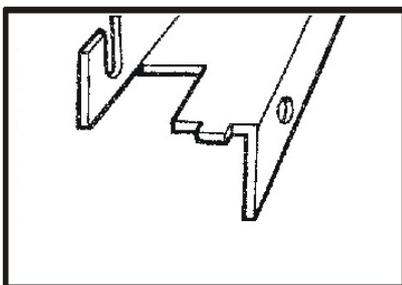
VENT SIDE RAIL



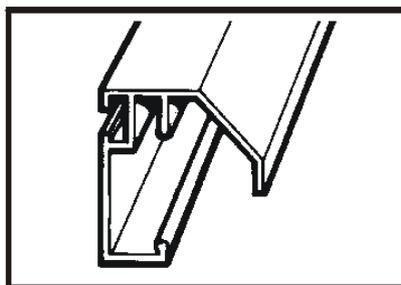
DOOR INHL PANEL



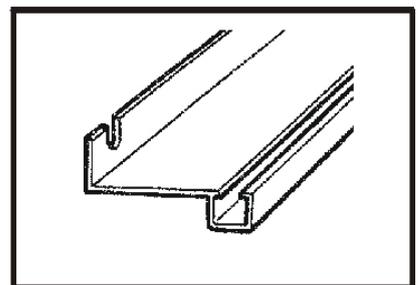
DOOR TOP/BOTTOM PANEL



DOOR TRACK SUPPORT

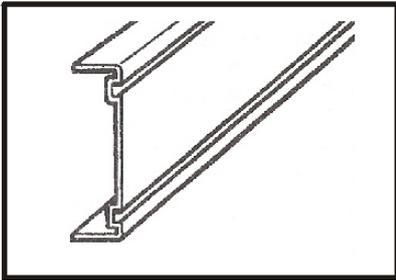


TOPDOOR TRACK

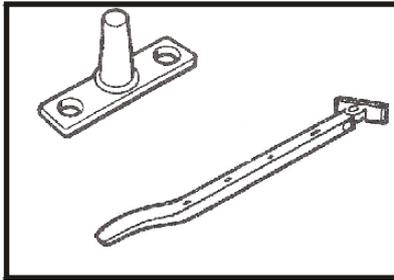


DOOR END CILL

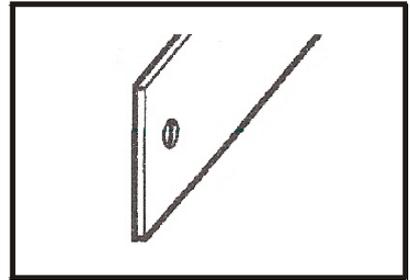
FITTINGS WITHIN THE KIT (NOT TO SCALE)



BASE (ALLOY)



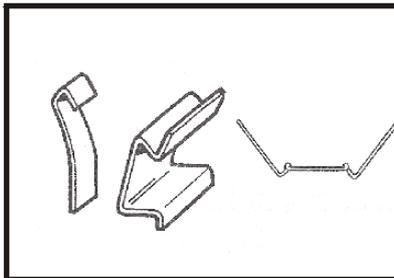
CASEMENT STAY + PINS



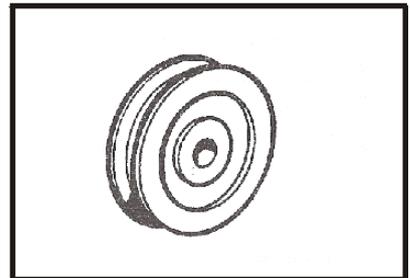
FLAT BAR



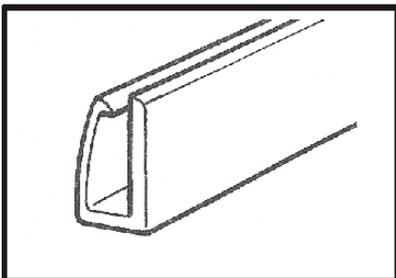
RAWLPLUGS & WOOD SCREW



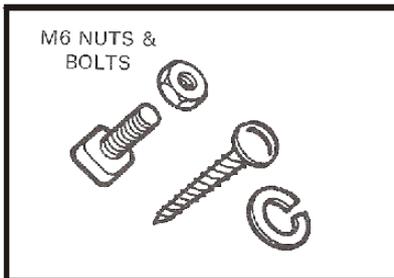
OVERLAP, SPRING + WIRE CLIPS



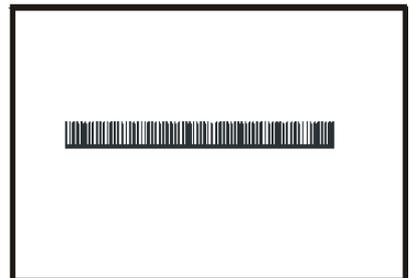
DOOR WHEEL



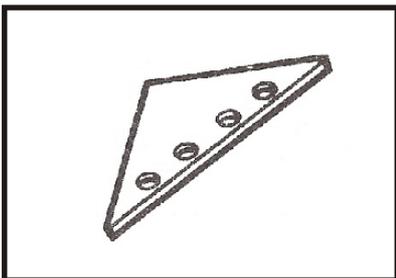
BLACK DOOR SKID



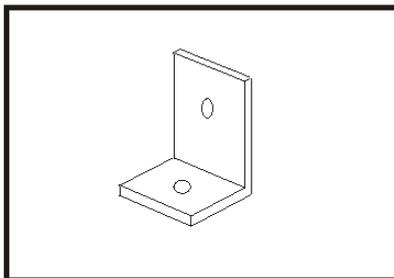
**M6 NUTS & BOLTS
SELF TAPPING SCREWS
SPRING WASHER**



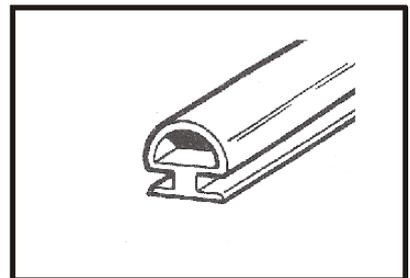
DRAUGHT EXCLUDER



EAVE GUSSET PLATES



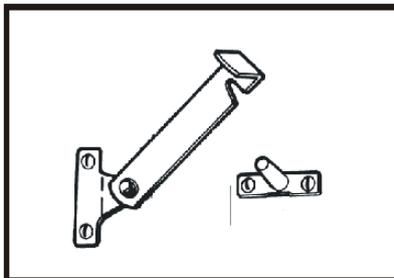
ANGLE BRACKET



NEOPRENE BEADING



SINGLE DOOR CATCH



DOUBLE DOOR CATCH



BEWARE!

PARTS LIST

		4 X 2	6 X 2	8 X 2	10 X 2	
1	50' Glazing beading	1	1	0	0	
2	100' Glazing beading	0	0	1	1	
3	Eave gusset plate	2	2	2	2	
4	Black draught excluder	2	2	2	2	
5	Top door panel	Taped together and marked door	1	1	2	2
6	Bottom door panel		1	1	2	2
7	Door infill panels		1	1	4	4
8	Door track support		1	1	1	2
9	Ridge	Taped together in extension box	1	1	1	1
10	Gutter / Eave		1	1	1	1
11	Front Cill		1	1	1	1
12	Diagonal angle brace		1	2	2	2
13	Horizontal flat bar brace		1	2	2	3
14	Left hand gable end cill	Taped together and marked end	1	1	1	1
15	Left hand gable end glazing bar		1	1	1	1
16	Left hand gable end horizontal bracing angle		1	1	1	1
17	Left hand gable end wall bar		1	1	1	1
18	Right hand gable end cill	Taped together and marked end	1	1	1	1
19	Right hand gable end glazing bar		1	1	1	1
20	Right hand gable end horizontal bracing angle		1	1	1	1
21	Right hand gable end wall bar		1	1	1	1
22	Door glazing bars—marked door	2	2	4	4	
23	Front glazing bars—marked front	1	2	2	4	
24	Corner bars—taped in two packs	4	4	4	4	
25	Short bracing angles marked door end	1	1	1	1	
26	Vent (in packs)	1	1	1	1	
27	Top door track	1	1	1	2	
28	Roof glazing bar	1	2	3	4	
29	<p>The following items can be found in the bag of fittings or additional packages. Skeleton gun, tube of silicon, rolls of foam seal, anchor brackets, stainless steel screws, plastic plugs, M10 nuts and bolts, stainless steel clips, wire clips, overlap clips, casement stays, stay pins, M4 pins, nuts and bolts, door catch, short and long self tapping screws, spring washers, door skids, door wheels and fittings.</p>					

HELPFUL HINTS

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

Do not assemble frame in high winds.

The greenhouse frame should be anchored to a permanent foundation. This will 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.

Please remember that if the lean-to is being situated over an entrance to a house or dwelling, safety glass to eave level MUST be used. Horticultural standard is not acceptable in that situation.

Do not place the structure in vulnerable locations such as under trees, playing areas, etc.

Children should not play near glass greenhouses.

REMEMBER glass is fragile so please handle with care at all times, using gloves and eye protection where appropriate. (Failure to observe these rules could result in personal injury or property damage).

Take your time, follow the plan and observe the safety code.

If you have a painted model you will find a number of small holes at the top/bottom of some of the bars. These are jig holes for the painting process and form no part of the construction.

SAFETY

This is a safety alert symbol. It is used in this manual to alert you to potential hazards. Whenever you see this symbol, read and check the safety message that follows it. Failure to check the safety message could result in personal injury or property damage.



PRE-ASSEMBLY

Building regulations may be required for this greenhouse. Because local building codes vary, be sure to check before setting up the greenhouse.

In deciding the location of the greenhouse, consider the following:

Make sure that you do not locate the greenhouse beneath a tree where branches could fall and damage it.

Do not position the greenhouse where snow and ice could slide off a roof onto the greenhouse.

Make sure that the greenhouse is positioned so that it is not subject to high winds.

Check that the greenhouse will not interfere with electrical wires.

Locate the greenhouse so that it is not hidden from view to avoid accidents which could result from running into the greenhouse or hitting it with a vehicle.

ASSEMBLY AND INSTALLATION

The ground should not be frozen when the greenhouse is secured to its base.

Have an assistant help with the assembly and with moving the assembled greenhouse onto its base. When using a step ladder during assembly, follow these safety considerations.

Always inspect the ladder before using it.

Before climbing the ladder, be sure both rails are on solid flooring.

Before mounting a step ladder, be sure it is fully opened and locked, and all four legs are firmly supported.

Do not leave the tools on top of a step ladder unless it is equipped with a special tool holder.

Edges of glass panes may be sharp. Wear thick gloves when handling glass.

Safety goggles should be worn during construction.

Make sure that the assembled greenhouse is securely attached to its base and to the building.

- 1. Do not allow children to play near, or climb on top of the greenhouse.**
- 2. Be extremely careful when using agricultural chemicals (insecticides, fertilizers, fungicides etc) in the greenhouse. Do not use any chemicals which call for outdoor use only.**
- 3. Read and carefully follow all instructions provided by the chemical manufacturer when using chemicals in the greenhouse.**
- 4. Do not push or lean on the glass panels.**
- 5. Use extra care when moving heavy or awkward objects such as tables, poles etc., near the greenhouse.**
- 6. When operating a lawn mower near the greenhouse, make sure that clippings are not discharged toward the greenhouse. The mower could discharge a stone or other objects through a glass pane.**

7. Use hand shears rather than a powered string trimmer when trimming glass around the base of the greenhouse.
8. Make sure that the catch at the top of the door is latched when no one is in the greenhouse.
9. Do not latch the door when anyone is inside the greenhouse.
10. Be aware of the increased temperature inside the greenhouse on a sunny day and equip the greenhouse with a thermometer.

GENERAL

1. Do not keep pets or other animals in the greenhouse.
2. Do not store flammable liquids in the greenhouse.
3. Do not exert excessive pressure when cleaning window panes.
4. When replacing broken glass always use gloves and eye protection.

INSTALLATION INSTRUCTIONS FOR “EASY GRO” MINI LEAN-TO

The contents of this carton are divided up into different frame assemblies that collectively make up the completed unit. We manufacture as standard 4', 6', 8' and 10' units however we can manufacture buildings up to 20' long on request, the construction is similar for these models but they have a different door configuration. For the purposes of this plan we have used the 6' x 2' as our basis.

It is recommended that each frame is completed before moving onto the next. (**Key point**).

The contents are as follows:

1. Left hand gable
2. Right hand gable
3. Front
4. Door(s) (4' + 6' = single, 8' = double and 10' = 2 x single)
5. Roof
6. Roof vents
7. Bag of fittings
8. Coil of neoprene beading
9. Two lengths black draught excluder
10. Coil of paper backed sponge sealant
11. Tube of sealant and skeleton gun

Tools needed:

- 1 spanner (10mm)
- 1 flat head screwdriver
- 1 drill head screwdriver
- 1 drill and masonry bit
- 1 tape measure

NB Base preparation will be your first task.

Alloy base – see page 10

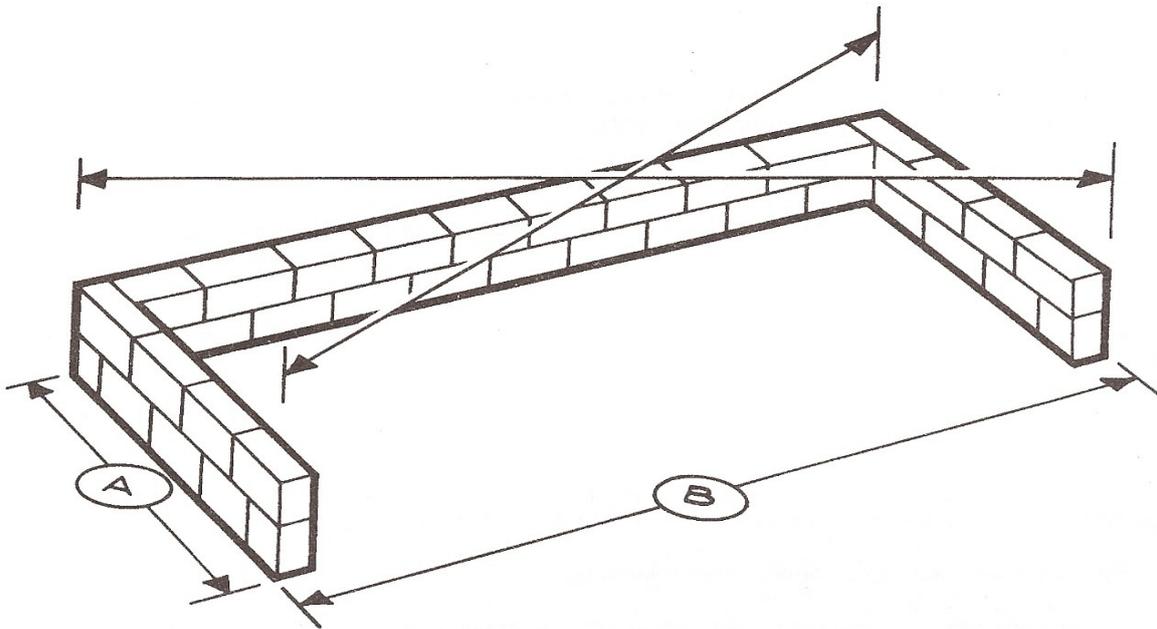
Brick base – see page 9

ELITE GREENHOUSES BASE DIMENSION

For brick, block, concrete and timber

The dimensions given below must be used to locate the position of your lean-to-greenhouse or to lay corner footings if they are needed.

If a brick, concrete or timber base is to be laid, construct it as shown ensuring that dimensions A & B are **not exceeded** as these are the precise outside measurements enabling the cill to overhang the edges. ENSURE that the base is square by measuring across the corners, only when equal is it square. Check the level using a builders spirit level.



If you have a patio floor you can lay the bricks directly on top of the flags provided they have a proper foundation. If they don't have hard standing underneath you may need to lift the outer flags and insert some firmer material such as aggregate before laying the bricks.

Precise measurements are :

4 x 2 (nominal) A = 0.670m B = 1.346m Diagonal = 1.504m
6 x 2 (nominal) A = 0.670m B = 1.964m Diagonal = 2.067m
8 x 2 (nominal) A = 0.670m B = 2.582m Diagonal = 2.638m
10 x 2 (nominal) A = 0.670m B = 3.200m Diagonal = 3.269m

ALLOY BASE ASSEMBLY

For brick base see page 9.

4' model = 1 at 1.258m + 2 at 0.640m + 2 base legs

6' model = 1 at 1.880m + 2 at 0.640m + 2 base legs

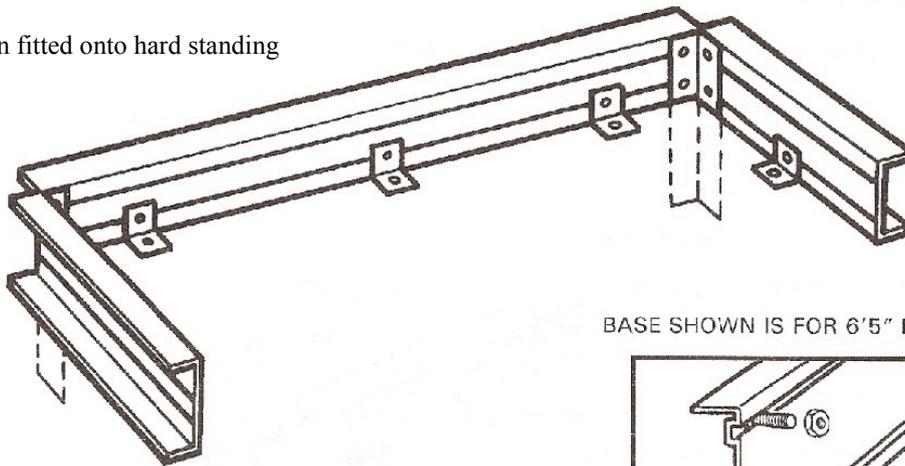
8' model = 1 at 2.504m + 2 at 0.640m + 2 base legs

10' model = 1 at 3.110m + 2 at 0.640m + 2 base legs

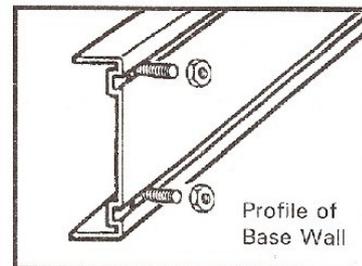
N.B. The holes in the top flange of the base are drilled when the greenhouse has been erected and put onto the base.

Having assembled the base, proceed to the greenhouse construction.

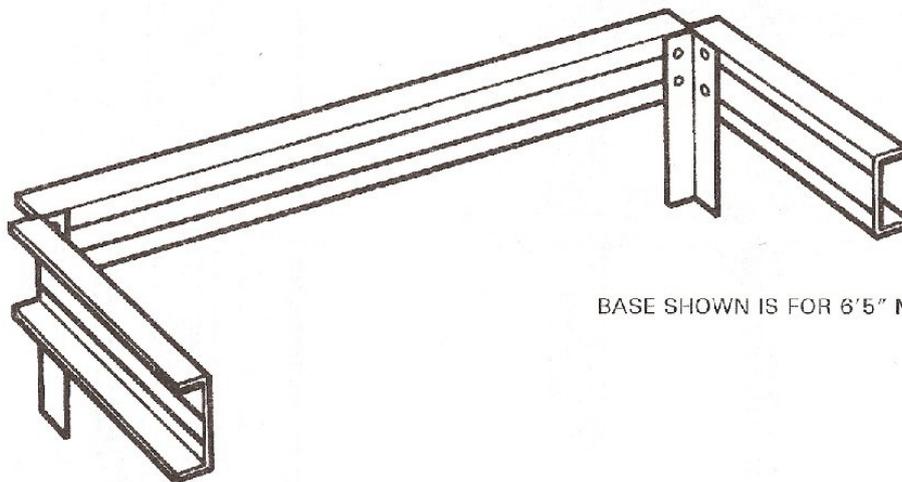
When fitted onto hard standing



BASE SHOWN IS FOR 6'5" MODEL



Alloy base (when fitted to soil floor).



BASE SHOWN IS FOR 6'5" MODEL

If you have bought an alloy base to go with the house, start with this.

1. Lay the three base sections on level ground in a rectangle with the bolt channels facing inward and the flanges facing outwards, remembering to put the **wider** of the two flanges towards the floor. **(Key point)**.
2. Slide a bolt into each end of the bolt channels in each section (i.e four bolts to each).
IMPORTANT: If you plan to erect the greenhouse on a patio or flagged area, you need to insert some extra bolts in the lower channels. See 14 below.
3. Attach a base leg (approx. 400mm long) to the first corner by pushing the bolts through the holes in the base leg and securing with a nut. You do not need to fasten them tightly at this stage.
4. Repeat this with the other corner.
5. Ensure that the frame is square by measuring from corner to corner. Only when the diagonals are equal is the frame square. Tighten all the nuts **(Key point)**.
6. Get someone to help you carry the base frame to the place where you want the greenhouse to be.
- 7
 - a) If you are erecting on soil, **mark where the corners will be** and follow points 8 to 11 below.
 - b) **If you are putting on a patio or flagged area, jump to point 12***
8. Lift the base frame clear of the site and dig a hole at each corner, sufficient in depth to take the base legs.
9. With your assistant ensure the base legs are pointing downward, carry it to the site of the greenhouse and place it in position.
10. Ensure that it is still square by checking the diagonals again, and then that it is level using a spirit level. When you are sure that both are correct give the nuts a final tightening.
11. Skip the next points and go to greenhouse assembly.

N.B. It is advisable to concrete the corner stakes after you have erected the greenhouse. If you do it before and are slightly out of square you cannot make any adjustments!

12. *You must ensure that your patio is level. If it is not, you must level it up first or the greenhouse will not be level and will not glaze properly.
13. Cut off the surplus portions of the base legs, level with the patio.
14. The number of extra bolts you need to insert into the bottom channel of each side and end, as mentioned in point 2 above depends upon the length of the greenhouse. For the 6' x 2' model insert 1 bolt into the bottom channel on each 2' base piece and 3 equally spaced on the 6' section. Add 1 extra bolt to the long side for every additional 2'. Attach the angle brackets to the lower bolt channel of the base, these will be used later to anchor the structure to the patio.
15. Check that the base is still square by measuring the diagonals again, and level by using a spirit level.
16. Space the bolts in the sides and ends at equal distances and place the brackets on them with a nut.

Do not anchor down at this stage (Key point).

Beware of sharp edges on the corners. Do not over tighten nuts as the bolts could snap.

RIGHT HAND GABLE

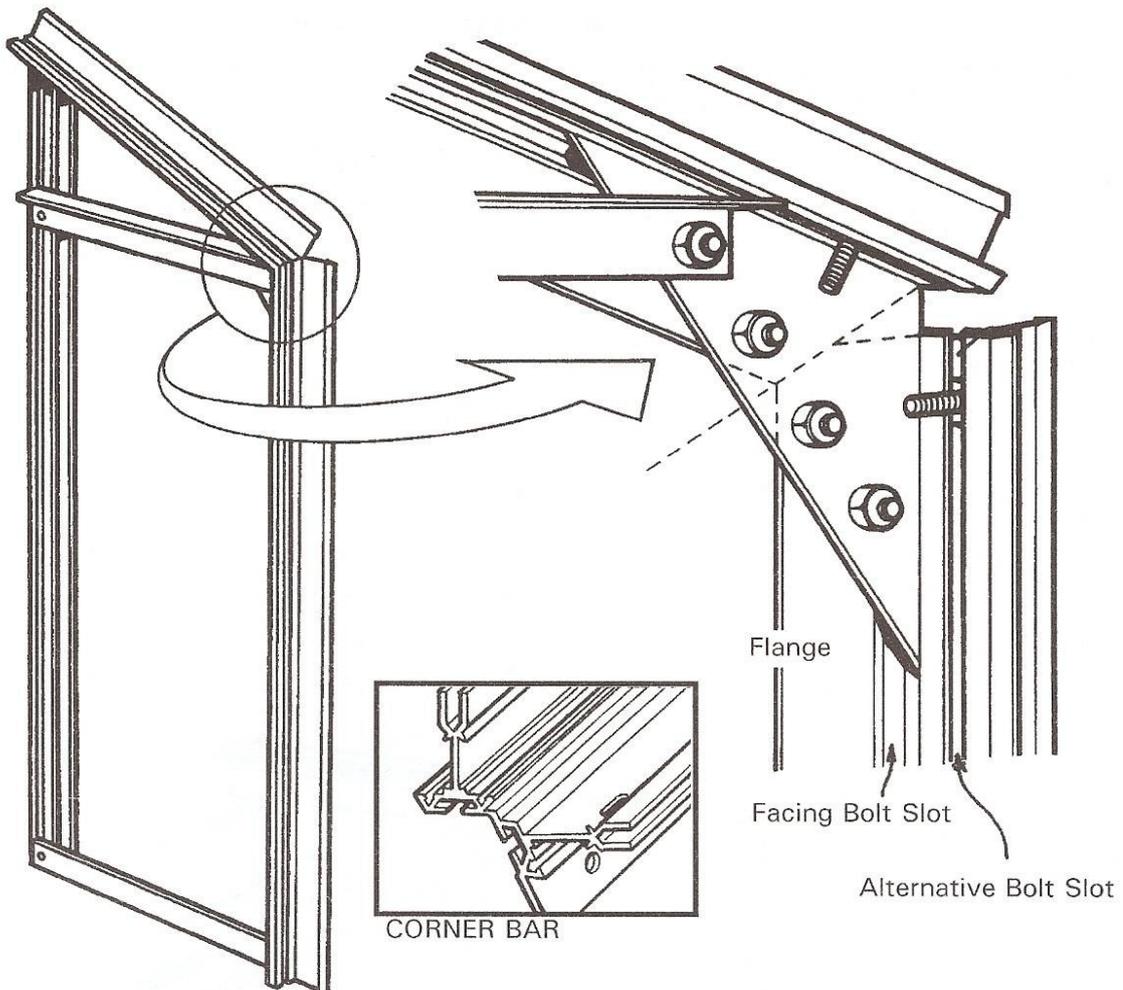
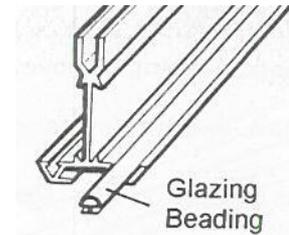
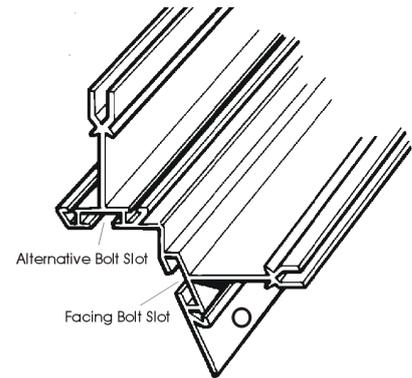
(When viewed from inside)

In the pack marked "right hand gable" there are five pieces of alloy.

1. Roof corner bar
2. Side corner bar
3. Wall bar
4. Bottom cill
5. Bracing angle

From the main box and bag of fittings you also require:

1. Nuts and bolts, 12 in total
2. One eave gusset plate
3. Glazing beading 20m approx.



PROCEDURE

1. Insert the glazing beading into the two corner bars and wall bar.
N.B. Do not put any beading in the middle groove of the corner bar. **(Key point)**.
2. Lay the 5 parts out on a flat surface with the inside of each bar facing upwards, i.e. with the cill facing downwards and bolt slots of two corner bars facing inwards. The bolt slot nearest the flange is facing upwards, i.e. the facing bolt slot, see diagram. **(Key point)**. Firstly decide which way round the corner bars go. The shorter roof corner bar is mitred at both ends. One end has severe mitre and this goes to the eave. The other end has slight mitre and this goes towards the ridge. The side corner bar is mitred at 1 end only. This goes to the top.
3. Starting at the point where the roof and side corner bars meet, slide three bolts into the alternative bolt slots of both bars (see diagram) and finger tip tighten the nuts, locating them 2” from each end of either bar and one in the middle. These will be used later during the general assembly to attach the ridge gutter and cills to the Left and Right Hand gables. **(Key point)**.
4. Secure the eave gusset plate to the two corner bars by inserting a bolt into the facing or second bolt slot (i.e. the bolt slot nearest to the flange and at 90° to the “alternative” bolt slot) of the roof corner bar). Place the gusset plate over the bolt, put a second bolt through the flange and the plate having first lined up the two holes, put the nuts on and **finger tip tighten**. Do the same sequence with the side corner bar. The two corner bars are now connected. The horizontal angle attaches to the upper bolt of the gusset plate. **(Key point)**.
5. Insert two bolts into the bolt slot of the wall bar and push the last one through the hole in the flange at the top of the roof corner bar, place a nut on the bolt and finger tip tighten. (The second bolt will be used to attach the horizontal brace to the wall bar).
6. The bottom cill angle can now be bolted to the side corner bar and wall bar by inserting a bolt into the bolt slots and placing the angle over the bolts, finger tip tighten the two nuts.
7. The horizontal angle can now be attached to the wall bar by utilising the extra bolt inserted into the wall bar in step 5.
8. Having successfully completed the above, ensure that all joints are tight and neat and that the frame is square, then tighten the nuts with a spanner. **(Key point)**.

N.B. The roof corner bar sits slightly on top of the side corner bar. Please ensure that the edges of the flange line up neatly as per the above drawing.

LEFT HAND GABLE

The parts, format and procedure are identical to the right hand gable. Please re-read carefully to complete the left hand gable.

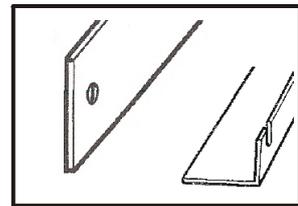
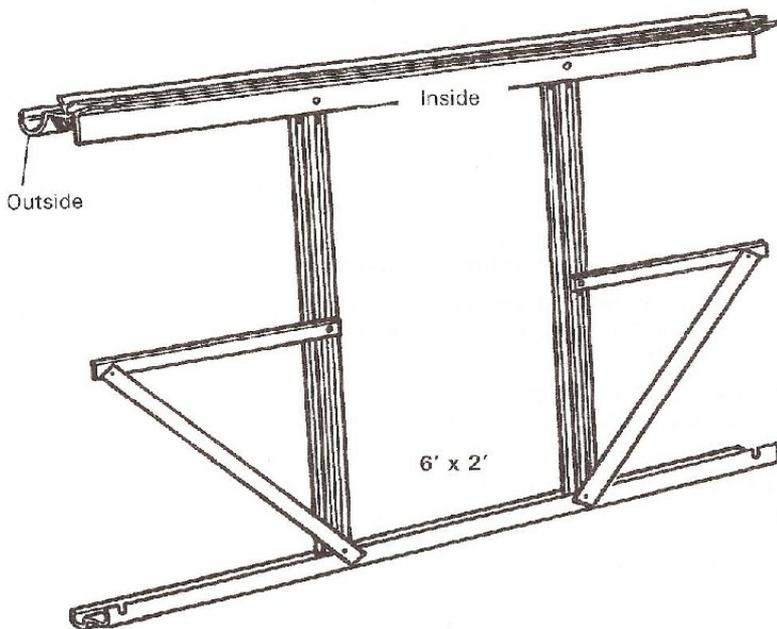
FRONT FRAME

Parts required:

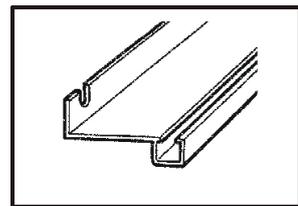
	4' x 2'	6' x 2'	8' x 2'	10' x 2'
1. Eave/gutter bar	1	1	1	1
2. Cill	1	1	1	1
3. Glazing bars	1	2	2	4
4. Angles	1	2	2	2
5. Flat bars	1	2	2	3

You will require from the main box and bag of fittings:

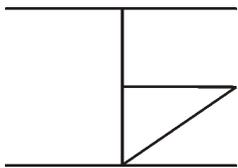
1. Nuts and bolts
2. Glazing beading



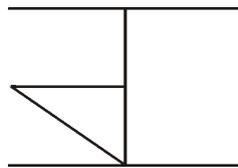
FLAT BAR & HORIZONTAL BRACE



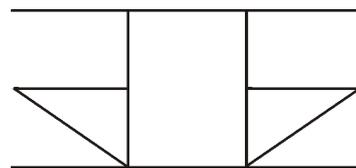
DOOR END CILL



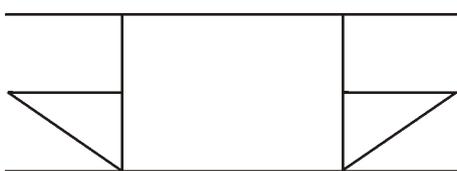
4' with left hand door



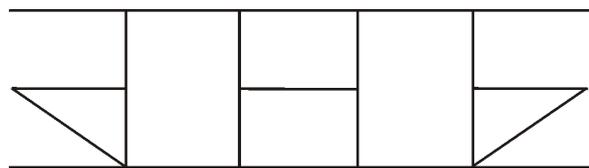
4' with right hand door



6'



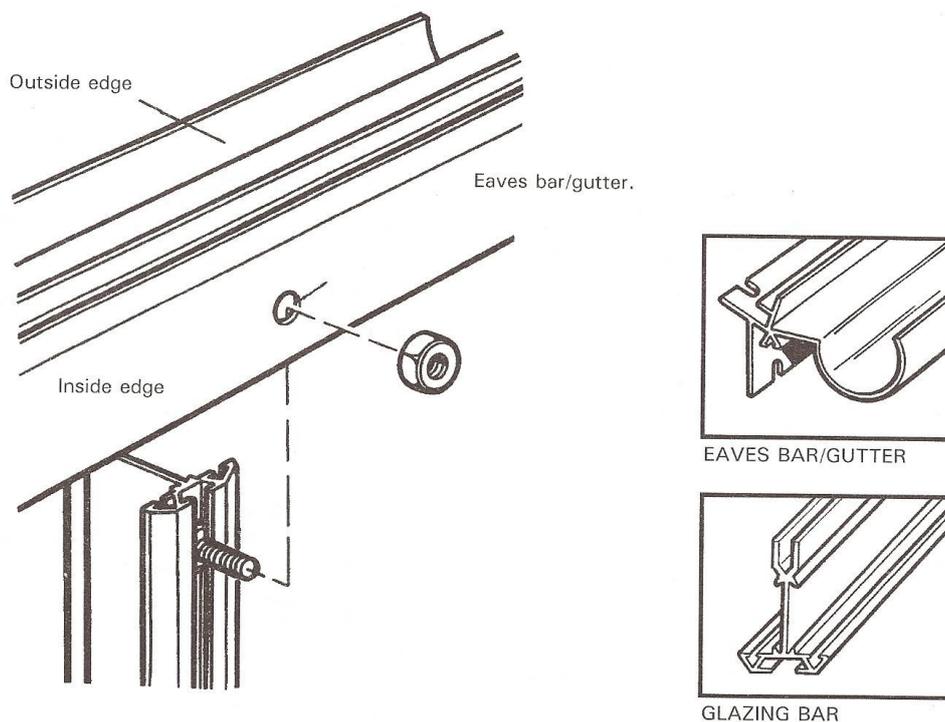
8'



10'

PROCEDURE

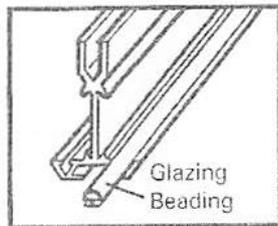
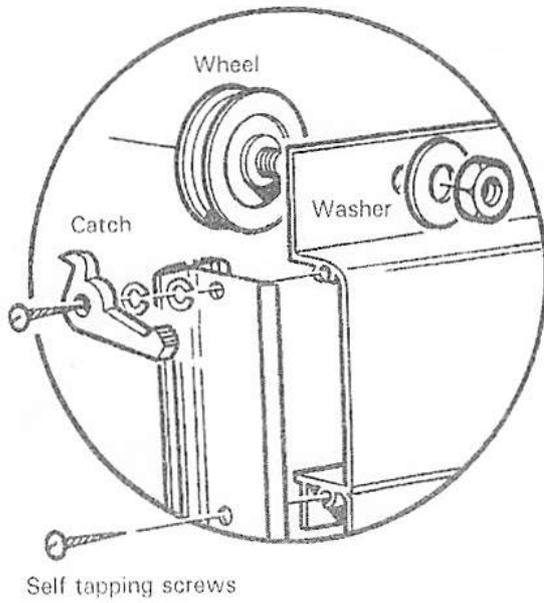
1. Lay out the component parts on a flat surface, with the inside of the bars uppermost, the gutter and cill are facing the ground. **(Key point)**.
2. Thread the glazing beading into the glazing bars and the gutter. It is not required on the inside groove where a door will be situated.
3. Insert 3 bolts into each glazing bar and attach the gutter/eave to the glazing bar as illustrated below.
4. The cill will bolt to the bottom of the glazing bar in a similar manner. Before securing the nut onto the bottom bolt, place the diagonal braces over the bolt. This bracing angle bar must be arranged so that the inside of the angles are facing inwards. **(Key point)**.
5. Attach the short flat bar pieces (utilising the bolts that were inserted and located in the middle – see No.3 above) to the middle of glazing bars, ensuring that they are parallel to the eave/gutter and cill. With the 4' x 2' model, you must decide if the door is going in the left or right hand bay. The flat bar and angle will go in to the opposite bay.
6. Ensure that all joints are tight and the frame is square before tightening the nuts.



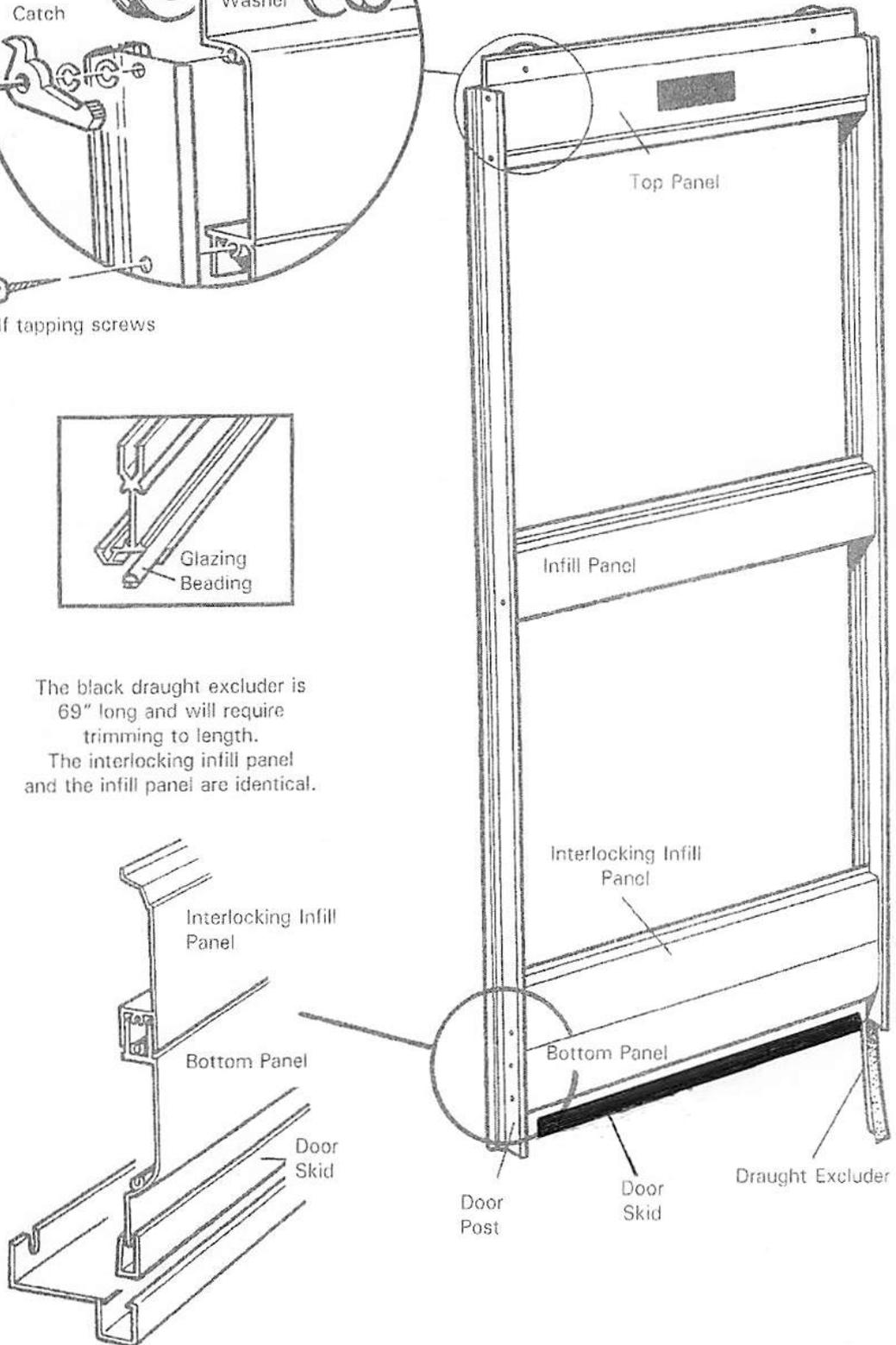
BEWARE OF
SHARP EDGES!

The front frame is now complete,

SINGLE DOOR FRAME ASSEMBLY



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



DOOR FRAME ASSEMBLY

Components consist of:

2 door glazing bars

2 infill panels

2 top & bottom door panels

From the main bag of fittings you require:

2 door wheels

1 clip on nylon door skid (this might already be fitted prior to delivery)

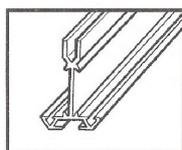
2 lengths of black brush draught excluders

Door catch, self tapping screws and spring washers

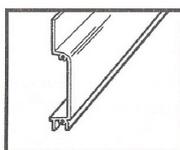
10ft neoprene beading

The 8' long buildings has a double door (see next page) and the 10' long building has 2 single doors in bays 2 and 4.

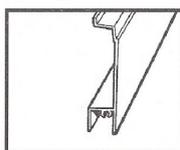
1. Place the two side door glazing bars on a level surface two feet apart with the bolt slots facing **downwards**. The top of each side piece has two screw holes in it, the bottom has three. Insert the glazing beading into the **inside** grooves of both bars. (**Key point**).
2. Place the top, bottom and two infill panels in position as shown by the position of the screw holes in the side pieces of 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 locks on to the bottom panel.
3. Fix the door together by screwing through the door side pieces into the screw eyes in the door with the no.8 half-inch self-tapping screws. **DO NOT** fix the top left hand side screw yet. 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 panel before assembling the doors. Alternatively, you could insert the screws into the screw eyes of the door panels before assembling the doors, this would have the effect of pre-self tapping the panels prior to assembly making assembly easier.
4. Fix the top left hand side with the longer screw provided. Put the screw through the door catch so that the serrated part is facing outwards and upwards. Next slip two spring washers on to the screw, and then fix the screw through the side of the door and into the top panel. (**Key point**).
5. Make sure all the angles are square and tighten all screws.
6. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door). Each wheel has a protruding collar on one side. This collar goes up against the inside flange of the top door panel. 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 normal nuts in general assembly. The wheel will revolve freely because it has ball bearings in it.
7. Slip the nylon door skid on the bottom panel.
8. 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 surplus at the bottom. Slide a bolt into the bottom of each door post and put a nut on and tighten. This will prevent the draught extruder from slipping down when the door is in its upright position.
9. Do not fit the door at this stage, see later page no 27 for this detail.



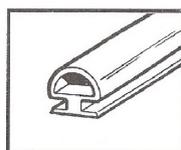
END GLAZING BARS AND DOOR POSTS



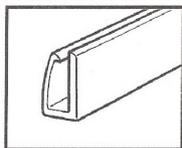
DOOR TOP PANEL



DOOR INFILL PANEL



GLAZING BEADING



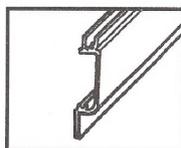
BLACK DOOR SKID



BLACK DRAUGHT EXCLUDER



BEWARE OF SHARP EDGES!

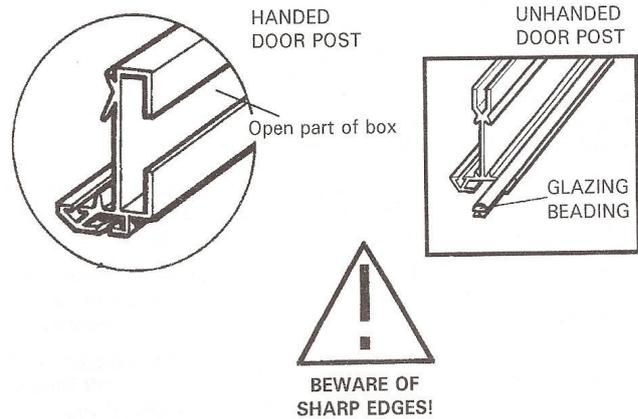


DOOR BOTTOM PANEL

DOUBLE DOOR FRAME ASSEMBLY

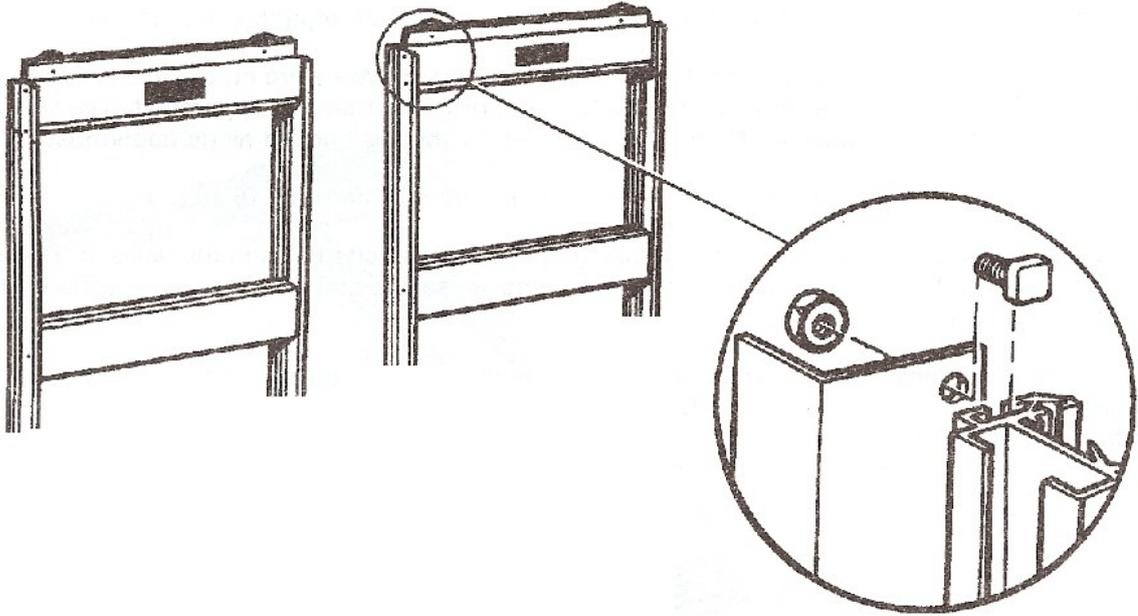
Each door component consists of:
2 door glazing bars 1 = handed, 1 = unhanded
2 infill panels
1 top and 1 bottom door panels

From the main bag of fittings you require
2 door wheels
1 clip on nylon door skid (this may already be fitted prior to delivery)
1 length of black brush draught excluder
Double door catch, self tapping screws and spring washers

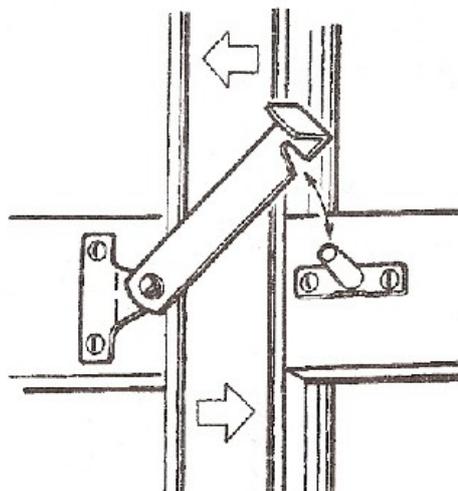


1. Place the two side bars on a level surface roughly 24" apart with the bolt slots facing downwards. The top of each side piece has two screw holes in it, the bottom has three. (**Key point**).
2. Looking at the handed door posts in profile with the 2 holes at the top (3 holes at the bottom) the open box part of the section goes to the outside i.e. on right hand door – left hand upright, on left hand door – right hand upright. **When the doors are built and in closed position, the handed posts of each door will meet in the middle.**
3. Place the top, bottom and 2 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 locks on to the bottom panel.
4. Fix the door together by screwing through the door side pieces into the holes provided in the edge of the panels with the No.8 half-inch self –tapping screws. 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.
5. Make sure all the angles are square and tighten all screws.
6. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door). Put the washer over the bolt and secure with the nut provided, tightening until there is no movement on the bolt. The nuts are lock-nuts and are harder to put on than the normal nuts in general assembly. The wheel will revolve freely because it has ball bearings on it. Remember the door wheel has a collar on one side that goes up against the inside edge of the upper door panel.
7. Slip the nylon door skids on the bottom panel.
8. Turn the door over and insert one of the black brush draught excluders in the groove (bolt slot) in the left hand of the door i.e. the unhanded bar. Push up to the top of the door and trim off surplus at the bottom. Slide a bolt into the bottom of each door post and put a nut on and tighten. This will prevent the draught extruder from slipping down when the door is in its upright position.
9. Do exactly the same with the right hand door remembering that the draught excluder is inserted into the right hand bar i.e. unhanded one.

10. Do not fit the doors to the front at this stage; wait until the structure is fully assembled prior to glazing.
11. The double door catch is fitted to the door panels as illustrated (this replaces the single door catch). You will need to drill four 5mm holes in the relevant door panels and attach the catch and keep, utilising the small nuts and bolts provided. Position the keep so that the catch fits snugly and the doors close tightly.
12. Having assembled both doors you need to attach a piece of alloy to the rear of right hand door. Insert bolts into bolt slot of the left hand upright of the right hand door, attach the angle as shown below, utilising the pre-fabricated holes and tighten the nuts. See illustration.



Door Catch Detail



ROOF VENT ASSEMBLY

In the pack marked “Roof Vent” there are five pieces of aluminium

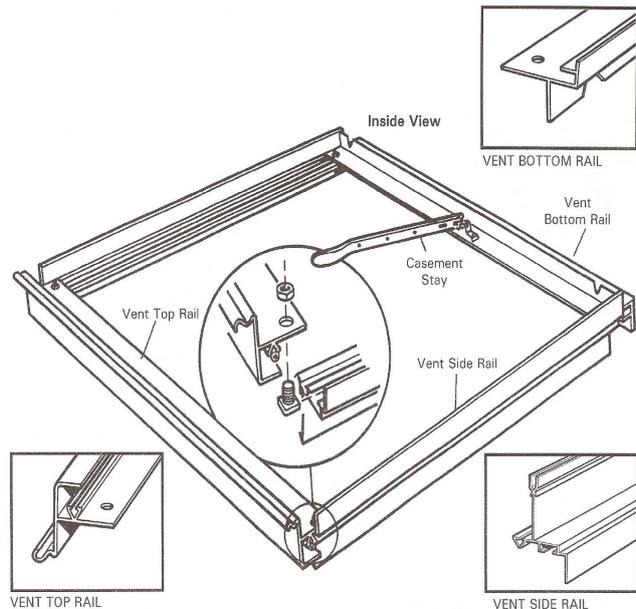
1. Vent hinge
2. Vent cill
3. Vent slam bar
4. 2 vent glazing bars

From the main box and bag of fittings you will require:

1. 6' glazing beading
2. 4 nuts and bolts
3. 1 casement stay
4. 2 casement stay pins
- 6 M4 nuts and bolts

PROCEDURE

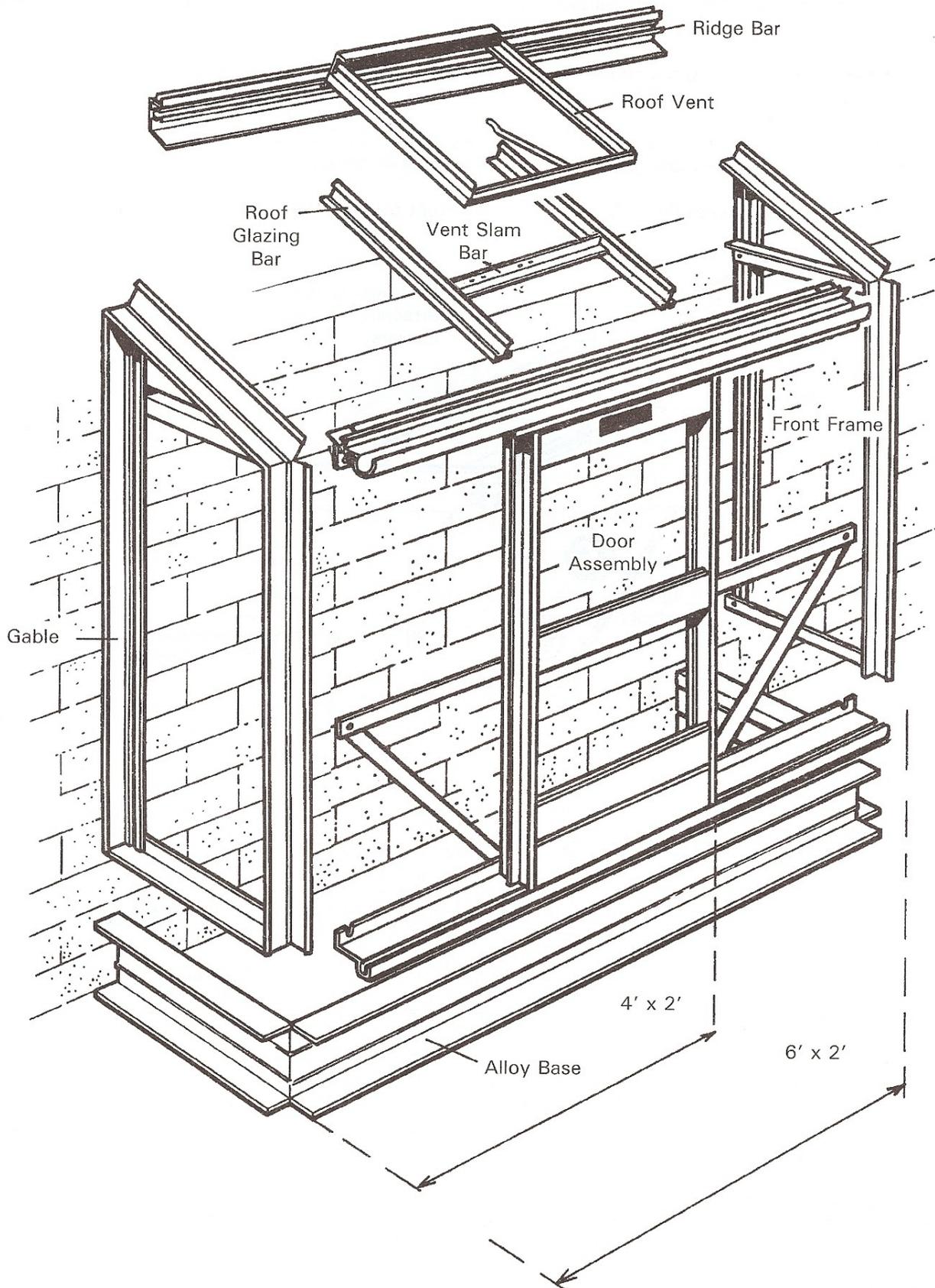
1 Slide the neoprene beading into the groove in the two vent side rails, and the vent top rail. Place the 4 pieces of the vent frame on a level surface looking at them as though you were on the inside. The two side pieces have the bolt slots uppermost, the top rail must be arranged so that the squared edge is downwards and the bottom rail has the two ‘V’ slots facing upwards. **(Key point).**



2. Slide 2 bolts into the bolt slots of the vent glazing bars.
3. At this stage you do not need the slam bar, so put that to one side.
4. Lay the 4 remaining parts out on a flat surface with the insides uppermost.
5. Place the vent top rail over the bolts and finger tip tighten the nuts.
6. Do the same with the bottom cill.
7. Ensure the joints are tight and the frame is square before tightening the nuts.
8. With the completed vent frame in the same position i.e. bolt slots uppermost, fit the casement stay to the bottom rail with the smaller M4 nuts and bolts, hold the nuts in position from underneath whilst you tighten up the bolts through the holes in the saddle of the casement stay ensuring that the bolts seat into the countersunk hole and are pointing outwards. Put the nuts on and tighten up. The holes in the cill are slotted to enable some lateral adjustment at a later stage, should it be necessary. Attach the two stay pins to the slam bar using the M4 nuts and bolts. You can fit the slam bar to the roof after you have fitted the roof bars.
9. The vent will slide onto the ridge as soon as you have fitted the roof bars and ridge – see page 23.
10. With the 4' x 2' model you must decide if the vent is to be fitted to the left or right hand bay, like the door it will fit into either.

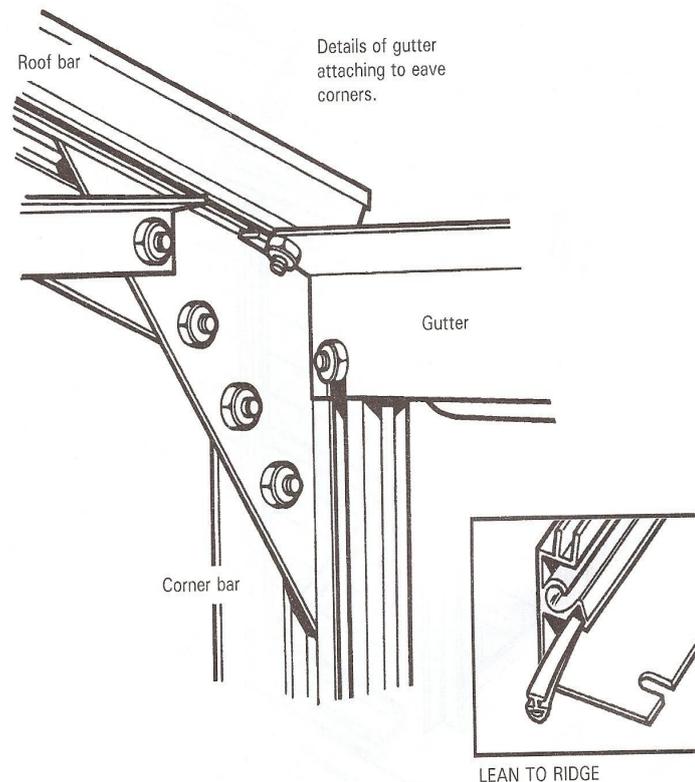
ASSEMBLY OF GREENHOUSE UNIT

The five frames are now completed and ready for assembling into the completed unit. Please follow the next steps carefully and observe all safety precautions. An extra pair of willing hands would be useful at this stage.



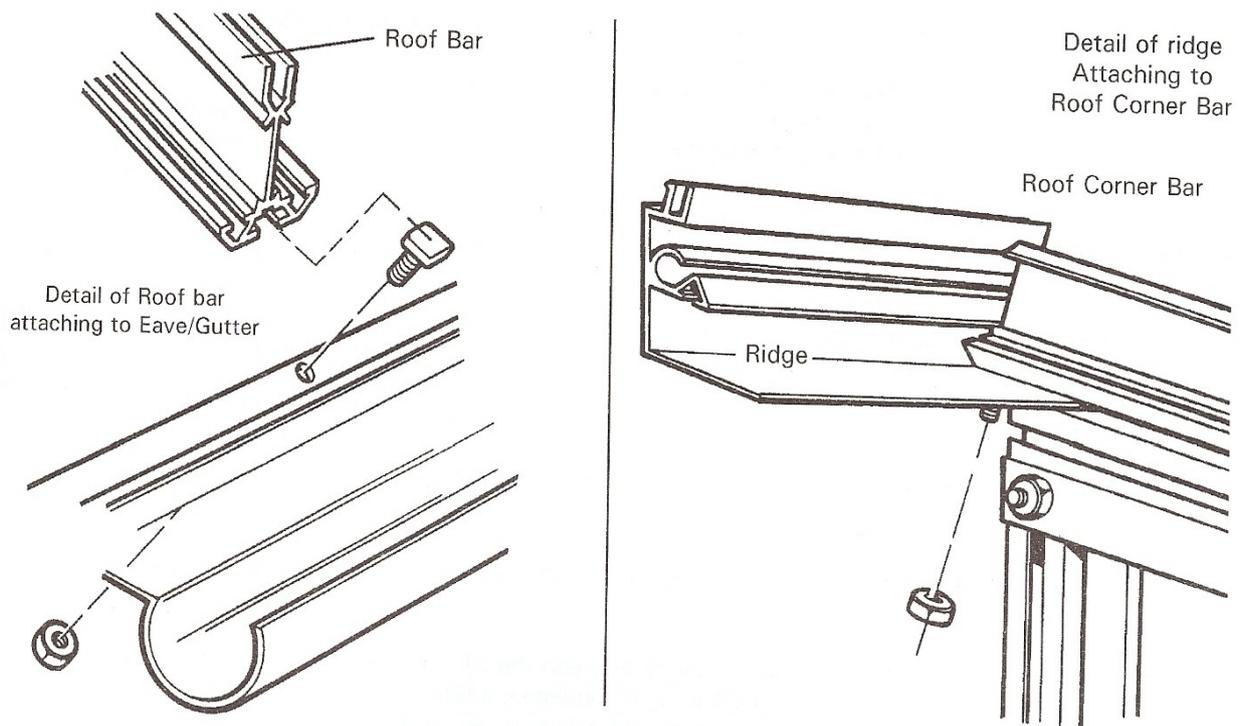
A. Attach Right and Left hand gables to Front Frame

1. Stand the right hand end frame and the front frame up so that they meet at the right front corner. Push the gutter/eave bar into the small gap between the roof and side corner bars so that the slotted holes at the end of the eave flanges line up with the bolt slot in the corner bar. The gutter is OUTSIDE the end frame and the two flanges that form the angle of roof and side are INSIDE and tight up against the bolt slots of the roof and side corner bars. (**Key point**). The extra bolts inserted into the corner bar during gable end assembly can now be slid into the slots in the eave bar to secure the corner (see page 13).
2. The bottom cill attaches to the inside of the corner bar. The bolt placed in the bolt slot at gable end assembly (see page 13) will slide down into the slotted hole at the end of the cill.
3. Do the same operation with the left hand gable and front frame.



B. The next step is to put the roof on and this is done in 3 steps:

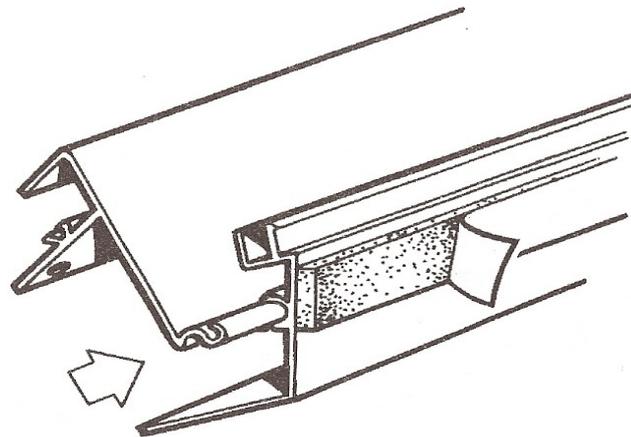
1. **Attaching the ridge**
Firstly insert the glazing beading into the vee groove, then in the same way the gutter slotted into the corner bars so too does the ridge. Slot the ridge onto the corner bars, ensuring that the flat side of the ridge is facing the wall. The bolts inserted in the roof corner bars at original frame assembly can now be slid into the slots at the end of the ridge. (**Key point**).
2. **Securing the roof bars**
Firstly insert the glazing beading into both sides of the two glazing bars (one glazing bar for 4' x 2'). Put one bolt into one bar and place it through the hole in the flange on the ridge. Put a nut on and tighten up. Do the same with the other roof bars, if your unit is the 6', 8' or 10' have the extra bolt in the bars only where the vent is to be situated.
From the bottom of the roof bar insert 2 bolts into the bolt slot. Put the second bolt through the holes in the upper flange of the gutter, put a nut on and tighten up. The extra bolt will be used later to secure the vent slam bar. (**Key point**).



3. Sliding the vent into position

The hinge is a groove 'C' joint, one 'C' is an integral part of the ridge, the other inverted 'C' being a part of the vent top rail. **(Key point)**.

Firstly identify these two sections and then slide the vent onto the ridge from one end. With the vent in the open position, push the vent along the ridge until it covers the section where the vent is to be situated. The two side rails of the vent will overlap the outside edges of the roof bars. i.e. the vent is wider than the opening it covers.



The vent slam can now be fitted to the two roof bars just underneath the bottom rail of the vent. The ends of the slam bar are cut out to go round the profile of the roof glazing bar. Secure the slam bar with the two bolts that were inserted when you fitted the bottom of the roof bars to the eave. The position of the slam bar is approx. 90mm up from the eave. The space will be fitted with a pane of glass during glazing later on.

The slam bar is an unequal angle and it attaches to the roof bars with the longer part of the angle pointing skywards, i.e. toward the bottom rail of the vent, and the shorter part of the angle pointing to the gutter, i.e. the OUTSIDE corner of the angle is facing INSIDE the structure. **(Key point)**.

The frame assemblies and final unit shape are now complete, but there are three further steps to take:

1. Securing to the wall and base
2. Fitting the door
3. Glazing the completed structure

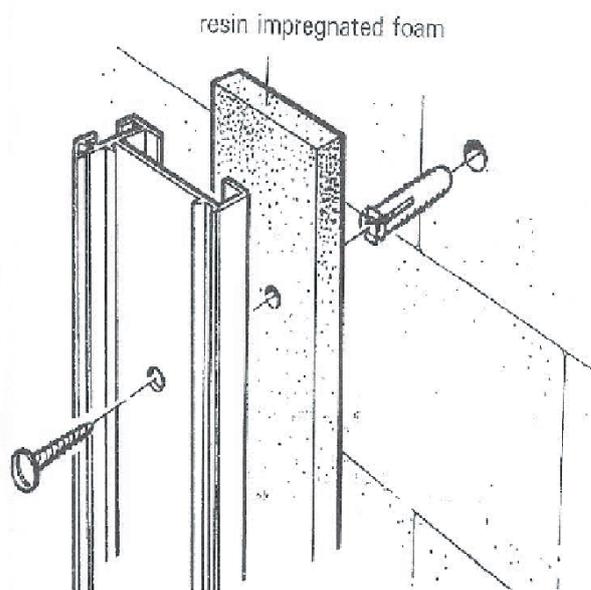
Securing to the wall and base

1. Offer the structure to the wall that it is to abut, ensuring that the verticals are plumb, and that the building is square and at 90° to the wall, with a nail or pen, mark the wall through the holes in the wall bar and ridge. Then remove the structure to another location and drill through into the wall at the pre-marked locations with a masonry drill. Insert the plastic plugs into the holes.
2. The coil of paper-back resin impregnated foam can now be stuck onto the wall side of the ridge and wall bars. (**Key point**).
3. Offer the structure to the wall again and screw through the holes into the pre-located plastic plugs in the wall, with the screws provided. If your wall is not plumb, it may require packing between the alloy frame and the wall. Tighten up the screw until it is fully home.

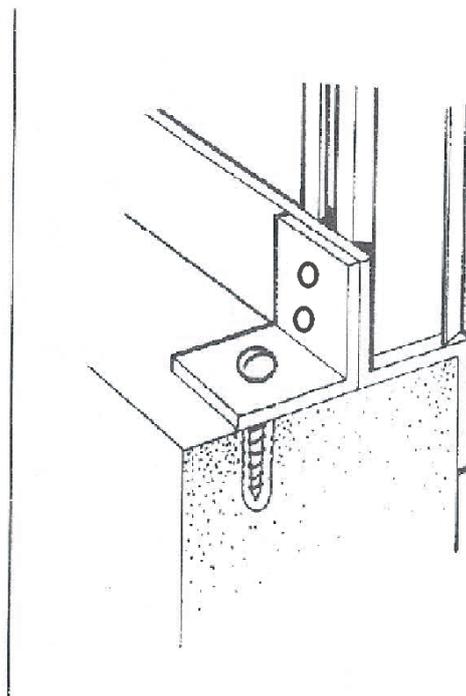
Do the same at each screw location utilising any packing where necessary.

4. Having successfully anchored the structure to the wall you can now secure it to its base.

Wall bar
attached to
wall via plastic plug
& screw



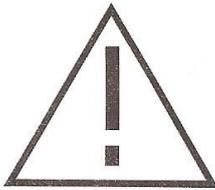
Angle bracket
to secure frame
to brick base



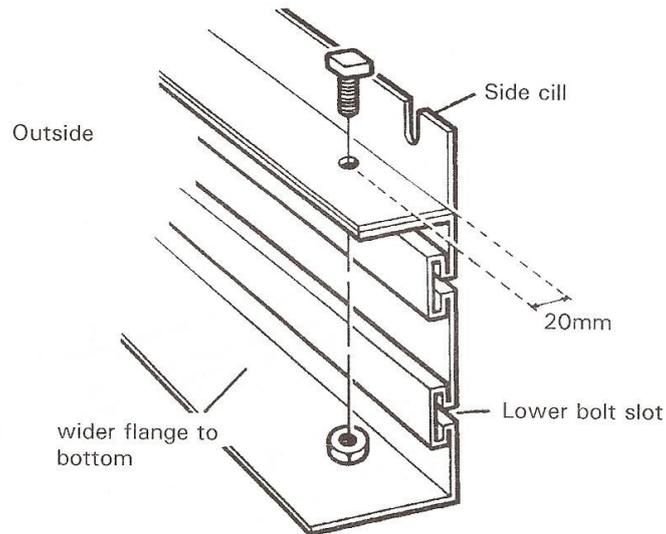
A Alloy base

Having assembled the base as previously described on page 10, place the greenhouse on top of the upper base flange, i.e. smaller of the two flanges.

Position the greenhouse so that the back vertical edge of the cill is level with the vertical side of the base. Because our base is assembled by using bolt slots, it is not too difficult to adjust the overall length and width of the base by loosening the nuts holding the corners and moving the walls of the base slightly in or out to line up the precise position of the greenhouse. Having arrived at this position you need to drill through the cill and the upper flange of the base at the positions indicated. Drill 7mm holes, 20mm in from the corner of the cill/angle, put holes in the cill in the centre between the vertical glazing bars, insert a bolt from the top and put a nut on from the underside, tighten all nuts. **(Key point)**.



Danger
please use
extreme care
when using
an electric drill

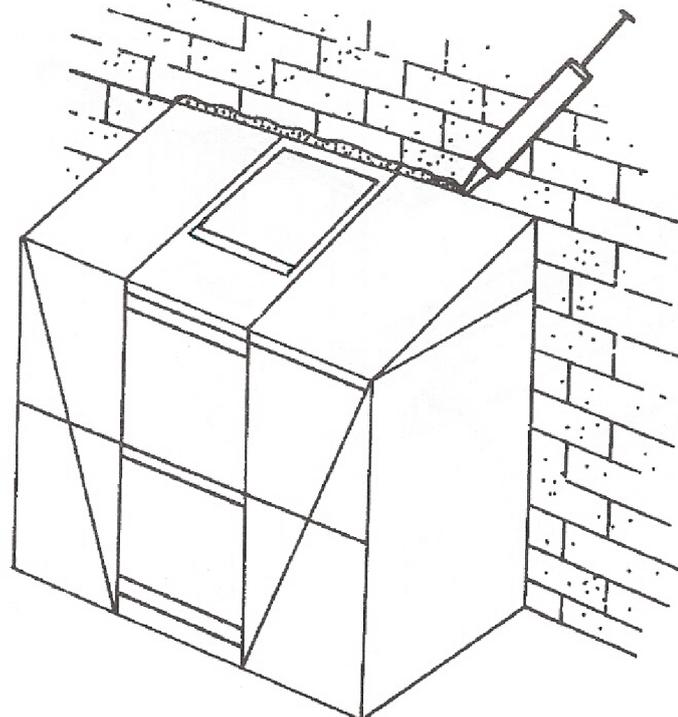


B Brick base

There are a number of small alloy brackets in the pack of fittings, these are to be bolted onto the upright glazing bars at the point where the cills are attached to them.

Before bolting them to the frame, first mark the brickwork where the holes are to be drilled. Drill the holes with a masonry bit and insert the plastic plug. Secure the small angle to the uprights and screw through the hole in the angle into the plastic plug as illustrated.

The structure is now ready for the final sealant. There is a tube of silicon and a skeleton gun in the pack which you can now use to seal between the wall bars and ridge and the brick wall.



Fitting the door track support/door track

For the 6' x 2' install the door track support onto the upper part of the two middle front bars, for 4' x 2' utilise the one middle bar and one of the side corner bars using the bolts inserted into the front bars previously (page 15 para 3). For the 8' x 2' you have a double door track support which fits in the same way but is twice as long. For the 10' x 2' you have two single doors in bays 2 and 4 so they fit into these bays in the same way as the 6' x 2'.

This section fits in a similar way to the vent slam bar previously described. It fits onto the bolts that attach the glazing bars to the gutter. (**Key point**).

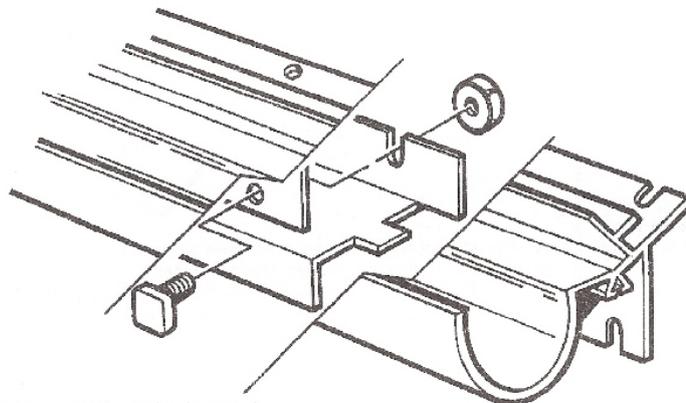
N.B. Ensure that the two slotted holes at the end of the door track support are facing upwards, not downwards. (**Key point**).

Insert 3 bolts into the bolt slot of the door track.

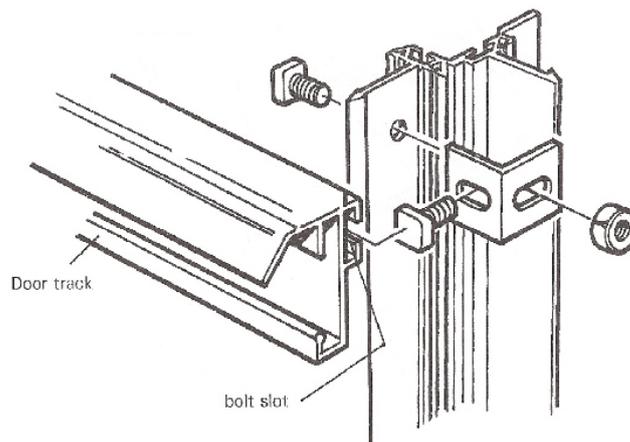
Slacken off the two nuts holding the door track support and push it upwards until it is pressed hard up against the under side of the gutter lower flange. You must ensure that the door track support bolts to the upper bolt where the side bars attach to the eave.

Attach the larger hole of the small flat bar (found in fittings) to the bolt channel of the top door track and let the flat bar hang vertically down. Move the flat bar along the door track until the small hole on the flat bar lines up with the self tapping screw groove of the roof or side corner bar. Insert a self tapping screw to secure. This will prevent the top door track from bowing under the weight of the door.

Insert a bolt into the bolt slot of the door track and line it up with the elongated hole in the angle bracket.



Detail of door track support fitting under the eave bar



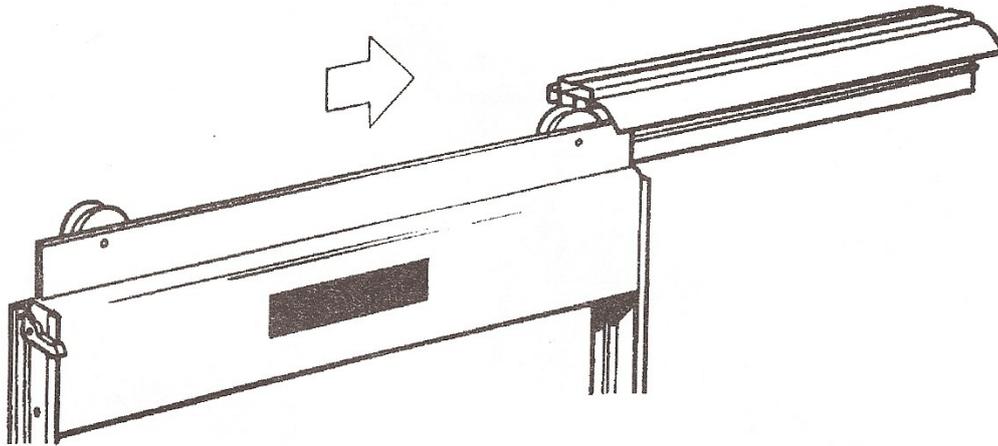
Door track

bolt slot

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 door way 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 glazing bars.

Carefully ease the door past the two glazing bars. The door will now run quite freely if you need to square up the door, 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)**.



GLAZING THE STRUCTURE

BAR CAPPING

If you have purchased bar capping you **MUST NOT** use the band clips, you use wire clips instead, see diagram.

Please see separate instructions packed with the bar capping for how to install the capping.

HORTICULTURAL AND MULTISHEET TOUGHENED GLASS

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

1. Start with the bottom pane of one of the gables, offer the pane to the glazing bars holding it in place by inserting two of the stainless steel band clips 200mm up from the bottom edge. The other two clips are placed 15mm down from the top edge of the pane. Please see next page for fitting of the clips and ensure that they go the correct way up.

2. To install the second pane in each section, hook the bent end of **one** overlap glass clip over the top edge of the first pane. Position a second pane above the first pane so that the bottom edge of the second pane overlaps the top edge of the first pane by 15mm. Secure the second pane in place with four band glass clips. Then, bend the straight edge of the overlap glass clip up so that it supports the bottom edge of the second pane.

3. Follow these instructions to glaze the entire greenhouse. See the table on page 30 for the glass pane sizes.

- N.B.
1. Due to the glass tolerance the 15mm overlap may vary slightly up or down.
 2. Use one overlap clip per overlap.

FULL SHEET TOUGHENED GLASS

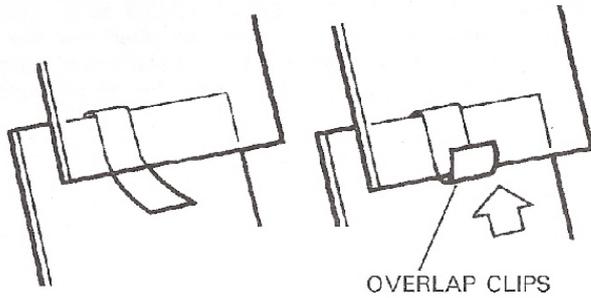
These are in large sheets and have no overlaps, where a small shape meets the large rectangle you require a P.V.C. overlap muntin to join the two pieces.

The front glass is the same size as the long panes in the gables which you will notice is short of the gutter. You will find a number of P.V.C. spacers packed in with your glass, this is inserted onto the top of the glass and then pushed up under the gutter bar.

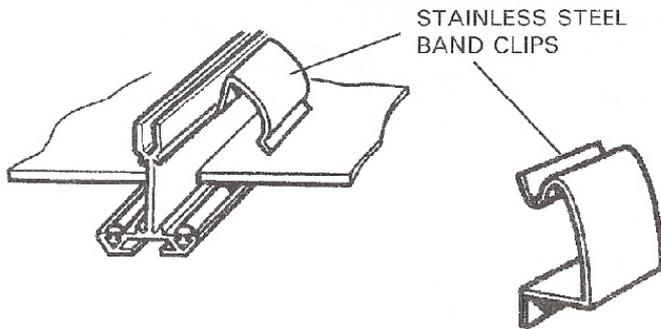
See the table on page 31 for the glass pane sizes.

Please note the position of the wire clips around the door and vent.

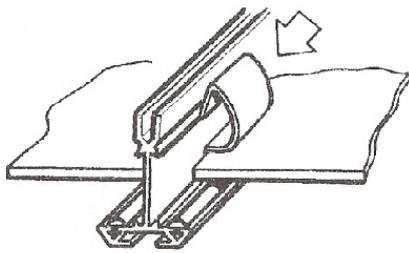




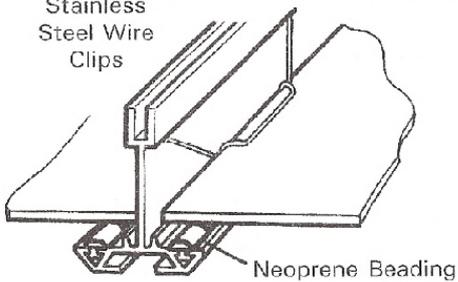
OVERLAP CLIPS



STAINLESS STEEL BAND CLIPS



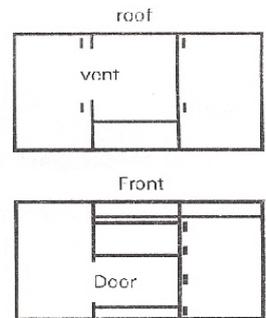
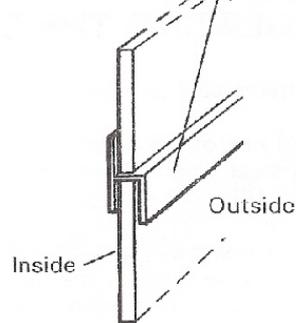
Stainless Steel Wire Clips



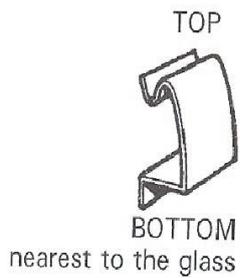
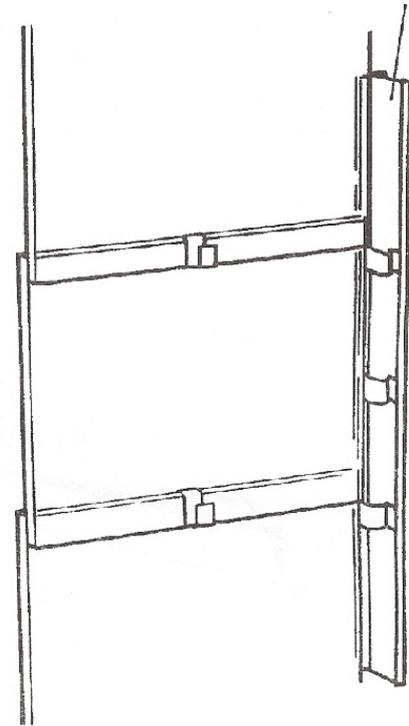
Neoprene Beading

The wire glazing clips are used immediately BEHIND the door and UNDER the vent as illustrated.

P.V.C. Overlap Muntin

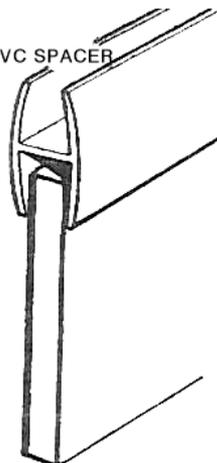


GLAZING BAR



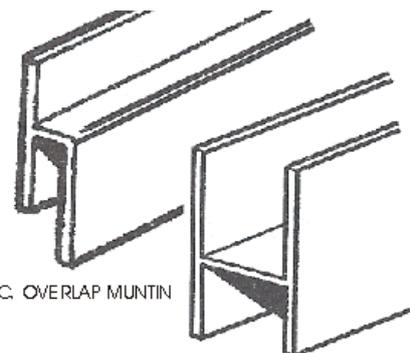
BOTTOM nearest to the glass

PVC SPACER

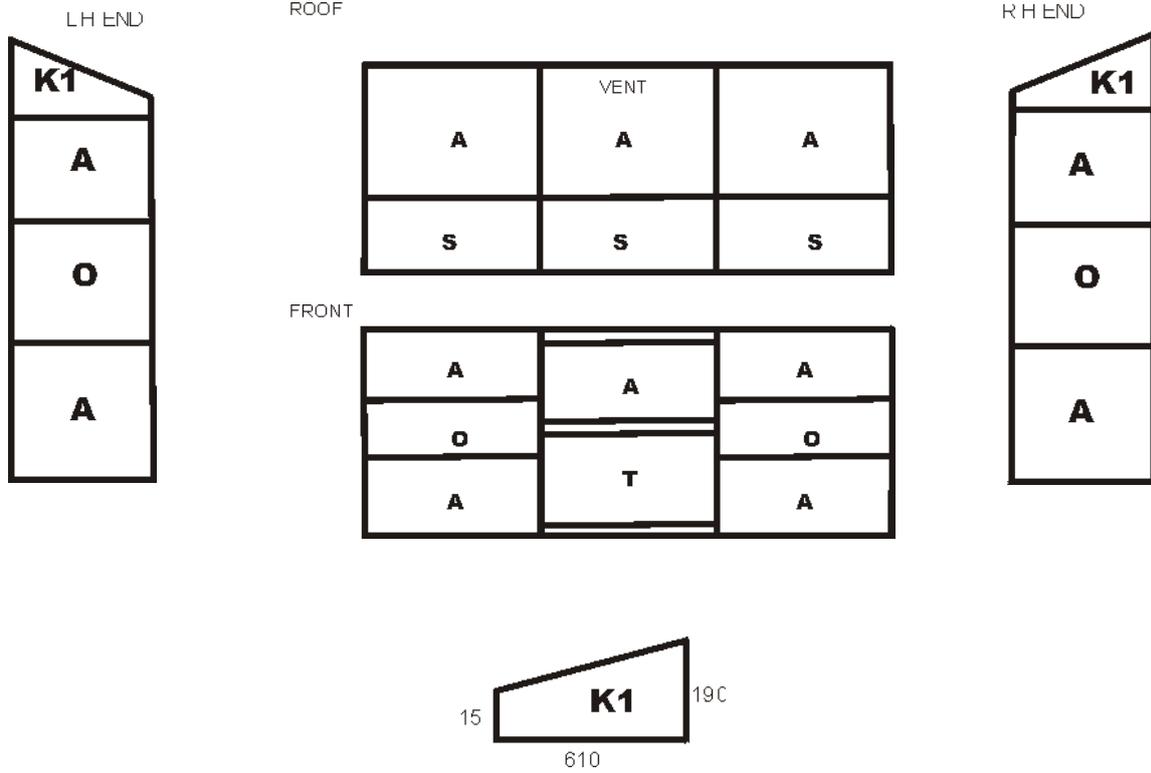


P.V.C. OVERLAP MUNTIN

P.V.C. SPACER



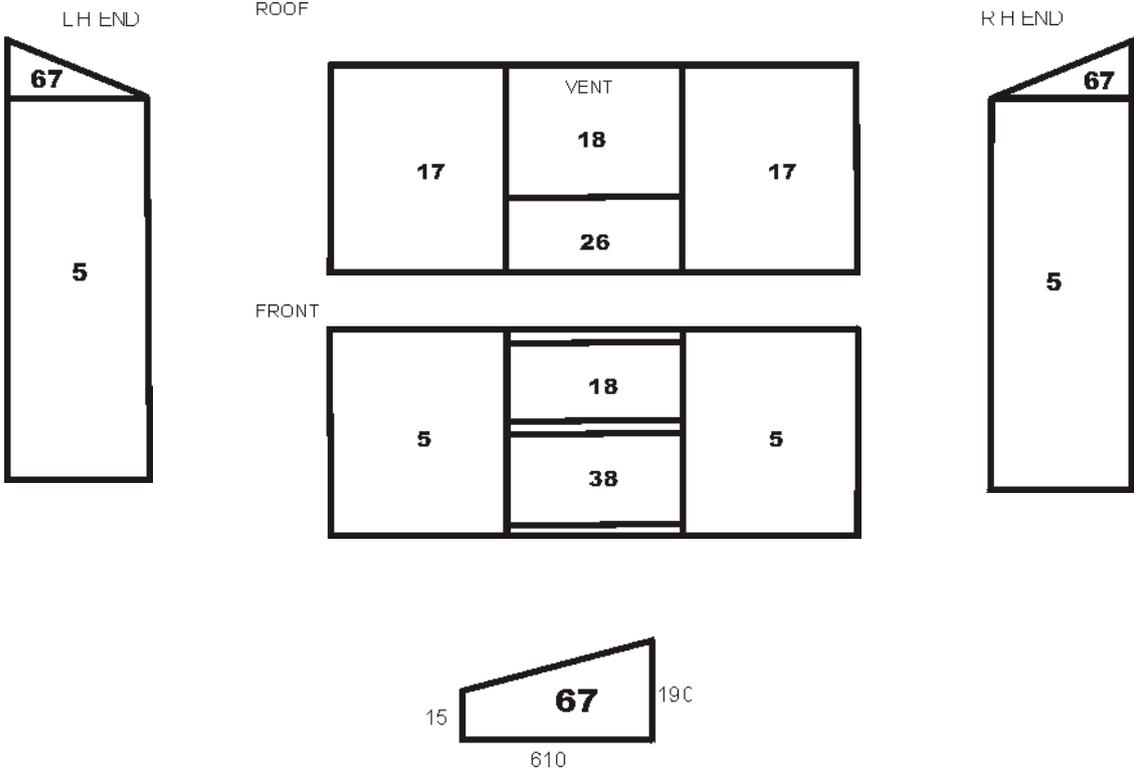
HORTICULTURAL GLASS PLAN



	LENGTH	WIDTH
A	610	610
O	610	389
S	610	85
T	610	590

	4' X 2'	6' X 2'	8' X 2'	10' X 2'
A	9	12	14	17
O	3	4	4	5
S	2	3	4	5
T	1	1	2	2
K1	2	2	2	2
TOTAL	17	22	26	31

TOUGHENED GLASS PLAN



CODE	LENGTH	WIDTH
5	610	1563
17	610	683
18	610	610
26	610	85
38	610	590

	4' X 2'	6' X 2'	8' X 2'	10' X 2'
5	3	4	4	5
17	1	2	3	4
18	2	2	3	3
26	1	1	1	1
38	1	1	2	2
67	2	2	2	2
TOTAL	10	12	15	17

