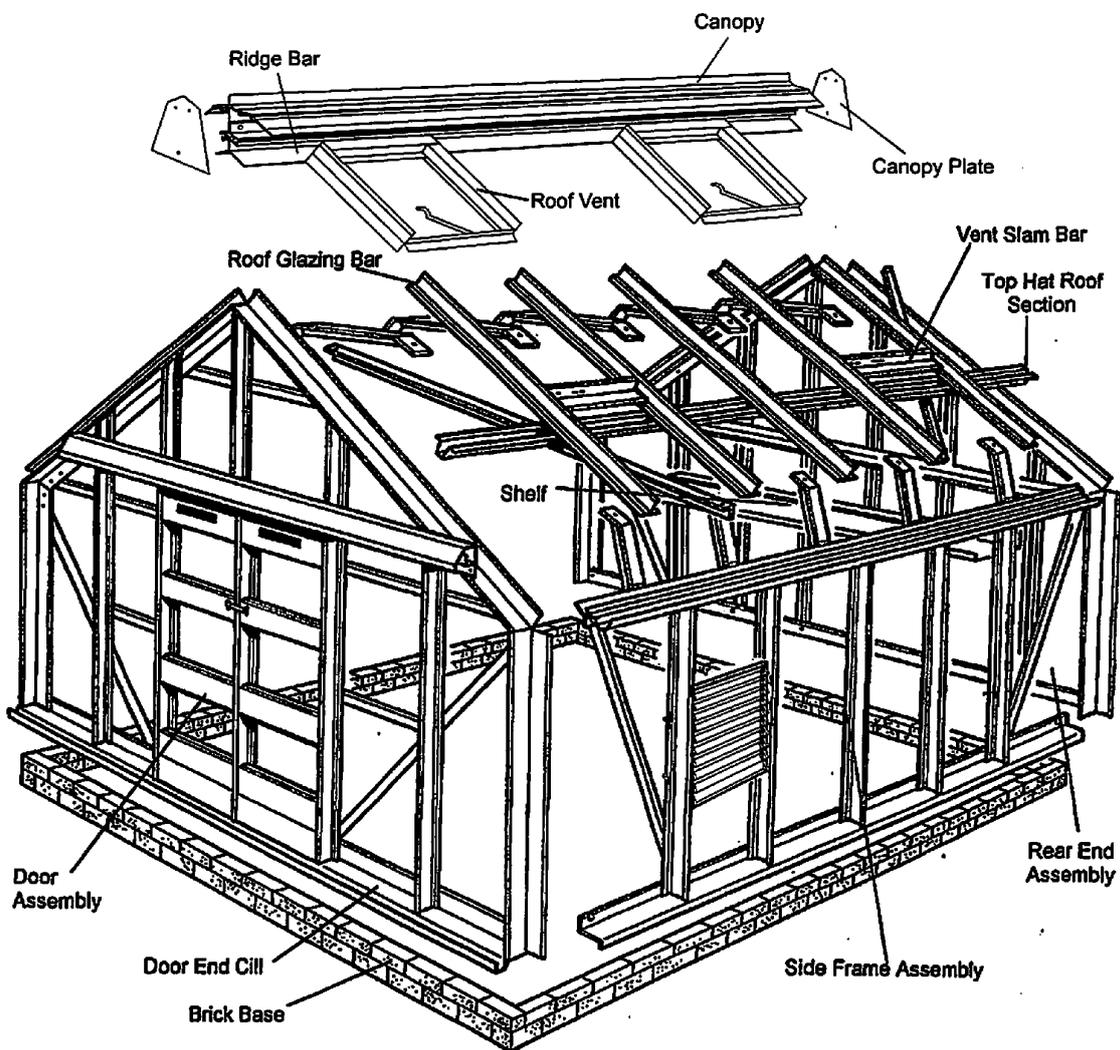




INSTRUCTIONS & ILLUSTRATIONS FOR THE **TITAN 1200**



ELITE GREENHOUSES LTD

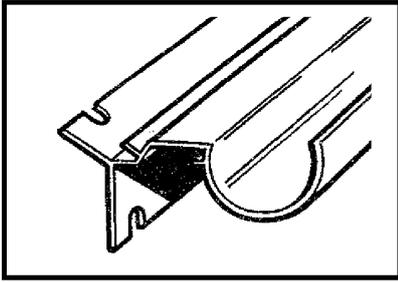
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

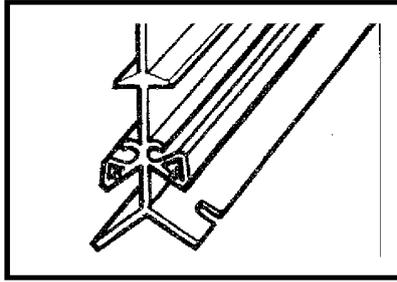
enquiries@elite-greenhouses.co.uk

www.elite-greenhouses.co.uk

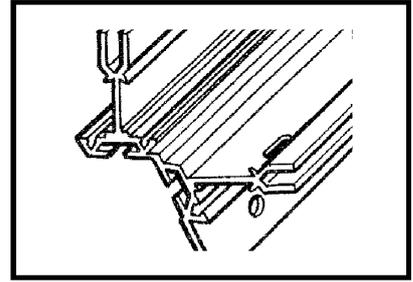
COMPONENT DRAWINGS (NOT TO SCALE)



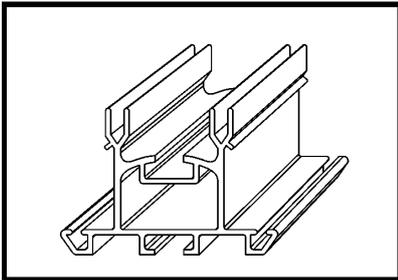
EAVES BAR/GUTTER



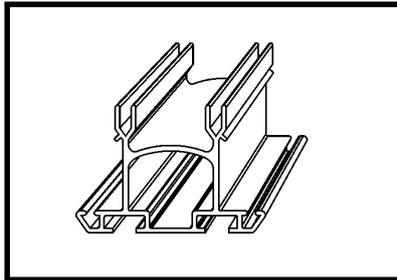
RIDGE



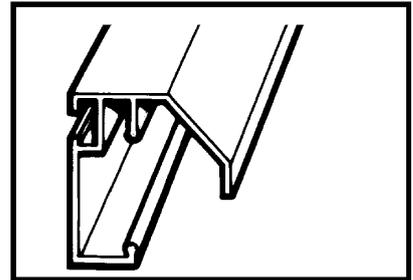
CORNER BAR



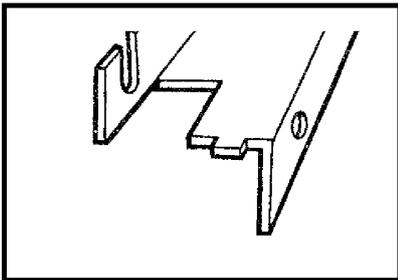
BLOCK GLAZING BAR



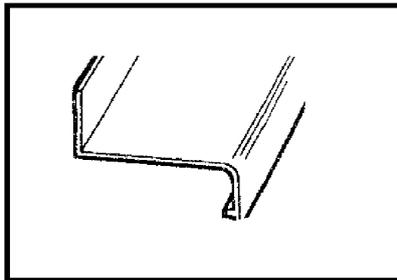
GX BLOCK GLAZING BAR



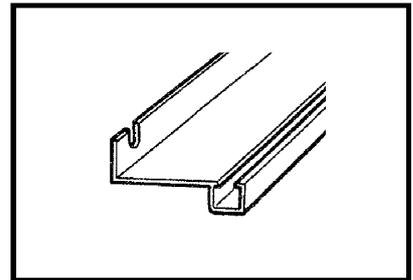
TOP DOOR TRACK



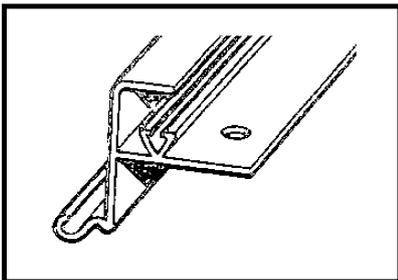
DOOR TRACK SUPPORT



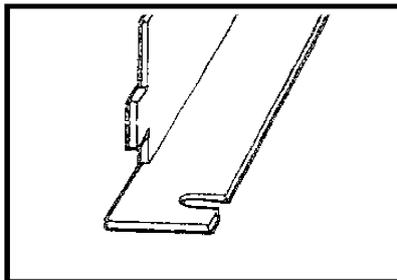
SIDE + REAR END CILL



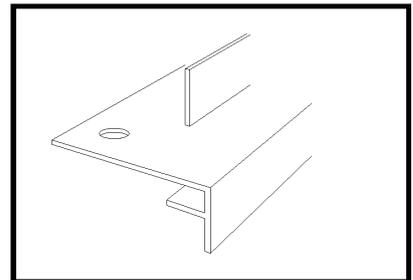
DOOR CILL



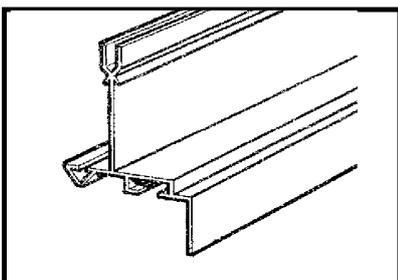
VENT TOP RAIL



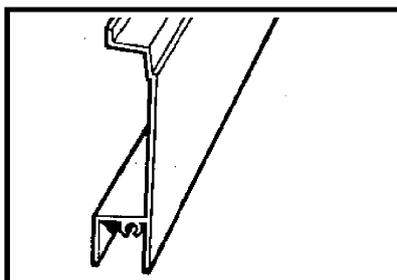
VENT SLAM BAR



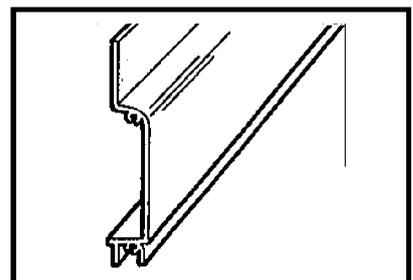
VENT BOTTOM RAIL



VENT SIDE RAIL

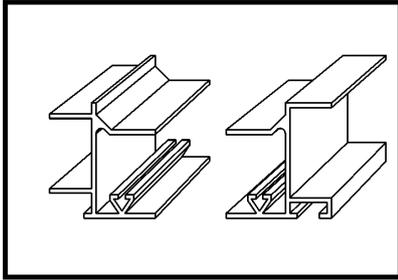


DOOR INFIL PANEL

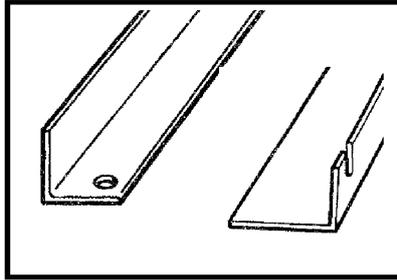


DOOR TOP/BOTTOM PANEL

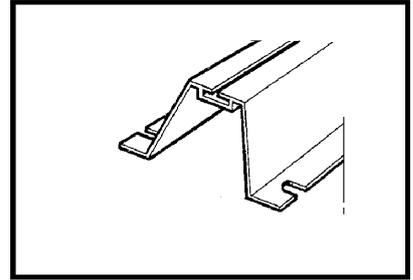
FITTINGS WITHIN THE KIT (NOT TO SCALE)



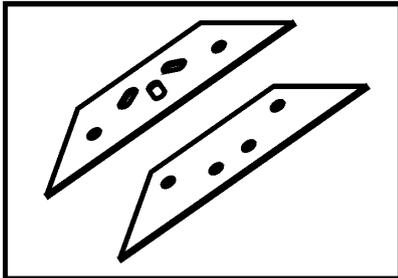
HANDED DOOR POSTS



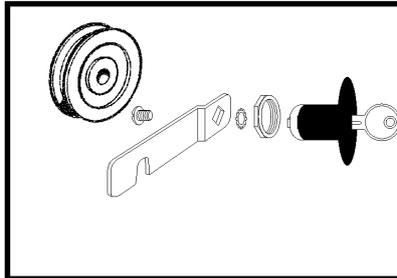
**BRACING ANGLE +
HORIZONTAL BRACE**



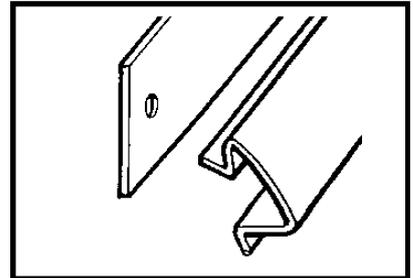
TOP HAT/ROOF BRACE



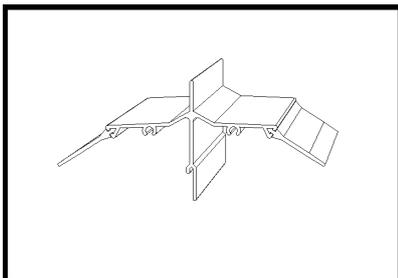
APEX & EAVE GUSSET PLATES



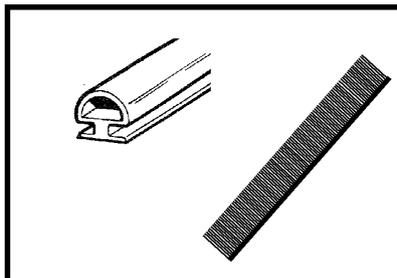
DOOR WHEEL + DOOR LOCK



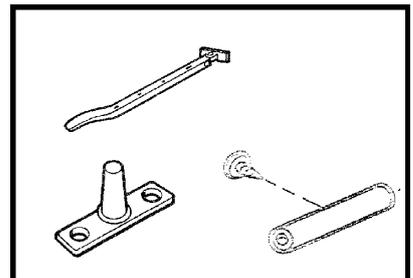
FLAT BAR & CLIP CAPPING



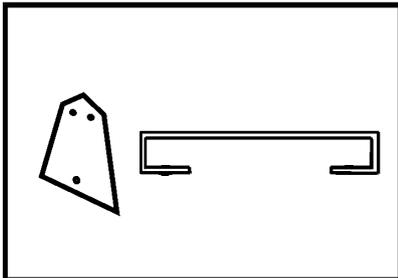
RIDGE CANOPY + SEAL



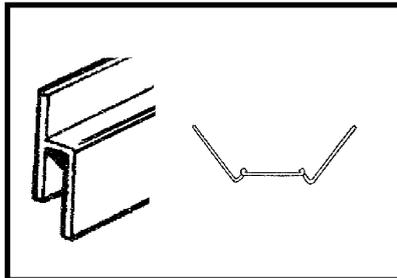
**NEOPRENE BEADING, +
DRAUGHT EXCLUDER**



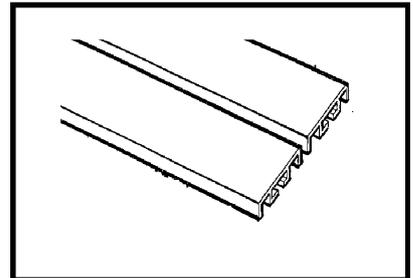
CASEMENT STAY + PINS + VENT STOPPER



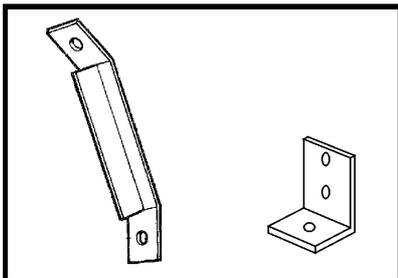
CANOPY PLATE & DOOR HANDLE



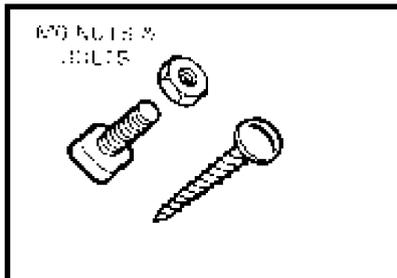
MUNTIN + WIRE CLIP



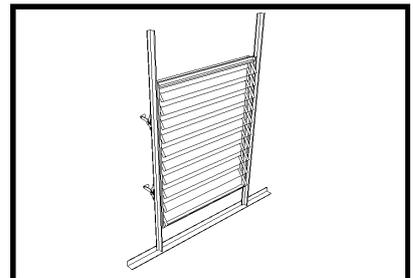
DIAMOND SHELF



**CANTILEVER BRACE +
ANGLE BRACKET**



SELF TAPPING SCREWS



LOUVRE

PARTS LIST

			10 x 12	12 x 12	14 x 12	16 x 12	18 x 12	20 x 12
1	Ridge		1	1	1	1	1	1
2	Gutter/Eave		2	2	2	2	2	2
3	Side Cill		2	2	2	2	2	2
4	Side Bracing Angle		4	4	6	8	8	8
5	Alloy Shelf 8' Long		1	1	1	1	1	1
6	Top Hat Roof Section		2	2	2	2	2	2
7	Rear End Large Horizontal Angle	Taped Together & Marked Rear End	1	1	1	1	1	1
8	Rear End Small Horizontal Angle		1	1	1	1	1	1
9	Rear End Cill		1	1	1	1	1	1
10	Long Rear End Glazing Bar		1	1	1	1	1	1
11	Diagonal Angles For Rear End		2	2	2	2	2	2
12	Medium Rear End Glazing Bar		2	2	2	2	2	2
13	Short Rear End Glazing Bar		2	2	2	2	2	2
14	Door End Cill	Taped Together & Marked Door End	1	1	1	1	1	1
17	Short Door End Glazing Bar		1	1	1	1	1	1
18	Main Door Track Support		1	1	1	1	1	1
19	Diagonal Angles For Door End		2	2	2	2	2	2
20	Upper Horizontal Angles		1	1	1	1	1	1
21	Short Horizontal Angles		2	2	2	2	2	2
22	Horizontal Angle		2	2	2	2	2	2
23	Long Door End Glazing Bar		2	2	2	2	2	2
24	Medium Door End Glazing Bar		2	2	2	2	2	2
25	Corner Bar in 2 packs of 4		8	8	8	8	8	8
26	Roof Glazing Bar		8	10	12	14	16	18
27	Long Roof Bracing Angle		4	4	4	4	4	4
28	Side Glazing Bar		8	10	12	14	16	18
29	Vent Packs For Roof		2	2	4	4	6	6
30	Louvre Packs For Side		1	1	1	1	2	2
31	Top Door Track		1	1	1	1	1	1
32	Door Panels—(2 top panels, 2 bottom panels, 3 intermediate panels)		2	2	2	2	2	2
33	Handed Door Post—1 Left Hand, 1 Right Hand		1	1	1	1	1	1
34	Un-handed Door Posts		2	2	2	2	2	2
34	Tee Bar Cantilever Short		8	10	12	14	16	18
35	Tee Bar Cantilever Long		4	5	6	7	8	9
36	Glazing Beading		450'	500'	550'	600'	650'	700'
37	Bag Of Fittings		1	1	1	1	1	1
38	Eave Gusset Plates		4	4	4	4	4	4
39	Ridge Gusset Plates		2	2	2	2	2	2
40	Casement Stay		2	2	4	4	6	6
41	Clip Capping		6	6	6	6	6	6

For glass see back of booklet.

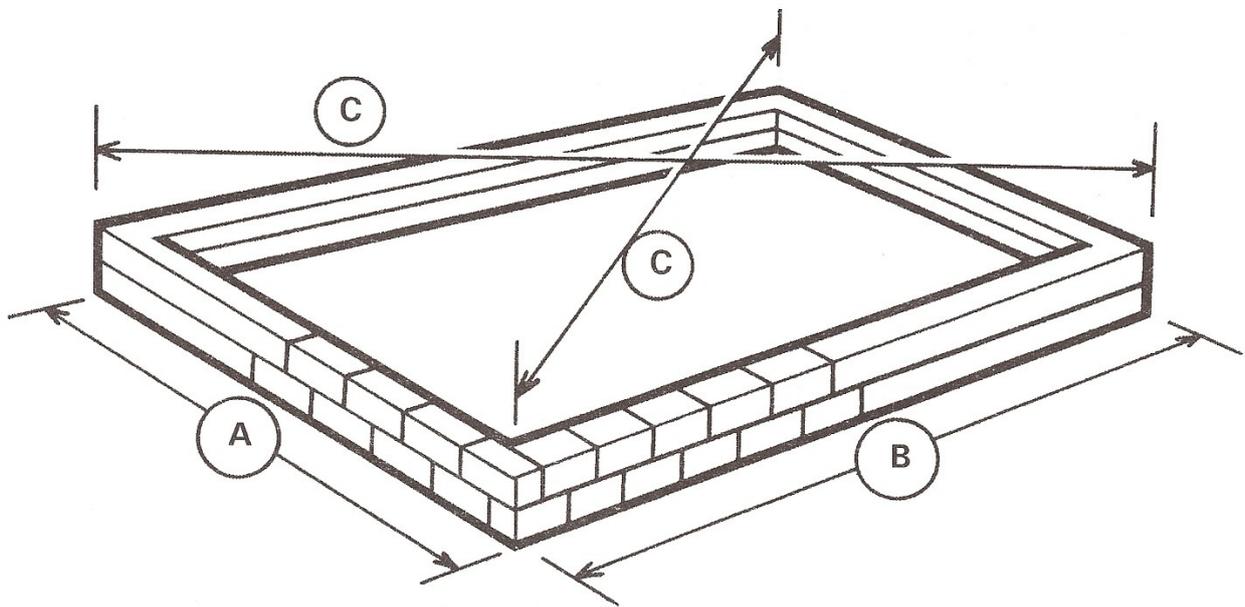
ELITE GREENHOUSES BASE DIMENSIONS

For brick, Block, Concrete or Timber

The dimensions given below may be used to locate the position for your greenhouse or to lay corner footings if they are needed. If a brick, concrete or timber base is laid, construct it as shown ensuring that dimensions A & B are **not exceeded** as these 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 builder's spirit level.

For dwarf wall/dropped door modifications, you must obtain a base plan from Elite Greenhouses Ltd.



SIZE	A	B	C
10 x 12	3.804m	3.194m	4.966m
12 x 12	3.804m	3.812m	5.385m
14 x 12	3.804m	4.430m	5.839m
16 x 12	3.804m	5.048m	6.321m
18 x 12	3.804m	5.666m	6.825m
20 x 12	3.804m	6.284m	7.346m

For base dimensions on larger or modified buildings, contact the office for a base plan.

HELPFUL HINTS & ADVICE

- 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 wind but will help prevent breakage of the glass caused by the freezing and thawing process of the earth. **(Key point).**
- When building your own brick/concrete foundations ensure that they are level and square otherwise your frame will not be correct and the glass will not fit.
- Be sure all four corners of the constructed greenhouse are square before installing glass, and do not install the glass till 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 clothing such as gloves, strong outer clothing and eye glasses should be worn.
- Be careful when using agricultural chemicals such as fertilisers, fungicides and insecticides etc. in the greenhouse. Do not use chemicals that are for outside use only. Always read the labels very carefully.
- Do not push or lean on the glass panels.
- Use extra care when moving heavy or awkward objects such as tables, poles, internal frames etc. within or near the greenhouse.
- Do not latch the door when anyone is in the greenhouse.
- Be aware of the increased temperature in the greenhouse on a sunny day.
- Do not keep pets or other animals in a greenhouse.
- When cleaning glass do not exert too much pressure.
- If your greenhouse is a painted one there are a few 1/8" holes in the end of the bars. These are jig holes for painting and have no bearing on construction. **(Key point).**
- When powder coated, the sub-frame assembly packages may slightly differ from the standard alloy finish.
- Powder coated packages are wrapped in polythene tubing – please be careful when opening e.g. do not run a knife down the sides as you can scratch the paintwork.
- **WHEN CONSTRUCTING A PAINTED MODEL PLEASE TAKE CARE NOT TO DAMAGE THE FINISH BY WORKING ON CONCRETE OR PATIOS.**
- **N.B. This plan covers the entire Titan 1200 range. The only difference between a 12ft long and an 20ft 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 12x12 model as the benchmark. Therefore only one plan is needed.**
- We reserve the right to alter and improve our products.

INSTALLATION INSTRUCTIONS FOR THE 12'6" WIDE MODEL "TITAN 1200" RANGE

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

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

The frames to be constructed are as follows:

Two side frames

Rear end frame

Door end frame

Roof vent: two frames for the 10' and 12', four frames for the 14' and 16', and 6 for frames for the 18' and 20' models.

Two doors, 610mm wide.

Louvre frame: 1 for 10', 12', 14' and 16'. 2 for 18' and 20' models.

WE CAN NOW COMMENCE WITH THE ASSEMBLY

If you are building your own brick base please refer to the dimensions on of this booklet. It is recommended that a concrete footing is built to the laying of the bricks/blocks.

Excavate a trench about 9" wide and dig down to hard earth or clay. Fill the trench with 4" approx. of hard-core and cover with a concrete mix, ensuring that the final concrete is level. You can now lay the bricks/blocks on top of this to the desired height, usually 2 courses of standard brick above ground level.

N.B. All base work must be level and square and built to the precise outside measurements given in Base Dimension section earlier in the booklet. **(Key point).**

SIDE FRAME ASSEMBLY

From the pack you require:

If you have ordered a built in base, then follow the section at the back of the booklet in conjunction with the instructions for each sub assembly.

Pack of side bars marked "side bars"

Pack of gutters and cills marked "side"

Pack of angles marked "side"

For greenhouse of 14' or longer, the gutters, ridge and cills are in a separate pack wrapped in polythene.

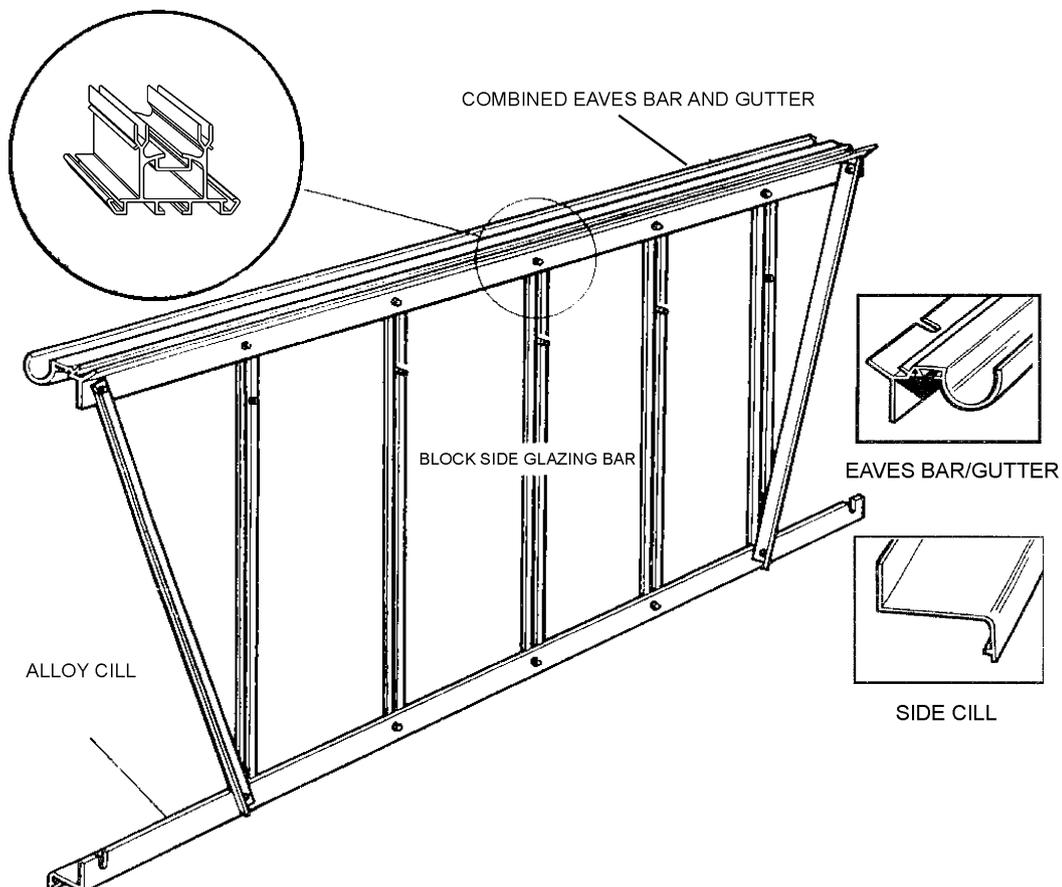
From the pack of fittings you need: nuts and bolts, glazing beading.

Procedure: For the point of this plan we have used a 12' x 12' side as an illustration. The procedure is identical for a 10' x 12' and 20' x 12' apart from needing more or less side bars, nuts and bolts, glazing beading and longer or shorter gutters and cill. **(Key point).**

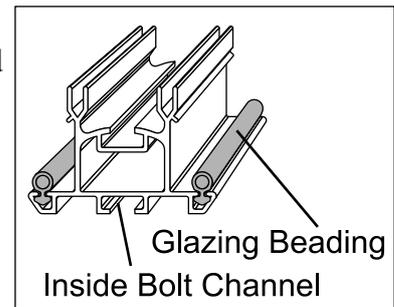
If you have purchased a **partition** with your greenhouse you will have 2 less roof and 2 less side bars. These are replaced with an extra set of corner bars. You must decide where the partition is to be situated and at that point leave out one side bar on each of the side frames. **(Key point).** The partition is constructed when the greenhouse is fully erected prior to glazing. Full details of this procedure given later in the booklet, but for the time being do nothing apart from the omission of the side bar. **If you have not purchased a partition disregard this and future notes relating thereto.**

You need for each frame: 1 gutter/eaves, 1 cill, 2 diagonal angles and 5 side bars. (N.B. For the longer sides you have 4 diagonal angles per frame).

Before assembling any sections slide the required number of bolts into the glazing bars.



1. Lay out the pieces on the ground as though you were standing inside the greenhouse i.e. with the gutter and cill facing downwards and the inside bolt channel of the glazing bar upwards (beading channels downwards). **(Key point)**. Slide the glazing beading into the 'V' grooves of the glazing bars, taking care not to stretch the material. Trim off any surplus level with the ends of the glazing bar. Note: the beading may contract and slide down the bar. Allow for this before trimming.



2. Slide 3 bolts into each glazing bar (insert an extra two bolts into the bars that the louvre vent will attach to **(Key point)**). The middle bolt will be used later to attach the cantilever tee bars.

Fix the combined eaves and gutter bars to the glazing bars by pushing the bolt previously inserted through the holes in the lower flange of the eave and secure with a nut. Ensure that the glazing bar is pushed up under the gutter and is tight up against the inside shoulder of the eave. **(Key point)**. Do the same with the rest of the glazing bars.

3. Fix the cill in a similar way to above but start with the middle glazing bars and work outwards.

4. The 2 outer glazing bars have the angle ties bolted to them. Before attaching the nuts, place the diagonal bracing angle over the bolts so that they point outwards towards the end of the eaves bar. They must be arranged so that the flat bit of the angle, in each case faces towards the middle of the house. N.B. For the 10' and 12' models there are 2 diagonal bracing angles per side, for the 14' there are 3 and for the 16', 18' and 20' models there are 4 per side: the extra angles are centrally positioned (diagonally like the 2 end ones) for additional strength. **(Key point)**.

5. Ensure that the glazing bars are tight up against the cill and inside shoulder of the eave, tighten all nuts. The nuts and bolts are made of **high tensile alloy** and are approx. 2 ½ times stronger the ordinary alloy bolts so they can be tightened quite firmly with a spanner without fear of stripping or snapping the thread. Caution should however be exercised when tightening any bolts.

6. Do exactly the same with the other side frame.

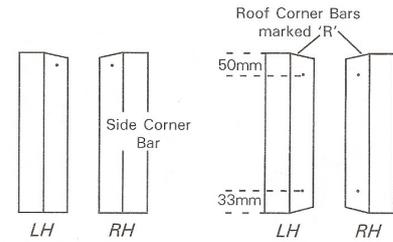
WELL DONE! YOU HAVE SUCCESSFULLY COMPLETED THE 2 SIDE FRAMES!

REAR END ASSEMBLY

If you have ordered a built in base, then follow the section at the back of the booklet in conjunction with the instructions for each sub assembly.

For the construction of this frame you require from the main box: 1 pack of corner bars marked “corner bars” and 1 rear end pack marked “rear end”

From the pack of fittings you need: nuts and bolts, glazing beading and gusset plates (1 large – ridge plate, 2 small – eave plates)



PROCEDURE:

1. Starting with the pack of corner bars split the tape holding them together and first identify the 2 roof bars from the 2 side bars. The side bars have one hole and 1 mitre, both at one end. The other end has no hole and is square cut. They are also shorter in length (1345mm). The roof bars have a series of holes in the flange and are mitred at both ends and in addition have a letter ‘R’ written at the apex on the **outside** of the bar and are longer in length (2221mm). N.B. If your greenhouse is a painted one, the roof corner bars will not be marked with a letter ‘R’. They can be identified from the side bars as outlined above. **(Key point)**.

The bars are also handed so you must identify the left and right hand. Standing up, hold one side bar vertically in your left hand and the other in your right. Rotate the bars so that the 2 bolts slots are facing in towards you, with the mitres at the top (inside view). Viewed this way the 2 mitres should run down to each other. The roof bars can be handed similarly, keeping the bolt slots facing inwards and the letter ‘R’ to the top. (With a painted model, the top can be identified by observing the 4 holes in the flange. The two holes nearest the end are at 50mm and 33mm centres. The 50mm end is the top i.e. nearest the ridge). On the outside you can identify them by ensuring that the ‘R’s (indicating ridge) are at the top, the mitres will then run into each other.

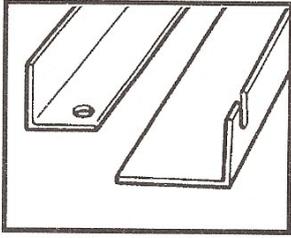
2. Slide the glazing beading into the 5 vertical glazing bars and the 4 corner bars, taking care not to stretch the material. Trim off any surplus level with the end of the bars. N.B. the corner bars have 3 grooves to receive the glazing bead; do not put any in the middle one. **(Key point)**.

3. Lay out the components of the frame on the ground as though you were standing on the inside i.e. with the bolt slot uppermost. Ensure that, having correctly identified the roof from the side corner bars, left and right hands (see previous text) you have the roof bars with the letter ‘R’ (indicating ridge) at the top on the outside, i.e. towards the ground. **(Key point)**.

4. Slide 4 bolts into each roof corner bar **alternative** bolt slot (facing inwards, see picture on next page). Leave 1 at the top, 1 at the bottom and 2 in the middle. Put a nut on and lightly tighten, leaving them approx. 2” from the end of each bar. These will be used later in the general assembly. For the side corner bar you need only insert 2 extra bolts into the **alternative** bolt slots.

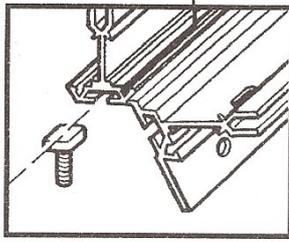
5. Starting at the apex (2 corner bars opposite each other marked ‘R’) slide 1 bolt into the **facing bolt slot** i.e. the one that is facing upwards and is set at 90° to the **alternative** bolt slots – 4 above. **(Key point)**.

6. Place the ridge gusset plate (larger of the 2 types) over the bolt, slide the plate left or right until the slotted hole in the plate lines up with the locating hole in the flange nearest to the end of the corner bar. Put nuts on both bolts i.e. flange and plate finger tip tighten only. **(Key point)**. **DO NOT spanner tighten at this stage.**

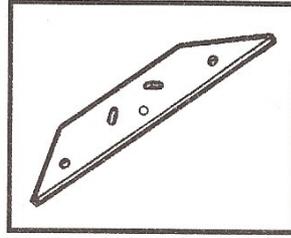


BRACING ANGLE

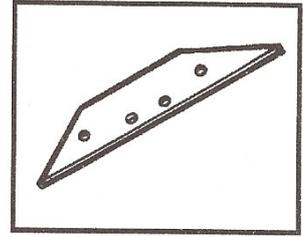
HORIZONTAL BRACING ANGLE



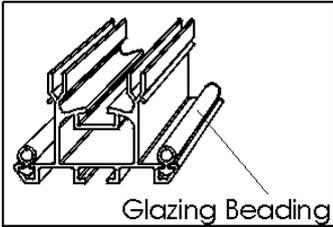
CORNER BAR



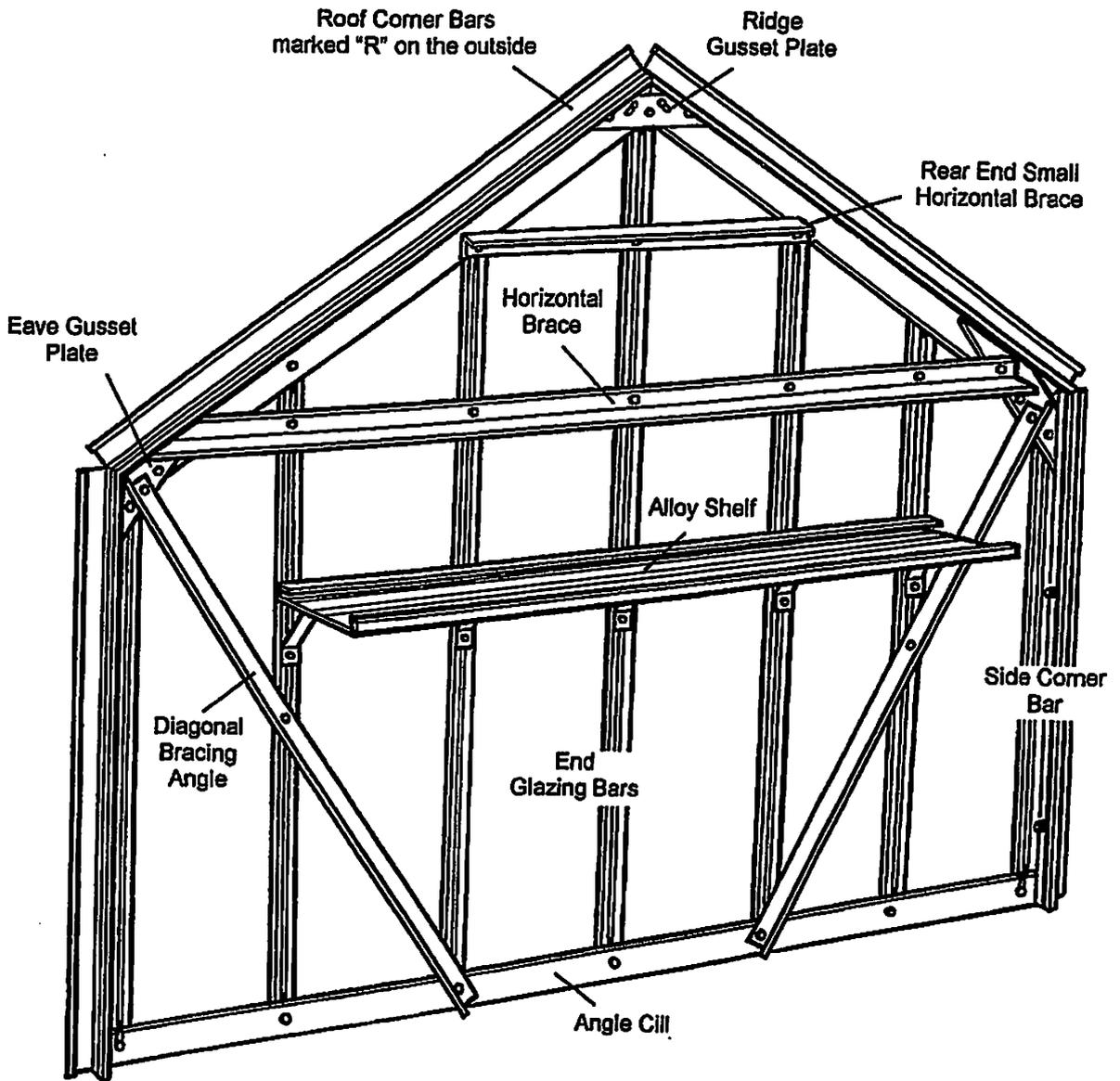
RIDGE GUSSET PLATE



EAVE GUSSET PLATE



Glazing Beading

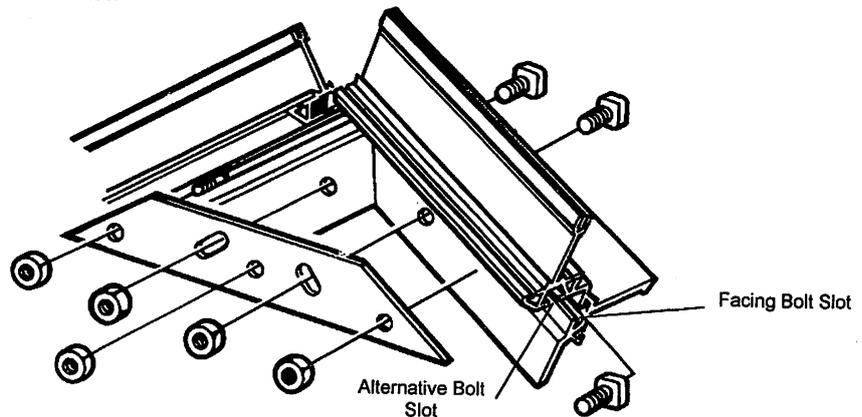


7. Do exactly the same with the other roof corner bar ensuring that the two bars are pressed tight up together behind the ridge gusset plate.

8. At this stage you do not need to use the middle, 5th hole in the gusset plate.

9. Now moving to the eave gusset assembly, slide 3 bolt into the facing bolt slot (the one that is facing upwards and is at 90° see 4 above). Place the eave gusset plate (smaller of the 2 types) onto the bolt and move it left or right until the next hole in the plate lines up with the locating hole in the top of the side corner bar. Place a bolt through the hole and put a nut on finger tip tight only. **(Key point)**. Put a nut on the bottom bolt and finger tip tighten. **Do not spanner tighten at this stage.**

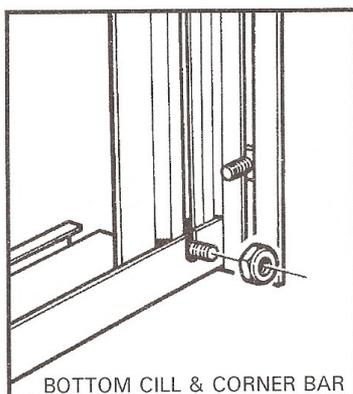
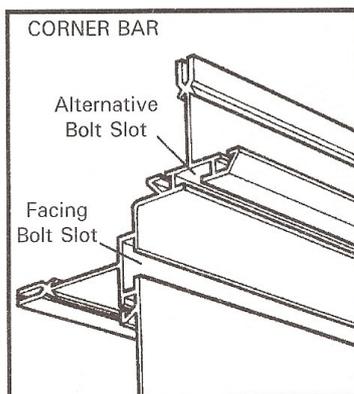
Details of Ridge Gusset Plate on Roof



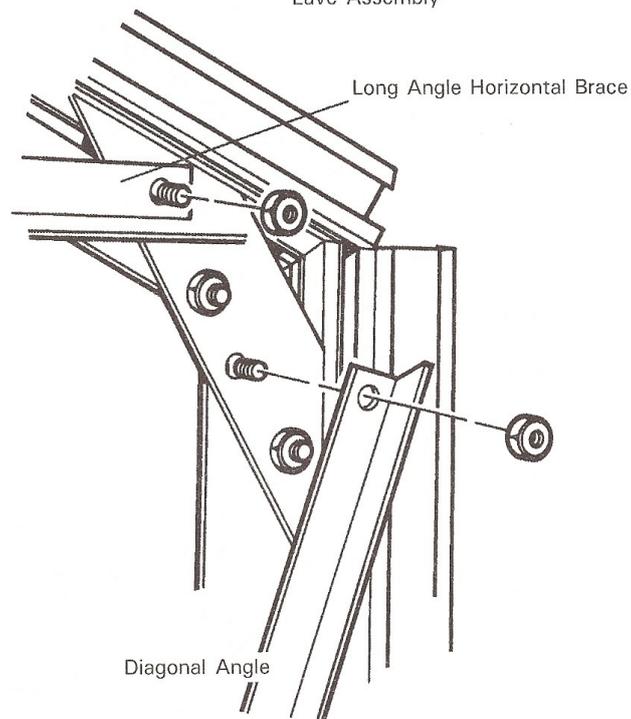
10. Do the same with the other part of the same eave gusset plate, ensuring that both corner bars are tight up against each other behind the eave plate.

11. Repeat steps 9 and 10 at the other corner with another eave gusset plate.

12. Attach the bottom cill to the left and right hand side corner bars by inserting a bolt into the facing slot. Line the bolts up with the slotted hole at the end of the cill, put nuts on and tighten up ensuring that the corner bars are pushed right down into the angle of the cill. **(Key point)**. You can use a spanner on these two bolts.



Details of Eave Assembly



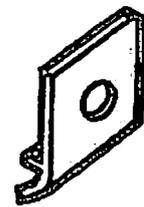
13. You can now attach the 5 vertical glazing bars to the bottom cill in a similar manner to above. The longer bar to the middle hole and the shorter ones to the outer holes. Before attaching the nuts of the intermediate bar, place the diagonal angles (1806mm long) onto the bottom bolt and put a nut on finger tip tight only. Attach the other end of the angle brace to the 2nd bolt up from the bottom of the eave gusset plate. (**Key point**). Put on the nut and finger tip tighten. (**Key point**). Do the same with the other diagonal brace. See illustration on page 11. **DO NOT spanner tighten at this stage.**

14. Moving to the top of the glazing bars, insert 5 bolts into the shorter two glazing bars and 4 bolts into the intermediate two bars and 5 into the longer middle glazing bar.

15. Now you can attach the long angle horizontal brace to the top bolts of the eave gusset plates. The angle should be facing upwards, put the nuts on and finger tip tighten.

16. You can now attach the 5 vertical glazing bars to the roof corner bars (long middle bar to the unoccupied hole in the ridge gusset plate). Slide the last bolt in each bar you inserted in 14 above to the end of each bar and insert them through the holes in the flange of the roof corner bar, place the nuts on and finger tip tighten.

17. Attach the diagonal angles to the 2 shorter glazing bars. Slide the bottom un-occupied bolt previously inserted in 14 above to the middle of the bar. Place the shelf clamp over the bolt and tighten so that the diagonal angle is clamped to the glazing bar.



SHELF CLAMP

18. Now attach the horizontal brace to the 4 upright glazing bars utilising the top un-occupied bolts you inserted in 14 above. Put the nuts on finger tip tight. (**Key point**).

19. Do the same with the small horizontal brace, utilising the nuts and bolts used at the top of the intermediate glazing bars. You should now have two bolts left in each bar. They are used for the shelf.

20. It is easier to attach the shelf to the gable during initial construction so please observe the diagram earlier in the booklet and refer to the plan with the shelf installation.

21. The rear end is now almost complete. Before tightening up all the nuts check the corners to ensure they are tightly up against each other and that all the vertical bars are tight up against the angle of the rear end cill and corner bar. Tighten all nuts; the rear end is now complete.

22. Now attach the rear end shelf using the instructions packed with the shelf fitting.

DOUBLE DOOR END ASSEMBLY

If you have ordered a built in base, then follow the section at the back of the booklet in conjunction with the instructions for each sub assembly.

For the construction of this frame you require from the box:

1 pack of corner bars – marked “corner bars”

Door end pack – marked “door end”

From the main bag of fittings you need: nuts and bolts, glazing beading and gusset plates – 1 large (ridge plate), 2 small (eave plates).

PROCEDURE

The format of the door end is identical to the rear end assembly up to and including step 13 so please refer to those items in the previous pages. Do not attach the middle glazing bar yet as this is much shorter.

1. For step 14, slide 4 bolts into the bolt channel of the 2 short glazing bars. The long glazing bars have 2 bolt channels. Slide 3 bolts into the channel closest to the corner bar and 2 bolts into the channel closest to the door opening.

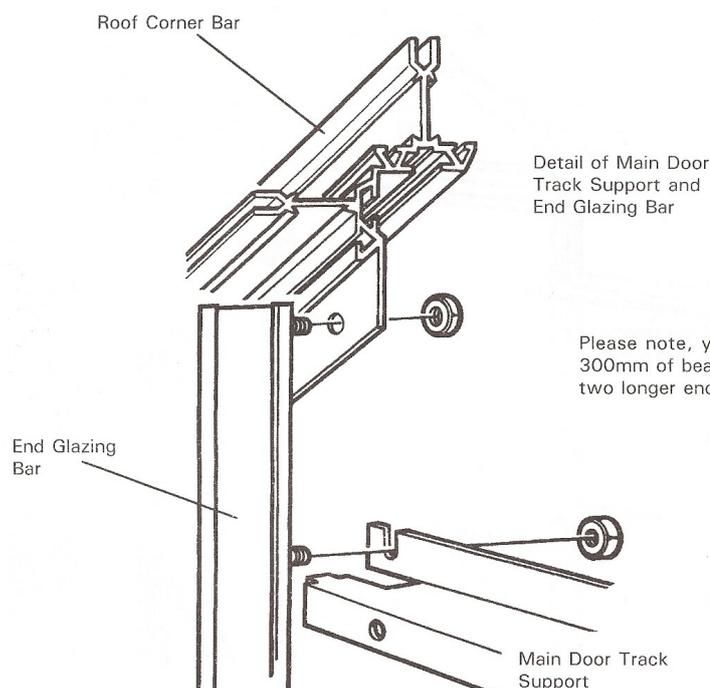
2. The long horizontal brace is replaced by 2 shorter ones that attach to the upper bolt of the gusset plate but stop at the longer middle bars to facilitate the doorway. Fix to the bolt inserted in the channel closest to the corner bar.

3. There are 2 additional short horizontal braces that attach to the 2 shorter vertical glazing bars at a point immediately above where the diagonal angle brace clamps to the bar, then to the longer intermediate bars horizontally along which thus ensures the doorway remains well braced and perpendicular.

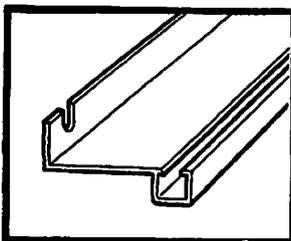
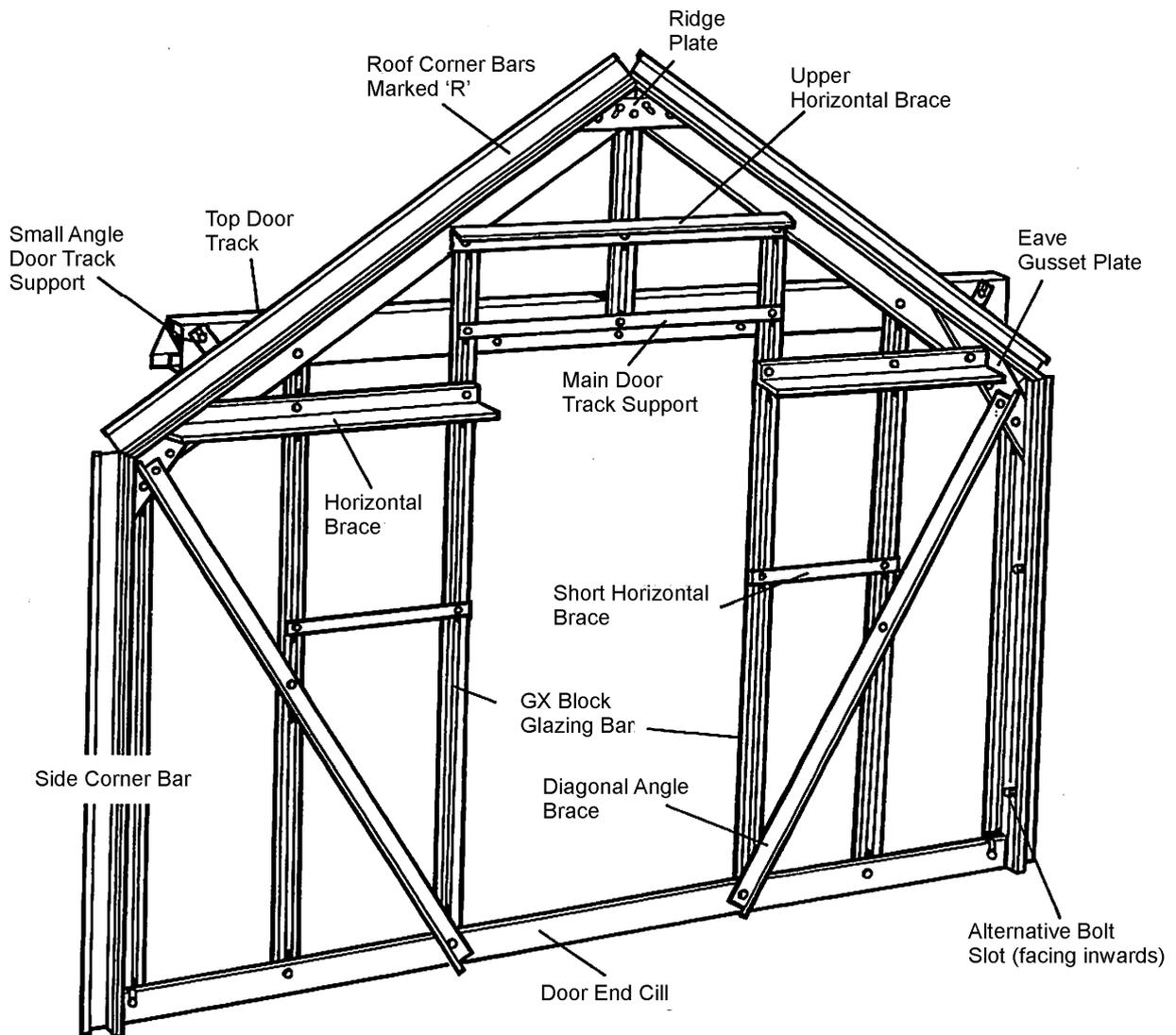
4. The **main door track** support can now be fitted approx. 4” above the horizontal angle. It is important to note that the 2 slotted holes at the extremes of this section are facing **upwards** and not **downwards**. (**Key point**). Do not fit the top door track or the short glazing bar above the door opening at this stage.

5. Attach the upper horizontal brace at the point where the longer end glazing bars meet the corner bars.

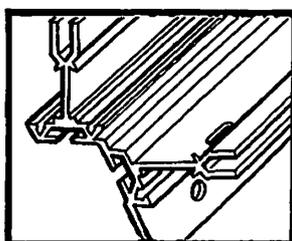
6. Check that all joints are tight and all braces are in position, and then tighten up all nuts. The end is now complete.



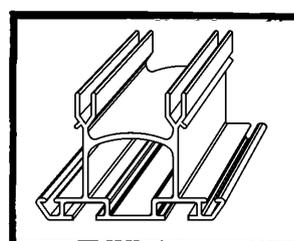
You have now completed the 4 main frames of the structure which can now be joined together. You need not do this procedure on the base but any flat surface near the greenhouse site. If your base is prepared however, you can carry put the assembly there to save lifting it on later. **But before this we construct the vents and doors.**



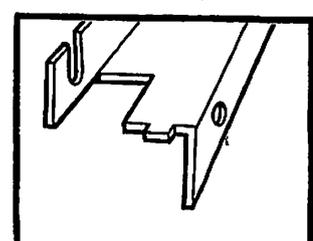
DOOR END CILL



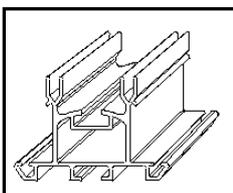
CORNER BAR



GX BLOCK GLAZING BAR



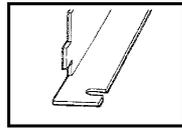
DOOR TRACK SUPPORT



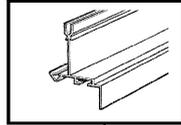
BLOCK GLAZING BAR

ROOF VENT ASSEMBLY

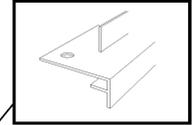
The roof vent pack has 5 pieces of aluminium: and from the main box of fittings you require
6' of glazing beading
4 nuts and bolts
2 casement stay pins
1 casement stay
6 M4 stainless steel nuts and bolts



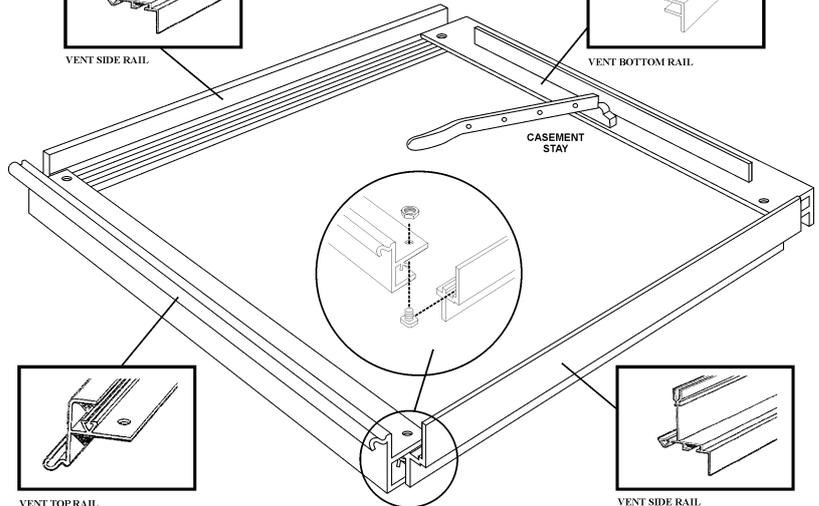
VENT SLAM BAR
(FITTED TO ROOF LATER IN ASSEMBLY)



VENT SIDE RAIL



VENT BOTTOM RAIL



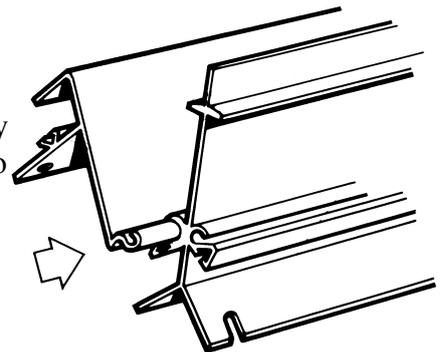
PROCEDURE:

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 slots in the side and top rails and trim to suit.
4. Insert a bolt into each end of the side rail bolt slots, put these bolts through the holes in the top and bottom rails, add nuts and lightly tighten. Check that all joints are secure and that the vent is square, and then tighten up the nuts.
5. Fit the casement stay using the M4 stainless steel nuts and bolts, putting the bolts through the holes in the saddle of the stay and through the 2 elongated holes in the bottom rail. Hold the nuts in place and tighten the bolts with a screwdriver.

Do the same with the other vents.

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

Do not fit the vent at this stage.



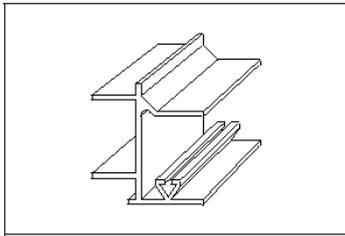
DOOR FRAME ASSEMBLY

Each Door consists of:

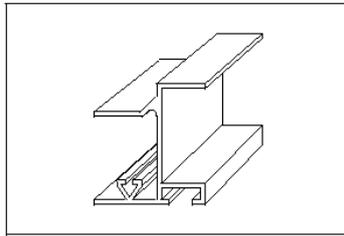
- 1 unhandled door post
- 1 handed door post (handed post for left door is different profile to the handed right hand door post)
- 3 infill panels (1 with pre fabricated lock hole) for lock barrel
- 1 top and bottom door panels
- 3 panels of glass which must be fitted during door assembly. **It is not possible to fit glass after the door is built**

From the main bag of fittings you require;

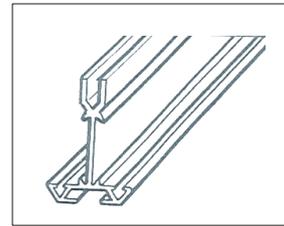
- 2 door wheels
- 1 clip on nylon door skid (this might already be fitted to the bottom door panel)
- 2 lengths of black brush draught excluder with PVC carrier
- Door lock, self tapping screws and spring washers
- 12' glazing beading
- Door handles
- 3 PVC Glass strips



HANDED DOOR POST
RIGHT HAND DOOR



HANDED DOOR POST
LEFT HAND DOOR



UNHANDLED
DOOR POST

Left hand Door (viewed from outside)

Identify the correct door posts. The handed door post for the left hand door has a bolt channel, whereas the handed door post for the right hand door post does not. **(Key point).**

1. Place one unhandled post and the handed post for left hand door on a level surface roughly two feet apart with the bolt slots facing downwards. (Unhandled door post on the left, handed door post on the right). The top of each side post has two screw holes in it, the bottom has three. **(Key point).** Slide the glazing beading into the groove of each bar i.e. only one length of glazing beading per bar.

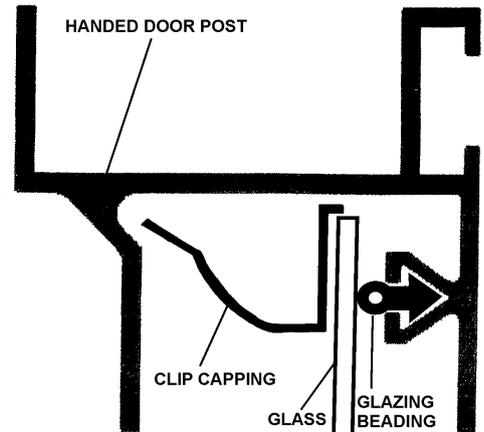


Glazing
Beading

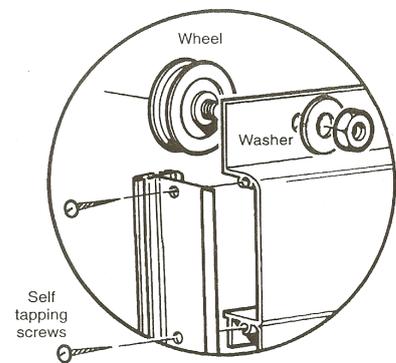
2. Place the top, bottom and 3 infill panels in position as shown by the position of the screw holes in the side pieces and the panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skid to fit on. The lower infill panel locks on to the bottom panel. The infill panel for the left hand door **does not** have a pre fabricated hole for the lock barrel.
3. Fix the left hand door post to the door panels 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 with out 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 assembly, making assembly easier.
4. **GLASS MUST BE FITTED TO EACH DOOR BEFORE THE 2ND DOOR POST IS FITTED—KEY POINT**

5. Before fitting the unhandled door post, offer the glass panels to the door (see glazing plan in booklet for glass size guide on door), slide them in from the side. Carefully attach the unhandled door post in the same way as before, ensuring the glass is sitting in the correct position (sitting on the beading channels of the door posts) before tightening the screws.

6. Make sure all angles are square and tighten all screws. Now insert 2 glazing clips to the glass on the unhandled door post. The handed door posts are clipped using the 6 pieces of clip capping (no metal clips) found in the greenhouse box (3 per door). The clip capping should be cut to the length of the glass, and pushed into the cavity between the frame of the door and the glass, so as to wedge the glass to the back frame of the door. See diagram for final resting position of the clip capping.



7. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door). Put the washer over the bolt and secure with the nut provided, tightening until there is no movement on the bolt. The nuts are lock-nuts and are harder to put on than 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. (See picture).**

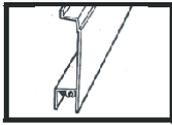


8. Slip the nylon door skids on each of the bottom panels. This may already have been done prior to delivery. After fitting the doors (see later in the booklet), you may need to lower the door skid so that it engages with the bottom door cill to allow smooth movement of the door. Lower the skid on each door and insert a self tapping screw at each end of the skid to reinforce the position.
9. Build the right hand door using the remaining handed and unhandled door post. Viewed from the outside, the handed door post will be on the left of the door, while the unhandled door post will be on the right. At this point you must decide the height you would like your door lock. The hole to take the door lock is on the left hand side of the infill panel. You can decide to fit this panel to the 2nd or 3rd panel down. **Make sure you fit the glass before final fixing of the door.** See glazing plan towards the back of this booklet.
10. Thread the stainless steel backed brush extruder into the PVC carrier. This may already have been done prior to delivery.
11. Turn the doors over and insert the black brush draught excluder in the groove (bolt slot) in the unhandled door posts. Insert a nut and bolt at the bottom of each unhandled door post and tighten so that the brush will not slip down when the door is in its upright position. Cut off the surplus brush and carrier at the top of the bar.
12. Do not fit the door to the gable at this stage – wait until the structure is fully assembled prior to glazing.

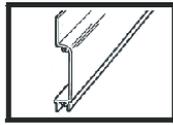
DOOR FRAME ASSEMBLY



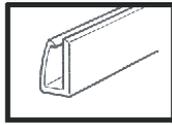
DRAUGHT EXCLUDER



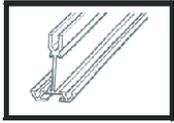
DOOR INFIL PANEL



DOOR TOP/
BOTTOM PANEL



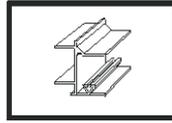
DOOR SKID



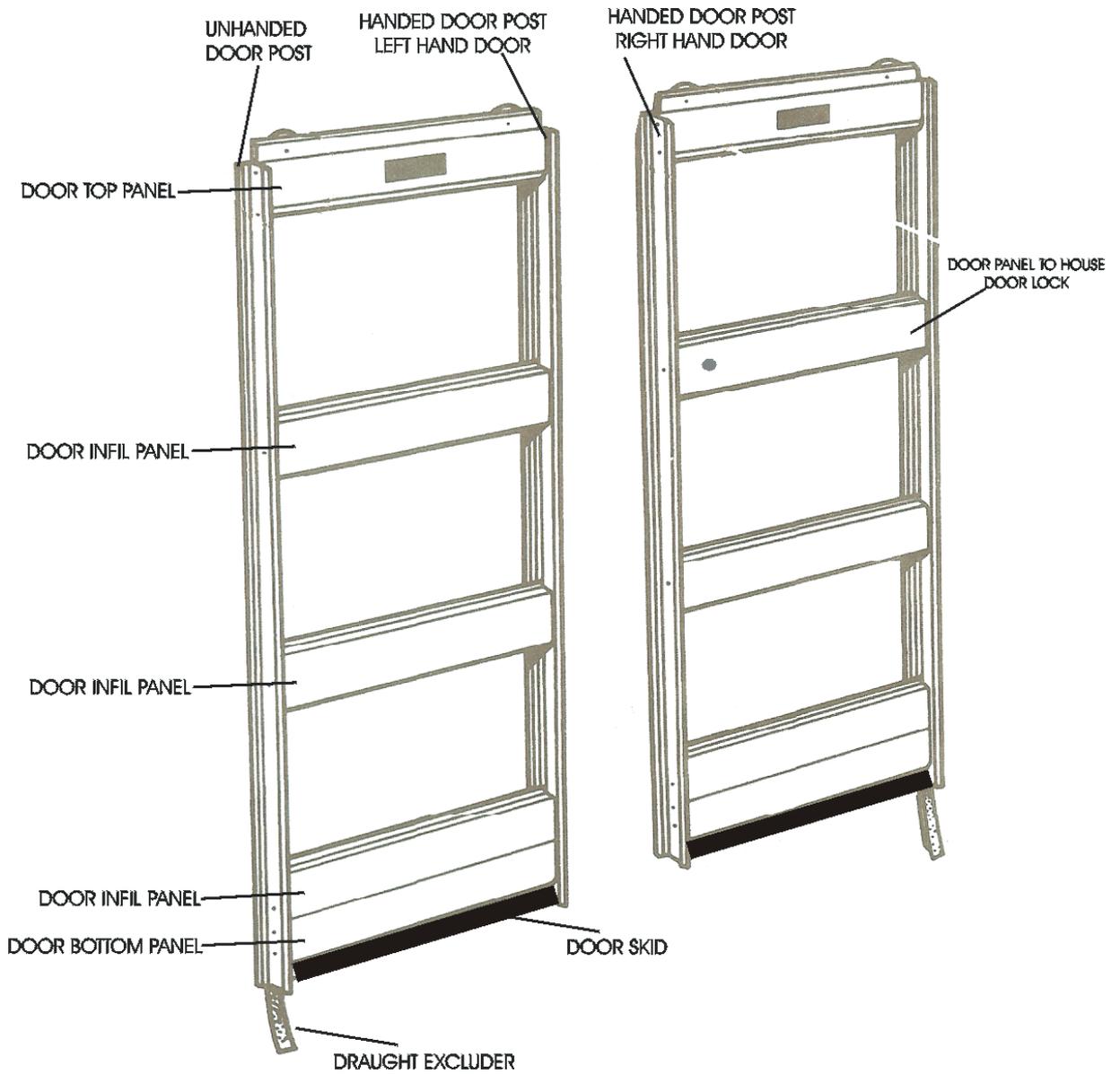
UNHANDLED
DOOR POST



HANDED DOOR POST
LEFT HAND DOOR



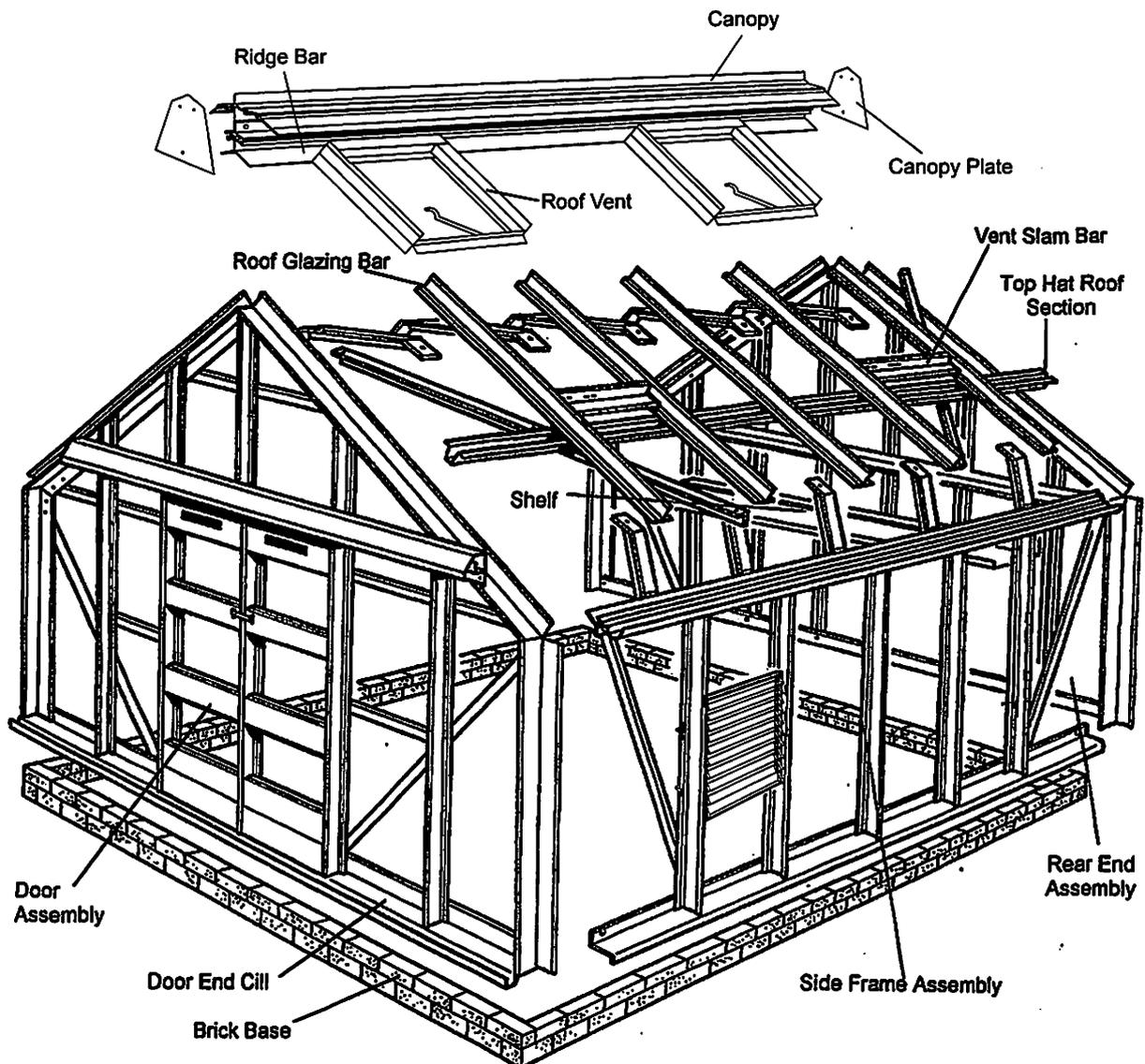
HANDED DOOR POST
RIGHT HAND DOOR

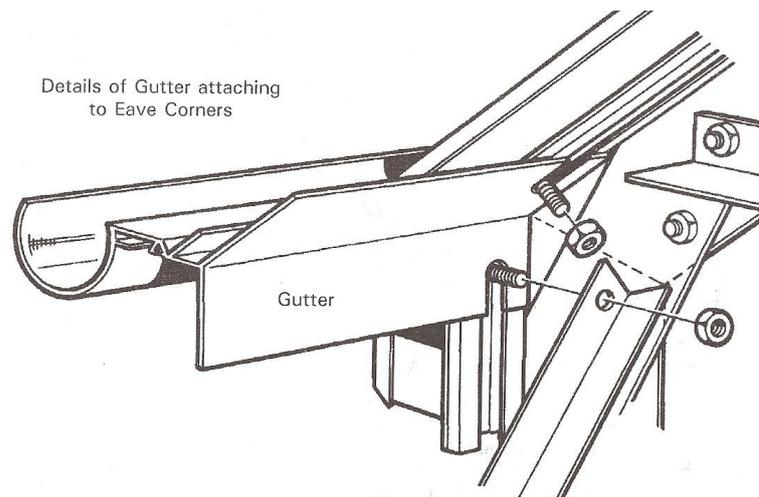


ASSEMBLY OF THE GREENHOUSE UNIT

PROCEDURE

1. With the help of a willing assistant, stand up the rear gable and one of the sides. Standing on the inside of the structure with the gutter facing away from you, insert the eave/gutter bar into the gap between the corner bars, so that the inside flanges which form the angle of roof and side line up with the bolt slots in the corner bars. **(Key point)**.
2. Undo the nuts holding the 2 bolts you inserted in the corner bars alternative bolt slot and slide them into the slotted holes in the flanges. Put a nut on the top bolt, put the side diagonal brace on the bottom bolt and then the nut and tighten up.

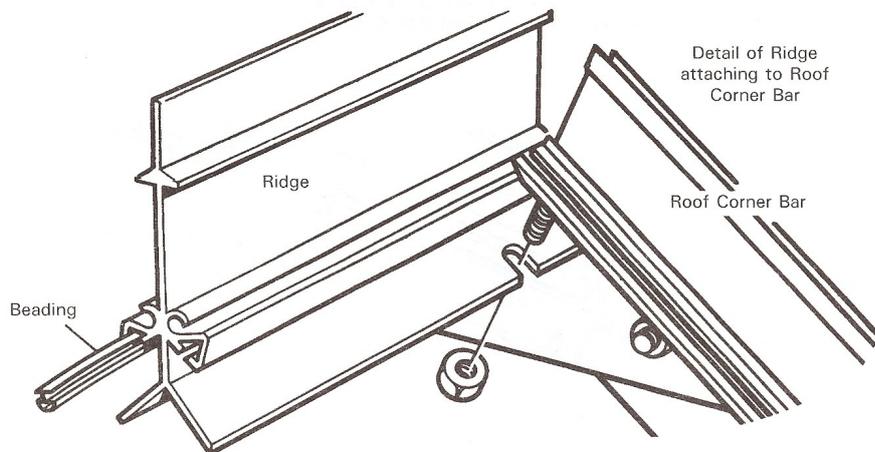




3. Now stand up the door end assembly and repeat the above procedure.

4. Stand up the other side frame and repeat the operation outlined in 1 and 2 above at both corners.

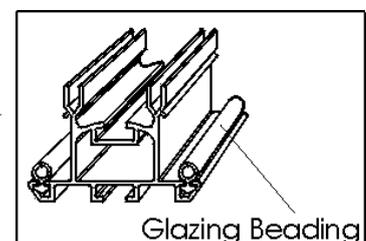
5. The bottom cill of the sides attaches to the corner bars in a similar way. Undo the nuts and bolts inserted in the gable end assembly, move the cill under the corner bar so that the elongated hole in the vertical flange of the side cill lines up with the bolt slot in the corner bar. Move the bolts down the slot into the slotted hole, put a nut on and tighten up, ensuring that the corner bar is pushed right down into the angle of the cill. Do the same at the other 3 bottom corners.



6. The ridge bar is fitted next, but first you must thread the glazing beading into the 2 grooves on the ridge. **(Key point)**. Lift the ridge bar up to the apex and standing on a pair of sturdy

and safely placed stepladders push the ridge into the small gap between the roof corners so that the 2 flanges which form the angle of roof are tight up against the inside edge of the corner bars. Ensure the vertical part of the ridge is outside and pointing outwards. Undo the nuts and bolts previously inserted during the gable end assembly and push them upwards into the slotted holes of the ridge. Tighten all nuts.

7. The roof bars can now be attached to the structure but first you must slide the glazing beading into the bars and trim to suit. **(Key point)**. Attach the bars firstly at the ridge, sliding a bolt into the bolt slot of the roof bars and placing the bolt through the holes in the flanges of the ridge. Put a nut on and immediately prior to tightening ensure that the roof bar is pushed up hard against the ridge. Do not attach the bottom of the bars to the eave until all the roof bars are bolted to the ridge. **(Key point)**.

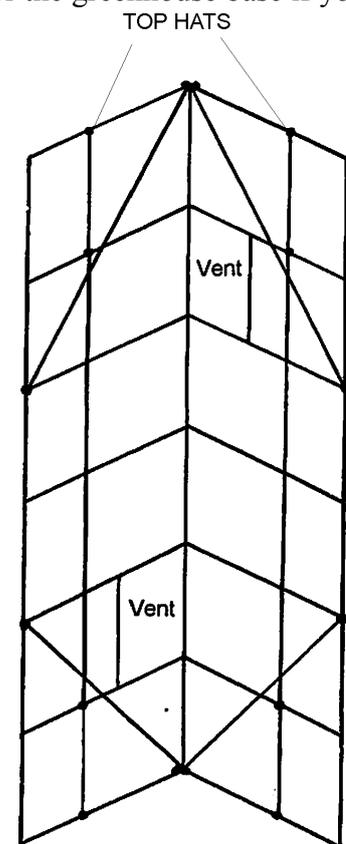
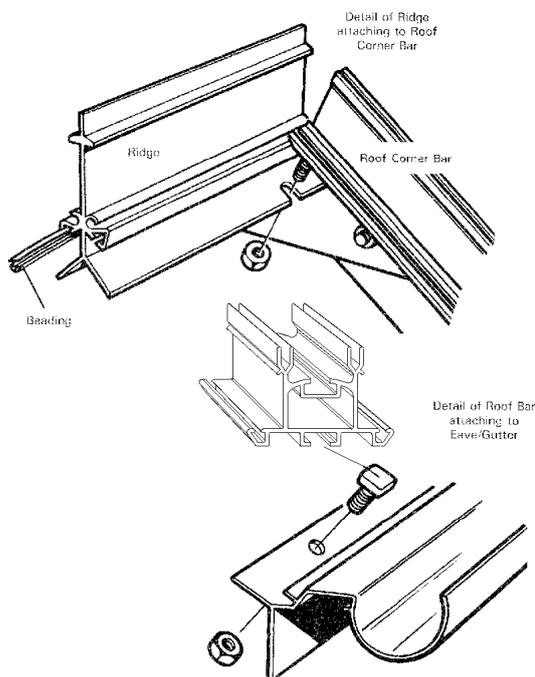


8. Insert 4 bolts into each glazing bar to attach to the top hat roof section and cantilevers at a later stage. For each vent you need an additional bolt for each glazing bar that the vent covers e.g. 12' x 10' model has 2 roof vents, therefore requires 4 extra bolts in 4 different roof bars.

9. Now attach the bottom of the roof bars to the eave/gutter bar into the holes in the upper flange. Start with the middle bars either side of the ridge. You will also need to insert extra bolts into each bar that has a very opening and a cantilever tee-bar brace. Each 2' section has 3 tee-bar cantilevers e.g. 12' x 10' model has 15 in total, 5 in the roof and 5 each side.

10. Before tightening the nuts that hold the roof bar to the eave you must ensure that the roof bar is tight up against the small flange immediately above the gutter. **(Key point)**. Failure to observe this point and the gutter and a slight downward dip of the ridge.

11. At this point you will need to lift the structure onto a firm footing or the greenhouse base if you haven't already done so.

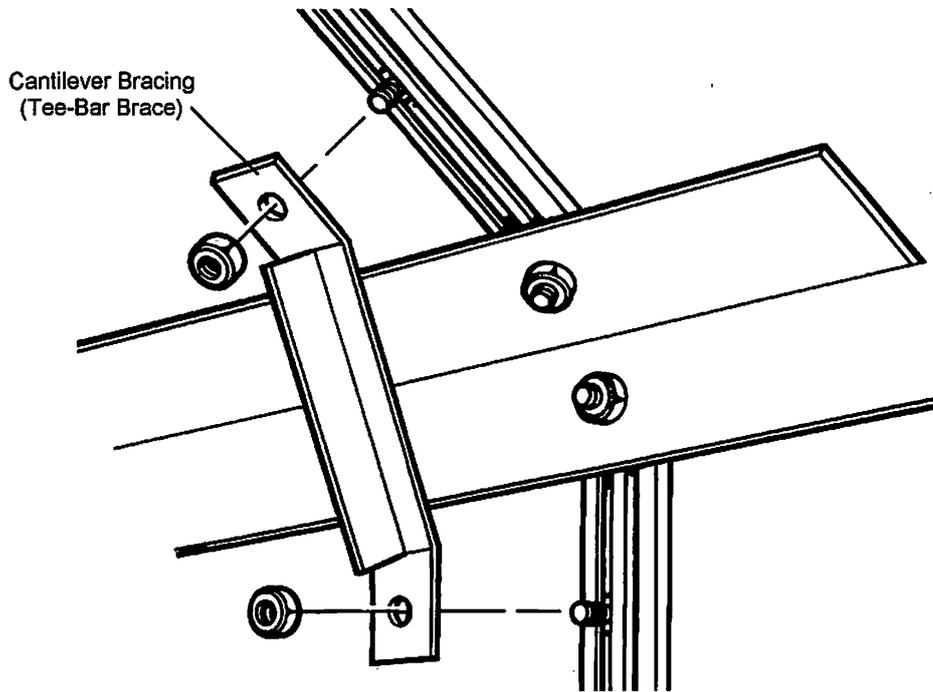
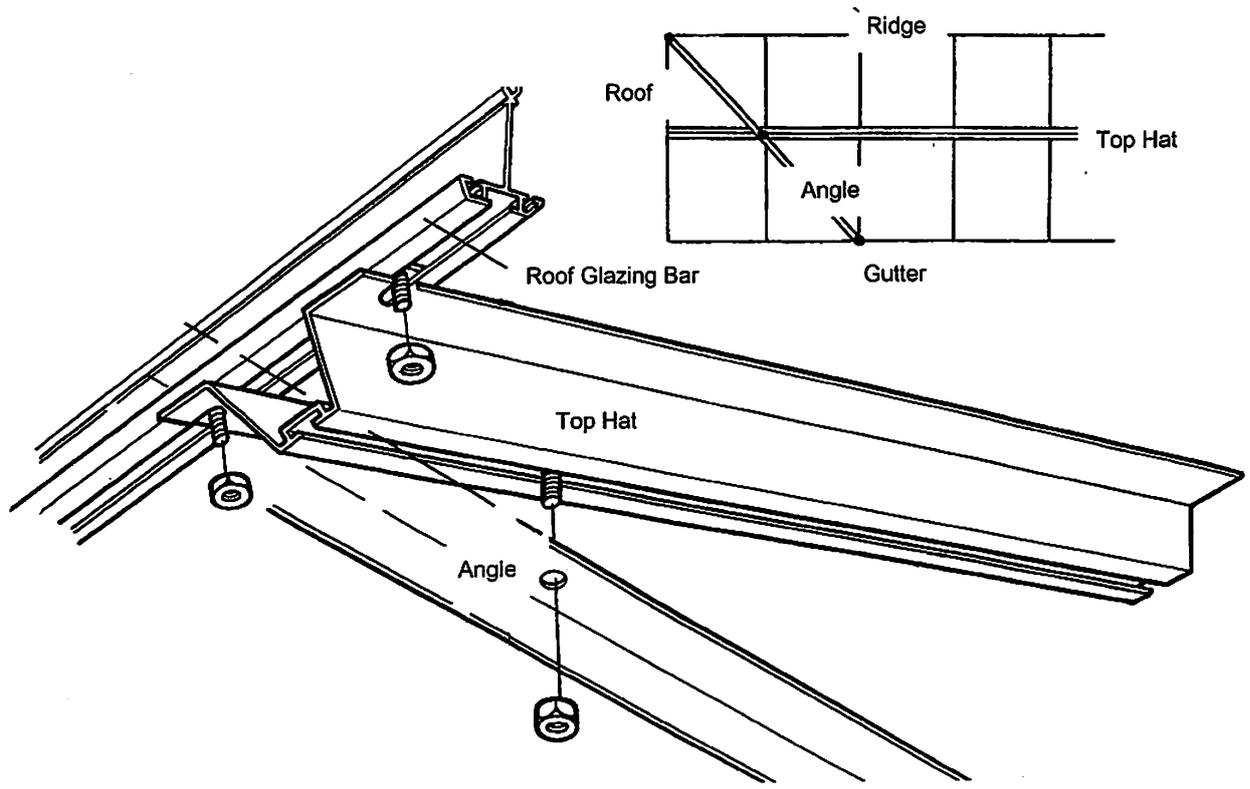


12. On all models there are 2 top hat roof sections and 4 roof diagonal angles. The diagonal angles attach to the point where the ridge meets the roof corner bars and travels diagonally down to the gutter/eave bar at the point where the 2nd glazing bar is bolted. You fit one of these at each corner i.e. 4 per house, but first you must fit the top hat roof section to both corner bars and all glazing bars on both sides of the greenhouse. Insert a bolt into the top hat bolt slot. The top hat is fitted utilising 2 of the 4 extra bolts inserted into the glazing bar earlier and should be positioned midway along the glazing bars. The diagonal angles are fitted around the top hat section 9 see diagram) and attached to the top hat using the pre-inserted bolt in the bolt slot of the top hat.

Before tightening these cantilevers up, make sure there is no sag in the ridge or outward bow in the eave. (Key point). If you have this problem you must straighten it out before tightening the cantilevers up. A bow or a sag can easily be removed with 2 people pushing the gutters towards each other until straight, hold it in position whilst a third person tightens up the cantilevers. Alternatively, a rope across the width of the greenhouse, wrapped around the gutters and wound in with a stout piece of timber will draw the gutters in and also raise the ridge.

The main structure is now complete and it must now be lifted onto its brick base for securing down. **If you have a partition, do not fit the top hat sections at this stage.**

TOP HAT DETAILS



SECURING GREENHOUSE TO BASE

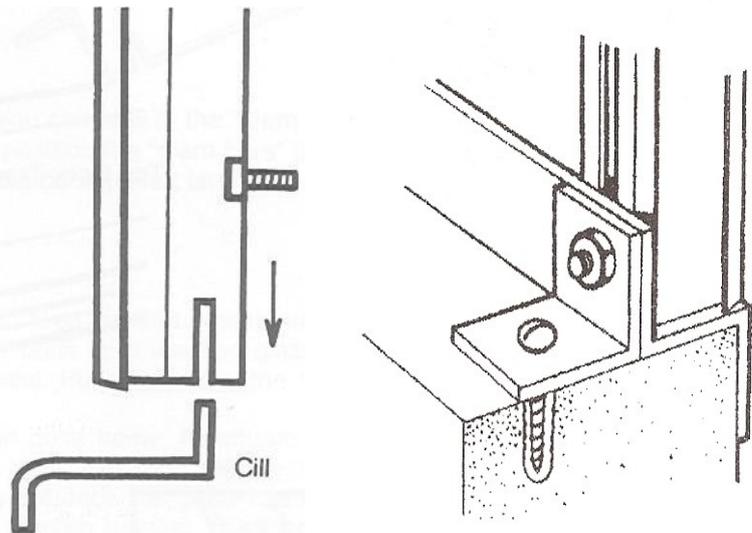
BRICK BASE

Having built your base level and square and to the outside measurements given at the start of the booklet, site the greenhouse onto the brick base. The 4 cills will lip over the base and will protrude approx. ¼" (7mm) all the way round. There are a number of small alloy angle brackets in the pack of fittings; these are bolted onto the upright glazing bars at the point where the cills are attached to them. (See diagram below right). Before bolting them to the frame, first mark the brickwork where the holes are to be drilled. Drill the holes with masonry bit and insert a plastic plug. Secure the small angle brackets to the uprights and screw through the hole in the angle into the plug (as illustrated). If you have a partition you may wish to contact Elite for dimensions for the brick base.

PARTITION

If you have purchased a partition, you now construct the frame in situ. In the box you will find packs marked "partition corner doors", "partition door end cill", "partition door end", "partition door track", "partition door panels" and "partition door posts".

You will also require a number of fittings from the box: 2 eave gusset plates, 1 ridge gusset plate, glazing beading and the nuts and bolts.

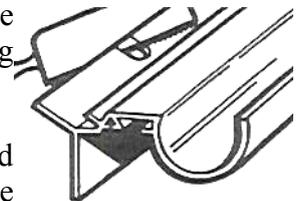


PROCEDURE

1. Starting with the corner bars, identify the roof and side and left and right hands as you did earlier.
2. Each corner bar has a saw cut approx. 20mm into the bar from each end, but apart from that they are identical. Insert the 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 hacksawing down into the hole to form the slot. **(Key point).**

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



5. Slide the 2 bolts into the bolt slot facing inwards i.e. the alternative bolt slot of the corner bars 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 3 bolts into each bolt slot. (Don't forget to ensure that the "R" is at the ridge and **not** the eave). Do the same with the other side and roof corner bars.

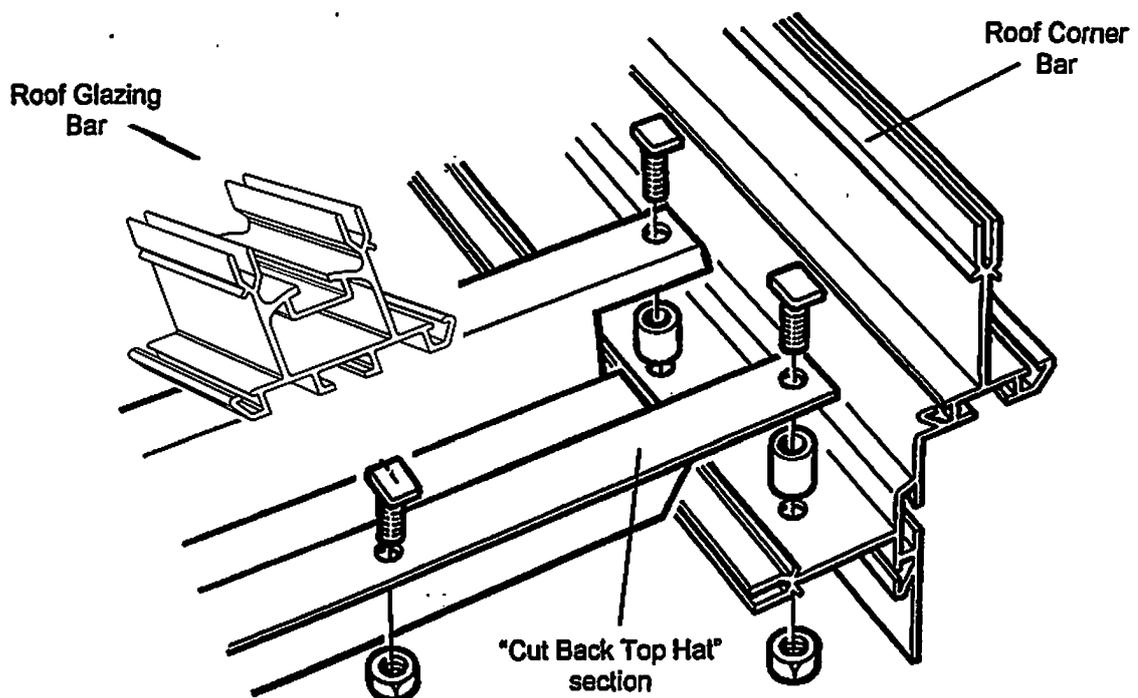
6. Next, offer the gusset plates to the corner bar at the point where they meet. Slide the bolts in the facing bolt slot towards the gusset plates and line up the holes in the gusset plate with the bolts in the facing bolt slot and in the flange of the corner bar. Insert 2 bolts through the gusset plate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

7. The cill can now be attached to the facing bolt slot of the partition corner bar (in the same way you did during the original door end assembly). 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. You can now attach the four vertical glazing bars. Thread the glazing beading into the channels and trim to suit. Slide 4 bolts into the bolt channel of the short glazing bars. Slide 3 bolts into the bolt channel closest to the corner bar of the long glazing bar, and 2 bolts into the bolt slot closest to the door opening. 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 3 glazing bars.

9. Utilising the 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, attach as before. The door in a partition is assembled and hung in the same way as the front gable doors. Partition doors are shorter than the outside doors to afford full width opening.

10. You must now fit the top hat section to your greenhouse. First you must cut back the top hat (this will already be done if you have notified the partition position with your order). The cut back section is fitted in the partition end or extension end of the greenhouse as shown in the diagram. The diagonal roof angles are fitted around the top hats in the same way as described earlier.



EXTERIOR DOOR TRACK

This top door track has no holes in, but 1 continuous bolt slot. You must have the door track centrally positioned. 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. The small glazing bar above the middle of the door can now be fitted. Put the glazing beading into the grooves and trim to suit. Insert 2 bolts into the bar and put them through the holes in the top door track and apex gusset plate. Put nuts on and tighten up.

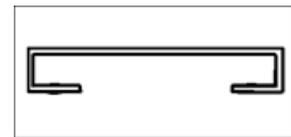
FITTING THE DOORS TO THE STRUCTURE

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

For the left hand door, put the door bottom panel into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end block glazing bars. Carefully ease the door past the block glazing bar and feed in the second wheel. Push further to the right until the draught excluder butts up to the end block glazing bar. The door will now run quite freely. Fit the right hand door from the right hand side in the same way. To square up the doors with the spacing, undo the upper bolts holding the door track. There is a little play to facilitate “fine tuning” of the door.

FITTING THE DOOR HANDLES

The handles are fitted to the infill panel on each 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 handles, and secure with a nut and bolt.



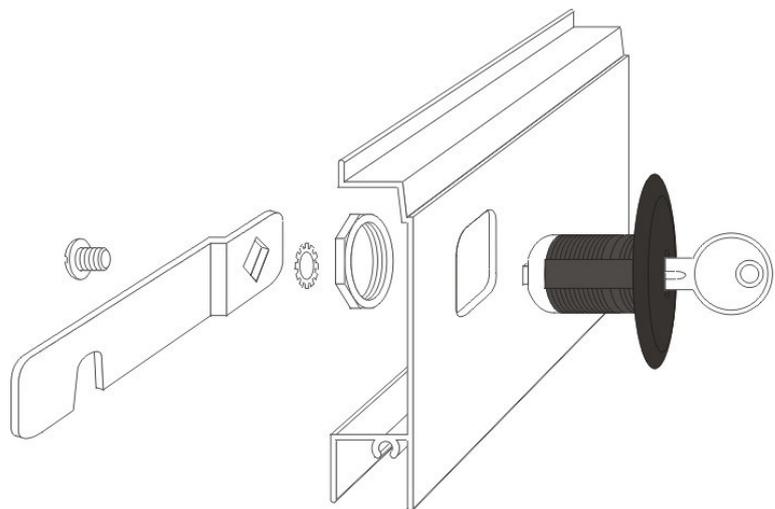
DOOR HANDLE

FITTING THE DOOR LOCK

The door lock must be fitted after the doors are 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, washer and screw to the door lock from the inside position of the door. The lock will turn through 90 degrees both ways, so you must ensure the cam (when fitted) is pointing skywards (unlock position) and horizontal (locked position)

Now using a cropped head bolt, attach the domed pin to the bolt channel of the handed door post on the left hand door (viewed from outside). Move the pin up or down in the channel so that the notch on the cam locates comfortably when horizontal. Tighten all components.



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

Repeat for the 2nd door



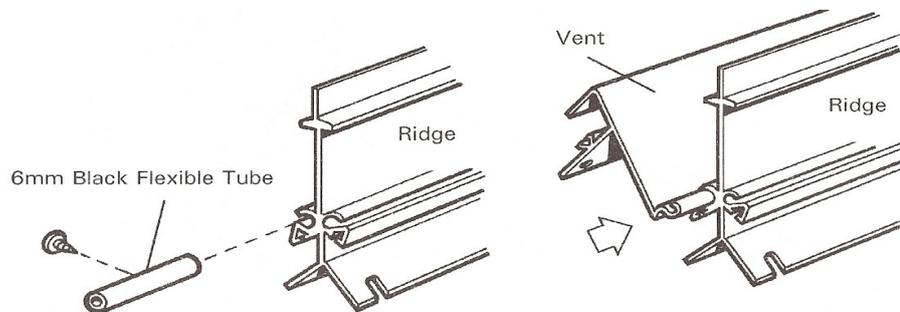
To facilitate smooth running of the door, fit 1 flat bar/door track support at each end of the top door track. The angle has 2 slots at one end of the bar, and nothing at the other. Attach one of the slots to the bolt channel of the back of the door track using a bolt. The blank end of the angle will hang down and line up with the self tapping screw groove on the 'front facing' part of the short glazing bar. Drill a small hole (3mm) in the angle to secure to the corner bar using a screw. Repeat at the other side of the door track.

NOW YOU FIT THE VENT TO THE RIDGE

Slide the vent into position in the 'C' groove as shown. Insert a small black PVC tube into the same channel of the ridge on both sides of each vent. Insert a small self tapping screw into the tube approximately half way along then tighten the screw. The tube will expand and lock into position thus preventing sideways movement of the vent. **N.B.** There is no hole for the screw but it will easily push into the tube and screw up. **(Key point).**

Having slid the vents from the end of the ridge to the desired position, you can now fit the 'slam bars' to the 2 block glazing bars. Utilise the

bolts you inserted during general assembly and position the 'slam bars' just under the vent allowing the casement stay to effectively close. The slam bar can be adjusted later to facilitate good opening and closing of the vent.



FITTING THE ROOF CANOPY

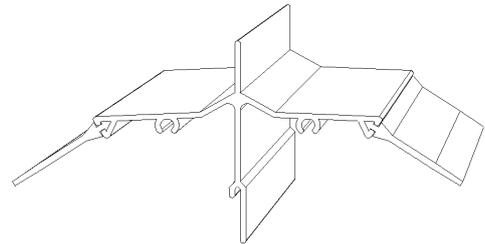
This must be done AFTER the roof vent(s) is/are fitted.

The canopy is fitted on top of the ridge bar, and is slightly longer than the ridge. If your greenhouse is over 8' long, then the canopy will be made up using several pieces.

First sit the canopy on top of the ridge and position the canopies so that the overhang at each end of the ridge is the same and that the end of the canopy is level with the outer edge of the roof corner bars.

Drill through the ridge (7mm diameter hole) and canopy at each end. Insert a bolt, and secure on the other side with a nut.

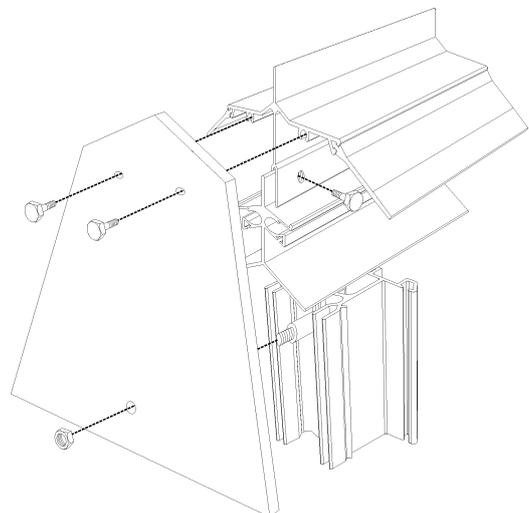
Now insert the canopy seal to each side of the canopy into the seal channel, and feed along so that it is level with the ridge at each end.



FITTING THE CANOPY PLATE

The canopy plate has 3 holes. Slide a LONG bolt (provided) into the external bolt slot of the glazing bar above the door and the central glazing bar at the rear. Fit the canopy plate to this bolt, and put a nut on. Do not tighten yet. Now the top 2 holes in the plate are fitted to the self tapping screw grooves in the ends of the roof canopy using 1/2" colour coded screws provided.

Tighten all screws and nuts.



10 BLADE LOUVRE

The louvre can not be fitted to any of the corner bays of the greenhouse.

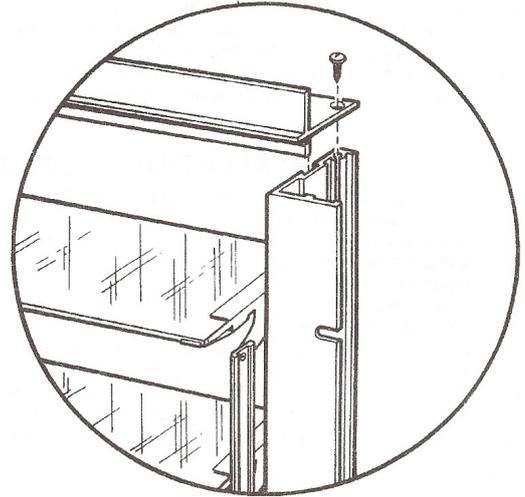
Procedure

1. Place top cill into position on side jamb of louvre and secure with self tapping screws.
2. Do same on the other top corner.
3. Do same with bottom cill.
4. Please note that the handle is on the right hand side.



LOUVRE MODEL CONTAINS

- 1 Top cill
- 1 Bottom cill
- 2 Side jambs (one with handle)
- 4 Self Tapping Screws
- 4 1/2 Headed Bolts & Nuts
- Glass Blades

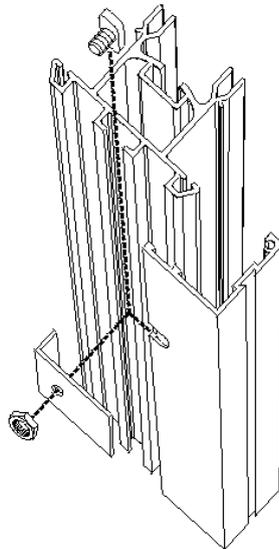


To fit the louvre to the greenhouse frame;

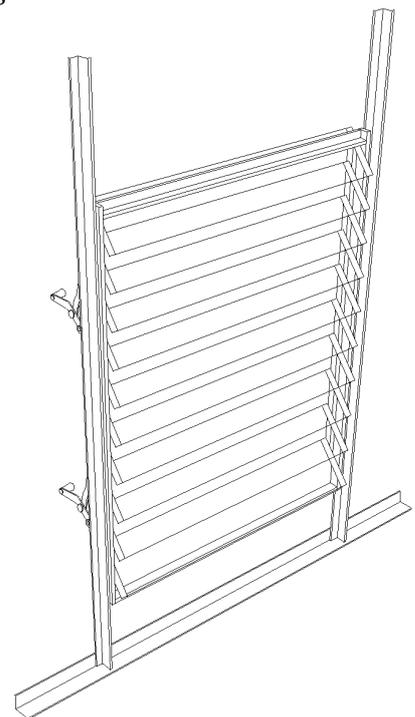
The louvre can be fitted to either of the centre bays at the rear, or the non corner bays of the side. The louvre **MUST** be sandwiched between 2 pieces of glass. It cannot sit directly on top of the bottom cill.

The louvre is fitted from inside the greenhouse, and you must ensure that the handles are on the right (viewed from inside).

1. Decide which bay you intend to fit to, and fit 1 piece of glass on the bottom cill (either ref T6 or T5 depending upon the required louvre height).
2. Offer the louvre to the bay you intend to fit to and sit on top of the previously installed pane of glass.
3. Using the previously inserted bolts (or using 1/2 head bolts supplied) loosely fit the 4 brackets as shown to the greenhouse frame, and then tighten so as to clamp the louvre frame to the greenhouse.



BRACKET FIXING TO
LOUVRE FRAME



TOUGHENED GLASS

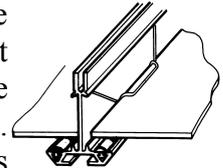
Always handle glass with extreme care as failure to do so can result in injury.

Your greenhouse is supplied with PVC bar capping and you will find the bar capping installation instructions with the bundle of capping.

Your greenhouse is glazed using both wire clips and then bar capping on top.

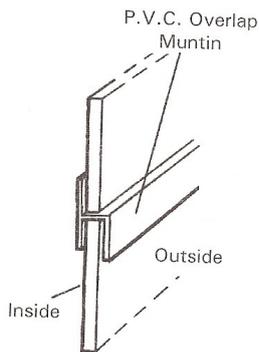
Wire Clips

Start with the panes of glass on the side (see glazing plan later in this booklet), Insert 4 wire clips as illustrated, put one 'wing' of the clip under the ridge at the front of the bar, then insert the two shoulders just behind the edge of the glass. The other 'wing' of the clip, which is not yet engaged in the bar can now be pushed downwards until it clicks into and under the ridge on the front of the glazing bar. 2 on either side of the pane approx. 100mm from the bottom and the top. The upper 2 clips approx. ½" (13mm) from the top edge of the glass. Now insert the intermediate clips so as to have 8 clips per large pane.



Bar Capping should be fitted 'as you go along'. You need access to the top of each roof cap to screw into position, so you will need to poke your head up in the next bay along to enable safe fixing.

With single sheet toughened glass the traditional overlap system used with the horticultural glass is replaced by a rigid P.V.C muntin. Muntins are only used where 2 pieces of glass butt together. Position the muntin on top of the lower pane of glass taking care to have the inside and outside as indicated. Put the next pane on top of the muntin (into the rebate) and clip the glass in, as previously described. There are enough stainless steel clips in your kit for 8 clips per large pane of toughened glass over 1.2m.

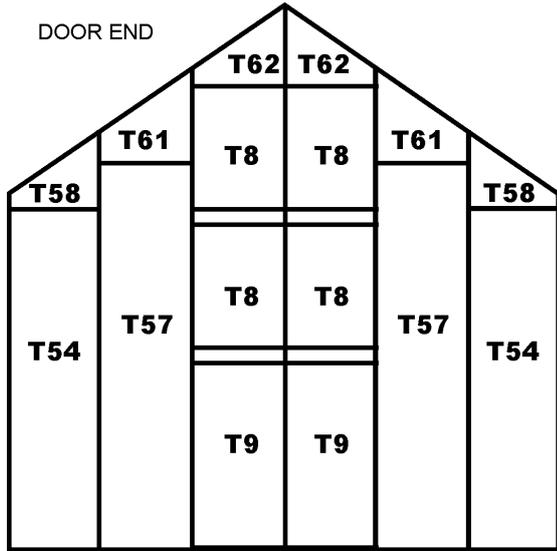


CODE	SIZE
T3	640 x 904
T5	585 x 177
T8	610 x 457
T9	610 x 610
T17	545 x 100
T49	598 x 2232
T50	585 x 2232
T51	598 x 1345
T52	585 x 1345
T53	585 x 243
T54	598 x 1185
T55	585 x 1630
T56	585 x 1980
T57	598 x 1630

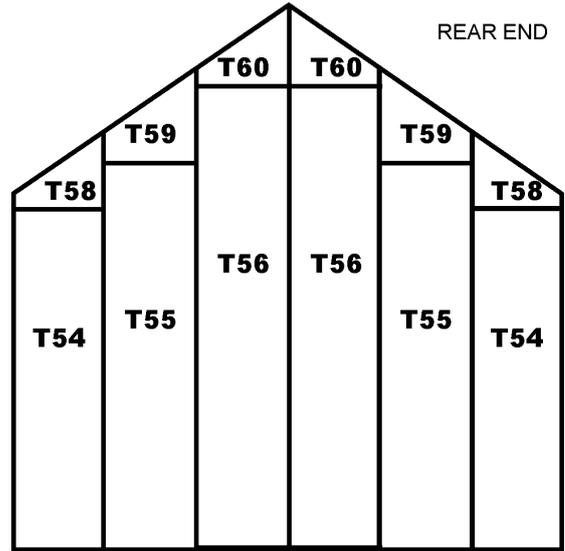
REF/ SIZE	T3	T5	T8	T9	T17	T49	T50	T51	T52	T53	T54	T55	T56	T57	T58	T59	T60	T61	T62
10 x 12	2	1	4	2	10	4	4	4	7	1	4	2	2	2	4	2	2	2	2
12 x 12	2	1	4	2	10	4	6	4	9	1	4	2	2	2	4	2	2	2	2
14 x 12	4	1	4	2	10	4	6	4	13	1	4	2	2	2	4	2	2	2	2
16 x 12	4	1	4	2	10	4	8	4	15	1	4	2	2	2	4	2	2	2	2
18 x 12	6	2	4	2	10	4	8	4	18	2	4	2	2	2	4	2	2	2	2
20 x 12	6	2	4	2	10	4	10	4	20	2	4	2	2	2	4	2	2	2	2

TOUGHENED GLASS PLAN

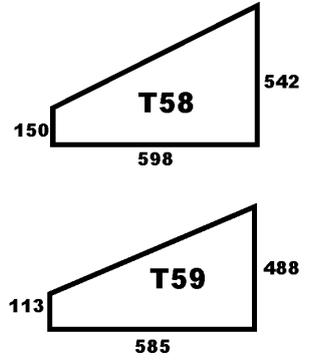
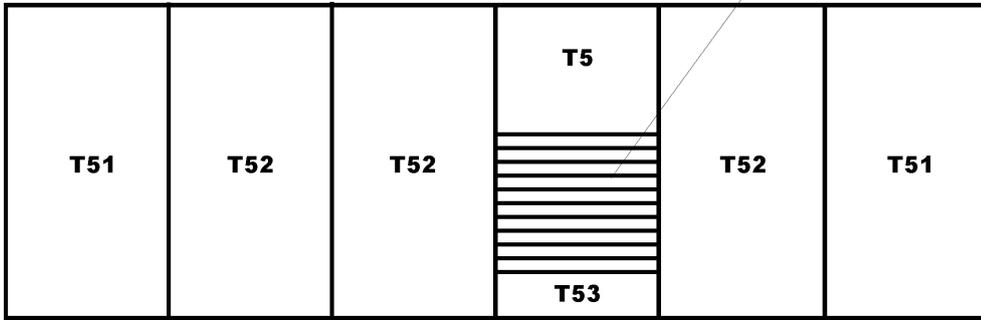
DOOR END



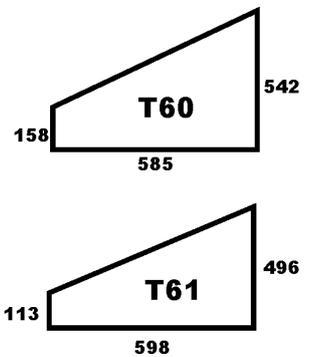
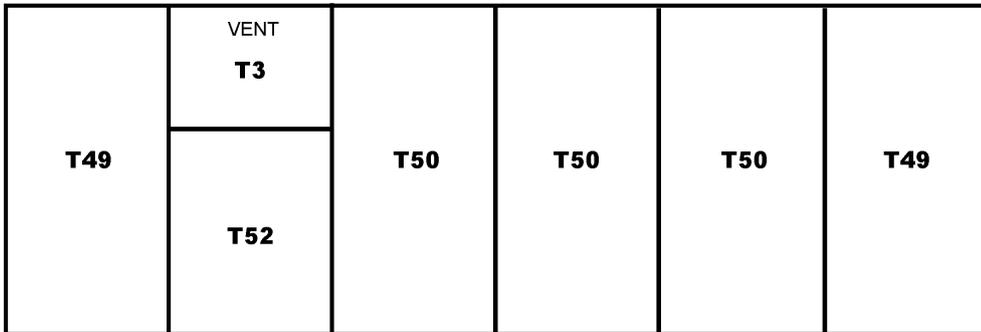
REAR END



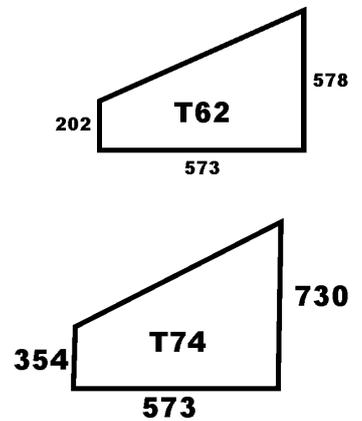
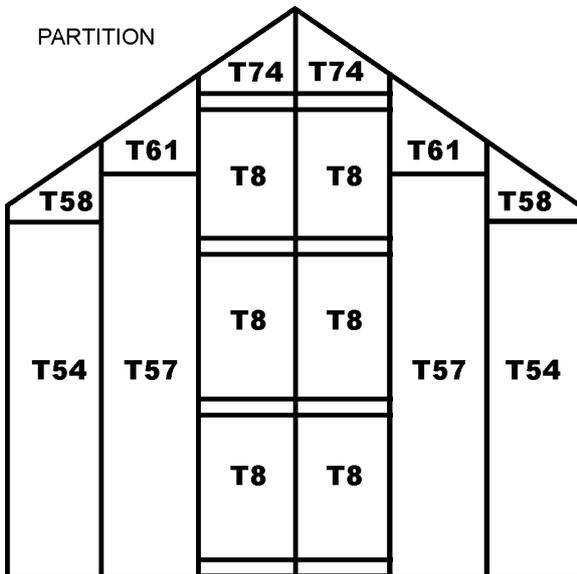
SIDE



ROOF



PARTITION



ELITE 0318