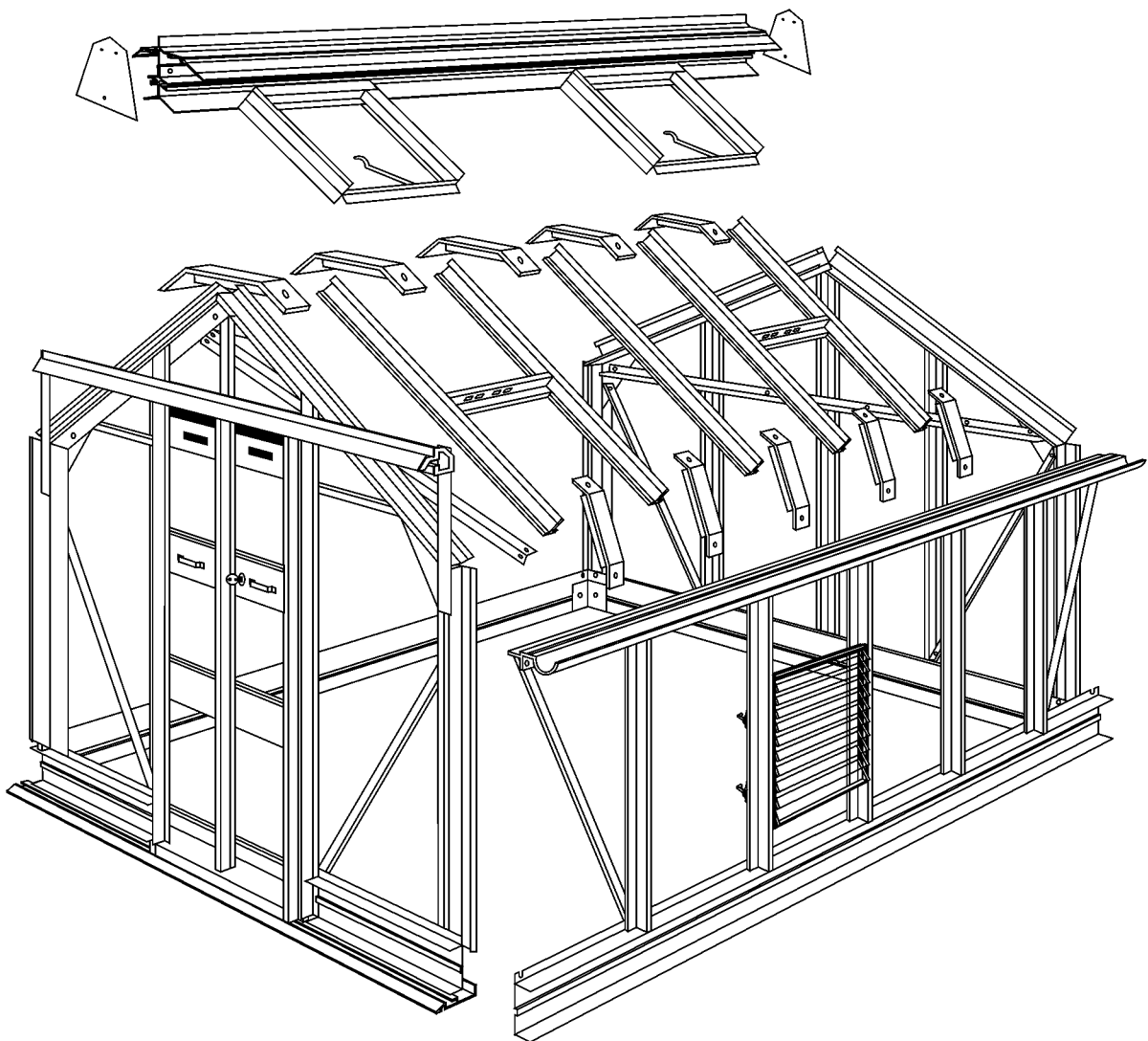




INSTRUCTIONS & ILLUSTRATIONS FOR THE
TITAN 800



ELITE GREENHOUSES LTD

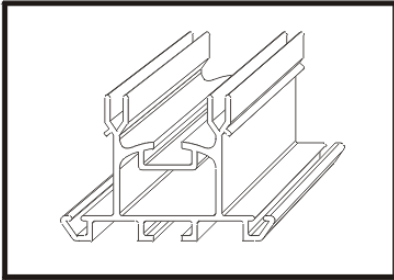
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

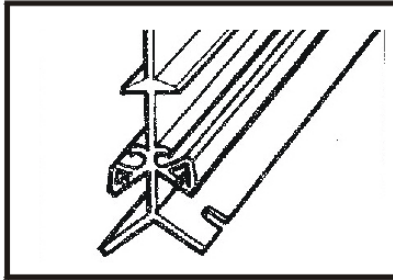
enquiries@elite-greenhouses.co.uk

www.elite-greenhouses.co.uk

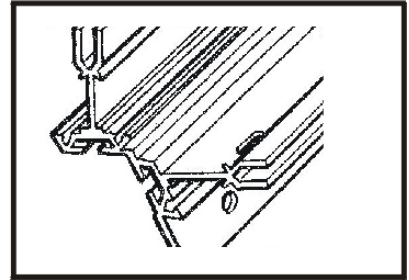
COMPONENT DRAWINGS (NOT TO SCALE)



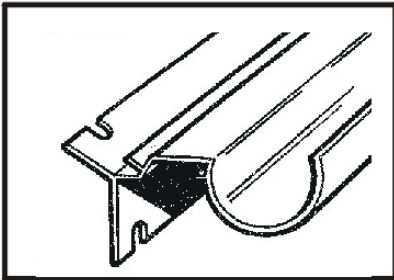
BLOCK GLAZING BAR



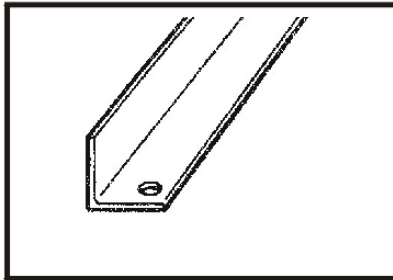
RIDGE



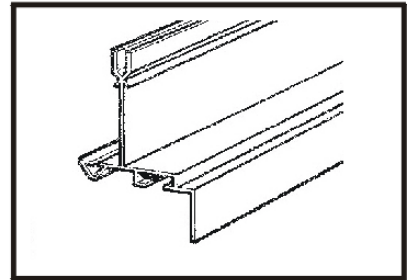
CORNER BAR



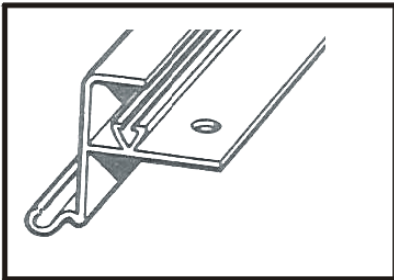
EAVES BAR/GUTTER



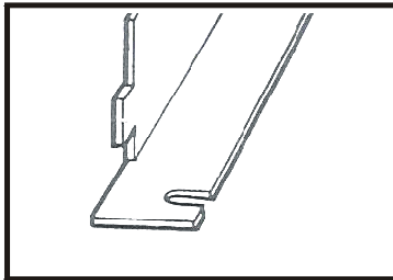
BRACING ANGLE



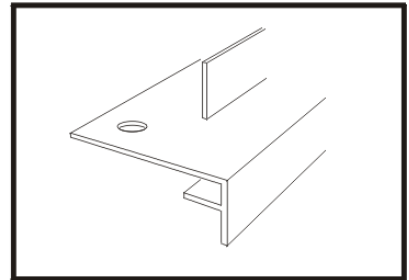
VENT SIDE RAIL



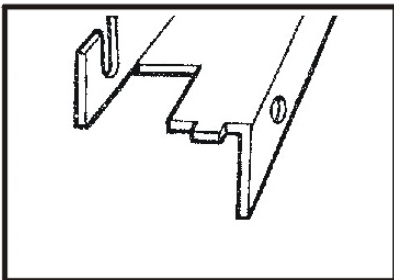
VENT TOP RAIL



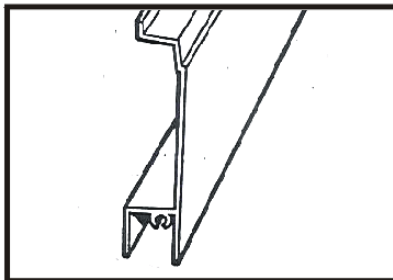
VENT SLAM BAR



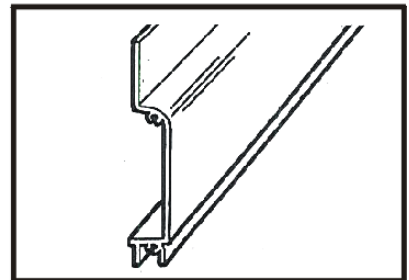
VENT BOTTOM RAIL



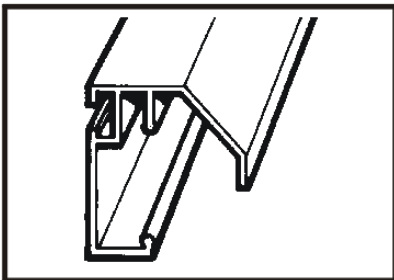
DOOR TRACK SUPPORT



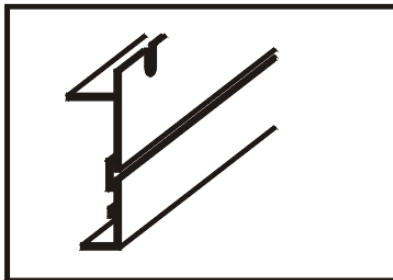
DOOR INFIL PANEL



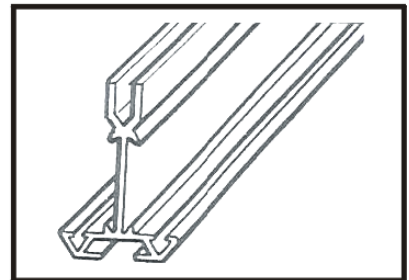
DOOR TOP/BOTTOM PANEL



TOP DOOR TRACK

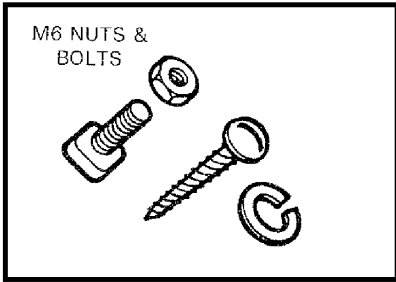


BUILT IN BASE

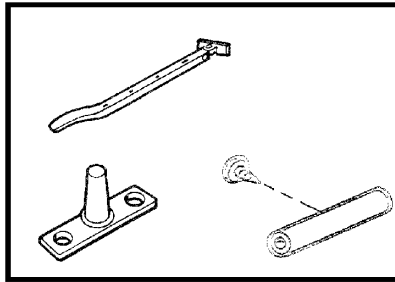


UNHANDLED DOOR POST

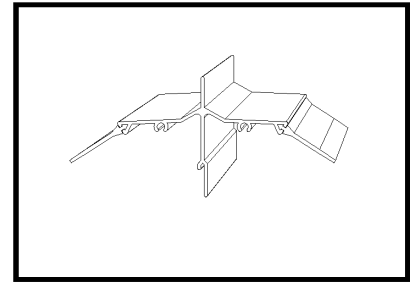
FITTINGS WITHIN THE KIT (NOT TO SCALE)



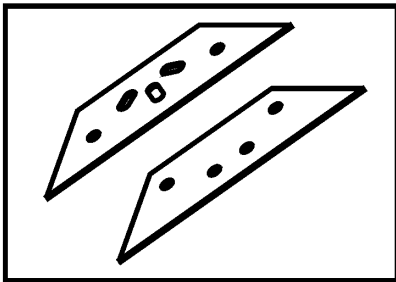
M6 NUTS & BOLTS
SELF TAPPING SCREWS
SPRING WASHER



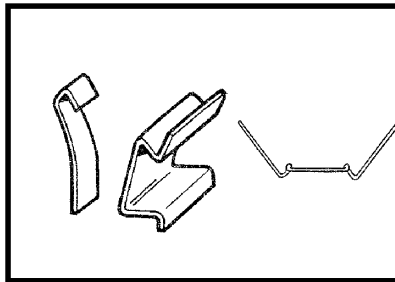
CASEMENT STAY + PINS + VENT STOPPER



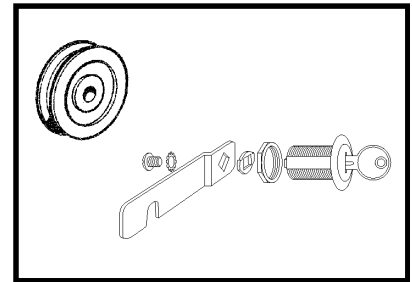
RIDGE CANOPY + SEAL



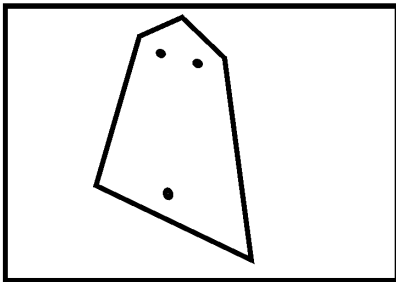
APEX & EAVE GUSSET PLATES



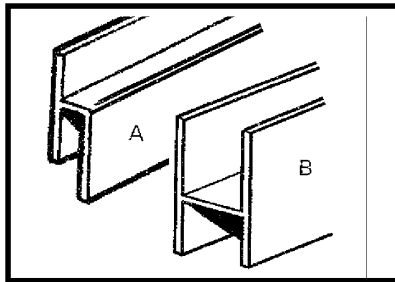
OVERLAP, SPRING + WIRE CLIPS



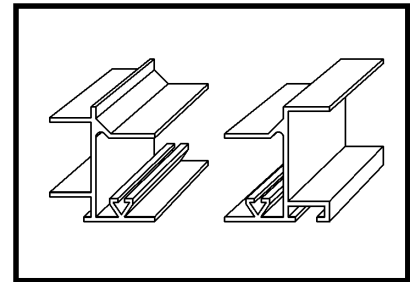
DOOR WHEEL + DOOR LOCK



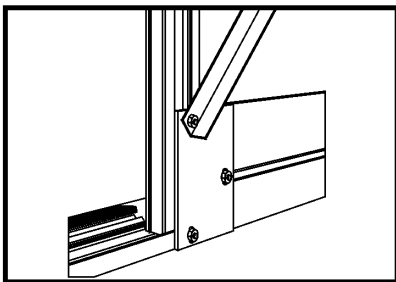
CANOPY PLATE



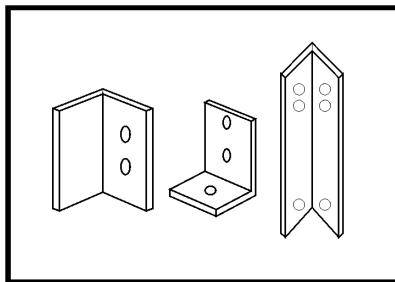
A=MUNTIN B= ROOF SPACERS



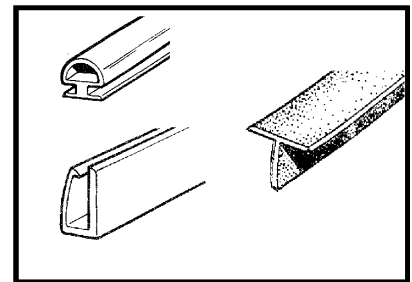
HANDED DOOR POSTS



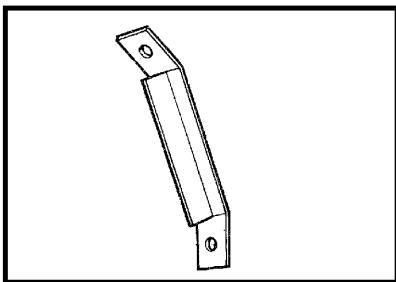
DOOR END PLATE



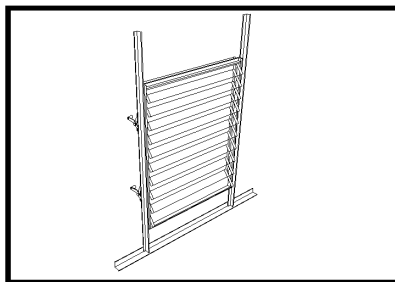
DOOR STOP, ANGLE BRACKET + BASE LEG



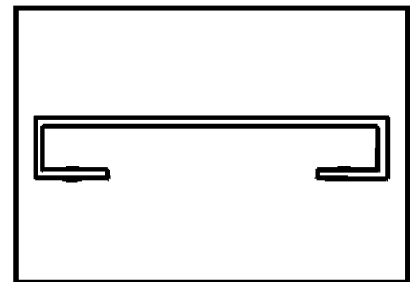
NEOPRENE BEADING, DOOR SKID + DRAUGHT EXCLUDER



CANTILEVER BRACE



LOUVRE



DOOR HANDLE

HELPFUL HINTS AND 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 must be anchored to a permanent foundation. This will not only help secure it against powerful winds, but will help prevent breakage of the glass caused by the freezing and thawing process of the earth. **(Key point)**.
- When building your own brick/concrete foundations ensure that they are level and square otherwise your frame will not be correct and the glass will not fit.
- Be sure all four corners of the constructed greenhouse are square before installing glass, and do not install the glass until the greenhouse is on a permanent foundation.
- Do not place your greenhouse in vulnerable locations such as under trees, playing areas etc.
- Children should not play near glass greenhouses.
- REMEMBER: Glass is fragile. Handle with extreme care! **(Key point)**.
- Protective clothing such as gloves, strong outer clothing and eye glasses should be worn.
- Be careful when using agricultural chemicals such as fertilisers, fungicides and insecticides etc., in the greenhouse. Do not use chemicals that are for outside use only. Always read the labels very carefully.
- Do not push or lean on the glass panels.
- Use extra care when moving heavy or awkward objects such as tables, poles, internal frames etc. within or near the greenhouse.
- Do not latch the door when anybody is inside the greenhouse.
- Be aware of the increased temperature of 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"/3mm holes in the ends of some bars. These are jig holes for painting and have no bearing on construction. **(Key point)**.
- 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.
- We reserve the right to alter and improve our products.

DETAILED ASSEMBLY INSTRUCTIONS

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

It is recommended that each frame assembly is **fully** completed before moving on to the next.

The frames to be constructed are as follows:

1. SIDE FRAME – Two off.
2. REAR GABLE – One off.
3. DOOR GABLE – One off.
4. ROOF VENT – One for 6 x 8, two for 8 x 8, 10 x 8, 12 x 8, four for 14 x 8 and 16 x 8, six for 18 x 8 and 20 x 8.
5. DOOR(S) – Two off 2' 0" wide
6. Additional parts such as the ridge, roof bars, louvre, eave ties etc. are put on “loose” and are not pre-constructed into an independent frame. The partition, if appropriate is constructed in situ and not as an independent frame.

WE CAN NOW COMMENCE WITH THE ASSEMBLY !

SIDE FRAME ASSEMBLY

From the main box you require: Pack of side block glazing bars marked “side”.
Pack of gutters and side angles.
Built in base side cills.

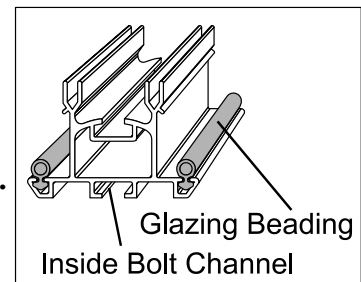
From the pack of fittings you need: Nuts and bolts and glazing beading.

PROCEDURE. For the point of this plan we have used a 12' x 8' side as an illustration. The procedure is identical for a 6' x 8' and 20' x 8' apart from, you need more or less side block glazing bars, nuts and bolts, glazing beading and longer or shorter gutters and built in base cill. **(Key point).**

If you have purchased a **partition** with your greenhouse you will have 2 less roof and 2 less side block glazing bars. These are replaced with an extra set of corner bars. You must decide where the partition is to be situated and at that point **leave out** one side block glazing 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 are given in a supplementary booklet, but for the time being do nothing apart from the omission of the side block glazing bar. If you have not purchased a partition disregard this and future notes relating thereto.

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

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



2. Slide a bolt into each end of each block glazing bar, using the inside bolt slot, i.e. the one facing upwards, and one in the middle to enable the cantilever brace to be fitted. (If you have bought a shelf and /or louvre to go in your greenhouse and you intend to fit it on a side wall, use the ½” headed bolts provided with the shelf fittings these can be inserted later).
3. Fix the combined eaves bar/gutter to the block glazing bar (s) by pushing the bolts through the holes in the eaves bar, and securing with a nut. You do not need to tighten the nuts too much at this stage, but they need to be tight enough to stop the bolts slipping out of the block glazing bar.
4. Fix the built in base cill to the middle block glazing bar by pushing the bolt through the hole in the cill unit and tightening.
5. Correctly position the built in base cill on the outer most block glazing bars by pushing the bolts through the holes in the cill, but do not put the nuts on yet.
6. Place the angled tie bars over these bolts so that they point outwards towards the ends of eaves bar. They must be so arranged that the flat bit of the angle in each case faces towards the middle of the house (i.e. the elongated slit will be by the eaves in one case and by the cill in the other). **(Key point).** The 6', 8' 10' and 12' models have 2 angle tie bars each side, the 14' model has 3 each side and the 16', 18' and 20' has 4 each side.

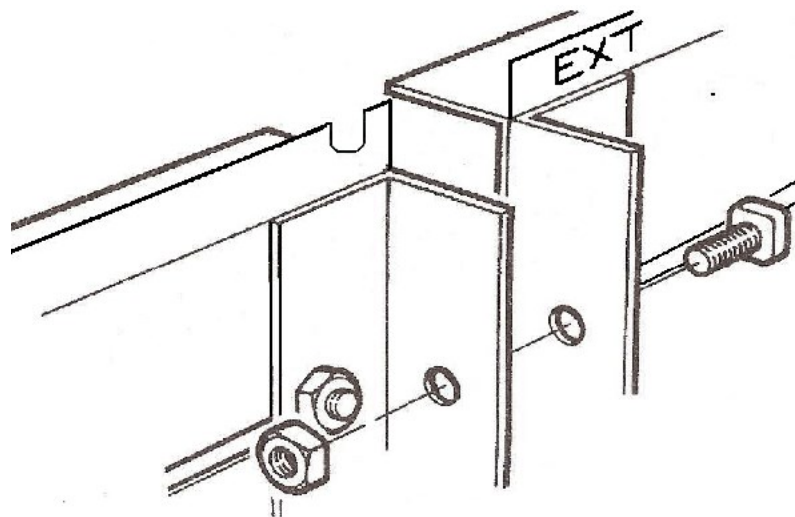
Do not attach the angle tie bar to the end of the eave/gutter at this stage.

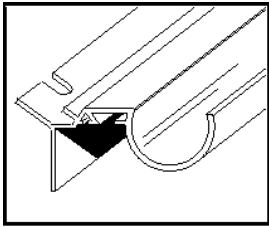
7. Put nuts on bottom bolts and lightly tighten.
8. Do the same with the other side frame assembly.
9. Make sure that the block glazing bars reach both the built in base cill and the eaves in each case. Tighten all nuts. **(Key point)**.
10. If you intend to fit any Elite accessories (louvres, shelf, staging) they will be packed with ½ head bolts to enable them to be retro fitted. You do not need to pre insert any bolts for these accessories.
11. If you are fitting your greenhouse onto hard standing (flags, concrete etc), then insert bolts into the bolt channel of the built in base (generally 1 every 2'). These will be used to anchor the greenhouse to the floor during general assembly. For fitting on hard or soft standing, slide 1 extra bolt into the bolt channel at both ends of the built in base. These will be used to secure the corner bracket/base leg.

If your greenhouse is over 12'5" in length, you will need to attach the side base sections together to form the length of your greenhouse. You will notice that you have 4 side base pieces, 2 of which will be un-fabricated at 1 end. These 2 sections are handed sections and must be fitted to the correct side assembly.

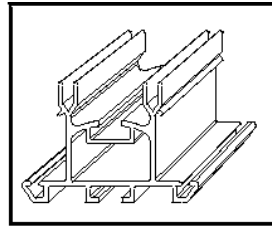
The un-fabricated end of the base will be joined to the unhandled base section as shown below. It is essential that the un-fabricated end is towards the middle of the greenhouse side assembly and not at one of the ends.

To attach the 2 base pieces together you must attach 2 base legs back to back, bolt them together and attach the vacant end of each base leg to the bolt channel of the base section as shown. Your gutter section will be in one piece and will not need to be joined (except where greenhouse is over 20'5").

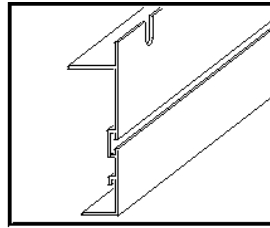




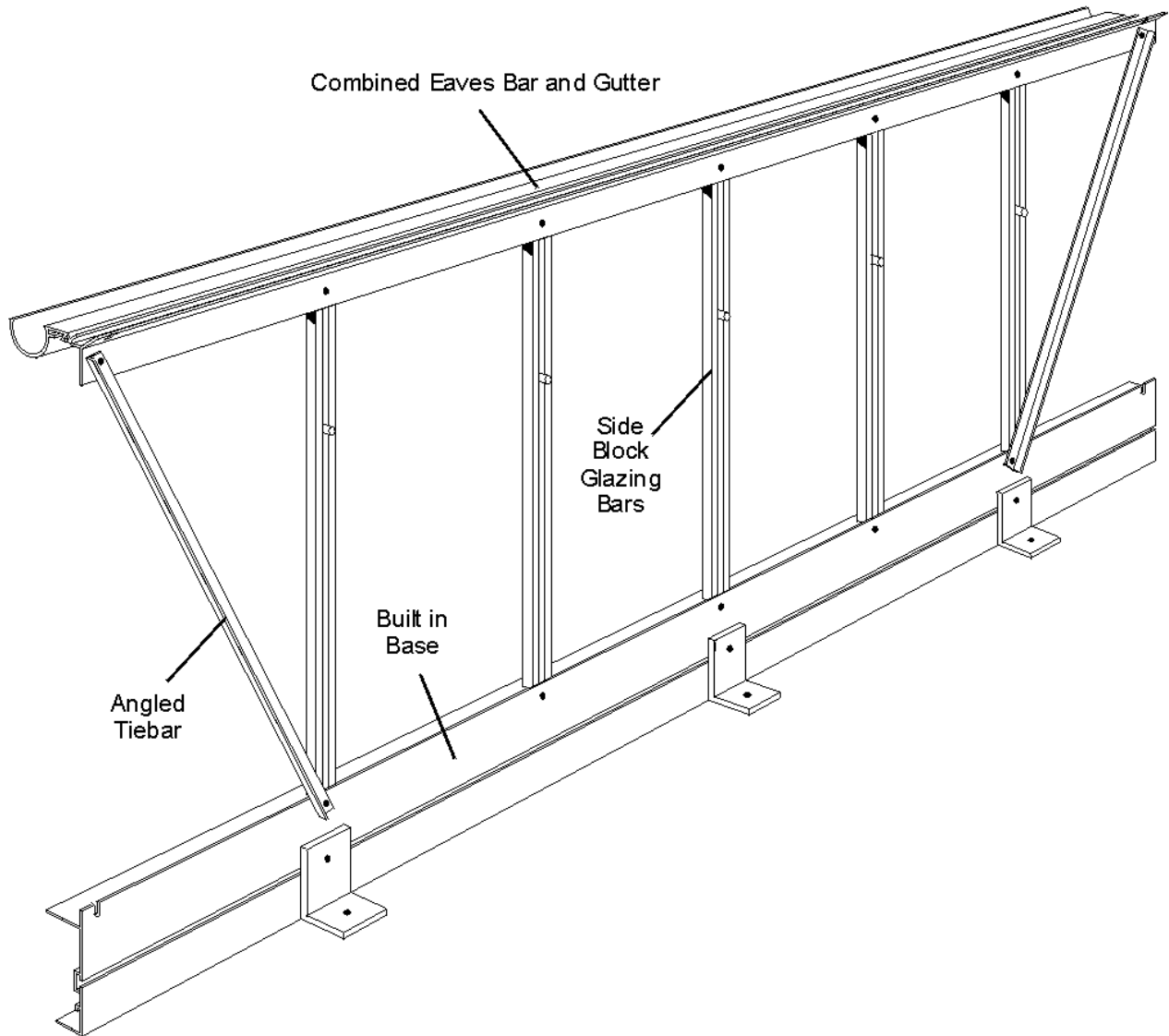
EAVES BAR GUTTER



BLOCK GLAZING BAR



BUILT-IN BASE

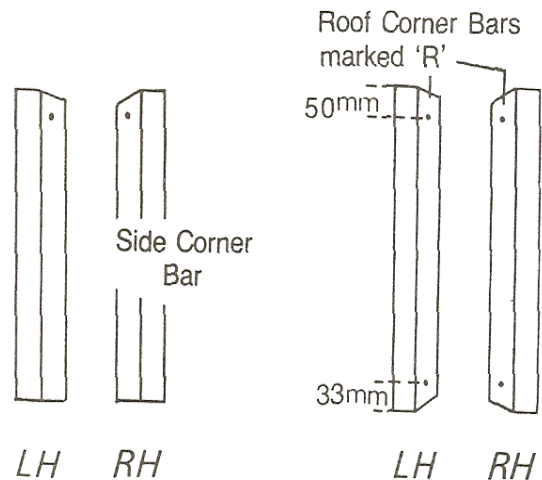


WELL DONE! YOU HAVE SUCCESSFULLY COMPLETED THE 2 SIDE FRAMES!

REAR END ASSEMBLY

For the construction of this frame you require from the main box: 1 pack of corner bars marked “corner bars”, 1 rear end pack marked “rear end”, 1 rear end built in base cill marked “rear end” and 1 rear end horizontal brace marked “rear end”. 2 base legs (approx. 400mm long).

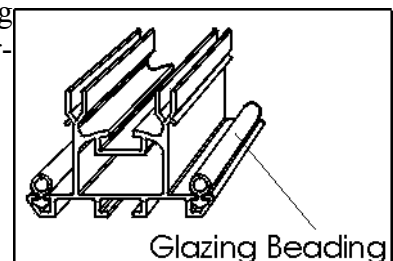
From the pack of fittings you need: nuts and bolts, glazing beading and gusset plates – 1 large (ridge plate) 2 small (eave plates). These plates are **not** in the pack of fittings but are taped up with the casement stays elsewhere in the box.



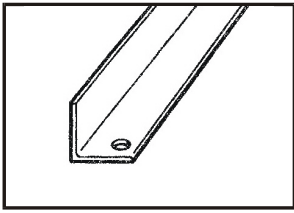
Starting with the pack of corner bars split the tape holding them together and first identify the 2 roof bars from the 2 side bars. The side bars have one hole and one mitre, both at one end. The other end has no hole and is square cut. The roof bars have a series of holes in the flange and are mitred at both ends and in addition have a letter ‘R’ written at the apex on the **outside** of the bar. **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 pictured above. **(Key point).**

1. The bars are also handed so you must identify the left and the 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 bolt slots are facing towards you, with the mitres at the top (inside view). Viewed this way the two 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 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. The diagrams above will help to hand the bars.

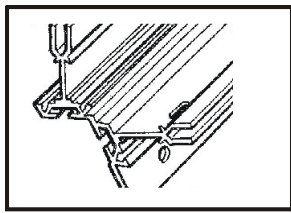
2. Slide the glazing beading into both beading channels of the 3 vertical block glazing bars and the 4 corner bars, taking care not to stretch the material. Trim off any surplus level with the end of the bars. **N.B.** The corner bars have 3 grooves to receive the glazing bead; do not put any in the middle one unless you are fitting an internal partition. **(Key point).**



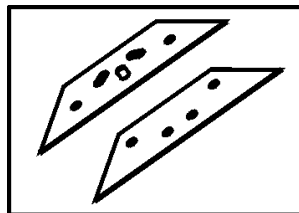
REAR END ASSEMBLY



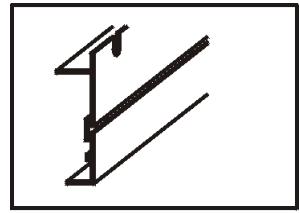
BRACING ANGLE/DIAGONAL ANGLE



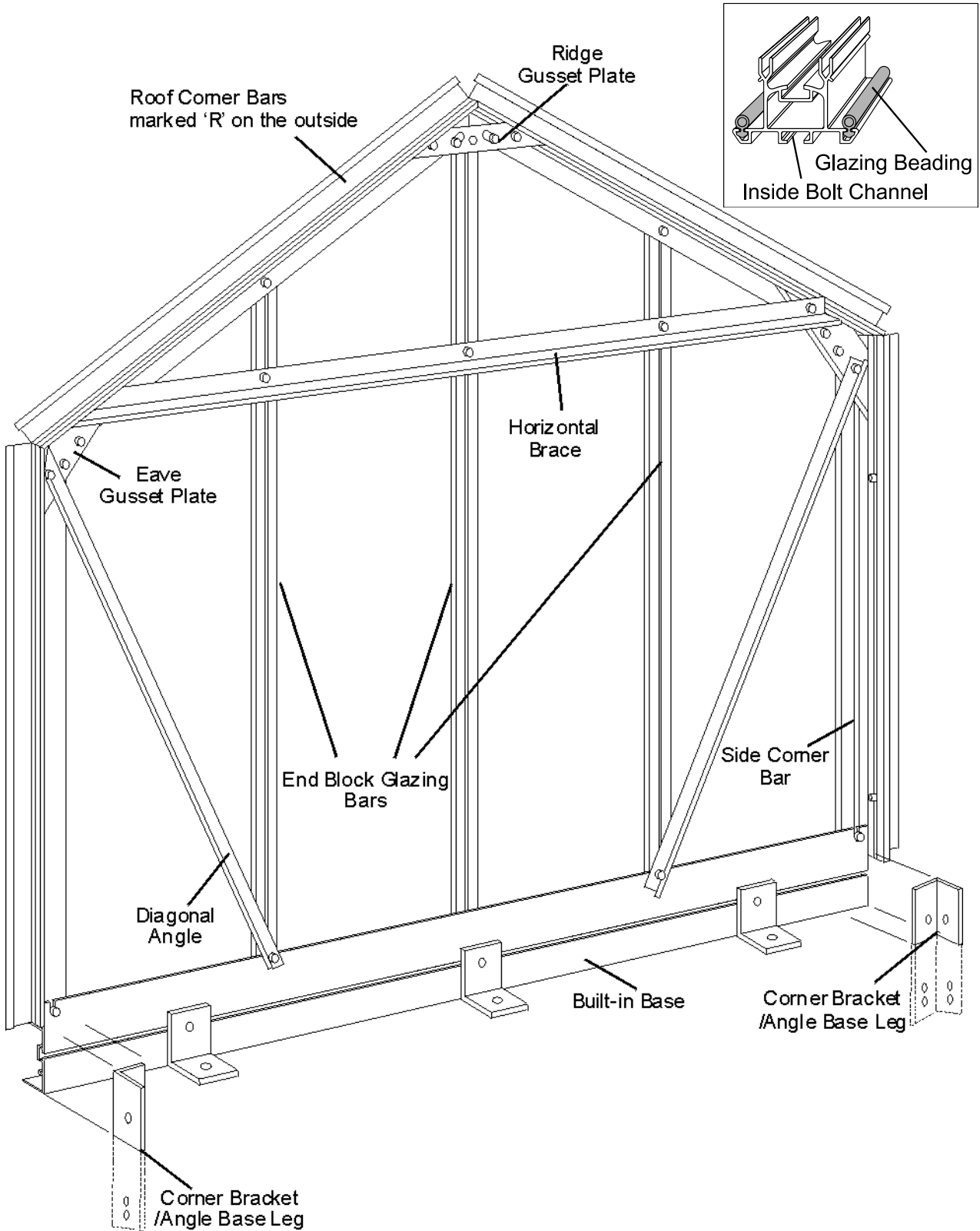
CORNER BAR



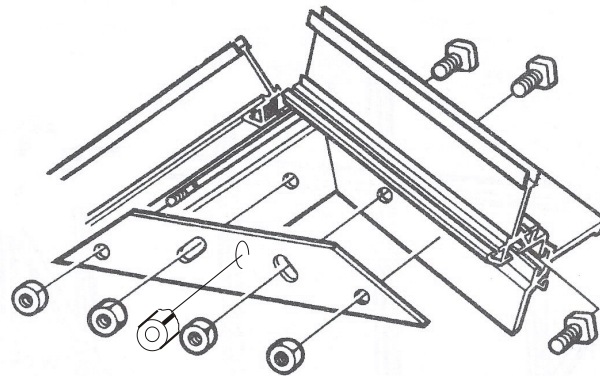
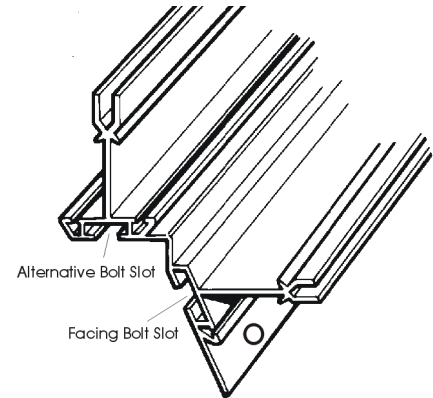
APEX & EAVE GUSSET PLATES



BUILT IN BASE

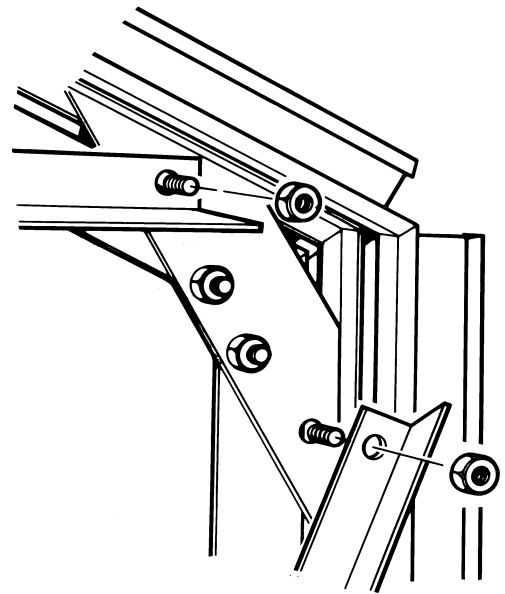


3. Lay out the components of the frame on the ground as though you were standing on the inside i.e. with the internal bolt slots uppermost. Ensure that, having correctly identified the roof from the side corner bars, left and right hands (see previous text) you have the roof bars with the letter 'R' (indicating ridge) at the top on the outside, i.e. towards the ground. **(Key point)**.
4. Slide a bolt into the alternative bolt slot of all 4 corner bars (see diagram for details) 1 at the top and 1 at the bottom. 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.
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 slot– 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)**.
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. Now moving to the eave gusset assembly, slide one bolt into the facing bolt slot (the one that is facing upwards and is at 90° to 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)**. At this stage do not put a nut on the top bolt.
9. Do the same with the other part of the eave gusset plate, ensuring that both corner bars are tight up against each other behind the eave plate.
10. Repeat steps 8 and 9 at the other corner with another eave gusset plate.
11. Attach the bottom built in base cill, marked "rear end" in the box, to the left and right hand side corner bars by inserting a bolt into the facing bolt slot of the corner bar. Line the bolts up with the 2 slotted holes 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)**.

12. You can now attach the 3 vertical block glazing bars to the built in base cill in a similar manner to 11 above, the longer bar to the middle hole, and the shorter ones to the outer holes. Before attaching the nuts to the shorter bars place the diagonal angles onto the bottom bolt and put a nut on finger tip tight only. Attach the other end of the angle brace to the **bottom bolt** of the eave gusset plate, put on the nut and finger tip tighten. **(Key point)**. Do the same with the other diagonal brace.
13. Moving to the top of the greenhouse, insert 2 bolts into the shorter two block glazing bars and 2 bolts into the longer block glazing bar.
14. Now you can attach the long angle horizontal brace marked “rear end” in the box, to the **top bolts** of the eave gusset plates. The angle should be facing upwards, put the nuts on and finger tip tighten.
15. You can now attach the 3 vertical block glazing bars to the roof/corner bars. Slide the last bolt in each bar you inserted in 13 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.
16. Now attach the horizontal brace to the 3 upright block glazing bars utilising the 1st bolts you inserted in 13 above. Put the nuts on finger tip tight. **(Key point)**.
17. The built in base has a continuous bolt channel along its length. Slide 5 bolts into this channel (if you are installing the greenhouse onto hard standing) or 2 bolts (1 at each end if installing onto soft ground).
18. For hard standing. attach the slot of the corner bracket/base leg to the base section so that the 4 holes on the bracket are pointing downwards. Mark the point of the bracket where it is flush with the bottom of the built in base, and then cut the bracket. The end of the corner bracket with 4 holes is now surplus. If you are fitting your greenhouse onto soft ground, then do not fit the corner bracket/angle base leg yet. If you are on soil, the corner bracket/base leg will go into the ground at general assembly and be concreted in to form an anchor point.
19. The rear end is now almost complete. Before tightening all 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 bars. Tighten all nuts; the rear end is now complete.

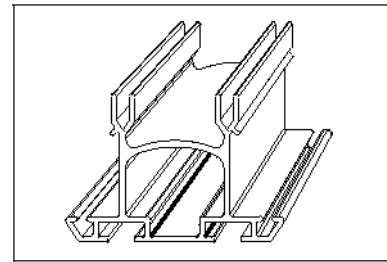


DOOR END ASSEMBLY

Components required

Door end cill

- 2 Built in base cills
- 2 Long door end block glazing bars
- 1 Short block glazing bar
- 2 Rectangular plates with 3 holes
- 2 Short horizontal braces
- 2 Roof corner bars (marked 'R')
- 2 Side corner bars (unmarked)
- 1 Main door track support
- 1 Top door track
- 2 Small angle door track support
- 2 Base legs/corner brackets (approx. 400mm long)



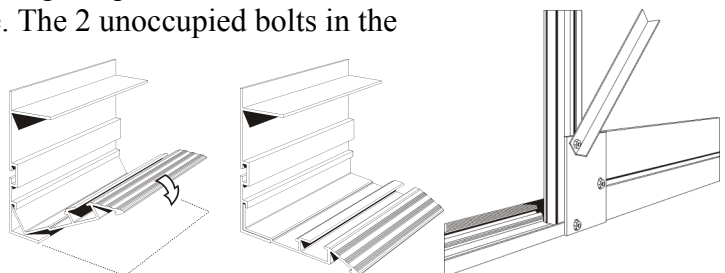
LONG DOOR END BLOCK
GLAZING BAR

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

From the main bag of fittings you need: nuts and bolts, glazing beading and gusset plates – 1 large (ridge plate) 2 small (eave plates). Remember, these plates are **not** in the pack of fittings but are taped together with the casement stays elsewhere in the box!

PROCEDURE: The format for the door end is identical to the rear end assembly up to and including step 10 so please refer to those items in the previous pages.

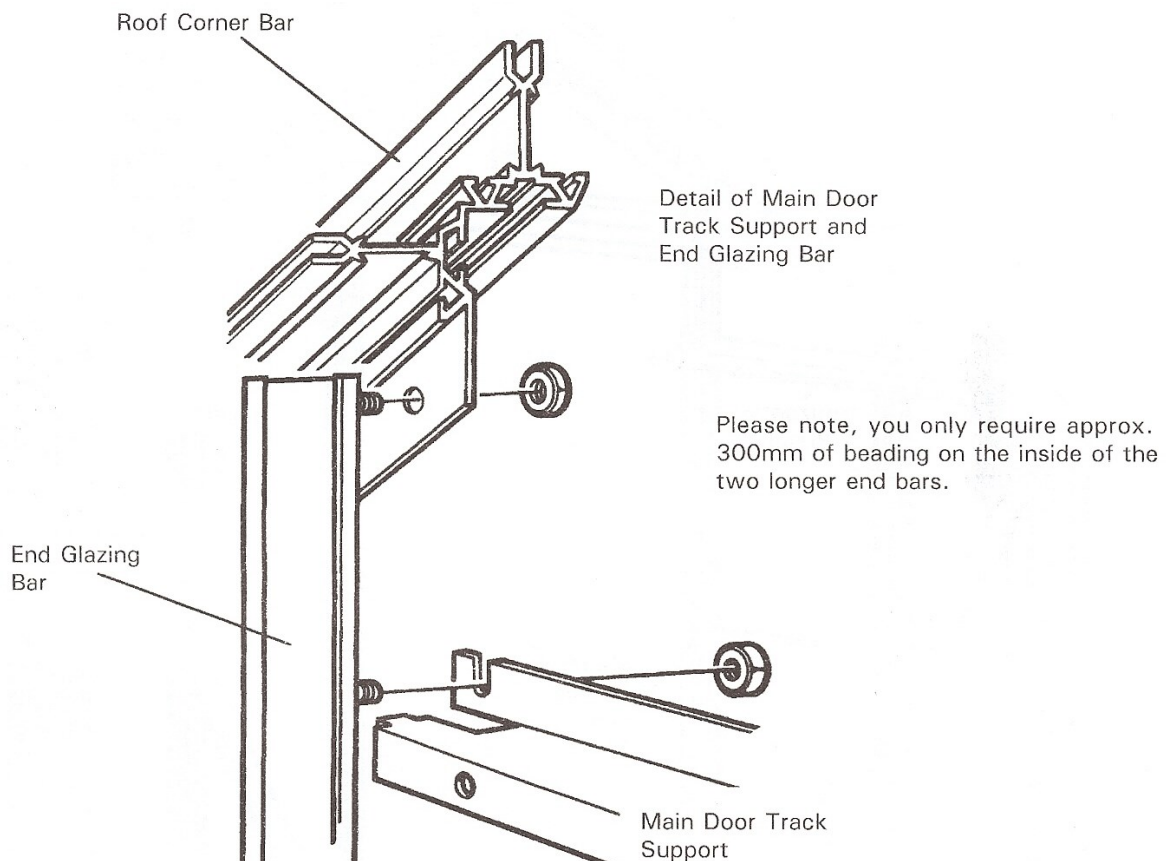
1. Now attach the small built in base section to the corner bars, leaving a space for the doors in between.
2. Now engage the door end cill with the 2 built in base cills by pushing the angle of the cill under the locator as shown in the diagram. At this stage the cill will move freely left and right but will remain located to the built in base cill. (See diagram below).
3. The long block glazing bars have 2 bolt channels. When in position, slide 2 bolts into the bottom of the channel closest to the corner bar, and 1 bolt into the channel closest to the door opening. Slide 3 bolts (only 1 if greenhouse to be sited on soft ground) into each built in base section. Attach the bottom bolts in the block glazing bar to the holes in the door end cill, but do not put a nut on yet. **Remember, the door end block glazing bars do not sit on top of the base (as the rear end block glazing bars do), they go down the side of the base and attach to the bottom cill. (Key point).**
4. Attach the rectangular plate (with 3 slotted holes) to the 2 bolts inserted in the block glazing bars and the last bolt inserted into the base ensuring that the block glazing bar is tight down into the angle of the door end cill. Attach the diagonal angle to the top bolt of the rectangular plate, and then to the **bottom bolt** of the eaves gusset plate. The 2 unoccupied bolts in the base sections will be used to anchor the greenhouse to the floor.



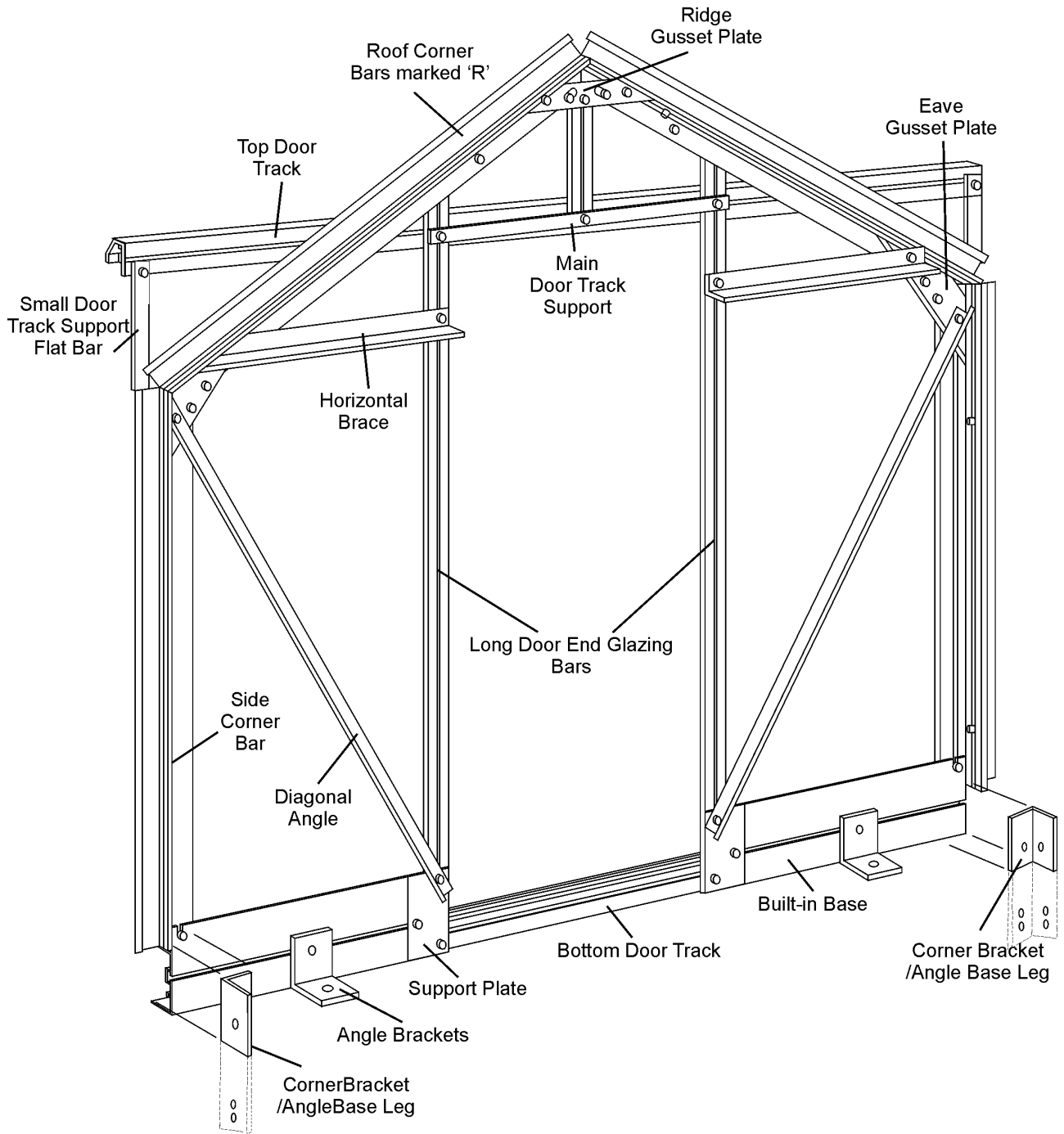
5. Follow the same procedure with regard to fixing the corner bracket/angle base leg as detailed on the rear end assembly.
6. The long block glazing bars have 2 continuous bolt channels. Slide 2 bolts into each channel at the top of the bars. The last bolt is used to secure the glazing bar to the holes in the roof corner bar. Attach the horizontal brace to the 1st pre-inserted bolt of the longer block glazing bars, and then to the **top bolt** of the gusset plate. **(Key point)**.
7. Attach the main door track support (shaped like a letter Z) to the pre inserted bolt in the bolt channel closest to the door opening of the long block glazing bars. This 'Z' shaped bar must be fitted with the two outside slots facing upwards (as illustrated) **not** downwards.
8. Stand the frame up and bolt the door track to the main door track support by inserting 3 bolts into the bolt slot of the door track. Position the bolts through the 3 holes in the door track support above the door opening.
9. Do not fit the small block glazing bar above the door track at this stage. This will be done when the doors are fitted.
10. Check that all joints are tight and all braces are in position, and then tighten up all nuts. The end is now complete.

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

Please note, you only require approx. 200mm of beading in the inside 'v' groove of the long door end block glazing bars, i.e. the part that is above the main door track support.

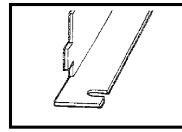


DOOR END ASSEMBLY

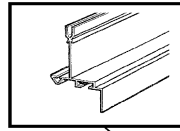


ROOF VENT ASSEMBLY

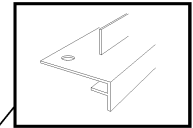
The roof vent pack has 5 pieces of aluminium: and from the main box of fittings you require
6' of glazing beading
4 nuts and bolts
2 casement stay pins
1 casement stay
6 M4 stainless steel nuts and bolts



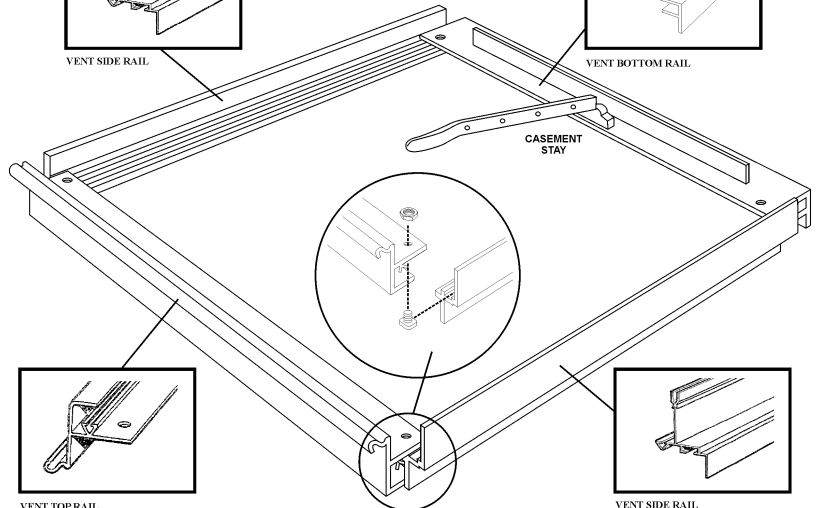
VENT SLAM BAR
(FITTED TO ROOF LATER IN ASSEMBLY)



VENT SIDE RAIL



VENT BOTTOM RAIL



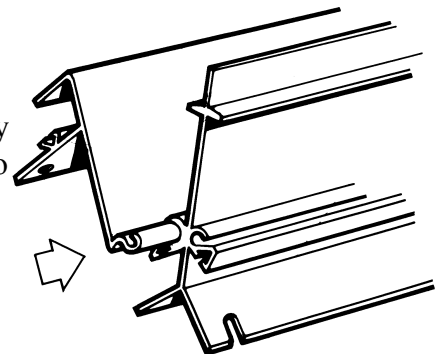
PROCEDURE:

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.



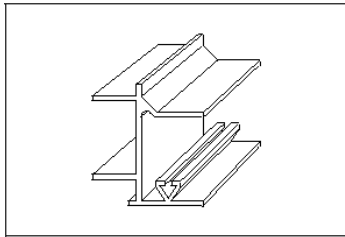
DOOR FRAME ASSEMBLY

Each Door consists of:

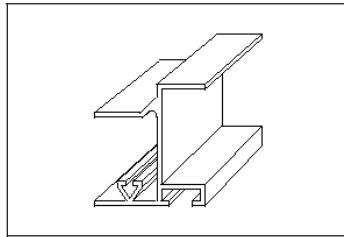
- 1 unhandled door post
- 1 handed door post (handed post for left door is different profile to the handed right hand door post)
- 3 infill panels (1 with pre fabricated lock hole) for lock barrel
- 1 top and bottom door panels
- 3 panels of glass which must be fitted during door assembly. **It is not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

From the main bag of fittings you require;

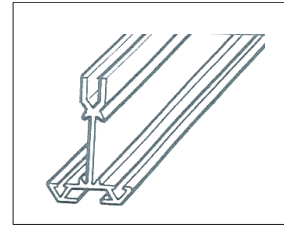
- 2 door wheels
- 1 clip on nylon door skid (this might already be fitted to the bottom door panel)
- 2 lengths of black brush draught excluder with PVC carrier
- Door lock, self tapping screws and spring washers
- 12' glazing beading
- Door handles
- 3 PVC Glass strips



HANDED DOOR POST
RIGHT HAND DOOR



HANDED DOOR POST
LEFT HAND DOOR

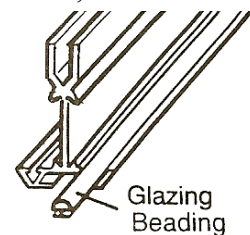


UNHANDLED
DOOR POST

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.



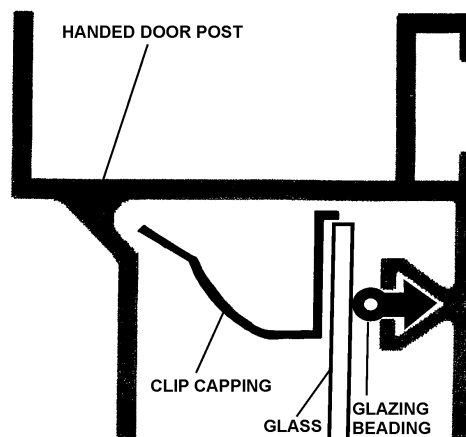
2. Place the top, bottom and 3 infill panels in position as shown by the position of the screw holes in the side pieces and the panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skid to fit on. The lower infill panel locks on to the bottom panel. The infill 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.

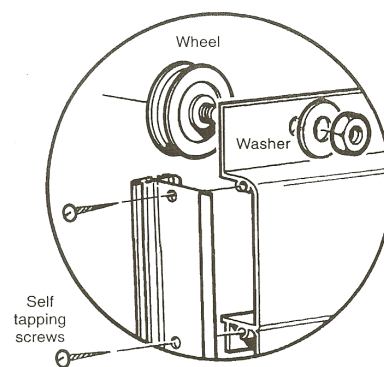
4. **GLASS MUST BE FITTED TO EACH DOOR BEFORE THE 2ND DOOR POST IS FITTED—KEY POINT**

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).

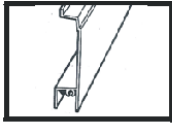


8. Slip the nylon door skids on each of the bottom panels. This may already have been done prior to delivery. After fitting the doors (see later in the booklet), you may need to lower the door skid so that it engages with the bottom door cill to allow smooth movement of the door. Lower the skid on each 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.

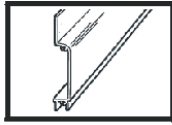
DOOR FRAME ASSEMBLY



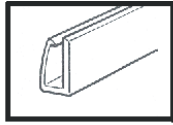
DRAUGHT EXCLUDER



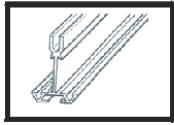
DOOR INFIL PANEL



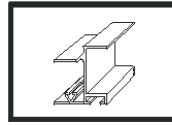
DOOR TOP/
BOTTOM PANEL



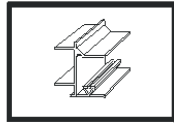
DOOR SKID



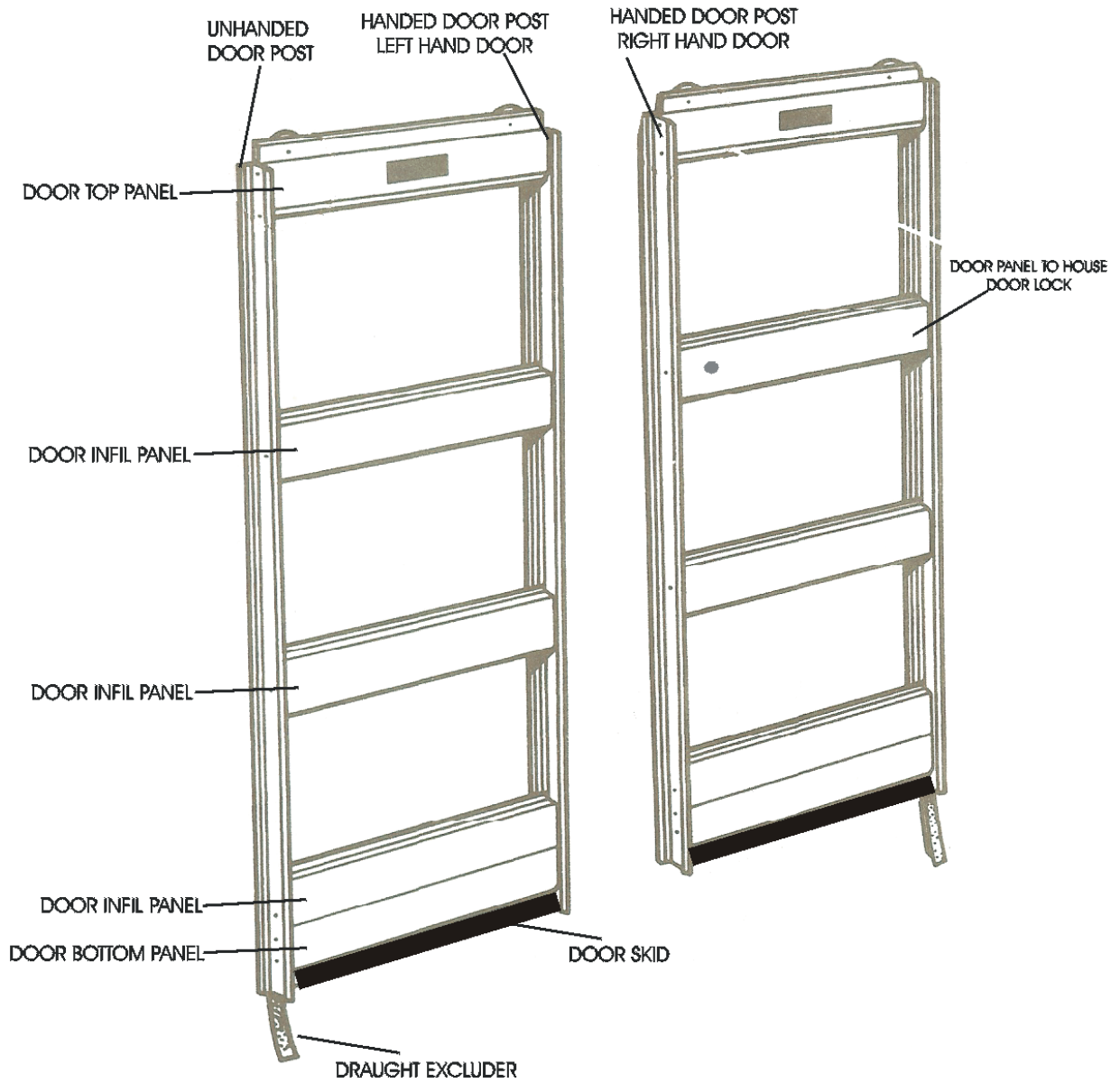
UNHANDLED
DOOR POST



HANDED DOOR POST
LEFT HAND DOOR



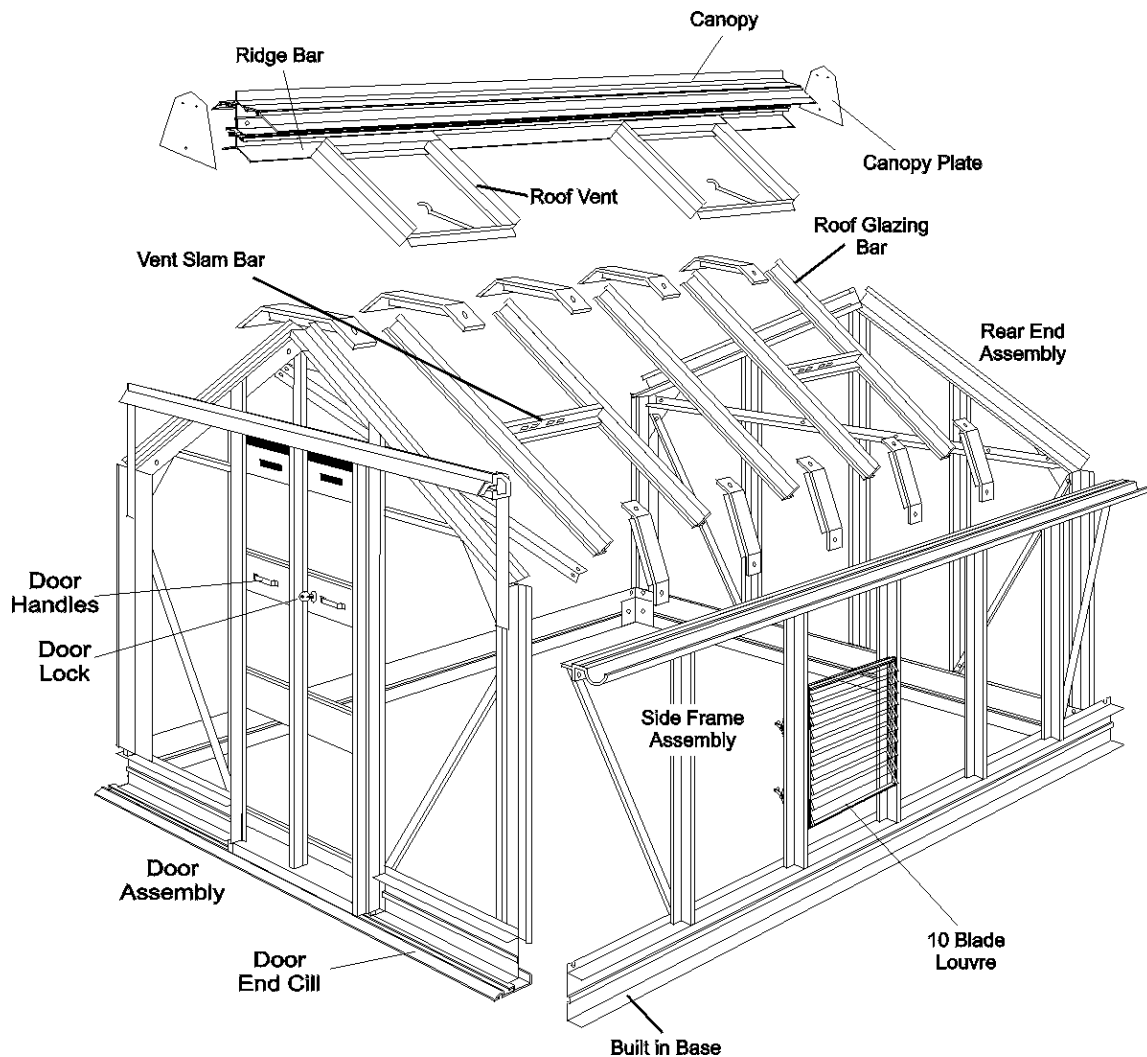
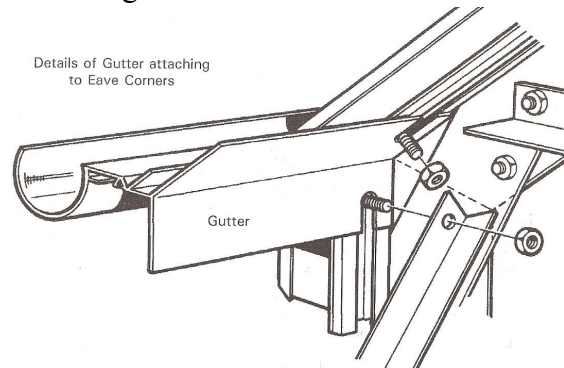
HANDED DOOR POST
RIGHT HAND DOOR



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 the roof and side line line up with the bolt slots in the corner bars. **(Key point).**
2. Loosen the nuts holding the bolts you inserted into the alternative bolt slot of the corner bar during door end and rear end assembly and slide them into the slotted holes in the flanges of the gutter (see diagram) Put a nut on the top bolt, put the side diagonal brace on the bottom bolt and then the nut and tighten up. Repeat the procedure at the bottom where the built in base and corner bar meet.
3. Now stand up the door end assembly and repeat the above procedure for all 4 corners of the greenhouse.
4. Stand up the other side frame and repeat the operation outlined above at both corners.

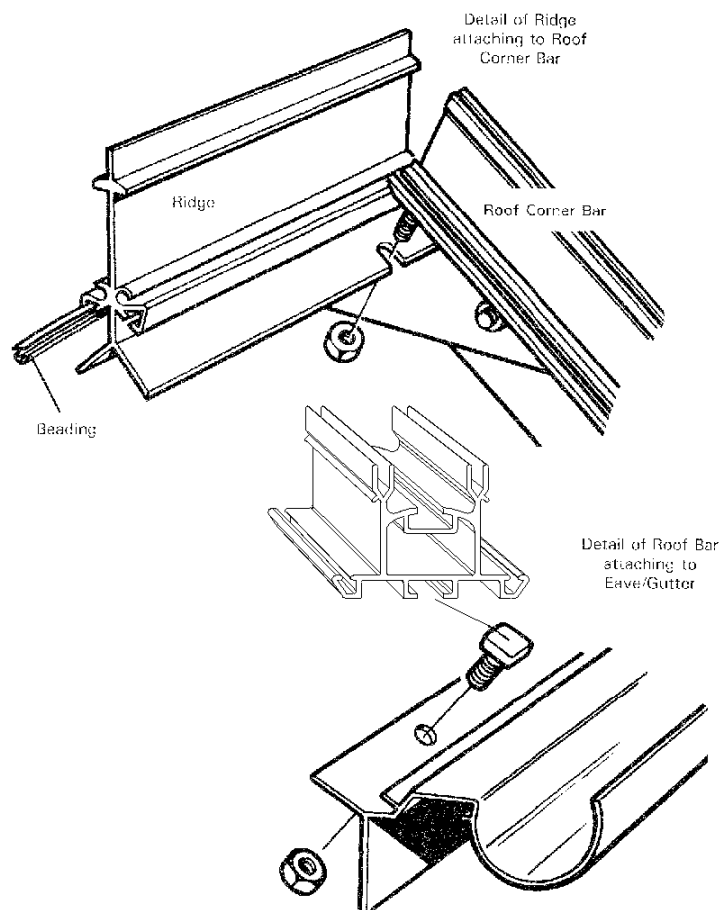


5. The bottom built in base cill of the sides attaches to the corner bars in a similar way. Undo the nuts and bolts inserted in the gable end assembly, move the built in base cill under the corner bar so that the elongated hole in the vertical flange of the built in base cill lines up with the bolt slot 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 built in base 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 the roof are tight up against the inside edge of the corner bars. The vertical part of the ridge is outside and pointing skywards. Undo the nuts and bolts previously inserted during the gable end assembly and push them upwards into the slotted holes of the ridge. Tighten the nuts.
7. The roof block glazing 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 glazing 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 block glazing bar is pushed up hard against the ridge. Do not attach the bottom of the bars to the eave until all the roof block glazing bars are bolted to the ridge.

(Key point).

8. Now attach the bottom of the roof block glazing 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 need to insert 2 extra bolts into the bolt channel on every bar and a 3rd extra bolt in the bars onto which the roof vent will close.



The 6' x 8' has 6 small cantilever tee bar braces.

The 8' x 8' has 3 small tee-bar braces (for roof) and 6 large braces (3 per side). The 10' x 8' has 12 large tee-bar braces .

Larger sizes have large cantilever braces on every bar.

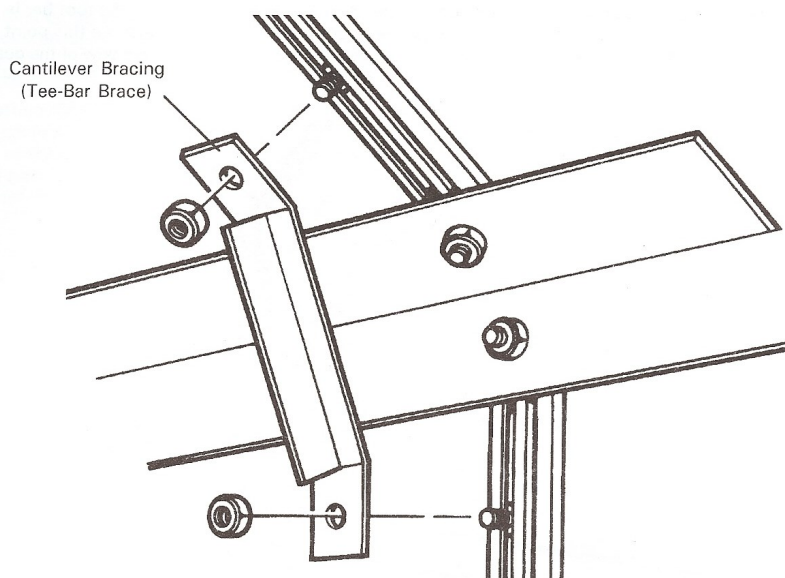
You must remember to insert one extra bolt per cantilever T-bar brace and one per vent per bar.

If you have purchased a partition with your greenhouse you will be 2 roof block glazing bars short of a full pack. Omit one each side of the ridge at the point where the partition is to be situated i.e. at the same place where you omitted the side glazing bars (see later text for partition details).

Before tightening the nuts that hold the roof block glazing bar to the eave you must ensure that the roof block glazing bar is tight up against the small flange immediately above the gutter. **(Key point)**. Failure to observe this point and the previous one of keeping the roof bar tight up to the ridge could result in a slight outward bow of the gutters and a slight downwards dip of the ridge.

9. At this point you will need to lift the structure onto a firm footing if you haven't already done so.
10. On the 6', 8', 10' and 12' models there are 2 roof diagonal braces. On the 14', 16', 18' and 20' models there are 4. You attach these to the point where the ridge bolts to the corner bars at the rear end. The angle travels diagonally down to the bottom of the first block glazing bar at the eave/gutter. You fit one each side at the rear of the greenhouse. If you have the longer house you put another 2 at the front end.
11. You can now attach the T-bar cantilevers which bolt to the side block bars and roof block glazing bars as indicated in point 8.

Before tightening these cantilevers up make sure there is no sag in the ridge or outward bow in the eave. (Key point). If you do have this problem you must straighten it out before tightening the cantilevers up. A bow or 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.



SECURING GREENHOUSE TO PERMANENT BASE

The main structure is now complete and it must now be fitted onto its base for securing down.

SQUARING UP

You must make sure that the structure is level and square. Put one pane of glass in each corner of roof, each pane must be level with the small glass retaining lip just above the gutter and be running parallel with the roof glazing bars. Each corner must be the same. If one corner is out, the corner diagonally opposite will also be out. By carefully pushing and pulling each corner diagonally you will be able to see the frame move in and out of square with the glass.

HARD STANDING

Having established the square of the greenhouse, drill the patio or concrete in the required positions, fit plastic plugs (not supplied as standard) and screw the bolt down angle brackets firmly to the ground using 35mm x 8mm round head screws (not supplied as standard).

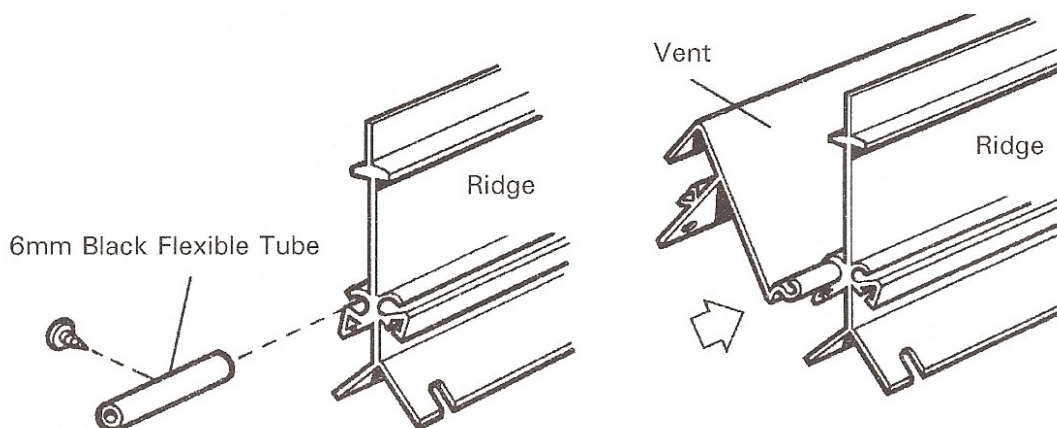
SOIL FLOOR

Determine the square of the greenhouse as described above, dig holes approx. 1 spade depth in the corners, make a mix of concrete and place a couple of shovelfuls around the base of each stake. When the concrete has gone off backfill with the soil excavated earlier on.

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.



EXTERIOR DOOR TRACK

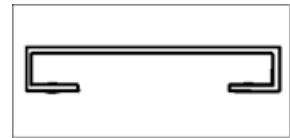
This top door track has no holes in, but 1 continuous bolt slot. You must have the door track centrally positioned. Insert 3 bolts into the bolt slot and line them up with the 3 holes in the door track support, put the nuts on and tighten up. To move the door track into the correct height, fit the glazing bar above the doors to the unoccupied hole in the ridge gusset plate and the slot in the middle of the main door track support. Tighten all nuts.

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 rail into the bottom door track and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end block glazing 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.



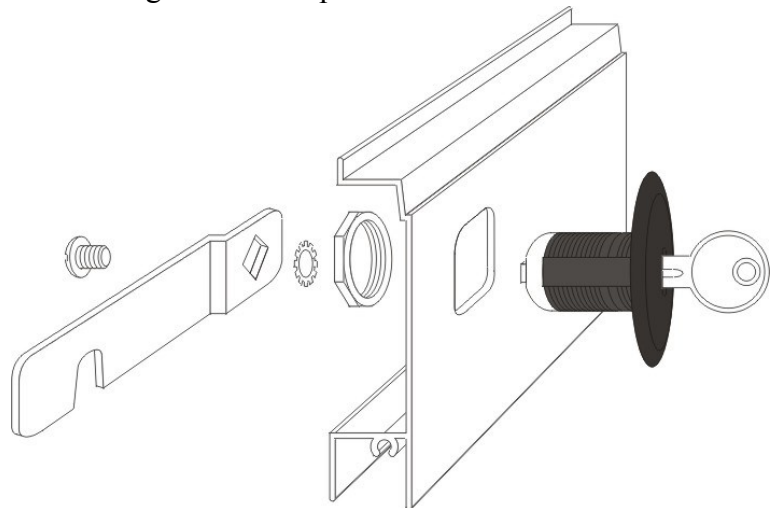
DOOR HANDLE

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 angle 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 side corner 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.

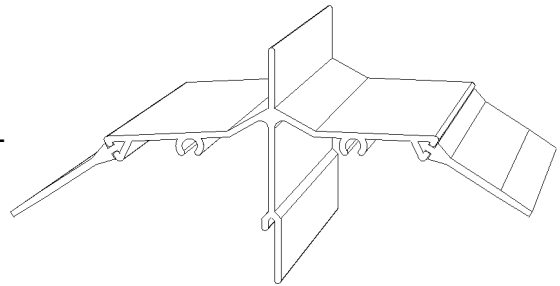
FITTING THE ROOF CANOPY

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 6' 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.

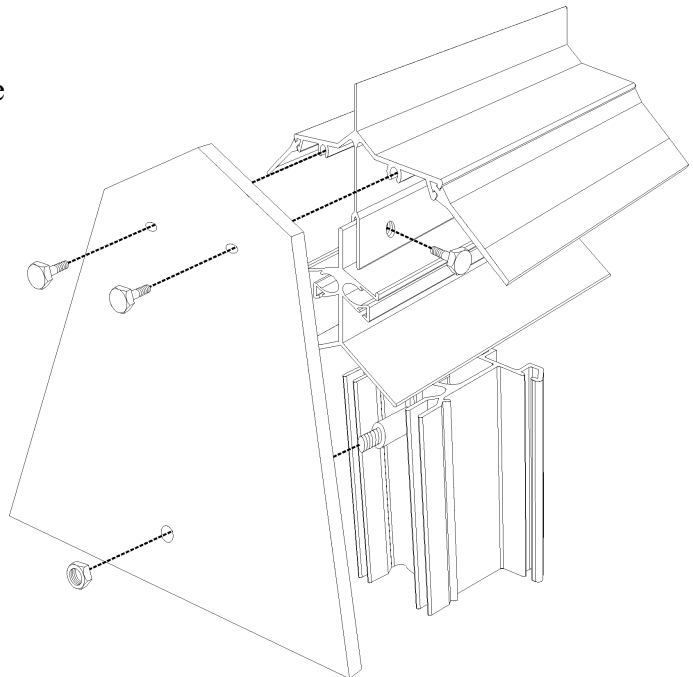


Now insert the canopy seal to each side of the canopy into the seal channel, and feed along so that it is level with the ridge at each end.

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.

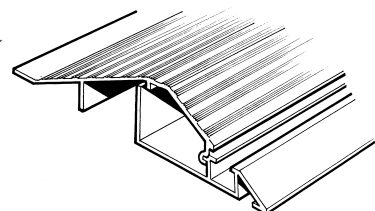


FITTING THE RAMP

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

If you are fitting onto soft ground, you must ensure that a solid material is underneath the ramp to avoid damage when you step on the ramp to enter the greenhouse.

You can lay a row of bricks sunk to ground level, a concrete flag, a piece of aluminium base pressed into the ground to ground level or something similar. You can then screw the ramp into the support material for a secure fixing.



10 BLADE LOUVRE

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

Procedure

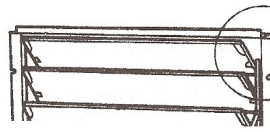
1. Place top cill into position on side jamb of louvre and secure with self tapping screws.
2. Do same on the other top corner.
3. Do same with bottom cill.
4. Please note that the handle is on the right hand side.

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.

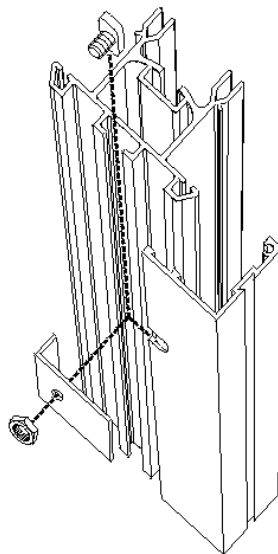
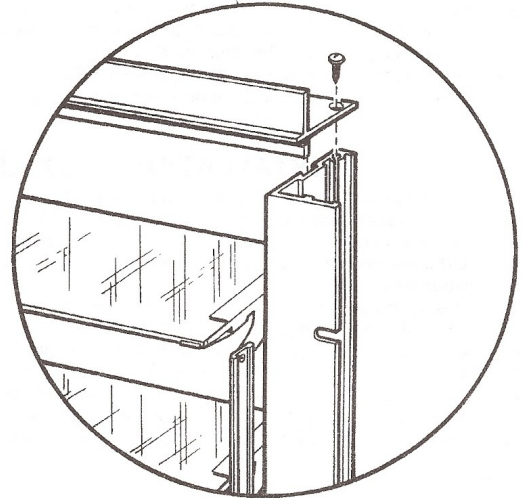
The louvre is fitted from inside the greenhouse, and you must ensure that the handles are on the right (viewed from inside).

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.

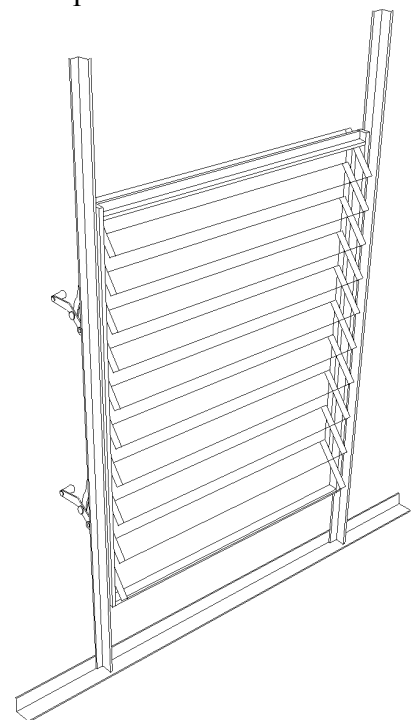


LOUVRE MODEL CONTAINS

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



BRACKET FIXING TO LOUVRE FRAME



TOUGHENED GLASS

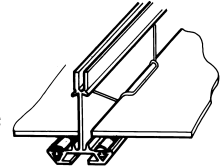
Always handle glass with extreme care as failure to do so can result in injury.

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.

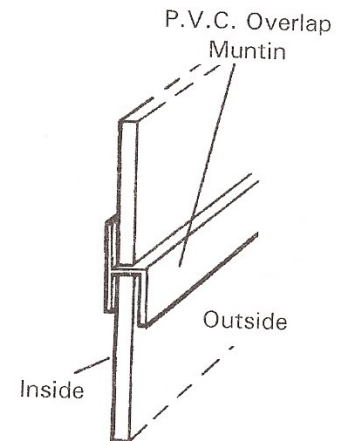
Wire Clips

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.

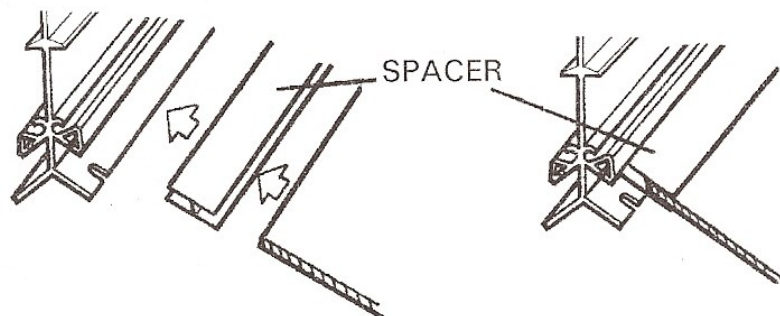
With single sheet toughened glass the traditional overlap system used with the horticultural glass is replaced by a rigid P.V.C muntin. Muntins are only used where 2 pieces of glass butt together. Position the muntin on top of the lower pane of glass taking care to have the inside and outside as indicated. 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.



GLASS SPACER

The roof glass is fitted by utilising a PVC roof spacer as illustrated.

Place the vent spacer onto the top of the roof pane (thus increasing the overall length of the glass). **N.B.** The spacer can increase the glass size by 9mm or 11mm depending which way round you fit it. It is designed this way to allow for the glass/alloy tolerances. Offer the glass to the glazing bars pushing it upwards towards the ridge. In order to fit the spacer end of the glass under the beading in the ridge, you need to lift the glass up from the bottom whilst simultaneously pushing upwards until the spacer is firmly 'inside' and touching the ridge.

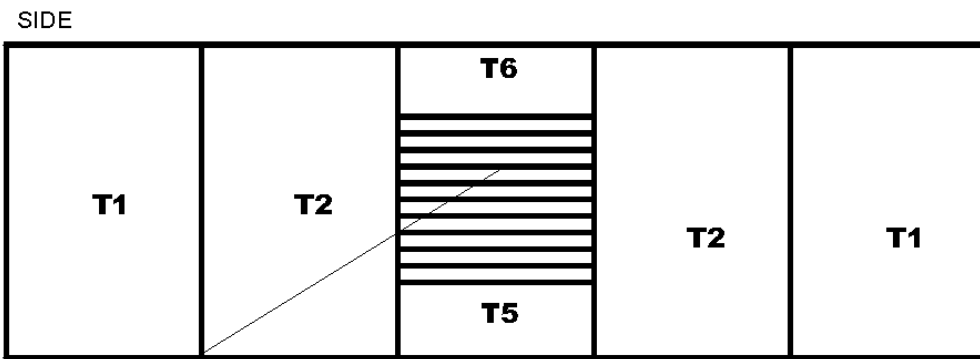
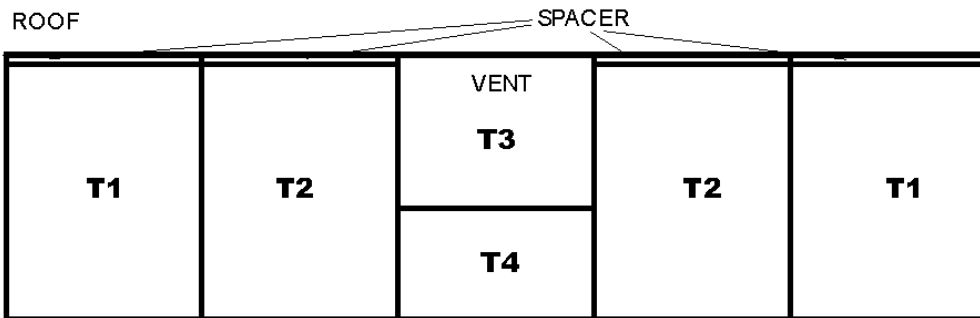
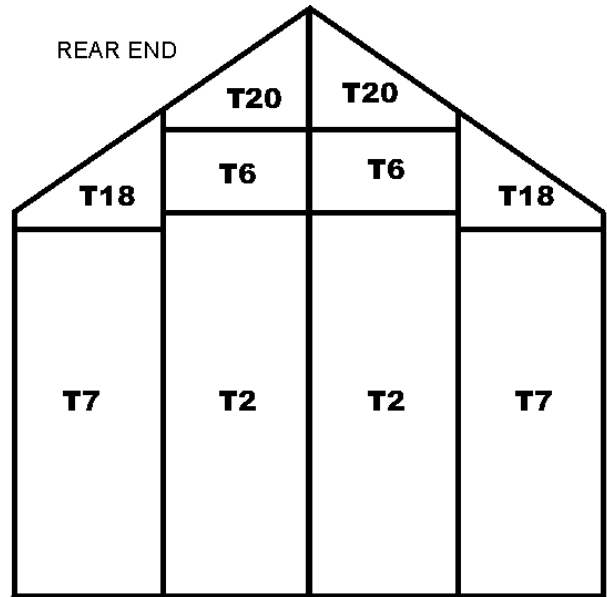
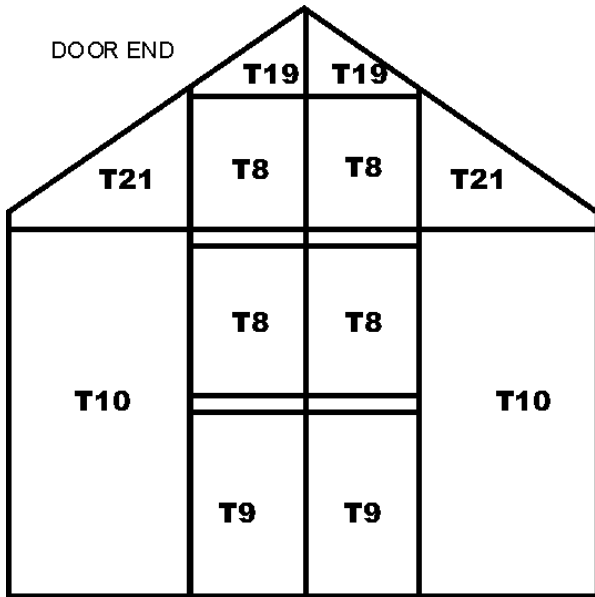


FULL SHEET TOUGHENED GLASS

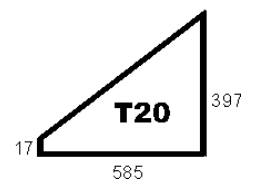
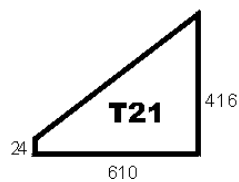
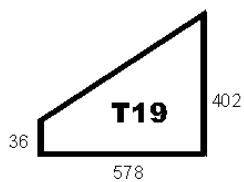
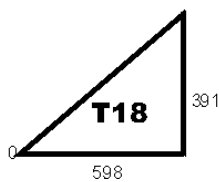
REF	SIZE
T1	598 X 1489
T2	585 X 1489
T3	640 X 904
T4	585 X 610
T5	585 X 177
T6	585 X 387
T7	598 X 1479
T8	610 X 457
T9	610 X 610
T10	610 X 1456
T17	545 X 100

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T17	T18	T19	T20	T21	TOTAL
6 X 8	8	4	1	1	1	3	2	4	2	2	10	2	2	2	2	46
8 X 8	8	7	2	2	1	3	2	4	2	2	10	2	2	2	2	51
10 X 8	8	11	2	2	1	3	2	4	2	2	10	2	2	2	2	55
12 X 8	8	15	2	2	1	3	2	4	2	2	10	2	2	2	2	59
14 X 8	8	17	4	4	1	3	2	4	2	2	10	2	2	2	2	65
16 X 8	8	21	4	4	1	3	2	4	2	2	10	2	2	2	2	69
18 X 8	8	23	6	6	1	3	2	4	2	2	10	2	2	2	2	75
20 X 8	8	27	6	6	1	3	2	4	2	2	10	2	2	2	2	79

FULL SHEET TOUGHENED GLASS



10 X T17



YOUR GREENHOUSE IS NOW COMPLETE

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

ELITE 1802