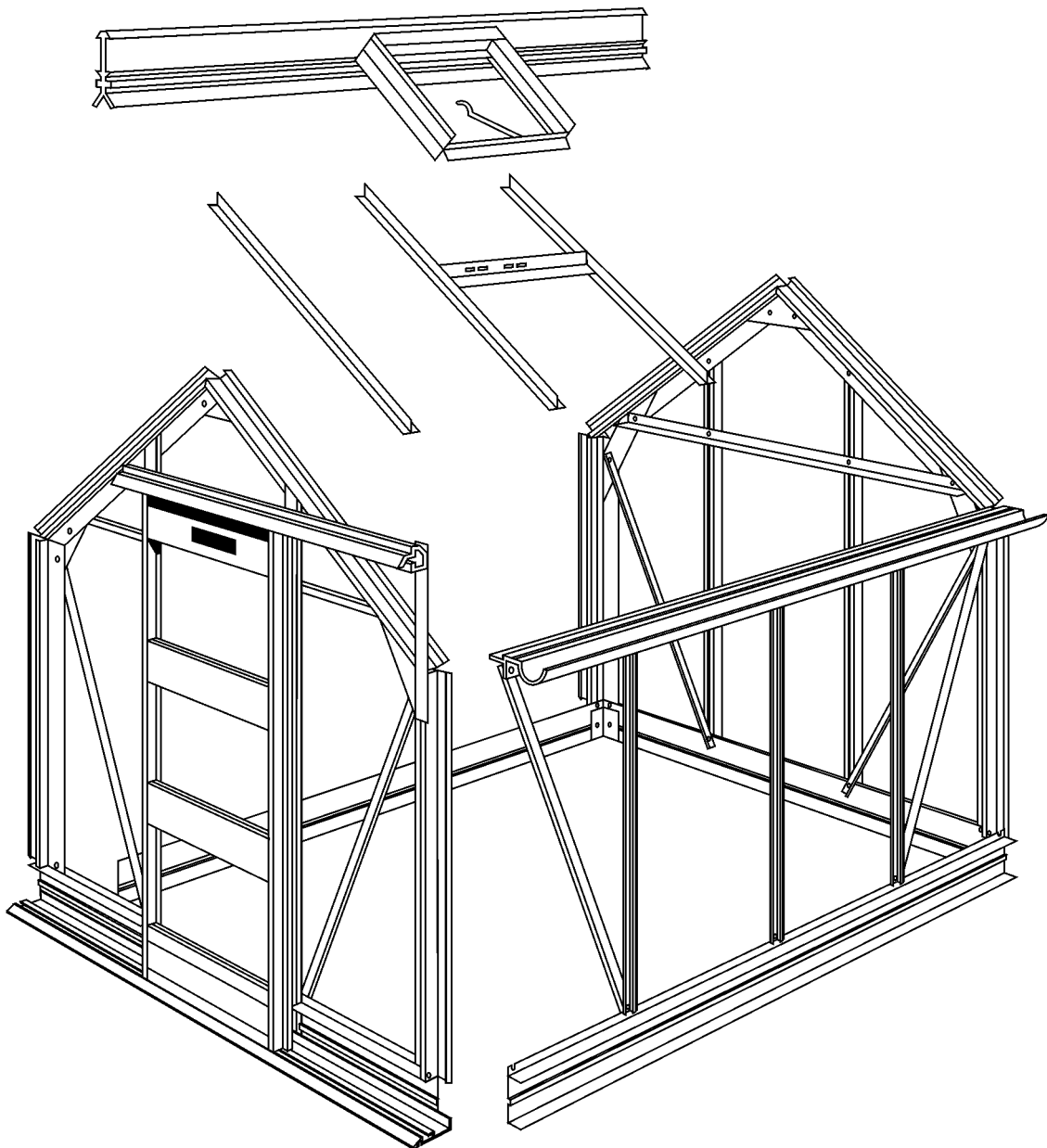




INSTRUCTIONS & ILLUSTRATIONS FOR THE
6'3" WIDE CRAFTSMAN



ELITE GREENHOUSES LTD

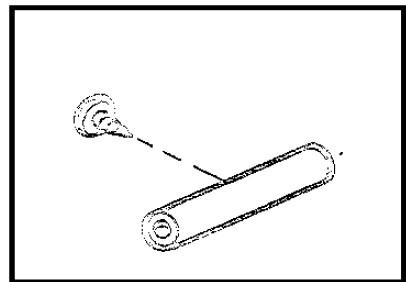
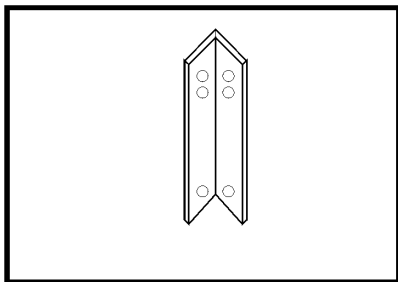
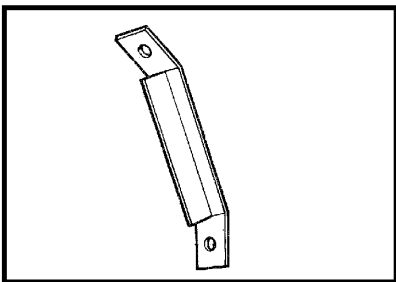
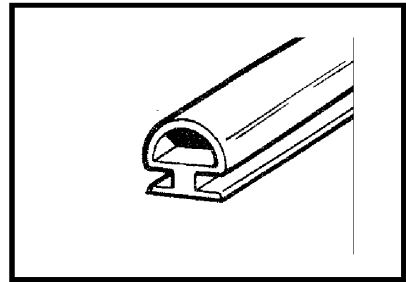
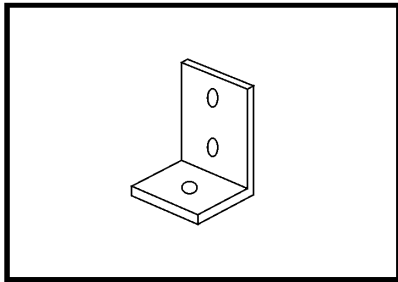
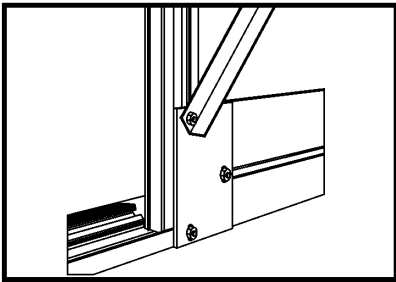
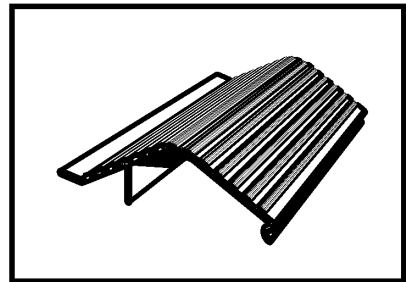
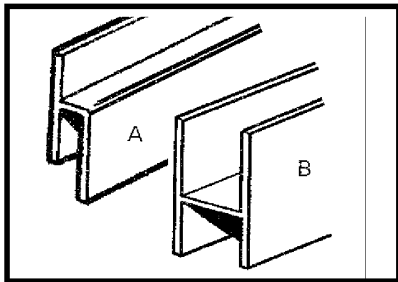
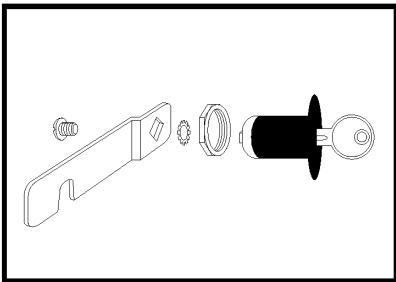
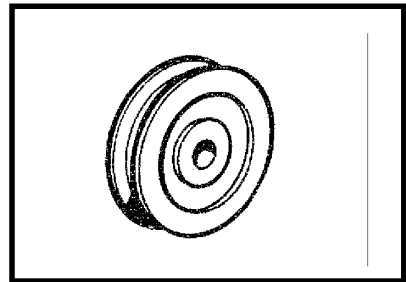
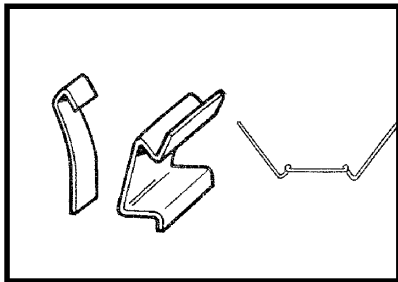
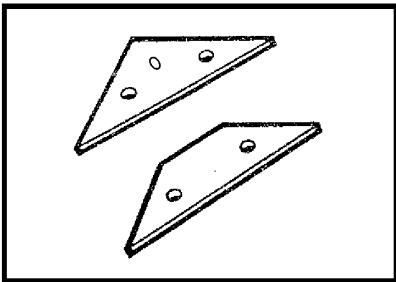
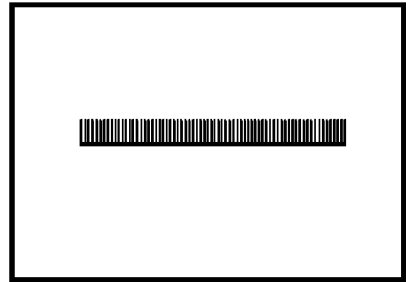
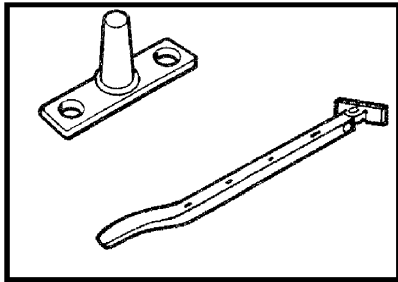
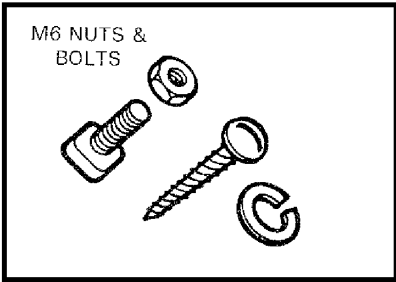
BENT SPUR ROAD, KEARSLEY, BOLTON BL4 8PD

TEL: 01204 791488 FAX: 01204 862412

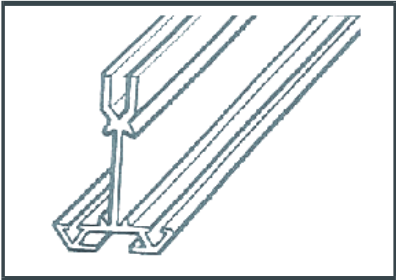
enquiries@elite-greenhouses.co.uk

www.elite-greenhouses.co.uk

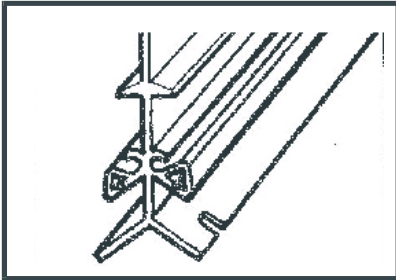
FITTINGS WITHIN THE KIT (NOT TO SCALE)



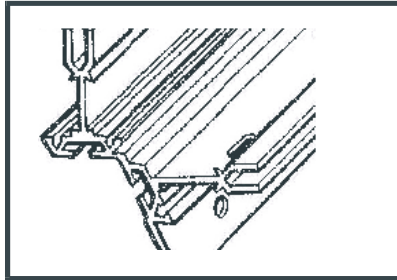
COMPONENT DRAWINGS (NOT TO SCALE)



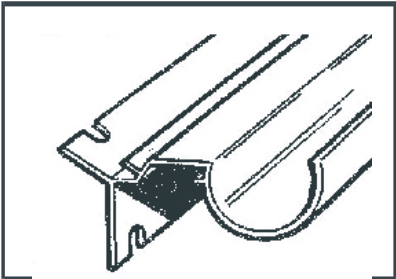
GLAZING BARS AND DOOR POSTS



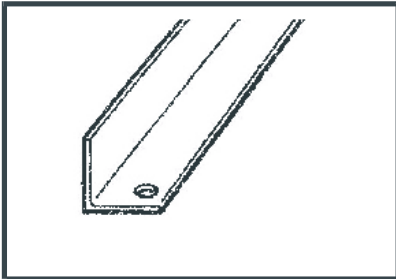
RIDGE



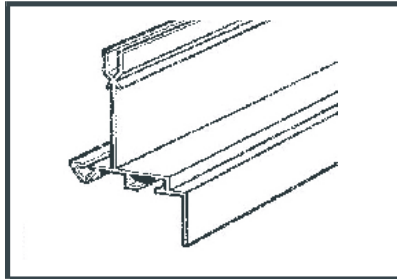
CORNER BAR



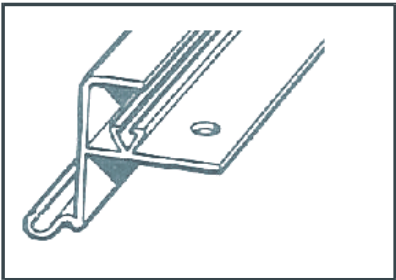
EAVES BAR/GUTTER



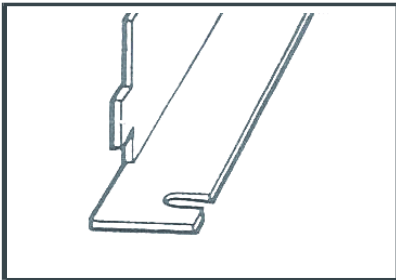
BRACING ANGLE



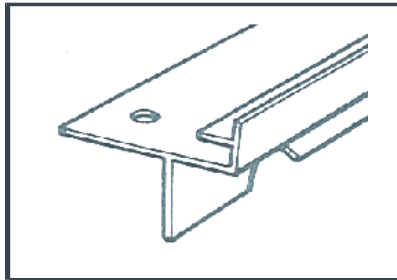
VENT SIDE RAIL



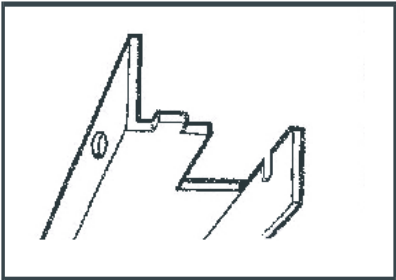
VENT TOP RAIL



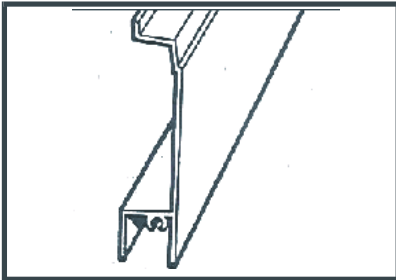
VENT SLAM BAR



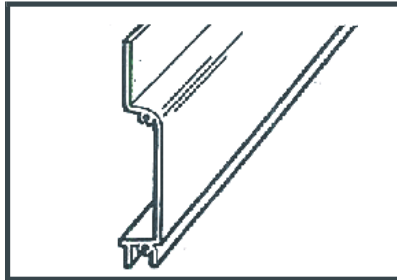
VENT BOTTOM RAIL



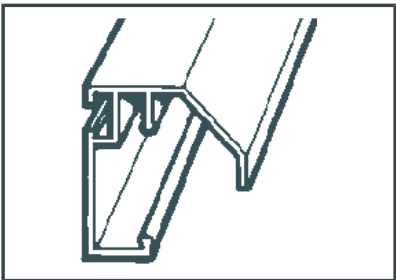
DOOR TRACK SUPPORT



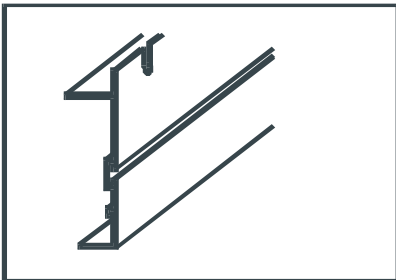
DOOR INFILL PANEL



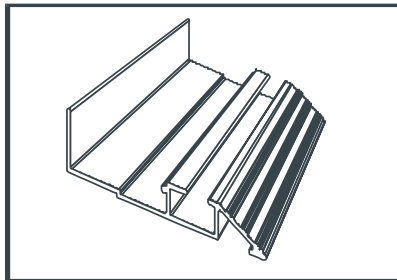
DOOR TOP/BOTTOM PANEL



TOP DOOR TRACK



BUILT-IN BASE



DOOR END CILL

PARTS LIST

			4 x 6	6 x 6	8 x 6	10 x 6	12 x 6
1	Nuts and bolts M6		80	90	106	116	142
2	Band clips		144	176	208	240	272
3	Wire clips		14	14	18	18	18
4	Overlap clips		18	22	26	30	35
5	Casement stay		1	1	2	2	2
6	Stay pins		2	2	4	4	4
7	Pins, nuts and bolts M4		6	6	12	12	12
8	Door keep		1	1	1	1	1
9	Short self tapping screws		14	14	14	14	14
10	Glazing beading (m)		44	54	64	74	84
11	Door skid		1	1	1	1	1
12	Eave gusset plates	Taped together with one casement stay	4	4	4	4	4
13	Ridge gusset plates		2	2	2	2	2
14	Door wheels + fittings		2	2	2	2	2
15	Ridge		1	1	1	1	1
16	Rear end built in base cill		1	1	1	1	1
17	Rear end glazing bars	Taped together and marked 'Rear End'	2	2	2	2	2
18	Rear end horizontal angle		1	1	1	1	1
19	Rear end diagonal angles		2	2	2	2	2
20	Door end glazing bars	Taped together and marked 'Door End'	2	2	2	2	2
21	Door end short horizontal angles		2	2	2	2	2
22	Door end diagonal angles		2	2	2	2	2
23	Small door track support		1	1	1	1	1
24	Door end cill	Taped together	1	1	1	1	1
25	Ramp		1	1	1	1	1
26	Door end built in base cill		2	2	2	2	2
27	Corner bars in two packs		8	8	8	8	8
28	Door posts		2	2	2	2	2
29	Top door track		1	1	1	1	1
30	Top door panel	With name plate and taped together and marked 'Door'	1	1	1	1	1
31	Bottom door panel		1	1	1	1	1
32	Infill door panel (one with hole)		3	3	3	3	3
33	Door track support		1	1	1	1	1
34	Gutter/eave bar	Taped together	2	2	2	2	2
35	Side angle braces		2	4	4	4	4
36	Built in base side		2	2	2	2	2
37	Side glazing bar		2	4	6	8	10
38	Roof glazing bar		2	4	6	8	10
39	Vent (in packs)		1	1	2	2	2
40	Corner brackets		4	4	4	4	4
41	Door end base plates		2	2	2	2	2
42	Angle brackets		8	10	12	14	16
43	Cantilevers		-	-	-	4	6

HELPFUL HINTS

- Please do take your time and be sure to read all instructions carefully before assembling.
- Do not assemble frame in high winds.
- The greenhouse frame should be anchored to a permanent foundation. This will not only help secure it against powerful winds but will help prevent breakage of the glass caused by the freezing and thawing process of the earth.
- When building your own brick/concrete foundations ensure that they are level and square otherwise your frame will not be correct and the glass will not fit.
- Be sure all four corners of the constructed greenhouse are square before installing glass, and do not install the glass until the greenhouse is on a permanent foundation.
- Do not place your greenhouse in vulnerable locations such as under trees, playing areas, etc.
- Children should not play near glass greenhouses.
- REMEMBER: glass is fragile, handle with care!
- Protective eye glasses should be worn.
- Gloves should be worn.
- If your greenhouse is a powder coated there are a few 1/8" holes in the end of the bars. These are jig holes for the process and have no bearing on construction. **(Key Point)**.
- When powder coated, the sub-frame assembly packages may slightly differ from the standard alloy finish.
- Powder coated packages are wrapped in polythene tubing – please be careful when opening e.g. Do not run a knife down the sides as you can scratch the paintwork.
- **WHEN CONSTRUCTING A POWDER COATED MODEL PLEASE TAKE CARE NOT TO DAMAGE THE FINISH BY WORKING ON CONCRETE OR PATIOS**
- **N.B. This plan covers the entire Craftsman range. The only difference between a 6ft long and an 8ft long for example are a few extra pieces of alloy, glass, nuts and bolts etc. The construction of the sub-frame assemblies is the same but for the purposes of this booklet we have used the 8 x 6 model as the benchmark. Therefore only one plan is needed.**
- We reserve the right to alter and improve our products.

INSTALLATION INSTRUCTIONS FOR THE 6'3" WIDE MODEL "CRAFTSMAN RANGE"

THE CONTENTS OF THIS CARTON ARE DIVIDED INTO DIFFERENT FRAME ASSEMBLIES THAT COLLECTIVELY MAKE UP THE COMPLETED GREENHOUSE FRAMEWORK.

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

The contents are as follows:

1. Two side frames
2. Rear end frame
3. Door end frame
4. Roof vent (s)
5. Door
6. Bag of fittings containing:
 - a. Nuts and bolts general assembly
 - b. Overlap clips for glass
 - c. Spring clips for glass
 - d. Casement stay (1 per vent)
 - e. Casement stay nuts and bolts
 - f. Four eave plates (not in the main bag, but taped up with the casement stay separately)
 - g. Two ridge plates
 - h. Two door wheels
 - i. One door guide
 - j. Small self tapping screws
 - k. 1 Large self tapping screw
 - l. 1 Spring washer
 - m. 1 Door keep
7. Roof bars
8. Glazing beading
9. One length of ridge
10. Two black brush draught excluders
11. Small angle brackets for anchoring down
12. Two door end plates with 3 holes for door end assembly

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

N.B. If you are erecting the greenhouse on a soft standing you will need either a flagstone or a row of bricks under the doorway, level with the top of the soil to give support to the cill when you stand on the threshold, if you have not ordered a soft base support with your greenhouse.

SIDE FRAME ASSEMBLY

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

With a built in base model the base is an integral part of each frame and is therefore not built as a separate entity.

1. Lay out the pieces on the ground as though you were standing inside the greenhouse, i.e. with the gutter and built in base facing downwards, and the bolt channels of the glazing bar(s) upwards. **(Key Point). Slide the glazing beading into both V grooves of the glazing bars.**



2. Slide a bolt into each end of each glazing bar. (If you have bought a shelf to go in your greenhouse and you intend to fit it on a side wall, use the ½” headed bolts provided with the shelf fittings these can be inserted later). For 10’ models, slide an extra bolt into the 2nd and 3rd glazing bar (and also the 4th bar for 12’ long models). These will enable the fitting of a cantilever brace during general assembly later in the plan.

3. Fix the combined eaves bar/gutter to the glazing bar(s) by pushing the bolts through the holes in the eaves bar, and securing with a nut. You do not need to tighten the nuts too much at this stage, but they need to be tight enough to stop the bolts slipping out of the glazing bar.

4. Fix the built in base to the middle glazing bar by pushing the bolt through the hole in the built in base unit and tightening.

5. Correctly position the built in base on the outer most glazing bars by pushing the bolts through the holes in the built in base, but do not put the nuts on yet.

6. Place the side angle braces over these bolts so that they point outwards towards the ends of the combined eaves/gutter bar. They must be so arranged that the inside of the angle in each case faces towards the middle of the house (i.e. the elongated slot will be by the combined eaves/gutter bar in one case and by the built in base in the other). **(Key Point).**

7. Put nuts on bottom bolts and lightly tighten.

8. Do the same with the other side frame assembly.

9. Make sure that the glazing bars reach both the built in base and the combined eaves/gutter bar in each case. Tighten all nuts.

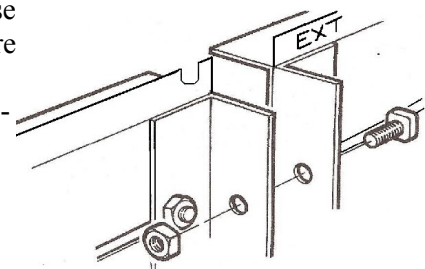
10. If you intend to fit any Elite accessories (louvres, shelf, staging) they will be packed with ½ head bolts to enable them to be retro fitted. You do not need to pre insert any bolts for these accessories.

11. If you are fitting your greenhouse onto hard standing (flags, concrete etc.), then insert bolts into the bolt channel of the built in base (generally 1 every 2’). These will be used to anchor the greenhouse to the floor during general assembly.

12. 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 (corner bracket) 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”).



SIDE FRAME

1 Combined gutter/eave bar

1 Built in base

Glazing bars—1 if 4' long

2 if 6' long

3 if 8' long

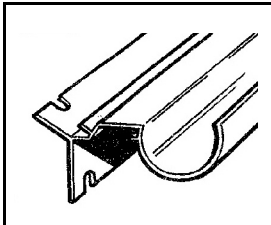
4 if 10' long

5 if 12' long

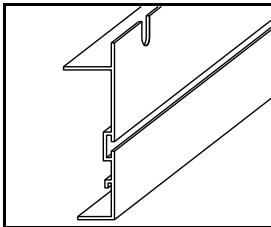
Side angle braces —1 if 4' long

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

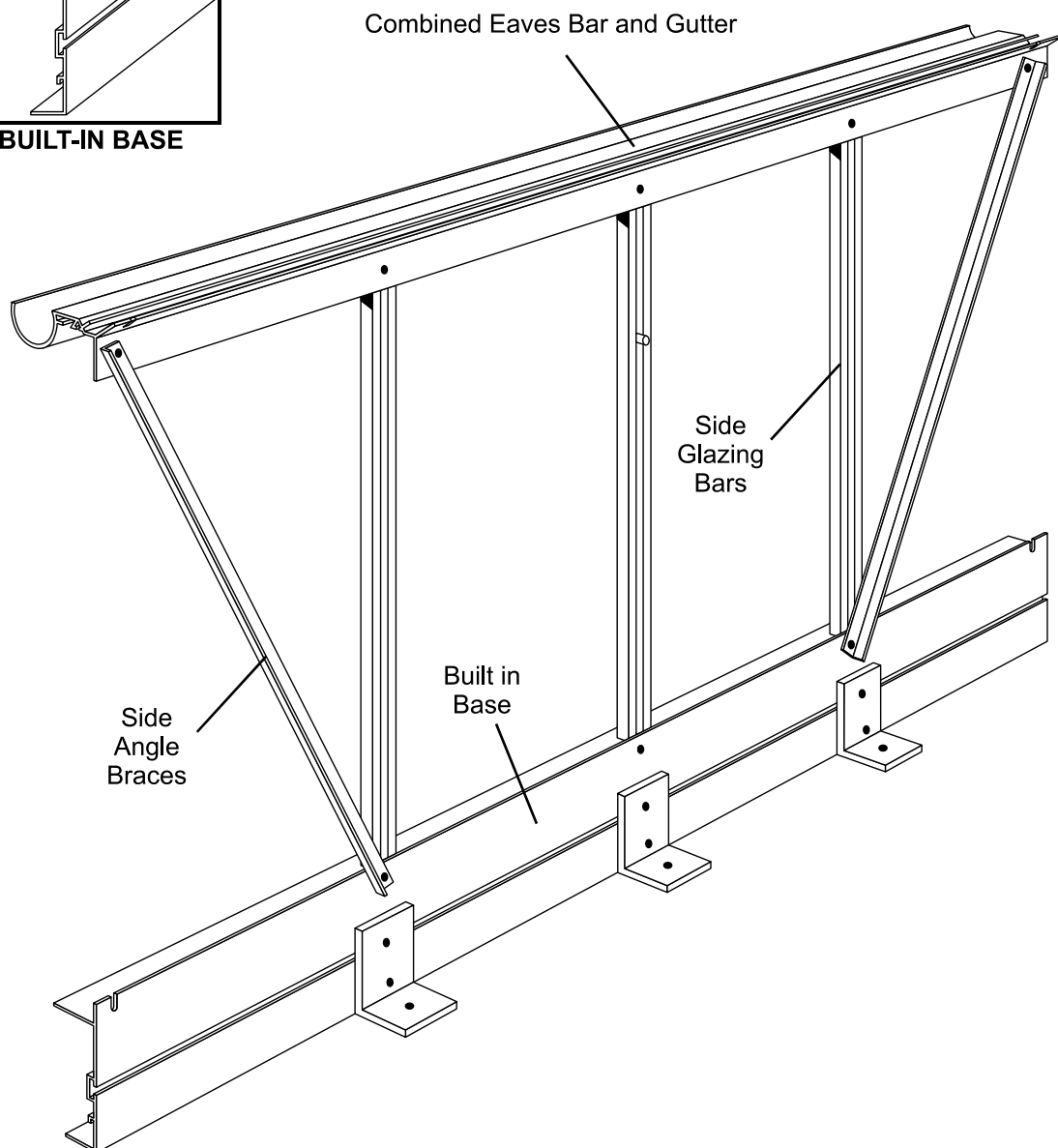
From the fitting list you will require nuts and bolts and glazing beading.



EAVES BAR GUTTER



BUILT-IN BASE



REAR END ASSEMBLY

Components

- 1 Built in base “marked rear end”
- 2 Glazing bars
- 2 Roof corner bars (marked “R” at the apex)
- 2 Side corner bars
- 2 Rear end diagonal angles
- 1 Rear end horizontal angle

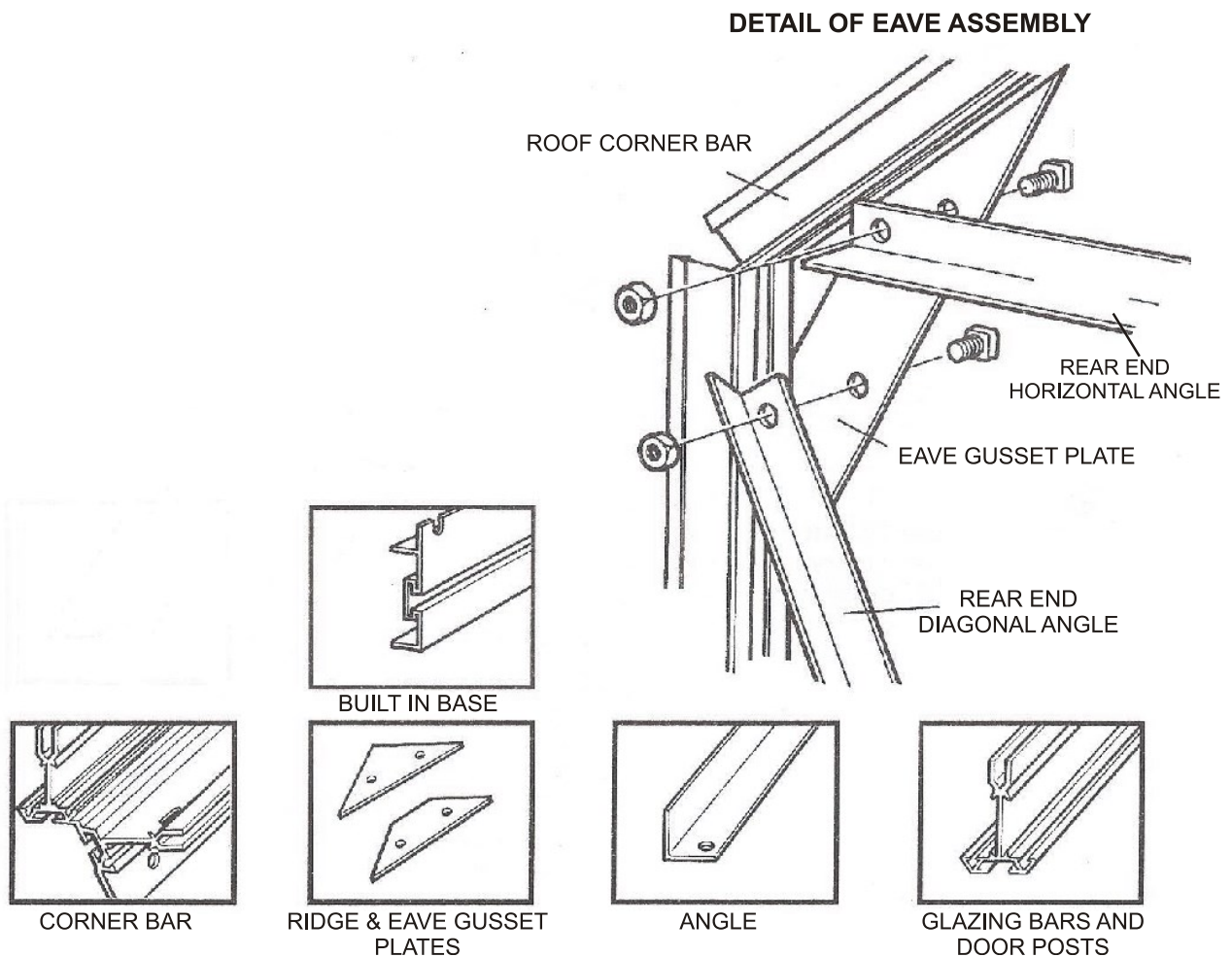
From the main bag of fittings you will require the nuts and bolts. You will also require 2 eave gusset plates and 1 ridge gusset plate. These are packed with the casement stay and are separate from the main bag of fittings.

INSTRUCTIONS

1. Lay out the frame as though you were standing on the inside i.e. with the two bolt slots upper most. Roof corners marked “R” at the apex, opposite each other, facing downwards (i.e. “R” on outside). Roof corner bars are mitred at both ends where as side corner bars are mitred at one end only (**Key Point**). The bolt slot is on the inside and faces inwards during initial construction. If you have a powder coated greenhouse there is no letter “R” on the corner bar. You **must** ensure that the “middle” hole is nearer to the ridge gusset plate than the eaves gusset plate (**Key Point**). **Slide the glazing beading into the V groove of the glazing bar and the corner bars. (Do not put beading into the middle V slot of the corner bar).**
2. Slide two bolts into the bolt channels of each corner bar (1 each end), put a nut on and position the bolt approx. 50mm from the ends of the bar. These will later be used in the general assembly for fixing the ridge, eave and built in base to the ends. Now secure the ridge gusset plate and eaves gusset plates by inserting bolts through the ‘gusset plates’ and into the holes punched in the flange of the corner bar, at the apex and eave.
3. Attach the built in base to the side corner bars by inserting a bolt through the hole in the flange of the corner bar and into the slot in the built in base. (Make sure bolt channel of base section is facing upwards). (**Key Point**).
4. Attach the vertical glazing bars to the built in base by inserting a bolt into the bolt channel of the glazing bars and locating it with the punched holes in the built in base. Before securing the nuts attach the rear end diagonal angle to the same bolt as illustrated. The top of the rear end diagonal angle now attaches to the **bottom bolt** of the eave gusset plate. Do not tighten at this stage.
5. Slide two bolts into the bolt channel at the top of the two vertical glazing bars and secure the second one to the roof corner bars by inserting the bolt through the punched hole in the flange.
6. You can now attach the rear end horizontal angle to the **top bolt** of the eave gusset plate and to the other bolts in the glazing bars you inserted in 5, above.
7. Check that all angles between the built in base and the vertical members are at right angles and that the glazing bars are right into the built in base at the bottom. (**Key Point**).

8. Tighten all nuts.

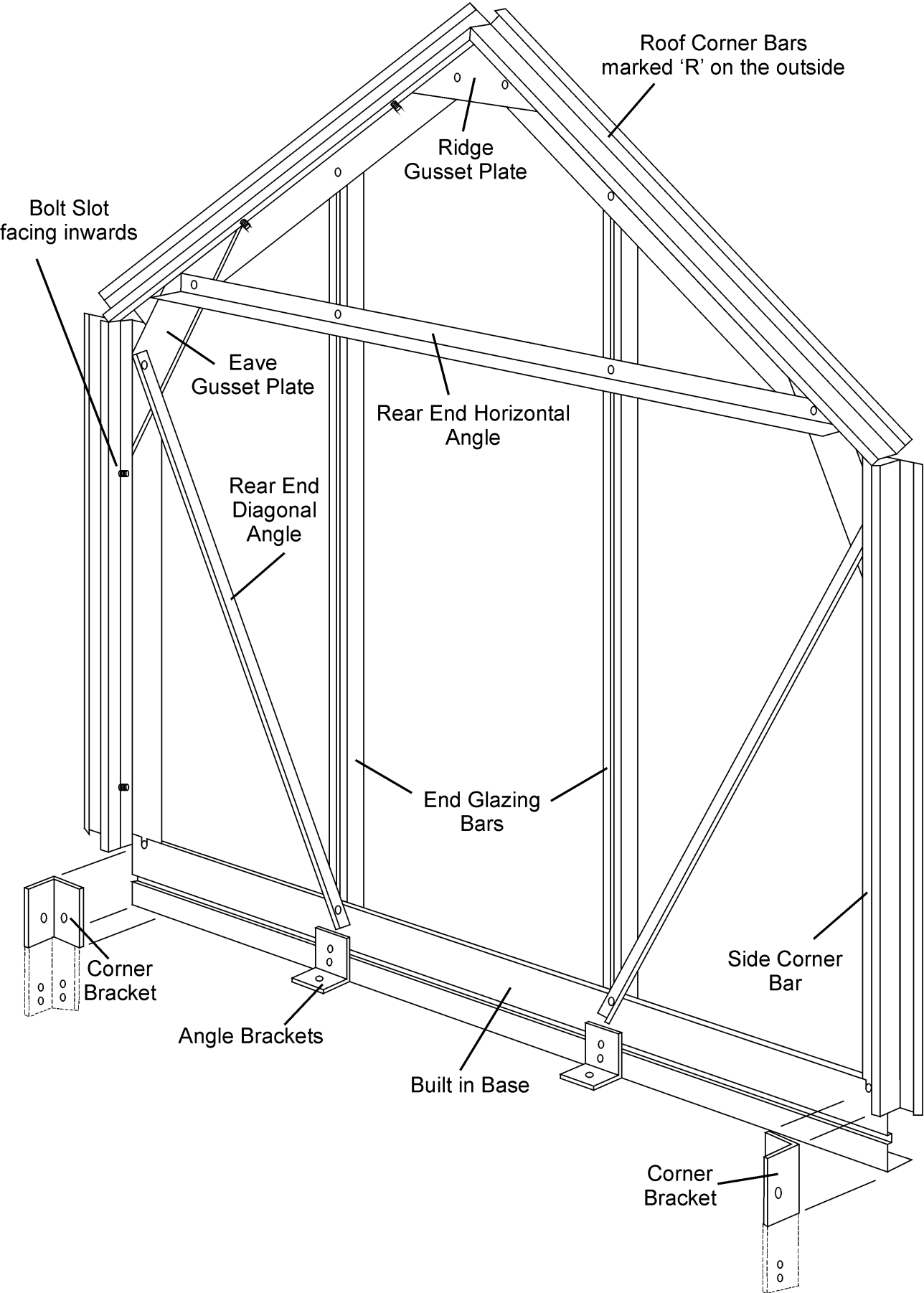
9. Slide a bolt into the bolt slot in the built in base section, one at each end. The corner bracket is approx. 400mm long and has 6 holes (4 at 1 end and 2 at the other). If you are fitting your greenhouse onto soft ground, then do not fit the corner bracket yet. Attach the corner bracket (base anchors) so that it is pointing downwards by using the end of the corner bracket that has 2 holes (not 4) to the bolt channel of the built in base section. **N.B.** It bolts only to the built in base and NOT to the corner bars. If you are on a patio, you will need to cut the corner bracket off level with the bottom of the built in base and slide extra bolts into the bolt channel to be attached to the angle brackets (generally 1 every 2'). If you are on soil, the corner brackets will go into the ground at general assembly.



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

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

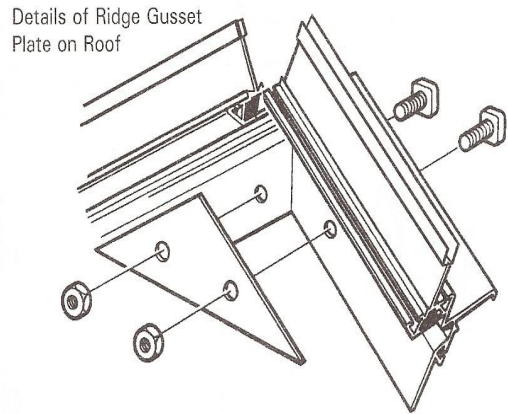
REAR END ASSEMBLY



DOOR END ASSEMBLY

COMPONENTS

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



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

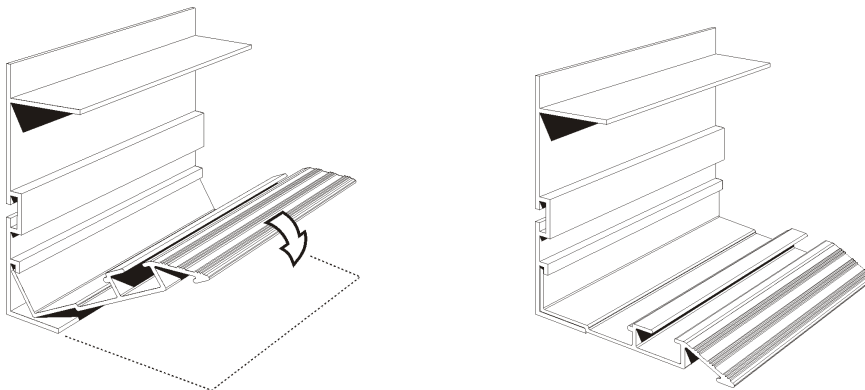
You will also require 2 eave gusset plates and 1 ridge gusset plate. These are packed with the casement stay and are separate from the main bag of fittings.

INSTRUCTIONS

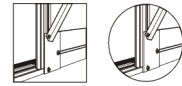
Please note, you only require approx. 40mm of beading in the inside 'v' groove of the end glazing bars.

1. Assemble the frame in exactly the same way as the rear end, up to and including stage 3 of the rear end. The difference with the door end is that instead of 1 long built in base piece, the door end has 2 smaller pieces (1 either side of the door opening) and 1 door end cill.
2. Now engage the door end cill with the 2 built in base pieces 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.

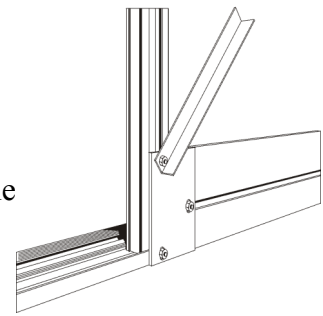
N.B. The short door end built in base sections have an extra slotted hole at the other end (nearest to the door opening) which will not be utilised in the assembly, but is there so that the built in base pieces do not require handing i.e. left can go on right and visa versa.



3. Slide 2 bolts into the bottom of each glazing bar and 3 bolts (only 1 if greenhouse to be sited on soft ground) into the free end of each built in base section. Attach the 2nd (of 2) bolt in the glazing bar to the hole in the door end cill, but do not put a nut on yet. Remember, the door end glazing bars are 95 mm longer than the rear end ones and do not sit on top of the base (as the rear end glazing bars do), they go down the side of the base and attached to the bottom cill.



4. Attach the rectangular plate (with 3 holes) to the 2 bolts inserted in the glazing bars and the last bolt inserted into the built in base ensuring that the glazing bar is tight down into the angle of the door end cill. Attach the door end diagonal angle to the top bolt of the rectangular plate. The 2 unoccupied bolts in the built in base sections will be used to anchor the greenhouse to the floor, and attach the corner bracket.



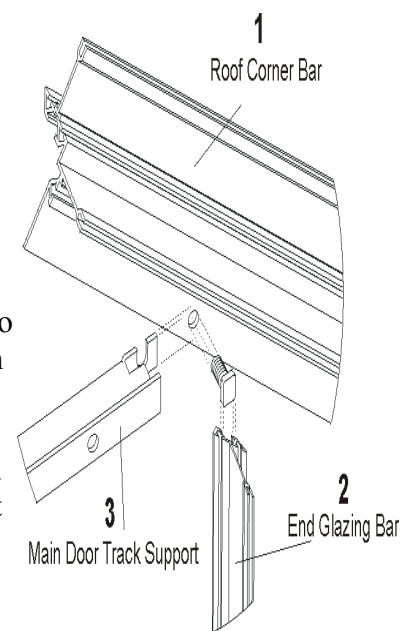
5. Slide 2 bolts into the top of each glazing bar. The last bolt locates in the hole in the roof corner bar, do not put a nut on yet.

6. Attach the main door track support (shaped like a letter 'Z' to be found with the door panels, packet marked door) to the two bolts that secure the glazing bars to the corner bars. **(Key Point)**. This 'Z' shaped bar must be fitted with the two outside slots facing upwards (as illustrated) **not** downwards. **(Key Point)**.

7. The two short horizontal angles attach to the **top bolt** in the eave gusset plate and the vertical glazing bars.

8. When this has been achieved tighten all nuts.

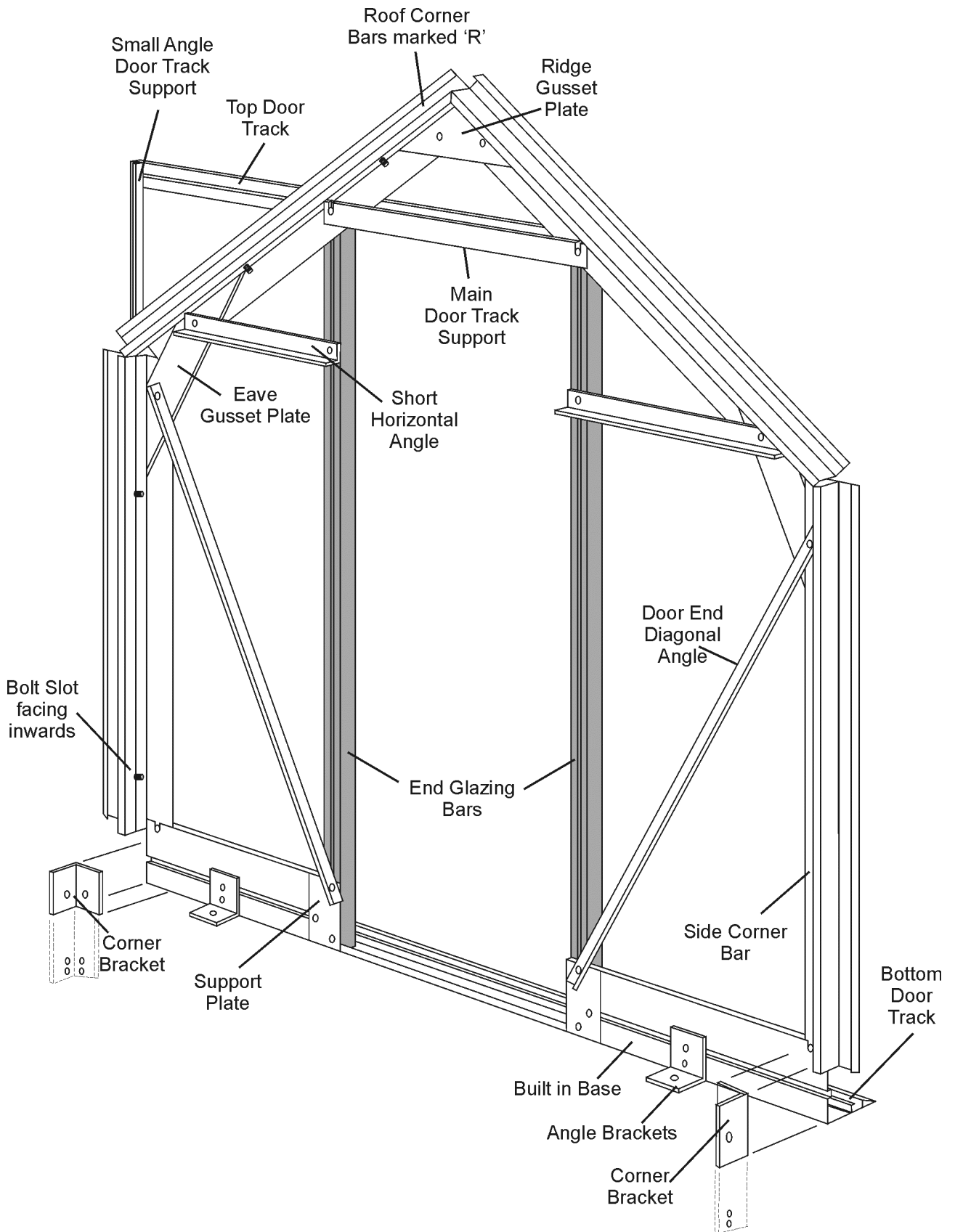
9. Stand the frame up and bolt the door track to the main door track support and the small angle door track support by inserting 4 bolts into the bolt slot of the door track. Position 3 of these through the 3 holes in the door track support above the door opening. Viewed from the outside, the door slides centre to right. Position the door track in such a way that it is in line with the left hand glazing bar and right hand corner bar. The small angle door track support (which is to be fitted at the end of assembly and before glazing) has 2 elongated holes at the top and is blank at the bottom. Attach one of the holes to the bolt slot at the back of the upper door track using the 4th bolt, and then by using a self tapping screw, you can attach the blank end of the bar to the continuous screw groove on the corner bar. See door end assembly diagram. **N.B.** it is easier to fit the small door track support once the frames are joined together. You will need to drill a small hole (4mm) in the bottom of the small angle door track support to accommodate the self tapping screw.



10. Attach the corner bracket to the pre-inserted bolt closest to the end of the built in base, so that it is pointing downwards. If you are fitting your greenhouse onto soft ground, then do not fit the corner bracket yet. If you are on a patio, you will need to cut the corner bracket off level with the bottom of the built in base and slide extra bolts into the bolt channel of the built in base to be attached to the angle brackets (generally 1 every 2'). If you are on soil, the corner bracket will go into the ground at general assembly.

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

DOOR END ASSEMBLY



SINGLE DOOR FRAME ASSEMBLY

Components consist of:

2 Door glazing bars

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

2 Top and bottom door panels

From the main bag of fittings you require

2 Door wheels

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

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

Self tapping screws and spring washers.

Door lock, cam and pin

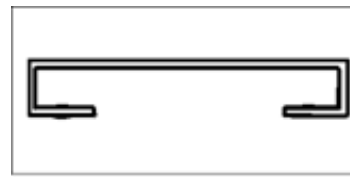
Door handle

Door keep

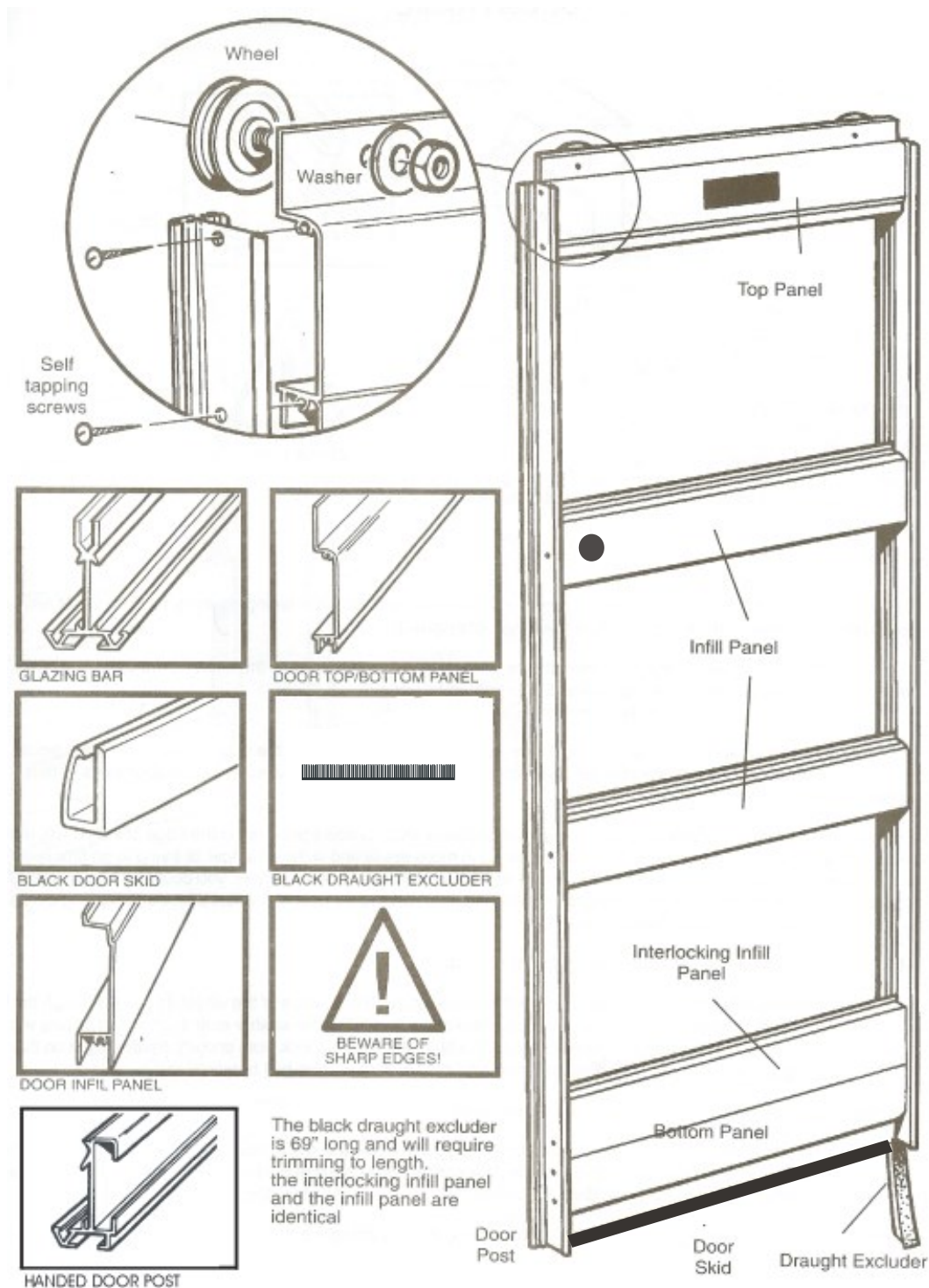
1. Place the two side bars on a level surface roughly two feet apart with the bolt slots facing downwards. The top of each side piece has two screw holes in it, the bottom has three (**Key Point**). Slide the glazing beading into the V grooves that face inwards towards the door panels. (Not in the outside V groove). Beading is only required on the side of the bar that door panels are fitted to.
2. Place the top, bottom and three infill panels in position as shown by the position of the screw holes in the side pieces and the panels. The top panel has the greenhouse name on it. The bottom panel has the edge for the door skids to fit on. The lower infill panel interlocks with the bottom panel. The infill panel with lock can fit on either the 2nd or 3rd panel down
3. Fix the door together by screwing through the door side pieces into the holes provided in the edge of the panels with the self tapping screws. The screws will go in more easily and without danger of trying to go crooked if you can put a small amount of grease on the screw before assembling the doors. Alternatively, you could insert the screws into the screw eyes of the door panels before assembling the door; this would have the effect of pre-self tapping the panels prior to the assembly making assembly easier.
4. Make sure all the angles are square and tighten all the screws.
5. Fix each door wheel into position by pushing the bolt provided through the centre of the wheel and then through the hole in the top door panel from underneath (i.e. from the inside of the door). Put the washer over the bolt and secure with the nut provided, tightening until there is no movement on the bolt. The nuts are lock-nuts and are harder to put on than the normal nuts in general assembly. The wheel will revolve freely because it has ball bearings in it. **The wheel has a collar protruding from the centre, this collar goes against the inside face of the top door panel.**
6. Slip the nylon door skid on the bottom panel (this might have been done for you). If you find the door does not engage properly with the bottom door cill, simply lower the door skid and fix using a self tapping screw
7. Turn the door over and insert the black brush draught excluders in the groove (bolt slot) in each side piece of the door. Push up to the top of the door and trim off the surplus at the bottom. Insert a nut and bolt at the bottom of each door post and tighten so that the brush will not slip down when the door is in its upright position.
8. Do not fit the door at this stage, wait until the structure is fully assembled prior to glazing, as instructed later in the booklet. The lock should be fitted to the door after the door is in position on the greenhouse.

FITTING THE DOOR HANDLES

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



DOOR HANDLE



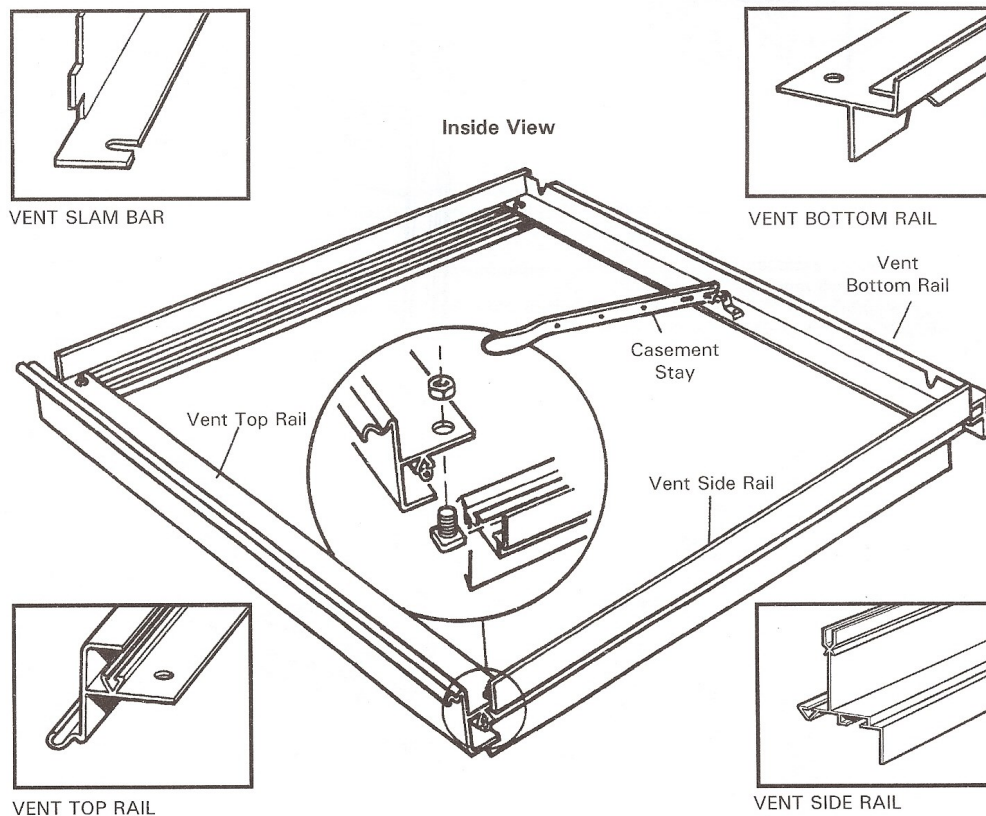
ROOF VENT ASSEMBLY

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 and 6 M4 stainless steel nuts and bolts.

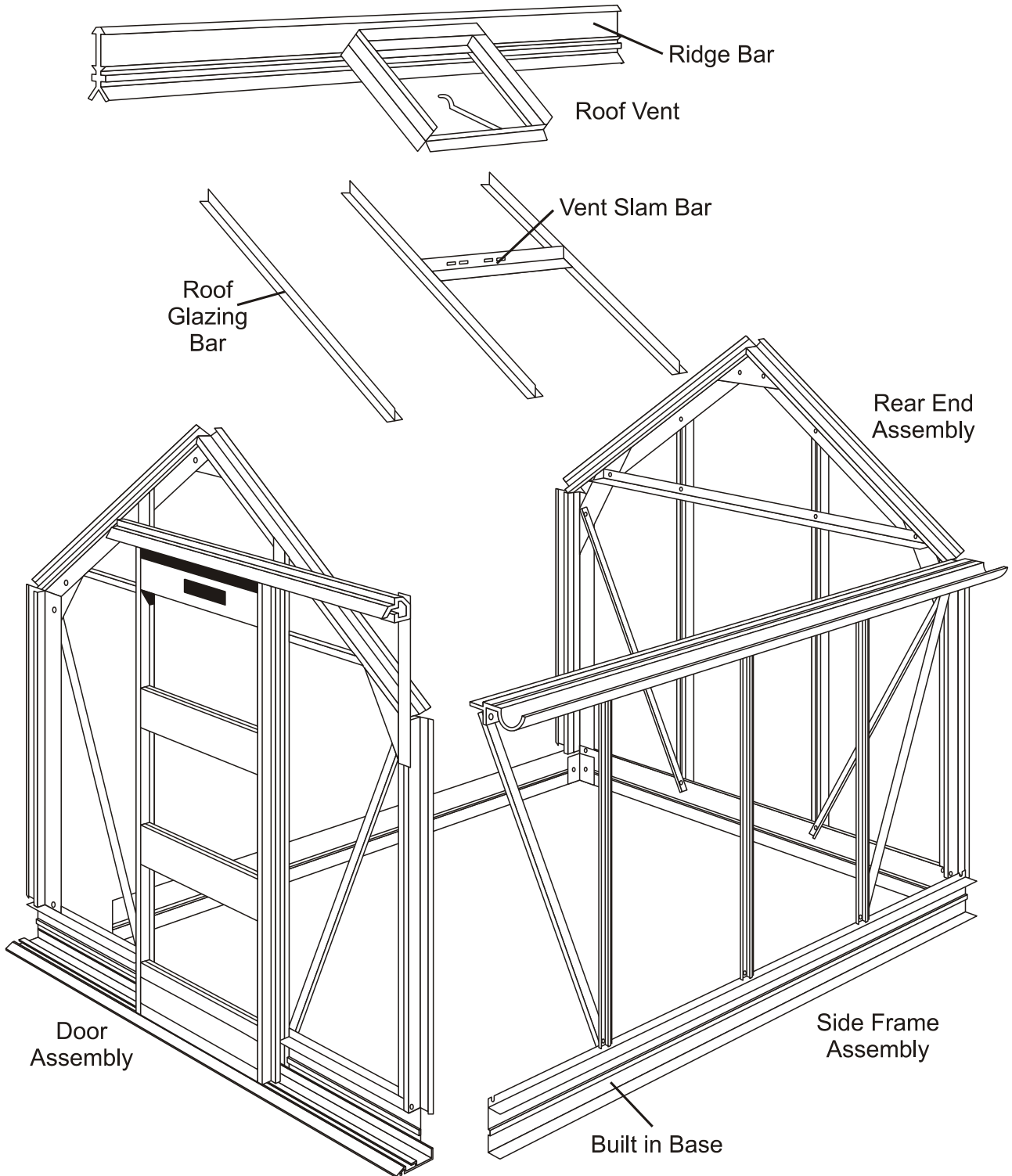
PROCEDURE:

1. Identify the slam bar and attach the 2 stay pins to the outer side of the angle using the M4 stainless steel nuts and bolts.
2. Lay the 4 edge pieces of the roof vent on a level surface as though you were on the inside of the roof vent (with the bolt slots of the vent side rails uppermost and the 'v' slots of the vent bottom rail upper most. The vent 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 v grooves in the vent side and vent top rails and trim to suit.
4. Insert a bolt into each end of the vent side rail bolt slots, put these bolts through the holes in the vent 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 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 roof vents.



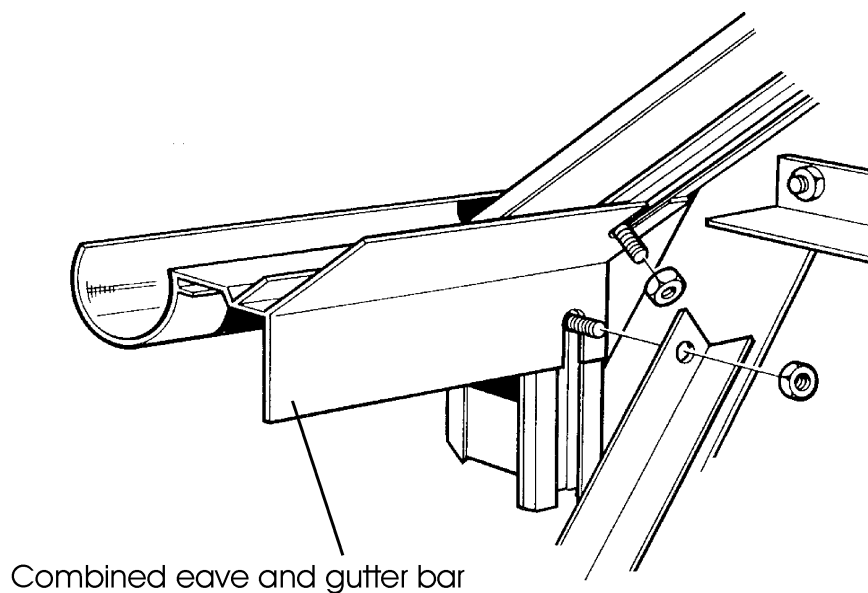
ASSEMBLY OF GREENHOUSE UNIT



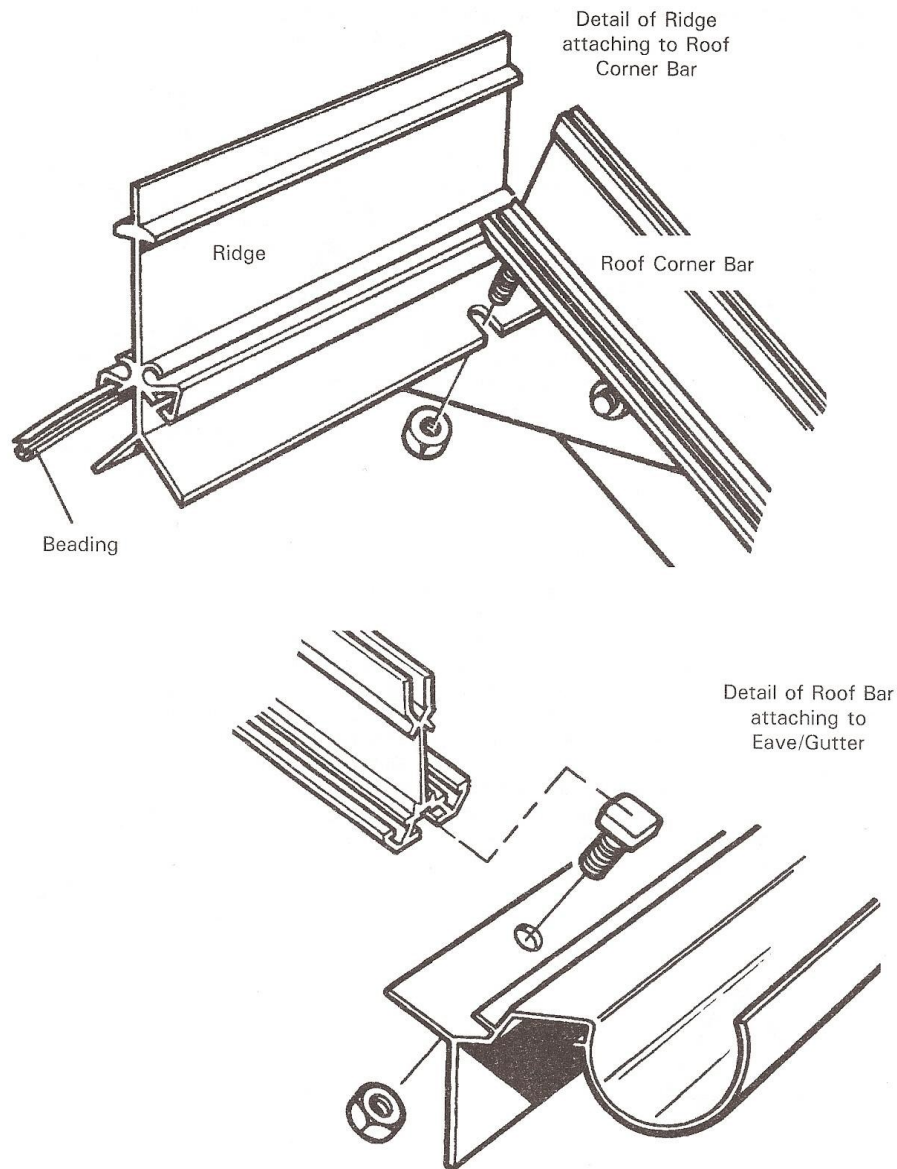
The first operation is to connect the two side frames to the end frames to form the outer shape of the completed structure. Another pair of willing hands would be useful at this stage.

1. Lift the first side frame into its position by the rear end.
2. Slot the combined eaves and gutter bar into the small space between the roof and side corner bar so that the gutter is outside the end frame and the two flanges that form the angle of the roof and side are inside and tight up against the bolt slots of the roof and side corner bar. **(Key Point)**.
3. The extra bolts that were inserted in the bolt slots of the corner bars (rear end and door end assembly) during the gable end assembly can now be used.
4. Line up the elongated holes in the flanges of the combined eaves and gutter bar with the bolt slots and slide the bolts into them. Put a nut on the top bolt and tighten up. Place the side bracing angle onto the bottom bolt, put a nut on and tighten up. **(Key Point)**.
5. The built in base attaches to the inside of the corner bar. The bolt placed in the corner bar bolt slot at gable end assembly will slide down into the slotted hole at the end of the built in base. The corner bracket attached at side frame assembly can now be attached to the gable end, in a similar way to its attachment to the side frame.

Details of combined eave and gutter attaching to gable end



6. Do the same at the other three corners.
7. Insert beading to both beading channels in the ridge bar.
8. Attach the ridge to the roof corner bars by inserting the end of the ridge through the small gap in the corner bars at the top. The vertical part of the ridge will be outside and pointing skywards and the two flanges that form the angle of the roof will be inside, tight up against the bolt slots of the roof corner bars.
9. Line up the slotted holes at the end of the ridge with the bolt slots, in the corner bars and push the two bolts, previously inserted during the gable end assembly, into the slots. Put on nut and tighten.



10. Slide the glazing beading into the V groove of the roof glazing bars. They can now be attached to the ridge and gutter. Attach them to the ridge first by sliding a bolt into the bolt slot of the glazing bar, inserting it through the hole in the flange of the ridge. Put a nut on and tighten up. Do the same with the rest of the roof bars.

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

12. Before bolting the bottom of the roof bar to the flange of the eave bar, insert final nut and bolt to the eave bar as illustrated.

If your greenhouse is 10'5" or 12'5" long you have additional Tee Bar cantilever bracing at the eave, 4 extra cantilevers for 10'5", 6 extra for 12'5". Put an extra bolt into the 2nd and 3rd glazing bars (for 10' model) and also 4th (for 12' model) before attaching the glazing bar to the eave. **(Key Point)**.

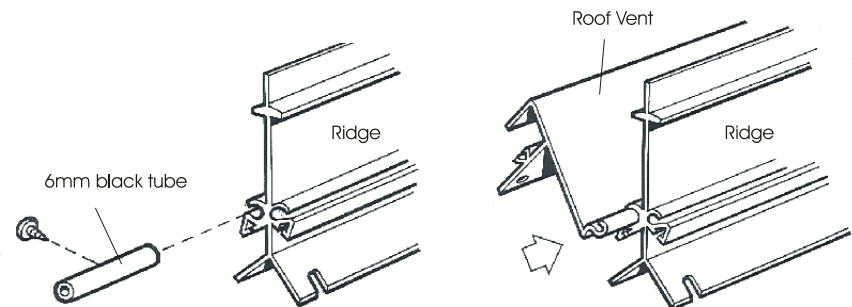
Secure the Tee Bar cantilever to the 2nd and 3rd bar of the 10' (4 cantilevers-2 each side) and also the 4th bar 12' (6 cantilevers – 3 each side).

NOW YOU CAN FIT THE VENT TO THE RIDGE

13. Slide the roof vent onto the ridge from either end and into the desired position. If you have a 4' long greenhouse or your vent is positioned next to either gable, drill a 7mm hole in the roof corner bar (near the top). Attach an angle bracket (same as used to fix greenhouse to floor see picture) to the hole in such a way that the angle bracket butts up to the vent to prevent movement. Before sliding the roof vent into the ridge, slide a piece of black tube into the vent hinge socket. Slide the roof vent into position, insert a small self tapping screw into the length of the black tube approximately $\frac{1}{2}$ way along then tighten the screw. The black tube will expand and lock into position thus preventing sideways movement of the roof vent. Fit a second black tube to the ridge on the other side of the vent.



N.B. There is no hole for the screw but it will easily push into the black tube and screw up. **(Key Point).** You only require one tube per roof vent on the left hand side of the vent hinge socket (viewed from inside the greenhouse).



Having slid the roof vents from the end on the ridge to the desired position, you can now fit the "slam bars" just under the roof vent allowing the casement stay to effectively close. The slam bar can be adjusted later to facilitate good opening and closing of the roof vent. Position the slam bar so that when the vent closes the two 'v' notches are gutter side of the top edge of the slam bar i.e. below the slam bar.

14. Do not fit the door at this stage.

15. The greenhouse is now ready for lifting on to its permanent base.

16. If you are fitting the greenhouse onto soft ground, you now need to dig 1 hole (approx. 1 spade width) in each of the 4 corners.

17. Lift the greenhouse into position. For soft ground fixing, you now need to attach the corner bracket to the bolt slots of the side and end built in bases at the point where they meet in the corner using the end of the corner bracket that has 2 holes as opposed to 4. The corner bracket must be attached in such a way that the end with 4 holes is pointing down into the hole previously made.

SQUARING UP

You must make sure that the structure is level and square. Put one pane of glass in each corner of the 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.

FITTING THE DOOR TO THE STRUCTURE

The door slides onto the frame from the left hand side. You may find it easier to slide the door before the lock is fitted.

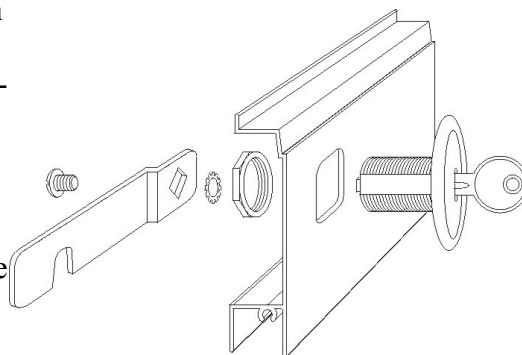
Put the door bottom rail into the bottom door track (door end cill) and slide to the right, feed the first wheel into the upper door track and move further to the right until the black draught excluder butts up to the end glazing bars. Carefully ease the door past the glazing bar and feed in the second wheel. Push further to the right until both draught excluders are butting up to both end glazing bars. Carefully ease the door past the two glazing bars. The door will now run quite freely. To square up the door with the spacing, undo the upper bolts holding the door track. There is a little play to facilitate “fine tuning” of the door. **N.B.** Sometimes the door can be a little stiff prior to glazing but once the glass has been inserted (the last job of the construction) the extra weight will make for smooth running. **(Key Point).**

FITTING THE DOUBLE 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.

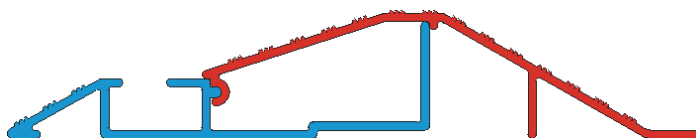
Now attach the cam lever, washer and screw to the door lock from the inside position of the door. The lock will turn through 90 degrees both ways, so you must ensure the cam (when fitted) is pointing skywards (unlock position) and horizontal (locked position).

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.



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.

FITTING THE KEEP FOR THE LOCK SINGLE DOOR

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

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

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

The picture shown is viewing the keep from the inside.



FINISHING OFF

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

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

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

Repeat at the bottom of the door.



HARD STANDING

Having established the square of the greenhouse, drill the patio or concrete in the required positions, fit plastic plugs and screw the angle brackets (attached during subassembly) firmly to the ground using 35mm x 8mm round head screws. **N.B.** If you are on a hard standing the corner brackets (4-1 each corner) need to be trimmed level with the bottom of the built-in-base.

SOIL FLOOR

Determine the square of the greenhouse as described above, make a mix of concrete and put a couple of shovelfuls around the base of each corner bracket. When the concrete has gone off back fill with the soil excavated earlier on.

GLAZING THE STRUCTURE

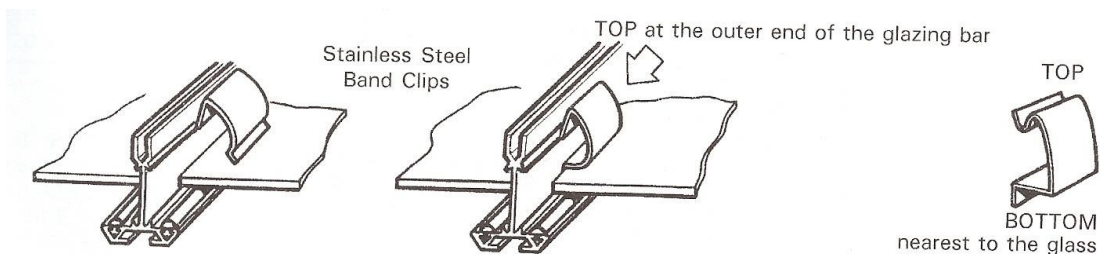
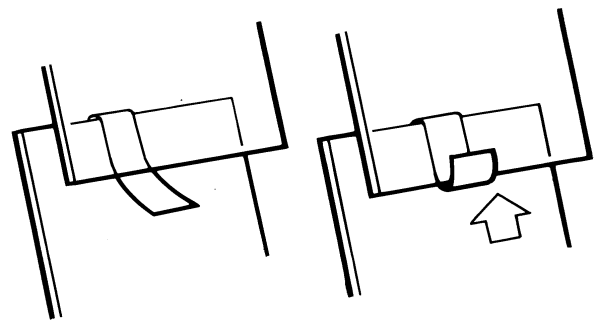
Always handle glass with extreme care as failure to do so can result in injury.



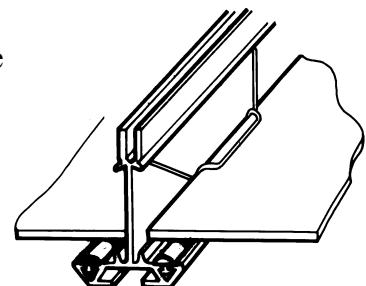
HORTICULTURAL GLASS AND MULTI-SHEET TOUGHENED GLASS

1. Starting with the bottom pane of one side, offer the pane to the glazing bars. Hold it in place by inserting two of the stainless steel band clips six inches from the bottom of the glass. Fit the curved lip under the glazing bar and then rotate it so that the other lip (with a distinct 90° bend) clips over the edge of the glass. **(Key Point)**.
2. Secure the glass by inserting another two stainless steel band clips in the same way half an inch from the top edge of the glass. **N.B.** The side panels will require a larger overlap of approx $\frac{3}{4}$ " (20mm).

3. Hook **one** overlap clip on the middle of the pane of glass. **(Key Point)**.
4. Offer the top pane of glass to the glazing bars, resting it on the two stainless steel band clips of the bottom pane. Insert two more stainless steel band clips to hold it six inches from the bottom of the pane. Bend the middle overlap clip upwards to support the glass. Secure the pane by inserting another two stainless steel band clips four inches from the top of the pane.



5. Repeat this all along this side of the greenhouse, then repeat it for the roof of this side, but note that you have to use two of the stainless steel wire clips on the sides of the panes nearest to the roof vent so that the roof vent will close correctly. (See illustration for the correct way to fit these). **(Key Point)**.
6. Repeat the glazing procedure on the other side of the house.
7. Following this, glaze the rear end in a similar fashion.
8. Proceed to the door end and glaze that, but use stainless steel wire clips on the left hand edges of the panes to the right hand side of the door opening, so that the door slides open correctly. **(Key Point)**.
9. Finally, glaze the door.

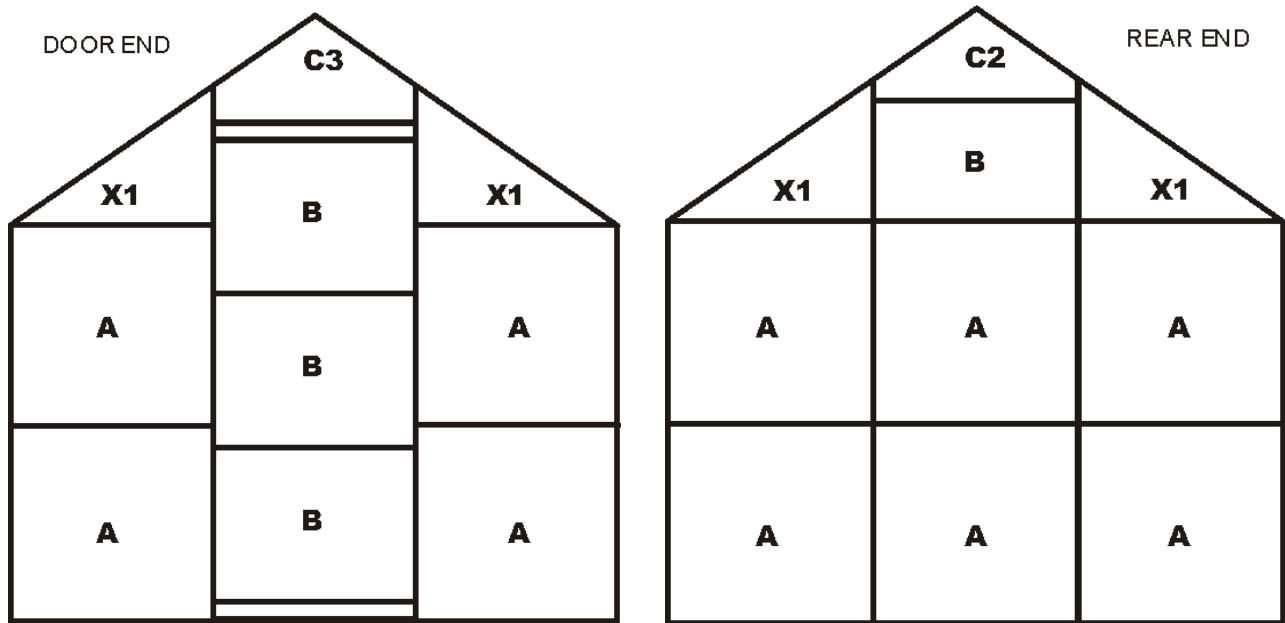


GLASS APPLICATION-HORTICULTURAL & MULTI-SHEET TOUGHENED GLASS

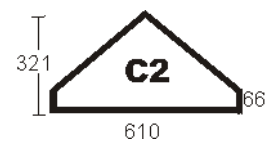
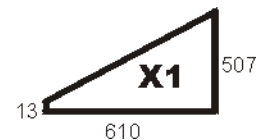
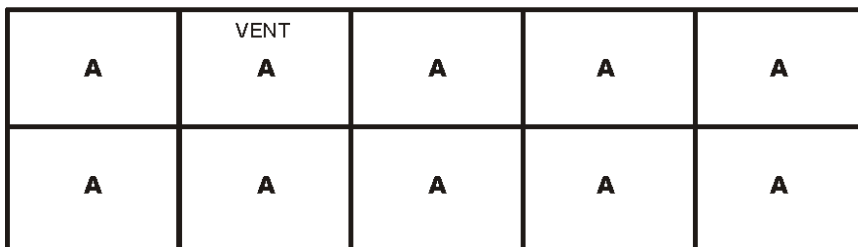
LOUVRE GLASS: 5@ 573 x 100 x 4mm

GLASS OVER/UNDER LOUVRE: 1 @ 610 x 140 x 3mm

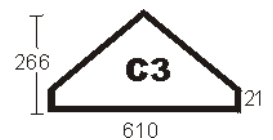
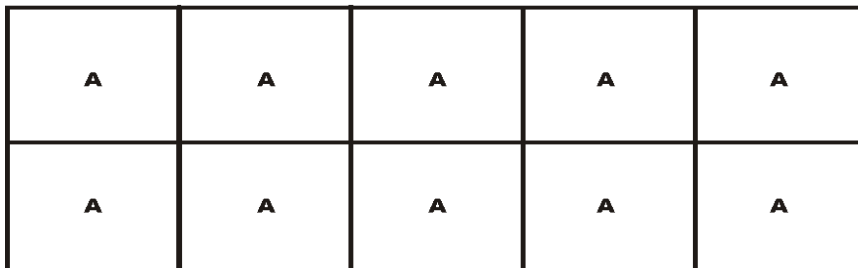
N.B. Louvre does not sit on the built in base it must be sandwiched between the 610 x 140 and 610 x 610.



ROOF



SIDE



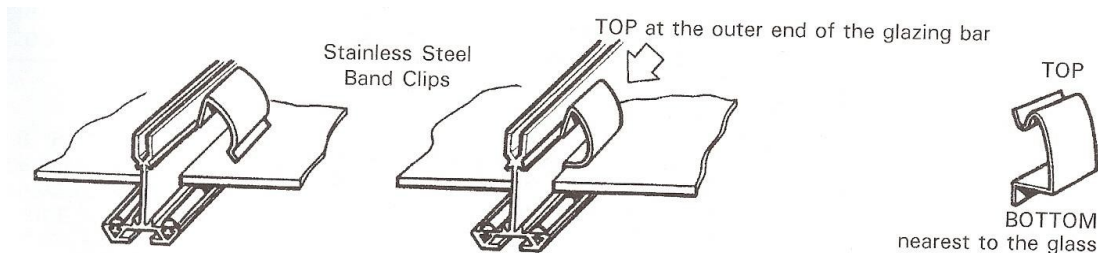
LENGTH	A	B	A = 24" X 24"	610 X 610 mm
4' 5"	26	4	B = 24" X 18"	610 X 457 mm
6' 5"	34	4		
8' 5"	42	4		
10' 5"	50	4		
12' 6"	58	4		

FULL SHEET TOUGHENED GLASS (EN12150)

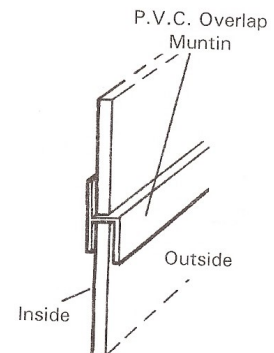
If you have purchased bar capping you must use the bar capping installation sheet that will be packed with the capping.

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

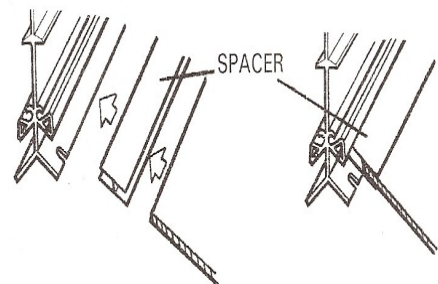
1. Full sheet toughened glass is in large sheets.
2. There are no overlaps: where there are two or more panes in a section they are butt jointed with a P.V.C overlap strip – (called a muntin) – **you do not use muntins or spacers if you have multi-sheet (or small pane) toughened glass.**
3. See the diagram for the position of the different sizes.



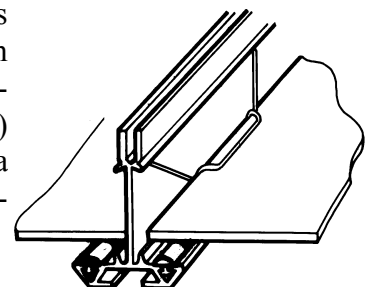
4. The glass is clipped onto the frame in the same way as the horticultural glass is, but use 8 stainless steel band clips per large pane.
5. Put the P.V.C. overlap muntin on top of the lower pane making sure you have differentiated between the inside and outside of the P.V.C. overlap muntin (see diagram below). The next pane sits on top of the P.V.C. overlap muntin and is clipped in as normal.
6. The roof panes have a P.V.C. spacer. Fit 1 roof P.V.C. spacer to the top edge of each roof panel (except where a vent is installed). Slide the glass with spacer under the ridge as far as it will go and then lower into the recess in the combined gutter/eaves bar.



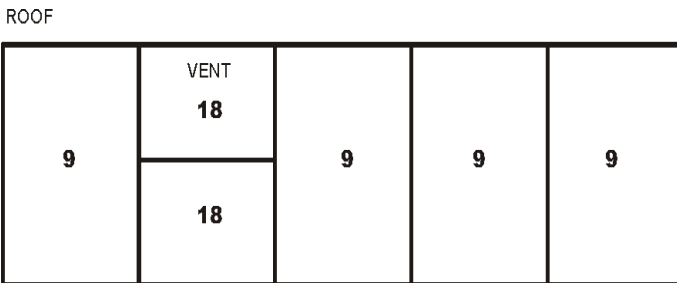
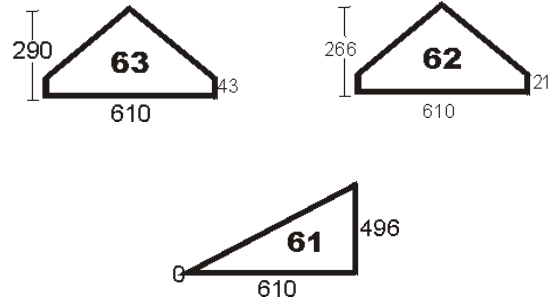
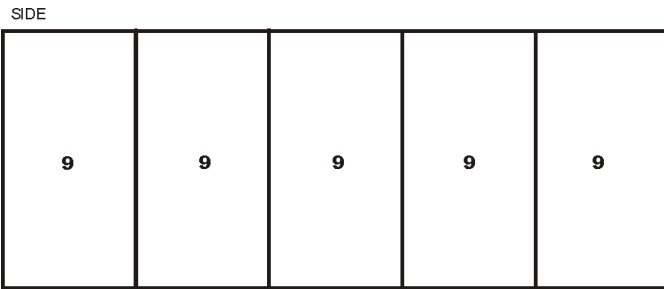
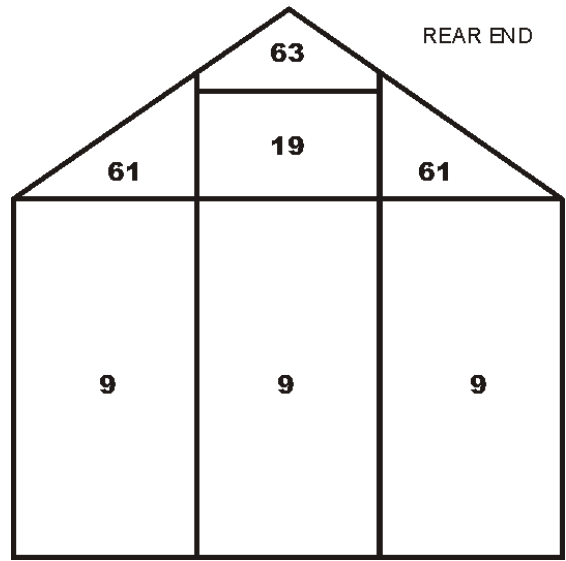
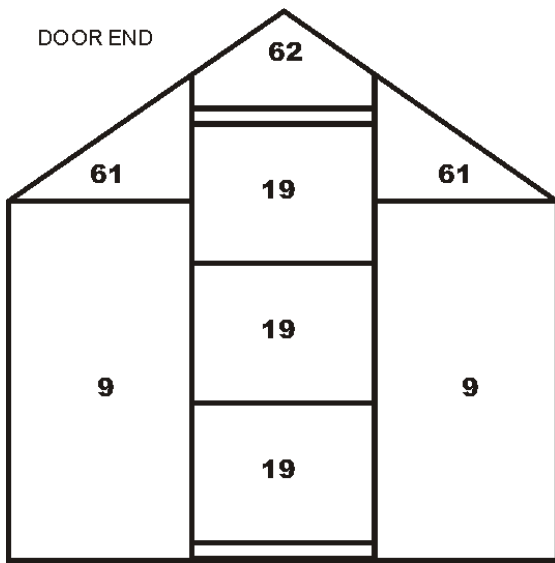
N.B. Spacers and muntins will be found in the packets of cut size glass (where appropriate).



If you have ordered bar capping you do not use the stainless steel band clips, use the stainless steel wire clips provided with the capping. Secure each pane of glass with the stainless steel wire clips (previously described) offer a piece of capping to the glazing bar, trim the capping to length, push the capping onto the glazing bar (full capping pieces cover two panes of glass one either side of a glazing bar) put the self-tapping screw through the holes in the capping and with a Philips screwdriver, screw the capping onto the bar. The screws are colour coded to the capping colour.



FULL SHEET TOUGHENED GLASS



Code	Width (mm)	Length (mm)
9	610	1197
18	610	610
19	610	457

MODEL	9	18	19	61	62	63
4'5" x 6'3"	12	3	4	4	1	1
6'5" x 6'3"	16	3	4	4	1	1
8'5" x 6'3"	19	3	4	4	1	1
10'5" x 6'3"	23	5	4	4	1	1
12'5" x 6'3"	27	5	4	4	1	1

- Louvre window, situated at rear centre or side =
- 1) Less 1 off Ref 9
 - 2) Plus 1 off Ref 18 & 1 off 610 x 140
 - 3) Louvre Frame and Glass 5 off 100 x 573

YOUR GREENHOUSE IS NOW COMPLETE

ELITE 1803