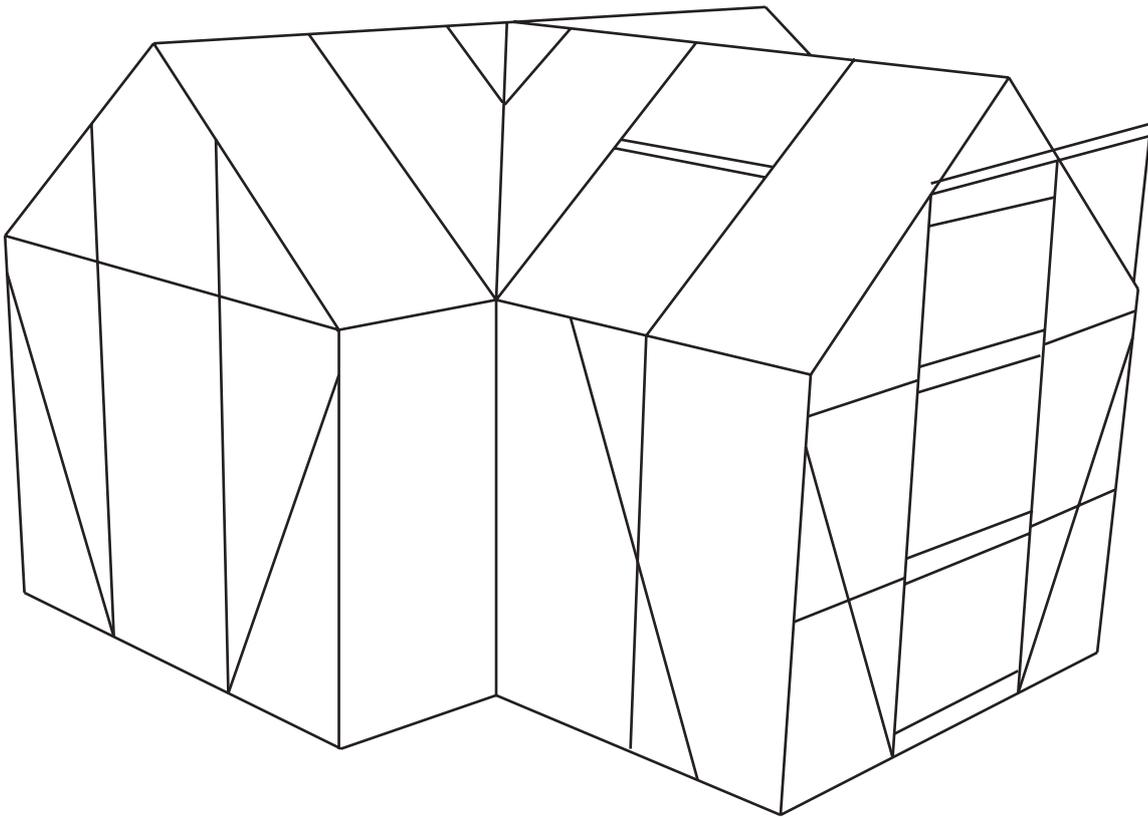


ORANGERY

UK



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Foreword

Your aluminium greenhouse is designed to give you many years of trouble-free service. By carefully following the steps contained in this manual, you will have a greenhouse of which to be proud.

Your aluminium greenhouse must be built upon a firm, level surface. For those greenhouses without an integral base, the optional galvanised steel base is an ideal foundation but you may also prepare a base from bricks, concrete blocks or impregnated timber. Whatever your choice of material, it is essential that the base is square and level and the greenhouse must be securely fastened to it (the steel base contains all the necessary fittings).

Though many gardeners will have little choice of position for their greenhouse, the following factors should be borne in mind ...

A flat, level site is essential. Your greenhouse can then be erected easily, staging can be installed properly, and the whole structure will be stable and secure.

Locate your greenhouse where there is a minimum of shade - if possible avoid any shading from trees, fences or shrubs. Overhanging branches are particularly troublesome as raindrops dripping from them quickly dirty the glass, and quite small twigs tapping against the panes are capable of breaking them. A North-South facing aspect is most suitable for raising summer and autumn crops as it will allow the rays of the early morning sun to warm-up the greenhouse quickly and as the sun sets, its rays will still keep up the temperature until the last possible moment.

If you wish to produce crops and plants in the winter and early spring then an East-West location is probably better. In winter the daylight hours are very few and adequate sun (which at a low aspect will then shine through the south wall) is only available between 10.00am and 4.00pm.

Remember too that your plants will need a great deal of water every day, so the site should be near to a water stand-pipe or not too far away from a convenient source.

Finally, try to choose a site where the soil drains freely so that you can enjoy pleasant working conditions underfoot!

Please read this manual thoroughly before commencing assembly.

You may find it useful (though it is not essential) to fit the glazing strip to all Glazing Bars (1), (7) & (23), Corner Posts (5), (11), Gable Bars (13), (14), Vent Sides (25) and Door Posts (16), (17) before you commence assembly.

Safety Tips

1. Extreme care should be taken when handling glass.
2. When glazing it is advisable to wear some head protection, gloves and strong shoes - safety glasses are strongly recommended.
3. Do not, under any circumstances, climb stepladders whilst carrying glass - get an assistant to hand you each piece in turn.
4. When fixing glass into the aluminium sections using spring wire glazing clips, hold the clip in position with one hand and spring the legs of the clip into the retaining groove with the other.

PLEASE NOTE that the Spring Wire Glazing Clips are in a tensioned state during and after fitting, great care should therefore be taken in seating them securely into the aluminium retaining groove.
5. Attention! Do not walk over the glazed roof as the glass panes and the frame are unable to withstand the weight.

User notes

1. If you have to leave the greenhouse unattended for any length of time during winter months when snow might be expected, please take the following precautions:
- Either: provide a prop for the roof or ensure that the greenhouse is secured against unauthorised entry.
2. Close and secure all windows and doors when strong winds are experienced or forecast.
3. Always replace immediately broken or damaged panes of glass.
4. Periodically lubricate the door rollers.
5. Always take great care when using a rotary mower in close proximity to the greenhouse as small stones can easily be thrown in the air and may break the glass.

Assembly Tips

All the following diagrams are viewed from inside looking out.

Assembly is easier if constructed this way.

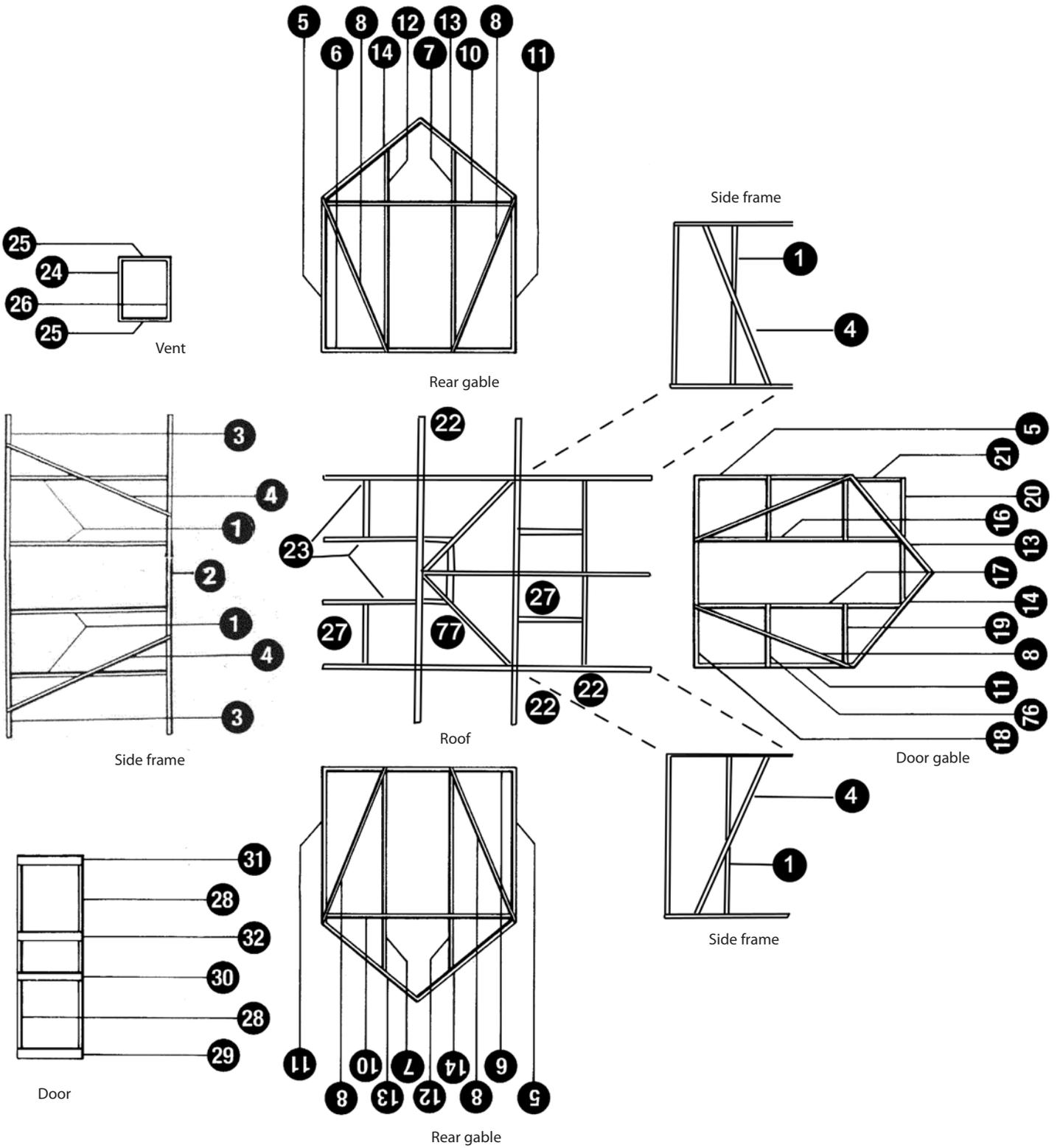
Method of Assembly

First install base as per instructions

Check base is square and level

- Begin construction of greenhouse side section
- Construct Door Gable
- Construct the 2 rear gables
- Assembly side section to Rear Gables
- Fit main Ridge Bar
- Fit Roof Glazing Bars (and Vent Trimmers)
- Construct 1,2m sides
- Fix Door Gable to 1.2m sides
- Fit Ridge Bar to Door Gable and main Ridge
- Attach small gutter and sill Between Comer Posts
- Fit Roof Slopes
- Fix roof Glazing Bars & roof/eaves Braces
- And Vent Trimmers
- Construct & glaze Vents and Door
- Check greenhouse is square and true
- Glaze
- Fit Plastic ends
- Fit Vents and door
- Fit Ridge end caps

Exploded view

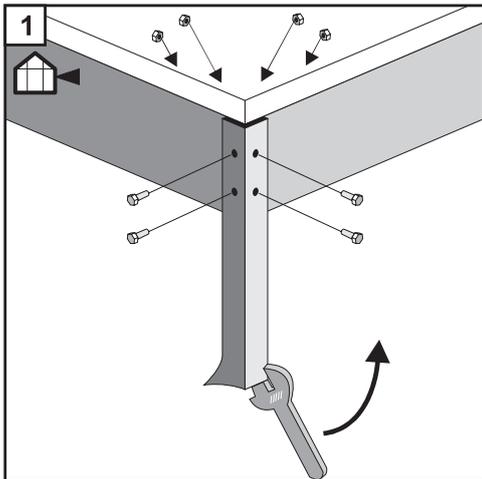


Orangery Base Construction

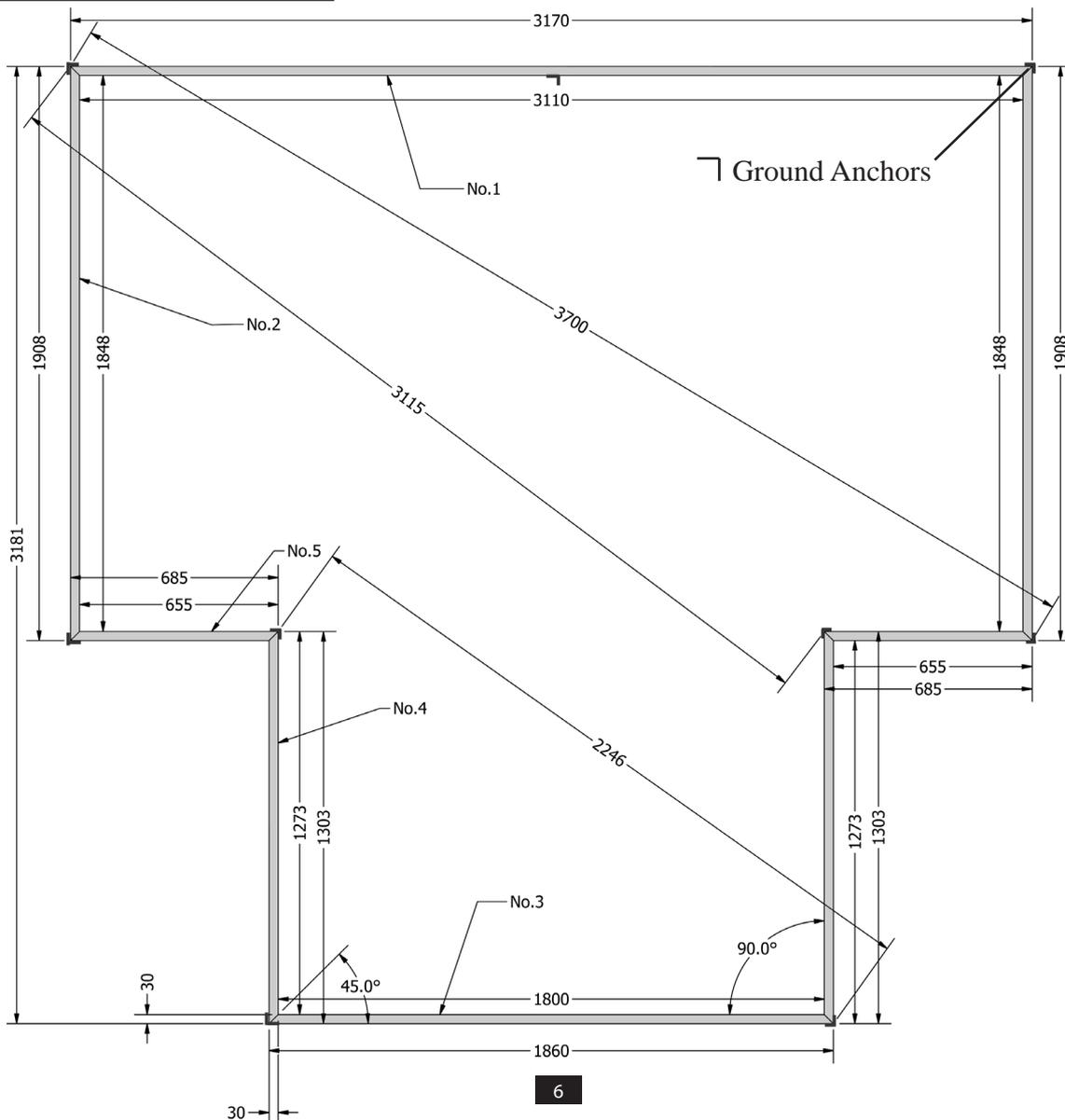
- 1) Ensure greenhouse base is sited on a firm, flat surface.
- 2) Lay-out base components as shown.
- 3) Connect long side 3170mm to rear base 1908mm at both ends by fitting ground anchors to matching holes in base sections.
- 4) Connect 685mm lengths opposite side.
- 5) Connect 1303mm lengths onto 685mm
- 6) Connect front 1860 mm to ends of 1303mm.

Secure base to ground by digging a hole at each corner for the ground anchor and when satisfied that base is level and square, concrete into place.

OR If sited on concrete or paved area Cut off ground anchors level with bottom edge of base section and using 'off-cuts or brackets(not provided) secure to ground.

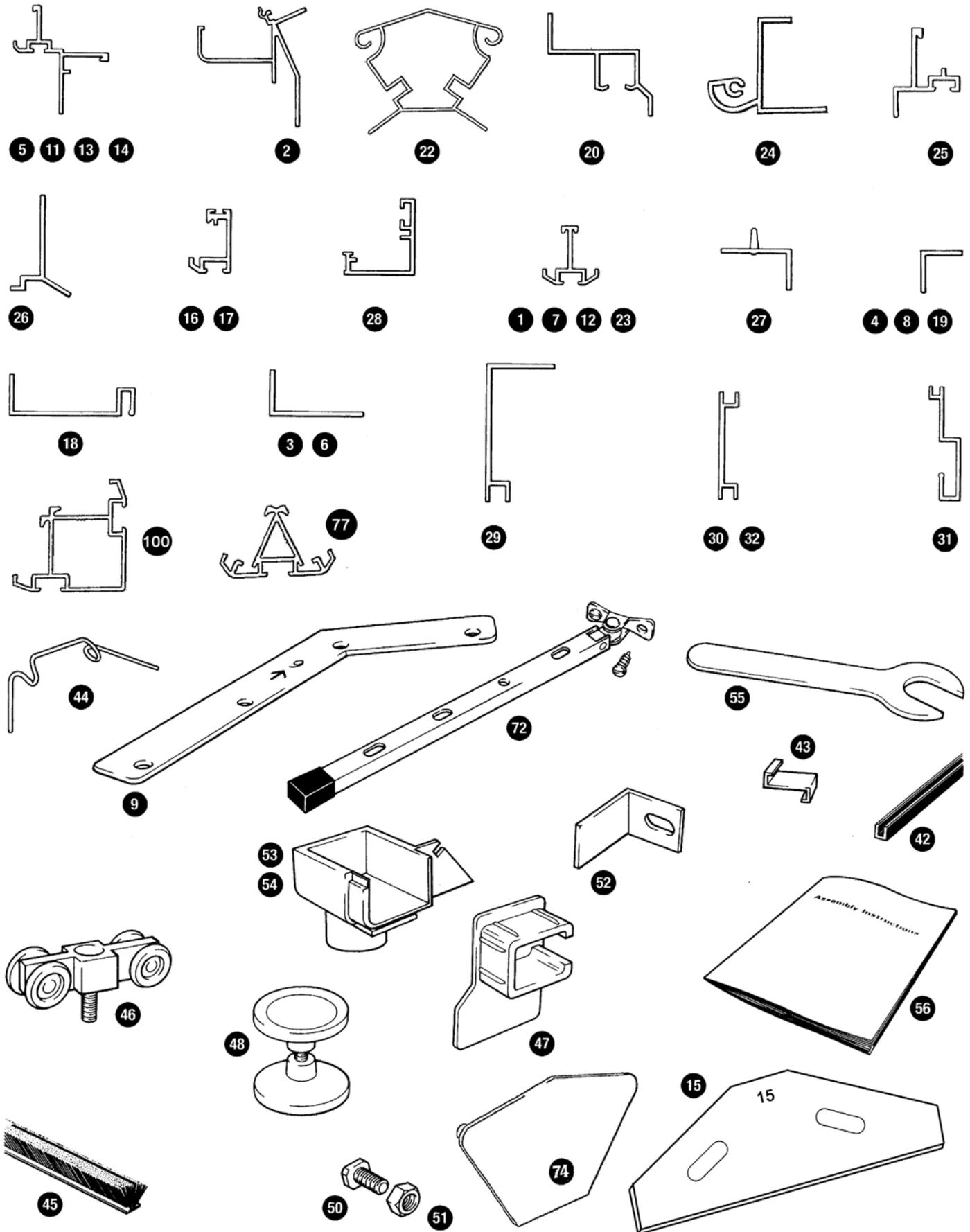


	mm				9
	3170	1		M6 *10	32
	1908	2			M6 *40
	1860	1			M6
	1303	2			
	685	2			



Components List

Pos	Description	Length [mm]	Qty	Pos	Description	Length [mm]	Qty
01	Side glazing bars	1341	6	27	Vent trimmer	638	4
02	Gutter	3110	1	28	Door stile	1815	2
	Gutter	1273	2	29	Door rail top	610	1
	Gutter	655	2	30	Door rail centre	610	1
03	Base sill side	3110	1	31	Door rail bottom	610	1
	Base sill	1273	2	32	Door rail inter	610	1
	Base sill	655	2	40	Roof/eaves brace		14
04	Diagonal brace side	1477	4	42	Glazing strip	64m	2
05	Comer post RIB	1346	3	43	Z' Clips		120
06	Base sill rear	1848	2		½ bent Lap Clip		10
07	Intermediate glazing bar RIB	1870	2	44	Spring wire glazing clips		430
08	Diagonal brace rear	1200	4	45	Door seal	4m	1
	Diagonal brace front	1165	2	46	Door roller c/w bolt & nut		2
09	Eaves gusset plate		6	47	Door closure cap LIB		1
10	Rear horizontal brace	1832	2	48	Door handle (pair)		1
11	Comer post L/H	1346	3	50	Square headed bolts M6x 12		230
12	Intermediate glazing bar LIH	1870	2	51	Hexagonal nuts M6		230
13	Gable bar RIH	1185	2	52	Door stop		2
	Gable bar RIH front	1165	1	53	Rainwater outlet/stop end LIB		3
14	Gable bar LIH	1185	2	54	Rainwater outlet/stop end RIB		3
	Gable bar LIH front	1165	1	55	10mm spanner		1
15	Apex gusset plate		3	56	Assembly instructions		1
16	Door post RIH	1850	1	72	Casement stay c/w screws		4
17	Door post LIH	1850	1	74	Ridge end Cap		3
19	Horizontal brace front	590	2	76	Horizontal brace flat	590	2
20	Door track & lintel	1252	1	77	Roof slope	1480	2
21	Door track support	500	1	79	Small roof glazing bar LIB		1
22	Ridge bar	3110	1	80	Small roof glazing bar RIh		1
	Ridge bar	2210	1	100	Internal comer post	1340	2
23	Roof glazing bar	1185	6	101	Roof slope bracket (top)		2
	Roof glazing bar	1165	2	102	Roof slope bracket bottom		2
24	Vent head	635	4	103	Ridge fixing plate		1
25	Vent side	606	8	104	Roof glazing bar	340	2
26	Vent sill	610	4	105	Roof glazing bar	350	2



Method of assembly

Please read through these instructions carefully before you assemble the greenhouse.

Each kit contains a components list. Layout the components and check all items against this list before you begin assembly.

Having established that the components are complete, familiarise yourself with each section by reference to the Identification Chart on previous page, and to the labels on individual aluminium components.

Please note that where several identical components are contained within the pack, these are bundled together, and the bundle identified by one label (e.g. roof glazing bars (23)).

IMPORTANT: The base of the greenhouse must be square and level before securing and glazing is commenced.

Check that the diagonals of the base are equal and that the top of the base is level.

Inside the package you will find four separate bundles for the gable ends (Front and Rear) and the two sides. The ridge bar, roof glazing bars, ventilators and door components are contained separately within the package.

The greenhouse framework is assembled by using the square headed bolts and nuts provided. The glazing bars in the sides and roof are attached to the lateral members (ridge, eaves bar and base) by sliding the head of a bolt into the channel at the back of the glazing bar, and then inserting the thread of the bolt through the pre-punched holes located at intervals along the lateral members. The same procedure applies to the fixing of the glazing bars and door posts in the gable ends. The corner posts are bolted to the front and rear sections through pre-punched holes in both components.

The bolt-carrying channels on the corner posts are used to hold the bolts which connect the corner posts to the side sills.

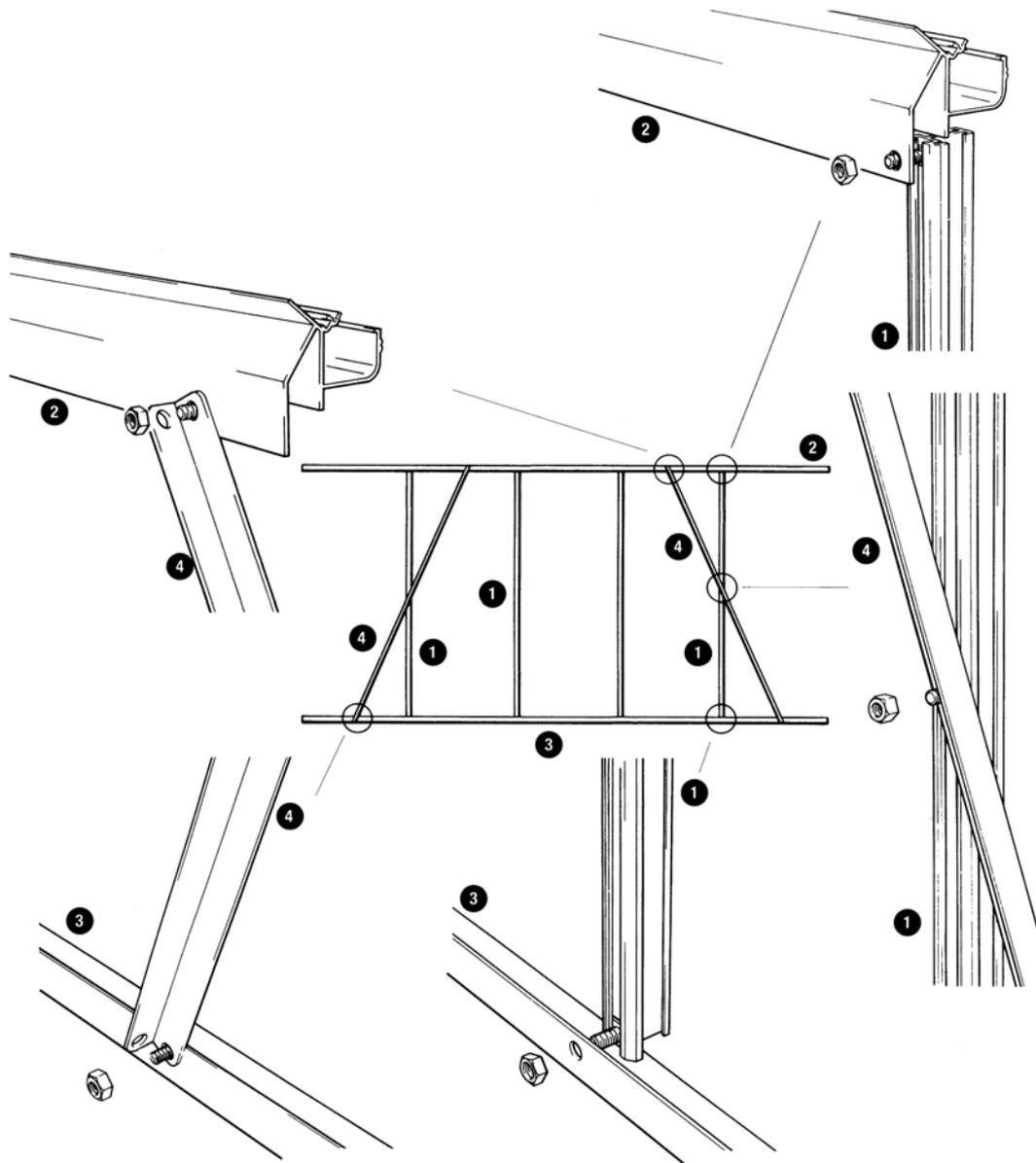
Side Frame assembly

Stage 1

Layout the side frame components on the ground and assemble the frame as shown by inserting square headed bolts into the glazing bar (1) channels, locating the threaded end through the pre-punched holes in the eaves bar (2) and sill sections, (3) and securing with one of the nuts provided. Connect the side diagonal bracing (4) to the gutter, base sill and glazing bars using square headed bolts and nuts.

DO NOT FULLY TIGHTEN AT THIS STAGE

When the side frame are completed check that they are true and then tighten the bolts and nuts.

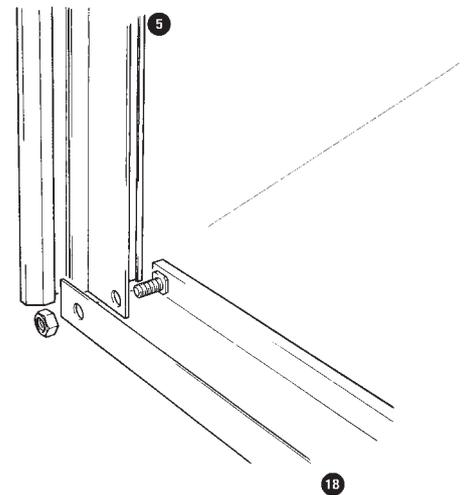
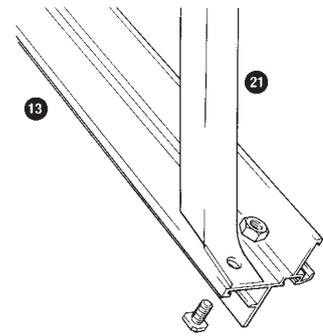


Assembly of front gable

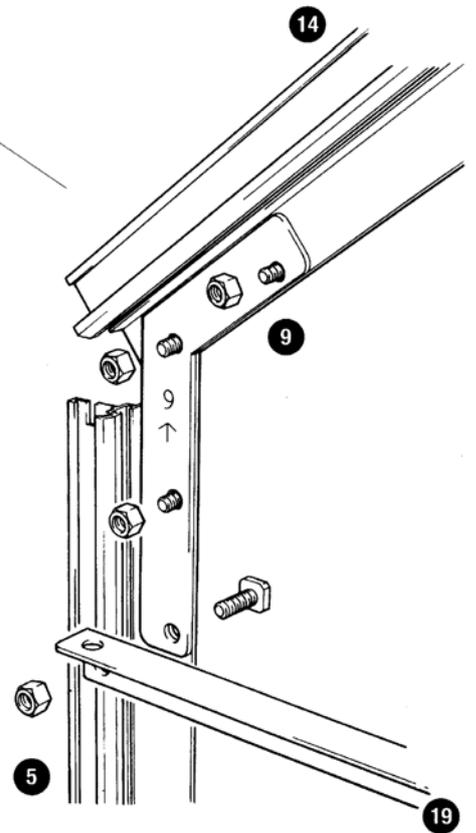
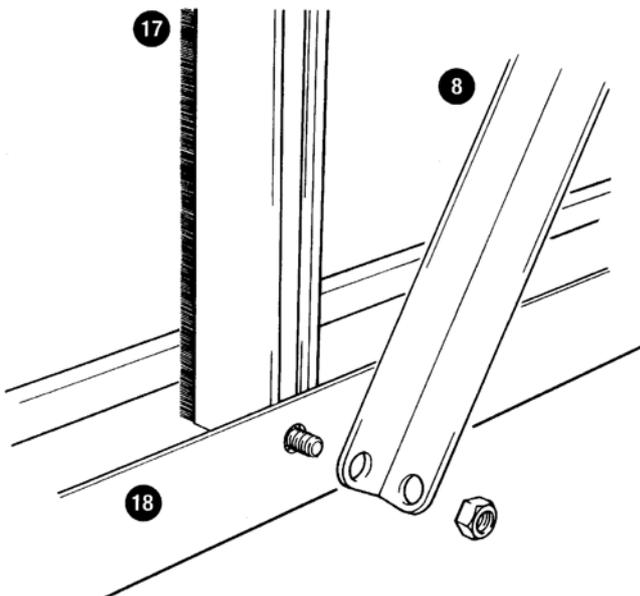
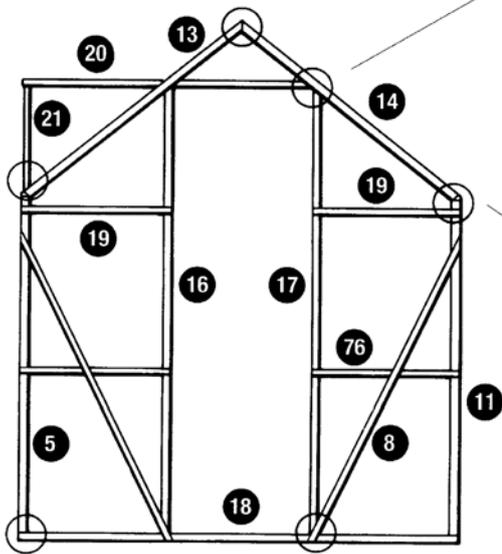
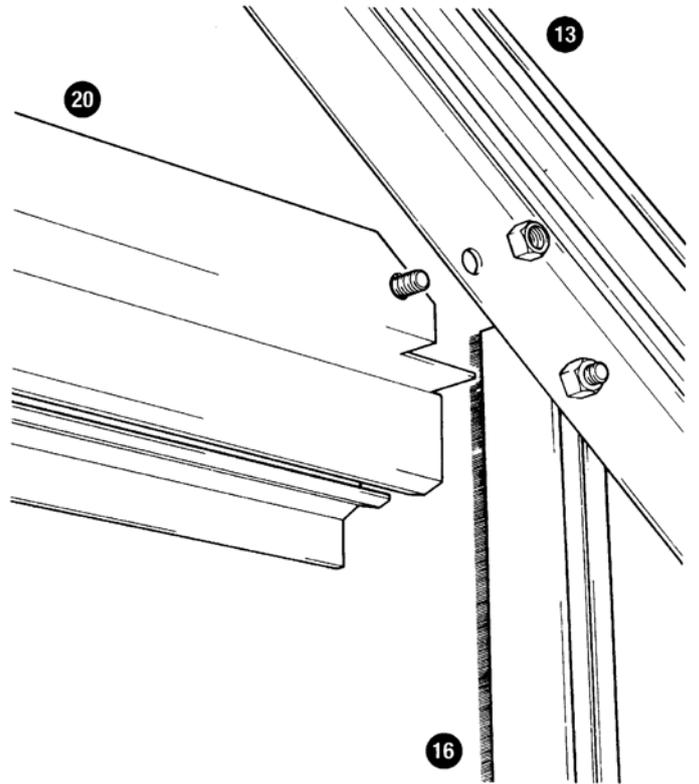
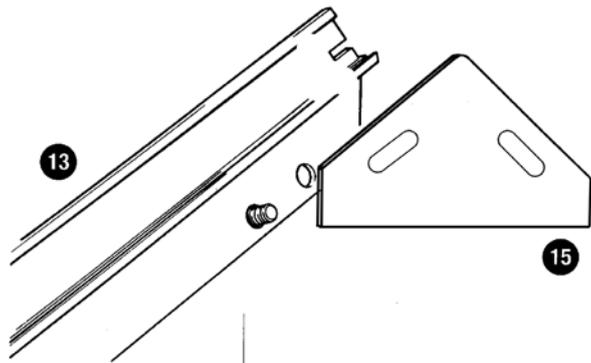
Stage 2

Identify and layout the components in the configuration shown in the diagram.

1. Slide door seal into left (17) and right (16) hand door posts.
2. Locate right-handed corner post (5) onto front base sill (18) and secure with bolt and nut through pre-punched holes in both components.
3. Now slide a square headed bolt into the channel at the back of the right hand door post and loosely secure together with front diagonal brace (8) to base sill. Connect diagonal brace to corner post.
4. Attach an eaves gusset plate (9) to the two holes at the top of the corner post (5). Note that the gusset plate is fitted to the INSIDE of the corner post with the imprinted arrow pointing upwards.
5. Slide two square headed bolts to positions approximately 1/3 and 2/3 of the way down the channel of the right hand door post (16) and connect to horizontal brace (19). Fasten end of horizontal brace to lower bolt holding eaves gusset plate. Repeat procedure for left hand corner post (11) and left hand door post (17).
6. Now offer the right hand gable bar (13) to the gusset plate (9) attached to the right hand corner post (5). Secure with two bolts and nuts, but do not fully tighten at this stage.
7. Connect right hand door post (16) to flange of gable bar (13). Repeat procedure for left hand gable bar (14) and door post (17).
8. Position apex gusset plate (15) inside gable bars and loosely secure with bolts and nuts.
9. Take door lintel with door track (20) attached and fasten each end to left and right hand gable bars (13 & 14) through pre-punched holes in flange above door posts.
10. Attach door track support (21) to right hand of door track and outside flange of gable bar (13).
11. Now connect the horizontal (flat section) braces (76) between the corner posts (5) and the adjacent door posts. Align the centrally placed hole in the horizontal brace (76) with the corresponding holes in the diagonal braces (8) and secure with a square headed bolt and nut.
12. Check that the whole assembly is true and square, and fully tighten all nuts and bolts.



Assembly of front gable

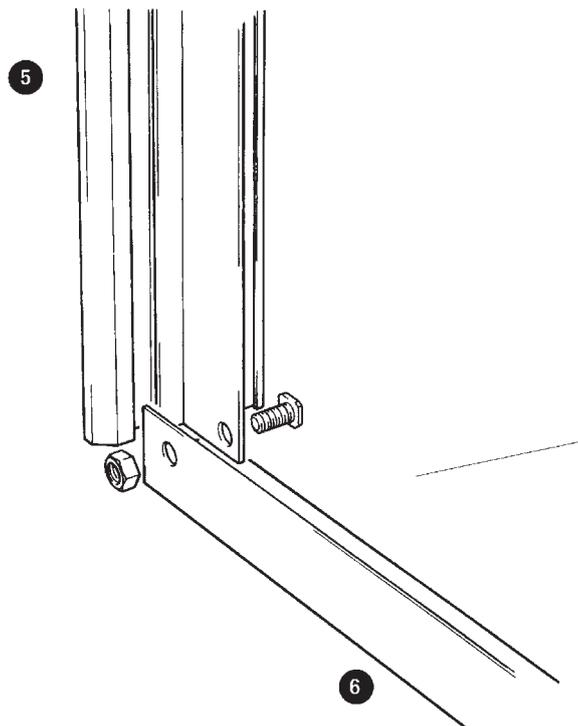


Assembly of rear gable

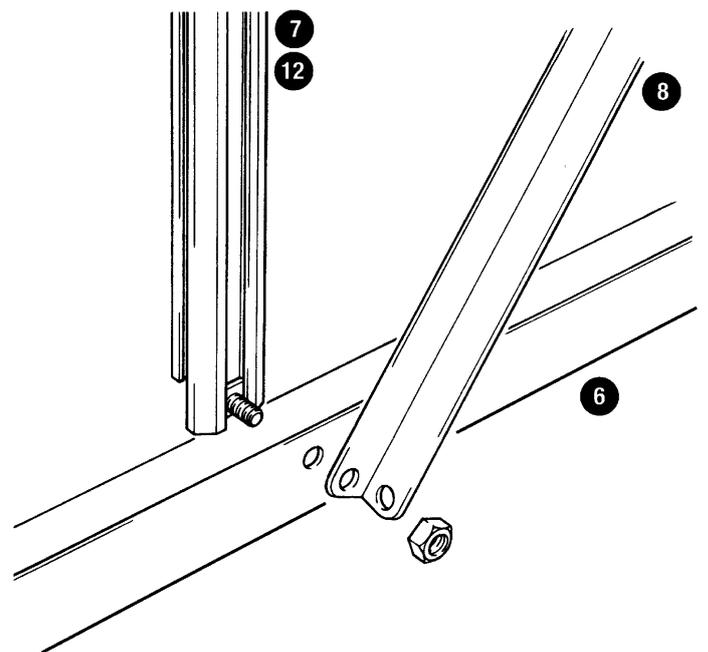
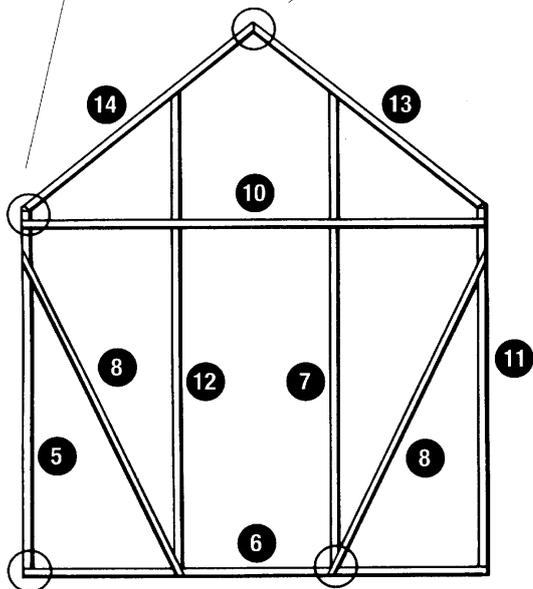
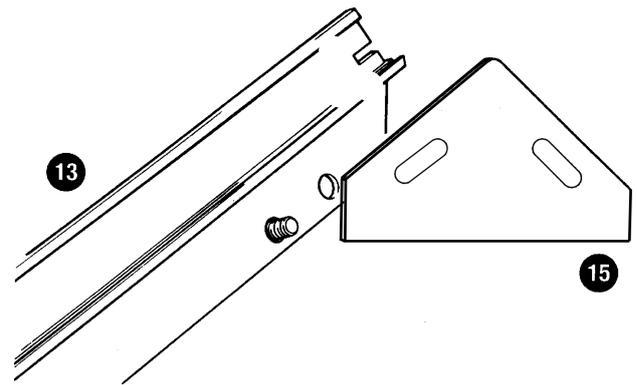
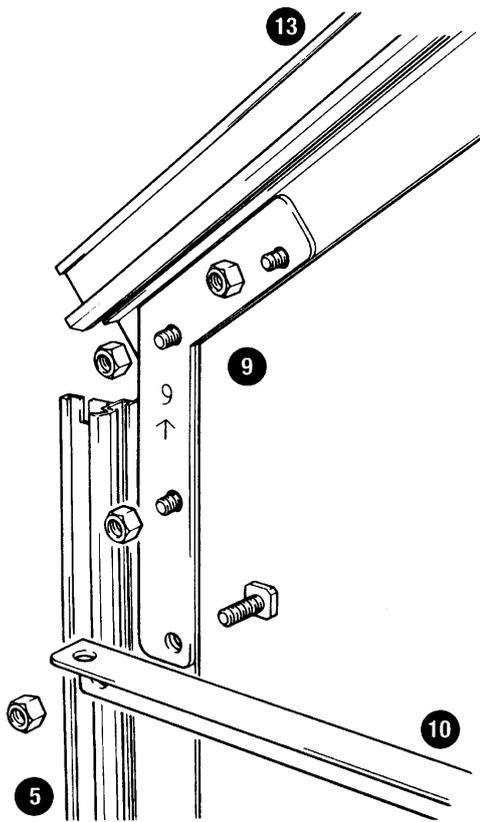
Stage 3

Identify and layout the components in the configuration shown in the diagram.

1. Locate right-handed corner post (5) onto base sill (6) and secure with bolt and nut through pre-drilled holes in BOTH components.
2. Now slide a square headed bolt into the channel at the back of the right hand intermediate glazing bar (7) and loosely secure together with diagonal brace (8) to base sill (6). Connect diagonal brace to corner post (5).
3. Attach an eaves gusset plate (9) to the two holes at the top of the corner post (5). Note that the gusset plate is fitted to the INSIDE of the corner post.
4. Slide a square headed bolt to a position approximately 1/3 of the way down the channel of the right hand intermediate glazing bar (7) and connect to horizontal brace (10). Fasten end of horizontal brace to lower bolt holding eaves gusset plate onto corner post.
5. Repeat procedure for left hand corner post (11) and left hand intermediate glazing bar (12).
6. Now offer the right hand gable bar (13) to the gusset plate (9) attached to the right hand corner post (5). Secure with two bolts and nuts, but do not fully tighten at this stage.
7. Connect right hand intermediate glazing bar (7) to flange of gable bar (13).
8. Repeat procedure for left hand gable bar (14) and intermediate glazing bar (12).
9. Position apex gusset plate (15) inside gable bars and loosely secure with bolts and nuts.
10. Check that the whole assembly is true and square, and fully tighten all nuts and bolts.



Assembly of rear gable



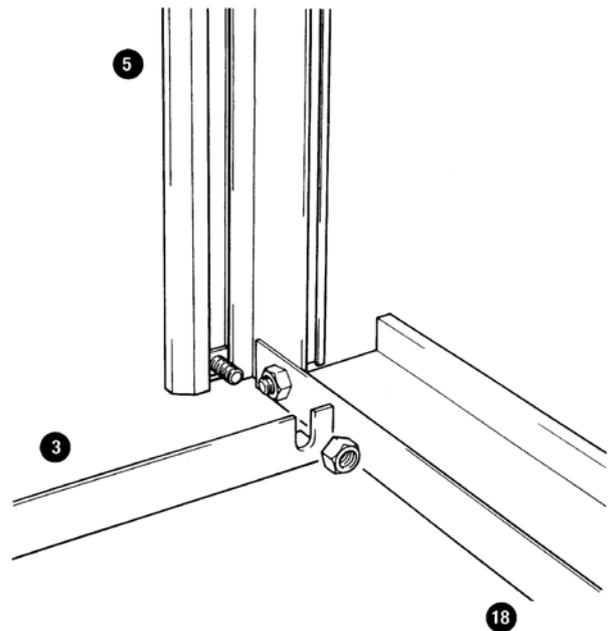
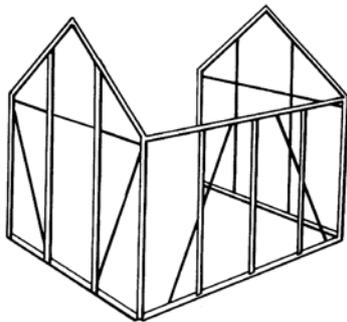
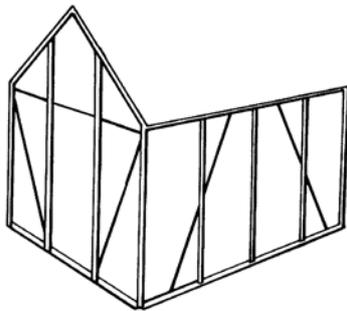
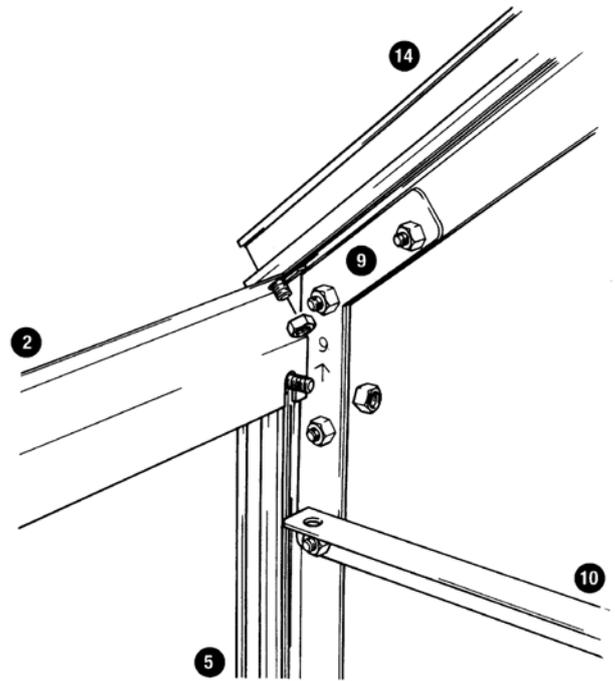
Assembly of gable ends to side

Stage 4

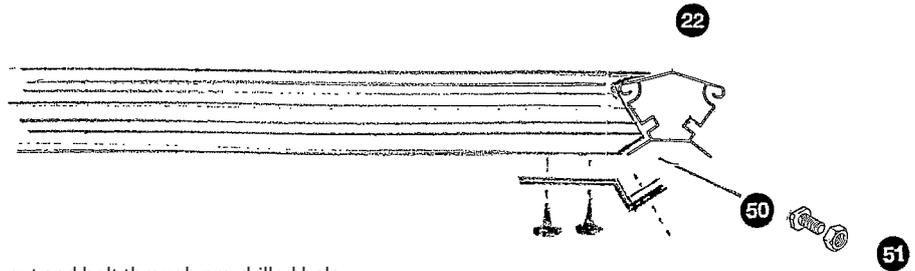
1. Bolt end gable to side section through pre-punched holes.

It will be found helpful to slide two bolts into each gable bar and corner post and to hold these in position by securing with finger-tight nuts BEFORE offering the sections into position.

2. Add second rear gable.
3. Now secure side section to gables.



Joining of ridge bar(s)



- Stage 5
1. Connect ridge bar fixing bracket to ridge with nut and bolt through pre-drilled hole.
 2. Rest machined end of ridge bar onto original and locate opposite end so that the flanges are underneath the gable.
 3. Release finger tight nut on remaining bolts in gable and slide nut and bolt assembly into locating slots in ridge bar. Tighten nuts to secure ridge bar.
 4. At opposite end, push ridge bar up to main ridge bar and connect by drilling through holes in bracket (103) into ridge and secure with self tapping screws.

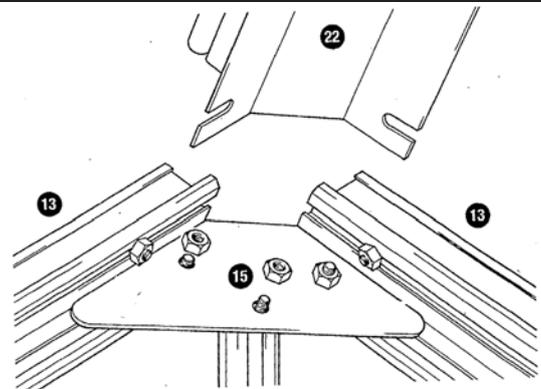
Side(s) to door gable

- Stage 6
1. Having constructed 1.2 m side(s) connect to corner post(s) as in rear gable and then connect small gutter to internal corner post(100) .
 2. Connect short gutter and sill between internal corner post (100) and rear gable
 3. Slide 4 nut and bolt assemblies into bolt channel of roof slope(s) (77)and fit between ridge bar (22) and gutter (2).
 4. Loosely connect small bracket (102) in the bottom and bracket (101) at the top.
 5. Slide 6 square head bolts into the channel of the roof glazing bars. (the mitred ones 1165mm &1185mm.

Now connect eaves bracket (103) to roof slope (77) and glazing bars with the 2 bottom pre- positioned bolts. Now connect the smaller mitred glazing bars (104/105) at the top end of the roof slope (77) to the ridge bar (22) and the bracket (101).

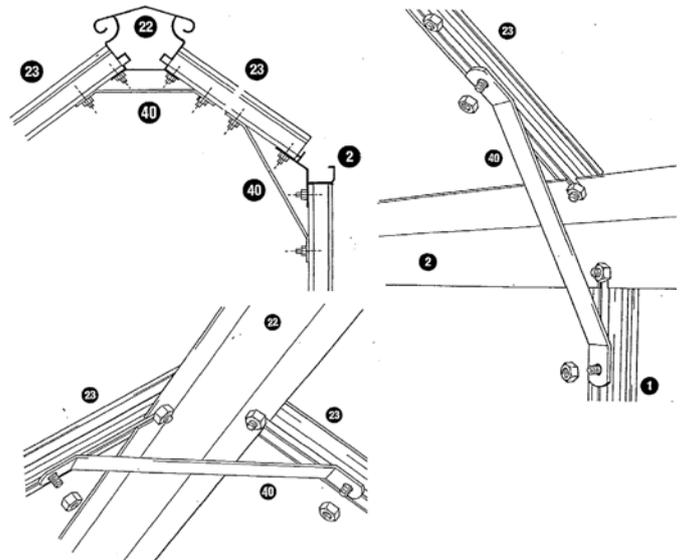
Fixing of ridge bar

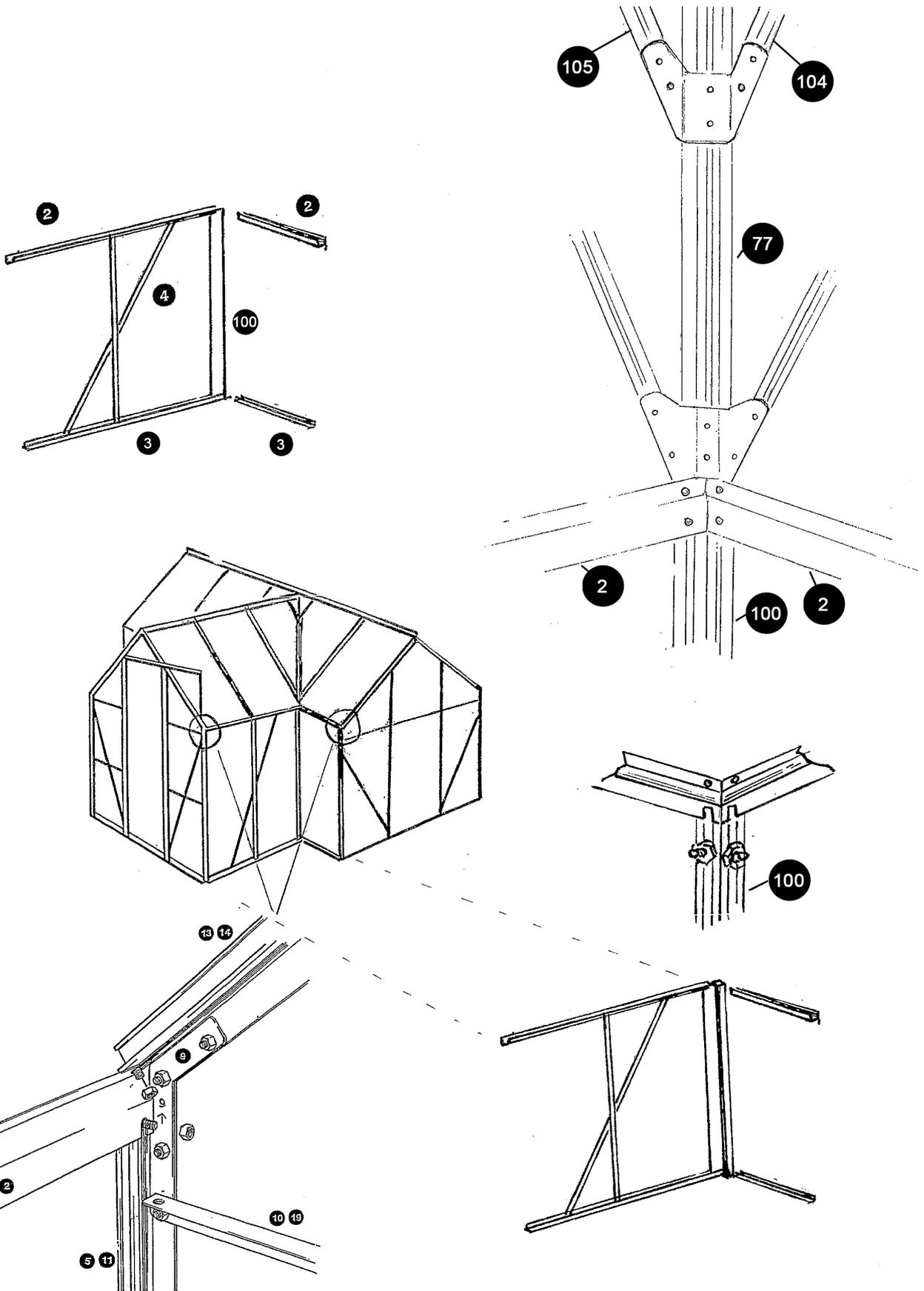
- Stage 7
1. Locate ridge bar (22) so that the flanges are underneath the gable bars (13) as shown in the diagram.
 2. Release finger-tight nuts on remaining bolts in gable bars (13) and slide bolts into locating slots in ridge bar (22). Tighten nuts to secure the ridge bar in position.



Roof Glazing Bars

- Stage 8
1. Slide five square headed bolts into the bolt channel at the back of the roof glazing bars.
 2. Locate and secure the roof glazing bars (23) to the ridge(22) and the gutter(2) using two of the pre-positioned square headed bolts and nuts.
 3. Secure roof brace (40) between each pair of glazing bars(23) using another two of the pre-positioned nuts and bolts
 4. Secure eaves brace (40) between adjacent roof glazing (23) bars and side glazing bars(1) with pre-positioned nuts and bolts.

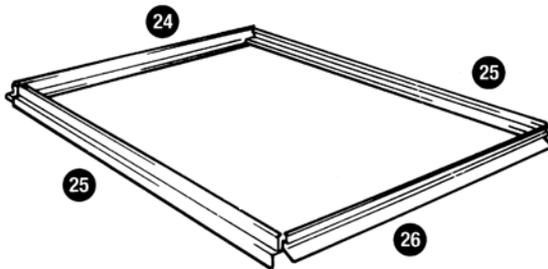
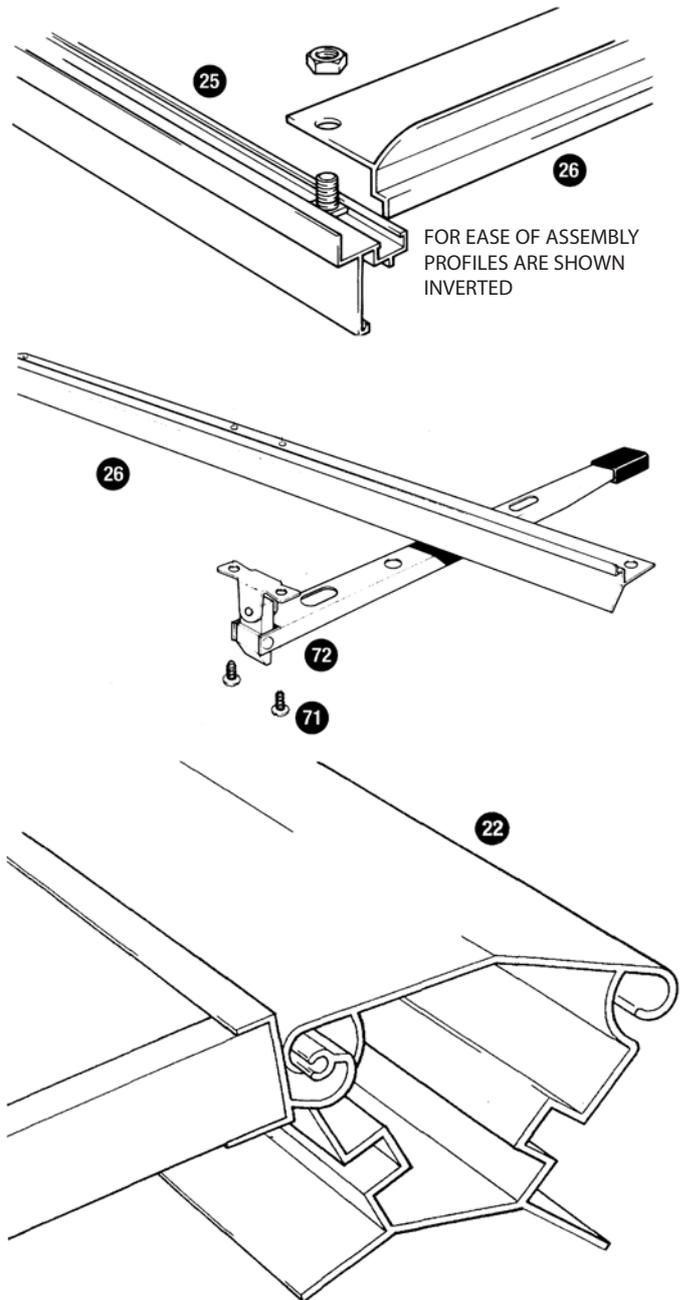




Assembly of the vent

Stage 9

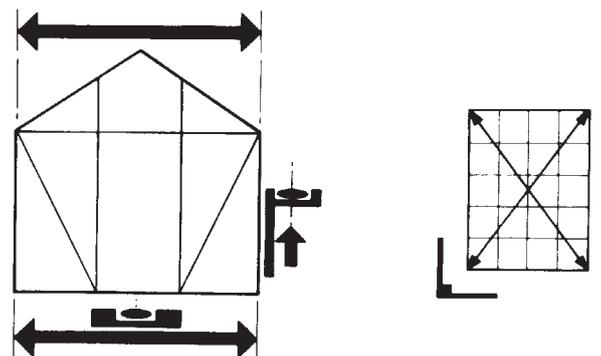
1. The vent assembly is made up of a head (24), two sides (25), a vent sill (26) and is glazed with a sheet of glass 610mm x 610mm.
2. Place two bolts through the pre-punched holes in the vent head, slide both vent sides (25) over the bolt heads and secure with nuts.
3. Place a square-headed bolt into the hole at each end of the vent sill (26) and loosely attach hexagonal nuts. Slide the heads of the bolts into the bolt channel of each vent side (25) and finger-tighten the hexagonal nuts.
4. Fit glazing strip (42) to the vent sides (25) only. Then glaze the vent with a pane of glass 610 mm x 610 mm and secure with four spring wire glazing clips (44) (see illustration on page 23).
5. Assemble casement stay (72) to vent sill (26) using screws provided.
6. Apply grease to the curved hinge joint at the vent head and slide the vent along the ridge bar to the required position. Now slide the vent trimmer (27) into position ensuring that the vent sits on the trimmer and then tighten the trimmer bolts to the roof glazing bars.



Square and True

Stage 10

1. Using a set-square and spirit level where appropriate, ensure that the whole assembly is square and each upright is vertical.
2. It is a useful check that the measurement across each gable end is the same at ground level and eaves height.
3. Tighten all nuts.



Glazing

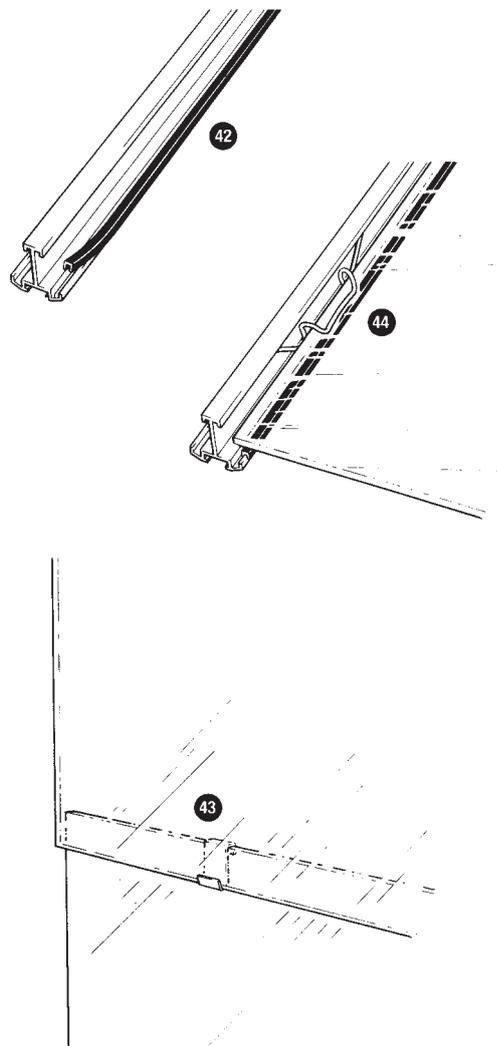
Stage 11

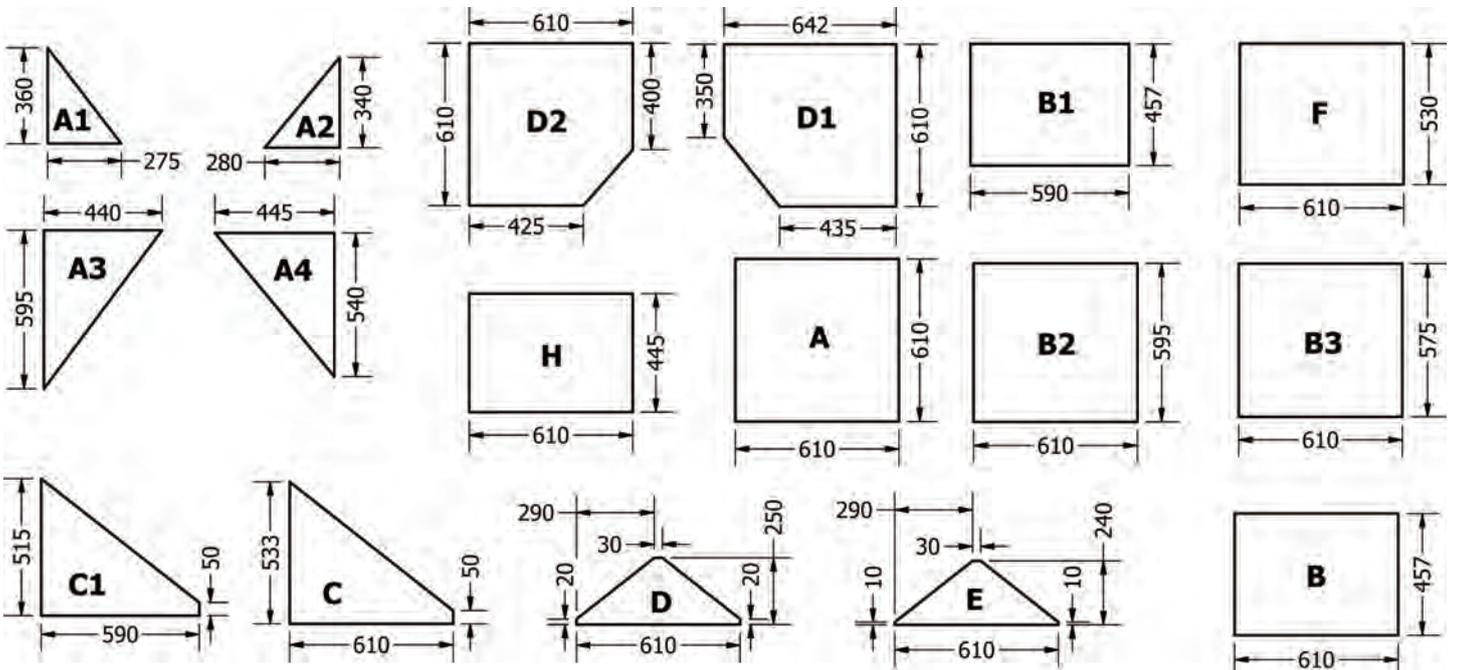
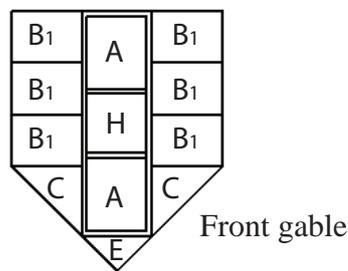
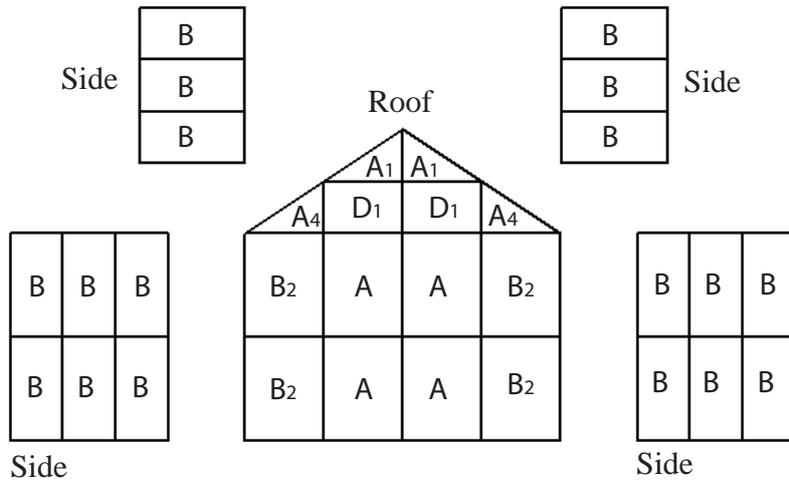
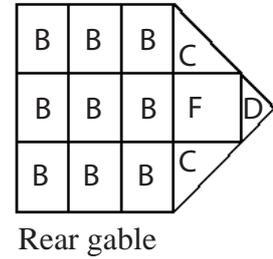
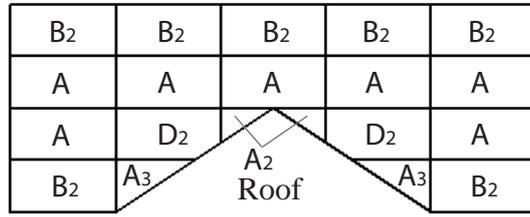
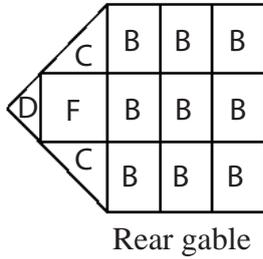
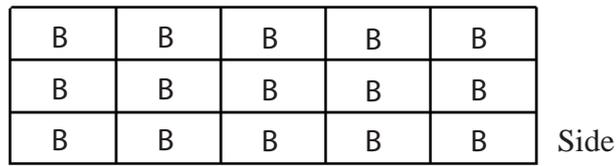
Choose a day when the weather conditions are calm and you have sufficient time to complete the glazing in one operation.

1. **IMPORTANT NOTICE:** The roof and eaves bracing (40) must be fitted and fully secured before glazing is commenced.
2. Extreme care should be taken when handling glass.
3. When glazing it is advisable to wear some head protection, gloves and strong shoes. Safety glasses are strongly recommended.
4. Do not, under any circumstances, climb stepladders whilst carrying glass, get an assistant to hand you each piece in turn.
5. When fixing glass into the aluminium sections using spring wire glazing clips, hold the clip in position with one hand and spring the legs of the clip into the retaining groove with the other.
6. Fit glazing strip (42) as shown in the diagram to all glazing bars, corner posts, gable bars, door posts and vent sides. pos. nos. 1, 5, 7,13,16,23,25,39,62.
7. Begin glazing at one end of the roof. Fit a pane of glass at eaves level first and clip into position as shown in the diagram with four spring wire glazing clips (44)
8. Place two 'Z' clips (43) onto the upper edge of the first pane of glass and clip second pane into position with four spring wire glazing clips (44).
9. Repeat procedure and insert third pane into groove in ridge and locate onto 'Z' clips (43). Secure with four spring wire glazing clips (44).
10. Having completed one section of the roof, now glaze the section on the opposite side. By so doing you will ensure that the roof remains square throughout the glazing operation (note: should the glass appear to 'run off' this indicates that the greenhouse is not square. If this is the case, the greenhouse must be brought into square before continuing).
11. When the roof is completely glazed, glaze the sides and gable ends, commencing at the sill and clipping one pane of glass into position at a time. Always use four spring wire glazing clips (44) per pane.

PLEASE NOTE

Fit Glazing strip only to the following components: Corner posts (5), Gable bars (13), Glazing bars (1), (7), (23), (39), (62), Door posts (16), Door stiles (28) and (65) and Vent sides (25).



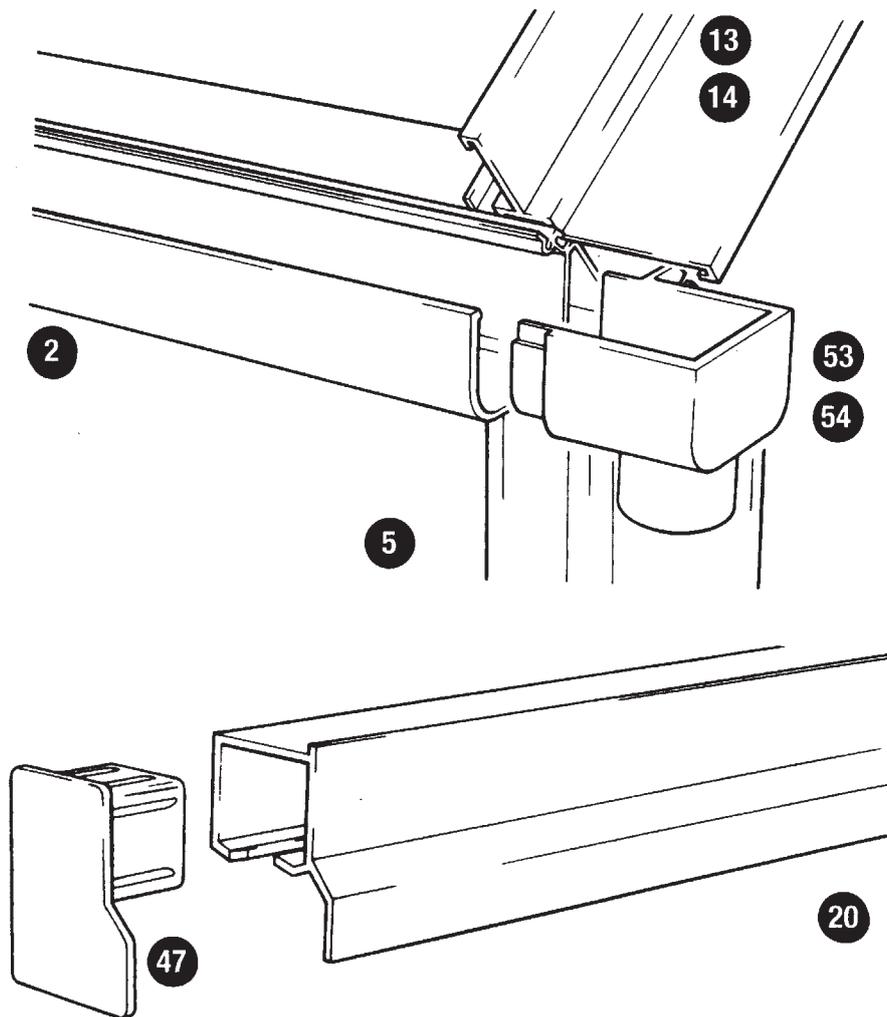


End stops

Position plastic rainwater outlets and stop ends into ends of eaves bars.

NOTE: The two rainwater outlets contained in this package are sealed across the outlet. Simply knock out the membrane at the end of the outlet with a piece of dowel or similar instrument to provide a drop-end.

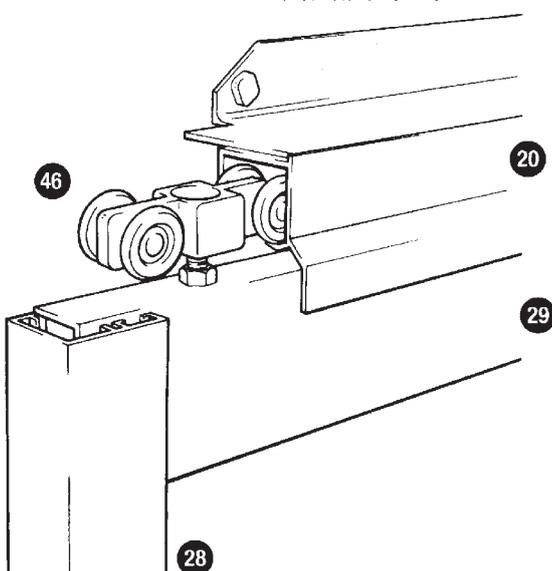
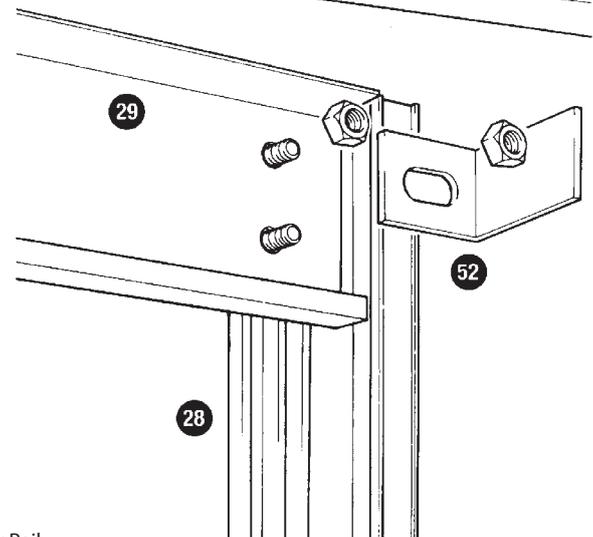
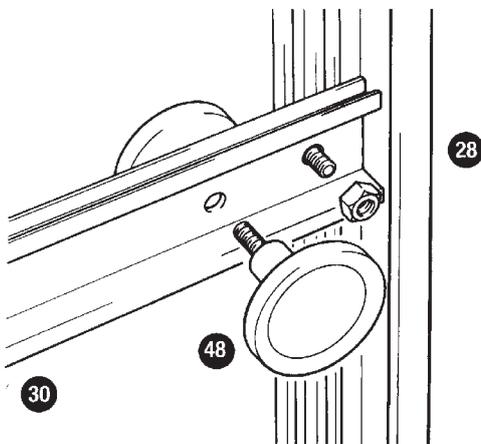
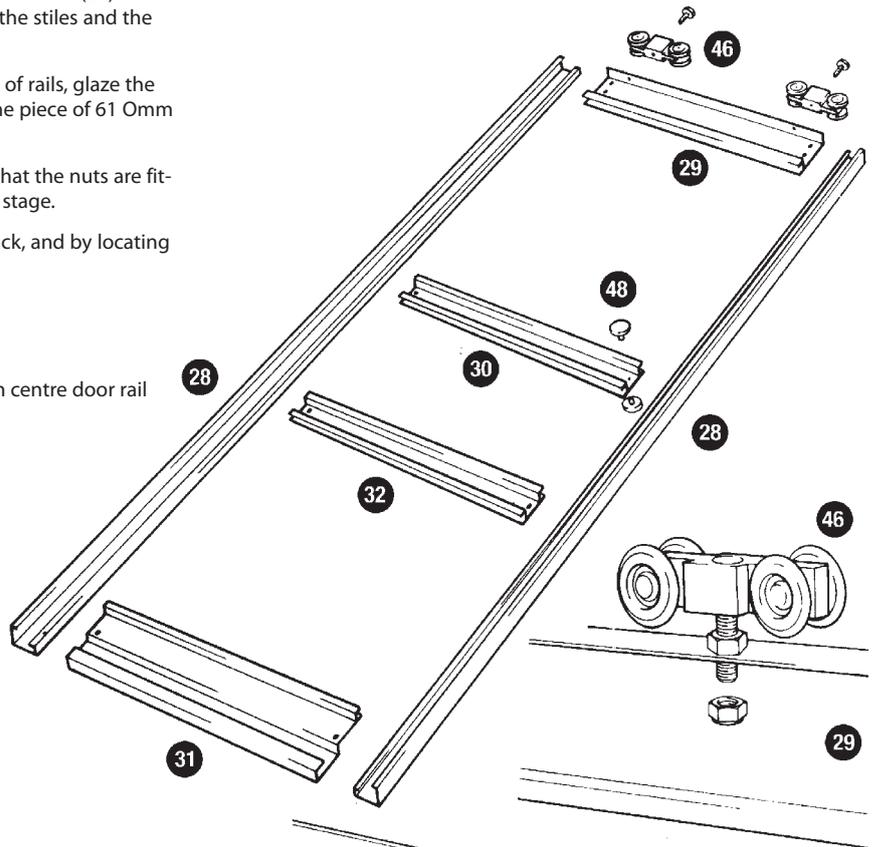
Fitting of door track closure cap.



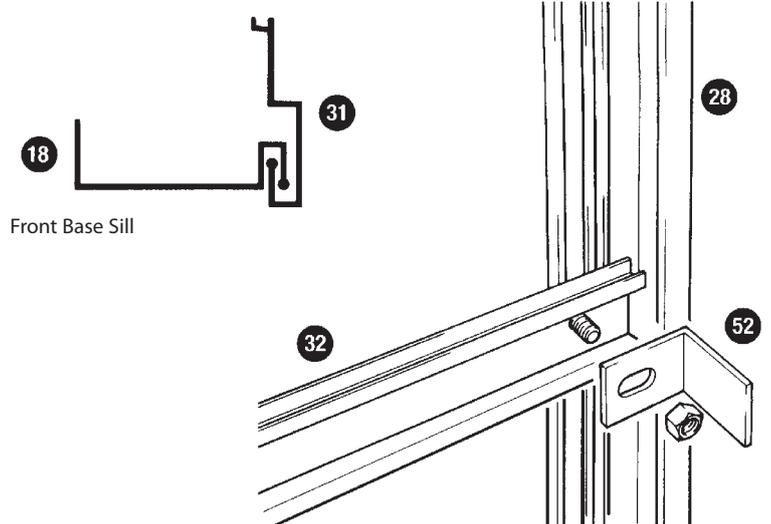
Door assembly

Stage 12

1. Layout the door components. Loosely bolt the rails to the stiles (28) as shown. The top rail (29) should fit closely to the top of the stiles and the bottom rail (31) should protrude below the stiles.
2. Fit glazing strip (42) to stiles, and by adjusting position of rails, glaze the door with two pieces of 610mm x 610mm glass and one piece of 610mm x 320mm. Tighten all nuts and bolts.
3. Attach the two door rollers (46) to the top rail. Ensure that the nuts are fitted as shown in the diagram but do not tighten at this stage.
4. Hang the door by inserting the rollers into the door track, and by locating the bottom rail to the flange on the front sill.
5. Adjust position of nuts on door roller bolts.
6. Fit top and bottom door stops as shown.
7. Fix pair of door knobs (48) through prepunched hole in centre door rail (30).



Bottom Door Rail



Front Base Sill