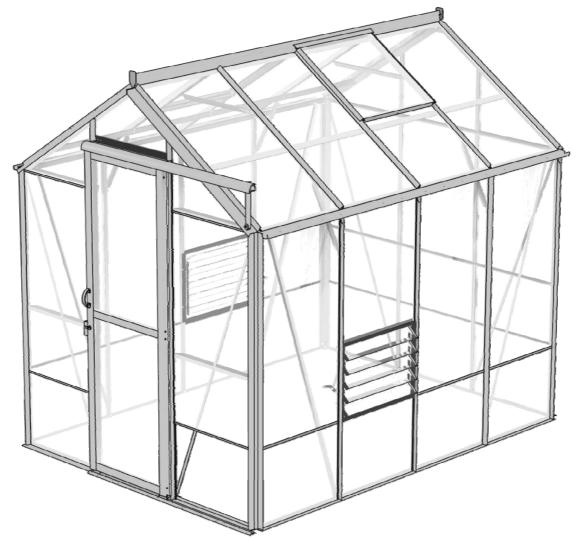
Model HE-TRA





6' Wide ASSEMBLY INSTRUCTIONS

Dear Customer, Thank you for ordering your new greenhouse from us. We hope you find these instructions along with each member of 'The Greenhouse People' team helpful and informative. Please read all information before you begin and take care to read all instructions it will save you a lot of time and frustration later on. This instruction manual is also available online at www.greenhousepeople.co.uk in our technical help section where you can zoom in on all the pictures and text and reprint a copy if your manual gets left out in the rain. If you want any more advice, you can always give us a ring on 01782 388811. Once again, thank you for your order and all the very best with your greenhouse. Yours sincerely, The Greenhouse People www.greenhousepeople.co.uk P.S. Please do send us a photograph of your finished greenhouse. We're always interested to see how you've gone on. Send to: Richard@thegreenhousepeople.co.uk

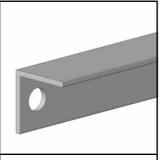
CONTENTS

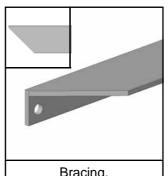
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4 - 6	COMPONENTS AND FITTINGS
7	INCH — MM CONVERSION CHART
8 -10	BASE PREPARATION
11	SAFETY
12	GENERAL ADVICE
13 -15	SIDE ASSEMBLY
16 -17	REAR ASSEMBLY
18 -21	FRONT ASSEMBLY
22 -23	DOOR ASSEMBLY
24 -25	ROOF VENT ASSEMBLY
26 -29	MAIN BUILDING ASSEMBLY
30 -31	LOUVRE ASSEMBLY
32	GLASS PLAN
33	GLAZING
34 -39	FINAL FIXING

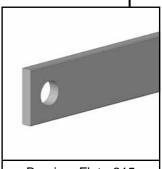
NOTE: ALL DIAGRAMS ARE CODED. IF THE DIAGRAM IS VIEWED FROM THE OUTSIDE THE ALPHABETICAL REFERENCE BOX IS BLACK WITH WHITE LETTERING:

COMPONENTS & FITTINGS





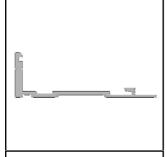


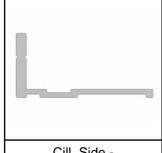


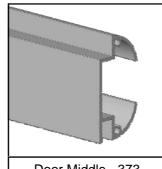
Bracing, Diagonal - 303

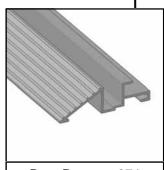
Bracing, Purlins - 308 & 314

Bracing, Flat - 315









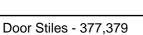
Cill, Front & Rear - 333

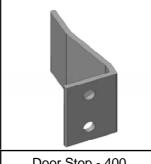
Cill, Side -350,351,352,353 & 354

Door Middle - 373

Door Runner - 374



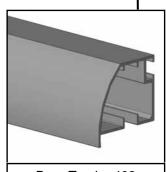




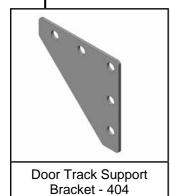
Door Stop - 400

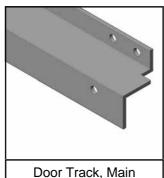


Door Strike Plate - 401

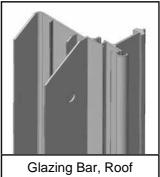


Door Track - 402

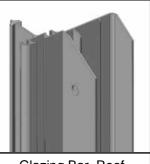




Door Track, Main Support - 405

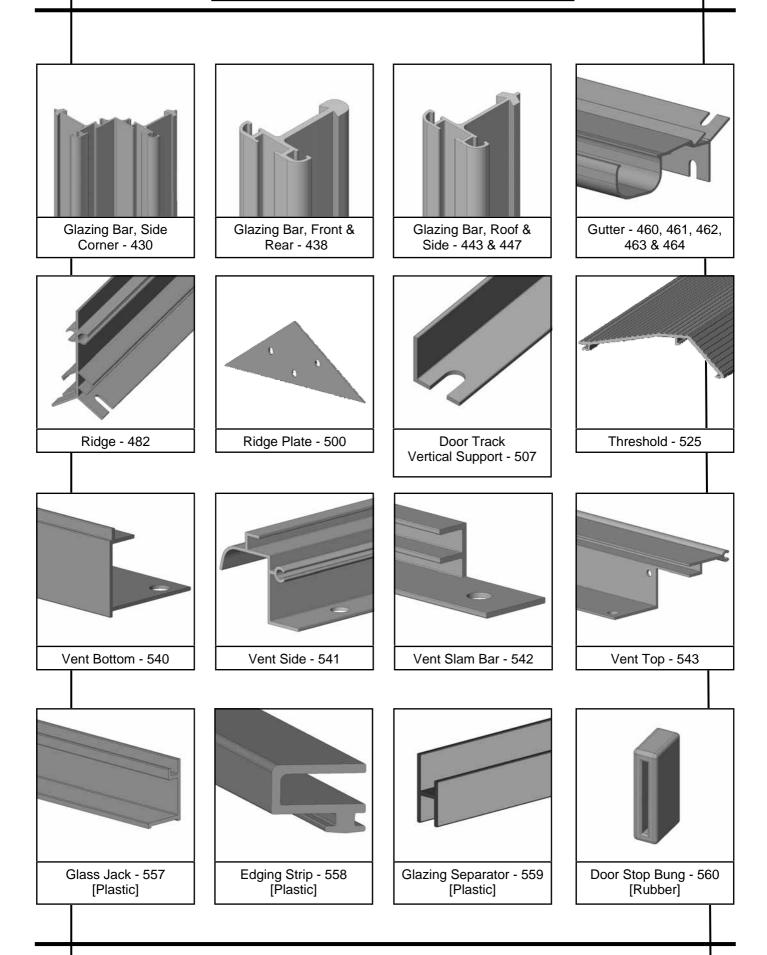


Corner Left - 409



Glazing Bar, Roof Corner Right - 415

COMPONENTS & FITTINGS

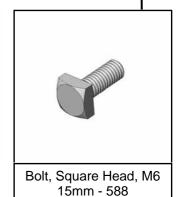


COMPONENTS & FITTINGS

USE MEASUREMENTS TO HELP YOU IDENTIFY PARTS







Bolt, Hex Head, M4 25mm - 575

Bolt, Square Head, M6 10mm - 576





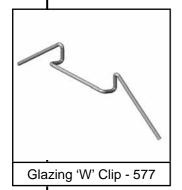


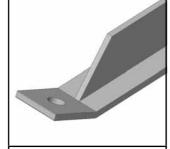
Nut, M6 - 579

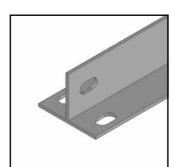
Nut Cap, M6 - 580 [Plastic]

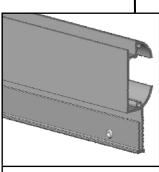
Screw, Self Tapping, M4.2 19mm - 583

Screw, Countersunk, M4 10mm - 587





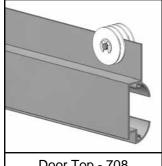




Cantilever, Ridge - 600 Cantilever, Eaves - 601

Hanging Basket Bar - 685, 687,688,689 & 690

Door Bottom - 707



Door Top - 708



Vent Peg - 709



Push-in Capping - 821-824 [Plastic]

INCH — MM CONVERSION CHART

Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
_	25.4	2.	9 609	4.	1219.2	<u>.</u> 9	18288	<u>-</u> cc	2438 4	10.	3048	12'	3657 6
. 2	50.8	2.1	635	4'1	1244.6	_	1854.2	8'1	2463.8	10,1	3073.4	12'1	3683
<u> </u>	76.2	2,2	660.4	4'2	1270		1879.6	8.2	2489.2	10'2	3098.8	12'2	3708.4
4	101.6	2'3	685.8	4'3	1295.4	6'3	1905	8.3	2514.6	10'3	3124.2	12'3	3733.8
2	127	2'4	711.2	4.4	1320.8		1930.4	8'4	2540	10'4	3149.6	12'4	3759.2
9	152.4	2,2	736.6	4'5	1346.2		1955.8	8'5	2565.4	10'5	3175	12'5	3784.6
2	177.8	5'6	762	4'6	1371.6		1981.2	9,8	2590.8	10'6	3200.4	12'6	3810
<u>∞</u>	203.2	2'7	787.4	4'7	1397	2,9	2006.6	8'7	2616.2	10'7	3225.8	12'7	3835.4
6	228.6	2,8	812.8	4'8	1422.4		2032	8,8	2641.6	10'8	3251.2	12'8	3860.8
10	254	2'9	838.2	4'9	1447.8		2057.4	6,8	2667	10'9	3276.6	12'9	3886.2
1	279.4	2,10	863.6	4'10	1473.2	6'10	2082.8	8'10	2692.4	10'10	3302	12'10	3911.6
-	304.8	2'11	889	4'11	1498.6		2108.2	8'11	2717.8	10'11	3327.4	12'11	3937
1.1	330.2	<u>ო</u>	914.4	2.	1524	7:	2133.6	<u>.</u> 6	2743.2	1-	3352.8	13'	3962.4
1.5	322.6	3.1	939.8	5'1	1549.4		2159	9'1	2768.6	11.1	3378.2	13'1	3987.8
1'3	381	3,5	965.2	2,5	1574.8	7.2	2184.4	9,5	2794	11.2	3403.6	13'2	4013.2
1.4	406.4	3'3	9.066	5'3	1600.2		2209.8	6'3	2819.4	11'3	3429	13'3	4038.6
1.5	431.8	3'4	1016	5'4	1625.6		2235.2	9'4	2844.8	11'4	3454.4	13'4	4064
1.6	457.2	3.2	1041.4	2,2	1651	7.5	2260.6	9,2	2870.2	11.5	3479.8	13'5	4089.4
1.7	482.6	3.6	1066.8	2,6	1676.4	9.2	2286	9,6	2895.6	11.6	3505.2	13'6	4114.8
1.8	208	3.7	1092.2	2.2	1701.8		2311.4	2,6	2921	11.7	3530.6	13'7	4140.2
1.9	533.4	3.8	1117.6	2,8	1727.2		2336.8	8,6	2946.4	11'8	3556	13'8	4165.6
1,10	228.8	3,0	1143	2,6	1752.6		2362.2	6,6	2971.8	11'9	3581.4	13'9	4191
111	584.2	3,10	1168.4	5'10	1778	7.10	2387.6	9'10	2997.2	11,10	3606.8	13'10	4216.4
		3'11	1193.8	5'11	1803.4	7'11	2413	9'11	3022.6	11'11	3632.2	13'11	4241.8
		Inch	mm	Inch	mm	lnch	шш	Inch	mm	lnch	mm	Inch	mm
		14'	4267.2	15'	4572	16'	4876.8	17.	5181.6	18'	5486.4	19'	5791.2
Inch mm		14'1	4292.6	15'1	4597.4	16'1	4902.2	17.1	5207	18'1	5511.8	19'1	5816.6
0.25" 6.35	I	14'2	4318	15'2	4622.8	16'2	4927.6	17.2	5232.4	18'2	5537.2	19'2	5842
0.5" 12.7		14'3	4343.4	15'3	4648.2	16'3	4953	17'3	5257.8	18'3	5562.6	19'3	5867.4
=		14'4	4368.8	15'4	4673.6		4978.4	17.4	5283.2	18'4	5588	19'4	5892.8
1" 25.4		14'5	4394.2	15'5	4699		5003.8	17.5	5308.6	18'5	5613.4	19'5	5918.2
		14'6		15'6	4724.4		5029.2	17.6	5334	18'6	5638.8	19'6	5943.6
		14'7	4445	15'7	4749.8		5054.6	17.1	5359.4	18'7	5664.2	19'7	5969
		14'8	4470.4	15'8	4775.2		2080	17'8	5384.8	18'8	9.6899	19'8	5994.4
		14'9		15'9	4800.6		5105.4	17.9	5410.2	18'9	5715	19'9	6019.8
		14'10	4521.2	15'10	4826		5130.8	17.10	5435.6	18'10	5740.4	19'10	6045.2
		14'11	4546.6	15'11	4851.4	16'11	5156.2	17'11	5461	18'11	5765.8	19'11	9.0209
												20,	9609

BASE PREPARATION

You have quite a choice in terms of the style of base that you can prepare. The most important objective is that it is level. The different styles of bases that we recommend are as follows:

Note: Your greenhouse size is only nominal, for example a 6 X 8 greenhouse is not exactly 6' by 8'! It will actually be a few inches bigger. So be careful when building your base as mistakes on the size of your base are difficult to correct later. Also we don't recommend building your greenhouse directly onto soil.

1. Slabs - Level paving slabs are ideal for a greenhouse base. Make sure the area of slabs is either the same size or larger than the footprint of the greenhouse. Slabs are also good for drainage because of the joints between them. If you put a polythene sheet or similar barriers underneath, this could prevent drainage. (See page 10 for a quick guide to laying slabs).

You can also lay your slabs out as a perimeter around the edge of the building with a path up the middle if you want to grow directly from the soil.

- 2. Concrete Plinth This is a simple footing around the edge of the greenhouse. You can do this by digging a small trench about 4-6" deep by 6" wide. As with all bases ensure that it is level along the length as well as side to side. If you don't have a long level then you could use a long bar or straight piece of wood under your level to get a more accurate reading. This is probably the cheapest and easiest base to build which enables you to have soil inside so that you can grow straight from the ground.
- 3. Solid Concrete This type of base is good from a structural point of view as you can get good fixings. It is also fine as far as drainage is concerned as long as the concrete is not sealed, painted or laid on a membrane.
 - Ways of increasing drainage are: When laying the concrete you could lay Aco drive drains to take surface water away or if the concrete is already laid you could simply drill through the concrete and create soakaways.
- 4. **Brick Base -** This is the traditional greenhouse base. It is usually 1 or 2 courses high but can be higher if required. This is a much more costly and difficult base to install. This is because you need to make a concrete footing first, then you need to lay the courses of bricks to the millimetre so that they fit the cill of the greenhouse perfectly.

However it does have an advantage, the cill overlaps the brick edge minimising water flow under the cill, which is important if you need to control the humidity and are using a de-humidifier etc.

Important: Always use a completely solid engineering brick for the top layer with no holes or frogs (such as Staffordshire Blue). This is because you'll need to anchor your greenhouse down by drilling and screwing into the bricks and if they have holes in then this is extremely difficult. If you are doing more than one course then you can use bricks with holes or frogs lower down where it will not matter.

See page 9 for external dimensions.

Two different styles of base that we don't recommend:

- Block Paving This is not an ideal base for a greenhouse. This is because when you
 screw your greenhouse down you will only be screwing into loose blocks, which will
 not be a strong enough fixing.
- 2. **Tarmac -** Again not ideal because of the anchoring problems, and it is much harder to get a level surface. However if you do want to put your greenhouse on tarmac, then the way to anchor it will be as on soil. You can dig out spade width holes where each base bracket will situate and fill these with concrete, let it set, then when your greenhouse is in position you can screw into the concrete.

BASE PREPARATION

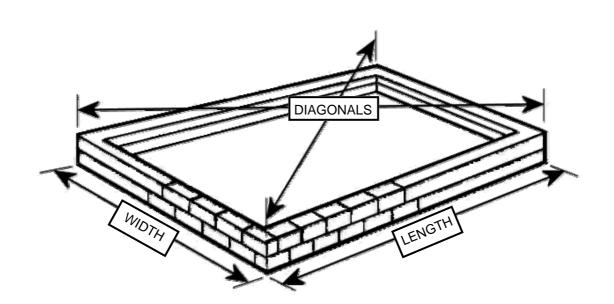
BRICK BASE

The following table gives the external dimensions for a brick base. Look for your building size in the left hand column and read across for the width and length.

The dimensions allow the lips of the cills to overhang. This helps prevent water running back into the greenhouse.

When building your base make sure the diagonal measurements are equal.

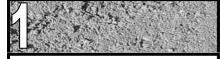
Size	Width	Length
Size	mm	mm
6 X 4	1955	1374
6 X 6	1955	1994
6 X 8	1955	2614
6 X 10	1955	3234
6 X 12	1955	3854



BASE PREPARATION

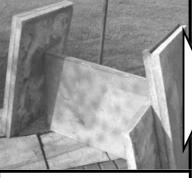
A quick guide to laying down slabs suitable for any garden structure.

Please read ALL before you begin.



We recommend that you lay paving slabs onto a dry mixture of sharp sand and cement. A ratio of 6:1 would be ideal. We recommend using a 2" thick slab rather than a 1" or 1½" as you will get a better fixing with a thicker slab.

Please note: This slabbing technique should only be carried out on a dry day.



Slabs, ideally 3' x 2', 2" thickness.



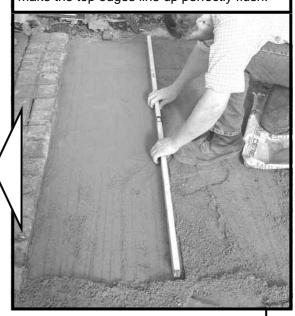
Use a long spirit level (or shorter level on a straight plank) to drag out the sand / cement mixture until it is perfectly level. Start at one corner and work away from that point dragging and tapping down as you go. When you have levelled the sand / cement mix you can lay your slabs directly onto the mixture. You may need to give each slab a tap to make the top edges line up perfectly flush.

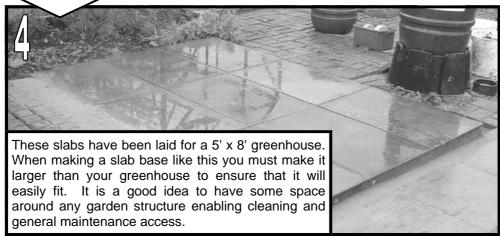




Finishing off the edges of your slabs with a slightly stronger mix of sand and cement will give a much neater finish.

Simply use a float to smooth the edges. Use a watering can to dampen the slabs at the end to remove any cement dust and to dampen the sand and cement below the slabs slightly.





SAFETY

Toughened Glass VERY IMPORTANT INFORMATION

Please take extra **CARE** handling toughened glass. It is extremely vulnerable to **BREAKAGE** at the edges and in particular, the **CORNERS**. When you are **MOVING** it, please take care not to brush the **EDGES** of the glass against concrete etc.. as it can **SHATTER** or **BREAK** very easily. Likewise, it should **ALWAYS** be stacked on wooden bearers, or cardboard, or carpet, or anything to avoid direct contact with a hard floor.

Once the glass is installed into the frame the whole structure becomes much more **RIGID**. The toughened glass in particular is very resilient to face-on **DAMAGE**.

If you are unsure about anything to do with glazing your greenhouse please ring us on **01782 388811**. **See also information on page 32-33**.

- Some of the components in this kit may cause injury if not used sensibly. When handling
 any of the metal components and during glazing please take care and wear gloves,
 goggles and ear protectors when you judge necessary.
- Do not assemble the frame in high winds.
- Children should not play near glass greenhouses.
- REMEMBER: Glass is fragile, handle with extreme care!
- Do not push or lean on the glass panels.
- 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 carefully.
- Do not latch the door when anybody is inside the greenhouse.
- Use extra care when moving heavy or awkward objects such as tables, poles, internal frames etc. within or near the greenhouse.
- Do not place your greenhouse in vulnerable locations such as under trees, in playing areas, etc.
- Be aware of the increased temperature in a greenhouse on a sunny day.
- Do not keep pets or other animals in a greenhouse.
- When cleaning glass, do not exert too much pressure.
- Do not keep petrol or petrol machinery in a greenhouse.



BEWARE OF SHARP EDGES

IMPORTANT!



GENERAL ADVICE

Preparation and things to consider:

- Bear in mind that constructing your greenhouse can take some **time**, you may need to leave it and come back to it.
- The more **space** available in which to work the better, a large **clean**, **clear** garage floor is ideal or a **flat** lawn area.
- **Tidy** your work space prior to assembly. This will reduce the chances of loosing any of the smaller components. It is a good idea to find a tub for all your nut and bolts etc...
- When building your own brick/concrete/slab foundations ensure that they are level and square
 and built to the correct outside measurements otherwise your frame will not be true and the
 glass will not fit.
- Be sure that all four sides of the constructed greenhouse are square before installing glass, and do not install the glass until the greenhouse is in its permanent location.
- Anchoring down your greenhouse is the **final stage** of construction (including glazing). 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.

Organising your components:

- On opening your main greenhouse box DO NOT UNWRAP any of the labelled bundles until they are required. Be CAREFUL not to mix-up any of the bundles.
- Assess each component in accordance with the parts list in the manual.
- Separate like from like components.
- If your greenhouse is a painted one there maybe a few 3mm holes in the ends of some bars. These are jig holes used for painting and have no bearing on construction.
- If you are unsure what a component is try checking the length against the parts list inside the box.

Tools advice:

- You will find a tool kit supplied. This consists of: A pair of gloves, a 10mm spanner, a 10mm spinner and a Philips screwdriver. Other tools that may be required are shown in the picture (top right).
- You will also find a tube of silicone and a silicone gun in the box. This can be used throughout the greenhouse to stop any leaks.

Using the manual:

Read the information relevant to each stage of construction immediately before you begin. Study each drawing carefully before you begin each stage of construction.

Glazing preparation:

 WD40 or a similar product can be sprayed into the glazing channels to make it much easier to insert the glazing rubber. All rubber should be added to the glazing channels PRIOR to any assembly.









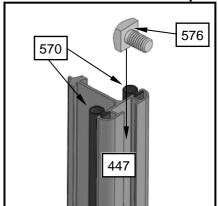
SIDE ASSEMBLY

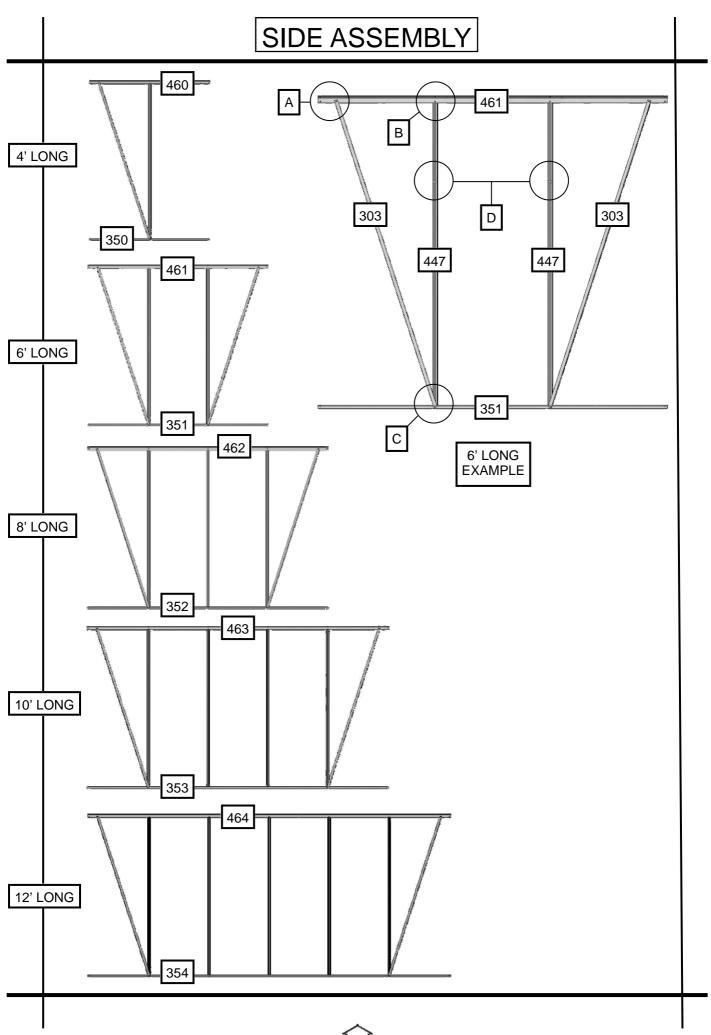
Part Name	Part	Length	6 X 4	6 X 6	6 X 8	6 X 10	6 X 12
	No.	mm					
Base bracket	300	-	2	4	4	4	6
Bracing, diagonal - 6' & 8' W	303	1,742	2	4	4	4	4
Cill, side 4' L	350	1,268	2	-	ı	-	-
Cill, side 6' L	351	1,888	ı	2	ı	-	-
Cill, side 8' L	352	2,508	ı	-	2	-	-
Cill, side 10' L	353	3,128	ı	-	ı	2	-
Cill, side 12' L	354	3,748	ı	-	ı	-	2
Glazing bar, side	447	1,670	2	4	6	8	10
Gutter 4' L	460	1,268	2	-	ı	-	-
Gutter 6' L	461	1,888	Ī	2	ı	-	-
Gutter 8' L	462	2,508	ı	-	2	-	-
Gutter 10' L	463	3,128	Ī	-	ı	2	-
Gutter 12' L	464	3,748	1	-	•	-	2
Bolt, square head - 10mm M6	576	10	6	12	16	20	24
Bolt, square head - 15mm M6	588	15	2	4	6	8	10
Nut - M6	579	-	8	16	22	28	34
Nut caps	580	-	8	16	22	28	34

- 1. Slide the glazing rubber into the channels of the glazing bars and trim to correct length before assembly.
- Lay out the pieces on the ground as though you were standing inside the greenhouse, i.e. with the gutter and cill facing downwards and the bolt channels of the glazing bars upwards.
- 3. Slide a 10mm bolt into the top of each end of the glazing bar (Diagram bottom right). An extra bolt will have to be fed into each channel (Diagram D, Page 15) to accommodate your extra strengthening cantilever bracings or anything else that may require extra bolts (e.g. a shelf). Slide longer 15mm bolt into the bottom of each glazing bar so a base bracket can be attached at a later stage.

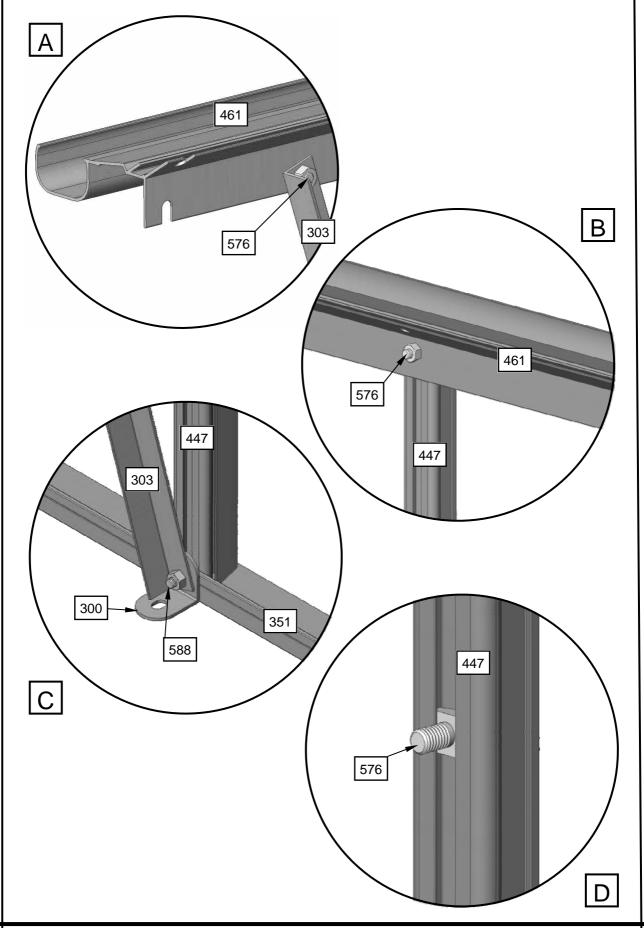


- 4. Fix the cill to the middle glazing bar by pushing the 15mm bolt through the hole in the cill unit and lightly tighten.
- 5. Correctly position the cill on the outermost glazing bars by pushing the 15mm bolts through the holes in the cill, now place the base brackets followed by the diagonal bracings on the same bolts so they point outward towards the ends of the gutter and lightly tighten the nuts (Diagram C, Page 15).
- 6. On buildings larger than 6' long you will need to attach additional glazing bars to the cill in the same way as step 5.
- 7. Attach the gutter to the glazing bars in the same manner as step 4 and lightly tighten.
- 8. Attach the other ends of the braces to the hole in the gutter approximately 100mm from the end. Put the nuts on the bolts and lightly tighten.
- 9. Do the same with the other side frame assembly.
- Make sure that the glazing bars reach both the cill and the gutter in each case.
- 11. Finally tighten all nuts.





SIDE ASSEMBLY



REAR ASSEMBLY

Part Name	Part	Length	Qty Required
	No.	mm	
Base bracket	300	-	4
Bracing, flat	315	1,779	2
Bracing, rear purlin - 6' W	314	1,870	2
Cill, front & rear 6' W	333	1,882	1
Glazing bar, corner, roof left* - 6' W	409	1,130	1
Glazing bar, corner, roof right* - 6' W	415	1,130	1
Glazing bar, corner, side	430	1,670	2
Glazing bar, front & rear - 6' W	438	2,075	2
Ridge plate	500	-	1
Bolt, square head - 10mm M6	576	10	24
Nut - M6	579	-	30
Nut caps	580	-	30
Bolt, square head - 15mm M6	588	15	6

^{*}When viewed from the outside.

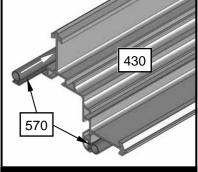
1.Slide the glazing rubber into the channels in the glazing bars and side / roof corner bars.

Do not put glazing rubber into the middle slots of the side corner bars (see diagram on the right).

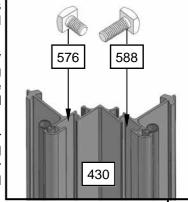
- 2.Lay out the frame as though you were standing on the inside i.e. with the bolt slot uppermost. The roof corner bars are mitred at one end whereas the side corner bars are not. The bolt slot is on the inside and faces inwards during initial construction. You must ensure that the "middle" hole is nearer to the ridge plate than the eaves.
- 3.Slide a 10mm (576) bolt into the bolt channels of each corner bar and put a nut on, finger tighten 50mm (2") from the top. These will be used later in the assembly. On the side corner bars, the bolt channel that attaches to the flange on the roof corner bars, needs a longer 15mm bolt at the top so that the purlin and diagonal bracing can be fixed by the same bolt (Diagram bottom right). Now slide up from the bottom of the bar an extra 10mm bolt in the bolt channel for the second rear purlin

leaving it without a nut. You also need to slot a 15mm bolt in each bolt channel 50mm (2") from the bottom so a base anchor bracket can be attached at a later stage when fixing the greenhouse to the ground. The roof corner bars 409 & 415 also need two extra 10mm bolts sliding into the channel, this is to attach the hanging basket rail at a later stage (Marked '@' on page 17 and 19).

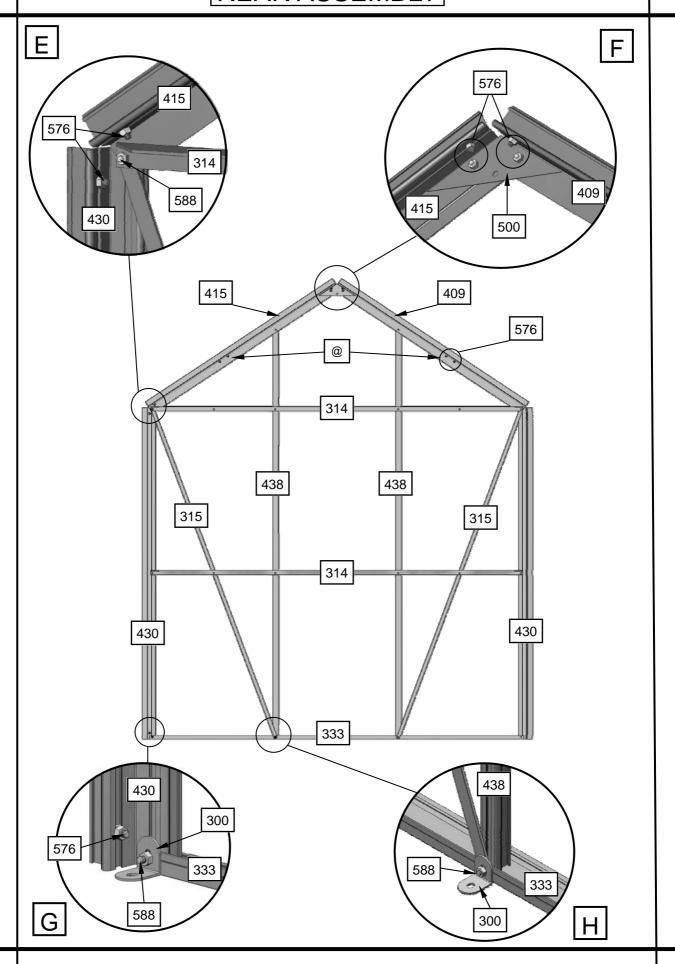
- 4.Bolt the square end of the roof corner bar onto the side corner bar with the diagonal bracing and the rear purlin on the same bolt, lightly tighten the nuts (Diagram E).
- 5. Now secure the ridge plate by inserting bolts through the "plate" and into the holes punched in the flange of the roof corner bar, at the apex (Diagram F).
- 6.Attach the rear cill to the side corner bars by using one of the 15mm bolts inserted in "step 2". Loosen the bolt and drop it into the slot in the cill (Diagram G).
- 7.Insert rubber into the rear glazing bars and then attach to the cill by slotting a 15mm bolt into the bolt channel of the glazing bars and locating it with the punched holes in the cill. Before securing the nuts attach the diagonal bracings to the same bolts (Diagram H). The diagonal brace and lower rear purling cross, at this point you need to fix a 10mm bolt.
- 8.Slide three 10mm bolts into the bolt channel at the top of the two rear glazing bars, the first bolt is to attach the lower rear purlin, the second bolt is to attach the top purlin and the third bolt is to attach the glazing bar to the roof corner bars. Do this by inserting the bolt through the punched hole in the flange of the roof corner bars.
- 9. Check that all angles between the cill and the vertical members are at right angles and that the glazing bars are tight into the cill at the bottom **(Key point)**. Finally tighten all nuts.



EXTERNAL VIEW



REAR ASSEMBLY

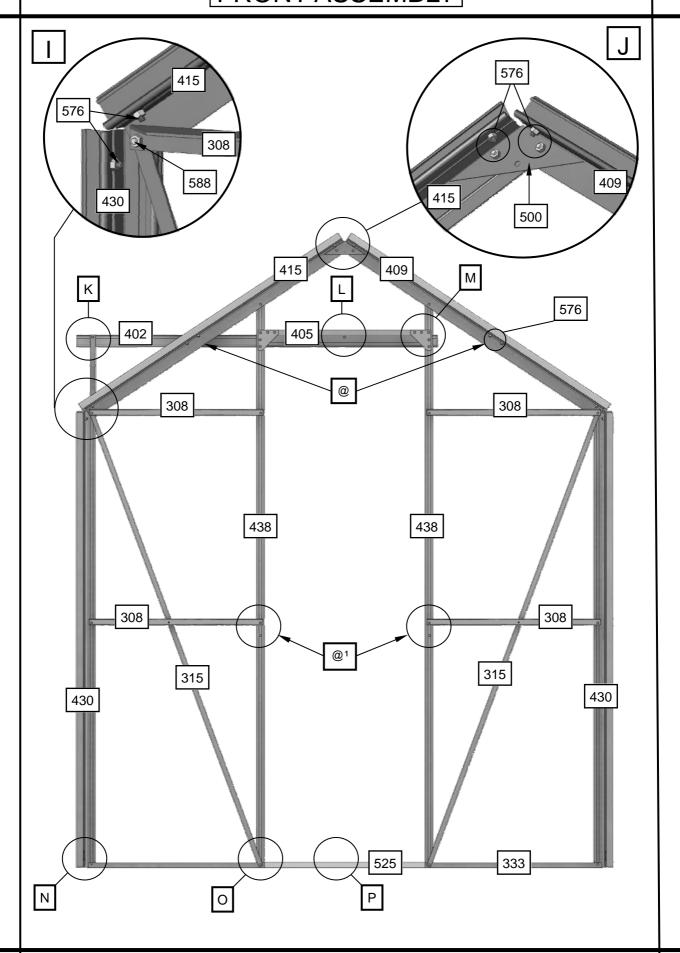


FRONT ASSEMBLY

Part Name	Part	Length	Qty Required
	No.	mm	
Base bracket	300	-	5
Bracing, front purlin - 6' W	308	636	4
Bracing, flat	315	1,779	2
Cill, front & rear 6' W	333	1,882	1
Door runner - 1320mm	374	1,320	1
Door stop	400	40	1
Door strike Plate	401	80	1
Door track - 1320mm	402	1,320	1
Door track support bracket	404	-	2
Door track, main support - 588mm	405	588	1
Glazing bar, corner, roof left - 6' W	409	1,130	1
Glazing bar, corner, roof right - 6' W	415	1,130	1
Glazing bar, corner, side	430	1,670	2
Glazing bar, front & rear - 6' W	438	2,075	2
Ridge plate	500	-	1
Support, door track vertical - 6' W	507	252	1
Threshold - 588mm	525	588	1
Bolt Hexagon Head- 25mm M4	575	25	1
Bolt, square head - 10mm M6	576	10	38
Nut Nylock M4	578	-	1
Nut - M6	579	-	48
Nut caps	580	-	48
Bolt, square head - 15mm M6	588	15	10

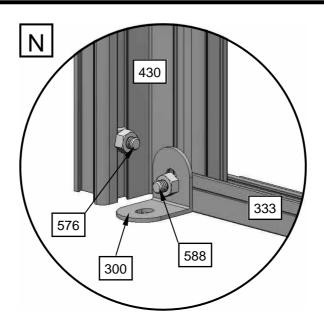
- 1. Slide the glazing rubber into the channels of the glazing bars before assembly.
- 2. Assemble the frame in exactly the same way as the rear assembly, up to and including stage 5. In stage 3 the rear purlins are changed for front purlins which are shorter [636mm] (Diagram I)
- 3. Insert rubber into both front glazing bars (437) on the outside edge only (this is because the inside edge will not be glazed as the door is fitted here), however you do need to fit about 120mm of rubber to the top inside edge to enable you to install the panes of glass above the door. Now attach the glazing bars to the cill by slotting a 15mm bolt into the bolt channel of the glazing bars and locating it with the punched holes in the cill. Before securing the nuts attach the diagonal bracings to the same bolts (Diagram O).
- 4. Now slide two 15mm bolts down each front glazing bar followed by five 10mm bolts. Use the top 10mm bolt to attach the front glazing bars to roof corner bars.
- 5. Attach the main door track support (405) to the two glazing bars using the door track support brackets (Diagram M). Use three of the 10mm bolts to fix the door track support bracket to the glazing bars, leaving the last 10mm bolt below the bracket to attach the two top front purlins.
- 6. You now need to attach the lower front purlin on the top of the two 15mm bolts (Marked '@1'), attaching the other end to the side corner bar. The hole in the centre of the purlin should line up with the hole in the flat diagonal bracing. Bolt them together using 10mm bolts (The head of the bolt should face outwards with the shank facing inwards. This is to prevent possible damage to glass). Repeat this on the opposite side. (The door stop and strike plate will be inserted later in the door installation. This is also when you'll need the 25mm M4 nut and bolt).
- 7. Bolt the door track to the main door track support (Diagram L) by inserting 3 bolts into the bolt slot of the door track. Position these through the 3 holes in the main door track support above the door opening. When this has been achieved tighten all nuts. The height of the track will have to be adjusted when fitting the door.
- 8. Slide another 10mm bolt into the end of the door track and attach the vertical door track support (507). Bolt the other end to the roof corner bar (415) using a base bracket (300) (Diagram K).

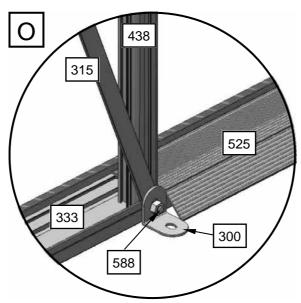
FRONT ASSEMBLY

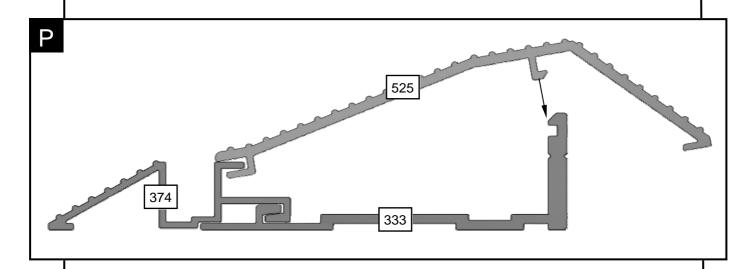


FRONT ASSEMBLY K М

FRONT ASSEMBLY



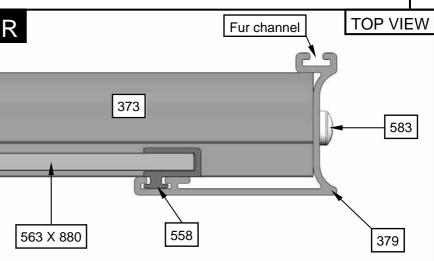




DOOR ASSEMBLY

Part Name	Part	Length	Qty Required
	No.	mm	
Door middle - 618mm	373	618	1
Door stile - female, with lock, tall	377 / 717	1,880	1
Door stile - female, without lock, tall	379	1,880	1
Door bottom - 618mm	707	618	1
Door Top - 618mm	708	618	1
Door handle	384	112	1
Edging Strip - 870mm	558	870	4
Draught Excluder Fur	571	3,800	1
Screws, self tapping - 19mm M4.2	583	19	14
Bolt, square head - 10mm M6	576	10	2
Toughened Glass 880	-	563 X 880	2

- 1. Start by attaching the door middle to the two door stiles (Diagram Q). The door middle
 - should be fixed with the ('U' shaped) groove for the glass facing down. It is also important to attach the door stile with the lock on the correct side. This should be on the left hand side looking at the door face on from the outside with the holes for the door handle above the door middle.
- 2. When the door stiles are in place slide the edging strips into the channels on the inside edge of the 'L' shape. (Diagram R)
- 3. Now slide one of the 563 X 880 glass panes into the edging strips in the top section of the door. Slot the door top (this has the door wheels attached) onto the glass and fix to the door stiles using the self tapping screws as before. (Diagram S)
- Repeat this on the bottom section of the door using the door bottom to secure the glass. Fix the door bottom in the same way as the door top. (Diagram W)
- 5. When you have finished the construction of the door you can bolt the door handle onto the left hand door stile. The bolts should be inserted from the outside, with the nuts on the inside.
- Now inset the draught excluder fur in the small channel on the back of the door stiles (Diagram R and S).



563 X 880

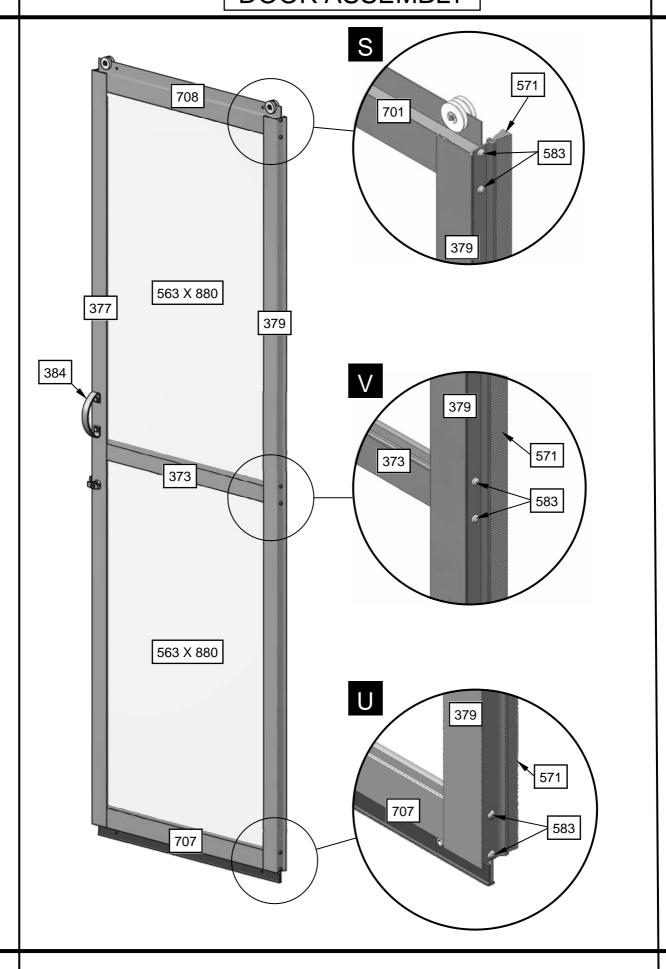
373

563 X 880

377

'U' shaped groove

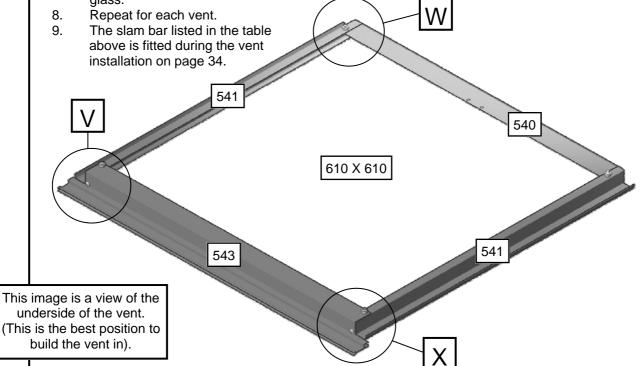
DOOR ASSEMBLY



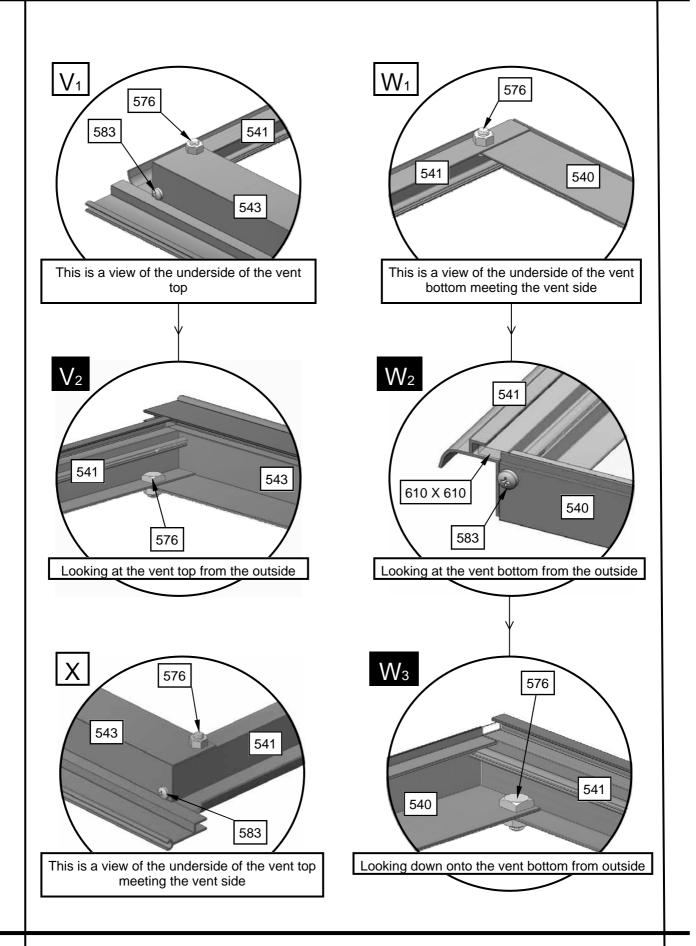
ROOF VENT ASSEMBLY

Part Name	Part	Length	Qty Required
	No.	mm	\ vent
Casement stay*	330	-	1
Vent - bottom	540	590	1
Vent - side	541	604	2
Vent - slam bar	542	645	1
Vent - top	543	650	1
Bolt, square head - 10mm M6	576	10	4
Nut - M4*	578	-	6
Nut - M6	579	-	6
Nut caps	580	-	6
Screws, self tapping - 19mm M4.2	583	19	4
Silicone, gun	584	-	1
Silicone, tube	585	-	1
Screws, countersunk - 10mm M4*	587	10	6
Bolt, Cropped Head - 10mm M6	589	10	2
Vent peg assembly	709	-	2
Toughened Glass 610	-	610 X 610	1
*Redundant if an a	utovent is	being used	

- 1. (Ignore step 1 if you are using an Autovent). Attach the casement stay to the vent bottom using the M4 countersunk screws and nuts.
- 2. Lay the components out so the underside of the vent is facing up. Lightly bolt the vent sides to the vent top. (Diagram V & X)
- 3. Now use the self tapping screws to screw through the vent top into the screw channel on the vent sides. (Diagram V)
- 4. Slide the 610 X 610 glass into the channels in the vent sides. Push the glass all the way up the channels until it slots into the vent top. (Diagram W2)
- 5. Bolt the vent bottom on to secure the glass. (Diagram W1)
- 6. Now tighten all the bolts.
- 7. Trim the end off the silicone tube. Run a bead of silicone all the way round edge of the glass on the outside of the vent. This will help to reduce any leaks and will also secure the glass.



ROOF VENT ASSEMBLY



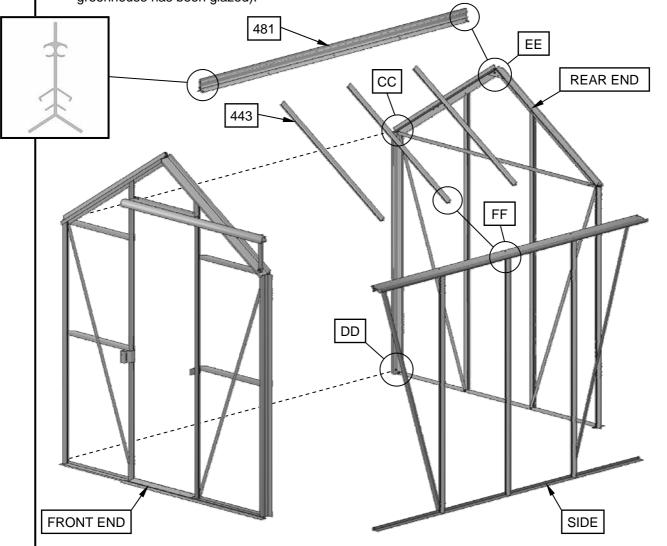
Part Name	Part	Length	6 X 4	6 X 6	6 X 8	6 X 10	6 X 12
	No.	mm					
Rear End	-	-	1	1	1	1	1
Front End	•	-	1	1	1	1	1
Side	•	-	2	2	2	2	2
Glazing bar, roof - 6' W	443	1,130	2	4	6	8	10
Ridge - 4' L	480	1,268	1	-	ı	-	-
Ridge - 6' L	481	1,888	-	1	ı	-	-
Ridge - 8' L	482	2,508	-	-	1	-	-
Ridge - 10' L	483	3,128	-	-	ı	1	-
Ridge - 12' L	484	3,748	-	-	ı	-	1
Bolt, square head - 10mm M6	576	10	14	28	44	60	76
Nut - M6	579	-	14	28	44	60	76
Nut caps	580	-	14	28	44	60	76
Cantilever, ridge	600	608	1	2	3	4	5
Cantilever, eaves	601	460	2	4	6	8	10
Hanging basket rail - 4' L	685	1,268	2	-	ı	-	-
Hanging basket rail - 6' L	687	1,888	-	2	ı	-	-
Hanging basket rail - 8' L	688	2,508	-	-	2	-	-
Hanging basket rail - 10' L	689	3,128	-	-	-	2	-
Hanging basket rail - 12' L	690	3,748	-	-	-	-	2

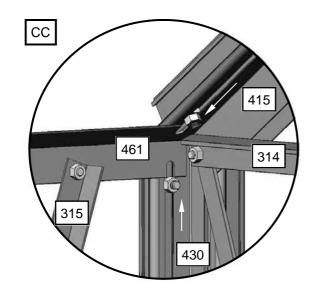
Note: If you have purchased any *extension* packs or *partitions* you should now follow the instructions for those upgrades. The instruction books for the upgrades will tell you when to refer back to this main book.

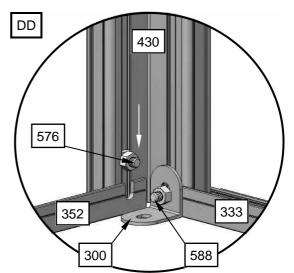
- 1. With the help of a willing assistant, stand up the rear gable and one of the sides. Standing on the inside of the structure with the gutter facing away from you, insert the gutter bar into the gap between the corner bars, so that the inside flanges which form the angle of roof and side line up with the bolts in the corner bars (Diagram CC).
- 2. Loosen the nuts holding the 2 bolts previously inserted into the corner bars and slide them into the slotted holes in the flanges of the gutter, then tighten (Diagram CC & DD).
- 3. Repeat step 2 with bottom bolt and attach to side cill.
- 3. Now stand up the door end assembly and repeat the above procedure.
- 4. Stand up the other side frame and repeat the operation outlined in 1 and 2 above at both corners.
- 5. The bottom cill of the sides attaches to the corner bars in a similar way. Undo the nuts and bolts inserted in the gable end assembly, move the cill under the corner bar so that the elongated hole in the vertical flange of the side cill lines up with the bolt slot in the corner bar. Move the bolts down the slot into the slotted hole, put a nut on and tighten up, ensuring that the corner bar is pushed right down into the angle of the cill (Diagram DD). Do the same at the other 3 bottom corners.
- 6. The ridge bar is fitted next. If you insert a nut and 10mm bolt into each of the holes in the ridge before you lift it into place you will make life easier later on when you are attaching the roof bars. 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 roof corner bars. The vertical part of the ridge is outside and pointing skywards. Undo the nuts and bolts previously inserted into the roof corner bars during gable end assembly and push them upwards into the open ended slots in the ridge (Diagram EE). Then tighten the nuts.
- 7. The roof bars can now be attached to the structure but first you must slide the glazing rubber into the bars and trim to suit.
 - Attach the bars firstly at the ridge, if you have already inserted bolts into the ridge as suggested in step 6 slide the glazing bar onto these bolts. If not then slide a bolt into the bolt slot of the roof bars and placing the bolt through the holes in the flanges of the ridge. Put a nut on and immediately prior to tightening ensure that the roof bar is pushed up hard against the ridge. Do not attach the bottom of the bars to the eave until all the roof bars are bolted to the ridge.

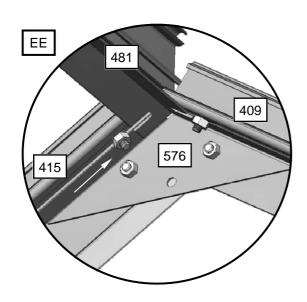
Very Important: Bolts will need to be slid into each roof bar for the ridge cantilever, two more bolts to attach the hanging basket rail, one more bolt is needed to attach the eave cantilever bracing between the roof and the side. Please note: At this stage you will need to insert an extra bolt into each bar either side of a vent opening. So you will have to decide now where your roof vents are positioned so that you can work out the correct number of bolts in each bar.

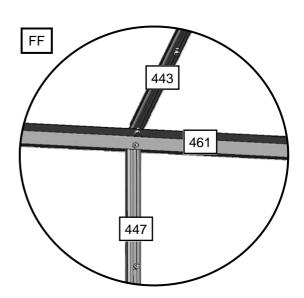
- 8. Now attach the bottom of the roof bars to the gutter bar into the holes in the upper flange (Diagram FF). Start with the middle bars either side of the ridge.
 - Before tightening the nuts that hold the roof bar to the eave you must ensure that the roof bar is tight up against the small flange immediately above the gutter (key point). Failure to observe this point and the 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 downward dip to the ridge. Also try to make sure that no glazing rubber extends from the v-shaped grooves for a tighter neater finish.
- 9. At this point you will need to lift the structure onto a firm, level, and square (check internal diagonal measurements are equal) footing or the greenhouse base if you haven't already done so.
- 10. You can now attach the T-bar cantilevers (600) which bolt into the apex of the roof. Use the top bolt out of those you have slid into each roof bar (Diagram GG).
- 11.Next you can attach the eave cantilevers (601) between the roof and the sides using the bottom bolt in your roof bar channels and the extra bolt you slid into the side sections earlier on (Diagram HH). The remaining 2 or 3 bolts in the roof bar should be above the eave bracings and are used to attach the hanging basket rail and the vent slam rails in your predetermined locations (note: both the slam rails and the hanging basket rail should be attached after the greenhouse has been glazed).

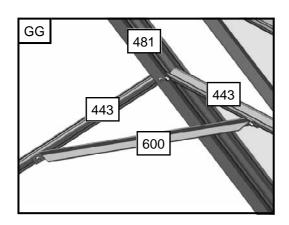


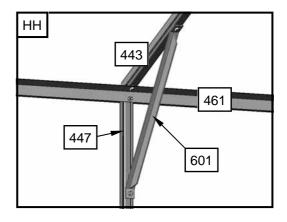








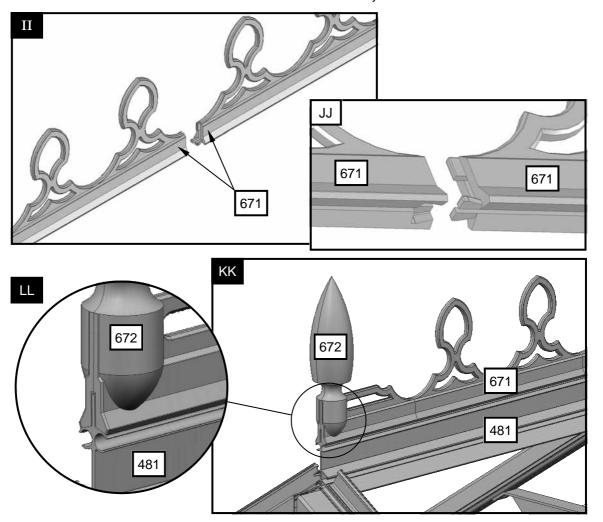




FITTING OPTIONAL CRESTING AND FINIALS



- 1. When fitting the finials and cresting you need a hacksaw, silicone gun and tube.
- 2. Before you get into position you need to take a hacksaw and trim off the male end of one of the cresting sections.
- The best way to install the cresting and finials is to stand on the inside of the building on carefully positioned steps. Squeeze a bead of silicone along the groove on the underside of the first finial. Slot this onto the ridge making sure it is flush with the front edge (Diagram LL).
- 4. This now gives you your starting point for the cresting. You will see that the cresting is moulded so that it all links together making the assembly much stronger (Diagram JJ). The first section of cresting you should use is the one you trimmed with the hacksaw. Face the cut end towards the fixed finial. The cresting fits to the ridge in the same manner as the finial. It is also a good idea to run a bead of silicone along the grove on the underside of the cresting.
- 5. Once you have inserted the first cresting section you will have to lift one end to insert the next section. Running a bead of silicone on each section. Repeat this until you are about 150mm (6") from the end.
- 6. You can now insert the last finial in the same manner as you did the first.

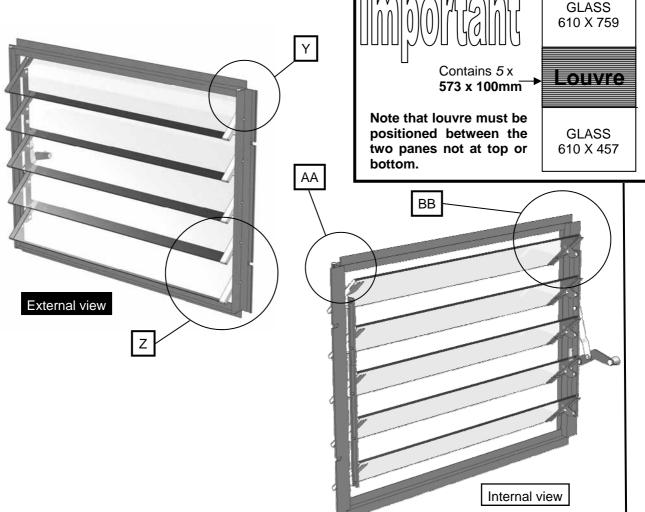


LOUVRE ASSEMBLY

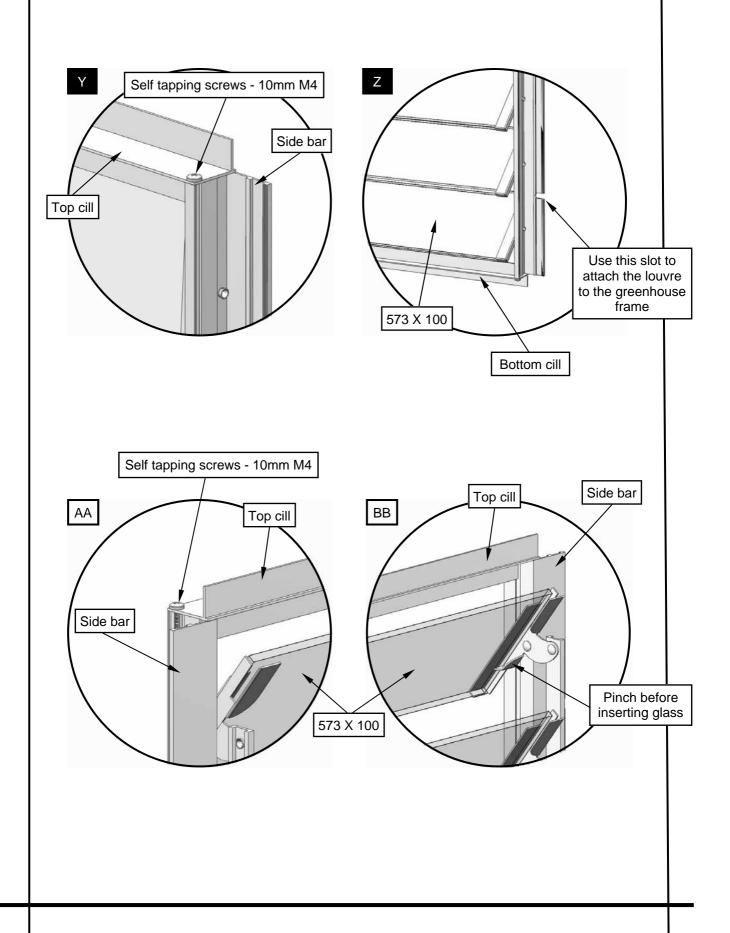
Part Name	Part No.	_	Qty Required
Top/Bottom cill	-	592	2
Side bar	-	444	1
Side bar - with handle	-	444	1
Screws, self tapping - 10mm M4	-	19	4
Crop head bolts - 10mm M6	-	10	4
Nuts - M6	-	-	4
Toughened glass (L)	-	573 X 100	5

- 1. Trim rubber to side lengths and place top and bottom cill into position on side bars. Secure with self tapping screws. (Diagrams Y & AA)
- 2. Repeat this process on each corner.
- 3. When you are fitting your louvre the pane of glass (610 X 457) must be inserted below it first.
- 4. Use your four crop headed bolts to attach the louvre to your side glazing bars (Diagram Z). You will NOT need glazing separators above and below the louvre. The glass simply butts right up to the metal.

5. Pinch glass holding clips together prior to glazing to help secure the glass blades tightly. (Diagram BB) 6. Insert each of the five glass blades.



LOUVRE ASSEMBLY



GLAZING

You are about to begin glazing your greenhouse. It is vital that you take as many safety precautions as possible, especially when handling glass. When glazing the roof we recommend that one individual stands on some ladders inside the greenhouse (It is important that this person is not directly underneath the glass, it is best to stand to one side and help guide the glass in with one hand), while someone else passes the panes up from the outside. When handling glass, you should always wear long sleeves, gloves and goggles.

Important, when glazing any structure it is likely to take you several hours to complete the process. You should leave yourself enough time or get yourself help to do the job in one session. Before you begin the process carefully separate your glass into groups of similar panes being very carefully to measure and separate different types as some are quite similar. When moving the glass please be very careful and put down wooden bearers and cardboard to protect the glass from any hard ground or wall surfaces and to help keep the glass clean.

Glass separators (610mm black plastic strips) go on your front and rear gables and sides allowing one pane to sit directly on the pane below.

The ideal recommended glazing procedure in our opinion should go as follows;

Start by glazing two roof sections, standing in the doorway looking into the greenhouse the far left roof section and the front right. By doing these two sections first you will be able to establish the squareness of your structure. If you are having difficultly fitting these panes squarely into the structure then you need to check that the internal corner to corner measurements of the frame are equal in both directions.

If you are still having difficulty then it may be due to the frame not being perfectly vertical. By moving the

ridge backwards and forwards while you are up your supported ladders you will be able to alter the vertical aspect of your structure (you can also place a spirit level against the gables and the sides to assess this). Leave the rest of the roof glazing at this stage and move to glazing the rear and front gables (see previous page for order and fittings), this will confirm that the structure is vertical.

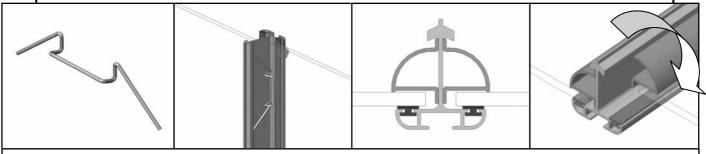
Once you have glazed the rear of the greenhouse you need to glaze the front. Start by glazing the sections either side of the door, once you have done this the door has to be installed (see page 35 for the door installation).

When the door is in place you can fit the glass above the door (Part Name GG). Push the pane to the top of the apex and slide in the glass jack which will then sit on the main door track support. It is also necessary to place two 'W' clips on the top edge of each of the angled panes (shown in the diagram to the right).

'W' clips 409 415

You can now glaze the sides, and then the rest of the roof. Note, that when you are glazing the roof you should leave glass out of the roof where you wish the roof vents to be situated (these should be fitted along with the doors after glazing.

Please note that the order with which you glaze your building is largely effected by your individual situation, i.e. If your greenhouse is to be situated tight up against a shed and a wall then those sides may need to be glazed first and then the whole building very carefully moved into position using as many helping hands as you can muster.

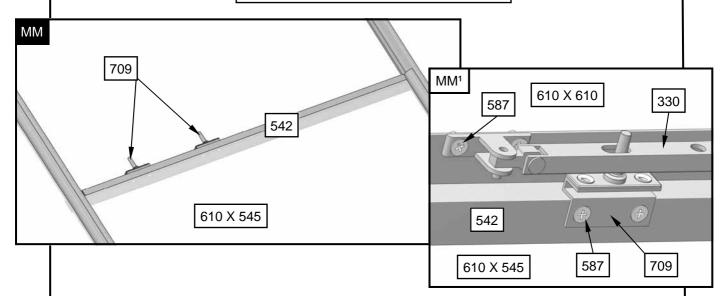


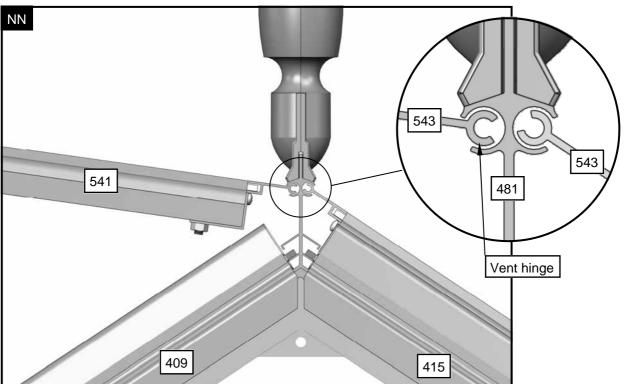
There are 2 glazing systems used, 'W' clips (used on the angled panes in the gables), and full length bar capping.

One end of the glazing clip hooks under the lip of the glazing bar. The bottom edge of the clip fits round the face of the glass. The final end of the clip is also hooked under the lip of the glazing bar.

The bar capping runs the full length of each pane. It is inserted by hooking the top edge under the lip of the glazing bar and sliding the flat face across the face of the glass.

VENT INSTALLATION





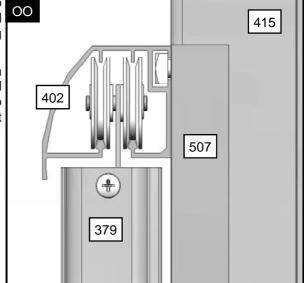
- 1. If you are using a casement stay attach the vent pegs to the slam bar using M4 countersunk screws and M4 nuts. The bolts should be inserted through the vent peg into the slam bar (Diagram MM¹). (Ignore this step if you are using an autovent).
- 2. Take the slam bar and slot it onto the bolts inserted in the roof glazing bars during the main building assembly, loosely fit the nuts. Now slide the slam bar onto the top of the pane of glass, below where the vent is going, and tighten the nuts (Diagram MM).
- 3. The vents should be slid into the ridge from either end after glazing. Please note that the rest of the roof should be glazed before the vents are inserted (Diagram NN).
- 4. Once the vents are in position use a blob of the clear silicone each side of the vent hinge. When this dries it will prevent the vent from moving along the ridge.

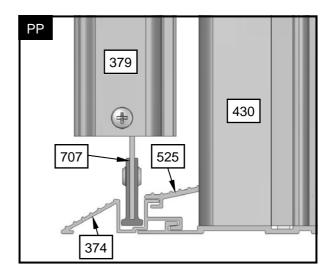
DOOR INSTALLATION

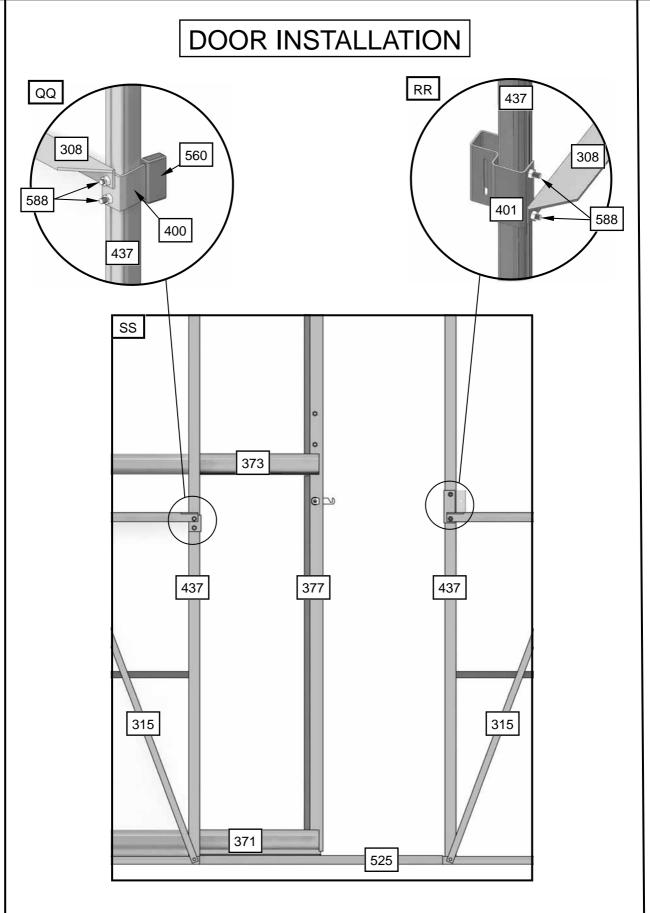
- 1. Take the door and locate the first set of door wheels on the rails in the door track (Diagram OO). When doing this you also need to locate the door guide on the bottom of the door in the door runner (Diagram PP). When both of these are located slide the door further along the track until you can locate the second set of door wheels. To locate the door wheels and the door guide you will probably have to adjust the height of the door track, you do this by loosening the bolts that join the door track support bracket to the front glazing bars.
- 2. With the door half open you can now add the door stop (Diagram QQ & SS). Before you attach the door stops you should push on the door stop bungs (560).
- 3. You can also attach the strike plate (401). This should be lined up with the latch on the door lock (Diagram RR & SS). The 25mm bolt supplied in the door assembly needs to be inserted in the strike plate through the small hole on the front face. Fix it using an M4 nut. This bolt is what the door lock latches onto. (To prevent someone being locked in the building the lock has been designed to latch upwards).
- 4. If you find that the door doesn't run very well at first, it is possible to fine tune this by

adjusting the bolts on the main door track support. (You can also use WD40 on the door wheels and rails for an even smoother running door).

General maintenance: For a smooth running door you should oil the wheels regularly and keep the bottom door runner clear of grit by swilling with water.

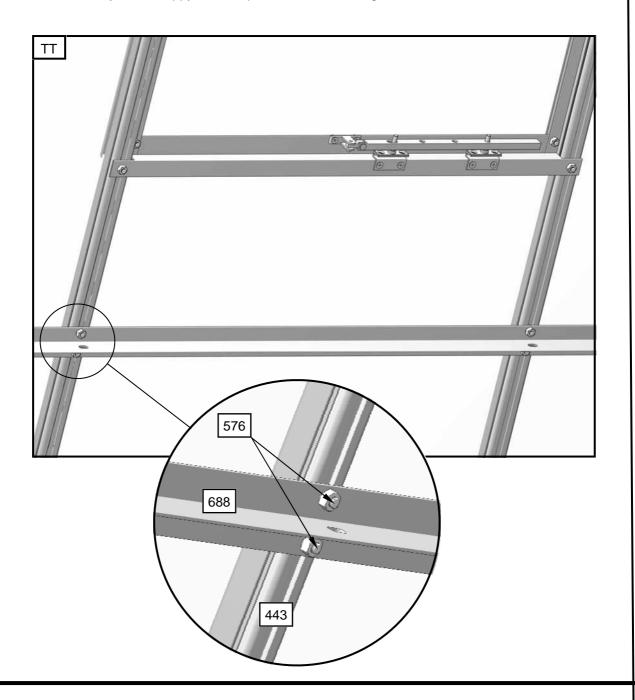






HANGING BASKET BAR

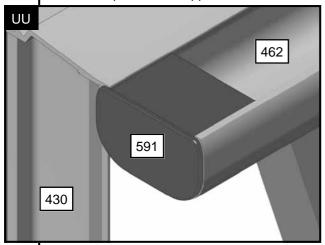
- 1. The hanging basket bars are fixed below the vents on the undersides of the roof.
- 2. Use the two remaining bolts in the bolt channels of the roof bars to attach the hanging basket bar. Start at one end loosely attaching nuts and work along to the other end. (If you are using an autovent you may need to adjust the position of the bars to allow the autovent to work freely).
- 3. The easiest way to ensure the bar is level all the way along is to hook a tape measure on the underside of the gutter and mark the two roof corner bars in the position you would like it.
- 4. Once you are happy with the position of the bars tighten all the nuts.

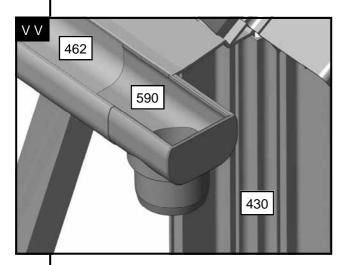


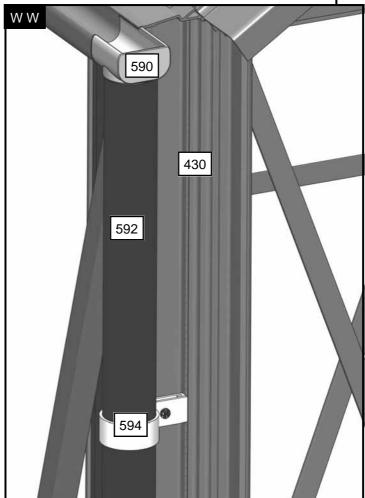
DOWNPIPE INSTALLATION

David Marco	D1	1	0.1
Part Name	Part	Length	Qty
	No.	mm	Required
Screws, self tapping - 19mm M3.5	583	19	2
Gutter outlet	590	70	2
Gutter stop end	591	26	2
Downpipe	592	1500	2
45 degree double collar	593	-	2
Downpipe bracket	594	_	2

- 1. Firstly you need to decide whether you want the water in your gutters to drain to the front or the rear of the greenhouse.
- 2. The gutter outlets and stop ends simply push into the gutters (Diagram UU & VV). For an even better seal you could run a bead of silicone around the inside edge of the gutter before inserting the outlet and stop end.
- 3. Now take the downpipe and slide on the bracket. Insert the downpipe into the outlet.
- 4. When you are happy with its position line up the bracket with the side corner bar, mark through the screw hole and with a 3.2mm drill make a pilot hole. Using the self tapping screw fix the bracket to the corner bar (Diagram WW).
- 5. Finally push the 45 degree pipe (593) onto the end of the downpipe to direct the flow of water.
- 6. Repeat on the opposite corner.



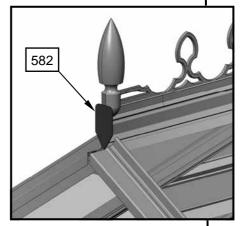


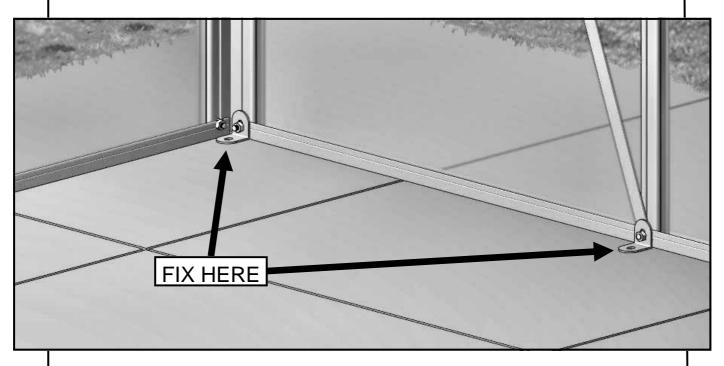


ANCHORING BUILDING TO SLAB / CONCRETE BASE

- 1. For this final stage you will need eight No.10 X 2" screws, eight brown wall plugs, a 7mm masonry drill bit and a hammer drill.
- 2. Fixing the greenhouse to the ground is very simple to do. When you built the front, rear and side assemblies you will have attached base brackets (Part number: 300) in specific places around the building.
- 3. Make sure the greenhouse structure is square (Diagonal measurements should be equal) and level.
- 4. Drill down through the holes in the base brackets into the concrete.
- 5. Insert a wall plug into each hole.
- 6. Finally drive a screw into each hole.
- 7. You should now go round the entire greenhouse, inside and out, pushing on the nut caps.
- 8. The last job is to insert the Ridge caps (582), these simply push on to the ridge. You can now check the greenhouse and look for any gaps where water might come in, fill these using the silicone supplied.
- 9. Your greenhouse is now complete.







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