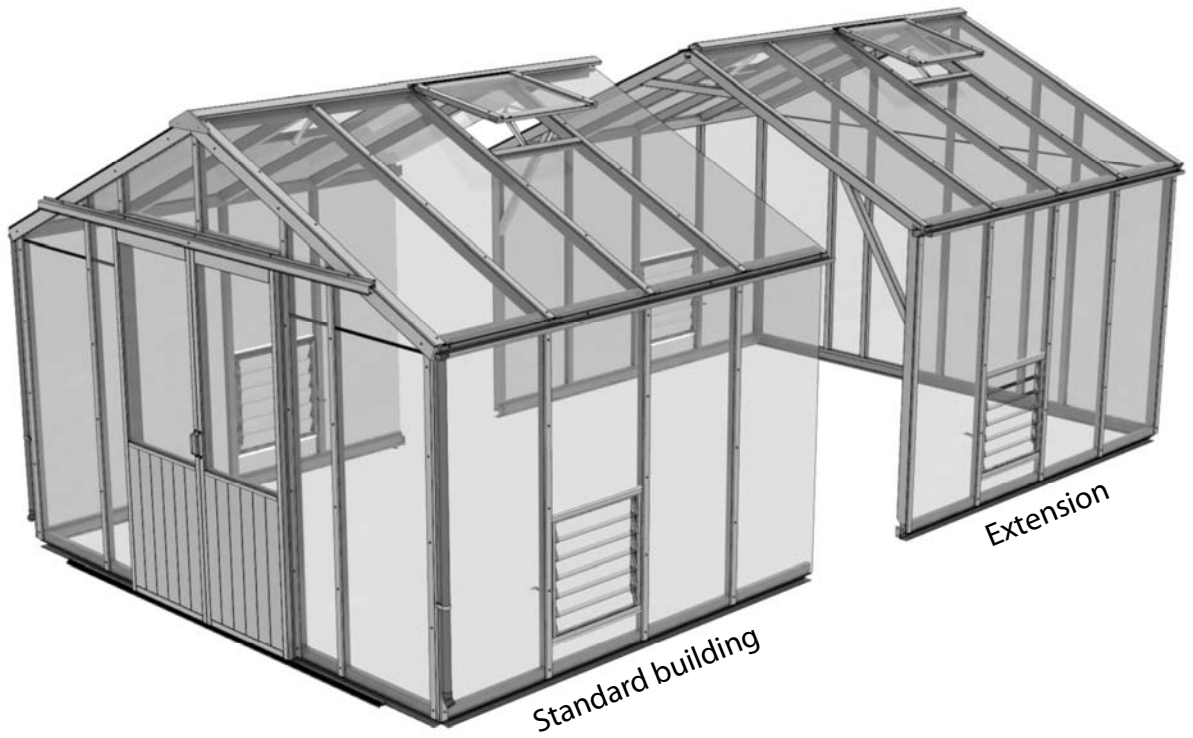


EVOLUTION TEN TENT



Cedar Greenhouses

Extension Instruction Manual





10' Wide Evolution Extension Assembly Instructions

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Introduction

Thank you for purchasing your new Alton greenhouse extension. We recommend you familiarise yourself with the instructions and read all safety information before you commence assembly. This instruction manual is also available online at www.greenhousepeople.co.uk in the technical help section should you need to reprint it. Should you require any additional advice you can always call us on 01782 385409.

Safety Warning

- Glass, aluminium and timber can potentially cause injury. Please ensure you wear protective goggles, gloves, headgear and suitable footwear when assembling and glazing the building.
- Please remember that glass is fragile and should be handled with extreme care. Always clear up and dispose of any breakages immediately.
- Do not assemble the greenhouse in high winds.
- For safety reasons and ease of assembly, we recommend that this greenhouse is assembled by a minimum of two people.
- Please clear all lying snow from the greenhouse roof as it can cause the roof to buckle or collapse.

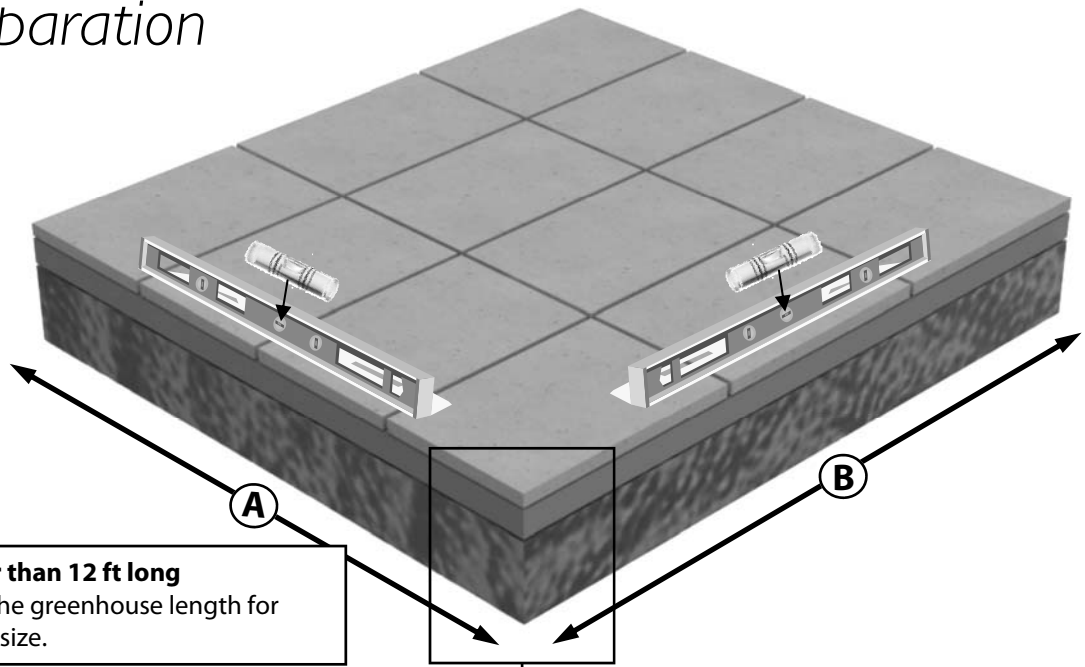
Site Preparation

- When selecting a site for your greenhouse, it is vital that you choose as flat and level an area as possible.
- A concrete or slabbed base will provide the most solid foundation for your greenhouse. A slabbed base would be our preferred choice as this helps with drainage.
- Avoid placing your greenhouse under trees or in other vulnerable locations.
- To minimise the risk of wind damage, try to select as sheltered a site as possible, e.g. beside a hedgerow or garden fence.

Additional Considerations

- Please bear in mind that assembling your greenhouse can be time consuming. You may need to spread the construction over two or more days. We recommend that you avoid leaving the building partially glazed. If you ever have to leave your greenhouse half assembled and not anchored down, weigh it down with slabs or bags of sand to stop the wind moving it.
- You will find it helpful to prepare a large, clean and clear area in which to work in. A garage floor or flat lawn area is ideal.
- If you have arranged for someone to install your greenhouse for you, please check that all components are included. Most parts are numbered and can be identified by a stamp or removable label. Alternatively, the components can be identified by lengths detailed in the packing list in your main cardboard box.
- Once installed your greenhouse requires little maintenance, but to maintain the smooth running of your door(s) WD40 or similar can be applied to the door wheels and lower door guides.
- Remember this is a natural un-treated product, the wood will soak up some water to start with and some staining may occur. This will settle down over time and the greenhouse will really blend with its surroundings. If you want to avoid this and give your greenhouse a more permanent finish you could apply an oil or spirit based product (it would be best to do this before glazing!).

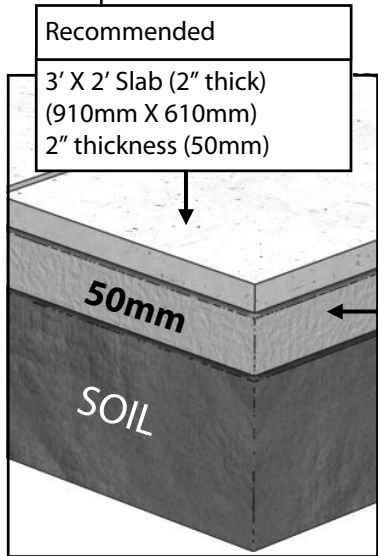
Base Preparation



For buildings larger than 12 ft long just add **630mm** to the greenhouse length for every 2 ft increase in size.

Slab Base Size (Recommended)
Note: The base should always be larger than your building.
The measurements given in 'A' and 'B' should only be used as a guide.

Greenhouse Width	Greenhouse Length	A (mm)	B (mm)
10 ft - 3247mm	6 ft - 1976mm	3660	2700
10 ft - 3247mm	8 ft - 2606mm		3600
10 ft - 3247mm	10 ft - 3236mm		3600
10 ft - 3247mm	12 ft - 3866mm		4500



It is necessary to leave sufficient working room around your greenhouse when you're putting it up and also to allow for the possible need to replace a piece of glass in the future. If possible try and leave a space of 2ft/610mm around the greenhouse.

Locate the greenhouse where there is maximum amount of sunlight and avoid if possible any shade from trees, fences or other buildings. Over-hanging branches can be a particular nuisance and should be avoided.

Choose a site where the greenhouse is relatively easy to get to and convenient to bring water to and possibly a supply of electricity.

Finally, and most importantly, choose a site where your Alton Greenhouse will look right so that it will complement your garden.

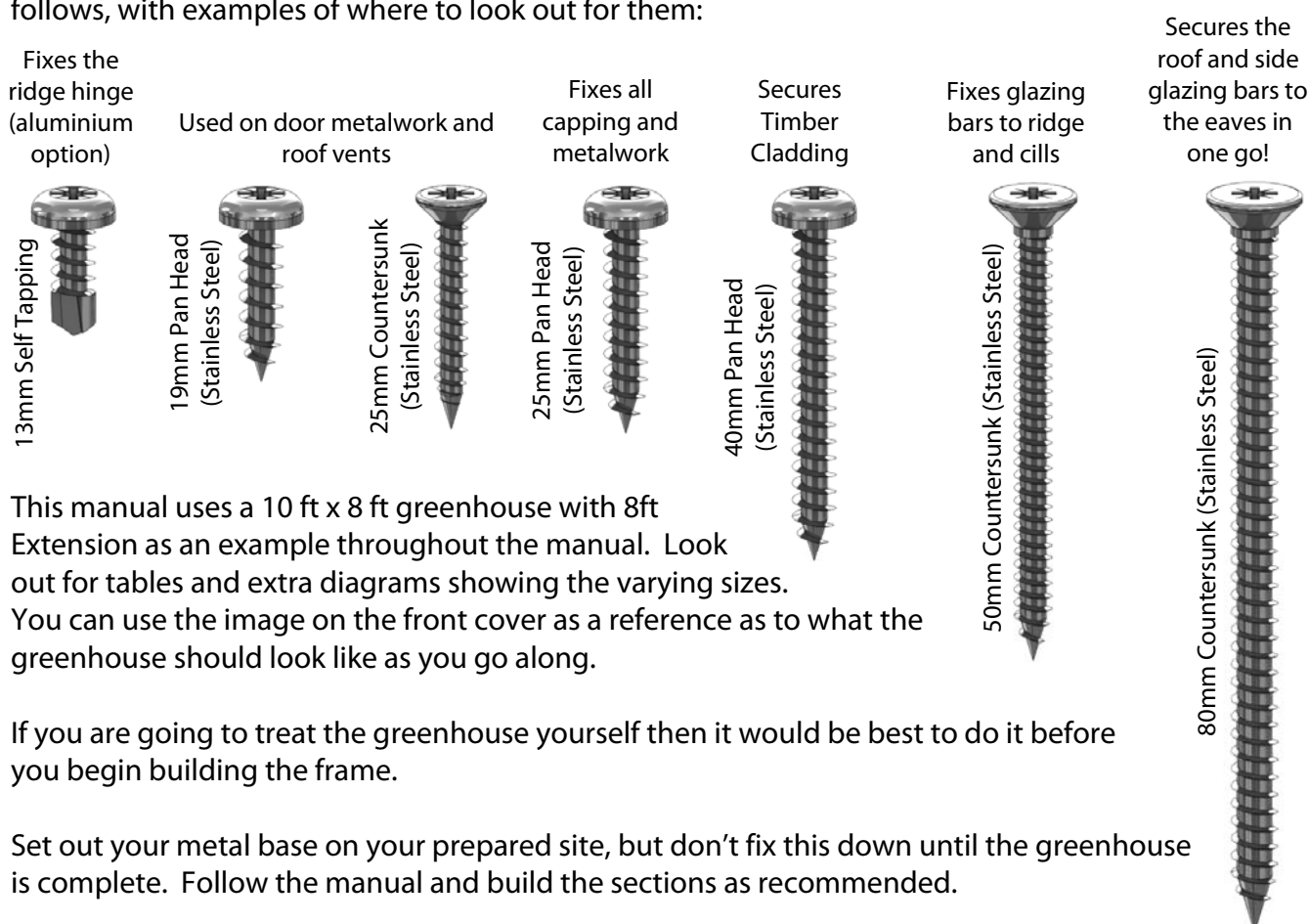


Overview

To build your new greenhouse you will need the following tools:

Spirit Level	Pencil
PZ2 Screwdriver Bit	Cordless Screwdriver (2 would be ideal, 1 to drill and 1 to screw)
4mm Drill Bit	7mm Masonry Bit
Hammer Drill	Hammer
Step ladders	

There are 7 different types of screws used in the construction of the greenhouse. These are as follows, with examples of where to look out for them:



This manual uses a 10 ft x 8 ft greenhouse with 8ft Extension as an example throughout the manual. Look out for tables and extra diagrams showing the varying sizes. You can use the image on the front cover as a reference as to what the greenhouse should look like as you go along.

If you are going to treat the greenhouse yourself then it would be best to do it before you begin building the frame.

Set out your metal base on your prepared site, but don't fix this down until the greenhouse is complete. Follow the manual and build the sections as recommended.

When screwing through one piece of timber into another it is always recommended to predrill the first piece. This will prevent the timber from splitting which could weaken the structure.

You can build the sides of the main building and the extension flat on the ground and then with help or using a prop position the first standard side ready for installation. You then work your way around the greenhouse connecting each section. The front gable is the next section to install, followed by the other standard side and then the extension sides. You then attach the rear gable. Once you have completed the gables and sides you can install the ridge and the roof.

If for some reason you want the extension section at the front (maybe the location of a partition would cause this) simply turn the extension 180 degrees and fit the right side on the left and vice versa.

Overview

Glazing the structure is very simple but be very careful of the edges of the glass as the pane will break into tiny peaces if you catch an edge on a hard surface such as concrete. You should also wear suitable gloves when handling the glass (this also helps to keep it clean). It is good practice to pre-load the bar capping with screws and position this around the greenhouse ready for you when you arrive with the glass.

During glazing you will also need to fit the louvre vents so make sure you have these built and ready to slot in. These fit between 2 pieces of glass and are held in place by the capping system.

Then fit the roof vent. This is done from the inside, gain access through the opening on a set of steps.

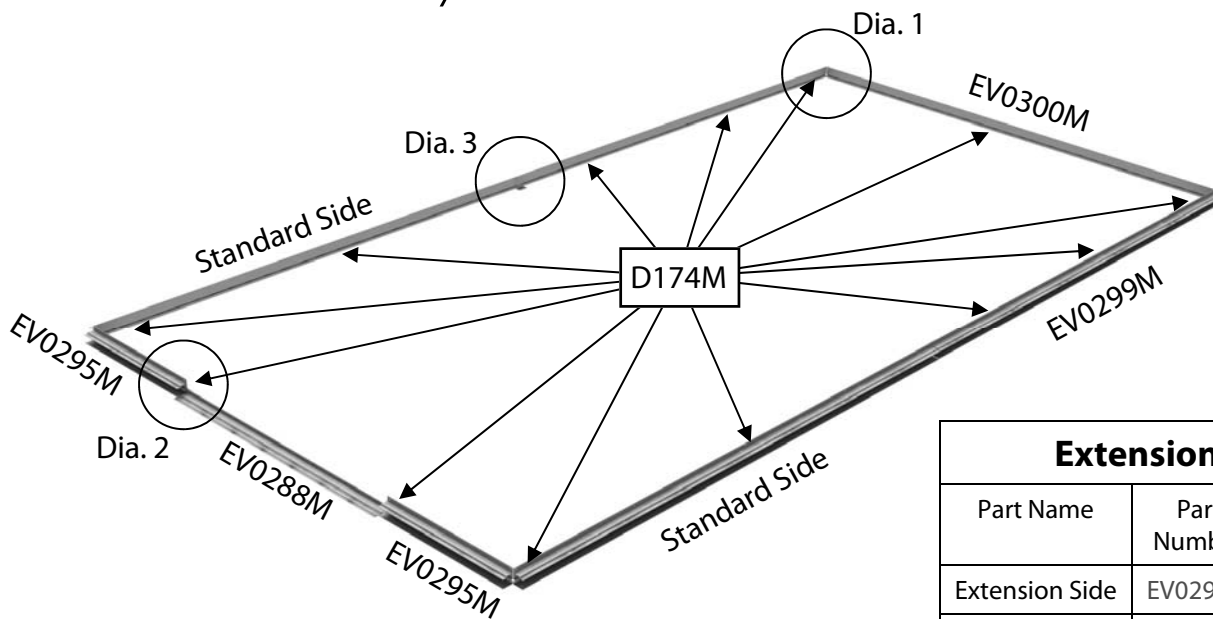
All you have left to do now is fit the gutter and downpipes, think about where you might site a waterbutt when doing this.

You can always add a Partition or another Extension at a later date so consider this when you are siting your greenhouse.

Option of gluing joints. This is not required for strength but you may do it if you wish. However bare in mind if you ever intend to move or adapt the greenhouse in the future this would make it very difficult. The best glue for this would be Poly Urethane Wood Adhesive. Take care when applying this, you only need a very small amount as the glue expands to fill the joint. If you use too much it may seep out of the joint and could be unsightly! Try a test piece before you start.

Read through the rest of this manual before starting, you are less likely to miss something doing this and you will have a better understanding of how it all works.

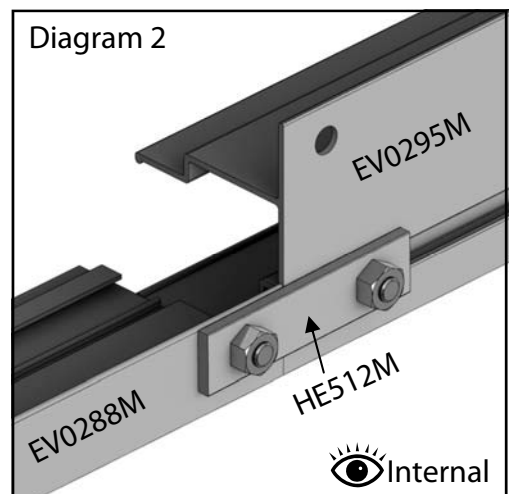
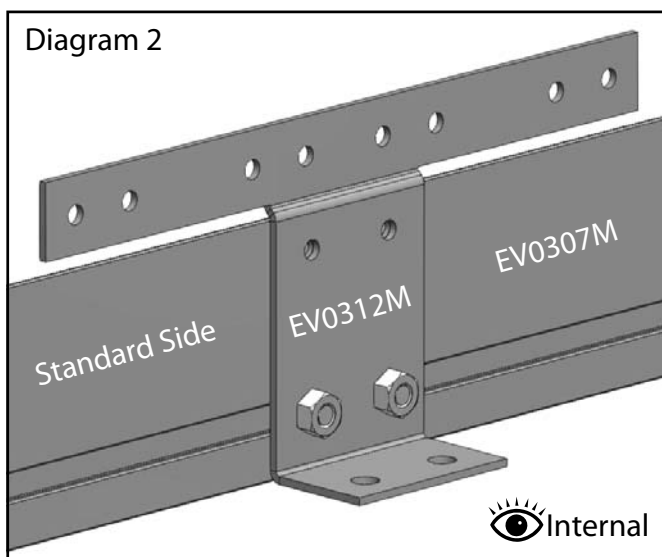
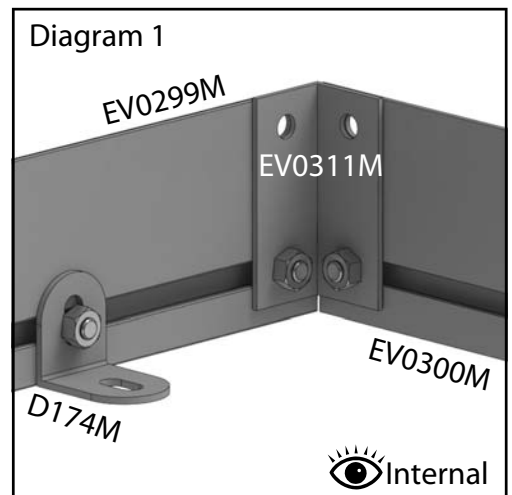
Base Assembly



Extension Base			
Part Name	Part Number	Size (mm)	Qty
Extension Side	EV0299M	2519	2
Joining Bracket	EV0312M	-	2
Base Bracket	D174M	-	4

Lay out your aluminium base sections as the diagram shows. Insert bolts in the bolt channels for attaching the base brackets (D174M), diagram 1. The base brackets should always be positioned either side of the door, in the corners, in the middle of the rear and equally spaced down the sides. Use the joining bracket in each corner to join the sections (diagram 1). The top holes will take a 25mm screw when the side cills are fixed to it. Also fit the front door cill with 2 plates (HE512), diagram 2.

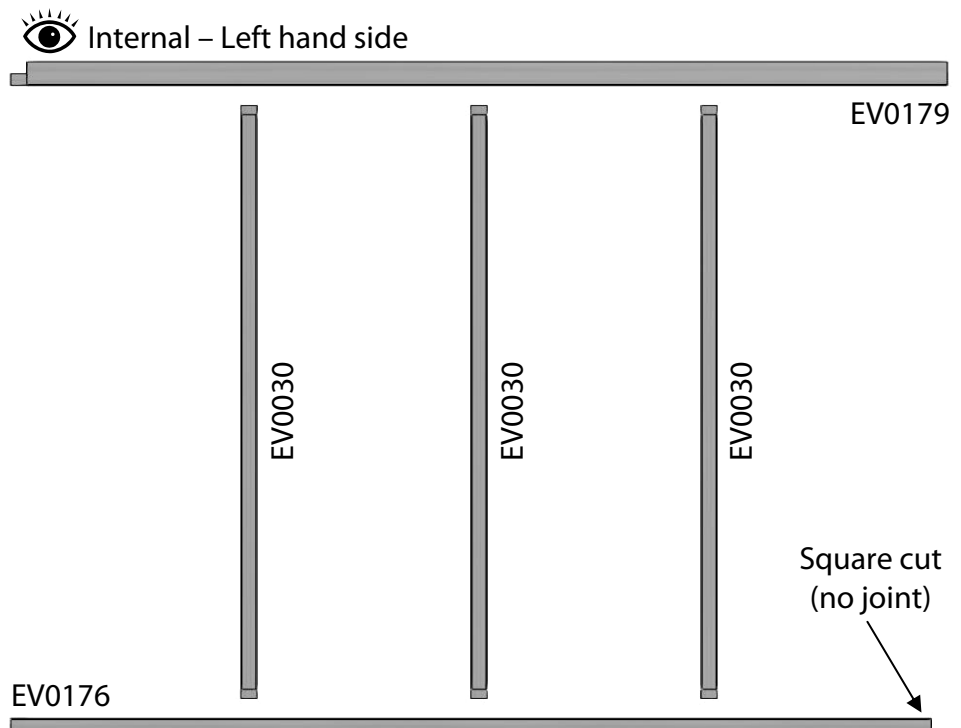
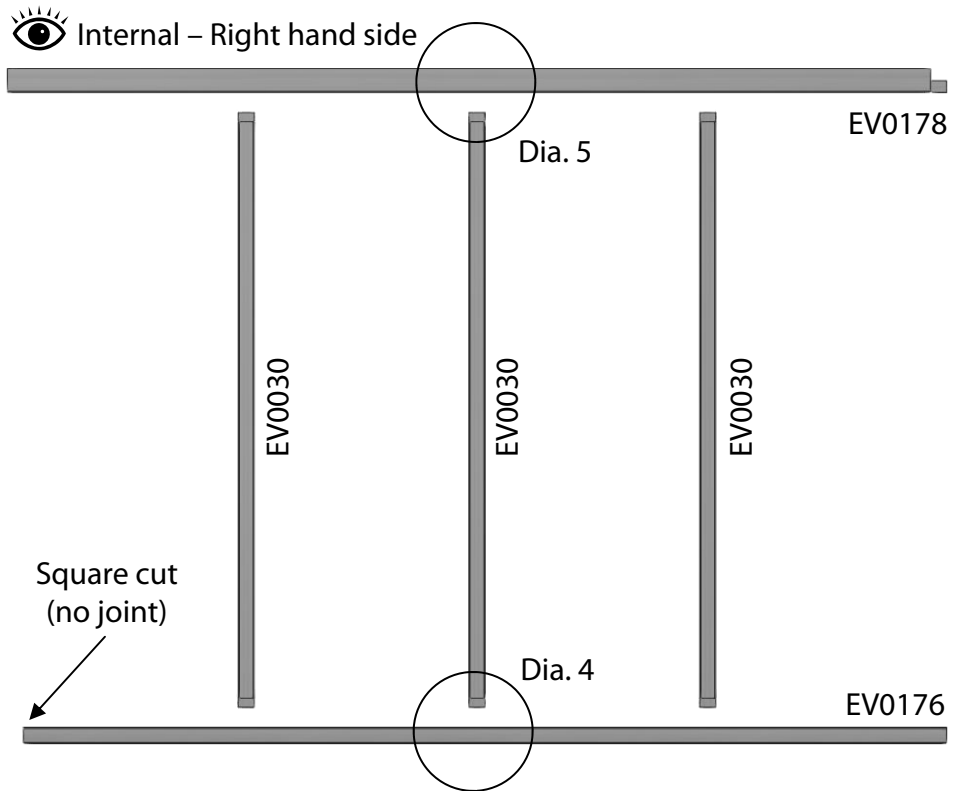
Use the larger plates at an extension point (EV0312M), diagram 3. Don't fix any of the base brackets to the ground until the building is complete.



Extension Side Assembly

Begin by laying out the components for your 2 extension sides flat on the ground as the diagram below shows. Use the table below to help identify the components with the part numbers and sizes. First of all drill pilot holes through the bottom of each mortise on the cill section (diagram 4, page 9). Then slot each glazing bar into the mortise holes. These are designed as a tight fit so you may need help with this or maybe use a solid object to push against. Once firmly in position fix with the 50mm screw. Now slot the eaves rail into position. There is no need to fix this yet as it is done at a later stage.

8ft Extension			
Part Name	Part Number	Size (mm)	Qty
Cill	EV0176	2476	2
Eaves Bar R	EV0178	2564	1
Eaves Bar L	EV0179	2564	1
Glazing Bar	EV0030	1588	6



Extension Side Assembly

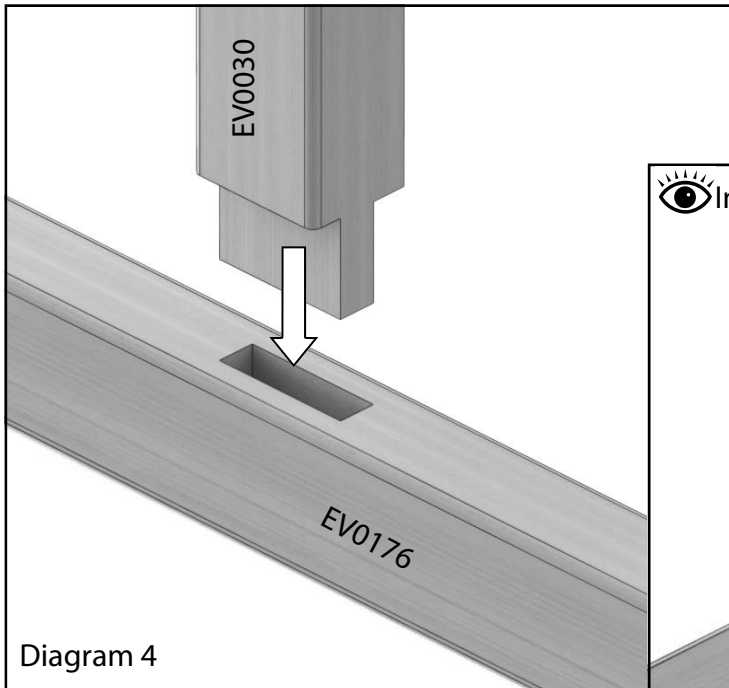


Diagram 4

Make sure the side bars are pushed all the way in, you may find they need a light tap with a wooden mallet or something similar.

(If you are going to glue your joints this is the first point you would do this.)

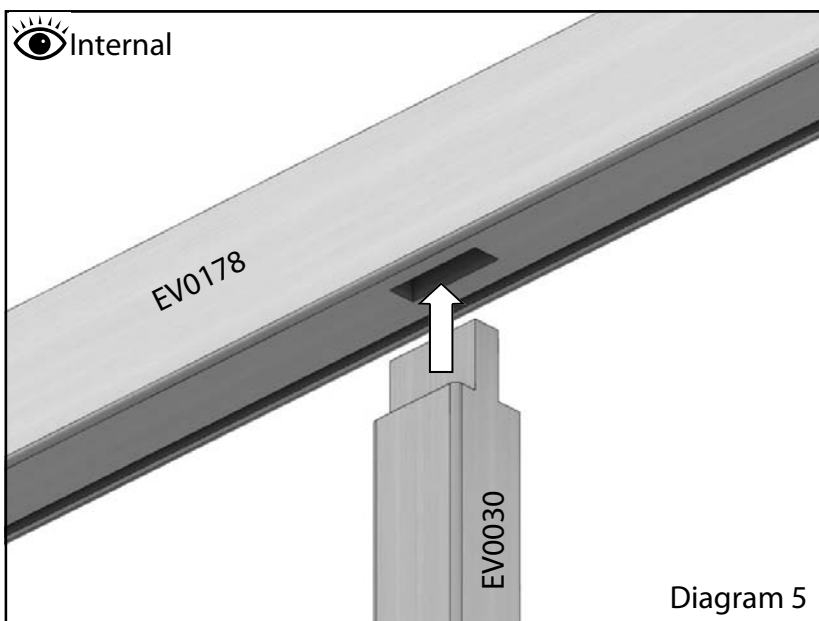
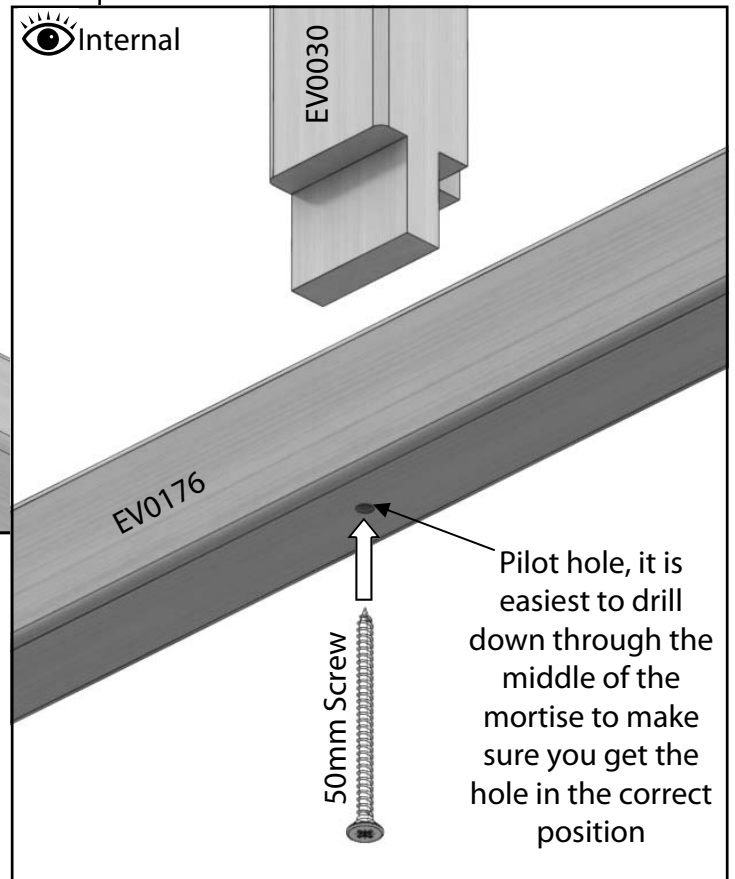
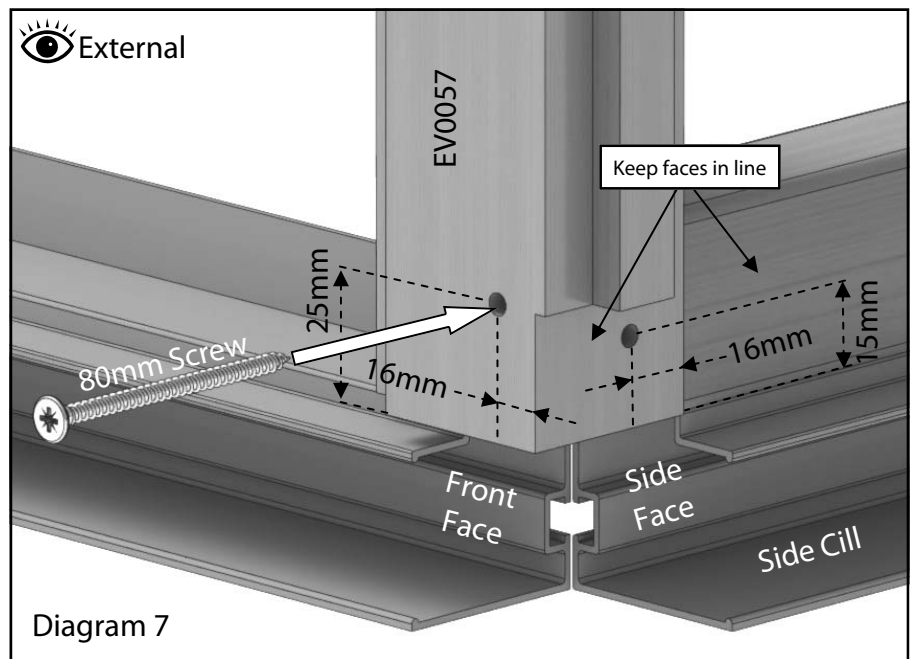
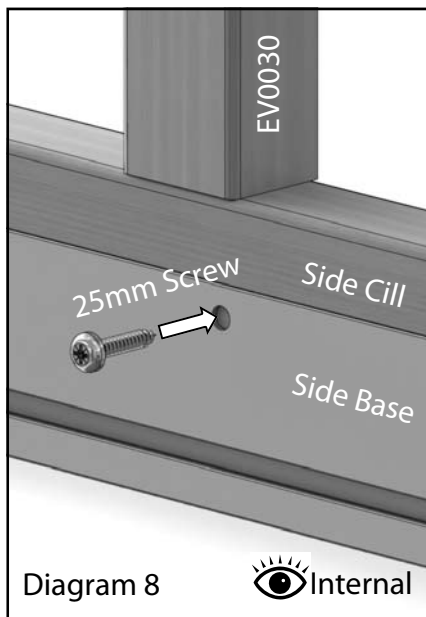
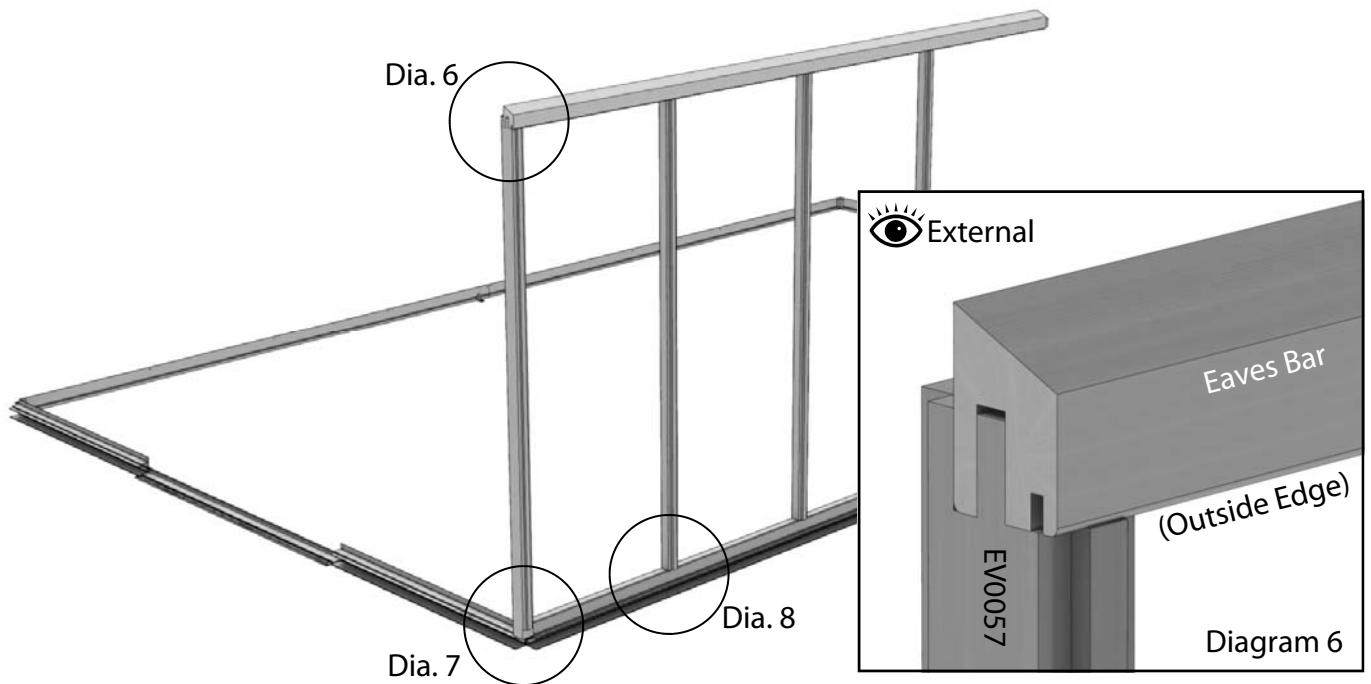


Diagram 5

Front Assembly

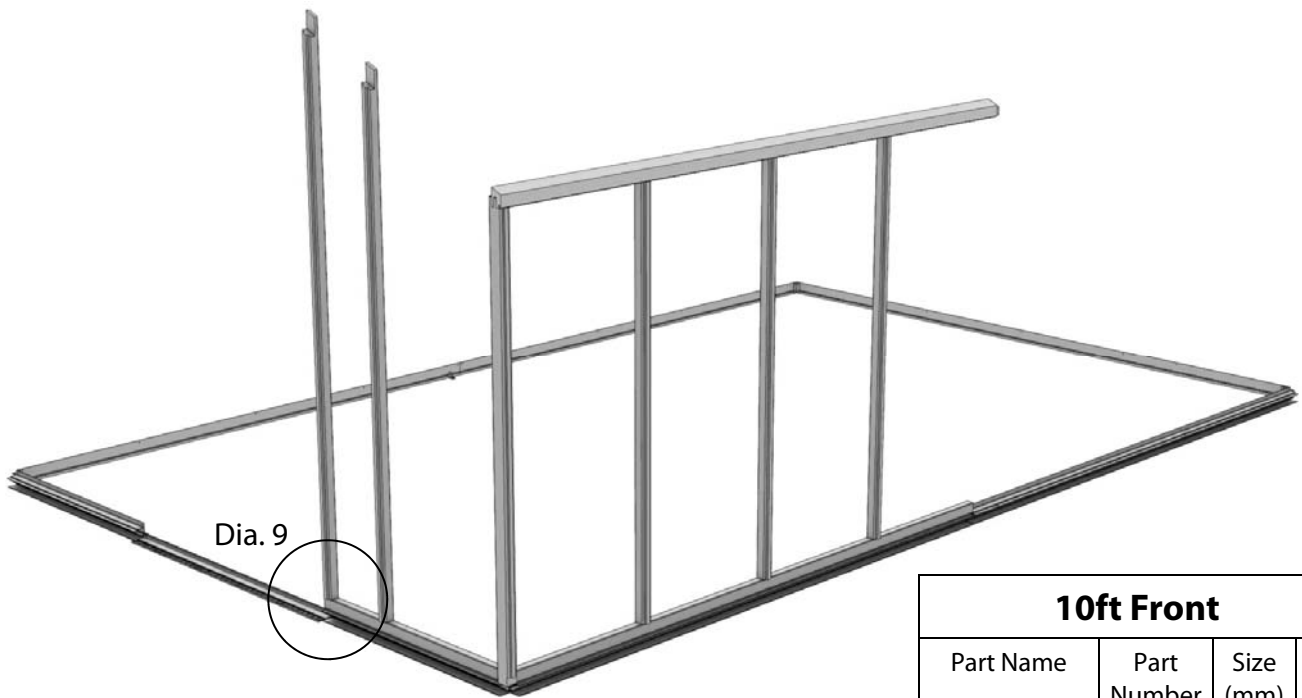


To install this section you will need a helper to hold the side in position or strap it to a set of steps. Drill two pilot holes in the bottom of the side corner bar as in diagram 6. The height of these holes should be about 15mm on the side face and 25mm on the rear face measured from the end of the bar, try to keep these at different heights to each other so the screws don't intersect each other.

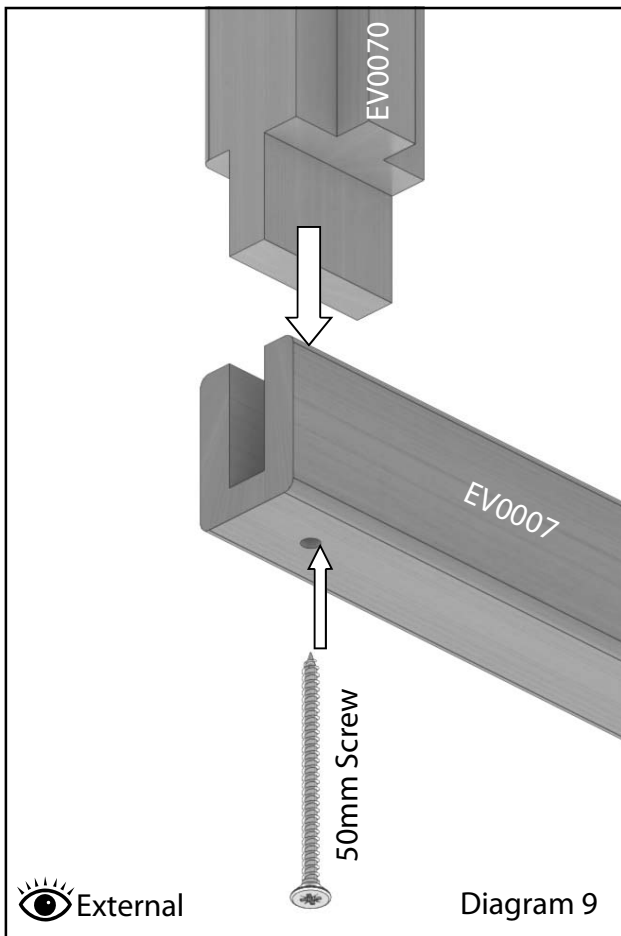
Now offer the side corner to the eaves bar slotting the tennon into the mortise shown in diagram 5, do not fix this joint as it will be done at a later stage. Screw the bottom of the corner glazing bar to the end of the cill (80mm screw) making sure the rebate for the glass lines up with the front face of the side cill (diagram 6).

- 5 Once the side corner bar is in place this will give you the correct position on the aluminium base and you can fix the base to the side cill with 25mm screws (diagram 7).

Front Assembly



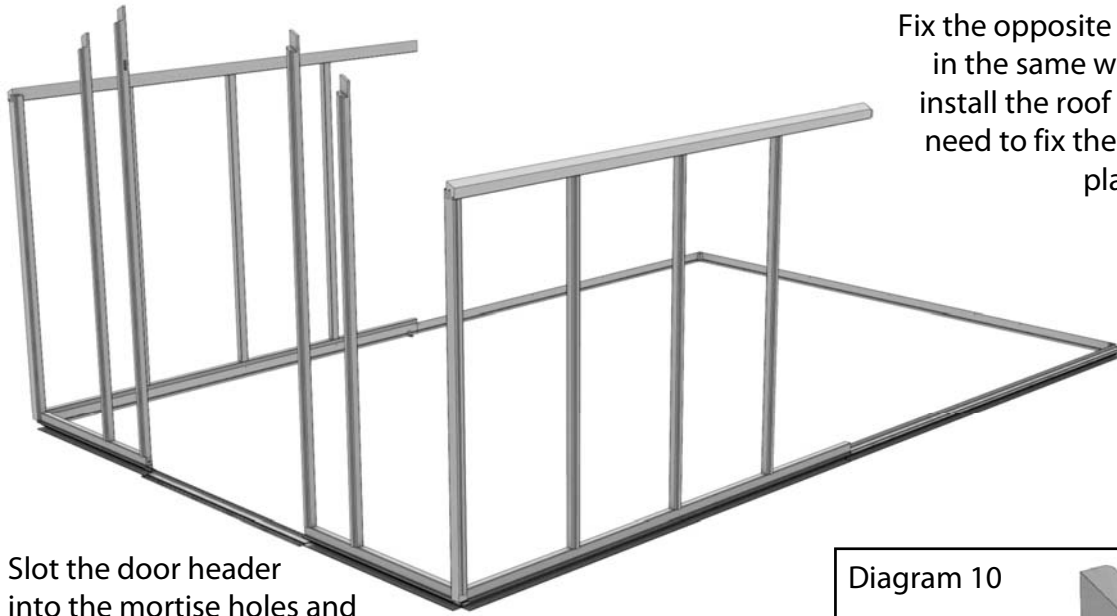
10ft Front			
Part Name	Part Number	Size (mm)	Qty
Front Cill	EV0007	975	2
Roof Corner R	EV0042	1794	1
Roof Corner L	EV0043	1794	1
Side Corner R	EV0056	1650	1
Side Corner L	EV0057	1650	1
Gable Bar 6 R	EV0060	1994	1
Gable Bar 6 L	EV0061	1994	1
Gable Bar 10 R	EV0070	2136	1
Gable Bar 10 L	EV0071	2136	1
Above Door	EV0078	486	1
Door Header	EV0109	1276	1



With the parts flat on the ground drill the pilot holes through each mortise in the cills and as before through the lap joint on the gable bars. Also drill pilot holes through the mortise holes on the gable bars ready for the door header. Fix the front cill to the gable glazing bar using a 50mm screw.

Slot the tennon of the front cill into the side corner bar as before (diagram 9). Fix this with a 80mm screw. Also screw this to the base with 25mm screws. Keep the gable glazing bar supported while you get the next parts ready.

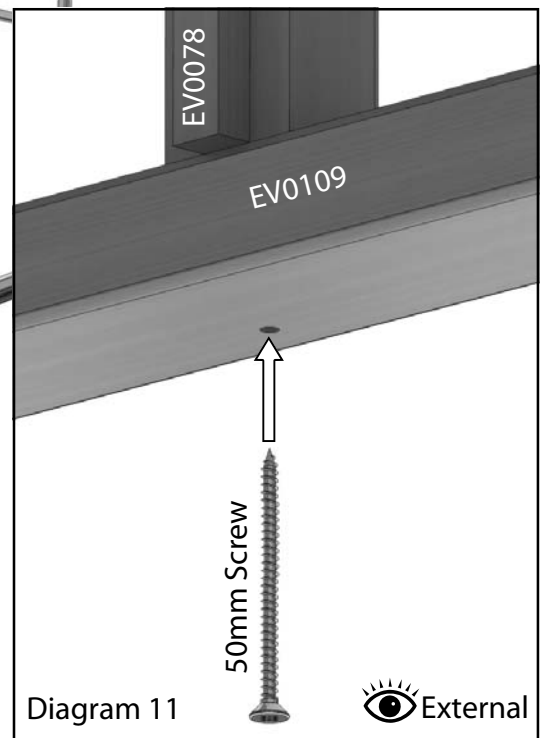
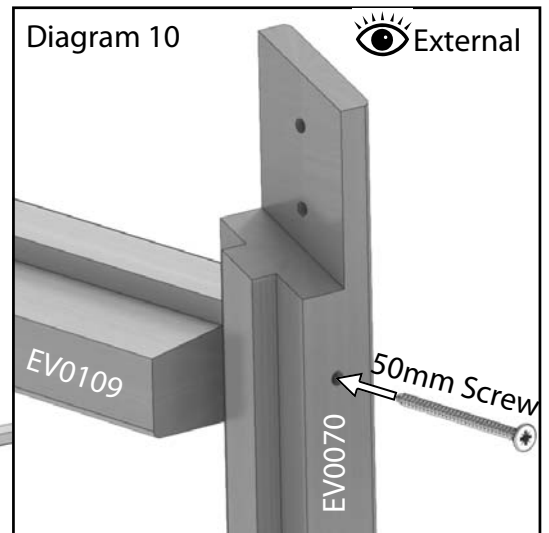
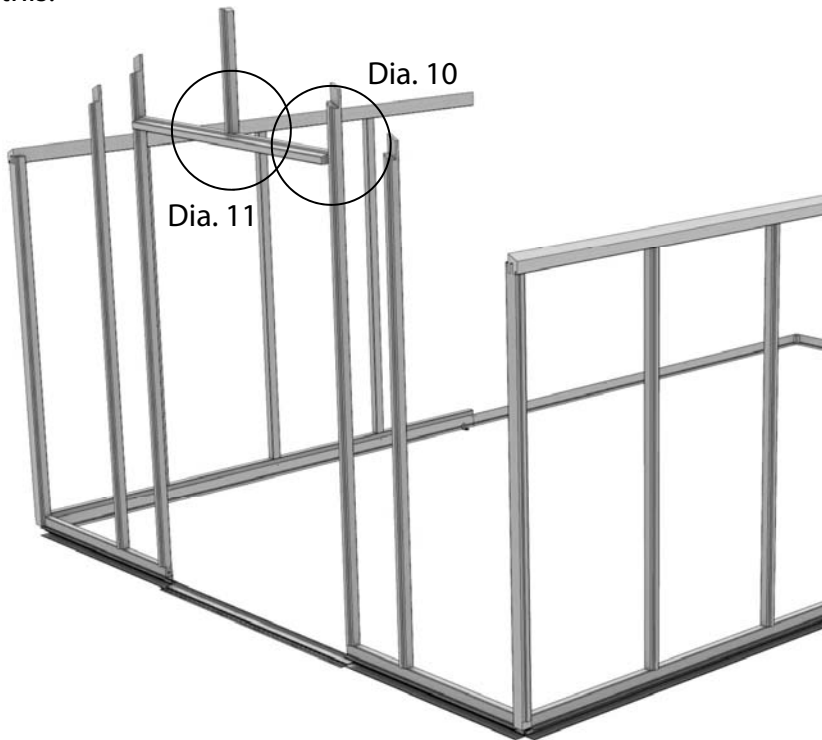
Front Assembly



Fix the opposite gable bar and cill in the same way. Before you install the roof corner bars you need to fix the door header in place.

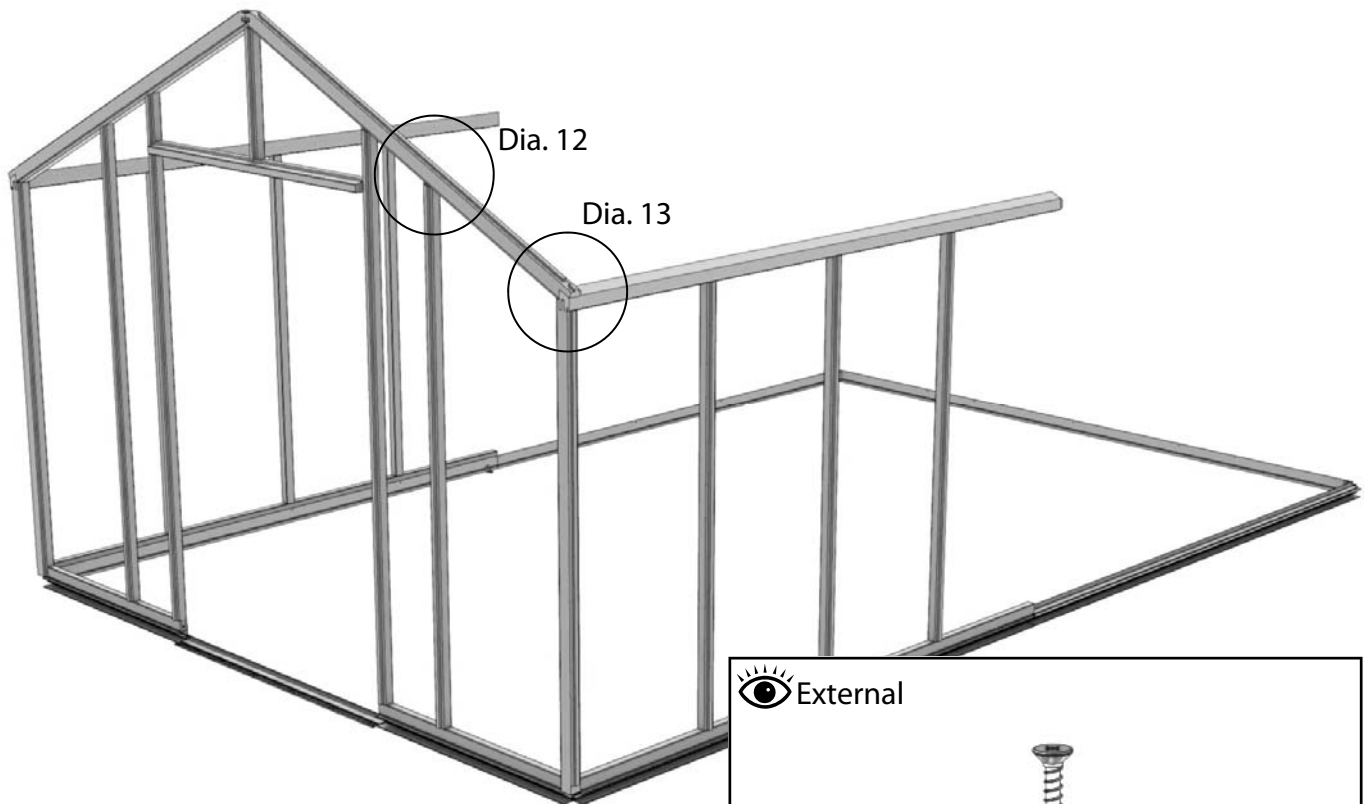
Slot the door header into the mortise holes and fix with a 50mm screw through each end (diagram 10).

Make sure the gable bars are well supported while doing this.

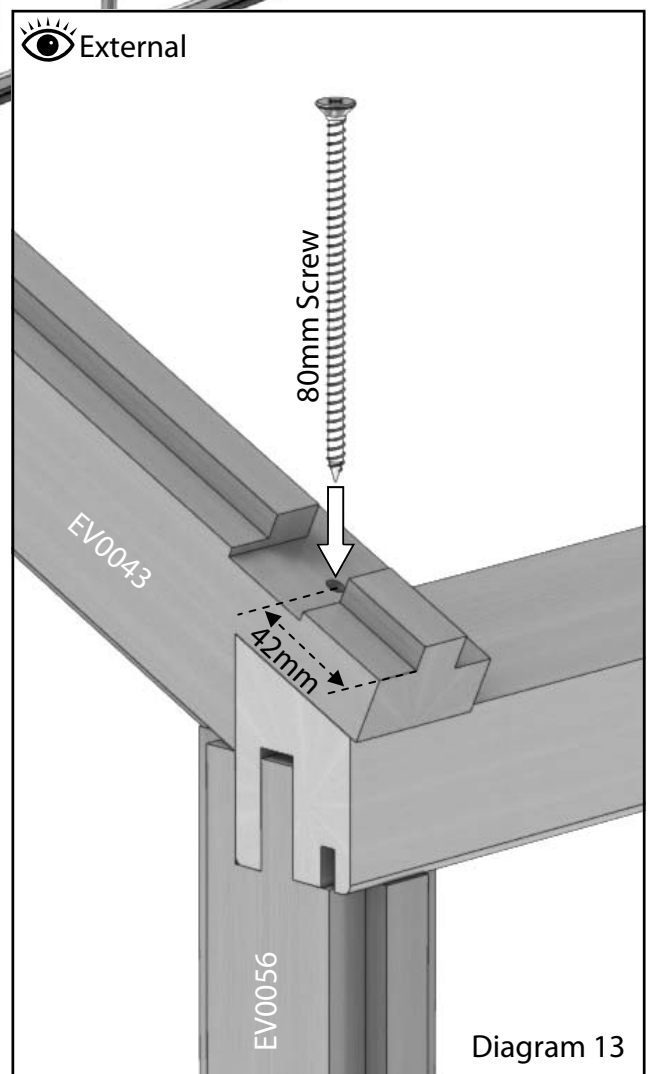
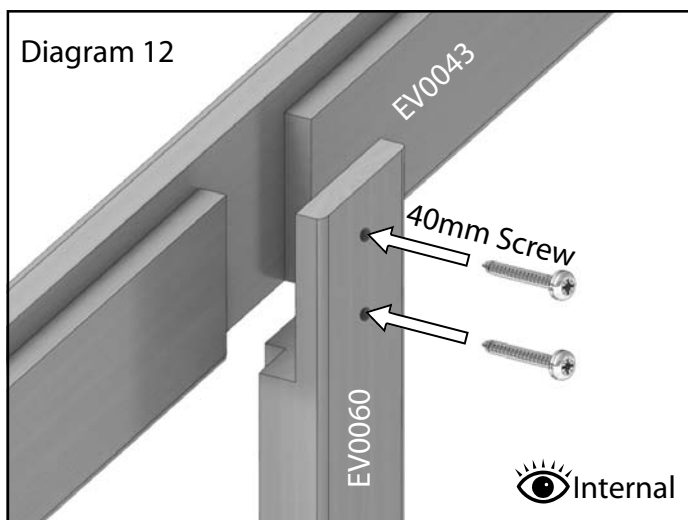


Drill through the bottom of the tennon in the door header (EV0109) then fix the glazing bar above the door with a 50mm screw.

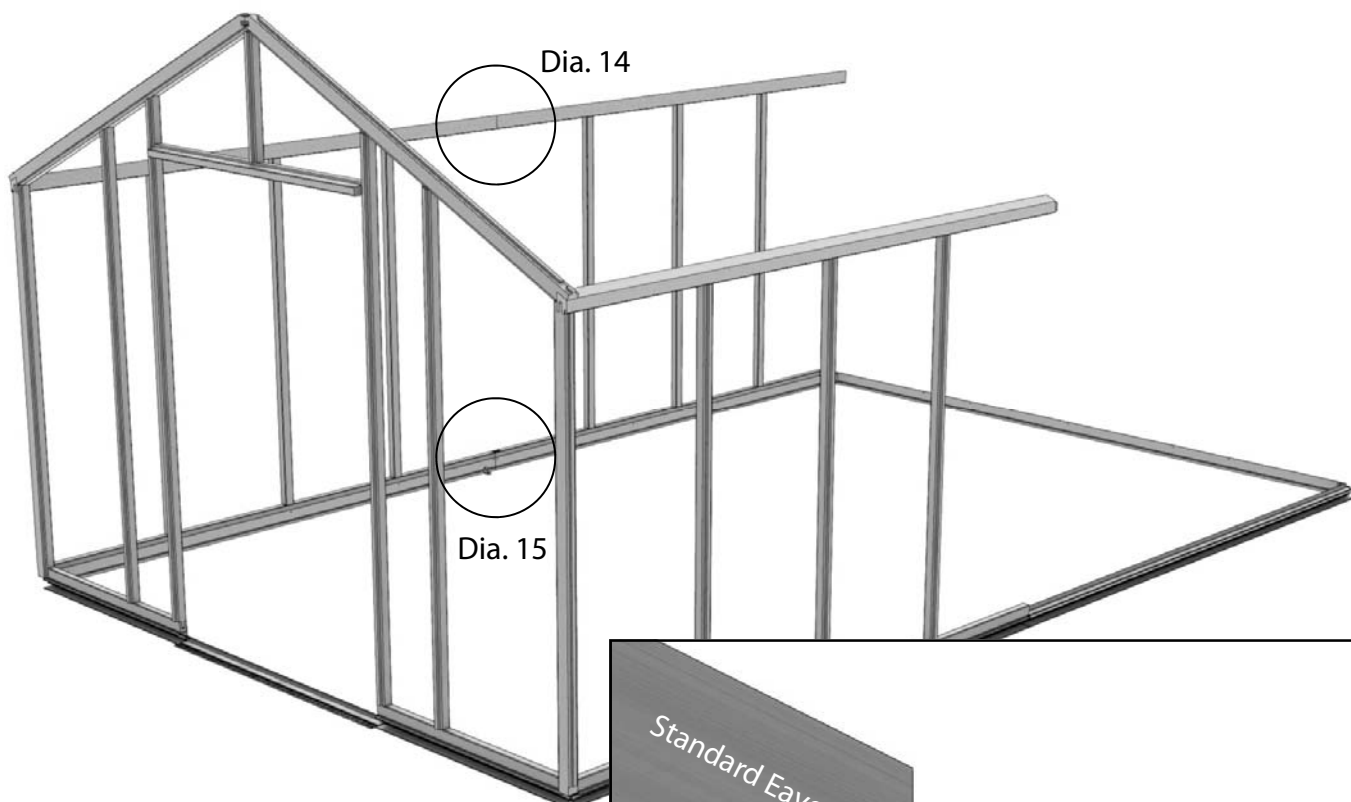
Front Assembly



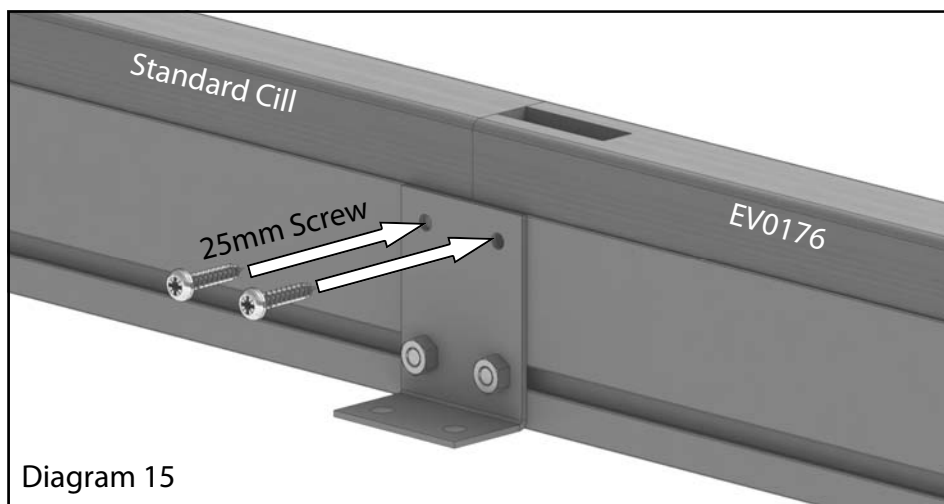
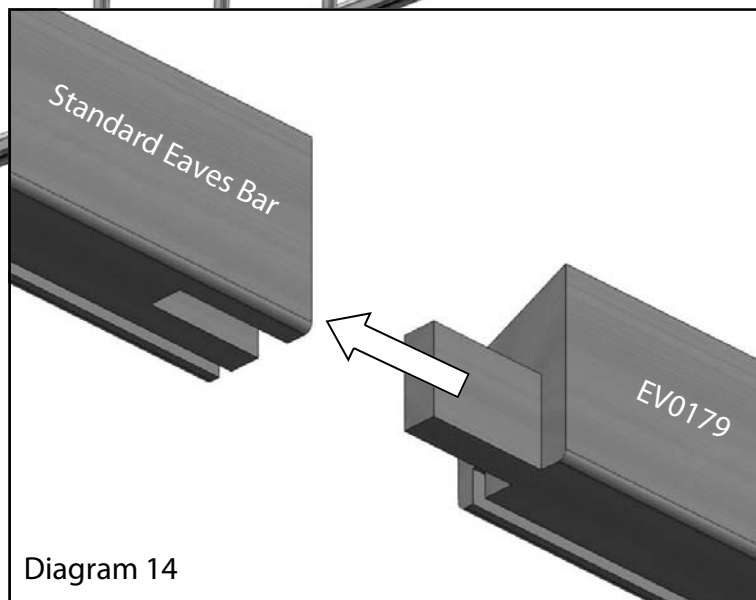
Now fit the roof corner bars to the front end. As before, fix the lap joint at the top of the gable bar first with 40mm screws (diagram 17) then secure the bottom end to the eaves bar with a 80mm screws (diagram 18).



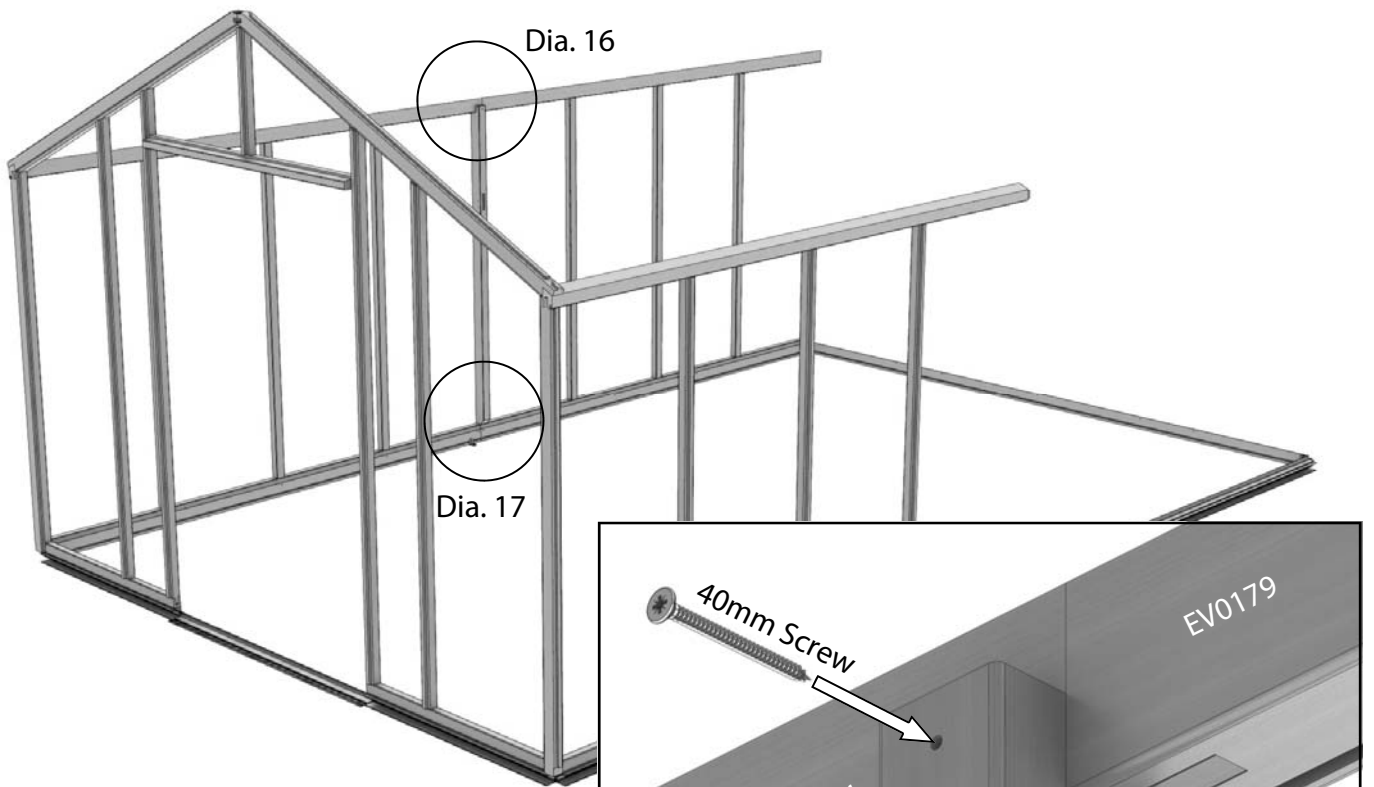
Extension Installation



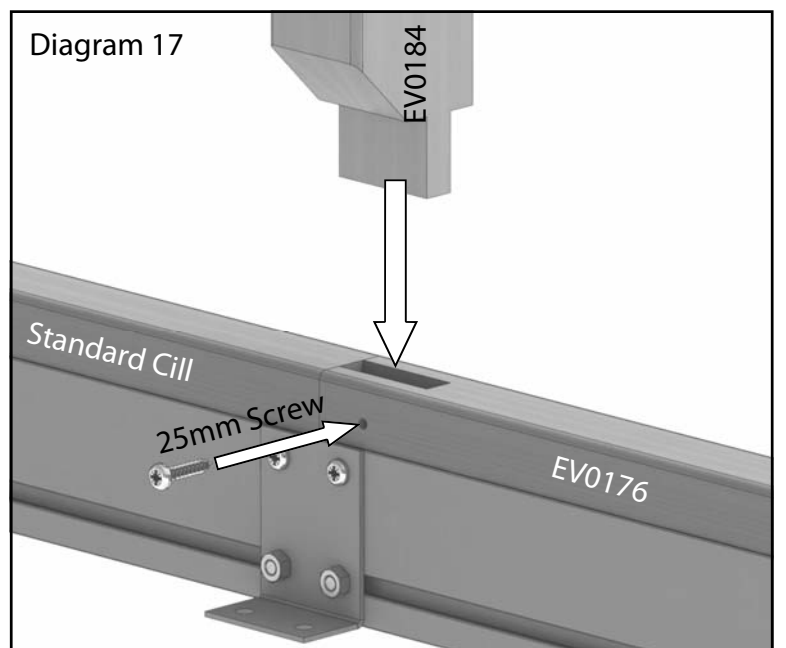
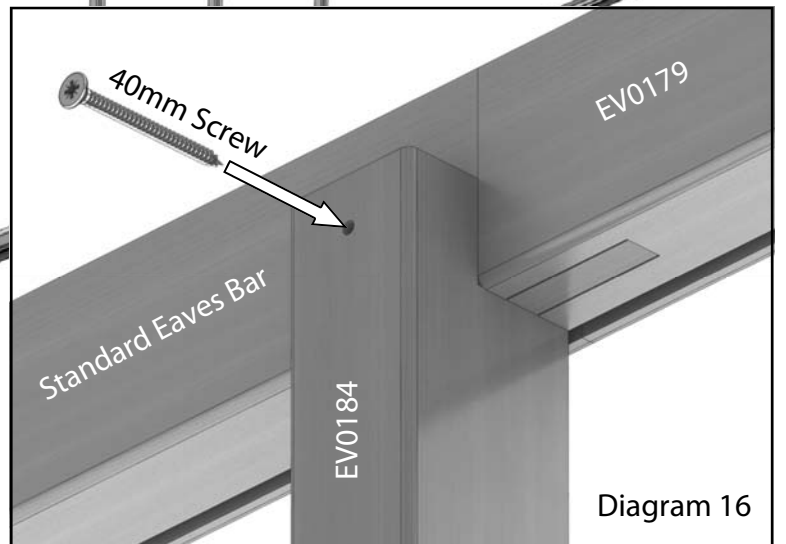
Take the first side extension section to the aluminium base and slide it up to the first side section until the tenon slots into the mortise joint. With help or the aid of a prop screw the cill to the base using 25mm screws.



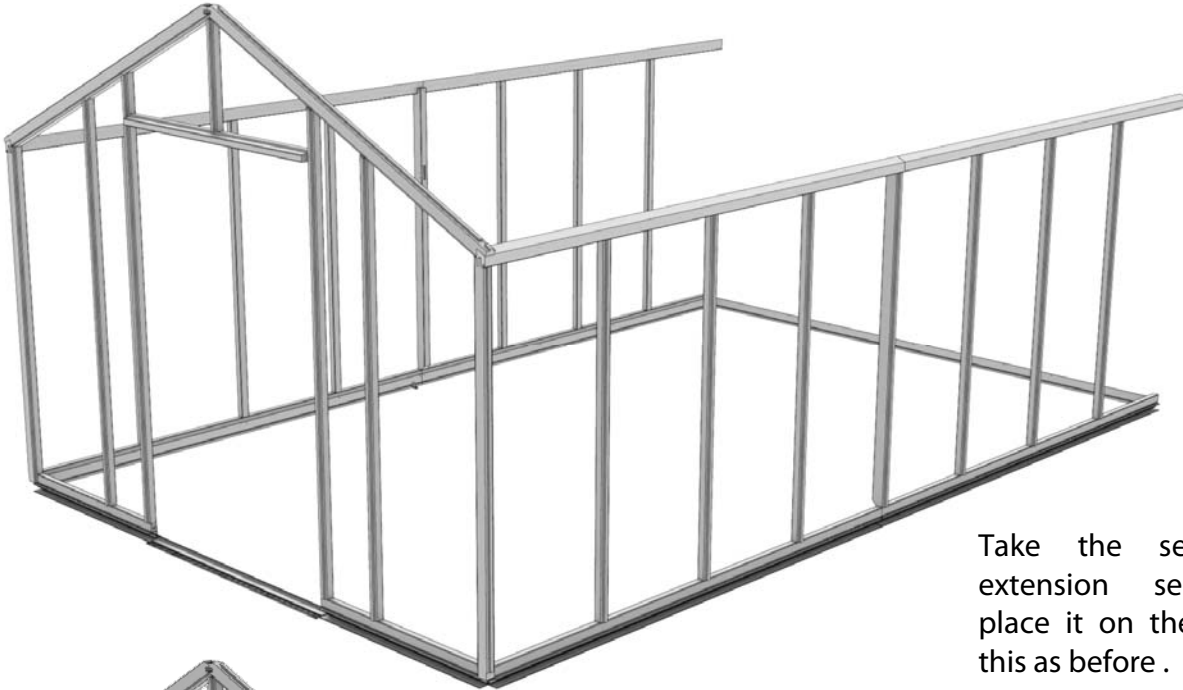
Extension Installation



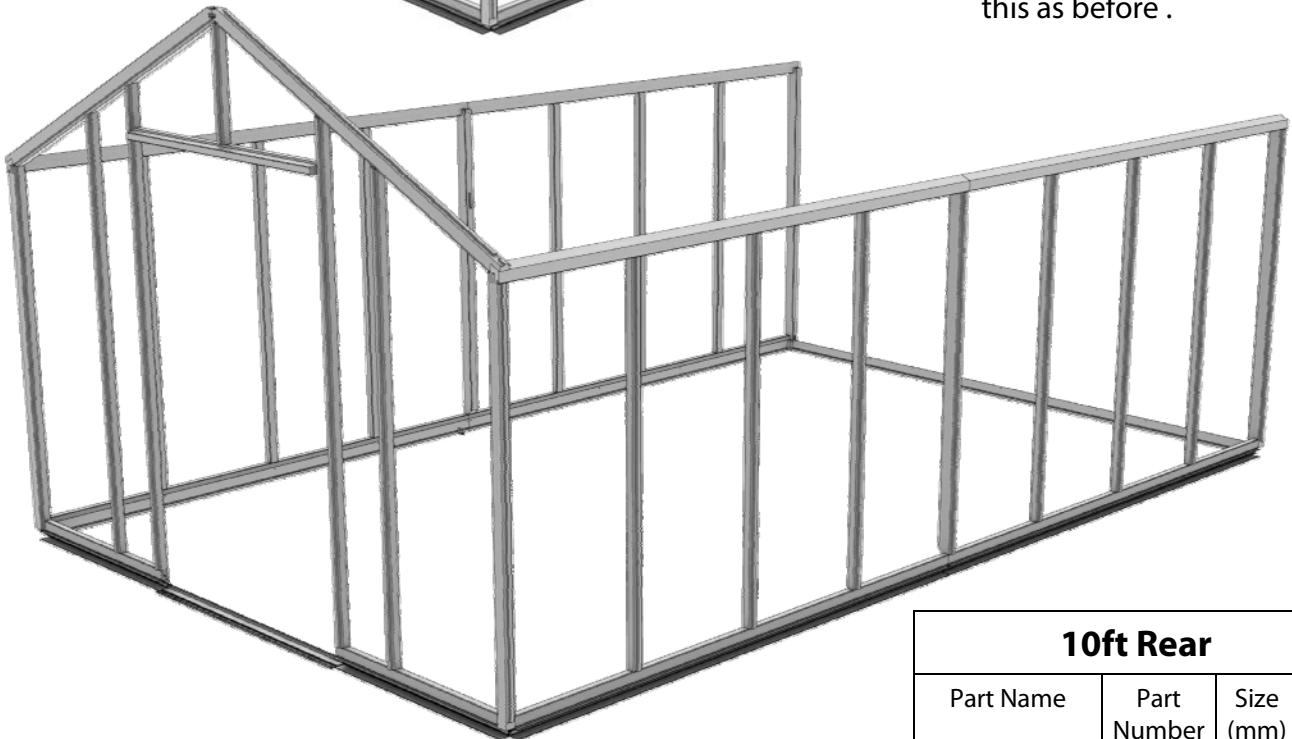
Next fit the side extension bar, first slot the tennon on the end of the bar into the mortise in the cill. Slot the top into position, lining the edge of the bar up with the joint of the two eaves bars. Secure this with a 50mm screw and the secure the bottom with a 40mm screw., remember to drill a pilot hole first.



Rear Assembly



Take the second side extension section and place it on the base. Fix this as before .



Now fit the final 2 side corner bars as before. See diagram 7 for the position of the holes. Don't fix the top of the bar until the roof corner bars have been fitted.

10ft Rear			
Part Name	Part Number	Size (mm)	Qty
Cill	EV0012	3106	1
Roof Corner R	EV0042	1794	1
Roof Corner L	EV0043	1794	1
Side Corner R	EV0056	1650	1
Side Corner L	EV0057	1650	1
Gable Bar 6 R	EV0060	1994	1
Gable Bar 6 L	EV0061	1994	1
Gable Bar 10 R	EV0062	2136	1
Gable Bar 10 L	EV0063	2136	1
Mid Gable Bar	EV0075	2365	1

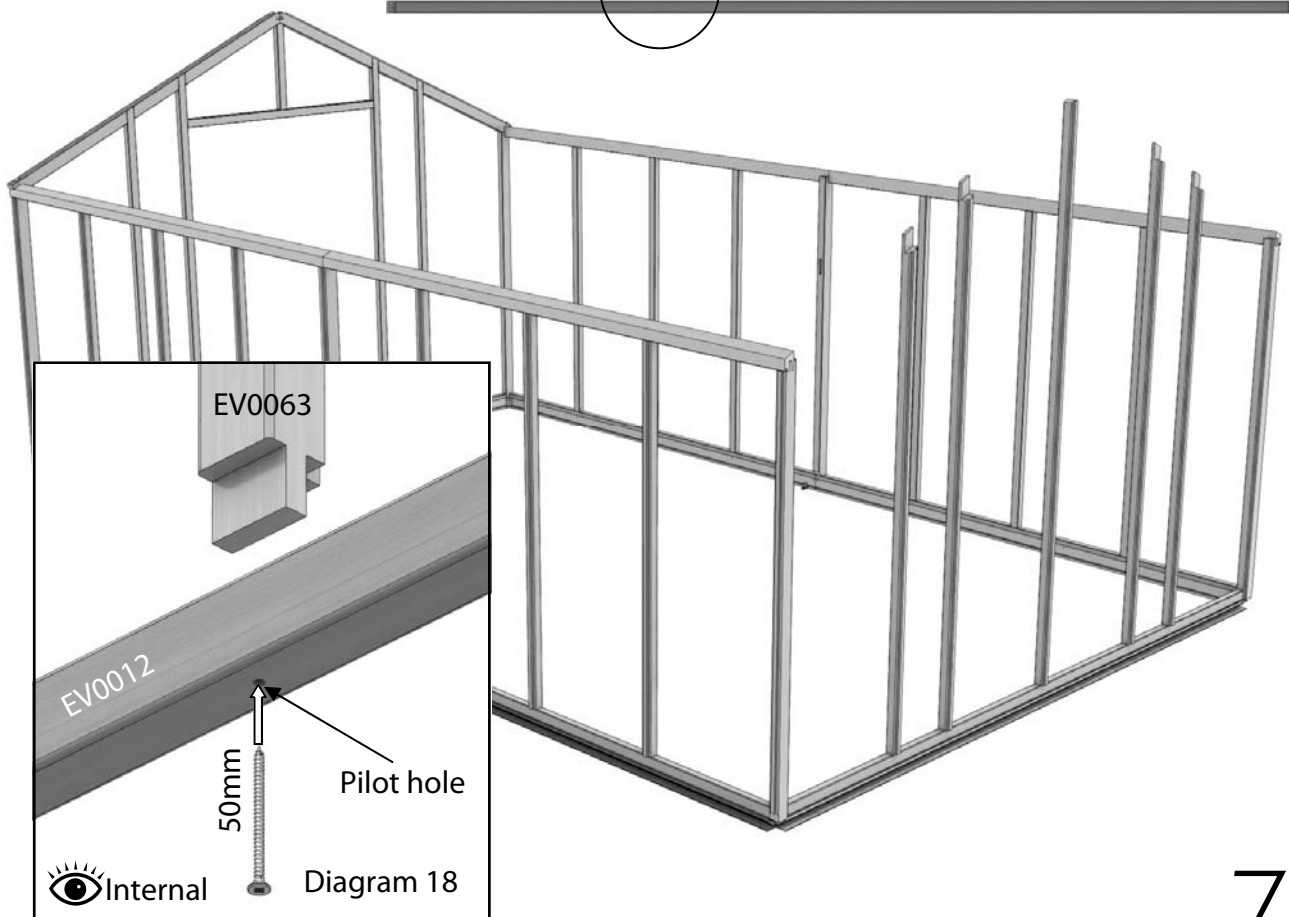
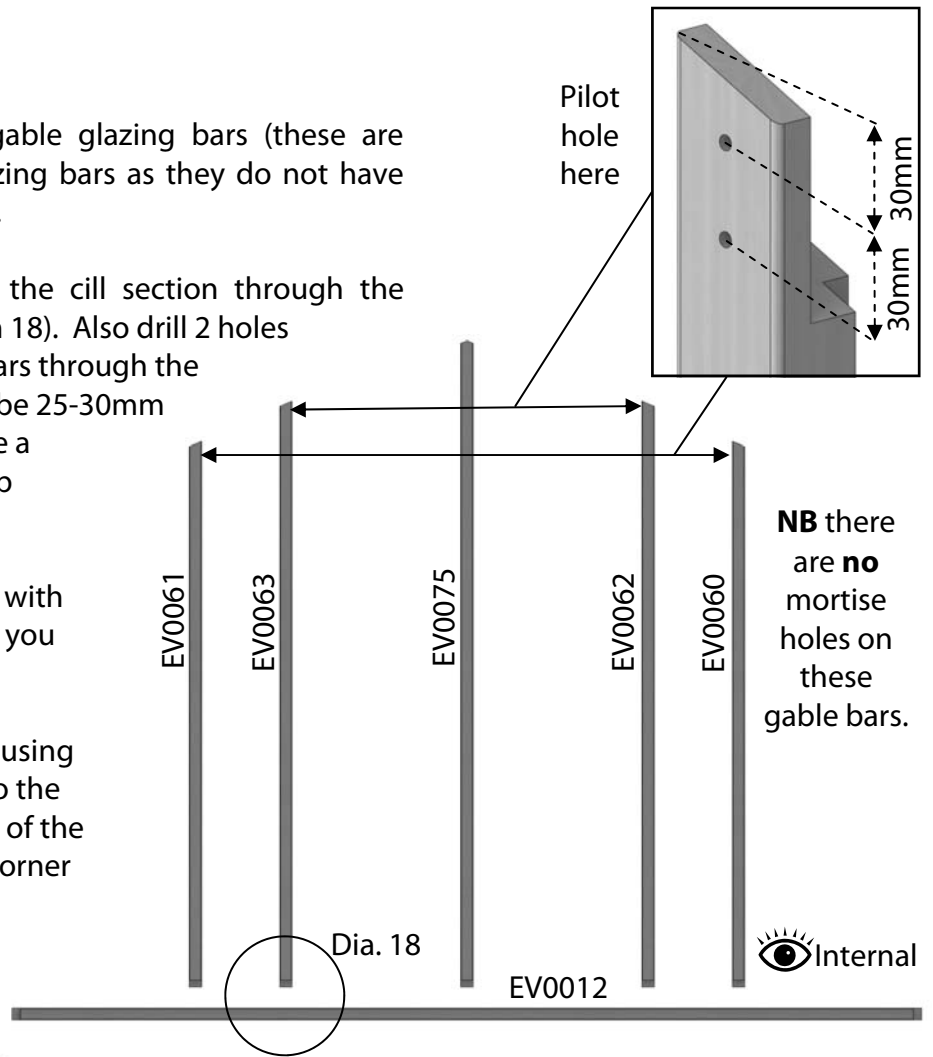
Rear Assembly

Locate the rear cill and rear gable glazing bars (these are different to the front gable glazing bars as they do not have the mortise for the door header).

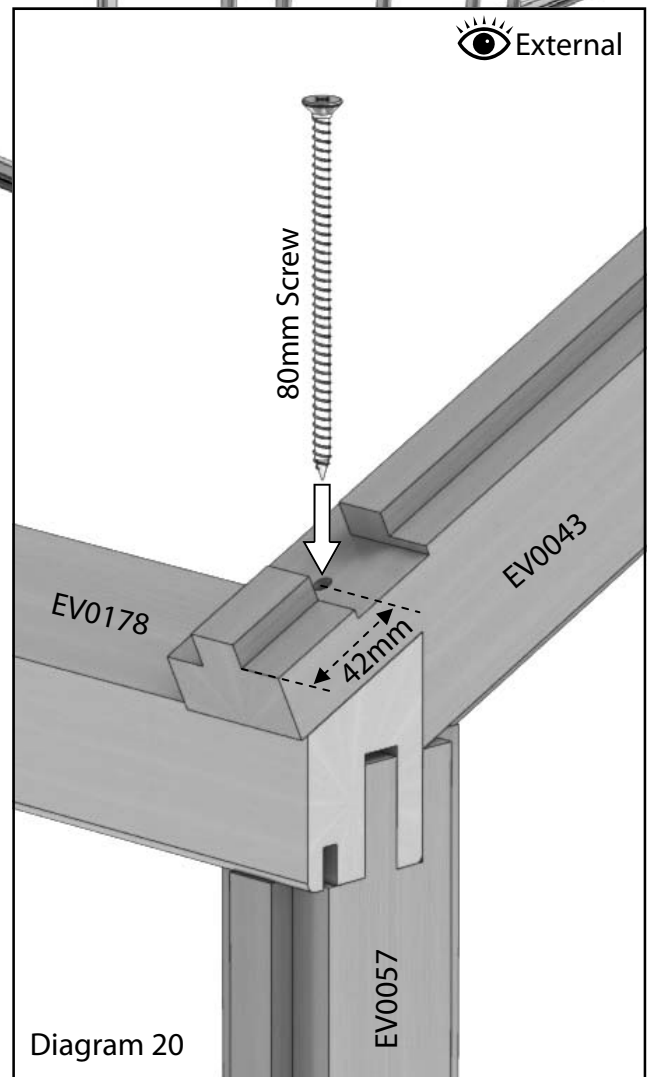
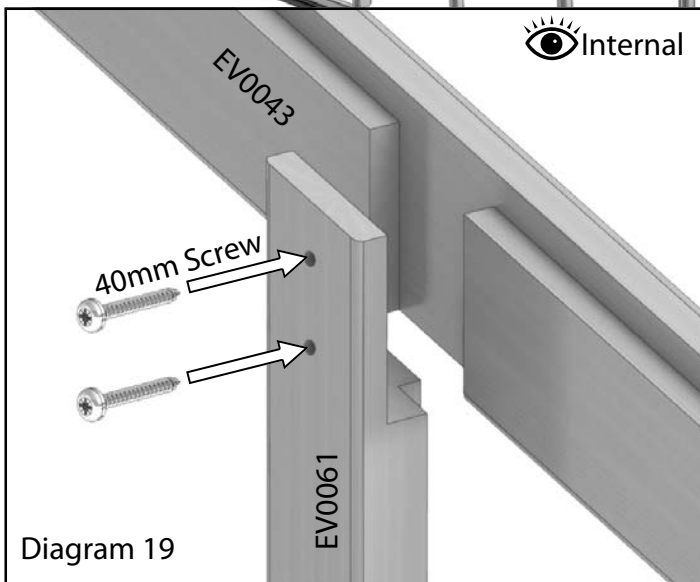
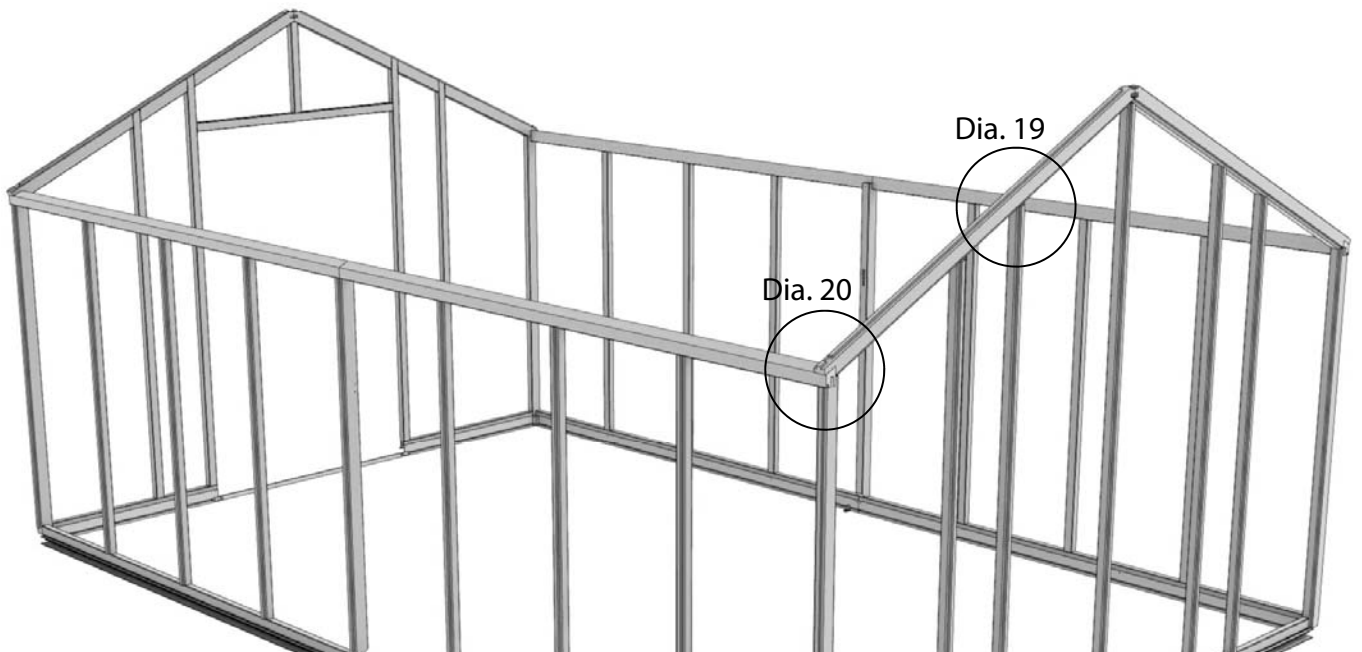
Start by drilling pilot holes in the cill section through the mortise holes as before (diagram 18). Also drill 2 holes in the top of the gable glazing bars through the lap joint location. These should be 25-30mm apart and the first hole should be a similar distance from the very top edge (see right)

Assemble the gable glazing bars with the rear cill flat on the ground as you did with the side sections.

Again with the aid of a helper or using a prop position the rear end onto the aluminium base. Locate the end of the cill into the mortise on the side corner bar (diagram 7, page 10).



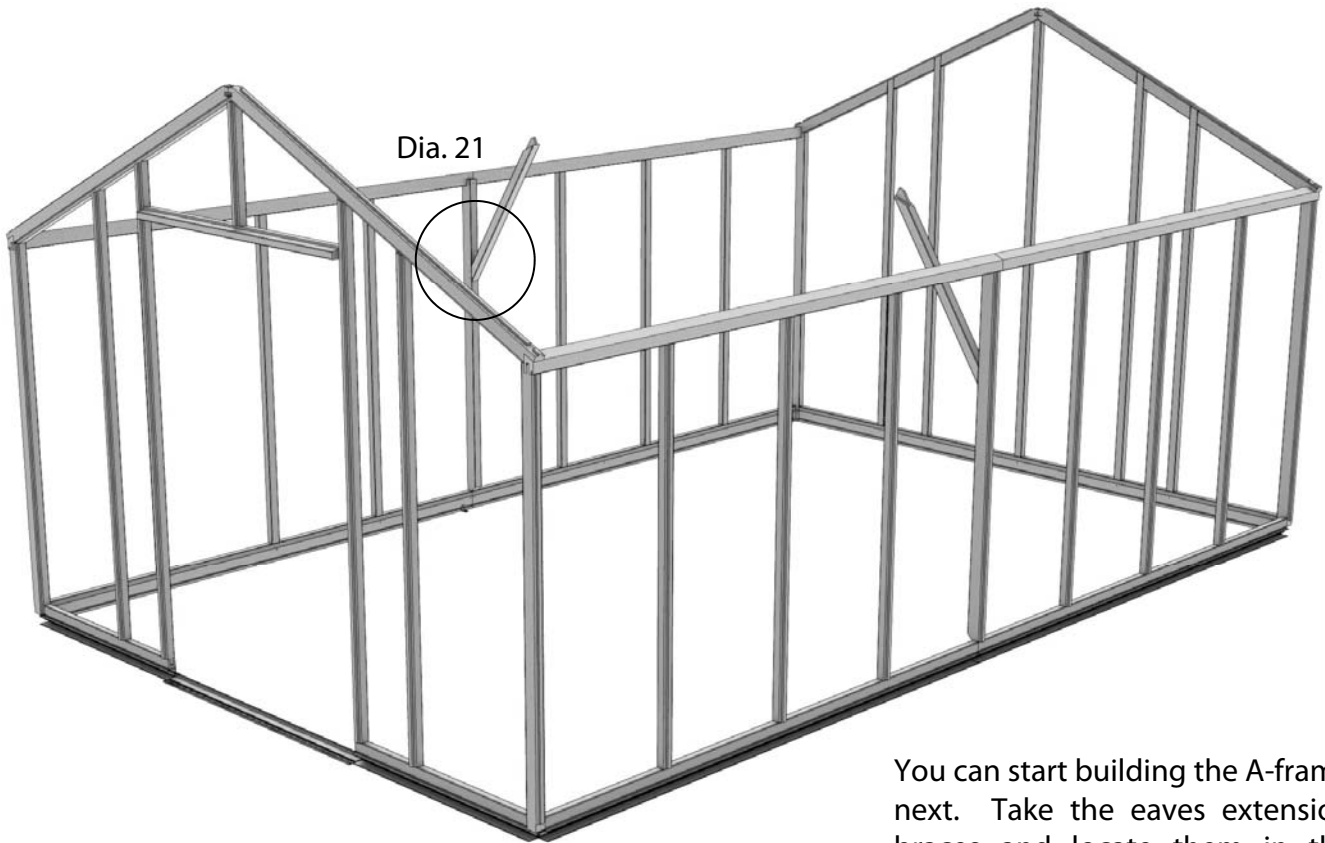
Rear Assembly



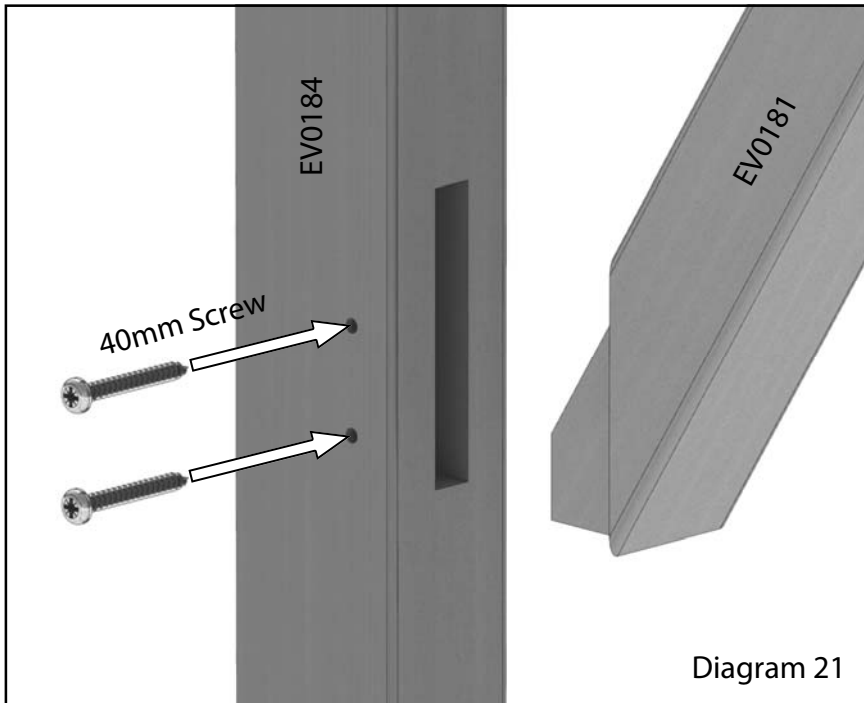
Now fit the roof corner bars to the rear end. Secure these to the gable glazing bars, diagram 19.

Now fix the roof corner bar and side corner bar through the eaves bar with an 80mm screw. You can then screw the base to this section with a 25mm screw.

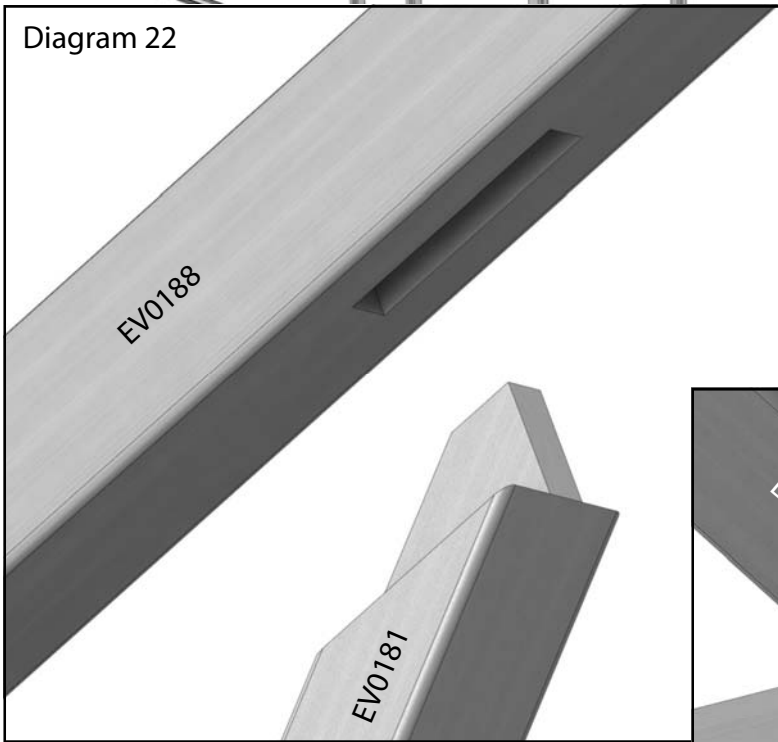
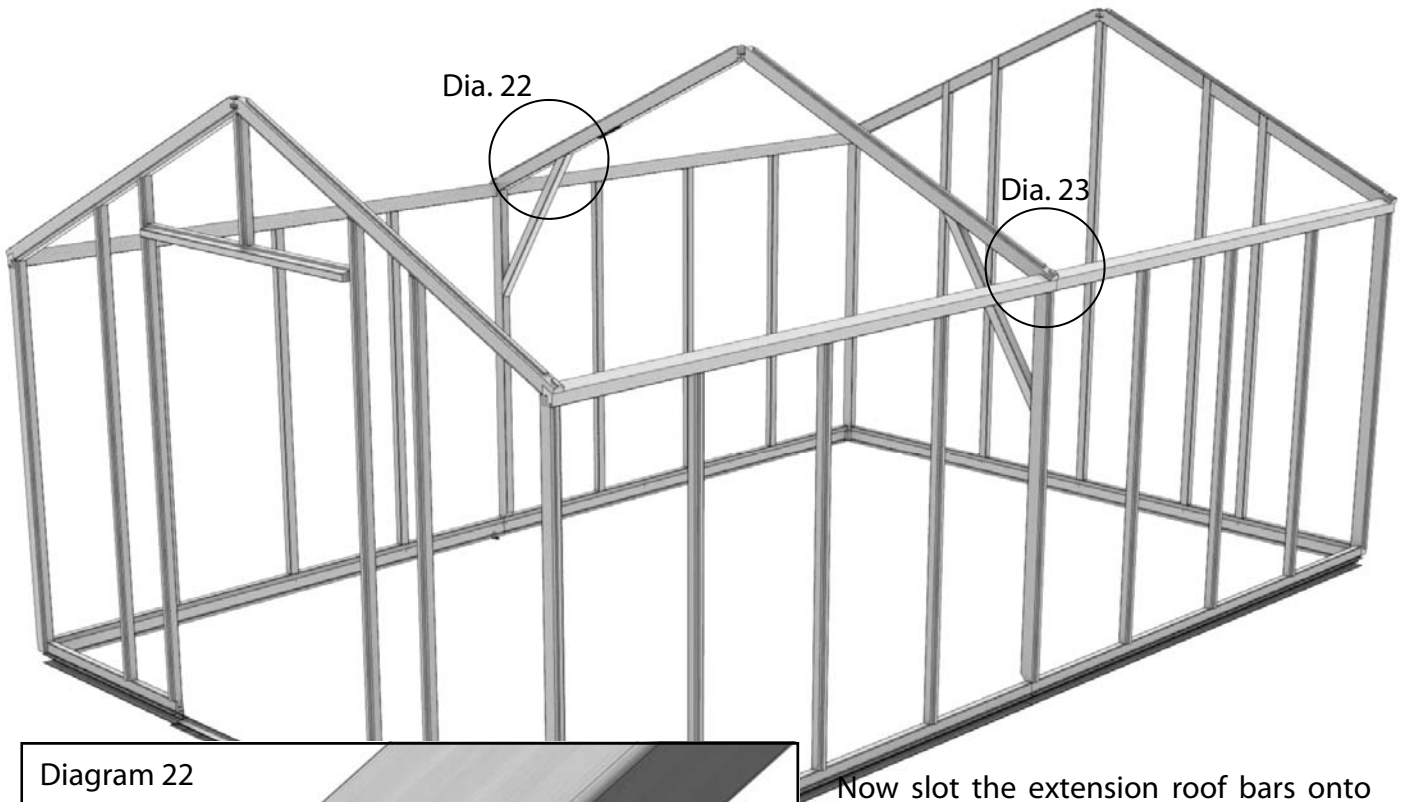
A-frame Assembly



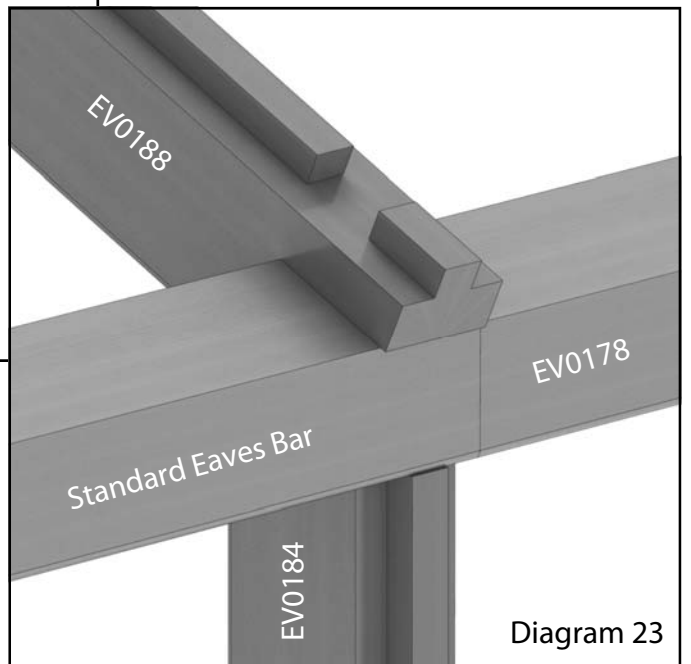
You can start building the A-frame next. Take the eaves extension braces and locate them in the mortise slots in the extension side bars. Pilot hole and fix these with 40mm screws. Make sure the flat face that meets the side bar is seated correctly before fixing.



A-frame Assembly

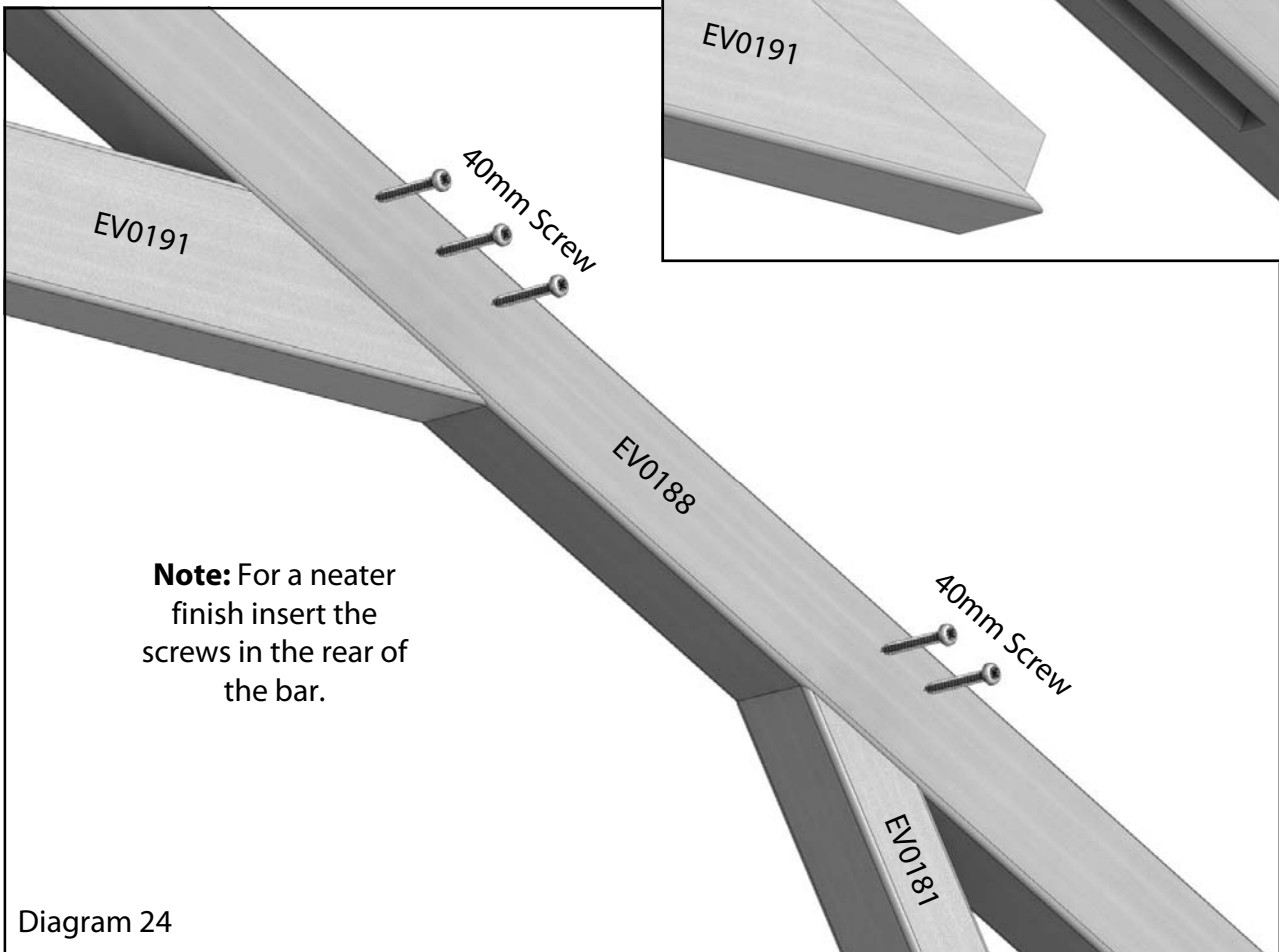
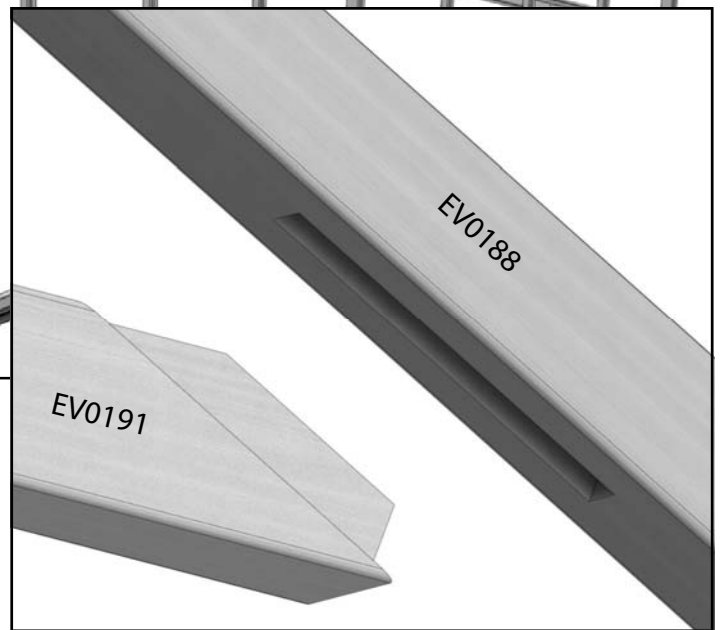
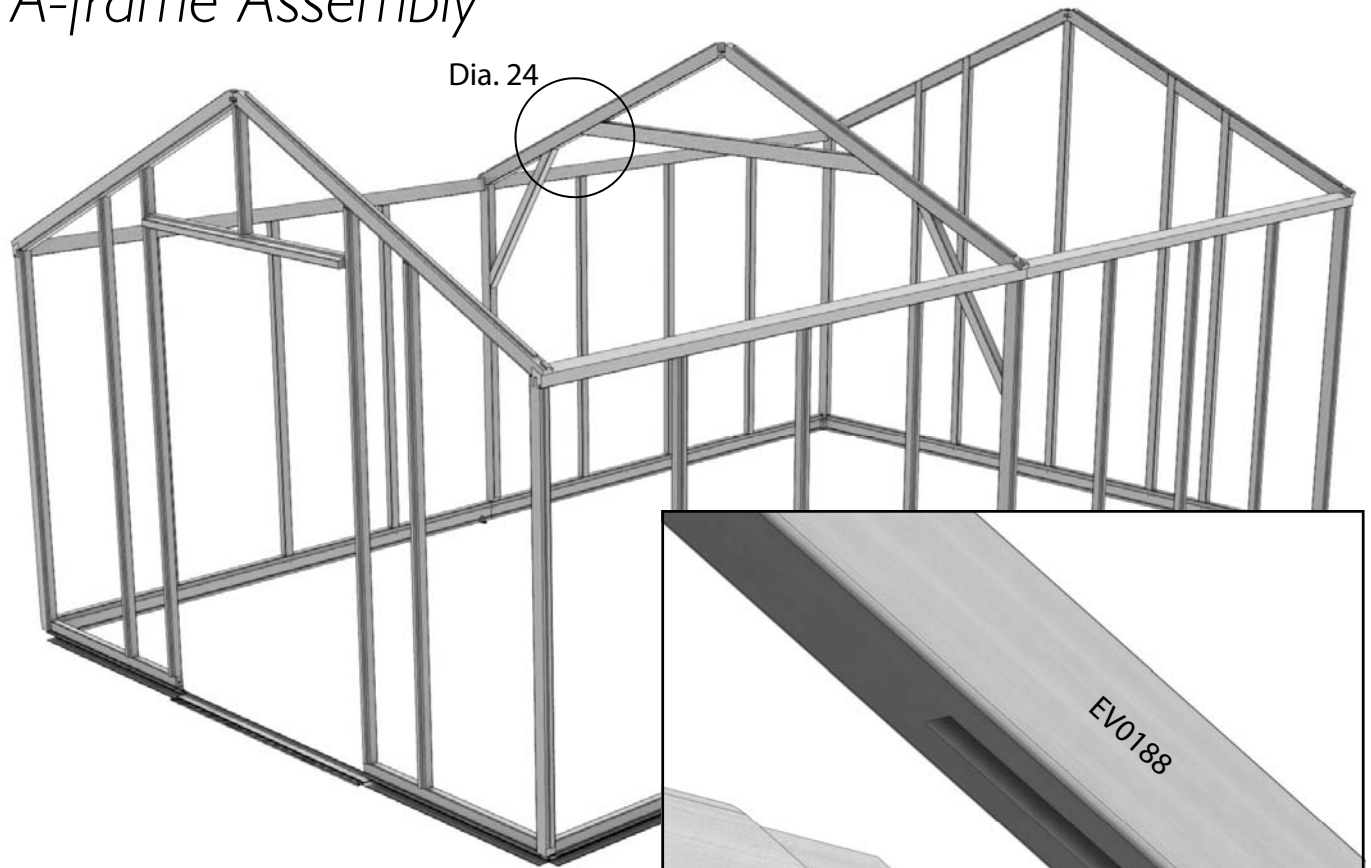


Now slot the extension roof bars onto the eaves bars and eaves braces, again locating the mortise and tennon joints (diagram 22). Before fixing these it would be a good idea to fit the A-frame brace (diagram 24). Once these are all in place check they are all inserted correctly and fix them with 40mm screws.



Don't fix the roof bars to the eaves at this stage as it is better to do this with the rest of the roof bars.

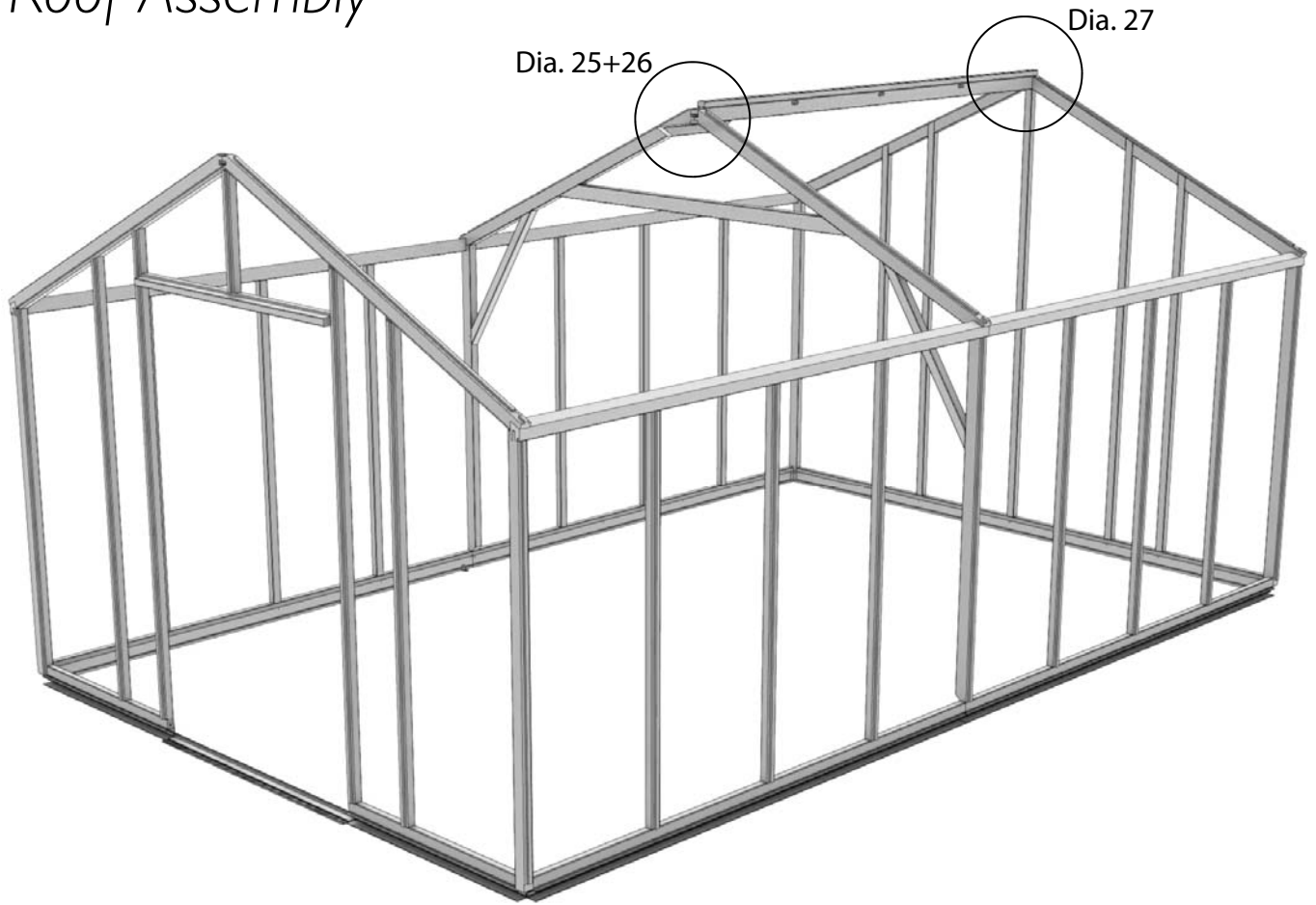
A-frame Assembly



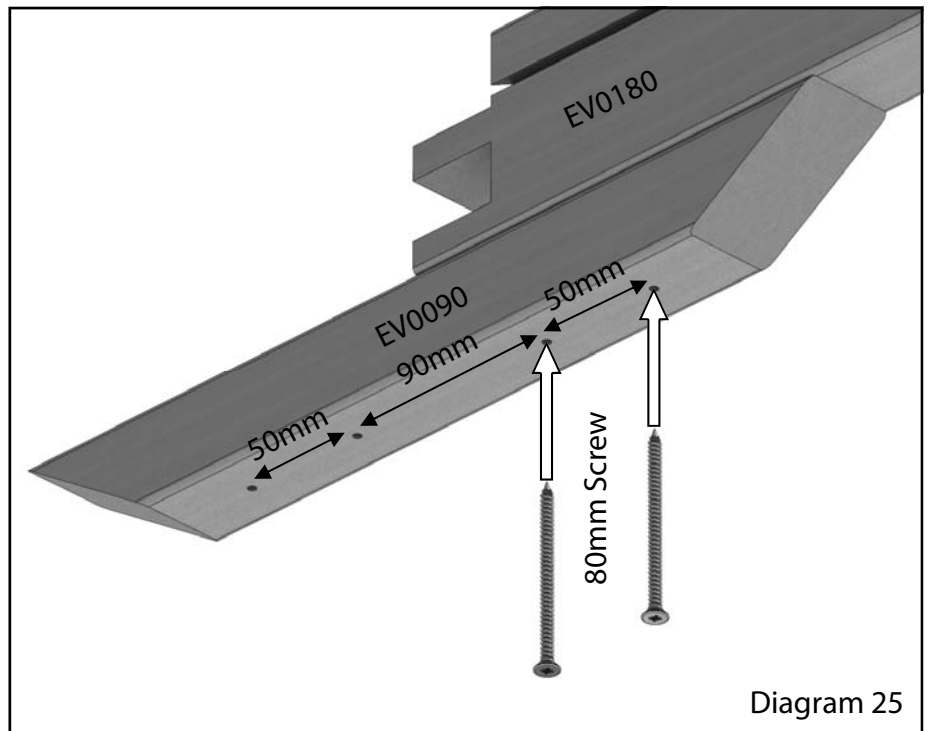
Note: For a neater finish insert the screws in the rear of the bar.

Diagram 24

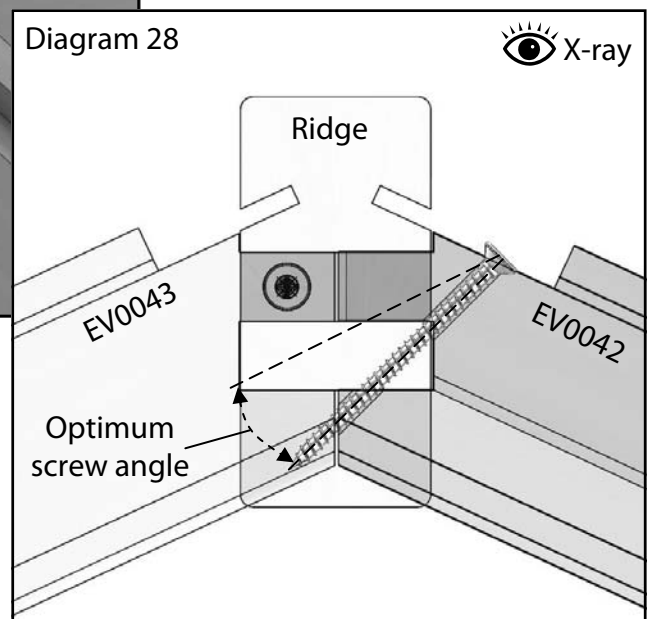
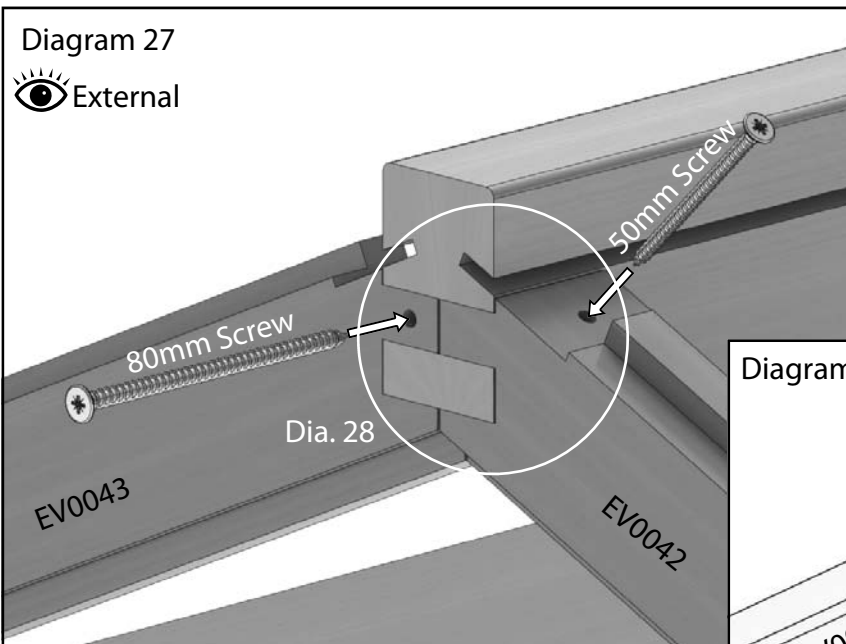
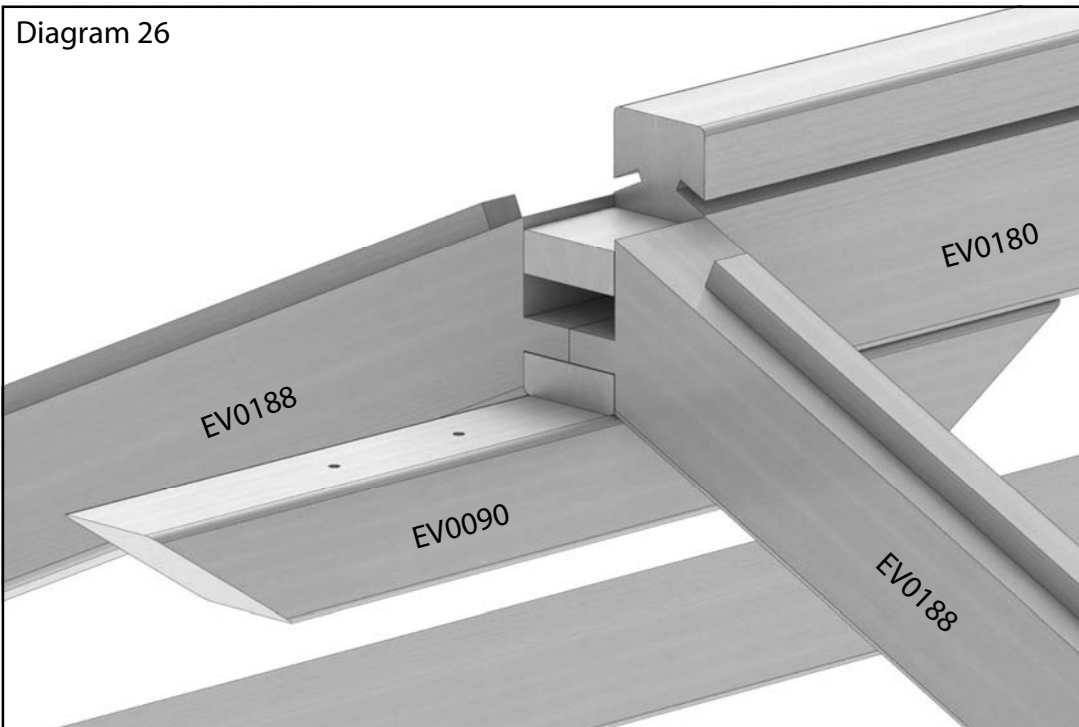
Roof Assembly



Now install the ridge sections. Firstly fit the ridge extension plate (this is the same part as the eaves braces). Drill 4 pilot holes as in diagram 25. Space these about 50-60mm apart with an 80-90mm gap in the middle so that the fixing screws don't interfere with the ridge joint. Fix this the extension ridge while on the ground. Lift it into position and slot one end into the rear of the greenhouse and rest the other end on top of the A-frame (diagram 26).



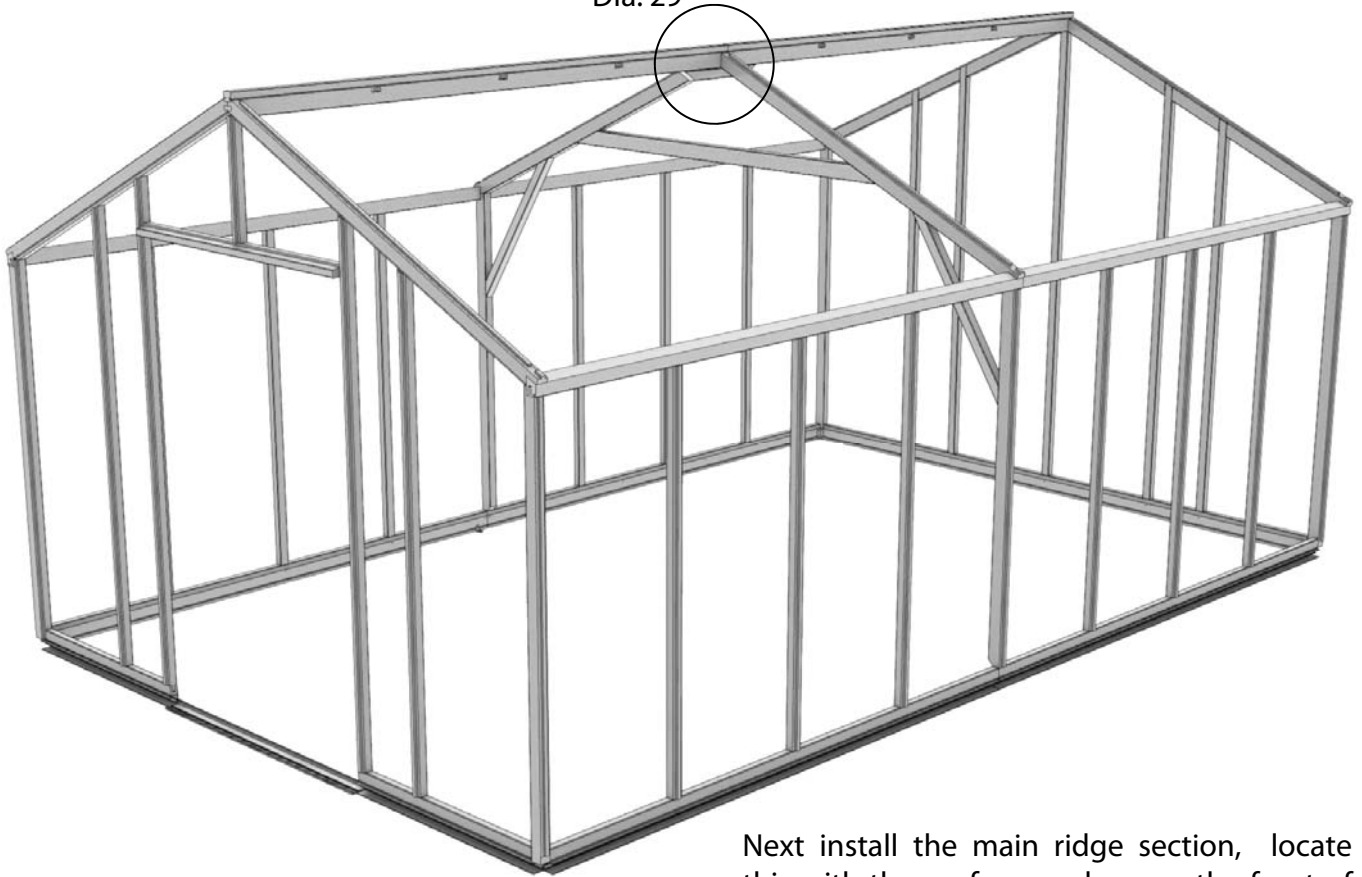
Roof Assembly



Now its in position drill 2 pilot holes into the end as in diagram 27. Try to keep the angle something close to diagram 28, through the top face of the roof corner bars. This is to prevent the end or the screw coming through the bottom of the roof glazing bar. This angle will also give a much better and stronger fixing.

Roof Assembly

Dia. 29



Next install the main ridge section, locate this with the roof corner bars on the front of the building. Fix this as before and then fix the ridge plate to the main ridge as shown in diagram 25 with 80mm screws.

Diagram 29



Roof Assembly

Now the ridge bars are installed you can return to section 7 on page 19 of your main book to complete the assembly of the building.

Notes...

Notes...

