The Outside, **Inside**

CONSTRUCTION GUIDE

For Commercial Tunnels
18ft Wide
Trenching Option

Thank you for purchasing a 'Premier' polytunnel.

Please take the time to carefully read through this Construction Guide before you head out into your garden and begin building your 'Premier' polytunnel.

A polytunnel is not a difficult structure to construct, but the task at hand should not be taken lightly – After all, this is a building that must stand up to extreme weather conditions year after year. This really is a two person job, so why not invite a friend to join you and make a weekend (or two) of it.

The following is a Guide to the successful construction of your polytunnel. If you follow this Guide, you will have many years of growing pleasure from your polytunnel with very little or no maintenance. Please use the Checklist supplied with your order, together with this Guide, to help you identify the different parts of your polytunnel.

To help you identify the different steel tubes, the item codes on the Checklist relate to the diameter and length of tube and how the ends are formed, eg; **"38/1810PP"** is a 38mm diameter steel tube, 1810mm long, with plain ends.
"PS" at the end of the code would indicate the tube had one end plain and one end swaged.
"FP" would indicate the tube had one flattened and punched end and one end plain.
"FS" would indicate the tube had one flattened and punched end and one end swaged.
"FF" would indicate that both ends are flattened and punched.
"A" would indicate that the flattened ends are offset (at an angle) to each other.

If you are unsure or confused about any aspect of construction, please feel free to contact us via e-mail at info@premierpolytunnels.co.uk or by telephone on 01282 811250.
Premier Polytunnels are proud to be the **ONLY** polytunnel supplier to offer an out of hours Construction Advice Service, available until 9pm, 7 days a week.

We have covered some of the polytunnel options within this Construction Guide that may not relate to the polytunnel and extras/additions you have purchased. Please ignore any sections which do not apply.

CONTENTS

TOOLS REQUIRED

*****WARNING: PRODUCTS MAY CONTAIN SHARP EDGES.**
ALWAYS WEAR GLOVES***

Here is a list of tools required to complete the construction of your polytunnel:

Tape measure	Spade	Large hammer	Claw hammer
Spirit level	2x 13mm spanner	Marker pen	Battery drill
9mm drill bit	5mm drill bit	Philips screwdriver	Wood saw
String line	Sharp knife	Timber drift (small offcut of timber)	
Step ladders			

INTRODUCTION

"Picture this...."

Below is a simple outline of what you should end up with once you have completed your project and is something to bear in mind while constructing your polytunnel.

A polytunnel is a series of hoops placed in line on **Foundation Tubes.**

A **Ridge** tube is suspended under the hoops at the centre point and runs the full length of the polytunnel.

Four diagonal tubular **Stabilisers** are placed one at each corner.

Two diagonal **Roof Stabilisers** are placed at each end to brace the roof of the polytunnel.

A timber **Double Door Frame** and **Doors** are fixed central at each end.

A **Trench** is dug around the outside of the framework.

Polythene is placed over the framework and fixed around the door/end frame. The polythene cover is then buried into the trench.

OPTIONAL EXTRAS/POLYTUNNEL ADDITIONS - If ordered:

Anchor Plates clamp to the base of each **Foundation Tube** in a 20 inch hole, before soil is compacted back over them to prevent the polytunnel framework from lifting or sinking.

Crop Bars are horizontal tubes placed across each intermediate hoop at roughly head height.

Triple Ridge bars are two extra ridge bars that provide stability down the length of the polytunnel.

Storm Strengthening Kits/Collars are placed around each hoop where the sections join. This adds strength to the joint.

Staging supports are placed down one or both sides of the polytunnel and allow for a work top to be placed on top.

Side Rails run around the outside of the framework 1 metre above ground level on one or both sides. The cover is fixed to these rails. **Sides Rails** include ventilation net.

Anti Hot Spot Tape is a foam tape that runs over each hoop and protects the cover from the steel.

Ventilation Screens allow you to cover the ventilation net when **Side Rails** are bought.

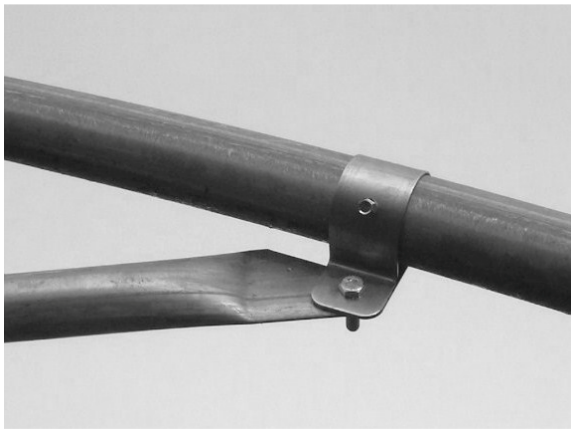
Sliding Doors replace standard hinged doors and allow for extra space on the inside of the tunnel.

USE OF ‘P’ CLIPS

The image below demonstrates the **double** ‘P’ Clip method used to fix the Ridge/Triple Ridge.

The following images show how a Corner Stabiliser, Crop Bar, Staging Support or any tube flattened and punched at the end attaches to a ‘P’ Clip.

NOTE: ‘P’ Clips should always be placed around a hoop so that the leg of the P is to the inside of the polytunnel – That is to say, as far away from the polythene cover as possible.



*****PLEASE NOTE: When assembling your polytunnel, no screws, bolts, ends of tubes, etc, should protrude beyond the hoops as these will cause damage to your cover*****

SITE

Your construction site should be clear and reasonably level from side to side. Approximately 6 inch out of level across the width of the tunnel can be taken up by adjusting the Foundation Tubes of your Polytunnel **(Fig1)**.

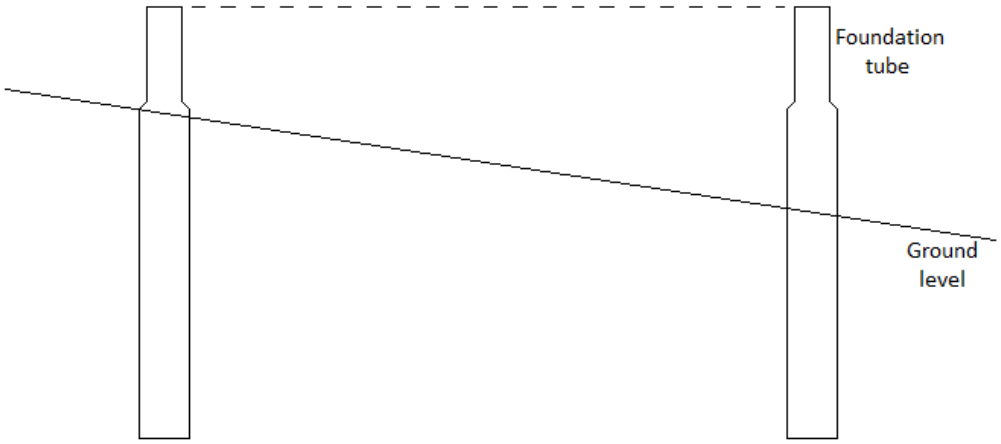


Fig1

A slope down the length of the tunnel does not have to be taken into account as your polytunnel can be built straight onto this slope with the framework placed at the vertical **(Fig2)**.

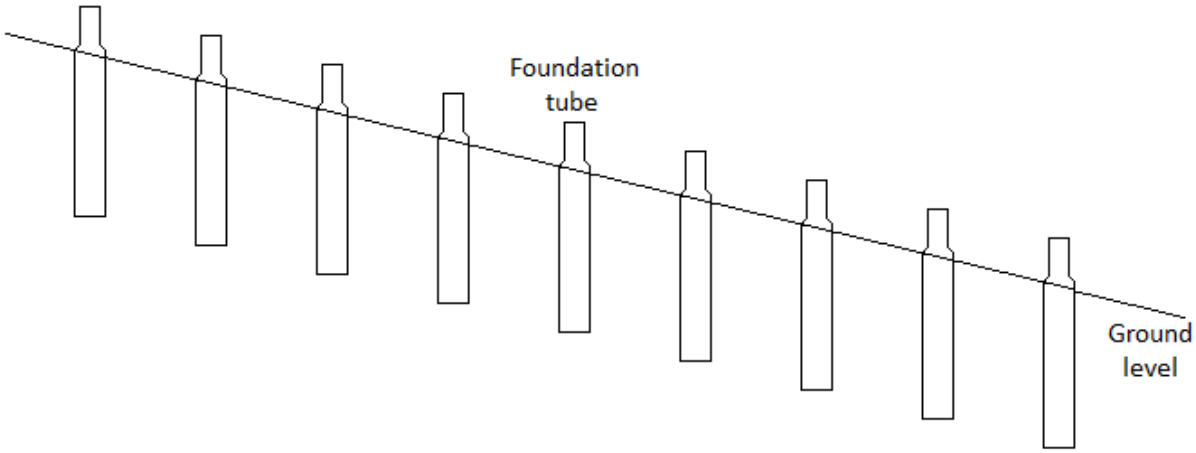


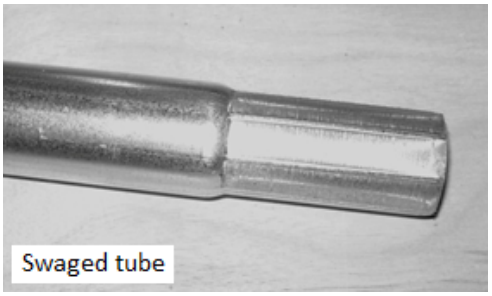
Fig2

FOUNDATION TUBES

*****IMPORTANT – Protect the ends of tubes from damage when driving them into place by using a timber drift (a small offcut of timber)*****

Foundation Tubes are driven into the ground at each end of each hoop.

Choose a corner of your polytunnel to be a fixed point from which all measurements will be taken (it is advised that this fixed point is the highest corner of the tunnel on any sloping site), drive in a foundation tube using a timber drift to protect the end, leaving only the swage protruding above ground.



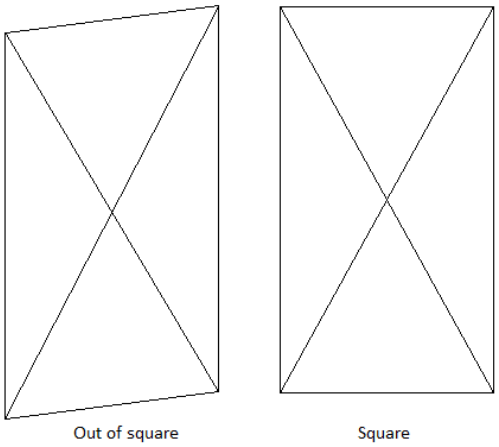
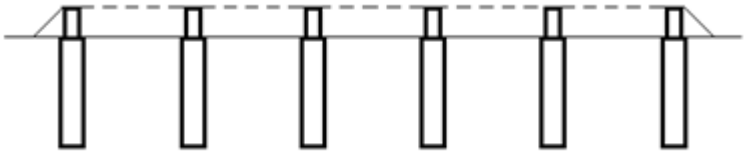


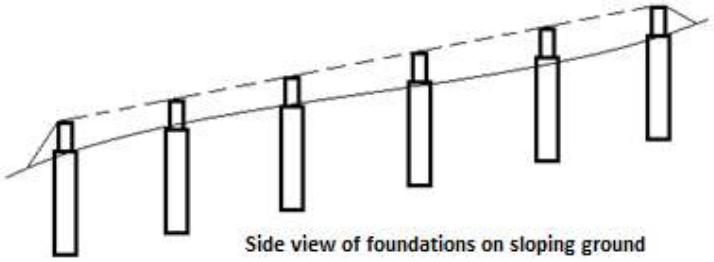
Fig3

Mark out the remaining corners, but do not drive in the foundation tubes yet. The measurements for these will be the width and length of your polytunnel. To check for square, measure from corner to corner **(Fig3)** – This measurement should be the same, but if not, simply adjust the tubes until correct.
Once you are happy with the positioning drive in the foundation tubes. Make sure the foundation tubes are level across the 18ft width.

Mark out the position for the remaining foundation tubes down the length of the polytunnel at 6ft spacing, and drive in the foundation tubes. Use a string line or straight edge to check the tops are level and the tubes are in line.



Side view of foundations on level ground



Side view of foundations on sloping ground

*****If Anchor Plates have been purchased, please see the 'Anchor Plates' section on page 7 before driving in the foundation tubes*****

ANCHOR PLATES

Anchor Plates replace the need for concrete in soft ground.

After marking out the position of all the Foundation Tubes **WITHOUT** driving any tubes in, dig a hole 20 inches square and 16 inches deep at each point. You can now drive the Foundation Tubes into the holes, making sure to check all measurements and levels **(Fig4).**

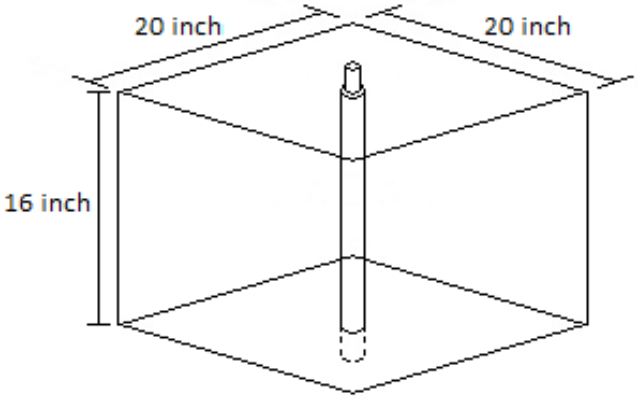


Fig4

Fig5

Place an anchor plate clamp **(Fig5)** around the each of the foundation tubes at the bottom of the holes **(Fig6)**.

Fig6

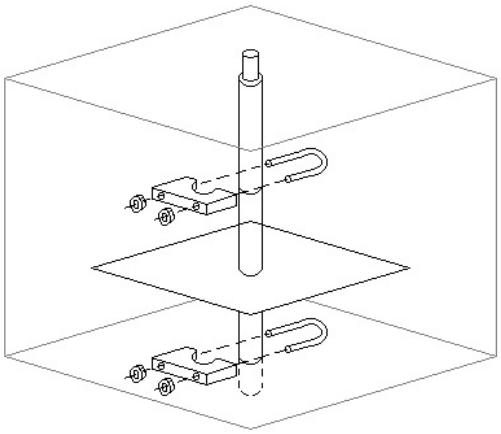


Fig7

An anchor plate slots over the tubes to rest on the clamps and another clamp is tightened on top of the plates to hold in position **(Fig7)**.

Fig8

The soil is placed back in the holes and heeled down flat with the ground level **(Fig8)**. Re-check all measurements.

HOOPS

Hoops come in four sections – two outer legs and two inner hoops. These sections should be slotted together on a flat base and the joints held together using a self drill screw which should be 30mm away from the joint **(Fig9)**. Do not fix the centre joint at this stage.

Fig9

Self Drill Screw

Lift the hoops into position on the Foundation Tubes. The swaged half of the inner hoop should be kept to the same side of the polytunnel (left side or right side). Make sure the screws on the end hoops face the inside of the polytunnel **(Fig10)**.

Fig10

Once all the hoops have been positioned on the foundation tubes, secure together with a self drill screw approximately 2cm from the join. Make sure these screws face the inside of the polytunnel.

*****Please note: Self drill screws should be held in the nut driver provided or can be held directly into a drill chuck. They will drill their own hole and tap themselves into position. Do not over-tighten*****

RIDGE – and – TRIPLE RIDGE KIT

The centre ridge bar (standard on all polytunnels) is supplied in 6ft sections. One ridge starter with plain ends and one or more ridge extensions with one swaged end.

Place a 'P' Clip around the top centre of each hoop. The central joint can be used as a guide.

On the end hoops the leg of the P should be to the inside edge of the hoop and should face down the length of the tunnel.
Place a 'P' Clip around one end of the starter ridge. Bolt this starter ridge up to the 'P' Clip on one of the end hoops **(Fig11).**

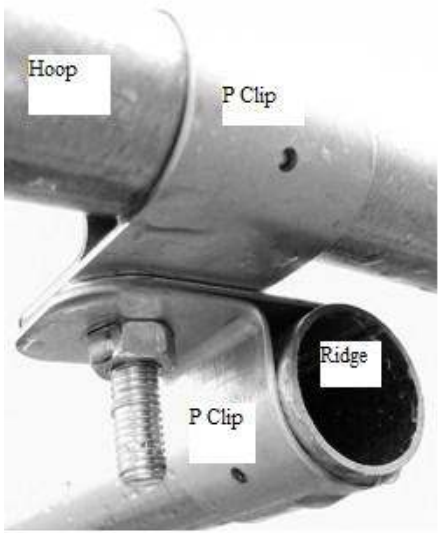


Fig11

Adjust the starter ridge until the end is located half way through the end hoop **(Fig12)**.

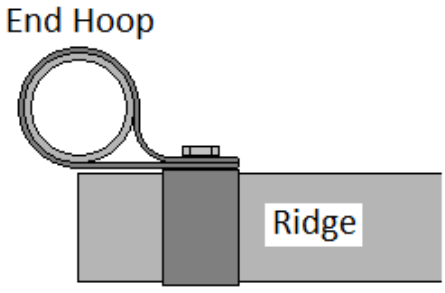


Fig12

With the starter ridge suspended from the hoop slide a ridge extension into the starter. Place a 'P' Clip around the ridge starter/extension wherever it crosses a hoop and bolt up to the 'P' Clip on the hoop. Do not tighten this bolt and nut until a later stage.

Keep adding ridge extensions and 'P' Clips whenever they cross a hoop until you reach the opposite end of the polytunnel. Bolting them up but not tightening.

Once a full ridge has been suspended loosely, measure the spacings for the hoops using the end with the starter ridge as the starting point. Adjust the 'P' Clips along the ridge until all the hoops are at 6ft spacings **(Fig13)**.

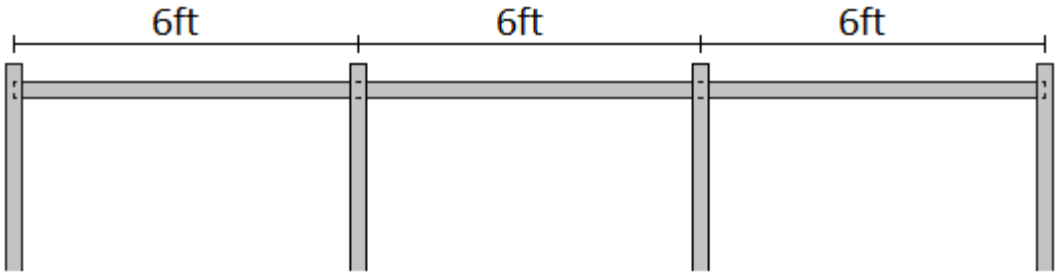


Fig13

Adjust the 'P' Clips on the hoops so that the ridge runs in a straight line down the tunnel, as close to centre as possible. Once happy with the positions, tighten all the bolts and nuts and secure the 'P' Clips onto the ridge and the hoops using self drill screws.
Secure the ridge sections together using self drill screws located approximately 2cm away from the joins.
Fit a plastic end cap in each end of the ridge.

Completed centre ridge.

Triple Ridge Kits: These side ridge bars are identical to the centre ridge and should be assembled using the same method. These side ridges should be located close to where the outer legs meet the inner hoop. **Please Note:** If you have ordered a **crop bar kit** or a **storm strengthening kit**, you should assemble these items prior to your side ridges in order that your ridge bars can avoid these items.

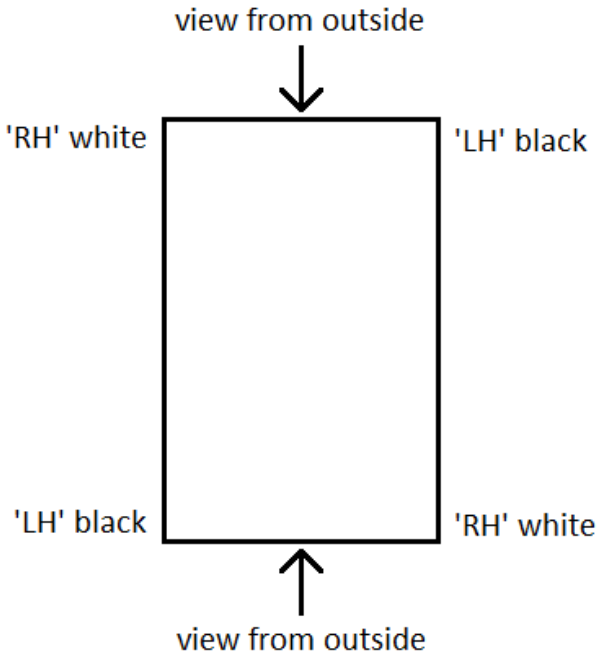
CORNER STABILISERS

These tubes are placed to form a triangle at each corner of the polytunnel **(Fig14)**.

Fig14

Stabilisers are right and left handed for opposite corners of the polytunnel and have their flat ends offset to accommodate the curve of the end hoop – The 'RH' pair are painted WHITE at the end and the 'LH' pair are painted BLACK to differentiate between them.

Note: Right and left hand should be viewed from the outside of the polytunnel looking at the end.



Place a ‘P’ Clip around the second to end hoop with the leg of the P towards the inside edge of the hoop and pointing towards the end hoop. This ‘P’ Clip should be located 9 inches up from the ground. Bolt one end of a corner stabiliser to this ‘P’ Clip but do not tighten **(Fig15)**.

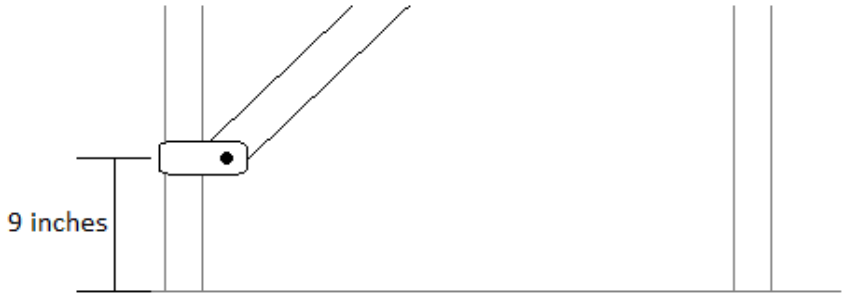


Fig15

Place a ‘P’ Clip around the end hoop, again with the leg towards the inside edge and pointing towards the second hoop. Bolt the corner stabiliser to this ‘P’ Clip but do not tighten.

Check the ‘P’ Clip on the second to end hoop is still located 9 inches up from ground level, if it has moved then simply slide the clip up or down the hoop until back in position. Tighten this ‘P’ Clip and secure with a self drill screw making sure the head of the screw does not protrude past the hoop.

Using a spirit level to check the end hoop for vertical, slide the ‘P’ Clip up or down the hoop until in the correct position. Tighten and secure the ‘P’ Clip using a self drill screw making sure the head of the screw does not protrude past the hoop **(Fig16)**.
The predrilled holes in the ‘P’ Clip may not be in a suitable location for the self drill screw, but the screw will make its own hole in a place suitably clear of the polythene.

Fig16

Repeat this process at each corner of the polytunnel.

ROOF STABILISERS

Roof stabilisers attach to the second to end hoop using ‘P’ Clips located approximately 12 inches either side of the centre ridge **(Fig17)**.

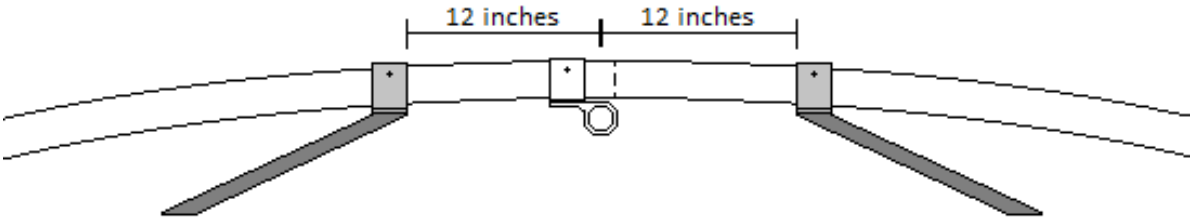


Fig17

Place another two ‘P’ Clips on the end hoop, one each side of the centre ridge. Bolt the roof stabiliser to these ‘P’ Clips but do not tighten.

Secure the ‘P’ Clips to the second to end hoop with a self drill screw, making sure the head of the screw does not protrude outside of the polytunnel.

You will find that the roof stabilisers angle down to the end hoop **(Fig18).**

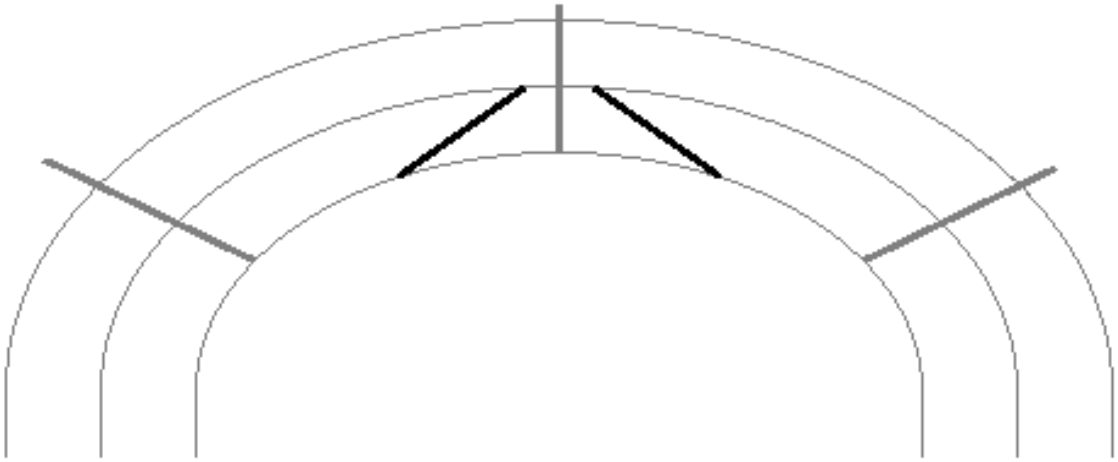


Fig18

If the end hoop bows in or out of the tunnel, adjust the ‘P’ Clips along the hoop until it runs flat. Tighten and secure the ‘P’ Clips with a self drill screw, making sure the head of the screw does not protrude outside of the polytunnel.

STORM STRENGTHENING KIT

This is a very simple method of adding strength to the weakest part of the hoop. Simply bolt a 'P' Clip around any joints where an outer leg meets an inner hoop (acting as a collar), making sure that the leg of the P will not interfere with the polythene cover. Secure the 'P' Clips with a self drill screw, making sure the head of the screw does not protrude outside of the tunnel.

Storm strengthening collar

CROP BARS

Crop Bars are an optional extra and are placed on all intermediate hoops **(Fig19)**.

Fig19

Place a 'P' Clip around each intermediate hoop, one either side of the centre ridge.
Slide the two crop bar sections together and bolt each end up to the 'P' Clips leaving the bolts loose.

Using a spirit level to check the crop bars are level horizontally, slide the 'P' Clips along the hoop until in the correct position. Tighten and fix the 'P' Clips with a self drill screw making sure the head of the screw does not protrude past the hoop.

Secure the two crop bar sections together with a self drill screw located no more than 3cm from the join **(Fig20).**

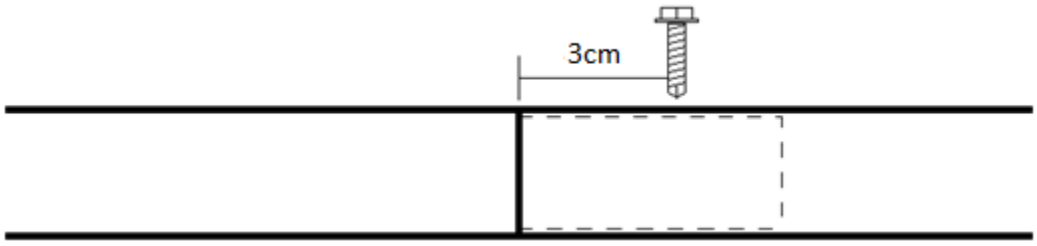


Fig20

Fix the short crop bar support to the centre of the crop bar using a 'P' Clip **(Fig21).**

Fig21

Using a 'P' Clip around the centre ridge, bolt the other end of the support up to the ridge but leave the 'P' Clip loose.

Adjust the support along the ridge until the crop bar doesn't dip or rise down its length. Once happy tighten the 'P' Clip to the ridge and secure with a self drill screw **(Fig22)**.

Fig22

STAGING SUPPORTS

Using a flat surface, assemble your staging legs. These consist of a 900mm long top that is flattened at each end, and a 750mm long leg that is flattened at one end and plain at the other.

Bolt one end of the top to the flattened end of the leg and tighten.

Place a 'P' Clip around the top and one around the leg. The 'P' Clips should be facing inside the staging leg **(Fig23).**

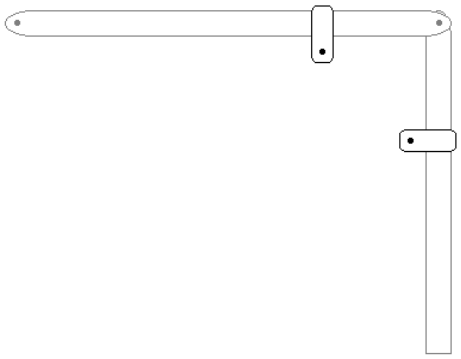


Fig23

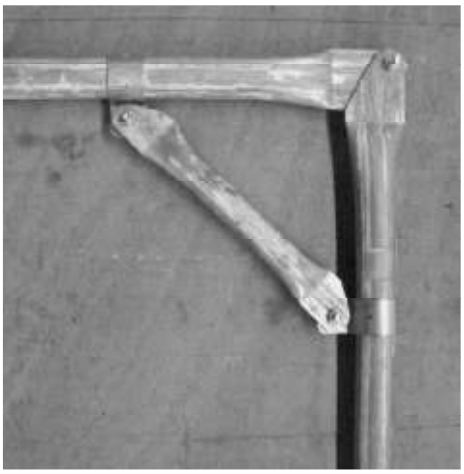


Fig24

A 28mm diameter, 300mm long diagonal brace that is flattened at each end is fixed to these 'P' Clips across the corner of the staging leg. Loosely attach this brace to the 'P' Clips.
Adjust the 'P' Clips along the top and the leg until they are at a right angle to each other. Tighten and fix the 'P' Clips with a self drill screw **(Fig24)**.

A plastic end cap is inserted into the bottom of the leg.

Place a 'P' Clip around the hoop and bolt the staging leg to this 'P' Clip, check the staging leg for level horizontally and vertically and once in position tighten and fix the 'P' Clip to the hoop **(Fig25)**.

Fig25

We suggest that you fix the two end staging supports first. These should angle in slightly from the end of the polytunnel to avoid the cover.
Position the centre staging legs and align them with the end legs. Use a hard pad to stand the leg on when placing the support on a soft base – This will help prevent the leg from sinking.

TIMBER POLYTUNNEL DOORS

3 inch x 2 inch timber is used for the doors.

Using a flat surface or bench take the two 3 inch x 2 inch x 1.97m door legs and the three 750mm cross pieces which fit between the legs.

Using 6 corner braces and screws, fix a cross piece between the legs at each end and one in the centre. These enable you to build the door square without checking **(Fig26)**.

Fig26

Drill through each of the door legs into the cross pieces and nail together using the 6 inch nails provided **(Fig27).**

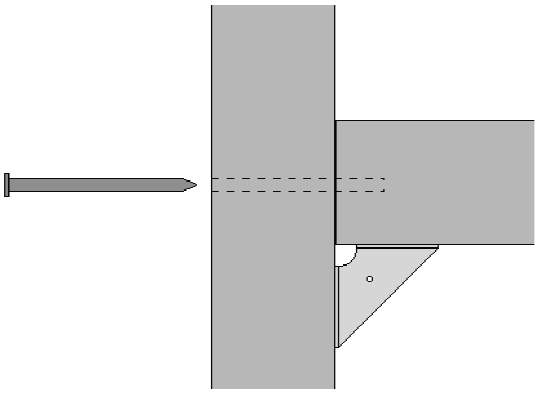


Fig27

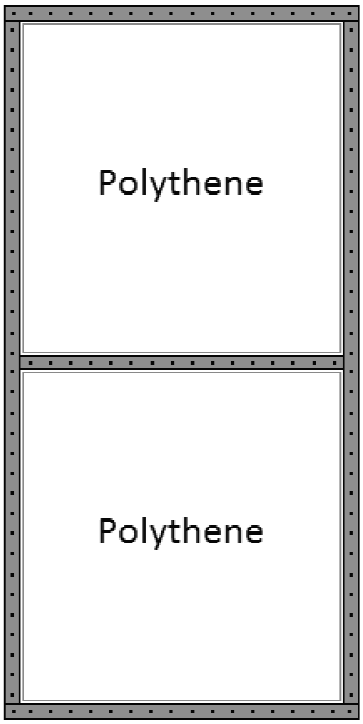
Fig28

Tack the polythene panel to each door and get as much tension as possible on the polythene – a staple gun comes in handy here.

Cut two pieces of 19mm x 38mm batten the full width of the door and nail these on top of the net and polythene at each end, making sure there is a nail at each side of the joint of the frame. This is important as it gives the door added stiffness **(Fig28)**.

Cut two battens to fit down the door legs and nail in position (nails should be about 4 inches apart).

Cut and fix the final batten across the centre cross piece and trim off all excess material around the edges.



How the door should look once finished

DOOR HINGES

Two, 4 inch butt hinges should be screwed to the inside edge (the opposite side to the batten) of the door approx 9 inches from each end **(Fig29)**.

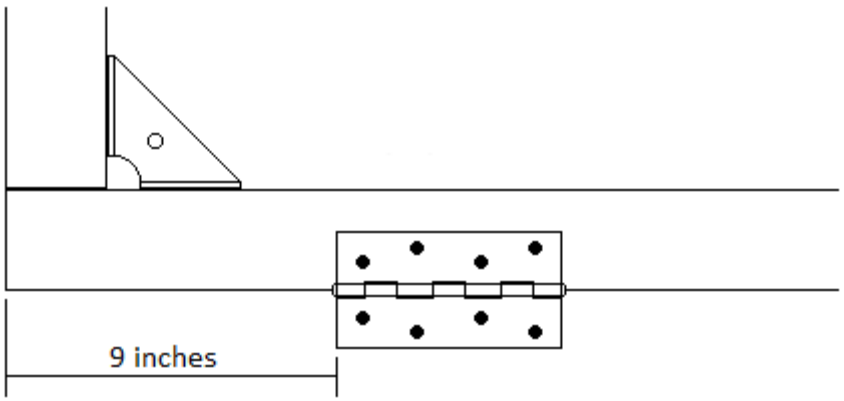


Fig29

HINGED DOOR CATCHES

Choose which door is to be the fixed one (this means the one that will open second). A 6 inch hasp and staple should be screwed to the top of the door and fix up to the lintel **(Fig30).**

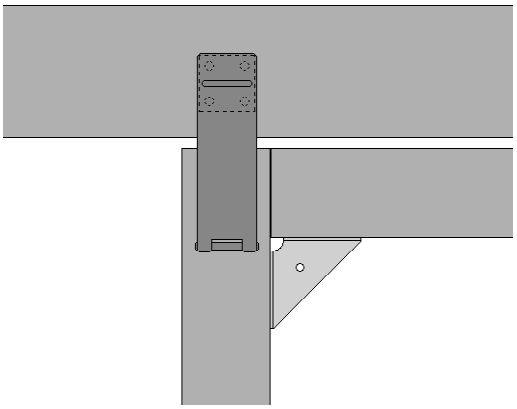


Fig30

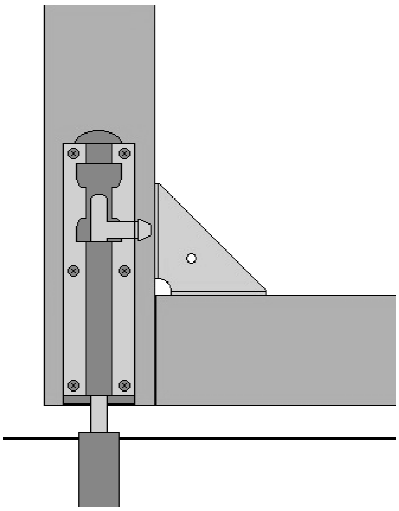


Fig31

A 6 inch tower bolt should be screwed to the bottom of the door and a 300mm long 28mm diameter tube should be knocked into the ground underneath this tower bolt when the door is in the closed position. Making sure not to knock the tube in so far that the tower bolt no longer reaches down into it to hold shut **(Fig31).**

A 3 inch hasp and staple is fitted between the doors on the outside. This should be fitted to the intermediate cross pieces **(Fig32).**

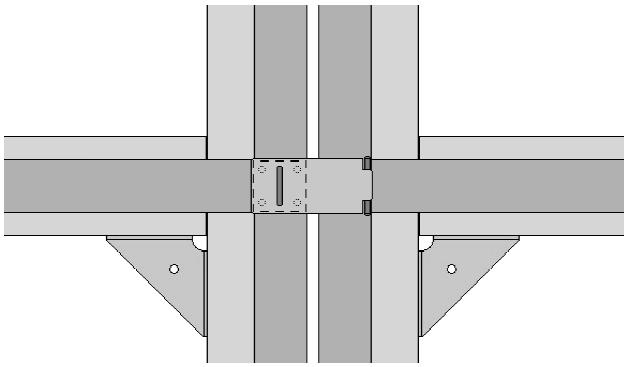


Fig32

DOOR FRAME – HINGED DOORS

4 inch x 2 inch timber is used for the door frame.

It may help to place a string line across the end hoop – This can then be used as a line for the door frame, or just use your eye to line the frame with the end hoop.

The door opening will be approximately 70 inches if using the standard doors supplied with your kit.

Mark the hoop 35 inches each side of centre (this is where the door posts will fix) and dig two holes approximately 8 inches square and 15 inches deep directly below these marks **(Fig33)**.

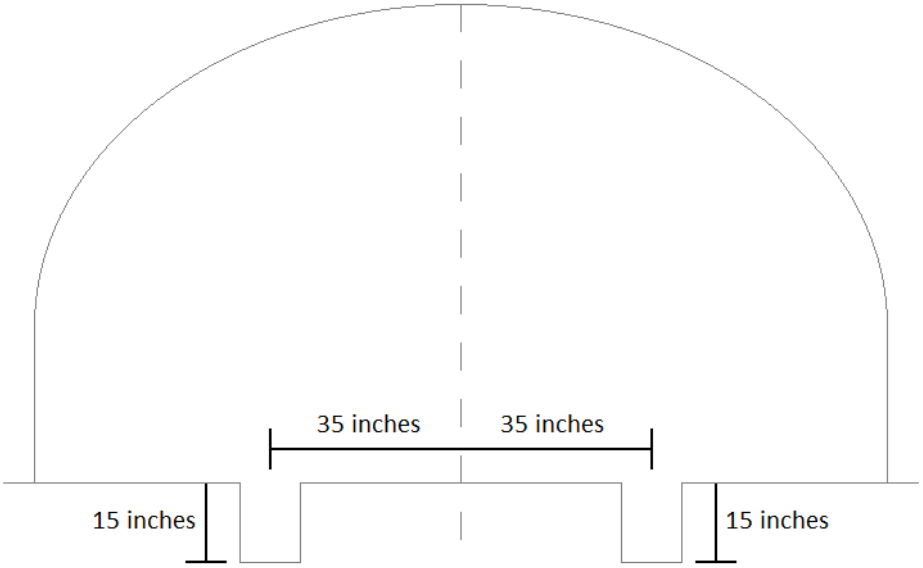


Fig33

Position one of the 12ft door post into one of the holes (preferably the hole on the highest side of the tunnel when on sloping ground) with the inside edge up to the mark on the hoop. Check the post for vertical and mark the timber under the hoop **(Fig34).**

Fig34

Cut the post on this mark.

Re-position the post in the hole. Place a ‘P’ Clip around the hoop with the leg of the P down the outside face of the post. Drill the post through the ‘P’ Clip and bolt together using a cross head roofing bolt with a washer under the nut **(Fig35)**. Make sure the inside edge of the post is still in line with the mark on the hoop. Tighten and secure the ‘P’ Clip with a self-drill screw.

Fig35

Making sure the post is vertical, backfill the hole until at ground level.

Hang a door on this post leaving adequate room at the bottom for the door to open without catching **(Fig36).**

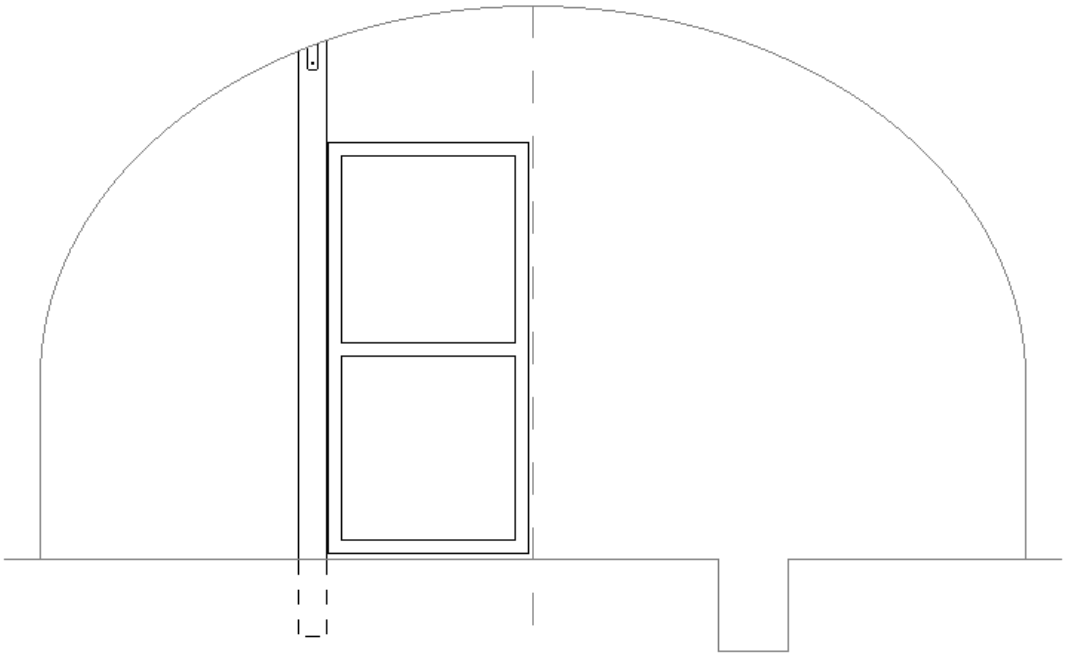


Fig36

Hang the second post using the same method as the first but leave it hanging loose. Hang the second door at a height that coincides with the first door. Adjust the post to get equal spacing between the two doors (use a 6 inch nail or screwdriver as a spacer). When you are happy that the two doors align, tighten and secure the 'P' Clip in place and back fill the hole **(Fig37).**

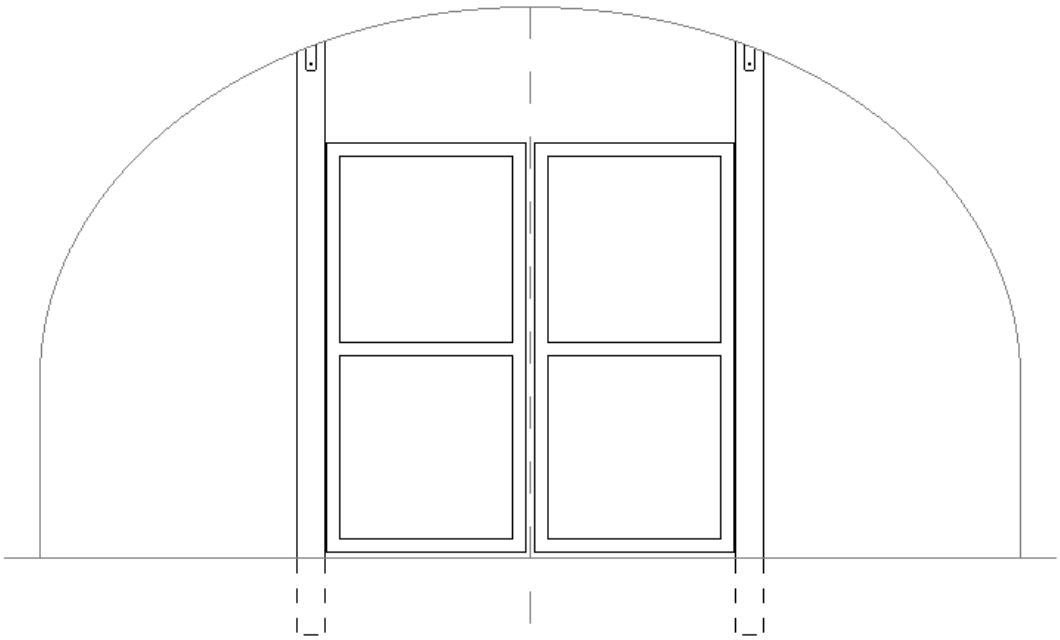


Fig37

The timber lintel supplied should be cut to fit between the posts.

Drill a 5mm hole through the side of each door post 2 inches above the top of the doors. Sit the lintel in place between the door posts and on top of the doors with a 6mm gap between lintel and doors, fix in place with a 6 inch nail through the previously drilled holes **(Fig38).** Nail a nail plate across each joint on the inside of the polytunnel **(Fig39).**

Fig38

Fig39

A lintel stabiliser angles down from the centre ridge to the centre of the lintel **(Fig40)**.

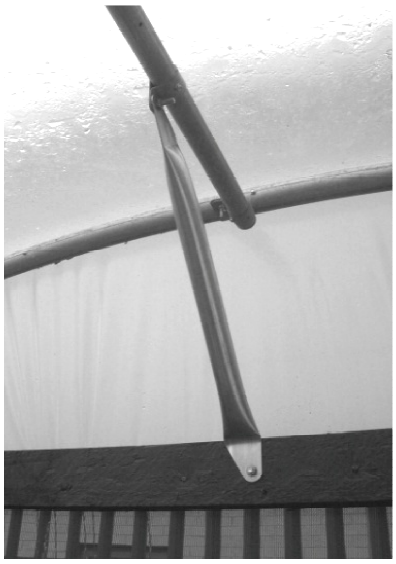


Fig40

Place a ‘P’ Clip around the centre ridge and loosely bolt the lintel stabiliser to it.
Slide the ‘P’ Clip along the ridge until the angled end of the stabiliser meets the lintel. Drill a 9mm hole through the hole on the stabiliser and the timber lintel. Bolt the stabiliser to the lintel with an M8 x 75 cup square bolt through the drilled hole **(Fig41)**.

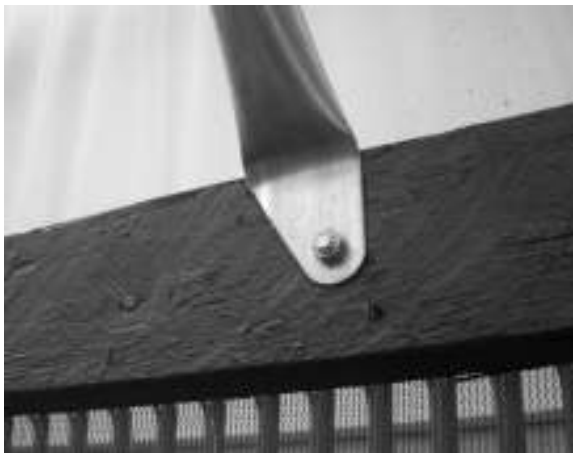


Fig41

Adjust the ‘P’ Clip along the ridge until the lintel doesn’t bow in or out of the polytunnel. Tighten and secure the ‘P’ Clip with a self drill screw.

DOOR FRAME – SLIDING DOORS

4 inch x 2 inch timber is used for the door frame.

It may help to place a string line across the end hoop – This can then be used as a line for the door frame, or just use your eye to line the frame with the end hoop.

The door opening will be approximately 67 inches if using the standard doors supplied with your kit.

Mark the hoop 33½ inches each side of centre (this is where the door posts will fix) and dig two holes approximately 8 inches square and 15 inches deep directly below these marks **(Fig42)**.

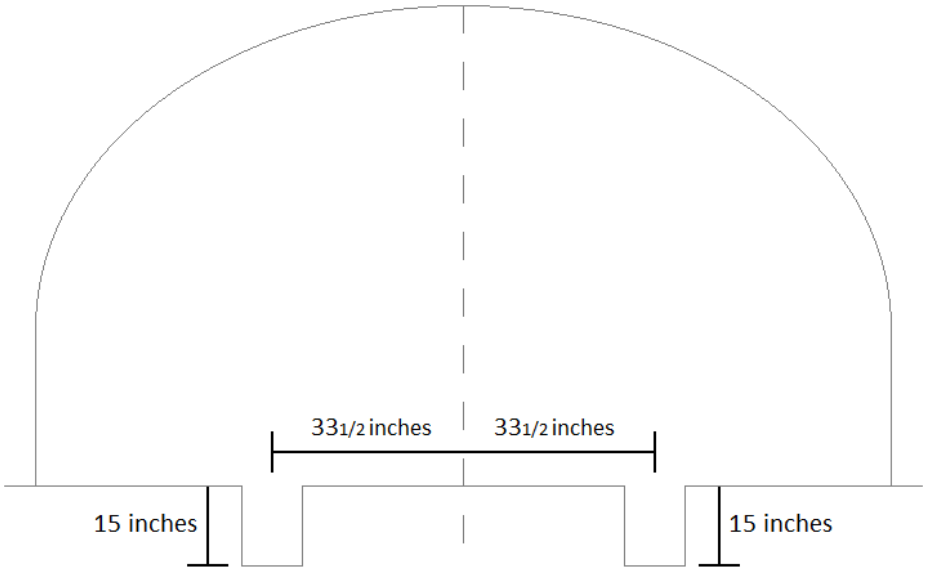


Fig42

Position one of the 12ft door post into one of the holes (preferably the hole on the highest side of the tunnel when on sloping ground) with the inside edge up to the mark on the hoop. Check the post for vertical and mark the timber under the hoop **(Fig43).**

Fig43

Cut the post on this mark.

Re-position the post in the hole. Place a ‘P’ Clip around the hoop with the leg of the P down the outside face of the post. Drill the post through the ‘P’ Clip and bolt together using a cross head roofing bolt with a washer under the nut **(Fig44)**. Make sure the inside edge of the post is still in line with the mark on the hoop. Tighten and secure the ‘P’ Clip with a self-drill screw.

Fig44

Making sure the post is vertical, backfill the hole until at ground level.

Place the second door post in its hole. Mark the post under the hoop and cut on the mark. Hang the post using the same method as used when hanging the first post but leave the ‘P’ Clip loose. Using the pre-cut timber lintel as a spacer to make sure the posts are 67 inches apart, backfill the hole **(Fig45).**

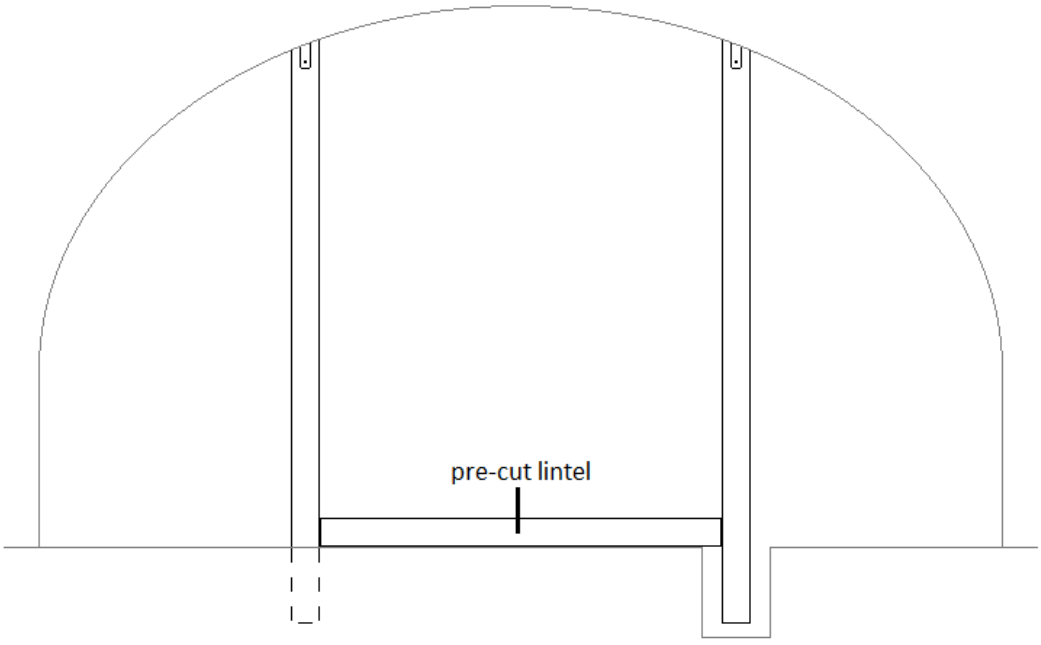


Fig45

It is important that the timber lintel is the correct height so that the door is free to slide without leaving a large gap at the bottom.

The measurement from ground level to the ***underside*** of the door frame lintel should be 79 inches **(Fig46)** – this will leave a gap of 1 inch under the door.

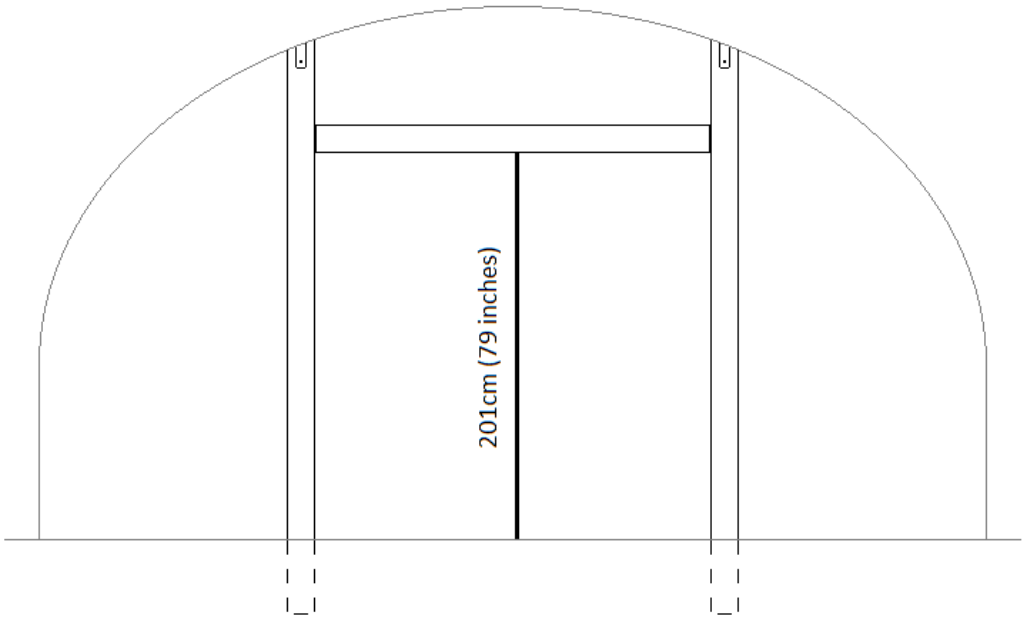


Fig46

Measure 79 inches up from ground level on the fixed door post and make a mark. Drill a 5mm hole through the side of the door post 2 inches above this mark. Holding the lintel so the bottom face is in line with the mark, fix in place with a 6 inch nail through the previously drilled hole **(Fig47).**

Making sure the lintel is level horizontally (a spirit level comes in handy) butt the loose door post up to it and drill another 5mm hole through the post and into the lintel. Fix in place with a 6 inch nail.

Nail a nail plate across each joint on the inside of the polytunnel **(Fig48).**

Fig47

Fig48

You can now fix the second post to the hoop by tightening and secure 'P' Clip to the door rail with a self-drill screw.

A lintel stabiliser angles down from the centre ridge to the centre of the lintel **(Fig49)**.

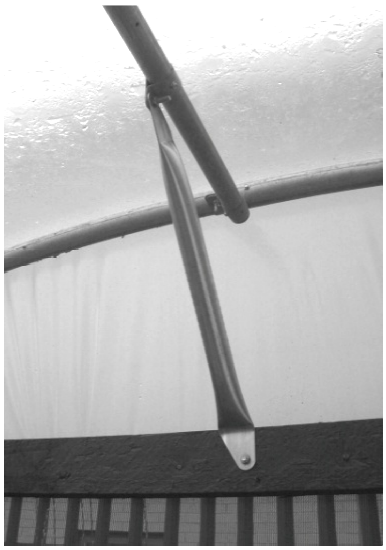


Fig49

Place a ‘P’ Clip around the centre ridge and loosely bolt the lintel stabiliser to it.
Slide the ‘P’ Clip along the ridge until the angled end of the stabiliser meets the lintel. Drill a 9mm hole through the hole on the stabiliser and the timber lintel. Bolt the stabiliser to the lintel with an M8 x 75 cup square bolt through the drilled hole **(Fig50)**.

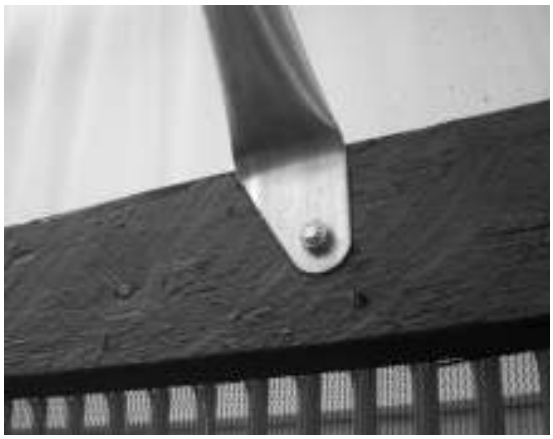


Fig50

Adjust the ‘P’ Clip along the ridge until the lintel doesn’t bow in or out of the polytunnel. Tighten and secure the ‘P’ Clip with a self drill screw.

TIMBER SIDE RAILS AND VENTILATION NET

This timber rail goes around the outside of the polytunnel framework on one or both sides. It is positioned 1m above ground level leaving only the door opening **(Fig51)**.

If a ventilation screen kit is to be used then it is required that the side rail runs as level horizontally as possible and there is no more than 800mm between the ground and side rail.

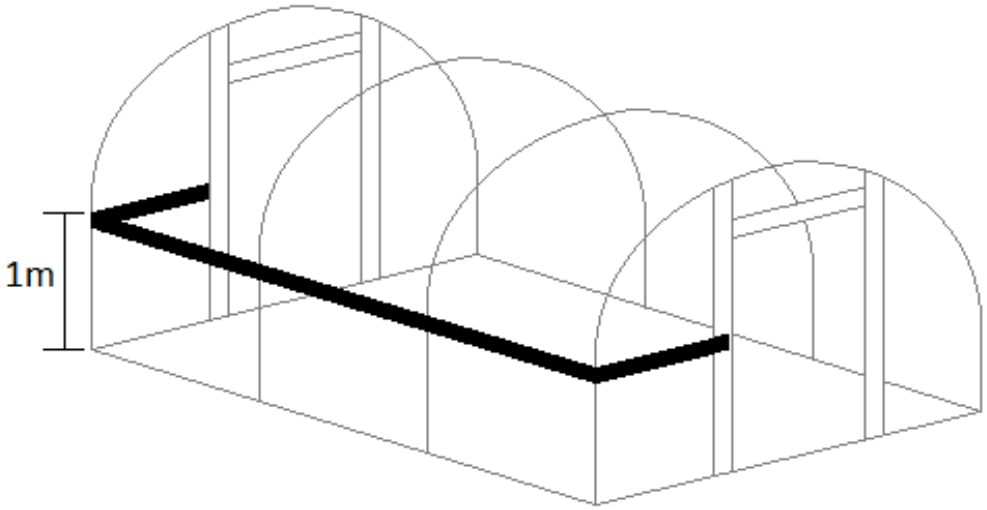


Fig51

The rails which make up the sides of the polytunnel are placed end to end and fixed at each hoop.

At each intermediate hoop a 'saddle clamp' is used to fix the timber rails to the hoop **(Fig52).**

At the corners a corner bracket should be placed around the hoop and the timber rails bolted through this bracket **(Fig53).**

Fig52

Fig53

These side timbers should be left overhanging by at least 2 inches at each end. Wherever a joint in the rail occurs, a nail plate should be nailed across the joint on the inside **(Fig54)**.

Fig54

Cut a length of timber to fit across the front of each door post and butt up to the overhanging side rail.

To attach the end rail to the Door Post drill a 9mm hole through the end rail and door post and bolt in place with a 100mm cup bolt with a washer under the nut on the inside **(Fig55)**.

Fig55

At the outer corners, bolt the end rail to the corner bracket **(Fig53 on page 28)**.

Nail a 4 inch nail through the side timber and into the end rail and cut off the overhang.

FORMING A REBATE FOR TIMBER SIDE RAILS

In order that the polythene cover can be attached easily and securely, a rebate needs to be formed around the timber side rails from door post to door post. To do this a batten is nailed around the top edge of the timber side rails.

The ventilation net should be trapped under this batten at the same time **(Fig56).**

A staple gun comes in handy to hold the netting onto the side rail until the rebate batten has been nailed on

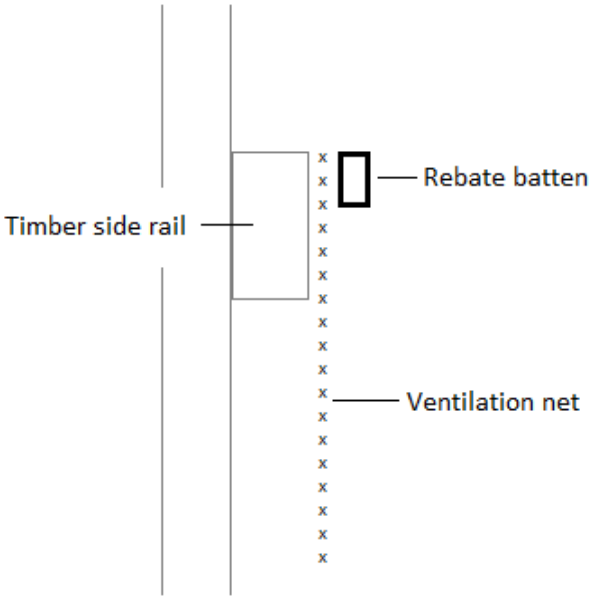


Fig56

Where a batten crosses a joint a nail should be positioned at each side of the joint – This will make the joint more robust.

Once you have formed the rebate all the way round from door post to door post it is necessary to cut off (at an angle) any rebate that protrudes at the corners **(Fig57).**

Fig57

PLEASE NOTE: If a ventilation screen kit is being used then the ventilation screen polythene should be placed between the netting and the timber side rail **(Fig58).** The ventilation screen and the netting should only run down the length of the tunnel and not around to the door posts.

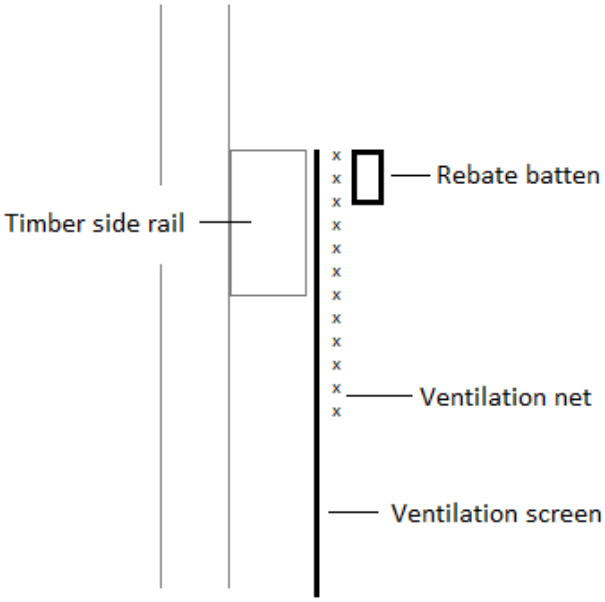


Fig58

With a ventilation screen kit, once the polythene screen and netting have been attached down the length, the polythene infill panels should be placed between the side rail and the rebate batten on the ends of the tunnel, and should come around the corners by approximately 24 inches, overlapping the netting and polythene screen **(Fig59).**

Fig59

VENTILATION SCREENS FOR TIMBER SIDE RAILS

Your pack will include a 1.2m piece of timber with an 800mm aluminium track screwed in place.

This piece of timber and a similar piece without the track attached are the verticals, and at a later stage are placed under the timber side rail at each corner and buried in the trench along with the ventilation net **(Fig60).**

Fig60

A drop plate **(Fig61)** should be placed behind the side rail corner clamp on the end hoops only and should point downwards. The drop plate should be on the side of the polytunnel (not the end) and is used to fix the vertical timbers **(Fig61)**.

Fig61

Once the tunnel is covered and the side rail has been lowered back to its starting position you can fit the vertical timbers. These verticals must be placed perpendicular to the side rail at the corners.

Drill and bolt the verticals loosely to the drop plate. The vertical should be placed so the aluminium track is above ground level and is facing down the length of the tunnel **(Fig62).**

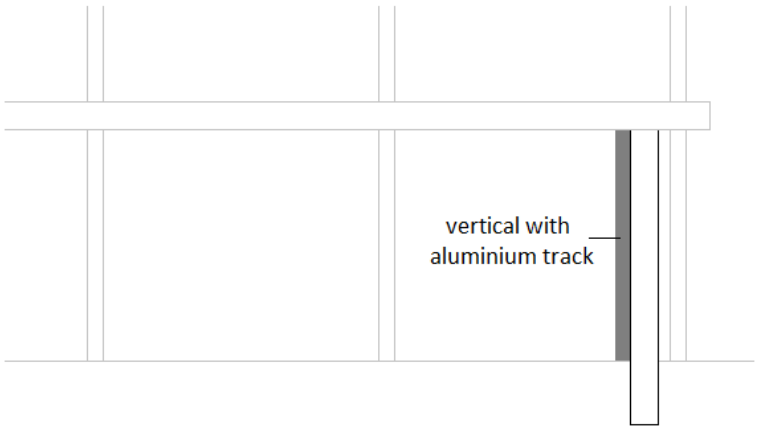


Fig62

Slide the gearbox into the track and insert a self drill screw approximately 5mm in from each end of the track to stop the gearbox from coming out.

With the vertical in the trench, dig out the ground so that the vertical doesn't angle in or out of the tunnel **(Fig63 & Fig64).**

Fig63 – ground dug out for vertical

Fig64 – vertical positioned in trench/dug out

Adjust the verticals so they are perpendicular to the side rail. Once happy with the position, tighten to the drop plate and pack around the base of the verticals with soil (just enough so that the vertical won't move before the full trench is backfilled).

Assemble the 28mm steel lifting tube as a complete length using the self drill screws with the square adaptor at the gearbox end **(Fig65)**. Cut this tube to fit between the verticals with a little room for movement. Place a plastic end cap in the opposite end to the gearbox to finish it off neatly **(Fig66)**. Slot the square adaptor into the gearbox with the steel lifting tube resting on the ground.

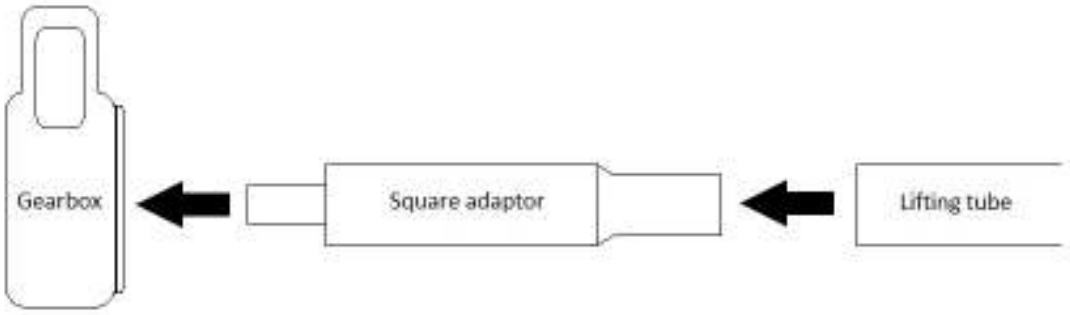


Fig65

Fig66

Trim the polythene screen in line with the ends of the lifting tube and trim off the excess along the ground leaving approximately 1ft of overlap **(Fig67)**.

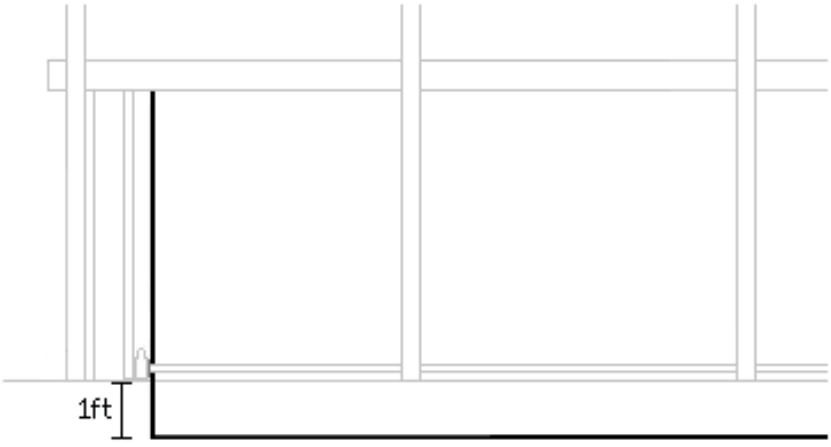


Fig67

Using the plastic 'C' Clips provided, clamp the bottom edge of the screen to the tube **(Fig68)**. A 'C' Clip should be placed approximately every 3ft along the tube.
Place the handle in the gearbox and wind the screen onto the lifting tube (including the excess polythene). If the screen does not roll up parallel, relocate the 'C' Clips around the tube until it rolls up correctly **(Fig69)**.

Fig68

Fig69

Tension the ventilation net and infill panels down into the trench and backfill with soil until at ground level **(Fig70).**

Fig70

Next tension the net and infill panels out to the verticals and door posts, and batten in place **(Fig71)**.

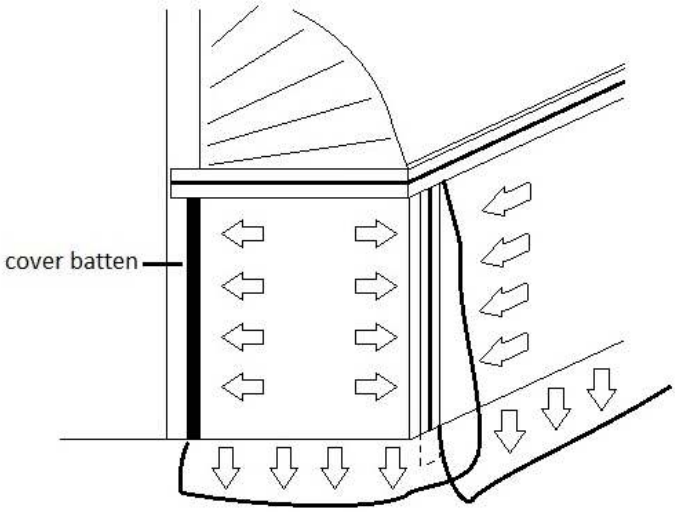


Fig71

ALUMINIUM SIDE RAILS

Tools required:
Hacksaw/Angle grinder 3mm Allen key (Supplied)
Always wear a dust mask and eye protection when using an angle grinder

This aluminium rail goes around the outside of the polytunnel framework on one or both sides. It is positioned 1m above ground level leaving only the door opening **(Fig72)**.

If a ventilation screen kit is to be used then it is required that the side rail runs as level horizontally as possible and there is no more than 800mm between the ground and side rail. It is also required that the side rail is spaced out from the tunnel (please see 'ventilation screens for aluminium side rails' section on page 38), this is so the screen can wind up and down with ease.

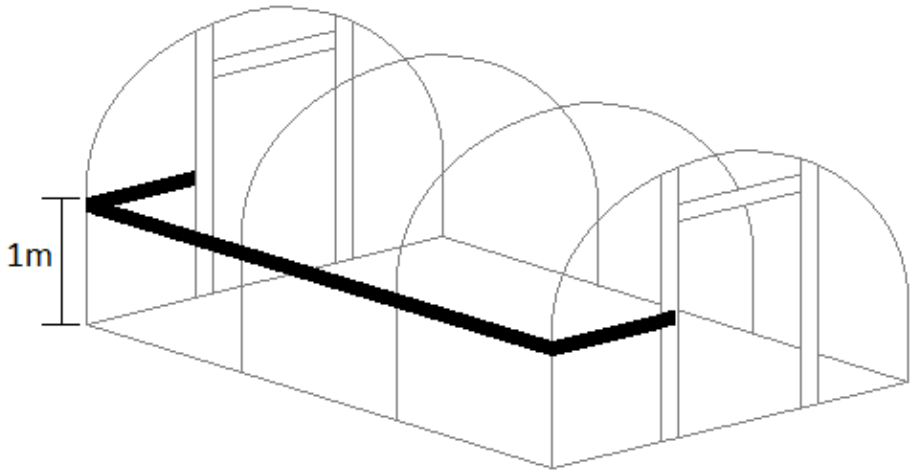


Fig72

The rails which make up the sides of the polytunnel are made up of a 3ft starter piece and 12ft extensions (tunnels of certain lengths will also have a 6ft extension). These aluminium sections are placed end to end and fixed at each hoop.

At each intermediate hoop a 'saddle clamp' is used to fix the aluminium rails to the hoop **(Fig73).**
*****Please note: the bolts for these clips must be slid into the aluminium rail from the end*****

At the corners a corner bracket should be placed around the hoop and the aluminium rails bolted through this bracket **(Fig74).**

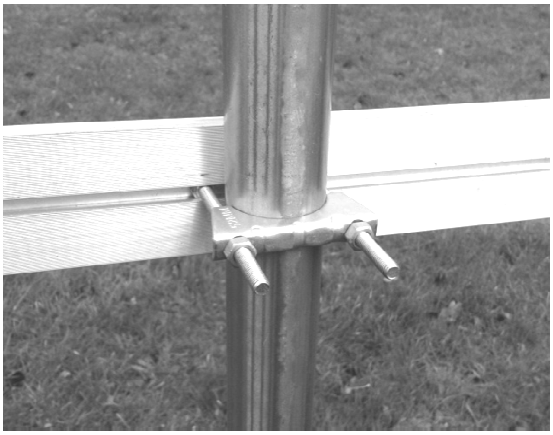


Fig73

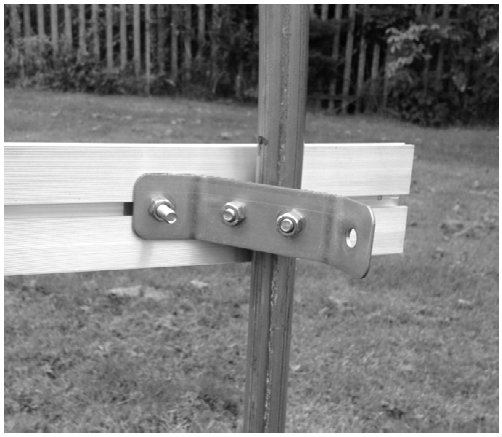


Fig74

Wherever a joint in the rail occurs, a joiner is used to fix the two aluminium lengths together **(Fig75).** The grub screws for these joiners are tightened into the aluminium sections using the Allen key supplied. These joiners must be inserted as you add each section of side rail.

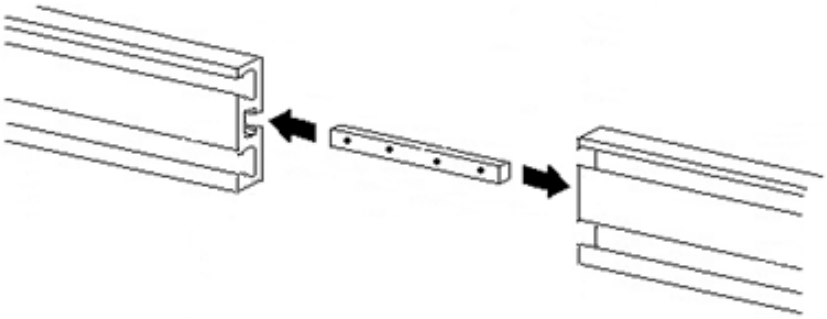


Fig75

Two 7ft lengths of aluminium are supplied for the corners. Cut these (with either an angle grinder or a hacksaw) to fit across the front of each door post and butt up to the overhanging side rail.
To attach the end rail to the Door Post drill a 9mm hole through the end rail and door post and bolt in place with a 65mm hex bolt with a washer under the nut on the inside **(Fig76)**.

Fig76

Bolt the opposite end of the end rail to the corner bracket and cut off the overhang on the side rail. Make sure to smooth off any sharp corners to avoid the cover splitting at these points.

VENTILATION SCREENS FOR ALUMINIUM SIDE RAILS

Tools required:
Rubber hammer

Your pack will include a 1.2m piece of double aluminium grip rail with an 800mm aluminium track screwed in place.

This piece of aluminium and a similar piece without the track attached are the verticals, and at a later stage are placed under the side rail at each corner and buried in the trench along with the ventilation net **(Fig77).**

Fig77

When assembling the side rail it is necessary to the aluminium out from the hoops to make room for the vent screen.

This is done by placing plastic spacers on every bolt between the fixings and the rails. 25mm spacers are used for every intermediate hoop, and 35mm spacers are used for the end hoops.
Washers are placed either side of the spacers on the bolts, and an extra saddle clamp is used on every intermediate hoop **(Fig78)**.
On the end hoops, a flat plate should be placed over the bolt, between the spacer and the aluminium rail. The plate should be on the side of the polytunnel (not the end) and is used later to fix the verticals **(Fig79)**. The plate should point downwards.

Fig78

Fig79

Once the tunnel is covered and the side rail has been lowered back to its original position you can fit the verticals. These verticals must be placed perpendicular to the side rail at the corners.

Bolt the verticals loosely to the drop plate. The vertical should be placed so the aluminium track is above ground level and is facing down the length of the tunnel **(Fig80).**

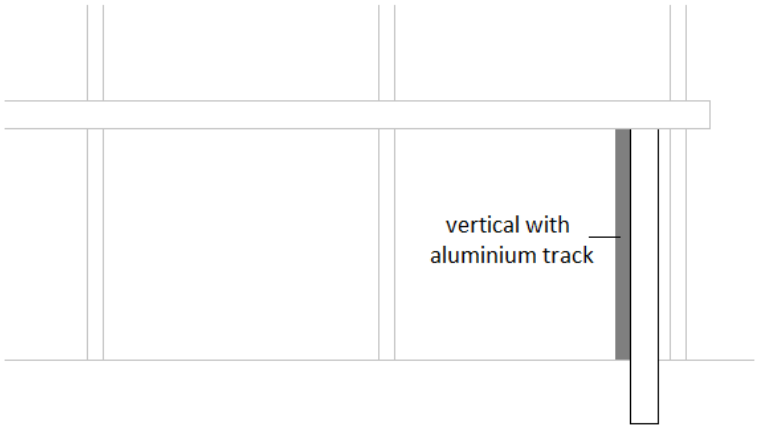


Fig80

Slide the gearbox into the track and insert a self drill screw approximately 5mm in from each end of the track to stop the gearbox from coming out **(Fig81)**.

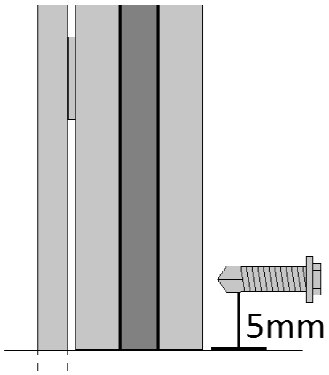


Fig81

With the vertical in the trench, dig out the ground so that the vertical doesn't angle in or out of the tunnel **(Fig82 & Fig83).**

Fig82 – ground dug out for vertical

Fig83 – vertical positioned in trench/dug out

Adjust the verticals so they run perpendicular to the side rail. Once happy with the position, tighten to the drop plate and pack around the base of the verticals with soil (just enough so that the vertical won't move before the full trench is backfilled).

The ventilation screen and the ventilation net are both fixed into the bottom cover slot down the length of the side rail between the verticals. The screen is to be placed in the slot first and then the net on top of it. Use the **BLACK** plastic 'U' profiles to fix these and NOT the grey profiles **(Fig84).** Insert plastic 'T' profiles into the black 'U' profiles to secure.

A rubber hammer should be used to insert the plastic profiles as standard metal ones may crack the plastic.

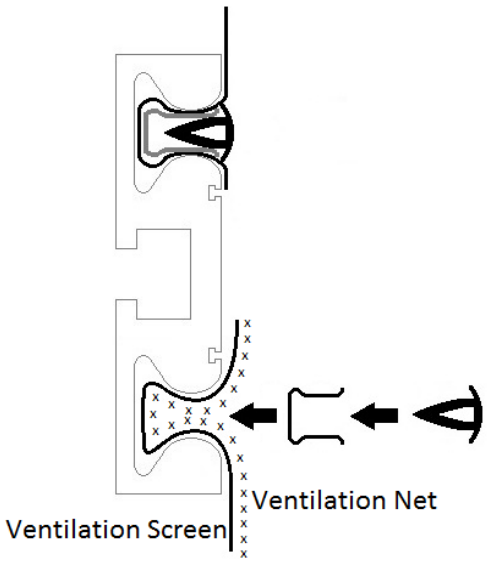


Fig84

Assemble the 28mm steel lifting tube as a complete length using the self drill screws with the square adaptor at the gearbox end **(Fig85)**. Insert the adaptor into the gearbox and cut the tube to fit between the vertical timbers with a little room for movement. Place a plastic end cap in the opposite end to the gearbox to finish it off neatly **(Fig86)**.Slot the square adaptor into the gearbox with the steel lifting tube resting on the ground.

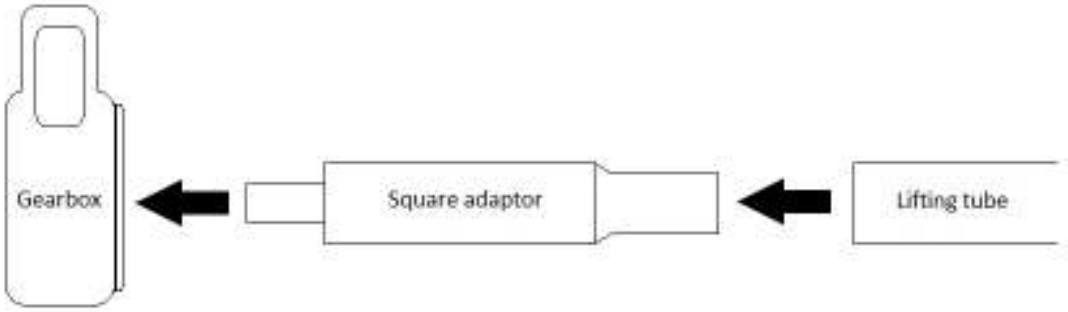


Fig85

Fig86

Trim the polythene screen in line with the ends of the lifting tube and trim off the excess along the ground leaving approximately 1ft of overlap **(Fig87)**.

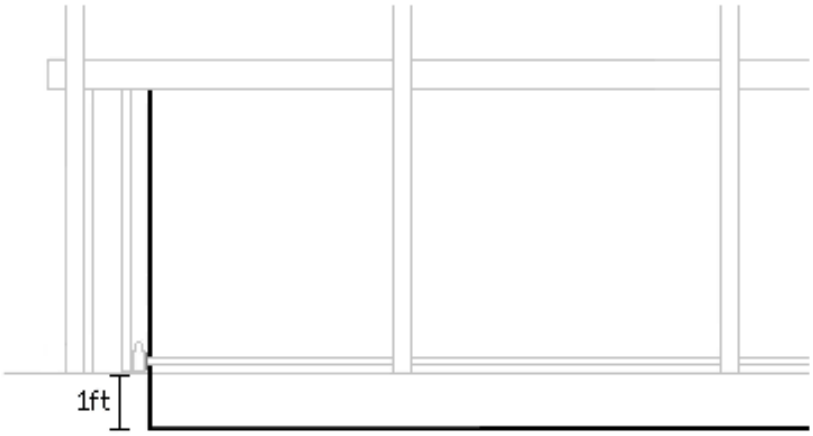


Fig87

Using the plastic 'C' Clips provided, clamp the bottom edge of the screen to the tube **(Fig88)**. A 'C' Clip should be placed approximately every 3ft along the tube.
Place the handle in the gearbox and wind the screen onto the lifting tube (including the excess polythene). If the screen does not roll up parallel, relocate the 'C' Clips around the tube until it rolls up correctly **(Fig89)**.

Fig88

Fig89

Tension the ventilation net down into the trench and backfill with soil until at ground level **(Fig90).**

Fig90

Next tension the net out to the verticals and fix in place using ‘U’ profiles. Insert a ‘T’ profile into any remaining ‘U’ profiles.

With your order you will also have received polythene infill panels for each corner. Using the **Grey** plastic ‘U’ profiles fit these panels into the bottom cover slot of the side rail from the door posts at each end of the tunnel out to and around the corner to the verticals. Insert a plastic ‘T’ profile into the ‘U’ profiles.
Tension the panels down into the trench and backfill with soil until at ground level.
Next tension the end panels out to the door posts and the verticals, using batten for the door posts and ‘U’ profiles for the verticals to fix in place **(Fig91)**. Insert ‘T’ profiles into the remaining ‘U’ profiles.

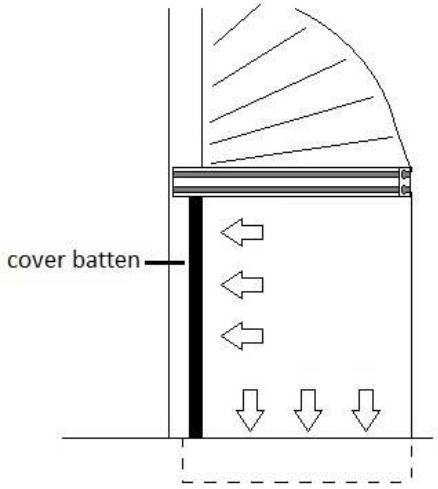


Fig91

FORMING A REBATE FOR THE DOOR FRAME

In order to fix the cover around the door frame and give it the necessary strength to remain held in position under extreme weather, it is trapped in a rebate which must be formed around the outside edge of the door frame with 19mm x 38mm battens **(Fig92)**. These battens should be cut and nailed up each leg and across the lintel to the outside edge (nails spaced at 9 inch).

The cover then comes over this batten and is trapped in place by another batten nailed to the door frame up against the first batten.

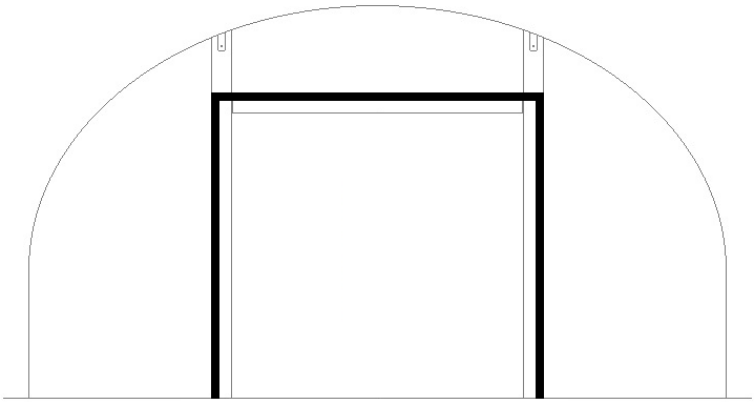


Fig92

FINAL FIX

Check the structure all around for alignment and positioning of all the bars. If you are happy, all joints and 'P' Clips can now be secured with a self drill screw **(Fig93)**. In some cases this may be a combined fix of both joint and 'P' Clip. These screws are held in the nut driver provided and, in the case of the 'P' Clips, use one of the two small holes as a starter point for the screw **(Fig94)**.
Keep all screws to the inside of the polytunnel, away from where the polythene cover may rub.

*****It is MOST IMPORTANT that the hoops are screwed to the Foundation Tubes*****

Fig93

Fig94

ANTI HOT SPOT TAPE

This is a self adhesive foam tape which is placed over each hoop from the base rail/side rail on one side, to the base rail/side rail on the opposite side. Anti Hot Spot Tape should be used just prior to covering your polytunnel.

On all of the hoops the Anti Hot Spot Tape runs over the centre of the hoop **(Fig95)**. On the end hoops an extra length of tape should be placed on the front face in order to protect the polythene cover as it stretches around the hoop to the door frame **(Fig96)**.

Fig95

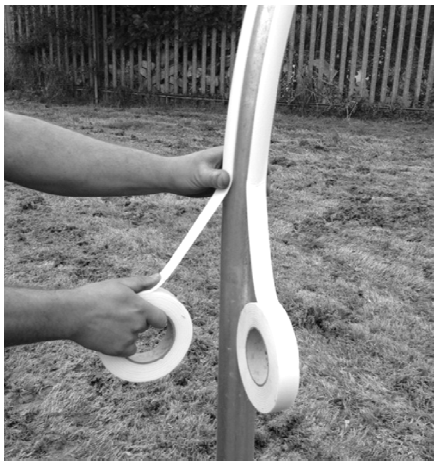


Fig96

COVERING THE POLYTUNNEL

TRENCHING OPTION:

Dig a trench down each side of the framework at a distance of 4 inches out from the line of the hoops.
At each end dig a trench at all four corners from the side trench to the door post.
This trench should be a spade wide and approximately 14 inches deep. The edge of the trench nearest the polytunnel should be as straight and neat as possible as your cover will follow this line **(Fig97 and Fig98)**.

*****Please note: Make sure you place the soil from the trench on the outside of the polytunnel*****

Fig97

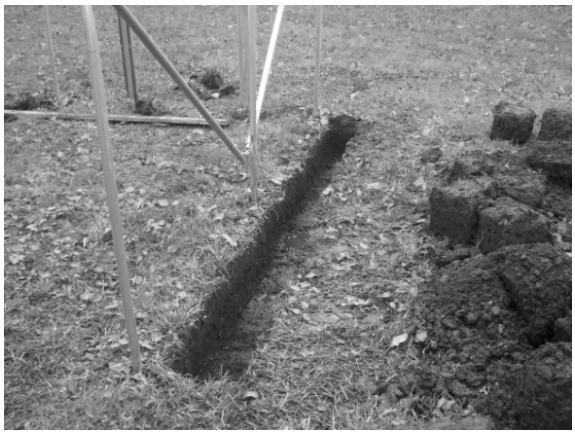


Fig98

Next, roll the cover out along the side of the polytunnel after checking and clearing the ground of sharp objects.

ONLY ROLL OUT YOUR COVER ON A CALM DAY AS YOU ARE EFFECTIVELY OPENING A LARGE SAIL.

This Thermal Anti Drip polythene must be placed with the Anti Drip side facing inside the polytunnel. The word "INSIDE" is written within the elephant logo and should be able to be read from the inside of the tunnel **(Fig99)**.

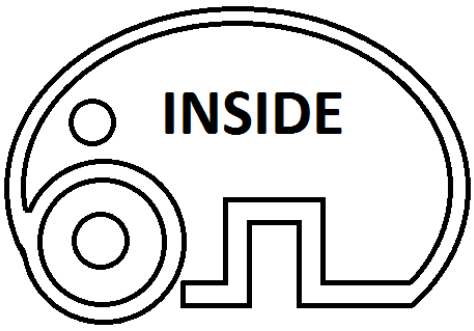


Fig99

With one person at each end, hold the edge of the sheet which, when pulled over the framework, will ensure the correct side of the polythene is on the inside of the polytunnel. Stretch the sheet tight along the length of the polytunnel and walk to the opposite side of the structure, taking the sheet over the framework and being careful not to snag the sheet on any protrusions **(Fig100)**.

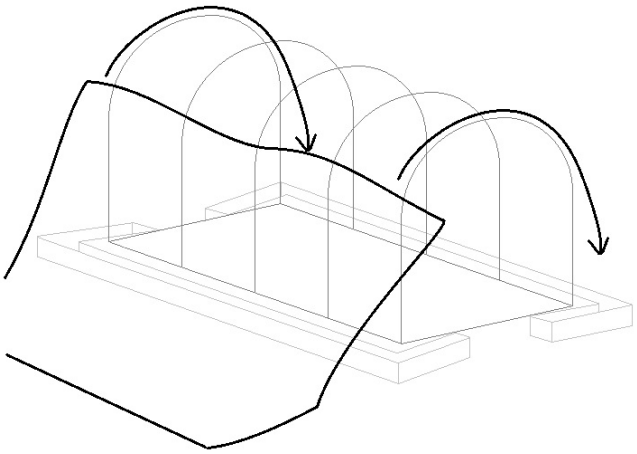


Fig100

The polythene is very strong and resistant to tearing so don't be afraid to pull it as hard as you can, but it is advisable to grip the polythene only around the edges as in the event of damage this area will be buried or can be trimmed off.
Centralise the sheet along the width and length of the polytunnel – You will find that the sheet will not reach to the ground at the ends, but this is correct and there is no need to worry **(Fig101).**

Fig101

- **STEP 1:** Cut a 19mm x 38mm batten to fit across the top of the door frame and end frame between the outer battens that form the rebate. Starting at one end of the polytunnel, trap the polythene with this batten pressed tight against the rebate batten. The polythene should be smoothed out 6 inches either side of the lintel centre and the batten nailed in place along this 12 inch length only **(Fig102)**.

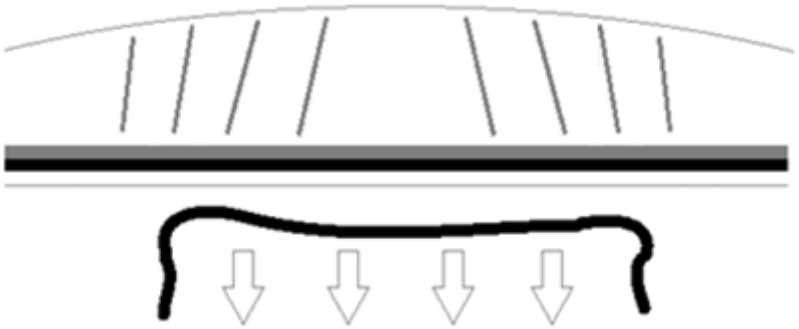


Fig102

At the opposite end of the polytunnel the same method of fixing should be used, but this time the polythene should be pulled along the length of the polytunnel as tight as possible before nailing the batten in position.

- **STEP 2:** Tension the polythene into the trench on one side starting in the middle – This is best done with one person at a hoop either side of centre **(Fig103)**. Do not over tension but, when the cover is smooth from the ridge down into the trench, back fill the trench between the two people with the polythene forming a "U" around the trench and the soil on top **(Fig104)**. Using this method, work your way out to the ends.

*****Make sure to pull the cover along the length of the tunnel as well as down into the trench, this will mean the cover will not dip between the hoops too much*****

Repeat this operation on the opposite side of the polytunnel, starting in the middle and working out – only this time get as much tension into the cover as possible. It is acceptable to stand on the cover in the trench to get the required tension.

Fig103

Fig104

- **STEP 3:** With just the four corners and door posts left, it will now be necessary to cut the polythene at the corners, but ONLY in the trench below ground level, to allow the cover to come smoothly around the ends **(Fig105)**. It is important that the cover is cut in line with the end of the tunnel, **NOT** the length.

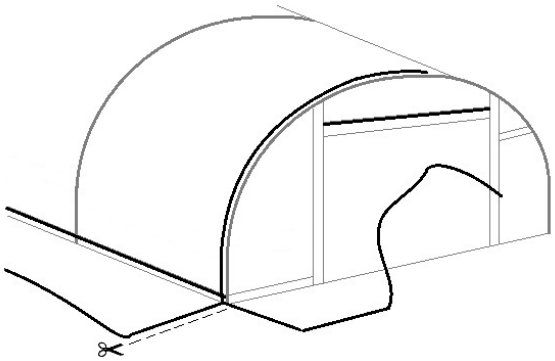


Fig105

- **STEP 3:** Starting at the lintel, grip the polythene and, while pulling tightly, twist the wrist to create a selection of pleats working out to the Door Post, nailing the batten as you go **(Fig106)**. Repeat this same method down each door post **(Fig107)**.

Fig106

Fig107

You should have run out of pleats by the time you reach the level of the straight side after which the polythene should form a smooth flat panel **(Fig108)**.

You should have run out of pleats by the time you reach the level of the straight side after which the polythene should form a smooth flat panel **(Fig108)**.

Tension the cover into the trench at each corner and back fill with soil.

Trim off the excess polythene around the door opening **(Fig109)**.

Fig108

Fig109

COVERING THE POLYTUNNEL

TIMBER SIDE RAIL OPTION:

On any sides where side rails are being used, loosen the clamps holding the side rail to the hoops. Raise the rail by 2 - 3 inches and retighten the clamps.

Fit the cover using the same method as the trenching option, see page 44, the only difference being that instead of backfilling the trench you will use batten to trap the cover underneath the rebate on the side rail **(Fig110)**

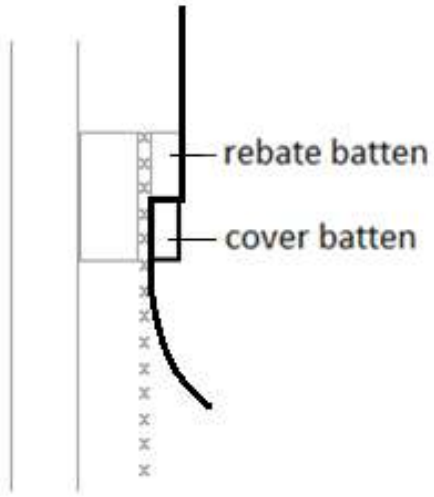


Fig110

Once the cover is fully fitted, lower the side rail back to its starting position and tighten all the clamps.

Tension the ventilation net down into the trench and backfill with soil until at ground level.

Finally, tension the ventilation net out to the door posts and batten in place.

*****When a side ventilation screen is being used please see 'ventilation screen for timber side rails' section on page 32 to see how to fix your netting and infill panels*****

COVERING YOUR POLYTUNNEL

Tools required: Rubber hammer

ALUMINIUM SIDE RAIL OPTION:

On any sides where side rails are being used, loosen the clamps holding the side rail to the hoops. Raise the rail by 2 - 3 inches and retighten the clamps.

Fit the cover using the same method as the trenching option, see page 44, the only difference being that instead of backfilling the trench you will use **Grey** plastic 'U' profiles to trap the cover into the top cover slot of the side rail **(Fig111)**.

A rubber hammer is preferred for this job as standard metal ones may crack the plastic profile.

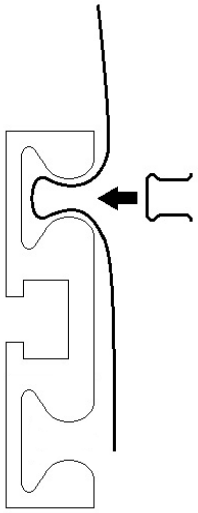


Fig111

*****It is useful to push the cover into the cover slot before inserting the plastic 'U' profile as it eliminates the chance of slicing the cover*****

Insert plastic 'T' profiles into all the 'U' profiles once each section of the cover is completed **(Fig112)**.

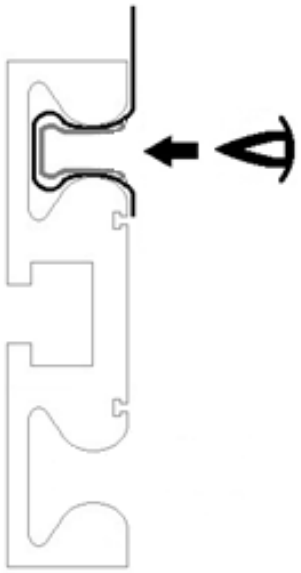


Fig112

Once the cover is fully fitted, lower the side rail back to its starting position and tighten all the clamps.

After the side rail has been lowered to its starting position again, the ventilation net can be fixed into the bottom cover slot of the side rail. It should be fixed in using the **Grey** plastic 'U' profiles. Once it is fixed with these profiles around the side rail from door post to door post, secure it by inserting the plastic 'T' profiles into the already fixed 'U' profiles **(Fig113).**

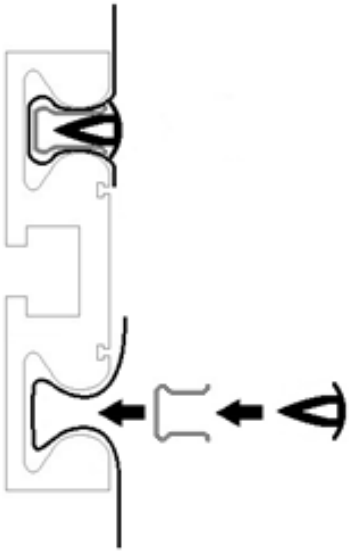


Fig113

Tension the ventilation net down into the trench and backfill with soil back up to ground level. Finally fix the Ventilation net to the Door Post using a timber batten**.** Trim off any excess.

*****When a side ventilation screen is being used please see 'ventilation screens for aluminium side rails' section on page 38 to see how to fix your netting and infill panels*****

SLIDING DOOR ASSEMBLY

After completing and covering your polytunnel you can assemble the sliding door system.

Two lengths of 3 inch x 1 inch timber are supplied with a double sliding door kit. These timbers are placed across the outside face of each door post and out to the hoop **(Fig114).** This is to stop the sliding door from rubbing against the cover.

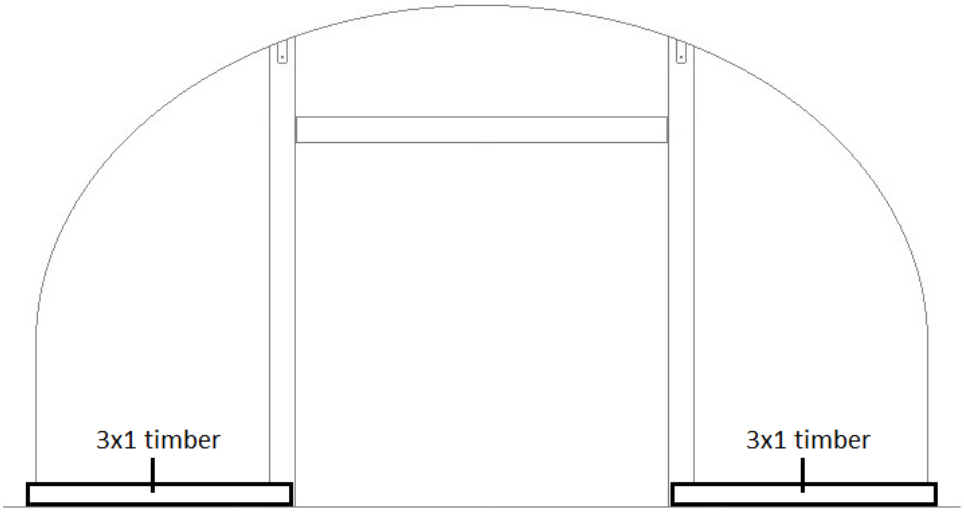


Fig114

Drill a 9mm hole through the 3 x 1 timber, the door post and the batten. Using a M8 x 100 cup square bolt, bolt the 3 x 1 timber to the door post**.**

On the inside of the tunnel place a 'P' Clip around the hoop, with the leg of the 'P' Clip facing towards the door post. Drill a 9mm hole through the 'P' Clip hole, through the polythene cover and 3 x 1 timber **(don't worry about drilling through the cover, the 9mm hole will not affect the cover).**

Bolt the 3 x 1 timber to the 'P' Clip through the polythene cover and tighten **(Fig115)**. Fix the 'P' Clip with a self drill screw.

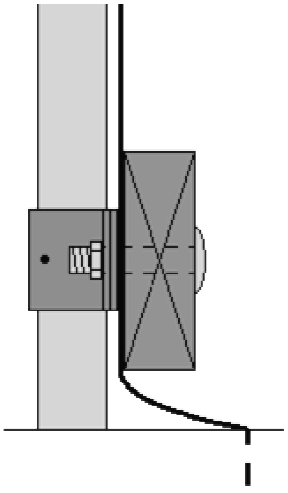


Fig115

You can now attach the door track.

Measure 2 inches up from the bottom edge of the door frame lintel and drill two 9mm holes through the timber batten and the face of the lintel approximately 4 inches in from each post.
Measure a further 20 inches in from the outside holes and drill a further two 9mm holes **(Fig116)**.

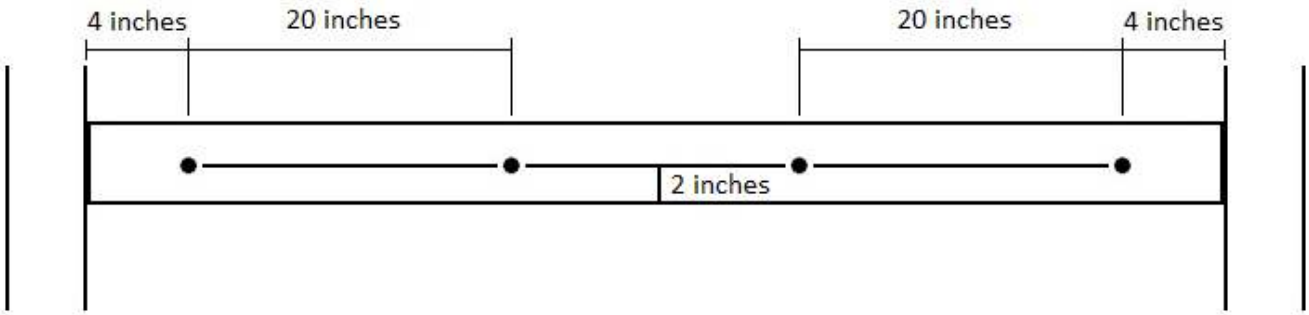


Fig116

Next, slide four 8mm x 80mm hexagon bolts into the 'T' slot on the back of the door track. Position these bolts in line with the holes drilled in the lintel and push into position **(see Fig117)**.

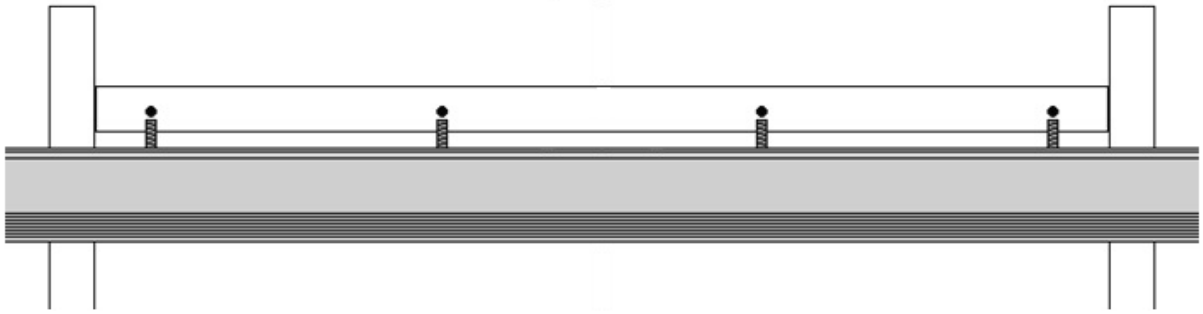


Fig117

Adjust the sliding door track as necessary so that the centre of the track is inline with the centre of the lintel **(Fig118)**.

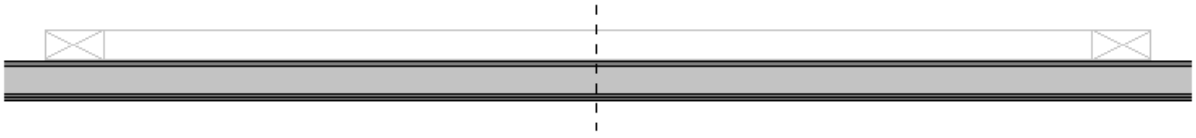


Fig118

Place a washer and nut on the bolts and tighten **(Fig119)**.

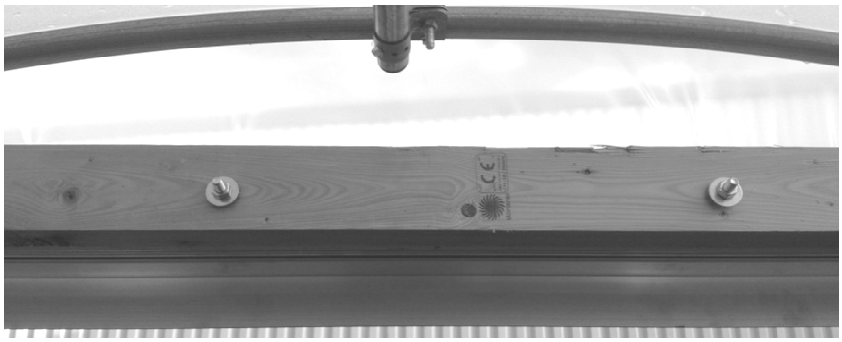


Fig119

Having pre- assembled your doors and covered them with polythene you now need to screw the runners (wheels) in position on the top edge of the doors **(Fig120)**.

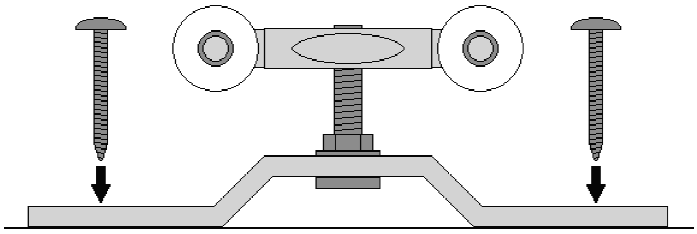


Fig120

The runner should be screw up to the ***outside*** edge of the doors. (Please note; the ***outside*** edge is where the battens holding the polythene panel are fixed) – **(Fig121).**

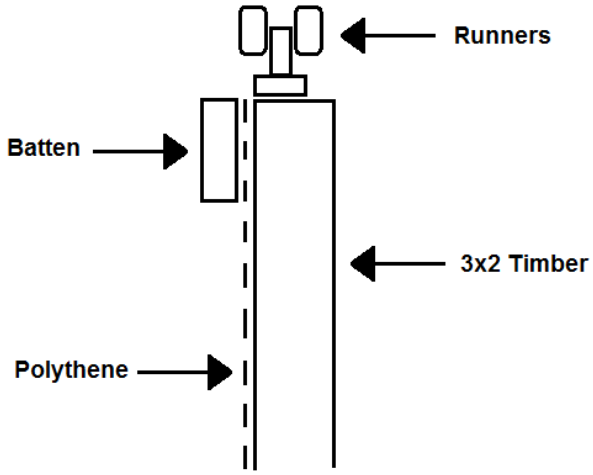


Fig121

The first runner should be placed 5-inch from the end of the door that is to meet the adjoining door. The second runner should be placed 17-inch from the first runner **(Fig122).**

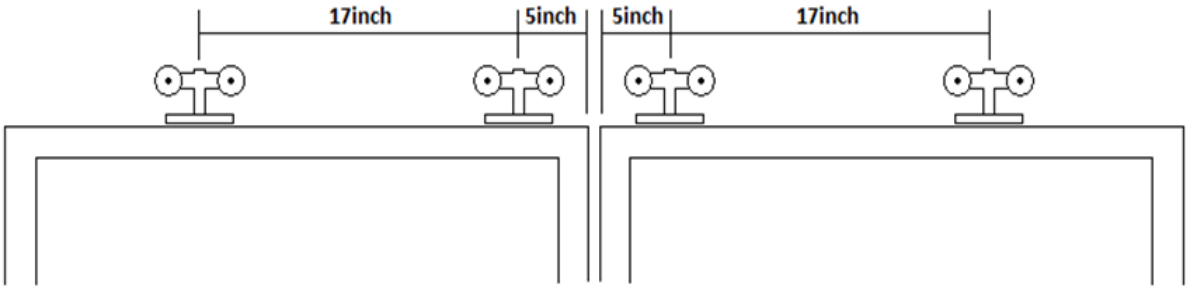


Fig122

Insert two of the door stops into the track – leave these loose in the track for the time being **(Fig123)**.

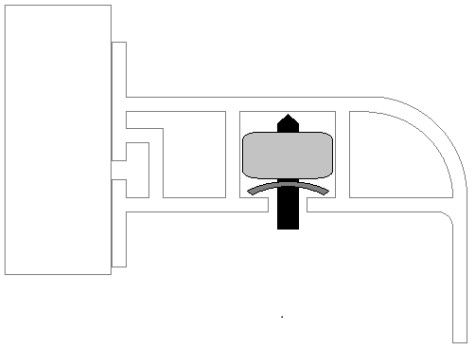


Fig123

Slide the doors into the track with the battens facing outwards. Adjust the runners up or down on the threaded bolt until the doors sit square to the door frame and each other.

Insert another door stop **(Fig123)** into each end of the track. When you are happy that the stops are in the right position so that the doors will not open or close too far, you can now tighten the stops into position.

Insert the plastic finishing end caps into the ends of the track to round off the sharp corners on the ends of the track **(Fig124)**.

Fig124

When the doors are in the closed position they should overlap each inner door post equally – approximately 1½ inch.

Drive a 500mm long tube (supplied) into the ground at each end of both doors to stop the doors from swinging out away from the polytunnel **(Fig125)**.

Fig125

With the doors in the closed position, these drop tubes should be positioned in line with the outer edge of the door face **(Fig126).**

The two centre tubes should be driven in to ground level.

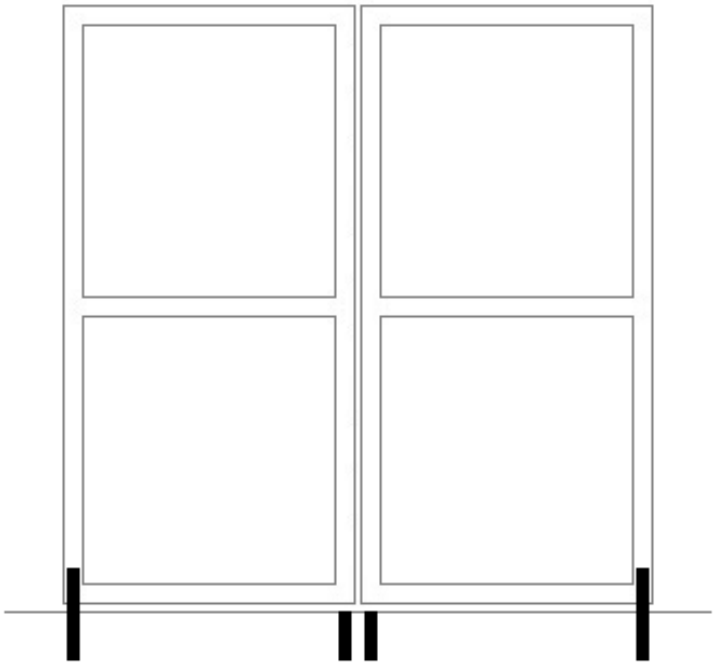


Fig126

The two outer tubes should be left protruding from the ground in order that they overlap the doors by 2½ inches **(Fig127)**.

Ensure you position these drop tubes slightly away from the doors in order that the doors can slide freely between the polytunnel and the drop tubes.

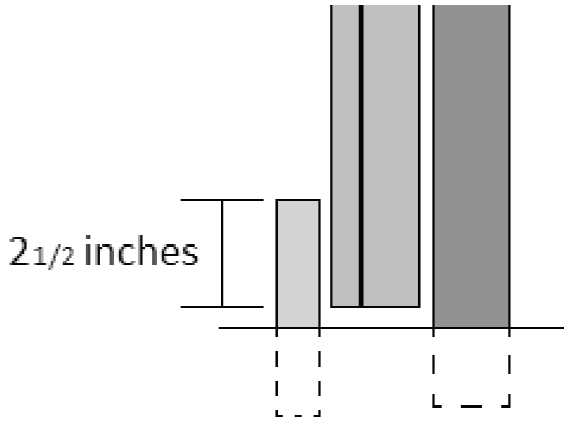


Fig127

Two drop bolts are supplied with double sliding doors – one per door.

There are two screw-in eyes for each of the drop bolts – the first of these 'eyes' should be screwed into the bottom corner of each door (on the side of the doors where a catch would usually be fitted to lock/hold the doors closed/together) in line with the drop tubes approximately 4 inches up from the bottom edge. The second 'eye' should be screwed approximately 7 inches higher than the first **(Fig128)**.

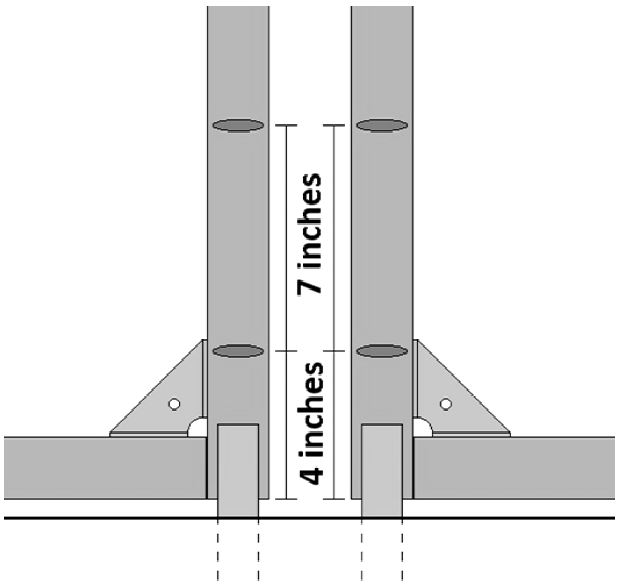


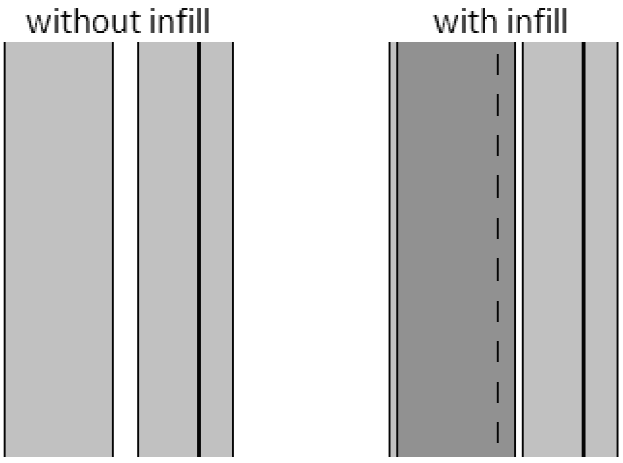
Fig128

Drop the bolts through the 'eyes' and into the centre tubes – this will hold the doors shut.

Open the doors and drop the bolts into the outer tubes to hold the doors open.

Two timber infills are supplied with each sliding door frame. These are nailed to the inside of the inner door posts and fill the gap between the frame and the door **(Fig129).**
Please note: at no point should they come in contact with the door as this would stop it from sliding.

Fig129



Well done! You are now ready to begin growing and relaxing in your Premier Polytunnel!