PREMIER POLYTUNNELS

The Outside, **Inside**

CONSTRUCTION GUIDE

For Fruit & Veg Cages

Thank you for purchasing a 'Premier' Fruit & Veg Cage.

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

A fruit and vegetable cage is not a difficult structure to construct, but it will require basic D.I.Y skills. Why not invite a friend to join you and make a day of it – After all, two heads are better than one.

The following is a Guide to the successful construction of your fruit and vegetable cage. If you follow this Guide, you will have many years of growing pleasure 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 fruit cage. When identifying the different steel tubes, the item codes on the Checklist relate to the diameter and length of tube and how the ends are formed, e.g. **"28/1530PP"** is a 28mm diameter steel tube, 1530mm long, with plain ends. **"PS"** at the end of the code would indicate the tube had one end plain and one end swaged.

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 Helpline, available until 9pm, 7 days a week.

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TOOLS REQUIRED

A spirit level is not a necessary instrument in this construction where a good eye will do, but the more care that is taken to ensure everything aligns, the better the finished project will look.

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
Timber drift	2 x 13mm spanner	Marker pen	Battery Drill
9mm drill bit	Philips screwdriver	Wood saw	String Line
5mm drill bit	Sharp Knife		

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 fruit and vegetable cage.
A fruit and veg cage is a series of rectangles 2m wide x 2.4m long.
A series of hoops are placed in line on **Foundation Tubes.**
A **Ridge** tube is suspended under the hoops at each side in the centre of the hoops' curve and runs the full length of the cage.
Four diagonal tubular **Stabilisers** are placed one at each corner. On cages which are more than one bay (2m) wide, Stabilisers are also placed between each bay at each end of the cage.
A timber **Door Frame and Door** is fixed central at one end (in the first bay).
Fruit Cage/Anti Bird Net is placed over the framework and fixed around the Door Frame. The Anti Bird Net is then pegged into the earth around the base **– OR –** fixed to the **Base Rails.**

Where two tubes connect a simple fixing method using two **"P Clips"** is always necessary.

The images below demonstrate the use of **P Clips.**

*****PLEASE NOTE: When assembling your fruit and veg cage, no screws, bolts, ends of tubes, etc, should protrude beyond the hoops as these will cause damage to your net cover.*****

SITE

Your construction site should be clear and reasonably level from side to side. You will require at least a 2ft working area around the fruit and veg cage. Approximately 6-inch out of level can be taken up by adjusting the Foundation Tubes of your cage. A slope from end to end does not have to be taken into account as your fruit and veg cage can be built straight onto this slope with the framework placed at the vertical.

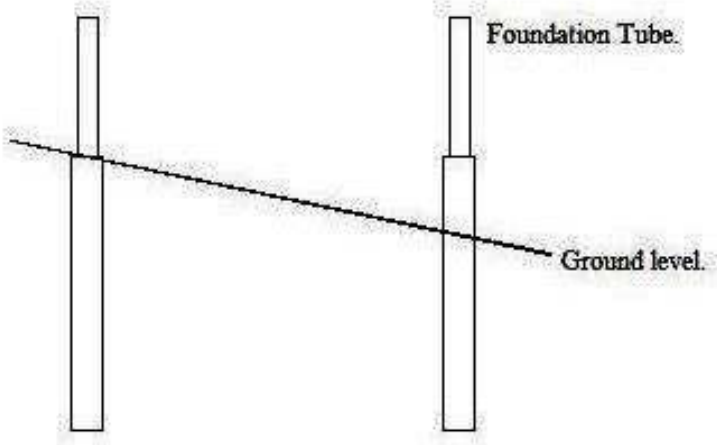


Fig1

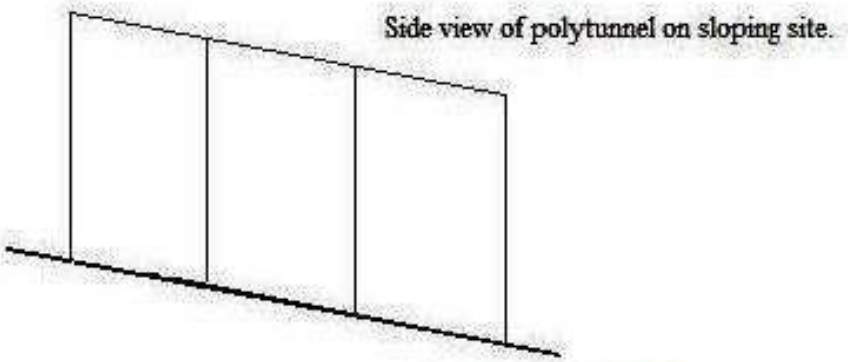


Fig2

Fig1 shows a slope from side to side and how up-to-a 6-inch slope can be removed by adjusting the foundation tubes.

Fig2 shows a slope from end to end (Same idea for Polytunnels and Fruit & Veg Cages).

FOUNDATION TUBES

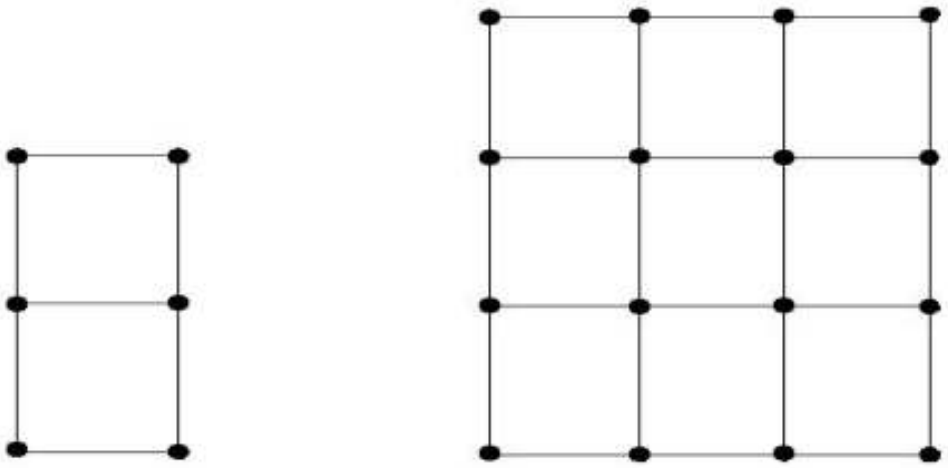
Here at **Premier Polytunnels** we understand that gardens are not square, therefore we have designed a fruit and vegetable cage that does not have to be built square and the width and length can be simply reduced to suit the individual plot. Although considerable liberties can be taken regarding square and size, it is necessary for the outer hoops to be inline.

The following instructions are based on a fruit and vegetable cage being built square and to the standard sizes.

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

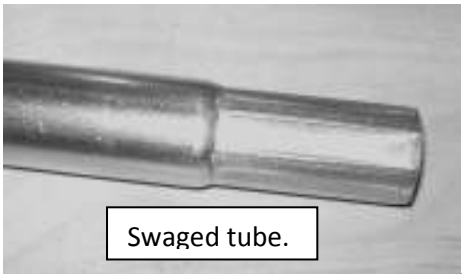
Foundation Tubes are driven into the ground at each end of each hoop.
Choose a corner of your fruit and veg cage to be a fixed point from which all measurements will be taken and drive in a 500mm long swaged Foundation Tube using a timber drift to protect the end, leaving only the swage protruding above ground. (The "swage" is the end of the tube which has been reduced in diameter). Measure the length of your chosen fruit and veg cage (2.4m, 4.8m, 7.2m) and drive in a second tube. (All measurements are to the centre of the tube). Mark out the remaining corners, but do not drive in the Foundation Tubes yet. The measurements for these will be the width (2m, 4m, 6m) and length of your cage. To check for square, measure from corner to corner **(See Fig3)** – This measurement should be the same, but, if not, simply adjust the two tubes along the length until correct. Re-check the measurements and drive in these two tubes until level with the first two.
Mark out the position for the remaining Foundation Tubes down the length of the cage at 8ft spacing, and drive in Foundation Tubes. Use a string or straight edge to check the tops are level and the tubes are in line.
For fruit and veg cages greater than 2m wide a second or third row of Foundation Tubes should be placed at 2m intervals in line and level with the outer foundation tubes **(Fig2a).**

Diagram showing position of foundation tubes



2 bay 2m x 4.8m **9 bay 6m x 7.2m**

Fig2a



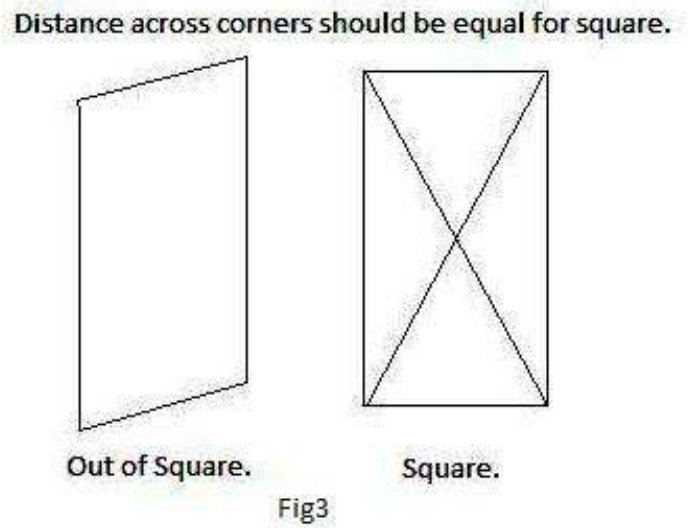
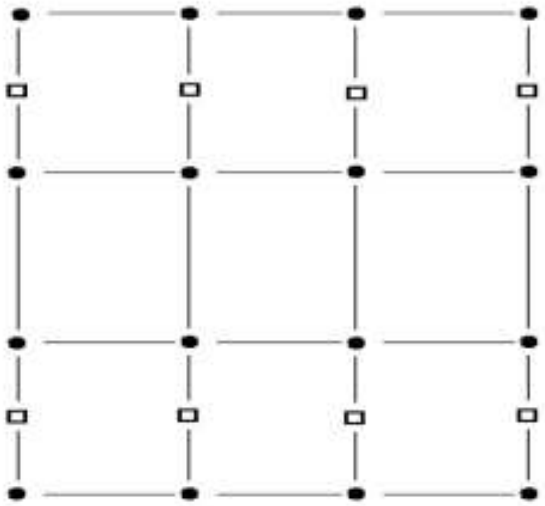


Fig3

STABILISER FOUNDATION TUBES

In order to stabilise the structure, a diagonal stabiliser tube is placed on each of the end hoops/uprights. These angle down to a point midway between the end hoop/upright and the second hoop/upright. In order to locate these stabilisers a further 500mm PLAIN Foundation Tube is driven into the ground leaving 4-inch protruding with a plastic end cap in the end **(Fig4{8} and Fig5).**



The squares show the position of foundation tubes for stabilisers

Fig8

Fig4{8}

Fig5

HOOPS

With all the Foundation Tubes in place, an outer hoop or inner upright should be placed on each of the swaged tubes. There are two rows of outer hoops on all sizes of fruit and veg cages and these have a curve at one end – These make up the sides of the frame. All other end and intermediate uprights are straight tubes measuring 1.93m **(Fig6).**

Fig6

On 2m wide fruit and veg cages there are no uprights and the two outer legs should be joined together with a straight top tube 1.31m long **(Fig7).**

In all cases where two tubes joint they are locked together with a self drill screw. 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 (Fig8).

Fig7

Fig8

Self Drill Screw

On fruit cages greater than 2m wide the top tubes should be joint together with a top tube joiner, this is a tube 0.81m long and swaged at both ends. This tube sits **on top** of the upright and is held in place with two P Clips. The P Clips should be tightened with the upright dead centre of the joiner **(Fig9 and Fig10).**

Fig9

Fig10

RIDGES

On 2m wide fruit and veg cages there is a ridge running the length of the frame on each side. Ridges are made up of a starter ridge with plain ends 2.44m long, extensions to the ridge are swaged at one end and are 2.49m long these slot together and the two outer ridges are clamped in place using the double P Clip method approximately half way around the curve of the hoop. Before final fixing, the distance between the hoops must be measured at 2.4m or the same distance as between the Foundation Tubes **(Fig11).**
On fruit and veg cages greater than 2m wide, extra ridges run the full length where there is a central upright **(Fig12).**
The end of the ridges should have a plastic cap inserted.

Fig11
Outer Ridges

Fig12
Inner Ridges

The images below demonstrate the use of **P Clips.**

*****PLEASE NOTE: When assembling your fruit and veg cage, no screws, bolts, ends of tubes, etc, should protrude beyond the hoops as these will cause damage to your net cover.*****

STABILISERS

With all the hoops in positioned it only remains to fix the stabilisers to complete the frame. Stabilisers are place on each of the end hoops and uprights – These are clamped to the stabiliser Foundation Tube and angle up to the hoop/upright. Before tightening the clamps on the hoops/uprights you should slide the P Clips up or down the hoop/upright until it is vertical. Plastic end caps are placed in each end of the stabilisers **(Fig13 and Fig14).**

Fig13
Stabiliser located on Foundation Tube

Fig14

FINAL FRAME FIX

Now that the frame is complete, have a quick check visually that everything is in line and looking correct. If happy, fix **every** joint and P Clip in place with a self drill screw. P Clips have 3 small holes in them to help position the screw – Use these holes as a starter point.

A complete 4 bay (4m x 4.8m) Fruit & Veg Cage Frame

SINGLE DOOR

*****MEASURE TWICE, CUT ONCE TO AVOID MISTAKES!*****

Your door is supplied as a kit with pre-cut lengths of 2-inch x 1-inch timber.
Using a flat surface or bench take the two 2-inch x 1-inch x 1.8m door legs and the 3 cross timbers 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. This enables the door to be built square without checking **(Fig15)**.

Fig15

Tack the net panels to one face of the door and lightly tension the net in position – 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 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 **(Fig16).**
Cut two battens to fit down the door legs and nail in position (nails should be about 4-inch apart).
Cut and fix the final batten across the centre rail and trim off all excess material around the edges.

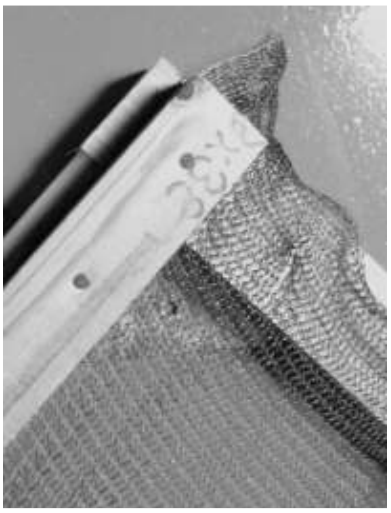


Fig16

DOOR HINGES
Two, 3-inch butt hinges should be screwed to the inside edge of the door approx 9-inch from each end.

DOOR FRAME

The door is designed to be fitted to the first bay – 2m x 2.4m. If necessary, the door can be placed in any of the end bays, although side entry is an option by fixing the door frame to the side ridge – **(This option may require extra net).**

2-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 is 26½-inch (2ft 2in) if using the standard door supplied with your kit.

Decide on a position in the first/end bay for the door post, which is going to carry the door hinges, and mark the top tube. Dig a hole approximately 12-inch deep directly below this mark and position the 8ft door post into the hole. Check the post for vertical and mark the timber under the top tube. Cut the post on this mark.

Place a P Clip on the top tube with the leg of the 'P' to the outside. Re-position the post in the hole, then with the P Clip running down the outside face of the post, drill the post and bolt to the P Clip. Secure the P Clip to the top tube with a self drill screw. This method reduces the amount that the post protrudes past the outside edge of the hoop **(Fig17).**

Fig17

Fig18

Please Note: A washer must be used behind the nut **(Fig18).**

Back fill the hole with soil making sure the post remains vertical and in line with the end hoop.

Hang the door on this post leaving adequate room at the bottom for the door to open without catching **(Fig19).**

Fig19

Dig a second hole at the edge of the door and place the second door post in this hole. Mark the post under the top tube and cut along this mark. Hang the post using the same method as used when hanging the first post. Slide the P Clip along the top tube until there is a gap of approximately 6mm between the door and post (use a 6-inch nail or screwdriver shaft to get this gap). When you are happy with the position and the gap, back fill the hole and secure the P Clip with a self drill screw.

The 2-inch x 2-inch timber lintel supplied should be cut if necessary to fit between the timber door posts above the door.

Drill a 5mm hole through the side of each door post 1-inch above the top of the door. Sit the lintel in place between the door posts and on top of the door with a 6mm gap once again between lintel and

door. Fix in place with a 4-inch nail through the previously drilled holes **(Fig20).** Screw an angle bracket across each joint on the inside of the frame **(Fig21).**

Fig20

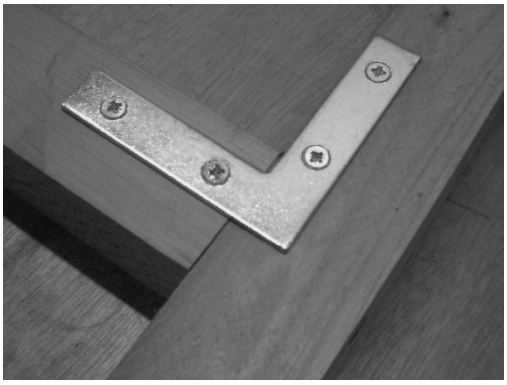


Fig21

DOOR CATCH

The catch is a simple hook and eye.

Cabin Hook Door Catch

Finished door and frame

COVERING YOUR FRUIT & VEG CAGE

Our 'Premier' Fruit & Veg Cages are covered with Fruit Cage/Anti Bird Net, which is a very strong, knitted net that has mesh holes of 20mm.

This woven net has a lot of stretch in it and as a guide to when it is under the correct tension, the holes should be approximately square. ***Remember this is only a guide and has a lot leeway.** ***

Your fruit and veg cage is covered in a one-piece net which should be stretched over the frame and positioned so that the net comes at least down to the ground all-round.

Using plastic ground pegs, the sides of the net should be anchored every metre. Pull the net around the end to the door making sure there is enough net at ground level to secure.

Using the 19mm x 38mm timber batten and nails secure the net around the door frame **(Fig25).**

At the rear end of the cage the net should be gathered ("mare's tail") in the middle of each bay and tied with a cable tie **(Fig22 and Fig23),** once again making sure there is enough left to peg the rest of the net to the ground across the end. Peg the "mare's tail" down **(Fig24)**. Use the rest of the pegs, spread evenly or where necessary, around the outside of the cage to fix the net down.

Trim the excess net from the door frame.

To protect against intruders and greedy ground-dwelling pests, the net can be buried in a trench or have soil piled around the edge after covering is complete.

Fig22

Fig23

Fig24

Fig25

Don’t forget – We’re here to help! Just telephone our Construction Advice Helpline (7 days a week, until 9pm) on 01282 811250 and a member of Construction Team will be happy to answer any technical/construction queries or questions you may have.

Congratulations! You are now ready to begin growing and relaxing in your ‘Premier’ Fruit & Veg Cage!