

Guidance for installation and maintenance of Cactus Tree Guards

Cactus tree guards come as flat-packed sheets of steel mesh, spiked on one side. The sheets are 160cm high by 100cm wide.

Personal Protective equipment (PPE)



Safety Glasses



Gloves



Anti-Perforation
safety boots

Protection of eyes and hands is essential when handling, forming and maintaining the guards.

Your delivery:

If you ordered 35 or less guards they will usually come folded over in 5s or 6s to enable us to get them onto a standard sized-pallet. Over 35 guards they will come flat-packed on an over-sized pallet. This is to make the most cost effective use of the pallet network, reducing the delivery cost and carbon footprint per unit. Please note that if you order rebars we have to use an over-sized pallet and we can put approximately 200 guard sheets with 600 1500 x 10mm rebars on the same pallet.

If they are folded simply cut the straps and release the bundles of guards. They will usually be tied together with releasable cable ties. I suggest you release these rather than cutting them as they are very useful when forming the guards.

Guard forming:

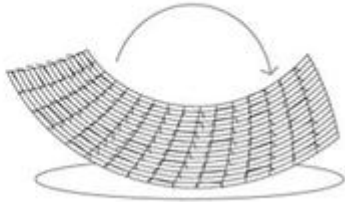
Wear eye protection and leather gloves.

You have two basic options:

a The Cactus Tree
Guard former tool



b Or on the ground



Option (a): Guard former tool.



Cactus tree guard forming tool

This is designed to make forming the guard easier on the back as you can work standing and you can do it on your own, but it isn't essential. You will need to support it at working height on two trestles, or fix it to some timber posts or the side of a trailer you are going to use to carry the guards into the field. This will require welding or bolting. Note that you can make a basic guard former by knocking 2 fence posts into the ground 2m apart. Then fix 2 timber fencing rails to the posts with a 75mm (3") between the rails. Use this long slot to form the guard through.



Hold the sheet by the short edges with spikes facing you. Put one long edge into the former and push the other edge over the top of the round bar. Keep moving the sheet further through the slot as you repeat this process. I found some customers demonstrating this process for me:

<https://www.facebook.com/reel/668961682268380>

Option (b): Forming the guards on the ground.

Lay the sheet spikes down on grass, not a hard surface as it will damage the spikes.

Take hold of one long edge and push it away from you towards the other long edge. It is possible on your own but it's difficult. Get a second person to tie up the long edges. I prefer to use releasable cable ties but you can use "hog ring" clips (CL22)...



CL22 Hog rings and CL23 applicator tool



Easytied tool

...or the Easytied drill bit tool - note it does *not* come with a power drill!

Also I don't supply CL22 hog rings. The hog rings can only be used to clip the guard to itself when forming.

I highly recommend using a manual screw-driver like this one...



...is very handy as its easier to carry and no power is needed.

Use the 6mm wire ties if using wires ties or 10mm will do fine *but make sure you have enough to tie the rebars to the cage if you do it all in 10mm ties*. To use the Easytied push the wire hoop ends firmly into the drill bit holes and push right up *before* twisting. This requires a gloved finger holding the tie in position and pushing towards the drill bit.

Positioning the guard –

If using rebars you have the option of positioning them on the outside or the inside of the guard. If you are using any other posts they *must* be on the inside to avoid them becoming a rubbing post. To put them on the outside you can use the ledge on the rebar rod driver...



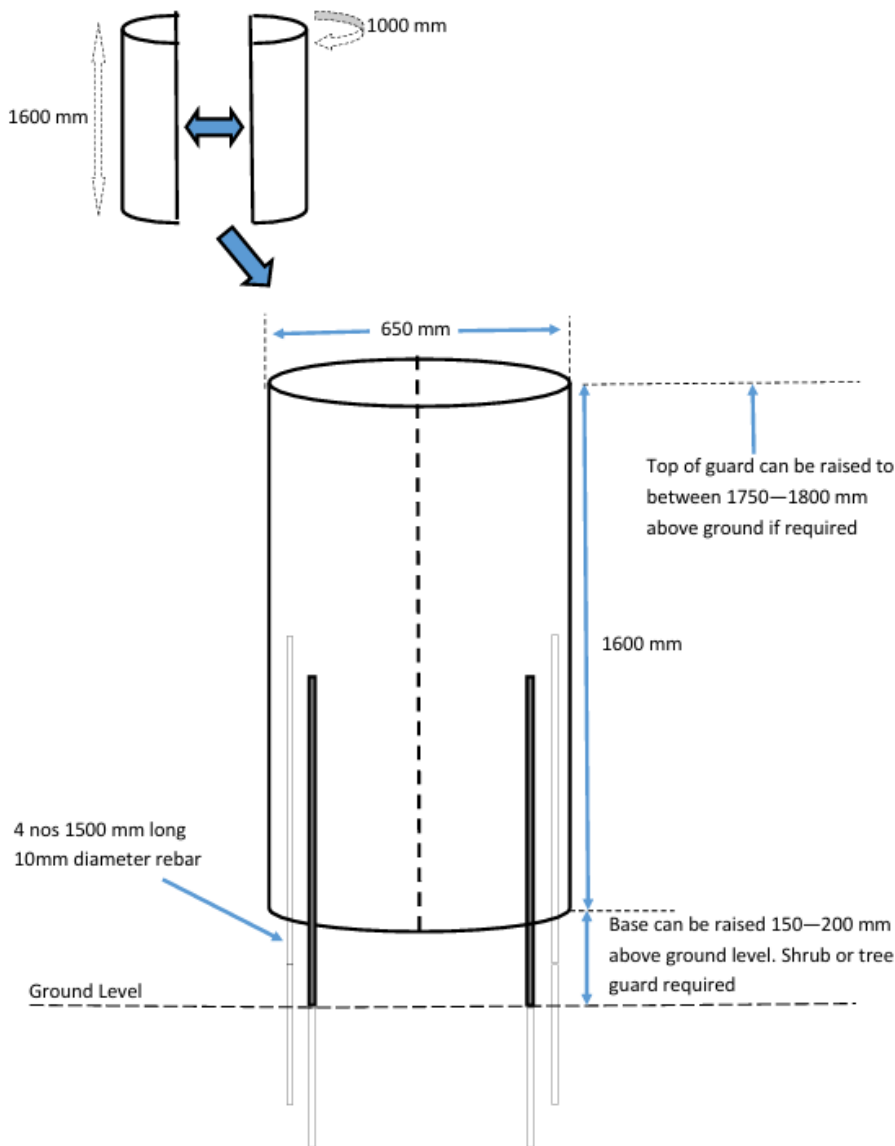
Rebar rod driver

...with a lump hammer to knock the rebars in without hitting on the top of the driver and risking hitting the spikes. On most soils you won't need to hit the driver at all unless the ground is very hard in the summer.

I recommend using 3 rebars in a triangle pattern on a single guard and 4 rebars if doing double sheet guards (see below). You can make the spacing of the rebars much easier by making a ring template (cut from the bottom of an old lick bucket or plastic sheet) to put on the ground to give you the correct spacing.

The main reason for choosing to put rebars on the outside of the guard is to make it quicker to firm up the rebars should they come loose. You can simply cut the wire ties with a small pair of wire cutters and use the rod driver tool to knock the rebar further into the ground. If the rebars are installed on the inside of the cage you would have to cut all the wire ties, remove the guard, put the rebars back in and then re-tie all the rebars. It's not as bad as it sounds but if you have a lot to do the extra time soon adds up. There's no escaping some timely maintenance I'm afraid!

Double sheet guards explained:

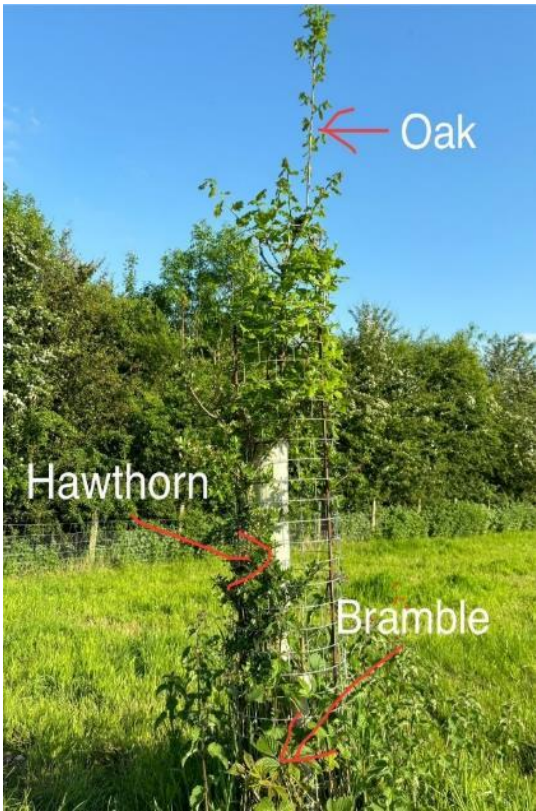


Double Panel Cactus Guard arrangement

Forming double guards:

Put 2 sheets of cactus guard back to back (spikes outwards) and tie up or clip the long edges together. Then take a heavy fence post and push down on one of the long edges towards the other long edge/ground. This will roughly form the guard and then the final forming will be with the rebars or post you are positioning it with. The benefits of having this arrangement is that it allows you to plant a tree e.g. oak with 4 thorny shrubs around it e.g. hawthorn, blackthorn, holly, dog rose, bramble, gorse and hazel also works well. These seem to actually encourage the tree to grow up and out faster and provide an instant biodiversity boost, more shade, resting, feeding and nesting habitats across a field. It will allow you to remove the cactus guards within 7-10 years, whereas without them it will be 15-20 years before you can remove the cactus guards. I strongly recommend this approach. **Please note** that you can do the same tree with shrub combinations with single sheet guards but the volume of shrubs around the tree will be far less. The double sheet guard is approximately 3.5 times the volume of a single sheet guard and it's volume of thorny bushes that matters when protecting the tree. The

internal diameter of a double guard is 65 cm as opposed to 35 cm when using a single guard. You can still get 2 or 3 shrubs in a single guard. It's this thorny thicket that gives early protection and of course far better habitat.



Left photo: Double cactus guards after 3 years from 40-60 cm bare root trees/shrubs. This one has two hawthorns, dog rose and oak in the middle. Note there is already some shade being cast by this thicket, the browse value of the shrubs and the varied flowering and fruiting times. The oaks in these are already over 2.7m tall!

Right photo: Single cactus guard after 3 years from 40-60 cm bare root trees/shrubs. This one has one hawthorn and one bramble supporting/protecting the oak.

The table below is the ecological reasoning for planting a mix of tree and shrub species, note the importance of the early and late flowering species like hazel and bramble.

Flowering period of typical upland scrub species (from Rose)												
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Bird cherry <i>Prunus avium</i>												
Bird cherry <i>Prunus padus</i>												
Rowan, <i>Sorbus aucuparia</i>												
Hazel, <i>Corylus avellana</i>												
Crab apple, <i>Malus sylvestris</i>												
Wych elm, <i>Ulmus glabra</i>												
Alder, <i>Alnus glutinosa</i>												
Blackthorn, <i>Prunus spinosa</i>												
Aspen, <i>Populus tremula</i>												
Hawthorn <i>Crataegus monogyna</i>												
Birch, <i>Betula</i> (2 spp)												
Willow, <i>Salix</i> (5 spp)												
Common gorse <i>U. europeaus</i>												
Western gorse <i>U. gallii</i>												
Bramble, <i>Rubus fruticosus</i>												



Thanks to Simon Stainer for this summary, information taken from Francis Rose *The Wildflower Key*

Tips for ease of maintenance

As with all tree planting there will always be a need for timely maintenance. When installing Cactus guards there are some simple ways to make maintenance easier.

Whether you need to replant a dead tree or prune an apple tree it's a lot easier and quicker if you think about how you can access inside the guard without having to cut all the ties and lift the guard off. Also as trees grow this will become more difficult as the branches will be against you when you try to put the guard back on. **Therefore I recommend you consider carefully how you tie the guard to the rebars.**

If you don't tie the guard with wire ties when formed, instead use releasable cable ties you can put the rebars in position and wire tie one of the long edges to the first rebar with wire ties and to the second rebar with wire ties but use only releasable cable ties to attach the other long edge onto the first rebar. This allows you to quickly release the cable ties and pull the cactus sheet back to get inside the cage. Hopefully these pictures explain this better!



Left: one edge wire tied to last/first rebar with 3 or 4 10mm ties

Below right: hold the cage open with a spade or fork while working inside



Above: close the cage by tying with 4 releasable cable ties (as used on tree tubes)

ACCESS DOOR

The alternative approach is to cut an access “door” into the cage so that you can pull a section of guard back to get in and do some pruning and then pull the window back and fix it with a releasable cable tie.



Raising the guards - You'll note that the sheets of cactus guard are only 160 cm high. Whilst this is high enough for sheep, goats, pigs, roe deer, muntjac it isn't going to be high enough for most cattle breeds or fallow and red deer and ponies/horses. You have 3 options:

Option 1 -

Start off with the guard on the ground. I don't recommend it being in contact with the ground so lift it up 5-10cm as the ground will soon lift up and grass will grow into the guard. Also having a small gap is useful for getting grasses out by putting your hand underneath and ripping it out or using shears. Ideally you would mulch around the trees with composted woodchip (ideal for introducing microbes including beneficial fungal spores and hyphae) or sheep wool works well to suppress grasses and retain moisture in the first year.

Once the leader (growing tip) of the tree gets to the top of the guard you will have to lift the guard up to protect it. It also helps to protect the leader from rubbing on the top wire by either cable tying it so it is held in the middle or putting slit hose pipe around the top wire.

Option 2 – raise the guard by 15-20cm off the ground from the start. Doing this does leave a gap that rabbits could get in and eat the trees so you then have to use rabbit protection such as 60 cm tree tubes. I have used spiral guards on the shrubs and they are ok but cattle can get hold of them with their tongues and pull them off. They don't seem to be able to get purchase on the tubes.

The downside of tubes is that they can attract **voles** as they offer a cosy home for them to nest in. Do not underestimate the damage that voles can do! They have been the biggest killer of my trees in tubes in Cactus guards. If grass is rested to grow long for deferred or long rested grazing or only cattle grazed you will probably get a lot of voles. They can kill a tree when it's reached 180 cm with a stem as thick as your thumb. You could just use a vole guard, but I am not sure if cattle can get hold of these. I now don't use tubes or if I do I lift them 10-15cm off the ground to stop them being a cosy dry vole house and put a vole guard or spiral on the exposed stem. Some wrap hessian around the stem to protect it on valuable trees.

Option 3 – Increase the height of the guard by adding cutting a sheet of cactus guard and adding it to the top/bottom of the guard.

You may be wondering why the guards aren't 1.8m high. This is because it then doesn't palletise or containerise well leading to significantly higher costs per unit. These work-arounds are more cost effective. If you are using double guards with the main tree in the middle (held by cable ties if necessary) you probably won't need to raise the guards above 1.7m as the distance to the centre is sufficient to keep animals from reaching. It helps to ensure the guard is installed with the top wire having spikes on it (one end doesn't have spikes).