Digging a hole

Digging a hole is one of the only jobs you'll ever do where you can start at the top.

To put a post (strainers, angles, or intermediate posts) into the ground by hand you have to dig a post hole.

Fencers who dig a lot of post holes develop strategies and techniques to make the job better and faster. They work smarter not harder.

To dig a fence post there are several tools you may need to use.

Most fencers use a fencing spade. These have the optimum blade width for the hole being dug. They are quite heavy and have a longer shaft to dig deep holes with ease. Certain features relating to weight, length, handle, design come down to personal preference. If you have very hard or rocky ground you may use a crow bar to loosen soil or rocks.

Once you have decided where you are to place your post you begin by establishing the exact face of the hole by cutting the top layer with your spade. Then continue cutting this turf layer on the other three sides. The top layer of turf is then removed. The hole is likely to be just a blade's width on all four sides. Do not dig a bigger hole than is necessary. (A larger post may require slightly more than a blade width) It is important to keep the face of the hole straight and aligned with the line of the fence.

Continue to dig keeping the sides straight. The digging action involves a vigorous action where by you are loosening the ground at the bottom of the hole and then removing the loose soil, repeating these two actions until the hole is deep enough.

You should calculate how deep the hole needs to be and mark this on either your spade or a measuring tool of some kind. That way you won't have to lift your heavy post in and out of the hole to check the depth.

When removing the soil keep it close to the hole and in a tidy pile. Remember it has to go back into the hole the closer it is to the hole the easier your job will be. Filling in your hole correctly is also very important and is covered on the next page.
The shapes and sizes of end assemblies vary greatly. Which type you use depends on a variety of reasons. E.g. Personal preference, type of fence, ground and terrain conditions, soil type etc.

Despite the different types the purpose of an end assembly remains the same - to provide an anchorage point for the line wires. It needs to be strong and stiff. It should remain secure to all the strain and pressure that is exerted on it by straining the wires, the weigh of gates and the direct pressure of stock.

When the wires are strained up they are exerting a force which pulls the post over. The idea of an end assembly is to exert and equal force or pressure in the opposite direction so that the post remains firm and straight.

**Diagonal Fence Assembly**
This is a common end assembly option but it must have room and ground levels that suit the stay block.

The foot, stay block and stay have vital parts to play in the role of keeping the strainer post in the ground.

The force of the wires is indicated by the

This force will try to pull the post in this direction

The stay block enables the stay to push against the strain of the wires

And the foot puts pushes against the soil to stop the upward lift of the post
**Horizontal Stay Assembly**

This is another commonly used end assembly. Its design also equals the force exerted by the wires so that the strainer post remains firm.

There are a few extra pieces to the system of keeping the strainer post firm and in the ground. The Inside post, horizontal stay, diagonal tie and the foot are important pieces of the puzzle that you must get right in order for this assembly to work.

The force of the wires is indicated by the

The pull of the wires will try to move the posts in this direction

The horizontal stay is pushed but the horizontal tie is pulling it back in the other direction

And the foot puts pushes against the soil to stop the upward lift of the post.

For every pressure inserted on the fence system there should be an equal pressure in the opposite direction. When this happens everything should stay in place.
The other two end assemblies are more commonly found in permanent electric fences. You can see by their construction that there is equal pressure exerted against the strain of the wires to keep the post in place.

**Tie back assembly**

**Breast block assembly**

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**Failure of End Assembly**

There are many reasons why an end assembly does not stay in place.

1. **Material**
   - The material you use could be faulty, a weak place in the wood. (knots, cracks etc)
   - If the wrong material is used it will also cause a problem (e.g. the foot is too small) some soil (sandy, boggy type soils) may require larger posts, deeper posts, larger foots, larger breast plates and big pegs.

2. **Construction**
   - There are many places during the construction where you can get it wrong.
     - Failure to put all parts into the system (e.g. leaving out the foot)
     - Putting parts in the wrong place (e.g. connecting the stay to the post too high or too low putting the foot too shallow)
     - Incorrect technique in securing parts to each other. (e.g. the footing may be incorrectly fixed, the hole where the stay is attached to the strainer may be off centre or too shallow, tieback wires may have slipped) If line wires are too much to one side of the post it may cause posts to twist in the ground
     - Incorrect sizes (Posts too high – not in the ground far enough, anchor posts too short, horizontal stay too short)
Any one of these points may cause the posts can break, bend, lift out, twist in the ground or move forward. In most of these cases the wires will lose their strain and the integrity of the fence is compromised.

A good end assembly will stay in place whether the soil is put back in the hole or not. Therefore the ramming of a post only has a minor affect on the integrity of the end assembly.

**How to put in an End Assembly**

**All types - Check the soil**

First job – select the site for the end of the fence then take a look at what type of soil you're dealing with to select the right materials and establish which type of end assembly will suit the position.

- **Strong soils** include silts and clays
- **Medium soils** include sands, silt sands and those silts and clays that have consistency in between strong and weak soils
- **Weak soils** include silts, clays and loams with the consistency of soft putty.

The soil type will let you select the correct Anchor – stay block or breast block.

**Post selection**

For any type of end assembly a strainer post is used. **Strainer posts** are normally made of wood with a minimum small end diameter (SED) of 200mm, and length of 2.4 – 2.7m. In a good soil the strainer will be half in the ground.

**Anchoring System**

All Strainers have a foot attached to them. All Strainers, Angles and rise posts need to be footed in the ground to ensure that they don’t lift or rotate.

There are two main ways of footing a post. The swinging foot is becoming the more popular way however the pegged system is still used a lot and is also very efficient at anchoring posts.