

# Keep animals in or keep them out!

- \* **Build your own customised Pingg-String® Fence.**
- \* **Fully enclose your garden or protect specific areas.**
- \* **Installation is quick, easy & low cost.**
- \* **Safe & highly effective.**

## Dog Problems

Frustrated by your badly behaved dog? Can't stop your dog climbing or jumping over your fence? Is your dog a digger, tunnelling under fencing or charging around your garden beds digging holes where you don't want them or ripping out plants? **Problem solved!**

## Cat Problems

Would you like to give your cats the freedom to roam your garden in safety? Do you want to prevent other peoples' cats from entering your garden? **Problem solved!**

## Possum Problems

Are possums unwanted visitors in your garden? Are they eating and damaging your plants? Are they causing your dog to nuisance bark? **Problem solved!**

## What is the Pingg-String® Fence?

Sureguard invented the Pingg-String Fence in 1997 as a safe, effective & humane fence for small animals. It is recognised by the NSW Department of Primary Industries as an allowable device for dogs & cats. It is listed as an allowable device in the Prevention of Cruelty to Animals Act 1979 (2000 Revision). Rangers often suggest the Pingg-String to replace illegal electric fences.

**NOTE: Using a farm electric fence for domestic animals is illegal in most States of Australia.**

The Pingg-String system combines two unique components: **Pingg-Energiser** and **Pingg-Wire**. The Pingg-Energiser makes a pulse which is just a little stronger than common static electricity. It pulsates rapidly so that fast animals can't get past the barrier (**Figure 1**). The Pingg-Wire is a specially woven high strength cord with stainless steel wires. The wires are loosely wound to allow the cord to stretch without the wires breaking. The wires are also designed to project the pulse a few millimeters so it can easily penetrate animal fur. When the animal presses against the Pingg-Wire it will be repelled.



## Two Pingg-String® Styles

The Pingg-String fence comes in two styles: one that attaches to the top of an existing fence and the other to be used at ground level. We call these the “**Fence Barrier**” and “**Ground Barrier**”. Use one or both to solve your animal problems.

### Overview of the “Fence Barrier”

The “Fence Barrier” consists of four wires that are tensioned by End Posts and held apart by Support Brackets. The End Posts are a special copyrighted design incorporating unique electrical wiring that forms part of the barrier. The fence barrier is designed for existing fences 1.5m or higher. Once installed, it sits a maximum of 18cm above your existing fence. We recommend that you install the Pingg-String fence barrier along the full perimeter of your protected area. Do not leave any gaps that animals could exploit.

**Figure 2** A climbing dog is repelled as it pushes into the Pingg-Wires. It is suitable for small, medium and large sized dogs but not very large dogs that can simply stand with paws placed on top of the fence. In that case you might consider our Pingg-String Ground Barrier or the Sureguard Radio Collar Fence.

**Figure 3** A climbing cat is repelled as it pushes into the wires.

**Figure 4** Alternative design angled at 90 degrees to the fence. Your fence must have a flat top area at least 5cm wide to screw the End Posts and Support Brackets to. This design only works for cats and small dogs. If your dog is big enough to stand with its paws against the wire, then this design is unsuitable. Note that this barrier stops your animals getting out, not others getting in.

**Figure 5** You don’t necessarily have to enclose your whole garden perimeter to protect against possums, especially if they are just targeting some plants that are growing along the fence. Here the barrier is just installed around the area you want to protect. You should add 3-5m either side of the plants. You may also want to consider the Ground Barrier kit. DO NOT use this design for cats & dogs.

**Figure 6** To keep possums completely out, install the Pingg-String fence barrier around the full perimeter. Pingg-String hardware components are quite low cost.

**Figure 7** You’ll need an End Post Kit for each level change. Remember, the End Posts enable the Pingg-Wires to be tensioned in each section of fence.

**Figure 8** Closeup view showing how two adjoining sections on different levels are connected with a pair of cables. These cables are included in the End Post Kit. They are long enough to handle fence steps up to 30cm. More than this will require a Cable Extension Kit (Order item #263).





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**Figure 9** Corner view showing how the two adjoining sections are connected with a pair of cables.

**Figure 10** Gates are no problem for the Pingg-String fence barrier. The barrier is attached to the gate and moves as the gate opens.



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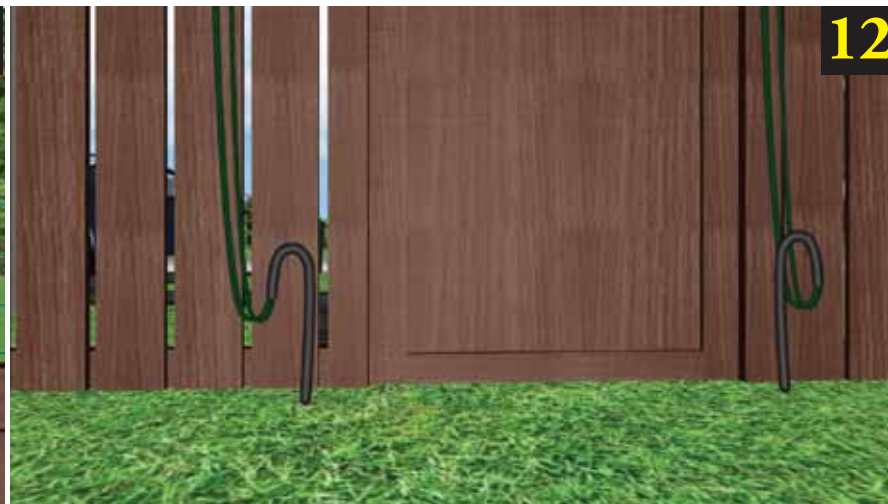


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**Figure 11** Closeup view of hinged side of gate. A pair of connecting cables joins the fence to the gate. A longer pair of cables are taken down to ground level, across the pathway inside polythene pipe and up the fence on the other side of the gate to continue the barrier. Make sure to tie these cables away from the gate hinge so they cannot be pinched when the gate closes. Bend the poly-pipe into an upside down U so no water enters the pipe.

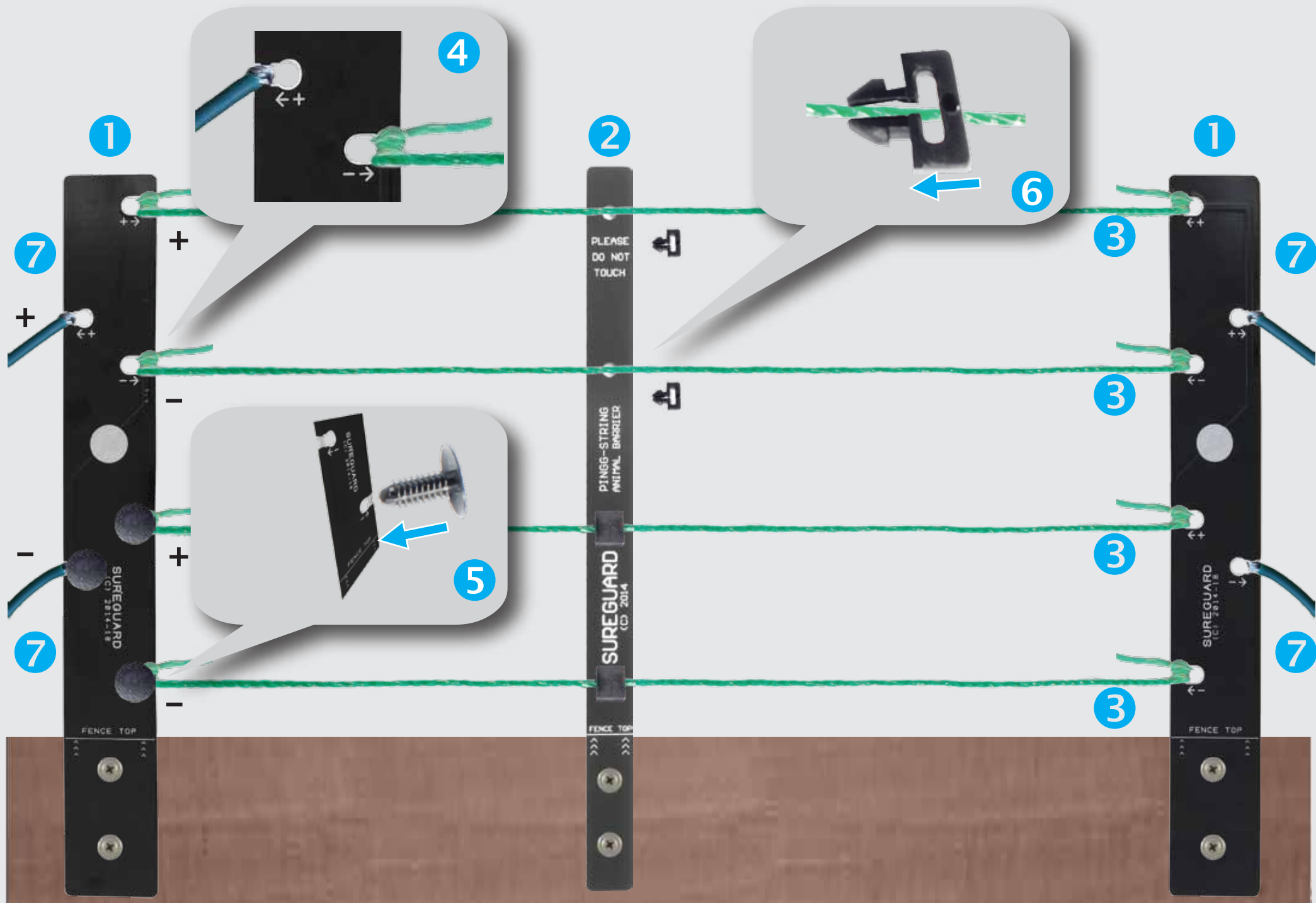


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**Figure 12** Closeup view of the cables going underground protected inside polythene pipe (buy from a hardware store).



# Installation of the Fence Barrier

## Tools & Hardware

- Wire cutters or sissors to cut the Pingg-Wire.
- Electric screw driver or nail hammer to attach the End Posts & Brackets.
- **Figure 15** shows a small selection of suggested fixings for different types of fence material. Please consult your hardware store for suitable recommendations.
- You may also need to buy something to pack between the End Post and fence surface (if the fence surface is irregular, not vertical or not initially suitable for the End Posts). Please consult your hardware store for suitable recommendations.
- A length of poly-pipe if any connecting cables need protection.

## Installation Sequence

**Figure 13** This illustration is a mini “Fence Barrier” to demonstrate the sequence of installation. It represents just one straight section of fence. In your actual installation you will repeat this on all protected sides of your property.

Basically, you will screw the End Posts and Support Brackets to your fence. You'll repeat this on all other straight sections. Then install the four Pingg-Wires starting from the top wire down. Once every section is completed, they are connected to each other with a pair of insulated cables so all wires are energised by the pulse. Then connect to the Pingg-Energiser - see **Figure 27**.

### *Parts of the Pingg-String Fence Barrier highlighted in Figure 13:*

❶ These are the **End Posts**. Each straight section of fence will have an End Post at either end that maintains tension in the Pingg-Wires. The End Posts must be fastened to a rigid surface such as timber or metal. You decide where to fasten these to the fence structure. E.g. to your: fence posts, top rail or the fencing panel. Notice the marking “Fence Top”. This is a suggested alignment point to the top of your fence. You can alter this within certain limits, but the lowest Pingg-Wire must be no more than 3cm to 4cm from the fence. When aligned to the marker the lower wire will be 1.5cm above the fence top.

❷ **Support Brackets** help keep the wires evenly separated and give physical strength to the barrier. The illustration shows one Support Bracket but you'll

install several depending on the distance between the End Posts. Typical spacing is 1.5m but can be up to 1.8m. Maximum strength is achieved when Support Posts are closer together.

❸ Electrical connections are made where the wires contact the metalized hole in the End Post. Install wires starting with the top and finishing with the bottom wire. This sequence can help tension the 4 wires evenly. Thread the Pingg-Wire through the metalized hole. Wrap it exactly 3 times through the hole. Insert the Tree Clip (See #5 below) to secure the wire. Cut the excess wire to 10mm long. Walk to the other end while unspooling the Pingg-Wire. Cut the Pingg-Wire allowing enough length to thread through the mounting holes at this end. As you pull the Pingg-Wire through the hole add a little tension to the Pingg-Wire then wrap the Pingg-Wire 3 Times through the hole. Insert another Tree Clip. Cut the excess wire to 10mm long (Important: Each wire end must not be able to touch the adjacent wire).

❹ Closeup view of Pingg-Wires. Notice the arrow next to each hole. **Wires MUST be installed (as illustrated) in the direction of the arrow.** Both the Pingg-Wire and Insulated Cable should have their copper wire wrapped through the metalized hole exactly 3 times.

❺ Use the Tree Clip to secure the wire connection and give a neat finish. The Tree Clip is a firm fit into the hole. Press firmly!

❻ **Bracket Clips** have a slot through which you can pass the Pingg-Wire. These clips push into the holes in the Support Bracket and keep the 4 Pingg-Wires evenly apart.

❼ **Insulated Cable** connects the End Post to the next adjacent End Post so the electrical impulse continues in the next fence section. In each End Post Kit you receive 4 insulated cables about 40cm long. The insulation has been pre-cut 3.5cm from either end to allow easy removal. When you remove this insulation pull off with a twisting motion. This will keep all the fine wires together and make it easy to thread onto the End Post.





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## For Reliable Containment

- Install the barrier around the full area you want to protect.
- Consider from the animal's perspective how it may try to get past the barrier. Protect all possible entry and escape routes.
- **Figure 14** Maintain the barrier by keeping foliage clear of the wires.
- Never alter Sureguard's recommended design or materials.
- Never install insulated cable other than the special insulated cable supplied by Sureguard.
- Never force an animal to touch the Pingg-Wire. Allow the animal time to learn.
- **Figure 16** To join Pingg-Wires together, tie a reef-knot as illustrated, then pull the knot tight. For each end, pull the wires away from the green cords and twist the wires together.  
**Important:** Follow the full procedure to ensure a good electrical connection.

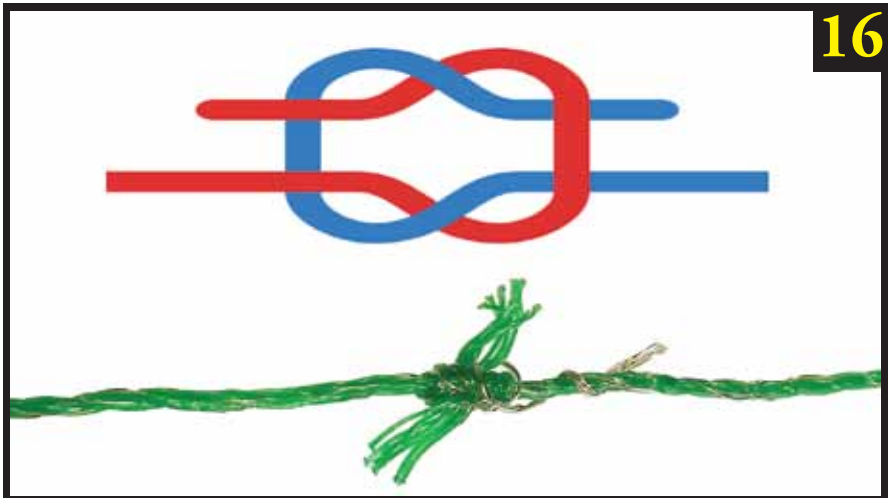
## Fixing Hardware

**Figure 15** This photo shows the style of fasteners that might be recommended by a hardware store.

- ❶ Self-drilling, Wafer style Philips head, size 8x16, suitable for metal fence posts.
- ❷ Self-drilling, Hex style Philips head, size 8x16 with needle point tip, suitable for timber and metal fence posts.
- ❸ Self-drilling Hex Tek screw, size 10x16 with 5/16 head, suitable for metal fences.
- ❹ ❺ & ❻ shows various styles for masonry fence posts.



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### "Fence Barrier" Purchasing Guide

Question:	End Post Kit	Extension Kit 15m	10m Cable
Number of corners or changes of direction?	___ x 1=		
Number of levels in a stepped fence?	___ x 1=		
Number of single gates up to 1.4m wide?	___ x 2=		___ x 1=
Number of single gates up to 6m wide?	___ x 2=		___ x 2=
Number of double gates up to 6m wide?	___ x 3=		___ x 2=
Total length of perimeter as a multiple of 15m? eg. 45m=3, 50m=4, 60m=4.			
Start &/or finish points are on a building? If YES, add 1			
SUM TOTALS			
	Order #261	Order #262	Order #263



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## Overview of the “Ground Barrier”

The “Ground Barrier” can be used to stop dogs damaging garden beds and keep dogs away from fences to stop digging under or climbing over. The ground barrier can be installed at several locations in the garden. Sections are connected together using a special insulated cable. A single Pingg-String energiser can power many sections. You can also construct a multi-wire barrier for small animals, such as cats and possums. The Pingg-String Ground Barrier is an effective solution to many animal problems!

**Figure 17** A single wire set to your dog’s nose height is generally all that is needed to protect an area. As your dog tries to go under the wire it naturally brushes against it and your dog is repelled by the pulse. This design works effectively with little risk of your dog jumping the wires. If your dog is not standing on conductive ground such as grass or bare soil then choose the 3 wire design.



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**Figure 18** The ground barrier may be constructed as a 3-Wire design (or 5-Wire for very small animals). Separate the wires according to the size of the animal. The animal should contact at least two of the wires simultaneously. Use this design if the animal is not in direct contact with soil or grass.

**Figure 19** A single wire set to the nose height of your dog and installed 50-90cm from an existing fence will stop jumping, climbing and digging under.

**Figure 20** Use the 3-Wire design for raised garden beds and terraces.

**Figure 21** Training dogs of different heights is simple. Set the wire height for the tallest dog. Allow a few days for the tallest dog to learn what happens when touching the Pingg-Wire. This dog will now stay clear of the wire. Next, reduce the height of the wire to the nose height of the next smaller dog. Allow time for that dog to learn about the Pingg-Wire. Continue until the smallest dog has learnt too.

**Figure 22** If you have several areas to protect, these can be connected together using our special insulated cable (Order Kit #263). When burying the cable protect it inside polythene pipe.



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## Installation of the Ground Barrier

### Tools & Hardware Required

- Wire cutters or sissors to cut the Pingg-Wire.
- Hammer to place the fibreglass posts into soil.
- Poly-pipe (if burying insulated cable)





## Installation Method

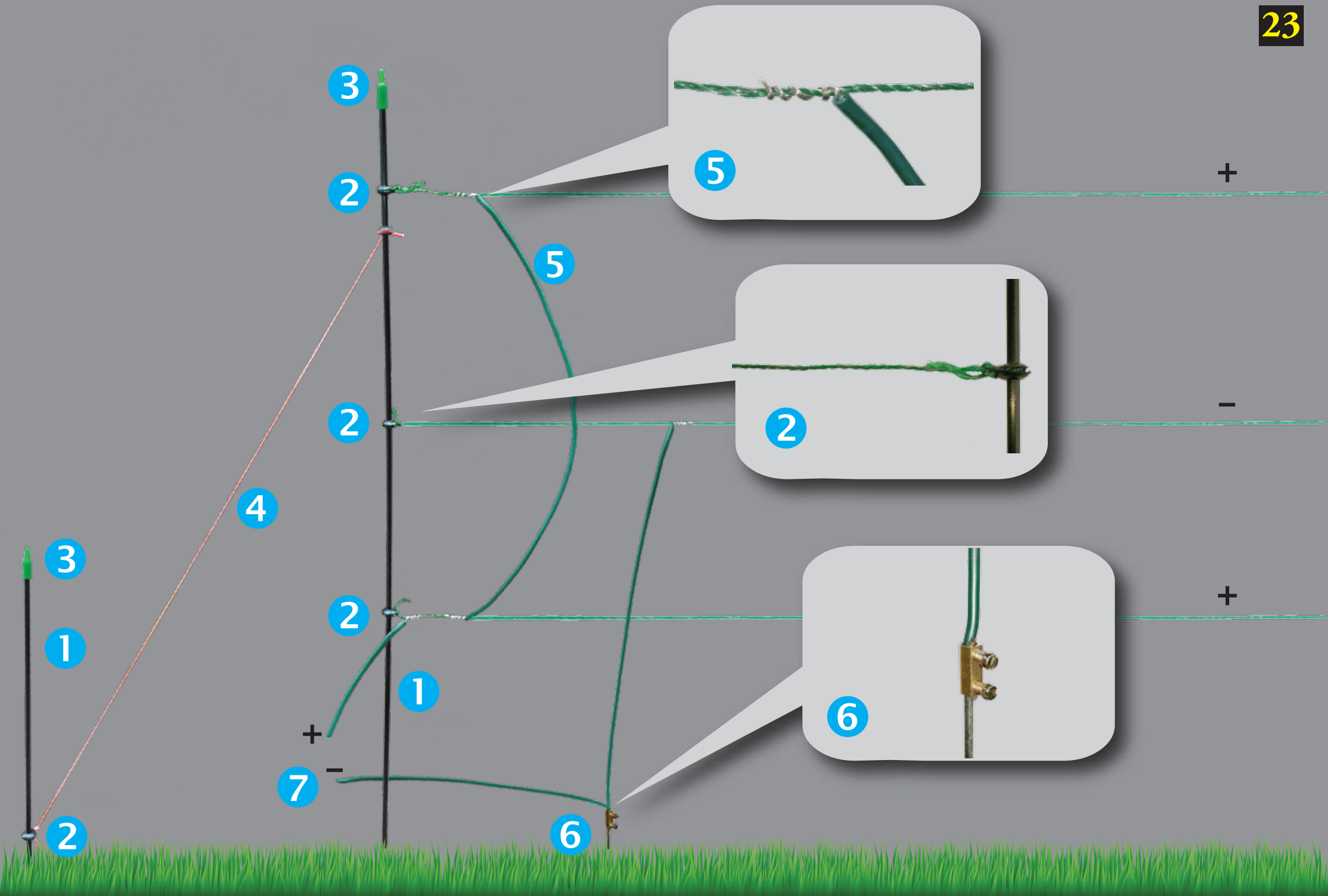
**Figure 23** This illustration is a mini ground barrier showing one possible design. See Figures 24-26 for other designs. It represents one straight section of fence. In your actual installation you may have several sections electrically joined using a special insulated cable, all powered by the energiser.

Basically, you will push the rubber wire holders onto the fiberglass posts, insert the posts into soil around the area you are protecting, attach the Pingg-Wire to the wire holders, connect all sections together with the insulated cable and connect to the Pingg-String Energiser.

### *Parts of the Pingg-String Ground Barrier highlighted in Figure 23:*

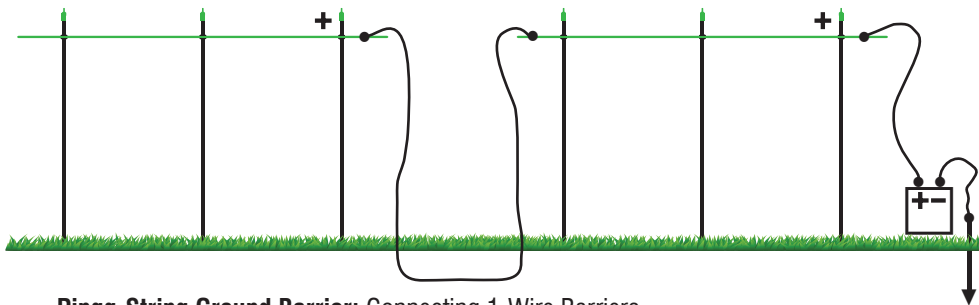
- ❶ **Fibreglass Posts** 60cm long pushed 10cm into soil. If the soil is hard, soak to a depth of 10cm. If necessary you may use a mallet or hammer to insert the post into the soil but take care not to damage the end of the post. Space the posts 1m to 3m apart, closer for curves and longer for straights.
- ❷ **Rubber Wire Holders** slide onto the posts to keep the Pingg-Wire in place. One or more wire holders can be used and the heights are fully adjustable. Each wire holder has a groove where the Pingg-Wire is held. Only on the end posts is the Pingg-Wire tied. Otherwise wrap the Pingg-Wire 360 degrees around the groove and continue from post to post until the end post is reached.
- ❸ **Green End Caps** protect the exposed end of the fibreglass posts.
- ❹ **End Posts** are tied to a firm structure (eg. fence, building, etc) using builder's string (or similar). This will maintain tension in the Pingg-Wires. The illustration shows a secondary post being used as a tie-off anchor point.
- ❺ **Insulated Cable** can be electrically connected to the Pingg-Wire by tightly wrapping it around the Pingg-Wire. Remove 3-4cm of insulation off the cable and twist it around the Pingg-Wire over a distance of 1-2cm.
- ❻ Bury the 50cm **Ground Stake** 40cm deep into soil. Cut a length of insulated cable to go between the ground stake and the negative terminal of the Pingg-Energiser. Remove 1cm of insulation from each end. For a 3-Wire fence cut a second length of cable to connect the negative Pingg-Wire and the ground stake. Unscrew the terminal on the ground stake. Twist the wires together, place into the terminal and screw tight. Test that the cable(s) cannot be pulled out.
- ❼ Connect the positive and negative of the fence to the corresponding positive and negative of the Pingg-Energiser using lengths of insulated cable.





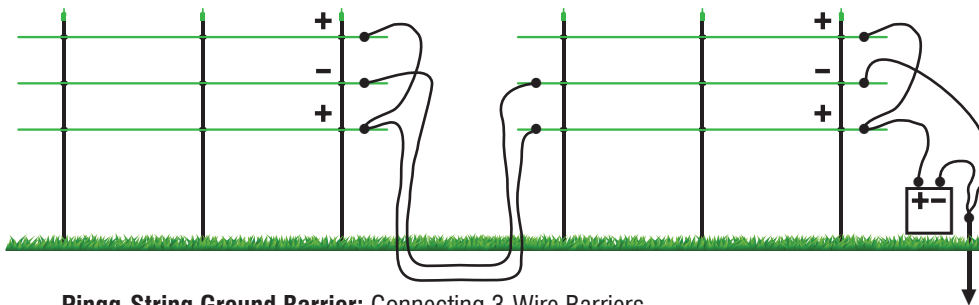
# How to wire the Pingg-String Energiser

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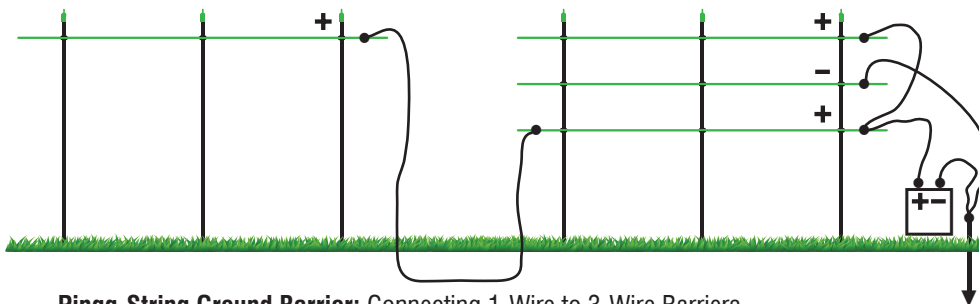
Pingg-String Ground Barrier: Connecting 1-Wire Barriers.

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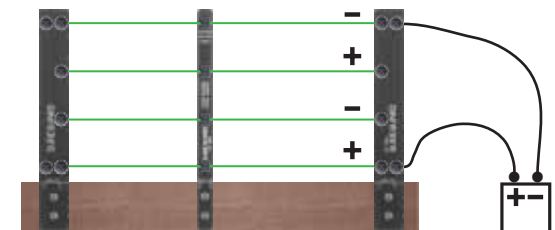
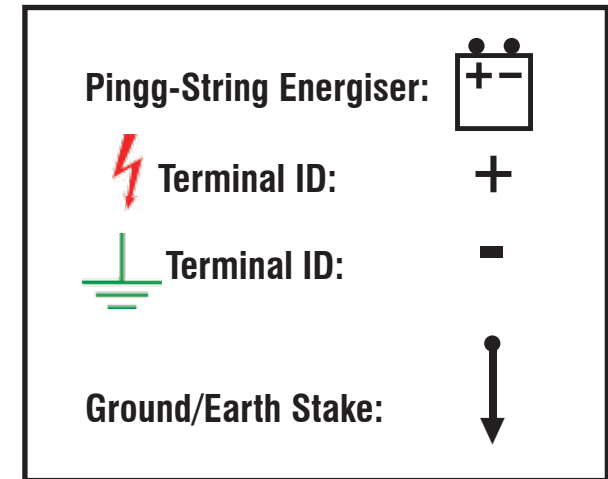


Pingg-String Ground Barrier: Connecting 3-Wire Barriers.

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Pingg-String Ground Barrier: Connecting 1-Wire to 3-Wire Barriers.



Pingg-String Fence Barrier