A Practical Guide to Electric Fencing for Horses and Ponies
Equine Electric Fencing Professionals

Whether your horse is your friend, your hobby or your investment, you want to keep it safe, secure and healthy. The professionals at Rutland Electric Fencing have developed products that can help you do just that. Over the last 35 years, we’ve worked closely with equine enthusiasts to create a full range of temporary and permanent fence systems that are simple to erect, while providing a secure barrier for your horse.

Safety
First and foremost, is safety. An electric fence is a psychological barrier, and once trained, your horse will learn to avoid it. Horses tend to use traditional fences as scratching posts, causing the fence to weaken or sag over time. An electric fence prevents this behavior, protecting the horse from harm and prolonging the life of the fence.

Temporary Electric Fence Systems
Temporary fencing is simple to set up and ideal for creating small paddocks or to restrict grazing. The energisers are battery operated and components tend to be lightweight so they are easy to move and relocate on a regular basis. Rutland offers easy-to-assemble components, as well as complete kits (pages 3-4).

If you are on the move with your horse and trailering it to different events, consider the EZEE Corral® portable fence kit, with everything self-contained in a single, easy to carry kit (page 5).

Permanent Electric Fence Systems
For permanent electric fencing we recommend the use of white components to give the greatest visibility of the fence against a background of green pasture or hedges. Our product range includes white Electro-Tape and Electro-Rope, as well as insulators that are UV and weather-resistant, providing both good visibility and long life for your fence (pages 7-8). A full range of battery and mains energisers are available.

An electric fence is also ideal for protecting an existing wooden fence from damage due to cribbing or chewing of the top wood rail. Offset insulators with a single strand of electrified wire can correct the problem (page 9).

We hope the information in this booklet is helpful as you plan your electric fencing project. Please refer to our website for more detailed information. If you have further questions about which products are best suited for your installation, feel free to contact our help line directly 01572 722558 (England and Wales) or 01356 624109 (Scotland). We are happy to assist you!
Getting Started

How safe is electric fencing?
Electric fencing is safe for both horses and humans. All of our Electric Shepherd energisers comply with the latest British and European Standards (BS EN61011, BS EN61011/2 and BS ENS5014 EMC). They are all passed and certificated by an independent test house. Though the voltage is high (up to 10,000 volts) the frequency and size of the pulse makes the product safe.

How does electric fencing work?
The energiser puts out a high voltage, low current pulse, approximately once per second, through a conductive fence line. This may be high tensile wire, stranded wire, electric fencing polywire, electro-tape or electro-rope.

The fence line must be totally insulated from the ground so that there is no leakage of current to the earth. This is why good quality insulators are an extremely important part of the system.

When your horse touches the ‘live’ fence line, it will complete the electric circuit and feel a shock as the current flows through its body, into the ground and back to the energiser via the earth stake. Your horse will remember the shock so the electric fence then becomes a psychological barrier and the horse will learn to respect it and stay away.

What is an energiser?
An energiser is the unit that creates the high voltage pulse shock on an electric fence. There are many different types of energisers. Each is differentiated by:
- **Power Source**: Battery (dry disposable or 12v wet rechargeable), depending on model.
- **Mains** (powered from 230 volt AC in UK).
- **Solar** (in conjunction with battery).
- **Voltage**: The amount of shock on the fence line under different loads created by vegetation or very long fences.
- **Joules**: This determines the distance of fence line that can be satisfactorily electrified. The higher the joules, the longer the fence can be and the higher the shock produced.

Should I buy a mains or battery energiser?
This is a choice determined by availability of a power source. If mains electricity is readily available a mains energiser is probably best for the following reasons:
- **Convenience**: no need to check the battery on a regular basis.
- **Cost**: no need to replace or recharge a battery.
- **Security**: normally a mains unit will be installed in a building. However, a battery energiser is much more flexible in its positioning and can operate in the open.

Why do I need an earth stake?
The best possible earth is essential. This is to allow the current to flow from the energiser, along the fence line, through your horse into the ground and back to the energiser via the earth stake, thus completing a circuit. If an insufficient earth is used, then too low a fence line voltage may be achieved to give a correct shock to the horse. In dry or sandy ground conditions, the current flows less easily than in damp conditions so you may need more than one earth stake. Remember only use a galvanised earth stake (either 18-1798 for medium sized battery energisers or 18-179M for mains units). If you use copper you may get metal corrosion and potential problems.

Why can’t I use electrician’s cable between fence and energiser?
There are two important reasons. Electrician’s cable is designed to cope with 240 volts; your system will have up to 10,000 volts. Thus electrician’s cable is not capable of handling this and will lead to significant voltage loss. The other reason is that this cable is likely to include copper and when connected to galvanised wire may cause corrosion at the joint.

Our Lead Out Cable (17-128 and 17-129) is designed to take the power from your energiser to the fence and the earth stake. A thicker cable (17-130 and 17-131) is available for underground uses, for example, under gateways. We also recommend running the cable through a piece of alkathene water pipe for greater protection from heavy vehicles and ease of replacement.

### Earthing Tips

In order for the fence to work correctly it is necessary to make an adequate Earth. The shock circuit is then completed when an animal comes into contact with the fence. If an insufficient earth is used then the whole system becomes inefficient or ineffective. You will only get the full potential from your Rutland Electric Shepherd energiser if it is correctly earthed. Depending on the energiser, we suggest you use a minimum one metre (REF Part No. 18-179B) or two metre (REF Part No. 18-179M) galvanised earth stake. In dry ground conditions the current flows less easily than in wet conditions and may require the use of additional earth stakes. Additional earth stakes should be spaced two metres apart and joined with lead out cable (Pt. No. 17-128).
**Temporary Fence** 33”/84cm High Two Line 12mm Electro-Tape Fence

This temporary two reel electric fence system is a simple way to divide larger fields or create small paddocks up to 400m in length.

Position your mounting post at the desired start of your fence. Place the termination post at the desired end of the fence. Add corner posts where a change in direction is needed. Strain insulators fit over the top two hooks on the corner and end posts.

Now you can pull the Electro-Tape through the strain insulators at the corner and end posts. At the termination post, tie the poly tape around the strain insulator. For longer fence distances, two or more reel systems may be connected together using electro-tape joiners (Pt No 30-156). To tension the tape, turn the knob on the reel. Once at the desired tension, screw down the locking knob.

Next place the poly posts every 8-10m between the corner and terminating posts. Since the poly tape is already tensioned on the corner and terminating posts you will have a straight line to evenly space your poly posts. The poly posts maintain the height of the fence over the length of the fence line. You should only use poly posts in a straight line to eliminate the risk of being pulled over.

The final step is to connect your fence energiser. We recommend that the energiser is connected at the center of the fence, allowing current to flow both ways. Connect the green crocodile clip, supplied with your Rutland energiser, to the earth stake or energiser mounting stand; then take the red crocodile clip and clip it to the fence line. To power the second line of your fence use a tapeconnector.
**Temporary Fence 48”/122cm High Two Line 12-20mm Electro-Tape Fence**

**122cm Poly Posts**
Premoulded plastic post with eight positions for electric fence line. Space every 8-10m to maintain height of the fence.
(Pt. No. 30-195 or 30-197)

**Electro-Tape**
- 12mm x 200m Roll (Pt. No. 19-151)
- 20mm x 200m Roll (Pt. No. 30-131)

**Post Mounting Reels**
For lengths up to 200m.
(Pt. No. 19-191)

**Jumbo Reels**
For lengths up to 500m.
(Pt. No. 19-190B)

**Mounting Post**
(Pt. No. 19-192A)

**Corner/Termination Post**
(Pt. No. 19-193H)

**Note:** All mounting, corner and terminating posts are made from electroplated ‘T’ section or angle iron with foot spades for stability.

**Temporary Fence Kits**

**Horse and Pony Starter Kit** – A complete kit including the energiser and batteries for making small paddocks or dividing up existing ones – It will fence 100 metres of straight, two line 12mm Electro-Tape and provide one gate – Optional metal corner and termination posts are available

Part No: 30-203

**Horse Paddock Kit** – A complete boxed kit including the energiser for making small paddocks or dividing up existing ones – It will fence 100 metres of straight, two line 12mm Electro-Tape – Additional corner posts are also available – Requires: 22-105 battery (not supplied)

Part No: 30-200

**Tape Connector**
(Pt. No. 30-158)

**Strain Insulator**
Attaches to hooks of corner and terminated posts.
(Pt. No. 16-122)

**Metal Horse Post**
(Pt. No. 19-193H)

**Round Rod Insulator**
(Pt. No. 30-165)

**Fence Energiser for 100m Fence**
Dry Battery – ESB15, ESB25 or ESB125
Wet Battery – ESB55 or ESB145
Solar Unit – ESS603, ESS610, ESB130+ or ESB145 w/solar panel

**Fence Energiser for 400m Fence**
Dry Battery – ESB125 or ESB135
Wet Battery – ESB55 or ESB145
Solar Unit – ESS610, ESB130+ or ESB145 w/solar panel

www.Rutland-Electric-Fencing.co.uk
EZEE Corral Portable Fence Kit

Unique Reel System
Each reel dispenses up to 9 metres of poly tape as needed
Indicator lights up when energiser is operating
Easy connection to fence energiser and reel
Sturdy connectors and cam locks hold securely, disconnect quickly

Patented Electric Fence Energiser
Fence energiser enclosed in corner post
No complicated wiring or earthing, simple plug-in and switch on
Operates for up to 60 days on 4 D-cell batteries
Poly Tape with separate metal strands for live & earth – no need for earth stake

EZEE Corral – A complete kit for a 900-sq ft (81 sq m) corral – Portable kit fits neatly inside the single canvas bag – No special tools required, simple connection and operation, weighs less than 10 kg. Requires: 4 x D-cell batteries (not supplied)
Part No: 30-205

EZEE Corral – It’s all in the easy-to-carry bag.
Permanent Fence *Two Line 20-40mm Electro-Tape Fence*

**Permanent Fence Installation Tips**

Start with installation of all end and corner posts. These pressure-treated posts will support the guide wire used to align the remaining line posts. End anchor and corner posts are at least 2.5m long and generally 15cm in diameter. They should be buried at least 100cm deep. These will go at each fence corner and major dips or rises in the terrain.

Pressure-treated line posts should be at least 2m long and 10cm in diameter. Using the guide wire, mark post locations with paint or flags. As a rule of thumb, line posts are spaced about 6-8m apart but it depends on many factors including the number of wires in the fence, the terrain, as well as type and number of animals being controlled. Increasing the distance between posts reduces the cost of the fence. When driving or setting posts in uneven terrain the posts should be set at right angles to the ground, not vertically or plum as in decorative fencing. Line posts should be driven at least 75cm into the ground.

Next you need to mount your insulators. The two fence lines should be set at 107cm for the top line and 61cm for the bottom. Position strain insulators at the start and end of your fence line, while corner insulators are located anywhere your fence line changes direction. On the line posts you can use either screw-in, free running, or heavy-duty clip insulators.

Now you can pull the Electro-Tape through the insulators. At the terminating post, use a strain insulator to tension the tape. For longer fence distances you may need to connect two reels of Electro-Tape using an Electro-Tape Joiner. To tension the tape in the middle of the fence use an Electro-Tape Tensioner.

The final step is to connect your fence energiser. We recommend that the energiser is connected at the center of the fence to allow the current to flow both ways. Whenever possible, always use a mains-powered energiser sited inside a building or weather protected cabinet. Mains-powered energisers have low running costs, require no batteries that may go flat, and are less likely to be damaged by animals. Connect the green crocodile clip, supplied with your Rutland energiser, to the earth stake or energiser mounting stand; then take the red crocodile clip and clip it to the fence line. To power the second line of your fence use a tape connector.

**Fence Energiser Recommendation**

- **Dry Battery** – ESB125
- **Wet Battery** – ESB55, ESB200, ESB225, ESB275
- **Solar Unit** – ESS610, ESB130+ or ESB145 w/solar panel
- **Mains** – ESM402, ESM602, ESM902, ESM1100

**Electro-Tape**

- **20mm Electro-Tape**
  - Pt. No. 30-131
  - Length: 200m
  - Joiner: 30-151
  - Tensioner: 30-160
- **20mm Electro-Tape**
  - Pt. No. 30-145
  - Length: 400m
  - Joiner: 30-151
  - Tensioner: 30-160
- **40mm Electro-Tape**
  - Pt. No. 30-136
  - Length: 200m
  - Joiner: 30-156
  - Tensioner: 30-161
- **40mm Electro-Tape**
  - Pt. No. 30-146
  - Length: 400m
  - Joiner: 30-156
  - Tensioner: 30-161
Permanent Fence  
**Two Line Electro-Rope or One Line Electro-Rope with Two Lines of High Tensile**

**Energiser Recommendation**
- Dry Battery – ESB125
- Wet Battery – ESB55, ESB200, ESB225, ESB275
- Solar Unit – ESS610, ESB130+ or ESB145 w/solar panel
- Mains – ESM402, ESM602, ESM902, ESM1100

**Electro-Rope**
- 100m Roll (Pt. No. 30-122)
- 200m Roll (Pt. No. 30-120)

**Screw-in Insulator**
- (Pt. No. 30-168)

**Metal Clamp Grips**
- For joining Electro-Rope (Pt. No. 30-125)

**Strain Insulator**
- Twist wire through insulator and around post (Pt. No. 16-122)

**Rope Tensioner**
- (Pt. No. 18-184)

**Link between rope lines with a length of stranded wire**

**Super HD Insulator**
- Attaches to post with two nails. (Pt. No. 15-124)

**Crimp Sleeves**
- For splicing high tensile wire. (Pt. No. 18-206)

**Line Clamps**
- Joins high tensile wire to lead out cable. (Pt. No. 18-172)

**Gripple**
- For splicing high tensile wire. (Pt. No. 18-177)

**Grips**
- For joining Electro-Rope (Pt. No. 18-172)

**Heavy-Duty Insulator**
- Attaches to post with two nails. (Pt. No. 15-121)

**High Tensile Wire**
- Galvanised 2.5mm 25Kgs – 650m (Pt. No. 23-505)

**Recommended Line Height**
- 107cm
- 61cm
- 75cm
- 45cm
Permanent Offset Fence  Electro-Rope Fence

Fence posts should be of sufficient height to ensure good visibility of the fence wire. For example, a 17 hands horse would best be contained by a post with a top wire around 122cm (48 inches) above ground. A 14 hands pony could be contained with a post of 96cm (38 inches). The posts for temporary fencing can be spaced up to 10 metres apart but ensure the wire is well anchored at the ends of the fence.

Two strands of tape or rope provide optimum visibility and safety with the bottom one at about lower chest height and the top one at upper chest level. To contain foals, be sure to have a strand of electrified poly tape/rope close to nose level.

Wire Spacing  All heights noted from ground level

Fence Energiser Recommendation
Dry Battery – ESB125
Wet Battery – ESB55, ESB200, ESB225, ESB275
Solar Unit – ESS610, ESB130+ or ESB145 w/solar panel
Mains – ESM402, ESM602, ESM902

Two Wire Fence  96 cm Total Height

107 cm
48 cm

Three Wire Fence  122 cm Total Height

122 cm
75 cm
45 cm
**Electric Fence Gates**

- **Wood or Metal Gates**
  Under gate cable to transfer current from one side to the other side of the gate.

- **Electrotape & Spring Gates**
  These cannot be relied upon for carrying current because of the poor contact between the handle hook and the post insulator. Therefore an Under Ground Cable must be used. When the gate is opened, it is disconnected from power and becomes dead. If the gate was dropped to the ground, then it would not short the fence to ground.

- **Temporary Gates**
  A temporary electric fence gate can only be installed at one end of a reel system, otherwise two reel systems will be required.

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- **HD Electro-Tape Strain Insulator**
  (Pt. No. 30-172)

- **Line Clamp**
  (Pt. No. 18-172)

- **Electrotape Gate**
  (Pt. No. 17-019)

- **Spring Gate**
  (Pt. No. 17-120 or 17-121)

- **Electro-Wire or Electro-Rope**
  Inserted in Alkathene pipe for protection.
  Under Ground Cable

- **Metal Clamp Grips**
  (Pt. No. 30-125)

- **Rope Flexigate**
  (Pt. No. 30-116)

- **Tape Connector**
  (Pt. No. 30-158)

- **Strain Insulator**
  (Pt. No. 16-122)
Troubleshooting

It is advisable to check daily the voltage at the furthest point on the fence from the energiser, using a fence line voltage meter.

Less than 3,000 volts
- Check power supply for flat battery or electric supply off
- Renew battery or contact an electrician for repair to mains supply

If power O.K., disconnect fence line live output wire from energiser, then check voltage output across live & earth terminals with voltmeter.

If output is less than 3,000 volts. There is an energiser fault. Visit your local dealer for repair. Remember card if in warranty.

If output on the energiser is normal (over 6,000 volts), reconnect fence wire.

Test earth stake by shorting the fence line to the ground with an iron bar approximately 100 metres along the fence or until the voltage reading is below 3,000 volts. If the earth stake(s) are effective, there should be below 500 volts reading on the earth stake. If there is more, then you either require an extra earth stake or your stake(s) need to be deeper. Test again. Remember earthing can change with ground & climatic conditions like drought.

If earthing is O.K. And lead out cable is used, check the cable. Disconnect the lead out cable where it connects to the fence line. Test the voltage at the cable end with a fence voltmeter.

Under 5,000 volts
- Lead out cable is leaking to ground. Check that it is specific lead out cable. Renew and recheck.

Over 5,000 volts
- Reconnect the lead out cable to fence line

If you cannot find or unable to solve the problem please phone our help line 01572 722558 (England and Wales) or 01356 624109 (Scotland).
## ENERGISER SELECTION GUIDE

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Stored Energy (Joules)</th>
<th>Power Source</th>
<th>Solar Option</th>
<th>Max Power Use</th>
<th>Open Volts</th>
<th>500 Ohm Load Volts</th>
<th>Expected Battery Life*</th>
<th>Estimated Electricity Cost P.A. **</th>
<th>Number Nets ***</th>
<th>Distance Rating ****</th>
<th>Suitable Animal Control</th>
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<td>0.05</td>
<td>2x 1.5v</td>
<td>NO</td>
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<td>7,500</td>
<td>800</td>
<td>35 Days</td>
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<td>1 Watt</td>
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<td>ESM1000</td>
<td>3.2</td>
<td>220/230v</td>
<td>NA</td>
<td>5 Watt</td>
<td>10,000</td>
<td>6,500</td>
<td>NA</td>
<td>£ 3.15</td>
<td>30</td>
<td>30 km</td>
<td>4 km</td>
</tr>
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<td>ESM2200</td>
<td>7.5</td>
<td>220/230v</td>
<td>NA</td>
<td>10 Watt</td>
<td>10,000</td>
<td>6,700</td>
<td>NA</td>
<td>£ 6.25</td>
<td>40</td>
<td>40 km</td>
<td>15 km</td>
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<td>220/230v</td>
<td>NA</td>
<td>20 Watt</td>
<td>10,000</td>
<td>7,000</td>
<td>NA</td>
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<td>50</td>
<td>50 km</td>
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<td>ESM4400</td>
<td>18.8</td>
<td>220/230v</td>
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<td>25 Watt</td>
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<td>7,000</td>
<td>NA</td>
<td>£ 15.65</td>
<td>65</td>
<td>65 km</td>
<td>34 km</td>
</tr>
</tbody>
</table>

*Battery life and recharge times are based on using batteries supplied by Rutland Electric Fencing. In practice rechargeable batteries should never be run flat. The battery life quoted assumes only 75% of the fully charged capacity is used before recharging takes place. The recharge takes place. When used in Economy mode the life expectancy can increase by up to 30%.

**Cost based on average domestic UK unit cost per annum.

***Where more than one Electric Net is being used they should be powered from the middle of the run and at least a one metre galvanised earth stake used. Mains energisers can be used to power electric nets, however to comply with health & safety requirements the energiser must be mounted indoors with a lead out cable going to the nets. We do not recommend using energisers over four (4) Joules on nets.

****Distance of fence wire which can be energised is based on using multi-wire Electric Fencing constructed with 2.5mm dia. High Tensile galvanised wire. A very rough guide Poly wires and Tapes will generally operate effectively in the ‘average vegetation’ column, not ‘no vegetation’, as most are less conductive than high tensile wire. If in doubt, use the ‘average vegetation’ figures.

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Battery energisers recommended for daily or frequent moving, temporary fencing

12 volt battery energisers recommended for moving monthly, temporary fencing

Solar energisers recommended for daily or frequent moving, temporary fencing

Mains energisers recommended for permanent fencing

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