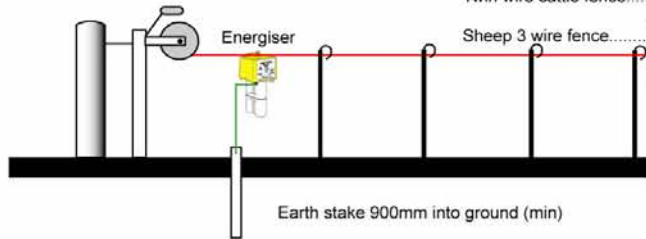


### Strip Grazing



Earth stake 900mm into ground (min)

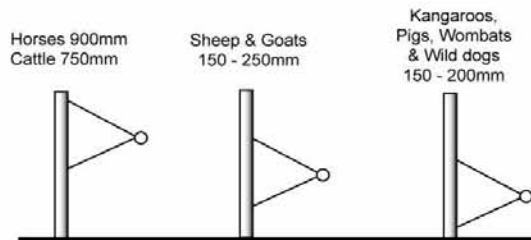
### Strip Grazing Wire & Post Spacing

Post spacing	15 metres approx. (flat Ground)
Single wire cattle fence	Wire 800mm off ground
Twin wire cattle fence	Wire 1 450mm off ground
	Wire 2 900mm off ground
Sheep 3 wire fence	Wire 1 250mm off ground
	Wire 2 500mm off ground
	Wire 3 800mm off ground

### Offset wires

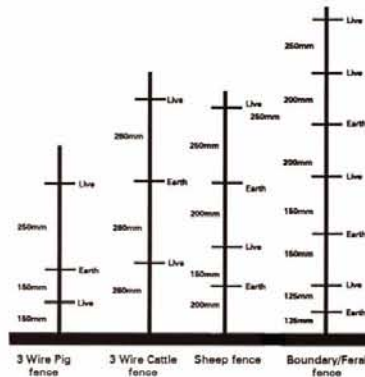
Offset wires are used to upgrade existing fences, extending fence life and reducing damage. Installed on one or both sides of fence, improves stock control.

### Approx. wire height settings



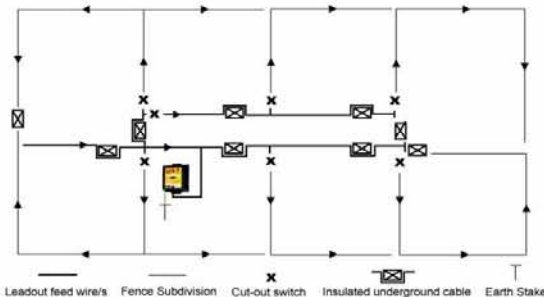
Space offsets approx 15 metres apart (MAX)  
Always earth the existing fence by connecting it to earth stakes.

### Wire Spacing



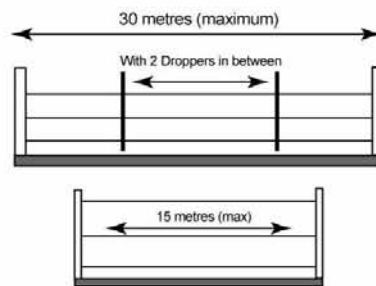
### Layout Design

Suggested basic layout for area of operation.



Leadout feed wire/s Fence Subdivision Cut-out switch Insulated underground cable Earth Stake

### Post Spacing



NSW  
PH: (02) 6372 3600

VIC  
PH: (03) 9796 2319

QLD  
PH: (07) 3285 5711

TAS  
PH: 0417 554 024



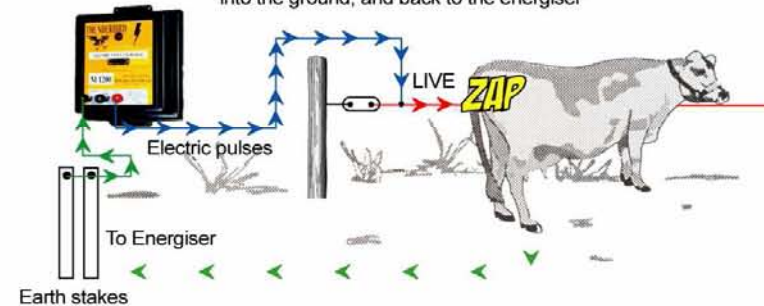
# THUNDERBIRD Electric Fence System

## Helpful Hints

How an electric fence works

### Ground earth return system

The pulse travels from the live wire through the animal into the ground, and back to the energiser

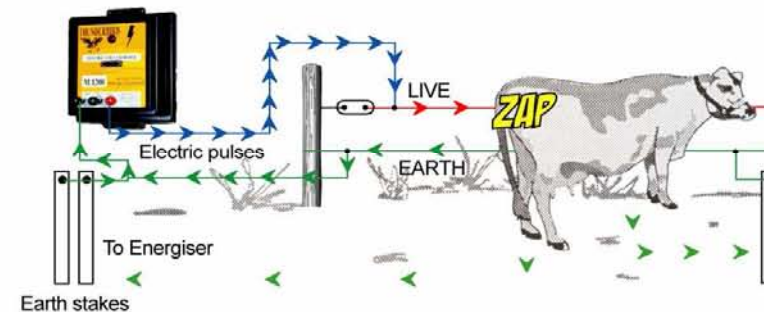


This method requires good soil moisture  
(Recommended for strip grazing only)

### Earth wire return system

(The preferred method)

When the animal pushes against both the live wire and earth return wire a strong pulse is passed directly through the animal. This method overcomes the problem of reduced or no pulse transmission due to poor electrical conductivity in the soil. (Eg. dry weather, drought)



- The pulse must return back to the energiser for a shock to be received
- Use a bentonite earth kit in dry soil areas.
- Earth wires are recommended for long fence or dry soil areas.



## Installing Energisers

Install Mains Energisers inside a shed. Cover Battery Energisers from weather. Use insulated underground cable for connection from energiser to live wire/s. Do not use COPPER WIRE or copper earth stake. USE GALVANISED WIRE/S AND EARTH STAKES.

## Wire Connectors

To achieve a good electrical joint, use a wire Joint Clamp. Twisting wires is not recommended. For joining Earth Return wires, we recommend that a joint clamp be used also.

## Wire

2.5mm high or medium Tensile galvanised wire is recommended.

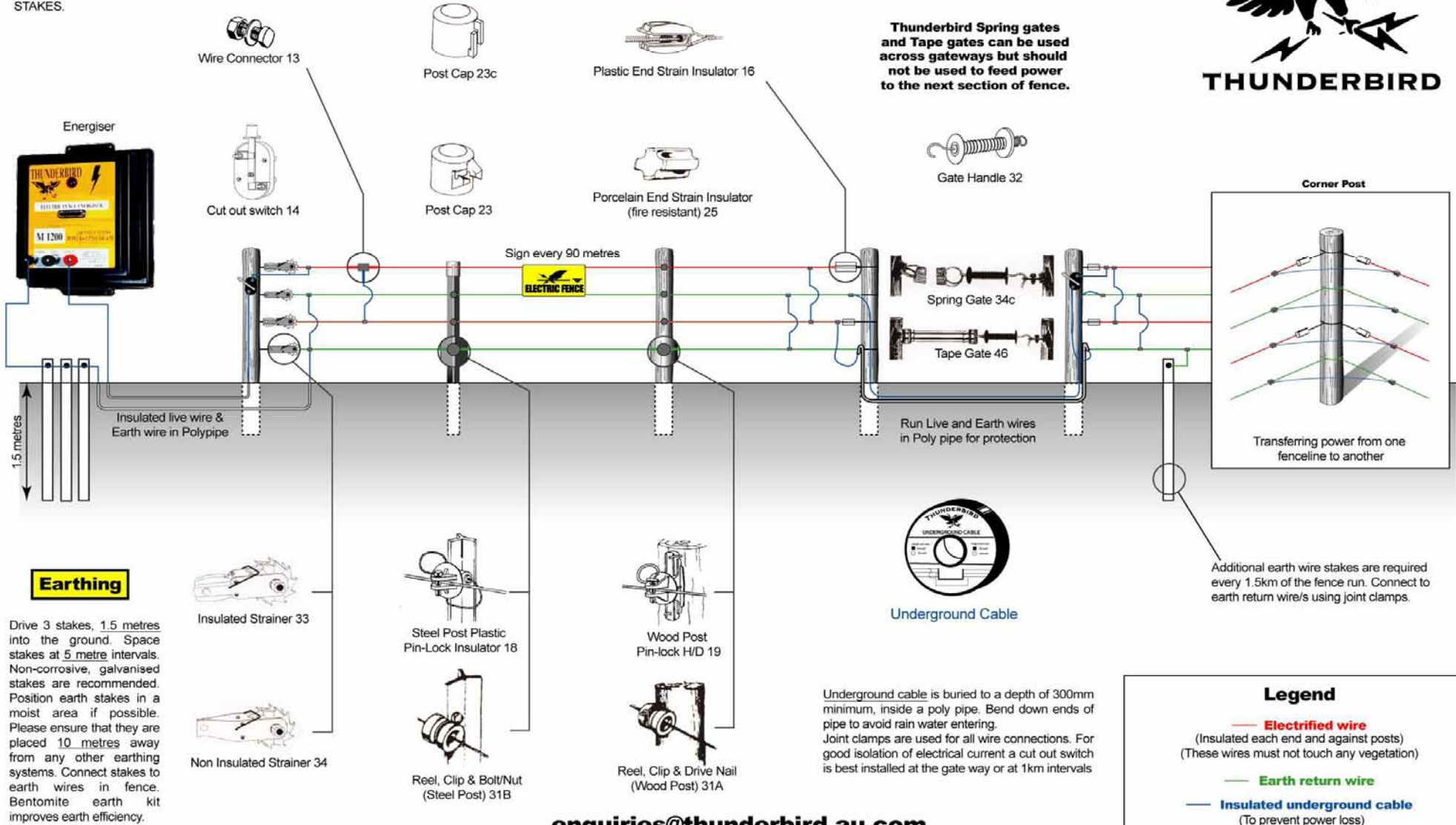
**DO NOT USE BARBED WIRE IN ELECTIC FENCING**

## Paralleling Common Wire

To reduce voltage loss, join all live wires and earth wires together (live to live, earth to earth). Use underground cables and joint clamps. Parallel wires from start to finish of each strain.



**Thunderbird Spring gates and Tape gates can be used across gateways but should not be used to feed power to the next section of fence.**



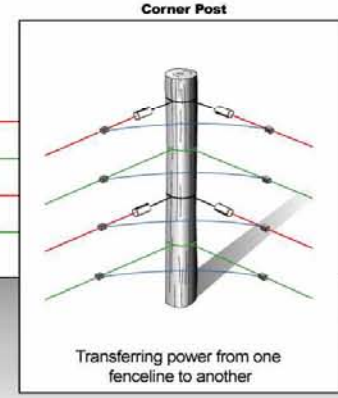
## Earthing

Drive 3 stakes, 1.5 metres into the ground. Space stakes at 5 metre intervals. Non-corrosive, galvanised stakes are recommended. Position earth stakes in a moist area if possible. Please ensure that they are placed 10 metres away from any other earthing systems. Connect stakes to earth wires in fence. Bentonite earth kit improves earth efficiency.



Underground Cable

Underground cable is buried to a depth of 300mm minimum, inside a poly pipe. Bend down ends of pipe to avoid rain water entering. Joint clamps are used for all wire connections. For good isolation of electrical current a cut out switch is best installed at the gate way or at 1km intervals



Additional earth wire stakes are required every 1.5km of the fence run. Connect to earth return wire/s using joint clamps.

**Legend**

— **Electrified wire**  
(Insulated each end and against posts)  
(These wires must not touch any vegetation)

— **Earth return wire**

— **Insulated underground cable**  
(To prevent power loss)

[enquiries@thunderbird.au.com](mailto:enquiries@thunderbird.au.com)

## WARRANTY THUNDERBIRD Electric Fence Systems.

Thunderbird warrants all electric fence energizers against defective workmanship and faulty materials for 2 years from the date of purchase.

We undertake, at our option, to replace or repair free of charge each product, or part thereof, on condition that it is returned to our factory freight pre paid, and found on examination to be suffering from material or constructional defect.

We cannot be held responsible for any repair other than those carried out by us or our authorised agents.

**A proof of purchase must be returned with the goods if you are claiming warranty.** This can be in the form of a photocopy of your receipt. No warranty claim will be accepted without this information.

This warranty is void if the product is subjected to improper use or handling, incorrect power input voltage, damage through contact with chemicals, flooding, fire, explosion, excessive heat, lightning strikes, insect damage, or damage to external wiring.

Country Electronics Pty Ltd  
ABN 38 003 806 040

11 Industrial Avenue  
Mudgee NSW 2850  
PHONE 02 63723600  
FAX 02 63722597

P.O. Box 391,  
Mudgee NSW 2850

Email : [enquiries@thunderbird.au.com](mailto:enquiries@thunderbird.au.com)

**For your records.**

**Model** .....

**Serial No** .....

**Date of purchase**.....

**Place of purchase** .....

**Receipt No** .....



## THUNDERBIRD Electric Fence Systems Models MB40, MB70, MB150 Mains / Battery Powered Energizers

**NOTE: READ ALL INSTRUCTIONS INCLUDING HELPFUL HINTS BROCHURE BEFORE USING THIS FENCE ENERGIZER.**

Thunderbird's medium mains/battery range of energizers are highly efficient electrical appliances. Installed and used correctly, these products should provide years of reliable service. These energizers have protection against moisture and ant damage.

**WARNING:-**

1. Regular inspections of electric fences must be undertaken to ensure continued operational safety and compliance. See - 'INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS' detailed over the page.
2. Persons coming into contact with high voltage pulses on a high output connection may have their normal physiological functions interrupted.
3. Young children and infirm persons should not be left unsupervised in the vicinity of an electric fence energizer or fence.
4. Do not connect to mains operated equipment.
5. Do not use copper wire. Electrolysis will occur and cause problems over time.

**INSTRUCTIONS**

Place the energizer in a suitable position for connection to the fence, preferably at the middle of the fence line, if powered by a battery. Install energizer in a shed or building if powered by a mains plug pack transformer. Mount energizer upright with fence terminals to bottom and mounting holes to the top, tighten fastners to secure energizer to structure. Drive one or more galvanised earth stakes into the ground approximately 1.5m. Connect the live wire to the fence or red terminal, and the earth stake to the earth or green terminal. Once all the fence has been installed, and is being powered by a battery, connect the red battery clip to the positive terminal of a 12V battery and the black clip to the negative terminal.

Correct earthing is extremely important. It is the other half of the electric fence. In dry conditions or sandy soil, run an earth wire as well as the live wire as part of the fence, connect any existing fence to the earth stakes, and drive in extra earth stakes every 1.5km. The top light flashes with every energizer pulse. The bottom light is a low voltage indication that flashes with every pulse if battery voltage falls below 12.0V (nominal). If the battery voltage falls to approximately 11.5V the low battery light will give a double flash every pulse. Once the battery voltage falls to 11V the energizer will stop and the low battery light will be continuously on. The energizer will start operating normally again when the battery voltage exceeds 12V. These cutouts are intended to protect your battery.

These energizers have built in self testing. If there is a problem with the unit you will see multiple flashes with each pulse. If the energizer pulse light flashes normally, and there is low or no output, assume that there is a problem with the fence.



## INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS.

The following safety information is part of the Australian standard 3350.2.76:1998 amendment 2. Refer to this standard for full details on electric fencing.

- >Electric fences must be installed and operated so that they do not cause an electrical hazard to persons, animals or their surroundings.
- >Construction of electric fences that is likely to lead to the entanglement of animals or persons is to be avoided.
- >An electric fence must not be supplied from two separate energizers or from independent fence circuits of the same energizer.
- >For any two separate electric fences that are each supplied from a separate independently timed energizer, the distance between the wires of the two fences must be at least 2 metres. If this gap is to be closer, it must be effected by means of electrically non-conductive (insulating) material or and isolated metal barrier.
- >Barbed wire or razor wire must not be electrified by an energizer.
- >A non-electrified fence incorporating barbed or razor wire may be used to support one or more off-set electrified wires of an electric fence. The supporting devices for the electrified wires must be constructed so as to ensure that these wires are positioned at a minimum distance of 150mm from the vertical plane of the non-electrified wires. The barb or razor wire is to be earthed at regular intervals in accordance with Thunderbird's earthing recommendations.
- >A distance of a least 10 metres must be maintained between the energizer's earth electrode and any other earthing system connected parts—for example mains power protective earth or telecommunication system earth.
- >Electric fence connecting leads located inside buildings must be effectively insulated from the earthed structural parts of the building, for example, use suitable high voltage insulated cable.  
**Important:** always ensure metal parts of the building are effectively earthed.
- >Electric fence connecting leads located underground must be run in suitable conduit of insulating material or high voltage cable to be used. Care must be taken to ensure that the effects of animal hooves or vehicle wheels (e.g. tractor) sinking into ground cannot damage connecting leads.
- >Electric fence connecting leads must not be installed in the same conduit as the mains power supply wiring, communication cables or data cables.
- >Crossing with overhead power lines must be avoided wherever possible. If such a crossing cannot be avoided it must be made underneath the power line and as near as possible at right angles to it.
- >If electric fence connecting leads and wires are installed near an overhead power line, the clearances must not be less than indicated in the table below.

Power line voltage - V	Clearances - Metres
Up to 1,000 V	3
1,000 V - 33,000 V	4
Greater than 33,000 V	8

>If electric fence connecting leads and wires are installed near an overhead power line, their height above the ground must not exceed 3 metres. This height applies either side of the orthogonal projection

## INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS.

- of the outermost conductors of the power line on the ground surface, for a distance of :-
  - 2 metres for power lines operating at nominal voltage not exceeding 1000V.
  - 15 metres for power lines operating at a nominal voltage exceeding 1000V.
- >Electric fences intended for deterring birds, household pet containment or training animals such as cows need only be supplied from a low output energizer to obtain satisfactory and safe performance.
- >For electric fences intended for deterring birds from roosting on buildings, no electric fence wire shall be connected to an earth electrode. A warning sign must be fitted to every point where a person or persons may gain access to the conductors.
- >Where an electric fence crosses a public pathway, a non-electrified gate must be incorporated in the electric fence at that point or a crossing by means of stiles must be provided. At any such crossing, the adjacent electrified wires must carry warning signs.
- >Any part of an electric fence that is installed along a public road or pathway must be identified at frequent intervals by warning signs securely fastened to the fence posts or firmly clamped to the fence wires.
- >The size of the warning sign must be at least 100mm x 200mm. The background colour of both sides of the warning sign is to be yellow. The inscription on the sign is to be black and shall be either the symbol shown (Fig. 1 ) or the words - "WARNING - ELECTRIC FENCE"
- >The lettering must be indelible, be on both sides of the sign and in letters not less than 25mm in height.

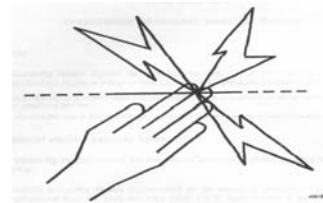


Fig. 1



>Ensure at all times that a mains operated, ancillary equipment connected to the electric fence circuit provides a degree of isolation between the fence circuit and the supply mains equivalent to that provided by the fence energiser.

>**This energiser must be installed in accordance with the Australian standard.**

### SPECIFICATIONS

Input Voltage	12.7V nominal - Maximum 20.0V
Input Current	MB40 - 40mA (nominal) MB70 - 65mA (nominal) MB150 - 115mA (nominal)
Output Voltage	7.5kV (nominal)
Stored Energy	MB40 - 0.4 joules MB70 - 0.7 joules MB150 - 1.4 joules

**NOTE:** These energizers are supplied with a detachable 12 volt D.C. lead and a mains low voltage plug pack transformer.