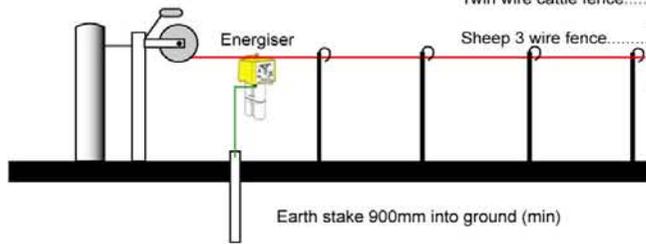


Strip Grazing



Strip Grazing Wire & Post Spacing

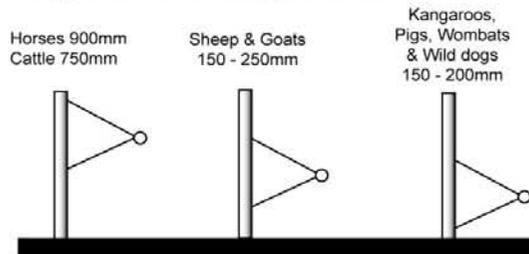
| | |
|-------------------------------|---------------------------------|
| Post spacing..... | 15 metres approx. (flat Ground) |
| Single wire cattle fence..... | Wire 800mm off ground |
| Twin wire cattle fence..... | Wire 1 450mm off ground |
| | Wire 2 900mm off ground |
| Sheep 3 wire fence.....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

Earth stake 900mm into ground (min)

Offset wires

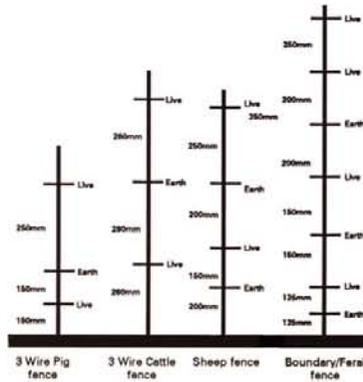
Offset wires are used to upgrade existing fences, extending fence life and reducing damage. Installed on one or both sides of fence, improves stock control.

Approx. wire height settings



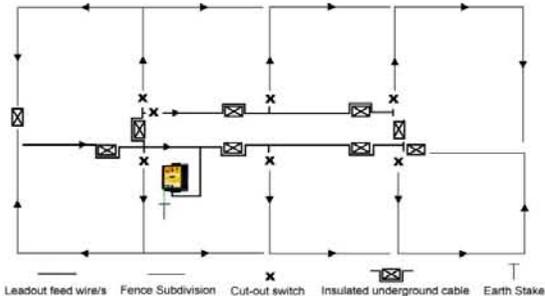
Space offsets approx 15 metres apart (MAX)
Always earth the existing fence by connecting it to earth stakes.

Wire Spacing

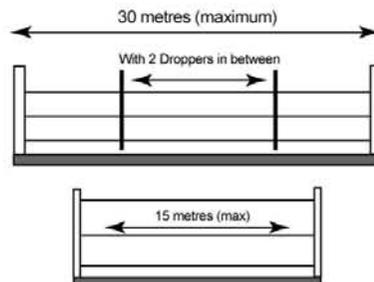


Layout Design

Suggested basic layout for area of operation.



Post Spacing



NSW
PH: (02) 6372 3600

VIC
PH: (03) 9796 2319

QLD
PH: (07) 3285 5711

TAS
PH: 0417 554 024



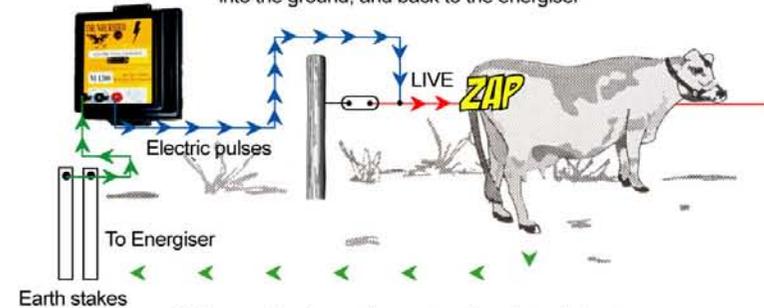
THUNDERBIRD Electric Fence System

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

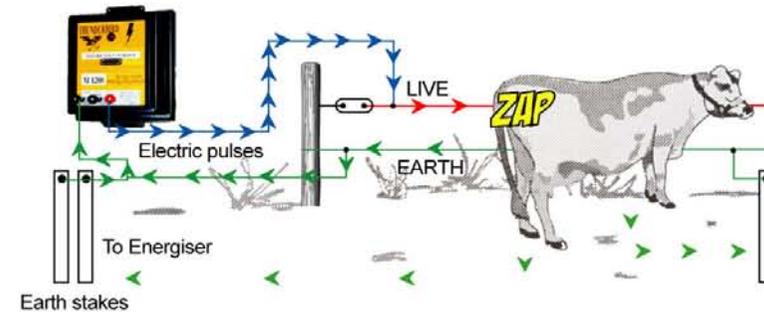


This method requires good soil moisture
(Recommended for strip grazing only)

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.

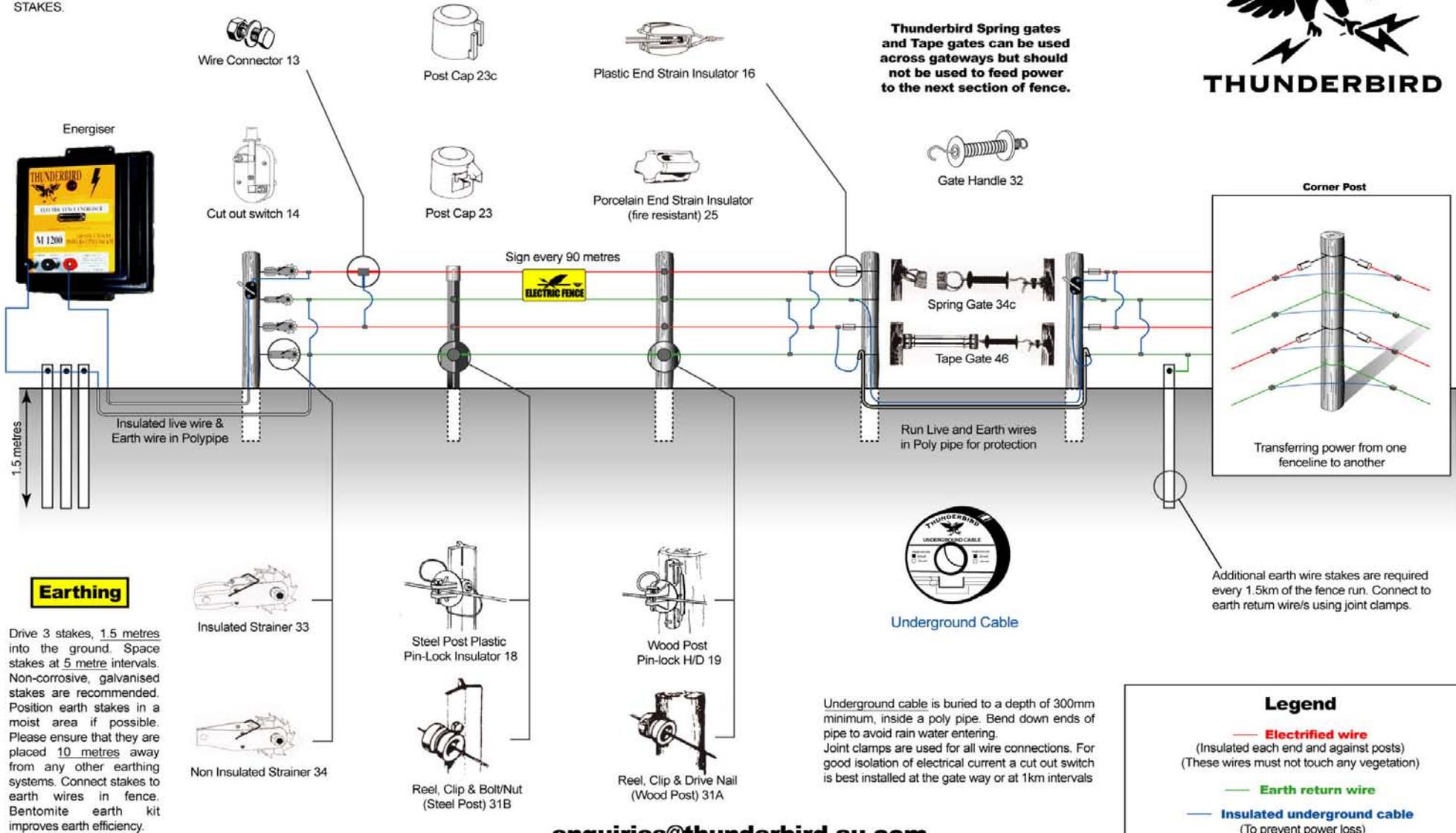
DO NOT USE BARBED WIRE IN ELECTIC FENCING

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.

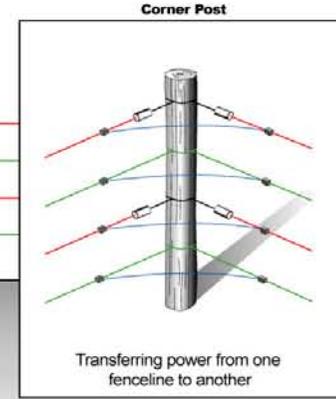


Thunderbird Spring gates and Tape gates can be used across gateways but should not be used to feed power to the next section of fence.



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.



Transferring power from one fence line to another



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

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

WARRANTY THUNDERBIRD Electric Fence Systems.

Thunderbird warrants all electric fence systems 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 can not be held responsible for any repair other than those carried out by us or our authorised agents.

A photocopy of this page or similar must also be returned with the goods showing the filled in details set out below.

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

For your records.

Model

Serial No

Date of purchase.....

Place of purchase

Receipt No



THUNDERBIRD Electric Fence Energisers. SOLAR 2000



NOTE : READ ALL INSTRUCTIONS INCLUDING HELPFUL HINTS BROCHURE BEFORE USING FENCE ENERGISER.

Thunderbird's SOLAR 2000 energiser is a highly efficient low power electrical appliance. Installed and used correctly these products should provide years of reliable service.

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 energiser or fence.
4. Do not operate with the energiser left lying on the ground. Water may enter the energiser causing it to fail.
5. **DO NOT STORE OUT OF SUNLIGHT.** The battery will go flat, and the energiser will not operate.

INSTRUCTIONS

Mount the energiser with the solar panel facing the equator, and clear of any potential shadows. The stainless steel fence clip at the top of the plastic case is designed to connect to the live wire or tape. The red live connecting wire (supplied) has a small spade terminal on one end. Push this terminal on to the lug on the top of the energiser case, and connect the red plastic clip to the fence. The green earth wire (supplied) connects to the green earth terminal at the base of the case—then to a steel stake driven 1 metre (minimum) into the ground. Remove the insulating tape from the loose wire near the battery and connect to the battery. The unit is now ready to operate.

This unit uses a 6V rechargeable battery. **DO NOT** attempt to charge the battery with a normal battery charger. It will destroy the battery and void the warranty on the battery. A special gel cell charger is required to charge the battery safely without the solar panel. Alternatively, leave the unit in the sun for a couple of days without turning it on. The SOLAR 2000 has a low voltage cut out when the battery voltage falls below 5.5V. This cutout is intended to protect the battery.

This energiser has built in self testing. If the battery is low, you will hear a constant beep. If there is a problem with the unit you will hear multiple beeps with each pulse. If the energiser beeps normally, and there is low or no output, assume a problem with the fence.

This energiser can take a few pulses to achieve correct output after turning on, or after changing levels, due to the processor reconfiguring the capacitor charging.

DO NOT use copper wire or copper stakes. Electrolysis will cause poor joints.

Locate the energiser in the middle of the fence line for best results.

In dry, sandy or rocky soil, an earth return wire may be required for the energiser operate effectively.

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 energisers or from independent fence circuits of the same energiser.

>For any two separate electric fences that are each supplied from a separate independently timed energiser, 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 an isolated metal barrier.

>Barbed wire or razor wire must not be electrified by an energiser.

>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 at least 10 metres must be maintained between the energiser'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 energiser 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

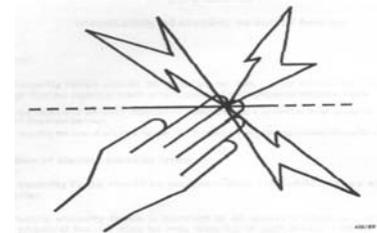


Fig. 1



>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 | 6.35V (nominal) |
| Input Current | 18mA on High, 12mA on Low (nominal) |
| Output Voltage | 6.7kV on High, 5.3kV on Low (nominal) |
| Stored Energy | 0.09 joules |