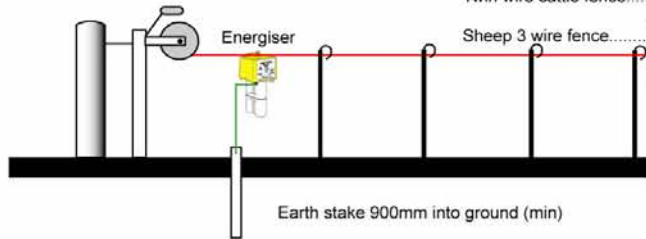


Strip Grazing



Earth stake 900mm into ground (min)

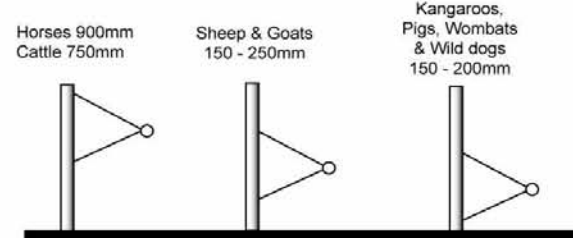
Strip Grazing Wire & Post Spacing

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

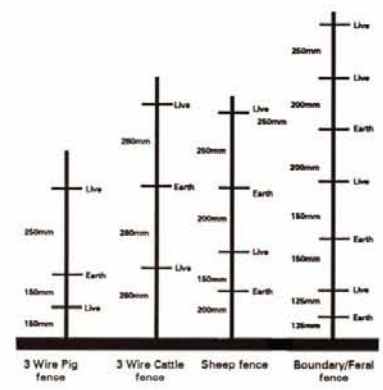
Offset wires are used to upgrade existing fences, extending fence life and reducing damage. Installed on one or both sides of fence, improves stock control.

Approx. wire height settings



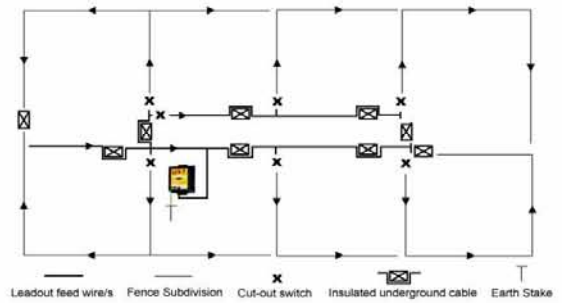
Space offsets approx 15 metres apart (MAX)
Always earth the existing fence by connecting it to earth stakes.

Wire Spacing

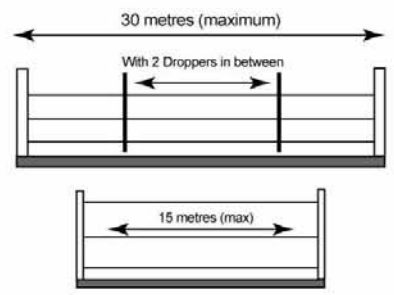


Layout Design

Suggested basic layout for area of operation.



Post Spacing



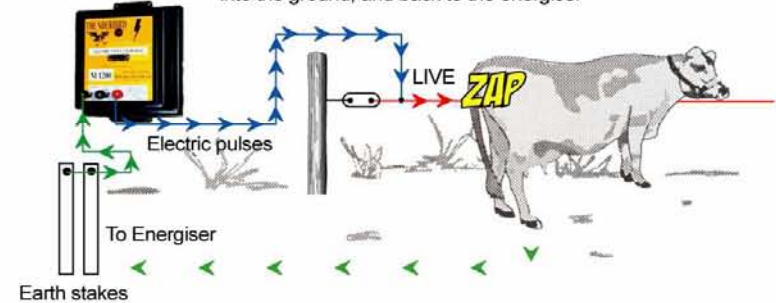
THUNDERBIRD Electric Fence System

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

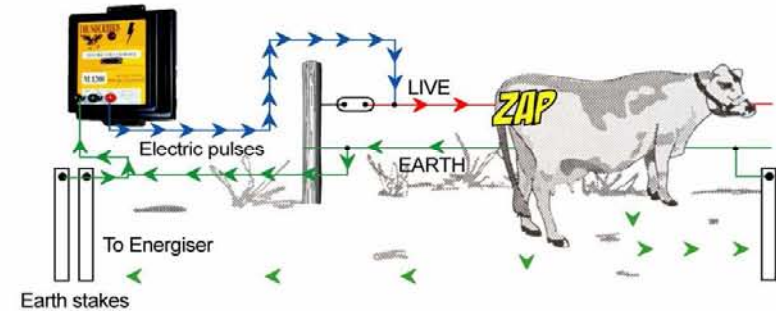


This method requires good soil moisture
(Recommended for strip grazing only)

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.



NSW
PH: (02) 6372 3600

VIC
PH: (03) 9796 2319

QLD
PH: (07) 3285 5711

TAS
PH: 0417 554 024

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.

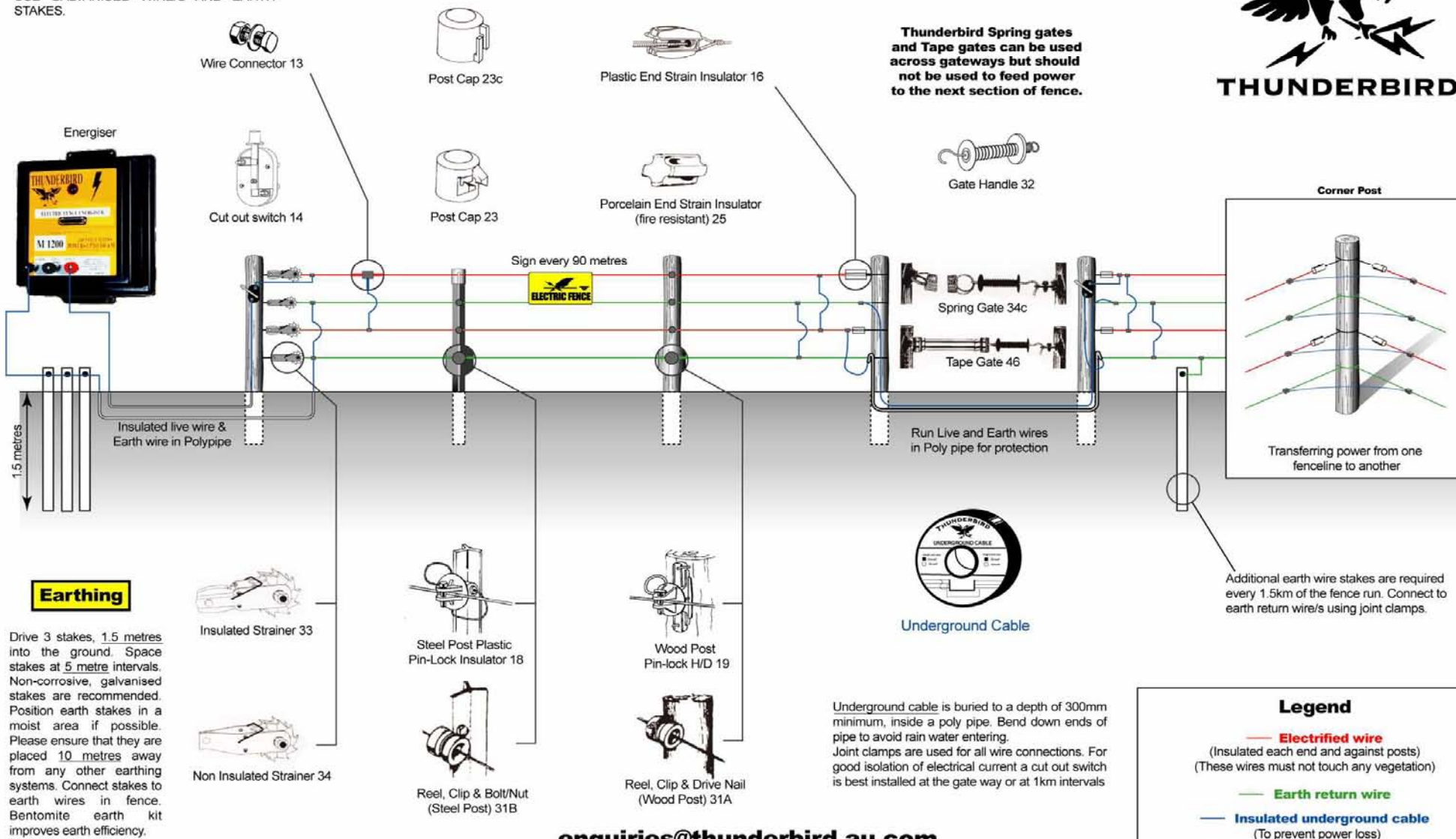
DO NOT USE BARBED WIRE IN ELECTIC FENCING

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.



Wire Connector 13

Post Cap 23c

Plastic End Strain Insulator 16

Energiser
Cut out switch 14

Post Cap 23

Porcelain End Strain Insulator (fire resistant) 25

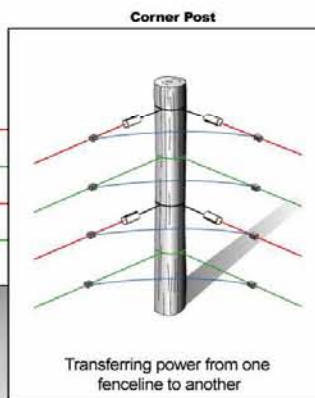
Gate Handle 32

Sign every 90 metres



Spring Gate 34c
Tape Gate 46

Run Live and Earth wires in Poly pipe for protection



Transferring power from one fence line to another

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



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

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.

Insulated Strainer 33

Steel Post Plastic Pin-Lock Insulator 18

Wood Post Pin-lock H/D 19

Non Insulated Strainer 34

Reel, Clip & Bolt/Nut (Steel Post) 31B

Reel, Clip & Drive Nail (Wood Post) 31A

enquiries@thunderbird.au.com

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)

**WARRANTY
THUNDERBIRD
Electric Fence Systems.**

Thunderbird warrant all electric fence systems against defective workmanship and faulty materials for 2 years on mains energisers, and 12 months on battery energisers, from 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 agent.

A photocopy of your proof of purchase and a request for warranty must be supplied.

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.
Models M-450/M-850
M-1250 & M-1850**



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

Thunderbird's M-450/850/1250/1850 energisers are highly efficient electrical appliances with low power use. Installed and used correctly these products should provide years of reliable service.

Ensure fence wire connections at energiser terminals are wrapped firmly around terminals and that terminals are kept tight.

Do not use copper wire.

In dry soil areas use earth wires connected to an earth stake.

Mount fence energiser indoors in a well-ventilated position and out of the reach of children.

WARNINGS:-

> Regular inspections of electric fences must be undertaken to ensure continued operational Safety and compliance with the requirements of - ' INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS ' as detailed below.

> Persons coming into contact with high voltage pulses on a high output connection may have their normal physiological functions interrupted.

> Young children and infirm persons should not be left unsupervised in the vicinity of an electric fence energiser or fence.

> If the supply cord of the energiser is damaged it must be replaced by a repair shop appointed by the manufacturer because special purpose tools are required.

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.

INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS.

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 closed, 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 Country Electronics 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—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.

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

_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 above.

.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 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.

INSTRUCTIONS FOR INSTALLATION AND CONNECTION OF ELECTRIC FENCES FOR ANIMALS.

Electric fences intended for deterring birds from roosting on buildings, no electric fence wire shall be connected to the energiser 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.

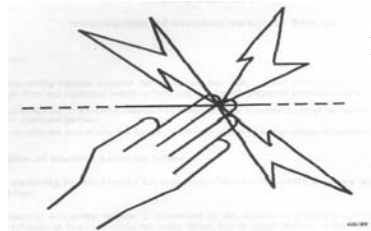


FIG 1



This product meets the Australian and New Zealand Safety standards, approval numbers— V00395 And other required regulations.

.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.

PULSE TRACKA - 6 Lights indicate the output voltage or fence load. If all lights flash this indicates no fence fault is present. A heavy short may show 2 or 3 lights flashing, while a medium short may show 4 or 5 lights flashing.

This is a useful indicator for the operator.

The mains light at the top of the unit glows to indicate mains power is being supplied to the energiser, indicating if power point is operating correctly.

Specifications. (approx)

Output voltage 6.6 - 7.2 KV approx

LOW POWER USAGE - 13 - 22 WATTS.

Hot tape and poly wire can be used effectively up to 500 metres. Super hot tape and super polywire can be used on runs up to 1500 metres. For longer runs use gal fencing wire.