

# PowerPlus

Thank you for purchasing this PowerPlus Energizer. Gallagher, as world leader in Power Fencing is committed to providing leading products. Gallagher Power Fences are alternatives to traditional barbed and net wire fences at a lower cost. Your new Energizer incorporates the latest in electric fencing technology, ensuring powerful animal control. This Energizer has built-in lightning protection devices to reduce the incidence of lightning damage and built-in RFI (Radio Frequency Interference) Suppressed Circuitry.

**If for any reason you are not happy with your purchase, please return the Energizer to your dealer within 30 days of purchase and we will give you a full refund - guaranteed. If you have any questions regarding this product please email us: or contact the store where you purchased this Gallagher product.**

## Important Information

- WARNING: Read all instructions.
- In areas of public access, use an electric fence warning sign every 10m (33ft) to identify the electrified wire(s).
- Check your local ordinance for specific regulations.
- Avoid the fence line passing under or running parallel to power lines. If unavoidable, the crossing should be made underneath the power and at right angles to it. Where they are in the vicinity of overhead power lines, no fence wires should be higher than 2m (6ft) above the ground.
- Fence wiring should be installed well away from any telephone or telegraph line or radio aerial.
- Do not use more than one Energizer on the same fence line at one time.
- Do not electrify barbed wire in an electric fence.
- WARNING: Risk of Electric Shock. Do not connect simultaneously to a fence and to any other device such as a cattle trainer or a poultry trainer. Otherwise, lightning striking your fence will be conducted to all other devices.
- Do not install an earth (ground) system for your Power Fence within 10m (33ft) of any utilities type ground system.
- Use lead-out cable (046099/116273) in buildings and where soil could corrode exposed galvanised wire. Never use household electrical cable.
- Refer servicing to qualified Gallagher service personnel.
- Do not place combustible materials near the fence or Energizer connections. In times of extreme fire risk, disconnect Energizer.
- Train livestock to Power Fencing prior to entry into pastures. Allow livestock to approach a Power Fence for the first time without stress.
- Do not touch live fence with the head or mouth, or become entangled.
- B160 and B260 only: WARNING - Do not connect to mains operated equipment. Do not charge batteries using a battery charger while batteries are connected to Energizer.

B700 and B1600: These Energizers have mains isolated output - they can be connected to mains operated equipment, eg. battery charger.

This Energizer complies with international safety regulations and is manufactured to international standards.

Gallagher reserves the right to make changes without notice to any product specification to improve reliability, function or design. E & OE.

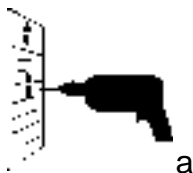
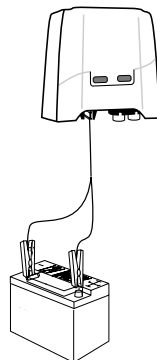
# Easy 5 step installation guide

## Step 1

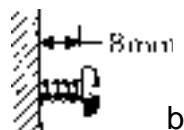
### Mount the Energizer

Installation under cover (non solar)

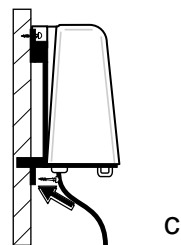
- a) Mount the Energizer on a wall, out of reach of children. Install where there is no risk of the Energizer incurring fire or mechanical damage and where the battery leads can be attached easily.  
Note: It is important to mount the Energizer correctly. If the Energizer is mounted upside down, water can damage the Energizer. Drill holes using the template on the inside back page as a drilling guide (A and B holes). Use a 4mm (5/32") diameter drill for timber walls or a suitable wall plug for brick and concrete walls (illustration a).



- b) Using the screws clipped to the Energizer, secure screw(s) in hole(s) A as shown (illustration b).



- c) Hang the Energizer on the screw(s) A. Fit screw through Energizer into hole (B) for extra stability if necessary (illustration c).



### Post installation (non solar)

Mount the Energizer on a post, out of reach of children and in a place where there is no risk of the Energizer incurring mechanical damage and where there is no risk of the leads being chewed by animals. Use the template described in a) - c).

### Solar installation

Mount Energizer to the underside of the Gallagher solar bracket/panel in a place where there is no risk of mechanical damage. (Complete instructions come with the Solar Bracket Kitset).

## Step 2

### Connect to earth (ground) system

Using Lead-out Cable 046099/116273 remove 5cm (2") of plastic coating from one end of the cable and attach to the green terminal on the Energizer. Attach the cable to the earth system by removing 10cm (4") of insulation from the cable at each Earth Stake, then clamp the exposed wire to each stake using an Earth Clamp 010851/010868. Tighten the clamp.

B160/B260/B700: For portable fencing – earth lead is provided.

For further instructions on the earth (ground) system see "How to install earth (ground) system" section.

## Step 3

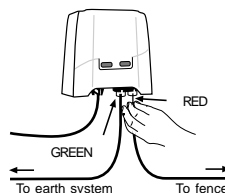
### Connect the fence

Connect Energizer's red terminal to the fence using Lead-out Cable 116273: remove 5cm (2") of plastic coating from one end of the cable and attach to the red terminal on the Energizer. Attach the other end of the cable to the fence using a Joint Clamp 010851/010868.

B1600 only: If using the REDUCED POWER option, connect the yellow terminal to the fence using 046099 Cable and 010851 Joint Clamp. To operate Full and Reduced power terminals simultaneously on 2 different fence systems, connect the Energizer red terminal to one fence system, and the yellow terminal to the other system.

B160/B260/B700: For portable fencing – fence lead is provided.

For instructions on fence installation see "How to install the fence" section.



## Step 4

### Connect the battery

Connect the battery leads from Energizer to battery: red lead to the (+) terminal of battery, black lead to the (-) terminal of battery. When battery is flat (voltage drops to approx. 11.8V), the Energizer slows to half speed to conserve power.

B160/B260/B700: use external 12V deep cycle lead acid rechargeable battery.

B1600: Use external 12V, 24V or 36V deep cycle lead acid rechargeable battery.

Do not use non-rechargeable batteries. During charging, place lead acid batteries in a well-ventilated area.

Battery Life			
Energizer	Battery (fully charged)	High Power/ Night Save mode (days)	Low Power/ Maximum Save mode (days)
B160	12V 60 Ah	18	50
B260	12V 60 Ah	12	30
B700	12V 100 Ah	9	27
B1600	2 x 12V 100 Ah	7	25

## Battery Save Modes

Adjustable battery save modes on the module board allow you to match the Energizer to your individual animal control requirements and have longer battery life:

- Standard mode - normal pulse.
- Night Save mode: saves the battery by slowing down at night when domestic animal movement is low.
- Day Save mode: saves the battery by slowing the pulse down during the day e.g. for fencing feral (wildlife) animals.
- Maximum Save mode: slow pulse day and night, extends battery life.

## Battery Protection Mode

Adjustable battery protection on the module board allows you to protect your battery from deep discharge. Deep discharge may cause permanent damage to your battery. When Switch 4 (Switch 3 for B700/B1600) is ON the battery protection is ON. When Switch 4 (Switch 3 for B700/B1600) is OFF battery protection is OFF.

## Step 5 Switch the Energizer On

B160/B260/B700: Switch the Energizer on to low power or high power.

B1600: Set the power mode of your choice using the M/H/L (Medium/High /Low) power switch, then switch the Energizer ON using the ON/OFF switch. Select the power setting that ensures the fence indicator light flashes with each pulse.















The right (FENCE) indicator light (red) flashes with each fence pulse, if the voltage is over 3000 volts (approx.) to indicate fence condition. If the fence is overloaded the light will either flash intermittently or not at all.

B1600: When using the yellow (REDUCED POWER) terminal, the fence condition is not monitored and the red light will always flash.

B160/B260: The left indicator light will turn on (red) to indicate that the battery needs recharging.

B700: When the battery needs recharging, the light flashes red. When the battery is flat (when battery protection is ON) the Energizer will stop and the light will be red constantly.

B1600: The left indicator light is green constantly when the Energizer is working satisfactorily. When the battery needs recharging, it flashes red. When the battery is flat (when battery protection is ON) the Energizer will stop and the light will be red constantly.

B160/B260	B700/B1600
<b>Battery Save Modes</b>  Standard Mode	<b>Battery Save Modes</b>  PRE-SET Night Save Mode
 Day Save Mode	 Standard Mode
 PRE-SET Night Save Mode	 Day Save Mode
 Maximum Save Mode	 Maximum Save Mode
<b>Battery Protection Modes</b>  OFF	<b>Battery Protection Modes</b>  OFF
 PRE-SET ON	 PRE-SET ON
<b>Key</b>  ON (Switch is up)	 OFF (Switch is down)

## Handyhint

### Earthing (Grounding)

Earthing the Energizer is the key for a successful Power Fence. Poor earthing is the most common reason for poor electric fence performance. Check the voltage on

your earth system using a Digital Volt Meter. Keep adding Earth Stakes until earth voltage is 200 volts or below.

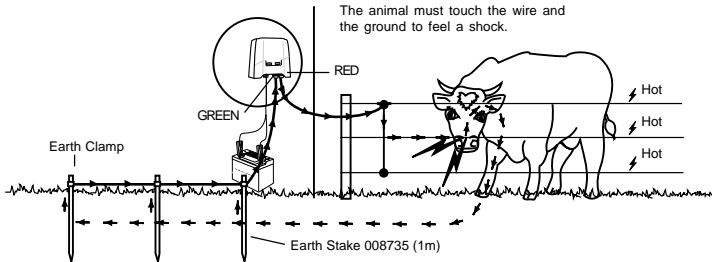


# How to install earth (ground) system

Improperly earthed Energizers can cause barns, gates etc to become hot (live). Follow earthing instructions carefully.

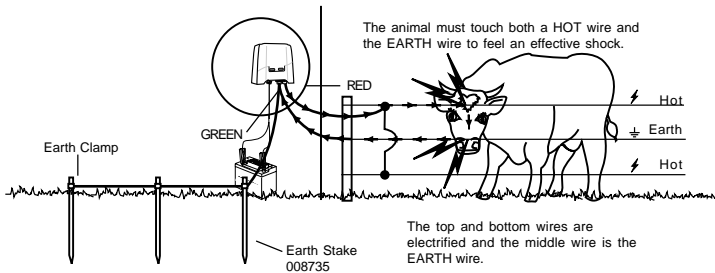
The most effective place for an earth system is in continuously damp soil (illustration a).

## a ALL HOT WIRE SYSTEM for areas with good earthing conditions



For dry areas with poor earthing conditions, install the fence using illustration b.

## b EARTH RETURN SYSTEM for areas with poor earthing conditions



Earth stakes, at least 1m (6ft) long, should be spaced 3m (10ft) apart. Use a minimum of 4 earth stakes for B1600, 3 earth stakes for B700, 2 earth stakes for B160 and B260.

Find a location for your earth system that is permanently damp, has high fertility or salinity and is away from dairy sheds. Install the earth system at least 10m (33ft) from any power supply earth peg, underground telephone or power cable. The best construction is 2m (6<sup>1</sup>/<sub>2</sub>ft) long

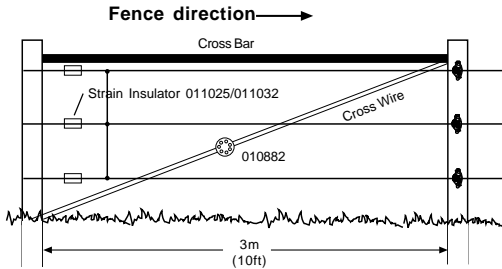
galvanised stakes or Super Earth Kits, 3m (10ft) apart, connected to the Energizer by high quality Lead- out cable.

Do not use materials that rust. materials that rust. (Use G6272 if the earth system is over 100m (300ft) from the Energizer).

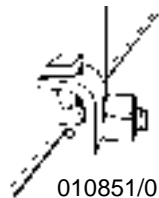


## How to install the fence

- a. Plan the fence line. Avoid rough, stony or steep areas if possible. For best electric fence performance use multi-wire (at least 3 wires connected in parallel) fencing.
- b. Install end strain posts and corner posts. Ensure that all corner posts are well installed to withstand the wire strain. Ensure the cross wire does not touch the hot (live) wires.



- c. Run out the bottom wire between the end posts.
- d. Tension wires until there is only a slight visible sag.
- e. Connect all live wires in parallel at the end of each fence section using Joint Clamps 010851/010868. Use Joint Clamps to ensure tight wire connections. Connect any earth wires together in parallel. Never connect hot (live) and earth wires together.



010851/010868

## Handyhint

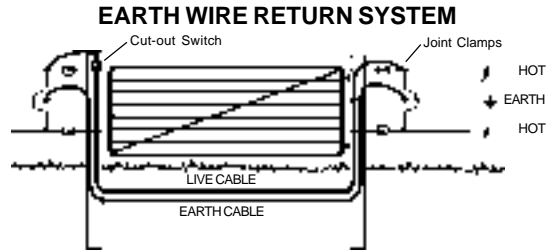
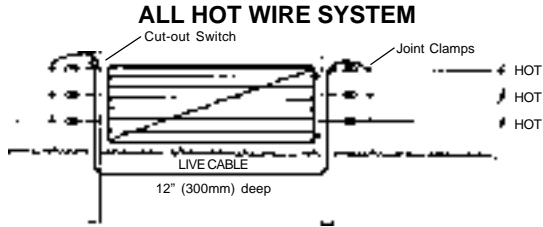
### Solar

Permanently installed solar powered Energizers are best placed in the centre of the area to be fenced. Choose an area with no shadows on the equator side and face the panel towards the equator.

Mount the solar installation where there is no risk of the leads being chewed by animals.

For solar systems test the battery every 12 months because rechargeable batteries can lose storage capacity over time.

- f. Conduct the fence system under gateways, rather than overhead. Do not use electric gates to get power across gateways. Install Lead-out Cable 046099 in a plastic pipe (for physical protection), 30cm (12") deep. Turn the ends of the pipe down to keep water out. Connect each end of the cable to the Joint Clamps.



## Offset Fence

Existing non-electric fences can be protected to last for many more years simply by attaching Offset Brackets and an electrified wire on one or both sides of the non-electric fence.

Use a single offset wire, positioned at two thirds the height of the animal (chest height) to be controlled.

Use Cut-out Switches to allow sections of the fence system to be switched off during fence maintenance. Put a switch at each gateway and at every major change in fence direction.

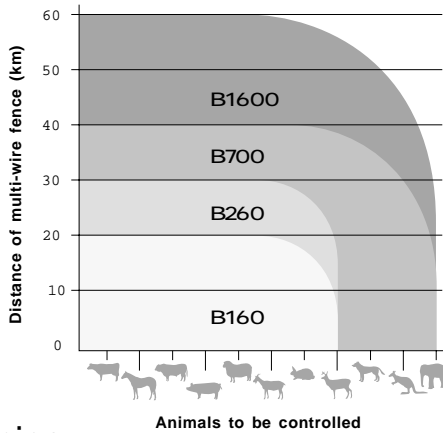
When joining wires under



tension, use a figure eight or reef knot.

Do not use copper wire anywhere in your fence system.

# Animal Control Chart



## Game Fencing

Power Fencing has been used widely throughout the world for game animals, deer, bears, elk and elephant. Power Fences are a psychological barrier and should not be considered a complete physical barrier fence. With any Power Fence occasional animal penetration may occur (as with any other type of fence). It is important for game fencing to have power on the fence the same day as the fence is constructed. Animals investigating the new obstruction will be shocked and will relate the shock to the new obstruction. If no power is on the fence and animals learn to walk through the fencing system with no electric shock, this causes major problems later on since they will not relate the electric shock to the fence after the power is turned on. A Power Fence is not recommended for animals under hunting pressure. For specific questions on game fencing contact your Gallagher dealer.

## Bird Determent

Where the Energizer is used to supply a system of conductors used for deterring birds from roosting on buildings, no conductor should be connected to earth. A switch should be installed to provide means of isolating the Energizer from all poles of the supply and clear warning signs should be fitted at every point where persons may have ready access to the conductors. The notice should bear the words "LIVE WIRES" in block letters not less than 13mm (1/2" high). The letters should be red on a white background. Each notice should be at least 62mm x 50mm (2 1/2" x 2").

# Handy hint

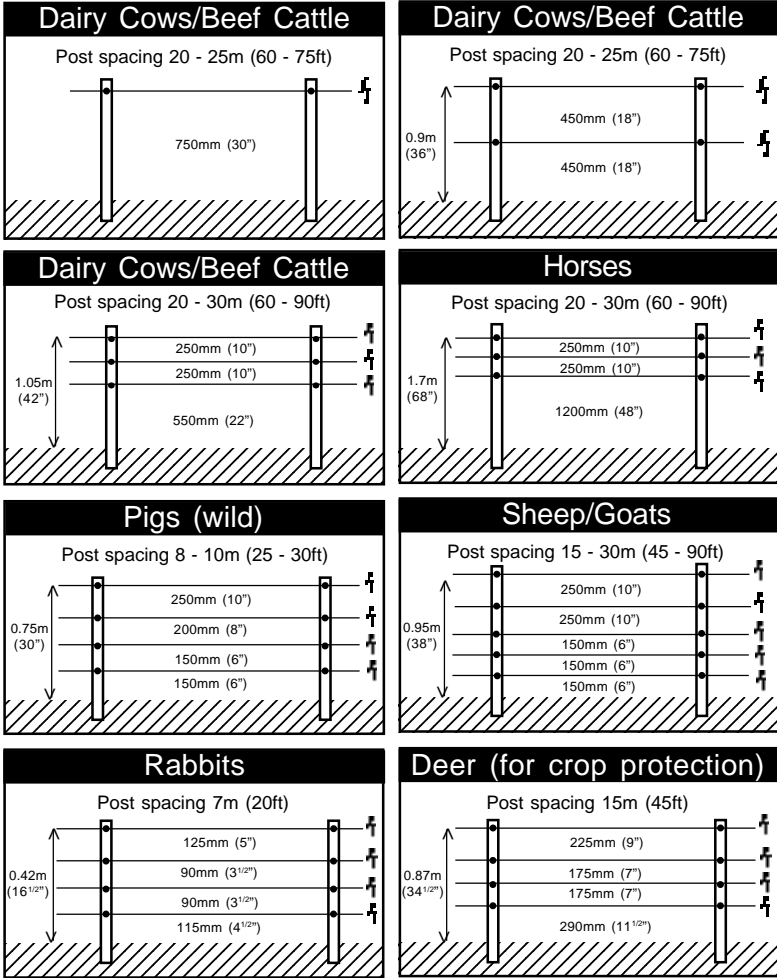
### Lightning Strikes

Lightning strikes can damage Energizers. Damage can be minimised by disconnecting the Energizer from the fence line and unplugging it from the power

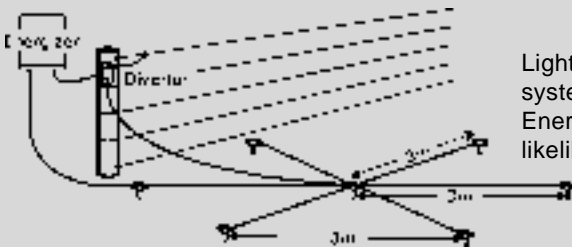
supply during electrical storms. The Gallagher Adjustable Lightning Diverter 064802 with a 'Crow's foot' earth configuration is recommended to minimise Energizer damage.

# Options for Wire and Post Spacings

These figures are guidelines only for flat country conditions.



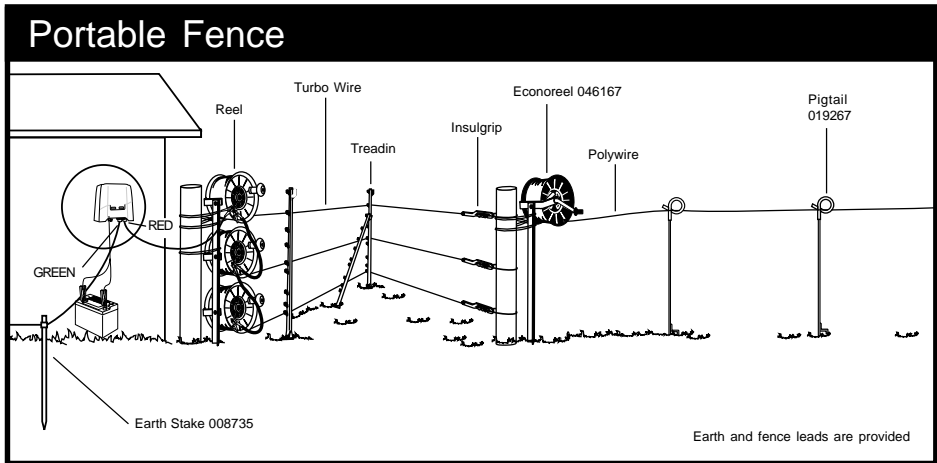
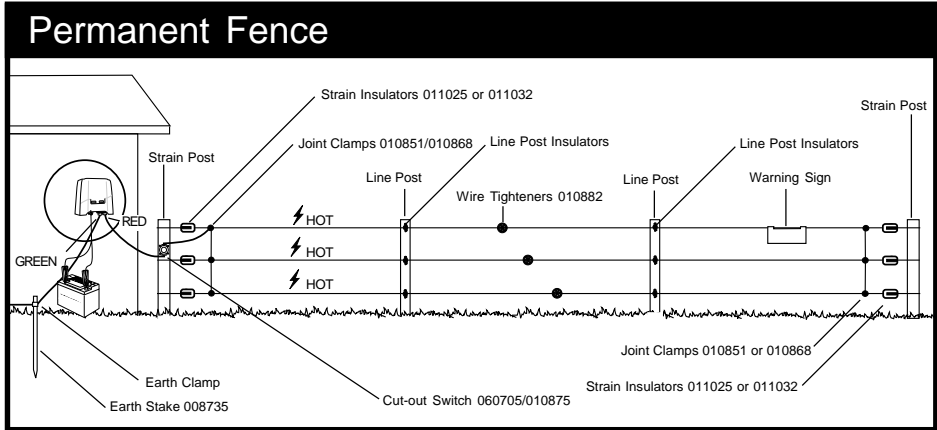
Dogs, kangaroos and elephants: For fence specifications and design, contact your Gallagher dealer. For wire and post spacings in dry areas with poor earthing conditions, see your Gallagher dealer.



Lightning is transferred to the earth system rather than through the Energizer, thereby reducing the likelihood of Energizer damage.

# Materials and Tools

Gallagher dealers offer a complete range of products for your Power Fence. For fence specifications and design contact your Gallagher dealer. On permanent Power Fencing, use high tensile, 2.5mm (12.5 gauge) wire. Do not use barbed wire or 1.6mm (16 gauge) or 18 gauge wire. On portable fences, Polywire, Polytape or light gauge wire may be used.



# Handyhint

## Insultimber

Gallagher Insultimber is a product unique to Gallagher which is made from a self-insulated high-density timber and which does not conduct electricity. Because it does not need any additional insulation, Insultimber is ideal for Power Fencing.

Insultimber is environmentally-friendly because it is a non-rainforest hardwood and a natural renewable resource.

And, best of all, Insultimber is  $\frac{1}{3}$  the cost of conventional non-electric fence systems!

# Energizer and Fence Maintenance Chart

Fault	Possible Cause(s)	Solution
Energizer doesn't operate	Energizer Off	Switch ON
	Incorrect battery voltage	For B160/B260/B700: use 12V battery, for B1600: use 12V, 24V or 36V battery
	Incorrect battery connection	Connect red lead to the (+) terminal of battery, black lead to (-) terminal
	Battery is flat	Battery voltage should be greater than 11.8V
	Faulty Energizer	Have Energizer repaired
Electric fence voltage is below 3000V or your stock are escaping	Faulty Energizer	<p>Turn Energizer OFF and remove the fence wire from the Red terminal (For B1600 remove the fence wire from the Yellow terminal if the REDUCED POWER option is being used). Turn Energizer ON again.</p> <p>Using a Digital Volt Meter (075037) check the voltage across the terminals. If the voltage is less than 5000V, have Energizer repaired.</p>
	Inadequate earthing	Improve the earth system by adding more galvanised earth stakes to the earth system until the earth voltage is 200V or below.
	Short on the fence line	<p>Check the electrical connections are secure eg. from the fence to the red terminal, from the earth system to the green terminal, at gates etc.</p> <p>Check the voltage on the fence every 33m (100ft) using the Digital Volt Meter. Note if the voltage is dropping. The closer to a fault, the lower the voltage reading will be. Become aware of things that cause faults and always be on the lookout for: stray pieces of wire on the fence, heavy vegetation growth, cracked or broken insulators, broken wires.</p>

Save these instructions

# Gallagher *world leader in Power Fencing™*

## **Leader in Power Fencing™**

Gallagher provides comprehensive power fence systems for both permanent and portable applications. Power fence systems that over many years have proven to be safe, simple, easy to erect, and highly cost effective. Most importantly power fencing provides superior animal control to other forms of fencing.

## **Product Range**

Gallagher offers a product to suit any farmer's need: unique, high performance products, like **SmartPower™**, designed for the professional farmer; traditional products, like **PowerPlus**, offering exceptional value; easy to install, yet sophisticated Energizer systems, like the **Fence Master**, designed specifically for the lifestyle farmer; highly robust, highly efficient battery Energizers, like **PowerBox**, for strip grazing; and for the environmentally-conscious, a range of high performance **solar battery solutions**.



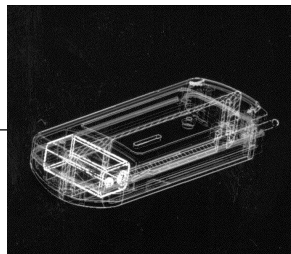
## **Leader in Service and Integrity**

The Gallagher Energizer is supported by the Gallagher Module Exchange Programme which guarantees only genuine Gallagher parts are used. Under this programme all world-wide modules are serviced in New Zealand by highly skilled technicians ensuring only the highest quality components are used when servicing Gallagher Energizers. World-wide, Gallagher representatives provide market leading on-farm support, ensuring our customers and products achieve the excellent performance you would expect from Gallagher products.



## **Leader in Innovation**

Sixty years in the industry, and distribution in over 100 countries, has made the name Gallagher synonymous with powerful, innovative and high quality Power Fencing.







B1600



B1600

A  B160/B260/B700

B  B160/B260/B700

B  B1600