



#### *Energizers and Components*

1. Energizers for permanent electric fencing must be high voltage/low impedance, short pulse units which can produce at least 3,000 volts output with all livestock containment fences charged (on) when under maximum anticipated load. Fence voltage should be monitored with a digital volt meter.
2. Install a surge protector at the 110 volt connection to provide protection from power surges. A lightning arrester or lightning choke is suggested following manufacturer recommendations. When installing a ground system for the arrester/choke system, install one more ground rod than was used on the charger ground system.
3. A minimum of three (1/2" diameter) ground rods must be installed at least 10 feet apart near the energizer. Six-foot ground rods are recommended, driven to ground level or refusal, with a minimum depth of 3 feet. In the case of refusal, additional ground rods must be added to provide a minimum of 18 feet of ground contact. The rods will be connected together with one continuous wire and clamps back to the charger terminal. Locate ground rods in moist, deep soil. Either galvanized or copper ground rods are acceptable. Rod connecting wires and clamps must be the same material as the ground rods. Avoid mixing dissimilar metals to prevent electrolysis. For large energizer systems (7 or more joules), use a minimum of 3 additional feet of ground rod per joule of energizer output capacity. Keep ground rods at least 25 ft from other grounding systems or well
4. Insulators for steel and other conductive material posts must be high-density polyethylene or polypropylene with ultra-violet (UV) stabilizer, porcelain or other insulators, which can withstand a minimum of 10,000 volts or more in current leakage. Only insulators with a 10 year warranty are of sufficient quality.
5. Cutoff switches are recommended at each secondary fence feeding off the main fence.
6. Electric fence warning signs should be installed where the public has access to the electric fence.