

Electric Fencing for Black Bears

Protection of Bee Hives, Poultry, Garbage, and other applications



When properly installed, electric fence is safe for people and pets and has been proven to be the most effective tool for deterring bears from getting into bee hives, poultry, and dumpsters. Modern electric energizers are safe for humans, animals, and vegetation. Their quick pulse rate does not produce excess heat which could cause a fire and, while unpleasant if touched, are safe for children and pets.

When an animal touches an electrified wire and the ground simultaneously they complete the circuit and receive a shock. Electricity passes through them, into the soil, to the ground rod and back to the energizer. This is known as an all-hot design because all wires are electrified and is the design recommended for bears.

Key Components:

- 1) Energizer
- 2) Grounding system
- 3) Wire (Poly tape or poly wire)
- 4) Posts
- 5) Fence Tester
- 6) Accessories: Gate handles, post insulators, safety signs, electrical tape

Energizers: The power source

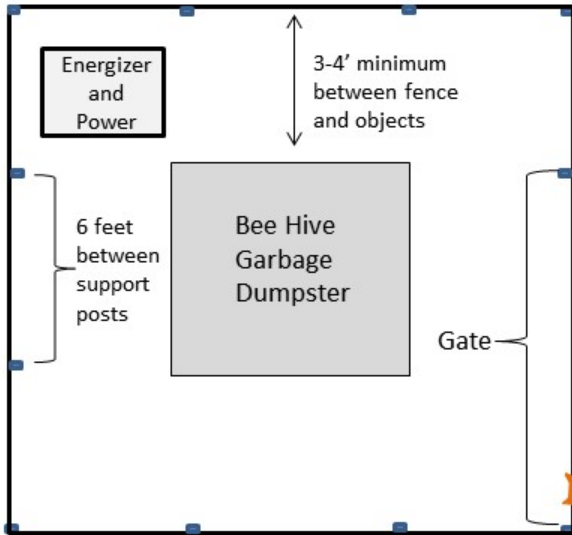
- Energizers store energy and deliver very short pulses of electricity through fence system.
- Several styles are available including solar powered, plug in, and battery powered.
- Stored energy is measured in joules and is most important rating for animal exclusion
- Bears require **0.7 joules** or greater (horse 0.1 joules)

Grounding: Second most important part of the fence, without proper grounding, the fence will fail.

- Moist soils allow for adequate return of energy back to energizer
- Grounding rods - use $\frac{1}{2}$ - $\frac{3}{4}$ "galvanized steel rod driven to a depth of **6 ft**, and one rod per joule

Fence Testing and Tips

- Voltage meter tells you fence is working and the amount of current running through the wires.
- A voltage meter is different than voltage reader which just tells you if electric is running, not how much is running through the wire
- Bears require a minimum voltage of 5000 volts passing through each hot wire to be effectively deterred
- Check voltage on every hot wire weekly, especially those farthest from the energizer
- Be sure all vegetation and fallen branches are clear and be sure all hot wires are not grounded out
- If using battery powered energizer check power weekly
- Due to winter denning behavior of bears, fencing can be set up seasonally (May 1-November 1) or, depending on application, a more permanent design may be desired.



Electric Bear Fence Design Template

Area: 18' X 18'

Power Supply : Battery powered energizer = \$80-200

Supplies: 11 - 5' Posts (\$3-5/post)

Post insulators if needed (\$16-20/batch)

Polywire 1300 ft (\$40-60)

Gate handles/anchors (\$13x4 = 52)

Ground rod galvanized 6' (\$10)

Ground clamp (\$3)

Fence signs (\$1.50 each)

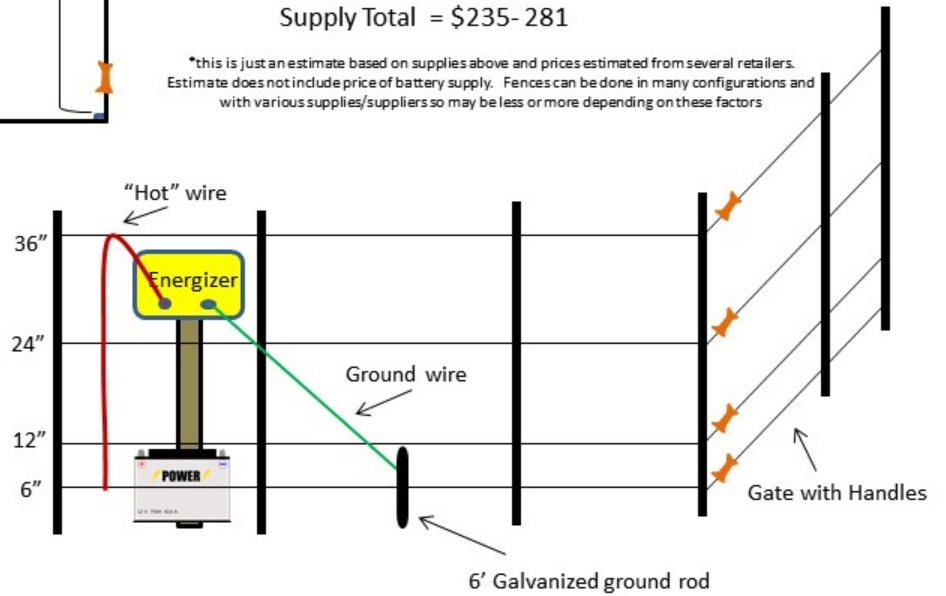
Voltage Meter (\$50)

Insulated 12 gauge "Hot" wire

Misc supplies (add \$25)

Supply Total = \$235- 281

*this is just an estimate based on supplies above and prices estimated from several retailers. Estimate does not include price of battery supply. Fences can be done in many configurations and with various supplies/suppliers so may be less or more depending on these factors



Dumpster photo courtesy NYSDEC