## 1: Introduction

1 Repels is a portable perimeter detection system designed for fast, simple deployment. It is ideally suited for temporary applications such as protection of mobile resources or when permanent security is disabled. The system uses above-ground, terrain-following guided radar to detect intruders. Each Repels system can protect various perimeter shapes up to 100 m (328 ft.); multiple units can be used to protect longer perimeters.
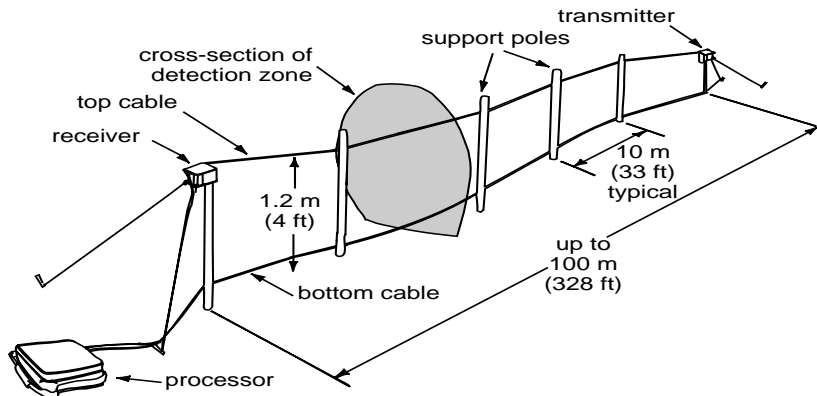

2: Transmitter

1 Insert into the soil a single support transmitter pole and two stakes using the slide hammer. Move the top line cleat down to the bottom of the pole.

Note: In hard/frozen soil, use pointed steel rod to make a hole first.
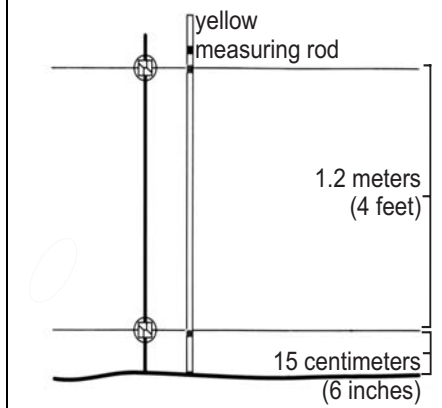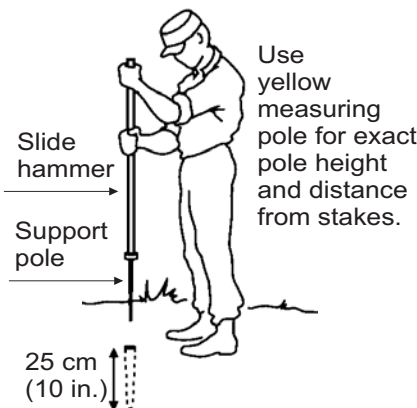
2 Remove the **transmitter** from the storage area on the processor chassis. Attach the transmitter to the support pole.

3 Attach the **longer tension cords** to each of the stakes in the ground. The other end is attached to the transmitter casing.
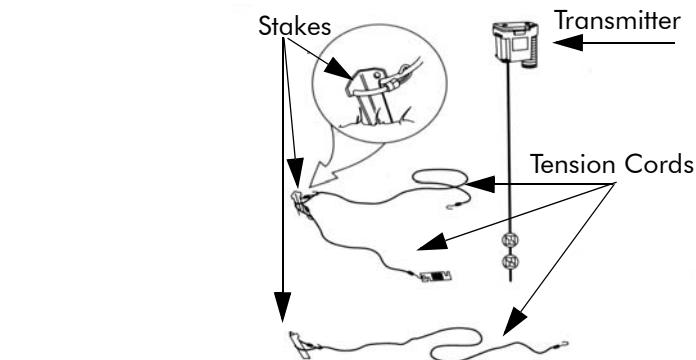

4 Attach the **shorter tension cord** with a cleat to one of the stakes in the ground. Do not attach the cleat end of the shorter tension cord to the stake or anchor. You attach the cleat end of the shorter tension cord to the bottom sensor cable.

2: Transmitter

5 Remove 3 meters (10 feet) of **sensor cable** from the Repels processor. (Leave the signal dampers inside the processor chassis.) Ensure you pull evenly on each cable to reduce tangles on the cable reel.

If the cables tangle:

a. Remove the screws on cable reel retaining plate.
b. Remove the cable reel from the processor chassis.
c. Unclip the signal damper block from the chassis.
d. Remove the signal dampers and signal damper block from the chassis. Ensure the sensor cables pass through the vertical slot opening on the top of the chassis.
e. Untangle the cables and replace the reel.

damper block
signal dampers
top cable
bottom cable

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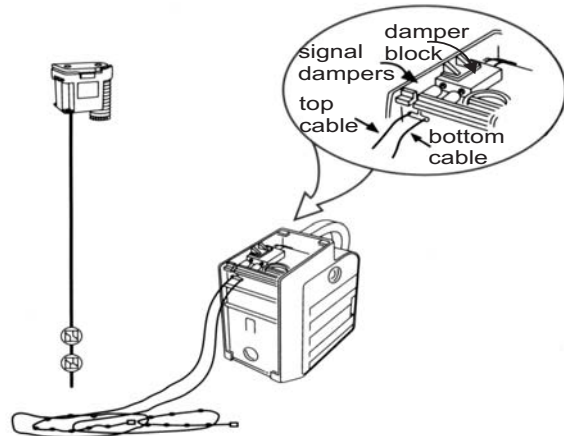
6 Wrap the **top sensor cable** in the notched neck of the transmitter and secure the cable under the hook.

Note: Some Repels systems use TOP and BOTTOM labels for the end clips of the sensor cables and signal damper block. Use the cable labelled TOP, if required.

Secure top sensor cable under hook on transmitter.

Wrap the top sensor cable in the notched neck of the transmitter above the last bead.
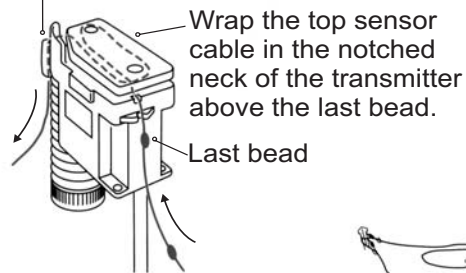
Last bead
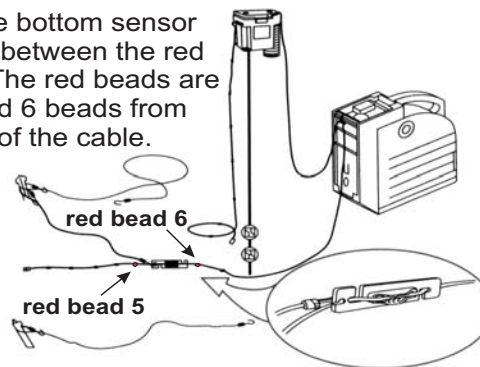
Transmitter

last bead

Top cable
Bottom cable

Processor

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7 Attach the **bottom sensor cable** to the cleat on the short tension cord.
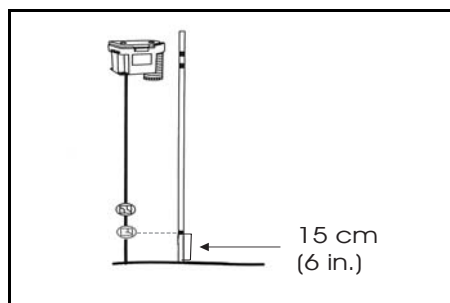
Note: Use the cable labelled BOTTOM, if required.

Cleat the bottom sensor cable in between the red beads. The red beads are the 5 and 6 beads from the end of the cable.
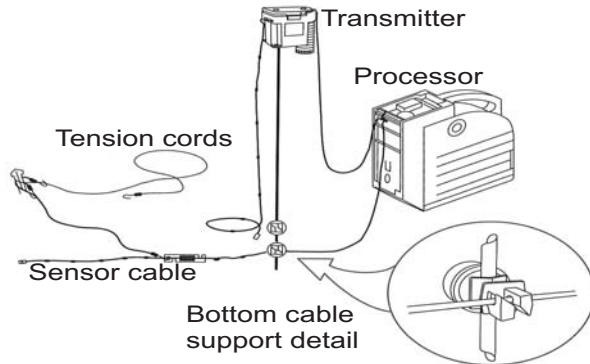
red bead 6

red bead 5

Verify the retaining power of the cleat by pulling on the sensor cable.

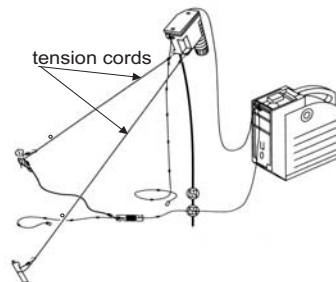**8** Set the height of the **bottom sensor cable support** to 15 cm (6 in.) above the ground.

15 cm (6 in.)

2: Transmitter

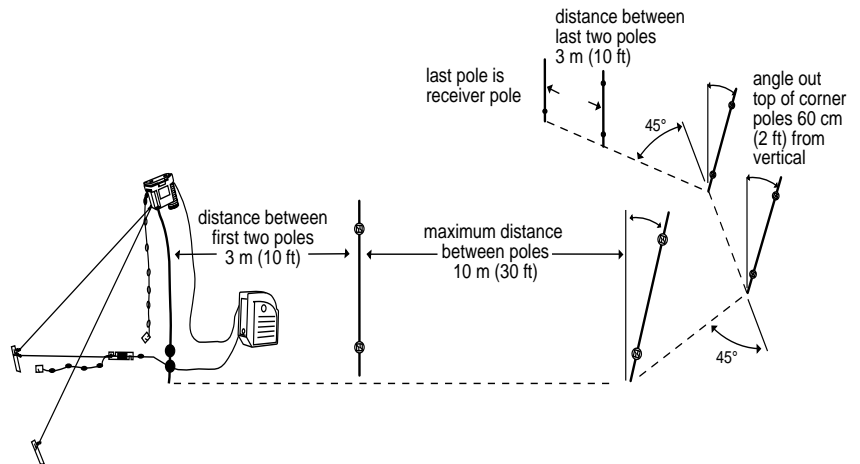|		
9	Attach the **bottom sensor cable** to the bottom sensor cable support.	
10	Attach the **longer tension cords** to the transmitter. **Note**: The transmitter support pole must be slightly bowed towards the ground stakes.	
11	Install the **rain cover** on the transmitter.	

3: Perimeter Setup

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1	Install the sensor cable **support poles** along the perimeter. **Note**: Use the pole installation technique described in **2: Transmitter**.	
2	Pull the remaining portions of the top and bottom **sensor cables** out of the Repels processor as you deploy the cable along the perimeter. **Note**: Ensure you pull evenly on each cable to reduce tangles on the cable reel.	Temporarily position the sensor cables on the *outside* of turns or corners in the perimeter route. This placement keeps the cables close to the support poles during deployment.
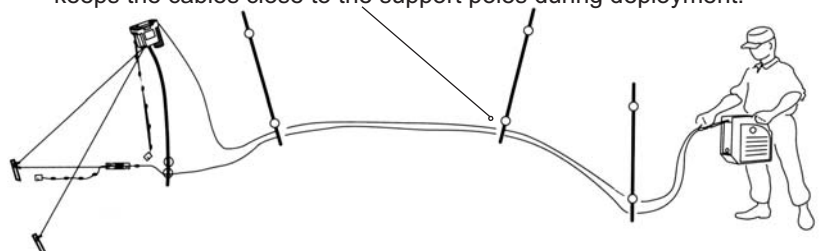
3: Perimeter Setup

3   Attach the top and bottom **sensor cables** to the clips on the support poles.

Move the top and bottom sensor cables to the *inside* of turns or corners in the perimeter route. This placement keeps the cable sensor clips in the correct inward-facing position.

yellow measuring rod

1.2 meters (4 feet)

15 centimeters (6 inches)
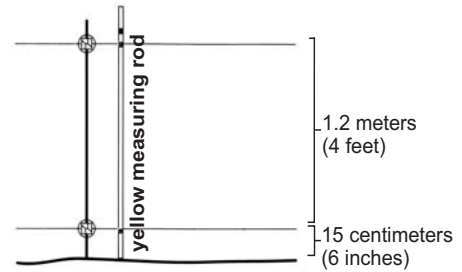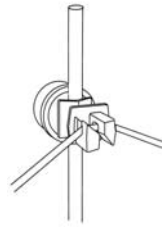
4: Receiver Setup

1   Insert two **stakes** in the soil next to the last support pole on the perimeter.

Note: Use the same spacing show in **2: Transmitter.**

2   Attach the **longer tension cords** to each of the stakes in the ground. (You attach the other end of the longer tension cords to the receiver in step 6.)

3   Attach a **shorter tension cord** with a cleat to one of the stakes in the ground. Do not attach the cleat end of the short tension cord to the stake. (You attach the cleat end of the shorter tension cord to the bottom sensor cable in step 4.)

4   Secure the **bottom sensor cable**:

a. Pull the bottom sensor cable until the bead hits the clip on the transmitter end.

b. Release the bottom sensor cable so the bead is approximately 5 centimeters (2 inches) from the clip on the transmitter end.

c. Pull the shorter tension cord taut and cleat to the bottom sensor cable.

Receiver End

Transmitter End

bead hits clip
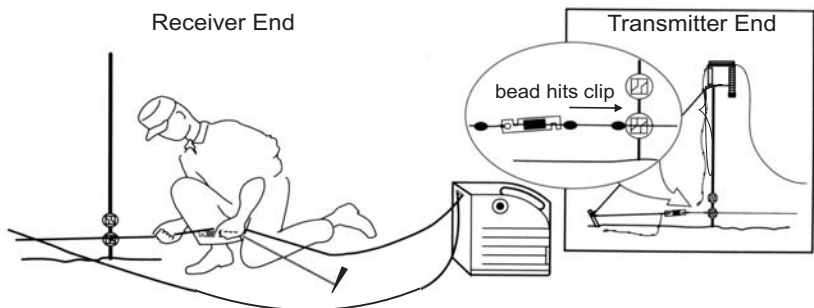
5   Remove the **receiver** from the storage area on the processor chassis. Attach the receiver to the last support pole on the perimeter.

Receiver
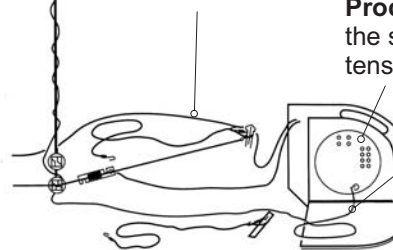
Top sensor cable. Route the cable around the stake in the ground with the shorter tension cord.

Processor. Position the processor next to the stake in the ground with the shorter tension cord.

Signal cable. Thread the cable under the bottom sensor cable and shorter tension cord. Wrap the cable around the support pole.

Note: There should be no excessively-slack sections of cable as slack cable can cause false alarms.
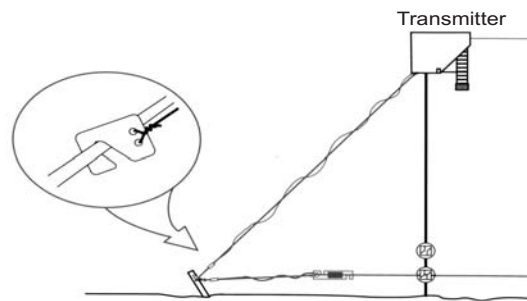
4: Receiver Setup

6   Attach both of the **longer tension cords** to the receiver.

Note: The receiver support pole must be slightly bowed towards the ground stakes.)
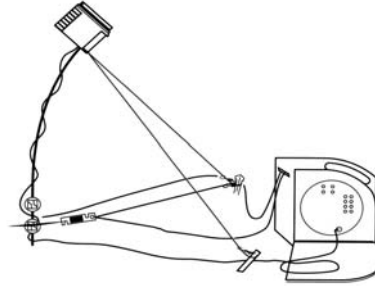
7   Secure the **top sensor cable**:

     a. Pull the top sensor cable until the support poles used for the perimeter corners and the transmitter move to an upright position.

     b. Push the support pole for the receiver to an upright position.

     c. Wrap the slack top sensor cable around the receiver head.

     d. Secure the cable under the hook on the front of the receiver.

   e. Thread the cable through the notch on the back of the receiver.

Receiver

Transmitter. Moves to a vertical position when you pull on the top sensor cable.

Hook

Notch
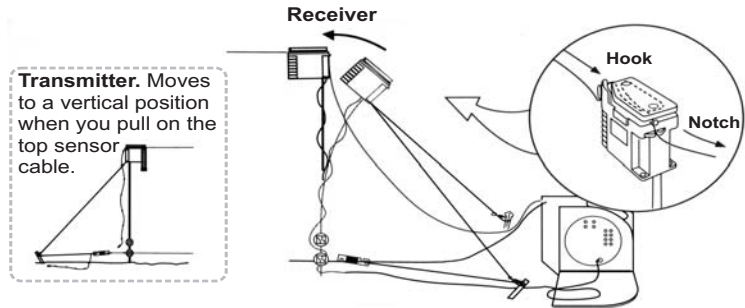
8   Wrap the loose ends of the **sensor cables** around the tension cords attached to the transmitter.

Transmitter

9   Install the **rain cover** on the receiver.

5: Processor Setup

**1**   Attach the **signal dampers**:

     a. Remove signal dampers from the processor chassis.

     b. Slide the dampers halfway up the long tension cords.

     c. Wrap the dampers around the longer tension cords to eliminate excessively-slack sections of sensor cable.

     d. Clip the dampers to the longer tension cords.

     e. Pull slack sensor cable towards the processor.
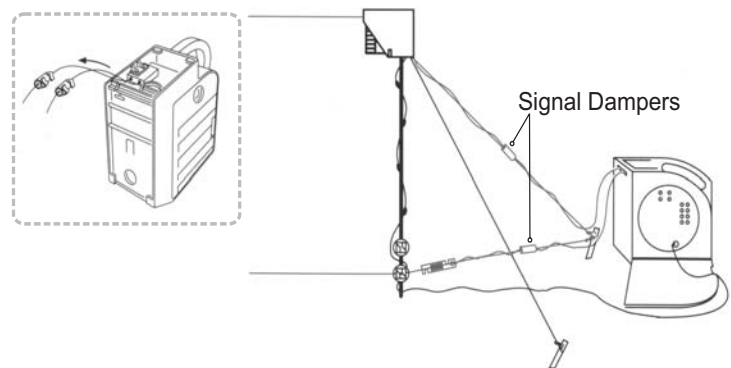
Signal Dampers

5: Processor Setup

2	Position the **signal damper block**: a. Remove the damper block from the processor chassis. b. Position the damper block directly in front of the receiver stakes located in the ground.	 Signal Damper Block
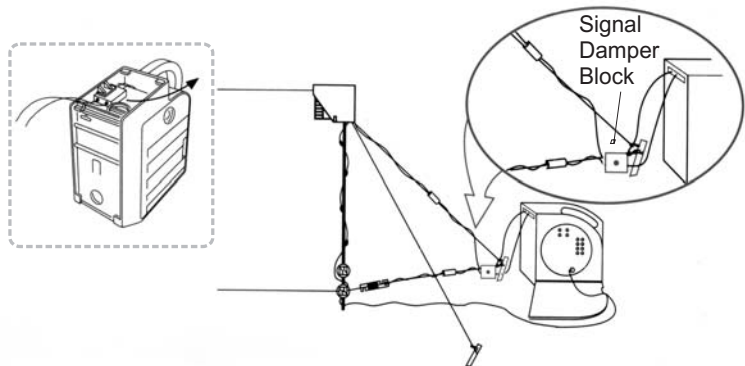
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3	Wind the slack section of the sensor cables onto the processor reel.
4	Place the processor within the area protected by the Repels system.
5	Determine if the annunciator(s) obtained for your system uses normally open (NO) or normally closed (NC) relays. **Note:** Alarm and fault conditions cause the relay to open or close and activate the annunciator.
6	Connect the annunciator(s) and standalone power supply to the appropriate alarm and fault relays on the processor. See the *Repels Site Planning and Troubleshooting Guide* for the annunciator wiring options.
7	Connect a diode across the + and − wires connecting the processor relays to the annunciator(s). **Note**: The diode absorbs induced current.
8	Supply power to the annunciator(s).
9	Ensure the annunciator wires are positioned behind the processor and away from the sensor cables. Eliminate slack sections of annunciator wire.

10	Set the alarm detection sensitivity using the SENSITIVITY toggle switch on the processor chassis.	
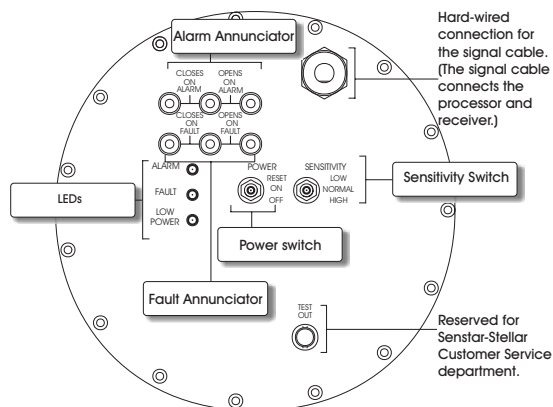
11	Put the processor in the storage bag.
12	Supply power to the transmitter by moving the toggle switch to the ON position.
13	Reset the power supply to the processor: • Move the POWER toggle switch to RESET momentarily.
14	Close the cover on the processor chassis.
15	Move back 5 meters (16.5 feet) from the Repels system. **Note: The Alarm LED can remain ON for15 seconds to 5 minutes. The Repels system is operational when the ALarm LED is no longer lit.**
16	Test the intrusion detection capability of the Repels system by attempting to bypass the sensor cables.