

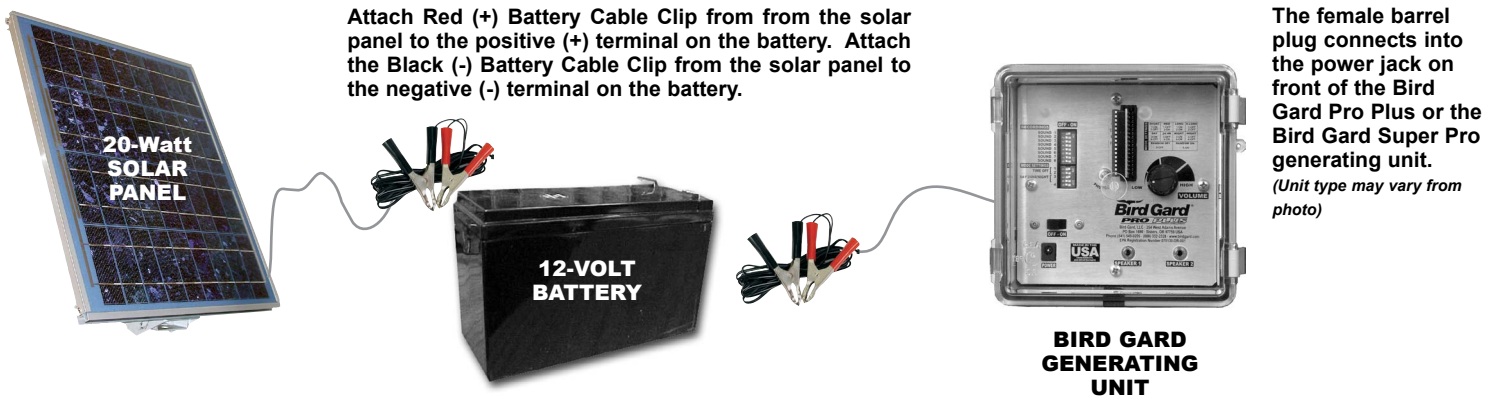
# 20-Watt Solar Panel Instructions

The 20-watt solar panel with mounting kit is designed to keep a 12-volt storage battery fully charged throughout the critical growing, ripening or operational season without the need to replace or recharge the battery. The solar panel and stainless steel mounting bracket is made to exacting standards and is designed to withstand the rigors of some of the harshest environments while continuing to perform efficiently. The solar panel circuitry is environmentally protected by glass within a metal frame for moisture resistance and superior structural strength in a rugged aluminum frame.

Included with the complete 20-watt solar panel is the mounting bracket and mounting hardware. This enables your 20-watt solar panel to be easily attached to the mounting bracket. Metal conductors from the solar panel feed the electricity to lead wires using ring terminal connectors. Use the special battery cable with clips assembly to attach to your 12-volt battery.

## CONNECTING

Attach the mounting bracket to the 20-watt solar panel using the mounting hardware (included). Then, attach the wires from the solar panel to the appropriate terminals on your 12-volt battery--Red Battery Cable Clip to positive (+) terminal and Black Battery Cable Clip to negative (-) terminal. Next use your battery cable with clips assembly from your generating unit to connect the black battery clip to the negative (-) terminal and the red battery clip to the positive (+) terminal of the battery. Lastly, insert the female barrel plug into the power jack on the Bird Gard product. This correct attachment procedure will ensure that your 12-volt battery remains fully charged. **NOTE: The solar panel must be used with 12-volt battery (40 AH or greater or 400 cold cranking amps).**



## MAINTENANCE

The 20-watt solar panel requires no special maintenance. Occasional cleaning with a mild solution of soap and water is recommended. Do not use hard abrasive cleaners, pads or solvents. Any cracks or minor breaks in the glass surface should be repaired immediately using transparent silicon caulking material. This is a temporary solution. Water or moisture leakage must be stopped or damage to your solar panel may occur. Check all connections regularly for corrosion or poor contact points. Clean or grease as needed.

### Site Latitude and Tilt Angle Guidelines:

| Site Latitude: | Tilt Angle:      |
|----------------|------------------|
| 0° to 15°      | 15°              |
| 15° to 25°     | Same as Latitude |
| 25° to 30°     | Latitude + 5°    |
| 30° to 35°     | Latitude + 10°   |
| 35° to 40°     | Latitude + 15°   |
| > 40°          | Latitude + 20°   |

### 20-Watt Solar Panel Kit Contents:

| Component Item                                    | Quantity |
|---|----------|
| 20-Watt Solar Panel with Ring Terminal Connectors | 1        |
| Brushed Aluminum Mounting Bracket with Hardware   | 1        |
| Package of Mounting Kit Hardware                  | 1        |



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