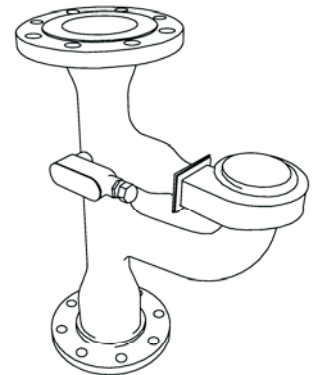




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# SPV-100 OPERATIONS MANUAL



## **SPV-100 Specifications**

### Product

Solar Powered Vacuum

### Application

For use on landfill gas vents, wells, or leachate cleanout system lines to convey flammable gasses at a higher rate in conjunction with our Solar Spark Vent Flares and help prevent horizontal migration

### Brief Description

Unit includes a 12 volt blower powered by battery and recharged by a solar collector.

### Component Specifications

|                         |   |
|-------------------------|---|
| <u>Solar Collector:</u> | (2) 59.1" x 26.3" high-efficiency photovoltaic module.<br>135 watt panels, 17.7 peak volts at 7.63 Amp max.                               |
| <u>Battery Type:</u>    | Rechargeable 12 VDC, 115 AH/20hr<br>Spill proof and maintenance free.   |
| <u>Dark Time:</u>       | Fully charged system will function for 72 hours in<br>complete darkness.  |
| <u>Regulator:</u>       | 30 Amp solid state controller with low voltage<br>disconnect, charge indicator, and battery voltage lamps.                                |
| <u>Blower Fan:</u>      | 12 VDC, 52 CFM at 2200 RPM, 0.57" H <sub>2</sub> O Maximum Pressure,<br>1.2 Amps, IP55 weatherproof.                                      |
| <u>Control Box:</u>     | Vented NEMA 4 enclosure, clear lens for monitoring.   |
| <u>Flame Arrester:</u>  | 304 Stainless Steel wire gauze. Bi-directional design<br>absorbs flame and extinguishes by rapidly dissipating<br>heat through the gauze. |

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## SPV-100 Solar Blower

*Important! Read all instructions and review assembly pictures before starting installation*

**CAUTION!** ALWAYS CARRY A METHANE-IN-AIR SAFETY ALARM METER while working near landfill gasses. Explosive and flammable conditions may cause injury or death. Do not produce a spark or flame in the presence of ambient flammable gas concentrations.

**CAUTION!** This equipment weighs 55 lbs. Total weight with Solar Spark Flare is approximately 150 lbs. Vent riser must be sturdy enough to support flare in windy conditions. Guy wires may be required.

**CAUTION!** This work must be performed by skilled technicians in accordance with OSHA regulations and standard industry safety practices.

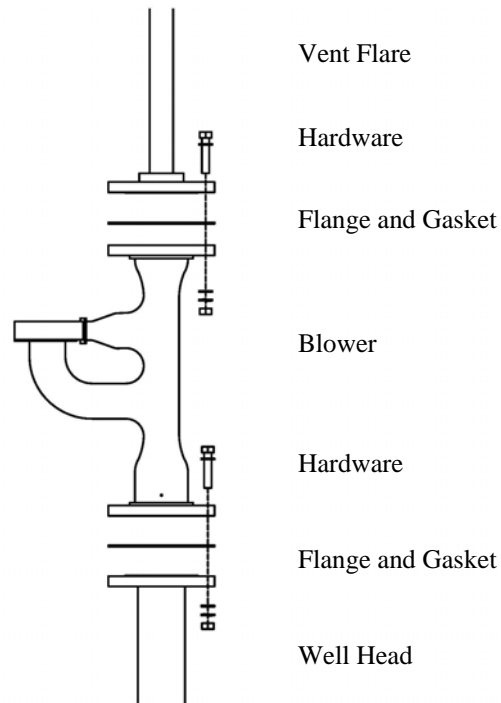
## Contents Check List

Verify that all these parts are present before starting installation.

|   |   |
|---|---|
| Blower Unit   | 1 |
| Control Box   | 1 |
| 12V Battery   | 1 |
| 135 Watt Solar Panel                                    | 2 |
| Solar Panel Mounting Bracket                            | 1 |
| 2" X 7' Pipe  | 1 |
| 4" X 2" Threaded Bushing                                | 1 |
| Hardware Kit  | 1 |
| 4" X 9" Flange  | 2 |
| Reflective Marker                                       | 1 |
| <br><u>Push Pin Installation</u> (sold separately)      |   |
| 4" X 7' Push Pin  | 1 |
| <br><u>Concrete Slab Installation</u> (sold separately) |   |
| 4" X 9" Flange  | 1 |
| 4" X 36" Nipple   | 1 |
| Expansion Bolts   | 4 |

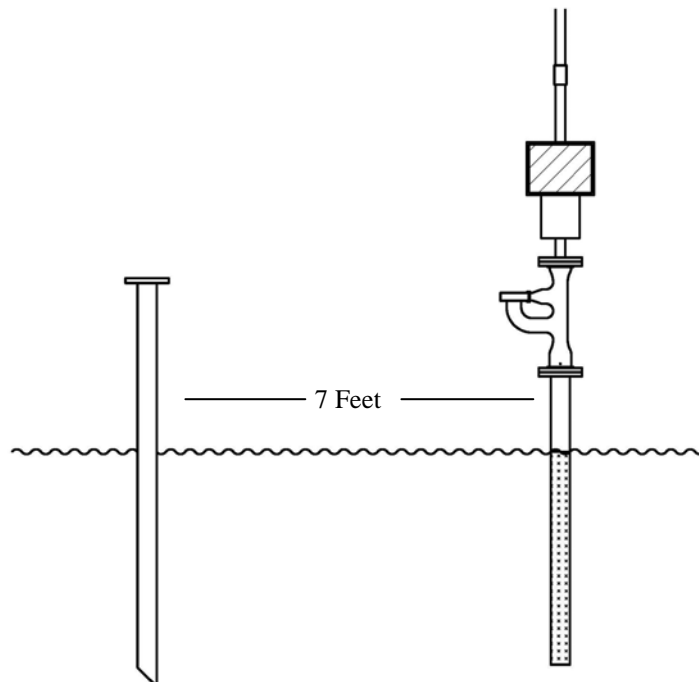
## 1. Blower Installation

- Attach flange to well head.
- Verify that the flame arrester is in the base of the blower.
- Bolt blower to well head using gasket and hardware.
- Remove flame arrester canister from base of existing flare (if applicable).
- Bolt flare to top of blower using gasket and hardware.
- Finish installation of flare.
- If you are using a guy wire kit or any other flare accessories, install them now.



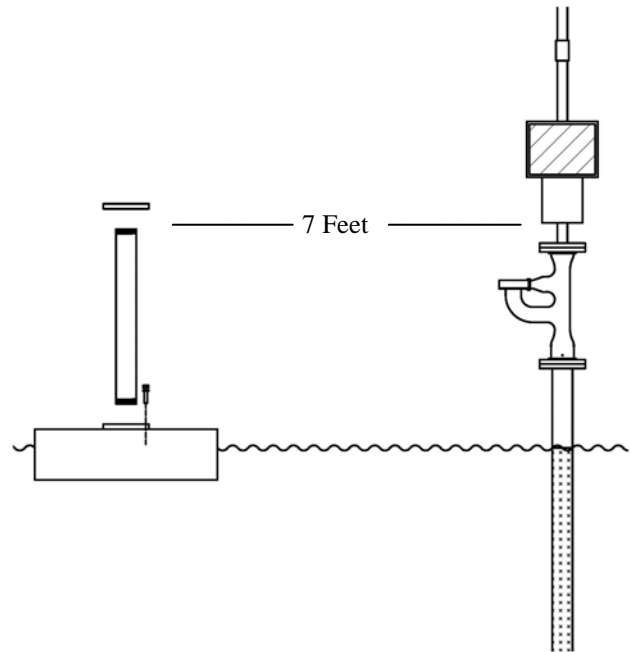
## 2. Push Pin Installation

- Attach the flange to the top of the push pin.
- Place the push pin approximately 7 feet away from the flare.
- Position pin to the East or West of the flare so that blower panels will not shadow the igniter panel.
- Push the pin into the ground using appropriate equipment.
- Top of flange should be approximately 36 inches from the ground.



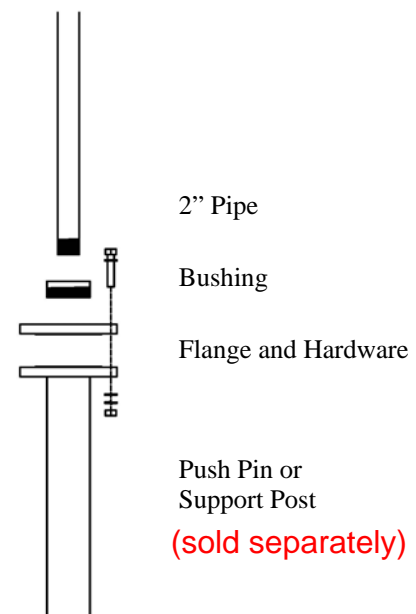
### 3. Concrete Slab Installation

- Position center of slab approximately 7 feet away from the flare.
- Position concrete slab to the East or West of the flare so that blower panels will not shadow the igniter panel.
- Bolt flange onto slab using expansion bolts.
- Attach 36" nipple and top flange.



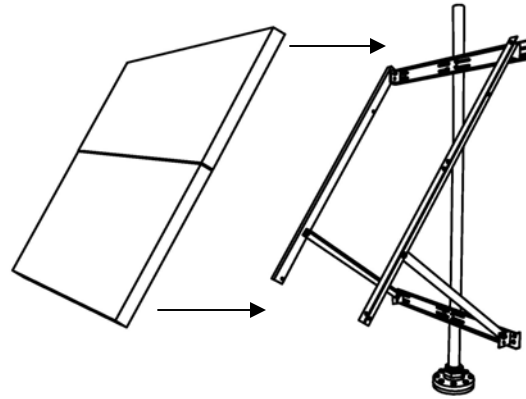
### 4. Support Pole Installation

- Bolt flange plate onto the push pin or slab post (no gasket necessary).
- Attach bushing and 2 inch pipe.



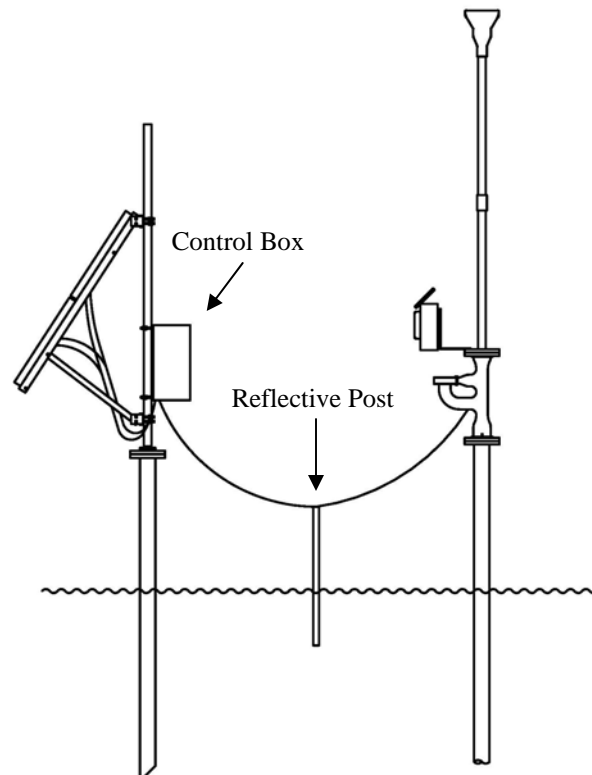
## 5. Solar Panel Installation

- Panels must face true South for installation in northern hemisphere and true North for installation in southern hemisphere.
- Install bottom rail first at 6 inches above the flange and tighten clamps.
- Install top rail and all mounting rails but leave bolts loose.
- Adjust bracket to approximately a 45 degree angle. Adjust to approximately 60 degree angle in locations where heavy snowfall is common.
- Install solar panels and tighten all bolts.
- Refer to instructions in mounting kit.



## 6. Control Box Installation

- Attach control box on opposite side from panels.
- Install battery and verify that the green battery light turns on.
- Connect solar panels and power cord to the control box. All cords and adapters are non-reversible, ensuring correct polarity. Use caution, the solar array will produce power if in sunlight.
- Verify that green charge light turns on when the array is in sunlight.
- Install reflective post half way between control box and blower.
- Attach blower cable to reflective post.
- Coil any excess wire and strap in place.





## Operation

- After installation of flare and blower , first turn on the flare, then the blower.
- Verify that fan is running.
- Verify that the flare has ignited and installation is complete.

## Maintenance

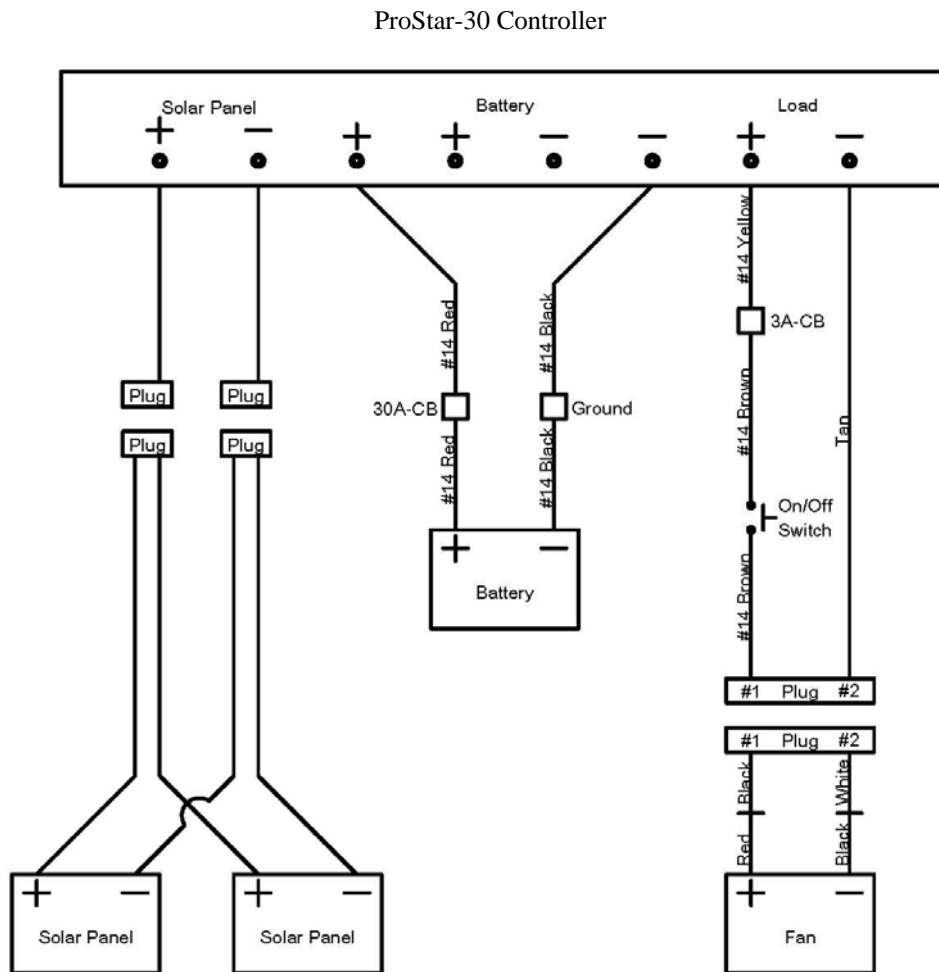
- Once the unit is functioning follow the maintenance schedule below:
- Weekly
  - Verify that blower is running, solar panels are clear of obstruction (snow etc.), and the flare is burning properly.
- Quarterly
  - Verify that Flame Arrester is clean and free of obstructions.
- Annually
  - Replace Flame Arrester.

## Trouble Shooting

If the blower stops working check the following:

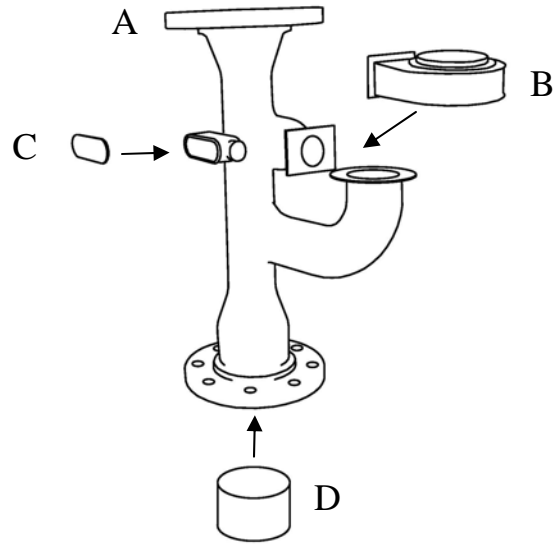
1. Battery Voltage
  - The controller has a built in low voltage disconnect which turns power off at 11.6 volts and back on at 12.6 volts. Check battery voltage.
  - Low voltage could be due to:
    - A. Low sunlight over extended period or obstructed solar panels.
    - B. Poor connections.
    - C. Faulty battery due to wear.
2. Power Switch
  - Check the power switch for faults.
3. Circuit Breakers
  - Reset the circuit breakers.
  - Check breakers for faults.
4. Fan Motor
  - Check for power at fan. If power is present but fan is not turning, replace fan.

# Wiring Diagram



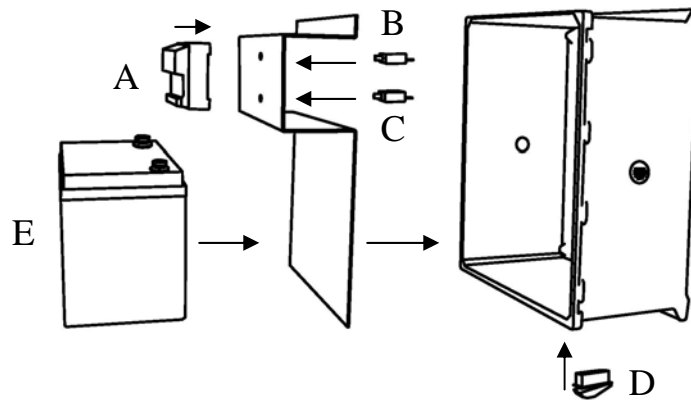
### Blower Unit Assembly

- A. Blower Housing 800321
- B. Blower Motor 800149
- C. Junction Box 800118
- D. Flame Arrester 800154



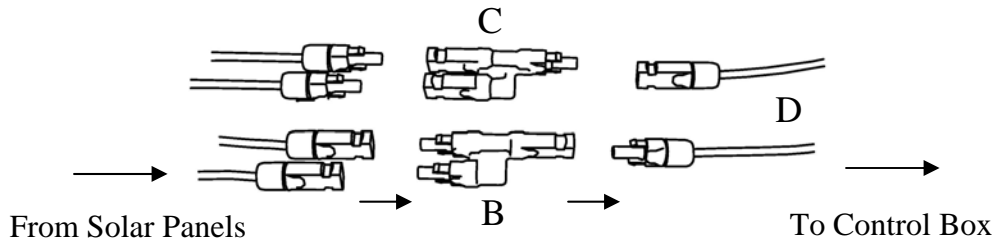
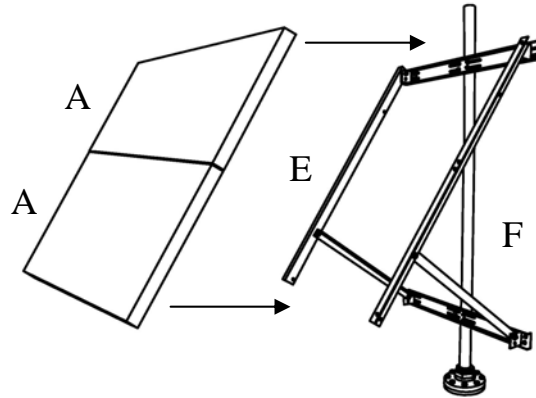
### Control Box Assembly

- A. Controller 800330
- B. 3 Amp Breaker 800122
- C. 30 Amp Breaker 800153
- D. Toggle Switch 121119
- E. Battery 800126



### Solar Panel Assembly

- A. Solar Panels 800325
- B. 2M/1F Connector 800302
- C. 2F/1M Connector 800303
- D. Power Cable 800307
- E. Panel Bracket 800335
- F. Mount Post 800310



### Notes:

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