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## Off Grid Pump

### BUILD AN OFF-GRID, SOLAR-POWERED BIODIESEL PUMP

#### Components needed:

1. [Solar Panel](#)
2. [Charge Controller](#)
3. [Battery](#)
4. [Battery Box](#)
5. [DC Fuses & Disconnect Box](#)
6. [Scully Tank Gauge](#)
7. [Pressure Relief Cap](#)
8. [Emergency Vent](#)
9. [Pump, Meter, & Fuel Filter](#)
10. [Fuel Storage Tank](#)
11. [Optional Accessories](#)



**Solar Panel:** Used from Ebay. We bought a 20 watt BP/Solarex panels for \$90 with mounting brackets. A new 20 watt panel will run about \$180 without a mounting bracket. A 10 watt panel is about \$90, so it is important to know how much you will be pumping to size appropriately.

[Mounting Bracket](#) approximately \$40 new.



### Charge controller

Sunsaver 20L Morningstar available from [EV Solar](#)

Cost \$73.00



**Battery:** We have used two types of batteries for our pumps.

- [NAPA auto parts](#) #8270 (by Exide) trolling motor / RV 105 amp-hour / 160 minute reserve capacity battery
- AGM (absorbed glass mat), 139.5 Amp-Hour, deep-cycle battery from a local supplier.

### Battery box:

- Small: Dick, 's Sporting Goods or [Battery Mart](#)
- Larger: Modified 'igloo, ' cooler for the AGM battery



### DC Breakers or Fuses : 20 amp rating

DC Disconnect Box from local electrical supply



**Scully Tank Gauge** for 500 gallon tank- 2, ' Male NPT opening

[http://www.scully.com/ss\\_pproduct.html](http://www.scully.com/ss_pproduct.html)

[http://www.oil-equip-mfg.com/products\\_kingalarms\\_gauges.htm](http://www.oil-equip-mfg.com/products_kingalarms_gauges.htm)

[http://www.oecfh.com/tank\\_level\\_indic.htm](http://www.oecfh.com/tank_level_indic.htm)



### Locking vacuum/pressure relief fill cap

<http://www.cim-tek.com/prevent.asp>

2" Cim-Tek from OEC FLUID HANDLING, INC.

Subsidiary of Oilmen's Equipment Corporation (800-500-9311 or 864-573-9200)



## Emergency Vent

Also available from [OEC Fluid Handling/Oilmen's Equipment Corporation](#) (800-500-9311 or 864-573-9200)



12 volt DC Pump, Meter, and Filter setup

[www.northerntool.com](http://www.northerntool.com)

- (1) 12 VDC Fill-Rite pump
- (1) 3/4" Fill-Rite meter
- (1) 3/4" Goldenrod fuel filter
- (1) 3/4" x 20' pump hose
- (1) Auto shutoff nozzle



## Fuel Storage Tank

An aboveground, horizontal, double-wall type I, [steel storage 500 gallon tank](#) in conformance with the Underwriters Laboratories' UL-142 specifications

### Optional Accessories

Diesel Tank Breather- Desiccant Filter

<http://store.avlube.com/d102breather.html>

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