**What can an inverter do?**

It converts battery power (DC) to AC power (what we use in the house). In general you want to hook up an inverter to power while it is turned off, then turn it on, then plug things into the inverter (in that order). How much it can power depends on how many watts it can produce. We have 4 inverters:

1. 2 x 150 Watt inverters (one stored in each car) that plug into car cigarette lighter. Since the cigarette lighter itself only produces 120 Watts of power, that is the max you will get from any inverter plugged into the cigarette lighter.
2. 400 Watt inverter is hooked up inside to the battery backup and can be used to power lights, chargers, small fans, etc. Anything with combined power needs of less than 400 watts.
3. 1600 Watt inverter is meant to be hooked up to a car battery to run higher loads (with the car running) or to charge up the inside deep cycle battery

A note about the 12/3 yellow extension cords: 3 is # of wires in the cord; 12 is gauge of those wires (smaller gauge numbers means thicker wire) which has an impact on how many amps and watts it can handle without tripping a breaker/fuse or getting hot. The cord is rated at 15 amps, 125 V, 1875 Watt capacity (15 amps \* 125 volts = 1875 watts). Some people recommend staying below 90% of the rating: from this perspective, we would run a max power through the cord of 1687. Since we're using a 1600 Watt inverter, that seems about right.

**Setup for inverter on car**

1. Keep the following dry: inverter, its connections and the male end of the extension cords you use.
2. Open the hood & find a stable platform for the inverter (consider cable ties).
3. Make sure the inverter is off.
4. Connect the inverter to the car battery using the alligator clips. Red inverter cable goes to red terminal on battery with alligator clip, black alligator on inverter goes to black terminal on battery. The connection order doesn’t matter; you will get a spark with the last connection regardless of order.
5. Turn on inverter and plug in extension cord.
6. Run extension cord to house through a window – consider elevating above street by tying to lamp on one side and tree on the other. So that we don’t have to leave a window open or crimp the extension cord:
	1. Remove screen from house window
	2. Put 2x4 (has been precut for this purpose) into window
	3. Run extension cords through hole in 2x4
7. Use power from car to power the Schumacher battery charger for the inside marine battery as needed (make sure there is < 200 Watt load on the inverter attached to the inside battery while charging from the car).
8. The shorter the extension cord running from the car to the house the less power loss you will experience but the high quality yellow extension cords helps minimize loss.
9. Powering things from the car might blow a fuse in the car. Our cars have spare fuses and a tool attached inside the cover of the fuse box under the hood.
10. How long can you run the inverter off the car battery without turning the car on? If there is a high load, run the car. Some people say run the car every hour for about 15 minutes, but you might also be able to read the current charge of the battery (using the DC volt meter pictured above) to determine when the car needs to be run to recharge the car battery. Full car battery will read about 13.4 volts when fully charged (at the terminals) & you will need to recharge the car battery BEFORE it gets down to 10 volts (which is considered full discharge & will damage the battery).
11. Consult the spreadsheet stored on the shelf above the inside battery backup system for the power used by particular items (e.g., lights, fans). Remember, Watts = Volts \* Amps. House voltage is 110-120 volts.