



Inverter Selection Worksheet

This worksheet will help you determine the inverter and battery bank required to operate your specific loads:

Load <i>(Sample)</i>	Qty	Wattage <i>(w)</i>	Conversion to DC Amps <i>(c)</i>	Actual DC Amps <i>(a)</i>	Appliance Run Time <i>(hours – h)</i>	Amp Hours Consumed Between Charge Cycles
			$w / 12$	$c \times 1.1$		$a \times h$
19' TV	1	100	8.3	9.1	4.0	36.4
Coffee Maker	1	1000	83.3	91.7	0.5	45.9
Microwave	1	1200	100.0	110	0.17	18.7
Hair Dryer	1	1600	133.3	146.7	0.17	24.9
		3900			<i>Total Ah</i>	125.9

Choosing the right inverter

When sizing your inverter, calculate the total wattage required at any one time and choose the inverter with a slightly higher power output. (Start up surge should be considered for compressive loads.)

Determining your battery bank requirements

1. Converting AC amps to Watts: ***AC amps x 120 Volts = Watts***

2. Convert Watts to Actual DC amps: (***Watts / 12***) x 1.1 = ***actual DC amps***

3. amp hours consumed between charge cycles:

run-time of appliance (hours) X actual DC amps = amp hours consumed

4. Number of batteries required:

(Total amp hours consumed X 2*) / amp hour rating of battery = Number of batteries required

*Since deep cycle batteries should only be discharged to 50% total capacity, the total amp hours consumed between charge cycles should be multiplied by 2.

Example:

amp hours consumed between charge cycle = 126

amp hour rating of battery = 90 (Group 27)

(126X2) / 90 = 2.8

(Round up to the nearest whole number.)

Therefore, the minimum number of batteries required is three with the above values.

Typical Battery Amp Hour Rating	
Battery Size	Amp Hour Rating
Group 27	90
Group 31	105
4D	160
8D	220
6V Golf Cart	225

