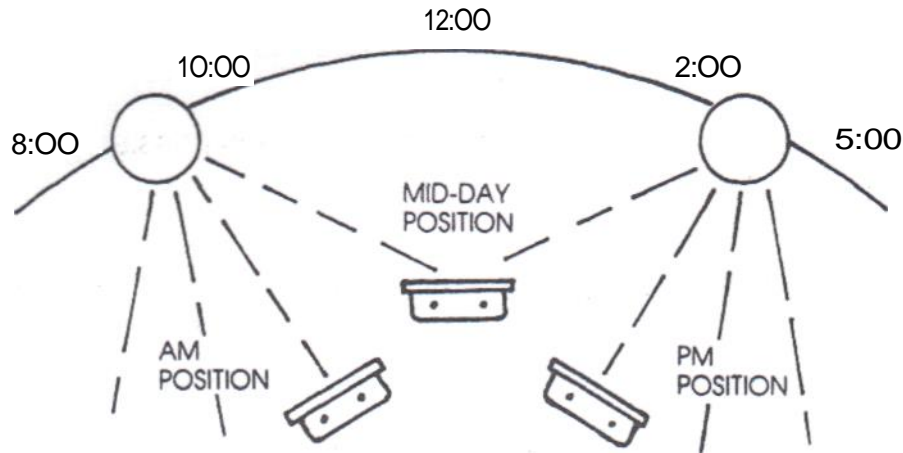


## Solar Pocket Chargers Instructions

### IMPORTANT SUGGESTIONS FOR OPTIMUM CHARGE RATE

(A) When possible reposition the charger twice during the day for highest output. EXAMPLE:



- (B) For increased efficiency, you can use a mirror, or aluminum foil reflectors to allow more light to concentrate on the solar cells. This will increase the current output of the solar array and reduce total charging time.
- (C) Keep the batteries as cool as possible by allowing air to circulate around them by any means available. Heat reduces a battery's efficiency.
- (D) If you use your battery device(s) continuously, we suggest that you discharge each Nickel-Cadmium (Ni-Cd) battery (where the batteries won't operate the device) every 90 days and then recharge them normally. Otherwise, the memory effect of a Nickel-Cadmium can destroy the battery's capacity to accept a full charge. Nickel-Metal Hydride (Ni-MH) batteries have very little memory effect problems.

Small batteries vary in both voltage and current output. (AA, C, D sizes) Carbon/zinc is the most common non-chargeable battery type, providing 1.5 volts output. Alkaline batteries are superior to carbon/zinc because of their longer life. Alkalines are more expensive, but have a longer shelf life, can furnish higher peak current, and resist leakage. The alkaline battery output is also rated at 1.5 volts. Although not recommended by manufacturers, both of these types of batteries can be rejuvenated 1 to 2 times before discarding providing they are not discharged too deeply, prior to charging.

When charging alkaline or carbon/zinc batteries, you should be aware of the required charge rate and time of charge required. Example: Using the SPC-4 Solar Charger, AA size pen cells should be charged for approximately 6 hours in direct sunlight. Excessive overcharging can destroy these types of batteries.

Rechargeable Nickel-Metal Hydride and Nickel-Cadmium batteries are far superior and an individual who uses a large number of batteries will realize a significant dollar savings. These batteries produce 1.2 volts and can be recharged hundreds of times to their full current and capacity. This feature offsets the price many times. This battery type also maintains a more constant voltage over its cycle with extremely high current output available.

Nickel-Cadmium batteries, when charged, do not have a long shelf life. In other words, they will self-discharge when not in use. They will also give very little warning when weak. Conventional batteries will steadily give less and less power signifying a dying battery. Ni-Cd and Ni-MH batteries will deliver almost full power to the end of capacity and then will fail very rapidly.

Nickel-Cadmium batteries should be fully discharged and recharged every 90 days. If a Nickel-Cadmium battery is used for short cycles before recharging (example: 10 minutes use-then recharge/10 minutes use-then recharge) the battery will soon develop a "memory" for 10 minutes of capacity. After 10 minutes use, the battery will not produce sufficient power to operate the device it is used in. For this reason, deep cycling of the battery is necessary. (Discharging only to a point your device won't function.)

## Solar Pocket Chargers Instructions (Cont.)

Most of the solar cells in volume production today are made with silicon. This plentiful, natural resource makes up more than one fourth of the earth's crust and is the primary component of ordinary sand. The silicon used in the production of solar cells must be purified to a very high degree. A large part of the high cost of solar cell production results from the painstaking task of removing all impurities in order to produce the highest quality silicon. When sunlight penetrates the junction of the negative and positive layers of a solar cell, it creates a flow of electrons throughout the crystalline structure. It is this flow of electrons that produces electricity in the cell.

You have purchased a most unique money saving device. Your SOLAR MADE POCKET CHARGER uses free solar power to bring new life to your rechargeable Nickel-Metal Hydride and Nickel-Cadmium Batteries. It has no buttons, switches, or moving parts. There is nothing on the market to rival SOLAR MADE POCKET CHARGERS for simplicity, size and durability. Please read the following instructions carefully and then have some fun saving money with the SOLAR MADE POCKET CHARGER.

### REMEMBER TO CHARGE IN COOLEST LOCATION POSSIBLE

## INSTRUCTIONS

1. Locate a window which receives the most sunlight per day (usually a South facing window in the winter months and an East or West facing window in the summer months.)
2. Moisten the enclosed suction cup/hanger with water or vegetable oil and attach it to the window.
3. Place Ni-Cd or Ni-MH batteries in the compartments with the positive and negative terminals as indicated in each compartment.
4. Hang the charger from the suction cup/hanger with the solar panel facing the sun. Leave the drapes open on this window to allow air to flow past the charger and keep it cool. It is light, not heat, that energizes the solar cells.
5. Completely discharged batteries will require approximately 6 to 14 hours to fully recharge.
6. Overcast or cloudy days may lengthen the charging time required. Experiment with charging times. It is recommended that you keep records on charging times and conditions until the proper amount of exposure is found.

### SPC-4 Charger for 2 to 4 AA size batteries

When using the SPC-4, please note that all battery slots must be filled. If less than 4 batteries are being charged, the unused slots must be filled with the brass shorting dowels furnished. Output of charger: 7.2 volts VOC/70 milliamp + or -5mA ISC in one sun. Charging time of completely discharged AA batteries (1.2 volt per cell) is approximately 7 hours in direct sun. Less time is required for batteries still holding a percent of charge.

### SPC-2A Charger for 2 AA, C, or D size batteries

The enclosed "Battery Adapters" must be used when charging AA or C size batteries. No adapters are needed when charging D size batteries. The adapters may also be of service when C or AA batteries are used in equipment which usually requires D size batteries. **BOTH BATTERY SLOTS MUST BE FILLED WHEN CHARGING.** Charging only one battery will not work. Output of SPC-2A: 4.5 volts VOC/120 milliamps ISC + or -10%.

## MAINTENANCE

The Solar Pocket Charger is very rugged and almost indestructible in normal use. The composite lens is rugged plastic encapsulated and will not shatter. If abused, however, the lens can be scratched. Small scratches will not impair the solar cells efficiency. Clean the lens with soap and water only. Never use chemical cleaners as they may discolor the protective lens. Automobile wax may be used to polish the clear lens and protect it. Metal parts which hold the batteries can be protected with a spray of silicon lubricant or WD40.