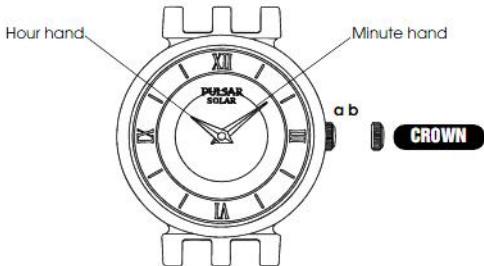


# PULSAR

## CAL. V110 SOLAR WATCH

- POWERED BY LIGHT ENERGY
- NO NEED FOR BATTERY CHANGE
- LASTS FOR 5 MONTHS AFTER FULL CHARGE
- OVERCHARGING PREVENTION FUNCTION

## DISPLAY AND CROWN OPERATION



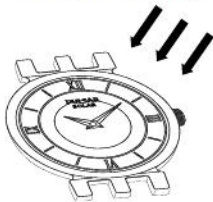
- a) Normal position : Free
- b) Extended position: Time setting

☆ The solar cell is installed under the dial.

# HOW TO CHARGE AND START THE WATCH

## TO CHARGE THE WATCH

- When you start the watch or when the energy in the rechargeable battery is reduced to an extremely low level, charge it sufficiently by exposing the watch to light.
- When the watch is exposed to sunlight or strong artificial light (of more than 3,000 lux), it will start operating.



- 1 Expose the watch to sunlight or strong artificial light.

\* See the table on the next page.

- 2 When the watch is charged after it has completely stopped, set the time before wearing the watch.

\* See also "GUIDELINE OF CHARGING TIME" on page 5.

Illumination (lux)	Time required until the hands start moving *
3,000	50 minutes
5,000	25 minutes
10,000	12 minutes
100,000	2 minutes

\* *The time required until the watch starts operating after it has completely stopped.*

#### **NOTES:**

1. *It is recommended that you charge the watch for more than the time required until the watch operates steadily. (See "GUIDELINE OF CHARGING TIME" on page 5)*
2. *It is not necessary to charge the watch fully. It is important, however, to charge the watch sufficiently, especially in case of initial charge.*

#### **CAUTION**

##### Caution for charging

- When charging the watch, do not place it too close to a photoflash light, spotlight, incandescent light or other light sources as the watch temperature will become extremely high, causing damage to the parts inside the watch.
- When exposing the watch to sunlight to charge it, do not leave it on the dashboard of a car, etc. for a long time, as the watch temperature becomes extremely high.
- While charging the watch, make sure the watch temperature does not exceed 50° C.

## GUIDELINE OF CHARGING TIME

Illumination (lux)	Light source	Environment	Time required (approx.)		
			A	B	C
500	60-watt incandescent light	Distance of 60 cm (2 ft.)	190 hours	20 hours	70 minutes
700	Fluorescent light	Office, overhead	140 hours	16 hours	50 minutes
1,000	30-watt fluorescent light	Distance of 70 cm (2 ft. 4 in.)	100 hours	11 hours	35 minutes
3,000	30-watt fluorescent light	Distance of 20 cm (8 in.)	30 hours	3.5 hours	11 minutes
5,000	30-watt fluorescent light	Distance of 12 cm (5 in.)	15 hours	100 minutes	6 minutes
10,000	30-watt fluorescent light	Distance of 3 cm (1 in.)	8 hours	50 minutes	3 minutes
10,000	Sun	Cloudy weather	8 hours	50 minutes	3 minutes
100,000	Sun	Fair weather	2 hours	15 minutes	1 minute

A: for full charge    B: until the watch operates steadily    C: to maintain 1-day usage

- The table above provides only a general guideline.
- When the watch is fully charged, it will keep operating for approximately 5 months.

### **TO PREVENT THE ENERGY DEPLETION**

- Wear the watch so that it is not covered by your clothes.
- When the watch is not in use, leave it in a bright place as long as possible.

*\* Make sure that the watch temperature does not exceed 50° C.*

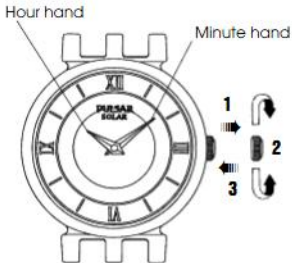
## **NOTE ON POWER SUPPLY**

- This watch is provided with a rechargeable battery for exclusive use with the watch. Unlike conventional battery-powered watches, therefore, battery replacement is not necessary.
- The solar cell is a clean energy source, having no adverse effect on the natural environment.

### **CAUTION**

- Never insert a conventional silver oxide battery in your watch as it may explode, generate an intense heat or catch fire. The watch is so designed that even if the battery is installed in the watch, the watch will not operate.

## TIME SETTING



### CROWN

- 1 Pull out.
- 2 Turn to set Hour and Minute hands to the desired time.
- 3 Push back in to normal position.

#### **NOTE:**

*When setting Minute hand, first advance it 4 to 5 minutes ahead of the desired time and then turn it back to the exact minute.*

# TO PRESERVE THE QUALITY OF YOUR WATCH

## WATER RESISTANCE

### ● Non-water resistant



- If the watch becomes wet, have it checked by an **AUTHORIZED PULSAR DEALER** or **SERVICE CENTER**.

### ● Water resistant 5/10/15/20 bar



- Before using in water, be sure the crown is pushed in completely.
- Do not operate the crown when the watch is wet or in water.  
If used in sea water, rinse the watch in fresh water and dry it completely.
- When taking a shower with the water resistant 5 bar watch, or taking a bath with the water resistant 10, 15 or 20 bar watch, be sure to observe the following:
  - \* Do not operate the crown when the watch is wet with soapy water or shampoo.
  - \* If the watch is left in warm water, a slight time loss or gain may be caused. This condition, however, will be corrected when the watch returns to normal temperature.

- \* Pressure in bar is a test pressure and should not be considered as corresponding to actual diving depth since swimming movement tends to increase the pressure at a given depth. Care should also be taken on diving into water.
- \*\* We recommend that you wear a PULSAR Diver's Watch for scuba diving.

## TEMPERATURES



Your watch works with stable accuracy within a temperature range of 5° C and 35° C (41° F and 95° F).

Temperatures over 50° C (122° F) or below -5° C (+23° F) may cause a slight time loss or gain or shorten the duration within which the watch keeps operating.

However, the above conditions will be corrected when the watch returns to normal temperature.

## MAGNETISM



The watch will be adversely affected by strong magnetism. Keep it away from close contact with magnetic objects.

Normal accuracy will return if the watch is moved away from the magnetic field.

## CARE OF CASE AND BRACELET



To prevent possible rusting of the case and bracelet caused by dust, moisture and perspiration, wipe them periodically with a soft dry cloth.

## SHOCKS & VIBRATION



Light activities will not affect your watch, but be careful not to drop your watch or hit it against hard surfaces, as this may cause damage.

## CHEMICALS



Be careful not to expose the watch to solvents, mercury, cosmetic spray, detergents, adhesives or paints. Otherwise, the case, bracelet, etc. may become discolored, deteriorated or damaged.

## PERIODIC CHECK



It is recommended that the watch be checked once every 2 to 3 years. Have your watch checked by an **AUTHORIZED PULSAR DEALER** or **SERVICE CENTER** to ensure that the case, crown, gasket and crystal seal remain intact.

## PRECAUTION REGARDING CASE BACK PROTECTIVE FILM



If your watch has a protective film and/or a sticker on the case back, be sure to peel them off before using your watch.