

# CITIZEN QUARTZ Eco-Drive

Model No. EP0XXX  
Cal. No. 851

## • INSTRUCTION MANUAL

### CTZ-B6775

#### 1. BEFORE USING THE WATCH

This is a solar cell analog quartz watch with a solar cell incorporated in its dial. We recommend that you first read these instructions. **Please expose the watch to light and recharge before use.**

#### 2. ABOUT THE SOLAR CELL WATCH

This watch is powered not by an ordinary battery, but by converting photo energy to electrical energy. A secondary battery is used in this watch to store the converted electrical energy. After being fully recharged once, the watch can continue to run accurately for **about 60 days** without any further recharging.

##### ■ How to use the solar cell watch well

To use this watch comfortably, **make sure that the watch is always recharged before it finally stops.** There is no concern for overcharging this watch, (Overcharging Prevention Feature) **we recommend that you recharge the watch every day.**

##### ■ Replacing the secondary battery

However often the secondary battery is repeatedly recharged there is no need to replace it like a battery. But if the secondary battery deteriorates, its rechargeability might decrease and recharging might take time. If this happens, please replace the secondary battery.

#### 2. SPECIAL ADDITIONAL FEATURES OF THE SOLAR CELL WATCH

These additional features are only found in the solar cell watch.

##### ■ Quick Start Feature

The watch will stop if it is completely discharged. **It will begin to operate soon after it is exposed to light.** (However the time it takes to start may vary according to the brightness of the light.) Please note that if the light is blocked the watch might stop again as a result of being insufficiently recharged.

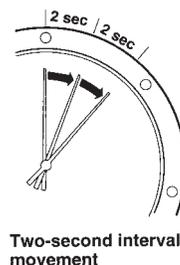
##### ■ Overcharge Prevention Function You can recharge without worry.

Once the secondary battery is fully recharged, the overcharging prevention feature comes into operation and prevents over-recharging

##### ■ Insufficient Charge Warning Feature

The second hand changes to a two second interval movement to indicate insufficient recharging.

Even, in such a case, the watch keeps correct time, but if about 24 hours pass after two second interval movement begins, the watch stops operating. After exposing the watch to light, recharging takes place and the watch returns to one second interval movement.



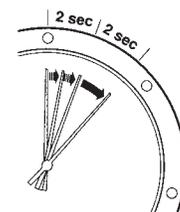
Two-second interval movement

##### ■ Time Setting Indication Feature

If the watch stops, subsequent exposure to light allows the Quick Start Function to start again, and the **second hand moves with a hitch movement to indicate that the displayed time is now incorrect.**

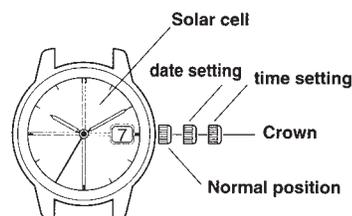
In this case, quickly recharge the watch and reset the time.

Otherwise, the hitch movement will continue.



Hitch movement

#### 4. SETTING THE TIME AND CALENDAR



##### ■ Setting the time

1. Stop the second hand at the 0 second position by pulling the crown out to the 2nd click.
2. Turn the crown to set the time.
3. After setting the time, firmly push the crown back in to its normal position.

##### ■ Setting the calendar Adjusting the date

1. Pull the crown out to the 1st click.
2. Set the desired date by turning the crown.
  - If you adjust the date when the watch display is reading between 9:00 pm and 1:00 am, the date might not change on the following day. After you have set the calendar, be sure to firmly return the crown to its normal position.

#### 5. WHEN THE SECOND HAND MOVEMENT IS ABNORMAL

##### ■ Two-second interval movement

Insufficient recharging warning feature is working. **Recharge the watch by quickly exposing it to light until it has returned to one-second interval movement.**

During two-second interval movement, the watch continues to keep the correct time.

If two-second interval movement continues for about 24 hours, the watch stops.

## ■ Hitch movement

Time setting indication feature is working.

**Quickly expose the solar cell to light in order to recharge it, then reset to the correct time.**

## 6. MAKE SURE THE WATCH IS CONTINUALLY RECHARGED

Please note that if you wear long sleeves, the watch may stop as a result of being hidden and not exposed to light.

When you take off the watch, try to place it in as bright a place as possible, and it will always continue to run properly.

Please note that right after a 'quick start' the watch might stop as a result of insufficient recharging if light is blocked.

## 7. CAUTION WHEN RECHARGING

The watch will be damaged during recharging if it gets too hot (about 60C/140F or more). **Avoid recharging at high temperatures.**

## 8. CAUTION

**Under no circumstances use an ordinary battery.**

A secondary battery is used in this watch to store the electrical energy which has been converted from photo energy.

The watch has been designed so that it will not operate if the battery is inserted instead of the secondary battery. However, if a battery is used, and if is recharged, it will become overcharged and there will be a danger of the battery exploding

Under no circumstances use a secondary battery other than the designated type.

## 9. TIME REQUIRED FOR RECHARGE

Time required for recharge may vary according to the design (colour of the dial, etc.) and operating environment. The following table will serve you as a rough reference.

Illuminance (lux)	Environment	Time required		
		For one-second movement	One-day usage	Empty to full
500	Fluorescent interior lamp 	9 hours 30 minutes	2 hours	180 hours
1,000	Under fluorescent desk lamp (60 - 70 cm) 	5 hours	50 minutes	90 hours
3,000	Under fluorescent desk lamp (20 cm) 	1 hour 30 minutes	20 minutes	30 hours
10,000	Exterior, cloudy 	30 minutes	5 minutes	9 hours
100,000	Exterior, summer, sunny 	10 minutes	2 minutes	3 hours 30 minutes

The recharging time is the time when the watch is continuously exposed to radiation.

\*Daily recharging time – the recharging time required for the watch to run on one-second interval movement for one day

\*Full recharging time – the time from when the watch is stopped to when it is fully recharged.

## 10. PRECAUTIONS

### 1. Avoid temperature extremes

Avoid leaving your watch in extremely warm or cold locations for long periods of time.

- This may cause your watch to gain or lose time and affect its other function.
- Place your watch on your wrist to restore its original accuracy should it begin to lose or gain time.

### 2. Avoid strong shock

This watch will withstand the bumps and jars normally incurred while playing and during sports activities.

Avoid dropping your watch on the ground or subjecting the watch to severe shock which may cause malfunction or damage.

### 3. Resistance to water

Check the chart to determine the water resistant properties of this watch.

Indication		Water-related use				
Watch face	Caseback	 Light spray, perspiration, light rain, etc.	 Swimming, etc.	 Skin diving (without air tank)	 Scuba diving (Diving with air tank)	 Pulling out the crown when the watch is wet.
—	WATER RESIST	OK	NO	NO	NO	NO
WATER RESISTANT (5 bar)	WATER RESIST	OK	OK	NO	NO	NO
WATER RESISTANT (10–20 bar)	WATER RESIST	OK	OK	OK	NO	NO

\* "WATER RESISTANT" may sometimes be abbreviated as "WATER RESIST"      \* Always set the crown in the normal position.      \* Tighten screwlock crown completely.

### 4. Avoid strong magnetic fields

Keep your watch out of the immediate vicinity of strong magnets. Generally, your watch is not affected by magnetic fields from such household appliances as television sets and stereo equipment.

### 5. Static electricity

The integrated circuits used in the watch are sensitive to static electricity. If exposed to intense static electricity, the watch's display may lose its accuracy.

### 6. Avoid harmful chemicals, solvents and gases

Avoid wearing your watch in the presence of strong chemicals, solvents and gases. If your watch comes in contact with materials such as gasoline, benzene, paint thinner, alcohol, spray cosmetics, nail polish, nail polish remover, adhesives or paint, discoloration, deterioration or damage to the case, band, and other components may occur.

### 7. Keep your watch clean

It may become difficult to pull out the crown due to dirt and dust getting caught between the crown and the watch case when the watch is worn for long periods of time. To help prevent this from happening, turn the crown freely back and forth occasionally while it is in the normal set position. Wipe off any water and moisture that adheres to the case, glass and band with a soft, clean cloth. Any dirt left on the case or band may cause skin rash.

A watchband will easily become soiled with dust and perspiration because it is in direct contact with the skin. Even a stainless or gold-plated band may begin to corrode if it has not been cleaned for a long period of time.

Mesh bands, because the meshes are very fine, will lose their particular "flexibility" if they are left soiled for a long time.

Metal watch bands should be washed periodically to keep them looking beautiful at all times.

Metal watchbands are usually washed with a brush in mild, soapy water and well wiped with a soft, absorbent cloth to make sure all water is removed. Pay attention to prevent any water from getting inside your watch when the band is washed.

### 8. Periodic inspection

Getting your watch checked once in two or three years is recommended to ensure long use and trouble-free operation.

### 11. SPECIFICATIONS

- Type: Analog Quartz Solar Cell Watch with 3 Hands
- Caliber No.: 8510A
- Accuracy: Within  $\pm 20$ sec/month (within a normal temperature range of  $5^{\circ}\text{C}/41^{\circ}\text{F}$  to  $35^{\circ}\text{C}/95^{\circ}\text{F}$ )
- Quartz oscillator frequency: 32,768Hz
- IC: C/MOS-LSI (1 pc.)
- Operational temperature range:  $-10^{\circ}\text{C}/14^{\circ}\text{F}$  ~  $+60^{\circ}\text{C}/140^{\circ}\text{F}$
- Display features: Time (hour, minute, second hands) Calendar (date)
- Additional features: Quick start  
Overcharge prevention  
Insufficient charge warning  
Time setting indication
- Battery: Secondary battery (Parts No. 295-33)

\* Specifications are subject to change without prior notice.