

# CITIZEN QUARTZ ECO-DRIVE

Model No. EP7XXX  
Cal. No. A23\*

## • INSTRUCTION MANUAL

### CTZ B6815

#### A. BEFORE USING

This watch is not powered by an ordinary battery, but by converting light energy into electrical energy.

**Before using, expose to light and make sure the watch is sufficiently charged. See "F. TIME REQUIRED FOR CHARGING" for charging time reference.**

A secondary battery is used in this watch to store electrical energy. **This secondary battery is a clean energy battery which does not use any toxic substances such as mercury. Once fully charged, the watch will continue to run for about 40 days without further charging.**

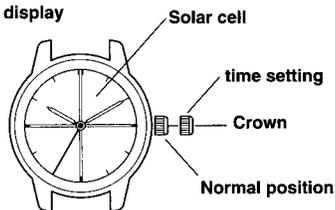
To use this watch comfortably, **make sure that the watch is always recharged before it stops.**

There is concern of overcharging this watch. (Overcharging Prevention Function is included.)

**We recommend that you recharge the watch every day.**

#### B. SETTING THE TIME AND CALENDAR

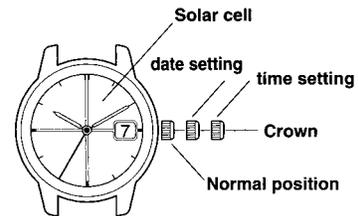
[1] Models without date display



##### ■ Setting the time

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

[2] Models with date display



##### ■ 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 the normal position.

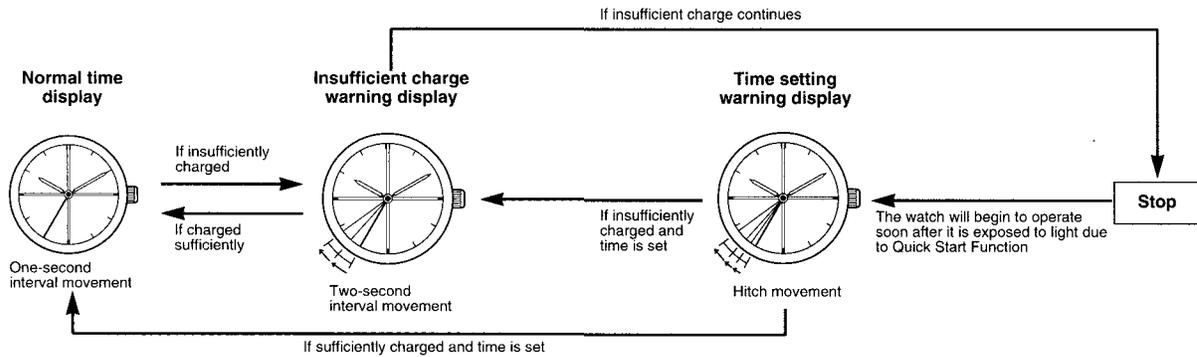
##### ■ Setting the calendar

##### Adjusting the date

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

## C. FUNCTIONS OF SOLAR POWERED WATCH

If the charge becomes insufficient, a warning function will operate and the display changes, as below.

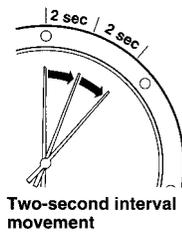


### ■ Insufficient Charge Warning Function

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

Even in such a case, the watch keeps the correct time, but about a day after the two second interval movement begins, the watch will stop.

After exposing the watch to light, recharging takes place and the watch returns to one second interval movement.



### ■ Quick Start Function

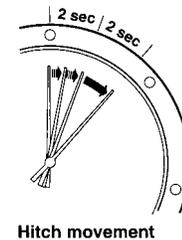
The watch will stop if it is completely discharged. It will operate within 10 seconds or so, after it is exposed to light.

(However, the time to start may vary according to the brightness of the light.)

### ■ Time Setting Warning Function

If the watch stops, subsequent exposure to light allows the 'quick start' function to start again, and the second hand moves with a hitch to indicate that the time is incorrect.

In this case, quickly recharge the watch and reset the time. otherwise hitch movement will continue.



### ■ Overcharge Prevention Function

You can recharge without worry

Once the secondary battery is fully charged, the overcharging prevention feature comes into operation and prevents overcharging.

## D. CARE AND HANDLING DURING CHARGING

### ■ Notes on use

Take care to charge your watch during use.

Please note that if you wear long sleeves, the watch can easily become insufficiently charged because it is hidden and not exposed to light.

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

### ■ Notes on recharging

- Avoid recharging at high temperatures (over about 60°C/140°F), otherwise the watch will be damaged during recharging.

(eg) Charging the watch near a light source that easily becomes hot, such as an incandescent lamp or a halogen lamp.

Charging in a place that easily becomes hot such as a dashboard.

When you charge the watch by an incandescent lamp, take a distance about 50cm from the light source to prevent extremely high temperature.

## E. REPLACING THE SECONDARY BATTERY

Unlike ordinary batteries, the secondary battery used in this watch doesn't have to be periodically replaced due to repeated charging and discharging.

### CAUTION

Never use another battery different from the secondary battery used in this watch.

The watch structure is so designed that a different kind of battery other than that specified cannot be used to operate it. In case a different battery such as a silver battery is used by some chance, there is a danger that it will be overcharged to burst, causing damage to the watch and even the human body.

## F. TIME REQUIRED FOR CHARGING

Time required for recharging may vary according to the design (colour of the dial, etc.) and operating environment. The following table will serve you as a rough reference. \*The recharging time is the time when the watch is continuously exposed to radiation.

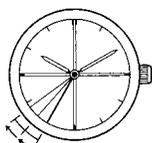
Illuminance (lux)	Environment	Time required		
		From the stop state to the one second movement	One day usage	Empty to full
500	Inside an ordinary office	15 hours	2 hours	120 hours
1000	60-70cm under a fluorescent light (30W)	7 hours 30 minutes	1 hour	60 hours
3000	20cm under a fluorescent light (30W)	2 hours 30 minutes	20 minutes	20 hours
10000	Exterior, cloudy	45 minutes	9 minutes	9 hours
100000	Exterior, summer, sunny	7 minutes	5 minutes	5 hours

Full recharging time

(Empty to full).....The time for fully recharge from stopped.

One day usage.....The time required for the watch to run for one day with one second interval movement.

## G. IN THESE CASES

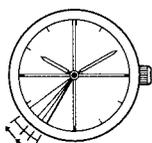


Two-second interval movement

**[If the watch warns that the energy is running short]**

The second hand starts moving at two second intervals in order to warn the watch will stop functioning after approximately 24 hours. **(Insufficient charge warning function)**

In such a case, expose your watch to light for a while to cancel the warning. (The second hand returns to moving at one second intervals when the energy is recharged.) If the watch is left short of energy, it will stop functioning after a day or so.



Hitch movement

**[If the watch warns you to set the time.]**

When the watch that has stopped is exposed to light, the second hand starts a hitch movement. **(Quick start function)**

The time elapsed before the second hand starts moving depends on the illuminance of the light. Even so, the second hand continues the hitch movement to tell you that the watch indicates an incorrect time because it has stopped. **(Time setting warning function)**

**In such a case, set the hands to the correct time.**

\* If the watch is sufficiently exposed to light, the second hand will soon switch to moving at two second intervals in order to warn that the energy is running short.

## H. PRECAUTIONS

### 1. Resistance to water

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

Indication		Water-related use				
Watch face	Caseback	 Washing face or getting wet in the rain (When splashed over it and no water pressure is applied to it)	 Swimming and general washing work (Kitchen work/car washing, etc)	 Skin diving (without air tank)	 Scuba diving (Diving with air tank)	 Pulling the crown out 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.

### 2. 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.
- The watch restores its original accuracy if it is placed in normal temperature.

### 3. 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.

### 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, discolouration, 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.

## H. SPECIFICATIONS

1. Type	Analog Quartz watch with 3 hands
2. Accuracy:	Within $\pm 20$ sec/month (within a normal temperature range of $+5^{\circ}\text{C}/41^{\circ}\text{F}$ to $+35^{\circ}\text{C}/95^{\circ}\text{F}$ )
3. Quartz oscillator frequency:	32,768Hz
4. IC:	C/MOS-LSI (1pc.)
5. Operating temperature: range	$-10^{\circ}\text{C}/14^{\circ}\text{F}$ to $+60^{\circ}\text{C}/140^{\circ}\text{F}$
6. Display features:	Time (hour, minute, second hands) Calendar (date)
7. Additional features:	Insufficient charge warning function Quick start Time setting warning Overcharge prevention
8. Battery	Secondary battery

\* Specifications are subject to change without prior notice.