FREQUENLY ASKED QUESTIONS
CITIZEN ECO-DRIVE

What is Eco-Drive?

Citizen Eco-Drive watches use the simplest, yet most technically advanced power generating and storage system in the Watch Manufacturing Industry. A Solar conversion panel and energy cell are the power provider for these Quartz Watches. Eco-Drive's ability to use light from any source to generate electrical power means that the supply is limitless and free. The absence of any added complex power generating machinery that would require additional upkeep is another big advantage.

What is a solar panel?

The Eco-Drive watch uses a microns thin disc of amorphous Silicon under the dial to convert light energy into electrical energy through the photovoltaic process. The electrical energy is then stored in a special energy storage cell . The charging is done in a more efficient manner than was ever before thought possible. Because of this newly developed technology, it is now practical to use a wide variety of attractive dials.

How is energy stored in my Eco-Drive?

A special Eco-Drive energy storage cell is used to store the electricity from the converted light energy. The high quality of the cell precludes it from being affected from the regular charge/discharge cycle as with an ordinary battery. With normal care and exposure to light, the owner can be assured of a lifetime of reliable and trouble free power. As an added benefit to the environment, the energy cell contains none of the chemicals used in ordinary watch batteries.

Why does my instruction booklet refer to a "Secondary Battery" if my Eco-Drive doesn't have a battery?

The Energy Cell is referred to as a "secondary battery" since the primary power is from light that is converted to electricity. There is really only one energy storage cell in your Eco-Drive watch. Unlike Eco-Drive watches, most quartz watches use a silver oxide battery technically referred to as a primary power source or battery which is used until depleted and then discarded.

How long will the energy storage cell last in my watch?

The rechargeble cell featured in Eco Drive watches is a highly specialized unit. Many times, it is incorrectly referred to as a "capacitor". This cell will last up to 40 years. Certainly charge capacity will diminish over

time, but even after 20 years, these specialized cells are rated to retain 80% of their original capacity. It is highly unusual for these cells to fail. Most commonly, if an Eco Drive is stopping it is more indicative of a low charge. If it is running slow, it may indicate it is time to have the movement serviced.

What does it mean when the second hand on my watch jumps two seconds at a time?

It means that the reserve power is getting low and the energy cell needs to be fully recharged by exposing it to light for a period of time outlined in your owner's manual. This may also occur after fully recharging your watch after a complete discharge of the energy cell. If you have fully charged your watch and the second hand continues to move in two second intervals, you need to do an all reset of the watch. For simple analog models, pull the crown out to the time setting position for 30 seconds, then return the crown to the closed position next to the case, then set the time. For multi-function models, please refer to your owners manual.

How can I tell if the watch is getting enough light?

In normal use, the watch displays the time and the seconds hand moves in 1-second intervals. For models that do not feature a seconds hand, the minute hand will move 1/3 of a minute every 20-seconds. A very important feature of Eco-Drive is the Low Charge Warning Mode which as a result of low energy cell voltage causes the second hand to jump two seconds at a time or the minute hand will move in 1-minute increments(while still keeping correct time). Additionally on models that have enhanced features such as a Chronograph, these features may not operate while in a low charge state.

When the low charge feature is activated, your watch should be fully charged by exposing it to bright light as outlined in recharging guidelines in your instruction manual and in the technical support section of our website.

What does it mean when my second hand jumps alternately in one then two-second intervals?

It means that your watch has stopped and it needs to be charged up and set to the correct time. See Time Reset Advisory following.

Why does my watch appear to have lost time, even though it is still running?

A second important feature, Time Reset Advisory, warns that the watch has stopped completely and then been exposed to enough light to start running again. The time shown would likely be incorrect and need to be reset after recharging the watch sufficiently. To indicate this warning, the sweep second hand movement

alternates between two, one second jumps and a two second jump (hitch movement) with the following two exceptions: the Eco–Drive two hand models and the Eco–Drive Chronograph.

How do I get my watch to return to normal operation?

After the watch has completely stopped and been fully recharged by exposure to bright light, you may notice the watch continues an erratic operation. This is known as the Time Reset Warning (hitch movement) mode until one or the other of two things happen:

First, if the watch is set to the correct time after partial recharging, the hitch movement will change to a two step movement indicating that more charging is needed. While charging is continued, the watch will keep correct time and after sufficient charging, will go back to the regular one second step by itself.

Second, if the watch is not set until after it is charged up to a sufficient level where the circuit signals the watch to start the one second step again, it will stay in the Time Reset Advisory (hitch) mode. However, after it has reached the above charge level, and the time on the watch is set, it will go back to the normal one second step movement.

The amount of charging time, under varying light conditions, to go from a stopped watch to a one second step is shown in each instruction book.

When the watch has received the charging time recommended in its instruction book, the all reset has been performed and the time has been set, the irregular movement of the hands will stop The sweep second hand on the Three Hand models and on the Chronograph will then return to the one second step and the minute hand on the Two Hand models will return to the normal 1/3 minute stepping operation. Reminder: the re–charging time, shown in each instruction book will differ depending on the caliber number.

The ALL RESET procedure varies by model. For simple analog models, pull the crown out to the time setting position, leave for 30 seconds, then return to the closed position next to the case. For multifunction and perpetual calendar models, refer to your owners manual for appropriate procedures.

What is the quick start feature?

Many Eco–Drive watches are equipped with a Quick Start Feature. This feature activates after your watch has become completely discharged then exposed to light sufficient for charging. It takes only several seconds of exposure to bright light to start it running. The instant the watch starts running, it enters into the Time Reset Advisory mode. This is indicated by the irregular movement of the second or minute hand (described previously under the Time Reset Advisory section). Be sure to fully charge your watch as outlined in your instruction booklet otherwise your watch may stop once removed from the light. Once your watch has been completely charged, be sure to perform the 'all reset' and set the time (and other features your watch may have) to restore regular operation.

How long will my watch run after it is fully charged?

Your watch is designed to run continuously and will do so if it is regularly exposed to bright light. Your watch uses very little energy and that is easily replenished during normal use. If your watch is put away where no light is available to it while in a fully charged state, depending on the model, it will run for from 45 days to 5 years (for models with power save feature). Most models have a 180 day power reserve.

Why doesn't my watch seem to be charging?

The predominant reason for failure to charge is that the watch is not getting sufficient light. Influencing this are the short cloudy days and long nights of winter. It is advisable that the watch be used normally, but exposed to bright light on a regular basis in order to enjoy its carefree use.

How can I be sure that the watch is not faulty?

If your watch is an Eco Drive model, be sure to ensure it is fully charged. Follow the guidelines in the instruction manual that came with your watch to fully recharge, perform the "all reset" and set the correct time on your watch. After that is done, if the watch still does not operate normally, you should send your watch to your nearest Authorized Service Center for review. If you are located in the United States, you should send it to our Torrance location.

NOTE: The vast majority of the Eco–Drive watches returned to us for service only need recharging to restore proper operation. Be sure to try fully charging your watch and perform the all reset before sending for service.

What should I do if I had the energy cell replaced after my watch stopped, but it still doesn't run?

An occasional repair request received by our Repair Department is due to Eco–Drive watches that have had ordinary silver oxide batteries substituted for the original Eco– Drive energy cell. In some instances, the movements have been damaged as the special cells which feature soldered contacts have been pried out of the movement causing physical damage. In almost every case, all that was needed was a full recharge of the watch.

A warning label, placed on the inside caseback of each Eco–Drive model, states, "do not put other than the energy cell designated" and the part number for the rechargeable energy cell, 295–XX, appears prominently on the movement cover. Additionally, the correct energy cell may feature a spotwelded gold colored con–necting strap which is necessary to make contact with the circuit of the watch. There is no such connector on a silver oxide substitute so no connection can be made to the circuit, consequently the watch will not run. In some watches, the original energy cell has been pried out, damaging the circuit and displacing parts, which

may result in the need to replace the entire movement.

As replacement of the original energy cell is not the result of a manufacturing defect, correction is not covered by the warranty. We recommend that you send your timepiece to your nearest Authorized Service Center for review and estimation for the cost of correcting this issue.

Is it possible to damage my Eco-Drive watch with excessive heat during charging?

Although not a frequently occurring problem, the Repair Department receives Eco-Drive watches which are damaged due to excessive heat during recharging. Warning is given in the instruction books not to subject the watch to conditions where the temperature may exceed 140 degrees Fahrenheit. Examples given are: charging the watch on the dashboard of a car, using an incandescent lamp (regular light bulb) closer than 20" or using a Halogen lamp.

How can I recharge my Eco-Drive in a safe manner?

Once your watch has been fully charged, exposing it daily to ambient light is sufficient to keep it charged but not sufficient for full charging from a full depletion of power. If you find your watch needs supplemental charging, it can be safely charged with a fluorescent desk lamp by placing the watch with the dial (face) up and within about 8 inches or an incandescent lamp (regular light bulb) no closer than 20 inches. Be sure to refer to your owners manual for recharge times for your model. If your watch has stopped completely or is in a low charge state, we do not recommend this type of light as it can take a very long period of exposure to fully charge your watch. The best type of light for this purpose is the sun.

Never use a halogen or flood type of lamp since the heat generated by these can cause certain components to become deformed and unusable (this type of damage is not covered by the warranty.)If your watch has become fully discharged, the most efficient and the quickest is in direct bright sunlight (not a window sill as glass windows filter light frequencies and never on the dashboard of a car.)

How can you help me recharge my Eco-Drive?

Eco-Drive timepieces feature a variety of functions and specifications. For optimal performance, we recommend the watch be exposed to light each and every day. In most instances, your watch has stopped or appears to operate erratically it is simply in need of full recharging. Charge rates and run times vary by model.

If the watch has lost complete power, be sure to perform the ALL RESET and 0- POSITION PROCEDURE (if applicable) as outlined in your instruction manual before setting the time.

This gives the watch a "starting" point after losing power. If this is not done, the watch may continue to operate in an irregular fashion, although fully charged.

Many of the Eco–Drive watches incorporate special features, such as a low charge warning, power save function or quick start. Features specific to your model are outlined in your instruction booklet.

What is the Low Charge Warning?

Low charge warnings are visible clues that your timepiece is in need of a full recharge. These warnings include irregular movement of the second or minute hand and special positioning of indicator hands on some of the more complicated pieces. Your instruction manual will outline the specific low charge warning for your timepiece.

What is the Power Save Feature?

Some Eco Drive models incorporate a special power save function to conserve power when the watch is not exposed to light sufficient for charging. This enables the watch to have extended run times from a single full charge.

Power Save features activate automatically when the watch has sufficient power stored for normal operation but is not receiving light sufficient for charging. Although certain functions "shut down", the correct time is kept internally.

What is the Quick Start feature?

Some models incorporate a quick start feature in which although not charged, the watch will start running after only a few seconds of exposure to light. Be sure to note that the watch is in need of a full charge as it does not have sufficient power stored to maintain normal operation when not exposed to light sufficient for charging.