



# CITIZEN<sup>®</sup>

Eco-Drive. A revolutionary watch.

## Setting Instructions for Movement Caliber 0850

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## 1. Outline

This is a multi-hand, multi-function analog solar powered watch with an alarm and chronograph functions. A solar power function as its base, which provides the power source for the watch hands movement and alarm sound by converting solar energy into electrical power with the solar cell, fitted on its face.

## 2. Specifications

Movement Caliber	0850
Accuracy	Within +/- 20 seconds per month (when worn at normal temperatures of 5°C to 41°C/(41°F to 95°F))
Operating temperature range	Watch operating temperature range : -10°C +60°C (14°F to 140°F)
Display Function	<ul style="list-style-type: none"> <li>• Time Hour, Minute, Second and 24 hour hands</li> <li>• Calendar Date, Day of Week</li> <li>• Alarm Hour, Minute and 24 hour hands. alarm on/off</li> <li>• Chronograph Minute, Second, 1/20 (0.05) second hands</li> </ul>
Additional Functions	<ul style="list-style-type: none"> <li>• <b>Alarm</b> Daily alarm (sounds for about 15 seconds) Alarm Monitor (sounds for about 5 seconds)</li> <li>• <b>Chronograph</b> Measurement is taken in 1/20 seconds and 60 minutes maximum. (A beep for start/stop/split confirmation will sound when the associated button is pressed)</li> <li>• Insufficient charging warning function</li> <li>• Stop warning function</li> <li>• Hands Setting warning function</li> <li>• Overcharging prevention function</li> </ul>
Continuous running times	Fully charged to stopped: Approximately 80 days Running time when second hand first points to "CHARGE" position: Roughly 5 days
Battery	Eco Drive rechargeable Manganese Titanium battery. Not user replaceable





### 3. BEFORE USING

When the watch does not operate according to the handling instruction, it is insufficiently charged. Charge the secondary battery of the watch for more than 6 hours, approximately 20 cm away from the fluorescent lamp or incandescent lamp as light sources.

When charging the secondary battery, do not pull it too close to the light source.

\* When charging the watch under direct rays of the sun, charge more than an hour.

An Eco Drive Rechargeable battery is used in this watch to store electrical energy. This rechargeable battery is a clean energy battery which doesn't use any toxic substances such as mercury. Once fully charged, the watch will continue to run for about 80 days (using the alarm sound for, 15 seconds/day and the chronograph measurement 60 minutes/day) without further charging

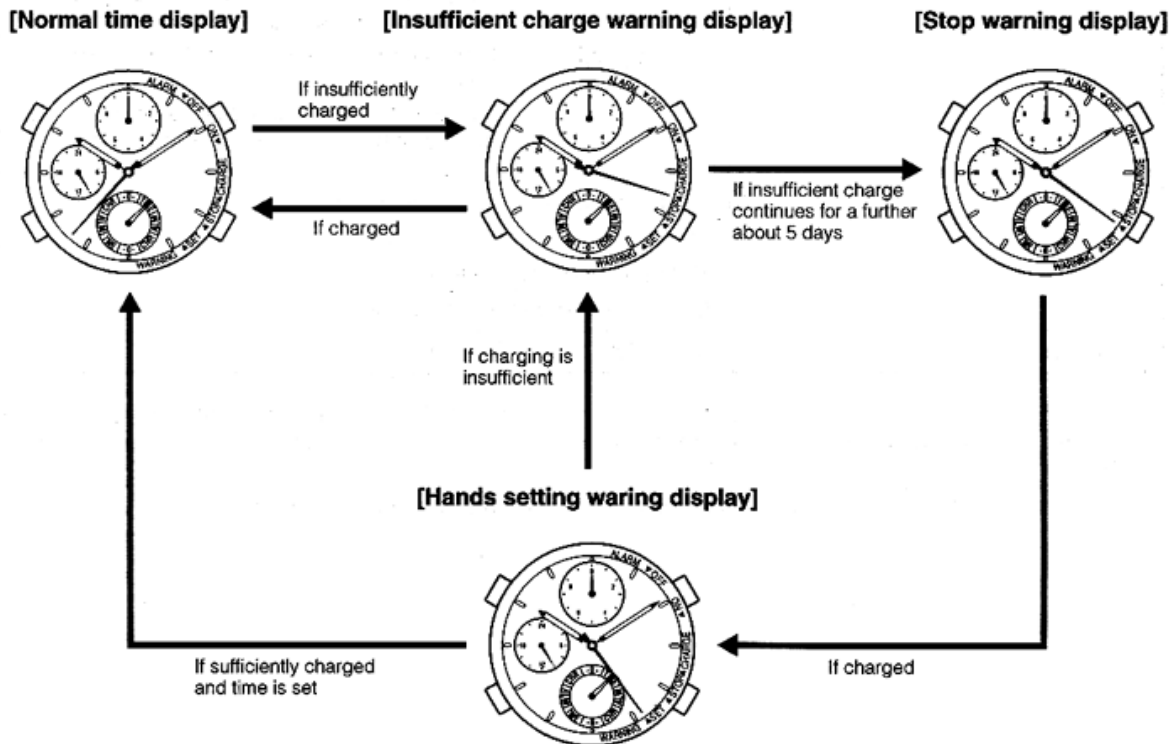
#### How to use this watch properly

For the comfortable use of this watch and its additional alarm and chronograph functions, take care to keep it sufficiently recharged.

There is no concern for over-charging this watch. (Over-Charging Prevention Functions is included) We recommend that you recharge the watch everyday.

### 4. SPECIAL FUNCTIONS OF THE SOLAR POWER WATCH

If this watch becomes insufficiently charged, a warning function comes into operation and the display changes, as below.





**Insufficient Recharging Warning Function** (Refer to section "Insufficient Charge and Time Setting Warnings")

If the watch is put in the undercharged state during any display mode, it switches to the time display when in other display modes, then the second hand moves to the A CHARGE position, indicating the shortage of electricity. (Electric power shortage warning display) Even then, the time (hour, minute and 24-hour hands) runs accurately.

- The alarm does not ring even if it is set.
- If the chronograph is being used, measurement stops and it is reset.
- The push button does not function.

**Stop Warning Function** (Refer to section "Insufficient Charge and Time Setting Warnings")

If the watch is left intact in the undercharged state, about 5 days later the second hand will move to the A STOP position, indicating that the watch has stopped due to Electric power shortage. (Stop warning display) The other hands (hour, minute and 24-hour hands) also stop.

\* In this condition, all function stop.

**Hands Setting Warning Function** (Refer to section "Insufficient Charge and Time Setting Warnings")

When the watch is recharged by exposing it to light after once stopped, the second hand moves to the ^SET position, indicating that the watch does not keep correct time. (Hands setting warning display)

\* The hours, minute and 24-hour hands run at the incorrect time.

**Over-Charging Prevention Function**

You can recharge without worry. When the rechargeable battery is fully recharged, the over-charging prevention function works so that the rechargeable battery is not overcharged.

**5. NOTES ON USE**

**!Warning**

**Never use a battery other than the Eco Drive Rechargeable battery.**

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





## 6. NOTES ON RECHARGE

### ! Caution

\* The watch will be damaged during recharging if it gets too hot (Over 60°C/140°F).

Avoid recharging at high temperatures (Over 60°C/140°F).

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

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

## 7. TIME REQUIRED FOR RECHARGE

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

\* The recharging time is the time when the watch is continuously exposed to light.

Running Time At Full Charge	Low Charge Warning	Quick Start Feature
80 Days	5 Days	No

### Charge Rates from Indoor Light Source

Indoors, Office (500 lux)			Fluorescent at 6" Distance Incandescent at 20" Distance (3000 lux)		
One Day Use	One Second Step	Full Charge	One Day Use	One Second Step	Full Charge
2.5 Hours	28 Hours	220 Hours	25 Minutes	4.5 Hours	34 Hours

### Charge Rates from Outdoor Light Source

Outdoors Cloudy (10,000 lux)			Outdoors Bright Sun (100,000 lux)		
One Day Use	One Second Step	Full Charge	One Day Use	One Second Step	Full Charge
5 Minutes	30 Minutes	9 Hours	2 Minutes	10 Minutes	3.5 Hours



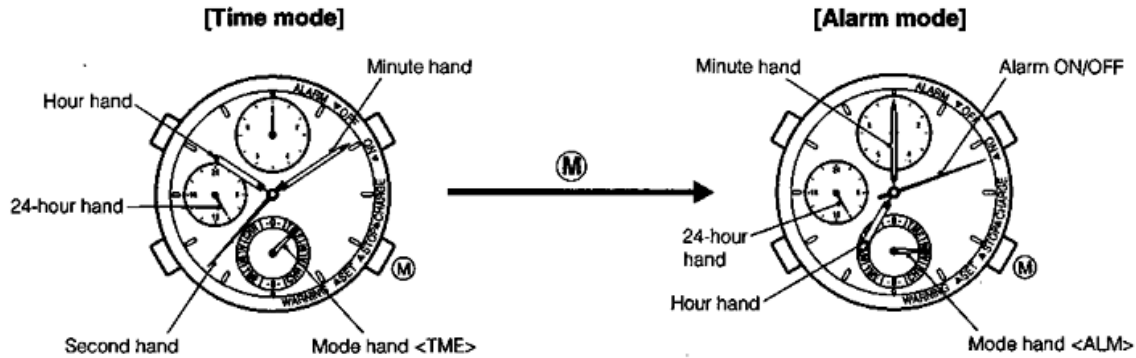


## 8. HOW TO USE THIS WATCH

### 1) CHANGING THE MODE

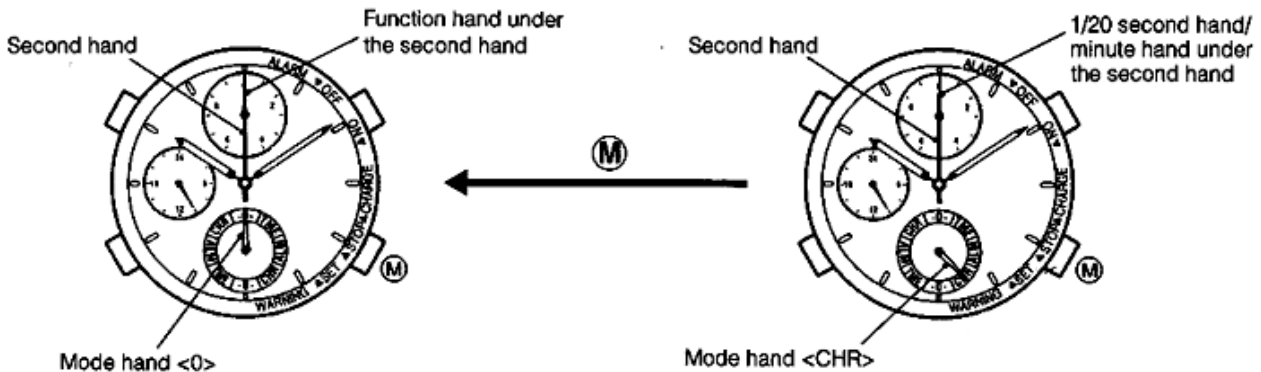
Other than the time display, this watch has alarm and chronograph main display functions- Each press of the (M) button changes Time <TME> -> Alarm <ALM> -> Chronograph <CHR> -> "0" position confirmation <(O)>. Confirm the change with the mode hand.

After that returns to the time mode <TME> display.



Display present time in hours, minutes, seconds and 24-hours. Use the 24-hour hand to confirm am/pm

Display alarm set time. The alarm setting is in 1 minute. Confirm of am/pm with the 24-hour hand **if** the alarm is **ON**, it will ring at the set time for 15 seconds once every day.

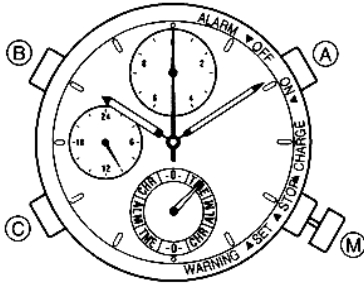


Not used usually. This display function should be used to adjust the display correctly, in case a wrong display of time results from static electricity, shock etc

Measures up to a maximum 60 minutes in 1/20 seconds, and display split times. A confirmation sounds when you start/stop or measure a split time



## 2) TIME SETTING



Check that the mode hand is indicating <TME> and the watch is in time mode.

- 1) Pull the button **(M)** out, so that the second hand stops at the "0" position.

Time setting synchronize the minute hand -> hour hand -> 24-hour hand

When the watch is adjusted by button operation, the time setting is completed by electro-magnetic correction.

- 2) Set the time by pressing button **(B)** or button **(C)**  
Each time button **(B)** is pressed .....  
The watch advances 1 minute in a clockwise direction.  
Each time button **(C)** is pressed .....  
The watch turns back 1 minute in a counter-clockwise direction.

Depress button **(B)** or **(C)** continuously, the hands move rapidly. Turn the hands in the direction that is closest to set the time.

- 3) After setting the time, push the button **(M)** to the normal position and the watch will start at the correct time.

### If the minute hand shows incorrect position

- a. Pull button **(M)** out to the first click.
- b. When button **(B)** or **(C)** is pressed with button **(A)** depressed, the minute hand moves every 20 seconds.

**Caution:** Do not press three buttons **(A)**, **(B)** and **(C)** simultaneously. If all the buttons are pressed simultaneously, "0" Position Adjustment (page 10) and all other functions will need to be set again.

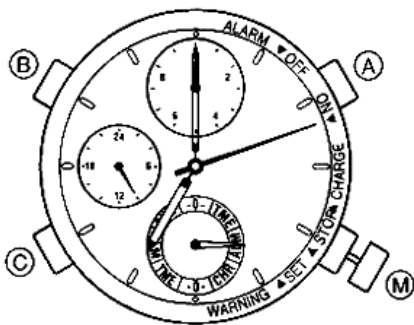
## 3) USING THE ALARM

The alarm sounds once a day for 15 seconds at the alarm time set. Pressing any of buttons **(A)**, **(B)** or **(C)** stops the alarm ringing.

### Setting the alarm

Alarm setting is on a 24-hour system in 1 minute. The hands are moved thus: minute hand -> hour hand -> 24-hour hand.

- 1) Press button **(M)** to set the mode hand to <ALM> and switch to the alarm mode.
- 2) Pull button **(M)** out to the alarm set time adjusting state.
- 3) Press buttons **(B)** or **(C)** to set the minute, hour and 24-hour hands to the desired time.



- Each time button **(B)** is pressed ... The watch advances 1 minute in a clockwise direction
- Each time button **(C)** is pressed ... The watch turns back in 1 minute increments in a counter clockwise direction





Depress button **(B)** or **(C)** continuously, the hands move rapidly.

After setting the alarm time, push the **(M)** button. The hour, minute and 24-hour hands move rapidly automatically to the present time. If those hands do not stop moving, push the **(M)** button again.

#### Switching the alarm ON and OFF

Each time button **(A)** is pressed in the alarm mode, the alarm switches ON and OFF

#### Alarm sound monitor

On the alarm mode (button **(M)** in the normal position), press button **(A)** and the alarm will sound for 5 seconds.

#### Note

\* There may be some variation in the volume of the alarm sound, depending on how much the Eco Drive Rechargeable battery is charged.

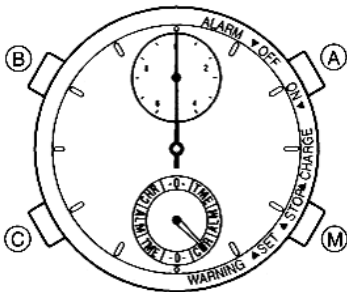
\* The alarm sound volume gets rather lower in the display other than the time display (alarm, chronograph, "0" position confirmation, and each display's adjustment state).

Once the alarm time has been set, use the watch normally in time display mode.

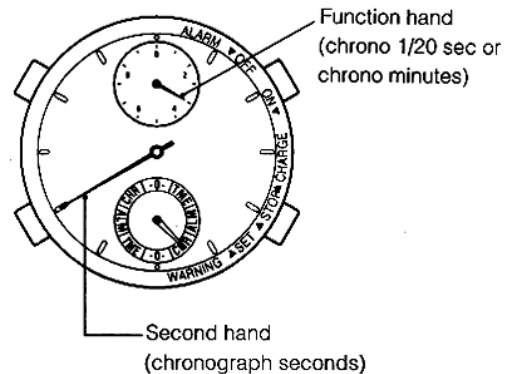
## 4) USING THE CHRONOGRAPH

Chronograph measurement is taken in **1/20** (0.05) seconds and can continue for **60** minutes max. Over 60 minutes, the watch enters the chronograph-reset state.

Chronograph reset



Chronograph measurement



#### Read the chronograph hands

For measurement less than 1 minute

Second hand -> Chronograph second hand Function hand -> Chronograph **1/20** second hand

For measurement over 1, minute:

Second hand -> Chronograph second hand Function hand -> Chronograph minute hand

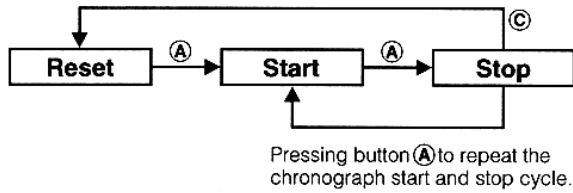






## Chronograph measurement

Chronograph standard or accumulated elapsed time measurement.



1) Press button **(M)** to set the mode hand <CHR> and get the chronograph display. At this time, the second hand and the function hand will return to the "0" position.

The hour, minute, and 24-hour hands show the present time.

2) Each time button **(A)** is pressed, it repeatedly starts or stop the chronograph, along with a confirmation sound. How to read each chronograph hand if the measured time when the chronograph is stopped is over 1 minute.

a. Read the number of minutes with the function hand.

b. Read the number of seconds with the second hand.

c. While pressing button **(B)** continuously, the function hand switches to 1/20 (0.05) second hand measurement, so read the value at that time.

When button **(B)** is released, the function hand resumes showing chronograph minutes.

3) While the chronograph is stopped state, pressing button & reset the function hand and the second hand to the "0" position.

## Chronograph split measurement

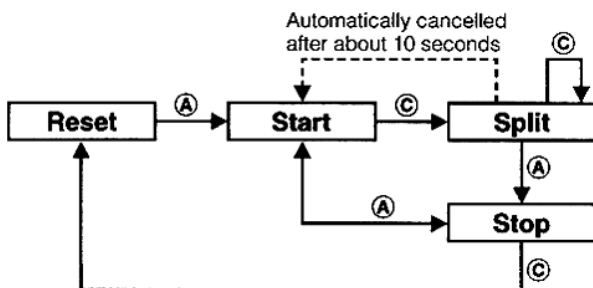
Pressing button **(C)** during chronograph measurement causes the chronograph split time to appear on display with a beep for confirmation.

Press button **(C)** again, the next chronograph split time is displayed, along with a confirmation sound. The split time display is automatically cancelled after about 10 second, and the chronograph return to the measurement state.

During either chronograph split time display or measurement, pressing button **(A)** causes the chronograph stop to appear on display.

In the chronograph stop state, pressing button **(C)** causes the chronograph reset.

During split time measurement or while split time display, each time you press button **(C)** the next split time is displayed.





## 5) TIME SETTING AND RECHARGE WARNINGS

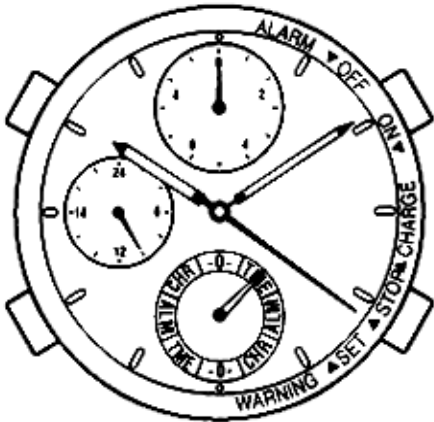
### When shown the insufficient charge warning display



If the watch is put in the undercharged state during any display mode, it switches to the time display when in other display modes, then the second hand moves to the **^CHARGE** position, indicating insufficiently charged. In such a case, expose the watch to sufficient light for the warning state to be cancelled. (The second hand returns to 1 second movement)

It takes about 30 minutes from starting to expose the watch to light until this warning state is cancelled. The charging time varies depending on the light (light source) that radiates over the watch.

### When shown the stop warning display



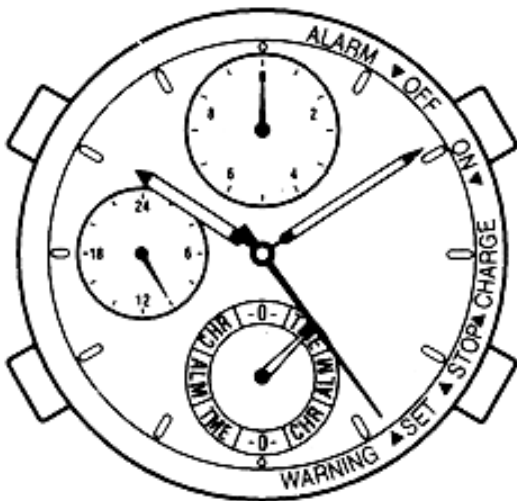
If the watch is left intact in the undercharged state, about 5 days later the second hand moves to the **^STOP** position, indicating that the watch has stopped due to insufficient recharge.

\* All functions are stopped in this state.

In such a case, expose the watch to sufficient light for the warning state to be cancelled.

After carrying out sufficient charging, it is necessary to reset the alarm time.

### When shown the hands setting warning display



If you expose a watch which has stopped once to light and recharge it, the second hand will move to the **^SET** position to let you know that the time is incorrect.

In such a case, readjust the hour, minute and 24-hour hands to keep correct time.

Without adjusting the time hands after the watch is fully recharged, you cannot use such functions as alarm, chronograph, etc. properly.

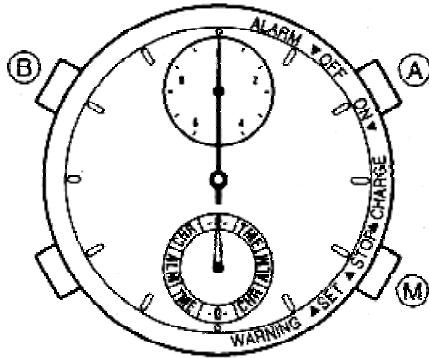
Be careful because if the watch is not sufficiently charged during the Hands Setting Warning Display State, and if light is blocked from it, the second hand will change to the **^STOP** position and the watch will stop running.





## 6) CHECKING AND ADJUSTING EACH HAND'S "0" POSITION

The watch's display may be incorrect due to the effect of static electricity, **strong** shock, etc. In such a case, check and adjust the "0" position of each of the following hands.



### "0" Position Checking

Press button **(M)** to adjust the mode hand to zero (0) position. Then the watch is put in the '0' position check mode. At this time, check that the second hand and the function hand return to the "0" position or (1 2 o'clock position).

When the second hand or the function hand is not in the "0" position (12 o'clock position), "0" position adjustment is necessary.

### "0" position adjustment

1) In "0" position check mode, pull out button **(M)**

2) Adjust each hand to the "0" position.

Second hand "0" position adjustment

..... adjust by pressing button **(A)**

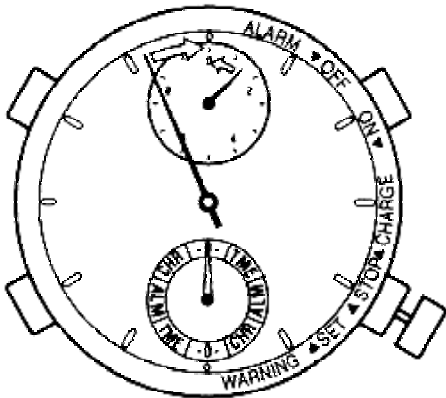
Function hand "0" position adjustment

..... adjust by pressing button **(B)**

Press button **(A)** or **(B)** continuously, the hands will move rapidly.

3) Push button **(M)** to its normal position after "0" position adjustment completely.

After finishing "0" position adjustment, reset the time and the alarm set time.



### Replacement of the Eco Drive Rechargeable battery

Since the secondary battery used in this watch is rechargeable, it does not need to be replaced periodically. **Please note**, this is not a user replaceable item.



# PRECAUTIONS ABOUT CARE AND HANDLING OF WATCHES

## TEMPERATURE CARE

Avoid temperature extremes. Exposing your watch to high temperatures, such as placing it on the dashboard of a vehicle or use in a hot tub, may cause the watch to malfunction, shorten battery life or damage certain components. Leaving the watch in extreme cold temperatures may cause irregular timekeeping until the watch returns to normal operating temperature.

## SHOCK-RESISTANT

The watch may be worn while playing golf or other activities, but avoid severe shocks such as dropping it on a hard surface.

## MAGNETIC-RESISTANT

No problem should occur from using the watch around ordinary household electric appliances such as TV sets or stereos. Keep away from magnets.

## CHEMICAL/GAS RESISTANT

Do not expose the watch to chemicals or gases for long periods.

## WATCH CLEANING

Stains, waterspots and accumulated dirt on the case, crystal or band should be removed with a soft cloth to prevent damage and premature wear.

## HANDLING OF WATER-RESISTANT WATCHES

Although water-resistant watches are warranted, steps should be taken to avoid damage that may result from accidents or mishandling:

- Do not operate the crown or push-button in the water or while the watch is wet. Tighten screw lock crown completely.
- Should the watch become immersed in water, dry it off right away. If the watch comes in contact with salt water, be sure to rinse it thoroughly in warm fresh water to remove any trace of salt.
- If a watch is wet from cleaning or by accident, never store it in a closed container. It should be dried immediately or taken to a watchmaker or jeweler if moisture is inside the case to prevent damage from rust.
- Vital components necessary to resist the entrance of moisture deteriorate with time and use. Gaskets, crowns and other materials should be replaced every year or two to ensure

that water resistant quality remains at factory specifications.

## CARE FOR METAL BRACELETS

To extend the life and maintain the good appearance of the metal watch bracelet, the following recommendations are given:

- Be aware that since the watch and bracelet is worn next to the skin, it collects dust and perspiration and becomes soiled if not cleaned regularly. This is particularly true of the inner parts of the links or mesh of the bracelet.
- Soil and rust, when present in a bracelet, are dissolved by perspiration and can cause staining of cuffs and irritation of the skin in some instances.
- Heavy perspiration should be wiped off the watch and bracelet with a soft dry cloth. The bracelet should be cleaned occasionally by using an old toothbrush and warm soapy water after which the soap is thoroughly rinsed with clear water and the bracelet dried completely. The foregoing manner of cleaning should not be done if the watch is not water-resistant but should instead be done by your jeweler.





## CARE FOR STRAPS

### LEATHER

- Heavy perspiration, if not removed from a leather strap, can wash out the natural oils and cause the leather to become dry and deteriorate. Any moisture should be blotted with a soft dry cloth or paper towel and the strap allowed to dry naturally.
- Salt residue and soil can be removed from the leather by cleaning with a dampened soft cloth and mild soap or saddle soap.
- Occasionally, the inside surface of the strap should be cleaned by using a soft cloth dampened with alcohol.
- The strap should always be worn a little loosely (one finger space between wrist and strap) to allow air to circulate thus causing any moisture to evaporate.

### RUBBER

- Rubber straps should be washed frequently with mild soap and warm water using a soft brush.
- Thorough cleaning, using the same method, should especially be done after use in salt water.
- Solvents, oils, perspiration, tanning lotion and salt can cause rubber to deteriorate if not removed.

Marking on the Dial	Marking on the Caseback	 Face washing, splashes, sweat, raindrops, etc.	 Swimming	 Skin diving (diving without air tanks)	 Scuba diving (diving with air tanks)	Water-resistant characteristics
NONE	NONE	NO	NO	NO	NO	Non water-resistant watch and must be kept away from water.
NONE	WATER RESIST	OK	NO	NO	NO	An ordinary water-resistant watch and can withstand splashes, sweat, rain-drops and etc. for daily life use.
WR100M WR10bar WR150M	WATER RESIST	OK	OK	OK	NO	For frequent use with water. It is not specially designed for scuba diving.
WR200M	WATER RESIST	OK	OK	OK	OK	For skin and scuba diving. Usable up to the respective indicated depths.

See instruction book for further information