



## Setting Instructions for Movement Caliber C660

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## 1. FEATURES

This watch is a combination solar - powered watch that contains a solar cell in its face that drives the watch hands, race time, chronograph, alarm and numerous other functions by converting light energy into electrical energy.

It is also equipped with convenient functions including a power save mode that reduces power consumption when light is not shining on the solar cell, UTC (Coordinated Universal Time), and a world timer indicating the time and dates of 30 major cities around the world

## 2. BEFORE USING

**This watch is a solar-powered watch. Before using, allow light to shine onto the watch so that it is sufficiently charged.**

An Eco Drive rechargeable battery is used in this watch to store electrical energy. This rechargeable battery is a clean energy battery that does not contain mercury or other toxic substances. Once fully charged, the watch will continue to run for a maximum of 4 years without additional charging (when in the power save 2 mode).

[Proper Use of this Watch]

To use this watch comfortably, make sure to recharge it before it stops running completely. There is no risk of overcharging the watch no matter how often it is recharged (Overcharging Prevention Function).

**It is recommended that the watch be recharged everyday.**





### 3. NAMES OF COMPONENTS AND MAJOR FUNCTIONS

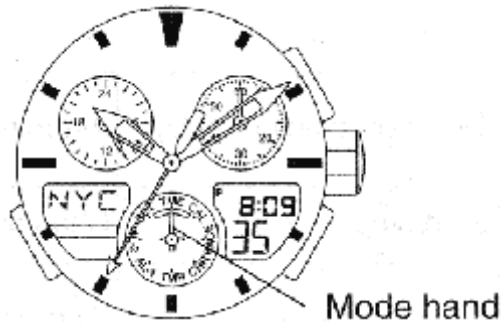
| Name /Mode                                         | Time                                                                 | Calendar         | Timer                                                                                                                         | Chrono - graph                                                            | Timer                                                   | Alarm 1                            | Alarm 2 | Zone Set             |
|----------------------------------------------------|----------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------|---------|----------------------|
| (1) Mode Hand                                      | TME                                                                  | CAL              | RACE                                                                                                                          | CHR                                                                       | TMR                                                     | AL-1                               | AL-2    | SET                  |
| (2) Hour Hand                                      | Always Indicates Hours                                               |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
| (3) Minute Hand                                    | Always Indicates Minutes                                             |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
| (4) Second Hand                                    | Always Indicates Seconds                                             |                  | Indicates the remaining race time (seconds). Indicates the auto-chronograph measured time display (seconds)                   | Indicates the chronograph measured time (seconds)                         | Always indicates Seconds                                |                                    |         |                      |
| (5) 24 Hour Hand                                   | Always indicates “24-Hour time” in conjunction with hour and minutes |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
| (6) Function hand                                  | Always stopped at ‘0’ position (standard position)                   |                  | Indicates the remaining race time (minutes). Indicates the auto-chronograph measured time display (minutes)                   | Indicates the chronograph measured time (Minutes)                         | Always stopped at ‘0’ position (standard position)      |                                    |         |                      |
|                                                    |                                                                      |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
| (7) Digital Display 1                              | Hours, minutes, seconds                                              | Month, date, day | Indicates the remaining race time (minutes, seconds). Indicates the auto-chronograph measured time display (minutes, seconds) | Indicates the chronograph measured time (Minutes, seconds, 1/100 seconds) | Indicates the timer’s remaining time (minutes, seconds) | Hours, Minutes, alarm (ON/OFF)     |         | City name (SET/ OFF) |
| (8) Digital Display 2                              | City Name, SMT (when set to daylight savings time)                   |                  | Race Timer set time (minutes)                                                                                                 | Chrono Measured time (hours)                                              | Timer Set time. minutes                                 | City Name                          |         |                      |
|                                                    | Charge indicator                                                     |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
| (10) Crown Normal Position 1 <sup>st</sup> Click   | Mode Switching                                                       |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
|                                                    | Time Correction                                                      | Calendar Correct | Race Timer set time correction                                                                                                | Adjust to 0 position                                                      | Timer Set Correction                                    | Alarm Correction                   |         | Change city Name     |
| (A) Button A Normal Position 1 <sup>st</sup> Click | Change Cities                                                        |                  | Start/ Stop                                                                                                                   | Start/ Stop                                                               | Start/ Stop                                             | Change Cities                      |         | Change city name     |
|                                                    | Switching Location to be corrected                                   |                  | ——                                                                                                                            | Switching Location to be corrected                                        | ——                                                      | Switching Location to be corrected |         | ——                   |
| (B) Button B Normal Position 1 <sup>st</sup> Click | Changing the city                                                    |                  | Return Flight / Reset                                                                                                         | Split / Reset                                                             | Return Flight / Reset                                   | Switching Alarm (ON/OFF)           |         | Change the city name |
|                                                    |                                                                      |                  | Switching alarm (on/off)                                                                                                      |                                                                           |                                                         |                                    |         | Switch SMT (on/off)  |
| (C) Button C Normal Position 1 <sup>st</sup> Click | Hand Evaluation                                                      |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |
|                                                    | Hand Evaluation                                                      |                  |                                                                                                                               |                                                                           |                                                         |                                    |         |                      |



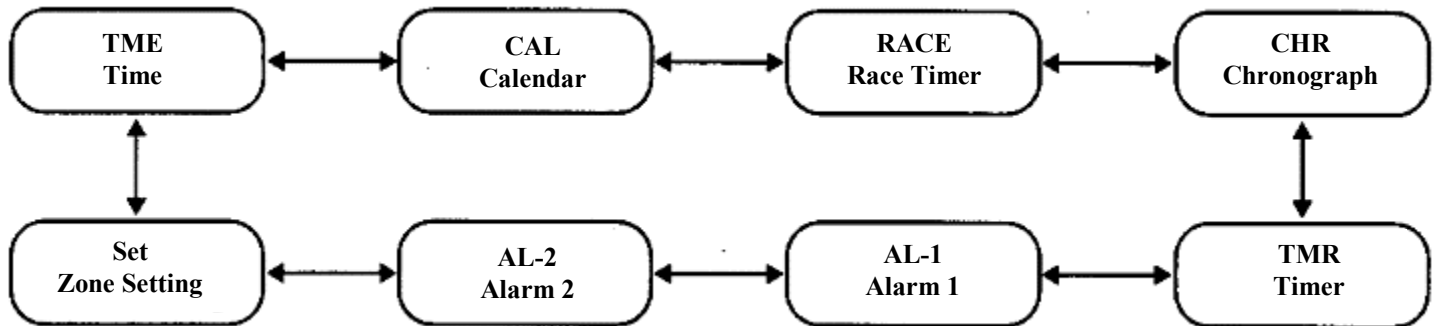


#### 4. SWITCHING THE MODE (DISPLAY FUNCTIONS)

In addition to the time and date modes, this watch is also equipped with three a race timer, chronograph, countdown timer as well as alarm 1 and alarm 1. The mode can be switched by turning the crown. Check the current mode with the mode hand.



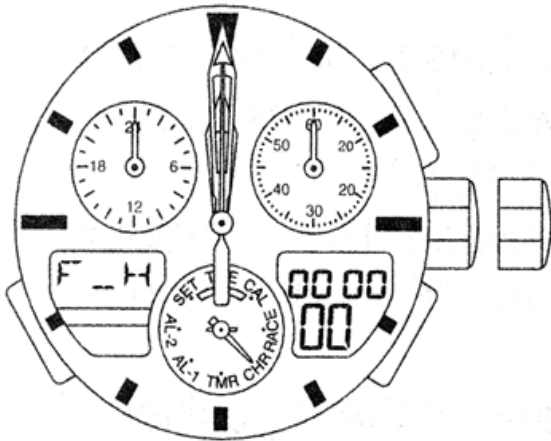
##### <Switching the Mode>



#### 5. CHECKING 0-POSITION OF EACH HAND

Before using this watch, check that the 0-position (based position of each hand) is set correctly to ensure that the functions of the watch operate properly by performing the following procedure.

##### <O-Position Check>



1. Turn the crown while in the normal position to set the mode hand to the chronograph [CHR) mode.
2. Pull the crown out to the first click (O-position correction position). The second, minute, hour, 24-hour and Function hands rapidly advance to the 0-position (12:00 position).

##### Note:

When each hand is not at the 0-position, perform the "O-position correction" procedure. If this 0-position is out of alignment, each hand will not indicate the correct position.





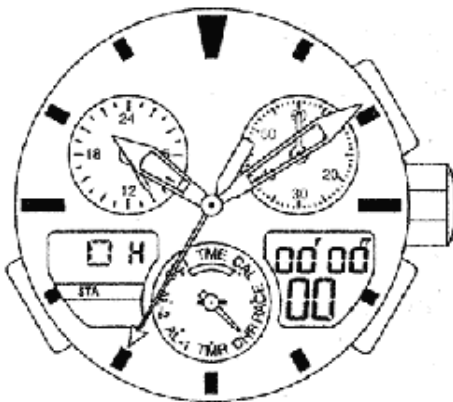
### 0-Position Correction (Setting to the Watch Base '0' Position)

When setting the 0-position of each hand, always make sure to turn the crown forward (clock-wise) to set each hand to its 0-position in the clockwise direction.

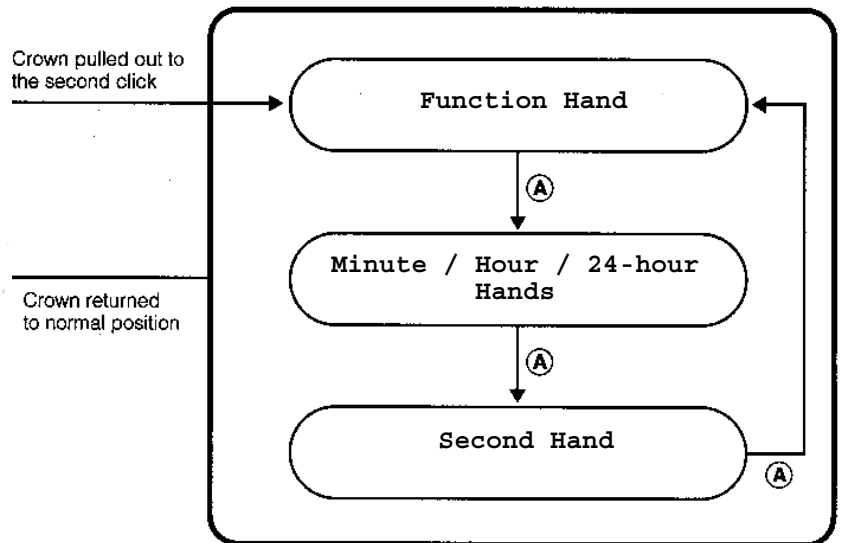
1. Turn the crown while in the normal position to set the mode hand to the chronograph [CHR] mode.
2. Pull the crown out to the second click (0-position correction position).
  - a. The second, minute, hour and 24 hour hands rapidly advance to the position stored in memory.
  - b. "F-H" lights during digital display 2 indicating that the watch is in the correction state.
3. Turning the crown forward (clockwise) allows correction to be made in the positive direction. Turning the crown continuously allows the 0-position to be corrected continuously. Turn the crown right or left to stop rapid advancement.
4. Pressing button (A) switches the correction location between "HR" (24-hour, hour and minute hands) and "SEC" (second hand) and "F-H" (function hand) each time button (A) it is pressed.
5. Turn the crown forward (clockwise) to align each hand at the 0-position at each correction location. Although correction can be made in the negative direction by turning the crown backward (counter-clockwise), always make sure to set the 0-position by turning the crown forward to ensure that the 0-position is set correctly.
  - a. The 24-hour hand is corrected in conjunction with the hour and minute hands.
6. After correcting, return the crown to the normal position.
  - a. After correcting the 0-position of each hand, reset the time, calendar and other modes before using the watch.

#### Note:

None of the buttons on the watch operate during movement of each hand. Operate the buttons only after the hands have stopped moving.



#### <0-position (Base Position) Correction State>





## 6. ACCESSING TIMES OR DATES OF MAJOR CITIES

The time or date of major cities pre-registered in this watch can be easily accessed by pressing the buttons.

### <Access Procedure>

1. Turn the crown to set the mode hand to the time [TME] or calendar [CAL] mode.
2. When button (A) is pressed, the times or dates of major cities are displayed while scrolling up each time it is pressed.
3. When button (B) is pressed, the times or dates of major cities are displayed while scrolling down each time it is pressed.

\* Pressing button (A) or (B) continuously causes the display to advance rapidly.

### <Cities and UTC Time Difference Pre-registered in this Watch>

| Display on watch | City name               | Time difference | Daylight savings time | Display on watch | City name      | Time difference | Daylight savings time |
|------------------|-------------------------|-----------------|-----------------------|------------------|----------------|-----------------|-----------------------|
| UTC              | Universal time constant | ±0              | —                     | TYO              | Tokyo          | +9              | X                     |
| LON              | London                  | ±0              | O                     | SYD              | Sydney         | +10             | O                     |
| PAR              | Paris                   | +1              | O                     | NOU              | Nouméa         | +11             | X                     |
| ROM              | Rome                    | +1              | O                     | AKL              | Auckland       | +12             | O                     |
| CAI              | Cairo                   | +2              | O                     | HNL              | Honolulu       | -10             | X                     |
| IST              | Istanbul                | +2              | O                     | ANC              | Anchorage      | -9              | O                     |
| MOW              | Moscow                  | +3              | O                     | LAX              | Los Angeles    | -8              | O                     |
| KWI              | Kuwait                  | +3              | X                     | DEN              | Denver         | -7              | O                     |
| DXB              | Dubai                   | +4              | X                     | CHI              | Chicago        | -6              | O                     |
| KHI              | Karachi                 | +5              | X                     | MEX              | Mexico City    | -6              | X                     |
| DAC              | Dacca                   | +6              | X                     | NYC              | New York       | -5              | O                     |
| BKK              | Bangkok                 | +7              | X                     | YUL              | Montreal       | -5              | O                     |
| SIN              | Singapore               | +8              | X                     | CCS              | Caracas        | -4              | X                     |
| HKG              | Hong Kong               | +8              | X                     | RIO              | Rio de Janeiro | -3              | O                     |
| PEK              | Beijing                 | +8              | X                     | BUE              | Buenos Aires   | -3              | X                     |

Scrolling DOWN  
↑  
Scrolling UP

- Cities (regions) in which daylight savings time is used are indicated with a 0, while those in which it is not are indicated with an X.
- The time difference and use of daylight savings time of each city are subject to change by the particular country.





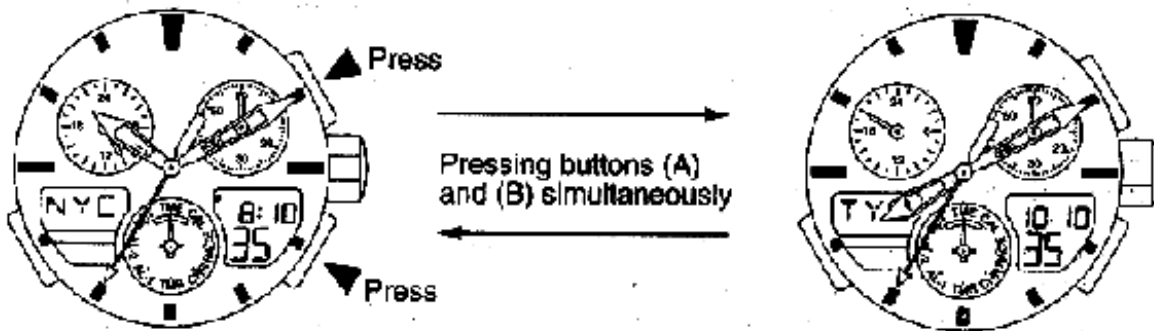
## 7. SWITCHING ANALOG TIME AND DIGITAL TIME

This watch is able to switch between analog time display and digital time display.

### <Switching Procedure>

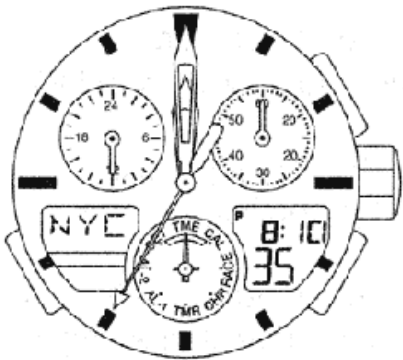
1. Turn the crown to set the mode hand to the time [TME] mode.
2. Press button (A) and (B) simultaneously.
3. After a confirmation tone sounds, the watch switches the time of the city displayed by analog display and the time of the city displayed by digital display.

If buttons (A) and (B) are simultaneously pressed when in the calendar [CAL] Mode, the watch switches the date of the city displayed by analog display and the date of the city displayed by digital display (the times are switched at this time as well).



## 8. HAND EVACUATION FUNCTION

The hand evacuation procedure allows the hour and minutes hands to be retracted to the 12:00 position for clear viewing of the digital displays.



### <Activating Hand Evacuation Method>

1. Pressing button (C (lower left)) for at least 2 seconds moves the hour and minutes hands to the 12:00 position.

### <Activating Hand Evacuation Method>

1. Pressing button (C (lower left)) moves the hour and minute hands back to the position for normal time indication



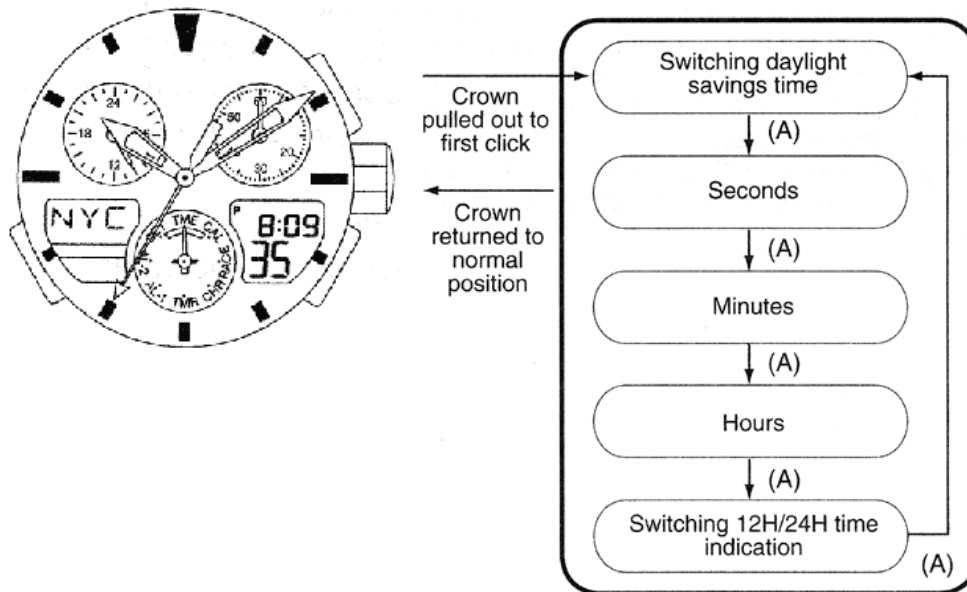


## 9. SETTING THE TIME (TIME IS CORRECTED BY DIGITAL DISPLAY)

When digital time is corrected, the second, minute, hour, 24 hour and UTC hour and minute hands of the analog time are corrected automatically in conjunction with digital time.

1. Turn the crown and set the mode hand to the time [TME] mode.
2. Press either button (A) or button (B) to access the city to be corrected.
3. When the crown is pulled out to the second click (time setting position), the watch enters the time correction state.
4. When button (A) is pressed, the location to be corrected changes each time it is pressed. Select the location to be corrected. (The location that is flashing is the location that can be corrected.)
  - When button (B) is pressed in the [SMT] daylight savings time correction state daylight savings time can be set (ON) or canceled (OF).
  - "Seconds" return to zero when button (B) is pressed in the "seconds" correction state.
  - When the crown is turned forward (clockwise) in the "hour" or "minute" correction states, correction is made in the positive direction. Turning the crown continuously allows "hours" or 11 minutes" to be corrected continuously. Although correction can be made in the negative direction when the crown is turned backward (counter-clockwise), always make sure to turn the crown forward to ensure that the time is set correctly.
  - Switching "12H/24H time" is performed by pressing button (B).
5. After corrections have been completed, return the crown to the normal position.

### <Normal Time Display>



### Notes:

1. Daylight savings time can be set for each city.
2. When the time is set for any one city, the times of other cities, including UTC time, are corrected automatically
3. When changing the time, the crown and buttons do not respond even if operated. Ensure that the required operation is performed correctly by first checking that the time has changed

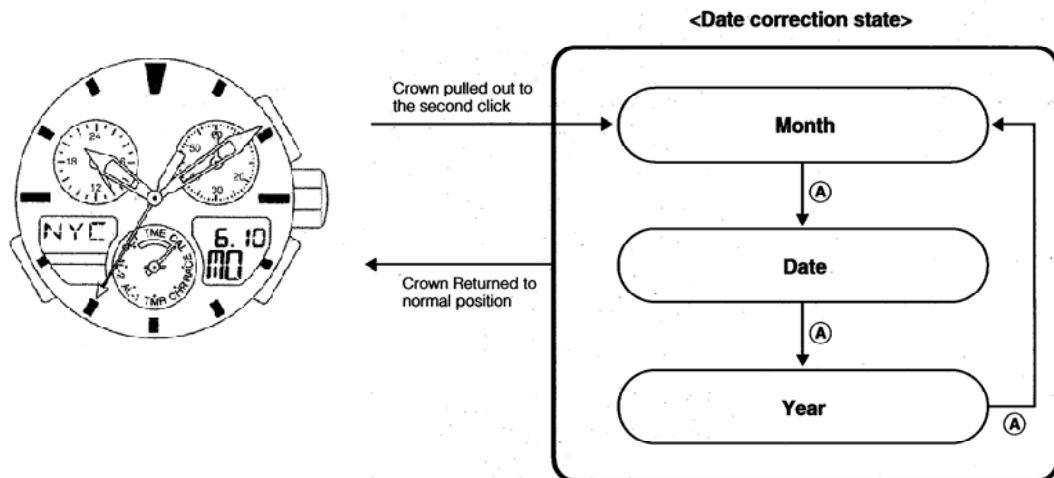






## 10. SETTING THE DATE (DATE IS CORRECTED BY DIGITAL DISPLAY)

1. Turn the crown and set the mode hand to the calendar [CAL] mode.
2. Press either button (A) or button (B) to access the city to be corrected.
3. When the crown is pulled out to the second click (date setting position), the watch enters the date correction state.
4. When button (A) is pressed, the location to be corrected changes each time it is pressed. Select the location to be corrected so that it is flashing. When the crown is turned forward (clockwise), correction is made in the positive direction. When the crown is turned backward (counter-clockwise), correction is made in the negative direction. Turning the crown continuously allows corrections to be made rapidly.
5. After corrections have been completed, return the crown to the normal position.



### Notes:

1. When the date is set for any one city, the dates of other cities, including UTC time, are corrected automatically.
2. The year can be set from 2000 to 2099.
3. The day is corrected automatically when the year, month and date are set.
4. Since this watch is equipped with an auto-calendar function, it is not necessary to correct the date at the end of the month.
5. When the date has been set to a non-existent date, the watch automatically displays the 1st day of the following month when the watch is returned to the normal display.



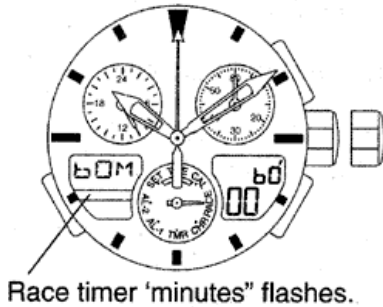


## 11. Using the Race Timer

The race timer is able to set the time for 5-minute intervals for times between 60 and 10 minutes, and to 6,5,4,3,2 and 1 minute.

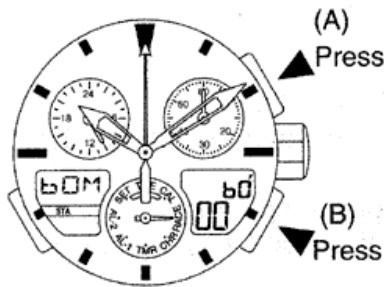
### <Setting the Race Timer>

3. Turn the crown and set the mode hand to the [RACE] race timer position.
4. When the crown is pulled out to the first click, (race timer setting position), the watch enters the minute correction state.  
The Race Timer Setting Time (minutes) flashes in Digital Display 2.



3. Turn the crown to set the Race Timer Setting (minutes)  
When the crown is turned to the right, correction is made in a positive direction. When the crown is turned to the left, correction is made in a negative direction. The function hand moves automatically in conjunction with the Race Timer Setting Time (minutes)
4. After Corrections have been completed, return the crown to the normal position.

### <Race Timer Initial Setting Display>

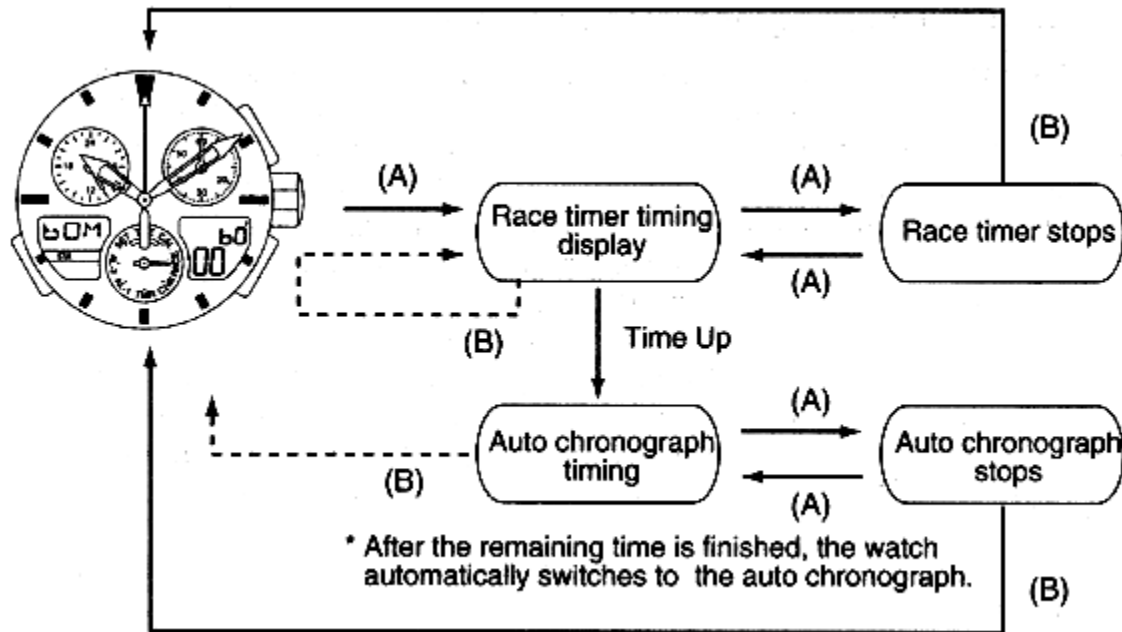


### <Timing Using the Race Timer>

1. When pressing button (A), the race timer starts counting down from the set time while the second hand starts moving counter-clockwise
2. When pressing button (A) during the countdown, the race timer stops. When pressing button (A) once more while the race timer is stopped, the race timer starts counting again.  
When pressing button (B) during the countdown, the race timer is initialized and starts counting down from the beginning.
3. When pressing button (B) while the race timer is stopped, the race timer returns to the initial setting time.

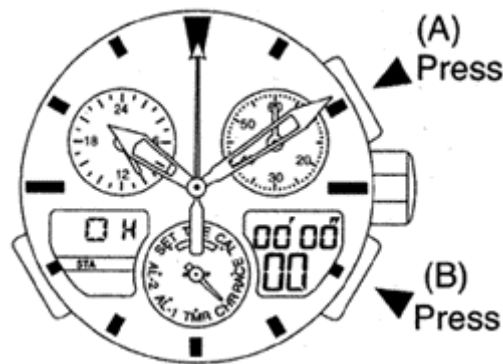
- When pressing buttons, the operation confirmation tone sounds to confirm operation
  - After starting, a warning tone is sounded when 11, 10, 6, 5, 4, 3 or 2 minutes or 1 minute remain or when 50, 40, 30, 20, 10, 5, 4, 3, or 2 seconds or 1 second remain
  - However, when 11, 10, 6, 5, 4, 3 or 2 minutes or 1 minute are set, the warning signal for the remaining time does not sound.
4. When timing of the set time is finished, the Time Up Tone sounds, while simultaneously the auto chronograph starts operation.





### <Using The Auto Chronograph Measurement>

When the race timer measurement is finished, upon finishing simultaneously, it changes to the auto chronograph that starts counting down automatically. The auto chronograph measures to a maximum of 23 hours, 59 minutes and 59 seconds in 1-second increments. After timing is finished, the chronograph automatically returns to the RACE timer initial setting display.



1. Pressing button (A) during measurement repeatedly starts and stops the auto chronograph each time it is pressed.
  - a. When starting the Auto Chronograph, the second hand starts moving clockwise in conjunction.
2. Pressing button (B) during measurement of the auto chronograph returns the auto chronograph to the race timer initial display.
3. Pressing button (B) while the chronograph is stopped returns the chronograph to the race timer initial setting display
  - a. The second hand rapidly advances to the 12:00 position and then stops
  - b. The function hand rapidly advances to the race timer initial setting position and then stops

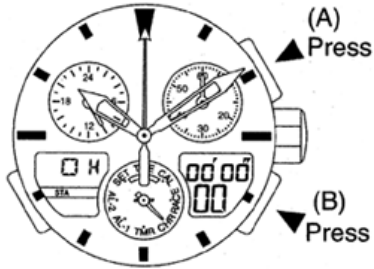




## 12. USING THE CHRONOGRAPH

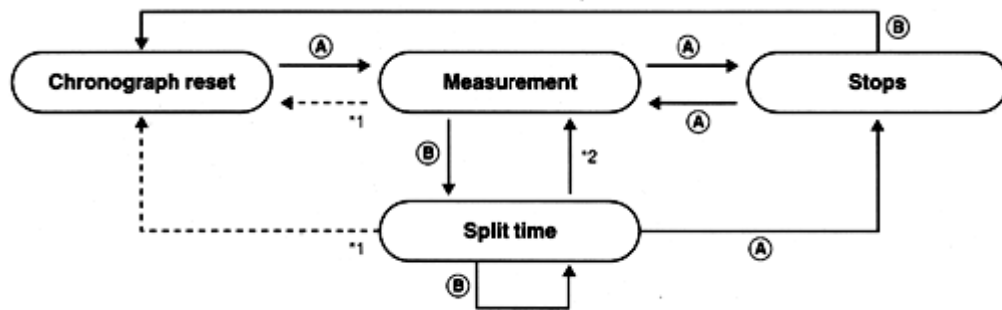
The chronograph is able to measure and display time up to a maximum of 23 hours, 59 minutes, 59.99 seconds in 1/100th second units. After 24 hours have elapsed, the chronograph automatically returns to the chronograph reset display (00'00"00) and stops.

### Normal Chronograph Display



### <Chronograph Measurement>

1. Turn the crown to set the mode hand to the chronograph [CHR] mode. (the second hand rapidly advances to the 12:00 position and stops)
2. Pressing button A repeatedly starts and stops the chronograph each time it is pressed. When starting the chronograph, the second hand starts moving clockwise in conjunction.
3. Split time is displayed for 10 seconds when button (B) is pressed during chronograph measurement. The "SPL" mark flashes in digital display 1. IN addition, the second hand also stops moving
4. Pressing button (B) while the chronograph is stopped returns the chronograph to the chronograph reset display. The Second and function hands (used as the minute hand for the chronograph) rapidly advance to and stop at the 12:00 position.



\*1: Returns automatically after timing for 24 hours

\*2: Returns automatically after 10 seconds

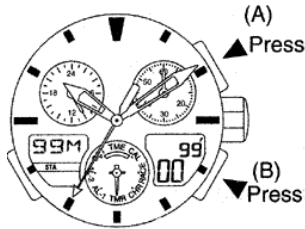




### 13. USING THE TIMER

The timer can be set to a maximum of 99 minutes in 1-minute units. When the set time has elapsed, a tone indicating that the set time is up sounds for about 5 seconds, after which the timer returns to the timer initial setting display.

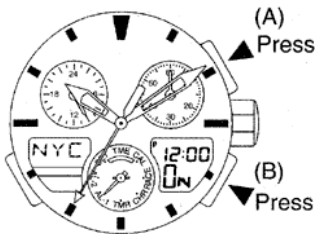
#### <Timer Initial Setting Display>



#### <Setting the Timer>

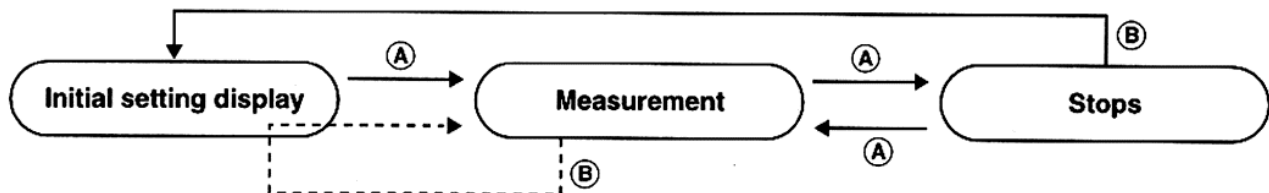
1. Turn the crown to set the mode hand to the timer [TMR] mode.
2. Pull out the crown to the second click (timer setting position) to enter the "minutes" correction state. Timer Setting Time (minutes) flashes in digital display 2.
3. Turn the crown forward to set the "minutes" timer setting time.  
When the crown is turned forward (clockwise), correction can be made in the positive direction. When the crown is turned backward (counter-clockwise), correction can be made in the negative direction.
4. After setting, return the crown to the normal position.

#### <Timer Initial Setting Display>



#### <Timing using the Timer>

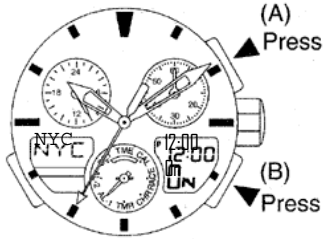
1. When pressing button (A) the timer starts counting down from the time set.
2. Pressing button (A) again during measurement stops the timer and pressing button (A) once more while the timer is stopped, restarts the timer.  
\*Pressing button (B) during timer measurement returns the watch to the timer initial setting display and resumes countdown from the beginning
3. Pressing button (B) when the timer is stopped returns the watch to the timer initial setting display.  
\*When pressing the button, the operation confirmation tone sounds





## 14. USING THE ALARM

The alarm setting procedure and other procedures for alarm use are the same for Alarm 1 and 2. Only the tone that sounds is different. The alarm sounds for 15 seconds when the set time is reached once a day. When the alarm is sounding, it can be turned off by pressing button (A) or (B).

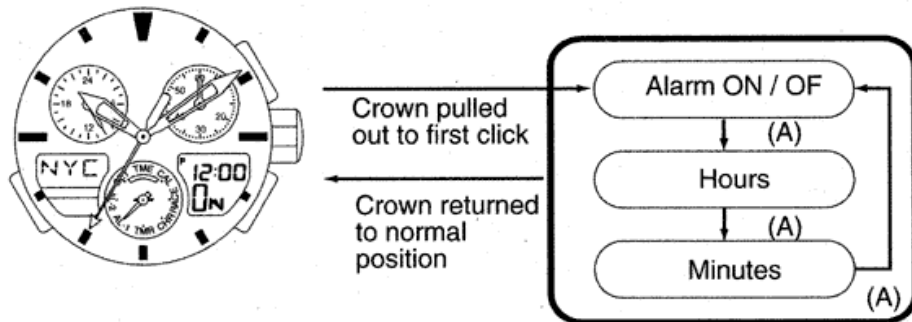


### <Setting the Alarm Time>

1. Turn the crown and set the mode hand to either the Alarm 1 or 2 [AL-1] or [AL-2] mode.
2. Press either button (A) or button (B) to access the city to be corrected.
3. When the crown is pulled out to the second click (alarm time setting position), the watch enters the alarm correction state.
4. When button (A) is pressed, the location to be corrected changes each time it is pressed. Select the location to be corrected so that it flashes.
  - a. The alarm can be set (ON) or canceled (OF) by pressing button (B) when the watch is in the alarm ON/OFF correction state.
  - b. When the crown is turned forward (clockwise) in the "hours" or "minutes" correction state, correction is made in the positive direction. When the crown is turned backward (counter-clockwise), correction is made in the negative direction.
  - c. Turning the crown continuously allows corrections to be made rapidly.
5. After corrections have been completed, return the crown to the normal position.

### Note:

When the time mode is set to the 12-hour time display, the alarm time also uses a 12-hour time display. Pay attention to AM and PM when setting the alarm time.



### <Switching Alarm On and OFF>

1. The alarm can be switched ON and OF by pulling out the crown to the first click when the alarm mode is on
2. Pressing button (B) switches the alarm ON and OF each time it is pressed
3. Return the crown the normal position after the alarm has been set to ON or OF.

### <Alarm Monitor>

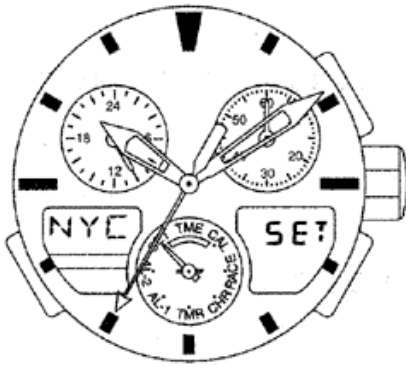
1. Pressing buttons (A) and (B) simultaneously during the normal alarm display causes the alarm to sound for confirmation for as long as they are pressed.





## 15. USING ZONE SETTING

The zone setting function enables only those cities for which "SET" has been selected to be easily accessed (displayed) in each mode.



### <Using Zone Setting>

1. 1. Turn the crown while in the normal position and set the mode hand to the mode setting [SET] mode.
2. 2. The city can be changed by pulling out the crown to the first click (for changing cities between SET and OFF and for setting the location for switching to daylight saving time).
3. Turn the crown to access the city to be set. Turning the crown continuously causes the cities to advance rapidly.
4. Press button (B) to set the city.
5. After setting, return the crown to the normal

position.

### <Confirming Set Cities>

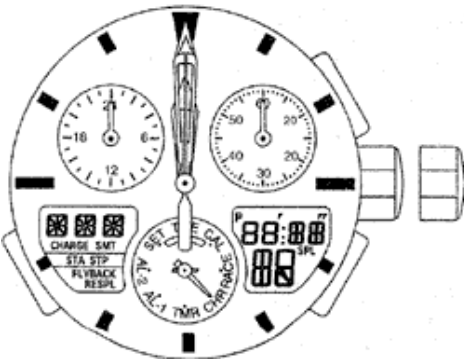
1. When button (A) or button (B) is pressed when the watch is in the zone setting [SET] mode (with the crown in the normal position), the city name and SET or OFF are displayed each time the button is pressed.
  - Only those cities for which SET is displayed can be accessed from each mode.

## 16. About All Reset

When this watch indicates an abnormal display or does not function properly (no display, alarm continues to sound, etc.) as a result of being subjected to the effects of static electricity or strong impact and so forth, perform the all-reset procedure described below.

When performing the all-reset procedure, first make sure that the watch is sufficiently charged and that the charge indicator is lit.

### <All-Reset Procedure>



1. Turn the crown to set the mode hand to the chronograph [CHR] mode.
2. Pull out the crown to the first click (0-Position correction mode). The second, minute, hour, 24-hour hand, and Function hands rapidly advance to the 0 position stored in memory.
3. Press buttons (A), (B) and (C) simultaneously and then release. All segments of the digital display are shown when either of the buttons is released.
4. 4. This fully lit display is canceled when the crown is returned to the normal position.
  - a. After canceling, a confirmation tone is sounded after which each of the hands perform a demonstration of the movement in the order of the second, function, and minute hand to indicate that the all-reset procedure is finished.
  - b. After the demonstration movement, pull the crown out to the first click to switch the watch to the 0 position (base adjustment) setting state.
  - c. Always make sure to set the 0-position (standard position) for the hour, minute, second, 24-hour and function hands while referring to section "5. Checking 0-Position of Each Hand <0-Position Corrections>"

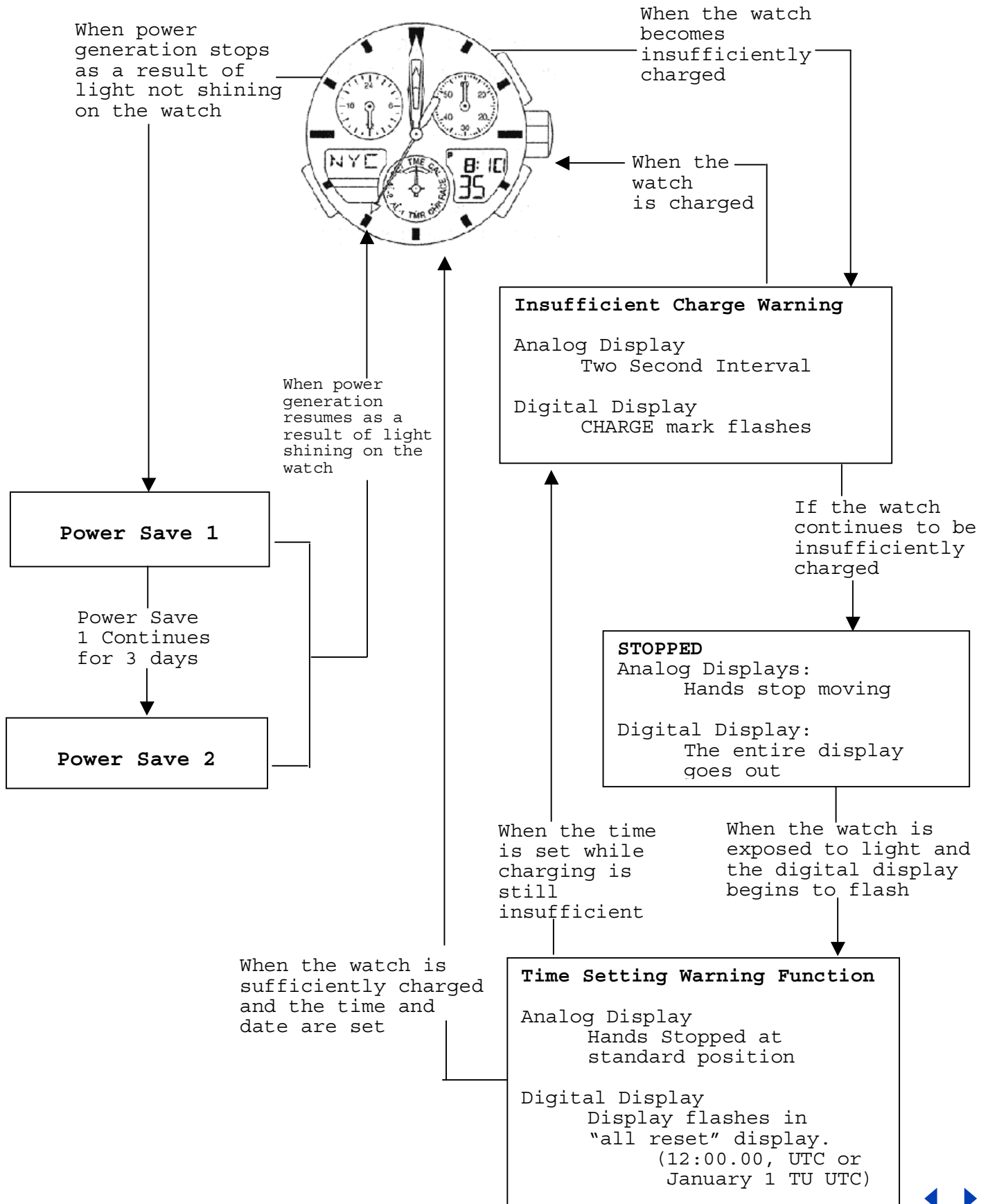
**NOTE:** After setting the 0 position (base position) for each hand, correctly reset the time, calendar and other modes before using this watch.







## 17. Functions Unique to this Solar Powered Watch

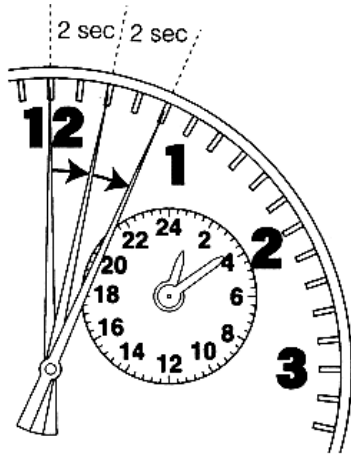






## [Insufficient Charging Warning Function]

### (Analog Display)



Regardless of the display (Mode) of the watch at the time, when the watch becomes insufficiently charged, the watch changes to the time display and the second hand begins to move at two-second-interval movement. Although the 24-hour hand, hour hand and minute hand continue to keep the correct time, the watch stops after about 1.5 days have elapsed after the insufficient charging warning function is activated. When this happens, charge the watch by exposing to light so that it returns to one-second-interval movement.

However, if the watch again becomes insufficiently charged without setting the time after it has been sufficiently charged by exposing to light as a result of having stopped due to being insufficiently charged, it will not return to the normal display unless the time is set after again sufficiently charging.

### Two second interval movement

### (Digital Display)

"CHARGE" flashes on digital display area 2 in all modes.

#### <Digital Display in Each Mode>

- The watch displays the normal time display regardless of the position of the crown (pulled out to the first or second click) in each mode except for the calendar mode.
- When the watch is in the calendar mode, the normal date display is displayed regardless of the position of the crown.

#### Notes:

- Crown operations do not function <except for mode switching (with the crown in the normal position)> in any of the modes.
- Button operations do not function, except for changing the city name (UP/DOWN), in any of the modes.
- The alarm tone does not sound even if it is set.
- The chronograph is interrupted and reset even if measurement is in progress.
- Timing by the race timer is immediately interrupted even if timing is in progress
- In the case the watch switches to the insufficient charging warning function as a result of being insufficiently charged, it takes a minimum of 30 minutes for the watch to return to the normal operating state even if sufficiently exposed to light.

#### <When the Insufficient Charging Warning Function is Canceled>

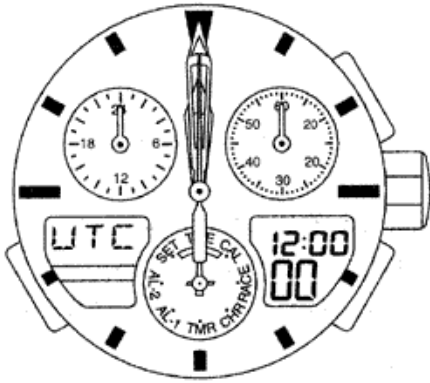
When the insufficient charging warning function is canceled as a result of exposing the watch to light and sufficiently charging, the watch returns to the mode indicated by the mode hand.





## [Time Setting Warning Function]

### (Analog Display)



The watch stops when insufficient charging continues for about 1.5 days. When the watch is charged by exposing to light after having stopped due to insufficient charging, each hand is rapidly advanced to the base position and stops. Each hand remains stopped until the time is reset.

### (Digital Display)

The initial setting display (12 hours, 00 minutes, 00 seconds, UTC or January 1 TU) flashes in the time or calendar mode.

## <Canceling the Time Setting Warning Function>

1. Set the mode hand to the time mode and pull the crown out to the second click to set the time. Flashing of the digital display is only canceled in the time mode. After correcting the time, return the crown to the normal position.
2. Set the mode hand to the calendar mode and pull the crown out to the second click to set the date. Flashing of the digital display is canceled in the calendar mode.
3. After correcting the date, return the crown to the normal position.

### Note:

- The time setting warning function will not be canceled unless the time is first set followed by setting the date.

## [Overcharging Prevention Function]

The overcharging prevention function is activated when the secondary battery is fully charged so that it is not charged further. This allows the user to charge the watch without any risk of overcharging.



**[Power Save 1]**

When power is not generated as a result of the solar cell not being exposed to light, the second hand stops when it reaches the zero seconds position and the watch automatically enters the power save state to inhibit power consumption of the secondary battery.

**(Analog Display)**

- The second hand stops at the base position (12:00).
- Other hands continue to keep the correct time.

**(Digital Display)**

- In coordination with the analog second hand stopping at the zero seconds position, the entire digital display goes out. However, the alarm, chronograph and other functions continue to measure time internally even though there is no display.

**<Canceling Power Save 1>**

Power Save 1 is canceled when power generation resumes as a result of exposing the solar cell to light.

- The second hand rapidly advances to the current time and begins one-second interval movement.
- The digital display reappears simultaneous to resumption of power generation.
- **Note:** During the secondary battery is fully charged and the overcharging prevention function is activated, the power save function is not activated even if power generation is interrupted as a result of the solar cell not being exposed to light. In addition, the power save function is similarly not activated when the solar cell is exposed to intense light and temporally becomes fully charged.

**[Power Save 2]**

When the Power Save 1 state continues for about 3 days and the minute hand reaches the base position (12:00), the watch automatically enters the Power Save 2 state.

**(Analog Display)**

- The 24-hour hand, hour hand, minute, second and function hands stop at the base position (12:00).

**(Digital Display)**

- The digital display remains completely out in continuation from the Power Save 1 state.

**Notes:**

- Crown and button operations do not function in any mode.
- The alarm tone does not sound even if it is set.

**<Canceling Power Save 2>**

Similar to Power Save 1, Power Save 2 is canceled when power generation resumes as a result of exposing the solar cell to light.

- Each hand rapidly advances to the current time and begins to move.
- The digital display reappears simultaneous to resumption of power generation. However, the chronograph returns to the reset state and the timer switches to the initial setting display.





## 18. GENERAL REFERENCE FOR CHARGING TIMES

The time required for recharging varies according to the model of the watch (color of the dial, etc). The following times are shown below to serve only as a reference.

Recharging time refers to the amount of time the watch is continuously exposed to light.

| Running Time<br>At Full Charge | Low Charge<br>Warning | Quick<br>Start Feature |
|--------------------------------|-----------------------|------------------------|
| 4 Years                        | 1.5 Days              | No                     |

### Charge Rates from Indoor Light Source

| Indoors, Office<br>(500 lux) |                    |                | Fluorescent at 6" Distance<br>Incandescent at 20" Distance<br>(3000 lux) |                    |                |
|------------------------------|--------------------|----------------|--------------------------------------------------------------------------|--------------------|----------------|
| One Day<br>Use               | One Second<br>Step | Full<br>Charge | One Day<br>Use                                                           | One Second<br>Step | Full<br>Charge |
| 2.5 Hours                    | 24 Hours           | 275 Hours      | 22 Minutes                                                               | 4.5 Hours          | 42 hours       |

### Charge Rates from Outdoor Light Source

| Outdoors Cloudy<br>(10,000 lux) |                    |                | Outdoors Bright Sun<br>(100,000 lux) |                    |                |
|---------------------------------|--------------------|----------------|--------------------------------------|--------------------|----------------|
| One Day<br>Use                  | One Second<br>Step | Full<br>Charge | One Day<br>Use                       | One Second<br>Step | Full<br>Charge |
| 7 Minutes                       | 2 hours            | 13.5 Hours     | 4 Minutes                            | 1.25 hours         | 7 Hours        |

### Full recharging time:

Time required for recharging the watch from the stopped state to full charged.

### Charging time for 1 day of operation:

Time required for recharging the watch to run for 1 day at one-second interval movement.

## 19. NOTES REGARDING HANDLING OF THIS WATCH

### <Try to keep the watch charged at all times>

- Please note that if you routinely wear long sleeves, the watch can easily become insufficiently charged as a result of it being concealed and unable to be exposed to light.
- When you take the watch off, try to place it in as bright location as possible to ensure that it always keeps the correct time.

### Notes: Charging Precautions

- Avoid recharging at high temperature (over about 600C/1400F) since this may result in damage to the watch as a result of reaching excessively high temperatures. Examples: Charging the watch in close proximity to an incandescent lamp, halogen lamp or other light source that can easily reach high temperatures, charging the watch in a location that reaches high temperatures such as on a car dashboard.
- When charging the watch with an incandescent lamp, always make sure the watch is at least 50 cm (20 in.) away from the lamp so that it does not reach excessively high temperatures during charging.





# 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 | <br>Face washing, splashes, sweat, raindrops, etc. | <br>Swimming | <br>Skin diving (diving without air tanks) | <br>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<br>WR10bar<br>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





## Water Resistance

The water-resistant quality of our timepieces is offered in varying degrees depending on the model. This ranges from non-water resistant models to those suitable for SCUBA diving. Water resistance of our timepieces is measured in BAR or Barometric Pressure. Each BAR of pressure is equal to 14.5 pounds per square inch of pressure.

Water resistance is measured when the watch is at a static, or motionless state. As the watch is moved in water, such as from the motion of swimming, pressure is added from velocity. While you may be swimming in a pool at surface level, the watch may be experiencing forces equal to that of 100 feet of water pressure (3 BAR). Diving into a pool can cause forces on the watch to exceed those pressures. As such, you should always allow a margin of safety when exposing your watch to moisture. Never "push the limit" of the degree of water resistance of your timepiece.

A primary factor to keep in mind about water resistance is that periodic maintenance is needed to maintain original factory specifications for water resistance. When a watch is new, it meets specifications for water resistance as indicated on the case back. However, as the watch ages, the gaskets that seal the watch become dry and brittle, diminishing its water resistant quality. Exposure to environments such as chlorinated pools, salt water or soaps from showering can accelerate drying of the gaskets. We recommend that the gaskets be changed at least every 18 to 24 months to maintain the water resistant quality of your timepiece. If the watch is frequently exposed to chlorinated pools, soaps salt water, etc., we recommend that the gaskets be changed on a yearly basis.

From time to time, you may notice condensation that appears then goes away after a short period of time. This is a normal occurrence and happens primarily from sudden temperature changes. When there are sudden temperature changes such as entering a cool building from the hot out of doors, or jumping into pool on a hot day the watch may fog. Conversely, if you go to the cold outdoors from a warm building, fogging may occur. As long as the fogging clears in a short period of time, there is no need for concern.

Be sure the crown is completely pushed in prior to any contact with moisture. If your model is equipped with a screw down crown, be sure it is properly seated against the case. Do not operate the crown or any push button when the watch is wet as this may allow the entrance of moisture. If at anytime, you notice moisture in your timepiece that does not clear in a short period of time, you should send your timepiece as soon as possible to the nearest Authorized Service Center for inspection.

You can determine the level of water resistance of our watches from the markings on your case-back. Additionally, models that are water resistant to 100 or 200 meters have an indication on the dial as well. The case-backs and dials are normally marked as follows:

### **The case back has no indication of water resistance**

This indicates the watch is a non water-resistant model and is not designed for contact with moisture at all. Caution should be exercised to avoid any contact with moisture, such as when washing your hands or from a rainstorm.

### **"Water Resist"**

This watch is designed to withstand water from accidental splashing, such as from washing your hands or rain. Any submersion into water may result in the entrance of moisture.

### **"Water Resist 10BAR" or "W.R. 10BAR", Dial marked "WR100"**

This watch is designed to withstand water pressure up to 333 feet. This includes water exposure from accidental splashing and rain, but also from showering, swimming in a pool and snorkeling. Be sure to rinse the watch with fresh water after exposure to a chlorinated pool, salt water, soaps, etc. After rinsing with fresh water, be sure to dry the exterior with a soft cloth.

### **"Water Resist 20BAR" or "W.R. 20BAR", Dial marked "WR200"**

This watch is designed to withstand water pressure up to 666 feet. This includes all exposure to water up to and including recreational SCUBA diving. Be sure to rinse the watch with fresh water after exposure to a chlorinated pool, salt water, soaps, etc. After rinsing with fresh water, be sure to dry the exterior with a soft cloth.

### **Special Note about Jacuzzis and Hot Tubs**

The various components used in the manufacture and assembly of your watch expand at various rates. This results in a loss of the sealing capabilities of gaskets, which may allow moisture to enter. In addition, heat from these sources can cause deformation of certain materials leading to mechanical failures. For these reasons, you should remove your watch before entering a hot tub or Jacuzzi.





## 21. Specifications

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Movement Caliber Number</b>                                                 | C660                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Accuracy</b>                                                                | Within +/- 15 seconds per month (when worn at normal temperatures of 5°C to 35°C / (41°F to 95°F))                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Operating temperature range</b>                                             | Watch operating temperature range : 0°C +55°C (32°F to 131°F)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Display Function</b><br><div> <div>↑</div> <div>↕</div> <div>↓</div> </div> | <b>Analog Display</b><br>Time: Second, minutes, hours, 24 hours, Function, Mode                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                | <b>Time</b><br>Seconds, minutes, hours, city name, daylight savings time                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                | <b>Calendar</b><br>Month, date, day, city name                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                | <b>Alarm 1</b><br>Hours, Minutes, City name, ON/OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                | <b>Alarm 2</b><br>Hours, Minutes, City name, ON/OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                | <b>Race Timer</b><br>Race timer remaining minutes, race timer remaining seconds, set minutes (race timer setting range 60-10 minutes with 5 minute intervals and 6,5,4,3,2,and 1 minute settings)                                                                                                                                                                                                                                                                                                              |
|                                                                                | <b>Chronograph</b><br>Chronograph hours, chronograph minutes, chronograph seconds, chronograph 1/100 seconds, SPL, 24 hour measurement                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                | <b>Timer</b><br>Timer remaining minutes, timer remaining seconds, set minutes (timer setting range: 99 minutes to 1 minute in 1 minute units)                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                | <b>Zone Setting</b><br>Display Setting (SET) and cancellation (OFF) for each city                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Additional Functions</b>                                                    | <ul style="list-style-type: none"> <li>• Switching between main time (analog) and sub-time (digital)</li> <li>• Hands Evacuation Function (moving the minute and hour hands to the 12:00 position)</li> <li>• Power save 1: Automatically stops second hand movement and liquid crystal display</li> <li>• Power Save 2: Automatically stops watch functions</li> <li>• Insufficient charging warning function</li> <li>• Time setting warning function</li> <li>• Overcharging prevention function</li> </ul> |
| <b>Continuous running times</b>                                                | <p>Fully charged to stopped: Roughly 4 years (when Power Save 2 function is operating)</p> <p>Two -second interval movement to stopped: Roughly 1.5 days</p>                                                                                                                                                                                                                                                                                                                                                   |
| <b>Battery</b>                                                                 | Eco Drive rechargeable Magnesium Titanium battery. Not user replaceable                                                                                                                                                                                                                                                                                                                                                                                                                                        |

