CITIZEN

Eco-Drive. A revolutionary watch.

Setting Instructions for Movement Caliber C650

Contents (click on a topic)

▶

1. FEATURES

This watch is a combination solar-powered watch that contains a solar cell in its face that drives the watch hands, alarm, chronograph, timer and numerous other functions by converting light energy into electrical energy.
It is also equipped with convenient functions including three power save modes that reduce power consumption when light is not shining on the solar cell, and a "charge indicator" that roughly indicates how much the secondary battery is charged.

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.
If the manual power save function has been activated, cancel it before charging. (Refer to p.19 for information on the procedure for canceling the manual Power-Save function.)

A 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). *Please note this is not a user replaceable item.*

[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 for optimum performance.

3. Specifications

| Movement Caliber Number			C650
Accuracy			Within +/- 15 seconds per month (when worn at normal temperatures of 5°C to 35 °C/(41°F to 95 °F)
Operating temperature range			Watch operating temperature range : 0°C +55°C (32°F to 131°F)
Display Function	**Digital Display**	Analog Display	Time: Second, minutes, hours, 24 hours, UTC minutes, UTC hours, mode
		Time	Seconds, minutes, hours, city name, daylight savings time, A/P
		Calendar	Month, date, day, city name
		Alarm 1	Hours, Minutes, A/P, city name, ON/OFF
		Alarm 2	Hours, Minutes, A/P, city name, ON/OFF
		Alarm 3	Hours, Minutes, A/P, city name, ON/OFF
		Chronograph	Chronograph hours, chronograph minutes, chronograph seconds, chronograph 1/100 seconds, SPL, 24 hour measurement
		Timer	Timer remaining minutes, timer remaining seconds, set minutes (timer setting range: 99 minutes to 1 minutes in 1 minute units
		Zone Setting	City name (SET/OFF), daylight savings time (ON/OFF), display setting and cancellation for each city, setting of ON/OFF for daylight savings time for each city.
Additional Functions			∉ Switching between main time (analog) and sub-time (digital) ∉ Power save 1: Automatically stops second hand movement and liquid crystal display ∉ Power Save 2: Automatically stops watch functions ∉ Manual Power Save: Enables watch functions to be stopped arbitrarily (forcibly) ∉ Power indicator: Approximate indication of Eco Drive Rechargeable battery charging level ∉ Insufficient charging warning function ∉ Time setting warning function ∉ Overcharging prevention function
Continuous running times			Fully charged to stopped: Roughly 4 years (when Power Save 2 function is operating) Two –second interval movement to stopped: Roughly 1.5 days
Battery			Eco Drive rechargeable Manganese Titanium battery. Not user replaceable
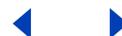
4. NAMES OF COMPONENTS AND MAJOR FUNCTIONS
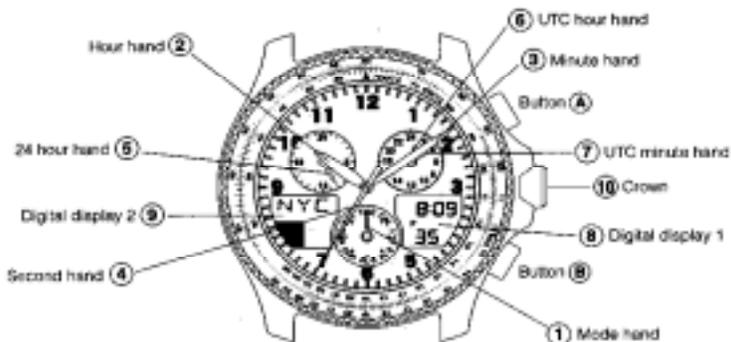
| Name /Mode	Time	Calendar	Alarm 1	Alarm 2	Alarm 3	Chronograph	Timer	Zone Setting
(1) Mode Hand	**TME**	**CAL**	**AL-1**	**AL-2**	**AL-3**	**CHR**	**TMR**	**SET**
(2) Hour Hand	**Always Indicates Hours**							
(3) Minute Hand	**Always Indicates Minutes**							
(4) Second Hand	**Always Indicates Seconds**							
(5) 24 Hour Hand	**Always indicates "24-Hour time" in conjunction with hour and minutes**							
(6) UTC hour hand	**Always indicates "UTC Hours"**							
(7) UTC minute hand	**Always indicates "UTC Minutes"**							
(8) Digital Display 1	**Hours, minutes, seconds, A/P, SMT(when set to daylight savings time**	**Month, date, day, SMT(when set to daylight savings time**	**Hours, minutes, A/P, alarm (ON/OFF)**			**Measured time (seconds, minutes, 1/100 seconds)**	**Remaining time display (minutes seconds)**	**City name (SET/OFF) SMT (ON/OFF)**
(9) Digital Display 2	**City Name**					**Measured time (hours)**	**Set time (minutes)**	**City Name**
	Charge indicator							
(10) Crown Normal Position	**Mode Switching**							
1ˢᵗ Click								**Changing the city**
2ⁿᵈ Click	**Time Correction**	**Date Correction**	**Alarm Correction**			**0-position adjustment**	**Set time correction**	**City name, time difference setting**
(A) Button A Normal Position	**Changing the city**					**Start Stop**		**Changing the city**
1ˢᵗ Click								**Switching City Name (set/off)**
2ⁿᵈ Click	**Switching Location to be corrected**							**Switching Location to be corrected**
(B) Button B						**Split, reset**	**Reset**	**Changing the city**
Normal Position	**Changing the city**							
1ˢᵗ Click			**Switching alarm (on/off)**					**Switching SMT (on/off)**
2ⁿᵈ Click	**Switching SMT (on/off) Switching between "seconds" correction and "24 hour time" correction**		**Switching alarm (on/off)**					
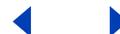
5. SWITCHING THE MODE (DISPLAY FUNCTIONS)

In addition to the time and date modes, this watch is also equipped with three additional modes consisting of the alarm, chronograph and timer modes. The mode can be switched by turning the crown. Check the current mode with the mode hand.

Mode hand

<Switching the Mode>

| TME Time | CAL Calendar | AL-1 Alarm 1 | AL-2 Alarm 2 |
| SET Zone Setting | TMR Timer | CHR Chronograph | AL-3 Alarm 3 |
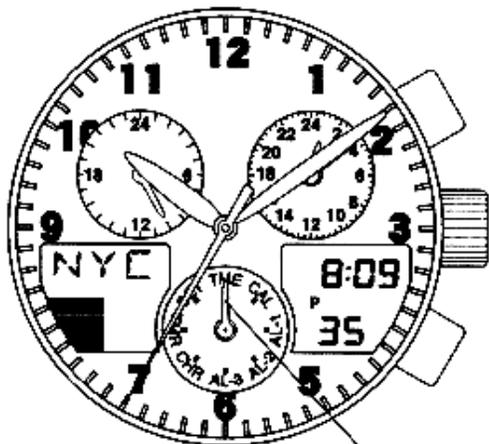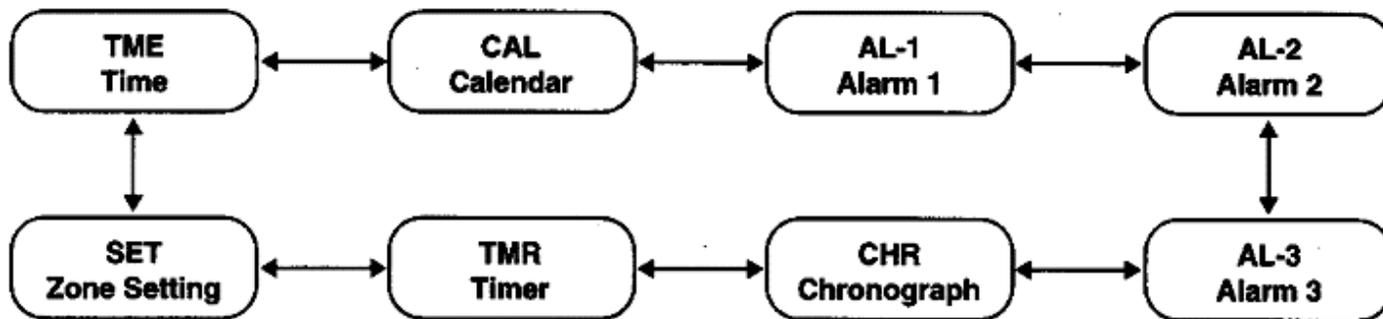
6. CHECKING O-POSITION OF EACH HAND

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.
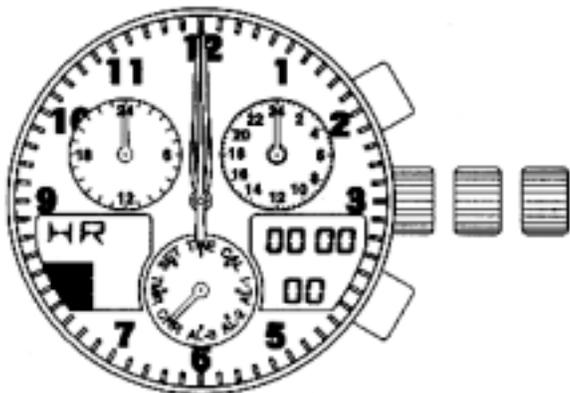
<O-Position Check>

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 second click (O-position correction position). The second hand, minute hand, hour hand, 24-hour hand, UTC hour hand and UTC minute hand 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.
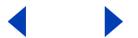
**O-Position Correction (Setting to the Watch Base Position)**
When setting the 0-position of each hand, always make sure to turn the crown forward (clock- wise) to set each hand to its 0-position in the clockwise direction.

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).
 ⊄# The second hand, minute hand, hour hand, 24-hour hand, UTC hour hand and UTC minute hand rapidly advance to the position stored in memory.
 ⊄# "HR" 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.

4. Pressing button (A) switches the correction location between "MIN" (minute hand) and "SEC" (second hand) each time 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 for- ward to ensure that the 0-position is set correctly.
 ⊄# The 24-hour hand is corrected in conjunction with the hour hand.

 ⊄# The UTC hour and minute hands are corrected in conjunction with the minute hand. • The second hand can only be corrected in the forward (clockwise) direction only. 6. After correcting, return the crown to the normal position.

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>

Crown pulled out to the second click

Hour hand/24 hour hand

Ⓐ

Minute hand/UTC hour hand, UTC minute hand

Ⓐ

Second hand

Ⓐ

Crown returned to normal position

<Normal Chronograph Display>
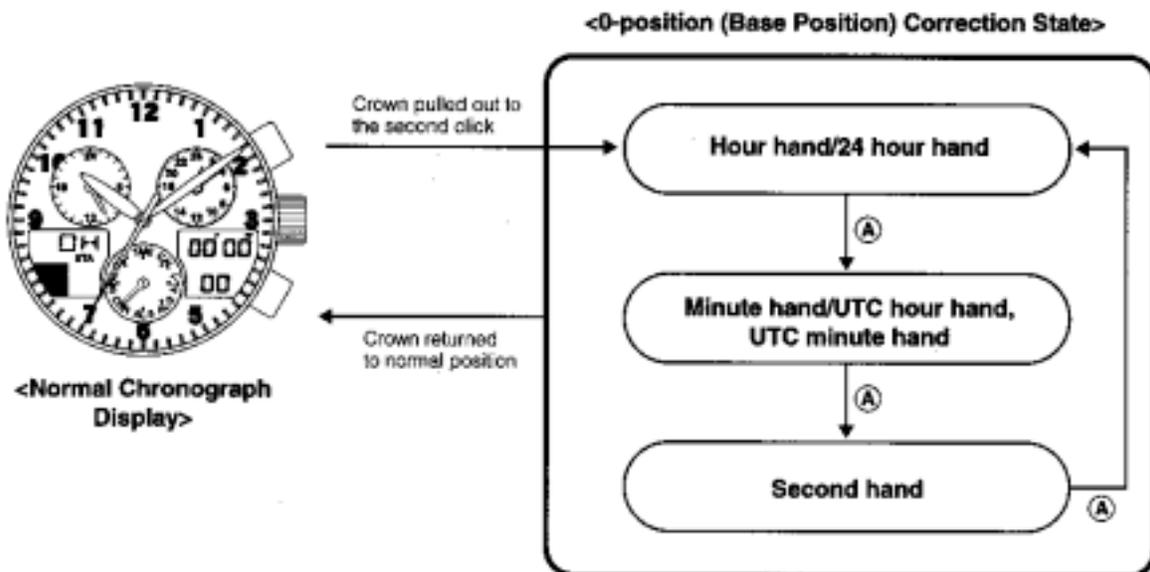
7. ACCESSING TIMES OR DATES OF MAJOR CITIES

The time of 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 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	Río de Janeiro	−3	O
PEK	Beijing	+8	X	BUE	Buenos Aires	−3	X

(left margin: 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.

8. 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).

Analog time: 10:10 AM (Tokyo: TYO)
Digital time: 8:10 PM (New York: NYC)

Analog time: 8:10 PM (New York: NYC)
Digital time: 10:10 AM (Tokyo: TYO)
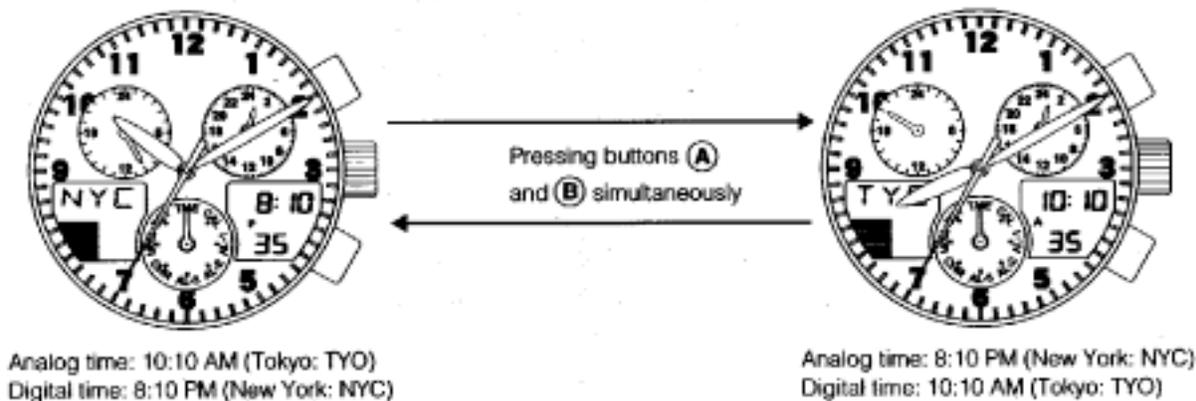
9. SETTING THE TIME (TIME IS CORRECTED BY DIGITAL DISPLAY)

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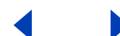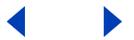
10. SETTING THE DATE (DATE IS CORRECTED BY DIGITAL DISPLAY)

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.

<Date correction state>

Crown pulled out to the second click

Crown Returned to normal position

<Normal Date Display>

Month

(A)

Date

(A)

Year

(A)
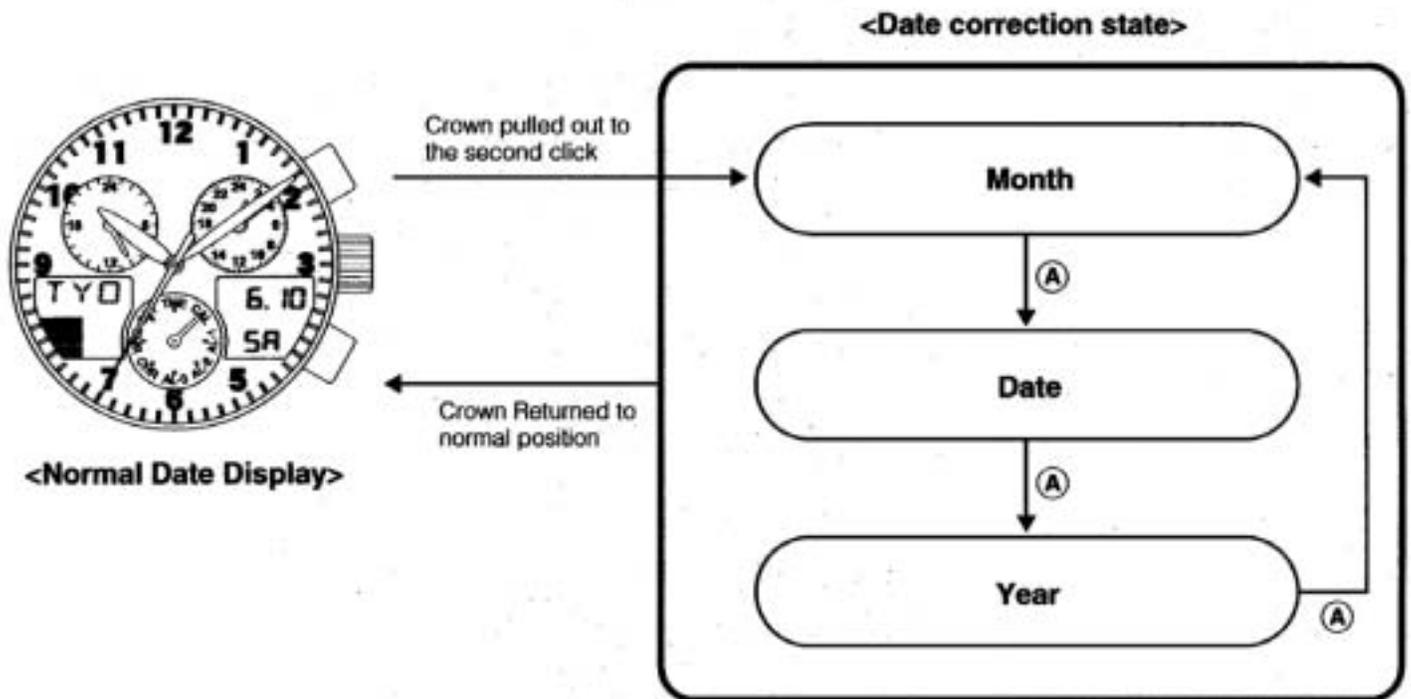
Notes:

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 lst day of the following month when the watch is returned to the normal display.

11. USING THE ALARM MODE

The alarm setting procedure and other procedures for alarm use are the same for Alarm 1, 2 and 3. 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).
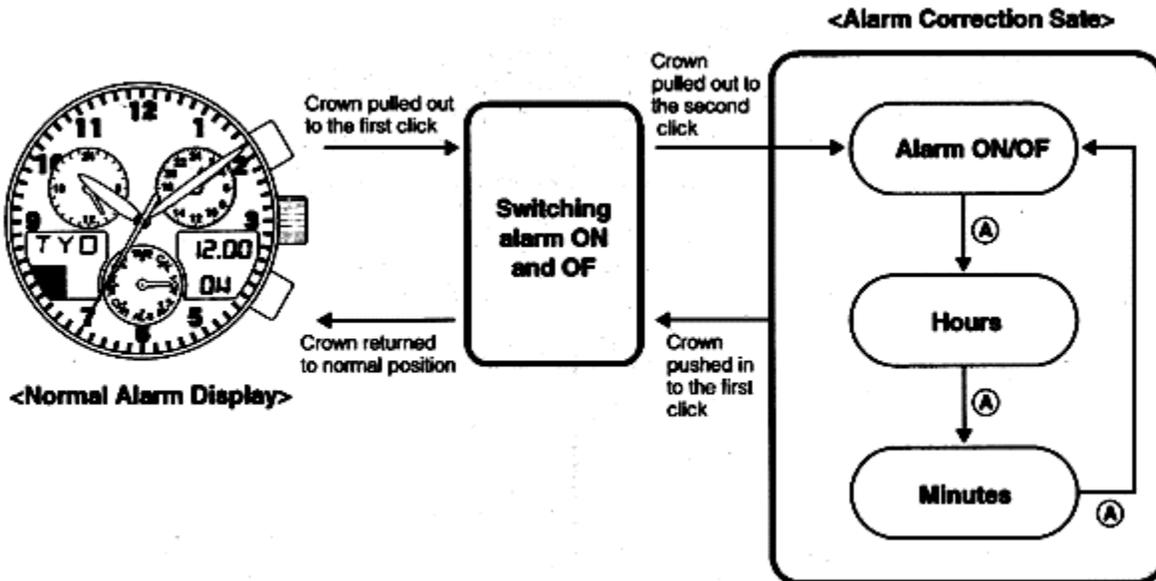
<Setting the Alarm Time>
1. Turn the crown and set the mode hand to either the Alarm 1, 2 or 3 [AL-1, 2 or 3] mode.

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.
⊯ The alarm can be set (ON) or canceled (OF) by pressing button (B) when the watch is in the alarm ON/OF correction state.
⊯ 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.
⊯ Turning the crown continuously allows corrections to be made rapidly.

5. After corrections have been completed, return the crown to the normal position.

Note:
1. 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>

The alarm can be switched ON and OF by pulling out the crown to the first click even when not in the alarm correction state.

1. Pull out the crown to the first click in the alarm mode to allow the alarm to be switched ON and OF.

2. Pressing button (B) switches the alarm ON and OF each time it is pressed.

3. Return the crown to the normal position after the alarm has been set to ON or OF.

<Alarm Monitor>

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

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.

2. Pressing button A repeatedly starts and stops the chronograph each time it is pressed.

3. Split time is displayed for 10 seconds when button (B) is pressed during chronograph measurement.

4. Pressing button (B) while the chronograph is stopped returns the chronograph to the chronograph-reset display.

The "SPL" mark flashes during split time display.
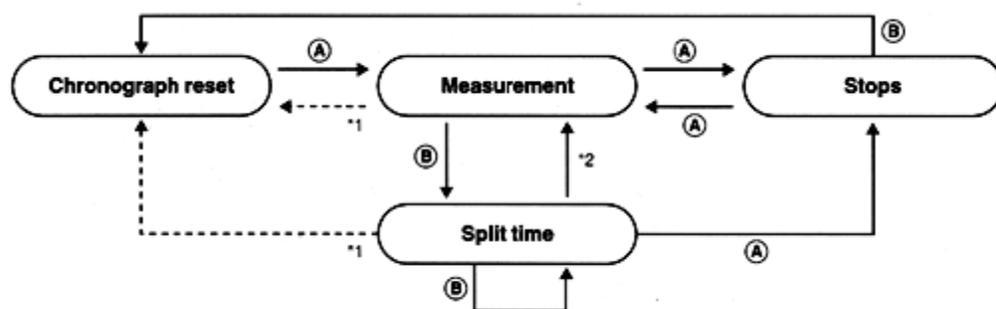
*1: Returns automatically after timing for 24 hours
*2: Returns automatically after 10 seconds

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.

3. When the crown is turned forward (clock- wise) in the "hours" or "minutes" correction state, 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.

<Using the Timer>

1. Press button (A) to start the timer.

2. Pressing button (A) again during measurement stops the timer.

3. Pressing button (B) during measurement returns the watch to be timer initial setting display and resumes measurement.

4. Pressing button (B) when the timer is stopped returns the watch to the timer initial setting display.
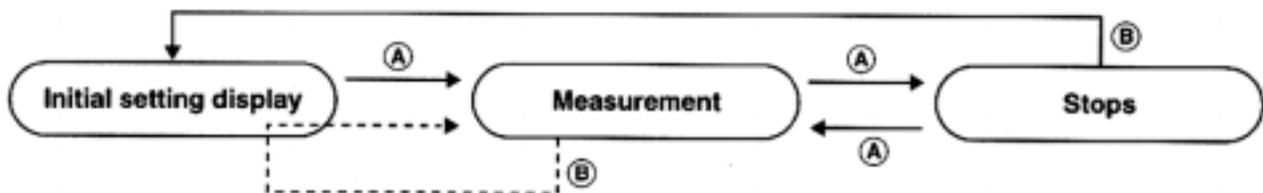
14. USING ZONE SETTING

The zone setting function enables only those cities for which "SET" has been selected to be easily accessed (displayed) in each mode. Daylight savings time can be also be set for each city. In addition, the user is also able to arbitrarily register one city and time difference.

<Using Zone Setting>
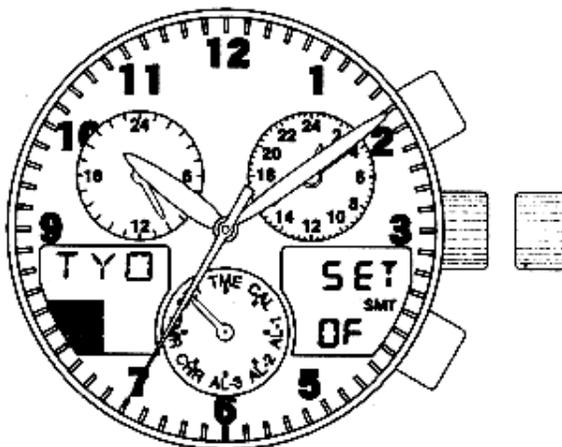
1. Turn the crown while in the normal position and set the mode hand to the mode setting [SET] mode.

2. The city can be changed by pulling out the crown to the first click (for changing cities between SET and OF 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 (A) to set the city and press button (B) to set daylight savings time.

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 OF are displayed each time the button is pressed.

⊄ Only those cities for which SET is displayed can be accessed from each mode.

<Registration of Arbitrary City and Time Difference>

1. Turn the crown while in the normal position and set the mode hand to the zone setting [SET] mode.

2. When the crown is pulled out to the second click (city setting position), the watch enters the correction state for the third letter of the city name.

3. Turning the crown displays those characters that are used for city names.
Turning the crown continuously causes the characters to advance rapidly.

4. The correction location changes each time button (A) is pressed.

5. When button (A) is pressed during the correction state of the first character of the city name, the watch enters the correction state for the time difference from UTC.
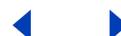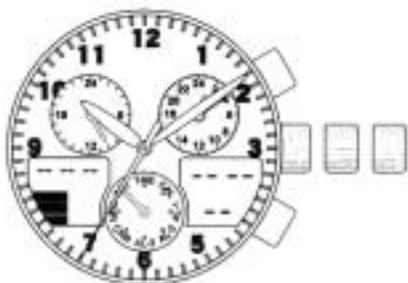
6. Turn the crown to display the time difference.

7. After setting, return the crown to the normal position.

<Characters and Symbols Used in City Names>
• Letters of the alphabet (A to Z)

• Numbers (0-9)

• Symbols (--: hyphens, M: blank spaces)

<Display Sequence>
When the crown is turned forward (clockwise), the display changes in the order of letters (A-Z), numbers (0-9) and then symbols (M: blank spaces, --: hyphens).
When the crown is turned backward (counter-clockwise), the display sequence is opposite that when turning the crown forward.

<Order in which Registered Cities and Displayed>
The location having the same time difference among the 30 cities pre-registered in this watch is displayed first. However, a city is not displayed if the time difference of a registered city has not been set.

<Canceling Registered Cities>
1. Turn the crown to set the mode hand to the zone setting [SET) mode.
2. When the crown is pulled out to the second click (city setting position), the watch enters the city name correction state.
3. Turn the crown to change the display of the registered city name to 4. After canceling registration, return the crown to the normal position.

15. 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>
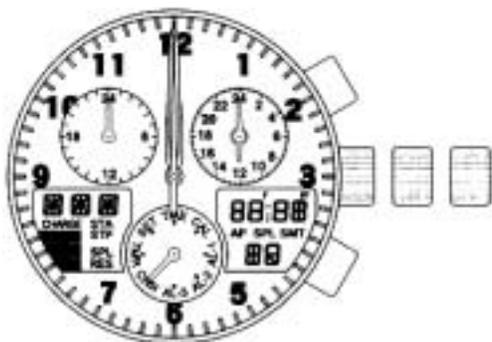
1. Turn the crown to set the mode hand to the chronograph [CHR] mode.

2. Pull out the crown to the second click (0- position correction mode).
   The second hand, minute hand, hour hand, 24 hour hand, UTC hour hand and
   UTC minute hand rapidly advances to the 0 position stored in memory.

3. Press buttons (A) and (B) simultaneously and then release. All segments of the digital display are shown when either of the buttons is released.

4. This fully lit display is canceled when the crown is returned to the normal position.
   - ⌗ After canceling, a confirmation tone is sounded after which each of the hands perform a demonstration movement in the order of the second hand, minute hand, UTC minute hand, UTC hour hand and 24 hour hand to indicate that the all-reset procedure is finished.

   - ⌗ After the demonstration movement, pull the crown out to the second click to switch the watch to the watch base position setting state.

Always make sure to set the 0 position (base position) for the hour hand, minute hand, second hand, 24-hour hand and UTC hour and minute hands while referring to "5. Checking 0- Position of Each Hand <O-Position Correction>".

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

16. FUNCTIONS UNIQUE TO SOLAR-POWERED WATCHES

Normal display

When power generation stops as a result of light not shining on the watch

Power Save 1

When Power Save 1 continues for 3 days

Power Save 2

When power generation resumes as a result of light shining on the watch

Can be set arbitrarily

Manual Power Save

When the watch becomes insufficiently charged

Insufficient Charging Warning Function
Analog display: Two-second interval movement
Digital display: CHARGE mark flashes

When the watch is charged

If the watch continues to be insufficiently charged

Stopped
Analog displays: Hands stop moving
Digital display: The entire display goes out

When the watch is exposed to light and the digital display begins to flash

Time Setting Warning Function
Analog display: Hands stopped at base position
Digital display: Display flashes in initial setting state (12:00:00, UTC or January 1 SA UTC)

When the watch is sufficiently charged and the time and date are set

When the time is set while charging is still insufficient

[Insufficient Charging Warning Function]

(Analog Display)

Two second interval movement

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.

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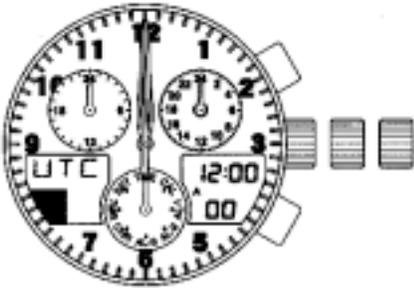
The watch stops when insufficient charging continues for about 1.5 days. When the watch is charged by exposing to light after having stopped due to insufficient charging, each hand is rapidly advanced to the base position and stops. Each hand remains stopped until the time is reset.

(Digital Display)

The initial setting display (12 hours, 00 minutes, 00 seconds, UTC or January 1 SA) 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.

⊄ It takes a minimum of 30 minutes until the watch switches to the time setting warning display after the watch has stopped due to insufficient charging even if the watch is exposed to light.

[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.

17. Power Save Features
[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 I 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.

Notes: 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 I 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 minute and second hands stop at the base position (12:00).
- Other hands stop moving at their current locations.

(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.
- The tone indicating that time is up does not sound in the timer mode.

<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.

[Manual Power Save]

When not using the watch for an extended period of time, activating the manual power save function after first charging the watch until all three bars of the graphic display of the secondary battery charge indicator are lit enables the watch to be stored for a longer period of time. Furthermore, do not charge the watch while the manual power save function is activated. First cancel the manual power save function before charging.

<Setting Manual Power Save>

The manual power save function is activated by setting the city name to "C65" and the time difference to "O" while following the procedure described in "<Registration of Arbitrary City and Time Difference>" in section 14 on Using Zone Setting, and then returning the crown to the normal position.

(Analog Display)
• Each hand stops moving at its current location.

(Digital Display)
• The entire digital display is not lit.

Notes:
• None of the button operations function in any mode.

• The mode does not change even when the mode hand is attempted to be moved by turning the crown.

<Canceling Manual Power Save>

Each hand rapidly advances to the current time and Manual Power Save is canceled when the crown is pulled out to the second click.

Return the crown to the normal position after canceling the manual power save function. -P Each hand rapidly advances to the current time and begins to move.
The digital display reappears simultaneous to resumption of power generation, and the alarm sounds for the set duration. However, the chronograph returns to the reset state and the timer switches to the initial setting display.

[Charge Indicator]

The charge indicator provides a simple graphic indication in digital display area 2 of the amount of charge remaining in the secondary battery.

<Interpretation of Secondary Battery Charge Levels>

Fully charged	Sufficiently charged	Low charge	Hardly any charge

When none of the bars of the graphic display are lit, the secondary battery has essentially become completely discharged and the second hand begins two-second interval movement. Since the watch will stop due to insufficient charging if this state continues for about 1.5 days, sufficiently charge the watch by exposing to light.

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.
Charging Time

Charge Rates from Indoor Light Source

Indoors, Office (500 lux)			Flouresecent 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	15 Hours	182 Hours	20 Minutes	3 Hours	29 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
6 Minutes	1.5 Hours	9 Hours	3 Minutes	50 Minutes	5 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 USE OF THIS WATCH

<Be sure 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 60OC/1400F) since this may result in dam- age 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.

20. Using the Register Ring

NOTE: The bezel design may vary depending on the model.

[Calculation function]

Note the following points when using this function. Use the calculation function of this watch only as a guide. These scales do not indicate the position of the decimal point.

Speed Index

Outer Scale (distance scale)

Inner Scale (time scale)
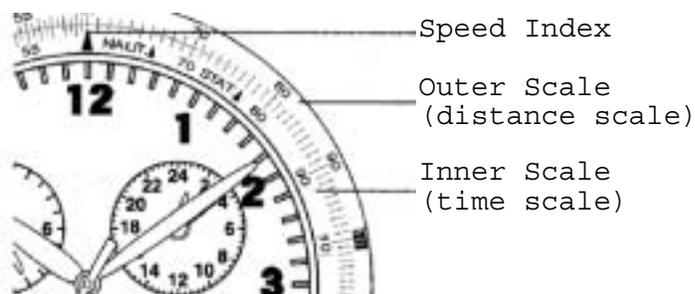
A. Navigational Calculation

1. **Time required**
   Example: Obtain the time required for the fight of an aircraft at 180 knots for 450 nautical miles.

   Answer. Align'18' on the outer scale with the SPEEDINDEX /\ on the inner scale. Then, "45" on the outer scale corresponds to "2:30" on the inner scale (time scale). Thus, the time required for the flight is 2 hours and 30 minutes.

2. **Knots (air speed)**
   Example: Obtain the knots (air speed) for 240 nautical miles with a flight time of 1 hour and 20 minutes.

   Answer. Align '24' on the outer scale with "1:20' on the inner scale (time scale). Then, the SPEED INDEX /\ on the inner scale corresponds to '18' on the outer scale. Thus, the air speed for the flight is 180 knots.

3. **Flight distance**
   Example: Obtain the air distance when the air speed is 210 knots and the flight time is 40 minutes.

   Answer. Align '21'on the outer scale with the SPEEDINDEX /\ on the inner scale. Then, "40" on the inner scale corresponds to "14" on the outer scale. Thus, the air distance of the flight is 140 nautical miles.

4. **Rate of fuel consumption**
   Example: Obtain the rate of fuel consumption (gallons / hour) when the flight time is 30 minutes and the fuel consumption is 120 gallons.

   Answer. Align "12" on the outer scale with "30" on the inner scale. Then, the SPEED INDEX /\ on the inner scale corresponds to "24" on the outer scale. Thus, the fuel consumption is 240 gallons per hour.

5. **Fuel consumption**
   Example: Obtain the fuel consumption required for a flight when the vats of fuel consumption is 250 gallons per hour and the flight time is 6 hours.

   Answer. Align "25" on the outer scale with the SPEED INDEX /\ on the inner scale. Then, "6:00" on the inner scale (time scale) corresponds to "15' on the outer scale. Thus, the fuel consumption is 1,500 gallons.

6. **Estimated flight time**
   Example: Obtain the estimated flight time when the vats of fuel consumption is 220 gallons per hour and the aircraft has 550 gallons of fuel.

   Answer. Align "22" on the outer scale with the SPEED INDEX /\on the inner scales. Then, '55' on the outer scale corresponds to '2:30' on this inner

scale (time scale), Thus, the estimated flight time is 2 hours and 30 minutes.

7. **Difference in altitude**
   The difference in altitude can be obtained from the rate of descent and the descent time.

   Example: Obtain the difference in altitude when an aircraft continues descending for 23 minutes at a rate of 250 feet per minute.

   Answer. Align"25"on the outer scale with "10" on the inner scale. Then,"23" on the inner scale corresponds to "57.5" on the outer scale. Thus, the difference in altitude is 5,750 feet.

8. **Rate of climb (or descent)**
   The rate of climb (or descent) ran be obtained from the time required to reach an altitude.

   Example: Obtain the rate of climb when an aircraft reaches an altitude of 7,500 feet after climbing for 16 minutes.

   Answer. Align "75" on the outer scale with "16" on the inner scale. Then,'10'on the inner scale corresponds to "47" on the outer scale. Thus, the rate of climb is 470 per minute.

9. **Time of climb (or descent)**
   The time required for climb can be obtained from the altitude to be reached and the rate of climb (or descent).

   Example: Obtain the time of climb when an aircraft is to climb to 6,300 feet at a rate of 550 feet per minute.

   Answer. Align "55" on the outer scale with '10' on the inner scale. Then, "63" on the outer scale corresponds to "11.5" on the inner scale. Thus, the time of climb is 11 minutes and 30 seconds.

10. **Conversion**
    Example: Convert 30 statuts miles into nautical miles and kilometers.
    Operation: Align '30' on the outer scale with STAT /\ on the inner scale. Then, NAUT /\ on the inner scale corresponds to "26" nautical miles on the outer scale, and "12 km" (s) on the inner scale corresponds to "48.2" km on the outer scale.

B. General Calculation Functions

1) **Multiplication**
   Example: 20 X 15
   Operation:
   Align "20" on the outer scale with "10' on the inner scale. Then, "15" on the inner scale corresponds to "30" on the outer scale. Take into account the position of the decimal point and add one zero to obtain 300. Note that with the scales of this watch, the position of the decimal point cannot be obtained.

2) **Division**
   Example: 250/20
   Operation:
   Align "25" on the outer scale with "20" on the inner scale. Then, '10', on the inner scale corresponds to "12.5" on the outer scale. Take into account the position of the decimal point to obtain 12.5.

3) **Proportion**
   Example: 30/20 = 60/x
   Operation:
   　Align "30" on the outer scale with '20' on the inner scale, Then, '60' on
   　the outer scale corresponds to '40' on the inner scale. At this point, the
   　proportion for every value on the inner and outer scales is 30:20.

4) **Square root**
   Example: Square root of 225
   Operation:
   　Turn the outer scale slowly and find a value that corresponds to both "22.5"
   　on the outer scale and "10" on the inner scale. In this example, "22.5" on
   　the outer scale corresponds to "15" on the inner scale, and "10" on the
   　inner scale corresponds to "15" on the outer scale. Thus, the answer is 15.

PRECAUTIONS ABOUT CARE AND HANDLING OF WATCHES

CITIZEN®

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

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.