## Before using the watch...

## Expose the watch to light

Your watch runs on electrical power generated from light and stored by a chargeable battery. Long-term storage of the watch can cause
the battery to run low, so be sure to expose the watch to light for some time before using it for the first time. See "Solar Charging" for more information.

## Low Battery Alert

When secondary battery power is low, the second hand of the watch will start to jump at 2 -second intervals to let you know that charging is required.

- See "Low
See "Low Battery Alert" for more information



## Power Saving

Power Saving causes the watch to enter a sleep state automatically
Power Saving causes the watch to enter a sleep state automatically
and stop movement of the analog hands in order to save power
whenever it is left in the dark. The watch will exit the sleep state if
you expose it to light or perform any button operation.
Note that the watch may also enter the sleep state and stop if it is
blocked from light by your sleeve.

## How the sleep state works

Sleep Level 1
The display sleep state is triggered whenever the watch is left in the
ark tor aboun one hour between the hours of 10 p.m. and 6 a.m.

- The hour and minute hands, and the date indicator continue to
operate normally.
Alarms and the hourly time signal continue to operate normally.
Sleep Level 2
Sleep Level 2 is triggered whenever the watch is left in the dark
while in Sleep Level 1 for six or seven days.
- The hour and minute hands, and the date indicator stop at their
current positions.
Alarms and the hourly time signal are disabled
Digital timekeeping functions continue to operate normally.

Modes and Indicators
You can use the button operations shown below to enter the Timekeeping Mode, World Time Mode, or Alarm Mode directly.
Chronograph Mode

The stopwatch performs $1 / 20$-second elapsed time The stopwatch performs $1 / 20$-second elapsed tim
measurement up to 23 hours, 59 minutes, 59.95 seconds (24 hours).

## Start/Stop

Press the (B) button to start and stop the
chronograph.
Chronograph Reset
To exit the Chronograph Mode, the chronograph must be reset by pressing the $\AA$ A button while the
chronograph is stopped. The chronograph is reset when the second hand, chronograph hands, and $1 / 20$ second hand are all at 12 o'clock.


## Solar Charging

Your watch runs on electrical power generated from light and stored by a chargeable battery. To ensure stable operation, make sure that the watch is exposed to light as much as possible.

- Whenever you are not wearing the watch on your wrist, position it so the face (solar cell) is pointed in the direction of a source of bright light.


Leave the watch under fluorescent lighting, near a window, etc.

- When wearing the watch, try to keep your sleeve from blocking its face, where the solar cell is located.


Charging efficiency is reduced significantly even if the face of the watch is covered only partially by your sleeve.

How the solar cell and battery work When exposed to light


Avoid charghy her Avse where the watch may become very hot.
On the dashboard of an automobile parked in the sun

- Very close to an incandescent light source or other sources of heat
a location exposed to direct sunlight for long periods after charging.

When not exposed to light


Your watch continues to operate even when it is not exposed to light eaving the watch in the dark can run down its battery and cause functions to become disabled.

## Charging Guide

- Required Charging Time for One Day of Operation

Based on six minutes of signal reception and 10 seconds of alarm


| Exposure Level (Brightness) | Charging Time |
| :---: | :---: |
| Outdoor Sunlight (50,000 lux) | 8 minutes |
| Sunlight through a Window ( 10,000 lux) | 30 minutes |
| Overcast Daylight through a Window (5,000 lux) | 48 minutes |
| Indoor Fluorescent Lighting (500 lux) | 8 hours |

- Approximate Charge Times Required to Advance to a Higher

| Exposure Level (Brightness) | Charging Time |  |
| :---: | :---: | :---: |
|  | Until Hand Movement Restarts | Until Full Charge |
| Outdoor Sunlight | 1 hours | 21 hours |
| Sunlight through a | 2 hours | 77 hours |
| Overcast Daylight through a Window (5,000 lux) | 4 hours | --- |
| Indoor Fluorescent Lighting (500 lux) | 35 hours | --- |

Even if the battery level drops to the point that timekeeping stops, you still will be able to recharge the battery and use the watch again.

- When you recharge the battery after it drops to a level where timekeeping stops, the hands will move automatically to the current time setting.

Note that the above charging times are for reference only. Actual charging time depends on a variety of environmental factors.

## How a Radio-controlled Watch Works

What is a radio-controlled watch? A radio-controlled watch is designed to receive a time calibration signal that contains standard time data and adjust its current time setting accordingly.


After the watch receives the Standard Time signal, it performs this, there may be an error of up to one second in the displayed time.

## Calibration Signal

- The Japanese calibration signal (Call Sign: JJY) is maintained by technology (NICT). It is transmitted 24 hours a day from Otakadoya transmitter ( 40 kHz ) located in Tamura-gun, Fukushima Prefecture, and from the Mt. Hagane transmitter ( 60 Hz ) located on the border between Saga Prefecture and Fukuoka Prefecture.
The U.S. calibration signal (Call Sign: WWVB) is transmitted by the National Institute of Standards and technology from Fort
Collins, Colorado.
Time calibration signal frequencies and transmitter locations are
subject to change. subject to change.

The time data of the Japanese calibration signal (Call Sign: JJY) is maintained by the Japan Standard Time Group of the National Institute of Information and Communications wave may be interrupted occasionally due to maintenance, lightning, etc. For more information, visit the website of the Japan Standard Time Group of the National Institute of information and Communications Technology (NICT) at the following URL
http://jij.nict.go.jp

- Note that the above URL is subject to change

Receiving the Calibration Signal There are two methods you can use in order to receive the time calibration signal

## Auto Receive

M to six times per day
Midnight, $1: 00,2: 00,3: 00, ~ 4: 00$, and $5: 00$ a.m.)
As soon as one auto receive is complete, all subsequent auto receives for that day are cancelled.

## Manual Receive

You initiate signal reception by pressing a button.
Hold down the © $A$ button for about two seconds.

- The indicator hand will indicate the result of the reception, the watch will beep, and the indicator hand will move to "READY"


To interrupt a receive operation

## Press any button.

## At the start of the receive

## operation

- The indicator hand will move to "READY"

The hour and minute hands will remain at their normal positions. - The second hand will stop at " 0 ".

## While reception is in progress

## The indicator hand will move to "WORK.

The hour and minute hands will remain at the normal positions progress.


## WORK

When reception is complete (Signaled when the watch beeps.) When the receive operalionis successful, the indicator hand hand returns to its second hand operation after about one or two minutes.
When the receive operation fails, the indicator hand moves to " N " and then the watch returns to the unadjusted time after about one or two minutes.

## Reception Ranges

This watch is designed to receive the standard time calibration signal of Japan (JJY) or of the United States (WWVB). The signal that is received depends on the current Home City setting.

- For information about selecting a Home City, see "Changing the Home City Setting". See the "World Time City Code List" for information about city codes.

| Home City (Supports signal reception) | Receivable Transmitter |
| :---: | :--- |
| TYO, HKG | Either the Mt. Otakadoya signal (40 kHz) or the Mt. Hagane signal ( 60 kHz ) |
| HNL, ANC, LAX, DEN, CHI, NYC | Ft.Collins |

- Signal reception is possible in Hong Kong (HKG), Honolulu (HNL), and Anchorage (ANC) when reception conditions are good.


[^0]
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## Location

 Reception is difificult and may even be impossible in the locationsdescribed below. Avoid such locations when performing signal reception.
You should think of your watch as operating like a radio or TV when it is receiving the calibration signal.
 Next to a household
appliance or office equipment (TV, speaker, fax, computer, cell phone, etc.)


## In a location where there is radio interference

construction site, airport, etc.)

If you are experiencing problems with reception, move away from the types of locations described above to a location with
better reception, and try again.

## Using the Chronograph

The chronograph performs $1 / 20$-second elapsed time measurement up to 23 hours, 59 minutes, 59.95 seconds ( 24 hours). When the maximum limit is reached, the elapsed time returns to zero automatically and timing continues from there

- In the Timekeeping Mode, press the (B) button once to enter he Chronograph Mode.


Second hand
counts seconds.

To return to the Timekeeping Mode, press the (A) button while the chronograph is reset to zero.

## Calibration Signal Reception

## Precautions

Auto receive is disabled while the watch is in the Chronograph
Operating any button while auto receive is in progress will cause
the watch to beep and then exit the receive operation.
Make sure you are within the range of a calibration signa transmitter before performing the receive operation. Remember time of day can make reception impossible even when you are within range of the transmitter.

- Proper reception may be impossible if there is something blocking the signal. If reception is unsuccessful, try again. e United States only. Note that you transmitted in Japan and djustments when using this watch outside of to make your own States, or in any area that is outcide the range of on of the States, or in any area that is outside the range of one of the
When the watch is unable to adjust its time using the calibration signal for some reason, timekeeping accuracy is within $\pm 20$ seconds per month.
Strong electrostatic charge can cause timekeeping erro
Receive is cancelled if an alarm operation starts while it is being
performed.
performed.
The watch's calendar shows dates up to the year 2099.
Attempting a receive operation after that causes an error


## Troubleshooting

1. The watch cannot receive the time calibration signal

- Is there something in the immediate area that may be interfering with reception?
Even if you are Even if you are within the reception range of a transmitter, objects with reception. Avoid sunsmitter or electrical noise can intertere "Location" for more information.
- Are you within the reception range of a transmitter? See "Reception Ranges" for information about areas where the Do you have the correct Hom Remember that auto receive is not performed unless (Tokyo), HKG (Hong Kong), NYC (New York), CHI (Chicago), (Honolulu) is selected as the Home City. Select the correct Home City code using the procedure under "Changing the Home City Setting".
Is the signal being transmitted?
Though the time data of the Japanese calibration signal (Call Sign: JJY) is maintained by the Japan Standard Time Group
the National Institute of Information and Commicalions the National Institute of Information and Communications
Technology (NICT), it sometimes may be interrupted for perio maintenance work, or because of lightning or other problems.

2. Time calibration signal reception is successful, but the hourly time signal and current time are slightly off
Ater the signal and current time are slightly off. internal decoding process before updating its time setting. Because of this, the time setting may be off slightly (within one second).
3. Time calibration signal reception is successful, but the current time setting is wrong. $\qquad$

- Is the correct city code selected for your Home City? Select the Suly code using the procedure under "Changing the Home City Setting".
$\square$ To start or stop an elapsed time operation
Enter the Chronograph Mode to use the chronograph.


1/20 second


1/20-second timing is performed for the first minute after you start or restart an elapsed time measurement operation. The $1 / 20-$ second hand also jumps to the elapsed time position when yo
stop an elapsed time measurement operation
operation is in progress resets the chronograph to zerem
Cumulative Time Measurement
Pressing the (B) button to restart the chronograph without resetting all zeros resumes elapsed time measurement from where it was ast stopped.

## Using World Time

World Time lets you display the current time in any one of 27 cities (29 time zones) around the world.

- Press the (®) button to enter the World Time Mode. If you are entering from the Chronograph Mode, the chronograph must be reset first. See "Chronograph Reset" for more information.


Time City Code Zon
(Hour, Minute)
Important!
If the current time shown of the selected city code is not correct,
check the current time setting of your Home Time and make
adjustments as necessary

- For information about configuring home time settings, see
"Changing the Home City Setting"
- Press the © button to return to the Timekeeping Mode.
- To search for a city

In the World Time Mode, press the © button to move the indicator hand (which is pointing at the currently
selected city code) clockwise.

- About one second after you release the © butir you ff the watch will move to the of the watch will move to the indicated city code.


Current time in the zone where the currently
selected city code is ocated (24-hour format, hour, minute)

## Home City beep indicator

If the city code that the indicator hand moves to when you press the
D button is your currently selected Home City, the watch will beep.

To check the current summer time on/ off setting
In the World Time Mode, press the © $\AA$ button.
-The second hand moves to " 0 when summer time is turned on, and to " 5 " (between " 4 " and " 6 ")
The summer time is turned of normal operation after about five seconds.


When summer time is turned on

- When you turn on summer time for a city code that supports time
calibration signal reception, the watch will decide automatically whether or not to apply the summer time or standard time setting in accordance with the received signal.
- In the case of a city code that does not support signal reception, turning on summer time advances the current time setting by one hour.
- City codes that support signal reception are TYO, HKG, HNL,
ANC, LAX DEN CHI and NYC

ANC, LAX DEN, CHI, and NYC.

- Signal reception is possible in Hong Kong (HKG), Honolulu (HNL), and Anchorage (ANC) when reception conditions ar good.
To select summer time manually for a city code that supports signal reception, turn off summer time for the city code and
then select a city code in the neighboring time zone that will advance the time by one hour.
- To turn summer time on or off

1. In the World Time Mode, use the (D) button to select the city code whose summer time setting you want to change.
2. Hold down the © button for about five seconds to toggle summer time on or off.

- You can turn summer time on or off individually for each World time city. Note, however, that you cannot change the summ
time setting for the "GMT" (Greenwich Mean Time) zone.


OFF
ON

Summer time, or Daylight Saving Time (DST) as is it is called in some countries, calls for setting clocks ahead one hour the use of summer time depends on the country and even the local area.

## Changing the Home City Setting

Use the World Time Mode to specify your Home City.
Example: To change the Home City setting from New York (NYC) to Tokyo (TYO)
1.

2. Hold down the © button as you press the (©
button to swap your current Home City with the World Time City you
selected in step 1 .
The watch will beep and make
The watch will beep and make
the currently selected World The currently selected World City.

- Your previous Home City will become your new World Time City, and the indicator hand
will move to its city code.
will move to its city code.


## mportant!

If you are using the watch in Japan, be sure to select TYO (Tokyo)
as your Home City. Selecting another c time calibration signal, which will cause your time setting to be off

## World Time City Code List

| City <br> Code | GMT <br> Differ- <br> ential | City Name | City <br> Code | GMT <br> Differ- <br> ential | City Name |
| :---: | :---: | :---: | :---: | :---: | :---: |
| GMT | +0.0 | Greenwich Mean Time | ADL | +9.5 | Adelaide |
| LON | +0.0 | London | SYD | +10.0 | Sydney |
| PAR | +1.0 | Paris | NOU | +11.0 | Noumea |
| ATH | +2.0 | Athens | WLG | +12.0 | Wellington |
| JED | +3.0 | Jeddah | PPG | -11.0 | Pago Pago |
| THR | +3.5 | Teheran | HNL | -10.0 | Honolulu |
| DXB | +4.0 | Dubai | ANC | -9.0 | Anchorage |
| KBL | +4.5 | Kabul | LAX | -8.0 | Los Angeles |
| KHI | +5.0 | Karachi | DEN | -7.0 | Denver |
| DEL | +5.5 | Delhi | CHI | -6.0 | Chicago |
| DAC | +6.0 | Dhaka | NYC | -5.0 | New York |
| RGN | +6.5 | Yangon | *CCS | -4.0 | Caracas |
| BKK | +7.0 | Bangkok | RIO | -3.0 | Rio de Janeiro |
| HKG | +8.0 | Hong Kong | -2.0 |  |  |
| TYO | +9.0 | Tokyo | -1.0 |  |  |

- Based on data as of June 2007
- The rules governing global times (GMT differential and UTC offset) and summer time are determined by each individual country.
- In December 2007, Venezuela changed its offset from -4.0 to
-4.5. Note, however, that this watch displays an offset of -4.0 (the old offset) for the CCS (Caracas, Venezuela) city code.


## Using the Alarms

The watch beeps for 10 seconds when the Timekeeping Mode time reaches the currently set alarm time.
The alarm will sound when the current time in your Home City
matches the alarm time.

- Press the © button to enter the Alarm Mode.

If you are entering from the Chronograph Mode, the chronograph must be reset

Alarm Mode
ON or OFF


Alarm Setting
(24-hour Format)

- To return to the Timekeeping Mode from the Alarm Mode, Timekeeping Mode while in the alarm setting mode.

To turn the alarm on or of

$$
\begin{aligned}
& \text { In the Alarm Mode, press the © button to toggle the alarm on } \\
& \text { and off. }
\end{aligned}
$$

When the alarm is turned on, a beeper sounds when the alarm time is reached.


## To stop the alarm

Pressing any button while the alarm is sounding stops it
$\square$ To set the alarm time
Example: To change the alarm setting from midnight to 3.00 pm

1. In the Alarm Mode, hold down the (A) button for about five seconds until he indicator hand moves
o "ON" and the second hand moves to zero.

- This indicates the setting mode


2. Use the (D) ( + ) and (B) ( - ) buttons to change the alarm setting in oneminute increments.

- Each press of either button changes
minute.
- Holding down either button will cause the hands to move at high speed. Once started,
high-speed hand movement high-speed hand movement release the button. To stop high-speed hand movement, press any button.
The alarm time uses 24 -hour timekeeping forma

When everything is the Way you want, press the setting mode.

- This will exit the alarm setting mode and the second hand will resume normal operation.
- The watch will exit the alarm setting mode automatically if
you do not perform any button operation for about two or three minutes.


## Setting the Time and Date Manually

You can perform the following procedures to adjust the time
and date when the watch is unable to receive a time calibration signal for some reason.
1.


Keep (A) button depressed until the indicator hands stops at 12 o'clock.
The second hand also wil
move to "0" at this time.
2. Use the (®) ( + ) and (B) (-) buttons to change the hour and minute setting.

- Each press of either button changes the setting by one minute.
- Holding down either button will cause the hands to move at high speed. Once started, will continue even if you
release the button. To stop
high-speed hand movement,
press any button.
- When setting the time, make sure you also watch the 24 -hour hand so the time is set properly ( $1: 00 \mathrm{a} . \mathrm{m} .=1$ o'clock, $1: 00$ p.m. $=13$ o'clock).

3. Use the © button to change the day setting.

- Each press of the © button advances the day by one.

4. 

$$
\begin{aligned}
& \text { When everything is the } \\
& \text { way you want, press the } \\
& \text { ® button to exit the } \\
& \text { setting mode. }
\end{aligned}
$$

- The second hand will resume normal operation.
- Pressing (A) to restart
timekeeping on a time signal on the TV or radio ensures precise setting.
- The watch will exit the setting mode automatically if you
not perform any button operation for about two or three minutes.

When you are using the watch in an area that supports time calibration signal reception, it will adjust the date automatically for month lengths and leap years. If you use it in an area that does not support signal reception, you will have to mak adjustments for month lengths and leap year manually.

## Home Position Adjustment

If the time setting of your watch is not correct even though time calibration signal reception is being performed normally, use the procedure in this section to check the home positions of the hands and make adjustments as required. Note that you do not need to procedure in this section to check the home positions of the hands and m
perform the following operation if your watch is showing the correct time.

3. Press the © button.

- This will cause the hour hand, minute hand, and 24-hour hand to move to their home positions.
 Minute Hand:
24-hour Hand: 24:00
- If the hour, minute, and 24 -hour hands are all at their proper home positions, advance to step 5 .


If the chronograph hour and minute hands If the chronograph hour and minute han
are not at their proper home positions


- Holding down either button will cause the hands to move at high speed. Once started, high-speed hand movement will continue even if you release the button. To stop high-speed hand movement, press any button. minute hands, so separate adjustment is not required.
m

9. $\begin{aligned} & \text { Press the } \AA \text { ® button to exit } \\ & \text { home position adjustment } \\ & \text { and return to the }\end{aligned}$ and return to the
Timekeeping Mode.

- If you press the © button If you press the © button
instead of the $\mathbb{A}$ button in step 1, the watch will return to step 1 (indicator hand and second hand home position
adjustment of thi adjustment) of this procedure
- The watch also will exit hom
position adjustment automatically if you do no perform any operation for about two or three minutes.

After completing the home position adjustment procedure, put the watch in a location where it is able to receive the time calibration signal easily and perform a manual receive operation.

- For details about the manual receive procedure, see "Receiving the Calibration Signal".


Day

- If the Day is at its proper home position, advance to step 9 .

- Holding down either button will cause the day to change at high speed. Once started, high-speed day change will continue even if you release the button. To stop high-speed day change, press any button.
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Golf course search by state
http://golfingnear.com
Email search by domain
http://emailbydomain.com
Auto manuals search
http://auto.somanuals.com
TV manuals search
http://tv.somanuals.com


[^0]:    Certain conditions can make reception impossible even when the watch is within one of the reception ranges shown above.
    signals become weaker outside of the smaller circles indicated by dashed lines, so the reception environment has a greater effect on signa ception.

    - The following also can affect signal reception: geographic contours, structures, weather, climate, time of day (afternoon, evening), noise.

