

## Modes and Hand Movement

Each press of the **(B)** button sounds a confirmation tone and cycles through available modes in the sequence shown below.

- The watch will revert to the Timekeeping Mode automatically if you leave it in any other mode without performing any operation for about two or three minutes.

### Timekeeping Mode

**If the time setting is not correct...**

Normally, you should never need to adjust the time setting of the watch as long as it is able to receive a time calibration signal. If signal reception is impossible for some reason, use the procedures under "Adjusting the Home Positions" to check the home positions of the hands, and make adjustments as required.

### Receive Result Mode

Use this mode to check if signal reception is being performed normally. The second hand will move to either "GET" or "NG".

### Alarm Mode

Use this mode to set the alarm time and to turn the alarm on or off. The second hand will move to either "ON" or "OFF".

### Home Position Adjustment Mode

Use this mode to adjust the home positions of the analog hands. The home positions of the hands are correct when they point to 12 o'clock.

## Power Supply

To ensure stable operation, be sure to allow the watch to be exposed to light as much as possible.

The power supply of this watch uses a solar cell to generate electrical power, which is stored by a rechargeable battery. Using or storing the watch where it is not regularly exposed to light, or allowing it to be blocked from light by your sleeve for long periods as you are wearing it can cause the power of the rechargeable battery to run down.

- A low battery can cause timekeeping to stop, and can also cause time and alarm settings to be lost.
- Face illumination or alarm operation can cause hand movement to stop due to the sudden temporary drop in battery power. This does not indicate malfunction, and normal operation will resume when the watch is exposed to light. Though hand movement stops, timekeeping continues internally, and the hands will be adjusted to the correct setting when normal operation returns.

### ■ Checking the Battery Level

Low battery power is indicated when the the second hand starts to jump at two-second intervals.

**Important!**

The following operations are disabled during 2-second hand movement.

- Auto and manual calibration signal reception
- Face illumination
- Alarm

If 2-second hand movement is being performed when the current time reaches midnight, the date indicator will change to the home position indicator (◀). If battery power drops to the next lower level, and the hands will stop at 12 o'clock.

- Even after the battery drops to the level that timekeeping becomes disabled, you will be able to resume normal operation by charging the battery.
- After timekeeping becomes disabled, the hands will move to the current time after the battery is recharged sufficiently.
- Keep the watch exposed to light until normal operation returns.

### ■ Charging Precautions

Avoid charging the watch in the following locations, and anywhere else 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
- In a location exposed to direct sunlight for long periods



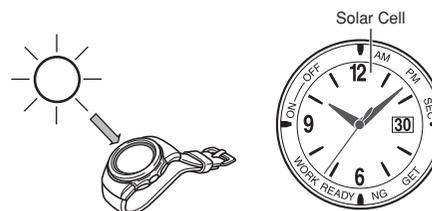
Depending on the light source you are using, the case of the watch may become quite hot during charging. Take care to guard against burn injury after charging.

### ■ To charge the battery

Point the solar cell (face) of the watch at a light source to charge the battery.

- Remember that even a partial blockage of the solar cell reduces charging efficiency.

Example: Positioning the watch



- The illustration shows the resin band model.

### ■ Charging Guide

Starting from a full charge, the watch should be able to continue operating for about four months without further charging under the conditions described below.

- Daily Use
- Illumination: 1.5 second
  - Alarm: 10 seconds
  - Signal reception: 1

Making sure the watch is regularly exposed to light ensures stable operation.

### Required Daily Charging Time

The following is the daily amount of charging required each day to support the operations under "Daily Use".

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	6 minutes
Sunlight Through a Window (10,000 lux)	30 minutes
Daylight Through a Window on an Overcast Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- Charge Times Required to Advance to a Higher Level

Exposure Level (Brightness)	Approximate Exposure Time	
	Timekeeping Restored	Full Charge
Outdoor Sunlight (50,000 lux)	1 hour	12 hours
Sunlight Through a Window (10,000 lux)	2 hours	61 hours
Daylight Through a Window on an Overcast Day (5,000 lux)	3 hours	---
Indoor Fluorescent Lighting (500 lux)	30 hours	---

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

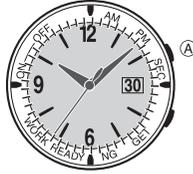
## Face Illumination

An LED light is used to illuminate the face of the watch for easy reading in the dark. An auto light switch automatically illuminates the face when you angle the watch towards your eyes for reading.

### To illuminate the face manually

In the Timekeeping Mode, press the **(A)** button.

- This illuminates the face for about 1.5 seconds.



- Pressing the **(A)** button illuminates the display regardless of whether the auto light switch is on or off.

You may hear a faint rattling sound when you move the watch around. This sound is caused by the movement of a metal bulb that controls operation of the auto light switch, and does not indicate malfunction.

### To illuminate the face with the auto light switch

The auto light switch automatically illuminates the face whenever you angle the watch towards your eyes for reading, but only when it is dark.

- The auto light switch does not illuminate the face when surrounding light is bright.

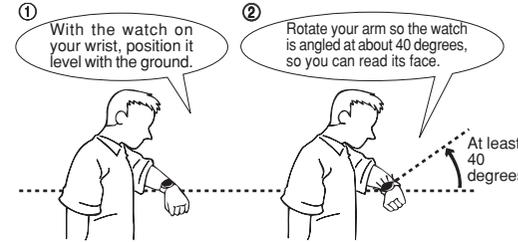
The auto light switch will illuminate the face for about 1.5 seconds in any mode.

### To turn the auto light switch on and off

In the Receive Result Mode, hold down the **(A)** button for about three seconds to toggle the auto light switch on and off.



## Positioning Your Arm Correctly



- You should be wearing the watch on the **outside of your wrist** when using the auto light switch.
- Make sure that the left (9 o'clock) and right (3 o'clock) sides of the watch are within  $\pm 15$  degrees of being parallel with the ground. The auto light switch may not operate properly if the angle is greater.



### Important!

- The light may be difficult to see if you turn it on under bright sunlight.
- If you press the **(B)** button or if an alarm operation starts while the face is illuminated, illumination will turn off.

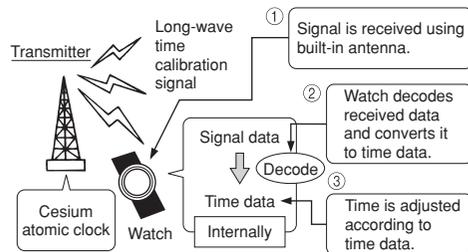
### Auto Light Precautions

- Frequent use of the auto light can run down the battery.
- The auto light switch may cause the face to illuminate when your sleeve covers the face of the watch.
- The face may not illuminate immediately when you angle the watch towards your face. This does not indicate malfunction.
- The face remains illuminated for 1.5 seconds only, even if you leave the watch angled towards your face.
- The auto light switch is disabled automatically during 2-second hand movement.
- The face may illuminate unintentionally when you wear the watch on the inside of your wrist, when you shake your arm, or when you raise your arm. **Be sure to turn off the auto light switch whenever you do not need face illumination.**
- Keep the auto light switch turned off whenever you are wearing the watch on the inside of your wrist.
- Electro-static charge and magnetism can interfere with auto light operation and even make operation impossible. If this happens lower your arm to the starting position and then raise it again. If you still have trouble with illumination, try lowering your arm down to your side and then raise it to your face for reading.

## How a Radio-controlled Watch Works

### What is a radio-controlled watch?

Your 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 internal calculations to determine the current time. Because of this, there may be an error of up to one second in the displayed time.

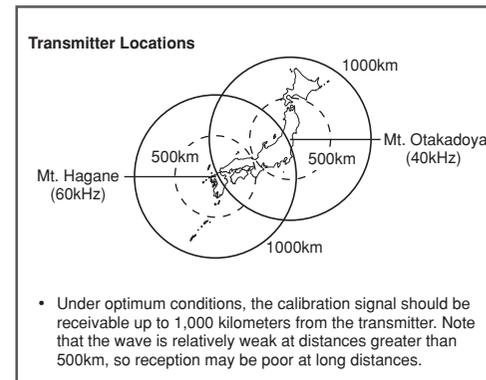
### Calibration Signal

- The Japanese calibration signal (Call Sign: JJY) is maintained by the National Institute of Information and Communications Technology (NICT). It is a long wave signal transmitted 24 hours a day from the Mt. Otakadoya transmitter (40kHz) located in Tamura-gun, Fukushima Prefecture, and from the Mt. Hagane transmitter (60kHz) located on the border between Saga Prefecture and Fukuoka Prefecture.

Note that transmission of the time calibration signal may be interrupted occasionally due to maintenance, lightning, etc.

## Reception Range

This watch is designed to receive either the Mt. Otakadoya signal (40kHz) or the Mt. Hagane signal (60kHz), whichever is strongest.



- Geographic contours, nearby buildings, seasonal conditions, the time of day, can even make reception impossible even when you are within the range of the transmitter.
- Reception is best at night.

## Location

Reception is difficult and may even be impossible in the locations described below. Avoid such locations when performing signal reception.

- You should think of your watch operating like a radio or TV when it is receiving the calibration signal.



Among or near buildings



Near high-voltage lines



Inside a vehicle (automobile, train, plane, etc.)



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.)



Near mountains

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.

## Receiving the Calibration Signal

There are two methods you can use to receive the time calibration signal.

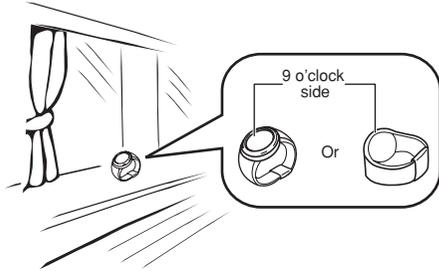
**Auto receive** (Reception is performed automatically at midnight, 1:00, 2:00, 3:00, 4:00 and 5:00 each morning.)

**Manual receive** (You initiate reception using a button operation.)

- When any auto receive is successful, further auto receive operations for that day are not performed.
- Successful auto receive keeps timekeeping accurate.

### ■ To position the watch for optimum reception

Remove the watch from your wrist and place it somewhere so its right side (9 o'clock side, where the antenna is located) is facing a window.



- Do not move the watch while it is receiving the calibration signal.

### ■ Time Required for Reception

A calibration signal receive operation takes anywhere from about two to seven minutes.

### ■ To perform manual receive

In the Timekeeping Mode, hold down the **(B)** button for about two seconds.

- The watch will beep, and signal reception will start.



### ■ To interrupt reception

Press any button.

### ■ When reception starts

The second hand moves to READY.

- The hour and minute hands continue to keep time normally.

### ■ During reception

The second hand moves to WORK.

- The hour and minute hands continue to keep time normally.
- Do not move the watch until calibration signal reception is complete.

### ■ After reception is complete

- If reception is successful, the second hand will move to GET. One or two minutes later, the hands will move to the correct time.
- If reception is not successful, the second hand will move to NG (No Good). One or two minutes later, the second hand will resume normal operation, without any adjustment of the hand setting.

### ■ To check the result of the last signal receive operation

In the Timekeeping Mode, press the **(B)** button. This enters the Receive Result Mode.

- If the watch was able to perform a successful signal receive operation since midnight, the second hand will move to GET. If the watch has been unable to receive any signal successfully, the second hand will move to NG.
- To return to the Timekeeping Mode, press the **(B)** button three times.
- The watch will also return to the Timekeeping Mode if you do not perform any operation for about two or three minutes.



The current receive result is cleared each day at midnight. This means GET indicates successful signal reception since the start of the current day.

- GET continues to be indicated even if an attempt at manual receive fails after auto receive is successful.

## Calibration Signal Reception Precautions

- Auto reception can be performed while the watch is in the Timekeeping Mode only.
- If the hands become misaligned for some reason, they may not indicate the correct time, even if the time calibration signal is received normally. If this happens, use the procedure under "Adjusting the Home Positions" to adjust the home positions of the hands and the date.
- Pressing any button while auto reception is in progress will cause the watch to beep and signal reception to stop.
- Make sure you are within the range of the calibration signal transmitter before performing the reception operation. Remember that geographic contours, nearby buildings, seasonal conditions, the time of day, can even 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.
- This watch is designed to adjust its current time setting in accordance with the calibration signal transmitted in Japan only. It operates like a standard (non-radio controlled) watch outside of the range of the receivable time calibration signal transmitters.
- When the watch is unable to receive the time calibration signal for some reason, timekeeping accuracy is within  $\pm 20$  seconds per month.
- Strong electrostatic charge can cause timekeeping error.
- Signal reception is cancelled if the alarm starts to sound while it is being performed.
- The watch's calendar shows dates up to the year 2099. Attempting a receive operation after that causes an error.

## Using the Alarm

You can set an alarm time in 1-minute units. The watch beeps for 10 seconds when the alarm time is reached.

### ■ To set an alarm time

1. In the Timekeeping Mode, press the **(B)** button twice to enter the Alarm Mode.

- The second hand will move to either "ON" (alarm on) or "OFF" (alarm off).



3. Set the alarm time you want.

- If you want to set the alarm time by moving the hands clockwise, go to step 3-a.
- If you want to set the alarm time by moving the hands counterclockwise, go to step 3-b.

When setting the alarm time, take care to set AM and PM correctly.

- The second hand will move between AM and PM any time the hour hand moves past 12 o'clock while you are setting the alarm time.

3-a To set the alarm time by moving the hands clockwise

Press the **(B)** button.

- Each press of the **(B)** button moves the setting clockwise by one minute.
- Holding down the **(B)** button for about two seconds moves the hands clockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.
- After the alarm time setting is the way you want, press the **(A)** button to advance to step 4.



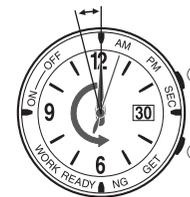
3-b To set the alarm time by moving the hands counterclockwise

Press the **(A)** button.

- This will cause the minute hand to move counterclockwise about one or two minutes, and then stop around 12 o'clock.

Press the **(B)** button.

- Each press of the **(B)** button moves the setting counterclockwise by one minute.
- Holding down the **(B)** button for about two seconds moves the hands counterclockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.



4. When the setting is the way you want, press the **(A)** button.

- This will cause the hour and minute hands to move to the current time, and the second hand to move to "ON" (alarm on).
- Setting the alarm time causes the alarm to turn on automatically.



5. Press the **(B)** button twice to return to the Timekeeping Mode.

- This causes the second hand to move to the seconds count of the current time and resume normal movement.

- If you do not perform any button operation for about two or three minutes, the watch will exit the setting mode and resume normal hand movement.

### ■ To turn the alarm on or off

In the Alarm Mode, press the **(A)** button to toggle the alarm on and off.



### ■ To stop the alarm beeper

Pressing any button while the beeper is sounding stops it.

## Adjusting the Home Positions

Use the following procedure to adjust the home positions of the hands and the date when the time setting is wrong, even after the time calibration signal is received normally.

- In the Timekeeping Mode, press the (B) button three times to enter the Home Position Adjustment Mode.**



- To adjust the second hand home position, hold down the (A) button until the second hand performs a full rotation and stops (about five seconds).**



- The analog hands do not move during home position adjustment.

- Check the position of the second hand.**

- If the second hand is not pointing at 12 o'clock, it means that its home position is off.



If the second hand is pointing at 12 o'clock, advance to step 5.

- Press the (B) button to move the second hand clockwise, until it points at 12 o'clock.**

- Each press of the (B) button advances the second hand by one second.
- Holding down the (B) button for about two seconds advances the second hand at high speed. High-speed movement of the second hand will continue until it completes a full revolution, or until you press any button to stop it.

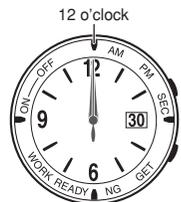
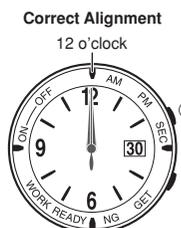


- Press the (A) button to advance to hour and minute hand home position adjustment.**

- If current hour and minute hand alignment is correct, they will both move to 12 o'clock.

- Check the position of the hour and minute hands.**

- If the hour and minute hands are not pointing at 12 o'clock, it means that their home position is off.

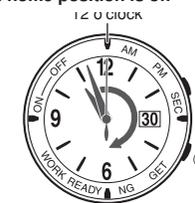


If the hour and minute hands are pointing at 12 o'clock and you want to set the hands by moving them counterclockwise, advance to step 8.

- Adjust the hour and minute hand home position.**

Use the following steps to move the hands clockwise.

- Press the (B) button to align the hour and minute hands with 12 o'clock.
- Each press of the (B) button moves the hand setting 10 seconds.
- Holding down the (B) button for about two seconds moves the hands at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.
- Move the hands at high speed until just before the setting you want. Stop high-speed movement, and then press the (B) button to move in 10-second increments to move the hands to 12 o'clock.



- To move the hands counterclockwise, press the (A) button.**

- This will cause the minute hand to move counterclockwise about one or two minutes, and then stop around 12 o'clock.

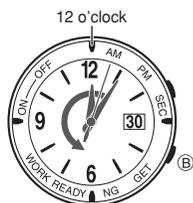


If the hour and minute hands are pointing at 12 o'clock, advance to step 10.

If the hour and minute hand home position is off

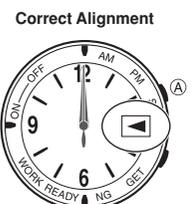
- Use the following steps to move the hands counterclockwise.**

- Press the (B) button to align the hour and minute hands with 12 o'clock.
- Each press of the (B) button moves the hand setting 10 seconds.
- Holding down the (B) button for about two seconds moves the hands at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.
- Move the hands at high speed until just before the setting you want. Stop high-speed movement, and then press the (B) button to move in 10-second increments to move the hands to 12 o'clock.



- Press the (A) button to advance to date home position adjustment.**

- The date indicator will show ◀ if the date home position is correct. Note that it can take up to 90 seconds before ◀ appears.



- Check the date indicator.**

- If the date indicator shows something other than ◀, it means that the date home position is off.

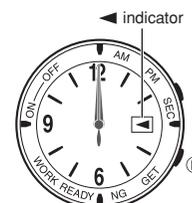


If ◀ appears for the date, advance to step 13.

If ◀ does not appear for the date

- Perform the following steps to adjust the date home position.**

- Hold down the (B) button for about two seconds to start automatic high-speed scrolling of the date. The ◀ is located between 31 and 1. When the date gets close to 31, press the (B) button again to stop the scrolling. Press the (B) button to advance the date until ◀ appears.



- Press the (A) button to exit home position adjustment.**

- This causes the date to change to the current date, and the hour and minute hands to move to the current time.
- Note that all button operations are disabled while the date is changing, and the hour and minute hands are moving.



- Press the (B) button to return to the Timekeeping Mode.**

- This causes the second hand to move to the seconds count of the current time, where it starts normal movement.

The watch will return to the Timekeeping Mode automatically if you leave it in the Home Position Adjustment Mode without performing any button operation for two or three minutes.

After you complete the home position adjustment procedure, place the watch in a location that allows good time calibration signal reception, and then perform a manual receive operation. See "To perform manual receive" for more information.



## Adjusting the Time 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.

If you become confused and lose your way during the following procedures, simply put the watch down and do not perform any button operation for two or three minutes. This will cause the watch to enter the Timekeeping Mode (indicated by normal one-second movement of the second hand) automatically. After that, you can try performing the manual setting procedure again from the beginning.

### ■ To manually reset the second hand to the top of the minute

1. In the Timekeeping Mode, hold down the **(A)** button for about five seconds until the second hand stops at AM or PM.

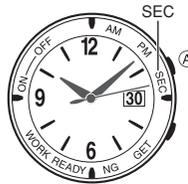
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.

Example: Current time is 10:08 a.m.



2. Press the **(A)** button twice.

- This will cause the second hand to move to SEC.
- Note that the hands of the watch do not move in the manual setting mode.



3. In accordance with a time signal on the TV or radio, press the **(B)** button.

- This will increase the minute setting by one and restart the seconds count from 00.
- In Japan, you can obtain the current time by dialing 117 on the telephone.



3. To return to the Timekeeping Mode, press the **(A)** button six times.

- This will cause the hands to move to the current time, and resume normal movement.



### ■ To adjust the date

1. In the Timekeeping Mode, hold down the **(A)** button for about five seconds until the second hand stops at AM or PM.

- Note that the hands of the watch do not move in the manual setting mode.
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.

2. Press the **(A)** button three times.

- The second hand will move to 12 o'clock.

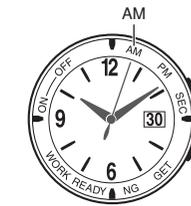
Example: Current time is 10:09 a.m.



### ■ To manually set the hour and minute

1. In the Timekeeping Mode, hold down the **(A)** button for about five seconds until the second hand stops at AM or PM.

Example: Current time is 10:09 a.m.



- Note that the hands of the watch do not move in the manual setting mode.
- If you do not perform any button operation for about two or three minutes, the watch will exit the manual setting mode and normal hand movement will resume.
- Pressing the **(A)** button and the **(B)** button at the same time in the manual setting mode will cause the hands to move to the original (unadjusted) time setting. Then the watch will return to the Timekeeping Mode.

2. Use one of the operations described below set the hands.

#### ■ To move the hands clockwise

Advance to step 2-a.

#### ■ To move the hands counterclockwise

Advance to step 2-b.

When adjusting the hour and minute hands, make sure you set a.m. and p.m. times correctly.

- Whenever the time setting passes 12 o'clock, the second hand will switch between AM and PM.

### 2-a To set the alarm time by moving the hands clockwise

Press the **(B)** button to move the hands clockwise by one minute.

- Holding down the **(B)** button for about two seconds moves the hands clockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.
- After setting the time you want, press the **(A)** button to advance to step 3.



### 2-b To set the alarm time by moving the hands counterclockwise

Press the **(A)** button.

- This will cause the minute hand to move counterclockwise about one or two minutes, and then stop around 12 o'clock.

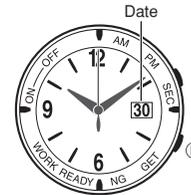


Press the **(B)** button to move the hands counterclockwise by one minute.

- Holding down the **(B)** button for about two seconds moves the hands counterclockwise at high speed. High-speed movement of the hands will continue until it completes a 12-hour cycle, or until you press any button to stop it.

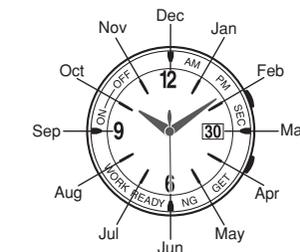
3. Press the **(B)** button to advance the date by one.

- If the watch automatically skips the end of the month date (30 or 31) you are trying to set, first perform the steps below to change the month setting and then come back to adjust the date setting.



4. Press the **(A)** button.

- The second hand will move to the current month setting.

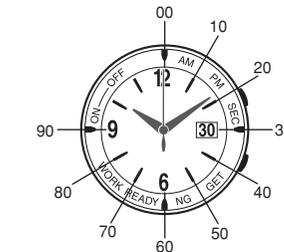


5. Press the **(B)** button to advance the month by one.



6. Press the **(A)** button.

- The second hand will move to the ten's digit of the year setting.



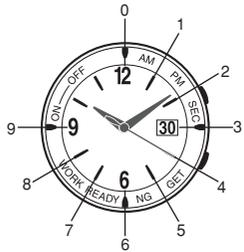
**7. Press the (B) button to increase the ten's digit setting by one.**

- You can set the year within the range of 2000 to 2099.



**8. Press the (A) button.**

- The second hand will move to the one's digit of the year setting.



Year (one's digit)

**9. Press the (B) button to increase the one's digit setting by one.**



**10. Press the (A) button to return to the Timekeeping Mode.**

- This will cause the hands to move to the current time, and resume normal movement.



- The watch automatically makes adjustments for leap years and month lengths. The date will change automatically when the current time reaches midnight. The date change at the end of the month may take more time than normal.

## Power Saving

Power Saving puts the watch into a sleep state, which will cause the second hand to stop moving whenever the watch is left in the dark.

- Note that hand movement may stop if the watch is blocked from light by your sleeve.

### ■ How the sleep state works

**Sleep Level 1**

The second hand stops whenever the watch is left in the dark for about one hour between the hours of 10:00 p.m. and 6:00 a.m.

- The hour and minute hand, and the date continue to operate normally.
- The alarm operates normally.

**Sleep Level 2**

If the watch is left in the dark for an additional six or seven days, the hour and minute hands, and the date indicator also stop.

- Auto time calibration is not performed.
- The alarm does not sound.
- Timekeeping continues internally even when the hands are stopped.

### ■ To recover from the sleep state

Move the watch to a brightly lit location, press any button, or raise the watch to your eyes for viewing (see "To illuminate the face with the auto light switch"). The hands will move to the current time setting and resume timekeeping from there.