

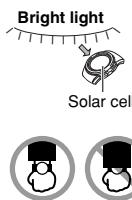
# Operation Guide 5020

**CASIO.**

## Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully.

### Keep the watch exposed to bright light

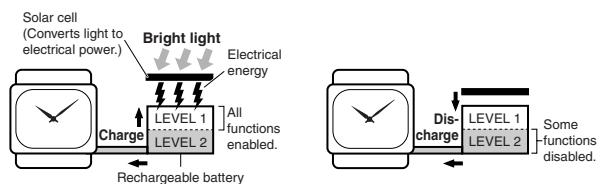


The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.

- When you are not wearing the watch on your wrist, position the face so it is pointed at a source of bright light.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked only partially from light, charging will be reduced significantly.

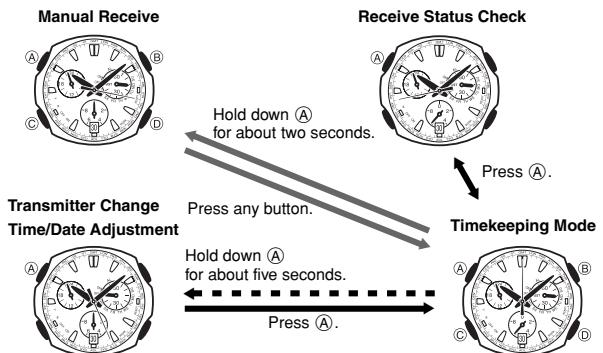
- The watch continues to operate, even when it is not exposed to light. Leaving the watch in the dark can cause the battery to run down, which will result in some watch functions to be disabled. If the battery goes dead, you will have to re-configure watch settings after recharging. To ensure normal watch operation, be sure to keep it exposed to light as much as possible.

#### Battery charges in the light.

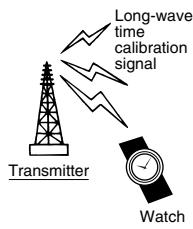


#### Battery discharges in the dark.

## General Guide



## Radio-controlled Atomic Timekeeping



Your watch receives a time calibration signal and updates its time setting accordingly.

- This watch is designed to receive the time calibration signal transmitted from Shangqiu City, Henan Province, China (Call Sign: BPC, Frequency: 68.5 kHz).
- Your watch will be able to receive the signal whenever Beijing (BJS) is selected as its Home City, and the watch is within range of the transmitter. The initial factory Home City setting of the watch is Beijing (BJS), so you will not need to change the setting if you are in the same time zone (GMT+8) as Beijing.
- As of November 2007, China does not use Daylight Saving Time (DST). If China does go to the Daylight Saving Time system in the future, some functions of this watch may no longer operate correctly.

- See the information under "Signal Reception Troubleshooting" if you experience problems with time calibration signal reception.

- The actual level at which some functions are disabled depends on the watch model.
- Be sure to read "Power Supply" for important information you need to know when exposing the watch to bright light.**

### If the analog hands aren't moving...

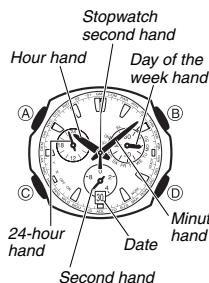
If the analog hands aren't moving, it means that the power saving mode has stopped them to save battery power.

- See "Power Saving" for more information.

- The hands also stop when the watch's battery runs down.

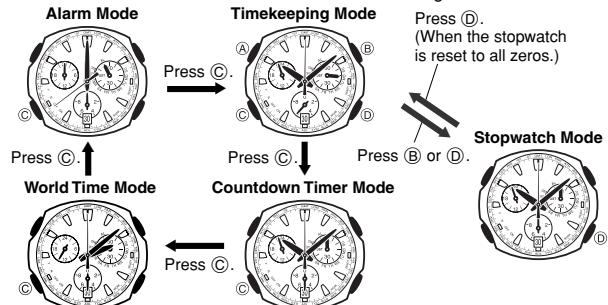
Note that CASIO COMPUTER CO., LTD. assumes no responsibility for any damage or loss suffered by you or any third party arising through the use of this product or its malfunction.

## About This Manual



- Button operations are indicated using the letters shown in the illustration.
- Each section of this manual provides you with the information you need in order to perform operations in each mode. Further details and technical information can be found in the "Reference" section.

- Whenever you enter the Timekeeping, Countdown Timer, World Time, or Alarm Mode, the hands of the watch move to the applicable time for that mode. Even if the hands are moving, you can press **C** to move to another mode (except for the Stopwatch Mode), if you want. Note, however, that all other buttons are disabled while the hands are moving.



## Chinese Time Calibration Signal

The Chinese time calibration signal (BPC) is maintained by the National Time Service Center (<http://www.ntsc.ac.cn/>) of the Chinese Academy of Sciences, and is transmitted from a transmitter (68.5 kHz) located in Shangqiu. The time data of the Chinese time calibration signal is maintained by the National Time Service Center.

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

## Current Time Setting

This watch adjusts its time setting automatically in accordance with a time calibration signal. You can also perform a manual procedure to set the time and date, when necessary.

- Whenever you need to travel outside of the time zone where Beijing is located (GMT+8), use the procedure under "To specify your Home City" to change the watch's Home City setting as required.
- When using the watch outside the range of the time calibration signal transmitter, you have to adjust the current time setting manually as required. See "Timekeeping" for more information about manual time settings.
- Even if the time calibration signal is received correctly, there are some times when the analog hands may not indicate the correct time. If this happens, use the procedures under "Adjusting the Home Positions" to check the home positions of the hands, and make adjustments as required.

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## To specify your Home City



- In the Timekeeping Mode, hold down **A** for about five seconds until the watch beeps twice.
  - The stopwatch second hand will move to the city code of the currently selected Home City. This is the city code setting mode.
  - The second hand will stop at "0".\* Some models show "60" instead of "0".
- Use **D** to move the stopwatch second hand to the city code you want to use as your Home City.
  - Each press of **D** causes the stopwatch second hand to advance clockwise to the next city code.

3. Press **A** to return to the Timekeeping Mode.

## Time Calibration Signal Reception

There are two different methods you can use to receive the time calibration signal: auto receive and manual receive.

### Auto Receive

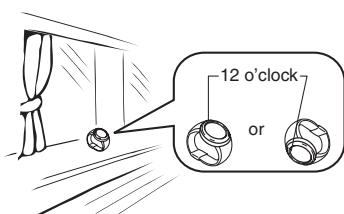
With auto receive, the watch receives the time calibration signal automatically up to five times a day. When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see "About Auto Receive".

### Manual Receive

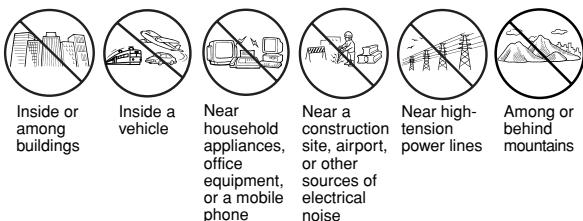
Manual receive lets you start a time calibration receive operation with the press of a button. For more information, see "To perform manual receive".

#### Important!

- When getting ready to receive the time calibration signal, position the watch as shown in the nearby illustration, with its 12 o'clock side facing towards a window. This watch is designed to receive a time calibration signal late at night. Because of this, you should place the watch near a window as shown in the illustration when you take it off at night. Make sure there are no metal objects nearby.

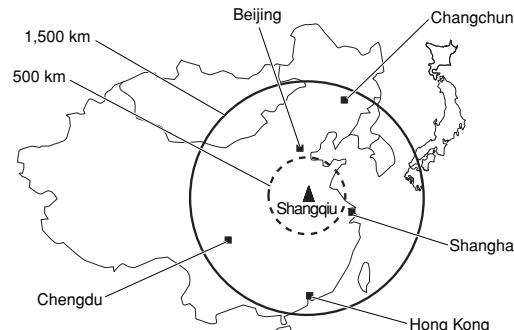


- Make sure the watch is facing the right way.
- Proper signal reception can be difficult or even impossible under the conditions listed below.



- Signal reception normally is better at night than during the day.
- Time calibration signal reception takes from two to seven minutes. Take care that you do not perform any button operations or move the watch during this time.

## Approximate Reception Range



- At distances further than about 500 kilometers from the Shangqiu (China) transmitter, signal reception may not be possible during certain times of year or times of day. Radio interference may also cause problems with reception.
- Even when the watch is within the reception range of the transmitter, signal reception will be impossible if the signal is blocked by mountains or other geological formations between the watch and signal source.
- Signal reception is affected by weather, atmospheric conditions, and seasonal changes.

## About Auto Receive

The watch starts to receive the time calibration signal automatically when the time in the Timekeeping Mode reaches 1:00 a.m., 2:00 a.m., 3:00 a.m., 4:00 a.m., and 5:00 a.m. each day (calibration times). When any auto receive is successful, the remaining auto receive operations are not performed.

#### Note

- When a calibration time is reached, the watch will receive the calibration signal only if it is in either the Timekeeping Mode or World Time Mode. Reception is not performed if a calibration time is reached while you are configuring settings.
- Auto receipt of the calibration signal is designed to be performed early in the morning, while you sleep (provided that the Timekeeping Mode time is set correctly). Before going to bed for the night, remove the watch from your wrist, and put it in a location where it can receive the signal easily.
- The watch receives the calibration signal for two to seven minutes every day when the time in the Timekeeping Mode reaches each of the calibration times. Do not perform any button operation within seven minutes before or after any one of the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the current time in the Timekeeping Mode.

## To perform manual receive

- Place the watch on a stable surface so its 12 o'clock side is facing towards a window.
- In the Timekeeping Mode, hold down **A** for about two seconds until the watch beeps.
- The stopwatch second hand will move to **READY** to indicate that the watch is setting up for time calibration reception.
  - The stopwatch second hand will move to **WORK** and stay there while actual reception is in progress.
  - If signal reception is unstable during reception, the stopwatch second hand may move between **WORK** and **READY**.
  - The hour and minute hands continue to keep time normally.
  - Time calibration signal reception takes from two to seven minutes. Take care that you do not perform any button operations or move the watch during this time.
  - If reception is successful, the stopwatch second hand will move to **Y (YES)**. Five seconds later, the hands will move to the correct time.

#### Note

- To interrupt a receive operation and return to the Timekeeping Mode, press any button.
- If reception is not successful, the stopwatch second hand will move to **N (NO)**. Five seconds later, the stopwatch second hand will resume normal operation, without any adjustment of the hand setting.
- If the stopwatch second hand is pointing to **Y (YES)** or **N (NO)**, you can return to the Timekeeping Mode by pressing **A**.

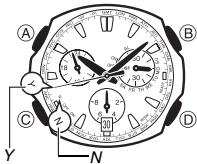
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## Viewing the Latest Signal Reception Results

You can use the procedure below to check whether or not the last signal receive operation was successful.

### To check the latest signal reception results



- In the Timekeeping Mode, press ④.
- If the watch was able to perform a successful signal receive operation since midnight, the stopwatch second hand will move to Y (YES). If the watch has been unable to receive any signal successfully, the stopwatch second hand will move to N (NO).
- The watch will return to the Timekeeping Mode after five seconds or when you press ④.

- The current receive result is cleared when the first auto receive operation is performed on the following day. This means Y (YES) indicates successful signal reception since the start of the current day.
- If you adjust the time or date setting manually, the stopwatch second hand will move to N (NO).

## Signal Reception Troubleshooting

Check the following points whenever you experience problems with signal reception.

Problem	Probable Cause	What you should do
The stopwatch second hand is pointing at N (NO).	<ul style="list-style-type: none"><li>You changed the time setting manually.</li><li>You performed some button operation during the auto receive operation.</li><li>The watch is not in the Timekeeping Mode.</li><li>Signal reception results are reset at midnight each day.</li><li>Radio interference is often present during the day time, which can interfere with calibration signal reception.</li></ul>	<ul style="list-style-type: none"><li>Perform manual signal receive at night or wait until the next auto signal receive operation is performed.</li><li>Enter the Timekeeping Mode and try again.</li><li>Check to make sure the watch is in a location where it can receive the signal.</li></ul>
The time setting is incorrect following signal reception.	<ul style="list-style-type: none"><li>The Home City setting is not correct for the area where you are using the watch.</li></ul>	<ul style="list-style-type: none"><li>Select the correct Home City.</li></ul>

- For further information, see "Important!" under "Time Calibration Signal Reception" and "Radio-controlled Atomic Timekeeping Precautions".

## Stopwatch



The stopwatch lets you measure elapsed time.

- When you enter the Stopwatch Mode, the stopwatch 1/20 second hand and the stopwatch minute hand move to 0.
- You can start elapsed time measurement with the stopwatch while the watch is in the Stopwatch Mode or the Timekeeping Mode.
- The display range of the stopwatch is 59 minutes, 59.95 seconds.
- The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
- You cannot switch to another mode while a stopwatch elapsed time operation is in progress.

### To start an elapsed time operation while in the Stopwatch Mode

- In the Timekeeping Mode, press ④ to enter the Stopwatch Mode.
- In the Stopwatch Mode, press ④ to start elapsed time measurement.
- Press ④ to stop elapsed time measurement.
  - You can restart and stop elapsed time measurement as many times as you like by pressing ④.
  - The 1/20 second hand rotates during the first 60 seconds only, and then stops. When elapsed timing is stopped (by pressing ④), the 1/20 second hand jumps to the 1/20 second indication (which is kept internally).
- Check the elapsed time.
- After you are finished measuring elapsed time, press ④ to reset the stopwatch to all zeros. The stopwatch will reset to all zeros even if you press ④ while elapsed time measurement is in progress.
- To return to the Timekeeping Mode, press ④ while the stopwatch is reset to all zeros.

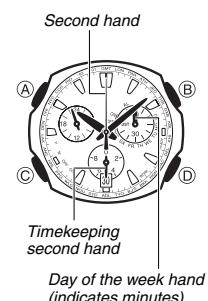
### To start an elapsed time operation while in the Timekeeping Mode

- In the Timekeeping Mode, press ④ to start elapsed time measurement.
  - After pressing ④ in the Timekeeping Mode, elapsed time measurement will not start for about one second.
  - The elapsed time operation will not start if you press ④ in the Timekeeping Mode while either of the following conditions exists.
    - While an alarm is sounding
    - While the watch is changing from one date to the next (at midnight)

## 2. Press ④ to stop elapsed time measurement.

- You can restart and stop elapsed time measurement as many times as you like by pressing ④.
- The 1/20 second hand rotates during the first 60 seconds only, and then stops. When elapsed time measurement is stopped (by pressing ④), the 1/20 second hand jumps to the 1/20 second indication (which is kept internally).
- Check the elapsed time.
- After you are finished measuring elapsed time, press ④ to reset the stopwatch to all zeros. The stopwatch will reset to all zeros even if you press ④ while elapsed time measurement is in progress.
- To return to the Timekeeping Mode, press ④ while the stopwatch is reset to all zeros.

## Countdown Timer



You can set the countdown timer within a range of one to 60 minutes. An alarm sounds when the countdown reaches zero.

- Whenever you enter the Countdown Timer Mode, the day of the week hand initially will move to the TMR position. After about one second, the day of the week hand will move to the countdown start time (minutes) and stop there.
- In the Countdown Timer Mode, the timekeeping second hand points straight down (6 o'clock position).
- When you enter the Countdown Time Mode, the day of the week hand initially will point to countdown start time that was set the last time the Countdown Timer Mode was exited.
- The initial factory default setting for the countdown start time is 60 minutes. The day of the week hand points to 0 (or 60) when the countdown start time is 60 minutes.
- All of the operations in this section are performed in the Countdown Timer Mode.

### To set the countdown start time

While the day of the week hand is stopped at the current countdown start time in the Countdown Timer Mode, press ④ to advance the hand by one minute. Keep pressing ④ until the hand is at the start time you want.

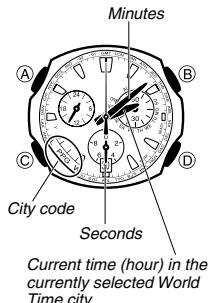
- Holding down ④ at this time will move the hand at high speed.
- If the day of the week hand does not move when you press ④, it may mean that the watch is not indicating a countdown start time. If this happens, refer to "To use the countdown timer" and return to the countdown start time.
- To set a countdown start time of 60 minutes, move the day of the week hand to 0 (or 60).

### To use the countdown timer

Press ④ while in the Countdown Timer Mode to start the countdown timer.

- When the end of the countdown is reached, the alarm sounds for 10 seconds or until you stop it by pressing any button. The countdown time is reset automatically to its starting value after the alarm stops.
- Press ④ while a countdown operation is in progress to pause it. Press ④ again to resume the countdown.
- To stop a countdown operation completely, first pause it (by pressing ④), and then press ④. This returns the countdown time to its starting value.

## World Time



The World Time Mode shows you the current time in 27 cities (29 time zones) around the world. A simple operation swaps your Home City with the currently selected World Time city.

- When you enter the World Time Mode, the hour and minute hands move to the current time in the currently selected World Time city.
- If the current time shown for a city is wrong, check your Home City settings and make the necessary changes.
- All of the operations in this section are performed in the World Time Mode.

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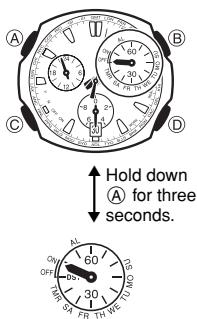
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## To view the time in another city

In the World Time Mode, use **D** to move the stopwatch second hand to the city code of the city you want to select as the World Time city.

- The hour hand, minute hand, and date display will change automatically to the applicable settings for the currently selected city code.
- The day of the week hand shows whether or not Daylight Saving Time (summer time) is turned off for the currently selected city code.
- All buttons (except for **C** for changing modes) are disabled while the hands and date display are changing.
- The watch will beep if the city code you select is your current Home City.
- For full information on city codes, see the "City Code Table".

## To toggle a city code time between Standard Time and Daylight Saving Time



- In the World Time Mode, use **D** to select the city code whose Standard Time/Daylight Saving Time setting you want to change.
- Hold down **A** for about three seconds until the watch beeps. This will cause the day of the week hand to toggle between **ON** (Daylight Saving Time) and **OFF** (Standard Time).
- Note that you cannot switch between Standard Time and Daylight Saving Time while **GMT** is selected as the city code.
- Note that the Standard Time/Daylight Saving Time setting affects only the currently displayed city code. Other city codes are not affected.
- The Standard Time/Daylight Saving Time setting of your Home City can be changed in the Timekeeping Mode only. See "To set the time and date manually" for more information.

## Swapping your Home City and World Time City

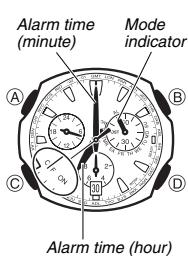
You can use the procedure below to swap your Home City and World Time city. This changes your Home City to your World Time city, and your World Time city to your Home City. This capability can come in handy when you frequently travel between two cities in different time zones.

- If your current World Time city supports receipt of a time calibration signal, making it your Home City enables calibration signal reception.

## To swap your Home City and World Time city

- In the World Time Mode, use **D** to select the World Time city you want.
- Hold down **B** for about three seconds until the watch beeps twice.
- This will make the World Time city (which you selected in step 1), your Home City. At the same time, it changes the Home City you had selected prior to step 2 your World Time city.
- After swapping the Home City and World Time city, the watch stays in the World Time Mode with the city that was selected as the Home City prior to step 2 now displayed as the World Time city.

## Alarm



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

- The day of the week hand points to **AL** while the watch is in the Alarm Mode. The stopwatch second hand points to the current alarm on (ON)/off (OFF) setting, while the hour, minute, and 24-hour hands indicate the current alarm time setting.
- All of the operations in this section are performed in the Alarm Mode.

### To set an alarm time

- In the Alarm Mode, hold down **A** for about three seconds until the watch beeps. This indicates it is in the setting mode.
- The stopwatch second hand will move to **ON** (alarm on) at this time.
- Use **D** (+) and **B** (-) to change the alarm time setting.
  - Each press of either button moves the hands one-minute.
- After setting the alarm time, press **A** to exit the setting mode.
- Setting the alarm time causes the alarm to turn on automatically.
- As you set the alarm time, take care to ensure that the 24-hour hand also is at the correct position.

## Alarm Operation

The alarm tone sounds at the preset time for 10 seconds, regardless of the mode the watch is in.

- Alarm operations are performed in accordance with the Timekeeping Mode time.
- Pressing any button stops the alarm tone operation.

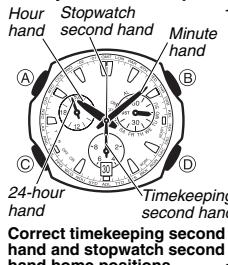
## To toggle an alarm on and off

In the Alarm Mode, press **A** to toggle the alarm **ON** and **OFF**.

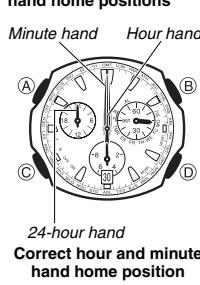
## Adjusting the Home Positions

If the time and date settings are wrong even after the time calibration signal is received normally, use the following procedure to adjust their home positions.

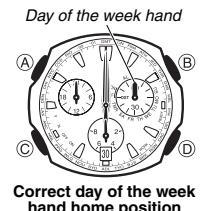
### To adjust the home positions



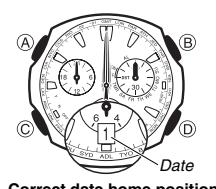
- In the Timekeeping Mode, as you hold down **A**, hold down **C** for about three seconds until the watch beeps.
- This indicates that the watch is in the time and date home position adjustment mode.
- If the timekeeping second hand moves to "0", it is in the correct home position. If it doesn't, use **D** to move the timekeeping second hand to "0".
- The stopwatch second hand is also in the proper home position if it moves to 12 o'clock. If it doesn't, press **B** to move it to 12 o'clock.



- After confirming that the timekeeping second hand and stopwatch second hand are both at the proper home positions, press **C**. This will switch to hour hand and minute hand home position adjustment.
- The hour hand and minute hand are at their proper home positions if they both move to 12 o'clock, and if the 24-hour hand is pointing at hour 24. If the hands are not positioned correctly, use **D** (+) and **B** (-) to move all three hands to their proper home positions.
- The 24-hour hand moves in accordance with the hour, minute, and second settings. As you set the time, take care to ensure that the 24-hour hand also is at the correct position.



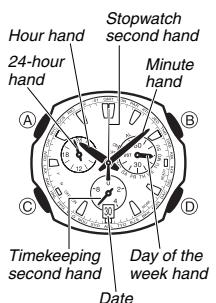
- After confirming that the hour and minute hands are in the correct home position, press **C**. This will advance to day of the week hand home position adjustment.
- The day of the week hand is in the correct home position if it is pointing at **0** (or **60**). If it isn't, use **D** (+) and **B** (-) to move the hand to **0** (or **60**).



- After confirming that the day of the week hand is in the correct home position, press **C**. This will advance to date home position adjustment.
- The date is in the correct home position if it shows "1". If it doesn't, use **D** (+) and **B** (-) to change the date to "1".
- Press **A** to return to the Timekeeping Mode.

- 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.

## Timekeeping



Use the Timekeeping Mode to set and view the current time and date. This section also explains how to set the current date and time manually.

- All of the operations in this section are performed in the Timekeeping Mode.

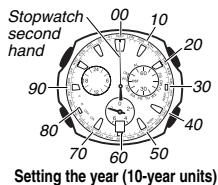
### To set the time and date manually

- In the Timekeeping Mode, hold down **A** for about five seconds until the watch beeps twice.
- The stopwatch second hand will move to the city code of the currently selected Home City. This is the city code setting mode.
- The second hand will stop at "0".
  - Some models show "60" instead of "0".
- Use **D** to change the Home City setting.
  - For full information on city codes, see the "City Code Table".
- Use **B** to toggle the DST setting on (ON) and off (OFF).
  - Even after you change the DST setting, you can still use **D** to select a different Home City code if you want.
- After the Home City and DST settings are the way you want, press **C**.
  - This will cause the watch to beep and the stopwatch second hand to move to the 12 o'clock position. This is the time setting mode.

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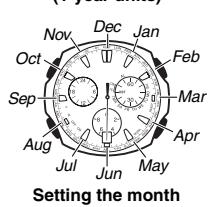
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5. Use  $\textcircled{D}$  (+) and  $\textcircled{B}$  (-) to change the time (hour and minute) setting.  
 • As you set the time, take care to ensure that the 24-hour hand also is at the correct position.



6. After the time setting is the way you want, press  $\textcircled{C}$ .  
 • This will cause the watch to beep and change to the year setting mode.  
 7. Use  $\textcircled{D}$  and  $\textcircled{B}$  to change the year setting decimal value.  
 • Each press of  $\textcircled{B}$  will move the stopwatch second hand and change the year setting in 10-year units.  
 • Each press of  $\textcircled{D}$  will move the timekeeping second hand and change the year setting in one-year units.  
 8. After the year setting is the way you want, press  $\textcircled{C}$ .  
 • This will cause the watch to beep and change to the month setting mode.  
 9. Use  $\textcircled{D}$  to move the stopwatch second hand to the month setting you want.  
 10. After the month setting is the way you want, press  $\textcircled{C}$ .  
 • This will cause the watch to beep and change to the day setting mode.  
 11. Use  $\textcircled{D}$  (+) and  $\textcircled{B}$  (-) to change the date setting.  
 • Pressing  $\textcircled{C}$  will return to the time setting mode.  
 12. After all the settings are the way you want, press  $\textcircled{A}$  to enter the Timekeeping Mode.  
 • You can press  $\textcircled{A}$  at any time during the above procedure to return to the Timekeeping Mode.  
 • The day of the week is displayed automatically in accordance with the date (year, month, and day) settings.

Setting the year (10-year units)

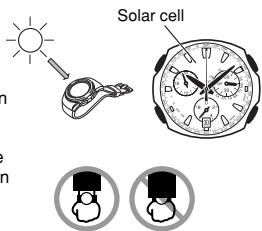


## Power Supply

This watch is equipped with a solar cell and a special rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

**Example:** Orient the watch so its face is pointing at a light source.

- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked from light only partially, charging will be reduced significantly.



### Important!

- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to light can cause rechargeable battery power to run down. Make sure that the watch is exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar cell, so regular battery replacement is not required. However, after very long use, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the special rechargeable battery to charge fully, contact your dealer or CASIO distributor about having it replaced.
- The special rechargeable (secondary) battery used by your watch is not intended to be removed or replaced by you. Use of a rechargeable battery other than the special one specified for this watch can damage the watch.
- The current time and all other settings return to their initial factory defaults whenever battery power drops to Level 3 and when you have the battery replaced.
- Keep the watch in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

## Battery Power Levels

The movement of the analog hands indicates the current battery power level.



Level	Hand Movement	Function Status
1	Normal.	All functions enabled.
2	• Second hand jumps every 2 seconds. • Date changes to home position.	All functions disabled, except for analog timekeeping and stopwatch.
3	• Second hand stopped. • Hour and minute hands stopped at 12 o'clock.	All functions disabled.

- The second hand jumping every two seconds (Level 2) indicates that battery power is quite low. Expose the watch to light as soon as possible to charge the battery.
- When battery power is at Level 2, time calibration signal reception is disabled.
- At Level 3, all functions are disabled and settings return to their initial factory defaults. The watch will continue to keep time internally for about one month after the battery drops to Level 3. If you recharge the battery sufficiently during this period, the analog hands will move automatically to the correct setting and normal timekeeping will resume.
- 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.

## Charging Precautions

Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery.

### Warning!

Leaving the watch in bright light to charge its rechargeable battery can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight

## Charging Guide

After a full charge, timekeeping remains enabled for up to about five months.

- The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor sunlight (50,000 lux)	8 minutes
Sunlight through a window (10,000 lux)	30 minutes
Daylight through a window on a cloudy day (5,000 lux)	48 minutes
Indoor fluorescent lighting (500 lux)	8 hours

- Since these are the specs, we can include all the technical details.

- Watch is not exposed to light
- Internal timekeeping
- Analog hands operational 18 hours per day, sleep state 6 hours per day
- 10 seconds of alarm operation per day
- 6 minutes of signal reception per day
- Stable operation is promoted by frequent charging.

## Recovery Times

The table below shows the amount exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time		
	Level 3	Level 2	Level 1
Outdoor sunlight (50,000 lux)	1 hour	20 hours	
Sunlight through a window (10,000 lux)	2 hours	76 hours	
Daylight through a window on a cloudy day (5,000 lux)	4 hours	---	
Indoor fluorescent lighting (500 lux)	37 hours	---	

- The above exposure time values are all for reference only. Actual required exposure times depend on lighting conditions.

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CASIO.

## Reference

This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

### Auto Return Features

- If you leave the watch in the Alarm Mode or Home Position Adjustment Mode for two or three minutes without performing any operation, it returns to the Timekeeping Mode automatically.
- If you do not perform any operation for about two or three minutes while a setting mode is selected, the watch will exit the setting mode automatically.

### High-Speed Movement

- The (D) and (B) buttons are used to change the hand setting in various setting modes. In most cases, holding down these buttons will start high-speed movement of the applicable hand(s) and day.
  - High-speed movement of hands and day will continue until you press any button, or until the moving hand(s) and day finishes one complete cycle.
  - One complete cycle for the hands is one revolution (360 degrees) of the hour hand, or 24 hours.
  - One complete cycle for the day is 31 days.
- High-speed hand movement also is triggered by changing from one mode to another, changing a World Time Mode setting (changing the World Time city in the World Time Mode, swapping the World Time and Home Time positions), etc.
- All buttons (except for the (C) button for changing modes) are disabled during a high-speed hand or date operation. You will be able to perform button operations again after high-speed operation is stopped.

### Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time being set.
- The time calibration signal bounces off the ionosphere. Because of this, such factors as changes in the reflectivity of the ionosphere, as well as movement of the ionosphere to higher altitudes due to seasonal atmospheric changes or the time of day may change the reception range of the signal and make reception temporarily impossible.
- Even if the time calibration signal is received properly, certain conditions can cause the time setting to be off by up to one second.
- The current time setting in accordance with the time calibration signal takes priority over any time settings you make manually.
- The watch is designed to update the date and day of the week automatically for the period January 1, 2000 to December 31, 2099. Setting of the date by the time calibration signal will not be performed starting from January 1, 2100.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Though this watch is designed to receive both time data (hour, minutes, seconds) and date data (year, month, day), certain signal conditions can limit reception to time data only.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time within  $\pm 20$  seconds a month at normal temperature.

### Timekeeping

- The year can be set in the range of 2000 to 2099.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's battery replaced or when battery power drops to Level 3.
- 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.
- The current time for all city codes in the Timekeeping Mode is calculated in accordance with the Greenwich Mean Time (GMT) differential of each city, based on your Home City time setting.
- GMT differential is calculated by this watch based on Universal Time Coordinated (UTC\*) data.

\* UTC is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep time accurately to within microseconds. Leap seconds are added or subtracted as necessary to keep UTC in sync with the Earth's rotation. The reference point for UTC is Greenwich, England.

### Power Saving

Power Saving enters a sleep state automatically whenever the watch is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by Power Saving.

- There actually are two sleep state levels: "second hand sleep" and "function sleep".

Elapsed Time in Dark	Operation
60 to 70 minutes (second hand sleep)	Second hand only is stopped, all other functions are enabled.
6 or 7 days (function sleep)	<ul style="list-style-type: none"><li>All functions, including analog timekeeping, disabled</li><li>Internal timekeeping maintained</li></ul>

- Wearing the watch inside the sleeve of clothing can cause it to enter the sleep state.
- The watch will not enter the sleep state between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when 6:00 AM arrives, however, it will remain in the sleep state.

### To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area.
- Press any button.

## City Code Table

City Code	City	GMT Differential	Other major cities in same time zone
PPG	Pago Pago	-11.0	
HNL	Honolulu	-10.0	Papeete
ANC	Anchorage	-09.0	Nome
LAX	Los Angeles	-08.0	San Francisco, Las Vegas, Vancouver, Seattle/Tacoma, Dawson City, Tijuana
DEN	Denver	-07.0	El Paso, Edmonton, Culiacan
CHI	Chicago	-06.0	Houston, Dallas/Fort Worth, New Orleans, Mexico City, Winnipeg
NYC	New York	-05.0	Montreal, Detroit, Miami, Boston, Panama City, Havana, Lima, Bogota
CCS	Caracas	-04.0	La Paz, Santiago, Port Of Spain
RIO	Rio De Janeiro	-03.0	Sao Paulo, Buenos Aires, Brasilia, Montevideo
-02		-02.0	
-01		-01.0	Praia
GMT		+00.0	Dublin, Lisbon, Casablanca, Dakar, Abidjan
LON	London		
PAR	Paris	+01.0	Milan, Rome, Madrid, Amsterdam, Algiers, Hamburg, Frankfurt, Vienna, Stockholm, Berlin
ATH	Athens	+02.0	Cairo, Jerusalem, Helsinki, Istanbul, Beirut, Damascus, Cape Town
JED	Jeddah	+03.0	Kuwait, Riyadh, Aden, Addis Ababa, Nairobi, Moscow
THR	Tehran	+03.5	Shiraz
DXB	Dubai	+04.0	Abu Dhabi, Muscat
KBL	Kabul	+04.5	
KHI	Karachi	+05.0	Male
DEL	Delhi	+05.5	Mumbai, Kolkata, Colombo
DAC	Dhaka	+06.0	
RGN	Yangon	+06.5	
BKK	Bangkok	+07.0	Jakarta, Phnom Penh, Hanoi, Vientiane, Singapore, Kuala Lumpur, Hong Kong, Taipei, Manila, Perth, Ulaanbaatar
BJS	Beijing	+08.0	
TYO	Tokyo	+09.0	Seoul, Pyongyang
ADL	Adelaide	+09.5	Darwin
SYD	Sydney	+10.0	Melbourne, Guam, Rabaul
NOU	Noumea	+11.0	Port Vila
WLG	Wellington	+12.0	Christchurch, Nadi, Nauru Island

- Based on data as of June, 2007.