Operation Guide 5031

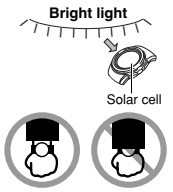
CASIO

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.

• This watch does not have a city code that corresponds to the UTC offset of –3.5 hours. Because of this, the radio-controlled atomic timekeeping function will not display the correct time for Newfoundland, Canada.

Keep the watch exposed to bright light

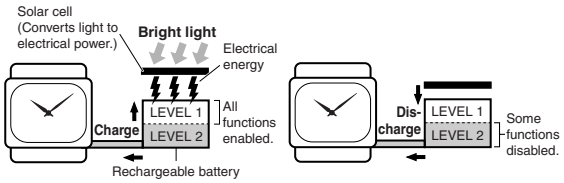


The electricity generated by the solar cell of the watch is stored by a built-in battery. Leaving or using the watch where it is not exposed to light causes the battery to run down. Make sure the watch is exposed to light as much as possible.

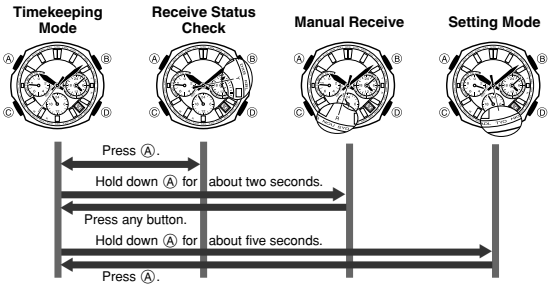
- When you are not wearing the watch on your wrist, position the face so it is pointed at a source of bright light.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked only partially from light, charging will be reduced significantly.

- 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



- Each press of Ⓒ cycles through modes in the sequence shown below.
- Stopping at a mode for about one second will cause the display to change to the data for that mode.
- Operating a button while the hands are moving at high speed may cause the hands to stop temporarily.
- Except while the watch is performing auto hand home position correction, holding down Ⓒ for about two seconds will return directly to the Timekeeping Mode.

Radio-controlled Atomic Timekeeping

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

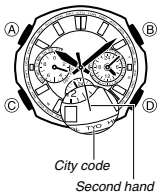
- Supported time calibration signals: Germany (Mainflingen), England (Anthorn), United States (Fort Collins), China (Shangqiu), and Japan (Fukushima or Fukuoka/Saga)
- See the information under “Signal Reception Troubleshooting” if you experience problems with time calibration signal reception.

Current Time Setting

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

- **The first thing you should do after purchasing this watch is to specify your Home City, which is the city where you normally will use the watch. For more information, see “To specify your Home City”.**
- When using the watch outside the areas covered by the time signal transmitters, you will have to adjust the current time setting manually as required. See “Configuring Time and Date Settings Manually” for more information about manual time settings.

To specify your Home City



1. In the Timekeeping Mode, keep Ⓐ depressed (for about five seconds) as the second hand moves to the last signal reception result (“**Y**” or “**N**”), then to “**READY**” (or “**R**” for some models), and then to the city code of the currently selected Home City.
   - This indicates the city code setting mode.
2. Use Ⓓ to move the second hand clockwise to the city code you want to use as your Home City.
   - For information about the Home City, see “Home City Codes and Transmitters”. The watch will receive the time calibration signal of the transmitter of the selected city code.
3. After the Home City setting is the way you want, press Ⓐ to return to the Timekeeping Mode.

- Normally, your watch should show the correct time as soon as you specify your Home City code. If it does not, it should adjust automatically after the next auto receive operation. You also can perform manual receive or you can set the time manually.
- 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 “Auto Hand Home Position Correction” to check the home positions of the hands, and make adjustments as required.

- 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.**

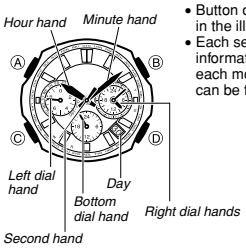
If the analog hands aren’t moving...

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

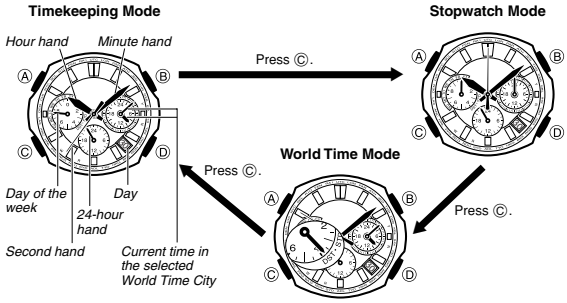
- **See “Power Saving” for more information.**
- The hands also stop when the watch’s battery runs down.

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.



Home City Codes and Transmitters

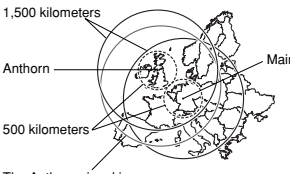
- The time calibration signal the watch will attempt to pick up depends on its current Home City code setting as shown below. If you use the watch in Japan or Europe (each of which has two different transmitter locations), it will try to receive the time calibration signal from one of the transmitters in your current location. If it cannot receive the signal, it will then try to receive the time calibration signal from the other transmitter.

Home City Code	Transmitter	Frequency
LON: London **PAR:** Paris **ATH:** Athens	German/U.K. Signals Anthorn (England) Mainflingen (Germany)	60.0 kHz 77.5 kHz
HKG: Hong Kong	China Signal Shangqiu City (China)	68.5 kHz
TYO: Tokyo	Japan Signals Fukushima (Japan) Fukuoka/Saga (Japan)	40.0 kHz 60.0 kHz
(HNL): Honolulu **(ANC):** Anchorage **LAX:** Los Angeles **DEN:** Denver **CHI:** Chicago **NYC:** New York	U.S. Signal Fort Collins, Colorado (the United States)	60.0 kHz

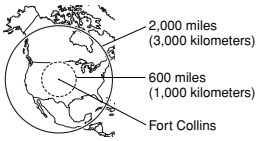
- City codes in parentheses indicate areas where reception may be possible only when conditions are good.
- For full information on city codes, see the “City Code Table”.
- In addition to the above, you also can select city codes that are outside the ranges of the time calibration signal transmitters supported by this watch.
- Note that this watch does not have a city code that corresponds to Newfoundland.
- The U.S. time calibration signal can be picked up by the watch while in North America. The term “North America” in this manual refers to the area that consists of Canada, the continental United States, and Mexico.

Approximate Reception Ranges

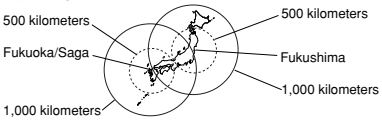
U.K. and German Signals



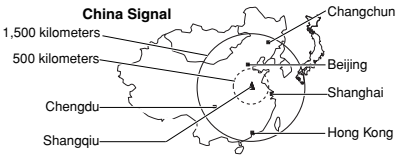
U.S. Signal



Japan Signals



China Signal



- Signal reception may not be possible up to the distances noted below during certain times of the year or day. Radio interference may also cause problems with reception.
  Mainflingen (Germany) or Anthorn (England) transmitters: 500 kilometers (310 miles)
  Fort Collins (United States) transmitter: 600 miles (1,000 kilometers)
  Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
  Shangqiu (China) transmitter: 500 kilometers (310 miles)
- 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.
- See the information under “Signal Reception Troubleshooting” if you experience problems with time calibration signal reception.

Daylight Saving Time (DST)

Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

- The watch will adjust the DST setting automatically when it receives a time calibration signal while any one of the following city codes is selected as the Home City.
  LON, PAR, ATH, TYO, ANC, LAX, DEN, CHI, NYC
- The watch will not adjust the DST setting automatically while either of following city codes is selected as the Home City. In this case, you will need to change between standard time and daylight saving time manually.
  HKG, HNL
- For information about the DST setting, see “To set your Home City time”.
- As of June 2008, 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.
- If you experience problems receiving the time calibration signal in your area, it probably is best to switch between Standard Time and Daylight Saving Time (summer time) manually. For more information, see “Home City and DST”.

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**

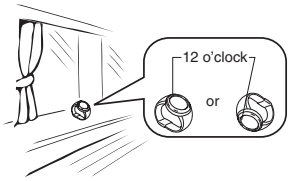
With auto receive, the watch receives the time calibration signal automatically up to six times a day (five times for the China signal). When any auto receive is successful, the remaining auto receive operations are not performed. For more information, see “About Auto Receive”.

- **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.

Inside or among buildings | Inside a vehicle | Near household appliances, office equipment, or a mobile phone | Near a construction site, airport, or other sources of electrical noise | Near high-tension power lines | Among or behind mountains

- Signal reception normally is better at night than during the day.
- Time calibration signal reception takes from two to seven minutes, but in some cases it can take as long as 14 minutes. Take care that you do not perform any button operations or move the watch during this time.

About Auto Receive

The watch receives the time calibration signal automatically up to six times a day (five times for the China signal). When any auto receive is successful, the remaining auto receive operations are not performed. The reception schedule (calibration times) depends on your currently selected Home City, and whether standard time or Daylight Saving Time is selected for your Home City.

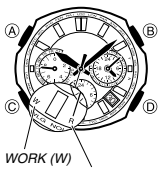
Your Home City		Auto Receive Start Times					
		1	2	3	4	5	6
LON	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*
	Daylight Saving Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*
PAR	Standard Time	2:00 am	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*
	Daylight Saving Time	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*
ATH	Standard Time	3:00 am	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*
	Daylight Saving Time	4:00 am	5:00 am	Midnight*	1:00 am*	2:00 am*	3:00 am*
TYO	Standard Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am
HKG	Standard Time	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	
HNL, ANC, LAX, DEN, CHI, NYC	Standard Time Daylight Saving Time	Midnight	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am

* Next day

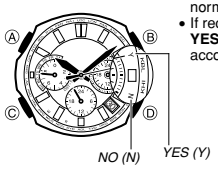
Note

- 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.
- Remember that reception of the calibration signal depends on the current time in the Timekeeping Mode.

To perform manual receive



1. Place the watch on a stable surface so its 12 o’clock side is facing towards a window.
2. In the Timekeeping Mode, hold down Ⓐ for about two seconds.
3. The second hand will move to **READY** (**R**) to indicate that the watch is setting up for time calibration reception.
   - The second hand will move to **WORK** (**W**) and stay there while actual reception is in progress.
   - If signal reception is unstable during reception, the second hand may move between **WORK** (**W**) and **READY** (**R**).
   - The hour and minute hands continue to keep time normally.
   - If reception is successful, the second hand will move to **YES** (**Y**), and the date and time settings will be adjusted accordingly. Normal timekeeping will resume after that.



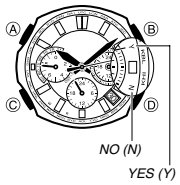
Note

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

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 Ⓐ.

- If the watch was able to perform a successful signal receive operation since midnight, the second hand will move to **YES** (**Y**). If the watch has been unable to receive any signal successfully, the second hand will move to **NO** (**N**).
- The watch will return to the Timekeeping Mode after five seconds or when you press Ⓐ.
- The current receive result is cleared when the first auto receive operation is performed on the following day. This means **YES** (**Y**) indicates successful signal reception since the start of the current day.
- If you adjust the time or date setting manually, the second hand will move to **NO** (**N**).

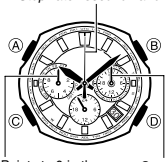
Signal Reception Troubleshooting

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

Problem	Probable Cause	What you should do
The second hand is pointing at **NO** (**N**).	• You changed the time setting manually. • You performed some button operation during the auto receive operation. • The watch is not in the Timekeeping Mode. • Signal reception results are reset when the first auto receive operation is performed on the following day. • Radio interference is often present during the day time, which can interfere with calibration signal reception.	• Perform manual signal receive at night or wait until the next auto signal receive operation is performed. • Enter the Timekeeping Mode and try again. • Check to make sure the watch is in a location where it can receive the signal.
The time setting is incorrect following signal reception.	• The Home City setting is not correct for the area where you are using the watch. • The home position of the hands is off.	• Select the correct Home City. • Enter the home position adjustment mode and adjust the home position.

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

Stopwatch



Points to 0 in the Stopwatch Mode. Functions as a 1/20-second hand during an elapsed time operation.

Stopwatch time hour and minute hands

The stopwatch measures elapsed time in units of 1/20 second 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.

To start or stop an elapsed time operation

In the Stopwatch Mode, press Ⓑ to start and stop the stopwatch.

• Pressing Ⓓ during an elapsed time operation stops the hands at the split time. Elapsed time measurement continues internally. After about five seconds, the hands will return to normal elapsed time indication.
• 1/20-second timing is performed only for the first 30 seconds after you start or restart an elapsed time operation. The 1/20-second hand also jumps to the elapsed time position when you stop an elapsed time operation.
• Pressing Ⓓ while the stopwatch is stopped will reset stopwatch to zero. The following operations are not possible while the watch’s hands are moving during a stopwatch elapsed time operation.
Split, reset

To measure elapsed time

Ⓑ → Ⓑ → Ⓓ
Start Stop Reset

To measure split times

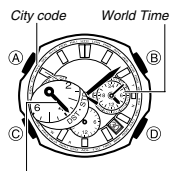
Ⓑ → Ⓓ → Normal measurement resumed after 5 seconds. → Ⓑ → Ⓓ
Start Split Stop Reset

• Pressing Ⓓ again while a split time is indicated will cause the hands to jump to a new (current) split time.
• Pressing Ⓑ while a split time is indicated will stop the elapsed time operation, causing the hands to jump to the stop time.

Cumulative Elapsed Time Measurement

Pressing Ⓑ to restart the stopwatch without resetting it will resume the elapsed time operation from where it was last stopped.

World Time



In the World Time Mode, indicates the current daylight saving time setting (STD or DST).

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

• If the current time is not correct, check your current Home City settings and make adjustments as required.
• The following operations are not possible while the watch’s hands are moving to the current time for a newly selected city code.
Using Ⓐ to switch between standard time (STD) and daylight saving time (DST).
Using Ⓑ to swap the Home City and World Time City
• For full information on city codes, see the “City Code Table”.

To search for a city

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

• About one second after you release Ⓓ, the hands of the watch will move to the current time in the zone of the city code indicated by the second hand.

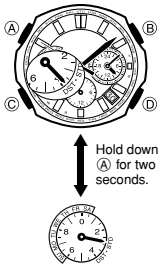
Daylight Saving Time (summer time)

Daylight saving time calls for setting clocks ahead one hour from standard time during the summer season.

• Note that the start and end of daylight time, and whether it is used at all depends on each country and geographic area.

Standard time	The hand points to STD (standard time).
Daylight saving time	The hand points to DST (daylight saving time).

To change the STD/DST setting of a particular city code



1. In the World Time Mode, use Ⓓ to select the city whose setting you want to change.
2. Hold down Ⓐ for about two seconds to toggle between daylight saving time and standard time.

• You can select STD or DST for each World Time city code, except UTC.

Swapping your Home City and World Time City

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

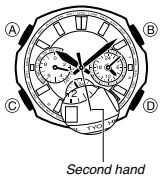
• If your current World Time City supports receipt of a time calibration signal, making it your Home City enables calibration signal reception.

To swap your Home City and World Time City

1. In the World Time Mode, use Ⓓ to select the World Time City you want.
2. Hold down Ⓑ for about three seconds.

• This will make the World Time City (which you selected in step 1), your Home City. At the same time, it will change the Home City you had selected prior to step 2 to 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.

Home City and DST

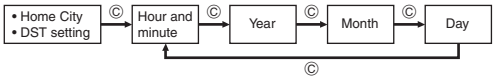


Use the procedure in this section to configure your Home City (the place where you normally use the watch) and daylight saving time settings.

• Use the Timekeeping Mode to configure Home City and daylight saving time settings.

To set your Home City time

1. In the Timekeeping Mode, keep Ⓐ depressed (for about five seconds) as the second hand moves to the last signal reception result (“**Y**” or “**N**”), then to “**READY**” (or “**R**” for some models), and then to the city code of the currently selected Home City.
• This indicates the city code setting mode.
2. Use Ⓒ to cycles through available settings in the sequence shown below.



3. Use Ⓓ to move the second hand clockwise to select the city code you want.
4. While the city code you want is selected, press Ⓑ to toggle between STD (standard time) and DST (daylight saving time).
• You will not be able to change the STD/DST setting while the watch’s hands are moving to the current time for a newly selected city code. Wait until the hands stop moving.

Standard time	The hand points to STD (standard time).
Daylight saving time	The hand points to DST (daylight saving time). Daylight saving time is one hour ahead of standard time.

• The watch will adjust the DST setting automatically when it receives a time calibration signal while any one of the following city codes is selected as the Home City.
LON, PAR, ATH, TYO, ANC, LAX, DEN, CHI, NYC
• The watch will not adjust the DST setting automatically while either of following city codes is selected as the Home City. In this case, you will need to change between standard time and daylight saving time manually.
HKG, HNL
• If you want to proceed with adjusting the current time and date setting, continue from step 3 under “Configuring Time and Date Settings Manually”. If you do go the date and time adjustment procedure, note that you will not be able to return to this Home City and daylight saving time setting procedure. To return to this procedure, you will need to press Ⓐ to exit the time and date setting procedure, and then perform this procedure from step 1, above.

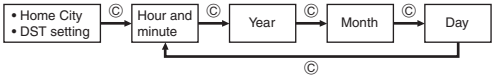
5. When everything is the way you want, press Ⓐ.

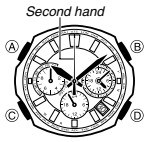
• This will apply your settings and return to normal timekeeping. The second hand will move to and start timekeeping from the appropriate seconds count in accordance with the watch’s internal timekeeping.

Configuring Time and Date Settings Manually

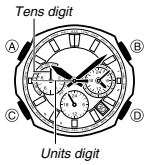
You can use the following procedures to adjust the time and date settings when the watch is unable to receive a time calibration signal for some reason.

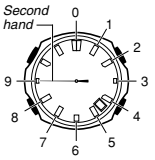
1. In the Timekeeping Mode, keep Ⓐ depressed (for about five seconds) as the second hand moves to the last signal reception result ("**Y**" or "**N**"), then to "**READY**" (or "**R**" for some models), and then to the city code of the currently selected Home City.
2. Use Ⓒ to cycle through available settings in the sequence shown below.



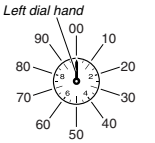


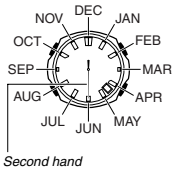
3. Press Ⓒ.
   - The second hand will move to 12 o'clock, and the left dial hand will move to "0" ("60" for some models).
4. Use Ⓓ (+) and Ⓑ (–) to change the time setting in one-minute increments.
   - Check the bottom dial hand to make sure that it is indicating the correct 24-hour setting.
5. Press Ⓒ to advance to the year setting.
   - The year setting consists of a tens digit and a units digit setting.





6. Use Ⓓ (units digit) and Ⓑ (tens digit) to change the year setting.
   - Ⓓ: Increases the one's digit by 1.
   - Ⓑ: Increases the tens digit by 10.
7. Press Ⓒ to advance to the month setting.





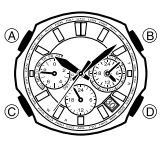
8. Press Ⓓ to move to the next month.
9. Press Ⓒ to advance to the day setting.
10. Use Ⓓ (+) and Ⓑ (–) to change the day setting.
11. When everything is the way you want, press Ⓐ.
    - This will exit the setting procedure and reset the seconds count to zero.
    - Press Ⓐ to restart timekeeping on a time signal on the TV or radio.
    - The day of the week is calculated automatically.

Auto Hand Home Position Correction

Strong magnetism or impact can cause the hands and/or day setting to be off, even if the watch is able to perform the signal receive operation. Auto hand home position correction corrects the hand position automatically.

- Auto correction is performed in the Timekeeping Mode only.
- The auto correction operation corrects the positions of the second, minute, and hour hands. Home position correction of the dial hands and day must be performed manually, using the procedure under "Manual Home Position Correction".
- Each hour, the watch performs automatic correction of the hand positions. Correction can be performed for error up to 55 minutes slow or 5 minutes fast.
- You also can trigger the auto hand home position correction operation manually, if you want. See "To trigger the auto hand home position correction operation manually" for more information.
- The auto hand home position correction operation can take up to three and a half minutes to complete.
- If hand positions are off by one hour or more, correct them using the procedure under "To trigger the auto hand home position correction operation manually" or "Manual Home Position Correction".

To trigger the auto hand home position correction operation manually



- Perform the following procedure when the time setting is off.

In the Timekeeping Mode, hold down Ⓓ for about six seconds until the second hand completes one full revolution.

- Though the second hand will stop momentarily about three seconds after you hold down Ⓓ, do not release the button yet. Wait until the second hand completes a full revolution before you release Ⓓ.
- To interrupt an ongoing correction operation and return to the Timekeeping Mode, press Ⓓ again.

- If you release Ⓓ when the second hand stops the first time (after about three seconds) in the above operation, the watch will enter the manual home position correction mode, which is described under "Manual Home Position Correction". If this happens, press Ⓐ to return to the Timekeeping Mode and then perform the above operation again.

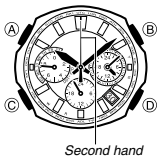
The manually triggered auto home position correction operation performs the following two steps.

1. The hands will move automatically in order to determine the home positions of the watch.
2. After the hand home positions are determined, the watch will return to normal timekeeping automatically. This completes the correction operation.

Manual Home Position Correction

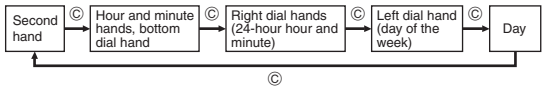
Strong magnetism or impact can cause the hands and/or day setting to be off, even if the watch is able to perform the signal receive operation. If this happens, perform the following home position correction procedure.

- Hand home position correction is not required if the time and day settings are correct.
- You also can use auto hand home position correction to correct the home positions of the second, minute, and hour hands.

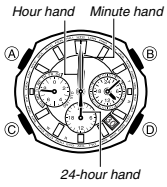


1. In the Timekeeping Mode, hold down Ⓓ for about three seconds until the second hand stops. Release Ⓓ at this time.

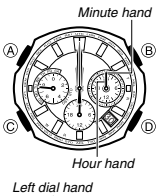
- Each press of Ⓒ cycles through available settings in the sequence shown below.

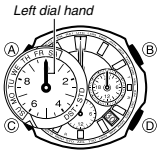


2. Check the second hand position.
   - Home Position
     Second hand: 12 o'clock
3. If the second hand home position is off, use Ⓓ to move it clockwise to correct it.



4. Press Ⓒ to change to hour and minute hand correction.
   - This will cause the hour and minute hands (24-hour hands) to their home positions.
   - Home Positions
     Hour hand: 12 o'clock
     Minute hand: 12 o'clock
     24-hour hand: 24 o'clock
5. Use Ⓓ (+) and Ⓑ (–) to correct the hour and minute hands.
   - The bottom dial hand indicates the current hour on a 24-hour dial. Its position is synchronized automatically with the hour and minute hands.
6. Press Ⓒ to advance to change to right dial (24-hour time) correction.
   - This will cause the hour and minute hands of the right dial to move to their home positions.
   - Home Positions
     Hour hand: 24 o'clock
     Minute hand: 24 o'clock
7. Use Ⓓ (+) and Ⓑ (–) to correct the right dial hands.
8. Press Ⓒ to change to left dial correction.
   - This causes the left dial hand to move to its home position.
   - Home Position
     Left Dial: 12 o'clock
9. Use Ⓓ (+) and Ⓑ (–) to correct the left dial hand.





10. Press Ⓒ to change to day correction.
    - This causes the day to move to its home position.
    - Home Position
      Day: 1
11. Use Ⓓ (+) and Ⓑ (–) to correct the day indication.
    - Each press of Ⓓ or Ⓑ moves the day indicator very slightly. Keep pressing the applicable button until the day is aligned the way you want.
12. Press Ⓐ to exit home position correction and return to normal timekeeping.

- If you press Ⓒ instead of Ⓐ, the watch will return to step 1 (second hand home position adjustment) of this procedure.

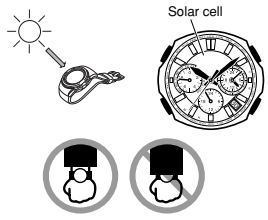
Check to make sure that the time, day, and day of the week are being indicated correctly.

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.

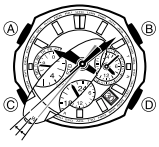
- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- You should try to keep the watch outside of your sleeve as much as possible. Even if the face of the watch is blocked from light only 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 the watch is left uncharged for about one week after 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.



Jumps two seconds

Level	Hand Movement	Function Status
1	Normal.	All functions enabled.
2	• Second hand jumps every 2 seconds. • Day changes to home position.	Time calibration signal reception disabled.
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.
- When power drops to Level 3, all functions will be disabled but the watch will continue to keep time internally for about one week. If you recharge the battery sufficiently during this period, the analog hands will move automatically to the correct setting and normal timekeeping will resume. If the watch is left uncharged for about one week after battery power drops to Level 3, the current time and all other settings return to their initial factory defaults.

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

- For details about the battery operating time and daily operating conditions, see the "Power Supply" section of the Specifications.
- 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)	2 hours		24 hours
Sunlight through a window (10,000 lux)	6 hours		89 hours
Daylight through a window on a cloudy day (5,000 lux)	9 hours		145 hours
Indoor fluorescent lighting (500 lux)	98 hours		– – –

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

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 do not perform any operation for about two or three minutes in the current time setting mode, or in the hand/day home position correction mode, the watch will return 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

- In most cases when configuring settings, holding down a button will start high-speed scrolling of the applicable setting.
- High-speed movement of hands and day will continue until you press any button.

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.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time with the precision noted in "Specifications".

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 normally should be no reason to change it. Note, however, that if the watch is left uncharged for about one week after battery power drops to Level 3, the current time and all other settings return to their initial factory defaults.
- 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 time zones in the Timekeeping Mode and World Time Mode is calculated in accordance with the Coordinated Universal Time (UTC) offset of each zone, based on your Home Time Zone time setting.
- 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)	• All functions, including analog timekeeping, disabled • Internal timekeeping maintained

- 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.

Specifications

Accuracy at normal temperature: ± 15 seconds a month (with no signal calibration)
Timekeeping: Hour, minutes (hand moves every 10 seconds), seconds, 24-hour, day, day of the week
Calendar system: Full Auto-calendar pre-programmed from the year 2000 to 2099
Other: Home City code (can be assigned one of 29 city codes and Universal Coordinated Time); Daylight Saving Time (summer time) / Standard Time
Time Calibration Signal Reception: Auto receive up to six times a day (5 times a day for the Chinese calibration signal) (Remaining auto receives cancelled as soon as one is successful); Manual receive
Receivable Time Calibration Signals:
Mainflingen, Germany (Call Sign: DCF77, Frequency: 77.5 kHz); Anthorn, England (Call Sign: MSF, Frequency: 60.0 kHz); Fukushima, Japan (Call Sign: JJY, Frequency: 40.0 kHz); Fukuoka/Saga, Japan (Call Sign: JJY, Frequency: 60.0 kHz); Fort Collins, Colorado, the United States (Call Sign: WWVB, Frequency: 60.0 kHz); Shangqiu City, Henan Province, China (Call Sign: BPC, Frequency: 68.5 kHz)
Stopwatch: Measuring capacity: 23:59'59.95"
Measuring unit: 1/20 second
Measuring mode: Elapsed time, split time
World Time: 29 time zones (29 cities + coordinated universal time)
Other: Standard Time/Daylight Saving Time (summer time); Home City/World Time City swapping
Other: Power Saving, auto hand home position correction

Power Supply: Solar cell and one rechargeable battery
Approximate battery operating time: 5 months (no exposure to light; one signal reception of approximately 4 minutes per day)

City Code Table

City Code	City	UTC Offset/ GMT Differential
PPG	Pago Pago	–11
HNL	Honolulu	–10
ANC	Anchorage	–9
LAX	Los Angeles	–8
DEN	Denver	–7
CHI	Chicago	–6
NYC	New York	–5
SCL	Santiago	–4
RIO	Rio De Janeiro	–3
FEN	Fernando de Noronha	–2
RAI	Praia	–1
UTC		0
LON	London	
PAR	Paris	+1
ATH	Athens	+2

City Code	City	UTC Offset/ GMT Differential
JED	Jeddah	+3
THR	Tehran	+3.5
DXB	Dubai	+4
KBL	Kabul	+4.5
KHI	Karachi	+5
DEL	Delhi	+5.5
DAC	Dhaka	+6
RGN	Yangon	+6.5
BKK	Bangkok	+7
HKG	Hong Kong	+8
TYO	Tokyo	+9
ADL	Adelaide	+9.5
SYD	Sydney	+10
NOU	Noumea	+11
WLG	Wellington	+12

- Based on data as of June 2008.
- The rules governing global times (UTC offset and GMT differential) and summer time are determined by each individual country.