

# Operation Guide 5098/5099/5101 CASIO®

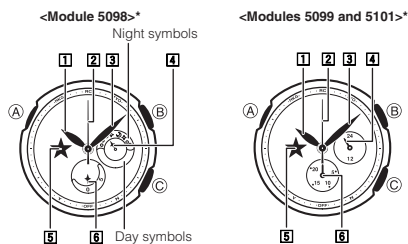
ENGLISH

Congratulations upon your selection of this CASIO watch.

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.

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## About This Manual



\* The module number is engraved on the back cover of the watch case.  
E-2

Button operations are indicated using the letters (A) through (C) shown in the illustration.

### Hand Functions

#### <Regular timekeeping>

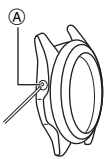
- 1 Hour Hand
- 2 Second Hand
- 3 Minute Hand
- 4 24-hour Hand: As with the <Modules 5099 and 5101>, midnight is indicated when the <Module 5098> 24-hour hand is straight upwards. The hand makes one revolution every 24 hours.

#### <Minute counter>

- 5 Ornament
- 6 Minute Hand (elapsed time)

This User's Guide uses numbers shown above to identify watch hands.

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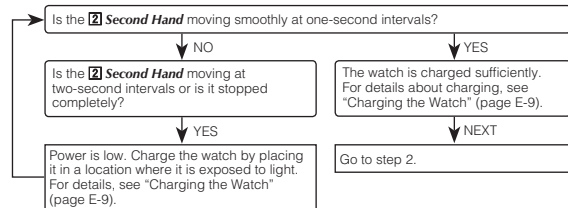
### Important!

The (A) button is designed to protect against accidental pressing. Use a thin pointed object to press the depression of the button to operate it.

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## Things to check before using the watch

### 1. During regular timekeeping, observe the movement of the 2 Second Hand.



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### 2. Check the current location setting.

Use the procedure under "Specifying Your Current Location and Setting the Time" (page E-27) to configure your location setting.

#### Important!

Proper time calibration signal reception and time settings depend on correct location setting. Make sure you configure these settings correctly.

### 3. Set the current time.

- **To set the time using a time calibration signal**  
See "To get ready for a receive operation" (page E-19).
- **To set the time manually**  
See "Specifying Your Current Location and Setting the Time" (page E-27).

#### The watch is now ready for use.

- For details about the watch's radio controlled timekeeping feature, see "Radio Controlled Atomic Timekeeping" (page E-16).

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## Charging the Watch

The face of the watch is a solar cell that generates power from light. The generated power charges a built-in rechargeable battery, which powers watch operations. The watch charges whenever it is exposed to light.

### Charging Guide

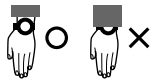


Whenever you are not wearing the watch, leave it in a location where it is exposed to light.

- Best charging performance is achieved by exposing the watch to light that is as strong as possible.

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When wearing the watch, make sure that its face is not blocked from light by the sleeve of your clothing.

- The watch may enter a sleep state (page E-15) if its face is blocked by your sleeve even only partially.

## Warning!

Leaving the watch in bright light for charging 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

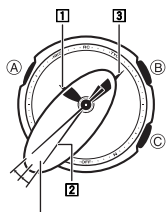
## Important!

- Keep the watch in an area normally exposed to bright light when storing it for long periods. This helps to ensure that power does not run down.
- 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 power to run down. Make sure that the watch is exposed to bright light whenever possible.

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## Power Levels



Moves at two-second intervals.

You can get an idea of the watch's power level by observing the movement of the [2] Second Hand in the regular timekeeping.

- If the [2] Second Hand is moving normally at one-second intervals, power is at Level 1.
- If the [2] Second Hand is moving at two-second intervals, power is at Level 2, which is quite low. Expose the watch to light as soon as possible so it can charge.

Level	Hand Movement	Function Status
1	Normal.	All functions enabled
2	[2] Second Hand moves at two-second intervals.	Time calibration signal reception disabled
3	[1] Hour Hand, [2] Second Hand and [3] Minute Hand stopped at 12 o'clock.	All functions 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 regular timekeeping will resume. After one week, all settings (including timekeeping) will be cleared. Recharging the battery will reset all settings to their initial factory defaults.

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## Charging Times

Exposure Level (Brightness)	Daily Operation *1	Level Change *2		
		Level 3	Level 2	Level 1
Outdoor sunlight (50,000 lux)	8 minutes	3 hours	35 hours	
Window sunlight (10,000 lux)	30 minutes	8 hours	134 hours	
Window sunlight on cloudy day (5,000 lux)	48 minutes	13 hours	216 hours	
Indoor fluorescent lighting (500 lux)	8 hours	149 hours	---	

- \* 1 Approximate exposure each day to generate power for normal daily operation.
- \* 2 Approximate exposure to take power up one level.
- The above times are for reference only. Actual times depend on lighting conditions.
- For details about the operating time and daily operating conditions, see the "Power Supply" section of the Specifications (page E-46).

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## Power Saving

The watch enters Power Saving when left in the dark for a few days. The actual number of days depends on the individual watch.

### What happens when the watch is in the sleep state

- All regular timekeeping hands move to 12 o'clock and stop.
- [6] Minute Hand (elapsed time) moves to 0 and stops.
- Auto Receive becomes disabled.
- Internal timekeeping functions continue to operate normally.

### To recover from the sleep state

- Move the watch to a well-lit area or press any button.
- It can take up to 14 minutes for the watch to recover from the sleep state to normal operation. Do not perform any button operations during that time.

## Radio Controlled Atomic Timekeeping

This watch receives a time calibration signal and updates its time setting accordingly. However, when using the watch outside of areas covered by time calibration signals, you will have to adjust the settings manually as required. See "Specifying Your Current Location and Setting the Time" (page E-27) for more information.

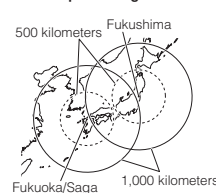
This section explains how the watch updates its time settings when the city name selected as the current location is in Japan or China, and is one that supports time calibration signal reception.

If your location setting is this:	The watch can receive the signal from the transmitter located here:
HONG KONG (HKG)	Shangqiu City (China)
TOKYO (TYO)	Fukushima (Japan), Fukuoka/Saga (Japan)

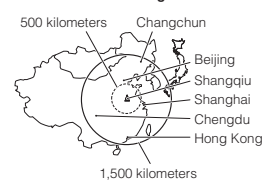
E-16

## Approximate Reception Ranges

### Japanese Signal



### Chinese Signal

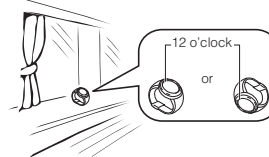


- Even when the watch is within range of a transmitter, signal reception may be impossible due to the effects of geographic contours, structures, weather, the time of year, the time of day, radio interference, etc. The signal becomes weaker at distances of approximately 500 kilometers, which means that the influence of the above conditions becomes even greater.
- Signal reception may not be possible at the distances noted below during certain times of the year or day. Radio interference may also cause problems with reception.
  - Fukushima or Fukuoka/Saga (Japan) transmitters: 500 kilometers (310 miles)
  - Shangqiu (China) transmitter: 500 kilometers (310 miles)
- As of January 2011, 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.
- Using this watch in a country covered by a time calibration that is different from the countries it supports may result in incorrect time indication due to local application of summer time, etc.

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## To get ready for a receive operation

- The antenna of this watch is located on its 12 o'clock side. Position the watch with 12 o'clock facing towards a window as shown in the nearby illustration. Make sure there are no metal objects nearby.



- Signal reception normally is better at night.
- The receive operation 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 operation or move the watch during this time.

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- Signal reception may be difficult or even impossible under the conditions described 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

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- What you should do next depends on whether you are using Auto Receive or Manual Receive.
  - Auto Receive: Leave the watch over night in the location you selected in step 2. See "Auto Receive" on page E-21 for details.
  - Manual Receive: Perform the operation under "To perform manual receive" on page E-22.

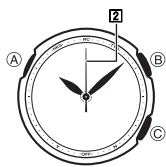
### Auto Receive

- With Auto Receive, the watch performs the receive operation each day automatically up to three times between the hours of 2 a.m. and 4 a.m. (1 a.m. and 3 a.m. for the Chinese calibration signal). When any receive operation is successful, none of the other receive operations for that day are performed.
- When a calibration time is reached, the watch will perform the receive operation only if it is in the regular timekeeping. The receive operation is not performed if a calibration time is reached while you are configuring settings.

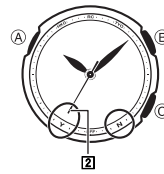
E-21

### To perform manual receive

- In the regular timekeeping, keep (A) depressed (for about two seconds) as the [2] Second Hand goes through the following sequence.
  - Moves to YES (Y) or NO (N) to indicate the last signal reception result, then to Receiving (RC).
- The [2] Second Hand indicates the operations the watch is currently performing.



When the [2] Second Hand is pointed here:	It means this:
Receiving (RC)	Reception is in progress.
YES (Y)	Reception was completed successfully.
NO (N)	Reception failed for some reason.



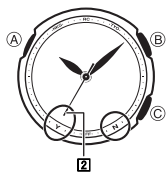
- When the receive operation is successful, the watch adjusts the time setting accordingly. It does not adjust the setting if the operation failed.

### Note

- To interrupt a receive operation and return to the regular timekeeping, press any button.

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### To check the result of the latest receive operation

- In the regular timekeeping, press (A).
- The [2] Second Hand will move to YES (Y) for five seconds if the latest receive operation was successful, or NO (N) if it was not. After that, regular timekeeping will resume.
  - You can return to the regular timekeeping manually by pressing (A) while the [2] Second Hand is pointing to YES (Y) or NO (N).

### Note

- The [2] Second Hand will indicate NO (N) if you have adjusted the time setting manually since the latest receive operation.

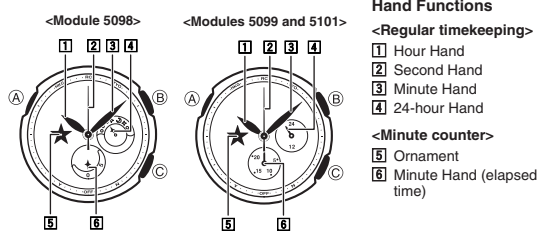
### Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time setting.
- Even if a receive operation is successful, certain conditions can cause the time setting to be off by up to one second.
- If you are in an area where signal reception is not possible, the watch keeps time with the precision noted in "Specifications" (page E-46).
- The receive operation is disabled under any of the following conditions.
  - While power is at Level 2 or lower (page E-12)
  - When the watch is in the function sleep state ("Power Saving", page E-15)
  - While the [5] Ornament is moving (page E-32)

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## Timekeeping

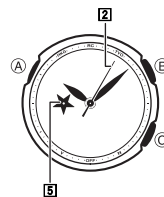


- Hand Functions**
- <Regular timekeeping>
- Hour Hand
  - Second Hand
  - Minute Hand
  - 24-hour Hand
- <Minute counter>
- Ornament
  - Minute Hand (elapsed time)

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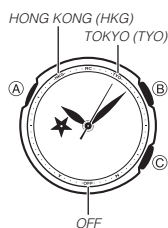
## Specifying Your Current Location and Setting the Time

Use the procedure in this section to specify the location where you will be using the watch. You also can adjust the time when the watch is unable to receive a time calibration signal.



- In the regular timekeeping, keep (A) depressed (for about five seconds) as the [2] Second Hand and [5] Ornament go through the sequence described below.
  - [2] Second Hand: Last signal reception result → RC → Current location setting
  - [5] Ornament: Upside down

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- Press (C) to select the location you want.

- Each press of (C) cycles through the three settings shown below.

City Name	Location
TOKYO (TYO)	Japan
HONG KONG (HKG)	China
OFF	Receive off*

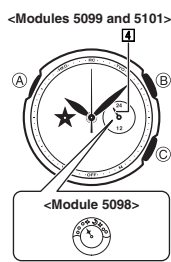
- \* Select OFF for the location setting whenever using the watch in any other geographic area other than Japan or China. When OFF is selected, the watch does not receive any time calibration signal, so you will need to adjust the time setting manually as required.



- Press (A). What happens next depends on the operations you performed in step 2, as described below.
  - If you changed the location to TOKYO (TYO) or HONG KONG (HKG) from another setting, the watch will resume regular timekeeping when you press (A).
  - If you changed to OFF or if you did not change the setting, pressing (A) will proceed to step 4, below.

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4. Use **(C)** (+1 minute) and **(B)** (-1 minute) to change the current time setting.
- Holding down either button for about two seconds and then releasing it starts high-speed hand movement in the applicable direction.
  - Pressing **(C)** and **(B)** at the same time will start high-speed hand movement, which will continue until the hands complete a 24-hour rotation.
  - To stop high-speed hand movement, press any button.
  - Check the **(4) 24-hour Hand** to make sure that the time is set properly (1:00 a.m. = 1 o'clock, 1:00 p.m. = 13 o'clock).

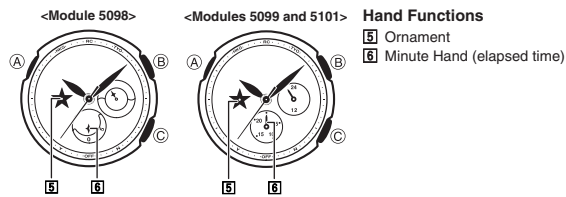
5. After the setting is the way you want, press **(A)**.
- This will exit the setting mode and the **(2) Second Hand** will resume regular timekeeping.
  - For best timekeeping accuracy, press **(A)** on a time signal from the TV or radio.
  - The watch will exit the setting mode automatically if you do not perform any button operation for about two or three minutes.

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## Using the Minute Counter

The minute counter measures elapsed time.



### To perform an elapsed time operation



### Note

- Check the current position of the **(6) Minute Hand (elapsed time)**. If it is pointed at 5, for example, it means that five minutes have elapsed.
- The minute counter can indicate elapsed time up to 20 minutes.
- The **(5) Ornament** moves with each second, making one revolution per minute (60 seconds).
- While the minute counter hands are stopped (not moving), press **(C)** to reset the **(6) Minute Hand (elapsed time)** to 0.

E-32

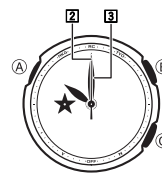
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## Hand Home Position Adjustment

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

### Important!

- It can take up to 14 minutes for the hands to move to their home positions for hand home position adjustment. It also can take up to 14 minutes for the hand to return to their normal positions following hand home position adjustment.
- When performing the following procedure, it is recommended that after you move to a home position, you press **(B)** to move the setting back one step. Next, press **(C)** to return it to the home position. This helps to ensure better home position adjustment accuracy.

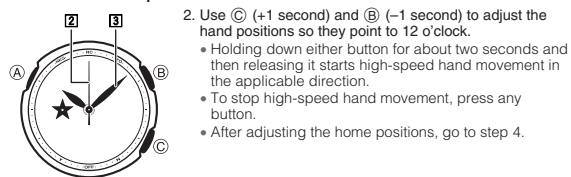


1. In the regular timekeeping, hold down **(A)** for about 10 seconds until the **(3) Minute Hand** and **(2) Second Hand** move to 12 o'clock.
  - The **(2) Second Hand** goes through the sequence described below.  
Last signal reception result → RC → Current location setting → Keep **(A)** depressed until the **(2) Second Hand** starts to move counterclockwise. You can release **(A)** at this time.
  - The **(3) Minute Hand** and **(2) Second Hand** are in their correct home positions if they are pointed precisely at 12 o'clock. If the hands are in the correct home positions, advance to step 4.

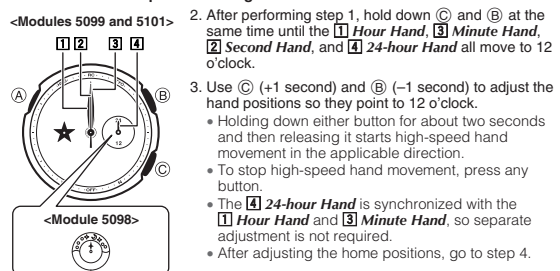
E-34

E-35

### If the current home positions are within ±15 minutes 00 seconds



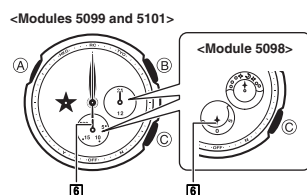
### If the current home positions are greater than ±15 minutes 00 seconds



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4. Press **(A)**. This will cause the **(6) Minute Hand (elapsed time)** to move to its home position (0).
- If the **(6) Minute Hand (elapsed time)** is at the correct home position, advance to step 6.



5. Use **(C)** (+) and **(B)** (-) to adjust the **(6) Minute Hand (elapsed time)** so it is at its home position (0).
- Holding down either button for about two seconds and then releasing it starts high-speed hand movement in the applicable direction.
  - To stop high-speed hand movement, press any button.
  - After adjusting the home position, go to step 6.
6. Press **(A)** to exit home position correction and return to regular timekeeping.

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## Troubleshooting

### Hand Movement and Position

- The [2] *Second Hand* is moving at two second intervals.
- All regular timekeeping hands are stopped at 12 o'clock, the [6] *Minute Hand* (elapsed time) is at its home position (0), and none of the buttons work.  
Power may be low. Expose the watch to light until the [2] *Second Hand* starts moving normally, at one-second intervals (page E-12).
- The hands of the watch suddenly start moving at high speed, even when I do not perform any operation.  
This could be due to any one of the following causes. In all cases, the hand movement does not indicate malfunction, and should stop shortly.
  - The watch is recovering from a sleep state (page E-15).
  - The time setting is being adjusted following a successful auto time calibration signal receive operation (page E-16).

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- The [2] *Second Hand* starts to move at one-second intervals, but then suddenly returns to moving at two-second intervals.

The watch probably is not sufficiently charged yet. Continue keeping it exposed to light.

### Time Calibration Signal

The information in this section applies only when **HONG KONG (HKG)** or **TOKYO (TYO)** is selected as the current location. You need to adjust the current time manually when **OFF** is selected as the current location.

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- The current time setting changes after I set it manually.

You may have the watch configured for Auto Receive of the time calibration signal (page E-21), which will cause the time to be adjusted automatically according to your currently selected location. If this results in the wrong time setting, check your location setting and correct it, if necessary (page E-27).

- Auto Receive is not performed or I cannot perform Manual Receive.

Possible Cause	Remedy	Page
Your location setting is wrong.	Check your location setting and correct it, if necessary.	E-27
There is not enough power for signal reception.	Expose the watch to light to charge it.	E-9

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## Specifications

**Accuracy at normal temperature:** ± 15 seconds a month (with no signal calibration)

**Timekeeping:** Hour, minutes, seconds, 24-hour

**Time Calibration Signal Reception:** Auto receive up to three times a day; Manual receive

Receivable Time Calibration Signals:

Fukushima, Japan (Call Sign: JJY, Frequency: 40.0 kHz); Fukuoka/Saga, Japan (Call Sign: JJY, Frequency: 60.0 kHz); Shangqiu City, Henan Province, China (Call Sign: BPC, Frequency: 68.5 kHz)

**Minute Counter:** Measuring capacity: 20 minutes

**Other:** Power Saving

**Power Supply:** Solar cell and one rechargeable battery

Approximate battery operating time: 8 months (no exposure to light after a full charge; signal reception of approximately 3 minutes per day)

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- The current time setting is off by hours.

Your location setting may be wrong. Check your location setting and correct it, if necessary (page E-27).

- The hands are off.

This could indicate that the watch has been exposed to magnetism or strong impact, which has caused problems with proper hand alignment. Adjust the watch's hand home position alignment (page E-34).

### Charging

- The watch does not resume operation after I expose it to light.

This can happen after the power level drops to Level 3 (page E-12). Continue exposing the watch to light until the [2] *Second Hand* starts moving normally (at one-second intervals).

- The [2] *Second Hand* indicates NO (N) when I check the result of the latest receive operation.

Possible Cause	Remedy	Page
<ul style="list-style-type: none"> <li>• You are wearing or moving the watch, or performing a button operation during the signal receive operation.</li> <li>• The watch is in an area with poor reception conditions.</li> </ul>	Keep the watch in an area where reception conditions are good while the signal receive operation is being performed.	E-19
You are in an area where signal reception is not possible for some reason.	See "Approximate Reception Ranges".	E-17
The calibration signal is not being transmitted for some reason.	<ul style="list-style-type: none"> <li>• Check the website of the organization that maintains the time calibration signal in your area for information about its down times.</li> <li>• Try again later.</li> </ul>	—

- Signal reception is being performed successfully, but the time is wrong.

Possible Cause	Remedy	Page
Your location setting is wrong.	Check your location setting and correct it, if necessary.	E-27
The watch may have been exposed to magnetism or strong impact, which has caused problems with proper hand alignment.	Adjust the watch's hand home positions.	E-34