Operation Guide 2790

CASIO®

Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when necessary.

> **Expose the watch to bright light to charge its battery before using it.**
> You can use this watch even as its battery is being charged by exposure to bright light.
> • **Be sure to read "Battery" for important information you need to know when exposing the watch to bright light.**

If the digital display of the watch is blank...

If the Power Saving on indicator (**PS**) is on the display (either flashing or not flashing), it means that the display is blank because **the watch's Power Saving function has turned off the display to conserve power**. Power Saving automatically turns off the display and enters a sleep state whenever your watch is left for a certain period where it is dark. If the watch is kept in the dark for a longer period, the analog hands will also stop moving after a few days.
• The initial factory default setting is Power Saving on.
• The watch recovers from the sleep state if you move it to a well-lit area, if you press any button, or if you angle the watch towards your face for reading.
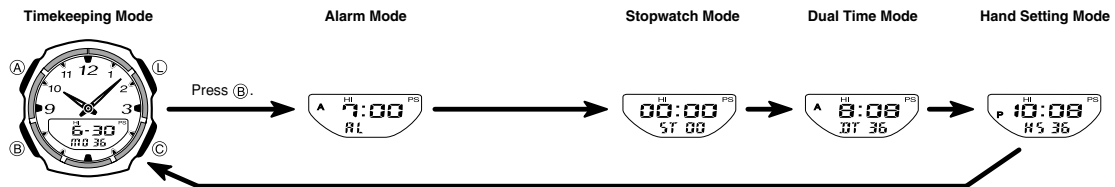• **See "Power Saving Function" for more information.**

About This Manual

• Button operations are indicated using the letters shown in the illustration.
• For the sake of simplicity, the sample displays in this manual do not show the analog hands of the watch.
• Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "Reference" section.
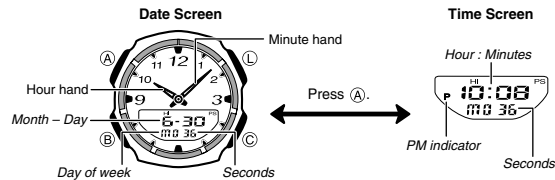
General Guide

• Press Ⓑ to change from mode to mode.
• In any mode, press Ⓛ to illuminate the display.

Timekeeping Mode	Alarm Mode	Stopwatch Mode	Dual Time Mode	Hand Setting Mode

Press Ⓑ.

Timekeeping

This watch features both digital and analog timekeeping. Changing the digital time setting causes the analog setting to be adjusted automatically to match the digital time.
• Whenever you need to adjust both the digital and the analog time settings, make sure you adjust the digital setting first.
• In the Timekeeping Mode, press Ⓐ to toggle the display between the date screen and the time screen.

Date Screen — Minute hand
Hour hand
Month – Day
Day of week
Seconds

Press Ⓐ.

Time Screen
Hour : Minutes
PM indicator
Seconds

Digital Time and Date

Use the Timekeeping Mode to set and view a digital display of the current time and date. When setting the digital time, you can also specify the illumination duration.

To set the digital time and date

1. In the Timekeeping Mode, hold down Ⓐ until the seconds start to flash, which indicates the setting screen.
   • The hour hand and minute hand of the watch do not move while the setting screen is on the display.
2. Press Ⓑ to move the flashing in the sequence shown below to select the other settings.

Seconds/Illumination duration → Hour → Minutes
Day ← Month ← Year

3. When the setting you want to change is flashing, use Ⓒ and Ⓛ to change it as described below.

Screen	To do this:	Do this:
36	Reset the seconds to 00	Press Ⓒ.
	Toggle illumination duration between three seconds (**3"** displayed) and one second (**3"** not displayed)	Press Ⓛ.
P 10:08	Change the hour or minutes	Press Ⓒ (+).
2003	Change the year	
6-30	Change the month or day	

4. Press Ⓐ to exit the setting screen.
• When you use the above procedure to set the digital display time, the hands of the analog timepiece normally adjust according to your setting.
• For more information about illumination duration, see "Display Illumination".
• Resetting the seconds to 00 while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to 00 without changing the minutes.
• The day of the week is automatically displayed in accordance with the date (year, month, and day) settings.
• 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.

To toggle between 12-hour and 24-hour timekeeping
In the Timekeeping Mode, press Ⓒ to toggle between 12-hour timekeeping (indicated by **A** or **P** on the display), or 24-hour timekeeping.
• With the 12-hour format, the **P** (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and the **A** (AM) indicator appears for times in the range of midnight to 11:59 a.m.
• With the 24-hour format, times are displayed in the range of 0:00 to 23:59, without any indicator.
• The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is applied in all modes.

Analog Timekeeping

The analog time of this watch is synchronized with the digital time. The analog time setting is adjusted automatically whenever you change the digital time.

Note
- After you manually change the digital time setting, the hands of the analog timepiece move clockwise to adjust to the new setting. If the analog time does not match the digital time for any reason, use the procedure described under "To adjust the analog time" to match the analog setting to the digital setting.
- Alarms, the Hourly Time Signal, and the display illumination are all disabled while the analog hands are moving.
- Whenever you need to manually adjust both the digital and the analog time settings, make sure you adjust the digital setting first.
- Depending on how much the hands have to move in order to adjust to the digital time, it may take some time before the analog hands stop moving.
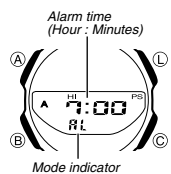
To adjust the analog time

1. In the Timekeeping Mode, press Ⓑ four times to enter the Hand Setting Mode.
2. Hold down Ⓐ until the current digital time starts to flash, which indicates the analog setting screen.
   - Note that you will not be able to change to the setting screen if the analog hands are moving because the watch is automatically adjusting the analog time to match the digital time. If this happens, wait until the hands stop moving.
   - The hour hand and minute hand of the watch do not move while the setting screen is on the display.
3. Press Ⓒ to advance the analog time setting by 20 seconds.
   - Holding down Ⓒ advances the analog time setting at high speed.
- If you need to advance the analog time a long way, press Ⓒ and Ⓛ at the same time. This locks the high speed hand movement, so you can release the two buttons. High-speed hand movement continues until you press any button. It will also stop automatically after the time advances 12 hours or if an alarm (daily alarm or Hourly Time Signal) starts to sound.
4. Press Ⓐ to exit the setting screen.
- To return to the Timekeeping Mode, press Ⓑ.

Alarm

Alarm time (Hour : Minutes)

Mode indicator

When the daily alarm is turned on, the alarm tone sounds when the alarm time is reached.
You can also turn on an Hourly Time Signal that causes the watch to beep twice every hour on the hour.
- Alarm setting (and Hourly Time Signal setting) is available in the Alarm Mode, which you enter by pressing Ⓑ.

Alarm Operation
The alarm tone sounds at the preset time for 10 seconds, regardless of the mode the watch is in.
- Note that the alarm does not sound while the analog hands are in motion to adjust in accordance with a change made to the digital time setting in the Timekeeping Mode.
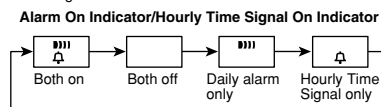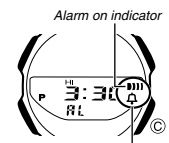
To set an alarm time

1. In the Alarm Mode, hold down Ⓐ until the hour setting starts to flash, which indicates the setting screen.
   - This operation automatically turns on the alarm.
2. Press Ⓑ to move the flashing between the hour and minutes.
3. While a setting is flashing, use Ⓒ to increase it.
   - With the 12-hour format, set the time correctly as a.m. (**A** indicator) or p.m. (**P** indicator).
4. Press Ⓐ to exit the setting screen.

To stop the alarm tone after it starts to sound
Press any button.

To turn the Daily Alarm and Hourly Time Signal on and off

Alarm on indicator

Hourly time signal on indicator

In the Alarm Mode, press Ⓒ to cycle through the on and off settings as shown below.

Alarm On Indicator/Hourly Time Signal On Indicator

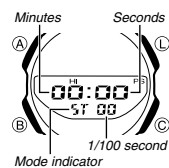|			
Both on	Both off	Daily alarm only	Hourly Time Signal only

- The alarm on (▮▮▮) indicator flashes while the alarm is sounding.
- The alarm on (▮▮▮) indicator and Hourly Time Signal on (🔔) indicator are displayed in all modes.

To test the alarm
In the Alarm Mode, hold down Ⓒ to sound the alarm.

Stopwatch

Minutes   Seconds
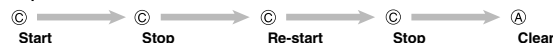
1/100 second

Mode indicator

The stopwatch lets you measure elapsed time.
- The display range of the stopwatch is 59 minutes, 59.99 seconds.
- The stopwatch continues to run, restarting from zero after it reaches its limit, until you stop it.
- The stopwatch measurement operation continues even if you exit the Stopwatch Mode.
- All of the operations in this section are performed in the Stopwatch Mode, which you enter by pressing Ⓑ.

To measure times with the stopwatch

Elapsed time

Ⓒ → Ⓒ → Ⓒ → Ⓒ → Ⓐ
Start   Stop   Re-start   Stop   Clear

Dual Time
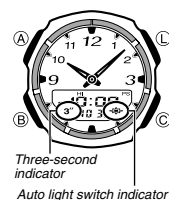
Dual Time Mode lets you keep track of a time in a different time zone.
- In the Dual Time Mode, the seconds count is synchronized with the seconds count of the current digital time.

Hour : Minutes

Seconds

Mode indicator

To set the Dual Time
1. Press Ⓑ to enter the Dual Time Mode.
2. Hold down Ⓐ until the hour setting starts to flash, which indicates the setting screen.
3. Press Ⓑ to move the flashing between the hour and minutes settings.
4. Press Ⓒ to increase the setting.
5. Press Ⓐ to exit the setting screen.

Display Illumination

Three-second indicator

Auto light switch indicator

An LED (light-emitting diode) and a light guide panel illuminate the display for easy reading in the dark. The watch's auto light switch automatically turns on display illumination when you angle the watch for reading in the dark.
- The auto light switch must be turned on (indicated by the auto light switch indicator) for it to operate.
- See "Illumination Precautions" for more important information.

To illuminate the display
In any mode, press Ⓛ to turn on illumination.
- The above operation turns on illumination regardless of the current auto light switch setting.
- You can use the procedure below to select either one second or three seconds as the illumination duration. When you press Ⓛ, the illumination will remain on for about one second or three seconds, depending on the current illumination duration setting.

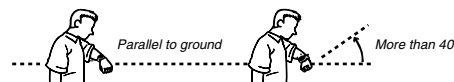### To specify the illumination duration
1. In the Timekeeping Mode, hold down Ⓐ until the seconds start to flash, which indicates the setting screen.
2. While the seconds are flashing, press Ⓛ to toggle the illumination duration between three seconds (**3"** displayed) and one second (**3"** not displayed).
3. Press Ⓐ to exit the setting screen.
- When the three-second setting is selected, the three-second (**3"**) indicator remains on the display in all modes.

About the Auto Light Switch
While the auto light switch is enabled, illumination turns on for about one second or three seconds, whenever you position your wrist as described below in any mode. Note that this watch features a "Full Auto Light," so the auto light switch operates only when available light is below a certain level. Illumination does not turn on under bright light.
- Be sure to wear the watch on the outside of your wrist while using the auto light switch.

Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes illumination to turn on.

Parallel to ground   *More than 40°*

Warning!
- **Always make sure you are in a safe place whenever you are reading the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not surprise or distract others around you.**
- **When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.**

To turn the auto light switch on and off
In the Timekeeping Mode, hold down Ⓛ for about two seconds to toggle the auto light switch on (☀ displayed) or off (☀ not displayed).
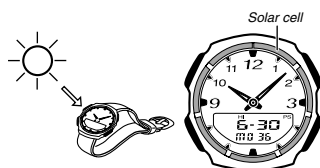- The auto light switch is automatically turned off whenever battery power is at Level 3. After battery power recovers to Level 2, you will have to perform the above procedure to turn the auto light switch back on again.
- The auto light switch indicator (☀) is on the display in all modes while the auto light switch is turned on.

Battery

This watch is equipped with a solar cell and a 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.

Solar cell

- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- The illustration shows how to position a watch with a resin band.

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 bright light can cause rechargeable battery power to run down. Be sure that the watch is normally exposed to bright light whenever possible.
- This watch employs a solar cell that converts light into electricity, which charges a built-in rechargeable battery. Normally, the rechargeable battery should not need replacement, but after very long use over a number of years, the rechargeable battery may lose its ability to achieve a full charge. Should you notice problems with getting the rechargeable battery to a full charge, contact your dealer or CASIO distributor about having the rechargeable battery replaced.
- The rechargeable battery should be replaced with a CASIO-specified ML2016 battery only. Other rechargeable batteries can cause damage to the watch.
- All data stored in memory is deleted, and the current time and all other settings return to their initial factory defaults whenever battery power drops to Level 4 and when you have the battery replaced.
- Turn on the watch's Power Saving function and keep it 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 Indicator

The battery power indicator on the display shows you the current status of the rechargeable battery's power.

Battery power indicator

Level	Battery Power indicator	Function Status
1	HI	All functions enabled.
2	MID or MID	All functions enabled.
3	LO C (Charge Soon Alert)	Beeper tone, display illumination, display, and buttons are disabled. Though the hands of the watch do not move, time continues to be kept internally.
4		All functions, including timekeeping, are disabled.

- If the **MID** indicator starts to flash a few minutes after the display is illuminated or after the beeper sounds, it means that the battery level is about to go from Level 2 to Level 3. If this happens, avoid using display illumination and the beeper, and expose the watch to bright light to charge its battery.
- The flashing **LO C** indicator at Level 3 tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- At Level 4, all functions are disabled and settings return to their initial factory defaults. Functions are enabled once again after the rechargeable battery is charged, but you need to set the digital time and date after the battery reaches Level 3 (indicated by flashing **LO C** indicator) from Level 4. You will not be able to set any of the other settings until the battery reaches Level 2 (no **LO C** indicator) after dropping to Level 4. When the battery returns to Level 2, the watch will automatically adjust the analog time setting to match the digital time.
- Leaving the watch in direct sunlight or some other very strong light source can cause the battery power indicator to temporarily show a reading that is higher than the actual battery level. The correct battery power indicator should appear after a few minutes.
- If you use illumination or any of the alarm functions a number of times during a short period, the recover (**R**) indicator appears on the display and the following operations become disabled until battery power recovers.
    Illumination; Beeper tone
    Manual adjustment of the analog time in the Hand Setting Mode
  After some time, battery power will recover and the recover (**R**) indicator will disappear, indicating that the above functions are enabled again.

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. Also note that allowing the watch to become very hot can cause its liquid crystal display to black out. The appearance of the LCD should become normal again when the watch returns to a lower temperature.

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 11 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)	5 minutes
Sunlight Through a Window (10,000 lux)	24 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
  - Display on 18 hours per day, sleep state 6 hours per day
  - 1 light operation (1.5 seconds) per day
  - 10 seconds of alarm operation per day
- Stable operation is promoted by frequent charging.

Recovery Times

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

Exposure Level (Brightness)	Approximate Exposure Time			
	Level 4	Level 3	Level 2	Level 1
Outdoor Sunlight (50,000 lux)	46 hours		20 hours	19 hours
Sunlight Through a Window (10,000 lux)	230 hours		100 hours	93 hours
Daylight Through a Window on a Cloudy Day (5,000 lux)	– – –		202 hours	189 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.

Power Saving on indicator

Power Saving Function

When turned on, the Power Saving function automatically puts the watch into a sleep state whenever it is left in an area where it is dark while the Timekeeping Mode or Dual Time Mode is selected.
- The watch does not enter the sleep state while the Stopwatch Mode is selected.
- The watch does not enter the sleep state while the Alarm Mode or Hand Setting Mode is selected. However, if you leave the watch in either of these modes, it will automatically revert to the Timekeeping Mode after a preset amount of time. After that it will be able to enter the sleep state.

- The table below shows how watch functions are affected by the Power Saving function.

Elapsed Time in Dark	Display	Operation
About one hour	Blank, with **PS** flashing	• Display is off. • All functions and analog timekeeping are enabled. • Timekeeping is maintained.
6 or 7 days	Blank, with **PS** not flashing	• Display is off. • Beeper is disabled. • Analog timekeeping is disabled, with hands positioned at 12 o'clock. • Digital timekeeping is 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.
- Angle the watch towards your face for reading.

To turn Power Saving on and off

In the Timekeeping Mode, hold down Ⓒ for about two seconds to toggle Power Saving on (**PS** indicator displayed) and off (**PS** indicator not displayed).
- Note that pressing Ⓒ also toggles between 12-hour timekeeping and 24-hour timekeeping.
- The Power Saving on indicator (**PS**) is on the display in all modes while the Power Saving is turned on.

Auto return features

- If you leave a screen with flashing digits for two or three minutes without performing any operation, the watch automatically saves anything you have input up to that point and exits the setting screen.
- The watch automatically returns to the Timekeeping Mode if you do not perform any button operation for two or three minutes in the Alarm or Hand Setting Mode.

Scrolling

The Ⓒ button is used to scroll through setting screen data on the display. Holding down this button during a scroll operation scrolls through the data at high speed.

Illumination Precautions

- The illumination provided by the light may be hard to see when viewed under direct sunlight.
- Illumination automatically turns off whenever an alarm sounds.
- Frequent use of the light shortens the battery operating time.
- Note that illumination is disabled while the analog hands are in motion to adjust in accordance with a change made to the digital time setting in the Timekeeping Mode.

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Auto light switch precautions

More than 15 degrees too high

- The auto light switch is automatically turned off whenever battery power is at Level 3.
- Avoid wearing the watch on the inside of your wrist. Doing so causes the auto light switch to operate when it is not needed, which shortens battery operating time. If you want to wear the watch on the inside of your wrist, turn off the auto light switch feature.
- Illumination may not turn on if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- Illumination turns off in about one second or three seconds, even if you keep the watch pointed towards your face.

- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If illumination does not turn on, try moving the watch back to the starting position (parallel with the ground) and then tilt it back towards you again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions, illumination may not turn on until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the auto light switch.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.