

SERVICE MANUAL & PARTS LIST

REF. NO. S/M-698
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MODULE NO.

QW-2220



WQV-1

CASIO®

(WITHOUT PRICE)

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1. SPECIFICATIONS: QW-2220

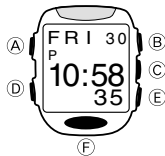
Item	Detail
Battery	CR2032
Battery life	Approx. 0.5 years
Current consumption	58 μ A maximum (Alarm mode) 2 mA maximum (Visual databank mode) 7 mA maximum (Camera mode)
Alarm system	Piezo plate on Back cover
Accuracy	± 15 sec./month
Accuracy setting system	Trimmer capacitor
Accuracy checking	See page 15
Functions	<ul style="list-style-type: none"> •Recording format: CASIO original (conversion to BMP or JPEG when uploading to a computer) •Recording medium: Built-in 1MB memory •Memory capacity: Up to 100 images •Recording element: 1/14-inch monochrome CMOS sensor •Total pixels: 28,000; Pixel Yield: 24,334 •Lens: F2.8 fixed; $f = 1.1$mm •Focusing distance: 30cm to ∞ •Subject illumination: Approximately 100Lx to 45,000Lx •Exposure control: Light metering system: full screen average; ALC (Average Luminance Control), exposure compensation •Shutter: Electronic shutter •Shutter speed: 1/11 to 1/1660 second •Monitor: 120×120 dots (14,400); monochrome with 16 grayscales; 20×20mm screen size •Recording modes: Normal, Merge, Art •Data Bank: Up to 24 characters per image (upper-case letters, numbers, basic symbols) •Infrared communication: Casio original system •Infrared functions: Image data exchange with a computer, data exchange with another Wrist Camera •Data speed: 115,200 bps •Communication distance: 10cm maximum •1/100-second stopwatch Measuring capacity: 23 : 59'59.99" •Countdown timer Input range: 1 minute to 60 minutes Unit: 1 minute •5 independent daily alarms •Hourly time signal •Low battery warning •Auto-calendar (to year 2039) •12/24-hour formats •Regular timekeeping: Hour, min, sec, pm, year, month, date, day

2. OPERATION CHART: QW-2220

GETTING ACQUAINTED

Congratulations upon your selection of the CASIO Wrist Camera (this watch). To get the most out of your purchase, be sure to read this manual carefully and keep the manual and everything contained in the packages.

About This Manual



- Button operations are indicated using the letters shown in the illustration.
- The sizes and positions of the characters shown on the sample displays in this manual may differ slightly from those that actually appear on the display of your watch.
- Each section of this manual provides you with the information you need to perform operations in each mode.
- When performing operations with this watch, you must first enter the correct mode (Camera Mode, Timekeeping Mode, etc.) See "GENERAL GUIDE" for information about maneuvering between modes.

- VISUAL DATABANK is a trademark of CASIO COMPUTER CO., LTD.
- CASIO COMPUTER CO., LTD. assumes no responsibility for any loss, or any claims by third parties that may arise through the use of this watch.

BEFORE USING THE WATCH...

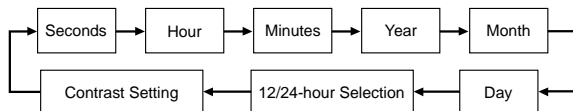
Warning!

- **Make sure you are in a safe place before operating the watch.**
Do not try to record images, perform complex watch operations, or look at the display of the watch while operating an automobile, motorcycle, or any other vehicle. Doing so creates the risk of causing a serious traffic accident. When you use the watch while walking, always keep aware of other people, vehicular traffic, and surface conditions around you in order to prevent accidents.
- **Do not use the watch inside of an aircraft.**
Never use the watch inside of an aircraft or in any other area where the use of such devices is prohibited. Doing so creates the risk of accident.
- **Always back up important data.**
Rough handling of or damage to the watch can accidentally delete image data in watch memory. Because of this, you should always keep back up copies of your images on computer disk.

To set the time and date



1. In the Timekeeping Mode, hold down (A) for about one second until the seconds digits start to flash on the display. This indicates the setting screen.
 - Each press of (D) moves the flashing around the setting screen in the sequence shown below.



2. While a setting is flashing, use (E) (+) and (B) (-) to change it.
 3. When everything is the way you want it, press (A) to exit the setting screen.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years.
 - The watch automatically exits the setting screen if you do not perform any operation for about two minutes.
 - The year can be set in the range of 2000 to 2039.

12-hour/24-hour Timekeeping

Pressing (D) while the day is flashing on the setting screen causes the indicator for the current timekeeping format (12H or 24H) to flash on the display. Each press of (E) at this time toggles between 12-hour (12H) and 24-hour (24H) timekeeping.

- The timekeeping format you select is applied in all modes.
- With the 12-hour format, the P (PM) indicator appears to the left of the hour digits for times in the range of noon to 11:59 p.m. The A (AM) indicator appears to the left of the hour digits for times in the range of midnight to 11:59 a.m.
- With the 24-hour format, times are indicated in the range of 0:00 to 23:59, without any indicator.

Contrast Adjustment

Pressing of (D) while the timekeeping format indicator (12H or 24H) is flashing causes the current contrast setting (example: CNT3 = Level 3) to appear on the display, with the level value flashing. Use (B) (darker) and (E) (lighter) to adjust the contrast to any one of the seven available levels.

Note

- The contrast setting described above does not affect the display of images. Image contrast can be adjusted using a separate procedure (See "To adjust image contrast").

Auto Display Off

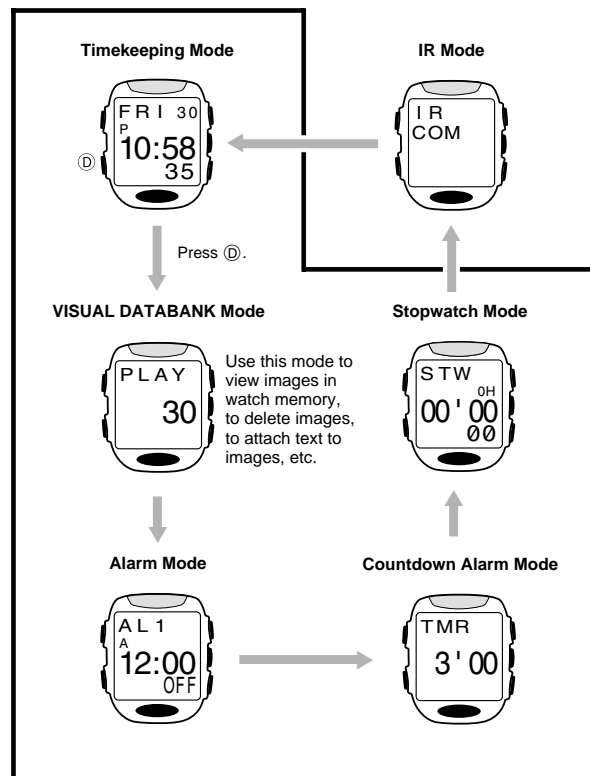


The watch automatically turns off its display screen if it is not moved for about 60 minutes. This not only conserves battery power, it also protects against "burn in" of display images.

To turn the display back on, press (F).
This displays the Timekeeping Mode screen.

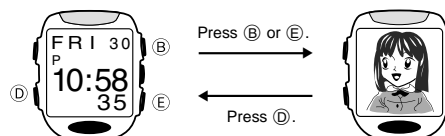
GENERAL GUIDE

Press **(D)** to change from mode to mode.



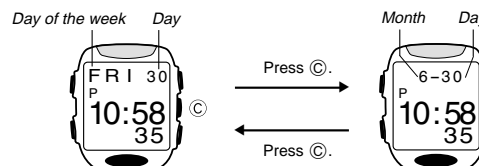
Timekeeping Mode

- Pressing **(B)** or **(E)** while in the Timekeeping Mode displays the Viewer Screen, which you can use to view images stored in watch memory.



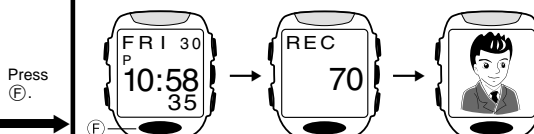
Press **(D)** to return from the Viewer Screen to the Timekeeping Mode.

- Each press of **(C)** while in the Timekeeping Mode toggles between the Day of the Week Screen and the Month Screen.



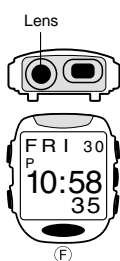
Camera Mode

- Pressing **(F)** in any mode besides the IR Mode enters the Camera Mode.



- Pressing **(D)** while in the Camera Mode enters the VISUAL DATABANK Mode so you can view images you have just recorded.

CAMERA MODE

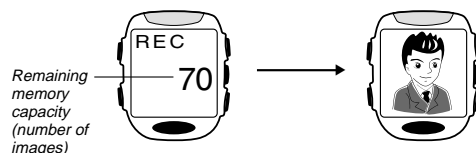


Use the Camera Mode to record images. The lens for image recording is located on the top edge of the watch.

To record an image

- Press **(F)** to enter the Camera Mode.
- Note that you cannot enter the Camera Mode from the IR Mode.

- The Camera Mode screen first shows remaining memory capacity for about one second, followed by the image being picked up by the lens.



- While viewing the image on the display, point the lens of the watch at the subject whose image you want to record.
- Press **(F)** to release the shutter and record the image.
- This records the image currently on the display and stores it into memory. The image remains on the display for about two seconds as the record operation is being performed.

Note

- All watch button operations are disabled while the record operation is in progress.
- The watch stays in the Camera Mode for about one minute after you enter it. Then it automatically enters the VISUAL DATABANK Mode and displays the last image recorded. See "Camera Rest Interval" for more information.
- The message **FULL** appears on the display to indicate that memory is full. You will not be able to enter the Camera Mode while this message is displayed. If this happens, delete images you no longer need to make room for more images.

Camera Mode Precautions

General

- Never touch the surface of the lens with your fingers.
- Take care that you do not accidentally move the watch when you press **(F)** to release the shutter.
- Insufficient lighting can result in poor images. Shoot in daylight whenever possible. At night, shoot indoors in a well-lit area.

Camera Rest Interval

Camera Mode operations consume considerable battery power. To protect against premature rundown of its battery, the watch automatically goes into a rest interval, during which you will be unable to re-enter the Camera Mode after you exit it. The length of the rest interval is equal to the amount of time you spent in the Camera Mode before you exited it. This means that if you exit the Camera Mode after being in it for 20 seconds, you will be unable to re-enter the Camera Mode for about 20 seconds.



Remaining rest interval time

If you try to enter the Camera Mode during a rest interval, the message **WAIT** appears on the display, along with a countdown of the remaining rest interval time.

- The maximum rest interval is 60 seconds.

Alarm, Hourly Time Signal, Countdown Alarm Sounds

The watch does not emit any alarm, Hourly Time Signal, or Countdown Alarm sound while it is in the Camera Mode.

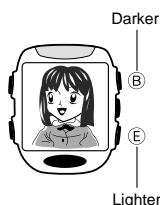
Controlling the Camera Mode Image

You can use the following procedures to adjust the brightness and to specify the type of lighting present when recording an image.

Adjusting the Image Brightness

The watch automatically sets the brightness of the image when you record it. You can also change the brightness level manually when you want to compensate for backlighting of the subject, very dark backgrounds, etc.

To adjust image brightness



When composing an image on the display, use **B** (darker) and **E** (lighter) to adjust its brightness.

- You can set brightness to one of 15 levels. The initial default level is 8.
- It may take some time after you press **B** or **E** before the change in brightness is reflected on the displayed image.
- A brightness setting you make remains in effect until you change it or exit the Camera Mode. Automatic brightness adjustment is the initial default whenever you enter the Camera Mode.

Important!

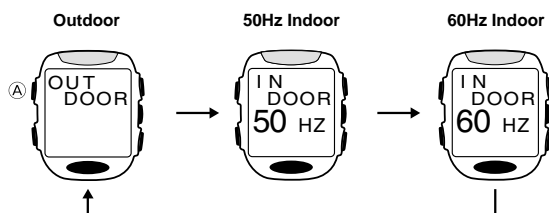
- Even with manual brightness adjustment, you may not be able to obtain an acceptable image when recording images under very bright or very dark lighting conditions.

Specifying the Lighting Type

The type of lighting present when recording, greatly affects the resulting image. Besides the difference between outdoor and indoor lighting, there is also a difference between indoor lighting types. Though you cannot see it, light produced by indoor lighting fixtures actually flickers at a fixed rate, which is the same as the cycle of the lighting fixture's AC power (50Hz or 60Hz). You can use the following procedure to tell the watch the type of lighting you are using, so it can make necessary adjustments that ensure best results.

To specify the lighting type

In the Camera Mode, press **A** to cycle through the available lighting type settings as shown below.



- The lighting type setting screen remains on the display for about one second. After that, it returns to the normal Camera Mode screen.
- A lighting type setting you make remains in effect until you change it or exit the Camera Mode. Outdoor lighting is the initial default whenever you enter the Camera Mode.

Recording Modes

There are three recording modes that you can use to produce the type of image you want.

Normal Mode

This mode records images using 16 grayscales. It is the normal default mode.

Merge Mode

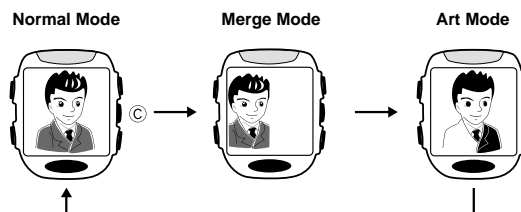
This mode lets you merge two separately recorded images into a single image.

Art Mode

This mode records images in two-tone monochrome.

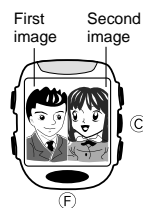
To select the recording mode

In the Camera Mode, press **C** to cycle through the available recording modes as shown below.



- The recording mode you select remains in effect until you change it or exit the Camera Mode. The Normal Mode is the initial default whenever you enter the Camera Mode.

To record using the Merge Mode



- In the Camera Mode, press **C** once to select the Merge Mode.
- Compose the first image, and then press **F** to record it.
- This records the first image on the left half of the display.
- Compose the second image, and then press **F** to record it.
- This records the second image on the right half of the display, and stores both images in memory.

Important!

- A Merge Mode image that has only a left side cannot be stored in memory.

Note

- Before pressing **F** in steps 2 and 3 of the above procedure, you can use the procedure ("To adjust image brightness") to adjust the brightness of the image.

To record using the Art Mode

- In the Camera Mode, press **C** twice to select the Art Mode.
- Compose the image, and then press **F** to record it.

VISUAL DATABANK™ MODE

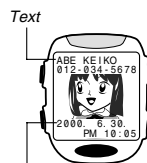
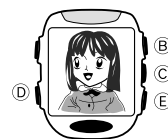
Besides viewing images, you can use the VISUAL DATABANK Mode to delete images, to attach text to images, etc.

Important!

- The watch does not emit any alarm, Hourly Time Signal, or Countdown Alarm sound while it is in the VISUAL DATABANK Mode. Instead, the message **ALM** flashes in the upper left corner of the display when an alarm time is reached, and the message **TMR** flashes when the countdown reaches zero.

To view recorded images

- In the Timekeeping Mode, press **D** to enter the VISUAL DATABANK Mode.
- The first image that appears is the one you just recorded or the one that was on the display when you last exited the Viewer Screen or the VISUAL DATABANK Mode.



Recording date and time

- Use **E** (+) and **B** (-) to scroll through the images currently in memory.
- Holding down either button scrolls at high speed.
- Press **C** to toggle display of the recording date and time (and attached text, if any) of the displayed image on and off.
- Press **D** five times to return to the Timekeeping Mode.
- The watch automatically switches to the Timekeeping Mode if you do not perform any operation for about two minutes in the VISUAL DATABANK Mode.

Note

- You can use the procedure under "Image Sorting" for information about how images are sorted when they are stored in memory.
- The image may appear somewhat dark while the recording date and time (and attached text, if any) are on the display.

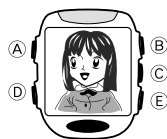
Using the Viewer Screen

The press of a button in the Timekeeping Mode displays the Viewer Screen, which you can use to view images stored in memory.

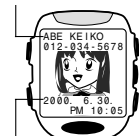
Important!

- The watch does not emit any alarm, Hourly Time Signal, or Countdown Alarm sound while the Viewer Screen is on the display. Instead, the message **ALM** flashes in the upper left corner of the display when an alarm time is reached, and the message **TMR** flashes when the countdown reaches zero.

To display the Viewer Screen



Text



Recording date and time

- In the Timekeeping Mode, press (E) or (B) to display the image that was on the display the last time you exited the Viewer Screen or the VISUAL DATABANK Mode.
- Use (E) (+) and (B) (-) to scroll through the images in memory.
 - Holding down either button scrolls at high speed.
 - Hold down (C) to view the recording date and time of the displayed image, and text attached to the image, if there is any.
 - The image may appear somewhat dark while recording date and time (and attached text, if any) are on the display.
- To close the Viewer Screen and return to the Timekeeping Mode display, press (D).
 - The watch automatically exits the Viewer Screen if you do not perform any operation for about 15 seconds.

To adjust image contrast

- In the Timekeeping Mode, press (E) or (B) to display the Viewer Screen.
- Press (A) to display the current image contrast setting value in the upper left corner of the display.
- Use (B) (darker) and (E) (lighter) to adjust the contrast to any one of the 15 available levels.
- After the contrast setting is the way you want, press (A) to apply the setting and exit the setting screen.

Note

- The above procedure affects the contrast of images only. See "Contrast Adjustment" for information about adjusting the contrast of other screens.

ALARM MODE

Alarm name
(Alarm 2)



Alarm time
(Hour : Minutes)

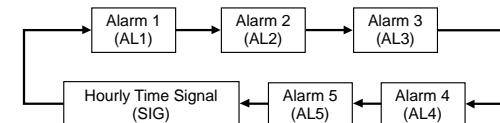
You can use the Alarm Mode to set five independent alarms. You can also turn on an Hourly Time Signal that causes the watch to beep every hour on the hour.

Important!

- The watch does not emit any alarm or Hourly Time Signal sounds while it is in the Camera Mode, VISUAL DATABANK Mode, or IR Mode, or while the Timekeeping Mode's Viewer Screen is on the display.
- In the case of the VISUAL DATABANK Mode and Viewer Screen, the message **ALM** flashes in the upper left corner of the display when an alarm time is reached.

To set the alarm time

- In the Alarm Mode, use (E) (+) and (B) (-) to display the screen for the alarm whose time you want to set.



- After you select an alarm, hold down (A) until the hour digits of the alarm time start to flash on the display.
 - The hour digits are flashing because they are *selected*.
 - This operation automatically turns on the alarm.

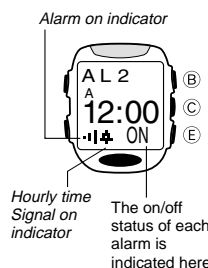
- While the hour setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
 - When setting the alarm time using the 12-hour format, take care to set the time correctly as am (A indicator) or pm (P indicator).
- Press (D) so that the minute digits of the alarm time start to flash.
 - Each press of (D) moves the flashing between Hour and Minutes.
- While the minutes setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
- Press (A) to exit the setting screen.

Note

- The watch automatically exits the setting screen if you do not perform any operation for about two minutes.

Daily Alarm Operation

The alarm sounds at the preset time each day for about 20 seconds, or until you stop it by pressing any button.



To test the alarm

In the Alarm Mode, hold down (C) to sound the alarm.

To turn a daily alarm and the Hourly Time Signal on and off

- In the Alarm Mode, use (E) (+) and (B) (-) to display an alarm screen or the Hourly Time Signal screen.
- When the alarm or Hourly Time Signal you want is selected, press (C) to turn it on and off.
 - The alarm on indicator and the Hourly Time Signal on indicator are shown on the display in the Timekeeping, Alarm, Countdown Alarm, and Stopwatch Modes.
 - If any alarm is on, the alarm on indicator is shown on the display.

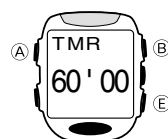
COUNTDOWN ALARM MODE

The Countdown Alarm Mode lets you set a start time of up to 60 minutes. A Countdown Alarm sounds when the countdown reaches zero.

Important!

- The watch does not emit the Countdown Alarm sound while it is in the Camera Mode, VISUAL DATABANK Mode, or IR Mode, or while the Timekeeping Mode's Viewer Screen is on the display.
- In the case of the VISUAL DATABANK Mode and Viewer Screen, the message **TMR** flashes in the upper left corner of the display when the end of the countdown is reached.

To set the countdown start time

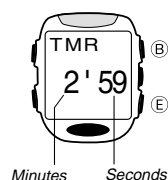


- In the Countdown Alarm Mode, hold down (A) until the minutes setting of the countdown alarm start to flash.
- While the minutes setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
- Press (A) to exit the setting screen.

Note

- The watch automatically exits the setting screen if you do not perform any operation for about two minutes.

Using the Countdown Alarm



- Each press of (E) starts and stops the countdown.
- The time is counted down on the display in one-second increments.
- Pressing (B) while a countdown is stopped resets the countdown to the countdown start time.
- When the countdown reaches zero, an alarm sounds for about 10 seconds or until you stop it by pressing any button.

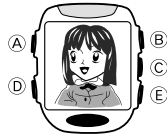
Using the Viewer Screen

The press of a button in the Timekeeping Mode displays the Viewer Screen, which you can use to view images stored in memory.

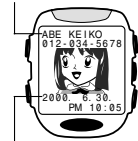
Important!

- The watch does not emit any alarm, Hourly Time Signal, or Countdown Alarm sound while the Viewer Screen is on the display. Instead, the message **ALM** flashes in the upper left corner of the display when an alarm time is reached, and the message **TMR** flashes when the countdown reaches zero.

To display the Viewer Screen



Text



Recording date and time

- In the Timekeeping Mode, press (E) or (B) to display the image that was on the display the last time you exited the Viewer Screen or the VISUAL DATABANK Mode.
- Use (E) (+) and (B) (-) to scroll through the images in memory.
 - Holding down either button scrolls at high speed.
 - Hold down (C) to view the recording date and time of the displayed image, and text attached to the image, if there is any.
 - The image may appear somewhat dark while recording date and time (and attached text, if any) are on the display.
- To close the Viewer Screen and return to the Timekeeping Mode display, press (D).
 - The watch automatically exits the Viewer Screen if you do not perform any operation for about 15 seconds.

To adjust image contrast

- In the Timekeeping Mode, press (E) or (B) to display the Viewer Screen.
- Press (A) to display the current image contrast setting value in the upper left corner of the display.
- Use (B) (darker) and (E) (lighter) to adjust the contrast to any one of the 15 available levels.
- After the contrast setting is the way you want, press (A) to apply the setting and exit the setting screen.

Note

- The above procedure affects the contrast of images only. See "Contrast Adjustment" for information about adjusting the contrast of other screens.

ALARM MODE

You can use the Alarm Mode to set five independent alarms. You can also turn on an Hourly Time Signal that causes the watch to beep every hour on the hour.

Important!

- The watch does not emit any alarm or Hourly Time Signal sounds while it is in the Camera Mode, VISUAL DATABANK Mode, or IR Mode, or while the Timekeeping Mode's Viewer Screen is on the display.
- In the case of the VISUAL DATABANK Mode and Viewer Screen, the message **ALM** flashes in the upper left corner of the display when an alarm time is reached.

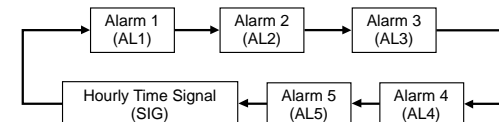
Alarm name
(Alarm 2)



Alarm time
(Hour : Minutes)

To set the alarm time

- In the Alarm Mode, use (E) (+) and (B) (-) to display the screen for the alarm whose time you want to set.



- After you select an alarm, hold down (A) until the hour digits of the alarm time start to flash on the display.
 - The hour digits are flashing because they are *selected*.
 - This operation automatically turns on the alarm.

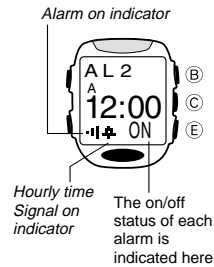
- While the hour setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
- When setting the alarm time using the 12-hour format, take care to set the time correctly as am (A indicator) or pm (P indicator).
- Press (D) so that the minute digits of the alarm time start to flash.
- Each press of (D) moves the flashing between Hour and Minutes.
- While the minutes setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
- Press (A) to exit the setting screen.

Note

- The watch automatically exits the setting screen if you do not perform any operation for about two minutes.

Daily Alarm Operation

The alarm sounds at the preset time each day for about 20 seconds, or until you stop it by pressing any button.



To test the alarm

In the Alarm Mode, hold down (C) to sound the alarm.

To turn a daily alarm and the Hourly Time Signal on and off

- In the Alarm Mode, use (E) (+) and (B) (-) to display an alarm screen or the Hourly Time Signal screen.
- When the alarm or Hourly Time Signal you want is selected, press (C) to turn it on and off.
 - The alarm on indicator and the Hourly Time Signal on indicator are shown on the display in the Timekeeping, Alarm, Countdown Alarm, and Stopwatch Modes.
 - If any alarm is on, the alarm on indicator is shown on the display.

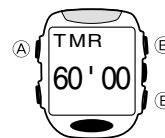
COUNTDOWN ALARM MODE

The Countdown Alarm Mode lets you set a start time of up to 60 minutes. A Countdown Alarm sounds when the countdown reaches zero.

Important!

- The watch does not emit the Countdown Alarm sound while it is in the Camera Mode, VISUAL DATABANK Mode, or IR Mode, or while the Timekeeping Mode's Viewer Screen is on the display.
- In the case of the VISUAL DATABANK Mode and Viewer Screen, the message **TMR** flashes in the upper left corner of the display when the end of the countdown is reached.

To set the countdown start time

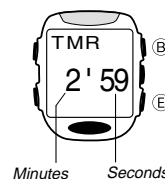


- In the Countdown Alarm Mode, hold down (A) until the minutes setting of the countdown alarm start to flash.
- While the minutes setting is flashing, use (E) (+) and (B) (-) to change it.
 - Holding down either button changes the setting at high speed.
- Press (A) to exit the setting screen.

Note

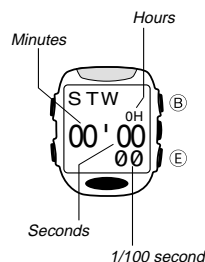
- The watch automatically exits the setting screen if you do not perform any operation for about two minutes.

Using the Countdown Alarm



- Each press of (E) starts and stops the countdown.
- The time is counted down on the display in one-second increments.
- Pressing (B) while a countdown is stopped resets the countdown to the countdown start time.
- When the countdown reaches zero, an alarm sounds for about 10 seconds or until you stop it by pressing any button.

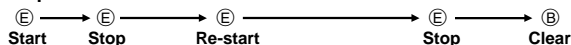
STOPWATCH MODE



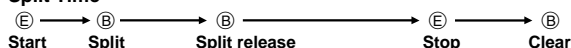
The Stopwatch Mode lets you measure elapsed time, split times, and two finishes. The range of the stopwatch is 23 hours, 59 minutes, 59.99 seconds.

To measure times with the stopwatch

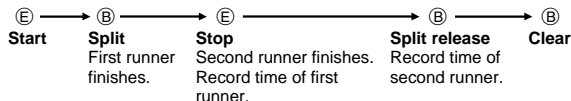
Elapsed Time



Split Time



Two Finishes



Note

- The elapsed time measurement operation continues even if you exit the Stopwatch Mode.

IR MODE

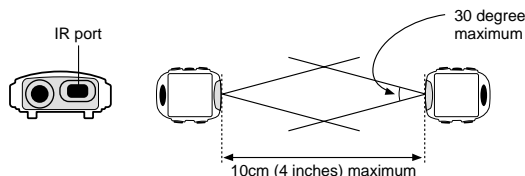
Use the IR Mode to exchange data between two watches or between your watch and computer.

Note

- An infrared adapter (PAD-2) is required to exchange data with a computer.
- For details about the procedure for exchanging data with a computer, see the documentation contained on the CD-ROM that comes with the PAD-2 infrared adapter.

Exchanging Data Between Two Watches

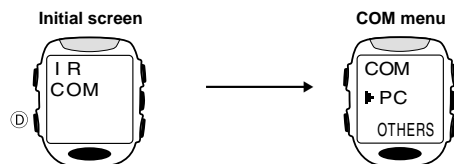
To exchange data between two watches, orient the watches as shown below.



- The above 10cm (4 inches) and 30-degree maximums shown in the above illustration apply only when the watches are pointed straight at each other. The maximum allowable distance may be less if either watch is at an angle (not pointed straight).
- Proper data communication may also be impossible if the two watches are too close to each other.

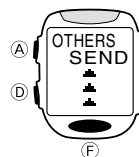
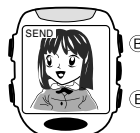
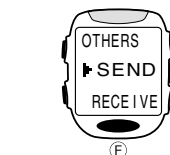
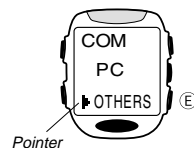
To enter the IR Mode

In the Timekeeping Mode, press (D) five times to enter the IR Mode. An initial screen appears for about one second, followed by the COM (IR Mode) menu.



- If you leave the watch in the IR Mode for about two minutes without performing any operation, it automatically changes to the Timekeeping Mode.

To send a single image



- On the **COM** menu, press (E) to move the pointer to **OTHERS**.

- Press (F) to display the **OTHERS** menu, with the pointer located next to **SEND**.
- Press (F) again to display the image selection screen.

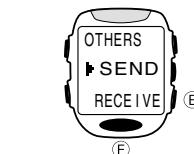
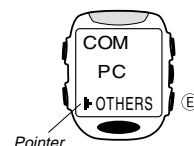
- Use (E) (+) and (B) (-) to scroll through the images and display the one you want to send.
 - Holding down either button scrolls at high speed.
- Align the IR ports of the two watches with each other.
- Put the receiving watch into receive standby at this time. See "To receive a single image" for more information.
- On the sending watch, press (F) to send the displayed image.
 - The data send screen shown nearby appears while an image send operation is in progress.
 - The message **OK** appears momentarily after the image send operation is complete. Next, the watch returns to the image selection screen in step 4 of the above procedure.

- After you are finished sending images, press (D) to return to the Timekeeping Mode.

Note

- Pressing (A) during the above procedure displays the **COM** menu.
- Pressing (D) during the above procedure returns to the Timekeeping Mode.

To receive a single image



- On the **COM** menu, press (E) to move the pointer to **OTHERS**.

- Press (F) to display the **OTHERS** menu, with the pointer located next to **SEND**.
- Press (E) to move the pointer to **RECEIVE**.

- Press (F) again to enter receive standby, which is indicated by the screen nearby.
- Align the IR ports of the two watches with each other, and perform the send operation on the sending watch.
 - See "To send a single image" for more information.
 - The message **OK** appears momentarily, followed by the received image. Next, the watch returns to the receive standby screen in step 3 of the above procedure.

- After you are finished receiving images, press (D) to return to the Timekeeping Mode.

Note

- Pressing (A) during the above procedure displays the **COM** menu.
- Pressing (D) during the above procedure returns to the Timekeeping Mode.

Communication Errors

Watch	Message/Indicator	Cause and Remedy
Sender	OTHERS SEND ERROR	• Communication failed for some reason. Try again.
	Flashing arrow marks.	• Communication link with receiver was broken. Re-align watches and try again.
Receiver	OTHERS RECEIVE ERROR	• Communication failed for some reason. Try again.
	PLAY 100 FULL	• Watch memory is full. Delete images you no longer need and try again.
	Flashing arrow marks.	• Communication link with sender was broken. Re-align watches and try again.

Communication Precautions

- The two watches must be within 10cm (4 inches) and 30 degrees of each other.
- Proper data communication may also be impossible if the two watches are too close to each other.
- Do not move the watches while communication is in progress.
- Make sure there is nothing between the two watches that blocks the path of the IR signal.
- Infrared communication may not be possible in areas where lighting is bright, near a window, etc. Perform data communication under normal room lighting (about 500 lux).
- The maximum allowable distance between watches may be less than 10cm when the watch is warm.
- An unrelated nearby IR data communication operation can interfere with proper IR data communication between two watches.
- The maximum allowable distance between watches may be less than 10cm when watch battery power is low.
- The watch automatically returns to the **COM** (IR Mode) menu about five minutes after the image selection screen or receive standby screen is displayed. If the point where five minutes elapse occurs while a data send/receive operation is in progress, the operation continues until it is complete, after which the watch automatically returns to the **COM** menu.

POWER SUPPLY

About the Pre-installed Battery

The battery installed at the factory discharges during shipment and inventory storage. Because of this, it may not provide the normal battery life specified for this watch.

- It is up to you to purchase a battery for replacement, even if the battery you are replacing does not last for the specified battery life period.

Low Battery Indication

As the battery goes low, the watch gradually disables functions to conserve remaining power, as described below.

Low battery indicator



Step 1

The low battery indicator flashes on the display when battery power drops below a certain level. At this time, the following functions become disabled.

- Entry to the Camera Mode
- VISUAL DATABANK Mode text input and image data deletion
- IR Mode data communication
- Daily alarm, Hourly Time Signal, Countdown Alarm sounds

Step 2

If you do not replace the battery within about 24 hours, the low battery indicator stops flashing and remains on the display and the following functions also become disabled.

- VISUAL DATABANK Mode image data display
- Viewer Screen

Note

- Attempting to access any of the disabled functions listed in Step 1 and Step 2 above causes the message **LOW BATT** to appear and let you know that the function is not available due to low battery power.
- Note that CASIO shall not be held responsible for any damage or loss, including but not limited to lost profits, by you or any third party due to data deletion or modification due to malfunction, repairs, battery replacement, etc.

Battery Precautions

Incorrectly using a battery can cause it to burst or leak, possibly damaging the interior of the watch. Note the following precautions.

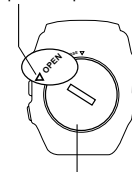
- This watch is powered by a single CR-2032 lithium battery.
- We strongly urge use of battery type specifically recommended in this manual.
- Damage to or dirt, dust, moisture on the inside of the battery cover or on the surface that comes into contact with the rubber seal (gasket) can cause loss of water resistance. Keep such areas clean and free of moisture.

- Never leave a dead or weak battery in the battery compartment. Doing so runs the risk of damage and malfunction due to battery fluid leaks.
- Be sure to dispose of old batteries according to the local laws and regulations in your area.
- Improperly replacing the battery can result in damage to the watch. Repairing such damage will be charged to you, so take care to replace the battery correctly.
- Never try to take the battery apart, or expose it to heat or direct flame. Take care that the positive and negative ends of the battery never become shorted.
- The battery installed at the factory is not rechargeable. Never try to charge it.
- Should battery fluid ever leak inside the battery compartment, immediately use a dry rag to wipe it out while taking care not to get any fluid on your hands.

Keep batteries out of the reach of small children. If accidentally swallowed, immediately contact a physician.

To replace the battery

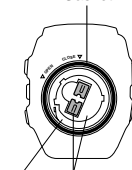
Rotate to this point to open.



Battery cover

1. Open the battery cover.
 - Insert a coin or other similar object into the slot in the battery cover and rotate the cover to the **OPEN** position.
 - Do not use undue force when rotating the battery cover. Doing so can damage the cover.

Gasket

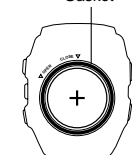


Battery compartment

Inside of battery cover

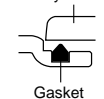
2. Remove the old battery.
 - If you have trouble removing the battery, try turning the back of the watch downwards so it falls out.
 - Take care that you do not lose the battery compartment gasket.
 - Keep your fingers away from the spring inside the battery compartment. The sharp edges of the spring create the risk of personal injury.

Gasket



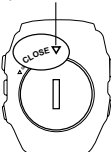
3. Load a new battery.
 - Wipe the surfaces of a new battery with a dry cloth, and load the battery into the watch with its plus (+) side facing up (so you can see it).
 - Never pick up the battery with tweezers contacting the top surface and bottom surface at the same time. Doing so creates a short.
 - If the gasket comes out when you remove the battery, be sure to replace it before loading the battery. You will not be able to load the battery properly if the gasket is not in place.
 - Whenever replacing the gasket, check it to make sure there is not dust or dirt on it.
 - Note the triangular shape of the gasket material. The flat surface (the base of the triangle) is the bottom, which should be against the watch body when the gasket is installed. The pointed surface (the peak of the triangle) is the top, which contacts the battery cover.

Battery cover



Gasket

Rotate to this point to close.



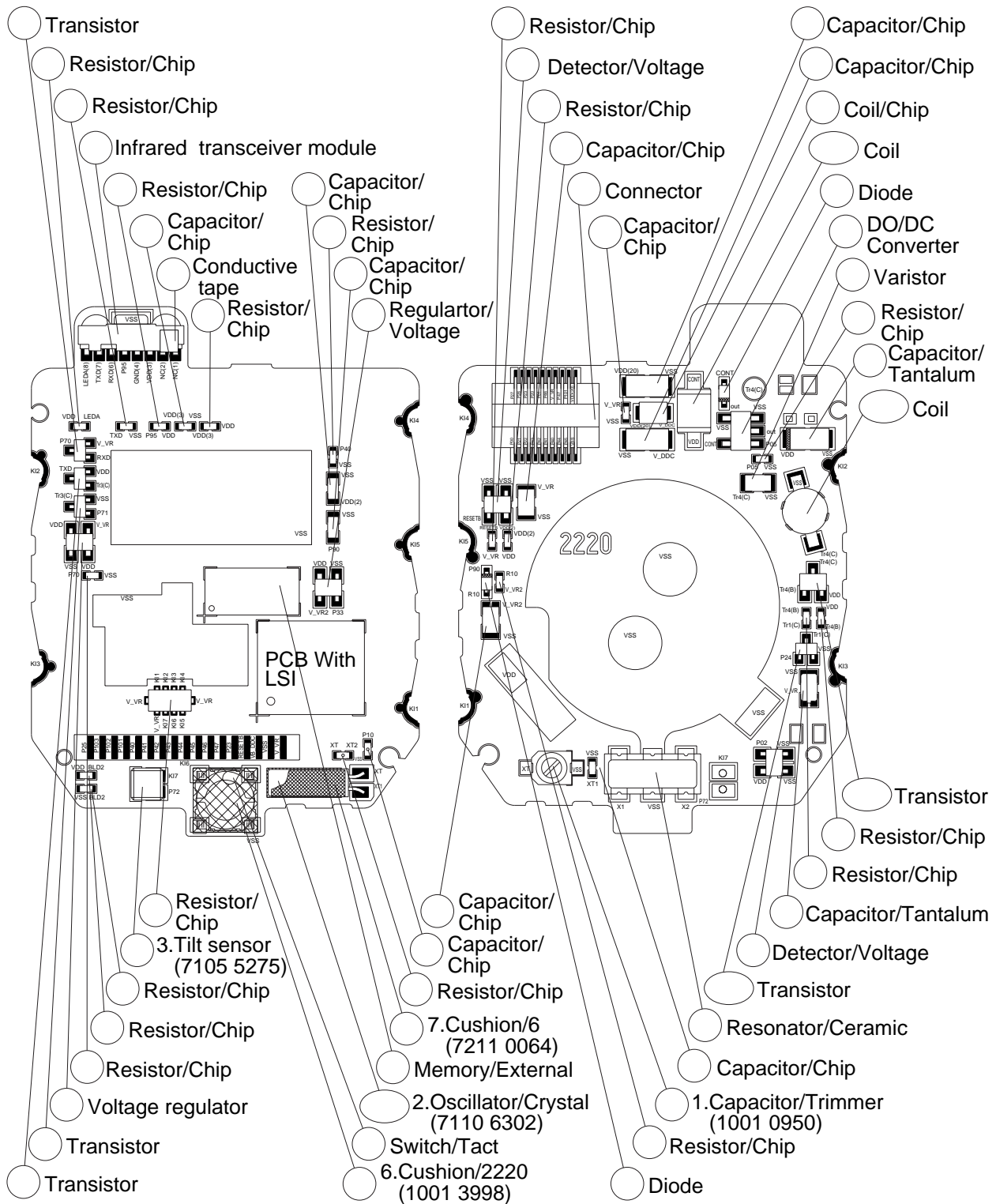
4. Close the battery cover.
 - Replace the battery cover, and rotate it to the **CLOSE** position using a coin or other similar object.

Settings Following Battery Replacement

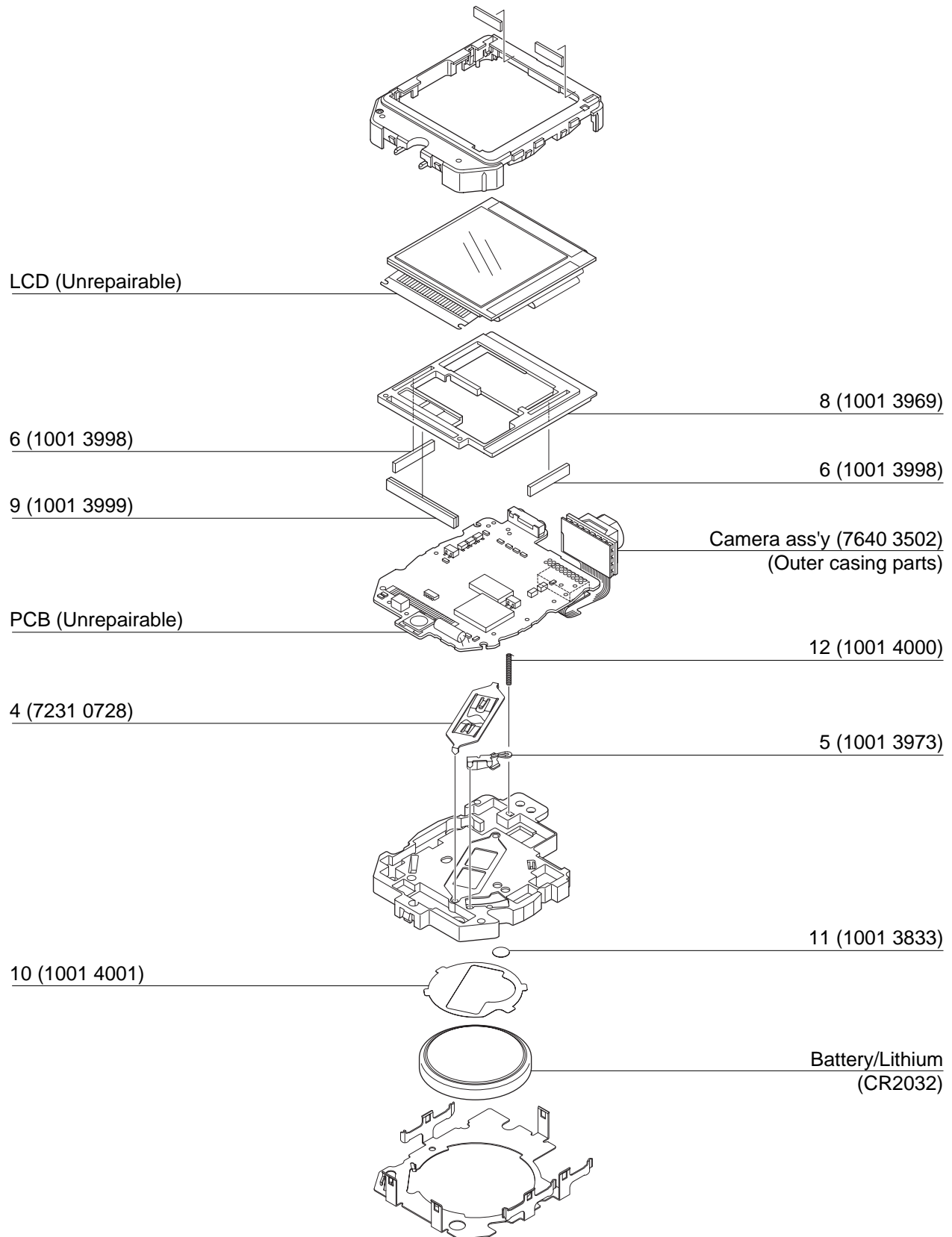
The watch retains image data in memory when you replace the battery. However, the current time, date, alarm settings, and countdown start time are all cleared. Be sure you make these settings each time you replace the battery.

3. DRAWINGS: QW-2220

3-1. CHECKING TERMINALS AND COMPONENT



4. EXPLODED VIEW: QW-2220



Note:
Never replace the PCB or LCD individually.
Because the matching of them has been adjusted in the factory.

5. PARTS LIST: QW-2220

- Note: 1. Prices and specifications are subject to change without prior notice.
 2. Spare parts are classified as follows according to their importance in after-sales service.
 A Rank ----- Very Important
 B Rank ----- Important
 C Rank ----- Less important
 3. Batteries in Bulk pack on the tray will be supplied from our Overseas Spare Parts Section under charge basis.
 Batteries in Blister pack will be supplied from our Sales Department.
 4. As for order/supply of spare parts, refer to the separate publication "GUIDE BOOK for spare parts supply".

Item	Code No.	Parts Name	Specification	Applicable	Q	R
	7640 3427	MODULE/WITHOUT MOVEMENT	QW-2220YC-01TK	WQV-1D-8 / WQV-1S-1	1	A
1	1001 0950	CAPACITOR/TRIMMER	CTZ2E-30C-W2-P	QW-2220YC-01TK	1	B
2	7110 6302	OSCILLATOR/CRYSTAL	DT-26S10	QW-2220YC-01TK	1	B
3	7105 5275	SENSOR/TILT	TS-2418-P	QW-2220YC-01TK	1	B
4	7231 0728	CONTACT/BATTERY (-) 1248	Q342627-1	QW-2220YC-01TK	1	C
5	1001 3973	CONTACT/BATTERY (+) 2220	Q366478-1	QW-2220YC-01TK	1	C
6	1001 3998	CUSHION/2220	Q466082-1	QW-2220YC-01TK	2	C
7	7211 0064	CUSHION/6	Q4914-1	QW-2220YC-01TK	1	C
8	1001 3969	HOUSING/2220-1	Q151744B-1	QW-2220YC-01TK	1	C
9	1001 3999	INTERCONNECTOR/2220	Q466083-1	QW-2220YC-01TK	1	C
10	1001 4001	LABEL/2220	Q466344A-1	QW-2220YC-01TK	1	C
11	1001 3833	SEAL/WATER DETECTION	Q466301-1	QW-2220YC-01TK	1	C
12	1001 4000	SPRING/COIL 2220-1	Q466295-1	QW-2220YC-01TK	1	B
		BATTERY/LITHIUM	CR2032	QW-2220YC-01TK	1	
For the prices and minimum order/supply quantities of the above parts, refer to the Parts Price List P.P.L.-559.						

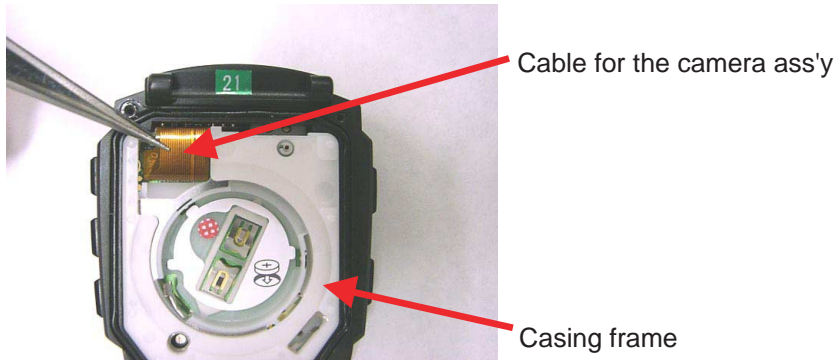
Notes: Q – Used quantity
 R – Rank

6. PRECAUTIONS FOR REPAIR: QW-2220

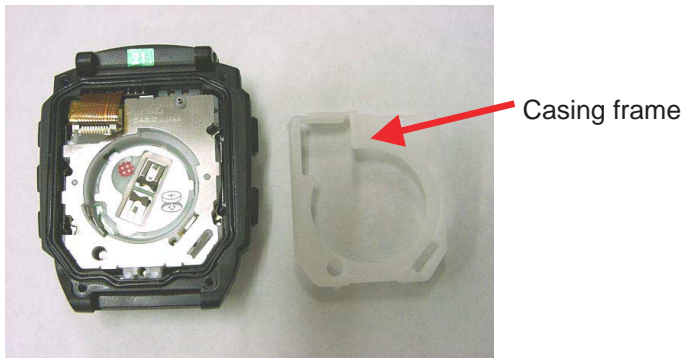
6-1. Removing of the module from the case

Remove the battery and back cover ass'y.

Remove the connector of the cable for the camera ass'y.

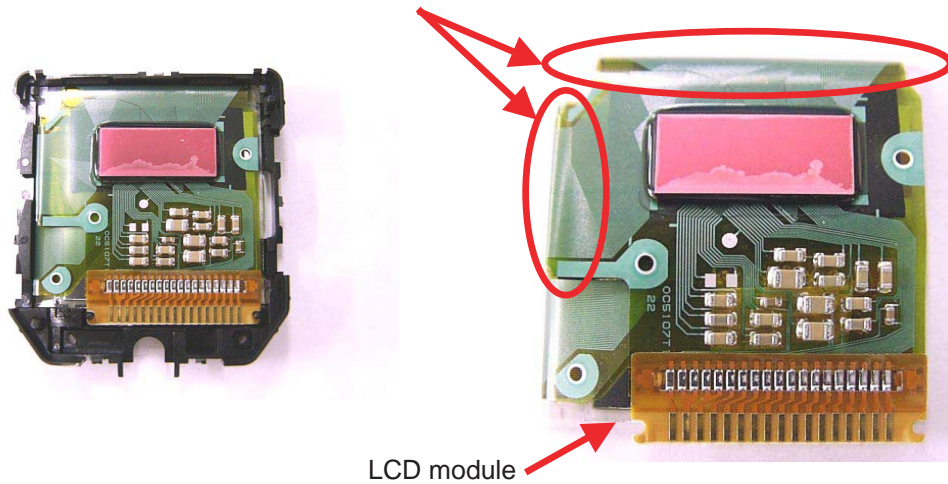


Remove the casing frame and module.



6-2. Notes for the LCD module

Be sure not to press the bend of the FPC for LCD module as this could result in damage.



6-3. ACCURACY CHECKING

Check the accuracy of the module with the quartz timer after switching the module to “ACCURACY CHECKING MODE”.

The operations are shown below:

A) SWITCHING TO “ACCURACY CHECKING MODE”

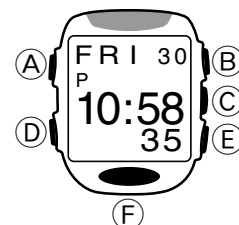
While pressing (C) button, press (A) and (B) buttons in the same time at the normal time keeping mode. Then all the segments are displayed and the LCD drive signals are changed to the static drive signal of “32 Hz” so that you can check the accuracy with the quartz timer.

B) CANCELLATION OF THE “ACCURACY CHECKING MODE”

Press (D), (E), or (F) button.

Then the display is returned to its original state.

NOTE: The “ACCURACY CHECKING MODE” will automatically return to the regular mode in 1 ~ 2 hour(s) without any operation.



QW-2220

CASIO TECHNO CO.,LTD.
Overseas Service Division

Nishi-Shinjuku Kimuraya Bldg. 1F
5-25, Nishi-Shinjuku 7-Chome
Shinjuku-ku, Tokyo 160-0023, Japan