

BEFORE USE

① Make sure to keep the watch sufficiently charged

The watch operates while charging electricity by converting light received on the dial to electrical energy. It cannot properly operate unless the remaining energy is sufficient. Place or store in a location receiving light, etc., to sufficiently charge electricity.

■ The amount of energy stored in the watch can be checked by the movement of the second hand.

→ CHECKING THE CHARGING STATUS BY THE MOVEMENT OF THE SECOND HAND

■ Charging the solar battery

→ How to charge the watch Standard charging time

92

② To receive radio signals

The watch automatically receives radio signals to adjust the time every day.

Automatic radio signal reception is carried out at two and four o'clock during the night.

During this period of time, place the watch in a location that easily receives radio signals without wearing it and do not move it.

■ Places where the watch can receive radio signals easily.
→ APPROPRIATE PLACE TO KEEP A RADIO-CONTROLLED WATCH P114

93

FEATURES

This is a solar radio-controlled watch. The watch receives official standard frequencies of Japan (from either of two transmitting stations) to display correct time. A solar cell underneath the dial converts any form of light into "electrical energy" to operate the watch.

■ **Automatic Time Setting** ••• The watch maintains the precise time by automatically receiving radio signals on an official standard frequency. It is also possible to make the watch manually receive radio signals. The watch can receive official standard frequencies of Japan (from either of two transmitting stations).
Refer to page 109

■ **Display of Radio Signal Reception Level** ••• During reception attempts, the watch displays the reception level of radio signals.
Refer to page 118

■ **Display of Radio Signal Reception Result** ••• Reception result (succeeded or failed) can be confirmed following reception of radio signals.
Refer to page 120

■ **Automatic Hand Alignment** ••• When the hand positions deviate to display incorrect time as a result of influence of various external sources such as magnetic source, the watch automatically corrects the hand alignment itself.
Refer to page 110

94

■ **Time Zone Adjustment** •• The watch can be set to local time in a different time zone from Japan Standard Time by selecting a time zone.
→ Refer to page 124

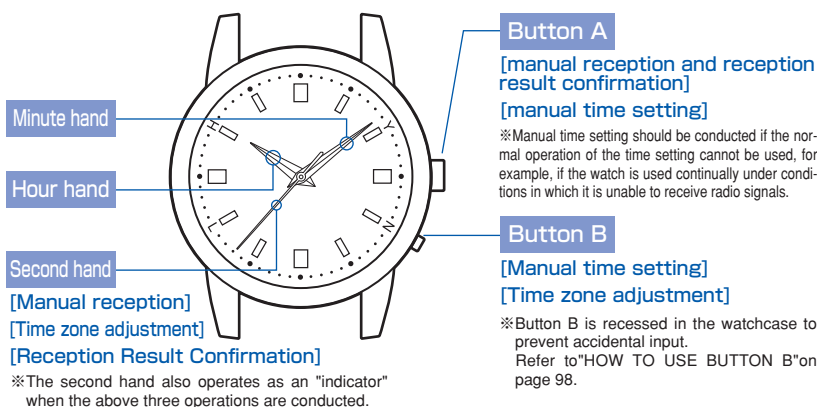
■ **Solar Rechargeable Battery** ••• A solar cell underneath the dial converts any form of light into "electrical energy" to power the watch and the power is stored in a secondary battery. Once fully charged, the watch continues to run for approximately six months.
→ Refer to page 104

■ **Energy Depletion Forewarning Function** •• The movement of the second hand indicates that the battery should be charged.
→ Refer to page 101

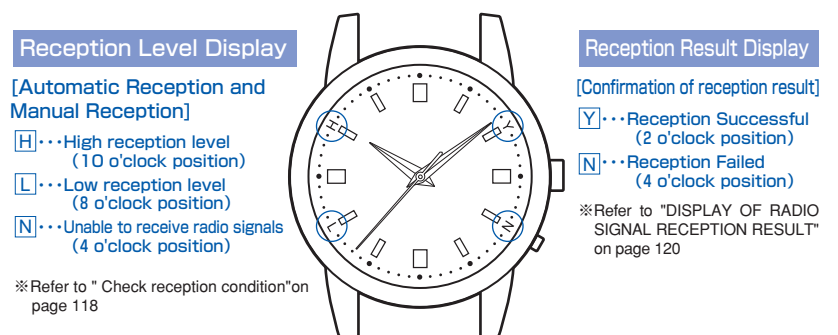
■ **Power Save** •••••••• The Power Save mode can be activated in order to reduce unnecessary energy consumption when the watch is left without an adequate light source.
→ Refer to page 102

95

DISPLAY AND BUTTON OPERATION



96



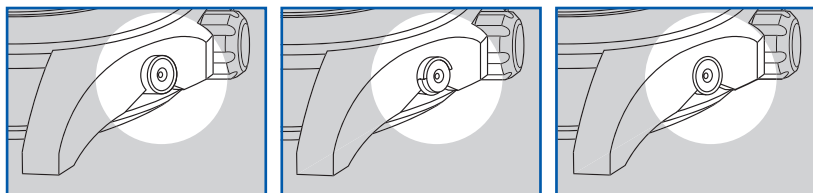
※ Positions of above displays may differ depending on the model.

97

HOW TO USE BUTTON B

Button B is recessed in the watchcase to prevent accidental input. Types of buttons differ depending on the design of the watch.

● How to press Button B



Button B is covered except the hollow in the middle of the button. Press the hollow using an object with a long tapered tip.

Upper half of Button B is covered. Press the lower half of Button B or press the hollow in the middle of the button using an object with a long tapered tip.

Button B is recessed in the watchcase. Press the hollow in the middle of the button using an object with a long tapered tip.

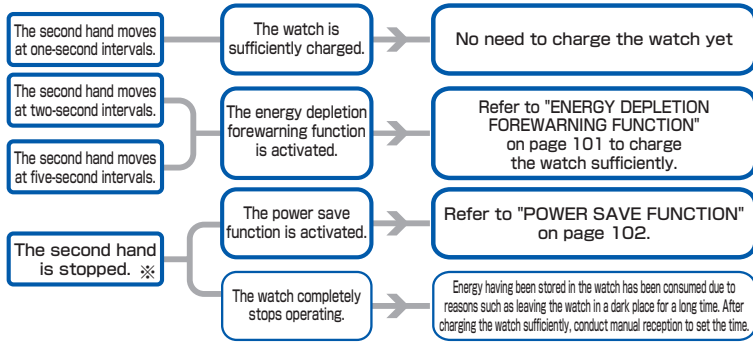
98

memo

99

CHECKING THE CHARGING STATUS BY THE MOVEMENT OF THE SECOND HAND

The approximate amount of energy stored in the watch can be checked by the movement of the second hand.



※If the second hand is stopped even after the watch is sufficiently charged, refer to "TROUBLESHOOTING" on page 166.

●Energy Depletion Forewarning Function

The energy depletion forewarning function is activated when the energy stored in the watch runs low. In such a case, the second hand moves at two-second intervals. If the watch continues to be in the state of two-second interval movement, the watch switches to five-second interval movement, followed by a completely stopped state. If the energy depletion forewarning function is activated, charge the watch sufficiently.

How to charge the watch..... page 104

Standard charging time.....page 105

- ※Neither the buttons nor the crown can be operated while the second hand moves at two-second or five-second intervals (this is not a malfunction).
- ※While the second hand moves at five-second intervals, the hour and minute hands and calendar stop operating.
- ※While the second hand moves at five-second intervals, the watch is unable to receive radio signals automatically. After the watch is charged sufficiently and the second hand returns to normal one-second interval movement, conduct the manual reception of radio signals to set the watch to the correct time.(Refer to "Radio Signal Reception"on page 109).

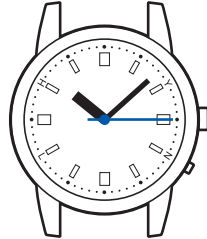
●Power Save Function

When the watch is not exposed to an adequate light source, the power save function is automatically activated in order to reduce unnecessary energy consumption.

When this state continues for 72 hours or longer, the watch enters "the Power Save One" mode. If the watch continues to be insufficiently charged, and the stored power falls below a certain level, the watch automatically switches to "the Power Save Two" mode.

["the Power Save One" mode]

- When this state continues for 72 hours or longer, the watch enters "the Power Save One" mode. When the watch is in "the Power Save One" mode, the second hand rotates to point to 3 o'clock position and stops.
- In this state, movement of the hour and minute hands will cease, but the watch will continue to conduct automatic reception.
- To reset the watch to display the current time, expose it to adequate light for five seconds or longer.



※When the watch returns to its normal movement, the watch hands rotate rapidly to display the current time. After the watch hands are set to the current time, the correct date is displayed.

["the Power Save Two" mode]

- If the watch continues to be insufficiently charged, and the stored power falls below a certain level, the watch automatically switches to "the Power Save Two" mode, to limit further energy consumption.
- When the watch is in "the Power Save Two" mode, the second hand rotates to point to 9 o'clock position and stops. The watch will also stop conducting automatic reception. In this state, movement of the hour and minute hands will cease, and the watch will not conduct automatic reception.
- When the watch enters "the Power Save Two" mode, immediately charge the watch.



- ※While the watch is being charged, the second hand moves at five-second intervals. During the five-second interval movement, neither the buttons nor the crown can be operated (this is not a malfunction).
- ※If "the Power Save Two" mode is prolonged, the amount of stored power drops and the internal time settings will be lost. In such a case, after the battery is completely charged and the watch resumes regular one-second movement, conduct the manual reception to set the watch to the correct time (refer to "SETTING THE TIME BY RECEIVING RADIO SIGNAL"on page 108).

CHARGING SOLAR BATTERY

How to charge the watch

This watch is a solar-powered watch containing a solar cell underneath the dial to convert any form of light into "electrical energy" and store the power in a secondary battery.

To enjoy optimal performance of this watch, make sure that the watch is kept sufficiently charged at all times.

If the watch is concealed under a long sleeve shirt, or if it is used or stored continually under conditions where it cannot receive sufficient light, the power stored in the solar cell may be easily depleted because the watch cannot be sufficiently charged.



※Before initially using the watch or when the watch has stopped as a result of complete depletion of stored power, charge the watch sufficiently.

Standard charging time

Illumination 1 x (LUX)	Light source	Condition (Example)	Time required for fully charging the watch	Time required for charging the watch to start moving at one-second intervals ★	Time required for charging the watch to run for one day
500	Incandescent light	60W 60cm	—	—	7 hours
700	Fluorescent light	General offices	—	—	5 hours
1000	Fluorescent light	30W 70cm	—	15 hours	4 hours
3000	Fluorescent light	30W 20cm	130 hours	5 hours	1.5 hours
5000	Fluorescent light	30W 12cm	80 hours	2 hours	45 minutes
1万	Fluorescent light	30W 5cm	40 hours	1 hours	15 minutes
1万	Sunlight	Cloudy day	40 hours	1 hours	15 minutes
10万	Sunlight	Sunlight Sunny day(Under the direct sunlight on a summer day)	15 hours	30 minutes	3 minutes

★ The figures in the table above refer to the time required to charge the stopped watch by exposure to light until the watch moves at steady one-second intervals. Even if the watch is partially charged for a period shorter than the time provided in the above table, it will resume one-second interval movement, however, the one-second interval movement will change to two-second interval movement shortly. To avoid this and charge the watch to a sufficient level, use the charging time mentioned above as a measure.

※ The required charging time slightly varies depending on the model of the watch.

※ For the movement of the second hand, refer to "CHECKING THE CHARGING STATUS BY THE MOVEMENT OF THE SECOND HAND"on page 100

●Overcharge prevention function

When the secondary battery is fully charged, the overcharge prevention function is automatically activated to avoid further charging. There is no need to worry about damage caused by overcharging no matter how much the secondary battery is charged in excess of the "time required for fully charging the watch."

※Refer to "Standard charging time"on page 105 to check the time required for fully charging the watch.

⚠ NOTICE

(Notes on charging the watch)

- When charging the watch, do not place the watch in close proximity to an intense light source such as lighting equipment for photography, spotlights or incandescent lights, as the watch may be excessively heated resulting in damage to its internal parts.
- When charging the watch by exposure to direct sunlight, avoid places that easily reach high temperatures, such as a car dashboard.
- Always keep the watch temperature under 60_C.

●POWER SOURCE

- The battery used in this watch is a special secondary battery, which is different from ordinary batteries.
- Unlike an ordinary silver oxide battery, the secondary battery does not require periodic replacement.
- However, if the secondary battery is charged or discharged repeatedly for a long time, its life may become slightly shortened (this depends on the conditions in which the watch is used or where it is stored).
- The secondary battery is an environmentally friendly, clean energy storage device.

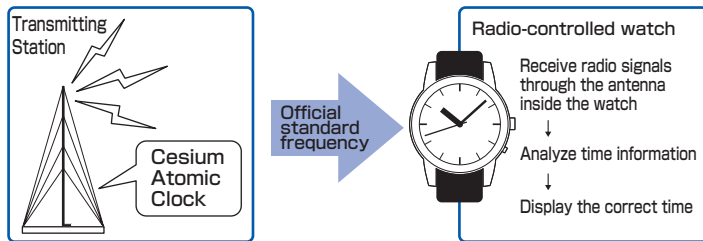
⚠ WARNING

The exclusive secondary battery is used in this watch. Do not install any battery other than the exclusive secondary battery for this watch because installation of an ordinary battery can generate heat that can cause bursting or ignition. Even when a battery other than the exclusive secondary battery is substituted, electrical continuity cannot be obtained.

SETTING THE TIME BY RECEIVING RADIO SIGNAL

What is a radio-controlled watch?

The radio-controlled watch displays the precise time and date by automatically receiving and synchronizing itself with the radio signal of an official standard frequency.



Time signal transmitted by a standard frequency is based on a super accurate "Cesium Atomic Clock" that may have a 1 second loss or gain per one hundred thousand years.

108

Radio signal reception

The watch can receive a radio signal either automatically or manually

■ **Automatic reception:** The watch receives radio signals automatically at least once a day. It automatically receives radio signals at 2:00 AM and 4:00 AM. When the watch receives a proper radio signal, the reception is completed. The watch can continue to display the precise time as long as the automatic reception is successful.

■ **Manual reception:** The manual reception of radio signals can be conducted. HOW TO MANUALLY RECEIVE RADIO SIGNALS → refer to page 116

This radio-controlled watch enables the wearer to check the reception result of radio signals.

DISPLAY OF RADIO SIGNAL RECEPTION RESULT → refer to page 120

※ If the watch is set to the time zone outside a radio signal reception range, the radio signal reception cannot be conducted (refer to "TROUBLESHOOTING" on page 162).
 ※ Whether the watch succeeds in receiving radio signals or not depends on the receiving conditions (refer to "APPROPRIATE PLACE TO KEEP A RADIO-CONTROLLED WATCH" on page 114).
 ※ The watch cannot receive radio signals outside a reception range (refer to "Radio signal reception range" on page 113).

109

AUTOMATIC HAND ALIGNMENT

This function works when the hand positions move out of alignment due to reasons other than the accuracy of the watch.

Under normal operation, periodic checks of each hand position are performed once every one-minute for the second hand position, and once every twelve hours for the hour and minute hand positions.

<When the hand positions move out of alignment due to reasons other than the accuracy of the watch>

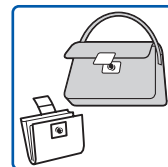
- Strong shocks can cause misalignment of the hand positions
The hand positions may move out of alignment due to strong shocks to the watch when the watch is dropped or hits against a hard surface.
- Strong magnetism can cause misalignment of the hand positions.
The hand positions may move out of alignment when the watch is exposed to a magnetic source.
※ For objects which generate magnetism found in your daily life, refer to page 111.
- When the watch is stopped due to complete depletion of stored power

The radio-controlled watch automatically sets itself to the precise time. However, if the preliminary hand positions are misaligned when the time is set, the watch will be unable to display the precise time even after it receives a radio signal properly. It is like a scale which cannot display the correct weight because its hand is not set to the 0 position before weighting.

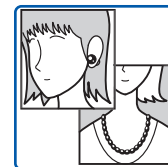
Be assured that all hand positions of this watch are automatically corrected.

110

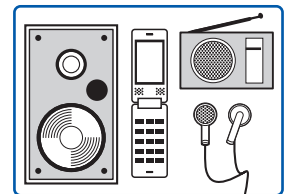
●Magnetic objects in daily life



• Clasp of a handbag or a purse



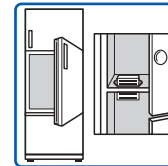
• Magnetic necklace or earring



• Audio speakers, speakers of radios, earphones, mobile phones, etc.



• Magnetic therapy products (compress, bedclothes, hip belt, etc.)



• Magnets used in refrigerators or furniture

These are examples of objects which generate magnetism around you.

111

RADIO SIGNAL

●Official standard frequency of Japan (JJY)

This watch can receive official standard frequencies from transmitting stations in Japan (2 stations),.

[Official standard frequency of Japan: JJY]

JJY is operated by the National Institute of Information and Communications Technology (NICT).

JJY is transmitted from two stations in Japan. Each station transmits JJY in a different frequency.

Fukushima (Ohtakadoya-yama transmitting station: 40 KHz)

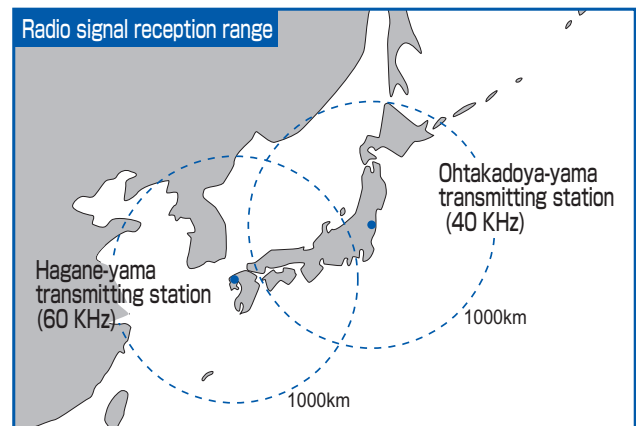
Kyushu (Hagane-yama transmitting station: 60 KHz)

The reception range from each transmitting station is approximately 1,000 km (1,000 km radius of each station).

※ Whether the watch succeeds in receiving radio signals or not depends on the receiving conditions (refer to "APPROPRIATE PLACE TO KEEP A RADIO-CONTROLLED WATCH" on page 114).

※ The watch cannot receive radio signals outside a reception range.

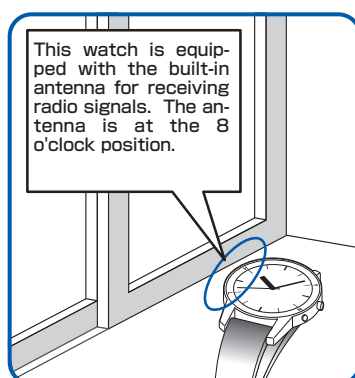
112



113

APPROPRIATE PLACE TO KEEP A RADIO-CONTROLLED WATCH

●To enable the watch to receive radio signals easily



The antenna for receiving radio signals inside the watch is at the 8 o'clock position.

Turning the antenna toward the outside of the window enables the watch to receive radio signals more easily. Place the watch where it can easily receive radio signals.

To enhance the reception of radio signals, do not move the watch while it is receiving radio signals.

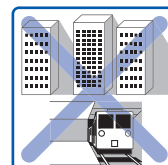
This watch is equipped with the built-in antenna for receiving radio signals. The antenna is at the 8 o'clock position.

• The watch is unable to receive radio signals outside a reception range.
→ Radio signal reception range P.113

• Whether the watch succeeds in receiving radio signals or not depends on weather or receiving conditions.

114

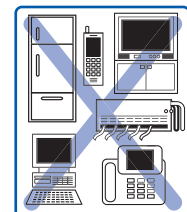
Conditions in which the watch may be unable to receive radio signals



• Inside a building, between tall buildings, underground



• Close to overhead power lines, TV stations, and train cables



• Close to home electrical appliances or OA devices
• Close to furniture made of steel, such as a steel desk



• Close to construction sites, or in heavy traffic



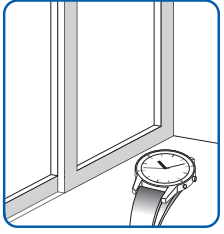
• Inside a vehicle, train, airplane, etc.

Avoid these places when conducting a radio signal reception.

115

HOW TO MANUALLY RECEIVE RADIO SIGNALS (MANUAL RECEPTION)

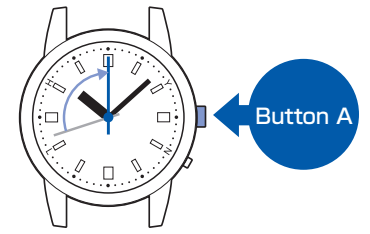
① Place a watch



Remove the watch from your wrist and place it in a location that easily receives radio signals.
To enable the watch to receive radio signals easily → Refer to page 115

116

② Press button A for more than 5 seconds.



Continuously press button A for more than 5 seconds until the second hand points to the 0 second position. When the second hand points to the 0 second position, release the button.
※Repressing button A during reception cancels the reception.

※If the time difference is set, the manual reception of radio signals can not be performed even though button A is continuously pressed more than 5 seconds in operation ②. How to return the time to jpn time → Refer to page 126 HOW TO USE THE TIME ZONE ADJUSTMENT FUNCTION.

③ Wait for a while with the watch is placed down

((Reception))

It takes 12 minutes at maximum depending on the radio signal reception condition.

Reception End

The second hand starts ticking.

Wait until the end of reception without moving the watch. Condition during reception can be checked by the [reception level display].
Reception level display → Refer to page 118

④ Check that the reception was made.

CHECK RECEPTION RESULT P.120

It may be difficult to receive radio signals depending on the environment. Check that the watch could receive radio signals.
Conditions in which the watch may be unable to receive radio signals

117

CHECK RECEPTION CONDITION

●Reception level display

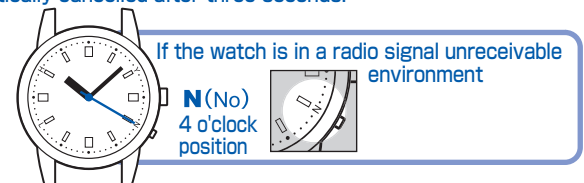
The second hand of the watch during reception indicates the radio signal reception condition or "reception level."
[Reception level] is displayed in approximately 1 minute after the start of reception.



The second hand moves every one minute, and the [reception level] is updated.
The [reception level] is displayed until reception is completed and the second hand starts ticking.

118

The level indicator shown below indicates that it is an environment that is not suitable for radio signal reception.
Reception is automatically cancelled after three seconds.



If reception cannot properly be performed, change the location or direction of the watch to try to receive. Also, the reception environment varies depending on the time period even in the same location.

Radio signals can easily be received during nighttime hours due to its characteristics.

[N] of the reception level display is indicated only for 3 seconds.

Check the [Reception result] to confirm whether the reception could be made. →CHECK RECEPTION RESULT refer to page P.118

•Radio signal reception cannot be performed outside the radio signal reception range. → RADIO SIGNAL RECEPTION RANGE Refer to page 113

•Success or failure of reception is dependent on reception environment. Conditions in which the watch may be unable to receive radio signals


→Refer to page 115

119

CHECK RECEPTION RESULT

Last received result is indicated irrespective of automatic reception and manual reception.

Pressing Button A moves the second hand to indicate success or failure of reception.




Press Button A once and release it.

The reception result is indicated for 3 seconds.


If reception could be made,

Y(Yes)
2 o'clock position



If reception could not be made,

N(No)
4 o'clock position



※Repressing button A in mid-process cancels the result display.

120

Cautions for reception

If reception cannot properly be performed, change the location or direction of the watch.

Also, the reception environment varies even in the same location depending on the time period.

Radio signals can easily be received during nighttime hours due to its characteristics.

Radio signal reception range → Refer to page 113

Success or failure of reception is dependent on reception environment.

Conditions in which the watch may be unable to receive radio signals

→ Refer to page 115

While the time zone difference is being set, radio signals cannot be received.

TROUBLESHOOTING → Refer to page 162

121

Notes

- The watch may display the incorrect time if it fails to receive radio signals properly because of interference. The watch may fail to receive radio signals depending on the location or reception conditions. In such a case, change the location of the watch.
- Radio signals can easily be received during nighttime hours due to its characteristics.
- The watch moves depending on the quartz movement (loss/gain: _15 seconds per month) when it is unable to receive radio signals.
- The time signal transmission may be stopped during maintenance of the facilities of each transmitting station or because of a lightning strike. In such a case, see each station's website for further information or contact SEIKO CUSTOMER SERVICE CENTER..

- Websites of transmitting stations (as of June 2006)
- Japan: NICT (Japan Standard Time Group) <http://www.nict.go.jp>
- SEIKO CUSTOMER SERVICE CENTER: 0120-612-911 (toll free in Japan)

122

HOW TO USE THE WATCH (For Advanced Use)

TIME ZONE ADJUSTMENT FUNCTION

●Features of time zone adjustment function

■Enables adjustment to overseas time on a 1 hour basis.

In almost all areas of the world, time differs by one hour. Using the time zone adjustment function enables adjustment to overseas time on a 1 hour basis.

■Based on the time difference from Japan

Adjust to overseas time based on the time difference from Japan. Time differences all over the world from Japan are in a range between -20 hours and +4 hours.

■By setting the time difference on the basis of the second hand, the time is automatically adjusted. In the mode of time zone adjustment function, the position of the second hand indicates the time difference from Japan.

Operate the button to set the time difference on the basis of the second hand.

Setting the time difference automatically adjusts to the local time.

→ HOW TO USE THE TIME ZONE ADJUSTMENT FUNCTION →Refer to page 126

→ TIME ZONE AND SUMMER TIME →Refer to page 130

→ World Main Area Time Zone List →Refer to page 132

124

●Time zone adjustment Q & A

Q : When returning to Japan from overseas, is the time automatically set to Japan time?

A : Just moving cannot adjust the time to Japan time. After setting the time difference, radio signal reception is not performed. When wearing a watch in Japan, set to Japan time by use of the time zone adjustment function.

Q : How is adjustment made to a local time with a time difference of 15 minutes or 30 minutes?

A : The time can be adjusted on a 1 hour basis by use of the time zone adjustment function. When adjusting to a local time with a time zone difference of 15 minutes or 30 minutes, please refer to the "Hand time adjustment" on page 134.

Q : The hands stop during operation of time zone setting, therefore, does time lag occur?

A : The internal circuit stores the time, therefore, no time lag occurs.

Q : How accurate is the watch while the time difference is being set.

A : While the time zone is being set, the watch has an accuracy of a normal quartz watch. (Monthly rate: ±15 seconds)

125


HOW TO USE THE TIME ZONE ADJUSTMENT FUNCTION

① Find out the time difference to a target location

Check the time zone from Japan to the target location in advance.

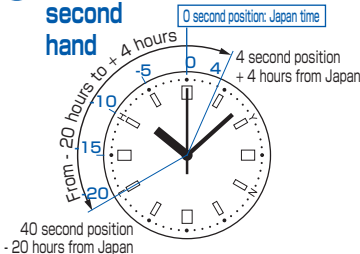
World Main Area Time Zone List → P. 132

② Enter the time zone adjustment mode



Press Button B using an object with a sharp point. The second hand is moved to enter the time zone adjustment mode. The B button is embedded in the case to prevent from incorrectly being pressed, and it cannot be pressed by a finger or nail. How to use button B →P.98

③ Check the position of the second hand



Check the position of the second hand. The second hand indicates that the number of hours of the time zone from Japan has been set. One second scale indicates one hour of time difference. ※When the second hand is stopped at the 0 second position, it is set to Japan time. (It indicates that the time difference is 0 hours from Japan.)

Carry out operation of Section ④ within 10 seconds.

Set the time difference with reference to the next page.


Carry out operation of Section ④ on the next page within 10 seconds in the state of Section ③.

After 10 seconds have elapsed, the time difference adjustment mode is completed to return to the time indication mode. The watch is in the time indication state during second hand ticking. In this case, repeat the procedure from Section 2.

126

127

④ Set the time difference by the button based on the second hand



Each pressing of Button A or B moves the second hand one scale to set 1 hour of time difference. (Simultaneously, the hour and minute hands move at a fast speed.) Pressing the button the necessary times based on the second hand will set the time difference to the target location. The button can successively be pressed. ※Watch the position of the second hand without minding movement of the hour and minute hands.

⑤ Setting completed

Fast forwarding of the hour and minute hands is completed, and the second hand starts ticking.

When returning to Japan, return the time to Japan time according to the same procedure. Japan time is indicated by the second hand pointing to the [0 second position] in Section ③.

■When you don't know how to operate in mid-process, leave the watch as it is for a while. In 10 seconds after the hour and minute hands have stopped, the time zone adjustment mode is completed, and the watch enters the time indication mode. Afterwards, operate the setting again.

■How many hours of time zone you have set can be checked by carrying out operations of ② and ③.

■While the time difference has been set, radio signal reception is not performed. When wearing the watch in Japan, set to Japan time.

128

129

TIME ZONE AND SUMMER TIME

■Around the world, [time zones], time difference based on [Coordinated Universal Time] exists.

The world is divided into 24 areas having a time difference of 1 hour each. Time zone for which a 24 period (one day) corresponds to one complete rotation of the earth is internationally administered.

■Depending on the area, Daylight Saving Time (DST) is individually set. Daylight Saving Time means summer time, which is a system to lengthen daylight time by advancing one hour when daylight time is long in summer. Daylight Saving Time is [Time zone + 1 hour].

[Universal Coordinated Time (UTC)]

UTC is the universal standard time coordinated through international agreement. It is used as the official time around the world. UTC is determined by adding a leap second to GMT (Greenwich Mean Time), which is determined through astronomical measurement, in order to keep the precise time. Japan Standard Time (JST) is 9 hours ahead of UTC (+ 9 hours).

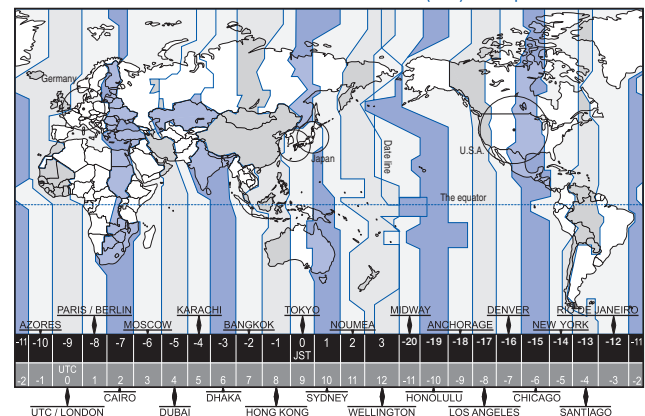
[Summer time (DST)]

Summer time is daylight saving time. Advancing the watch one hour to prolong daytime during longer daylight hours in summer. Daylight saving time has been adopted in about 80 countries, mainly in Europe and North America. The adoption and duration of daylight saving time vary depending on the country.

※Only in some locations, time differences are set on a 15-minute or 30-minute basis. (India, etc.) Time differences and Daylight Saving Time are subject to change owing to circumstances of the country or region.

130

Reference: Time difference between Universal Coordinated Time (UTC) and Japan Standard Time (JST)



131

World Main Area Time Zone List

How to use the time zone adjustment function →P.126

Names of the cities	Time difference with Japan Time	Position that the second hand indicates
Wellington (summer time)	+4 hours	4-second position
Wellington★	+3 hours	3-second position
Noumea	+2 hours	2-second position
Sydney★	+1 hours	1-second position
Tokyo	± 0	0-second position
Hong Kong	-1 hour	59-second position
Bangkok	-2 hours	58-second position
Dacca	-3 hours	57-second position
Karachi	-4 hours	56-second position
Dubai	-5 hours	55-second position
Moscow★	-6 hours	54-second position
Cairo★	-7 hours	53-second position

132

Cities marked with "★" use daylight saving time (as of November 2007).

※The time differences and use of daylight saving time in each city are subject to change according to the governments of the respective countries or regions.

Names of the cities	Time difference with Japan Time	Position that the second hand indicates
Paris★	-8 hours	52-second position
London★	-9 hours	51-second position
Azores★	-10 hours	50-second position
Rio de Janeiro (summer time)	-11 hours	49-second position
Rio de Janeiro★	-12 hours	48-second position
Santiago★	-13 hours	47-second position
New York★	-14 hours	46-second position
Chicago★	-15 hours	45-second position
Denver★	-16 hours	44-second position
Los Angeles★	-17 hours	43-second position
Anchorage★	-18 hours	42-second position
Honolulu	-19 hours	41-second position
Midway Islands	-20 hours	40-second position

133

HOW TO MANUALLY SET THE TIME

When the watch is under conditions where it is unable to receive an official standard frequency, the watch can be used as a normal quartz watch. In such a case, the time can be manually set. (Monthly rate: \approx 15 seconds)

[Note] If the watch is used within a reception range after the time is set manually, conduct the [manual reception]. When the watch successfully receives a time signal, the watch displays the time based on the time information it receives.

① Pull out Button A.

The watch hands stop.

② Press Button B once.

Press Button B using an object with a sharp point. The second hand moves to the 12 o'clock position and stops to enter the manual time setting mode.

③ Press Button B

[Advance the time by one-minute increments] Each pressing of Button A advances the hour and minute hands by one minute increments.

To set the time

The watch hands do not move if Button A is turned. Pressing Button B advances the hands clockwise only. [Advance the time by fast forwarding the hands] If Button B is kept pressed for 2 to 3 seconds, the hour and minute hands advance rapidly. Press Button B again to stop.

④ Push Button A back in.

Push Button A back in simultaneously with time signal. The watch start operating.

134

135

HOW TO RESET THE BUILT-IN IC

When the watch shows an abnormal display or does not properly function, or does not move at one-second intervals even after being sufficiently charged, follow the instructions below to reset the built-in IC. Then the watch will resume its normal operation.

※If the second hand moves at two-second or five-second intervals, the energy depletion forewarning function should be activated, thus it is not a malfunction (refer to "CHECKING THE CHARGING STATUS BY THE MOVEMENT OF THE SECOND HAND" on page 100). The watch hands may rotate rapidly because the automatic hand alignment function is activated, however, it is also not a malfunction (refer to "AUTOMATIC HAND ALIGNMENT" on page 26).

① Press Button A and Button B simultaneously.

Press Button B using an object with a sharp point. The B button is embedded in the case to prevent from incorrectly being pressed, and it cannot be pressed by a finger or nail. Refer to "HOW TO USE BUTTON B." →P98

② The hands stop.

The hour, minute, and second hands advance rapidly until they point to the 12 o'clock position and stop. In such a case, the second hand starts moving first.

③ Start the watch hands

The hour, minute, and second hands start moving from the position of 0 hour 0 minute 0 second. Reset of the built-in IC is completed.

④ Set the time

HOW TO MANUALLY RECEIVE RADIO SIGNALS
→ P. 116

HOW TO MANUALLY SET THE TIME AND DATE
→ P. 134

Conduct the manual reception of radio signals to set the time. If the watch is under conditions in which it is unable to receive radio signals, set the time manually.

※After resetting the built-in IC, or if the time is set manually after the IC is reset, be sure to conduct the [manual reception].

137

SPECIFICATION

- Frequency of crystal oscillator • 32,768 Hz (Hz = Hertz ... Cycles per second)
- Loss/gain (monthly rate) • Less than 15 seconds (Except during automatic time setting, worn on the wrist within normal temperature range between 5°C and 35°C.)
- Operational temperature range • Between -10°C and +60°C
- Driving systems • Step motor (hour and minute hands)
Step motor (second hand)
- Power source • Secondary battery, 1 piece
- Duration of operation • Approximately 6 months (Fully charged, the Power Save not activated)
※If the Power Save is activated, the watch continues to run for approximately one year and a half at maximum.
- Time setting by receiving the JJY-LF radio signal • Automatic reception : 2:00 AM
(If the watch fails to receive radio signals, it will attempt to receive signals again at 4:00 a.m.)
※After having received the JJY-LF radio signal, the watch moves depending on the quartz movement until the next reception. Manual reception is also possible.
- IC (Integrated Circuit) • Oscillator, frequency divider and driving circuit C-MOS-IC, 3 pieces

※The specifications are subject to change without prior notice due to product improvements

138

TO PRESERVE THE QUALITY OF YOUR WATCH

AFTER-SALE SERVICE

Repair parts

- The repair parts of this watch will be retained usually for 7 years.
- Some alternative parts may be used for repair if necessary.

Notes on overhaul

Periodic inspection and adjustment by disassembly and cleaning (overhaul) is recommended approximately once every 3 to 4 years in order to maintain optimal performance of the watch for a long time. According to use conditions, the oil retaining condition of your watch mechanical parts may deteriorate, abrasion of the parts may occur due to contamination of oil, which may ultimately lead the watch itself to stop. As the parts such as gasket may deteriorate, water-resistant performance may be impaired due to intrusion of

140

perspiration and moisture. Please contact the retailer from whom the watch was purchased for inspection and adjustment by disassembly and cleaning (overhaul). For replacement of parts, please specify "SEIKO GENUINE PARTS". When asking for inspection and adjustment by disassembly and cleaning (overhaul), make sure that the gasket and push pin are also replaced with new ones.

Notes on guarantee and repair

- Contact the retailer the watch was purchased from or SEIKO CUSTOMER SERVICE CENTER for repair or overhaul.
- Within the guarantee period, present the certificate of guarantee to receive repair services.
- Guarantee coverage is provided in the certificate of guarantee. Read carefully and retain it.

141

GUARANTEE

Within one year from the date of purchase, we guarantee free repair/adjustment service against any defects according to the following guarantee regulations, provided that the watch was properly used as directed in this instruction booklet.

Guarantee coverage

- The watch body (movement·case) and metallic band.

Exceptions from guarantee In following cases, repair/adjustment services will be at cost even within the guarantee period or under guarantee coverage.

- Change of leather/urethane/cloth band
- Troubles or damage caused by accidents or improper usage
- Scratches or grime caused by use
- Problems and damage caused by acts of god, natural disasters including fire, floods or earthquakes.
- The certificate of guarantee is valid only if all the necessary items are properly filled in. We will not honor an altered or tampered certificate of guarantee for free repair services.

142

Free repair services are guaranteed only under the period and conditions specified in the certificate of guarantee. It does not affect specific legal rights of a consumer.

The certificate of guarantee is valid only in Japan.

Procedure to claim free repair services

- For any defects under guarantee, submit the watch together with the attached certificate of guarantee to the retailer from whom the watch was purchased.
- If repair services cannot be provided by the retailer from whom the watch was purchased, contact SEIKO CUSTOMER SERVICE CENTER. In this case, the attached certificate of guarantee is also needed.

Others

- The case, dial, hands, glass and bracelet, or parts thereof may be repaired with substitutes if the originals are not available. If necessary, movements will be replaced. Refer to the page 140 of this booklet for the retention period of the parts.
- For length adjustment service of a metallic band, ask the retailer from whom the watch was purchased or SEIKO CUSTOMER SERVICE CENTER. Other retailers may undertake the service on a chargeable basis.

143

DAILY CARE

The watch requires good daily care

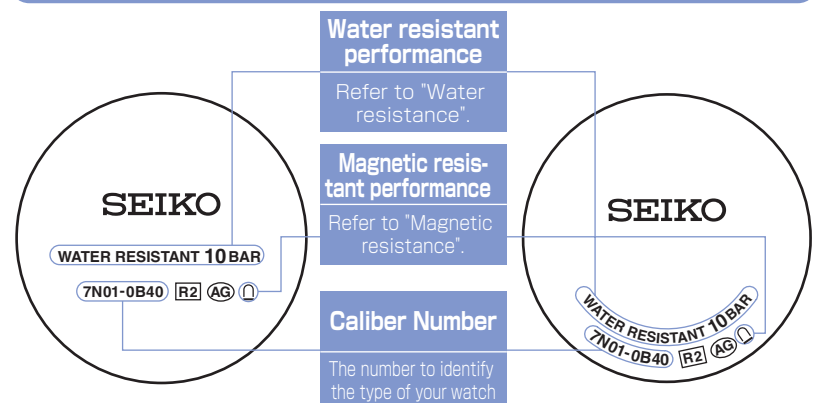
- Wipe away moisture, sweat or dirt with a soft cloth
- To clean the clearances (around the metallic band, crown or case back), a soft toothbrush is convenient.
- After soaking the watch in seawater, be sure to wash the watch in clean pure water and wipe it dry carefully.

Turn the crown from time to time

- In order to prevent corrosion of the crown, turn the crown from time to time.
- The same practice should be applied to a screw lock type crown. (No need to pull out the screw lock type crown.)

144

The case back shows the caliber and performance of your watch



※The figure above is one example. Performance of your watch is different from above sample.
 ※If the back cover of the watch is made of glass, these information may be inscribed on the metal parts around the back cover

145

WATER RESISTANCE

Refer the table below for the description of each degree of water resistant performance of your watch before using.
 (Refer to "P.145")

Indication on the case back	Water resistant performance
No indication	Non-water resistance
WATER RESISTANT	Water resistance for everyday life
WATER RESISTANT 5 BAR	Water resistance for everyday life at 5 barometric pressures
WATER RESISTANT 10(20) BAR	Water resistance for everyday life at 10(20) barometric pressures.

146

Condition of Use

Avoid drops of water or sweat

The watch withstands accidental contact with water in everyday life. **WARNING** Not suitable for swimming

The watch is suitable for sports such as swimming.

The watch is suitable for diving not using an air cylinder.

147

⚠ WARNING



Do not use the watch in scuba diving or saturation diving.

The various tightened inspections under simulated harsh environment, which are usually required for watches designed for scuba diving or saturation diving, have not been conducted on the water-resistant watch with the BAR (barometric pressure) display. For diving, use special watches for diving.

⚠ CAUTION

※ If the inner surface of the glass is clouded with condensation or water droplets appear inside of the watch for a long time, the water resistant performance of the watch is deteriorated. Immediately consult the retailer from whom the watch was purchased or SEIKO CUSTOMER SERVICE CENTER (listed on the back cover).



Do not turn or pull out the crown when the watch is wet.

Water may get inside of the watch.

⚠ CAUTION



Do not leave moisture, sweat and dirt on the watch for a long time.

Be aware of a risk that a water resistant watch may lessen its water resistant performance because of deterioration of the adhesive on the glass or gasket, or the development of rust on stainless steel.



Do not wear the watch while taking a bath or a sauna.

Steam, soap or some components of a hot spring may accelerate the deterioration of water resistant performance of the watch.



Do not pour running water directly from faucet.

The water pressure of tap water from a faucet is high enough to degrade the water resistant performance of a water resistant watch for everyday life.

MAGNETIC RESISTANCE (AFFECT OF MAGNETIC FIELD)

Affected by nearby magnetism, a quartz watch may temporarily gain or lose time or stop operating.

※ This defective condition caused by magnetism will be corrected soon after the watch is removed from the magnetic source. Reset the time once again before using the watch.

Indication on the case back	Condition of use
No indication	Keep the watch more than 10 cm away from magnetic products.
	Keep the watch more than 5 cm away from magnetic products. (JIS level-1 standard)
	Keep the watch more than 1 cm away from magnetic products. (JIS level-2 standard)

Examples of common magnetic products that may affect watches



Cellular phone (speaker)



Bag (with magnet buckle)



AC-powered shaver



Portable radio (speaker)

Magnetic health belt

Magnetic necklace

Magnetic health mat

Magnetic health pillow

Magnetic cooking device etc

The reason why analogue quartz watch is affected by magnetism.

It is because the built-in motor of the watch, which harnesses magnetic power and external strong magnetism, affect each other to stop the motor or suppresses the turn of the motor.

BAND (MAINTENANCE PROCEDURE)

The band touches the skin directly and becomes dirty with sweat or dust. Therefore, lack of care may accelerate deterioration of the band or cause skin irritation or stain on the sleeve edge. The watch requires a lot of attention for long usage.

Metallic band

- Moisture, sweat or soil will cause rust even on a stainless steel band if they are left for a long time.
- Lack of care may cause a yellowish or gold stain on the lower sleeve edge of shirts.
- Wipe off moisture, sweat or soil with a soft cloth as soon as possible
- To clean the soil around the joint gaps of the band, wipe it out in water and then brush it off with a soft toothbrush. (Protect the watch body from water splashes by wrapping it up in plastic wrap etc.)

Leather band

- A leather band is susceptible to discoloration and deterioration from moisture, sweat and direct sunlight.
- Wipe off moisture and sweat as soon as possible by gently blotting them up with a dry cloth.
- Do not expose the watch to direct sunlight for a long time.
- Please take care when wearing a watch with light-colored band, as dirt is likely to show up.

- Refrain from wearing a leather band watch other than Aqua Free bands while bathing, swimming, and when working with water even if the watch itself is water-resistant enforced for daily use (10-BAR water resistant).

Polyurethane band

- A polyurethane band is susceptible to discoloration from light, and may be deteriorated by solvent or atmospheric humidity.
- Especially a translucent, white, or pale colored band easily adsorbs other colors, resulting in color smears or discoloration.
- Wash out dirt in water and clean it off with a dry cloth. (Protect the watch body from water splashes by wrapping it up in plastic wrap etc.)
- When the band becomes less flexible or cracked, replace the band with a new one.

Notes on skin irritation and allergy

Skin irritation caused by a band has various reasons such as allergy to metals or leathers, or skin reactions against friction on dust or the band itself.

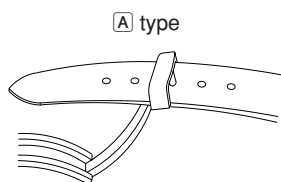
Notes on the length of the band

Adjust the band to allow a little clearance with your wrist to ensure proper airflow. When wearing the watch, leave enough room to insert a finger between the band and your wrist.

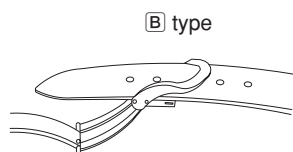


SPECIAL CLASPS

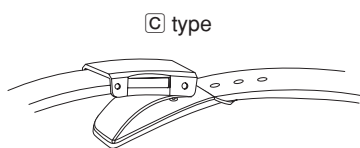
There are 3 type of special clasps as described below; If the clasp of the watch you purchased is one of them, please refer to the indications.



A type

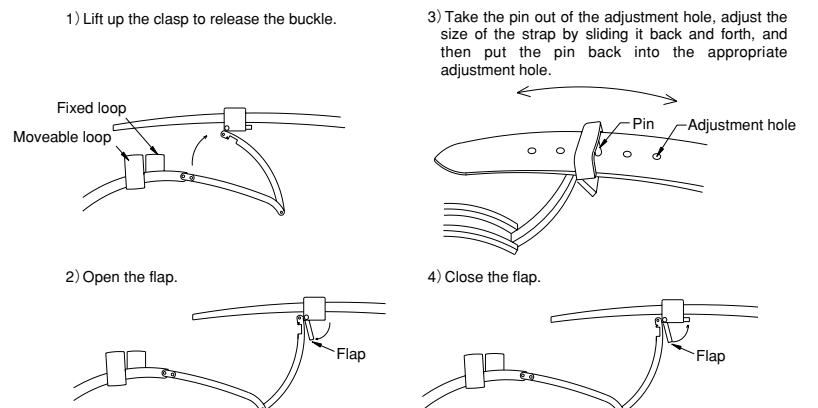


B type



C type

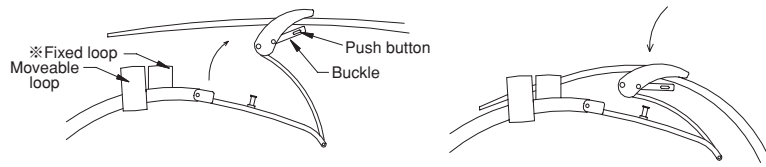
A Type



B Type

① How to wear or take off the watch

- 1) Press the button on both sides of the buckle; pull the buckle up. The band will automatically come out of the loop.
- 2) Place the tip of the band into the moveable loop and fixed loop, and fasten the clasp by pressing the frame of the buckle.

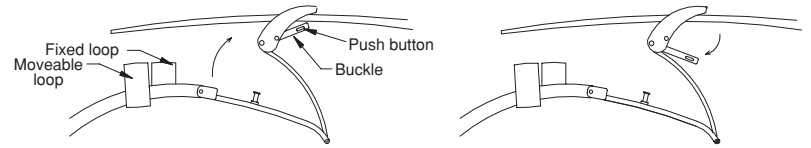


※No Fixed loop with Metal Bracelets.

156

② How to adjust the length of the leather band

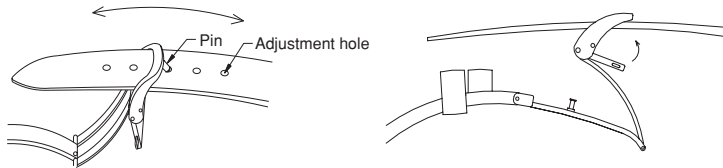
- 1) With pressing buttons on both sides of the buckle, pull the leather band out of the moveable loop and fixed loop. Then open the clasp.
- 2) Press the push buttons again to unfasten the buckle.



157

C Type

- 3) Pull the pin out of a adjustment hole of the band. Slide the band to adjust its length and find an appropriate hole. Place the pin into the hole.
- 4) Fasten the buckle with pressing the push buttons.



158

- 1) Press the button on the buckle, and lift to open the clasp.
- 2) To adjust: Pull the pins out of the adjustment holes on the band. Slide the band to the appropriate length. Push the pins into the new holes on the band.



159

TOUBLESHOOTING

	Trouble	Possible Cause	Solution
Movement of the watch hands	The second hand moves at two-second intervals.	The energy depletion forewarning function is activated.	Refer to "Energy depletion forewarning function" on page 101 to charge the watch.
	The second hand moves at five-second intervals.	If this function is activated even though you wear the watch everyday, the watch may be unable to receive sufficient light because it is concealed under a long sleeve shirt, etc.	Make sure that the watch is not concealed under a sleeve while you are wearing the watch. When taking the watch off, place the watch in a location as bright as possible. (Make sure that the temperature is always kept below 60°C when placing the watch in a bright location.)
	The stopped second hand pointing to the 3 o'clock position or 9 o'clock position started moving.	The Power Save has been activated to limit energy consumption. When the watch is used or stored continually under conditions where it cannot receive sufficient light, the power save function is automatically activated in order to reduce unnecessary energy consumption.	Refer to "Power save function" on page 102. If the watch moves at five-second intervals, immediately charge the watch. For details, refer to "Checking the charging status by the movement of the second hand" on page 16.
	The watch hands are fast forwarded even though no button is pressed, and then the watch resumes regular movement.	The automatic hand alignment function was activated. When the hand positions deviate to display incorrect time as a result of influence of various external sources, the watch automatically corrects the hand alignment itself.	Use the watch as it is (this is not a malfunction). For details, refer to "Automatic hand alignment" on page 110.

160

161

	Trouble	Possible Cause	Solution
Radio signal reception	The watch cannot receive radio signals.	The watch is moved while it is receiving radio signals.	Do not move the watch or do not change the orientation of the watch while it is receiving radio signals. For details, refer to "To enable the watch to receive radio signals easily" on page 114.
		The reception is cancelled while the watch is receiving radio signals.	Repressing button A during reception cancels the reception while the automatic or manual reception is being performed.
		During automatic reception, the watch was left where radio signals were weak or where it could not receive radio signals.	Place the watch where it can easily receive radio signals. Refer to "Conditions in which the watch may be unable to receive radio signals" on page 115
		JJY-LF stations may stop transmitting time signals for some reasons.	See the website of Communication Research Laboratory (CRL) for further information concerning the transmission of time signals. Check the URL of the CRL website on page 122. For details, refer to "Radio Signal Reception" on page 109
		The watch may be set to the time in different time zone from Japan Standard Time.	Check that the time difference is set. Adjust the time to Japan Time. For details, refer to "How to use the time zone adjustment" on page 126.
		The manual reception of radio signals is not conducted after the time is manually set. The manual reception of radio signals is not conducted after the built-in IC is reset.	Conduct the manual reception. For details, refer to "How to manually receive radio signals (manual reception)" on page 116.

162

163

Trouble		Possible Cause	Solution
Display of incorrect time or misalignment of the hands	The watch temporarily gains or loses time.	The watch receives a wrong radio signal because of a result of influence of various external	Place the watch where it can receive radio signals more easily. Conduct the manual reception if necessary. For details, refer to "Conditions in which the watch may be unable to receive radio signals" on page 115 or "HOW TO MANUALLY RECEIVE RADIO SIGNALS (MANUAL RECEPTION)" on page 116.
		The watch has been left in extremely high or low temperatures for a long time.	When the watch returns to normal temperature, the condition will be corrected. Conduct the manual reception if necessary. For details, refer to "How to manually receive radio signals (manual reception)" on page 116. If the watch hands are not set to current time even after conducting the manual reception, consult the retailer from whom the watch was purchased.
	The time displayed on the watch is several hours before or ahead of the current time.	The watch may be set to the time in different time zone from Japan Standard Time.	Check that the time difference is set. Adjust the time to Japan Time. For details, refer to "How to use the time zone adjustment" on page 126.
	The reception result display confirms successful reception but the incorrect time is displayed.	The hand positions deviate to display incorrect time as a result of influence of various external sources.	Use the watch as it is. Automatic hand alignment will be activated to correct the hand positions. For details, refer to "Automatic hand alignment" on page 110. If the second hand position cannot be corrected automatically, or if you are in a rush, reset the built-in IC. For details, refer to "How to reset the built-in ic" on page 136. If problem still persists, consult the retailer from whom the watch was purchased.
The second hand is not correctly positioned in the reception result display or reception level display.	The second hand is out of preliminary position. This happens when the position of the second hand deviates to display incorrect time as a result of influence of various external sources.		

164

165

Trouble		Possible Cause	Solution
Charging the watch	The stopped watch was exposed to adequate light for a longer time than the time required for fully charging the watch, however, it does not resume its normal one-second interval movements.	The light is too weak or the manner of lighting the watch has been altered while the watch is being charged.	Place the watch where it can be exposed to an adequate light source. Make sure that the manner of lighting the watch is not altered while the watch is being charged.
		The built-in IC has fallen into an unstable condition.	Reset the built-in IC. For details, refer to "How to reset the built-in ic" on page 136.
Button operation	Buttons or crown cannot be operated.	The energy stored in the watch runs low and the second hand moves at two-second intervals.	Refer to "Energy Depletion Forewarning Function" on page 101 to charge the watch.
		Small amount of water has got inside the watch due to deterioration of the gasket, etc.	
	You don't know how to operate in mid-process.	-----	Leave the watch as it is for a while. The watch resumes regular movement (except when setting the time manually or resetting the built-in IC). Afterwards, operate the setting again.
Others	Blur on the dial glass persists.	Small amount of water has got inside the watch due to deterioration of the gasket, etc.	Contact the retailer from whom the watch was purchased.

※For the solutions of troubles other than the above, contact the retailer from whom the watch was purchased.

166

167

LUMIBRITE

[IF YOUR WATCH HAS LUMIBRITE]

LumiBrite is a luminous paint that is completely harmless to human beings and natural environment, containing no noxious materials such as radioactive substance.

LumiBrite is a newly-developed luminous paint that absorbs the light energy of the sunlight and lighting apparatus in a short time and stores it to emit light in the dark. For example, if exposed to a light of more than 500 lux for approximately 10 minutes, LumiBrite can emit light for 3 to 5 hours.

Please note, however, that, as LumiBrite emits the light it stores, the luminance level of the light decreases gradually over time. The duration of the emitted light may also differ slightly depending on such factors as the brightness of the place where the watch is exposed to light and the distance from the light source to the watch.

<Reference data on the luminance>

(A) Sunlight

[Fine weather]: 100,000 lux [Cloudy weather]: 10,000 lux

(B) Indoor (Window-side during daytime)

[Fine weather]: more than 3,000 lux [Cloudy weather]: 1,000 to 3,000 lux

[Rainy weather]: less than 1,000 lux

(C) Lighting apparatus (40-watt daylight fluorescent light)

[Distance to the watch: 1 m]: 1,000 lux

[Distance to the watch: 3 m]: 500 lux (average room luminance) [Distance to the watch: 4 m]: 250 lux

168

全国共通フリーダイヤル 0120-612-911

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