1B21 / 1B22 / 1B32 2207

SEIKO WATCH CORPORATION

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SEIKO

1B21 / 1B22 / 1B32

Solar Radio Signal INSTRUCTIONS

日本語 ..... JA 1

English ..... EN 1

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Please refer to the Instruction Manuals of other languages by accessing **"Customer Service"**→ **"Instruction"** on our Website from PC or Smartphone.

简体中文 / 繁體中文

https://www.seikowatches.com/

Thank you very much for choosing a SEIKO watch. For proper and safe use of your SEIKO watch, please read carefully the instructions in this booklet before using it.

Keep this manual handy for easy reference.

* Length adjustment service for metallic bands is available at the retailer from whom the watch was purchased. If you cannot have your watch repaired by the retailer from whom the watch was purchased because you received the watch as a gift, or you moved to a distant place, please contact SEIKO CUSTOMER SERVICE CENTER. The service may also be available on a chargeable basis at other retailers, however, some retailers may not undertake the service.
* If your watch has a protective film for preventing scratches, make sure to peel it off before using the watch. If the watch is used with the film on it, dirt, sweat, dust, or moisture may be attached to the film and may cause rust.

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Handling cautions

⚠ WARNING

Please note that there is a risk of serious consequences such as severe injury if the following safety regulations are not strictly observed.

Immediately stop wearing the watch in following cases:

- If the watch body or band becomes edged by corrosion etc.
- If the pins protrude from the band.

* Immediately consult the retailer from whom the watch was purchased or SEIKO CUSTOMER SERVICE CENTER.

Keep the watch and accessories out of the reach of babies and children.

Care should be taken to prevent a baby or a child accidentally swallowing the accessories.
If a baby or child swallows the battery or accessories, immediately consult a doctor, as it will be harmful to the health of the baby or child.

Do not remove the secondary battery from the watch.

* About the secondary battery → Power Source → P.42
Replacement of the secondary battery requires professional knowledge and skill. Please ask the retailer from whom the watch was purchased for replacement of the secondary battery.
Installation of an ordinary silver oxide battery can generate heat that can cause bursting and ignition.

⚠ CAUTION

Please note that there is a risk of minor injury or material damage if the following safety regulations are not strictly observed.

Avoid the following places for wearing or keeping the watch:

- Places where volatile agents (cosmetics such as polish remover, bug repellent, thinners etc.) are vaporizing
- Places where the temperature drops below 5°C or rises above 35°C for a long time
- Places affected by strong magnetism or static electricity
- Places affected by strong vibrations
- Places of high humidity
- Dusty places

If you observe any allergic symptoms or skin irritation

Stop wearing the watch immediately and consult a specialist such as a dermatologist or an allergist.

Other cautions

- For adjusting the length of the metallic band, specialized knowledge and expertise are necessary. Therefore, in such a case, contact the retailer from whom the watch was purchased. If you attempt to adjust the metallic band, injury may occur to your hand or fingers, or parts of the band may be lost.
- Do not disassemble or tamper with the watch.
- Keep the watch out of the reach of babies and children. Extra care should be taken to avoid risks of any injury or allergic rash or itching that may be caused when you touch the watch.
- When disposing of used batteries, follow the instructions of your local authorities.
- If your watch is of the fob or pendant type, the strap or chain attached to the watch may damage your clothes, or injure the hand, neck, or other parts of your body.

⚠ 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 watches specifically designed for diving.

⚠ CAUTION

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.

⚠ CAUTION

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

Water may get inside of the watch.

* 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.

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.

Before use

■ 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 seconds hand.

"Checking the Charging Status" → P.18

● Charging the solar battery

"How to charge the battery" → P.38
"Guide to charging times" → P.39

■ To receive radio signals

The watch automatically receives radio signals to adjust the time every day.
Automatic radio signal reception is carried out before 2:00 AM and 4:00 AM.
During this period of time, place the watch in a location that easily receives radio signals without wearing it and do not move it.

"To improve radio signal reception" → P.27

Characteristics

This is a solar-driven, radio signal-adjusted watch.

- The watch is operated by using "electric energy" which is converted from the light received by the solar panel.
- This watch displays the precise time by receiving radio signals conveying time information.
- It can receive official standard frequencies from Japan (from either of two transmitting stations), the People's Republic of China, the United States of America and Germany.

■ **Radio Signal Receiving Function**..... → P.20
The watch maintains the precise time by automatically receiving radio signals on official standard frequencies.
Manual reception of radio signals is also possible.
This watch can receive official standard radio signals from Japan (from 2 transmitting stations), China, U.S.A. and Germany. (Select the transmitting station in the time difference adjustment function.)

■ **Reception Level Indication Function**..... → P.61
The movement of the seconds hand indicates the radio signal reception level during radio signal reception attempts.
(Only manual reception)

■ **Display Function of Radio Signal Reception Results**..... → P.30
The movement of the seconds hand indicates radio signal reception results (Yes/No).

■ **Time Difference Adjustment Function (Selecting Transmitting Station)**..... → P.32
Set the time difference in order to display the local time overseas.
Additionally, set the time difference to enable reception of the radio signal in areas in which it is available.

■ **Solar Charging Function**..... → P.38
A solar cell underneath the dial converts any form of light into "electrical energy" to charge it. Once fully charged, the watch continues to run for approximately six months.

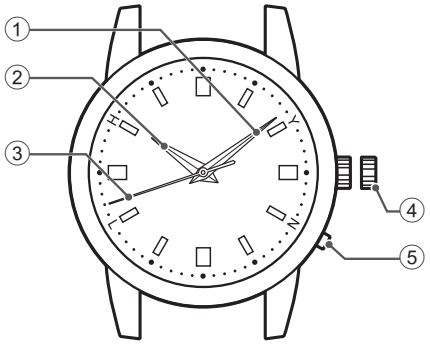
■ **Energy Depletion Forewarning Function**..... → P.40
The movement of the seconds hand indicates that the battery should be charged.

■ **Power Save Function**..... → P.41
This watch is equipped with a function which can suppress energy consumption when it is left without receiving an adequate light source for a certain length of time.

■ **Automatic Hand Position Alignment Function**..... → P.71
When the hand positions display an incorrect time as a result of external influences such as magnetism, the watch automatically corrects the hand misalignment.

Names of the parts and their functions

■ 1B21 (non date-displaying model)



① Minute hand

② Hour hand

③ Seconds hand

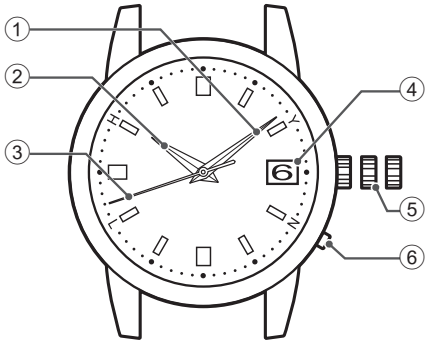
④ Crown

- Normal position:
  Checking the reception result → P.30
  Time difference setting → P.33
  Manual reception → P.60
  Manual time setting → P.63
- First click: Resetting the system → P.79

⑤ Button → P.16

* The operation method of the button varies with the functions being used. Follow the instructions of each section of this manual.

■ 1B22 / 1B32 (date-displaying models)



① Minute hand

② Hour hand

③ Seconds hand

④ Date

⑤ Crown

- Normal position:
  Checking the reception result → P.30
  Time difference setting → P.33
  Manual reception → P.60
  Manual time setting → P.66
- First click position :
  Manual date setting → P.69
- Second click position : Reset the system → P.79

⑥ Button → P.16

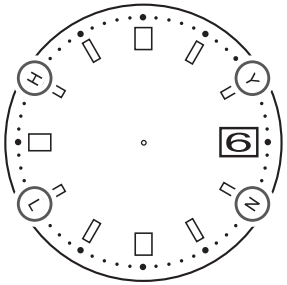
* The operation method of the button varies with the functions being used. Follow the instructions of each section of this manual.

● Reception level display

[Manual reception]

H : High reception level (50-second position)
L : Low reception level (40-second position)
N : Unable to receive radio signals (20-second position)

* Reception level display → P.61



● Reception result display

[Check of reception result]

Y : Reception successful (10-second position)
N : Reception failed (20-second position)

* How to display the reception results → P.30

* Each indication may differ depending on the model (design) of the watch.

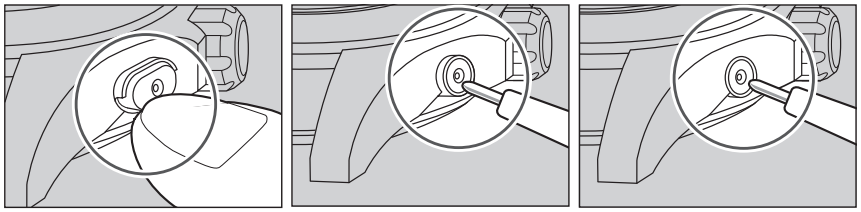
● Radio signal transmitting station display

Display (Country with radio signal transmitting station)	Display position
J / JJY (Japan)	9-second position
B / BPC (China)	8-second position
W / WWVB (U.S.A.)	53-second position
D / DCF77 (Germany)	1-second position

* Time difference adjustment function → P.32
* List of time zone differences in major regions of the world → P.35

How to use the button

Some models may have a button which is recessed in the watch case to prevent accidental input.
Shape of the button differs depending on the design of the watch.



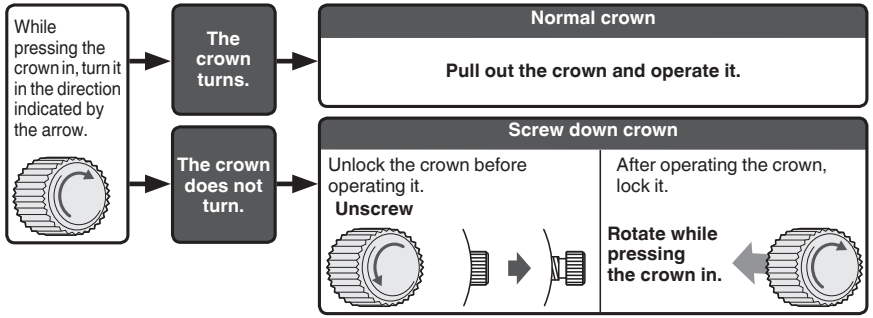
Upper half of the button is covered.
Press the lower half of the button or press the hollow in the middle using an object with a long tapered tip.

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

The button is recessed in the watch case.
Press the hollow in the middle using an object with a long tapered tip.

Crown

There are two types of crowns, a normal crown and a screw down crown.
Please check the type of the crown of your watch.

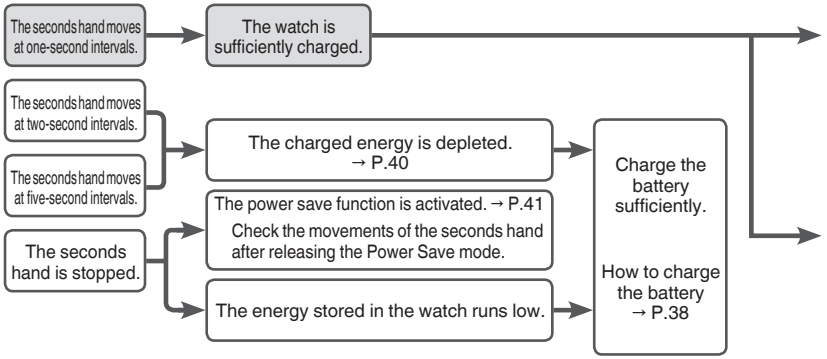


* By locking the crown by screw, a screw down crown can prevent malfunction and increase water resistance.
* Be careful not to screw the crown in by force as it may damage the slots of the crown.

Before Use

1 Checking the Charging Status

When the movement of the seconds hand shows an energy depletion state, the battery requires charging.

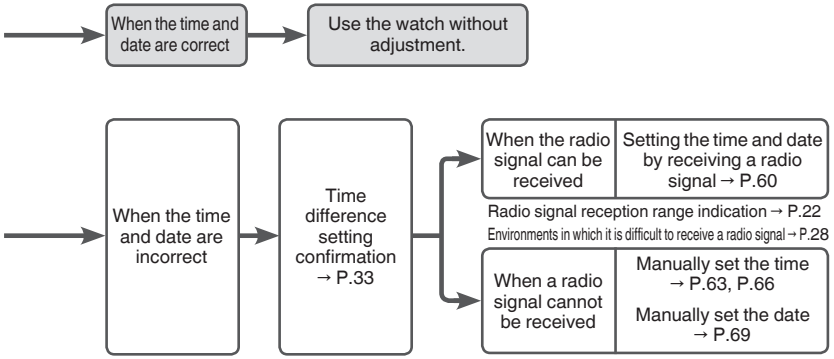


* If the seconds hand does not move at one-second intervals even after fully charging the battery, refer to "Charging the solar battery" in Troubleshooting on P.75

Only the 1B22 and 1B32 are date-displaying models.

2 Checking the time and date

* The hands of this watch cannot be moved by turning the crown.
* When adjusting the time or date, refer to the following regarding the procedures.



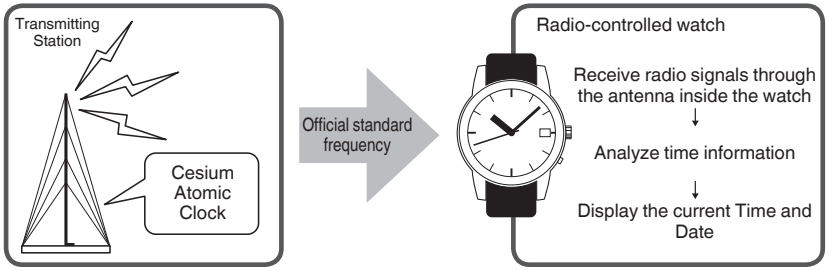
* When the watch does not display the correct time and date even after successfully receiving a radio signal, refer to Troubleshooting.→ "Misalignment of the time and hand positions" → P.75, and "Misalignment of the date" → P.77

Only the 1B22 and 1B32 are date-displaying models.

Setting the time and date by receiving a radio signal

■ Mechanism of radio signal reception

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.

Only the 1B22 and 1B32 are date-displaying models.

■ Automatic reception and manual reception

● Automatic reception

This watch sets the time and date by automatically receiving a radio signal at a fixed time.
This watch automatically receives a radio signal before 2:00 a.m. and 4:00 a.m.
* When the reception is successful, the watch finishes the automatic reception.

- Place the watch in a place where it can easily receive a radio signal (by the window, etc.).
- Do not move the watch during the radio signal reception.
  "To improve radio signal reception" → P.27

● Manual reception

This watch can receive a radio signal arbitrarily at any time other than the automatic reception mode.
"How to conduct manual reception" → P.60

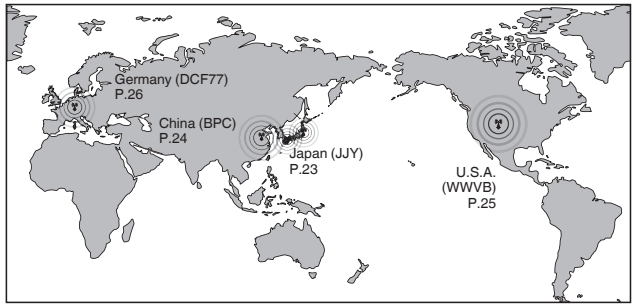
* Radio signal reception results depend on the receiving environment. "Environments in which it is difficult to receive a radio signal" → P.28
* The watch cannot receive a radio signal outside the radio signal reception range. "Radio signal reception range indication" → P.22
* When the time difference is set for a region other than radio signal reception range, a radio signal cannot be received. Check the setting of the time difference. "Setting the time difference (Setting the radio signal transmitting station)" → P.33
* When the watch does not display the correct time and date even after successfully receiving a radio signal, refer to Troubleshooting. "Misalignment of the time and hand positions" → P.75, "Misalignment of the date" → P.77

Only the 1B22 and 1B32 are date-displaying models.

Reception environment

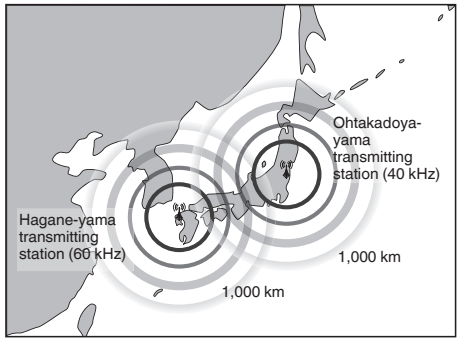
■ Radio signal reception range indication

This watch receives standard radio signals from Japan (2 stations), China, U.S.A. and Germany.
Select the transmitting station in the time difference adjustment function to switch the standard radio signal to receive.
"Setting the time difference (Setting the radio signal transmitting station)" → P.33



■ Radio signal reception range: Japan (JJY)

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



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.

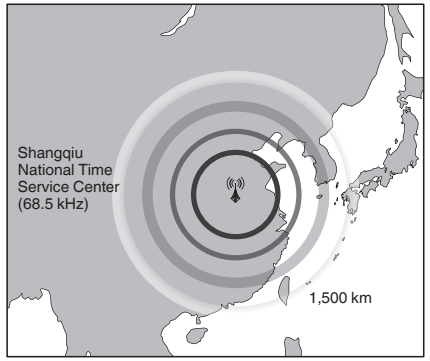
Fukushima : Ohtakadoya-yama transmitting station
Frequency: 40 KHz
Kyushu : Hagane-yama transmitting station
Frequency: 60 KHz

* NICT: National Institute of Information and Communications Technology

* Even within the reception range, weather conditions, terrain, buildings, and orientation may mean that reception is not possible.
  "Environments in which it is difficult to receive a radio signal" → P.28

■ Radio signal reception range: China (BPC)

The reception range from the transmitting station is approximately 1,500 km (1,500 km radius of the transmitting station).



BPC is operated by NTSC.

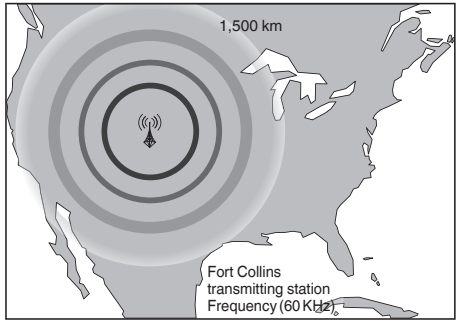
Shangqiu National Time Service Center
Frequency: 68.5 kHz

* NTSC: National Time Service Center

* The watch may be able to receive radio signals outside a reception range if the receiving conditions are favorable.
* Even within the reception range, weather conditions, terrain, buildings, and orientation may mean that reception is not possible.
  "Environments in which it is difficult to receive a radio signal" → P.28

■ Radio signal reception range: U.S.A. (WWVB)

The reception range from the transmitting station is approximately 1,500 km (1,500 km radius of the transmitting station).
There are four time zones within the reception range.



WWVB is operated by NIST.

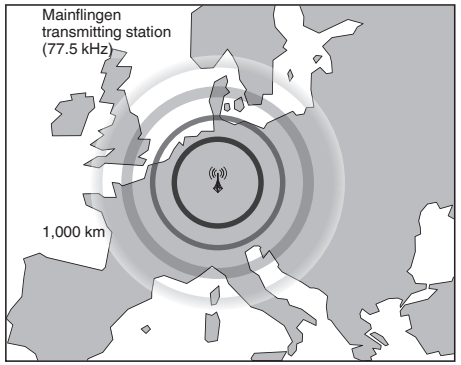
Fort Collins transmitting station
Frequency: 60 kHz

* NIST: National Institute of Standards and Technology

* The watch may be able to receive radio signals outside a reception range if the receiving conditions are favorable.
* Even within the reception range, weather conditions, terrain, buildings, and orientation may mean that reception is not possible.
  "Environments in which it is difficult to receive a radio signal" → P.28
* Use of automatic reception is recommended, as this time frame is optimal for automatic reception.

■ Radio signal reception range: Germany (DCF77)

The reception range from the transmitting station is approximately 1,000km (1,000 km radius of the transmitting station).
There are three time zones within the reception range.



DCF77 is operated by PTB.

Southeastern Frankfurt
Mainflingen transmitting station (77.5 kHz)

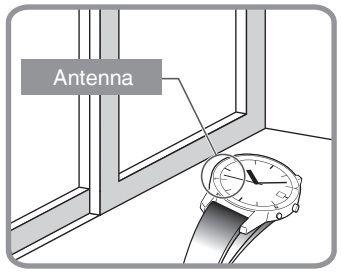
* PTB: Physikalisch-Technische Bundesanstalt

* Even within the reception range, weather conditions, terrain, buildings, and orientation may mean that reception is not possible.
  "Environments in which it is difficult to receive a radio signal" → P.28
* Use of automatic reception is recommended, as this time frame is optimal for automatic reception.

■ To improve radio signal reception

● Place the watch in a place where it can easily receive a radio signal such as near a window.

The antenna is embedded at the 8 o'clock position of the watch. Turning the antenna toward the outside of a window or the direction facing transmitting stations helps improve radio signal reception.
* Locations of transmitting stations
  "Radio signal reception range indication" → P.22



● Do not move the watch while it is receiving radio signals.

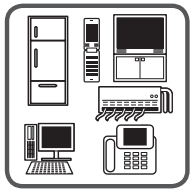
To enhance the reception of radio signals, do not move the watch or do not change the orientation of the watch while it is receiving radio signals.
* If the button or crown is operated while the watch is receiving a radio signal, the reception will be cancelled.

● The place where the watch is put before going to bed

Place the watch next to a window facing in the direction of a transmitting station before bedtime because automatic reception is performed late at night.
The standard radio signal is influenced by the distance from the transmitting station, as well as by terrain (including buildings) and weather conditions.
Also, please search for a place to easily receive radio signals when attempting reception.

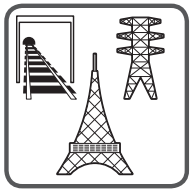
■ Environments in which it is difficult to receive a radio signal

Avoid putting the watch in such places when it receives radio signals.



- Close to home electrical appliances such as TV's, refrigerators or air conditioners
- Close to OA equipment such as mobile phones, personal computers or fax machines
- Close to steel desks or other furniture made of metal

- In places generating radio interference, such as construction sites or places with heavy traffic



- Close to overhead power lines, TV stations, train cables

- Inside a building, between tall buildings, underground

- Inside a vehicle, train, or airplane

⚠ CAUTION

- The watch may display the wrong time if it fails to receive radio signals properly because of interference.
  The watch may also fail to receive radio signals properly depending on the location or radio wave receiving conditions.
  In this case, move the watch to another place where it can receive radio signals.
- When the watch is out of reception range, its accurate quartz movement (loss / gain: ±15 seconds per month on average) will continue to keep the time.
- The time signal transmission may be stopped during maintenance of the facilities of the (each) transmitting station or because of a lightning strike.
  In such a case, see the (each) station's website for further information or contact SEIKO CUSTOMER SERVICE CENTER.

- Websites of transmission stations (As of August 2020)

Japan	:	National Institute of Information and Communications Technology (Japan Standard Time Project) http://jjy.nict.go.jp/
China	:	NTSC http://www.ntsc.cas.cn/
U.S.A.	:	NIST https://www.nist.gov/pml/time-and-frequency-division/radio-stations/wwvb
Germany	:	PTB https://www.ptb.de/cms/en.html

How to check the reception status

■ How to display the reception results

The seconds hand indicates the latest reception results (Yes/No) of a radio signal for 5 seconds.

1 Press the button once and then release it.

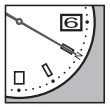
The seconds hand indicates the reception results.

* When the button is held down, the watch starts manual reception.
* Press the button using an object with a long tapered tip. → P.16

2 Check if the reception was successful (within 5 seconds).

If a reception was successful: The seconds hand points to Y (Yes: the 10-second position)

If a reception has failed: The seconds hand points to N (No: the 20-second position)



* If the button is pressed after 5 seconds have elapsed or while the seconds hand is moving to display the reception results, the reception results display function is cancelled and the watch returns to the TIME display mode.

Only the 1B22 and 1B32 are date-displaying models.

If a reception was successful: The seconds hand points to Y

- A radio signal has been received successfully. Use the watch without any adjustments.

* When the watch does not display the correct time and date even after successfully receiving a radio signal, refer to Troubleshooting.→ "Misalignment of the time and hand positions" → P.75, and "Misalignment of the date" → P.77

If reception has failed: The seconds hand points to N

- Place the watch in a place where it can easily receive a radio signal, or change its direction.
  Even within the radio signal reception range, this watch may fail to receive a radio signal depending on the condition (due to the influence of weather, terrain, buildings, or direction). "Environments in which it is difficult to receive a radio signal" → P.28
  This watch is unable to receive radio signals outside the reception range. "Radio signal reception range indication" → P.22
- Make sure that the time difference is correctly selected before attempting radio signal reception.
  If the time difference is set to an area outside reception range, then reception of the radio signal will not be possible. Check the time difference setting.
  "Setting the time difference (Setting the radio signal transmitting station)" → P.33
  "List of time zone differences in major regions of the world" → P.35
- Attempt to receive a radio signal in a different time period. (In the case of manual reception)
  Receiving environments differ according to time periods even at the same place. Due to radio signal characteristics, the watch is able to easily receive radio signals during nighttime hours.
- If you use the watch in a place or region outside the radio signal reception range or when the watch cannot successfully receive radio signals, manually set the time and date.
  "How to manually set the time (1B21: non date-displaying model)" → P.63
  "How to manually set the time (1B22 / 1B32: date-displaying models)" → P.66
  "How to manually set the date (1B22 / 1B32: date-displaying models)" → P.69

Only the 1B22 and 1B32 are date-displaying models.

Time difference adjustment function (When using overseas)

■ Time difference adjustment function characteristics

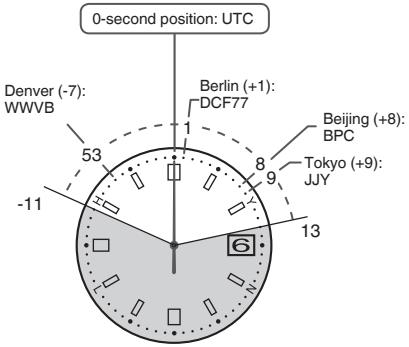
- Set the time difference in the time difference adjustment mode to display an overseas local time.
  The watch can display an overseas local time in one-hour units. The time difference is set based on UTC (Coordinated Universal Time).
  The range of time differences around the world based on UTC is [from -11 hours to +13 hours].
- In the time difference adjustment mode, the time difference based on UTC (Coordinated Universal Time) is displayed by the position of the seconds hand.
  To set the time difference, turn the crown to move the seconds hand to the correct position.
- A radio signal transmitting station is selected by setting the time difference.
  When setting the time difference for a region other than the radio signal reception ranges, the radio signal reception function will not work.

Examples: When using the watch in Japan, set the seconds hand to the [9-second position: Tokyo] to receive a radio signal from Japan.
When using the watch in China, set the seconds hand to the [8-second position: Beijing].

"Setting the time difference (Setting the radio signal transmitting station)" → P.33
"List of time zone differences in major regions of the world" → P.35

<How to read the seconds hand position and time difference (Radio signal transmitting station)>

* The numbers in parenthesis are time differences based on UTC.

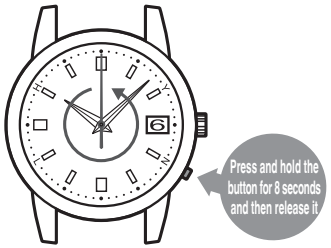


Setting the time difference (Setting the radio signal transmitting station)

1 Continue to press the button (for 8 seconds), and when the seconds hand starts to move counterclockwise, release it.

The watch enters the time difference setting mode and the seconds hand stops pointing at the time difference index currently set.

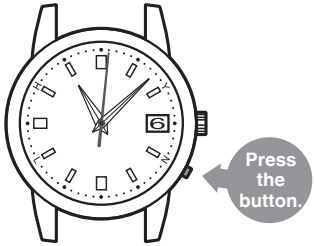
* Though the seconds hand may move to the 0-second position after 3 seconds of pressing the button, keep the button pressed.
* If the watch is left untouched for 1 minute after the seconds hand stops, the watch automatically returns to the TIME display mode. If this happens, restart the operation from procedure 1.
* Keeping the button pressed for a short period may start manual reception.
* Press the button using an object with a long tapered tip. → P.16



2 Press the button to set the seconds hand to point at the time difference index of the target area.

With each pressing of the button, the seconds hand advances 1 second (+ 1 hour) in the clockwise direction and the time advances 1 hour.
The position of the seconds hand shows the difference. Please set it by referring to P.35.

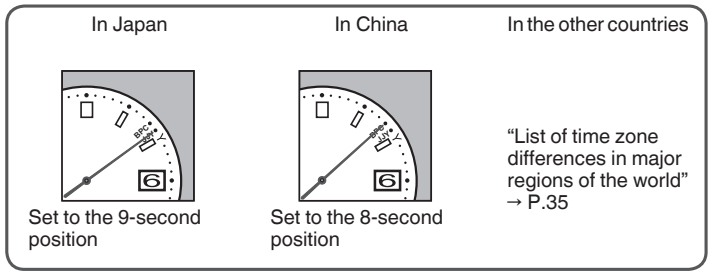
* Also while the watch is working, the seconds hand can be moved.



Only the 1B22 and 1B32 are date-displaying models.

The radio signal transmitting station can be changed by setting the time difference. When setting a time difference for regions other than the radio signal reception ranges, the radio signal reception function will not work.

* When setting the Daylight Saving Time (DST), add one hour to the time difference of the target area.



* When the seconds hand is at 13 seconds (UTC +13 hours), press the button to move it to the 49-second position (UTC -11 hours).

3 Wait for one minute after the hour hand stops. (The watch exits the time difference setting mode.)

After one minute, the watch switches to the one-second interval movement.

* When the date is changed, it is also moved.

Only the 1B22 and 1B32 are date-displaying models.

List of time zone differences in major regions of the world

Refer to the table below to set the time difference area in the Time Difference Adjustment mode.

* When setting a time difference for a region where no receivable official standard frequency is mentioned in the table below, the radio signal reception function will not work.

(As of August 2020)

Time difference setting seconds hand position	Time difference from UTC	Time zone representative city	Reception frequency
0 seconds	±0 hours	London	DCF77
1 second	+1 hour	Paris / Berlin	DCF77
2 seconds	+2 hours	Cairo	DCF77 △
3 seconds	+3 hours	Jeddah	-
4 seconds	+4 hours	Dubai	-
5 seconds	+5 hours	Karachi	-
6 seconds	+6 hours	Dhaka	-
7 seconds	+7 hours	Bangkok	-
8 seconds	+8 hours	Beijing/ Hongkong	BPC
9 seconds	+9 hours	Tokyo	JJY
10 seconds	+10 hours	Sydney	JJY △
11 seconds	+11 hours	Noumea	-
12 seconds	+12 hours	Wellington	-
13 seconds	+13 hours	Nuku'alofa (Tongatapu)	-

Time difference setting seconds hand position	Time difference from UTC	Time zone representative city	Reception frequency
49 seconds	-11 hours	Midway Island	-
50 seconds	-10 hours	Honolulu	-
51 seconds	-9 hours	Anchorage	-
52 seconds	-8 hours	Los Angeles	WWVB
53 seconds	-7 hours	Denver	WWVB
54 seconds	-6 hours	Chicago	WWVB
55 seconds	-5 hours	New York	WWVB
56 seconds	-4 hours	Santo Domingo	WWVB △
57 seconds	-3 hours	Rio de Janeiro	-
58 seconds	-2 hours	Fernando de Noronha	-
59 seconds	-1 hour	Azores Islands	-

To use Daylight Saving Time (DST) where this is observed, select the time zones with a △ mark in the Reception frequency columns.

■ Time zones and time differences

There are time differences around the world based on "Coordinated Universal Time (UTC)." There are 24 regions (Time Zones) around the world with a time difference of one hour. This system has been adopted internationally by setting the total time difference around the world as 24 hours.
Further, Daylight Saving Time (DST) is individually adopted in countries and regions.

[What is UTC (Coordinated Universal Time)?]

UTC is the universal standard time coordinated through international agreement. It is used as the official time around the world. UTC is a time coordinated by adding leap seconds to the "International Atomic Time (TAI)" determined from atomic clocks in the world, in order to correct the deviation from the astronomically defined universal time (UT).

[What is summer time (DST)?]

Summer time is Daylight Saving Time (DST).
Advance 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 (DST) vary depending on the country.

* Time differences between regions and daylight saving time may change due to circumstances of a country or region.
* In some regions, time zones that differ from UTC by half- or quarter-hour time differences are established. (For example, some parts of India)
* Each indication may differ depending on the model (design) of the watch.

■ Time difference adjustment Q&A

Q : When returning to Japan from overseas, is the time automatically set to Japan time?
A : Just moving does not adjust your watch to Japanese local time.
When wearing a watch in Japan, set to Japan time by use of the time difference adjustment function.

Q : The hands stop during operation of time difference setting, therefore, does time lag occur?
A : The internal circuit stores the time, therefore, no time lag occurs.

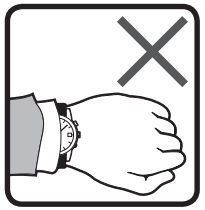
Q : When a time difference for regions out of the radio signal reception range is set, the watch will not receive a radio signal. How is the accuracy of the watch at that time?
A : The watch has an accuracy of a normal quartz watch in that case. (Monthly rate: ±15 seconds)

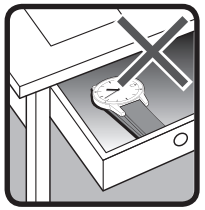
Q : How is adjustment made to a local time with a time difference of 15 minutes or 30 minutes?
A : The time can be adjusted on a 1 hour basis by use of the time difference adjustment function. When adjusting to a local time with a time difference of 15 minutes or 30 minutes, refer to
"How to manually set the time (1B21: non date-displaying model)" → P.63
"How to manually set the time (1B22 / 1B32: date-displaying models)" → P.66

Charging the battery

■ How to charge the battery

Expose the dial to light to charge the watch.





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

Under the following situations, the energy of the watch is likely to be depleted, resulting in stoppage of the watch:
- The watch is concealed under a sleeve.
- The watch is used or stored under conditions where it cannot be exposed to light for a long time.

* Be careful to make sure that the watch does not get hot when it is charging. (The operating temperature range is -10°C to +60°C.)
* When you first start using the watch or starting it after it stopped due to a lack of charge, charge the watch sufficiently using the table on P.39 as a guide.

■ Guide to charging times

Charge the watch using the times below as a guide.

Illuminance lx (LUX)	Light source	Condition (Example)	From the state where the watch is stopped (Not charged)		In the state where the hand moves (The watch is charged)
			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 last for 1 day
700	Fluorescent light	General offices	-	-	5 hours
3,000	Fluorescent light	30 W 20 cm	200 hours	5 hours	1.5 hours
10,000	Fluorescent light	30 W 5 cm	60 hours	1 hours	15 minutes
	Sunlight	Cloudy day			
100,000	Sunlight	Sunny day (Under the direct sunlight on a summer day)	24 hours	30 minutes	3 minutes

The figures of "Time required for charging the watch to start moving at one-second intervals" are estimations of time required to charge the stopped watch by exposing it to light until it moves at steady one-second intervals. Even if the watch is partially charged for a shorter period, the watch will resume one-second interval movement. However, it may shortly return to two-second interval movement. Use the charging time in this column as a rough guide for sufficient charging time.

* The seconds hand movement indicates the remaining amount of energy. "Checking the Charging Status" → P.18
* The required charging time slightly varies depending on the model of the watch.

About energy

■ Energy depletion forewarning function (Two-second interval movement and Five-second interval movement)

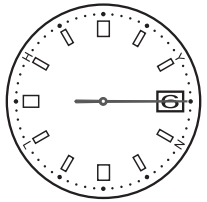
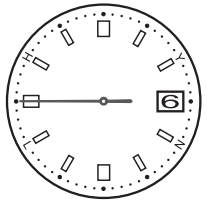
The energy depletion forewarning function is activated when the energy stored in the watch runs low.
In such a case, the seconds hand moves at two-second intervals.
If the watch continues to be in the state of two-second interval movement, the watch switches to five-second interval movement, followed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

"How to charge the battery" → P.38
"Guide to charging times" → P.39

* Neither the button nor the crown can be operated while the seconds hand moves at two-second or five-second intervals. (This is not a malfunction.)
* While the seconds hand moves at five-second intervals, the hour hand and date stop operating.
* While the seconds hand moves at two-second and five-second intervals, the watch is unable to receive radio signals automatically. After the watch is charged sufficiently and the seconds hand returns to normal one-second interval movement, conduct the manual reception of radio signals to set the watch to the correct time. ("Automatic reception and manual reception" → P.21)

■ Power save function

This watch is equipped with a power save function which can suppress energy consumption when it is left without receiving an adequate light source for a certain length of time.
* There are two types of power save mode.

	Power Save 1	Power Save 2
Condition	The watch is exposed to a state without receiving an adequate light source for 72 hours or longer.	The watch is in an insufficient charging state for a long time.
Situation	 The seconds hand stops pointing at the 15-second position, and the hour and minute hands, and date also stop. The watch conducts automatic radio signal receiving.	 The seconds hand stops pointing at the 45-second position, and the hour and minute hands, and date also stop. The watch does not conduct automatic radio signal receiving.
How to handle the situation	When the watch is exposed to an adequate light source for five seconds or longer, it displays the current time again after the seconds hand is rapidly advanced.	After sufficiently charging the battery, set the watch for the current time, if necessary.

Power Save 2

* While the watch is being charged, the seconds hand moves at "Five-second Intervals." During the "Five-second Interval Movement," neither the button nor the crown can be operated.
* If the "Power Save 2" mode is prolonged, the stored power amount drops and the internal current time information stored will be lost. When the watch returns to its normal movement of one-second interval after sufficiently charging the battery, set the current time by receiving a radio signal. ("Automatic reception and manual reception" → P.21)

Only the 1B22 and 1B32 are date-displaying models.

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.

The capacity or charging efficiency may gradually lower due to long-term use or operating environment.
In addition, long-term use may shorten the charge duration due to wear, contamination, lubricant deterioration of mechanical parts, etc. Request repair when the performance lowers.

⚠ WARNING

■ Notes on replacing the secondary battery

- Do not remove the secondary battery from the watch.
  Replacement of the secondary battery requires professional knowledge and skill.
  Please ask the retailer from whom the watch was purchased for replacement of the secondary battery.
- Installation of an ordinary silver oxide battery can generate heat that can cause bursting and ignition.

* 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."
* For the required time to fully charge the battery, see "Guide to charging times" → P.39.

⚠ WARNING

■ 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.

Daily care

● The watch requires good daily care

- Do not wash the watch when its crown is in the extended position.
- Wipe away moisture, sweat or dirt with a soft cloth.
- After soaking the watch in seawater, be sure to wash the watch in clean pure water and wipe it dry carefully.
  Do not pour running water directly from a faucet onto the watch. Put some water into a bowl first, and then soak the watch in the water to wash it.
  * If your watch is rated as “Non-water resistant” or “water resistant for daily use,” please do not wash the watch.
    “Performance and type” → P.45
    “Water resistant performance” → P.47

● Turn the crown from time to time

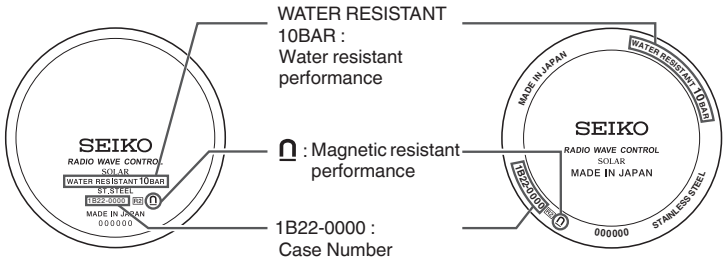
- In order to prevent corrosion of the crown, turn the crown from time to time.
- The same practice should be applied to a screw down crown.
  “Crown” → P.17

● Press the button once in a while

- Press the button once in a while to prevent corrosion of the button.
  * If the display is changed by pressing any button, wait and leave it as is.

Performance and type

The case back shows the caliber and performance of your watch



- **Water resistant performance**
  Please refer to P.47.
- **Case Number**
  The number to identify the type of your watch.
- **Magnetic resistant performance**
  Please refer to P.48 and P.49.

* The above illustration is provided as an example, therefore it may not be exactly the same as your watch.

Lumibrite

If your watch has Lumibrite

Lumibrite is a luminous paint that absorbs the light energy of sunlight and lighting apparatuses 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.

* In general, when coming from a place that is bright to a place that is dark, it takes human eyes some time to adapt to the darkness making it difficult to see objects initially. (Dark adaptation)
* Lumibrite is luminous paint that stores and emits light, which is harmless to human beings and the environment, containing no toxic materials such as radioactive substances.

<Brightness levels>

Condition		Illumination
Sunlight	Fine weather	100,000 lux
	Cloudy weather	10,000 lux
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
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

Water resistant performance

Refer the table below for the description of water resistant performance of your watch before using. (Please look at P.45.)

Indication on the case back	Water resistant performance	Conditions of Use	
No indication	Non-water resistance	Avoid drops of water or sweat	
WATER RESISTANT	Water resistance for everyday life	The watch withstands accidental contact with water in everyday life.	⚠ **WARNING** Please do not use it for swimming.
WATER RESISTANT 5 BAR	Water resistance for everyday life at 5-BAR water resistant	The watch is suitable for sports such as swimming.	
WATER RESISTANT 10 (20) BAR	Water resistance for everyday life at 10 (20)-BAR water resistant	The watch is suitable for diving not using an air cylinder.	

Magnetic resistant performance

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

* When the hand positions deviate to display incorrect time as a result of influence of magnetism, this watch automatically corrects the hand alignment itself. (P.71)

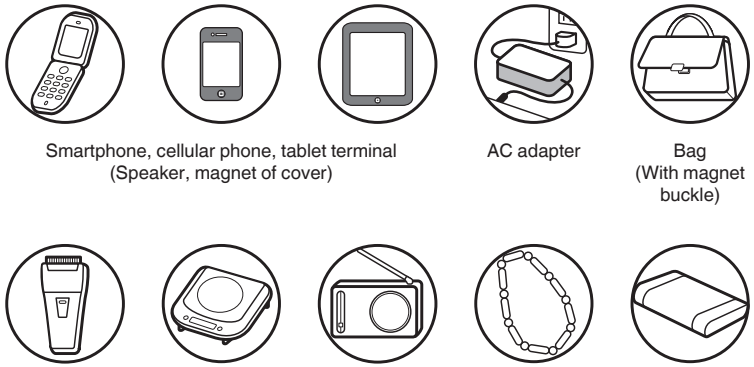
⚠ DANGER	
Indication on the case back	**Condition of use**
No indication	Keep the watch more than 10 cm away from magnetic products.
∩	Keep the watch more than 5 cm away from magnetic products. (JIS level-1 standard)
∩	Keep the watch more than 1 cm away from magnetic products. (JIS level-2 standard)

If the watch becomes magnetized and its accuracy deteriorates to an extent exceeding the specified rate under normal use, the watch needs to be demagnetized. In this case, you will be charged for demagnetization and accuracy readjustment even if it happens within the guarantee period.

The reason why a watch is affected by magnetism

The built-in motor is provided with a magnet, which may be influenced by a strong external magnetic field.

Examples of common magnetic products that may affect watches



Smartphone, cellular phone, tablet terminal (Speaker, magnet of cover) | AC adapter | Bag (With magnet buckle)

AC-powered shaver | Magnetic cooking device | Portable radio (Speaker) | Magnetic necklace | Magnetic health pillow

Band

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 result in a rash or 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.)
  Clean it off with a soft cloth.
- Because some titan bands use pins made of stainless steel, which has outstanding strength, rust may form in the stainless steel parts.
- If rust advances, pins may poke out or drop out, and the watch case may fall off the band, or the clasp may not open.
- If a pin is poking out, personal injury may result. In such a case, refrain from using the watch and request repair.

● 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/20-BAR water resistant).

● Polyurethane band

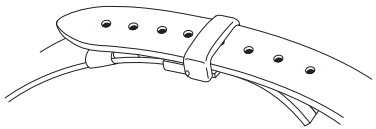
- A polyurethane band is susceptible to discoloration from light, and may be deteriorated by solvent or atmospheric humidity.
- Especially a translucent, white, or pale colored band easily adsorbs other colors, resulting in color smears or discoloration.
- Wash out dirt in water and clean it off with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

Notes on skin irritation and allergy	Skin irritation caused by a band may result from various factors 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.

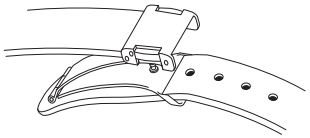
How to use tri-fold type clasp for leather band (Special clasps)

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

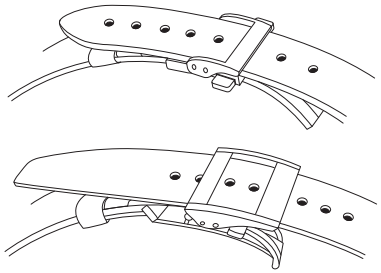
A A Type → P.53



B B Type → P.54

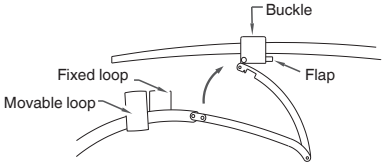


C C Type → P.55

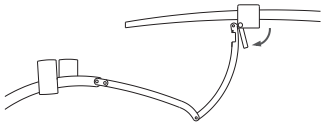


A A Type

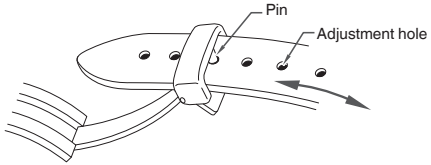
1. Lift up the clasp to release the buckle.



2. Open the flap.

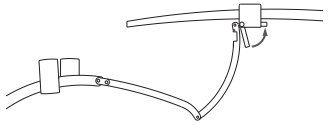


3. Remove the pin from the adjustment hole. Slide the band left and right, and reinsert the pin into the adjustment hole at an appropriate length.



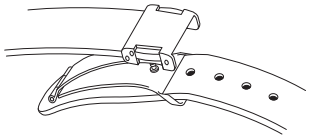
4. Fasten the flap.

* Do not push the flap in too hard.

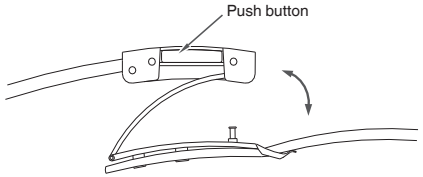


* When fastening the clasp, insert the tip of the band into the movable loop and fixed loop, and then, securely tighten the clasp.

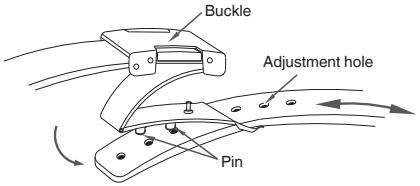
B B Type



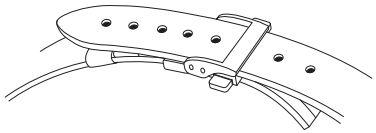
1. While pressing the push buttons on both sides of the flap, lift to open the clasp.

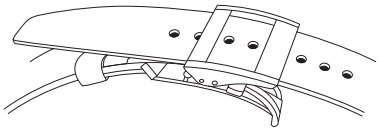


2. Remove the pin from the adjustment hole. Slide the band left and right, and insert the pin into the adjustment hole at an appropriate length. Push the buckle and fasten the clasp.



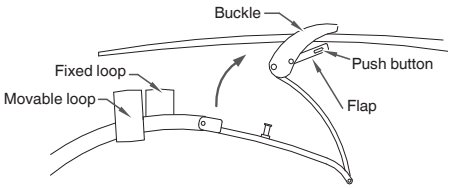
C C Type



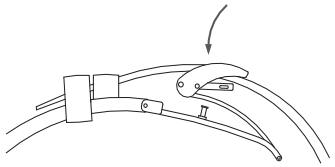


● How to wear or take off the watch

1. While pressing the push buttons on both sides of the flap, pull the band out of the movable loop and fixed loop. Then open the clasp.

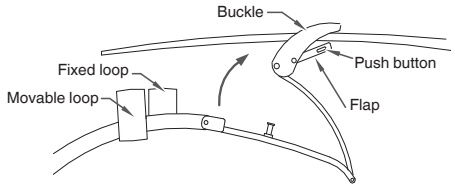


2. Place the tip of the band into the movable loop and fixed loop, and fasten the clasp by pressing the frame of the buckle.

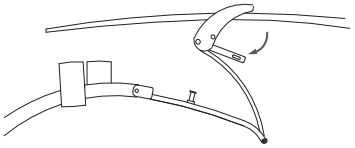


How to adjust the length of the band

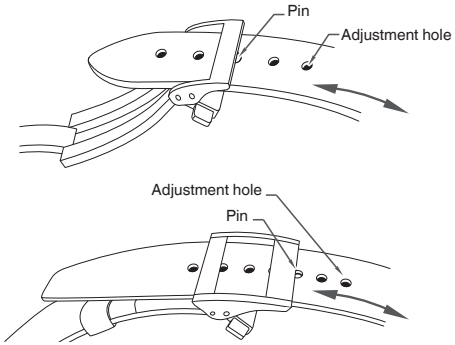
1. While pressing the push buttons on both sides of the flap, pull the band out of the movable loop and fixed loop. Then open the clasp.



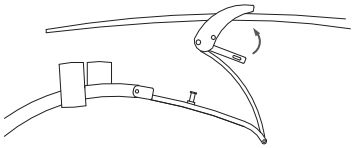
2. Press the push buttons again to unfasten the flap.



3. Pull the pin out of an 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 flap.



After sales service

Notes on guarantee and repair

- Contact the retailer from whom the watch was purchased 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.
- For repair services after the guarantee period has expired, if the functions of the watch can be restored by repair work, we will undertake repair services upon request and payment.

Replacement with functional parts

- Please keep in mind that if original parts are not available, they may be replaced with substitutes whose outward appearance may differ from the originals.

Inspection and adjustment by disassembly and cleaning (Overhaul)

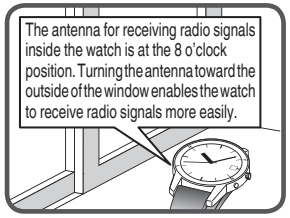
- Periodic inspection and adjustment by disassembly and cleaning (overhaul) is recommended approximately once every 3 to 4 years in order to maintain optimal performance of the watch for a long time. According to use conditions, the oil retaining condition of your watch mechanical parts may deteriorate, 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 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.
- When your watch is inspected and adjusted by disassembly and cleaning (overhauled), the movement of your watch may be replaced.

How to conduct manual reception (Receive a radio signal manually)

1 Place the watch.

Place the watch where it can easily receive a radio signal.
"To improve radio signal reception" → P.27
"Environments in which it is difficult to receive a radio signal" → P.28

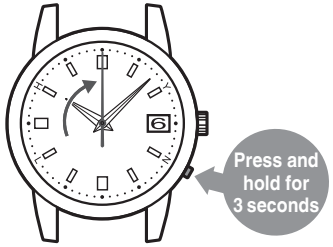
* The watch cannot receive a radio signal outside the radio signal reception range. "Radio signal reception range indication" → P.22



2 Continue to press and hold the button for 3 seconds, and then release it when the seconds hand moves to the 0-second position.

Reception starts after the seconds hand moves and stops at the 0-second position.

* When the time difference is set for a region other than radio signal reception range, the seconds hand does not move to the 0-second position. (A radio signal cannot be received manually.) Check the time difference set currently.
"Setting the time difference (Setting the radio signal transmitting station)" → P.33
* Press the button using an object with a long tapered tip. → P.16



3 Place the watch and wait for a few minutes (max. 12 minutes).

When the seconds hand moves at the one-second interval, the reception is finished.

It takes time to receive a radio signal (max. 12 minutes).
* The required time varies depending on the receiving state of a radio signal.

<Display until the reception is finished>

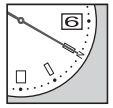
The seconds hand indicates the reception level.

Reception level	High : H	Low : L
Display		
Receiving state of a radio signal	Easy to receive	Difficult to receive

<If the reception has failed>

The seconds hand indicates the reception result "N."

Reception result : N



After 5 seconds, the watch switches to the time display mode.
"If reception has failed: The seconds hand points to N" → P.31

4 When the seconds hand starts to move at one-second intervals, check that the reception is successful.

When the reception is finished, check that the reception is successful.
"How to display the reception results" → P.30

When a radio signal cannot be received

When a radio signal cannot be received, refer to the following.

- Not receivable within the radio signal reception range
  Check that the time difference of the area where the watch is used is set.
  When the time and date are misaligned even after the time difference is correctly selected, refer to Troubleshooting. "Reception of a radio signal" → P.74
  Since a radio signal cannot be received, the time and date became misaligned. In this case, set the time and date manually.
  "How to manually set the time (1B21: non date-displaying model)" → P.63
  "How to manually set the time (1B22 / 1B32: date-displaying models)" → P.66
  "How to manually set the date (1B22 / 1B32: date-displaying models)" → P.69
  * For the radio signal reception ranges, refer to "Radio signal reception range indication" → P.22.

- When the watch is used outside the radio signal reception range
  Select the time difference of the area where the watch is used.
  "Setting the time difference (Setting the radio signal transmitting station)" → P.33
  When the watch does not display the correct time and date even after setting the time difference, manually set the time and date.

Only the 1B22 and 1B32 are date-displaying models.

■ How to manually set the time (1B21: non date-displaying model)

If the watch is continually used in an environment in which a radio signal cannot be received (a region other than the radio signal reception ranges, etc.), set the time manually.
"Radio signal reception range indication" → P.22

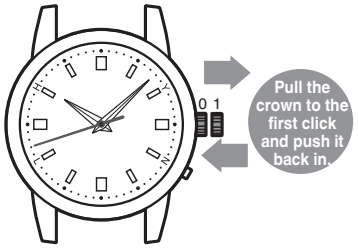
- When the watch is used in an environment in which a radio signal can be received again, receive a radio signal to set the time. "Automatic reception and manual reception" → P.21

* Even if a radio signal cannot be received, the watch can be used with the same accuracy as that of a normal quartz watch. (Average gain/loss ±15 seconds per month)
* When the watch receives radio signals after the time is manually adjusted, it displays the time received from radio signals.

1 Pull the crown to the first click and push it back in.

The seconds hand stops.

* When the crown is a screw lock type, unlock it. → P.17
* When a no movement state of the seconds hand is kept for one minute or more, the watch automatically switches to the time display mode. When the watch switches to the time display mode, re-attempt operation.



2 Press the button and then release it

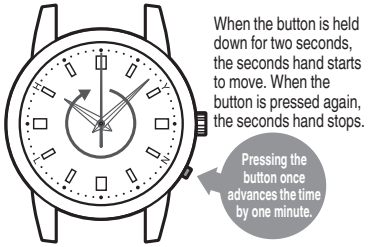
The seconds hand moves to the zero second position and stops.
The watch switches to the manual time setting mode.

* When this condition is kept for one minute or more, the watch automatically switches to the time display mode. When the watch switches to the time display mode, re-attempt operation from 1.
* When the watch switches to the manual time setting mode, the reception result data is lost. Therefore, the reception result is indicated as "N".
* Press the button using an object with a long tapered tip. → P.16

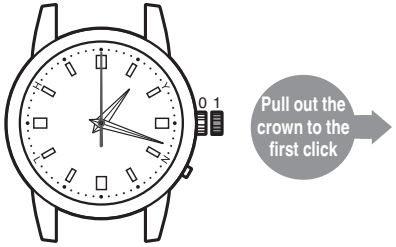
3 Press the button to set the time

By pressing the button once, the seconds hand makes a full rotation and the watch advances the time by one minute.

* The hands do not move by turning the crown.
* Advance the hand to set the time. The hand cannot be turned reversely.



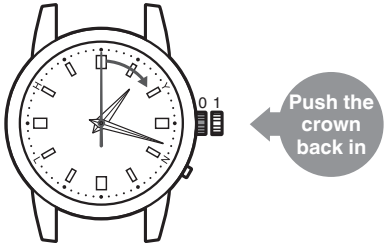
4 After the operation 3 pull the crown to the first click.



5 Push the crown back in according to the time signal, etc.

The operation is completed.
The watch starts to work.

* When the crown is a screw lock type, lock it. → P.17



When the watch is used in an environment in which a radio signal can be received again, receive a radio signal to set the time.
"Automatic reception and manual reception" → P.21

■ How to manually set the time (1B22 / 1B32: date-displaying models)

If the watch is continually used in an environment in which a radio signal cannot be received (a region other than the radio signal reception ranges, etc.), set the time manually.
"Radio signal reception range indication" → P.22

- When the watch is used in an environment in which a radio signal can be received again, receive a radio signal to set the time. "Automatic reception and manual reception" → P.21

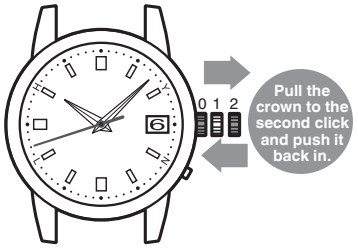
* Even if a radio signal cannot be received, the watch can be used with the same accuracy as that of a normal quartz watch. (Average gain/loss ±15 seconds per month)
* When the watch receives radio signals after the time is manually adjusted, it displays the time received from radio signals.

1 Pull the crown to the second click and push it back in.

The seconds hand stops.

When pulling the crown, do not stop at the first click but pull it to the second click immediately. If the seconds hand does not stop when pushing the crown back in, re-attempt operation 1.

* When the crown is a screw lock type, unlock it. → P.17
* When a no movement state of the seconds hand is kept for one minute or more, the watch automatically switches to the time display mode. When the watch switches to the time display mode, re-attempt operation.



2 Press the button and then release it

The seconds hand moves to the zero second position and stops.
The watch switches to the manual time setting mode.

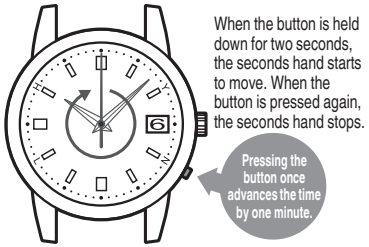
* When this condition is kept for one minute or more, the watch automatically switches to the time display mode. When the watch switches to the time display mode, re-attempt operation from 1.
* When the watch switches to the manual time setting mode, the reception result data is lost. Therefore, the reception result is indicated as "N".
* Press the button using an object with a long tapered tip. → P.16

3 Press the button to set the time

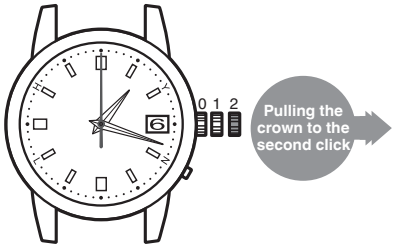
By pressing the button once, the seconds hand makes a full rotation and the watch advances the time by one minute.

* The hands do not move by turning the crown.
* Advance the hand to set the time. The hand cannot be turned reversely.
* The moment the date changes is midnight (12 AM). Please be sure to set the time after ensuring that AM/PM is set correctly.
* The date cannot be set in this operation.

"How to manually set the date (1B22 / 1B32: date-displaying models)" → P.69

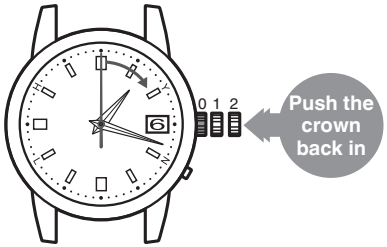


4 **After the operation 3 pull the crown to the second click.**



5 **Push the crown back in according to the time signal, etc.**

The operation is completed.
The watch starts to work.
* When the crown is a screw lock type, lock it. → P.17



When the watch is used in an environment in which a radio signal can be received again, receive a radio signal to set the time.
"Automatic reception and manual reception" → P.21

■ How to manually set the date (1B22 / 1B32: date-displaying models)

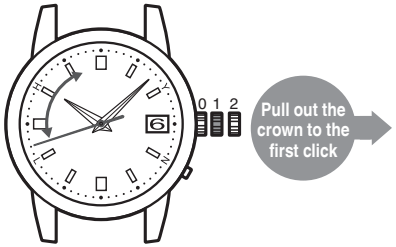
When the date is not changed automatically due to an environment in which a radio signal cannot be received outside the radio signal reception range, etc. (when changing from a month with 30 days or less to a month with 31 days), set the date manually.

- The date can be set independently regardless of the time.
- When the watch is used in an environment in which a radio signal can be received again, receive a radio signal to set the time. "Automatic reception and manual reception" → P.21

* When the date is not correct even if the radio signal reception is successful, the preliminary position of the date may be misaligned. To adjust the preliminary position, reset the system.
"In case of an abnormal movement" → P.79

1 **Pull out the crown to the first click.**

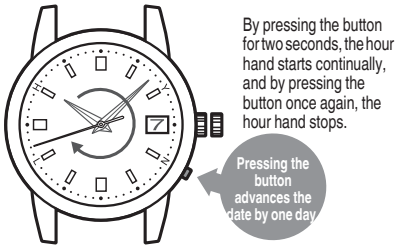
The watch switches to the manual date setting mode.
(The watch is working.)
* When the crown is a screw lock type, unlock it. → P.17
* When the crown is pulled to the first click, the seconds hand advances 15 seconds and then moves back. Continue to conduct the operation.



Only the 1B22 and 1B32 are date-displaying models.

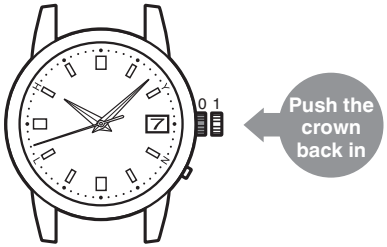
2 **Press the button to set the date**

By pressing the button once, the hour hand makes two full rotations and the watch advances the date by one day.
* The date is not changed by turning the crown.
* Set the date by advancing the date. The date cannot be reversely moved.
* Press the button using an object with a long tapered tip. → P.16



3 **Push the crown back in.**

The operation is completed.
* When the crown is a screw lock type, lock it. → P.17



Only the 1B22 and 1B32 are date-displaying models.

Preliminary position

When the date and time are not correct even if the radio signal reception is successful, the preliminary position of the date may be misaligned.
The possible causes of misalignment of preliminary position are as follows:

In the case of having a strong impact : the misalignment may occur when dropping or hitting the watch.
In the case of a magnetic influence : the misalignment may occur when bringing the watch close to an object which generates magnetism.

"Examples of common magnetic products that may affect watches" → P.49
* The condition "the preliminary position of hand is misaligned" means that compared to a health meter, "the zero position of a meter is misaligned, causing a correct weight not to be displayed."

■ Automatic hand position adjustment function (Adjustment of preliminary positions of hour, minute and seconds hands)

The hour, minute, and seconds hands have an "Automatic Hand Position Adjustment Function," which automatically corrects an incorrect preliminary position. Automatic Hand Position Adjustment Function activates once an hour for the minute and seconds hands and at 12:00 both for AM and PM for the hour hand.
* This function works when the preliminary hand position is misaligned due to external factors such as strong impact or magnetic influence. It does not work to adjust accuracy of the watch or slight deviations which may occur during the manufacturing process.

■ Preliminary position adjustment of the date

Since the preliminary position of the date is not automatically adjusted, it is necessary to align the position manually.

To adjust the preliminary position, reset the system.
"In case of an abnormal movement" → P.79

Only the 1B22 and 1B32 are date-displaying models.

Troubleshooting

At trouble		Possible causes	Solutions	Reference
Hand Movement	The seconds hand moves at two-second intervals.	The energy depletion forewarning function is activated. (P.40) If the seconds hand moves at two- or five-second intervals while you wear the watch everyday, the watch is in a condition where it cannot acquire sufficient light, for instance, the watch is concealed under a long sleeve shirt.	Fully charge the watch so that the seconds hand may move at one-second intervals. Be careful not to conceal the watch under a sleeve, etc., while wearing it. When taking off the watch, place it in as bright a location as possible.	P.38
	The seconds hand moves at five-second intervals.			
	The stopped seconds hand pointing to the 15-second position started operating.	The power save function has been activated. (P.41) When the watch is not exposed to adequate light for a certain period of time, the power save function to limit energy consumption is automatically activated.	Wait until the current time is displayed. No operation is needed. (This is not a malfunction.)	-

Only the 1B22 and 1B32 are date-displaying models.

At trouble		Possible causes	Solutions	Reference
Hand Movement	The stopped seconds hand pointing to the 45-second position started operating.	The power save function has been activated. (P.41) When the watch is not exposed to adequate light for a certain period of time, the power save function to limit energy consumption is automatically activated.	1. Fully charge the watch so that the seconds hand may move at one-second intervals. 2. After that, if the watch displays the incorrect time, receive a radio wave as needed.	P.21, P.38
	The watch hands advance rapidly unless a button is pressed. After the rapid advancement is completed, the watch resumes its normal movement.	The power save function has been activated. (P.41) The automatic hand position alignment function was activated. (P.71) When the hand positions deviate to display incorrect time as a result of external influences, etc., the watch automatically corrects the hand misalignment by the automatic hand position alignment function.	No operation is needed. (This is not a malfunction.)	-

Only the 1B22 and 1B32 are date-displaying models.

At trouble		Possible causes	Solutions	Reference
Reception of a radio signal	The watch is unable to receive a radio signal. The reception results have failed and the seconds hand points to N (the watch does not receive a radio signal).	The watch was moved while it was receiving a radio signal. (It takes 12 minutes at the longest to receive a radio signal successfully.)	Do not move the watch while it is receiving a radio signal. Because it takes time to receive a radio signal successfully, leave the watch untouched for 12 minutes at the longest.	P.27, P.61
		The watch was left where the radio signal was weak or where it was unable to receive a radio signal. (P.28)	Place the watch where it is able to easily receive a radio signal.	P.27
		Transmitting stations may have stopped transmitting radio signals for some reason. (Transmission stop)	Check the website of each transmitting station for further information concerning a transmission stop. Attempt to receive a radio signal again after a while.	P.29
		The time difference is set to regions other than the radio signal reception ranges.	1. Check the set time difference and set the correct time difference. 2. When the watch is not displaying the precise time, receive a radio signal again if necessary.	P.21, P.33

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At trouble		Possible causes	Solutions	Reference
Charging the solar battery	The stopped watch was exposed to an adequate light for longer than "the time required to fully charge the watch", however, it does not resume its normal one-second interval movements.	The amount of exposed light is too weak. The time for charging the watch is not sufficient.	The time required for charging the watch depends entirely on the amount of exposed light the watch receives. Refer to "Guide to charging times" to charge the watch.	P.39
		The watch's energy was depleted due to no exposure to light for a long period of time.	Refer to "In case of an abnormal movement" to reset the system.	P.79
		The built-in IC of the watch has fallen into an unstable condition.		
	Even though the watch was sufficiently charged and the watch hands move, the time is not correct.	The watch's energy was depleted due to no exposure to light for a long period of time.		
Misalignment of the time and hand positions	The watch temporarily gains or loses time.	The watch has been left in an extremely high or low temperature place for a long time.	1. When the watch returns to a normal temperature, it will display the precise time as before. 2. If the watch still gains or loses the time, conduct manual reception if necessary. 3. If the watch cannot resume normal movement even after conducting the above mentioned procedures, consult the retailer from whom the watch was purchased.	P.60

Only the 1B22 and 1B32 are date-displaying models.

At trouble		Possible causes	Solutions	Reference
Misalignment of the time and hand positions	The reception results are successful, but the precise time is not displayed.	The watch fails to receive a radio signal correctly as a result of external influence. (Incorrect reception)	1. Place the watch where it is able to receive a radio signal more easily. 2. Conduct manual reception if necessary.	P.27, P.60
		The hand positions were misaligned as a result of external influence. The hands are out of the preliminary position as a result of external influence. "Preliminary position" → P.71	1. The automatic hand position alignment function will operate, and these will be corrected. Continue to use the watch normally. Automatic hand position alignment function activates once per hour for the minute hand and seconds hand, and once every 12 hours (at 12 a.m. and 12 p.m.) for the hour hand. If urgent, perform manual time adjustment. 2. If the watch still gains or loses time, refer to "In case of an abnormal movement" to perform procedures. 3. If the watch cannot resume normal movement even after conducting the above mentioned procedures, consult the retailer from whom the watch was purchased.	P.71, P.79
	The seconds hand position is not correctly aligned in "the reception results display" or "the reception level display."	The seconds hand is out of the preliminary position as a result of external influence. "Preliminary position" → P.71		

Only the 1B22 and 1B32 are date-displaying models.

At trouble		Possible causes	Solutions	Reference
Misalignment of the time and hand positions	The watch displays an incorrect time hour unit, even though it displays the precise time of minutes and seconds.	The time difference settings are incorrect.	Check the time difference settings, and set these to the local region.	P.33
Misalignment of the date	The reception results are successful and the precise time is displayed, but the date is not correctly displayed.	The date is out of the preliminary position.	Perform the procedures from ① to ⑦ in "In case of an abnormal movement".	P.79
Operation	The crown or button cannot be operated.	The stored electric power is running short.	Sufficiently charge the watch until it starts moving at one-second intervals.	P.38
		Hands and date are moving right after a setting is carried out by the crown or button operation.	Wait without doing anything. After the date stops, the crown and button can be operated.	-

Only the 1B22 and 1B32 are date-displaying models.

At trouble		Possible causes	Solutions	Reference
Operation	You get lost in the middle of the operation.	----------	Return to the status before the start of the operation, and try the operation again. If the crown is pulled out, push it in. If the crown is not pulled out, then pull it out and push it in again. This will return to one-second interval movement for a maximum of 9 minutes. After this, try the operation again.	-
Others	Blur on the dial glass persists.	A 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 solution of troubles other than the above, consult the retailer from whom the watch was purchased.

Only the 1B22 and 1B32 are date-displaying models.

In case of an abnormal movement

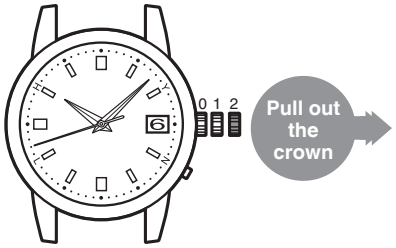
In the case that the watch moves abnormally or that the watch does not move at one-second intervals even after fully charging the battery, then it can be returned to normal operation using the following operation.

■ Reset the system

1 Pull out the crown to the first (1B21) or second (1B22 / 1B32) click

* When the crown is a screw lock type, unlock it. → P.17

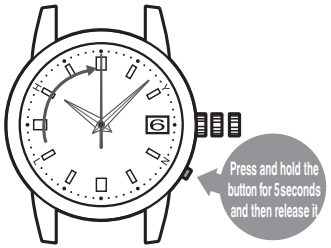
* Even after pulling the crown, the seconds hand continues to move.



2 Press and hold the button for 5 seconds and then release it.

In five seconds after releasing the button, the hour hand starts to move and stops at the 12 o'clock position.
And then the minute hand and the seconds hand start to move and stop at the zero second position.

* Press the button using an object with a long tapered tip. → P.16
* The button cannot be operated until all the hands stop.



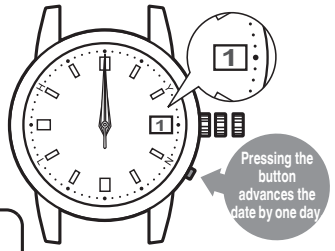
For 1B21, go to procedure 5 (P.82)
For 1B22 / 1B32, go to procedure 3 (P.81)

■ Preliminary position adjustment of the date: adjust to "1 (first day)"

3 Press the button to set the date to "1"

Adjust the date so that the number "1" will be displayed in the date window.
By pressing the button once, the hour hand makes two full rotations and the watch advances the date by one day.

* After the hour hand stops, press the button.
* The number may be displayed out of the center of the date window. After the preliminary position adjustment is finished, it is displayed at the center the date window.
* The date is not changed by turning the crown.



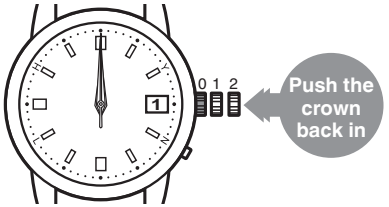
Do not continue to press the button.
Even if continuing to press the button, the date is not changed consecutively.

* Since continuous pressing returns the operation 2, do not continue to press the button.

4 Push the crown back in.

When the crown is pushed back in, the watch starts to work from 00:00:00.

* When the crown is a screw lock type, lock it. → P.17



Only the 1B22 and 1B32 are date-displaying models.

■ How to set the time zone

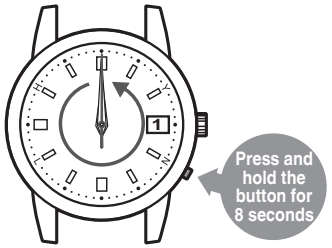
After the system is reset, the time zone is set to London.

* If necessary, set the time zone.

5 Continue to press the button (for 8 seconds), and when the seconds hand starts to move counterclockwise, release it.

The watch enters the time difference setting mode.

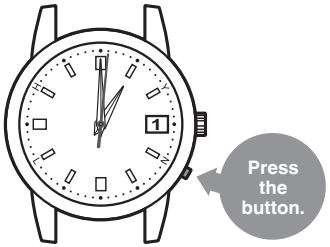
* Though the seconds hand may move to the 0-second position after 3 seconds of pressing the button, keep the button pressed.
* When a no movement state of the seconds hand is kept for one minute or more, the watch automatically switches to the time display mode. When the watch switches to the time display mode, re-attempt operation from 5.



6 Press the button to set the seconds hand to point at the time difference index of the current location.

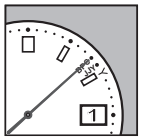
With each pressing of the button, the seconds hand advances 1 second (+ 1 hour) in the clockwise direction and the time advances 1 hour.
The position of the seconds hand shows the difference. Please set it by referring to → P.35.

* Also while the watch is working, the seconds hand can be moved.



The radio signal transmitting station can be switched by changing the time difference. When the time difference is set to a region outside the radio signal receivable area, the radio signal reception function will not work.

* To set the Daylight Saving Time (DST), set the seconds hand to point at the time difference index next to the target time zone in the clockwise direction (+1 hour).

In Japan	In China	In the other countries
Set to the 9-second position	 Set to the 8-second position	"List of time zone differences in major regions of the world" → P.35

* When the seconds hand is at 13 seconds (UTC +13 hours), press the button to move it to the 49-second position (UTC -11 hours).

One minute after the hour and minute hands stop after the operation 6, the watch exits the time difference setting mode.

■ Set the time and date

7 Receive a radio signal to set the time and date

When the operations 1 - 6 are finished, make sure to set the time and date.
* 1B22 / 1B32 are the only models requiring date adjustment.

"How to conduct manual reception" → P.60

Set the time and date manually in an environment in which a radio signal cannot be received.
"How to manually set the time (1B21: non date-displaying model)" → P.63
"How to manually set the time (1B22 / 1B32: date-displaying models)" → P.66
"How to manually set the date (1B22 / 1B32: date-displaying models)" → P.69

When the time and date are set, the operations are finished.

Specifications

Cal.	1B21	1B22 / 1B32
1. Features	Basic watch with three hands (Hour, minute and seconds hands)	Basic watch with three hands (Hour, minute and seconds hands), date display
2. Frequency of crystal oscillator	32,768 Hz (Hz= Hertz, cycles per second)	
3. Loss/gain (Monthly rate)	Loss/gain ±15 seconds in a monthly rate (Except the cases when the watch is used without time adjustment by receiving a radio signal and when it is worn on the wrist within a normal temperature range between 5 °C and 35 °C)	
4. Operational temperature range	Between −10 °C and +60 °C	
5. Driving system	Step motor type (Hour, minute and seconds hands)	Step motor type (Hour, minute and seconds hands and the date)
6. Power source	Secondary battery, 1 piece	
7. Duration	Approximately 6 months (when the battery is fully charged and the power save is not activated) * Approximately one year and a half at maximum when the power save is activated after the battery is fully charged.	
8. Radio signal reception function / radio signal transmitting station	Japan (2 stations), China, U.S.A. and Germany. Automatic reception (Before 2:00 a.m. and 4:00 a.m.) * It varies depending on the radio signal receiving condition. * After radio signal reception, the watch will start to work depending on the quartz movement until the next reception. * Manual reception is available.	
9. Integrated circuit	Oscillator, frequency divider, drive and reception circuit: IC, 2 pieces	

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