BSN5X53-A1811

SEIKO

ASTRON



5X53 HANDY MANUAL

SEIKO WATCH CORPORATION

<English>

Printed in Japan

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Please carefully read the instructions in this Complete User Guide before using the watch.

For details, please read the "5X53 (GPS Solar) Complete User Guide" (https://www.seikowatches.com/global-en/customerservice/instruction/).

- 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 WORLDWIDE SERVICE NETWORK. The service may also be available on a chargeable basis at other retailers, however, some retailers may not perform 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 under the film and may cause corrosion.

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1 Features

This is a GPS solar watch.

This watch has the following features.

GPS signal reception

This watch can be set to the precise local time by just one button operation anywhere in the word. DST (Daylight Saving Time) is reflected in the time that appears. This watch guickly adjusts the time by

receiving GPS signals from GPS satellites. This watch responds to a total of 39 time zones around the world. When the region or time zone where the watch is used is changed, please carry out operation of "time zone adjustment."



Solar charging Function

This watch operates by solar charging.

Expose the dial to light to charge the watch. Once fully charged, the watch runs for approximately 6 months.

When the energy stored in the watch runs out completely, it takes time to fully charge the watch, so please keep in mind to charge the watch regularly.



Automatic time adjustment function

This watch automatically adjusts the time in accordance with action patterns during use.

When the watch has sensed sufficient brightness under an open sky, it automatically receives GPS signals from GPS satellites. This function enables the watch to automatically adjust the time precisely even while you are

- using the watch.
- * This watch is unable to receive GPS signals when the energy stored in the watch is low.



* Unlike navigation equipment, this GPS solar watch is not designed to constantly receive GPS signals from GPS satellites without any operation. This watch receives GPS signals only in the time zone adjustment mode, automatic or manual time adjustment mode.

Standard Charging Time

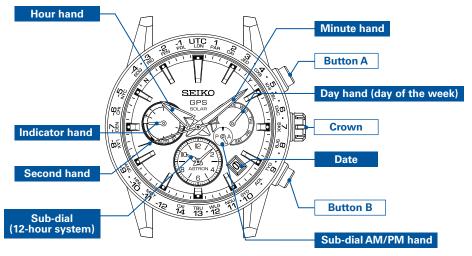
GPS signal reception consumes a lot of energy. It is necessary to charge the watch by exposing it to light so that the indicator hand points to the "middle" or "full" position. (If the charging status is displayed as "low," the reception will not start even with manual GPS signal reception.)

Illumination	Light source	Condition	From the state stopped (In the state where the hand moves (the watch is charged)	
lx (LUX)		(Example)	To fully charged	To one-second interval movement is secured	To move for one day
700	Fluorescent light	General offices	-	-	3.5 hours
3,000	Fluorescent light	30W 20cm	420 hours	12 hours	1 hours
10,000	Fluorescent light Sunlight	Cloudy day 30W 5 cm	115 hours	4 hours	15 minutes
100,000	Sunlight	Sunny day (Under the direct sunlight on a summer day)	50 hours	1.5 hours	10 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-secondinterval 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 required charging time slightly varies depending on the design and the dial color of the watch.

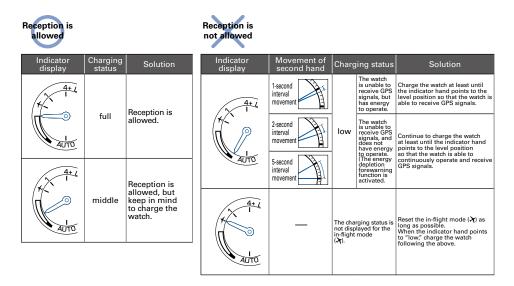




*Display of city name may vary depending on the model.

3 Check the charging status

The indicator hand position shows whether this watch is able or unable to receive GPS signals. In addition, for the low charging state, the movement of the second hand shows the energy depletion state in further detail.



4 Time zone

🗖 Time zone

Based on Coordinated Universal Time (UTC), the standard time commonly used is adopted by countries and regions around the world. The standard time is determined by each country or region, and the region where the same standard time is adopted is referred to as the time zone, and presently, the time zone is divided into 39 zones as of March 2018. Further, DST (Daylight Saving Time) is individually adopted in countries and regions.

DST (Daylight Saving Time)

Depending on the area, DST (Daylight Saving Time) is individually set.

Daylight Saving Time, or summer time, is a system to lengthen daylight time by advancing 1 hour when daylight time is longer during 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 varies depending on the country.

If the time zone adjustment is successful, data regarding the adoption of DST (Daylight Saving Time) for the country in which the GPS signals were received is reflected in the time that appears.

* Daylight SavingTime is subject to change owing to circumstances of the country or region as of March 2018.

Coordinated Universal Time (UTC)

UTC is the universal standard time coordinated through an international agreement. UTC is the primary time standard for recording time around the world. The time obtained by adding a leap second to the "International Atomic Time (TAI)" is determined based on the atomic clock around the world. It is coordinated in order to compensate for deviations from universal time (UT) which is astronomically determined by the UTC.

5 Time zone display and list of time zones around the world

The following list shows the relationship between displays of the bezel and dial ring and time difference from the UTC.

Please refer to the second hand positions below to set the time zone or to check the time zone setting.

DST (Daylight Saving Time) has been adopted in countries marked with a \bigstar . In the Lord Howe Island time zone in Australia with a \bigstar mark, the time is advanced by 30 minutes while DST (Daylight Saving Time) is in effect. This watch corresponds to DST in the Lord Howe Island time zone.

* The time zone and adoption of DST (Daylight Saving Time) for each region are current as of March 2018.



Display of time zone

Representative city names... 28 cities among the total of 39 time zones around the world Time difference... +14 hours ~ -12 hours

Display of time difference * The displays of city code and the time difference from UTC are Subject to change depending on model. * "." between figures of the display of time difference shows that there is a time zone in that place.

City code	Display of time difference	City name	UTC ± hours	City code	Display of time difference	City name	UTC ± hours	Ci co
LON	UTC	★London	0	BJS	8	Beijing	+8	М
PAR	1	★Paris/ ★Berlin	+1	-	•	PyongYang	+8.5	н
CAI	2	Cairo	+2	-	•	Eucla	+8.75	-
JED	3	Jeddah	+3	TYO	9	Tokyo	+9	A
-	•	★Tehran	+3.5	ADL	•	★Adelaide	+9.5	LA
DXB	4	Dubai	+4	SYD	10	★Sydney	+10	DE
-	•	Kabul	+4.5	-	•	☆Lord Howe Island	+10.5	C
кні	5	Karachi	+5	NOU	11	Nouméa	+11	N
DEL	•	Delhi	+5.5	WLG	12	★Wellington	+12	SE
-	•	Kathmandu	+5.75	-	•	★Chatham Islands	+12.75	-
DAC	6	Dhaka	+6	TBU	13	Nuku'alofa	+13	R
-	•	Yangon	+6.5	CXI	14	Kiritimati	+14	FE
ВКК	7	Bangkok	+7	-	-12	Baker Island	-12	P

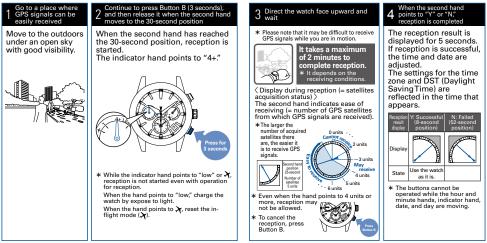
City code	Display of time difference	City name	UTC ± hours
MDY	-11	Midway islands	-11
HNL	-10	Honolulu	-10
-	•	Marquesas Islands	-9.5
ANC	-9	★Anchorage	-9
LAX	-8	★Los Angeles	-8
DEN	-7	★Denver	-7
СНІ	-6	★Chicago	-6
NYC	-5	★New York	-5
SDQ	-4	Santo Domingo	-4
-	•	★St. John's	-3.5
RIO	-3	★Rio de Janeiro	-3
FEN	-2	Fernando de Noronha	-2
PDL	-1	★Azores	-1

6 Time zone adjustment (to adjust the time zone and time by GPS signal reception)

Time zone adjustment

The time zone where you are is localized to adjust the watch to the precise current time by just one button operation anywhere in the world. This reflects the data regarding the adoption of DST (Daylight Saving Time) in the country that received the GPS signals. The time automatically switches to adjust for the adoption and duration of DST (Daylight Saving Time) for countries that follow DST (Daylight Saving Time). "Normal time" always appears for countries that do not adopt DST (Daylight Saving Time).

How to adjust the time zone



Precautions on time zone adjustment

If the time zone is adjusted near a time zone boundary, the time of the adjacent time zone may be displayed. In some areas the boundaries observed by the watch may not exactly correlate to the actual time zone markers on the land. This does not indicate a malfunction. In this case, set the time zone in the manual time zone setting mode.

When the time zone is adjusted while traveling on land, avoid time zone boundaries to carry out time zone adjustment in the representative cities in the time zone whenever possible.

In addition, when the watch is used near time zone boundaries, make sure to check the time zone setting, and manually set the time zone as necessary.

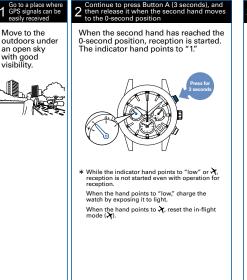
7 Manual time adjustment (to adjust only the time by GPS signal reception)

Manual time adjustment



The watch can be set to the precise current time of the currently set time zone. (The time zone is not changed.)

How to manually adjust the time



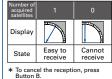
Direct the watch face upward 3 Direct the and wait



reception conditions satellites acquisition status) >

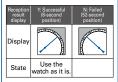
The second hand indicates ease of receiving (= number of GPS satellites from which GPS signals are received).

* To acquire only time information. the number of satellites necessary for reception is one.



When the second hand points to "Y" or "N" reception is completed

The reception result is displayed for 5 seconds. If reception is successful. the time, date, and day are adjusted.



Check that the reception is successful after the watch returns to the time display mode.

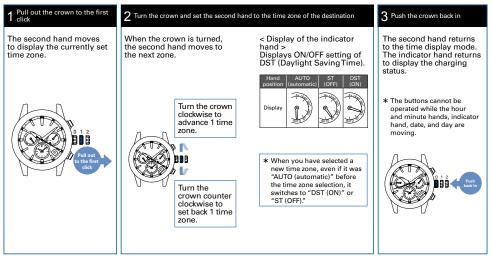
When the time is not correct even if "Y" is displayed. the time zone may not correspond to the region where you are. Check the time zone settina.

* The buttons cannot be operated while the hour and minute hands, indicator hand, date, and day are movina.

Manual time zone selection

In places where the time zone cannot be adjusted, the time zone can be set manually.

How to manually set the time zone



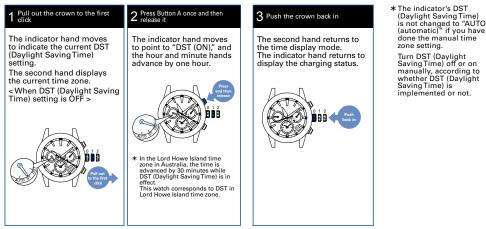
${f g}$ DST setting of the main-dial

Turn ON DST (Daylight Saving Time)

DST (Daylight Saving Time) can be manually set.

Be sure to do the settings in the following situations.

- When the main-dial is adjusted using the manual time zone setting and DST (Daylight SavingTime) is implemented.
- •When the time zone is the same, but the settings for DST (Daylight Saving Time) differ according to the area to which you move.



Turn OFF DST (Daylight Saving Time)

Carry out operation of 1 to 5 in the state where DST (Daylight Saving Time) setting is ON. In operation of 2, adjust the indicator hand to the "ST (OFF)" position as shown in the figure at the right.

The hour and minute hands return by one hour.



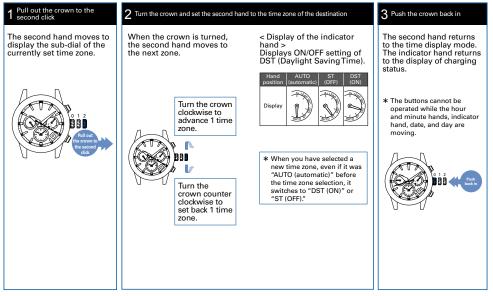
10 Manual time zone selection of the sub-dial

Manual time zone selection of the sub-dial

Adjust the sub-dial by selecting the time of the time zone.

* The sub-dial cannot be adjusted to a time outside the time zone.

How to manually set the time zone of the sub-dial

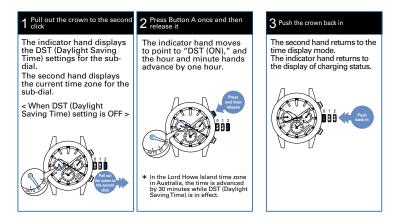


11 DST setting of the sub-dial

Set the DST (Daylight Saving Time) of the sub-dial.

DST (Daylight Saving Time) can be manually set.

- * Normally, the indicator's DST (Daylight Saving Time) is not changed to "AUTO (automatic)" if the sub-dial is adjusted via manual time zone selection. Turn DST (Daylight Saving Time) manually on or off, according to whether DST (Daylight Saving Time) is implemented or not.
- * It is unnecessary to do settings for DST (Daylight SavingTime) if DST = "AUTO (automatic)" is set in the sub-dial when the time for the main-dial and the sub-dial has been changed.



Turn OFF DST (Daylight Saving Time)

Carry out steps 1 to 2 in the state where DST (Daylight Saving Time) setting is ON. In step 2, adjust the indicator hand to the "ST (OFF)" position as shown in the figure at the right. The hour and minute hands return by one hour.



12 Switching between the main-dial and sub-dial

Your watch can switch between its main-dial and sub-dial.

Both the conditions for DST (Daylight Saving Time) set in the main-dial and the conditions for DST (Daylight Saving Time) set in the sub-dial switch.

- This comes in handy in the following situations.
- Matching the main-dial to the time for the time zone set in the sub-dial
- •To use you watch, adjust the main-dial to the local time, and then, after returning home, restore the main-dial to the sub-dial's Japan Standard Time

How to switch the main-dial and sub-dial



* The buttons cannot be operated while the hour and minute hands, indicator hand, date, and day are moving.

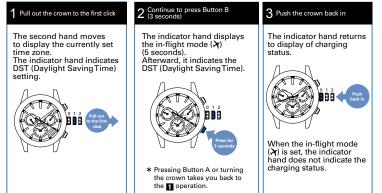
In-flight mode Set to the in-flight mode (γ). (γ)

Set to the in-flight mode (\mathcal{X}) where the reception may influence operation of other electronics devices in an airplane, etc. In the in-flight mode (\mathcal{X}) , the GPS signal reception (time zone adjustment, manual time adjustment, and automatic time adjustment) does not work.

 $\langle \text{In-flight mode}(\lambda) \rangle$ The indicator hand points to λ .



* When the in-flight mode () is reset, the indicator hand indicates the charging status.



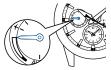
■ Reset the in-flight mode (౫).

Turn off the in-flight mode when leaving an airplane, etc.

If it is not turned off, the watch will not be able to receive GPS signals.

Carry out operation 1 to 3.

When the indicator hand points to "the charging status" in the figure at the right, the in-flight mode (λ) is reset.



* The display when the charging status is "full"

14 Leap second (Automatic leap second reception function)

Leap second

The leap second is to compensate for deviations from the universal time (UT) which is astronomically determined and the "International Atomic Time (TAI). "1 second" may be added (deleted) once a year or every few years.

Automatic leap second reception function

A leap second is automatically added by receiving "leap second data" from GPS signals at the time of leap second addition (delete).

* "Leap second data" includes information about future leap second addition and current leap second data.

Receiving Leap Second Data

When the GPS signal reception Receiving the leap second data

(automatic time adjustment, manual time adjustment, or time zone adjustment) is performed on or after December 1st and June 1st, the indicator hand may display as shown at the right.



When the leap second data reception is completed, the indicator hand returns to display the charging status. Use the watch as it is.

* The leap second data reception is performed every half a year regardless of leap second addition.

It takes up to 18 minutes to receive the leap second data.

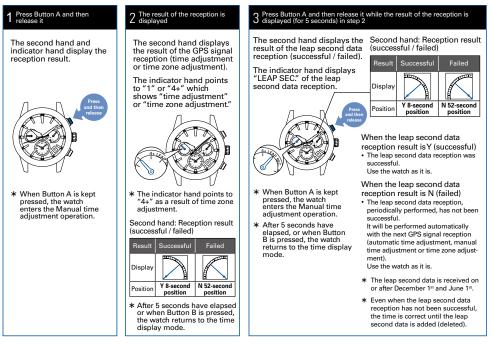
When GPS signals are received under the following conditions, the leap second data reception is also started.

- GPS signals are received after the system reset
- GPS signals have not been received for a long time
- Leap second data reception has failed (Leap second data reception is performed again during the next GPS signal reception. It is repeated until the leap second data reception is successful.)

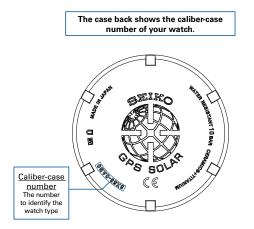
15 Reception result display

Check whether the leap second data reception was successful

The successful / failed reception result of the regular leap second data reception is displayed for 5 seconds.



${\bf 16}$ How to check when the time zone information was configured for your watch



* Display may vary depending on the model.

By referring to caliber-case number shown on the case back, you will be able to determine when the time zone data was configured.

For more details, refer to the URL below. https://www.seikowatches.com/global-en/customerservice/knowledge/gpstimezonedatainfo/

If the official time zone, etc., has changed in a region after the watch's time zone data or DST (Daylight Saving Time) data was configured, the correct time will not be displayed even after receiving GPS signals. Please perform the following operations to display the correct time:

< To set the time of this watch in a region where the official time zone or DST (Daylight Saving Time) has changed >

- Select the time zone appropriate for the current time in the target region by manual time zone setting and do settings for DST (Daylight Saving Time), as necessary.
 - → For details, please refer to "8. Manual time zone selection (to set the watch to the local time of the destination in an airplane, etc.)" P. 17
- 2. Next, adjust the time by manual time adjustment.
 - → For details, please refer to "7. Manual time adjustment (to adjust only the time by GPS signal reception)" P. 15
- 3. When using the watch within the same time zone, the correct time will be displayed after automatic (GPS) or manual time adjustments.
- 4. When moving from a region where the official time zone has changed to a different time zone, then back to the region where the official time zone has changed, carry out the same operations from 1. - 3. as indicated above to display the correct time in the region where the official time zone has changed.

SPECIFICATIONS

1. Basic function	Main-dial (hour, minute, and second hands), date display, indicator function, dual time display function (with AM/PM hand), world time function (39 time zones)
2. Frequency of crystal oscillator	32,768 Hz (Hz = Hertz Cycles per second)
3. Loss/gain (monthly rate)	Loss / gain ±15 seconds on a monthly rate (When the watch is used without an automatic time setting by receiving GPS signal and when it is worn on the wrist within a normal temperature range between 5°C and 35°C (41°F and 95°F)).
4. Operational temperature range	Between –10°C and +60°C (14°F and 140°F)
5. Driving system	Step motor: main-dial (hour, minute, and second hands), day hand, indicator hand and date, sub-dial (hour, minute, and AM/PM hand).
6. Power source	Secondary battery, 1 piece
7. Duration of operation	Approximately 6 months (Fully charged, and the Power Save is not activated). * If the Power Save is activated after it is fully charged, the watch continues to run for approximately 2 years at maximum.
8. GPS signal reception function	Time zone adjustment, manual time adjustment, automatic time adjustment
9. IC (Integrated Circuit)	Oscillator, frequency divider and driving circuit C-MOS-IC, 4 pieces

Product : GPS solar watch Model : 5X53

TRC/SS/2018/370

CE

This product is in compliance with the essential requirements and other relevant provisions of the RE Directive (2014/53/EU)& RoHS Directive(2011/65/EU).

SEI

https://www.seikowatches.com/global-en/products/ declaration-conformity

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* The specifications, as noted above, are subject to change without prior notice for product improvement purposes.