

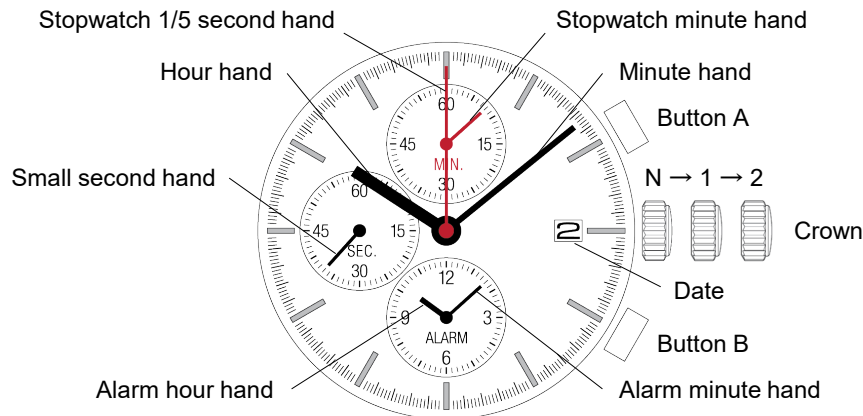
Instruction of Watch Movement

Cal. VS72A

SOLAR SERIES

- 1/5 sec. chronograph
- Alarm

◆ Display



◆ Crown and button operation

	Crown position		
	N : normal	1 : 1st click	2 : 2nd click
Crown	Free	Turn clockwise for date change	Time setting
Button A	Stopwatch Start Stop Restart	Sound demonstration (more than 3 seconds)	[*1]
Button B	Stopwatch Reset Split Split release	Alarm time setting (at 6H small circle)	[*1]

[*1] Alarm hand and stopwatch hand position adjustment

If the alarm hands are not adjusted to the current time or the stopwatch hands are not in the "0" position, follow the procedures below to set them.

(1) Pull the crown out to the 2nd click position.

- When the stopwatch is measuring, if the crown is pulled out to the 2nd click position, it will be automatically reset.
- If the alarm has been set and the crown is pulled out to the 2nd click position, the alarm hands will turn to indicate the current time.



(2) Set the alarm hands.

Press the button B repeatedly to set the alarm hands to the time the main time hands indicate.

(3) Set the stopwatch minute hand.

Press the button A for 2 seconds.

- The stopwatch minute hand turns a full round and can now be set to the correct position.

Press the button B repeatedly to set it to the "0" position.

(4) Set the stopwatch 1/5 second hand.

Press the button A for 2 seconds.

- The stopwatch 1/5 second hand turns a full round and can now be set to the correct position.

Press the button B repeatedly to set it to the "0" position.

Press the button A for 2 seconds here will allow you to resume the procedure again as indicated by the arrow if necessary.

(5) Push the crown back to the normal position.

Tips: When setting the hands, the hand moves quickly if the button B is kept pressed.

◆ How to set time

- (1) Pull the crown out to the 2nd click position when the second hand is at the 12 o'clock position.
 - When the stopwatch is measuring, if the crown is pulled out to the 2nd click position, it will automatically reset the stopwatch hands to "0" position.
 - If the alarm has been set and the crown is pulled out to the 2nd click position, the alarm hands will turn to indicate the current time.
- (2) Turn the crown to set the hour and minute hands.

Take a.m./p.m. into consideration when setting the hour and minute hands to the desired time.

 - The hands be set to the time a few minutes ahead of the current time, taking into consideration the time required to set the alarm hands and to adjust the stopwatch hands position if necessary.
 - When setting the minute hand, advance it 4 to 5 minutes ahead of the desired time and then turn it back to the exact time.
- (3) Push the crown back to the normal position.

◆ How to set date

- (1) Pull the crown out to the 1st click position.
- (2) Turn the crown to set the date.
 - Do not set the date between 9:00 p.m. and 1:00 a.m..
- (3) Push the crown back to the normal position.

Tips: When the date change during daytime, it happens when a.m./p.m. is wrongly set. Advance the hour hand by 12 hours.

◆ Features of the solar watch

This watch is a solar-powered watch containing a solar cell underneath the dial to convert any form of light into "electrical energy" and store the power in a secondary battery. Unlike conventional quartz watches, this watch does not use a silver oxide battery, thus eliminating the need for battery replacement.

- Running time
Expected running time from full charge to stoppage will be around 6 months.
- Over charge prevent function
If the secondary battery is charged more than predetermined voltage, over charge prevent function is operated to prevent the secondary battery deterioration and breakage.

◆ Power depletion warning function

When the energy stored in the secondary battery is reduced to an extremely low level, the small second hand starts moving at two-second intervals instead of the normal one-second intervals. In that case, recharge the watch as soon as possible by exposing it to light. Otherwise, the watch may stop operating in about 1 week.

◆ How to charge and start the watch

- Charging the watch
When you start the watch or when the energy remaining in the secondary battery is very low, charge it sufficiently by exposing the watch to light.
 - (1) Expose the watch to sunlight or strong artificial light (of more than 1,000 Lx).

When the watch has stopped operating, the small second hand will start moving at two-second intervals.

 - The small second hand immediately starts moving at two-second intervals, but the energy stored in the secondary battery is not yet sufficient. If the watch is turned away from the light, it may stop operating. It is not necessary to charge the watch fully. It is important, however, to charge the watch sufficiently, especially in the case of initial charging.
 - (2) Keep the watch exposed to the light until the small second hand moves at one-second intervals.
 - (3) When the watch is charged after it has completely stopped, set the date and time before wearing the watch.
- Caution
When charging the watch, do not place it too close to fluorescent lamp or other light sources as the watch temperature will become extremely high, causing damage to the parts inside the watch.
- To prevent energy depletion
 - Avoid covering the watch face with your clothing while wearing it.
 - When the watch is not in use, leave it in a brightly lit place for as long as possible. Make sure that the watch temperature does not exceed 50°C.

◆ Guidelines for charging time

The below table provides only general guidelines.

Illumination (Lx)	Source of light	Environment	Dial transparency rate is 20%			Dial transparency rate is 30%		
			A (Approx. Hours)	B (*) (Approx. Hours)	C (Approx. Minutes)	A (Approx. Hours)	B (*) (Approx. Hours)	C (Approx. Minutes)
700	A fluorescent lamp	Inside the office	—	48	123	—	35	90
3,000		30W 20cm	90	11	28	65	8	20
10,000	Sunlight	Cloudy	24	2.9	8	18	2.5	6
100,000		Fine weather	5	1.2	3	5	1	2

Condition A : Time required for full charge

Condition B : Time required for steady operation

Condition C : Time required for 1 day's charge

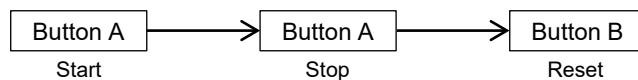
(*) The values in this column represent the charging times required until the small second hand moves constantly at one-second intervals after the watch starts operating with the small second hand moving at two-second intervals.

Even if the watch is not charged for the time specified in the column, the small second hand may temporarily move at one-second intervals. But it will soon resume moving at two-second intervals; therefore, charge the watch for more than the specified period.

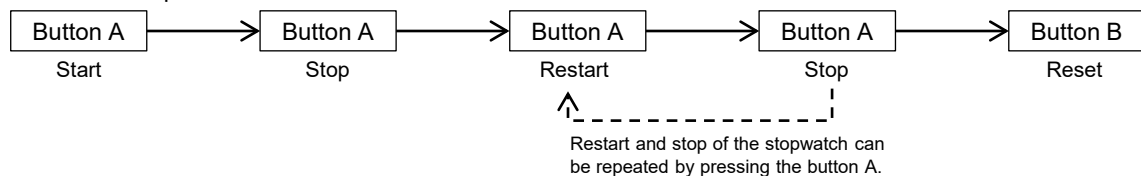
◆ How to use stopwatch function

- The stopwatch can measure up to 59'59"8 in 1/5 second increments.
- When the measurement reaches 60 minutes, the stopwatch automatically stops counting.

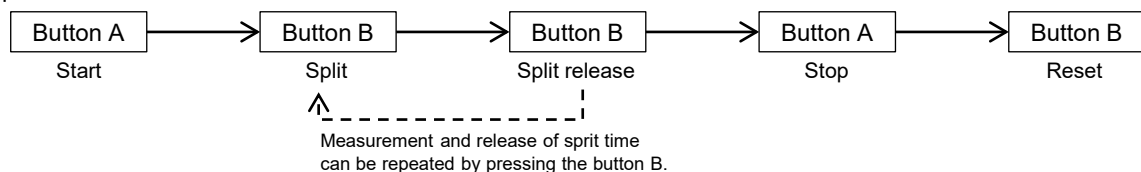
■ Standard measurement



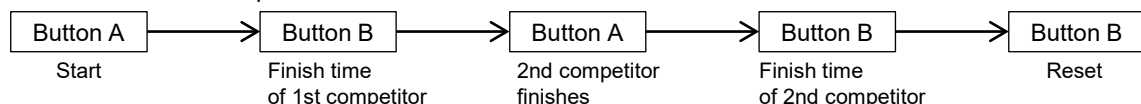
■ Accumulated elapsed time measurement



■ Split time measurement



■ Measurement of two competitors



- The stopwatch 1/5 second hand is capable of timing 60 minutes. (60 seconds x 60 times)
- The stopwatch minute hand is capable of timing 60 minutes.
- Before using the stopwatch, be sure to check that the crown is set at the normal position and that the stopwatch hands are reset to the "0" position.
 - If the stopwatch hands do not return to the "0" position when the stopwatch is reset to "0", follow the procedure in "Alarm hand and stopwatch hand position adjustment".

◆ How to use alarm function

The alarm can be set to ring only once at a designated time within the coming 12 hours.

The alarm time can be set in one minute increments.

■ How to set the alarm

Before using the alarm, check that the alarm hands are adjusted to the current time.

- If the alarm hands are not adjusted to the current time, follow the procedure in "Alarm hand and stopwatch hand position adjustment".

- (1) Pull the crown out to the 1st click position.
- (2) Press the button B repeatedly to set the alarm hands to the desired alarm time.
 - The single-time alarm cannot be set for a time more than 12 hours ahead of the current time. While you keep the button B pressed to advance the alarm hands quickly, they stop when they indicate the current time and the alarm is disengaged. In that case, release the button B, and then, press button again to set the alarm hands to the desired time.
- (3) Push the crown back to the normal position.
 - The alarm is automatically engaged.

Tips: While the crown is at the normal position, the alarm hands indicate the current time when the alarm is disengaged and the designated alarm time when it is engaged.

■ How to stop the alarm

At the designated time the alarm rings for 20 seconds, and it is automatically disengaged as it stops.

To stop it manually, press any button.

Tips : While the stopwatch is measuring, the alarm rings differently than usual. However, this is not a malfunction. While the alarm is ringing, pressing any button will only stop the alarm, and no stopwatch operation can be made.

■ How to cancel the alarm time you have set

- (1) Pull the crown out to the 1st click position.
- (2) Press the button B until the alarm hands stop and indicate the current time.
 - The alarm hands move quickly if the button B is kept pressed.
- (3) Push the crown back to the normal position.

■ How to preview the sound demonstration

- (1) Pull the crown out to the 1st click position.
- (2) Press the button A for longer than 3 seconds.
 - The alarm sound can be heard while the button A is kept pressed.
- (3) Push the crown back to the normal position.

◆ System reset

When an abnormal display appears, reset the built-in integrated circuit.

- (1) Pull the crown out to the 2nd click position.
- (2) Press the buttons A and B at the same time for longer than 2 seconds.
- (3) Push the crown back to the normal position.