SEIKO

セイコー
工業計測用ストップウオッチ
取扱説明書
INSTRUCTION

S059

このたびはセイコーストップウオッチS059をお買い上げいただきありがとうございました。
ご使用の前にこの取扱説明書をよくお読みのうえ正しくご愛用くださいますようお願い申し上げます。なおこの取扱説明書はお手もとに保存し、必要に応じてご覧ください。

■FEATURES

The SEIKO Quartz Stopwatch Cal.S059 is a digital stopwatch that is especially suited for industrial use as it measures time using the desimal system.
This makes it useful for control and analysis of various industrial activities. In addition to a lap/split time memory function that can store and recall up to 100 sets of lap times and split times, the S059 also features dual timer, time-calendar and alarm functions.

※DM (Decimal) : a unit of the decimal system
1DM＝1/100 minutes
100DM＝ 1 minutes
600DM＝ 6 minutes
6000DM＝ 60 minutes

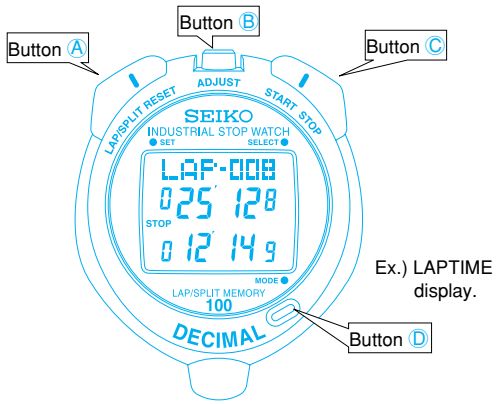
- ●Stopwatch function: It measures up to 99,999.9DM (equivalent to 999.999 minutes) in 1/10DM (equivalent to 1/1000 minute) increments.
  - ・Three separate measurement displays are available; split time, lap time and lap time in progress displays. They can be selected as you require.
  - ・Lap time/split time memory function: Up to 100 sets of lap times and split times are automatically stored in memory.
- ●Year, month, date, day, hour, minutes and seconds are shown in the TIME/CALENDAR display.
- ●Dual timer function: Two countdown timers are available, and they can be set to count down different lengths of time. When used together, they count down the set times alternately.
  - ・Both the timers can be set for any desired amount of time from 10 seconds up to 99 hours, 59 minutes and 59 seconds in second increments.
  - ・The warning sound beeps in different tones for each timer so that you can tell which timer is in use.
- ●Daily alarm function : The 1-channel daily alarm function can be set to sound daily at the designated time (hour, minute).
- ●An antibacterial agent is applied to the case surface of the stopwatches.
  ※It loses its antibacterial effect gradually over time and the effective period differs depending on the conditions of use.

■SPECIFICATIONS

1. Frequency of crystal oscillator ・・・・32,768Hz (Hz = Hertz… Cycles per second)
2. Loss/gain (monthly rate) ・・・・・・Less than 0.0012 % or 30 seconds at normal temperature range (25℃ ±3℃)
3. Operational temperature range: ・・・－10℃～＋60℃
4. Desirable temperature range of use: ・0℃～＋50℃
5. Display system
   TIME/CALENDAR display ・・・・・Day of the week, year, month, date, hour, minutes and seconds.
   (The calendar automatically adjusts for odd and even months including February of leap years from January 1, 2002 to December 31, 2051.)
   STOPWATCH display ・・・・・・・2 rows of digital displays and a dot matrix display (5 × 35 dots) STOPWATCH display mark, DM and 1/10DM. (Measures up to 99,999.9 DM)
   Alarm display ・・・・・・・・・・・alarm set time (hour, minute).
   Current time (hour, minute, second).
   TIMER display ・・・・・・・・・・TIMER 1 / TIMER 2 display.
   Hours, minutes, seconds and the number of times the countdown is repeated.
6. Display medium ・・・・・・・・・・Nematic Liquid Crystal, FEM (Field Effect Mode)
7. Battery ・・・・・・・・・・・・・・Lithium battery SB-T51, 1 piece
8. Battery life ・・・・・・・・・・・・Approx. 3 years.
   ※Battery life is calculated on the basis of using the dual timers (timer 1 and timer 2) for 5 repetitions or less per day, using the alarm for 20 seconds once a day, and using the operation confirm sound 50 times or less per day; therefore, if used more than this, the battery life may be less than the indicated 3-year period.
9. IC (Integrated Circuit) ・・・・・・・C-MOS-LSI, 1 piece
10. Battery life indicator

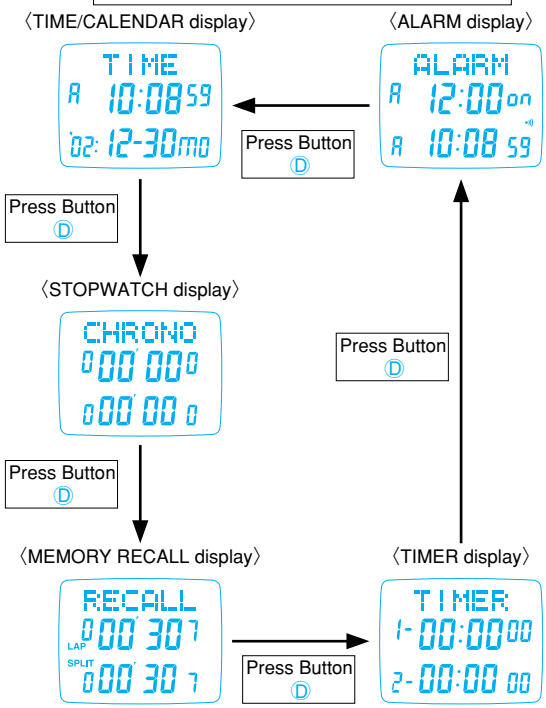
※The specifications are subject to change without prior notice for product improvement.

■BUTTONS AND CHANGEOVER OF DISPLAYS



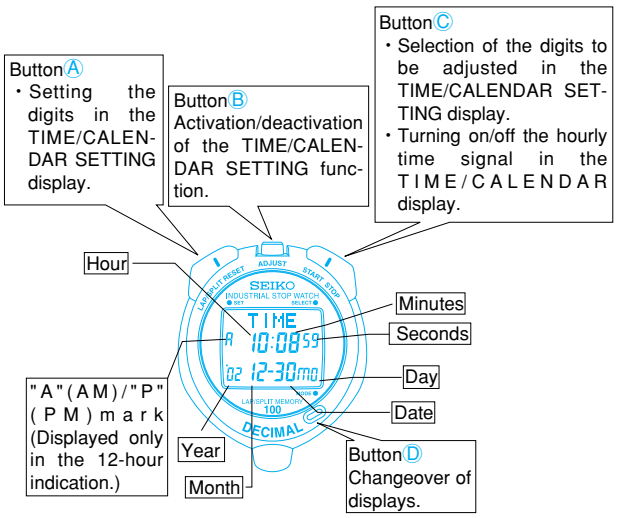
Ex.) LAPTIME display.

With each press of button Ⓓ, the display changes in the following order.



※If buttons Ⓐ, Ⓑ, Ⓒ and Ⓓ are pressed at the same time, the system will be reset. For details, please refer to the SYSTEM RESET itme.

■TIME/CALENDAR DISPLAY BUTTON OPERATIONS

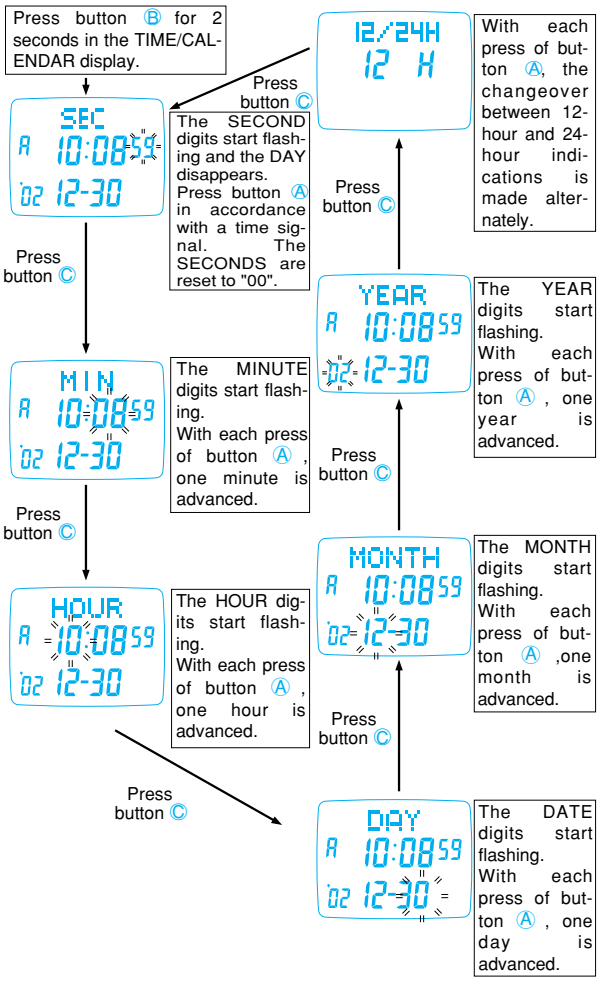


〈About turning the button operation confirmation sound on and off〉

※While the hourly time signal is turned on, with the hourly time signal mark "🔔" shown on the display, the button operation confirmation sound beeps with each press of the button in any display other than TIME/CALENDAR SETTING.

■HOW TO SET THE TIME/CALENDAR

〈Time/calendar setting〉



※When setting the MINUTES, HOUR, DATE, MONTH and YEAR, the digits advance quickly while button Ⓐ is kept pressed.

※Press button Ⓑ to exit TIME/CALENDAR correction. If button A is forgotten and not pressed, Time/Calendar correction will be exited automatically after 2 - 3 minutes.

※Once the YEAR, MONTH and DATE are set for the calendar, the DAY is automatically set.

※Full Illumination display will appear if button Ⓐ and button Ⓒ are pressed at the same time. This is not a malfunction. Press button Ⓐ, Ⓑ, Ⓒ or Ⓓ to return to the [Time/Calendar Display].

HOW TO USE THE STOPWATCH

① BUTTON OPERATIONS

- Three separate measurement displays are available; split time, lap time and lap time in progress displays.
- When the STOPWATCH display is shown, "CHRONO" is shown on the uppermost dot matrix display, followed by any one of "LAP", "RLP" and "SPL".
- If there is no button operation for 100,000DM or more after a start, a reset will occur automatically.

Button Ⓐ
- Lap time/split time measurement in STOPWATCH display.
- Selection of the stored data (from the newest to the oldest data) in the MEMORY RECALL display.

Button Ⓑ
- Selection among the LAP TIME, LAP TIME IN PROGRESS and SPLIT TIME displays.

Button Ⓒ
- Start/stop of the measurement in the STOPWATCH display.
- Selection of the stored data (from the oldest to the newest data) in the MEMORY RECALL display.

Ex.) LAP TIME display

Button Ⓓ
- Changeover of displays.

〈LAP TIME display〉

Press Button Ⓑ

Press Button Ⓑ

〈LAP TIME IN PROGRESS display〉 〈SPLIT TIME display〉

Press Button Ⓑ

② ACCUMULATED ELAPSED TIME MEASUREMENT

Accumulated elapsed time measurement.

Ⓒ START ⇨ Ⓒ STOP ⇨ Ⓒ START ⇨ ▫▫▫ ⇨ Ⓒ STOP ⇨ Ⓐ RESTART

Ex.) Accumulated elapsed time measurement in the LAP TIME display.

Press button Ⓒ to start the measurement.

Flashing "▶" mark is displayed during the measurement.

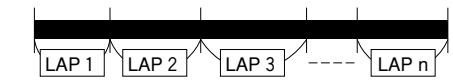
Press button Ⓒ to stop the measurement.
Press button Ⓒ again to restart the measurement.

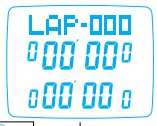
Press button Ⓒ to stop the measurement.

Press button Ⓐ to reset the stopwatch.

③ LAP TIME MEASUREMENT

Lap time measurement ··· To measure the time that has elapsed from the start of one stage of an activity to that of the next stage.

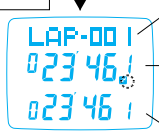




Press button Ⓒ to start the measurement.

Flashing "▶" mark is displayed during the measurement.

Press button Ⓐ to start measure a lap time.



LAP No.
LAP time
Accumulated elapsed time.

The lap time for the previous lap remains displayed while the measurement for the current lap is in progress.

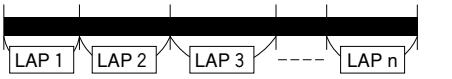
Press button Ⓒ to stop the measure.

The final lap time is displayed.

Press button Ⓐ to reset the stopwatch.

④LAP TIME IN PROGRESS DISPLAY

Lap time in progress display ··· Used to measure elapsed times is segments during measurement.



Press button Ⓒ to start the measurement.

Lap No.
Lap time
Accumulated elapsed time.

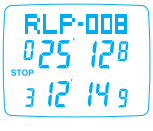
Flashing "▶" mark is displayed during the measurement.

Press button Ⓐ to measure a lap time.

The lap time for the previous lap remains displayed for 10 seconds.

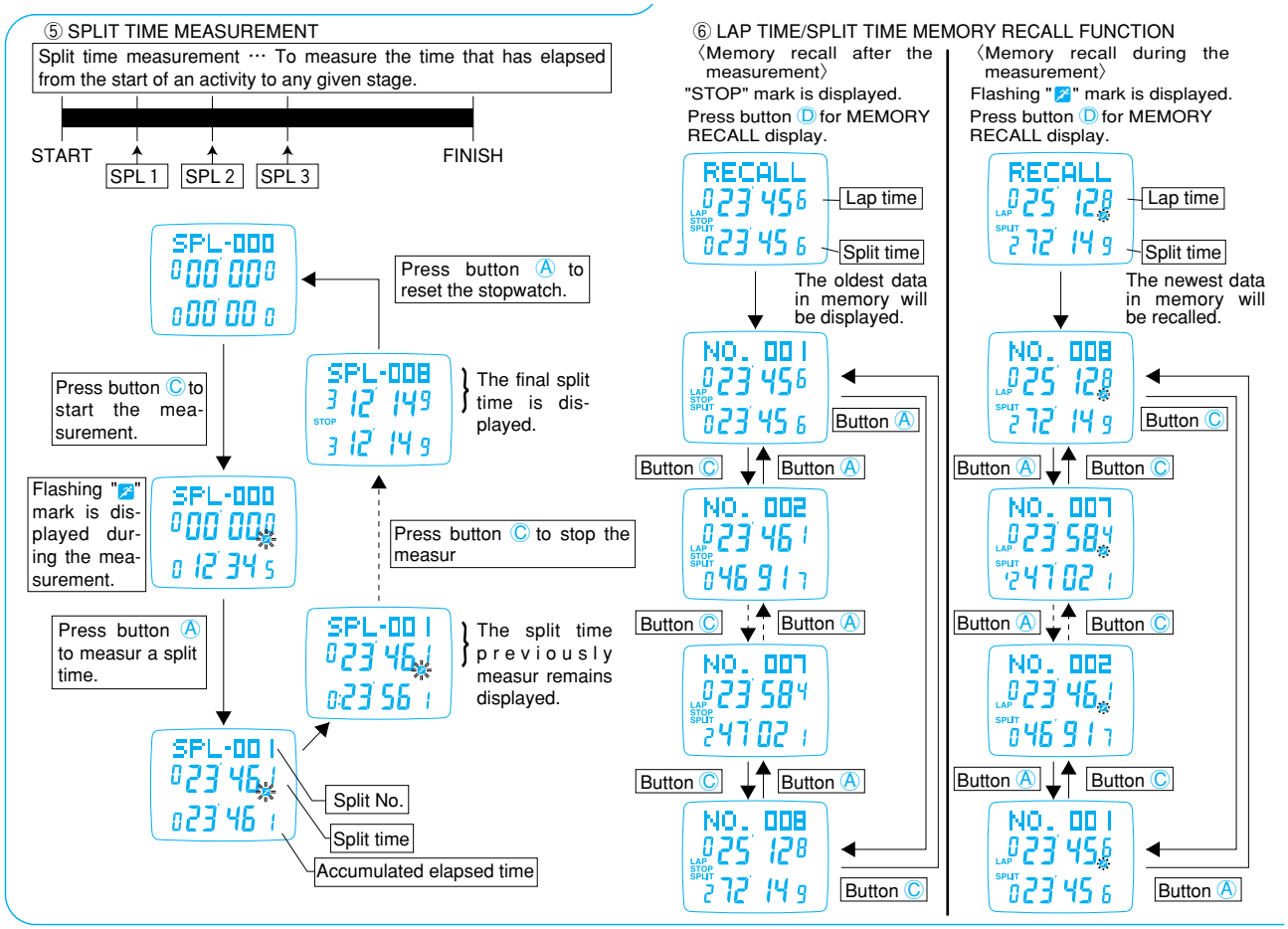
After 10 seconds, the lap time measurement in progress appears with the lap No. for the current lap flashing.

Press button Ⓒ to stop the measurement.



The final lap time is displayed.

Press button Ⓐ to reset the stopwatch.



※If no lap time/split time measurement is made in the STOPWATCH display and no data is stored in memory, the following display will be shown when display is changed over to the MEMORY RECALL.

※Even if the stopwatch is reset to "00", stored data is not erased and can be recalled unless a new measurement is started.

※The stopwatch can measure the lap time/split time as many times as necessary, but only the first 100 sets of measurements will be stored in memory.

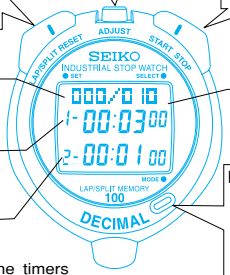
■TIMER DISPLAY

①BUTTON OPERATIONS
- Two countdown timers are available, and they can be used either separately or in combination. When used together, TIMER 2 starts counting down as soon as TIMER 1 has finished counting down the set time. They count down their respective set times alternately in this way as many times as necessary unless stopped.
- Both the timers can be set for any desired amount of times from 10 seconds up to 99 hours, 59 minutes and 59 seconds in second increments.
- To use the timers separately, set "00:00'00" for the timer you choose not to use. The other timer will count down the set time repeatedly as many times as necessary unless stopped.
- The number of times the timers repeat the countdown can be set from 1 to 100 times. If "---" is set for the number, the timers will repeat the countdown as many times as necessary unless stopped by pressing a button.

Button Ⓐ
- Resetting the timer to the set time in the TIMER display.
- Setting the countdown time and the number of times the countdown is repeated in the TIMER SETTING display.

Button Ⓑ
- Activation/deactivation of the TIMER SETTING function.

Button Ⓒ
- Start/stop of the timer in the TIMER display.
- Selects the set time correction location.



Number of times the countdown was repeated.

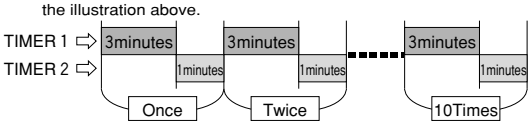
TIMER 1
EX.)
Set for 00:03'00"

TIMER 2
Ex.)
Set for 00:01'00"

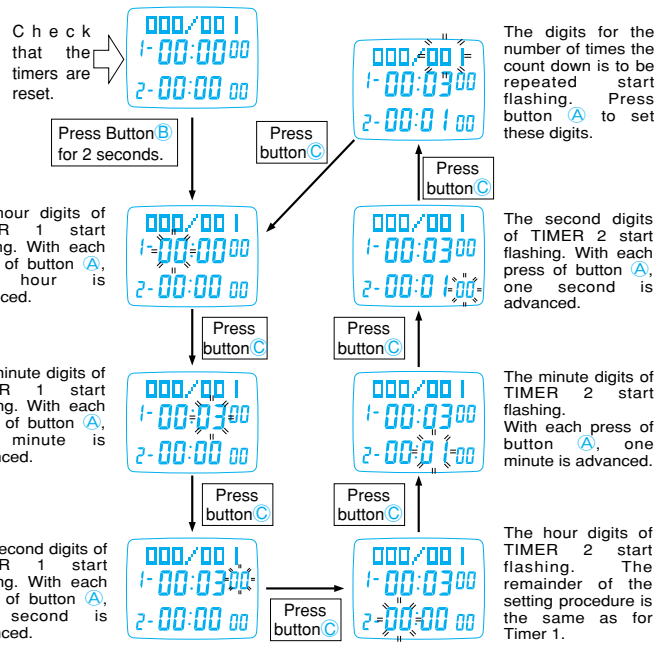
The number of times the countdown is to be repeated.

Button Ⓓ
- Changeover of displays.
- Resetting the countdown time to "00:00'00"" and the number of times the countdown is to be repeated to "0" in the TIMER SETTING display.

Ex.) Operation of the timers when they are set for the times as shown in the illustration above.

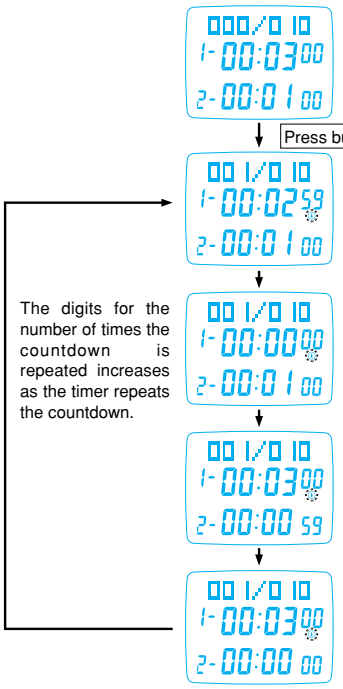


②HOW TO SET THE TIMER



■The digits for the hour, minutes, seconds and the number of times the countdown is to be repeated advance quickly by keeping button Ⓐ pressed.
■The timers cannot be set for a time less than 10 seconds. If a time less than 10 seconds is set and button Ⓑ is pressed to return to the TIMER display,the timers will automatically be set for "00:00'10"".
■If button Ⓓ is pressed while the digits are flashing, both of the timers will be reset to "00:00'00"".
■If button Ⓑ is pressed while the digits are flashing, setting will be canceled.

③HOW TO USE THE TIMER



■To stop the warning sound manually, press button Ⓐ, Ⓑ, Ⓒ or Ⓓ.
This will not turn it off completely while the countdown is repeated. It will beep every time the countdown is over thereafter.
■The warning sound for TIMERS 1 and 2 are different in tone.
■Restart and stop of the timer can be repeated as many times as necessary by pressing button Ⓒ.

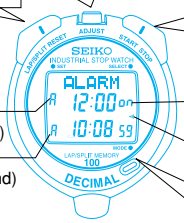
■ALARM DISPLAY

①BUTTON NAMES AND FUNCTIONS
- This 1-channel daily alarm sounds daily at the designated time.
- The alarm will sound for approximately 20 seconds when the set time arrives.
- The alarm can be turned on and off.
- The 24-hour system is normally used for the alarm display but this is coupled to TIME/CALENDAR DISPLAY when set to the 12-hour system.

Button Ⓐ
- Setting the digits in the ALARM SETTING display.

Button Ⓑ
- Activation/deactivation of the ALARM SETTING function.

Button Ⓒ
- Selection of the digits to be adjusted in the ALARM SETTING display.
- Turning on/off the ALARM function.



Alarm set time
(example: 12:00 a.m.)

Current time
(hour, minute, second)

Alarm "on" mark
["--" mark when canceled.]

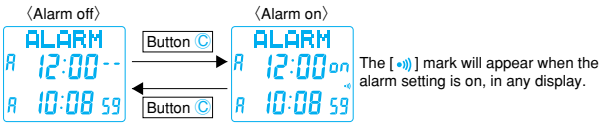
Alarm mark

Button Ⓓ
- Changeover of displays.

②HOW TO USE THE ALARM FUNCTION

◆Turning the alarm on and off

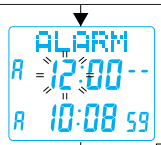
The alarm can be turned on (on) and canceled (--) by pressing button Ⓒ in [ALARM DISPLAY].



The [•))] mark will appear when the alarm setting is on, in any display.

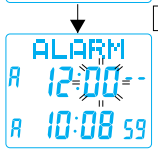
◆Alarm time setting

Press button Ⓑ for 2 seconds in Alarm Display.



Hour flashes. The hour digits will advance by 1 each time button Ⓐ is pressed.

Press button Ⓒ



Minute flashes. The minute digits will advance by 1 each time button Ⓐ is pressed.

Press button Ⓒ

※Press and hold down button Ⓐ to accelerate the digit speed during alarm time setting and correction.
※Press button Ⓑ to cancel alarm time setting or correction. After a correction has been canceled, the Alarm mark and Alarm On mark will appear.

◆How to stop the alarm
- When the set time arrives, the alarm will sound for approximately 20 seconds.
- Press button Ⓐ, Ⓑ, Ⓒ or Ⓓ to stop the alarm while sounding.

※The alarm will not sound when the set time arrives if the Dual Timer function is being used because the Dual Timer time-up tone has priority.

ABOUT SYSTEM RESET

- In the event of a display problem (illegible display, etc.), perform the following operation. The system inside the watch will be reset and normal operation will return.
- How to use system reset
  Press buttons Ⓐ, Ⓑ, Ⓒ and Ⓓ at the same time for 2 - 3 seconds; the display will turn off and [TIME A12:00 00 '02 1-1 TU] will be displayed after the buttons are pressed.

※After system reset, all data stored to memory will be lost. It will also be necessary to set the date and time.

REPLACEMENT OF THE LIQUID CRYSTAL PANEL

There will be dim contrast or blur of the digital display after the liquid crystal panel is used for adove sev-enyears. Contact the retailer from whom the watch was purchased for replacement in such cases. This is avail-able at the owner's expense.

REMARKS ON THE BATTERY

Notes on the battery

(1)Battery life

When a new normal battery is installed, this watch operates for approximately 3 years.

※Battery life is calculated on the basis of using the dual timers (timer 1 and timer 2) 5 times or less per day, using the alarm for 20 seconds once a day, and using the operation confirm sound 50 times or less per day; therefore, if used more than this, the battery life may be less than the indicated 3-year period.

(2)Monitor battery

The battery in your watch may run down in less than three years after the date of purchase, as it is a monitor battery which is inserted at the factory to check the function and performance of the watch.

(3)Battery change

①For battery replacement, be sure to have the battery replaced with a new one at the retailer from whom the watch was purchased or an SEIKO DEALER, and request the battery for exclusive use with the SEIKO watches.

②If the old battery is left in the watch for a long time, a malfunction may be caused due to battery leakage, etc. Have it replaced with a new one as soon as possible.

③Battery replacement is charged even if it runs down within the guarantee period.

(4)BATTERY LIFE INDICATOR

When all the segments of the display start flashing in the TIME/CALENDAR display, or when " B " mark starts flashing in other displays, the watch may run down in 2 to 3 days. We suggest that you have the battery replaced by a SEIKO DEALER.

※Even though the display is flashing, time accuracy is not affected.

⚠ WARNING

1. Do not remove the battery from the watch.
2. If it is necessary to take out the battery, keep it out of the reach of children.
3. If the child swallows it, consult a doctor immediately as it will adversely affect the health of the child.

⚠ CAUTION

1. Never short-circuit, tamper with or heat the battery, or never expose it to fire as it may explode, generate and intense heat or catch fire.
2. The battery in your watch is not rechargeable. Never attempt to recharge it, as this may cause battery leakage or damage to the battery.
3. If the watch is left in a temperature below 5℃ or above 35℃ for a long time, it may cause the battery life to be shortened.

TO PRESERVE THE QUALITY OF YOUR WATCH

⚠ CAUTION

WATER RESISTANCE

- Do not make button operation when the watch is wet, as water may get inside the watch.

					
	Designed and manufactured to withstand the water usually experienced in a daily living such as splashes and rain.	Designed and manufactured for swimming and kitchen work.	Skindiving without scuba.	Genuine diving using scuba or heliumgas.	Button operation when the watch is wet.
"WATER RESISTANT" is inscribed on the back of your watch case.	○	×	×	×	×

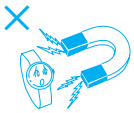
⚠ WARNING

- If your watch is 3 bar water resistant, do not use it in water.

PLACES TO KEEP YOUR WATCH

- If the watch is left in a temperature below -10℃ or above +60℃ for a long time it may function improperly or stop operating.

※This stopwatch is so adjusted that it will maintain stable time accuracy in normal temperatures. (5℃～35℃)
It will lose or gain slightly, but it will regain high time accuracy when it returns to normal temperature.



- Do not leave the watch in a place where it is subjected to strong magnetism or static electricity.

- Do not leave the watch where there is strong vibration.
- Do not leave the watch in a dusty place.

- Do not expose the watch to gases or chemicals.
(Ex.: Organic solvents such as benzine and thinner, gasoline, nail polish, cosmetic spray, detergent, adhesives, mercury, and iodine antiseptic solution.)
- Do not leave the watch in a hot spring, or do not keep it in a drawer having insecticides inside.

PERIODIC CHECK

- We suggest that you have your watch checked by the retailer from whom the watch was purchased every 2 or 3 years or when the battery is replaced for oil condition, battery electrolyte leakage or damage due to water or sweat. After checking the watch, adjustment and repair may be required.

⚠ CAUTION

- 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.

REMARKS ON REPLACEMENT PARTS

- SEIKO makes it policy to usually keep a stock of spare parts for its watches for 7 years. In principle, your watch can be reconditioned within this period if used normally. (Replacement parts are those which are essential to maintaining the functional integrity of the watch.)
- The number of years that a watch is considered repairable may vary greatly depending on the conditions under which it was used, and normal accuracy may not be achieved in some cases. We recommend, therefore, that you consult the retailer from whom the watch was purchased when having them repair your watch.
- The case, dial, hands glass and bracelet, or parts there of may be replaced with substitutes if the originals are not available.

REMARKS ON AFTER-SALES SERVICING

- If the watch requires service, take it to the retailer from whom the watch was purchased. If the trouble occurs within the guarantee period, submit the cirtificate of guarantee together with the watch.
- For repair after the guarantee period or for any other information regarding the watch, contact the retailer from whom the watch was purchased or SEIKO S-YARD CO., LTD.
- Guarantee coverage is spelled out in the certificate of guarantee. Please read it carefully and keep the certificate for ready reference.