SEIKO LC DIGITAL QUARTZ ALARM CHRONOGRAPH

Cal. A156

FEATURES

Your SEIKO LC Digital Quartz Alarm Chronograph with a solar powered cell is a quartz crystal watch that operates on the energy of light. It is equipped with a solar cell on the liquid crystal panel, which converts sunlight energy into electrical energy. The electrical energy thus obtained charges a silver oxide battery which operates the watch. The solar powered SEIKO LC Digital Quartz Alarm Chronograph, a highly reliable multifunction quartz crystal watch, can operate with remarkable accuracy for a very long time without the need of replacing the battery.

1. SEIKO's unique recharge control circuit
   Depending upon the amount of electrical energy stored in the silver oxide battery (secondary battery), the recharge control circuit controls the amount of energy to recharge the secondary battery from the solar cell. This recharge control circuit was developed by SEIKO precisely for this purpose. With this recharge control circuit, the electrical energy quickly recharges the secondary battery when it needs recharging and over-charging is controlled most effectively. It is the recharge control circuit that protects the secondary battery against possible damage and lengthens its life to approximately 7 years of continuous use.

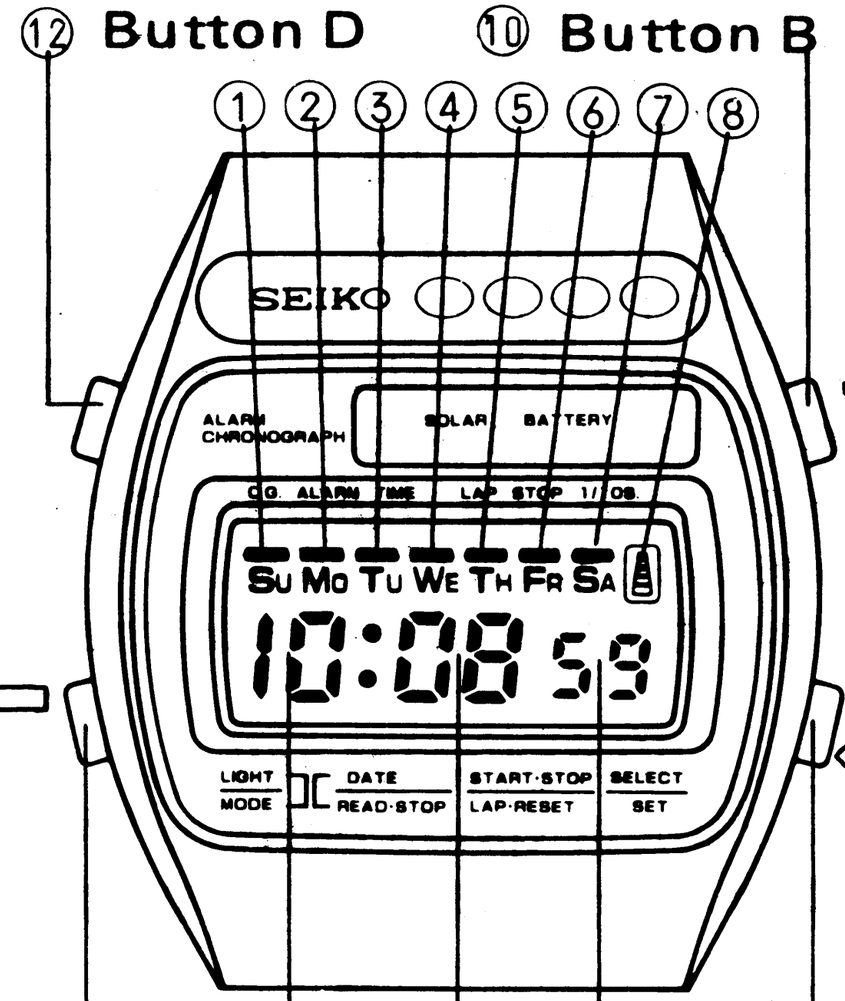
2. The most effective conversion of solar energy is made possible by the SEIKO solar cell.
   The lower current consuming IC which was developed by SEIKO's advanced micro-electronic technology has made it possible for the solar energy receiving sheet of the watch to be made very small.
3. Because the secondary battery has been thoroughly charged at the factory, it will power your watch for the initial two years without having to be recharged by the solar cell. However, it is recommended that the dial face of your watch be exposed to light occasionally even during that two-year period to recharge the secondary battery. This will keep the secondary battery in good working condition.
   Note: If use of the light is more frequent than 5 times a day and the alarm is used more than once a day, the secondary battery may need to be recharged within the initial two years.

CHARACTERISTICS

1. **Time display:** Hour (12 hour indication), minute, second, and day of the week.
2. **Calendar display:** Month, date, day of the week, and "A" (A.M.), "P" (P.M.).
3. **Stopwatch display:** Hours, minutes, seconds up to 12 hours (minutes, seconds, 1/10 seconds up to 20 minutes)
4. **Alarm display:** Hour, minute and "A" (A.M.)/"P" (P.M.). Can be set to operate at any desired hour and minute.
5. **Time signal:** It can be set to ring every hour on the hour.
6. **Water resistant:** When "Water Resistant" is shown on the back of your watch case, the watch is water resistant.
7. **Battery recharge indicator:** All the digits in the display start flashing when the secondary battery needs to be recharged.
8. **Illuminating light:** Illuminates the displays in the dark.
9. **Battery:**
   Primary battery . . . . . Silicone solar cell
   Secondary battery . . . . . Silver oxide battery (WSR265H)
10. **Recharge control circuit:** Over-voltage recharging control device

HOW TO USE
DISPLAY AND BUTTON OPERATION

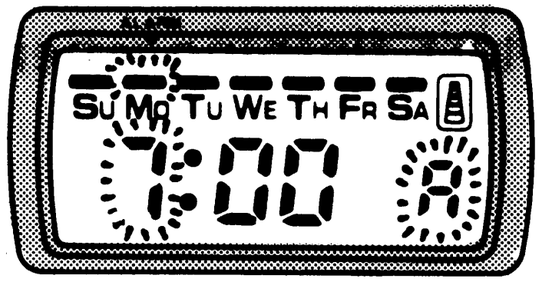
Time Display



Stopwatch

Depress button "A".

Alarm Setting

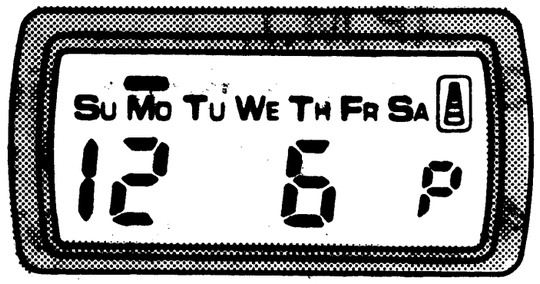


Depress button "A".

Time/Calendar Setting

Depress button "A".

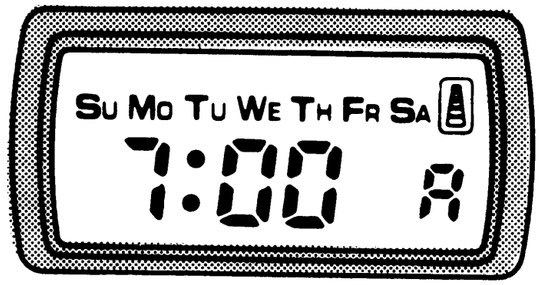
Calendar Display



While button "B" is depressed.

While button "C" is depressed.

Alarm Time Display



①-⑦ In the time and calendar display, day of the week is displayed.
① Stopwatch mark: In the stopwatch function, it starts flashing.
② Alarm set mark: In the alarm setting function, it starts flashing.
③ Time set mark: In the time setting function, it starts flashing.
⑤ Lap mark: In the stopwatch function when a lap time is displayed, it starts flashing.
⑥ Stop mark: In the stopwatch function when the time measurement is stopped, it starts flashing.
⑦ 1/10 second mark: In the stopwatch function, it flashes until the watch records up to 20 minutes.
⑧ Alarm mark:
Both alarm and time signal will not ring.
Alarm will ring.
Alarm and time signal will ring.
⑨ Button "A": Selection of the display and function is made in the following order by depressing button "A".

→ Time display → Stopwatch function → Alarm setting function →
Time setting function ←

Depress button "A" after the stopwatch function is used, or after the alarm setting or time setting is completed and the time display will be shown.
⑩ Button "B":
- In the time display, month, date, day of the week, and "A" (A.M.)/"P" (P.M.) are displayed while button "B" is depressed.
- In the stopwatch function, start or stop is activated by depressing button "B". When button "B" is depressed, it rings "peep" to indicate that it is depressed.

- In the time set function each depression of button "B" will select the digits to be adjusted in the following order.

  → Second → Minute → Hour (A.M. (A)/P.M. (P)) →
  Day ← Month ← Date ←

- In the alarm setting function, each depression of button "B" will select the digits to be adjusted in the following order.

  → Hour (A.M. (A)/P.M. (P)) →
  Minute ←

- In the time display, selection of the alarm mark is made by depressing button "B" and "C" at the same time.

⑪ Button "C":

- In the time display, the time set for the alarm is displayed while button "C" is depressed.
- In the stopwatch display, the lap time measurement, lap time release, or reset is performed by depressing button "C". When button "C" is depressed, it rings "peep" to indicate that it is depressed.
- In the time setting function or alarm setting function, one digit (flashing) is advanced by each depression of button "C". The digit is automatically advanced by depressing button "C" continuously. However, in the time setting function, the second digit is reset to "00" by depressing button "C".

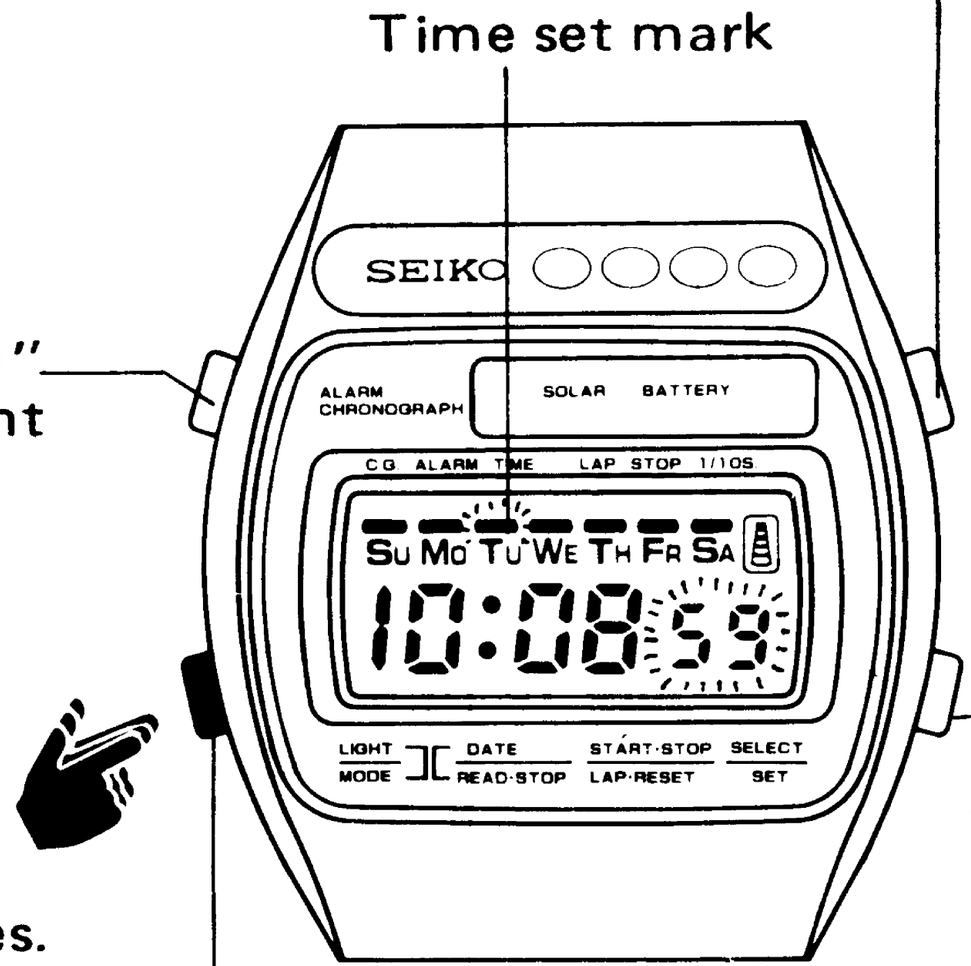
⑫ Button "D": The illuminating light is activated by depressing button "D".

Hour, minute, second, 1/10 second, month or date is displayed at ⑬ , ⑭ , ⑮ , as follows:

		⑬	⑭	⑮
Time display		Hour	Minute	Second
Calendar display		Month	Date	"A" (AM) "P" (PM)
Stopwatch display	Up to 20 min.	Minute	Second	1/10 second
	Over 20 min.	Hour	Minute	Second
Alarm		Hour	Minute	"A" (AM) "P" (PM)

HOW TO SET THE TIME AND CALENDAR

From the time display depress button "A" three times to activate the time and calendar setting function. The time set mark starts flashing.



Button B
The selection of the digits to be set is made in the following order by each depression of button "B".

→ Second → Minute → Hour (A.M. (A)/ P.M. (P))

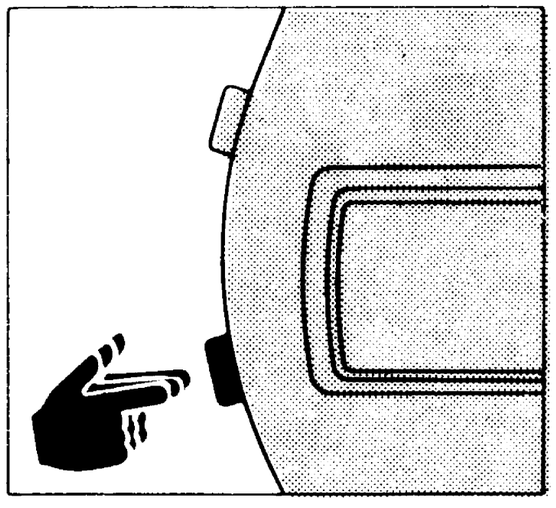
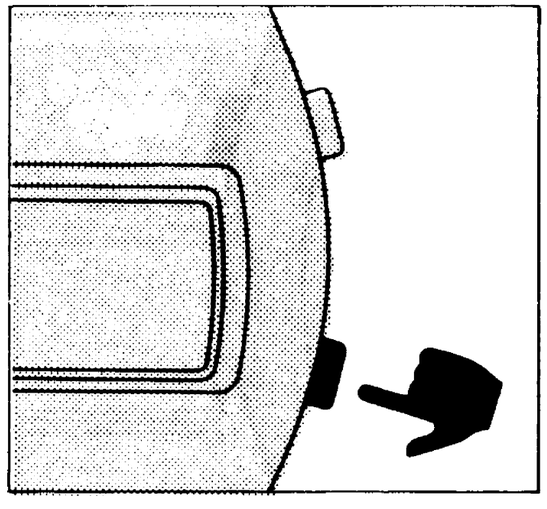
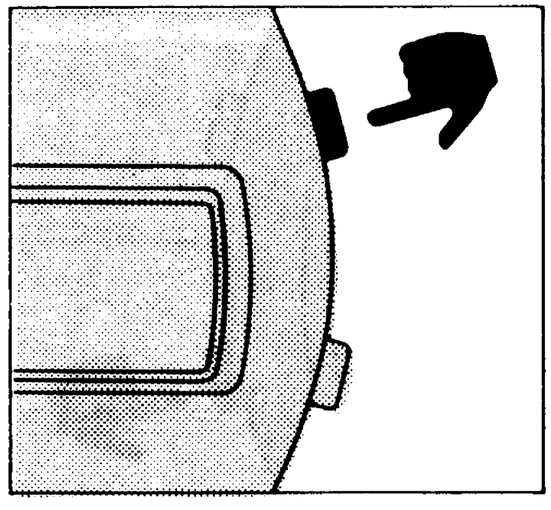
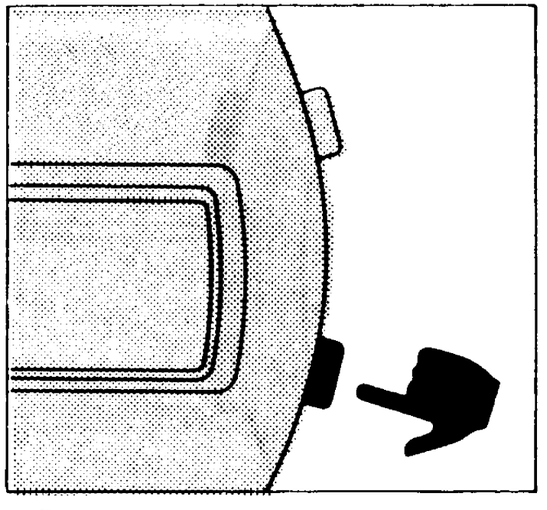
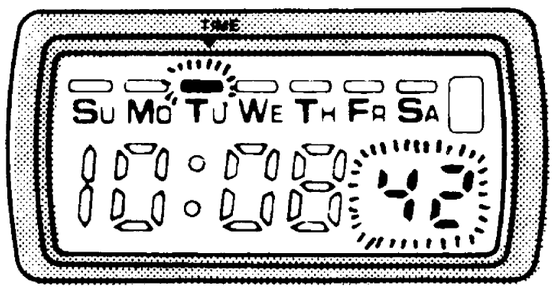
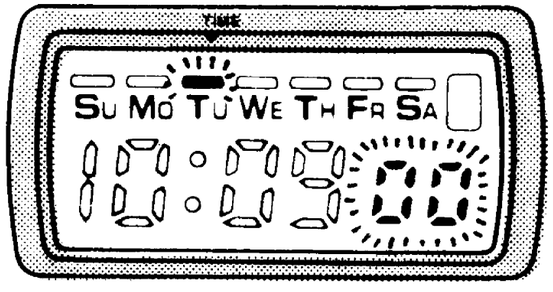
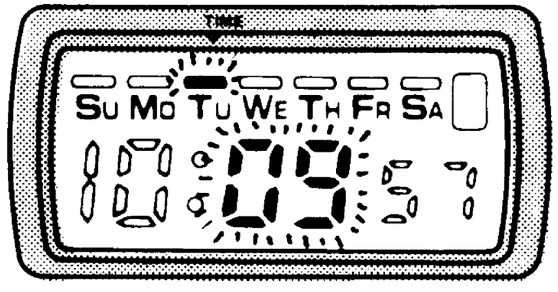
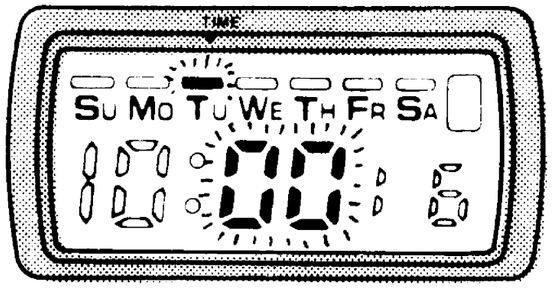
↑ Day

↑ Month ← Date ←

Button C
One digit (flashing) is advanced by each depression of button "C". The digits are automatically advanced by depressing button "C" continuously except the second digits which are reset to "00" and start immediately.

Remarks: The illustrations show how Monday, December 6, 10:08:42 A.M. is changed to Wednesday, August 10, 7:00:00 P.M.

SECOND → **MINUTE** →

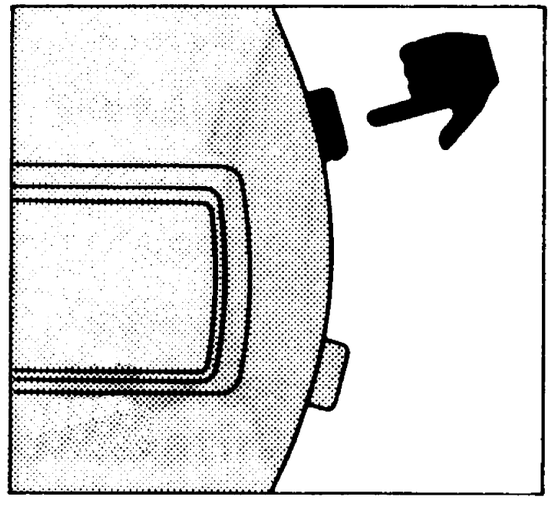
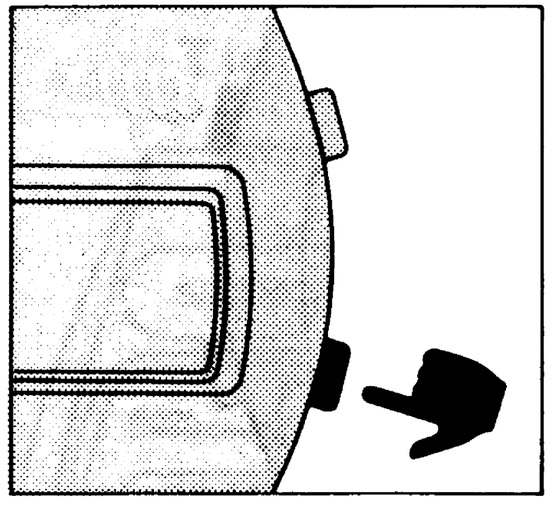
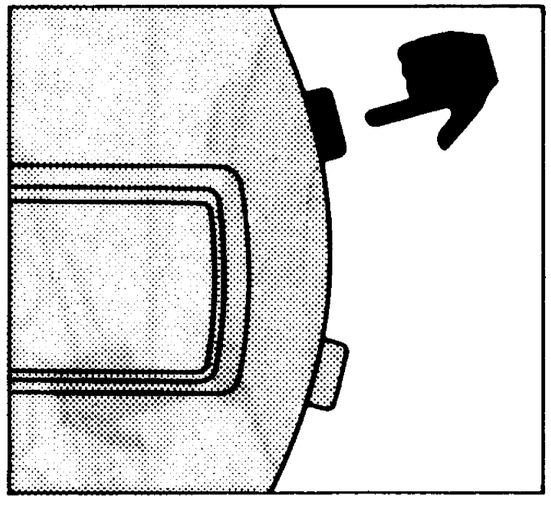
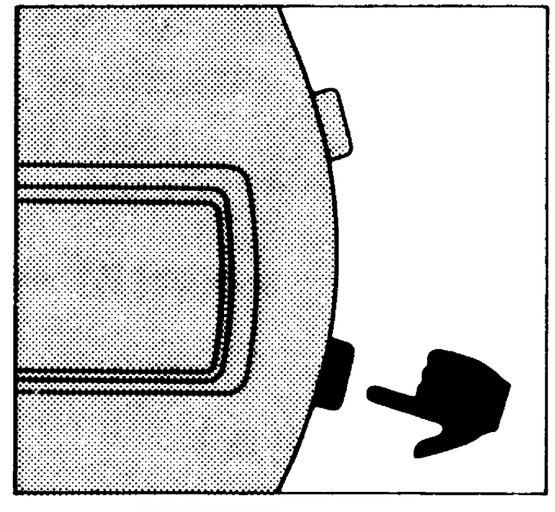
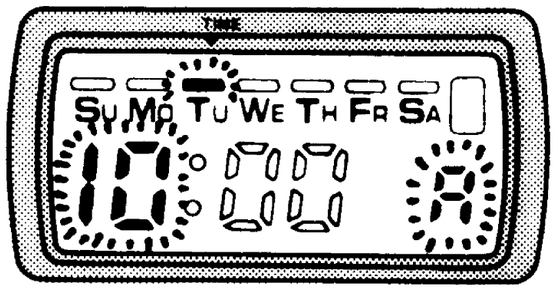
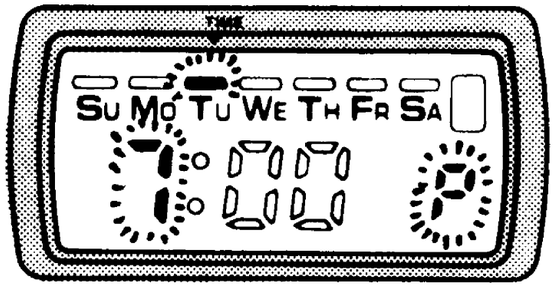
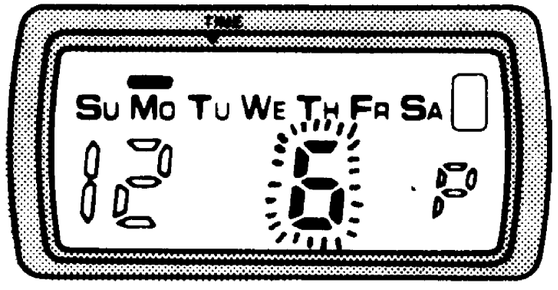
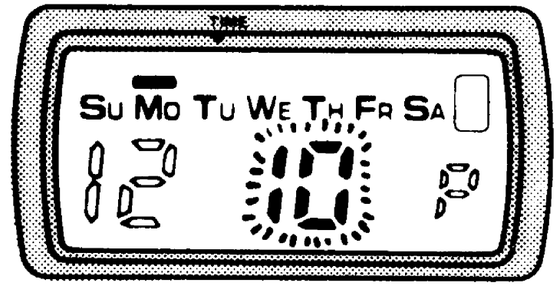
SELECT	SET	SELECT	SET
			
			
Depress button "A" three times and the time set mark and the second digits start flashing.	Depress button "C" in accordance with a time signal. The seconds are then reset to "00" and start immediately.*	Depress button "B". The minute digits start flashing.	One digit (minute) is advanced by each depression of button "C".

* When the seconds count any numbers from "30" to "59" and button "C" is depressed one minute is added and the seconds are immediately reset to "00".

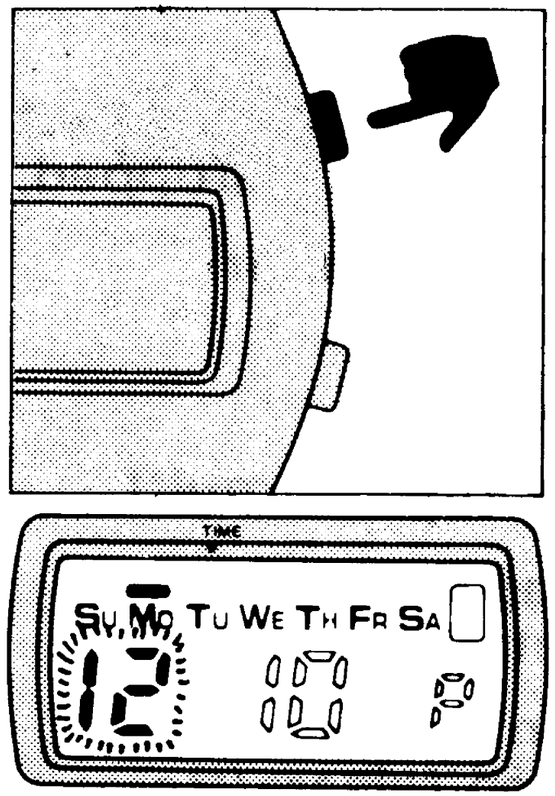
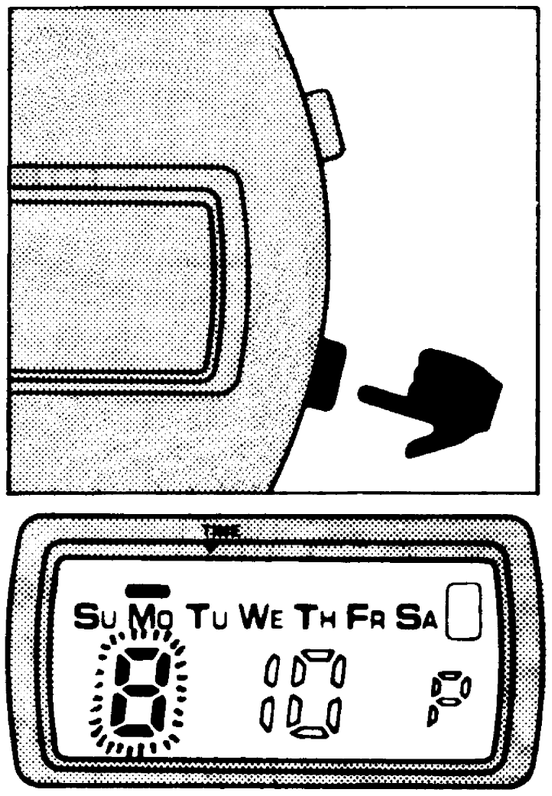
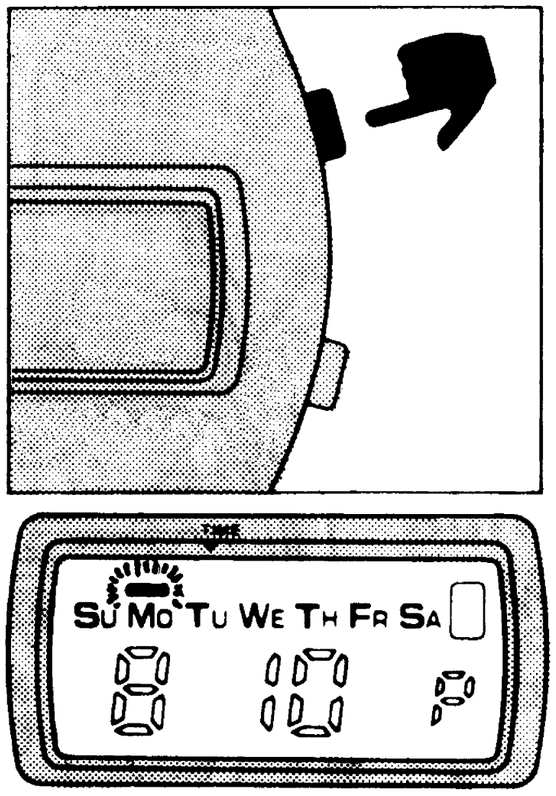
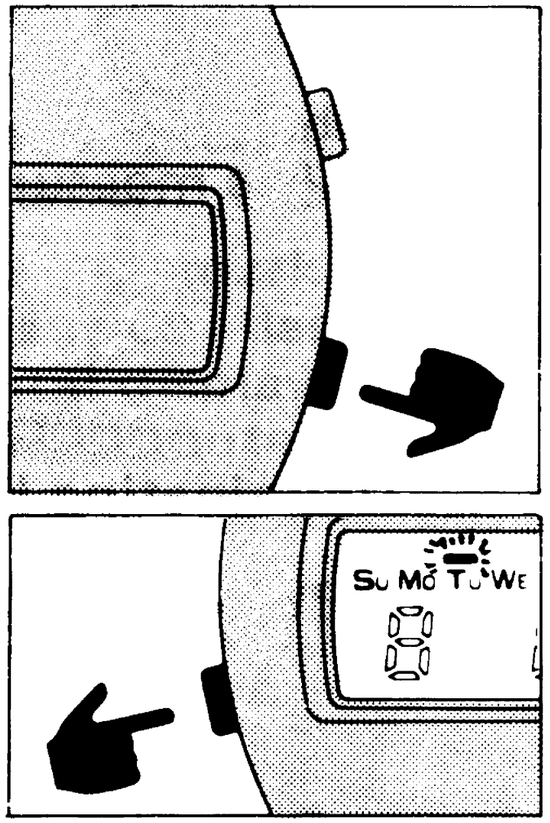
English

10

HOUR → DATE →

SELECT	SET	SELECT	SET
			
			
Depress button "B". The hour digits and "A" (A.M.) start flashing.	One digit (hour) is advanced by each depression of button "C".	Depress button "B". The date digit starts flashing.	One digit (date) is advanced by each depression of button "C".

MONTH ⟶ DAY

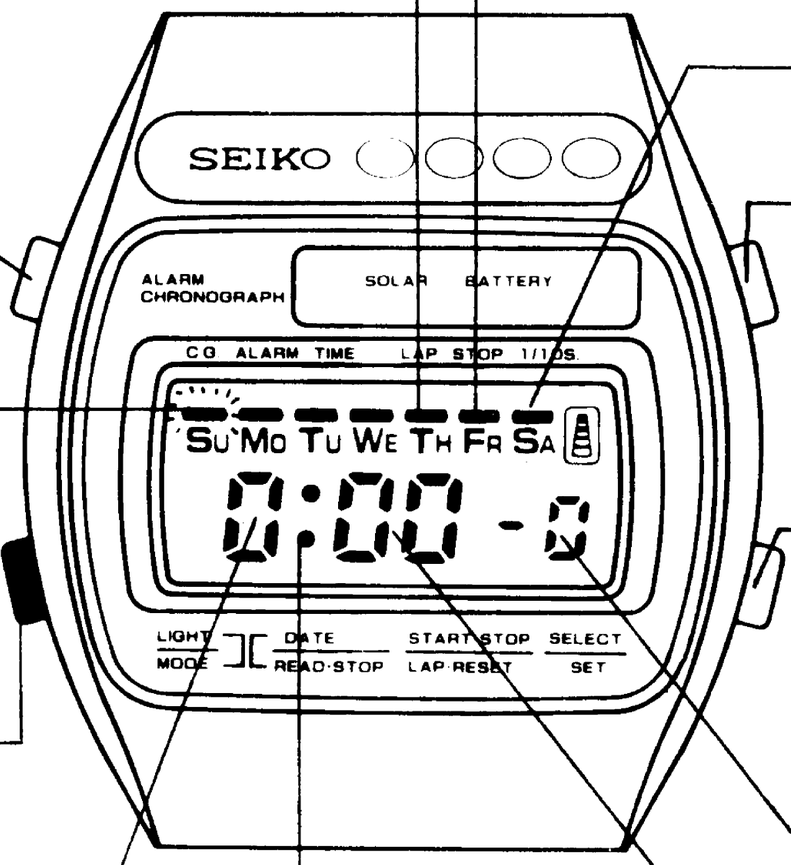
SELECT	SET	SELECT	SET
			
Depress button "B". The month digits start flashing.	One digit (month) is advanced by each depression of button "C".	Depress button "B". The day indicator starts flashing.	The day indicator is advanced by each depression of button "C". After all adjustments, depress button "A" to return to the time display.*

* If button "A" is not depressed the time display will automatically return within two minutes.

STOPWATCH FUNCTION

From the time display depress button "A" once to activate the stopwatch function. The stopwatch mark starts flashing.

Measurement up to 20 minutes (The 1/10 second mark flashes.)



LAP mark
It flashes when a lap time is measured.

STOP mark
It flashes when the time measurement is stopped.

1/10 second mark

Button D
Illuminating light

Button B
Start/Stop
See pages 14 and 15 for details.

STOPWATCH mark

Button C
Lap/Lap release/Reset
See pages 14 and 15 for details.

Button A

1/10 second

Second

When button "B" or "C" is depressed, the alarm rings with a single "peep" to indicate that the button is depressed.

Minute

Dot
They flash every second while the stopwatch function is operating.

Measurement over 20 minutes

LAP mark
It flashes when a lap time is measured.

STOP mark
It flashes when the time measurement is stopped.

1/10 second mark
It does not flash after the digital display passes 20 minutes.

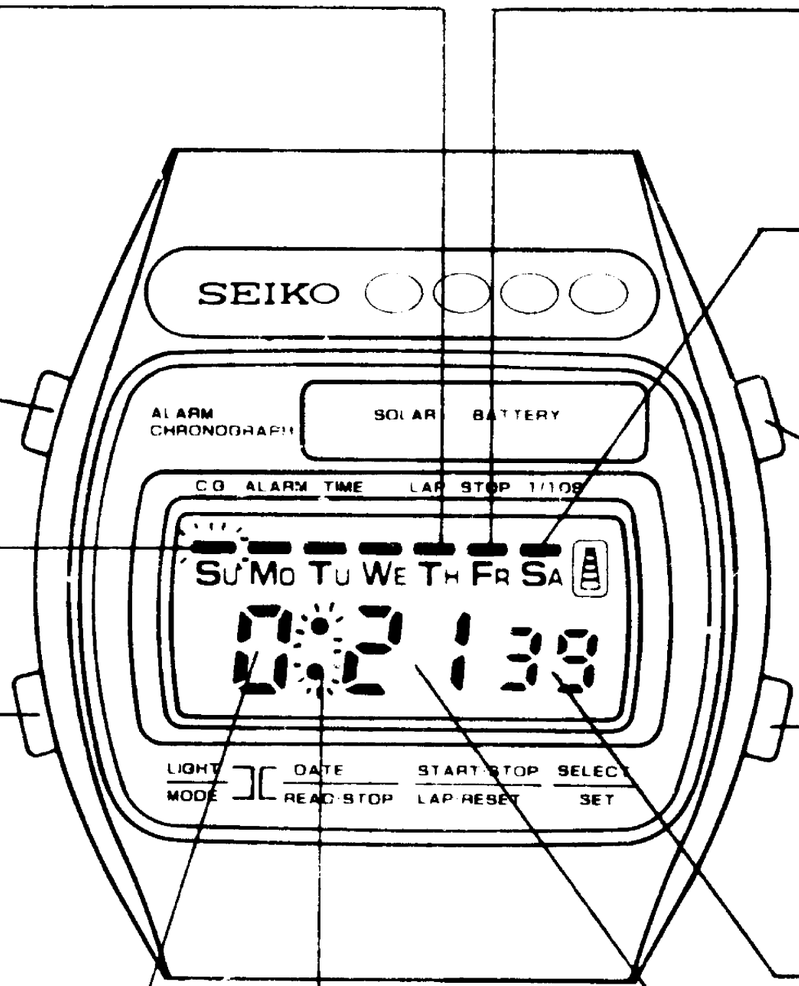
Button D
Illuminating light

Button B
Start/Stop
See pages 14 and 15 for details.

STOPWATCH mark

Button A

Button C
Lap/Lap release/Reset
see pages 14 and 15 for details.



Second

Minute

When Button "B" or "C" is depressed, the alarm rings with a single "peep" to indicate that the button is depressed.

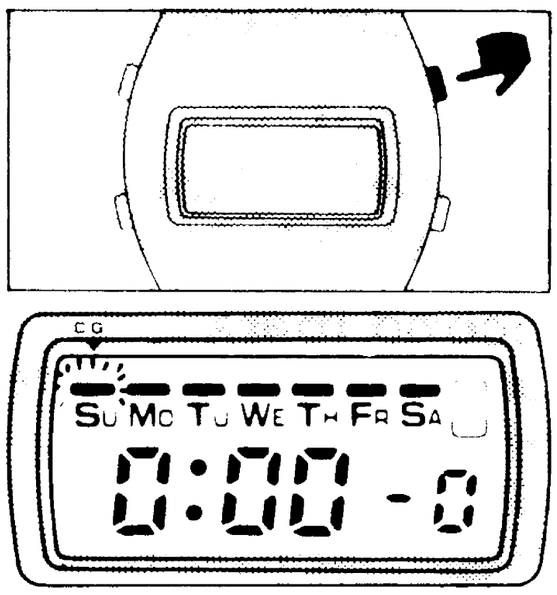
Hour

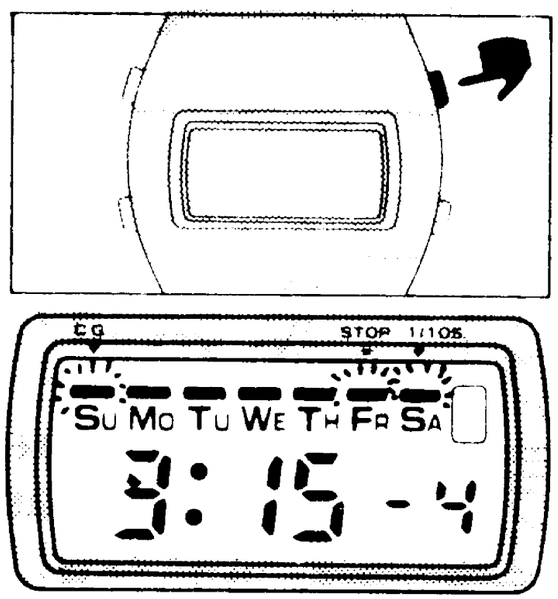
Dot
They flash every second while the stopwatch function is operating.

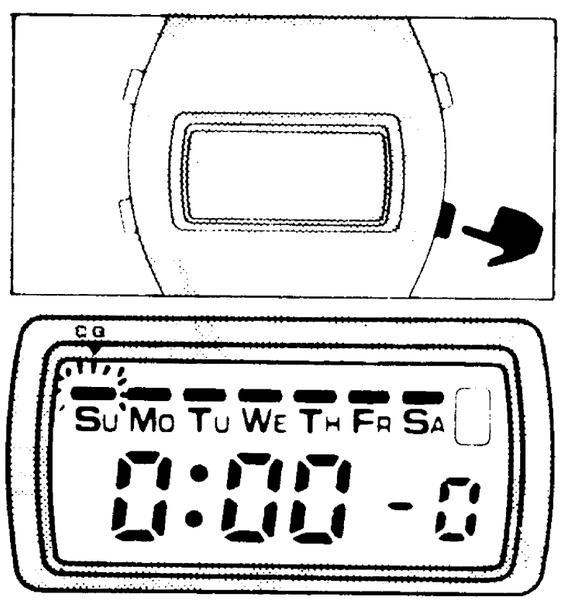
HOW TO USE THE STOPWATCH

1. START/STOP/RESET

START ⇨ STOP ⇨ RESET

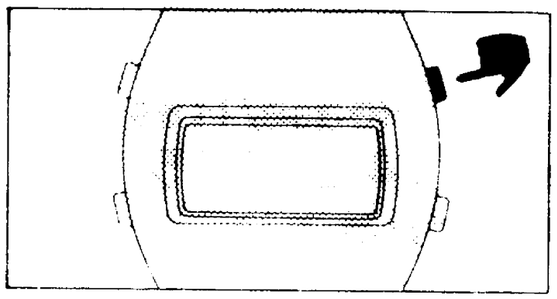


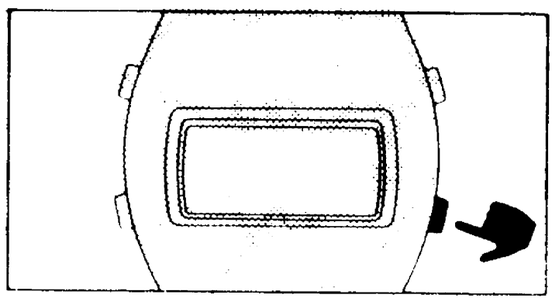


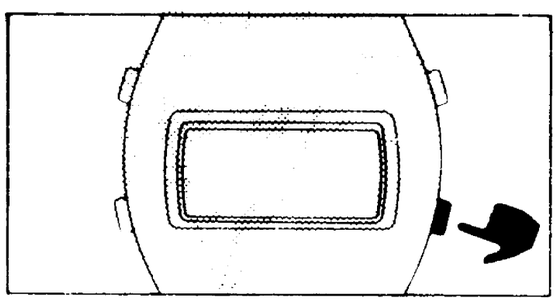


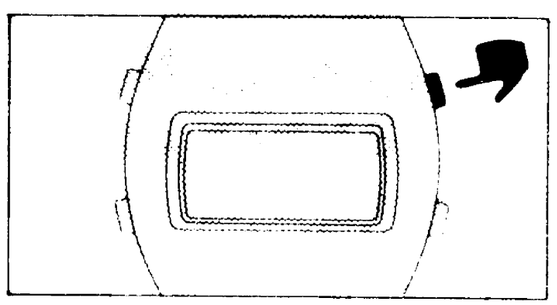
2. LAP TIME MEASUREMENT

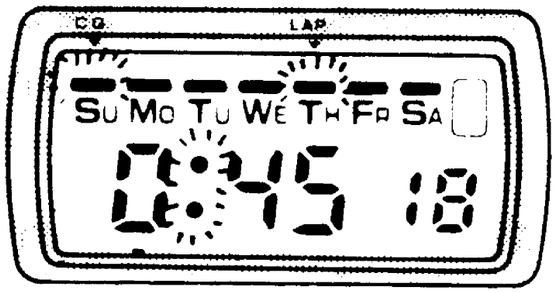
START ⇨ LAP TIME ⇨ LAP RELEASE ⇨ STOP

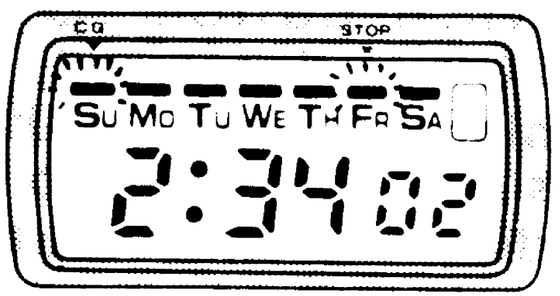










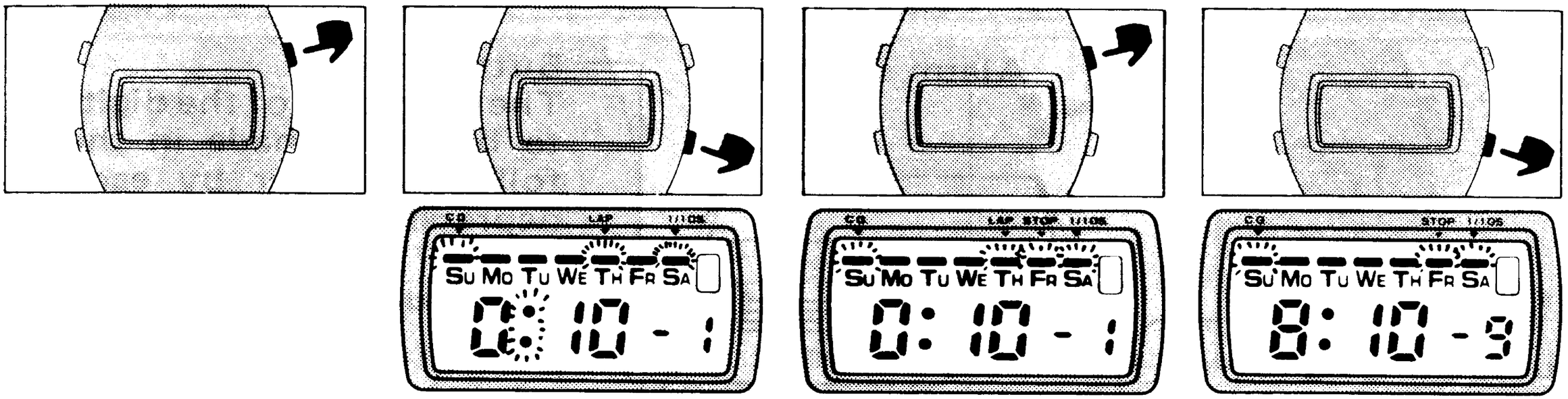


3. CONTINUOUS TIME MEASUREMENT OF TWO COMPETITORS

START ⟹ FINISH (1st competitor)

FINISH (2nd competitor)

READ OUT (2nd competitor)

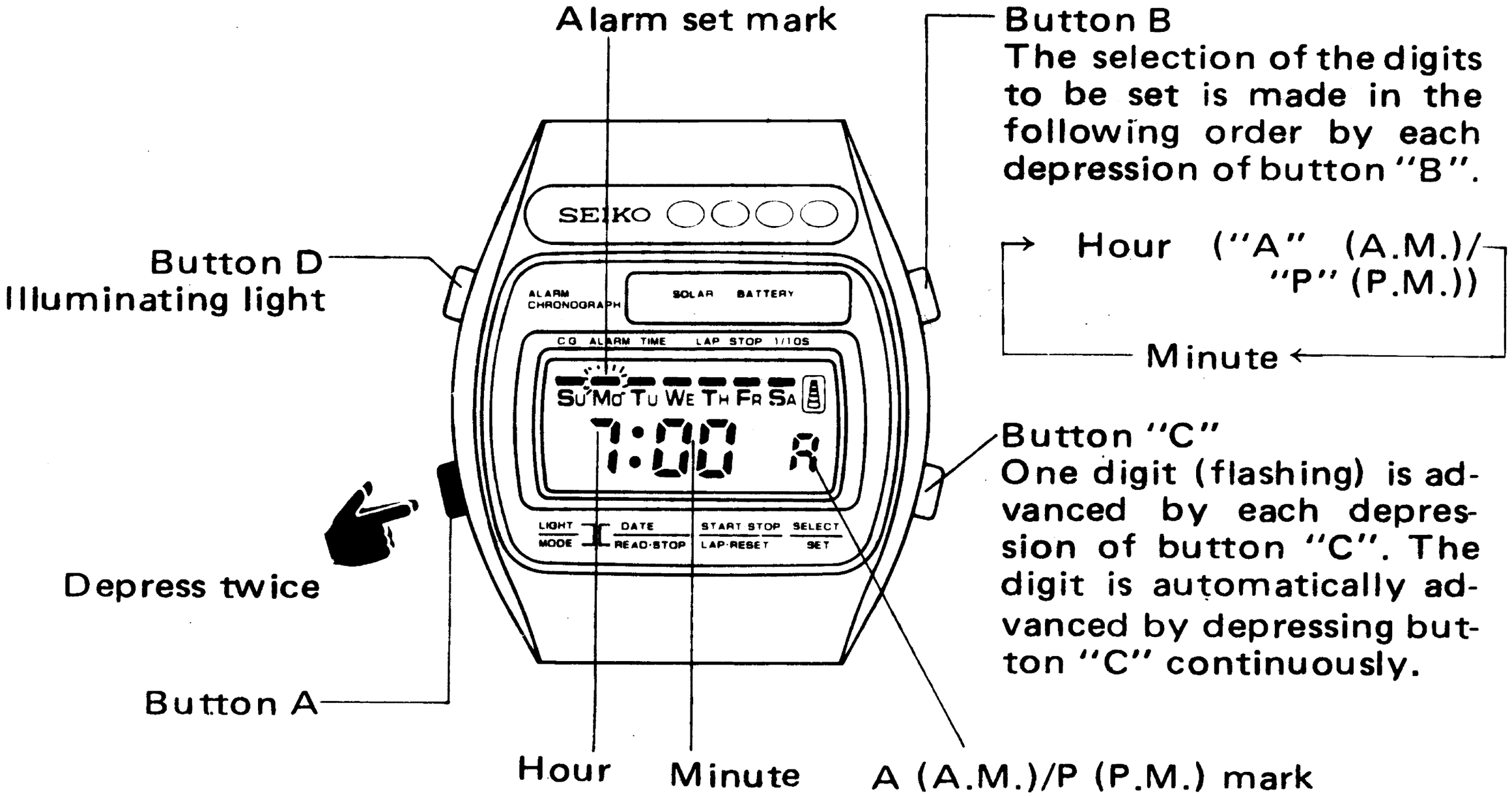


Note:

1. For multiple lap times repeat parts two and three of section two above.
2. During the stopwatch measurement you may return to the time display or any other display by depressing button "A". This will not disturb the recording of the stopwatch. To return to the stopwatch depress button "A" again.
3. If the lap mark is flashing while the stop mark is flashing, depress button "C" twice to reset to "0:00-0".

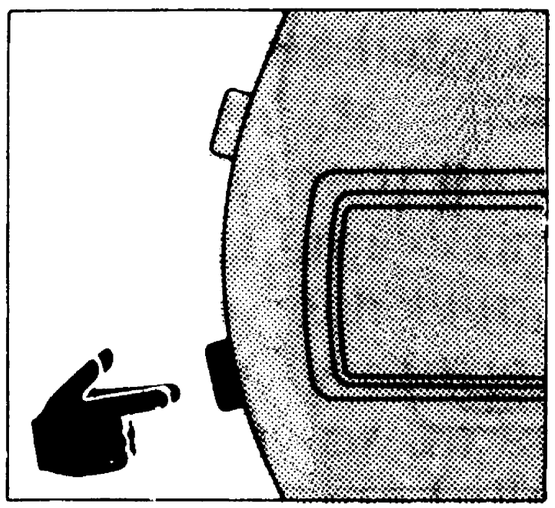
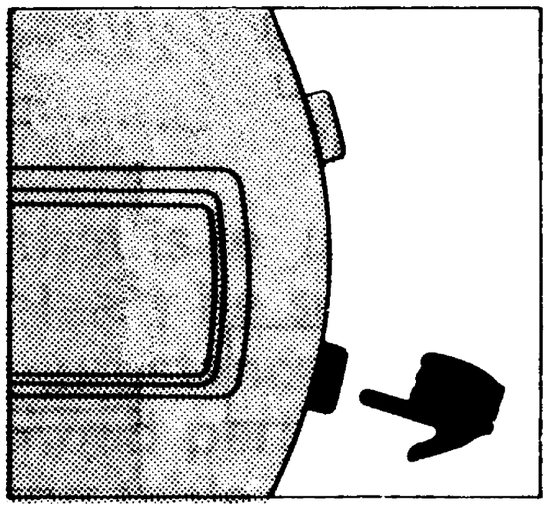
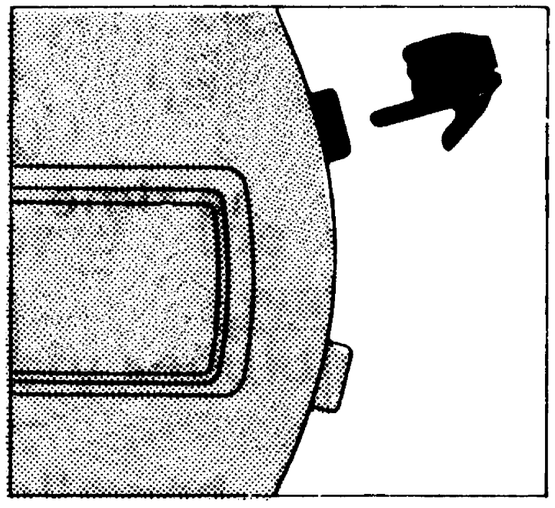
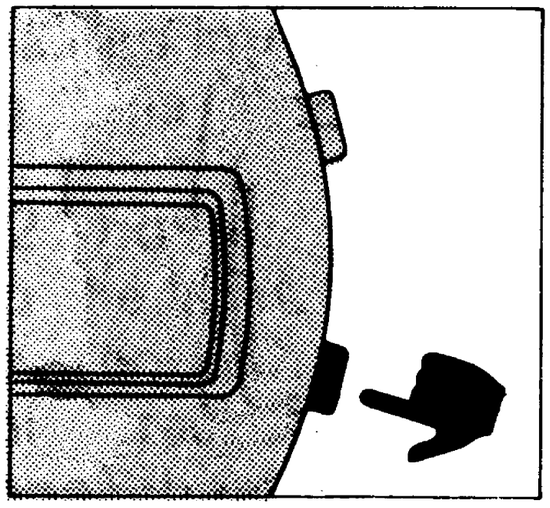
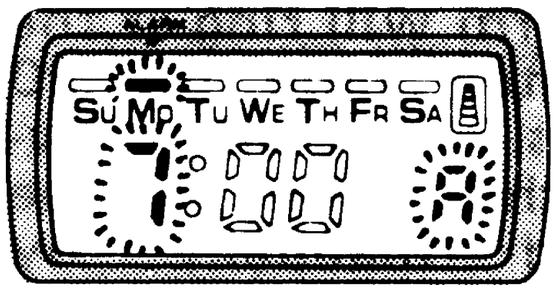
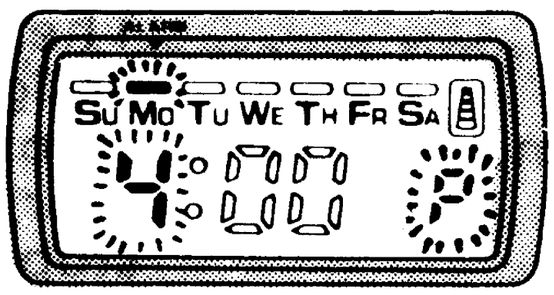
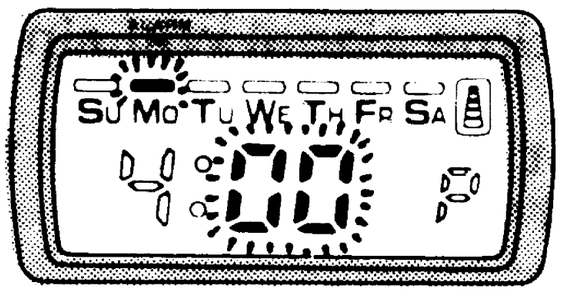
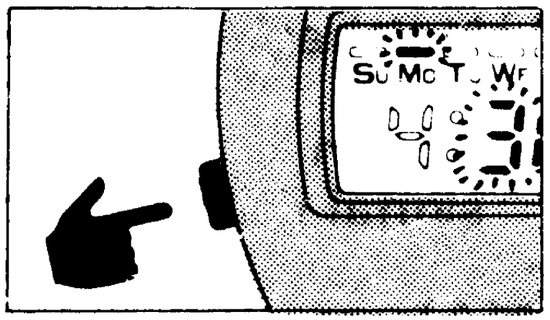
HOW TO SET THE ALARM TIME

From the time display depress button "A" twice to activate the alarm function. The alarm set mark starts flashing.



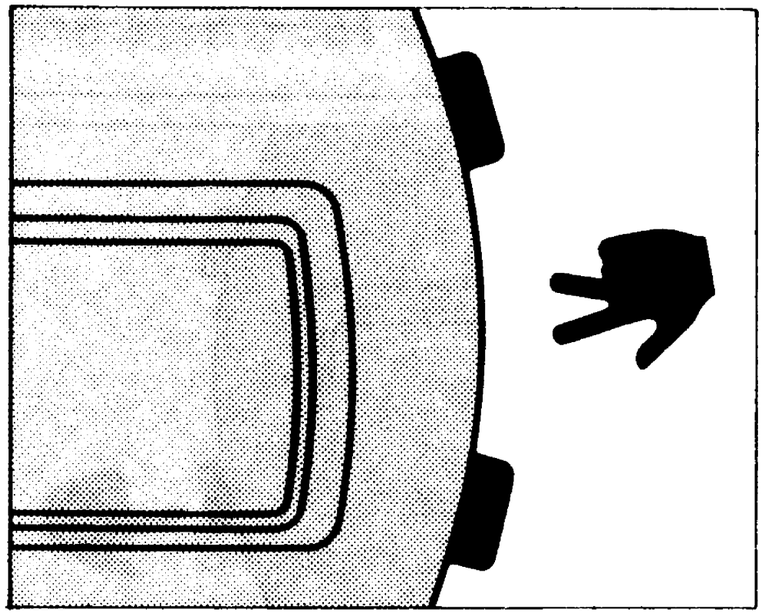
Remarks: The illustrations show how to change the alarm time from 7:00 A.M. to 4:30 P.M.

HOUR ⟶ **MINUTE**

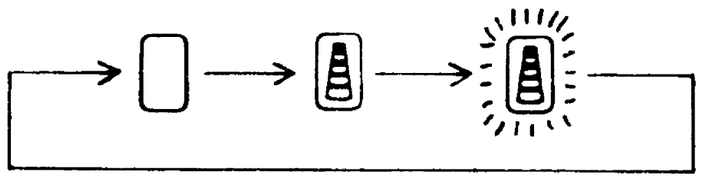
SELECT	SET	SELECT	SET
			
			
Depress button "A" twice and the alarm set mark, hour digit and A (A.M.)/ P (P.M.) start flashing.	One digit (hour) is advanced by each depression of button "C".	Depress button "B" and the minute digits start flashing.	One digit (minute) is advanced by each depression of button "C". After all adjustments, depress button "A" to return to the time display.*

* If button "A" is not depressed, the time display will automatically return within 2 minutes.

ALARM DISENGAGING AND REENGAGING, TIME SIGNAL AND ALARM TEST



In the time display, selection of the alarm mark is made in the following order by depressing buttons "B" and "C" at the same time.

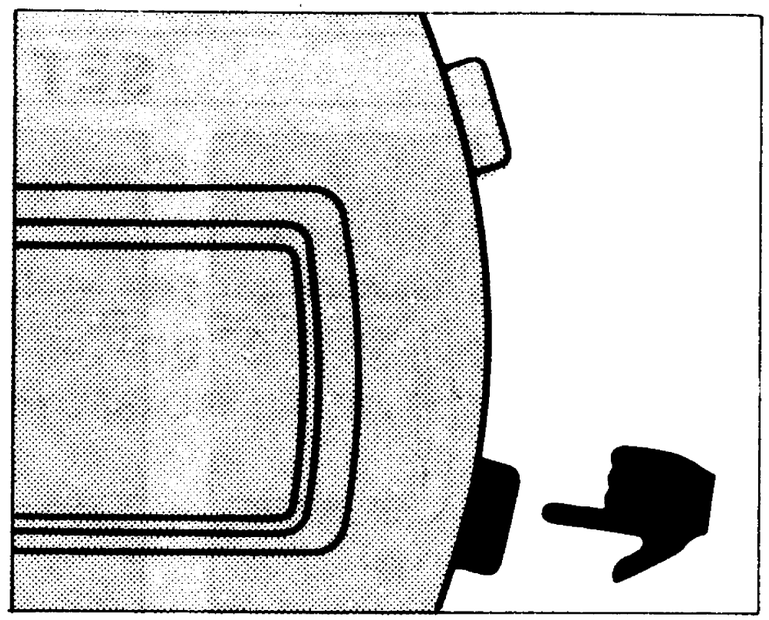


▯ Neither alarm nor time signal will ring.

Alarm will ring at the designated time but time signal will not ring.

Alarm will ring at the designated time and time signal will ring every hour on the hour.

HOW TO STOP THE ALARM



The alarm will ring at the designated time for 20 seconds and stop. However, the alarm can be stopped manually by simply depressing button "C".

ALARM TEST

In the time display when you depress buttons "B" and "C" at the same time the alarm will ring.
When testing the alarm, the selection of the alarm mark will advance one setting. Depress buttons "B" and "C" twice after each alarm test to be sure that the alarm is returned to the original alarm setting.

BATTERY RECHARGING

1. The secondary battery needs to be recharged when you see all the digits in the display flashing. However, the watch will remain accurate while all the digits are flashing. It is recommended that the secondary battery be recharged immediately after all the digits start flashing. If not recharged immediately, the secondary battery will require a longer charging time than that mentioned below.
2. The charging time that is required to operate the watch for 24 hours:
   When recharging, please be sure to expose the watch face to the light. Under normal wearing circumstances the battery should always have enough charge to run for an extended period of time. However, if you must recharge the battery the following table should be followed. (For additional charging over 24 hours increase the charging time in equal proportion to the desired time period.)

Type of Light	Time (approx.)
• Direct sunlight	3 minutes
• Artificial light:	
Incandescent lamp . . . . . 100W/30 cm (12 inches) directly under the light	25 minutes

3. Avoid an extremely high or low temperature when recharging
   - Do not charge the watch unnecessarily close to a high temperature light for a long period of time.
   - Do not charge under direct sunlight for a long time when the temperature is very high.

TO PRESERVE THE QUALITY OF YOUR WATCH

Your watch contains the highly precise electronic circuit and crystal oscillator, and to maintain its high accuracy, you should not subject it to violent shocks or extreme temperature. Be sure to check if "WATER RESISTANT" is shown on the back of your watch case. If your watch is water resistant, please follow the instructions below.

- Do not depress any buttons when the watch is in water.
- If the watch is exposed to water, rinse it in fresh water and then wipe it thoroughly dry.
- Have your SEIKO watch checked by an AUTHORIZED SEIKO DEALER periodically to be sure that the case, button, gasket and crystal seal remain intact.

Note: If your watch is not water resistant, care should be taken not to get it wet as water may damage the module. If a non-water resistant watch becomes wet, we suggest that you have it checked by an AUTHORIZED SEIKO DEALER to be sure that no watch damage occurred.