PULSAR

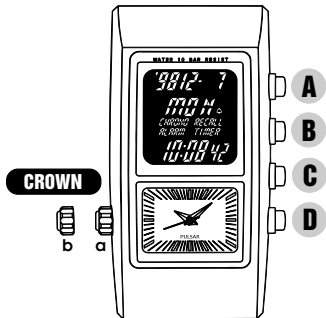## CAL. V091
DUO-DISPLAY QUARTZ

- Analogue time display
- Digital time and calendar
- 100-hour stopwatch
  with lap time signal function
- Memory recall function
- Countdown timer
- 5-channel daily alarm
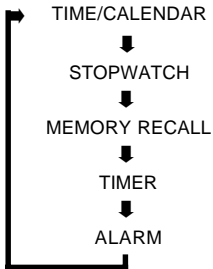- Illuminating light (electroluminescent panel)

DISPLAY AND MODE CHANGE

CROWN

b a

a: Normal position

b: Extended position

D With each press, the mode in the digital display changes in the following order:

TIME/CALENDAR

⬇

STOPWATCH

⬇

MEMORY RECALL

⬇

TIMER

⬇

ALARM

SCREW DOWN CROWN

[for models with screw down crown]

Unlocking the crown

1. Turn Crown counterclockwise until you no longer feel the threads turning.

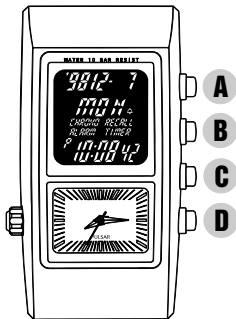2. Crown can be pulled out.

Locking the crown

1. Push Crown back in to normal position.

2. Turn Crown clockwise while pressing it lightly until tight.

TIME/CALENDAR SETTING

● Before setting the analogue time, be sure to set the digital time.

DIGITAL TIME/CALENDAR SETTING

D Press to show TIME/CALENDAR mode.

C Press for 2 to 3 seconds.

A Select the digits to be adjusted.

B Set the flashing digits. (Increasing digits)
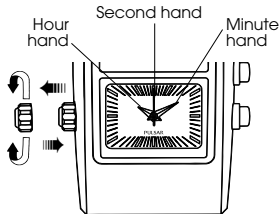
or

D Set the flashing digits. (Decreasing digits)

4

C Return to TIME/CALENDAR mode.

Selection of the digits

Seconds ≻ Minutes ≻ Hour ≻ Date ≻ Month ≻ Year

⋀⎯⎯⎯⎯⎯⎯ 12-/24-hour indication ⎯⎯⎯⎮

ANALOGUE TIME SETTING

Hour hand · Second hand · Minute hand
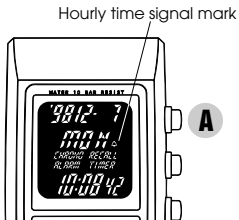
CROWN

1 Pull out when the second hand is at the 12 o'clock position.

2 Turn to set the hour and minute hands.

3 Push back in to normal position when the second digits count "00" in the digital time display.

5

TURNING ON/OFF OF HOURLY TIME SIGNAL AND BUTTON OPERATION CONFIRMATION SOUND

Hourly time signal mark

A With each press in TIME/CALENDAR mode, the hourly time signal and sound for button operation confirmation are alternately switched on and off.

*   *When the hourly time signal mark is displayed, the hourly time signal rings every hour on the hour and the confirmation sound beeps with each press of the buttons.*

STOPWATCH MODE

● The stopwatch measures up to 100 hours in 1/1000 second increments.
● The first 100 lap times are automatically stored in memory.
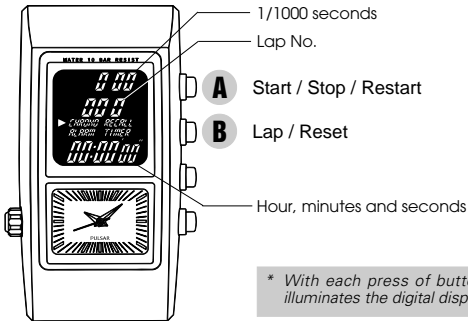
1/1000 seconds

Lap No.

A Start / Stop / Restart

B Lap / Reset

Hour, minutes and seconds

With each press of button A or B, the light illuminates the digital display for 3 seconds.

7

Lap time measurement

A ▶ **B** ▶ **B** ·····▶ **A** ▶ **B**
START   LAP 1   LAP 2   STOP   RESET

● *Lap time signal function:*
Starting from 10 seconds before the current lap time measurement reaches the previous lap time, the watch beeps at 1-second intervals. When the measurement reaches the previous lap time, the watch gives out a long beep.
To stop it manually, press button C or D.

* The watch does not beep if the previous lap time is 10 seconds or less.

MEMORY RECALL MODE

● The stored data can be recalled either during or after the measurement.

1/1000 seconds

Lap No.
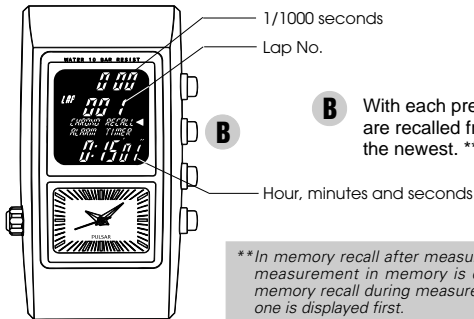
B With each press, stored data are recalled from the oldest to the newest. **

Hour, minutes and seconds

**In memory recall after measurement, the oldest measurement in memory is displayed first. In memory recall during measurement, the newest one is displayed first.*

* With each press of button B, the light illuminates the digital display for 3 seconds.*

9

TIMER MODE

● The timer can be set up to 9 hours and 59 minutes in minute increments.
● The number of times the timer repeats the countdown can be set from 1 to 99 times.

No. of times the coundown was repeated

No. of times the coundown is to be repeated
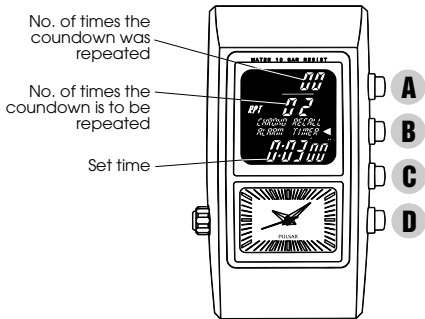
Set time

TIMER SETTING

C Press for 2 to 3 seconds.

▼

A Select the digits to be adjusted.

> Selection of the digits
>
> Hour ➢ Minutes ➢ No. of times the countdown is to be repeated
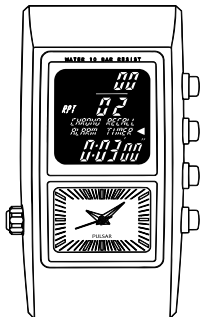
▼

B Set the flashing digits. (Increasing digits)

or

D Set the flashing digits. (Decreasing digits)

▼

C Return to TIMER mode.

TIMER OPERATION

A Start / Stop / Restart

B Reset

With each press of button A or B, the light illuminates the digital display for 3 seconds.

At 3, 2 and 1 seconds before the set time is up, a beep sounds and the digital display is illuminated. When the set time is up, a warning sound beeps for 6 seconds as the light illuminates the digital display.
To stop them manually, press any of the buttons. While the stopwatch is counting, press button C or D to stop the timer warning sound.

12

ALARM MODE

● The alarm can be set to ring daily at five different times a day.
● The alarms can be engaged and disengaged independently of one another.
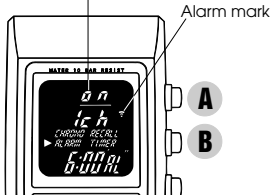
Alarm channel
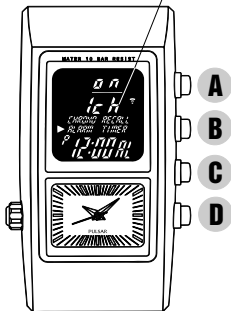
ALARM TIME SETTING

B Press to select the desired alarm channel.

C Press for 2 to 3 seconds.

A Select the digits to be adjusted (hour/minutes).

B Set the flashing digits. (Increasing digits)

or

D Set the flashing digits. (Decreasing digits)

13

Return to ALARM mode.

> * "on" and the alarm marks appear and the alarm is automatically engaged.

ALARM ENGAGEMENT/DISENGAGEMENT

"on"/"off" mark

Alarm mark

B Press to select the desired alarm channel.

A With each press, the selected alarm is engaged and disengaged alternately.

> * At the designated time, the alarm rings for 20 seconds.
> To stop it manually, press any of the buttons. While the stopwatch is counting, press button C or D to stop the alarm.

14

ILLUMINATING LIGHT (Electroluminescent panel)
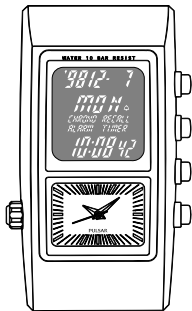
B Turn on the illuminating light.

* The digital display is evenly illuminated for 3 seconds.

NOTES ON OPERATING THE WATCH

DISPLAY AND MODE CHANGE
● When the confirmation sound is turned on, a beep sounds with each press of button D to change over the mode. It sounds in a different tone when the TIME/CALENDAR mode appears, so that you can easily know the mode shown.

TIME/CALENDAR SETTING
[DIGITAL TIME/CALENDAR SETTING]
● The calendar automatically adjusts for odd and even months including February of leap years from 1998 to 2047.
● Once the year, month and date have been set, the day of the week is automatically set.
● **Setting the seconds:**
  • With the second digits flashing, press button B in accordance with a time signal. The second digits are reset to "00".
  • When the seconds count any number from "30" to "59" and button B is pressed, one minute is added and the seconds are reset to "00".
● The flashing digits except the seconds and 12-/24-hour indication move quickly if button B or D is kept pressed.
● When setting the hour digits in the 12-hour indication, check that AM/PM is properly set. Only the "P" (PM) mark is displayed. For the AM setting, there is no indication.

16

● If the watch is left untouched with the digits flashing, it will automatically return to the TIME/CALENDAR mode in 2 to 3 minutes.

● **Note on unusual display:**
   While setting the time/calendar, all the segments of the display will light up if both buttons A and B are pressed at the same time. This is not a malfunction. Press any one of the buttons to return to the TIME/CALENDAR mode, and then set the time/calendar again.

[ANALOGUE TIME SETTING]

● When setting the minute hand, first advance it 4 to 5 minutes ahead of the desired time and then turn it back to the exact minute.

● When the crown is pulled out or pushed in for time setting, the minute hand may move slightly. However, this is not a malfunction.

[TURNING ON/OFF OF HOURLY TIME SIGNAL AND BUTTON OPERATION CONFIRMATION SOUND]

● If the hourly time signal coincides with the timer warning sound, the lap time signal or the alarm, the hourly time signal will not ring.

STOPWATCH MODE

● After measuring 100 hours, the stopwatch will automatically be reset to "00".

● Restart and stop of the stopwatch can be repeated by pressing button A.

● Lap time measurement can be repeated by pressing button B.

● Lap time measured remains displayed for 5 to 6 seconds. Then, the display automatically

returns to the measurement in progress.

● The lap number counts up to "199". After "199", the number is displayed in two digits such as "00" for 200, "01" for 201, and so on.
● When button A is pressed to stop the lap time measurement, the lap number is increased by one. After 5 to 6 seconds, the total time is displayed in place of the lap time.
● Even if the STOPWATCH mode is changed to another while the measurement is in progress, it continues counting properly and the flashing STOPWATCH mode mark indicates that the stopwatch is in use. After the stopwatch is used, however, be sure to reset it as the battery energy is consumed enormously to shorten the battery life.

MEMORY RECALL MODE

● Even if the digits are reset to "00" in the stopwatch measurement, the stored data is not erased and can be recalled unless a new measurement is started.
● The stored data is recalled quickly if button B is kept pressed.

TIMER MODE

[TIMER SETTING]
● The flashing digits move quickly if button B or D is kept pressed.
● If the watch is left untouched with the digits flashing, it will automatically return to the TIMER mode in 2 to 3 minutes.

[TIMER OPERATION]

18 ● Restart and stop of the timer can be repeated by pressing button A.

- If the timer warning sound and the lap time signal coincide with each other, the beeping sound starting first will stop when the other starts.
- Even if the TIMER mode is changed to another while the measurement is in progress, it continues counting properly and the flashing TIMER mode mark indicates that the timer is in use. After the timer is used, however, be sure to reset it as the battery energy is consumed enormously to shorten the battery life.

ALARM MODE

[ALARM TIME SETTING]

- When the time function is displayed in the 24-hour indication, the alarm will also be displayed in the 24-hour indication.
- The flashing digits move quickly if button B or D is kept pressed.
- When setting the hour digits in the 12-hour indication, check that AM/PM is properly set. Only the "P" (PM) mark is displayed. For the AM setting, there is no indication.
- If the watch is left untouched with the digits flashing, it will automatically return to the ALARM mode in 2 to 3 minutes.

[ALARM ENGAGEMENT/DISENGAGEMENT]

- When any of the alarms is engaged, the alarm mark is displayed.
- The alarm of channel 5 rings differently from that of the other channels, so that channel 5 can be used for a particular purpose.
- If the alarm coincides with the timer warning sound, the alarm stops ringing while those beeps are ringing.

● **Alarm test:** The alarm can be tested by keeping buttons A and B pressed in the TIME/CALENDAR mode.

ILLUMINATING LIGHT (Electroluminescent panel)

● The electroluminescent panel loses its luminance as the battery voltage gets lowered. Also, its luminance level decreases gradually with use. After 200 hours of use, the level decreases by about half.

● When the illuminating light becomes dim, replace the battery with a new one. If the light remains dim after the battery is replaced, have the electroluminescent panel replaced with a new one by the retailer from whom the watch was purchased. It will be replaced at cost.

● While the illuminating light is used, the watch gives out a slight noise. However, this is not a malfunction.

BATTERY CHANGE

2 Years

Battery life : Approx. 2 years
Battery   : SEIKO SR1120W, 2 pieces

- *The battery life may be less than 2 years if the alarm is used more than once a day, the confirmation sound more than 50 times a day, the illuminating light more than 3 times a day, the stopwatch for more than 10 hours a week, and/or the timer for more than 10 hours a week.*
- *As the batteries are inserted at the factory to check the function and performance of the watch, their actual lives once in your possession may be less than the specified period.*
- *When the batteries expire, be sure to replace them as soon as possible to prevent any malfunction.*
- *We recommend that you contact an AUTHORIZED PULSAR DEALER for battery replacement.*

- Necessary procedure after battery change

  After the batteries are replaced with a new one, or in case an abnormal display (broken digits, etc.) appears in the digital display, follow the procedure below to reset the IC.

Press and hold buttons A, B, C and D at the same time for 2 to 3 seconds. The digital display will become blank, and "12:00 oo, Thursday, January 1st, 1998" will be shown when the buttons are released.

* Before using the watch, set the time/calendar and alarm.

⚠ WARNING

- Do not remove the battery from the watch.
- If it is necessary to take out the battery, keep it out of the reach of children. If a child swallows it, consult a doctor immediately.
- Never short-circuit, tamper with or heat the battery, and never expose it to fire. The battery may burst, become very hot or catch fire.

⚠ CAUTION

- The battery is not rechargeable. Never attempt to recharge it, as this may cause battery leakage or damage to the battery.

TO PRESERVE THE QUALITY OF YOUR WATCH

WATER RESISTANCE

● **Non-water resistant**

• If the watch becomes wet, have it checked by an AUTHORIZED PULSAR DEALER or SERVICE CENTER.

● **Water resistant 5/10/15/20 bar**

5 bar WR

10/15/20 bar WR

• Before using in water, be sure the crown is pushed in completely.
• Do not operate the crown and buttons when the watch is wet or in water. If used in sea water, rinse the watch in fresh water and dry it completely.
• When taking a shower with the water resistant 5 bar watch, or taking a bath with the water resistant 10, 15 or 20 bar watch, be sure to observe the following:
  * Do not operate the crown or push the buttons when the watch is wet with soapy water or shampoo.
  * If the watch is left in warm water, a slight time loss or gain may be caused. This condition, however, will be corrected when the watch returns to normal temperature.

23

TEMPERATURES

Your watch works with stable accuracy within a temperature range of 5° C and 35° C (41° F and 95° F).

Temperatures over 50° C (122° F) or below −5° C (+23° F) may cause a slight time loss or gain or battery leakage or shorten the battery life. However, the above conditions will be corrected when the watch returns to normal temperature.

MAGNETISM

The analogue unit of your watch will be adversely affected by strong magnetism, though the digital unit will not be affected. Keep the watch away from close contact with magnetic objects.

CARE OF CASE AND BRACELET

To prevent possible rusting of the case and bracelet caused by dust, moisture and perspiration, wipe them periodically with a soft dry cloth.

SHOCKS & VIBRATION

Light activities will not affect your watch, but be careful not to drop your watch or hit it against hard surfaces, as this may cause damage.

CHEMICALS

Be careful not to expose the watch to solvents, mercury, cosmetic spray, detergents, adhesives or paints. Otherwise, the case, bracelet, etc. may become discolored, deteriorated or damaged.

PERIODIC CHECK

It is recommended that the watch be checked once every 2 to 3 years. Have your watch checked by an AUTHORIZED PULSAR DEALER or SERVICE CENTER to ensure that the case, crown, buttons, gasket and crystal seal remain intact.

PRECAUTION REGARDING CASE BACK PROTECTIVE FILM

If your watch has a protective film and/or a sticker on the case back, be sure to peel them off before using your watch.

STATIC ELECTRICITY

The IC (Integrated Circuit) used in your watch will be affected by static electricity which may disturb the display. Keep the watch away from close contact with objects such as TV screens which emit strong static electricity.

LIQUID CRYSTAL PANEL

The normal life expectancy for the liquid crystal panel of the watch is approximately 5 years. After that it may decrease in contrast, becoming difficult to read. Please contact your AUTHORIZED PULSAR DEALER or SERVICE CENTER if you wish to have a new panel fitted (guaranteed one year).