

***TECHNICAL
INFORMATION***

CITIZEN QUARTZ

Cal.No.941 ※※

§ 1. OUTLINE



This is a popular-type digital quartz crystal watch for ladies, which has been designed to develop a new field of the watch market.

It features the alarm function of the "caseback" (vibrating plate) type along with the compact incorporation of the chime and stopwatch functions.

For the appearance design of the watch, the digit selection button (S) button is located at the 8-o'clock position to give a neat external form as a whole.

§ 2. FEATURES

1) Popular-type and multi-function digital quartz crystal watch for ladies

- Alarm function
- Chime display
- Stopwatch function
- Illumination lamp
- Alarm monitor
- Fully automatic calendar (including leap years)

2) Digital Frequency Control (DFC)

When measuring the time rate, the measurement unit time (MEASURE TIME) must be set to "10 sec." or its integer-fold value.

This is based on the fact that the frequency is corrected every 10 sec. within the circuit. With the unit time of "2 sec.", it is impossible to obtain the correct measurements.

This watch incorporates no trimmer condenser, and thus the time rate can be controlled by the break or make of the terminal pattern for the "Digital Frequency Control" mentioned above. However, the time rate adjustment is not given generally at the market.

3) Power cell life of about 2 years

The watch can operate on just a single unit of the small-size silver oxide cell for about 2 years with no discontinuation, although it incorporates multiple functions.

§3. SPECIFICATIONS

Caliber No.	9410-00A
Module	Outer dia.: 19.2mm ϕ Thickness: 4.43mm (Power cell part 5.25mm)
Oscillation	32,768 Hz
Accuracy	± 15 sec./month at normal temperatures
Digital display	<ul style="list-style-type: none"> •FE twist nematic LC (liquid crystal) •2-division multiplex driving •Constant time display: Hour, minute, second and AM/PM •Display via button operation: Month, date and day •Alarm display: by switching •Chime display: by switching •Stopwatch display: by switching <ul style="list-style-type: none"> (a) Minute, second and 1/100 sec. (0'00''00 ~ 19'59''99) (b) Hour, minute and second (0:20'00'' ~ 11:59'59'')
Integrated circuit	C/MOS-LSI
Effective temperature range	0° ~ 55°C
Additional functions	<ul style="list-style-type: none"> •Illumination lamp •Fully automatic calendar (including leap years) •Alarm monitor •Function marks
Power cell	Parts No. : 280-44 Manufacturer's code: SR926W Nominal voltage : 1.55V Size : 9.5 ϕ x 2.6mm Capacity : 38mAH Life time : About 2 years (5 sec. lamp lighting, 30 sec. alarm ringing and 24 times chime per day)

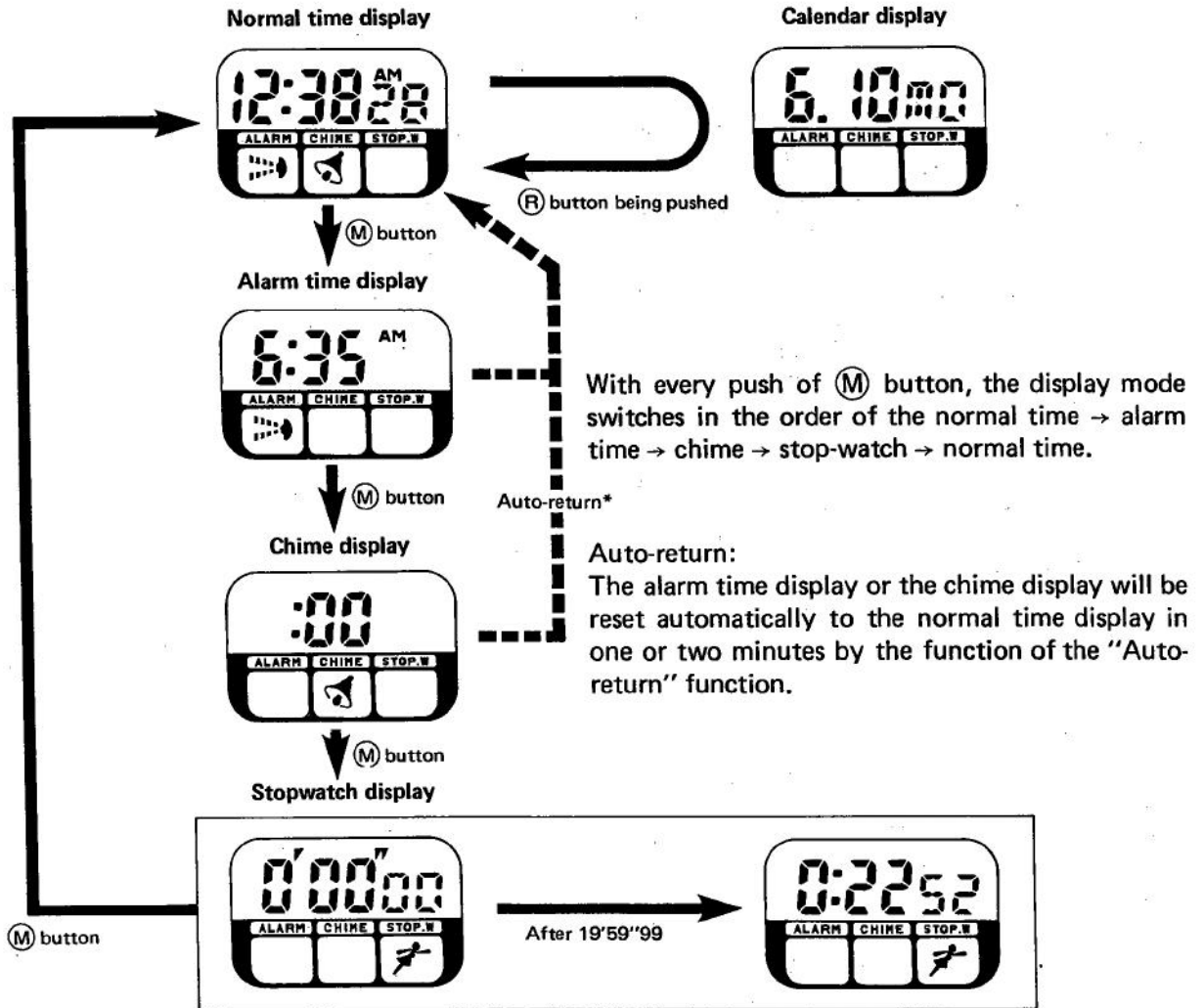
§ 4. HANDLING INSTRUCTION

1) Push-buttons

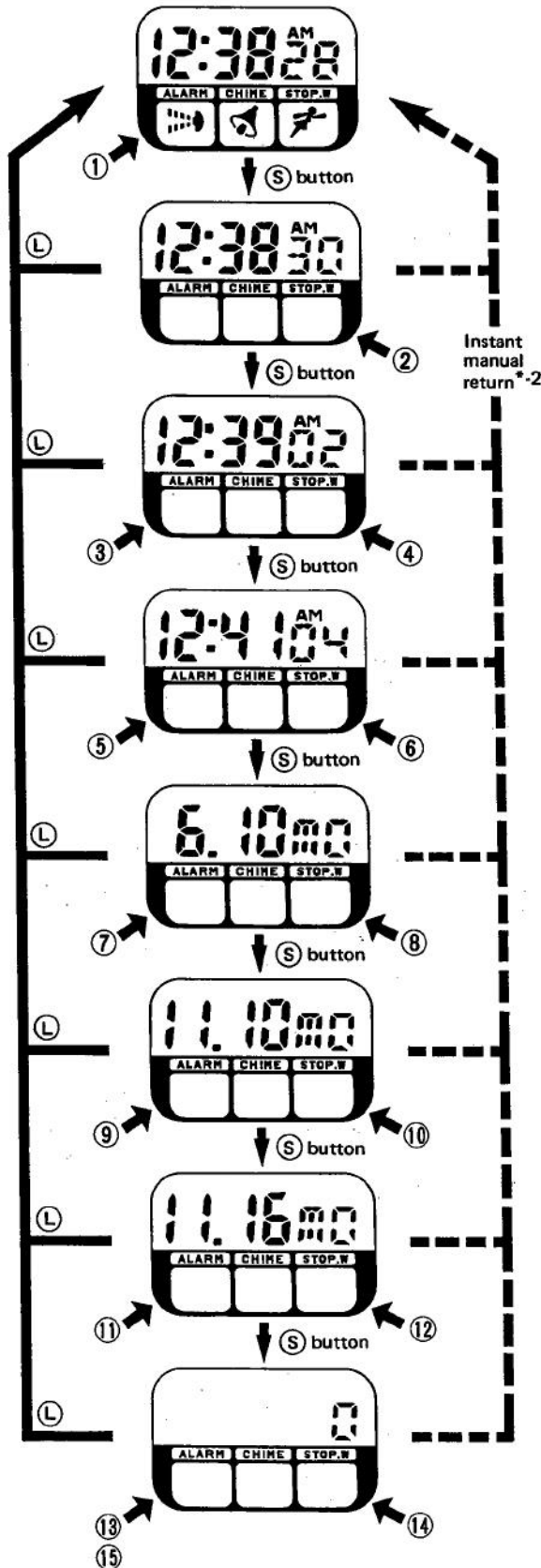


12:38'28" PM (Alarm and chime ON, stopwatch operating)

2) Mode switching



3) Time setting



•The flashing areas are shown in red color.

Normal time display

- With push of (S) button about 2 seconds under the normal time display, the "second" has flashing.

"Second" setting

- With push of (R) button, the "second" is reset to 0 when the "second" reads 00 ~ 29. In case the "second" reads 30 ~ 59, the "minute" is carried by one.

"Minute" setting

- With push of (S) button in the "second" setting mode, the "minute" has flashing.
- The "minute" is set with push of (R) button.

"Hour" setting

- With push of (S) button in the "minute" setting mode, the "hour" plus "AM/PM" have flashing.
- The "hour" is set with push of (R) button. Make sure AM or PM when setting the "hour".

"Month" setting

- With push of (S) button in the "hour" setting mode, the display changes from "hour, minute and second" to "month, date and day" along with the "month" flashing.
- The "month" is set with push of (R) button.

"Date" setting

- With push of (S) button in the "month" setting mode, the "date" has flashing.
- The "date" is set with push of (R) button.

"Day" setting

- With push of (S) button in the "date" setting mode, the "day" has flashing.
- The "day" is set with push of (R) button.

"Year" setting

- With push of (S) button in the "day" setting mode, the "year mark" has indicating.
- The "year" is set with push of (R) button. In this case, the year which can be divided by 4 is set to 0. For instance, the "year mark" is set to 0 for 1980 since that year is divisible by 4. And only 0 has flashing. The "year mark" varies in the order of 0 → 1 → 2 → 3 → 0.
- With another push of (S) button in the "year" setting mode, the mode is reset to the normal time display.

*-1 (Instant manual return)

The normal time display can be reset instantly from any mode of display with push of (L) button, although the time and calendar display changes normally in the order of second → minute → hour → month → date → day → year.

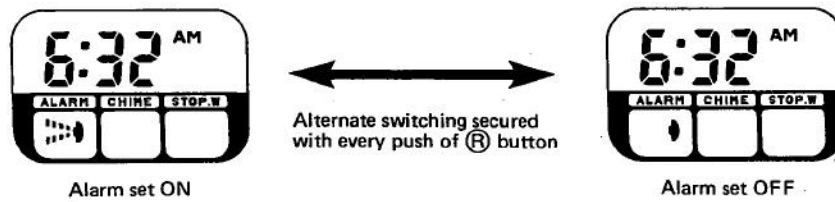
*-2 (Auto-return)

The normal time display can be reset automatically in one or two minutes in the mode of time setting owing to the "auto-return" function.

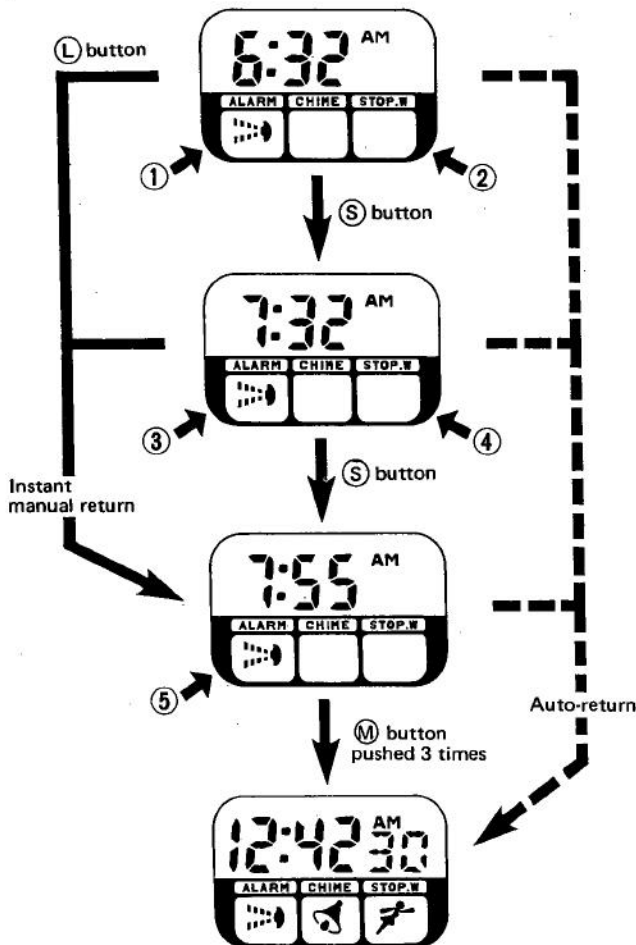
4) Alarm function

With a push of (M) button in the mode of normal time display, the alarm time display is secured.

(1) ON/OFF of alarm setting



(2) Setting of alarm time



Setting of alarm "hour"

- ① With push of (S) button about 2 seconds in the mode of alarm time display, the "hour" plus "AM/PM" have flashing.
- ② The "hour" is set with push of (R) button, making sure AM or PM.

Setting of alarm "minute"

- ③ With push of (S) button in the "hour" setting mode, the "minute" has flashing.
- ④ The "minute" is set with push of (R) button.

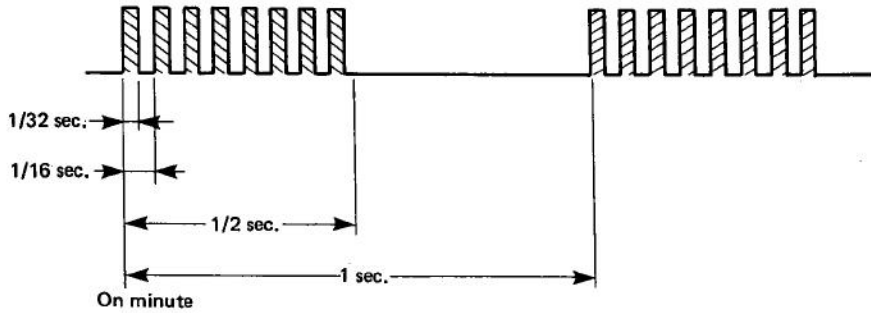
Display of alarm time

- ⑤ With the second push of (S) button, the "minute" ceases flashing. And the alarm time is displayed again.

Normal time display

The alarm time display is changed to the normal time display by pushing (M) button three times. With this watch, however, the normal time display can be reset automatically in one or two minutes owing to the "auto-return" function.

(3) Ring of alarm (every minute)



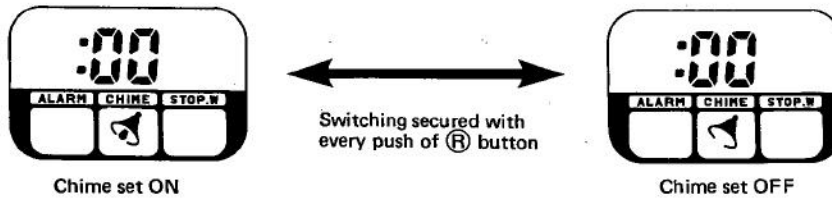
- (a) The alarm rings in short duration 8 times per second and for 30 seconds in all at the set time.
- (b) The alarm ring can be stopped at any moment with push of either one of the buttons (S), (R), (M) and (L).

(4) When the normal time display is reset after setting the alarm, the mark " ⏰ " is displayed to indicate that the alarm is being set.

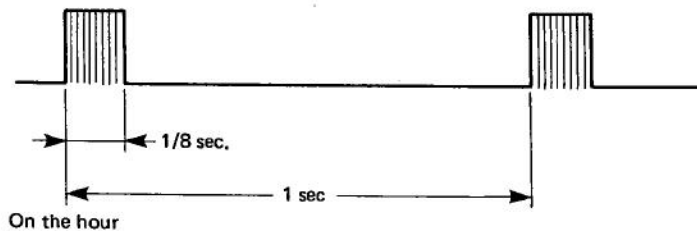
5) Chime function

With a push of (M) button in the mode of alarm time display, the chime display is secured.

(1) ON/OFF of chime setting



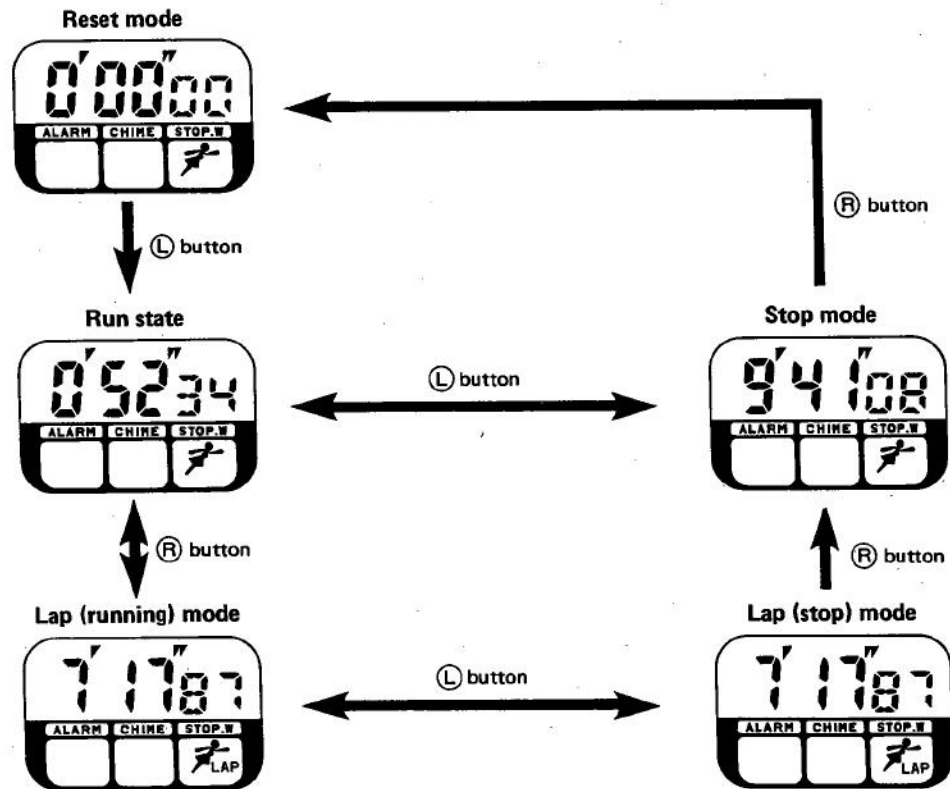
(2) Ring of chime (every hour on the hour)



- (a) When the chime is set ON, the ring sounds twice in long duration every hour on the hour.
- (3) When the normal time display is reset after setting the chime ON, the mark " 🕒 " is displayed to indicate that the chime is being set.

6) Stopwatch function

With a push of (M) button in the mode of chime display, the stopwatch display is secured in either one of the five modes shown below. The setting procedure starts at the "reset" mode which is secured with push of (L) and (R) buttons.



(a) Reset mode

The display of 0'00'00 is given to indicate the preparatory state for clocking. And with push of (L) button, the clocking starts to secure the "run" mode.

(b) Run mode

The clocking is under way with the mark " ▾ " flashing.

(c) Stop mode

With push of (L) button in the "run" mode, the flashing of " ▾ " stopped to discontinue the clocking. And then with push of (R) button, the display is returned to the "reset" mode.

(d) Lap (running) mode

The part-way time can be known in this mode, along with the display discontinued but the clocking still continued each. In this case, " ▾ " LAP" is flashing.

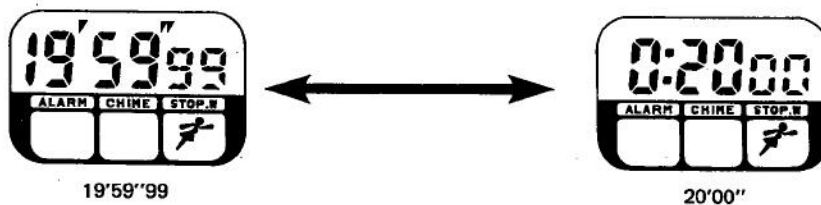
(e) Lap (stop) mode


The time can be known for both the 1st and 2nd places in this mode which can be secured with push of (L) button in the "lap (running)" mode. And then with push of (R) button, the "stop" mode is secured to show the clocking value continued from the "run" mode.

In this case, " ▾ " has no flashing.

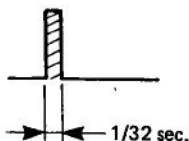
(1) Display transfer

The stopwatch display is given in "minute", "second" and "1/100 sec." during 00'00"00 ~ 19'59"99 and then in "hour", "minute" and "second" for 0:20 00 ~ 11:59 99 respectively.



(2) When the normal time display is reset in the "run" and "lap (running)" modes of the stopwatch display, the mark "  " is displayed to indicate that the clocking is under way.

(3) The confirmation tone is heard in short duration with every push of (L) button. The tone is also heard at every start and stop.



Alarm monitor



With the simultaneous push of (L) and (R) buttons under the normal time display, the alarm ring can be confirmed via the tone of long duration. This tone continues as long as the both buttons are pushed.



§ 5. TEST FUNCTION

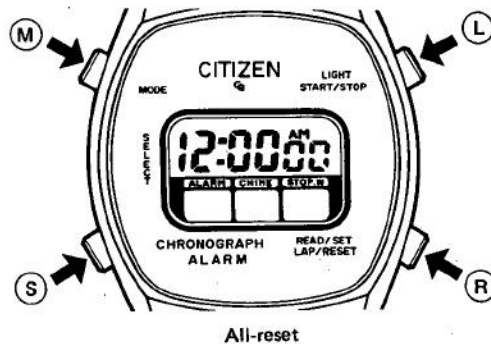
1) All-reset

The "all-reset" is applied with the simultaneous push of all push-buttons of (M), (S), (R) and (L) each.

•All-reset

Display mode: Time display
 Time: 12.00'00" AM
 Calendar: Sunday, January 1, leap year set (0)
 Alarm: 12:00' AM, OFF
 Chime: OFF

With release of either one of those buttons, the watch starts its function.



2) Lighting of all segments

With the simultaneous push of (S), (R) and (M) buttons each, the all segments glow.



§ 6. NOTES ON MEASUREMENT OF TIME RATE

With this caliber, the time rate is not given usually at the market since the frequency control has already given at the factory in terms of the digital circuit.

When measuring the time rate, the "MEASURE TIME" of the timing machine must be set to "10 sec." or its integer-fold value. This is based on the fact that the frequency control is given with every 10 seconds in the circuit. And thus the correct measurements cannot be obtained at the unit time other than "10 sec."