

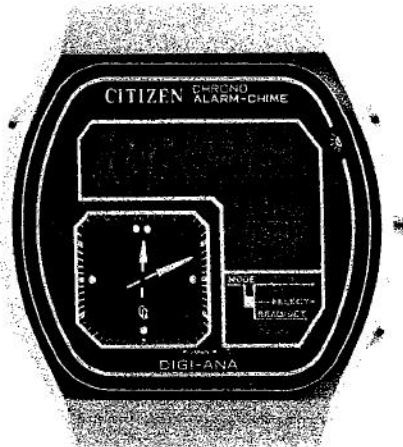
***TECHNICAL
INFORMATION***

CITIZEN QUARTZ

Cal. No. 891 ※ ※

 **CITIZEN**

§1. OUTLINE



Compared with the same-group watch Cal. No. 8900 which is precedingly put on the market, this "digital-analog" watch features more multiple functions with addition of such mechanisms as the alarm, chime and the illumination lamp.

The merits and advantages of both the digital and analog mechanisms are "docked" together into a new-type wristwatch in good balance and harmony.

In terms of the design, the L-shaped LC display panel and the square dial are well matched to present an attractive external appearance as a whole.

§2. FEATURES

- 1) The electronic watch (with no center second) for gentlemen, featuring the quartz crystal oscillation and LC display.
- 2) Just one chip of C/MOS-LSI incorporates various circuits for oscillation, dividing counting, control, buzzer, boosting, driving of LC display panel and driving of step motor respectively.
- 3) Digital display of multiple functions
The diverse display functions include the time display (hour, minute and second), the calendar display (month, date and day), the chime, the alarm and the stopwatch.
- 4) 12-/24-hour digital display switching function
The switching is possible between the 12-hour and 24-hour digital displays, and at the same time an automatic switching is given conveniently for the alarm setting.
- 5) Automatic calendar setting device
An automatic calendar setting is possible including the leap years. Thus the calendar is set automatically after it is once set as long as the power cell life lasts. (1970 ~ 2009)
- 6) Power cell life indicator
When the voltage of the power cell drops down, the colon of the LC display panel flashes to indicate replacement of the power cell.
- 7) The "dual time" is available through simultaneous application of both the analog and digital watches.

§3. SPECIFICATIONS

Caliber No.	8910-08A/8911-08A
Type	Digital-Analog watch (with no center second)
Movement	Size: 30.0mm ϕ
	Thickness: 4.97mm
	Max. thickness: 5.98mm
Oscillation	32,768Hz
Accuracy	± 15 sec./month at normal temperatures
Digital display	FE twist-type nematic liquid crystal
	Hour, minute and second (Normal time display)
	Month, date and day (By switching)
	Chime (By switching)
	Alarm time (By switching)
	Stopwatch (By switching)
Analog display	Converter: Bipolar step motor
	Hour/minute hands: 4-second step movement
Integrated circuit	C/MOS-LSI (1 unit)
Effective temperature range	$\pm 0^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Additional functions	12-/24-hour display switching function
	Illumination lamp
	Power cell life indicator
	Alarm monitor (Simultaneous push of both (L) and (R) buttons)
	Automatic calendar setting device
Power cell	Parts No.: 280-15 (WG-10)
	Nominal voltage: 1.55V (Ag ₂ O/K)
	Size: 11.6mm ϕ x 3.1mm
	Capacity: 75mAH
	Life: About 2 years

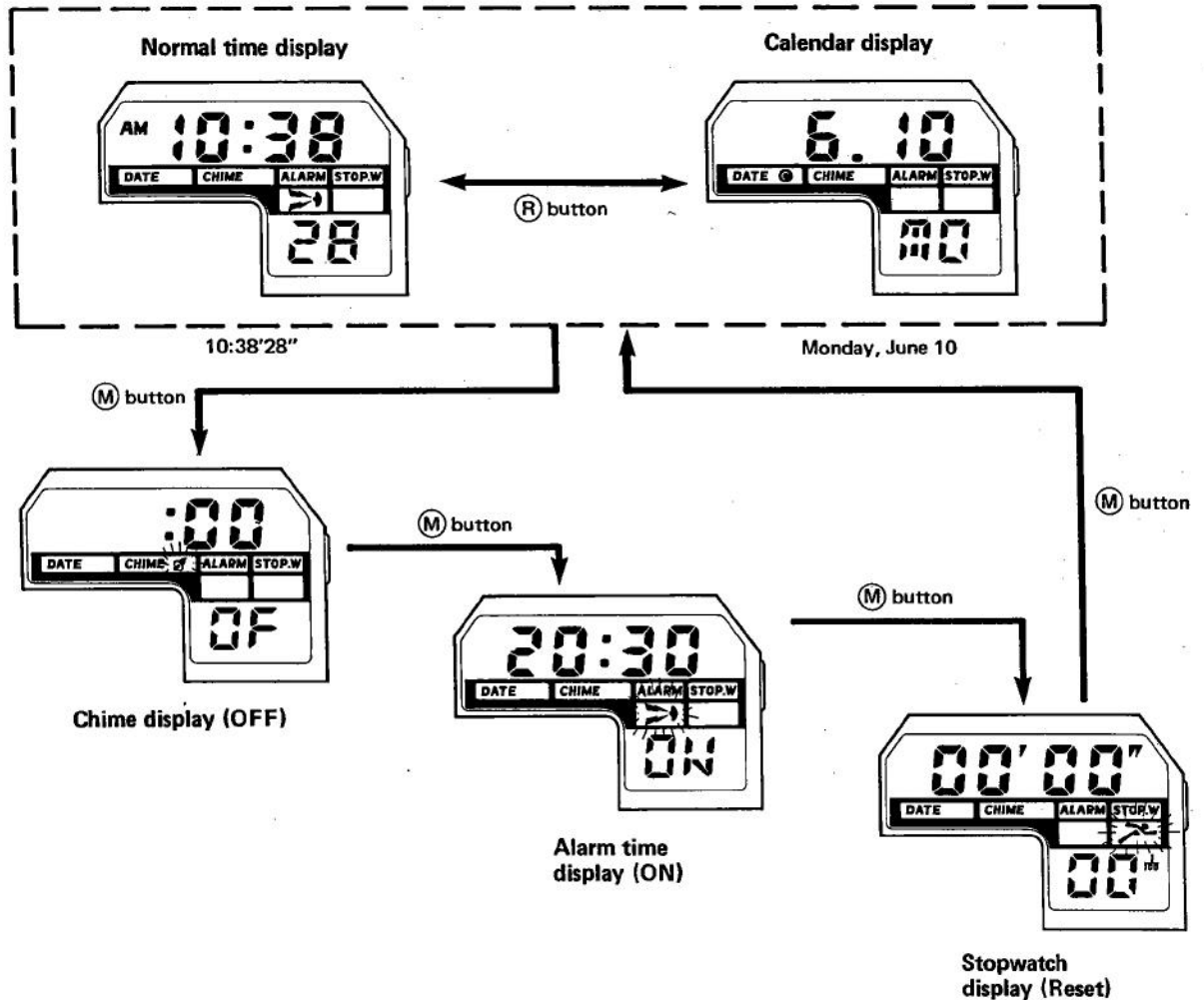
§ 4. HANDLING INSTRUCTIONS

1) Nomenclature

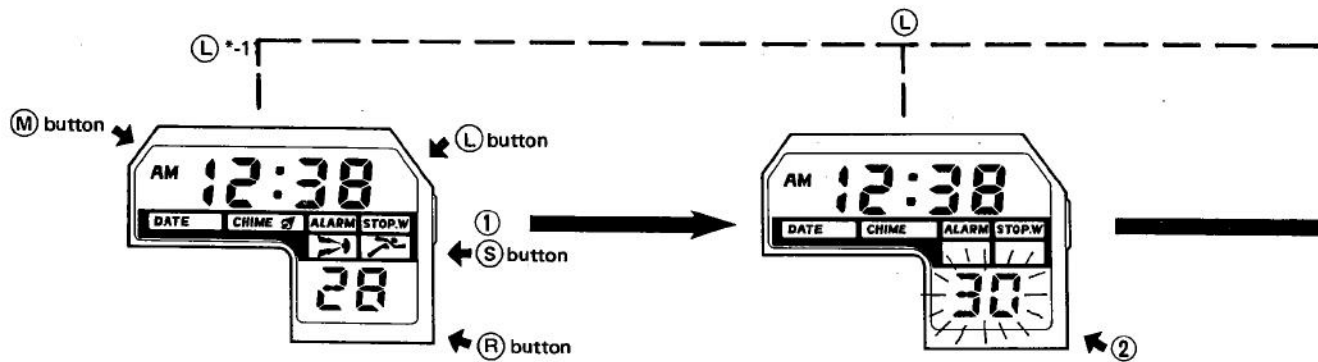


Time displayed above: 22:38'28" (24-hour display)

2) Mode switching



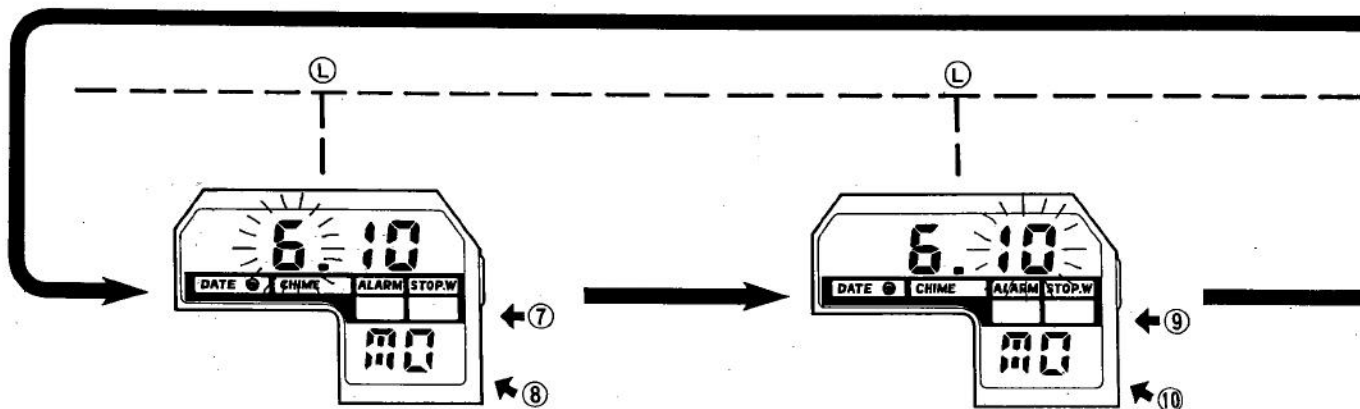
3) Setting of time and calendar (Digital)

**State of setting**

- ① With push of **(S)** button about 2 seconds under the time display, the "second" flashes.

Setting of "second"

- ② With push of **(R)** button simultaneously with the standard time signal, "00" second is given. The "minute" is carried by one digit while the "second" reads 30 ~ 59.

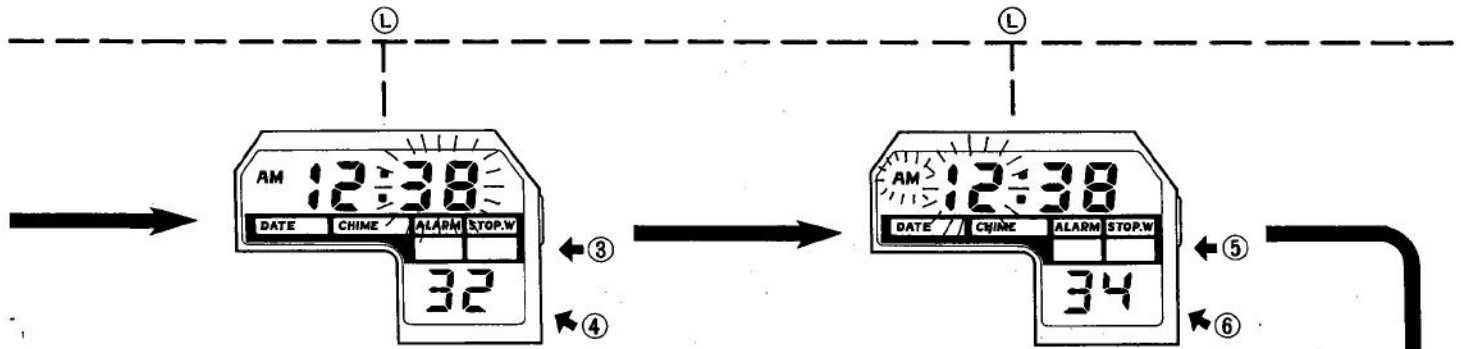
**Setting of "month"**

- ⑦ With push of **(S)** button, the "month" flashes.
 ⑧ The "month" advances with every push of **(R)** button.

Setting of "date"

- ⑨ With push of **(S)** button, the "date" flashes.
 ⑩ The "date" advances with every push of **(R)** button.

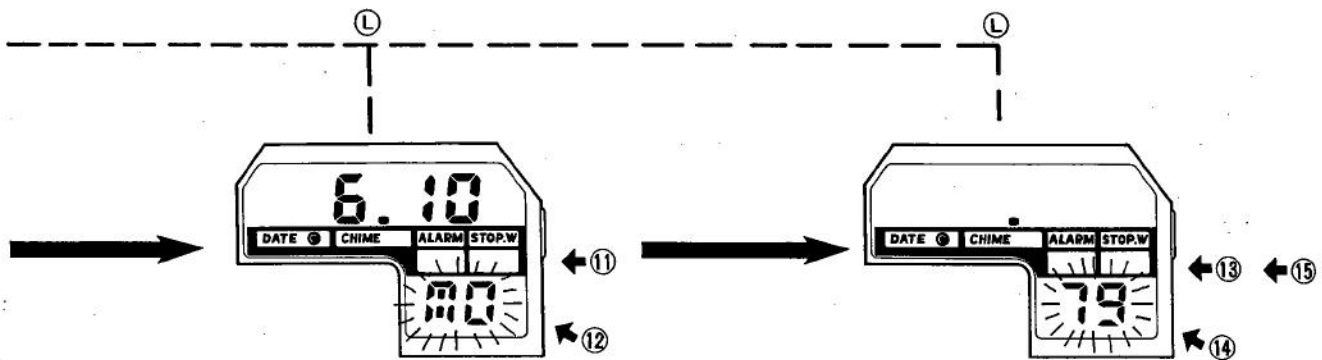
*-1: The time display can be reset from any setting mode with push of **(L)** button (Quick resetting device).

**Setting of "minute"**

- ③ With push of **(S)** button, the "minute" flashes.
- ④ The "minute" advances with every push of **(R)** button.

Setting of "hour"

- ⑤ With push of **(S)** button, both the "hour" and "AM/PM" flash.
- ⑥ The "hour" advances with every push of **(R)** button. Be careful of AM or PM.

**Setting of "day"**

- ⑪ With push of **(S)** button, the "day" flashes.
- ⑫ The "day" changes with every push of **(R)** button.

Setting of "year" *2

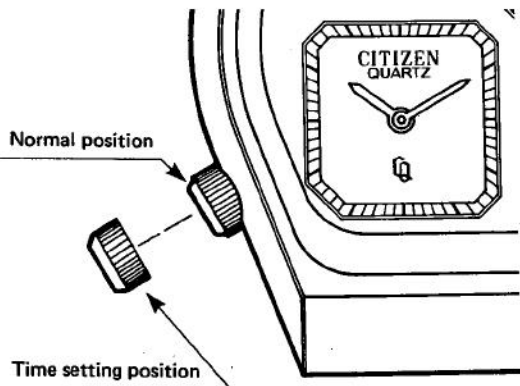
- ⑬ With push of **(S)** button, the "year" flashes.
- ⑭ The "year" changes with every push of **(R)** button.
- ⑮ With another push of **(S)** button the "time display" is reset.

• Abbreviations of "day" display

SU	: Sunday
MO	: Monday
TU	: Tuesday
WE	: Wednesday
TH	: Thursday
FR	: Friday
SA	: Saturday

*2: The "year" can be set in the cycle of 1970 ~ 2009 years.

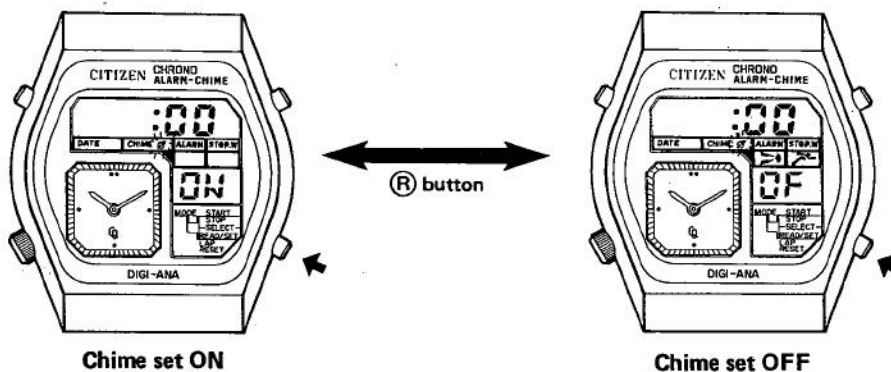
4) Setting of time (Analog)



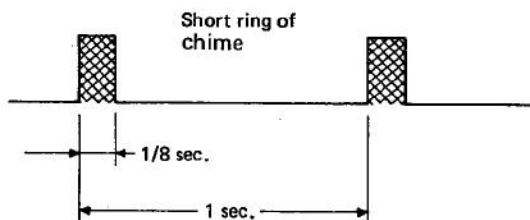
- (1) The crown is pulled out, and then the hands are turned to set the time.
- (2) When the time setting is over, the crown is pushed in completely.
 - The time can be set independently for both the digital and analog watches. Thus, the "dual time" (two independent watches) becomes available.
 - The hands move once every 4 second.
 - When both the digital and analog watches are set at one time, the digital setting must be done first.
 - The correction of ± 30 seconds is carried out through the digital watch. (As soon as the digital watch is set to 0-second, the minute hand is set quickly or kept holding when the second reads 30 ~ 59 and 0 ~ 29 each.)

5) Chime function

The chime display appears with push of (M) button in the time or calendar display mode.

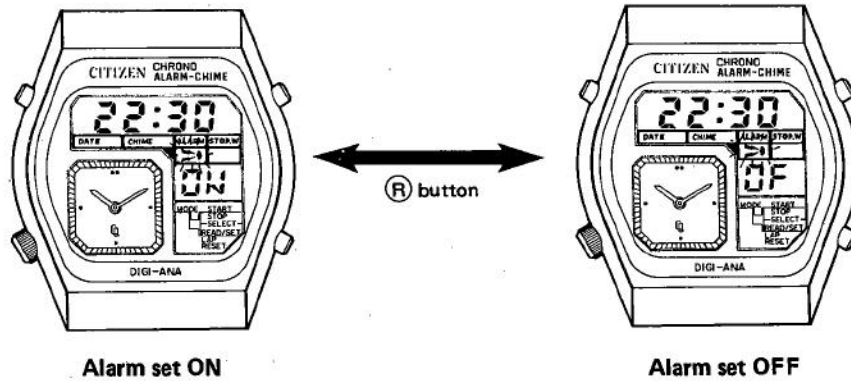


- (1) The ON and OFF of chime are switched alternately with every push of (R) button.
- (2) When the time display is reset with the chime set ON, the $\square \text{ } \text{ } \square$ mark appears to indicate that the chime is set.
- (3) With the chime set, the chime rings twice every hour on the hour (00'00'')

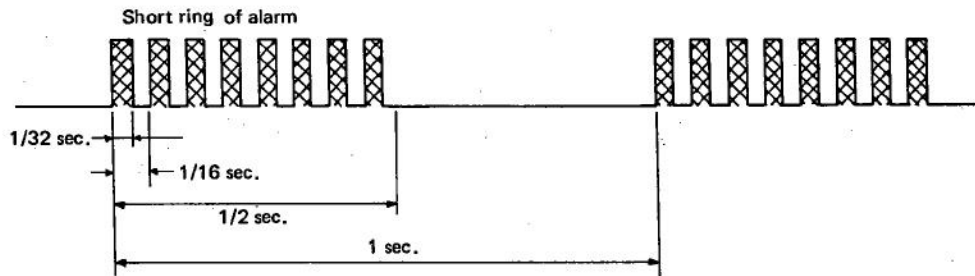


6) Alarm function

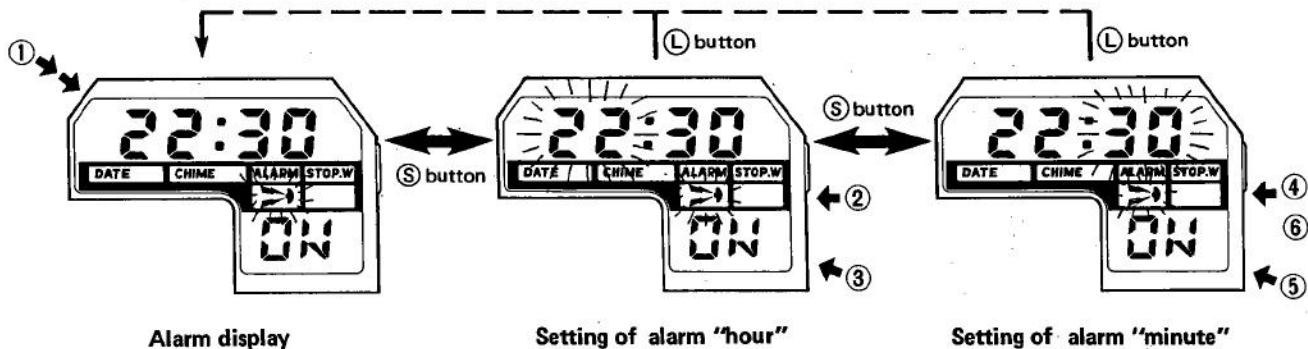
With push of (M) button in the chime display mode, the alarm display is given.



- (1) The ON and OFF of the alarm are switched alternately with every push of (R) button.
- (2) When the time display is reset with the alarm set ON, the \rightarrow mark appears to indicate that the alarm is set.
- (3) With the alarm set, the alarm rings at the set time (hour and minute) in 8 times per second and for one minute in all.



•Setting of alarm time



The AM/PM and the 12-hour – 24-hour switching are interlocked to the time display.

- ① The alarm time is called with push of (M) button twice in the time display mode.

- ② With continuous push of (S) button about 2 seconds, the "hour" flashes.

- ③ The "hour" changes with push of (R) button.

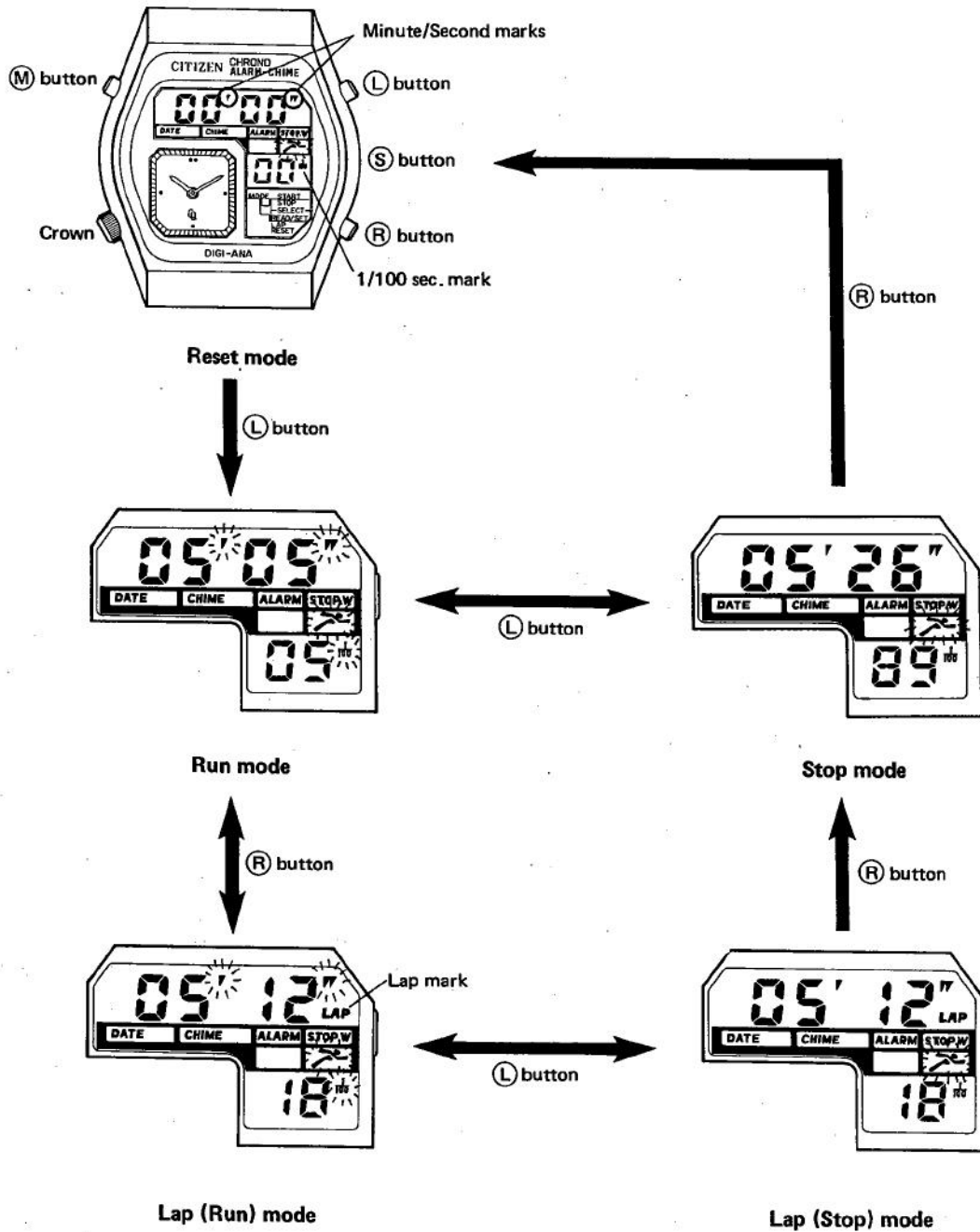
- ④ With push of (S) button, the "minute" flashes.

- ⑤ With push of (R) button, the "minute" changes.

- ⑥ With another push of (S) button "alarm time display" is re-set.

7) Stopwatch function

The stopwatch display is given by pushing (M) button in the alarm display mode. (The stopwatch function is identical to that of Cal. No. 8900A.)



(1) Details of each mode

●Reset mode

The **00'00"00** is displayed to indicate the preparatory state for the stopwatch timing. With push of (L) button in this mode, the stopwatch function starts.

●Run state

The fact that the timing is being carried out is shown. With push of (L) button in this mode, the stop mode is secured and then the lap (run) mode secured with push of (R) button each.

●Stop mode


The stop mode is secured with push of (L) button in the run mode, and the timing is stopped. With push of (R) button in this mode, the **00'00"00** is displayed to secure the preparatory state again for timing.

●Lap (run) mode

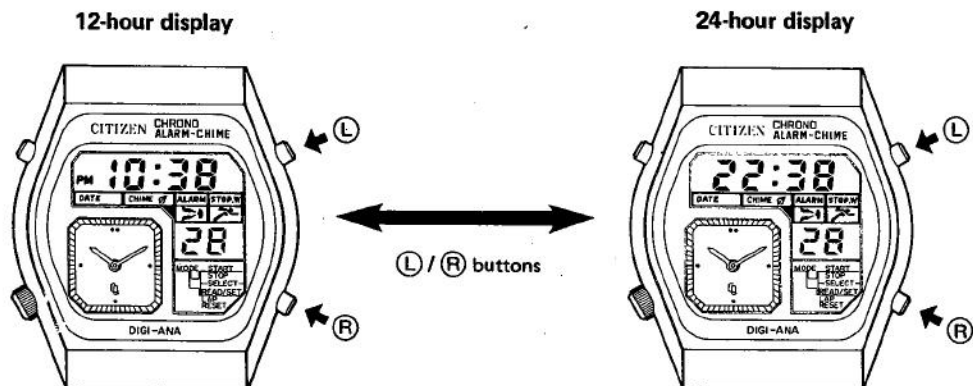
With push of (R) button in the run mode, the lap (run) mode is secured. In this case, the display is kept but the timing is continued. With the second push of (R) button, the run mode is reset and then the lap (stop) mode with push of (L) button each. The "LAP" mark is displayed.

●Lap (stop) mode

With push (L) button in the lap (run) mode, both " " and 1/100 stop flashing and at the same time the timing is stopped with the same display maintained. This is the lap (stop) mode. With the second push of (R) button, the time elapsed up to the instant of the (L) button pushing. This is thus convenient for timing of both the 1st and 2nd winners.

- (2) The 「」 mark is displayed when the time display is reset under use of the stopwatch in the run or lap (run) mode, which indicates that the stopwatch function is under operation.
- (3) The ring is heard to confirm the start and stop with every push of (L) button.
- (4) When the timing exceeds **59'59"99**, the **00'00"00** is displayed with the timing continued as always.

8) 12-hour – 24-hour display switching and alarm monitor



The switching is given between the 12-hour and 24-hour displays with the simultaneous push of both (L) and (R) buttons in the time display mode.

Also in this case, the alarm sound can be confirmed (Alarm monitor) with continuous push of (L) and (R) buttons at one time.

9) Power cell life indicator



When the life of the power cell comes near its end, the colon (:) of the time display mode flashes. So the power cell must be replaced as soon as possible with new cell.

This colon flashing also occurs when the watch is put under the temperatures less than 0°C. In this case, the detection of the power cell voltage is indicated, and thus the flashing ceases when the watch is put again under the normal temperatures.