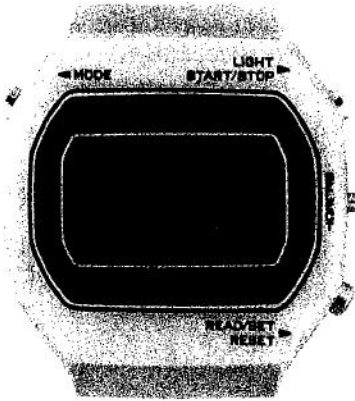


***TECHNICAL  
INFORMATION***

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**CITIZEN QUARTZ  
Cal.No.910※※**

**§ 1. OUTLINE**

This is digital quartz crystal watch with LC display, which features multiple functions including alarm 1 and 2, time signal, reverse operation timer and stop-watch, in addition to the ordinary display of "hour", "minute", "second" and "AM/PM" plus the calendar display of "month", "date" and "day" respectively. Thus, it excels both in the design and performance for a wristwatch.

The Cal No. 9101A incorporates additionally the time announcement device through which the time is announced in three different kinds of tones.

**§2. FEATURES****1) Digital quartz crystal watch with multi-function:**

In addition to the normal display ("hour", "minute", "second", "AM/PM") and calendar display ("month", "date", "day"), the following functions are added: alarm-1 and alarm-2 which can be set independently with each other; chime which gives alarm sound twice simultaneously with the time signal; timer mechanism which can set down to second; and stopwatch mechanism which is capable of continuous measurement.

**2) Alarm monitor:**

The electronic alarm tone can be heard with simultaneous push of both (R) and (L) buttons under the normal display mode.

**3) Mode mark indication:**

The mode marks are used to indicate the set modes for quick confirmation of the following functions: alarm-1, alarm 2, chime, timer mechanism and stopwatch mechanism.

**4) Built-in illumination lamp:**

A built-in illumination lamp facilitates an easy and clear time readout even in the dark.

**5) Automatic calendar setting system:**

The calendar can be set automatically at the end of each month (excluding the leap years).

**6) Power cell life indicating device:**

The colon on the time screen flashes to indicate replacement of the power cell.

**7) Uninterrupted operation about two years by a small-size silver oxide power cell:**

The reduction of the power consumption at the electronic circuit part makes it possible to operate the watch accurately for about two years with a small-size silver oxide power cell.

(Main Features of Cal. No. 9101A)

**8) Automatic calendar setting system:**

The calendar can be set automatically at the end of each month and year including the leap years.

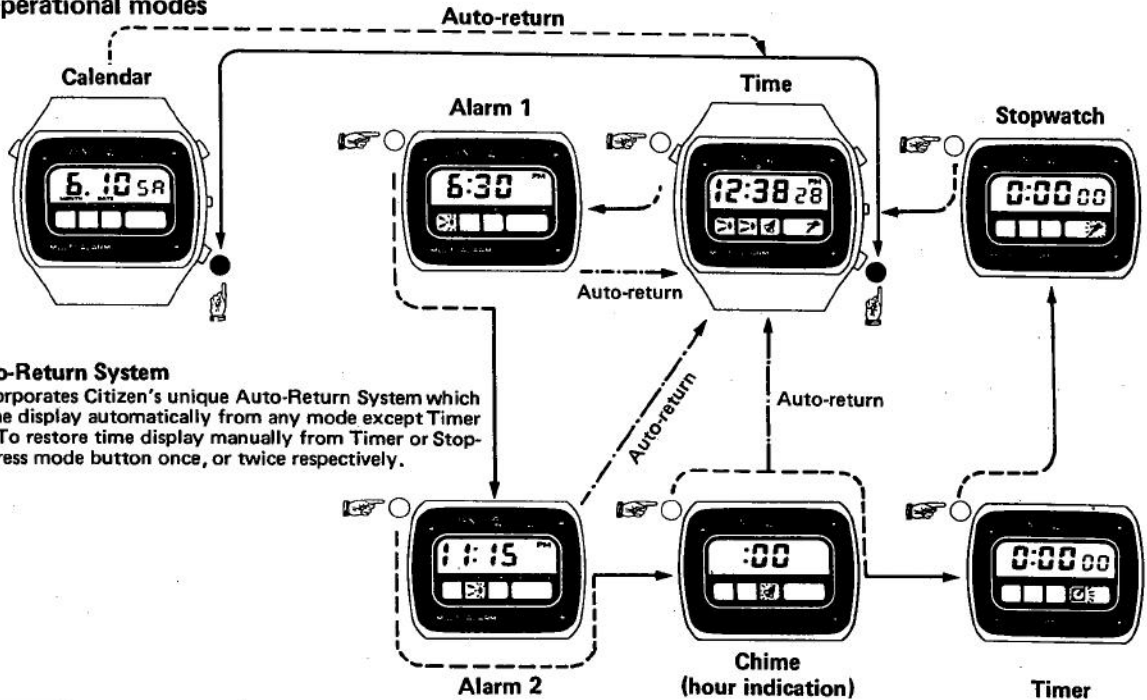
**9) Unique time announcement device:**

The time announcement device announces the user the time in three different kinds of alarm tones and through one-touch operation of push-buttons.

§3. HANDLING INSTRUCTION

Cal. 9100A

1) Operational modes



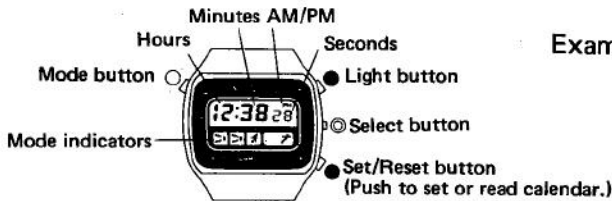
**Citizen's Auto-Return System**

This watch incorporates Citizen's unique Auto-Return System which restores the time display automatically from any mode except Timer or Stopwatch. To restore time display manually from Timer or Stopwatch mode, press mode button once, or twice respectively.

**TIME**

\*The time reads here 12:38 P.M. plus 28 Seconds.

\*Graphic indications represent only those modes set, or currently in operation.



\*Time is set in the order of seconds – minutes – hours (AM/PM).



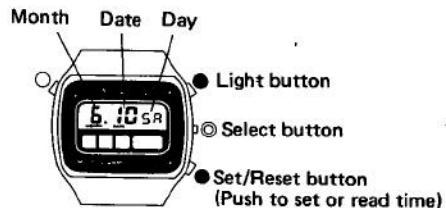
**CALENDAR**

\*The date reads June 10th (Saturday).

\*No indications appear in the screens of the display panel when calendar is being read or set.

\*Normal time display returns automatically to display panel within several minutes after reading or setting calendar, without pressing reset (black) button. Press reset button to restore time display instantaneously.

\*The days of the week are indicated in English abbreviated as shown right.



**ALARM 1**

Once set, Alarm 1 sound at the set hour and minute every day.

\*Alarm 1 is set for 6:30 P.M. (No other mode indications appears in the screens of the display panel while Alarm 1 is being set).

\*Alarm 1 & Alarm 2 allow setting of hours and minutes only, no seconds.

\*Set each alarm in the order of hours (AM/PM) and minutes.

\*Normal time display returns automatically to display panel within several seconds after setting.



**Alarm set to sound at present time.**

To suppress alarm, push reset (black) button; the flashing part of the graphic indication will leave the display panel (see below), and no alarm will sound when the specified time has been reached. To restore alarm, push reset (black) button a second time.



**Alarm suppressed.**

**ALARM 2**

Alarm 2 is a space alarm provided for added convenience.

\*Here Alarm 2 is set to sound at 11:15 P.M.

\*Other functions are same as Alarm 1.



**CHIME**

The Chime feature provides a handy reminder of the time, every hour on the hour.

\*When Chime is set, two abrupt sound bursts will occur every hour on the hour. When hourly (e.g., no minutes) alarm settings have been made, the alarm will replace Chime which would normally sound at that time. Chime will sound as usual on the other hours.



**Chime set to sound every hour on the hour.**

When chime is not desired, push reset (black) button in chime mode. Suppressed Chime will be indicated by the absence of the striker portion of the bell on the chime status indication. No chime will sound once this setting has been made. To rest chime, push reset (black) button in Chime mode.



**Chime suppressed.**

## TIMER

Count down. A timer that indicates the time still remaining. Set it for any time period . . . a beep that tells you when that period is up.

- \*Timer can be set to time intervals up to 11 hours 59 minutes 59 seconds.
- \*Countdown can be stopped or started as often as desired. Unless reset by pushing the Set/Reset (black) button, Timer count always resumes from point at which stopped.
- \*Alarm will buzz sharply once when Timer is started; alarm will sound a full minute when Timer count reaches 0 hours 00 minutes 00 seconds.

Examples: 1:00 00 Alarm sounds when Timer is started with push of Start (yellow) button.

0:59 59

0:59 58

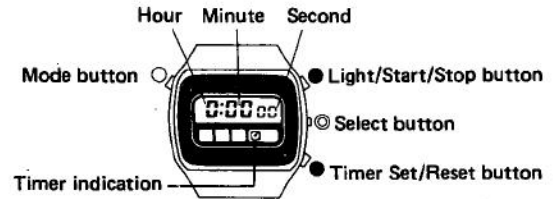
0:00 0:

0:00 00 ✓

Alarm sounds intermittently for one minute after time is up.

Timer setting is made in the order of hours → minutes → seconds.

**Note:** If setting was intended in timer mode, but indication flashes, and no numerals appear on the screen, the stopwatch mode is in operation. Make setting again according to the diagram, "Setting and Adjustment of Timer."

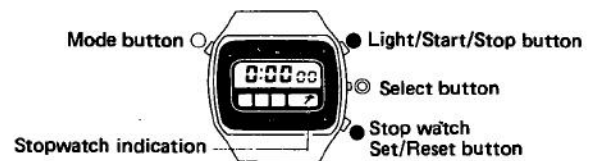


## STOPWATCH

For speed races, car rallies, etc., a single alarm will sound when stopwatch is started or stopped.

- \*Stopwatch can be used for the time intervals from 0 hours 00 minutes 00 seconds up to 11 hours 59 minutes 59 seconds.
- \*A single alarm burst will sound when stopwatch is started or stopped.
- \*Stopwatch indication returns instantly to 0:00 00 when reset (black) button is pressed.
- \*Stopwatch can be stopped and started as often as desired. Stopwatch time display always resumes from point at which started unless reset by pushing the Set/Reset (black) button.

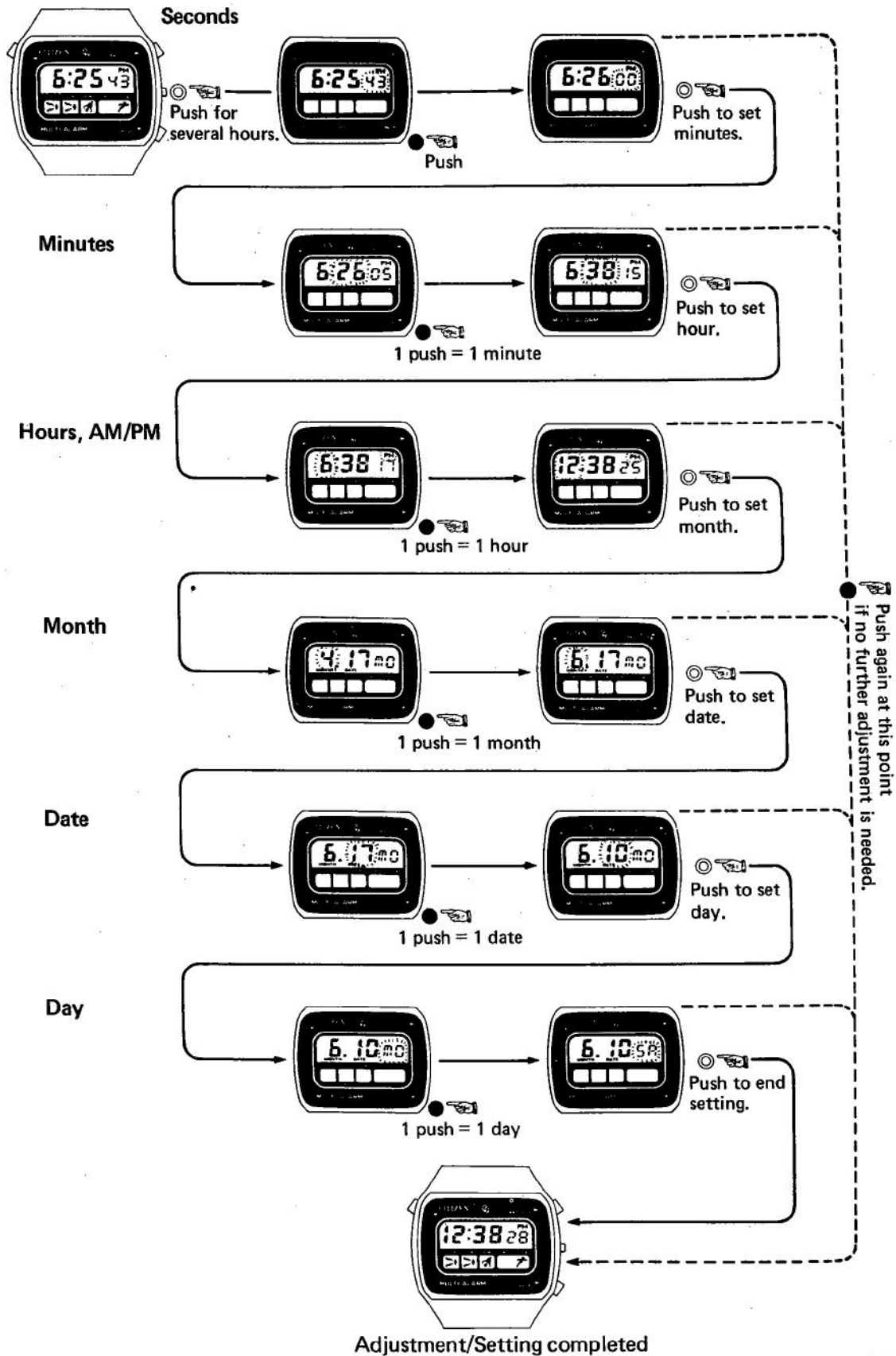
**Note:** If setting was intended in Stopwatch mode, but indication flashes and no numerals appear on the display panel, the Timer mode is in operation. Make setting again according to the diagram, "Setting and Adjustment of Stopwatch".



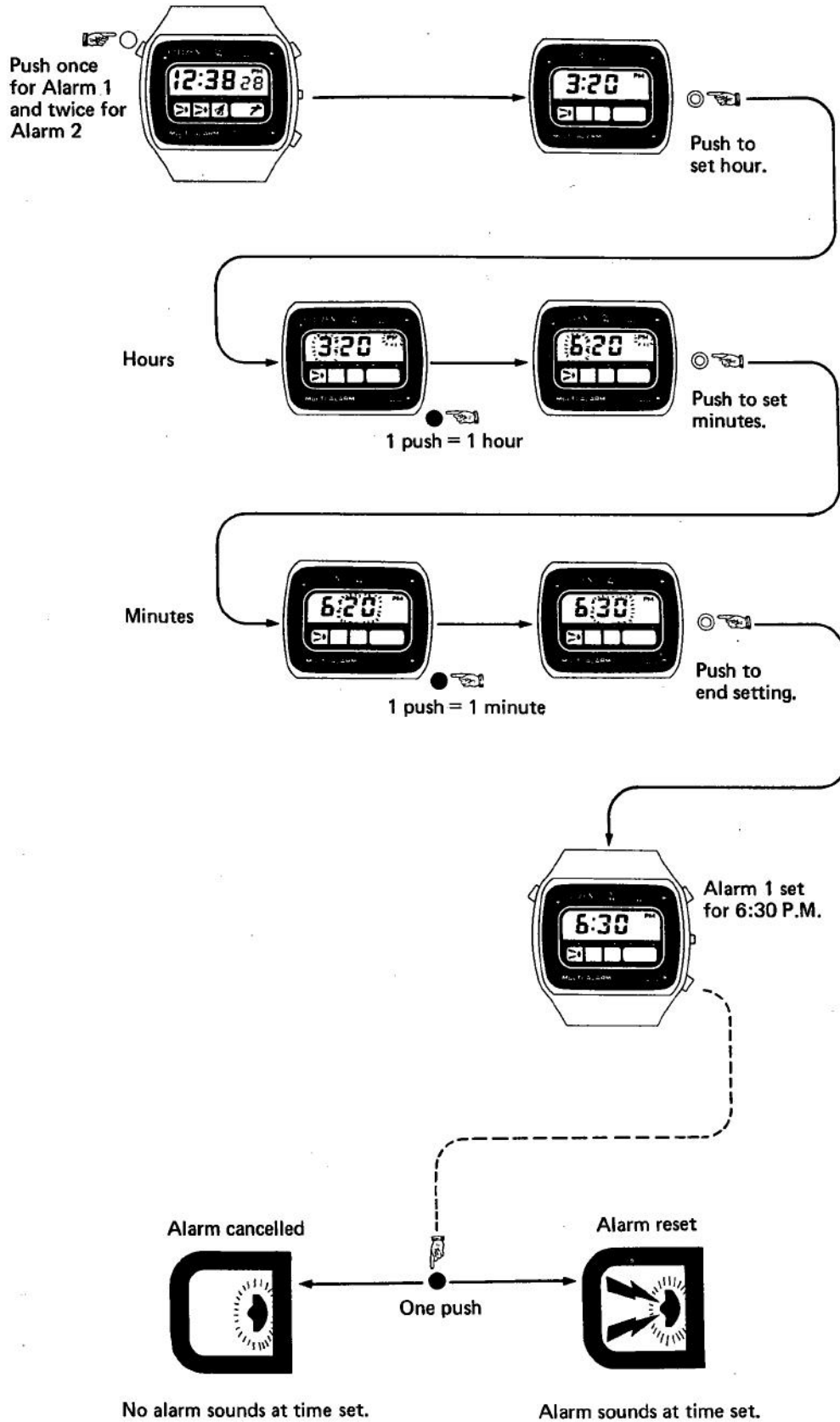
## Alarm Monitor

When the timer mode and the calendar mode are on the display, the alarm will be heard if the Light (yellow) button and the Reset (black) button are pushed at the same time.

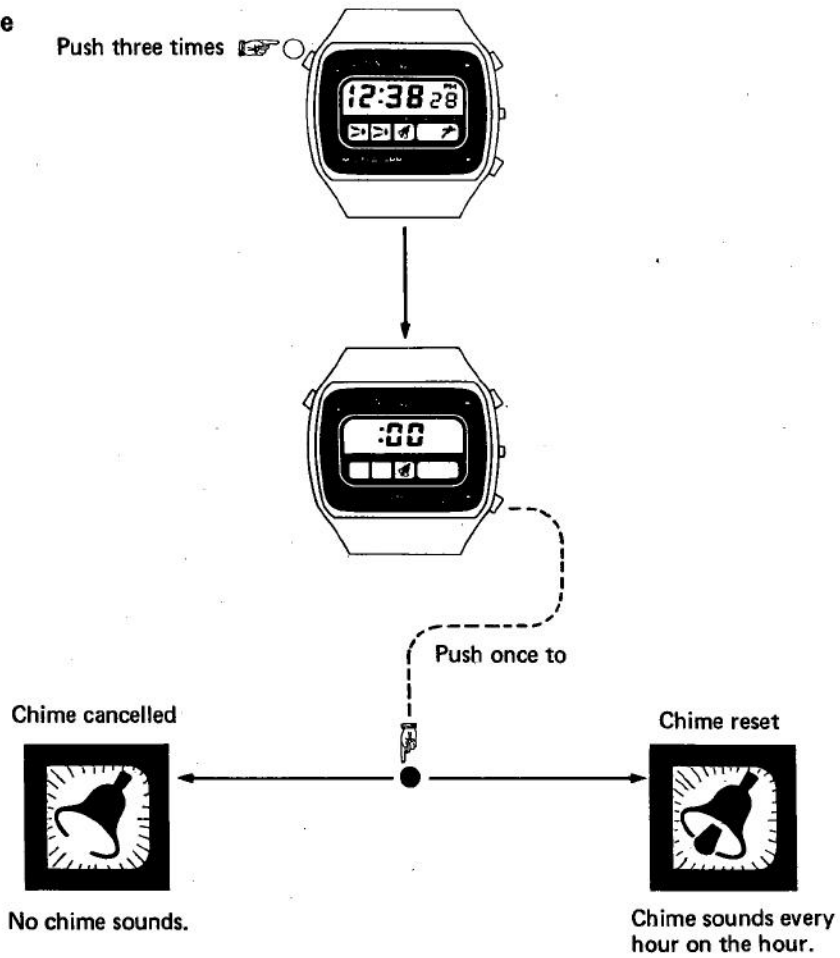
**How to set time, calendar and each mode:  
Adjustment and setting of time and date**



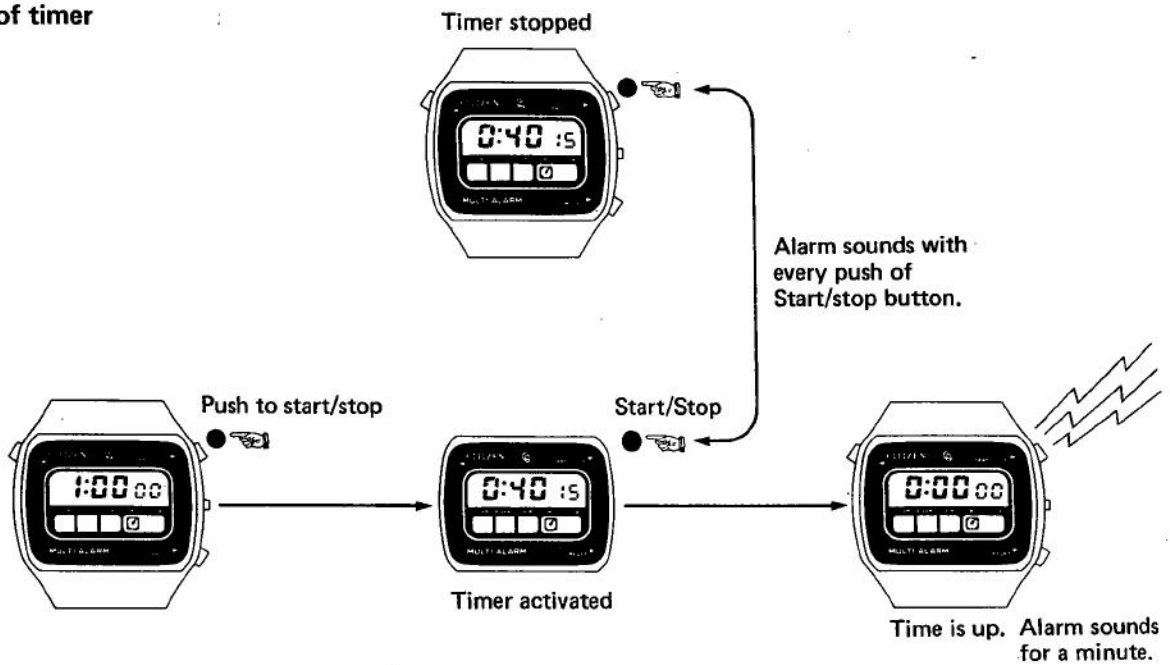
Setting and adjustment of alarms (common in Alarm 1 and 2)



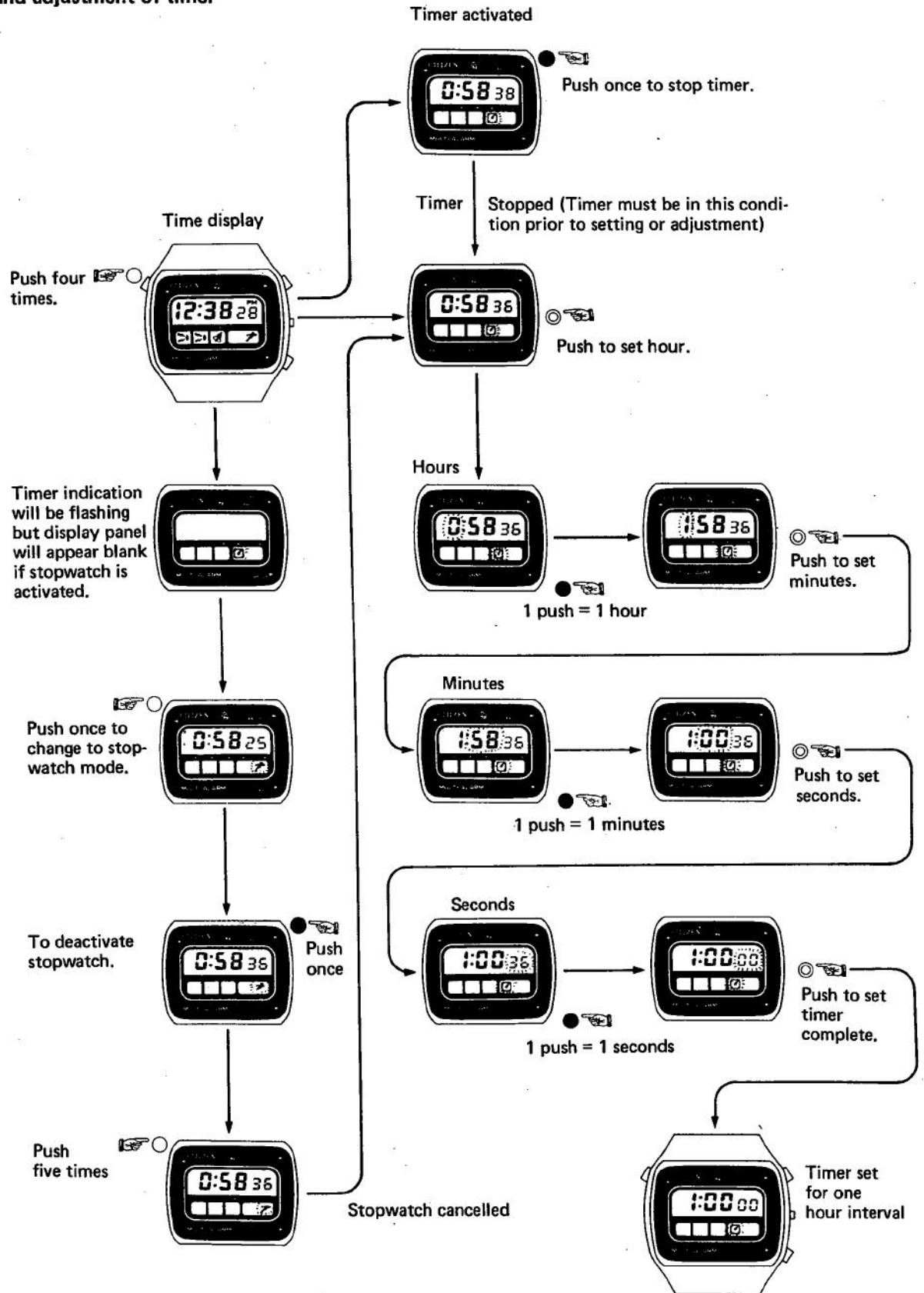
### Setting of Chime



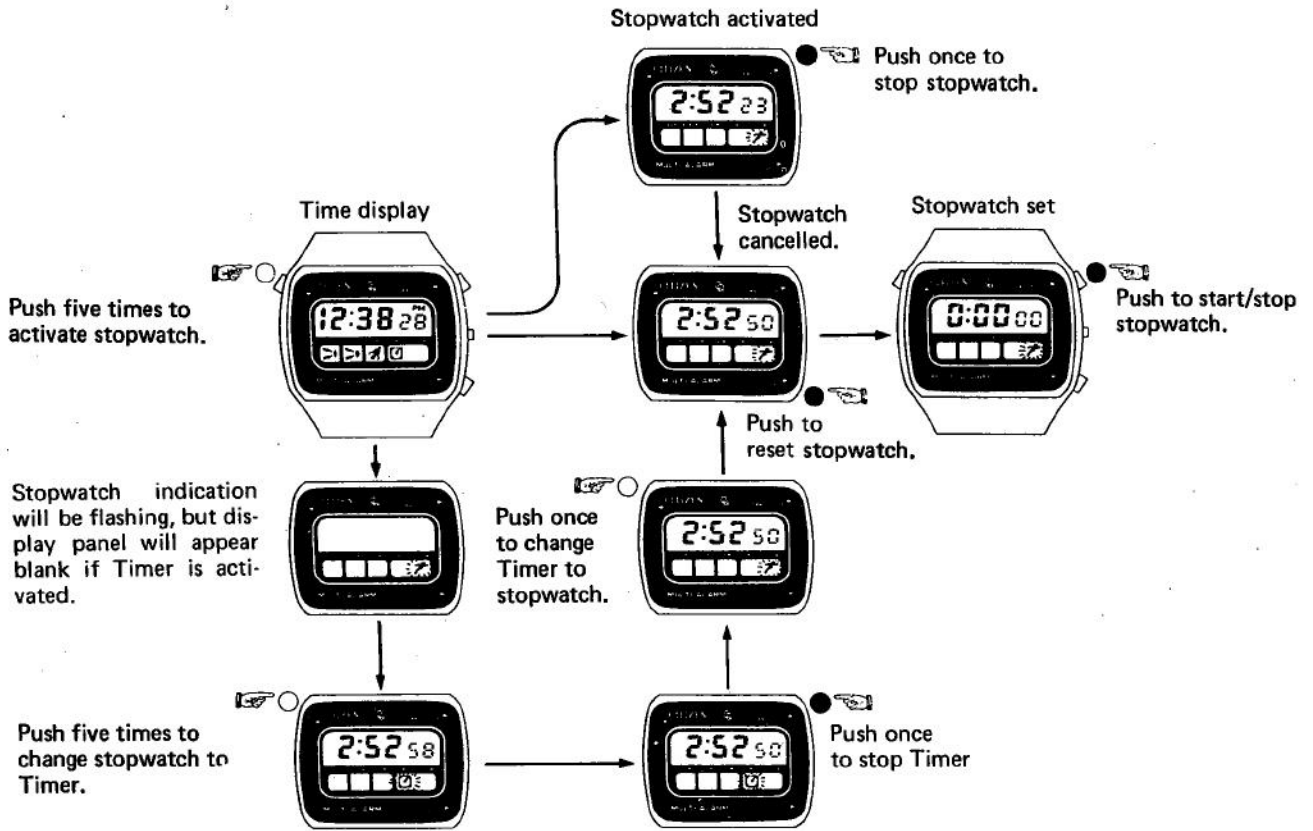
### Use of timer



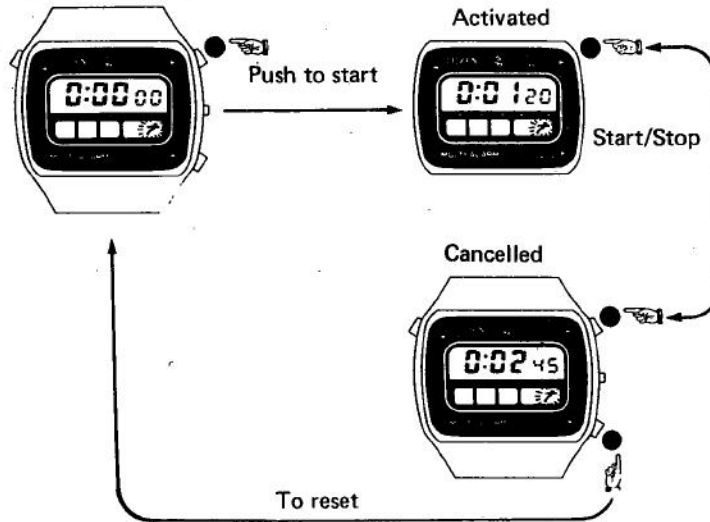
Setting and adjustment of timer



Setting and adjustment of stopwatch

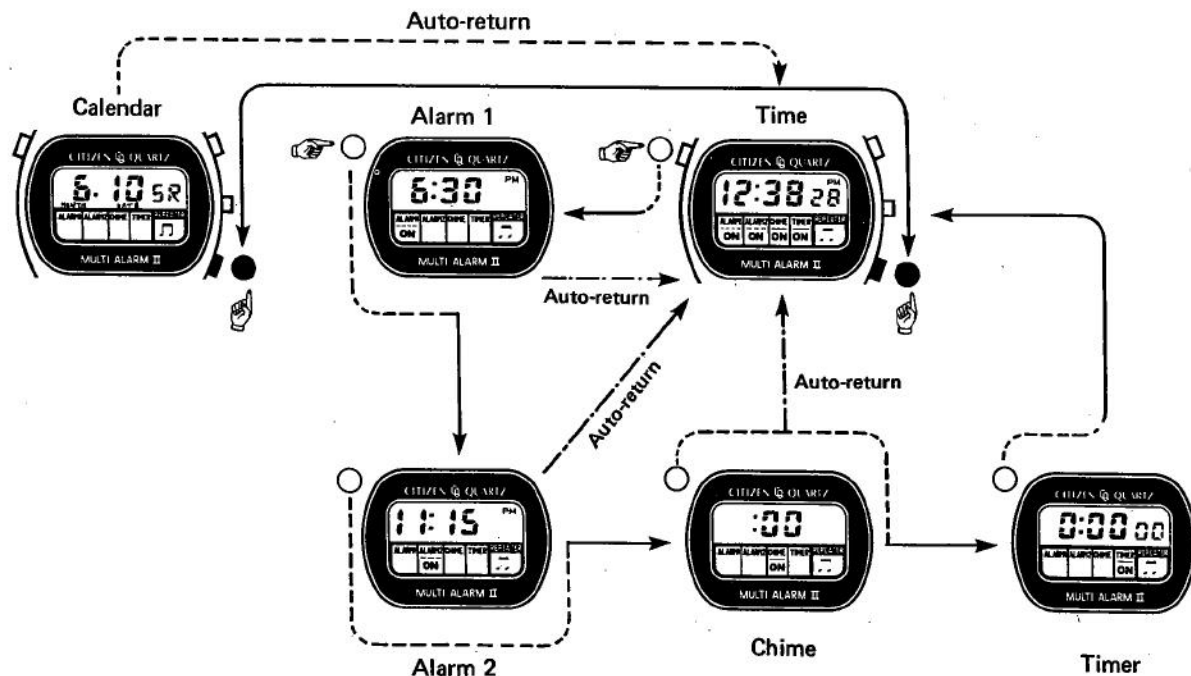


Use of stopwatch.



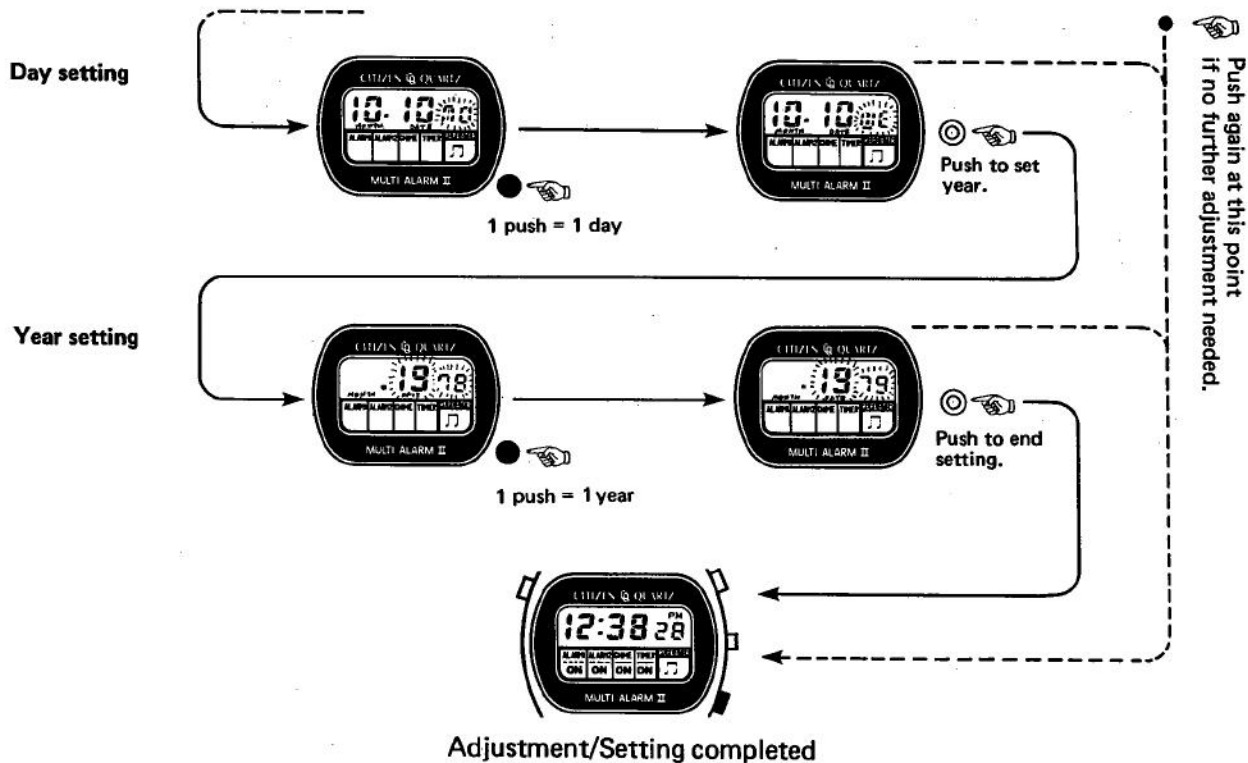
Cal. 9101A

1) Operational modes.



2) Setting and adjustment of time and calendar

The setting method is identical to Cal. No. 9100A with addition of the "year" setting after the "day" setting. The year can be set in a cycle of 1970~2009 years.



3) Setting and adjustment of Alarms (common in Alarm 1 and 2)



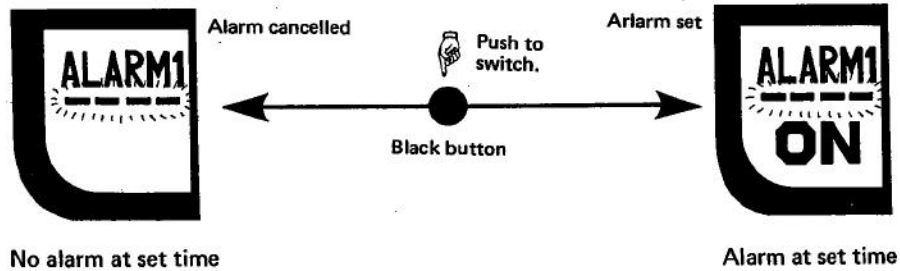
Alarm 1 set mark



Alarm 2 set mark

■ Alarm set/cancel

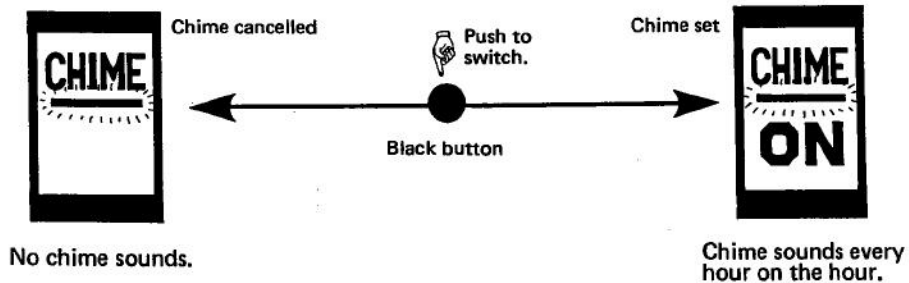
With every push of the black button in the alarm normal display mode, the alarm set and cancel are repeated alternately.



■ The setting procedure of the alarm time is identical to Cal. No. 9100A.

4) Setting of chime

With every push of the black button in the chime display mode, the chime set and cancel are repeated alternately.

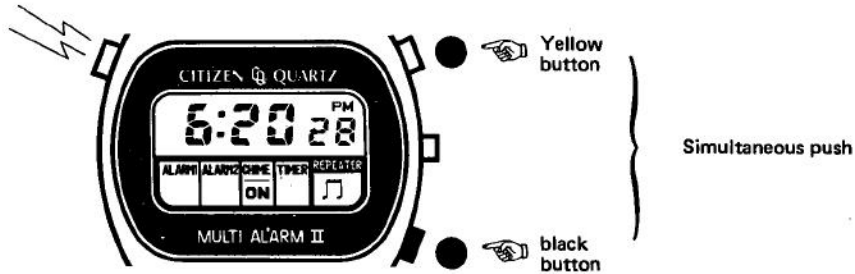


5) Setting and adjustment of timer

- The timer can be used independently for Cal. No. 9101A since no stopwatch is incorporated.
- The setting procedure of the timer is identical to Cal. No. 9100A.

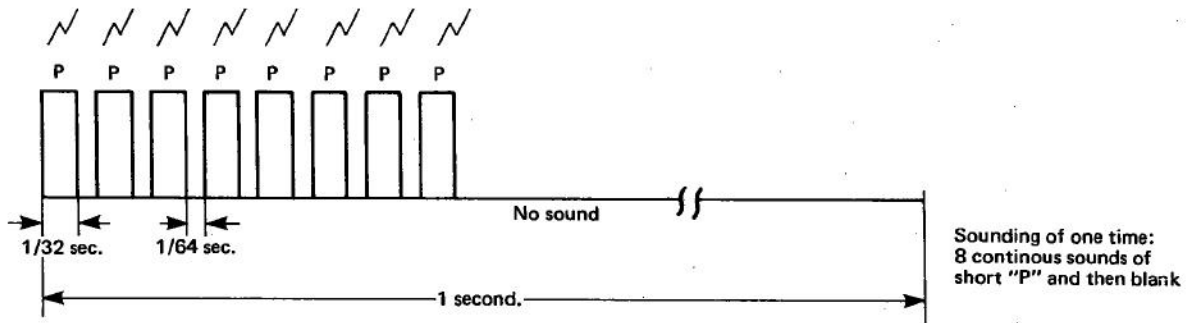
### 6) Handling of time announcement device

With simultaneous push of  $\odot$ -button (yellow) and Set/Reset button (black) in the normal time display or the calendar display mode, the time is announced in three different ways of sounding at the instant of the button push.



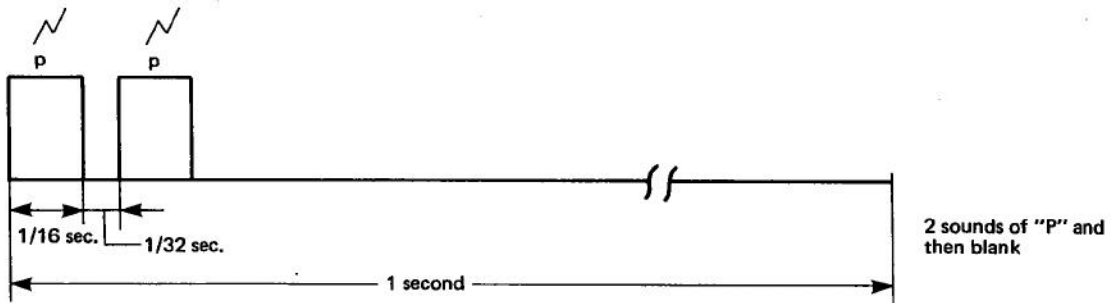
The three different ways of sounding varies in the "hour", "10-minute digit" and "1-minute digit" with no "second" sounding nor discrimination between AM and PM.

#### ■ Sounding of hour



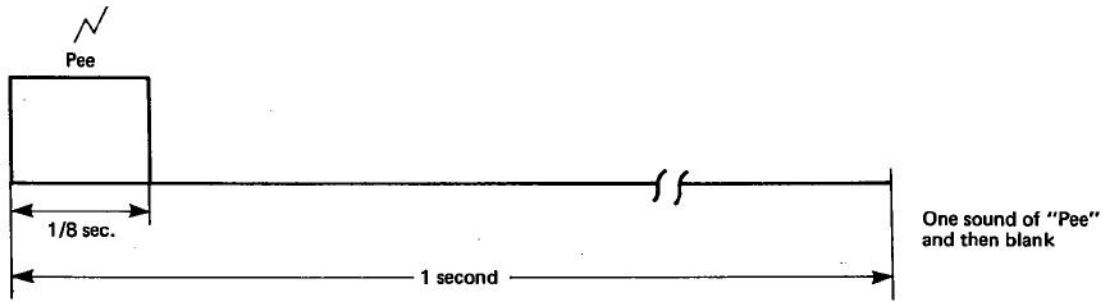
This way of sounding is repeated in the same frequencies as the number of the "hour" then, for example, 5 times for "5 o'clock".

#### ■ Sounding of 10-minute digit



This sounding is given in the same frequencies as the number of the 10-minute digit, for example, 4 times for "X-hour 4Y-minute".

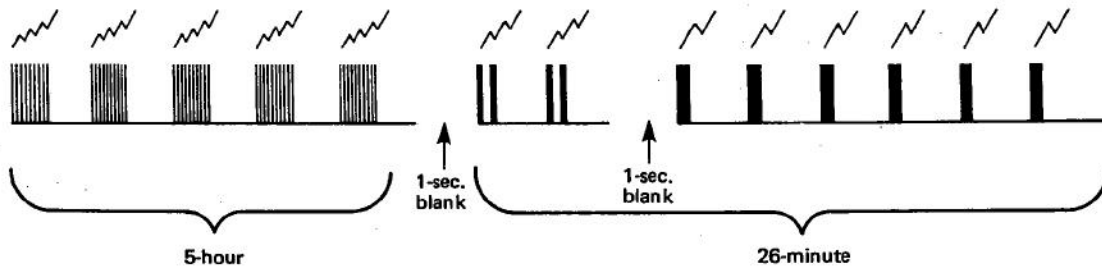
■ Sounding of 1-minute digit



This sounding is given in the same frequencies as the number of the 1-minute digit, for example, 3 times for "X-hour X3-minute".

Thus, the "hour" is announced with 1-second blank followed; the "10-minute digit" is announced with 1-second blank followed; and finally the "1-minute digit" is announced.

(Ex.) With simultaneous push of both the yellow and black buttons when the time shows "5:26", 5 times of hour sounding with 1-second blank followed, 2 times of 10-minute digit sounding with 1-second blank and 6 times of 1-minute digit sounding are given respectively.



\* In case the 10-minute digit or the 1-minute digit is "0", these digits has no sounding.

Examples:

- 10:00 10 times of hour sounding
- 8:05 8 times of hour sounding with 1-second blank followed and 5 times of 1-minute digit sound
- 7:40 7 times of hour sounding with 1-second blank followed and then 4 times of 10-digit sounding

## §4. SPECIFICATIONS

Model		Citizen Quartz Multi Alarm
Cal. No.		9100A 9101A
Movement	Diameter	27.2mm $\phi$
	Thickness	6.06mm
Oscillation		32,768Hz
Accuracy		$\pm 10$ sec./month under normal temperature
Display information	Normal display	"Hour", "minute", "second" and "AM/PM"
	Calendar display	"Month", "date" and "day" (year at setting time with Cal. 9101A)
	Alarm display	"Hour" and "minute"
	Chime display	":00"
	Timer display	"Hour", "minute" and "second" Set time: 11 h. 59 min. 59 sec.
	Stopwatch display	Measurement range: 0 sec. – 11 h. 59 min. (Cal. 9100A) 59 sec. Cumulative count possible
Display system		FE twist-type nematic LC display
Effective temperature range		0°C (32°F) ~ +60°C (140°F)
Semiconductor		C/MOS-LSI
Additional mechanisms		Alarm-1, Alarm-2 Chime Timer Stopwatch (Cal: 9100A) Alarm monitor Time announcement (Cal. 9101A) Illumination lamp Power cell life indicator Automatic calendar setting
Power cell		Small-size silver oxide power cell Parts No. 280-15 (1 unit) Nominal Voltage : 1.55V Capacity : 75mAH Size : 11.56mm $\phi$ X 3.0mm Life : about 2 years