

***TECHNICAL
INFORMATION***

**CITIZEN QUARTZ
Cal.No.892 ※※**

§ 1. OUTLINE



This "Ana-Digi" watch is another Citizen's unique product which follows the "Digi-Ana" watch already on the market with a favorable reception of users. This watch is constituted based mainly on the analog mechanism along with the digital display added suitably, thus meeting well the diversified requirements of the contemporary gentlemen. It excels in the controllability making best use of the crown's advantages, also featuring a high-grade sense of the design as well as the function of high performance.

§ 2. FEATURES

- 1) Analog-based function
This is an analog-based quartz crystal watch with the center second plus the digital display multi function.
- 2) Digital correction possible with crown operation
The correction is simplified for the digital display by turning the crown at the first click stop position.
- 3) Multiple functions incorporated into compact digital part
 - (1) Six functions: Time, calendar, chime, alarm, stopwatch and timer.
 - (2) Display selection possible between 12-hour and 24-hour periods (in both time and alarm).
 - (3) The "mode mark" gives a quick reference to the using state of each function (◀).
 - (4) The sound giving mechanisms: The buzzer with the alarm the timer and the confirmation tone for the stopwatch and the timer.
- 4) Power cell life indicator
The replacement of the power cell is announced previously through the 2-second step movement of the analog hand and the flashing of the digital colon.
- 5) Fully automatic calendar (incl. leap year)
The 40 years (1970–2009) are memorized in the circuit, and as a result the day of the week is set automatically by setting the year, month and date.
- 6) A long-life operation by just one unit of power cell
Just one unit of the power cell ensures an accurate operation for about 2 years in case the illumination is lit up 5 seconds plus 90 seconds of buzzer ringing per day.
- 7) The illumination lamp facilitates an easy readout of the time and calendar even in the dark.

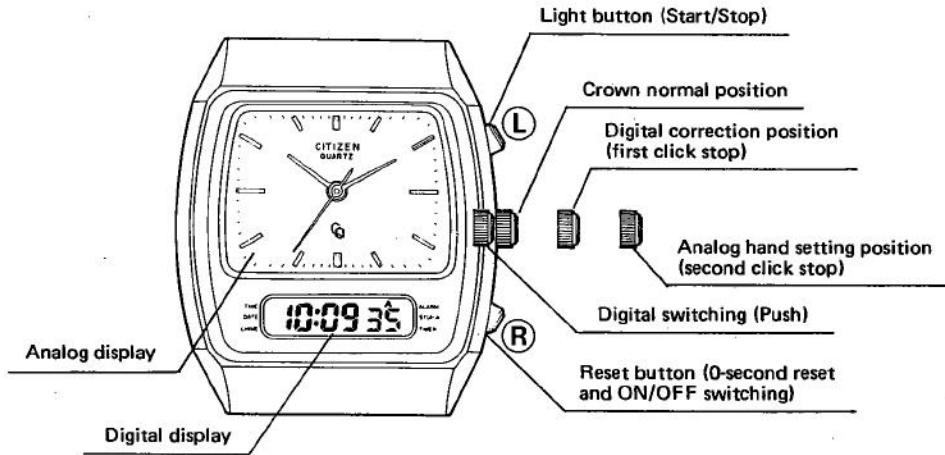
§3. SPECIFICATIONS

Caliber No.	8920-08B	
Type	Analog-Digital simultaneous display quartz crystal watch	
Movement	Size: 30.0mm ϕ Thickness: Analog 3.4mm (incl. power cell part 3.65mm) Digital 4.9mm (incl. power cell part 5.15mm)	
Accuracy	± 10 sec. per month at normal temperatures	
Oscillation	32,768Hz	
Display system	Analog: Time indication by 3 hands (hour, minute and second) with 1-second step movement Digital: FE twist-type nematic liquid crystal display	
Digital display	Time	12-hour display: Hour, minute, second and A/P (AM/PM) 24-hour display: Hour, minute and second
	Calendar	Month, date and day (Month, date and year at correcting time)
	Chime	:00 ON/OFF
	Alarm	12-hour display: Hour, minute, A/P and ON/OFF 24-hour display: Hour, minute and ON/OFF
	Stopwatch	Minute, second and 1/100 sec. After 60 min.: Hour, minute and second (24-hour clocking)
	Timer	Hour, minute and second (Setting possible up to 23:59 59)
Correction of display	By operation of crown (or push-button partially)	
Converter	Step motor	
Effective temperature range	0°C ~ +60°C (32°F ~ 140°F)	
Integrated circuit	C/MOS-LSI (1 unit)	
Additional devices	<ul style="list-style-type: none"> ●Power saving switch (Analog) ●Power cell life indicator (Analog/Digital) ●Fully automatic calendar (1970-2009) (Digital) ●Illumination Lamp (Digital) 	
Power cell	<p>Small-size silver oxide power cell (1 unit)</p> <ul style="list-style-type: none"> ●Parts No. : 280-15 ●Nominal voltage : 1.55V ●Capacity : 75mAH ●Dimensions : 11.6mmϕ x 3.1mm^t ●Life time : About 2 years (5 sec. lamp lighting and 90 sec. buzzer ringing per day) 	

§4. HANDLING INSTRUCTIONS

1) Nomenclature and functions

• The flashing areas are shown in red color in the diagram.

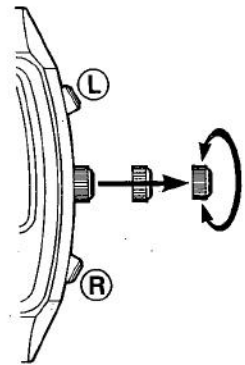


2) Handling method

Analog

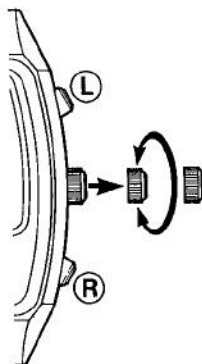
- (1) The handling method is identical to the conventional watches with center second.
- (2) Pull out the crown to the second click stop to set the time and also to secure the power saving state simultaneously. (Refer to page 10 for the details.)
- (3) Set the time.
- (4) Push in the crown lightly to its normal position. And the watch starts.

*When the crown is set to the hand setting position, the digital part has an automatic switch to the time mode. The manipulation of the crown gives no effect at all to the digital display time.



Crown pulled out 2 steps.

Digital



Crown pulled out 1 step.

<p>Ⓛ Light button</p> <ul style="list-style-type: none"> •(Start/Stop) 	<ul style="list-style-type: none"> •Second-setting state at the time of using a timer.
<p>Crown</p> <ul style="list-style-type: none"> •Push: Mode switching •First click stop: Correction mode 	
<p>Ⓡ Reset button</p> <ul style="list-style-type: none"> •At time correction: 0-second resetting •At stopwatch function: Lap and reset •At correction of chime and alarm: ON/OFF switching •At timer function: Return and flyback 	

1. Mode switching (The flashing areas are shown in the red color.)

With every push of the crown, the display changes in the following sequence.

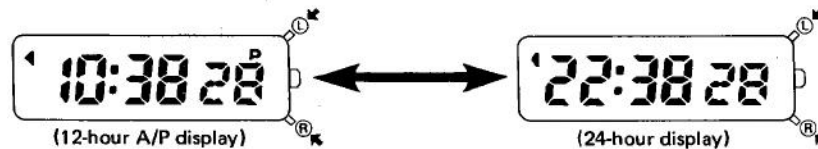


*The mode mark (◀) flashes at every switching time of display.

*With displays of the stopwatch and the timer, the different display from those shown above may sometimes be given.

2. 12/24-hour display switching

With simultaneous push of (L) and (R) buttons in the normal time display mode, a switch is given between the 12-hour and 24-hour displays. In this case, the buzzer rings once for the sound monitoring.



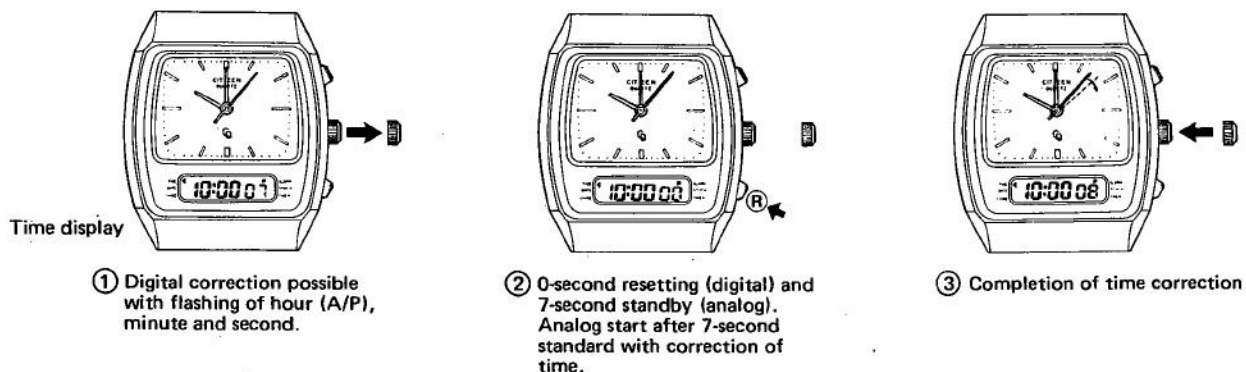
3. Setting to 0-second

- 1) The time display mode is called out with push of the crown.
- 2) With pull-out of the crown to the first click stop position (digital correction position), the hour (A/P), minute and second have flashing to indicate they are ready to be corrected.
- 3) With push of (R) button, the digital second is reset to zero along with correction of the analog time.

[With push of (R) button when the second of the digital display reads 0–29 seconds, the digital time is reset to 0-second and the analog time is connected after counting the gained amount of the second standby state. In the same way, if (R) button is pushed during 30–59 seconds, the digital time is carried by one minute through the 0-second resetting and the analog time is given a quick setting for the delayed amount of the second respectively.

- 4) The crown is returned to the normal display to complete the time correction.

(Ex.) For synchronization with 10-o'clock time signal:



4. Correction/operation method of each mode

With every push of the crown, the display is changed in the sequence of ① ~ ⑥.

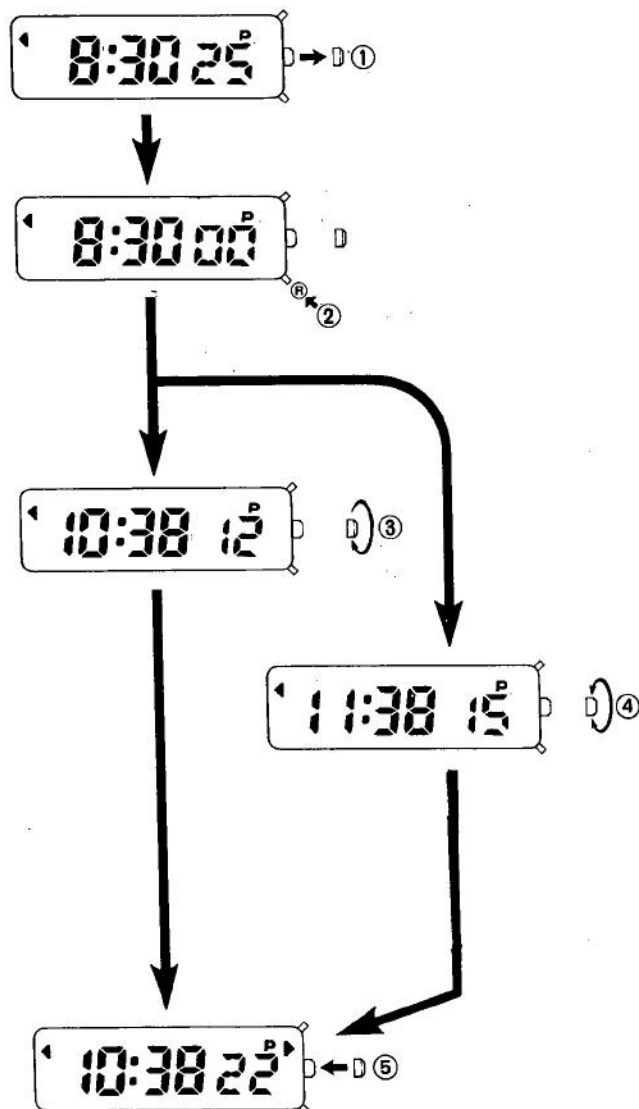
- | | | | |
|-----------------|---|---|------------------|
| ① Time mode | ◀ | ▶ | ④ Alarm mode |
| ② Calendar mode | ◀ | ▶ | ⑤ Stopwatch mode |
| ③ Chime mode | ◀ | ▶ | ⑥ Timer mode |

Time setting method

- Push the crown to call out the time display mode.

(Ex.) Correction from "8:30'25" PM" to "10:38 PM"

(The following illustration is based on the 12-hour display.)



- ① With pull-out of the crown to the first click stop position, the mode mark, hour (A/P), minute and second have flashing to be ready for correction.

- ② With push of (R) button, the time is reset to 0-second to make the watch start immediately. If (R) button is pushed while the second reads 30-59, the minute is carried with the second reset to zero respectively.

*Set the crown to the normal position when the correction is given only to the second. In this case, the analog time is corrected simultaneously.

- ③ Unlike the conventional method, the "hour" and "A/P" are corrected in couple by correcting the "minute" with turn of the crown. Therefore, the crown is turned in the addition direction () clockwise) for the time correction.

One turn of crown: Quick setting of about 45 min. possible.

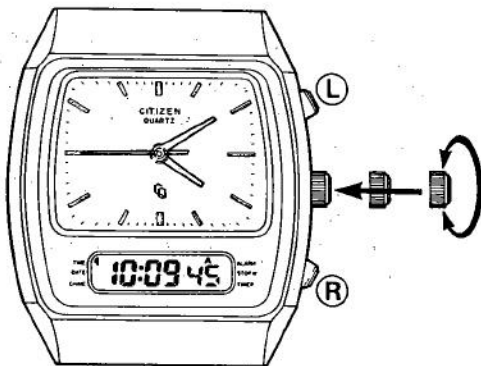
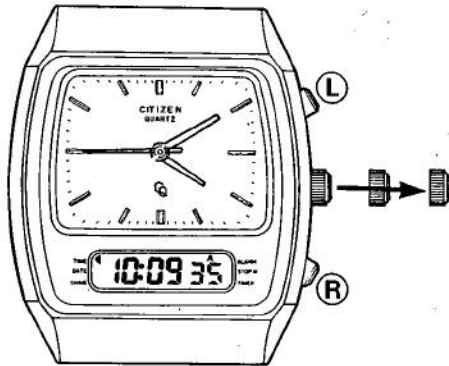
- ④ In case an overturn is given to the crown or the turn-back of the time is required, the crown is turned in the subtraction direction () counterclock-wise) to set the correct time.

This is identical to the analog hand setting.

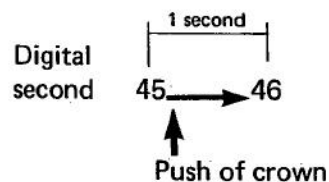
- ⑤ Push lightly the crown into the normal position to complete the time setting.

Synchronization between analog second hand and digital second

The crown is pulled out to the second click stop, and then the analog's second hand is set to the digital time (second).



- 1) The second hand stops when the crown is pulled out to the second click stop.
(The digital watch returns to the time display and continues the operation.)
- 2) In case the analog watch is set, for example, to "4:09" and if the second hand stops at 45 seconds with the crown pulled out to the second click stop, the explanation is given as follows.
- 3) First, the crown is turned to set the time to "4:09". Then the crown is pushed into the normal position at the moment when the digital second synchronizes with the position where the analog second hand stops.



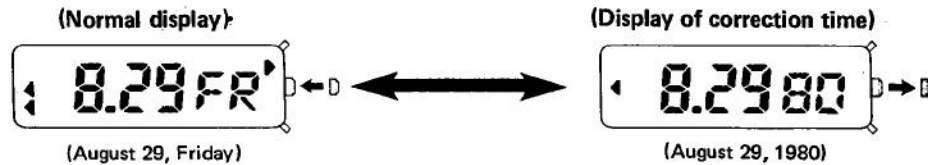
(Note)

Push in the crown after making sure that the digital second shows 45 seconds.
If the crown is pushed a little bit before synchronization with 45 seconds, the analog time may some times gains by one second.

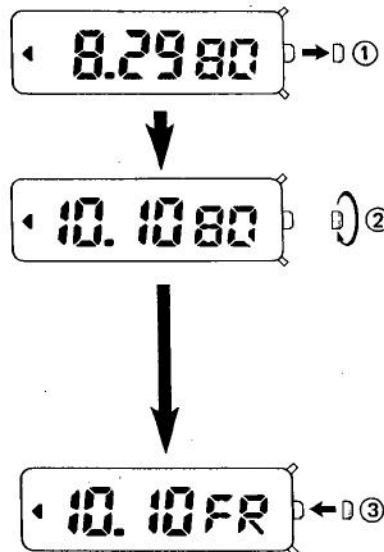
Calendar setting method

Push the crown to call for the calendar display mode.

The normal display and the display of the correction time are as shown below.



*The year is displayed in the last two figures.



① With pull-out of the crown to the first click stop, the month, date, year plus the mode mark begin flashing to be ready for correction.

② With forward and backward turns of the crown, the "date" is set quickly in a coupled correction* with the "month" and "year". Here the crown is turned clockwise to set the calendar to "October 10".

(In case an overturn is given to the crown or the turn-back is required for the "year", "month" or "date", the subtraction correction is given by turning the crown counter-clockwise for the correct setting.)

One turn of crown: Quick setting of about 45 days possible

③ When the correction is over for the "year", "month" and "date", the crown must be returned to the original normal position to complete the setting procedure. (When the normal time display is reset, the "year" disappears and the "day" is set and displayed automatically.)

•The day of the week are abbreviated for display as follows.

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

***Coupled correction**

•Date correction: Crown pulled out to first click stop.
DATE
(1 ↔ 31)

•Month correction:

Month ← DATE
(1 : Jan. ↔ 12 : Dec.)

•Year correction:

Year ← Month ← DATE
(1970 ↔ 2009)

•Day correction: The day is set automatically with correction of the year, month and date.

Set/reset of chime

Push the crown to call out the chime display mode.



① With pull-out of the crown to the first click stop, the ON/OF (set/reset) begins flashing to be ready for switching.



② The ON/OF switching is possible with push of (R) button.
ON: Set
OF: Reset (Cancel)



③ The crown is set to the original normal position.

[*With setting of the chime, the buzzer rings twice at every hour on the hour.]

Alarm setting method

Push the crown to call out the alarm display mode.



① With pull-out of the crown to the first click stop, the mode mark plus hour (A/P), minute and ON/OF begin flashing to be ready for correction.



② With turning of the crown, the "minute" is set quickly to give the coupled correction to the hour and A/P.



③ The ON and OF switch alternately with every push of (R) button.

ON: Set
OF: Reset (Cancel)



④ Push the crown lightly into the normal position to complete the setting.

*With setting of the alarm, the buzzer rings for one minute at the set time. And the ringing of the buzzer can be stopped any time by pushing an optional push-button (including the crown).

How to use stopwatch

LAP : Lap mark (showing part-way time)

▮▮ : Used for display of under 60 minutes, indicating the minute (') and second (") each.

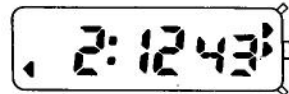
(Note) In the stopwatch display mode, the illumination lamp does not glow even with push of (L) button.

1) Push the crown to call out the stopwatch display mode.

*The "display of under 60 min." and the "display of over 60 min." are available.



Display of under 60 min.

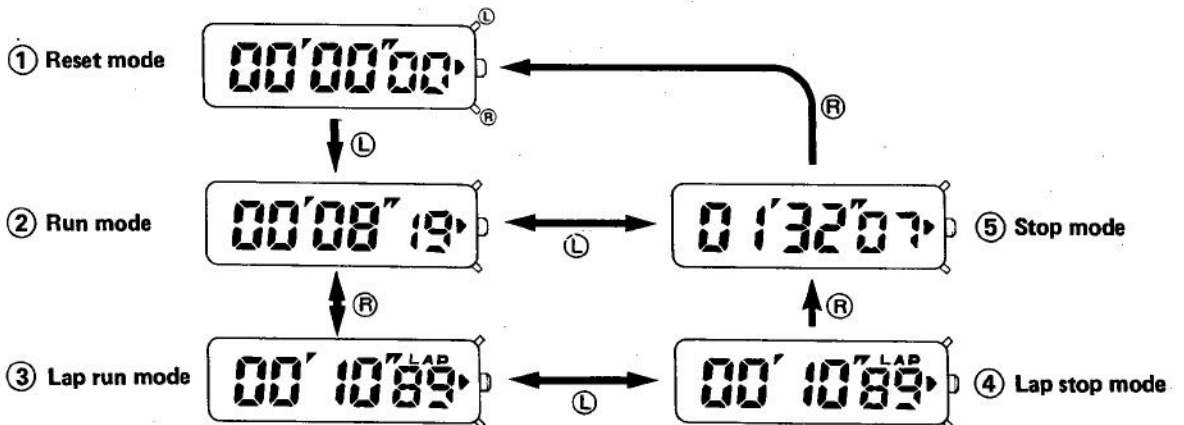


Display of over 60 min. (until 23:59'59")

The time shifts to show the hour, minute and second (23 h. 59 min. 59 sec.) after 59'59"99.

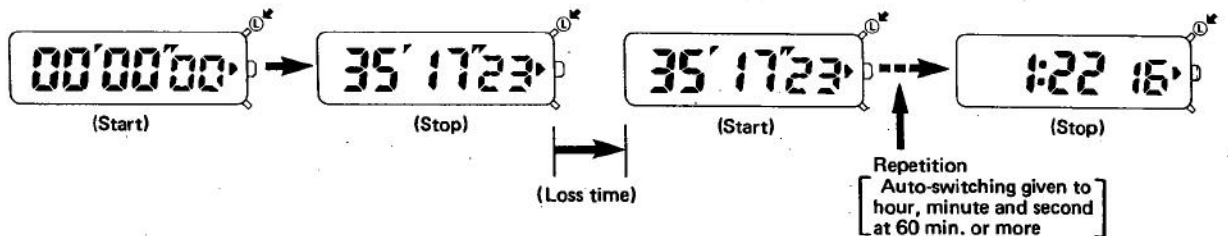
2) Resetting method (The following illustration is based on the "display of under 60 min.")

In the stopwatch display mode, the following five displays (① ~ ⑤) may be given. Thus the stopwatch must be used after resetting.

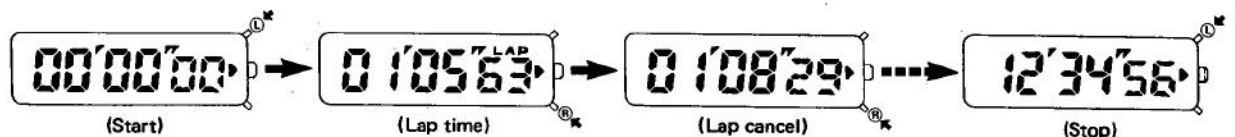


3) Counting method

① Simple and Cumulative counting



② Lap time (Part-way time)

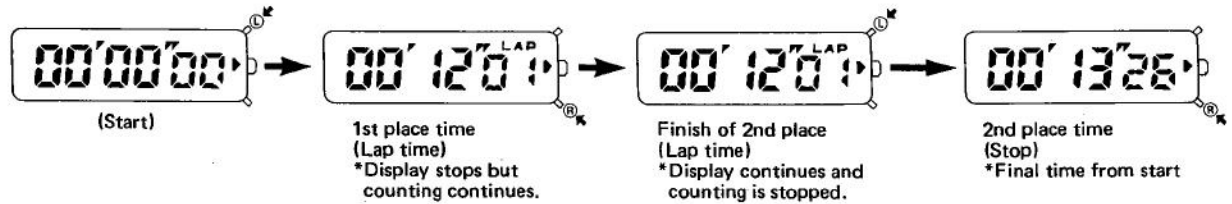


*Display stops but counting continues.

*Cumulative time since start

*Final time

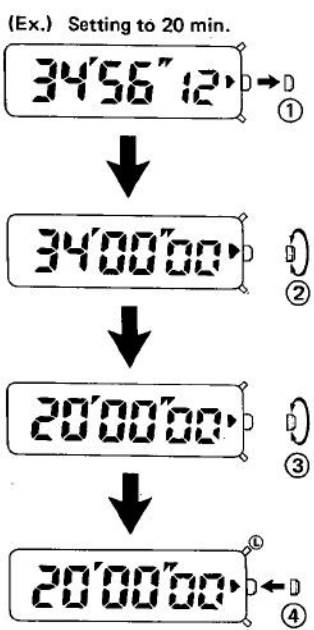
③ Simultaneous counting of 1st and 2nd place times



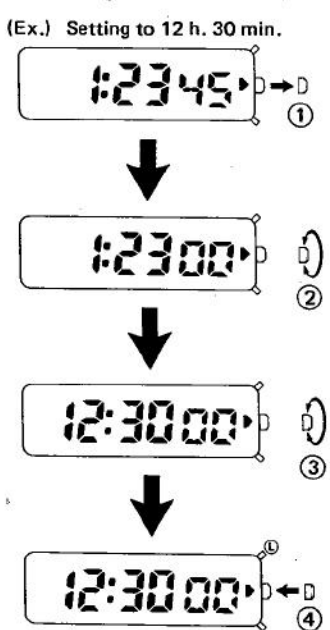
④ If the crown is pulled out to the first click stop under display of the stopwatch, the flashing is given to the "minute" at under 60 min. and to the "hour" and "minute" at over 60 min. each to secure the "Preset mode".

(Presetting method)

(Counting of under 60 min.)



(Counting of over 60 min.)



- ① With pull-out of the crown to the first click stop under timing of the stopwatch, the flashing is given to the "minute" at under 60 min. and to the "hour" and "minute" at over 60 min. each to indicate the correction enable state.
- ② With turning of the crown, the "second" and "1/100 sec." are reset to zero. At the same time, the time stop mode is given under counting.
- ③ With turning of the crown, the "minute" plus the "hour" coupled to the "minute" can be corrected to be set to an optional time.
- ④ Push the crown lightly into the normal position. After this, the same operation is available as that of the stopwatch.

*The presetting is possible even at the resetting time (00'00'00).

*It is impossible to use both the stopwatch and the timer at one time. If the stopwatch is used (start or preset) under use of the timer, the timer counting and the set time are rest (0:00:00).

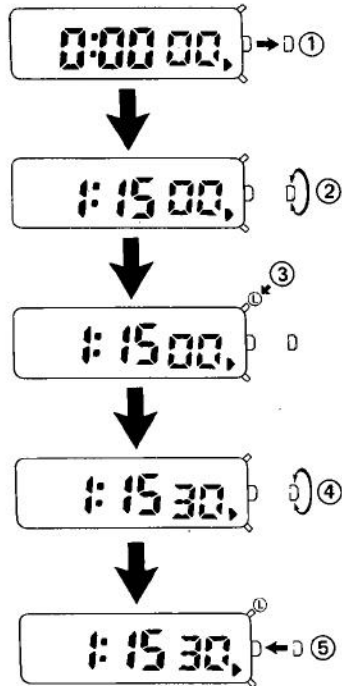
*The sound of confirmation rings once at the start/stop time.

*The flashing areas are shown in the red color.

How to Use Timer

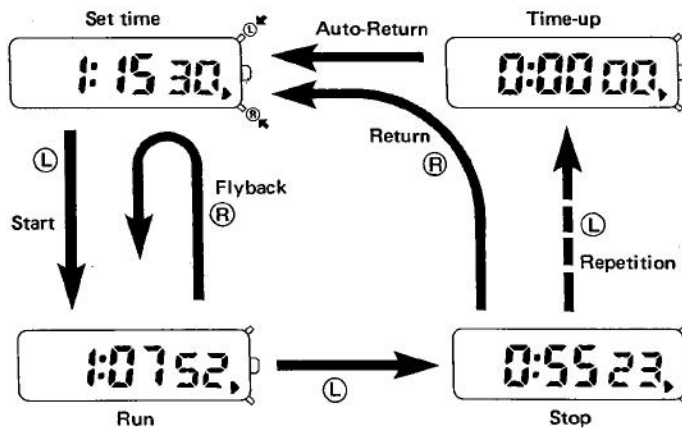
The timer display mode is secured by pushing the crown.
(While using the stopwatch, 0:00.00 is displayed.)

1) Resettting method



- ① With pull-out of the crown by one step, the "hour" and "minute" begin flashing (including the following examples) to be ready for setting. As for the following examples, the set time is reset as soon as the crown is pulled out by one step.
(Ex.)
1:15.30 (Holding at set time)
1:07.52 (Under timing)
0:55.23 (Timing stop)
- ② An optional desired time is set by turning the crown. In case no "second" setting is desired, the crown must be turned to the original place. The button operation for the timer is identical to the stopwatch.
- ③ When the "second" setting is desired, the "second" begins flashing with push of (L) button to be ready for setting.
- ④ An optional desired second is set by turning the crown.
- ⑤ After setting the timer time, the crown must be returned to the original place.

2) How to use



Flyback:

With push of (R) button under counting of the timer, the set time is reset to start immediately.

Return:

With push of (R) button when the timer is stopped temporarily, the set time is reset to stand by in that state.

Time-up:

With start after setting the time, the alarm rings for 10–20 sec. simultaneously with the 0-second detection to announce the "time-up".

Auto-return:

After ringing of the alarm, the set time is reset automatically to stand by in that state.

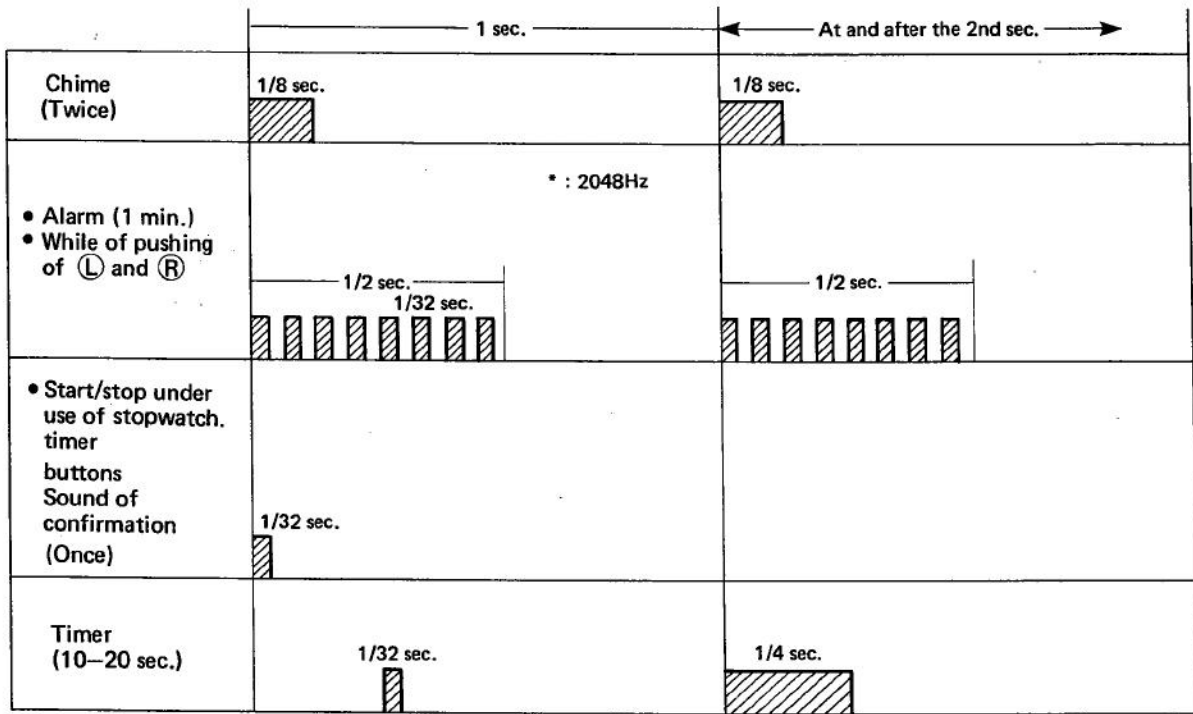
*It is impossible to use both the timer and the stopwatch simultaneously.

*The ringing can be stopped by pushing any button (including the crown).

5. Way of alarm ringing

The way of alarm ringing differs according to the functions as follows.

The diagram below shows the pulse tone duration of the 1-second ringing.



The alarm ringing and timer can be stopped with push of any push-button (including the crown). (Priority given to stoppage of ringing)