

***TECHNICAL
INFORMATION***

CITIZEN QUARTZ

Cal. No. 896※

 **CITIZEN**

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§1. OUTLINE



This "Ana-Digi Lady" is the Citizen's first product in the combination watch for ladies, featuring the minimum size of module among the watches of this type along with a fancy design. Thus it will meet to the full the requirements of the market as well as make an appeal to the contemporary ladies of the world.

§2. FEATURES

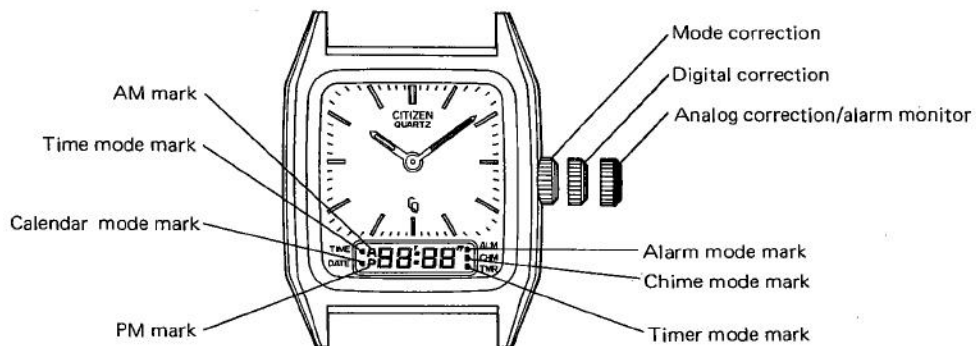
- 1) The Citizen's first combination watch for ladies.
- 2) The minimum size of module among the watches of combination type.
- 3) The operation is possible for multiple functions with just a piece of the crown.
- 4) An electromagnetic correction system is adapted for the analog watch function.
- 5) An hour-based turning of hands is convenient for correction of a time differential.
- 6) The appearance design has a commonness to other gentlemen's combination watches to ensure an application of a paired watches.
- 7) An alarm monitor is possible with every mode for confirmation of each ring.
- 8) The DFC (Digital Frequency Control) method is applied.

§3. SPECIFICATIONS

Caliber No.	8960-02	
Type	Combination quartz watch (with no center second)	
Size of module (mm)	15 (3-9h) x 18 (12-6h) x 20φ Thickness: 2.53 ^t (Power cell part 2.65 ^t)	
Accuracy	±20 sec./month at normal temperatures	
Oscillation	32,768Hz	
Method of display	FE-type nematic LC (liquid crystal) 2-split multiplex driving	
Converter	Bipolar step motor (20 sec. step movement of hands)	
Integrated circuit	C/MOS-LSI (1 unit)	
Effective temperature range	±0°C ~ +55°C (32°F ~ 131°F)	
Adjustment of time rate	DFC method (Unit of measurement of time 10 sec. with no terminal of adjustment)	
Display functions	Time	Hour: minute plus A/P
	Second	Second
	Calendar	Month & date
	Alarm	Hour: minute (only in ON mode)/OFF
	Chime	: 00 (only in ON mode)/OFF
	Timer	00'00" (1-hour counting with setting unit of 1 second)
Additional functions	<ul style="list-style-type: none"> • 12-/24-hour switching function • Alarm monitor • Time differential correcting function • Automatic calendar (28-day system in February) 	
Power cell (Silver oxide cell)	Parts No.	: 280-53 (1 unit)
	Maker code	: SR721W (Ag ₂ O/KOH)
	Size	: 7.9φ x 2.1mm ^t
	Nominal voltage	: 1.55V
	Capacity	: 25mAH
	Lifetime	: About 2 years (20 sec. alarm, 24 hourly chimes & 7.5 sec. timer alarm per day)

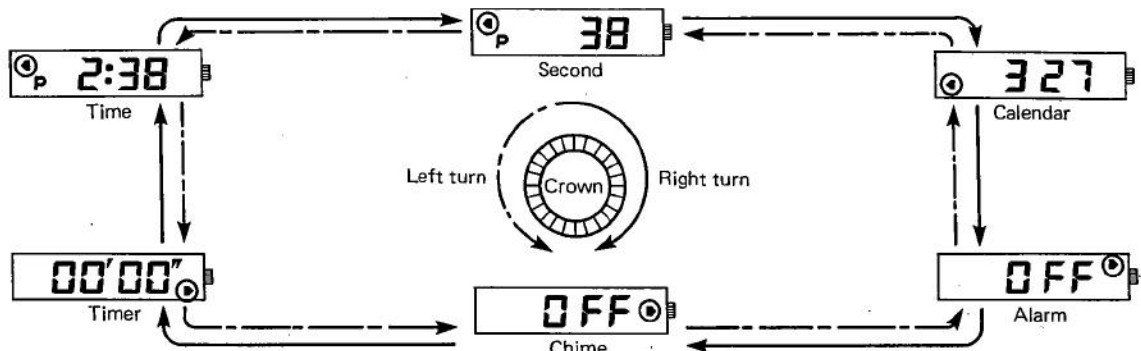
§4. HANDLING INSTRUCTIONS (The flashing is shown by ○.)

4-1. External view of watch



4-2. Switching of mode

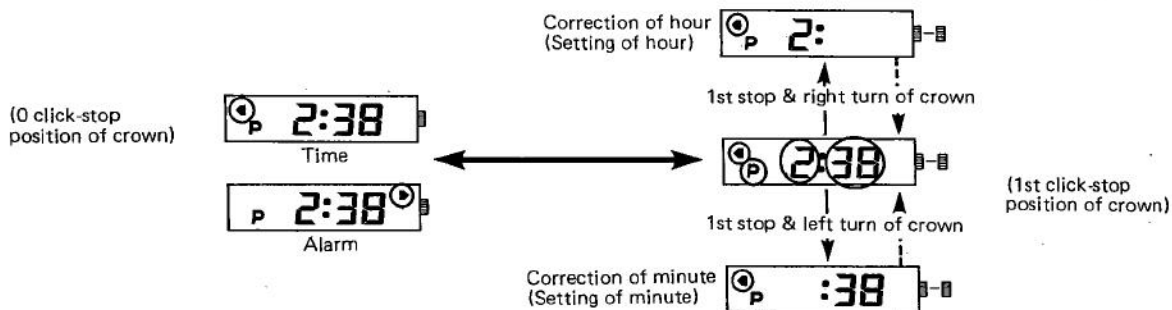
A switching of mode is carried out with the crown set at the 0-stop position.
(The mode mark is displayed to indicate the function which is presently working.)



4-3. Correction of digital time (Setting of alarm time)

The setting of digital time is identical with the setting of the alarm time.

- The crown is set at the 1st click-stop position in the time display mode (alarm display mode) and then turned right to correct the hour (setting of hour) and turned left to correct the minute (setting of minute) respectively.
(The descriptions in the parentheses are for the setting of alarm time. See 4-9 for the ON/OFF switching of alarm.)



4-4. Correction of second

With the crown set at the 1st click-stop position in the second display mode, the second is reset to zero to stop the watch operation.
In this case, the digital watch function is put under the correction mode.

- The watch operation starts again at the moment when the crown is pushed back to its normal position. (0-second setting)
- The digital of minute is carried at the moment of the 0-second resetting by counting 30 or more and omitting 29 or less respectively.
- The analog second is synchronous with the 0-second resetting.

0-reset given at digital n seconds	
Digital second	Analog correction output
$0 \leq n < 30$	Queuing for n-second count*
$30 \leq n < 40$	+2 pulses
$40 \leq n < 60$	+1 pulses

1 pulse = 20 sec.

*A 0-second reset that causes an analog correction does not queue. The count queuing is cancelled by an analog correction given in the count queuing mode.

4-5. Analog correction

1) Correction in time display mode

The correction mode is obtained by setting the crown at the 2nd click-stop position.

- Right turn of crown (1/4 turn)

An hour-based turning of hands is carried out. When a midway stop is desired for the analog correction, give another 1/4 turn to the crown.

- Left turn of crown (1/4 turn)

The time is corrected with every 20 seconds.

A time differential can be conveniently corrected since the second timing is given consecutively.

2) Correction in second display mode

The operation is identical with 1). In this case, the second timing is at pause.

(The digital watch is put under the 0-reset queuing mode.)

4-6. Correction of calendar

The correction mode is obtained by setting the crown at the 1st click-stop position in the calendar display mode. Then the crown is turned right to correct the month and left to correct the date respectively.

- Even in case a non-existing date (such as April 31 and the like) is set, the date will be changed automatically to the first day of the following month after the crown is once set at its normal position.

- As 28 days are usually set in February, it is required to set specially 29 days for a leap year.

4-7. Operation of timer

1) Setting of timer

The setting mode is obtained by setting the crown at the 1st click-stop position in the timer display mode. (In this moment, a sound of confirmation is heard.) The crown is turned right to set the minute and left to set the second respectively. The second is reset (00 second) with a set of the minute. Accordingly the minute must be set first when a setting is required for the second. (1-hour counting with the setting unit of one second)

2) Start/stop

- The counting action is started after setting a time by pushing the crown to its normal position and stopped by setting the crown at the 1st click-stop position respectively.

- A timer tone is heard for 10 ~ 20 seconds when the time is counted up.

- A sound of confirmation is heard in a start/stop mode.

4-8. ON/OFF switching of chime and alarm

An ON/OFF switching is carried out by setting the crown at the 1st click-stop position and then setting it back to its normal position in each mode of chime and alarm.

4-9. Switching of 12-/24-hour displays

A switching is carried out between the 12- and 24-hour displays by setting the crown at the 1st click-stop position and then setting it back to its normal position in the time display mode.

4-10. Alarm monitor

The following four different kinds of alarm monitor tones are provided to this caliber. These monitor tones are heard 1 ~ 2 minutes by setting the crown at the 2nd click-stop position.

- 1) A consecutive tone given in calendar display mode
- 2) An alarm tone given in alarm display mode
- 3) A chime tone given in chime display mode
- 4) A timer tone given in timer display mode

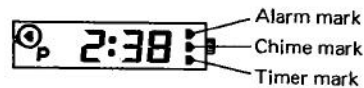
The alarm tones can be stopped at any moment by setting the crown back to its normal position.

4-11. Stopping of alarm tone

A priority is given to any operating way of the crown to stop the ring of alarm.

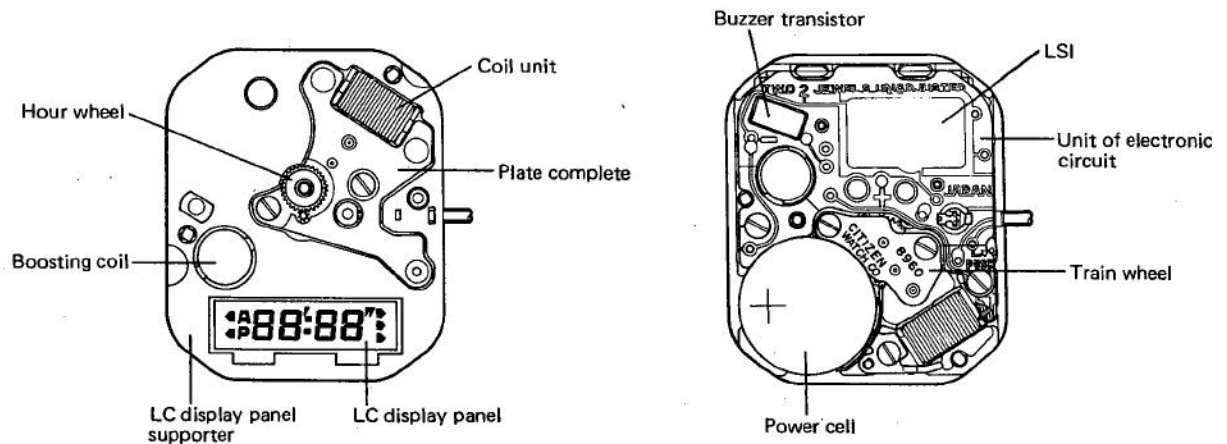
4-12. Display of mode marks

In each display mode of the time, second and calendar, each mode mark is displayed to indicate the working of each function.



(Time display mode)

§5. STRUCTURE OF MODULE



(Rear side of unit of electronic circuit)

