

# ***TECHNICAL INFORMATION***

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## **CITIZEN QUARTZ**

### **Cal. No. C710**

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## §1. OUTLINE

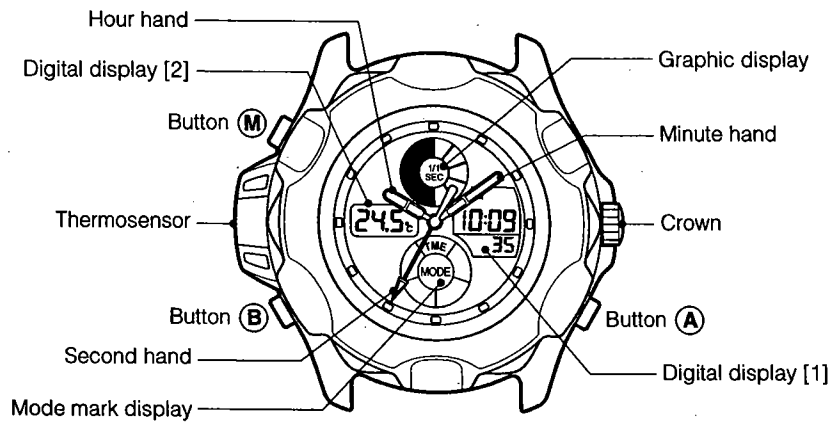
This watch is a combination quartz watch with calendar and various functions such as alarm, chronograph and timer.

It also has a thermometer function and an EL (electroluminescence) light function.

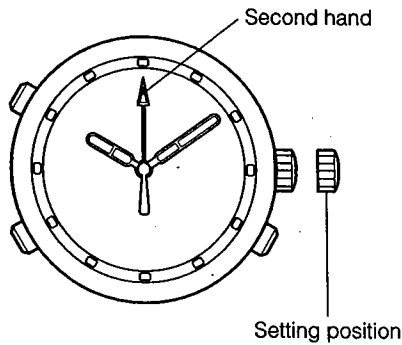
## §2. SPECIFICATIONS

Caliber No.		<b>C710</b>	
Type		Combination quartz watch	
Movement size (mm)		φ 30.8 x 5.45t	
Accuracy (At normal temperature)		±20 sec/month (+5°C ~ +35°C / 41°F ~ 104°F)	
IC		2 units of C/MOS-LSI	
Operating temperature		0°C ~ +55°C (32°F ~ 131°F)	
Converter		Bipolar step motor	
Time adjustment		No adjustment terminal for in the market	
Measurement gate		10 sec.	
Display functions	Analog time	Hour, Minute, Second	
	Digital functions	Time	Hour, Minute, Second, Temperature
		Calendar	Month, Date, Day of the week, Temperature
		Alarm	Set time (hour, minute), ON/OFF (off)
		Chronograph	24-hour measurement (1/1000 second unit), Split time measurement
		Timer	60-minute timer (1 minute unit)
Additional functions		<ul style="list-style-type: none"> <li>• EL light function</li> <li>• Thermometer function</li> <li>• Low battery indicator function</li> </ul>	
Battery	Parts No. / Code	280-44 / SR927W	
	Normal voltage / Capacity	1.55V / 60MAH	
	Life time	Approx. 2 years. (Alarm sound: 20 sec./day, Timer sound: 5 sec./day, EL illuminate: 3 sec./day)	

### §3. NAME OF PARTS



### §4. SETTING THE HANDS



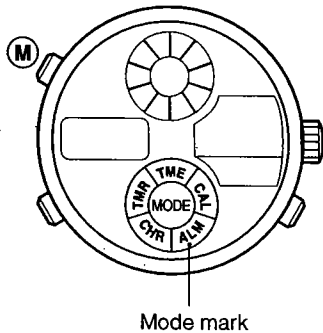
- (1) Pull the crown out to stop the second hand.
- (2) Turn the crown to set the correct time.
- (3) Press the crown back in to restart.

Analog and digital time can be set individually as a dual-time watch.

### §5. CHANGING DIGITAL FUNCTIONS (MODES)

Besides the time function, this watch has four other functions. Calendar, alarm, chronograph and timer.

The current mode can be checked by the mode mark. Each timer button (M) is pressed, the watch mode changes in the following sequence.



Mode mark	Mode (function)
TME	Time
CAL	Calendar
ALM	Alarm
CHR	Chronograph
TMR	Timer

#### <Automatic return function>

When the watch is left in alarm mode for more than 2 minutes, it automatically returns to time mode.

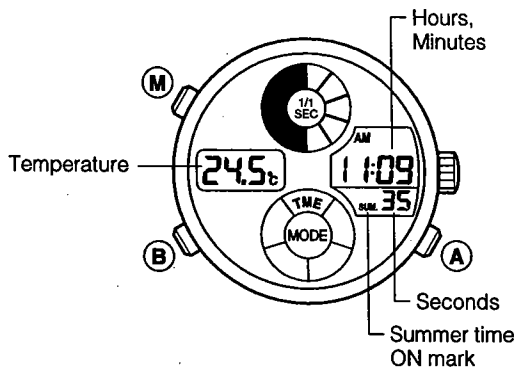
## §6. USING EACH FUNCTION (MODE)

### A. Time mode <TME>

When button **(A)** is pressed or being pressed in time mode, the EL light is turned on.

When button **(B)** is pressed, the current temperature is recalculated.

#### [Normal time display]



#### <Switching to summer time (daylight saving time)>

- (1) Press button **(B)** in time mode for more than 2 seconds. The "SUM." and "ON/OFF" starts blinking to indicate that the watch enters time setting mode. The blinking figures can be adjusted.
- (2) Press button **(A)** to set summer time on or off. Each time button **(A)** is pressed, the summer time setting mode is switched on (ON) or off (OF) alternately.
- (3) Press button **(M)** to return the watch to normal time display.

\* When watch is set to the summer time (ON).

The "SUM." appears and the watch indicates time that is one hour ahead of standard time.

#### <Setting digital time>

- (1) Press button **(B)** in normal time mode for more than 2 seconds. The "SUM." and "ON/OFF" starts blinking to indicate that the watch enters time setting mode.
- (2) Each time button **(B)** is pressed in time setting mode, the blinking figures change from the "SUM." to "seconds", "minutes", "hours", "12-hour/24-hour", and to "SUM." again. Use button **(B)** to select the figures you want to change.
- (3) Adjust the blinking figures by pressing button **(A)**. (If button **(A)** is pressed continuously, the figures change quickly.)
  - The summer time display is switched ON/OFF each time button **(A)** is pressed.
  - For resetting seconds, press button **(A)** to restart from "00" second.
  - The "12-hour/24-hour" indication system is switched alternately each time button **(A)** is pressed.
- (4) Press button **(M)** to return the watch to normal time display.

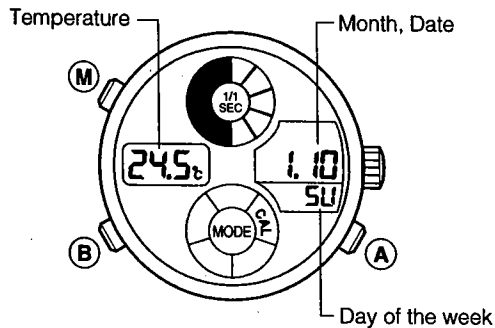
- When setting time in 12-hour indication system, make sure it is correctly set for the morning (AM) or the afternoon (PM).
- If the watch is left in time setting mode (figures blinking) for more than 2 minutes, it returns to normal time display automatically.
- If button **(M)** is pressed in time setting mode, the watch returns to normal time display.

## B. Calendar mode <CAL>

When button **(A)** is pressed or being pressed in calendar mode, the EL light is turned on.

When button **(B)** is pressed, the current temperature is recalculated.

### [Normal calendar display]



### <Setting calendar>

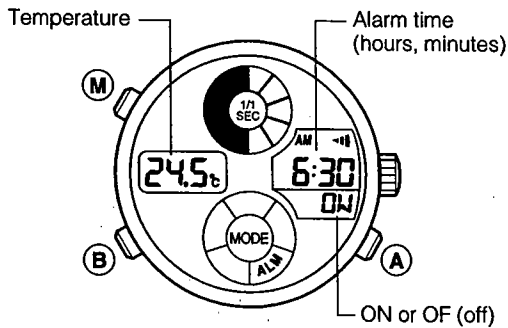
- (1) Press button **(B)** in calendar mode for more than 2 seconds. The "Month" starts blinking to indicate that the watch enters calendar setting mode.
- (2) Press button **(B)** to select the setting "Month", "Date", or "Year". Blinking figures move in order from "Month" to "Date", to "Year".
- (3) Press button **(A)** to adjust the blinking figures. (If button **(A)** is pressed continuously, the figures changes quickly.)
- (4) Press button **(M)** to return the watch to normal calendar display.

- The Year (in the Christian era) can be set between 1998 and 2099. (Year display appears in calendar setting mode only.)
- If the watch is left in calendar setting mode (figures blinking) for more than 2 minutes, the watch returns to normal calendar display automatically.
- The correct day of the week is automatically set as a result of setting the year, month and date.
- If the date is set to a non-existing date (for example, February 30), the watch automatically displays the first day of the next month when it returns to normal calendar display.
- This watch need not to set for the 1st day of every month due to the automatic calendar function.
- If button **(M)** is pressed in calendar setting mode, the watch returns to normal calendar display.

## C. Alarm mode <ALM>

Once this alarm is set (ON) it sounds for 20 seconds at the same time every day.

### [Normal alarm display (ON)]



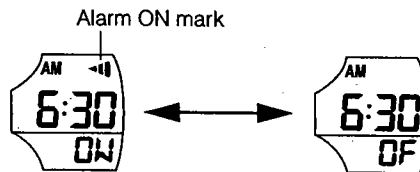
### <Setting alarms>

- (1) Press button **(B)** in alarm mode for more than 2 seconds. The "Hours" starts blinking to indicate that the watch enters alarm setting mode.
- (2) Press button **(A)** to adjust "Hours".
- (3) While the "Hours" is blinking, press button **(B)** to start the "Minutes" blinking.
- (4) Press button **(A)** to adjust "Minutes". (Pressing button **(A)** continuously changes the figures quickly.)
- (5) Press button **(M)** to return the watch to normal alarm display.

### <Switching alarm ON/OFF>

Each time button **(A)** is pressed while in normal alarm display, the alarm is switched ON/OFF (off) alternately.

When the alarm is ON, the "ON mark" turns on.



### <Alarm sound duration, Stopping alarm>

The Alarm sound duration is 20 seconds. Alarm sound stops by pressing any button.

### <Monitoring sound>

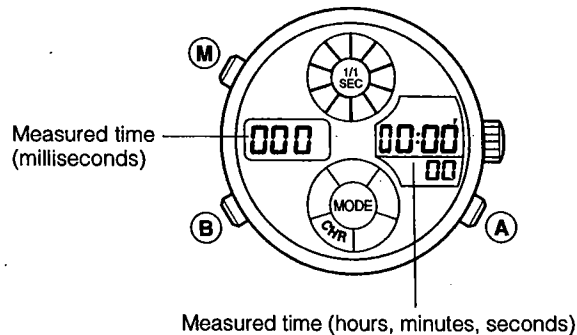
While button **(A)** is being pressed in alarm mode, the alarm continues to sound.

- When time mode is in 12-hour system, the alarm mode is in the same system. Be aware of AM/PM indication whether it is set for morning (AM) or afternoon (PM).
- If time mode is set for summer time, it does not affect the alarm mode.
- If the watch is left in alarm setting mode for more than 2 minutes, it automatically returns to normal alarm display.
- If button **(M)** is pressed in alarm setting mode, the watch returns to normal alarm display.

## D. Chronograph mode <CHR>

The chronograph is capable of measuring and indicating a maximum of 23 hours, 59 minutes, 59 seconds and 999 milliseconds in increments of 1/1000 second. After 24 hours, it stops with a reset display of "00°00'00"000". The chronograph can also measure split time (elapsed time).

### [Chronograph reset display]

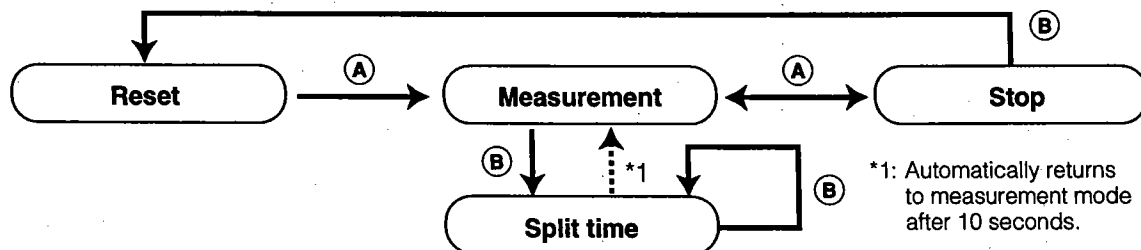


#### <Total elapsed time measurement>

- (1) The chronograph starts or stops each time button **A** is pressed.
- (2) To reset the chronograph, press button **B** after it is stopped.

#### <Split time measurement>

- (1) The chronograph starts or stops each time button **A** is pressed.
- (2) Press button **B** during a time measurement, and the watch shows a split time for 10 seconds. While a split time is shown, "SPLIT" will blink. Each time button **B** is pressed, the chronograph shows the latest split time.
- (3) To reset chronograph, press button **B** after it is stopped.



#### <Changing the mode during time measurement in chronograph mode>

Even if button **M** is pressed during a time measurement in chronograph mode and mode is changed, time measurement is continued internally. The measured time is shown when the mode is returned to chronograph again. However, if the time measurement is continued for more than 24 hours, the chronograph stops at the reset state.

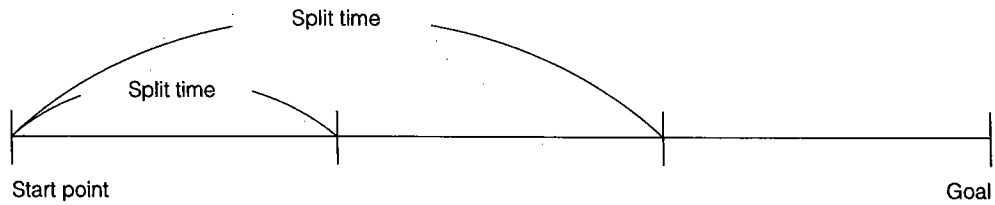
#### \* Confirmation sound and EL light

At the time of start, stop, split time check or reset operation in chronograph mode, a confirmation sound is heard.

At the time of stop or a split time measurement, the EL light is turned on for 3 seconds with the sound.



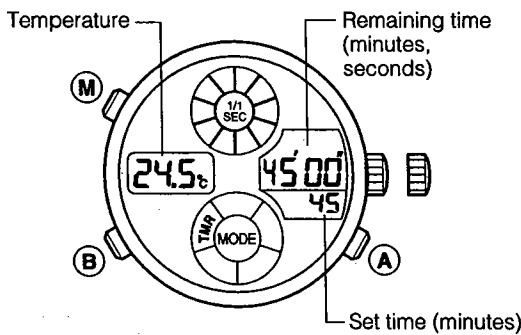
**Split time: Elapsed time from start point**



**E. Timer mode <TMR>**

The timer can be set for 1 minute to 60 minutes in increments of 1 minute. When the set time is up, a time-up warning sound is heard for about 5 seconds. After that, the timer returns to set time and stops.

**[Timer setting display]**

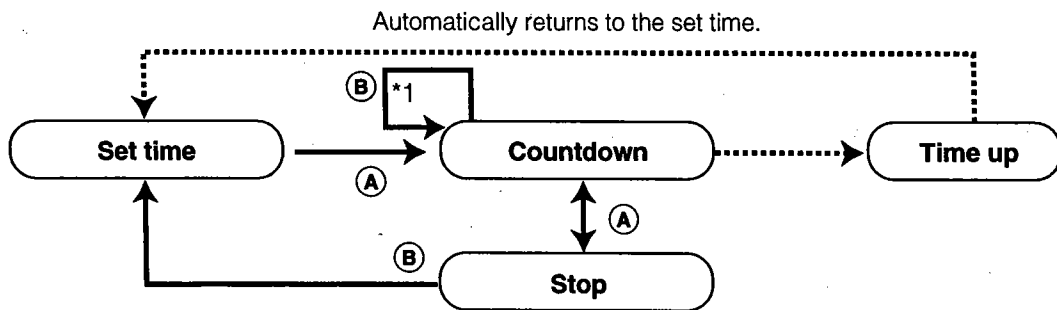


**<Setting timer>**

Press button **(B)** in timer setting display (set time is blinking) to change the set time. Each time button **(B)** is pressed, the indicated set time decreases by 1 minute. (If button **(B)** is pressed continuously, the indicated value decreases quickly.)

**<Timer countdown>**

- (1) Press button **(A)** to start the timer at the set time.
- (2) If button **(A)** is pressed during timer countdown, the timer stops. If button **(A)** is pressed again, the timer restarts.
- (3) If button **(B)** is pressed when the timer stops, the display returns to the timer set time.



\*1: Timer restart function

If button **(B)** is pressed during timer countdown, the mode immediately changes to timer set time display and restarts.

**• Confirmation sound**

At the time of start, stop, reset or timer restart operation in timer mode, a confirmation sound is heard.

**<Changing modes during timer countdown>**

If button **(M)** is pressed in timer mode to change the mode, the time countdown is continued internally. If the mode is changed again to timer mode, the time continuously counted down by the timer is displayed. However, if the timer time is up, the display returns to timer set time.

## §7. USING THE THERMOMETER

The thermometer indicates the current or last measured temperature in all modes except the chronograph mode.

Temperature is measured in two ways:

1. By button operation at any time
2. Automatically measured every hour, on the hour

Temperature can be indicated either in centigrade (°C) or on Fahrenheit (°F).

### <Automatic temperature measurement>

Temperature is automatically measured every hours, on the hour and when the mode changes from chronograph to timer.

However, if the watch is in the setting status (blinking indication) in time mode or chronograph mode at the moment of measurement, no temperature is measured.

### <Temperature measurement by button operation>

If button **(B)** is pressed in the normal time mode or calendar mode, temperature is repeatedly measured for 3 minutes at intervals of 2 seconds.

### <Temperature measurement range and accuracy>

	In Centigrade (°C)	On Fahrenheit scale (°F)
Temperature display range	-9.9°C ~ +59.9°C	14°C ~ 139°F
Measurement unit	0.1°C	1°F
Measurement accuracy	20°C ~ 30°C : ±1°C -5°C ~ +40°C : ±2°C	36°F ~ 86°F : ±2°F 23°F ~ 104°F : ±4°F

### (Note)

- If the watch is worn on the wrist during temperature measurement, the body temperature affects measurement.

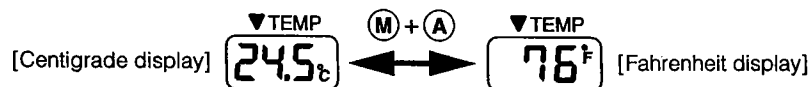
For accurate temperature measurement, take the watch off and leave it in the measuring environment at least for 20 to 30 minutes. The influence of body temperature depends on environmental conditions such as difference between atmospheric temperature and body temperature before taking the watch off, etc.

- Do not use the thermometer out of the display range. Extremely hot or cold temperature may cause breakdown of the watch.

### <Switching temperature display between centigrade and Fahrenheit>

Press button **(A)** in time or calendar mode for more than 3 seconds while pressing button **(M)**. The temperature display changes from centigrade (°C) to Fahrenheit (°F) or vice versa.

If button **(A)** is pressed before button **(M)**, display does not change.

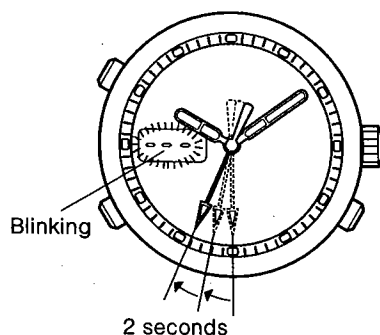


## §8. LOW BATTERY INDICATOR

When the battery gets weak, the low battery indicator function appears in digital display 2 as shown below.

- The second hand moves at 2-second intervals (moves by 2 increments every 2 seconds).
- In time or calendar mode, the temperature display starts to blinking " - - -".

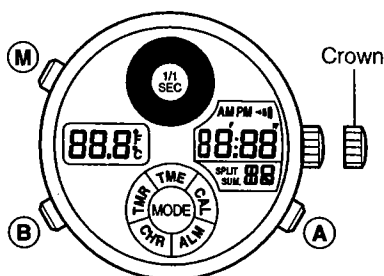
Even when the watch falls into such condition, it still displays the time but the EL light, thermometer and alarm will not function. Immediately replace the battery with new one.



## §9. ALL RESET

After replacement of the battery, be sure to perform the all reset operation as shown below.

If the watch malfunctions or shows an abnormal display as a result of an excessive shock or static electricity (for example, the watch indicates nothing, continuously sounds alarm, etc.). Perform the all reset operation.

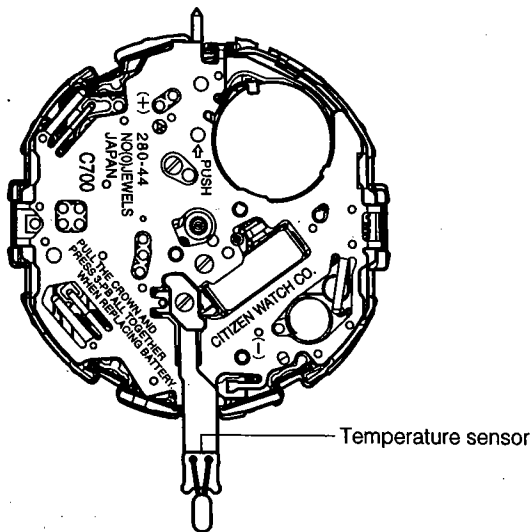


- (1) Pull the crown out.
- (2) Simultaneously press buttons **A**, **B** and **M**.
- (3) Release the three buttons.
- (4) Press the crown back. (A confirmation sound is heard.)

All reset operation is complete.

Before use, reset the watch for the correct time in all modes.

## §10. PRECAUTIONS FOR HANDLING TEMPERATURE SENSOR



When disassembling and reassembling the watch or when removing and installing the movement, take care not to bend the terminals of the temperature sensor sharply. If those terminals are bent badly, the temperature sensor may have a trouble in measurement or may be broken.

Since the temperature sensor is sensitive to static electricity, too, handle it with special care.

### <Note>

The temperature sensor and electronic circuit unit are adjusted as a set for high accuracy. Accordingly, when either of them needs to be replaced, do not replace only that one but replace them with a set of a new temperature sensor and a electronic circuit unit.

## §11. TROUBLE SHOOTING AND ADJUSTMENT

Basic structure of movement is same to CAL. C700.

Refer to CAL. C700 Technical Information for disassembly and assembly of movement, troubleshooting and adjustment.