

***TECHNICAL  
INFORMATION***

---

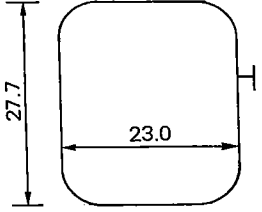
**CITIZEN QUARTZ**

**Cal. No. T010**

## ■1. OUTLINE

This caliber is a standard combination watch for men that was designed to have a popular price.

## ■2. Specifications

Cal. No.		T010-01
Type		Combination watch (Analog section: with center second)
Movement (mm)		<div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>Thickness: 3.5 (measured when the power cell section is included)</p> </div> </div>
Accuracy		±20 sec./month at normal temperatures
Oscillation		32,768Hz
Display method		FE twist-type nematic LC (Liquid Crystal)
Integrated circuit		C/MOS-LSI (1 unit)
Effective temp. range		0°C ~ +55°C (32°F ~ 131°F)
Converter		Bipolar step motor
Adjustment of time rate		Trimmer condenser
Measurement of time rate		2 seconds
Display functions	Analog section	Hour, minute, second
	Digital section	
	Normal time	Hour, minute, second, AM/PM
	Calendar	Month, date, day
	Alarm	Hour, minute, AM/PM
	Stopwatch	Minute, second, 1/100 second (Up to 60 minutes timing)
Additional functions		Chime Fully automatic calendar (February ends on the 28th) Switchover between 12H/24H displays Alarm monitor
Power cell	Parts No.	280-51
	Cell code	SR920W
	Size (mm)	9.5φ x 2.1t
	Voltage	1.5V
	Capacity	39mAH
	Lifetime	About 1.5 years (Alarm: 20 sec./day, Chime: 24 times/day).
Value of current		2.9μA (for the operation of the module)
Value of coil resistance		Within a range of 2.8KΩ to 3.4KΩ
Remarks		

## 3. HANDLING INSTRUCTIONS

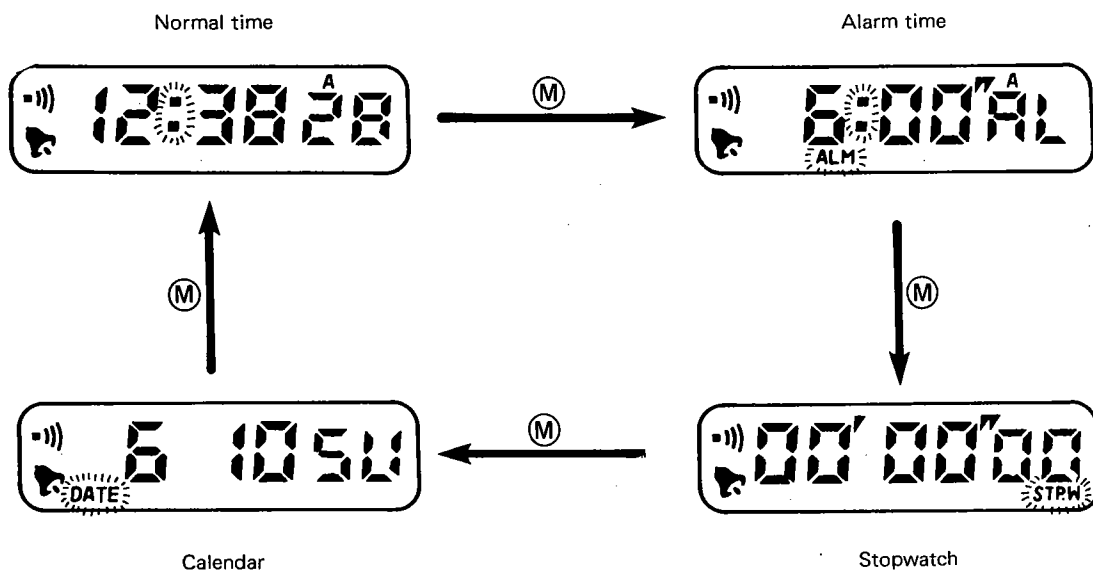
### 3-1. Nomenclature



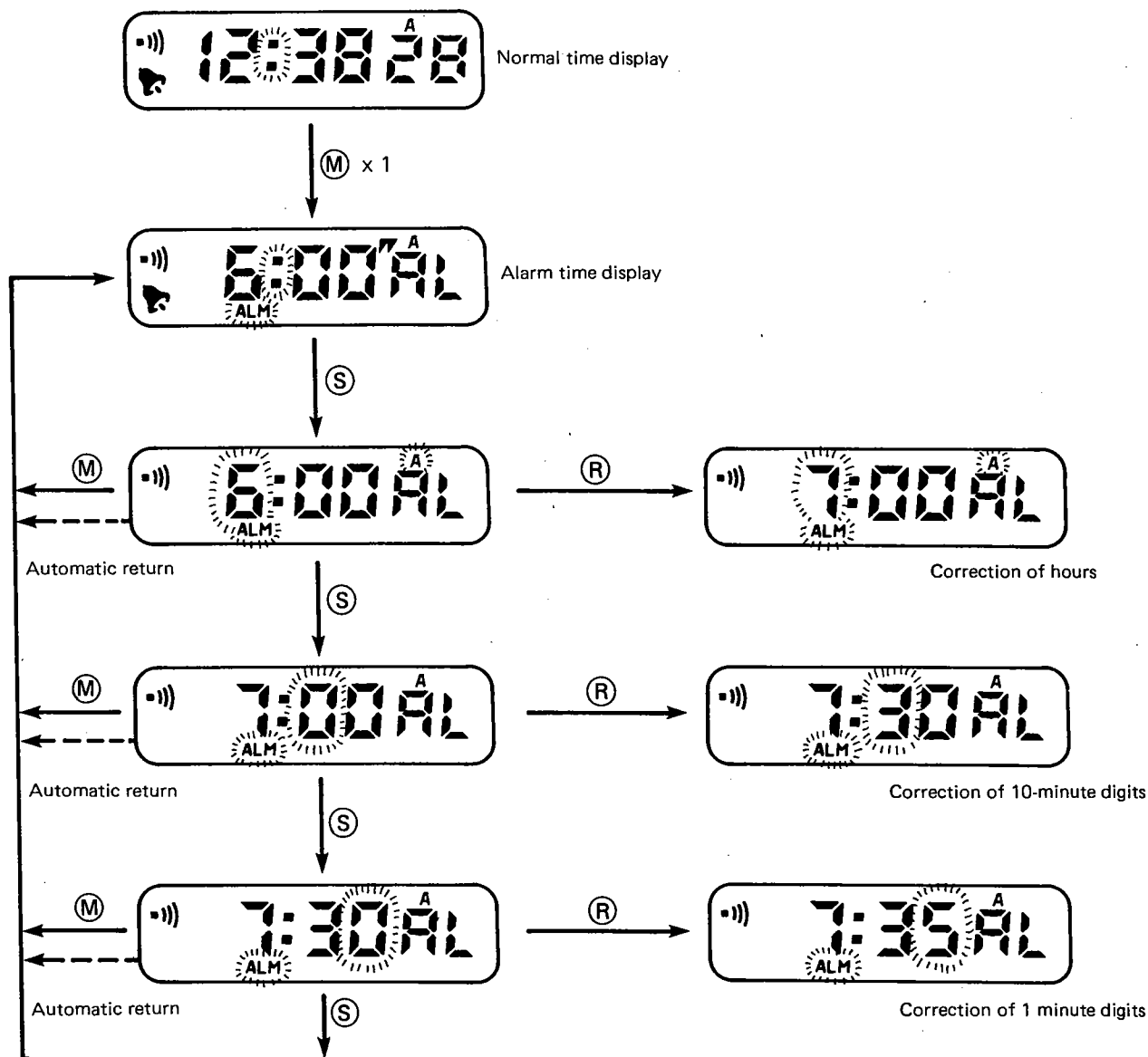
- Crown ----- Setting of analog time
- (M) button ----- Mode changing, previous condition restoration
- (S) button ----- Selection of digits to be corrected, lap, resetting
- (R) button ----- Correction, start, stop, ON/OFF of alarm

### 3-2. Changeover procedure of displays

The "☀" mark indicates flashing.

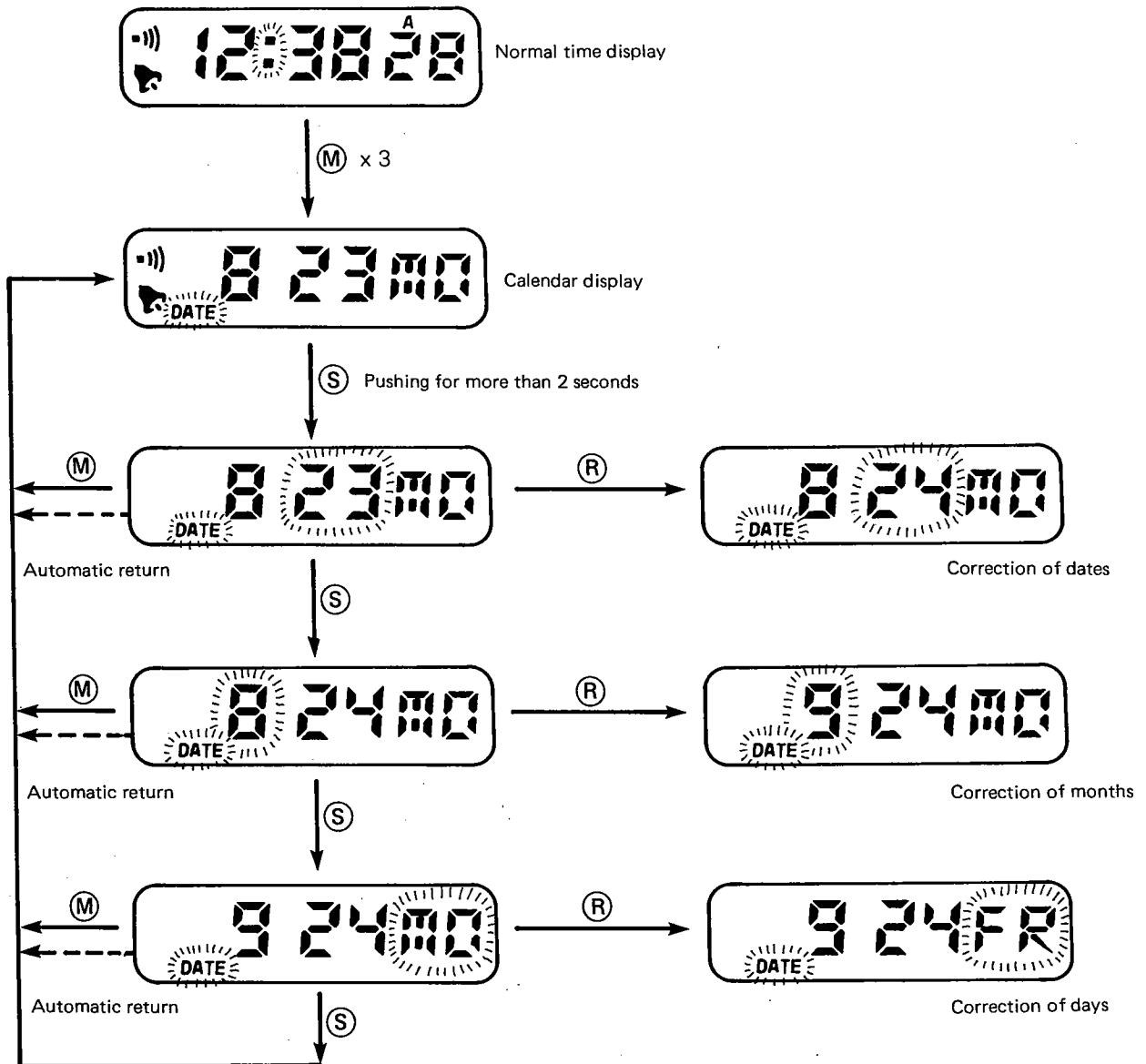


## (4) Correction of alarm time



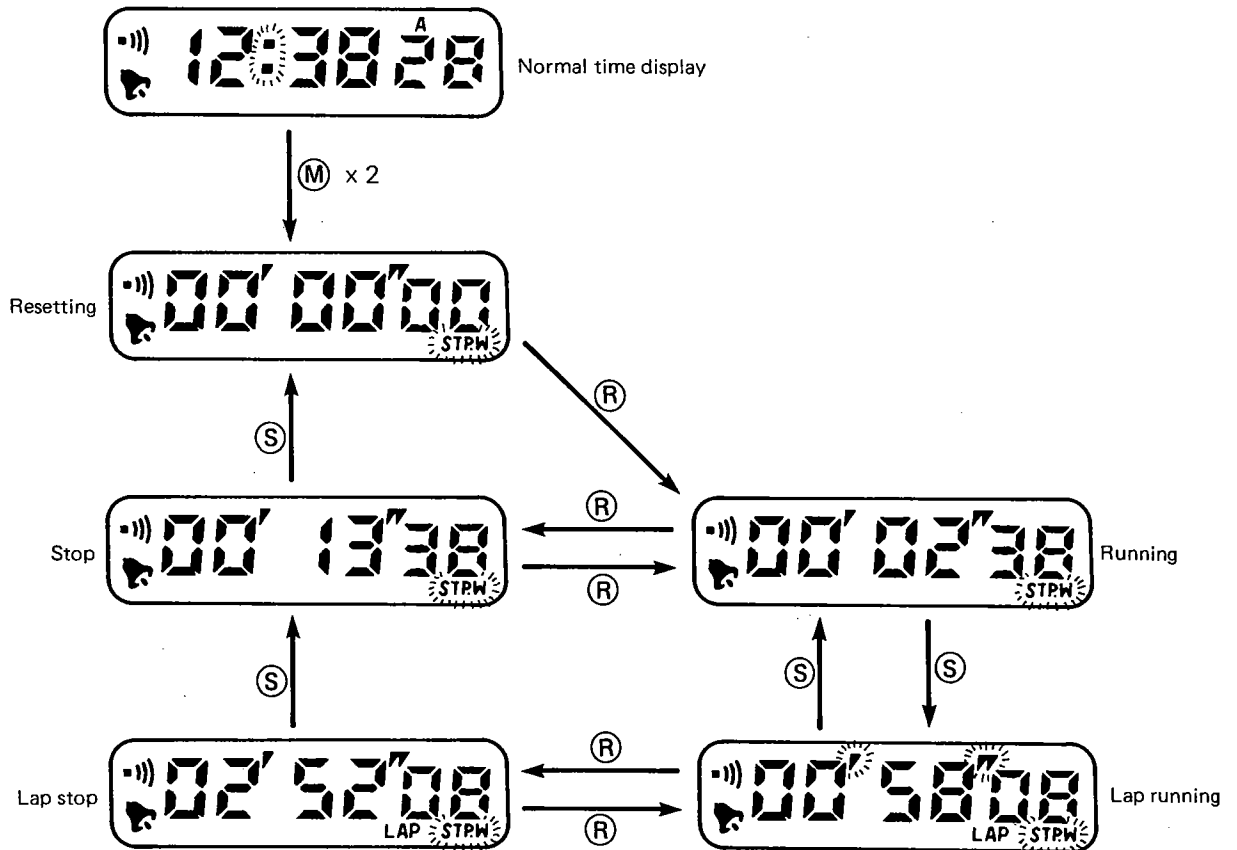
- "Hour" of alarm time is set in accordance with the 12H/24H of the normal time display.
- If alarm time is corrected, the alarm function will automatically be generated even though it has been turned OFF.
- If any correction mode is left as it is for approximately one minute, the alarm display will automatically return.
- If the **(M)** button is pushed after correction, the alarm display will be restored.

## (3) Correction of calendar



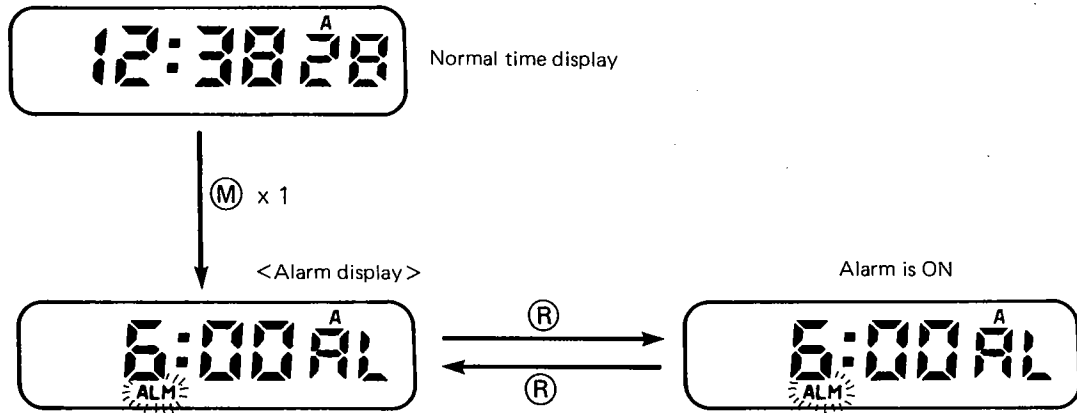
- If any correction mode is left as it is for approximately one minute, the calendar display will automatically return.
- If the **(M)** button is pushed after correction, the calendar display will be restored.
- If the non-existing date is set, the first day of the following month will be displayed when the calendar display returns or is restored.
- In this watch, February ends on the 28th. Date correction is necessary during a leap year.

## (7) Stopwatch operation procedure



- In case the chime has been set ON, the confirmation sound is heard with every push of either the **(S)** button or the **(R)** button.
- Timing will continue even if other modes are displayed during running.
- If other modes are displayed during the lap running, normal running will replace the lap running.
- In the stopwatch mode, if either the **(S)** button or the **(R)** button is pushed to stop the alarm which sounds during timing, the timing is also discontinued.
- If other modes are displayed during the lap stop and then the stopwatch mode is displayed again, lap stop time will be indicated.

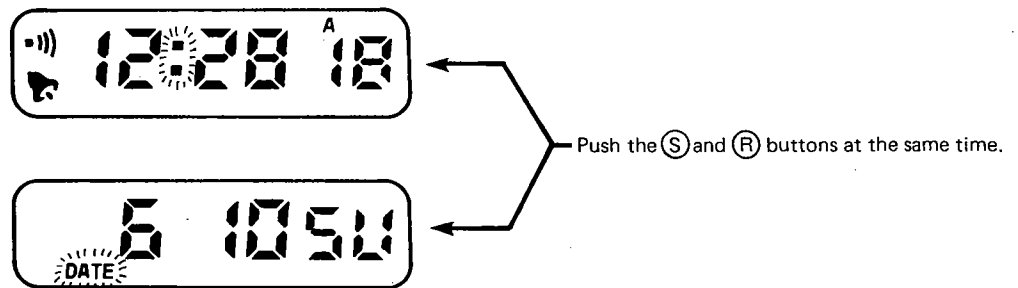
## (5) Alarm setting and release



- Alarm sounds for 20 seconds.
- Alarm stops sounding with a push of any button with the exception of the crown button.

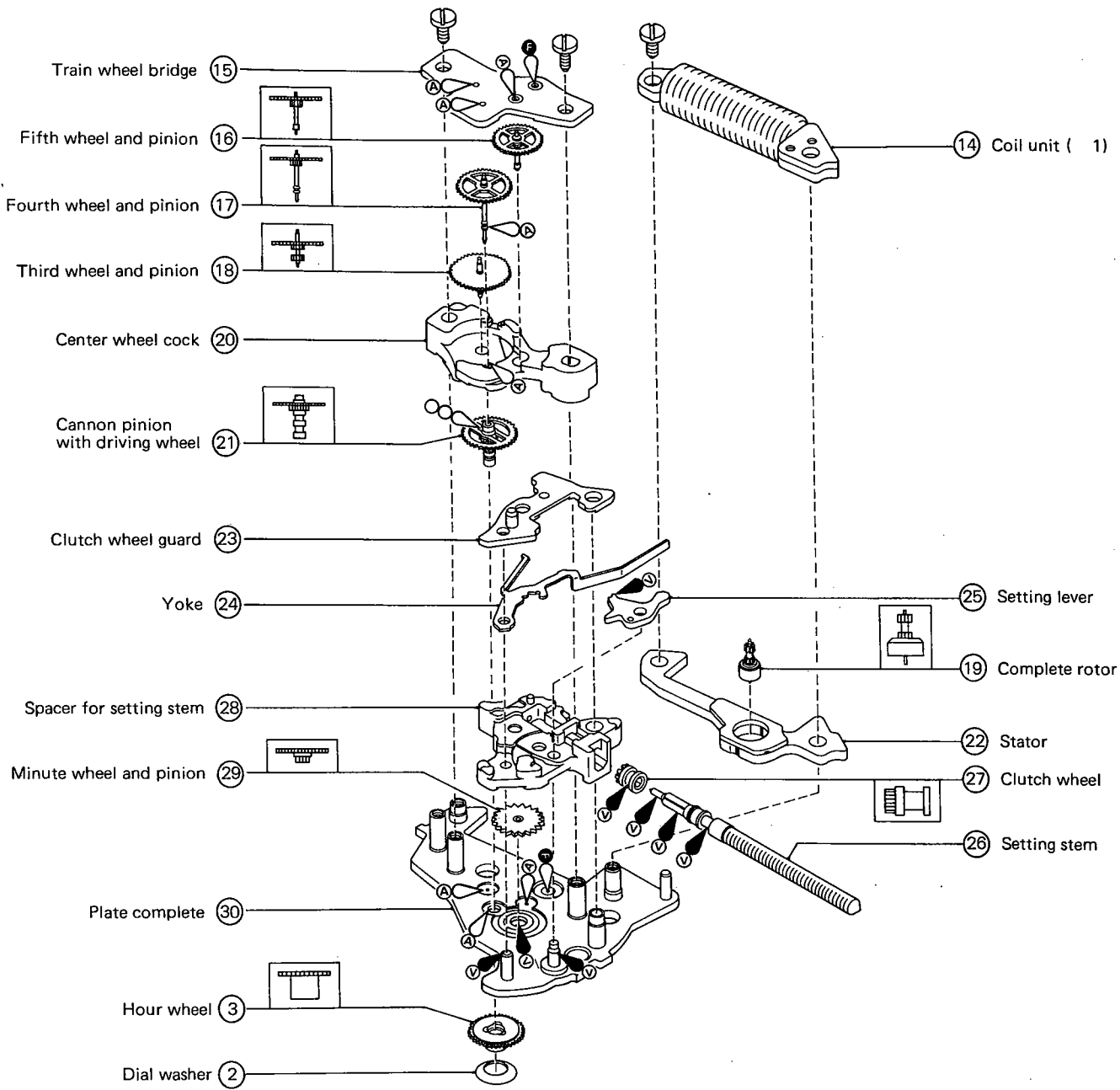
Alarm ON	The " □ ) ) ) " mark lights.
Alarm OFF	The " □ ) ) ) " mark ceases to light.

## (6) Setting and release of hourly chime, alarm monitor



- The alarm monitor is generated with a simultaneous push of the (S) and (R) buttons in the normal time display or the calendar display. At this moment, setting and release of hourly chime can be alternately carried out with every push of the (S) and (R) buttons at the same time.
- When the hourly chime is ON in the normal time display, the colon flickers at 1 Hz. On the contrary, when the hourly chime is OFF, the colon lights.

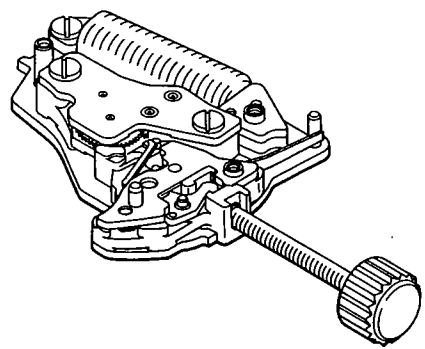
Hourly chime ON	The " 🗣 " mark lights.
Hourly chime OFF	The " 🗣 " mark ceases to light.



\* Mount the hour wheel and the dial washer from the dial side.

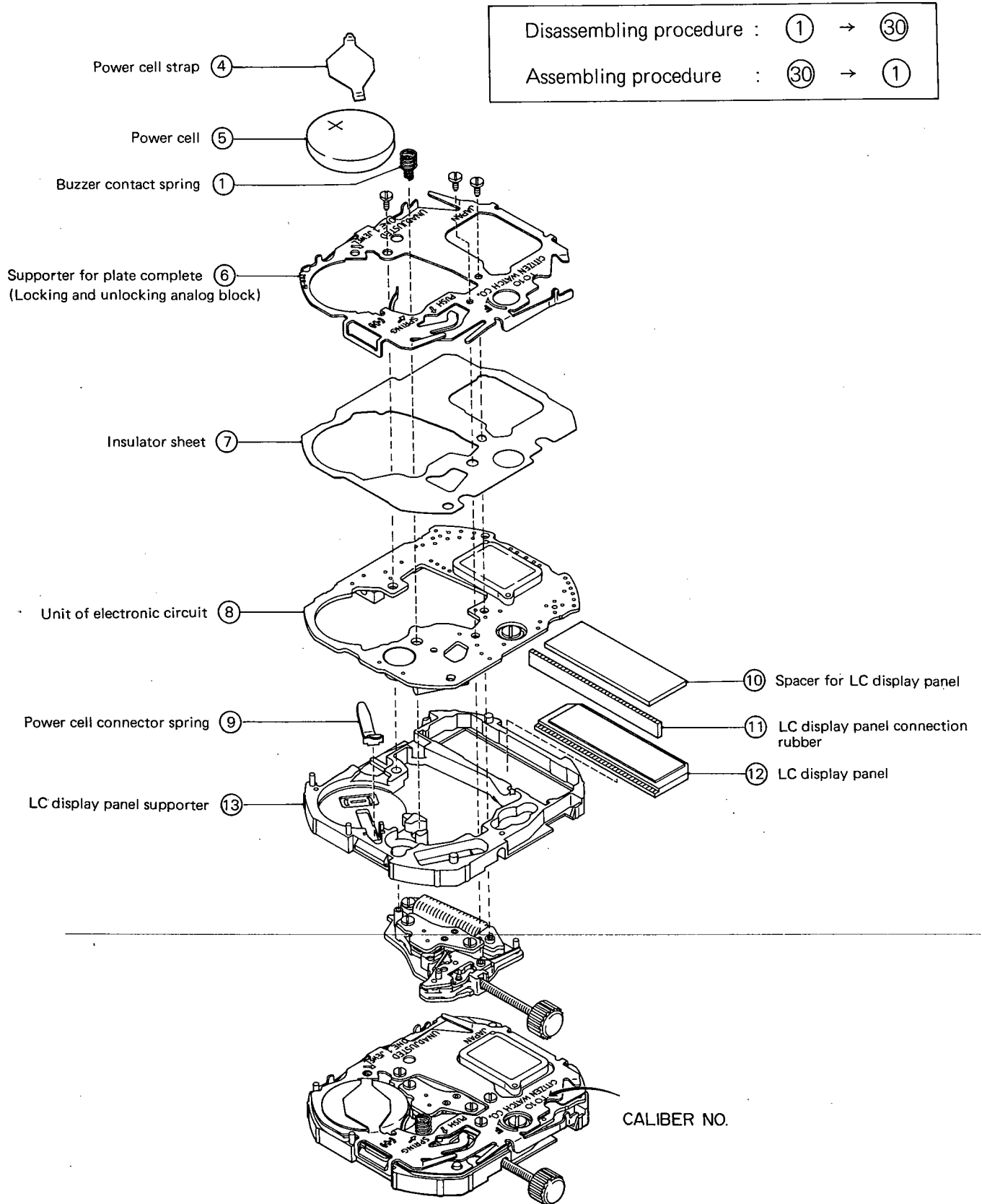
Lubrication symbol

Ⓐ	A-Lube
Ⓒ	V-Lube
Ⓕ	F-Lube
Ⓞ	CH-1

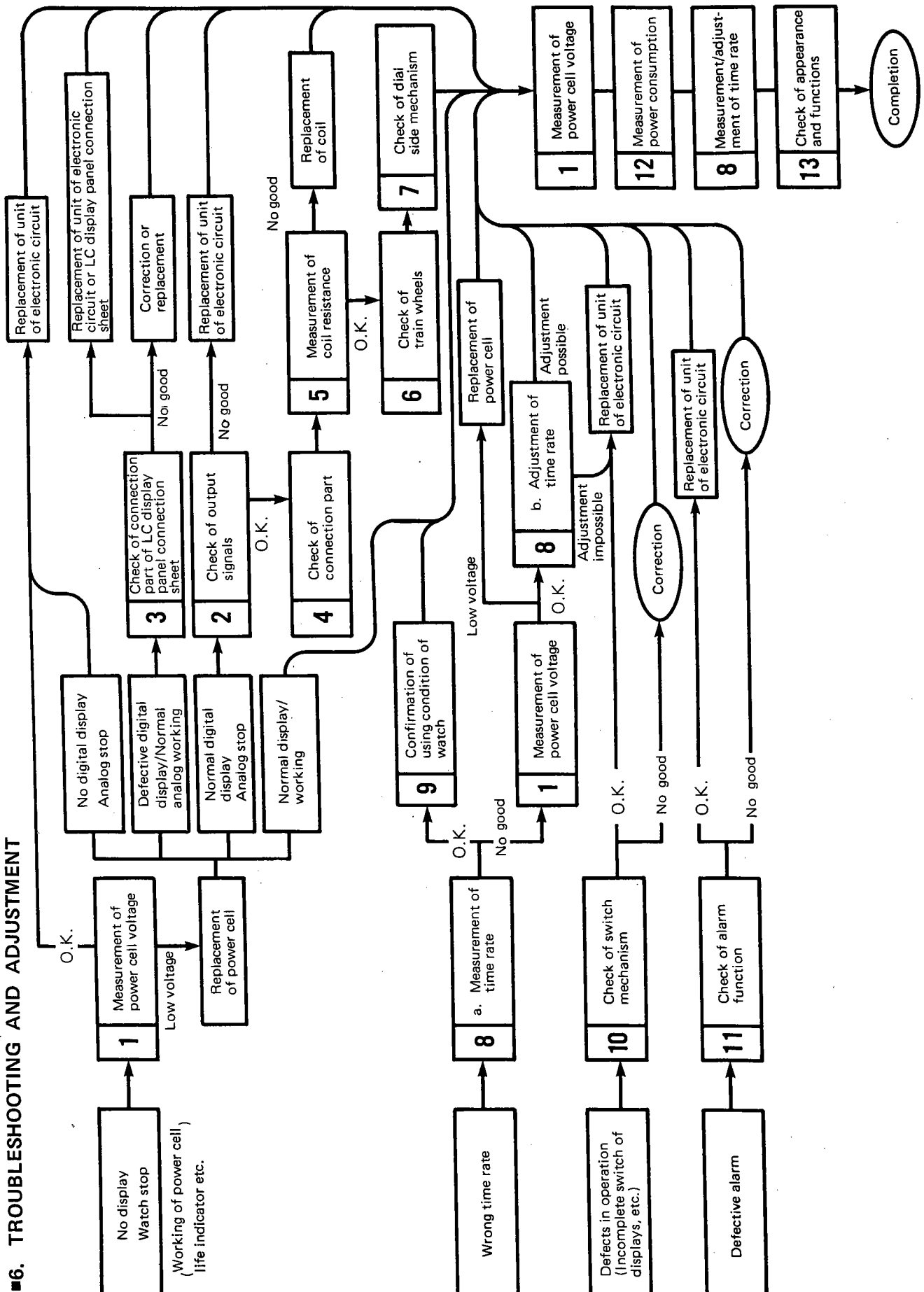




## 4. DISASSEMBLY AND ASSEMBLY OF MODULE

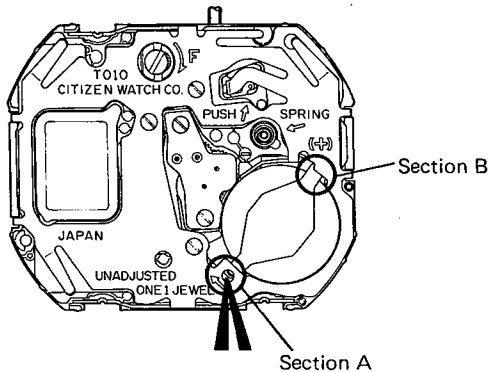


6. TROUBLESHOOTING AND ADJUSTMENT



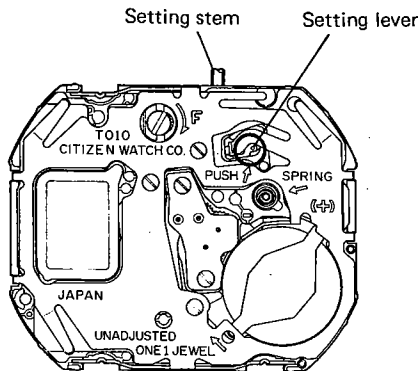
## 5. NOTES ON DISASSEMBLY AND ASSEMBLY

### (1) Mounting and removal of the power cell



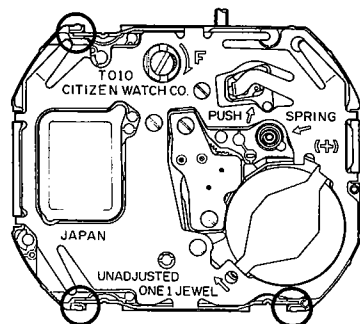
- Removal of the power cell  
Slide the section A in the direction of the arrow using a fine instrument like tweezers, etc., and the power cell is removed.
- Mounting of the power cell  
Insert the power cell strap under the section B.  
Then, set the section A in the reverse order of the removal procedure.

### (2) How to remove the setting stem

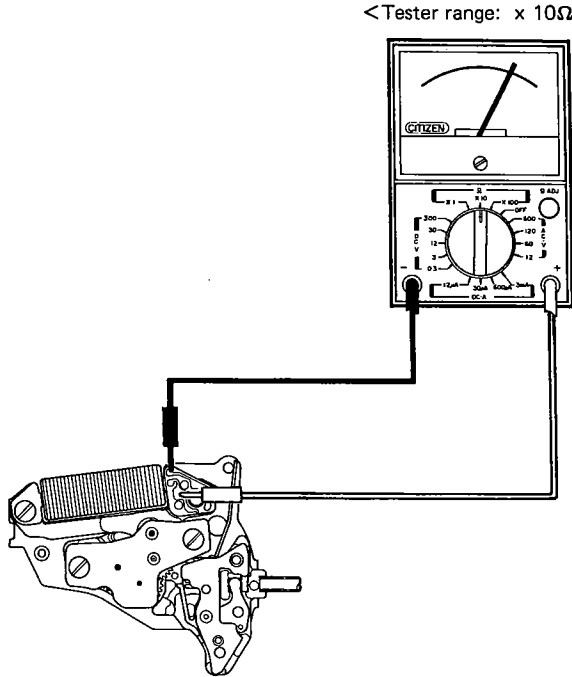


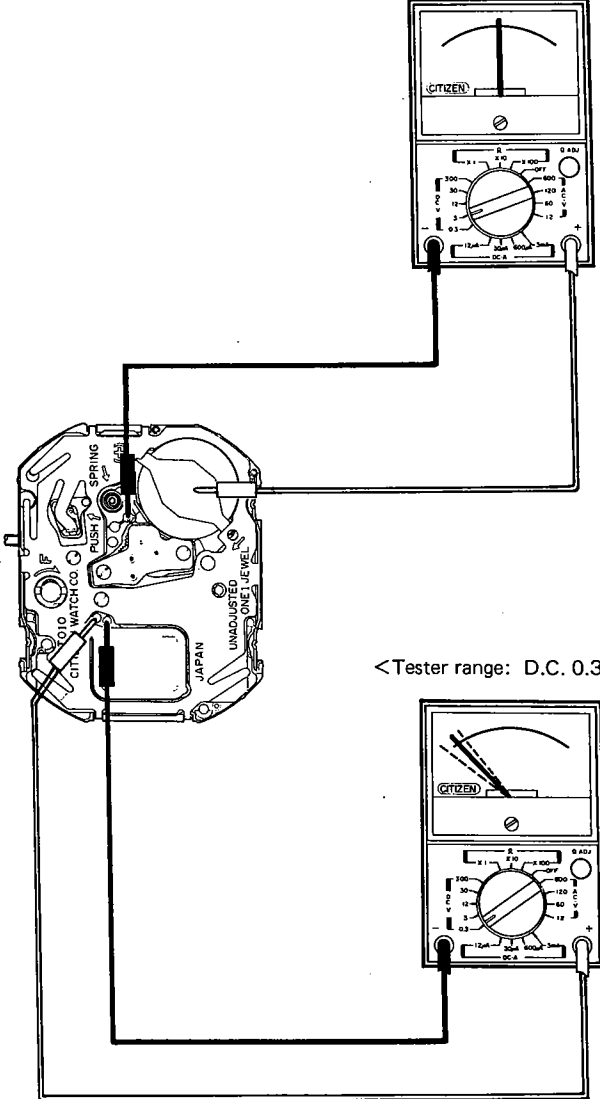
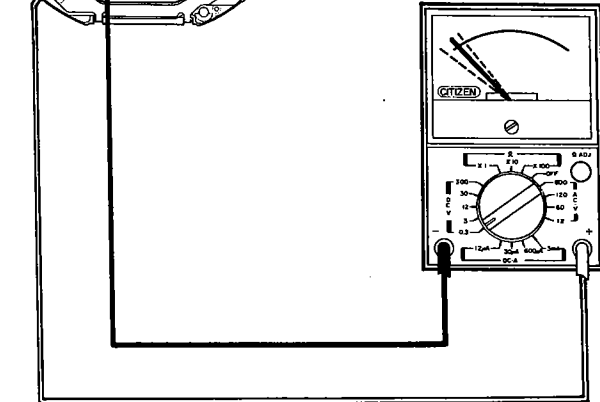
Remove the setting stem while pushing the setting lever at the site indicated by the arrow using a fine instrument like tweezers, etc. The above procedure should be carried out with the setting stem remaining in its normal position.

### (3) Mounting of the supporter for plate complete

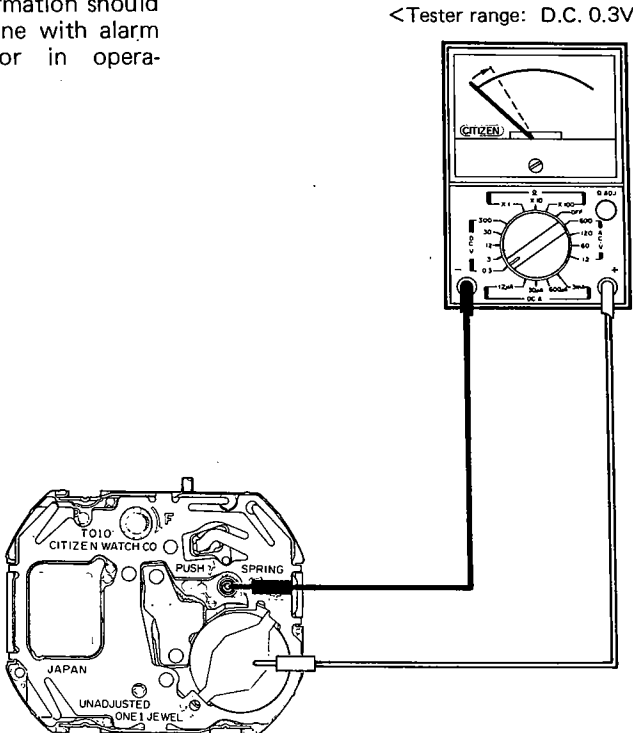



When mounting the supporter for plate complete, make sure that three points of the supporter for plate complete which are circled in the diagram have been placed within the LC display panel supporter.

Checking items	How to check	Result and treatment
<b>4</b> Checking connection between unit of electronic circuit and coil unit	<ul style="list-style-type: none"> <li>● Check that there is no dust or dirt on the connection parts.</li> <li>● Check that the screws have been fastened.</li> </ul>	<ul style="list-style-type: none"> <li>● If dust or dirt is found, remove it.</li> <li>● If the screws are loose, fasten them.</li> </ul>
<b>5</b> Measurement of coil resistance	<p>&lt; Tester range: x 10Ω &gt;</p> 	<p>Within a range of 2.8KΩ to 3.4KΩ → Nondefective</p> <p>Beyond the above range → Replace the coil unit.</p>
<b>6</b> Checking train wheel	<p>Check the following points;</p> <ul style="list-style-type: none"> <li>● Whether the transmission goes smoothly with each gear with an appropriate clearance and with no backlash.</li> <li>● Whether no foreign matter gets in the gears.</li> <li>● Whether lubrication is in a good condition.</li> <li>● Whether hole jewels have no cracks or cuts.</li> </ul>	<ul style="list-style-type: none"> <li>● If improper clearance or backlash is found, adjust the gear.</li> <li>● Foreign matter → Remove it.</li> <li>● Bad lubrication → Adjust it.</li> <li>● Cracks or cuts → Replace the hole jewels.</li> </ul>
<b>7</b> Checking dial — side mechanism	<ul style="list-style-type: none"> <li>● Check that the hands go around in a correct way.</li> <li>● Check that the crown is pulled out in a correct way.</li> <li>● Check that each part has been properly mounted.</li> </ul>	<ul style="list-style-type: none"> <li>● There are problems with turning of the hands → Replace the parts or adjust them.</li> <li>● Pulling out the crown cannot be correctly performed → Replace the parts or adjust them.</li> <li>● Bad mounting → Mount again.</li> </ul>

Checking items	How to check	Result and treatment
<p><b>1</b> Measurement of power cell voltage</p>	<p>&lt;Tester range: D.C. 3V&gt;</p> 	<p><b>Over 1.5V</b> → Nondefective</p> <p><b>Under 1.5V</b> → Replace the power cell</p>
<p><b>2</b> Confirmation of output signal</p>	<p>&lt;Tester range: D.C. 0.3V&gt;</p> 	<p>If the tester pointer swings back and forth around zero every second, the unit of electronic circuit is nondefective.</p>
<p><b>3</b> Checking LC display panel connection parts</p>	<p>Check the following points;</p> <ul style="list-style-type: none"> <li>●Whether the LC display panel connection rubber has been properly mounted.</li> <li>●Whether the LC display panel connection rubber has not been damaged.</li> <li>●Whether there is no dust or dirt on the connection parts.</li> </ul>	<ul style="list-style-type: none"> <li>●If mounting was incorrect, mount again.</li> <li>●If it has been damaged, replace it with a new one.</li> <li>●If dust or dirt is found, remove it.</li> </ul>



Checking items	How to check	Result and treatment
<b>8</b> Measurement and adjustment of time rate	<ul style="list-style-type: none"> <li>● Measurement of time rate. Measurement is possible with either of CQT-101 and CQT-210.</li> <li>● Adjustment of time rate; Make an adjustment by turning the trimmer condenser clockwise or counterclockwise. Time rate increases if the trimmer condenser is turned clockwise.</li> </ul>	<ul style="list-style-type: none"> <li>● If fluctuations are found in measured value of the digital section, measure the analog section for the time rate.</li> <li>● Do not measure in direct sun or incandescent light, or correct measurement may not be obtained due to a shift in the time rate.</li> </ul>
<b>9</b> Confirmation of using condition	<p>It is thought that accuracy is affected by the environments in which the watch is used.</p> <p>Therefore, confirm the using condition in terms of magnetism, temperature, humidity, shock, etc.</p>	
<b>10</b> Checking switch mechanism	<p>Check each switch spring in the following points,</p> <ul style="list-style-type: none"> <li>● Whether the switch spring has not been damaged.</li> <li>● Whether the switch spring is in a good contact with the push button.</li> <li>● Whether the switch spring is in a good contact with the pattern of the plate.</li> <li>● Whether dust or dirt around the push buttons creates bad operation of the push buttons.</li> </ul>	<ul style="list-style-type: none"> <li>● Damaged switch spring → Replace it.</li> <li>● Bad contact → Adjust it.</li> <li>● Bad contact → Adjust it.</li> <li>● Bad operation → Remove dust or dirt.</li> </ul>
<b>11</b> Checking alarm	<p>Confirmation should be done with alarm monitor in operation.</p> <p style="text-align: right;">&lt;Tester range: D.C. 0.3V&gt;</p> 	<ul style="list-style-type: none"> <li>● The tester pointer swings. → Nondefective</li> <li>● The tester pointer does not swing at all. → Replace the plate complete.</li> </ul>

Checking items	How to check	Result and treatment
<b>13</b> Checking appearance and functions	 <ul style="list-style-type: none"><li>● Make sure that there is no dust or dirt inside the watch.</li><li>● Make sure that each button functions correctly.</li><li>● Make sure that all the segments have been provided.</li><li>● Make sure that the alarm monitor operates in an expected manner.</li></ul>	



**CITIZEN WATCH CO., LTD.**  
Tokyo, Japan