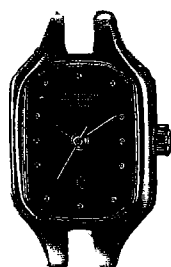


# *TECHNICAL INFORMATION*

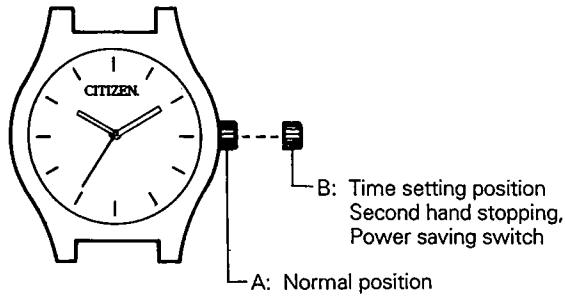
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**CITIZEN QUARTZ**

**Cal. No. 54❖❖**



## §3 HANDLING INSTRUCTIONS



- When setting the second hand correctly, pull the crown out to the first click position so that the second hand stops at the 0 second (12 o'clock) position. Then, set the hour and minute hands. When the time has been set, push the crown back simultaneously with the time signal, and the second hand will start and run correctly.
- After setting the time, push the crown back to the normal position correctly.

## §4 POINTS OF DISASSEMBLY AND ASSEMBLY

### 1. Yoke

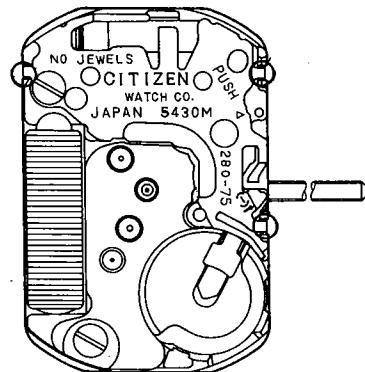
- Securely hitch the spring of the yoke to the spacer of the setting stem.
- Take care that the yoke will not float or remove from its normal position.

### 2. Coil unit

- When handling the coil (especially when opening the case back), take care not to break its wire.

### 3. Power cell strap

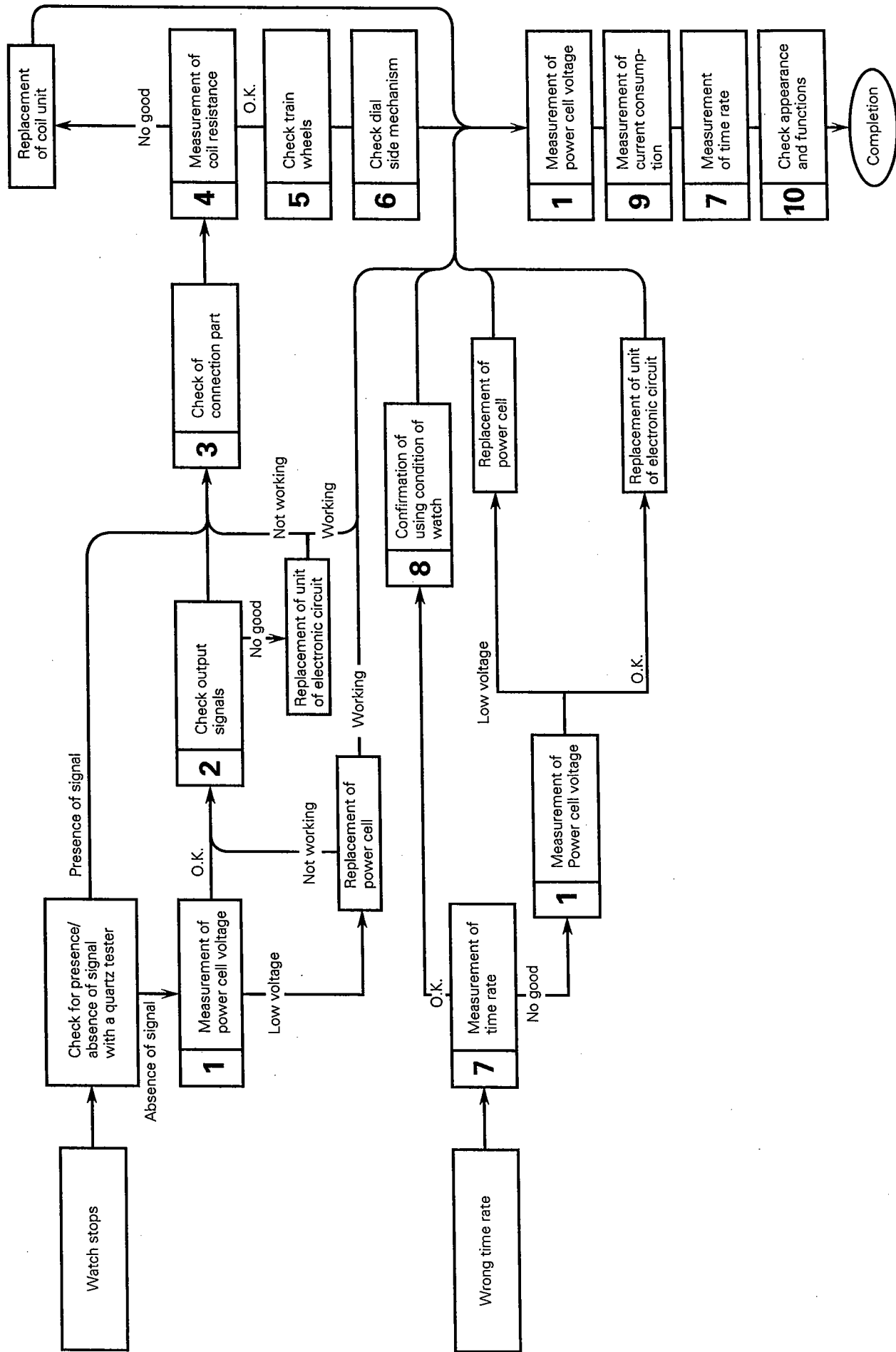
- When installing the power cell strap, securely hitch the hook of the power cell strap to the plate complete.

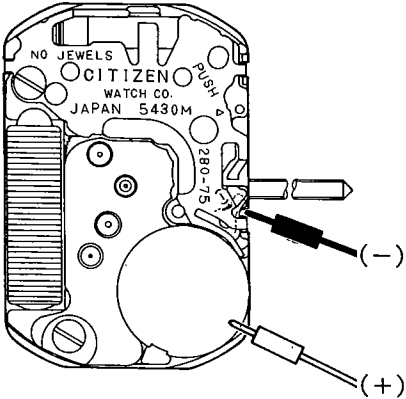
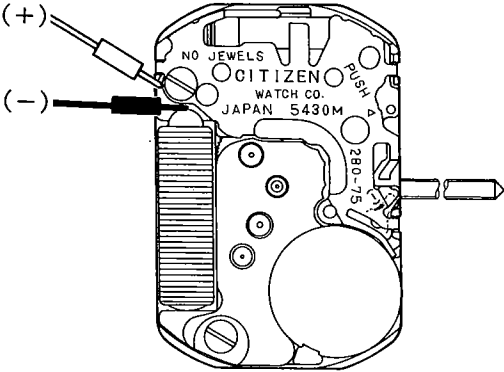


### 4. Other point

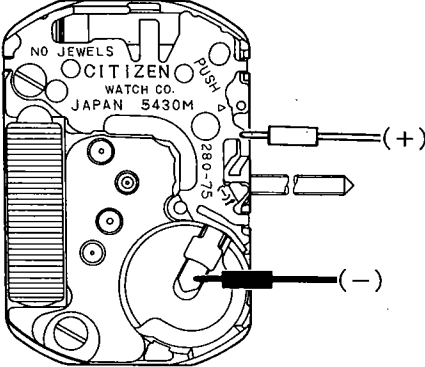
- Since this watch does not have excessive power, take care that dust, metal chips, etc. will not enter it.

# §6 TROUBLESHOOTING AND ADJUSTMENT



Check points	How to check	Results and treatment
<p>① Measurement of power cell voltage</p>	<p>[Refer to Technical Manual, Basic Course II-1-a for the setting procedure of the tester.]</p> <p style="text-align: right;">&lt;Tester range: DC 3V&gt;</p> 	<p><b>Over 1.5 V</b> → Normal</p> <p><b>Under 1.5 V</b> → Replace the power cell</p>
<p>② Check output signals</p>	<p>[Refer to Technical Manual, Basic Course II-1-b for the setting procedure of the tester.]</p> <p style="text-align: right;">&lt;Tester range: DC 0.3 V&gt;</p>  <ul style="list-style-type: none"> <li>• Since the hands of this watch move every 1 second, the tester pointer should swing to the right and left every 1 second. (The tester lead pins have no polarity)</li> </ul>	<p>The tester pointer swings every 1 second → Normal</p> <p>The tester pointer does not swing → Check the connections parts.</p> <p>The connections are normal → Replace the unit of electronic circuit</p>
<p>③ Check connection part</p>	<p>[Refer to Technical Manual, Basic Course II-2-a.] Check for looseness of screws, dust, dirt, etc.</p> <p>a) If the fixing screw of the unit of electronic circuit is loosened, the drive signals may not be transferred.</p> <p>b) If dust or dirt stick to the pattern of the coil of electronic circuit unit, the current may not flow sufficiently.</p>	

Check points	How to check	Results and treatment
<p>④ Measurement of coil resistance</p>	<p>[Refer to Technical Manual, Basic Course II-1-c for the setting procedure of the tester.]</p> <ul style="list-style-type: none"> <li>Remove the unit of electronic circuit when measuring the coil resistance.</li> <li>Remove the power cell, power cell strap and unit of electronic circuit in order, then measure the resistance of the coil unit.</li> </ul> <p style="text-align: center;">&lt;Tester range: R x 10Ω&gt;</p> <p style="text-align: center;">(The tester lead pins have no polarity.)</p>	<p>2.3 kΩ ~ 2.7 kΩ → Normal</p> <p>Outside range of 2.3 kΩ ~ 2.7 kΩ → Replace coil unit</p>
<p>⑤ Check train wheels</p>	<p>[Refer to Technical Manual, Basic Course II-2-b.]</p> <ul style="list-style-type: none"> <li>Check the appropriate clearance of each wheel and rotor for dust.</li> <li>This Cal. is designed that less current for low loads will be consumed, thus take care not to supply wrong oil or supply oil too much. Confirm excessive oil is not flowing out.</li> </ul>	
<p>⑥ Check dial-dise mecahnism</p>	<p>[Refer to Technical Manual, Basic Course II-2-c.]</p> <ul style="list-style-type: none"> <li>Confirm that all parts are not deformed and oil is supplied correctly. If the dial washer is deformed or scratched, the watch may move slowly or stop.</li> </ul>	
<p>⑦ Measurement of time rate</p>	<p>[Refer to Technical Manual, Basic Course II-2-d.]</p> <ul style="list-style-type: none"> <li>Since this watch has D.F.C. and does, not have adjustment terminals, thus the time rate cannot be adjusted in the customer's place.</li> </ul> <p>(Measurement is made in a 10 second-ragne.)</p>	<p>The watch loses or gains substantial time → Replace the unit of electronic circuit</p>
<p>⑧ Confirmation of using condition</p>	<p>[Refer to Technical Manual, Basic Course II-2-e.]</p>	

Check points	How to check	Results and treatment
<p>⑨ Measurement of current consumption</p>	<p>[Refer to Technical Manual, Basic Course II-1-f for the setting procedure of the tester.]</p> <p style="text-align: right;">&lt;Tester range: DC 12<math>\mu</math>A&gt;</p> <p>Set the battery to the adaptor.</p>  <p>a) This watch is equipped with the load compensation circuit. When the powercell is installed to adjust the drive output of the rotor, this function may work. If this function works, the current consumption may temporarily rise a little. In this case, make the measurement after pointer has returned to the normal level.</p> <p>b) When measuring the current consumption of the separate unit of electronic circuit, confirm the stamps of <math>\oplus</math> and <math>\ominus</math> on the circuit pattern, then measure the current similarly to the current consumption of the module.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px;"> <p><b>Influence of light;</b>  <b>Avoid measuring current consumption under an incandescent lamp or the direct rays of the sun, because it may cause the current value to increase.</b></p> </div>	<ul style="list-style-type: none"> <li>• Current consumption of the module  <b>Under 0.5 <math>\mu</math>A</b>  → Normal</li> <li>• <b>Over 0.5 <math>\mu</math>A</b>  → Measure the unit of electronic circuit separately</li> <li>• Measurement of the separate unit of electronic circuit  <b>Under 0.4 <math>\mu</math>A</b>  → Normal</li> <li>• <b>Over 0.4 <math>\mu</math>A</b>  → Replace unit of electronic circuit</li> </ul> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 20px;"> <p>When the current value of the module shows a high value, but that of the separate unit of electronic circuit is normal. There may be a problem somewhere outside the circuit. Therefore, inspect the watch for stains, lubrication conditions and deformed parts, and remove the cause of the high load.</p> </div>
<p>⑩ Check appearance conditions and functions</p>	<p>[Refer to Technical Manual, Basic Course II-2-f.]</p>	

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