

TECHNICAL INFORMATION

CITIZEN QUARTZ

Cal. No. 36***



 **CITIZEN**
CITIZEN IS A REGISTERED TRADEMARK OF FINE TIME CO., LTD.

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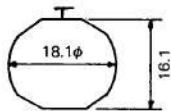
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■1. OUTLINE

With an eye on the quartz-oriented mechanical market, and with high hopes on generating new demands, we have developed a ladies' quartz watch which has three hands and the date/day display function.

This watch was designed to make a pair with the "CITIZEN WING" for men which has already been marketed in the Middle East, and Central and South America.

■2. SPECIFICATIONS

Caliber No.		3600A-01
Type		Analog quartz watch (with center second)
Movement (mm)		 <p>Thickness: 2.9 3.1 (when the power cell section is included)</p>
Accuracy		±20 sec./month at normal temperatures
Oscillation		32,768Hz
Integrated circuit		C/MOS-LSI (1 unit)
Effective temp. range		-10°C ~ +60°C (14°F ~ 140°F)
Converter		Bipolar step motor
Adjustment of time rate		DFC (having no adjustment terminal for customers' use)
Measurement of time rate		10 seconds
Additional functions	Date (with quick setting device)	Yes
	Day (with quick setting device)	Yes
	Selective display of bilingual day of the week	Yes
	Second hand stopping device	Yes
	Power saving switch	Yes
	Power cell life indicator	No
Power cell	Parts No.	280-34
	Cell code	SR621SW (Ag ₂ O/NaOH)
	Size (mm)	6.8φ x 2.1t
	Voltage	1.55V
	Capacity	18mAh
	Lifetime	About 2 years
Value of current		Under 1.1μA (for the operation of the module)
Value of resistance of coil unit		Between 2.1 and 2.7KΩ
Remarks		

■3. HANDLING INSTRUCTIONS



B: Quick setting of date and day

Date setting

-C: Time setting
Power saving switch
Second hand stopping

Day setting

A: Normal position

This watch may be handled in the same manner as the general type of analog watch with center second and the date/day display function has been.

* After setting time and calendar, push the crown back to its normal position.

■4. DISASSEMBLY, ASSEMBLY & LUBRICATION

Disassembling procedure : ① → ③④

Assembling procedure : ③④ → ①

Marks of lubrication

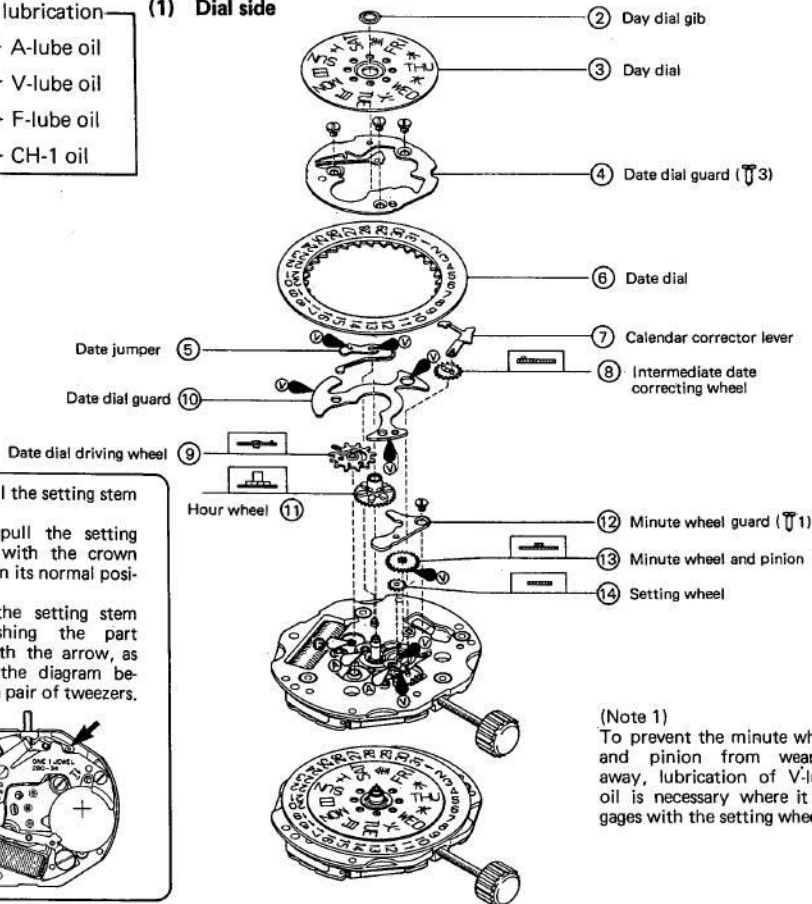
⊖ A-lube oil

∇ V-lube oil

⊙ F-lube oil

∞ CH-1 oil

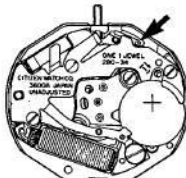
(1) Dial side



* How to pull the setting stem out

You can pull the setting stem out with the crown remaining in its normal position.

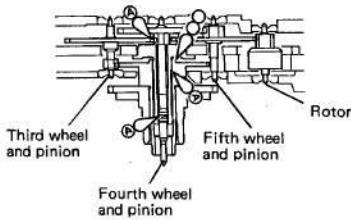
Pull out the setting stem while pushing the part marked with the arrow, as shown in the diagram below, with a pair of tweezers.



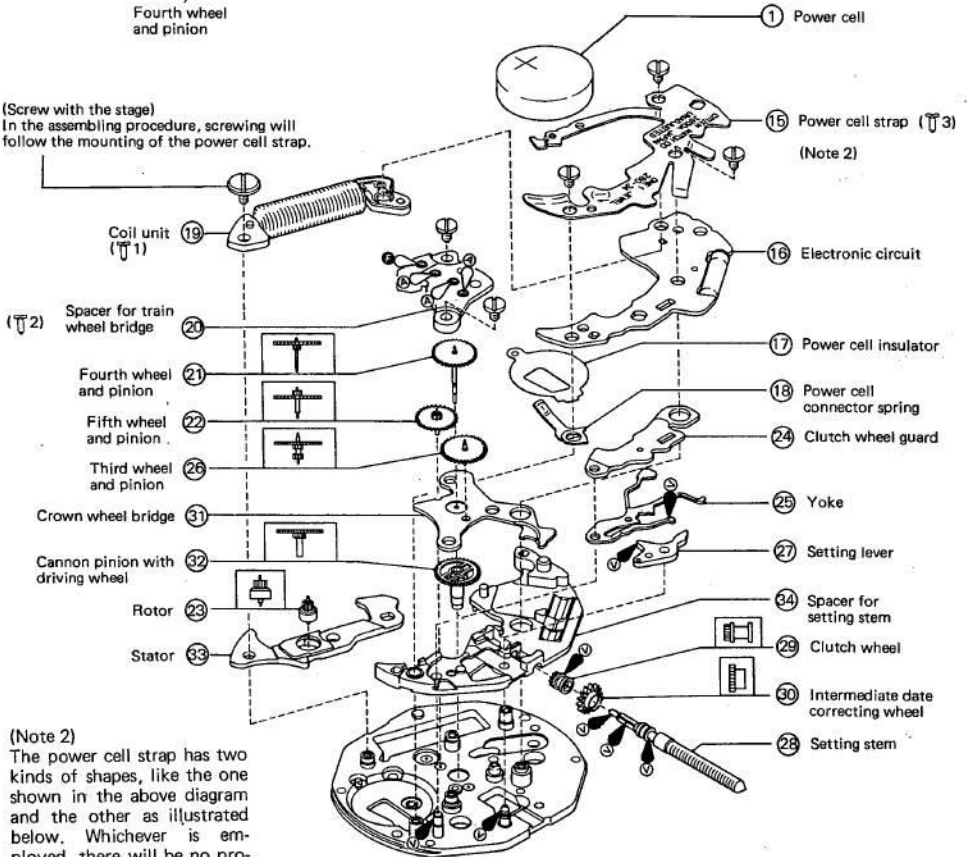
(Note 1)

To prevent the minute wheel and pinion from wearing away, lubrication of V-lube oil is necessary where it engages with the setting wheel.

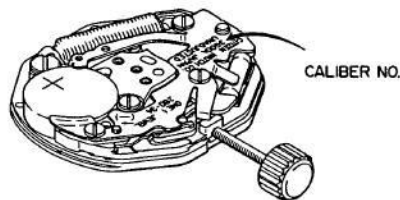
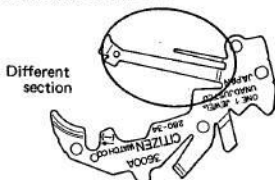
(2) Power cell side



(Screw with the stage)
In the assembling procedure, screwing will follow the mounting of the power cell strap.



(Note 2)
The power cell strap has two kinds of shapes, like the one shown in the above diagram and the other as illustrated below. Whichever is employed, there will be no problem. The two differs from each other in this section.



■5. NOTES ON DISASSEMBLY & ASSEMBLY

(1) How to mount/dismount the power cell

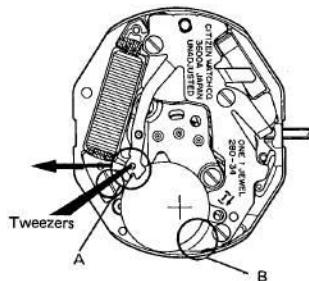


Fig. 1

- The power cell is held in place by the power cell strap, Parts A and B, as illustrated in Fig. 1. (Part A is a type of spring.)
- Dismounting
If you push Part A with a pair of tweezers in the direction of the arrow, the power cell will be dismounted. In doing so, be careful not to scratch the coil unit with the tweezers.
- Mounting
If you insert the power cell under Part B and then push the power cell down with your finger while pushing Part A with the tweezers, just like you have done when dismounting, the power cell will be mounted. At this time, make sure that the visor (crescent shaped holder) of Part A is completely positioned over the power cell.

(2) How to remove the day dial gib

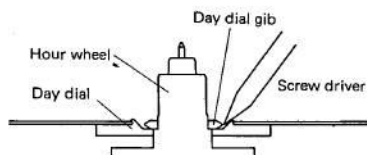


Fig. 2

- If you insert the small screw driver through the crevice as shown in Fig. 2, and pry the gib up inch by inch, the day dial gib will be removed. Be careful not to scratch the hour wheel when removing.

(3) How to install the yoke

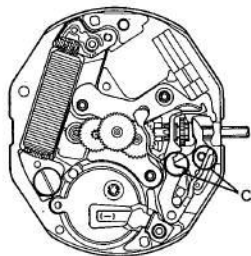
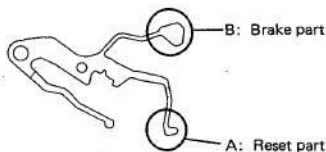
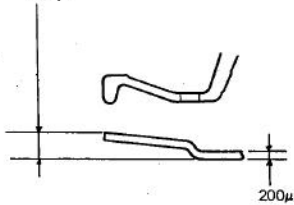


Fig. 3

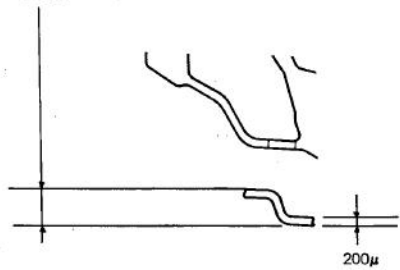
- Before mounting the yoke, confirm that the third wheel and pinion has already been set and also that the crown is in its normal position.
- Correctly install the yoke, as illustrated in Fig. 3. Special attention should be paid to the fitting condition of the setting lever and the setting lever axle. (Part C)
The yoke and the setting lever may sometimes come up after being installed. When setting the clutch wheel guard, do not forget to confirm that the yoke and the clutch wheel, and the setting lever and the setting stem, engage each other, respectively.
- * In this caliber, the yoke acts also as the resetting lever as well as the brake lever.
Part A, which corresponds to the pattern of the electronic circuit, serves as the resetting lever.
Part B, which corresponds to the teeth of the fourth wheel and pinion, serves as the brake lever to stop the train wheel.

* The resetting part should be bent to have the most suitable height of 690 – 840 μ .



* Confirm that the setting stem can smoothly and fully move back and forth after the power cell strap is mounted.

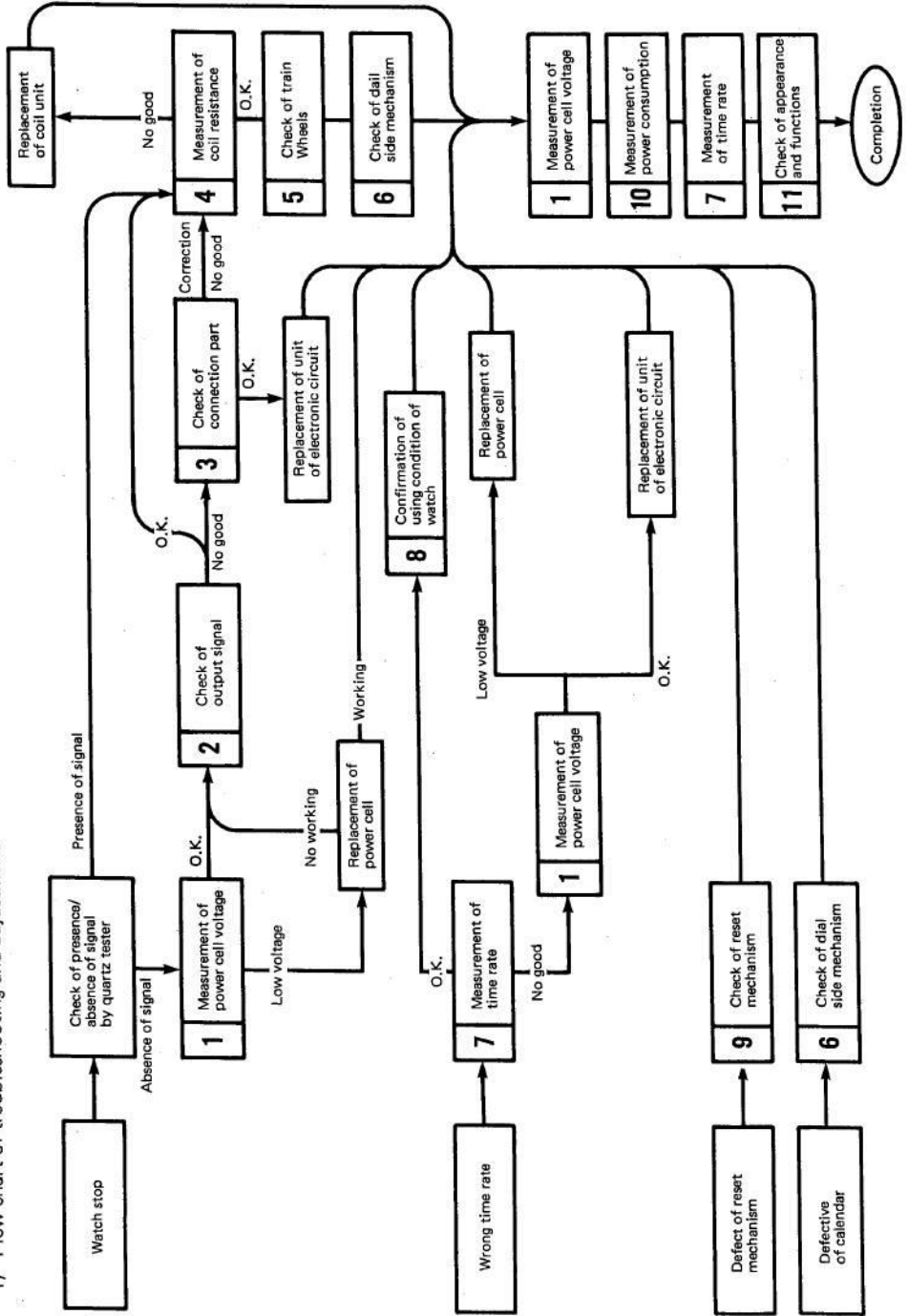
* The brake part should be bent to have the most suitable height of 680 – 840 μ .

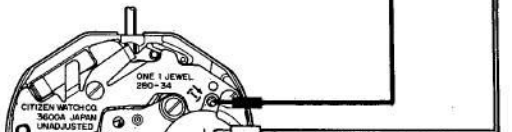
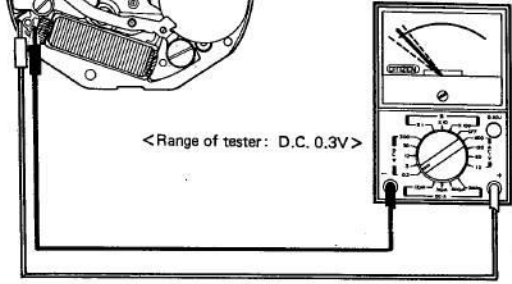
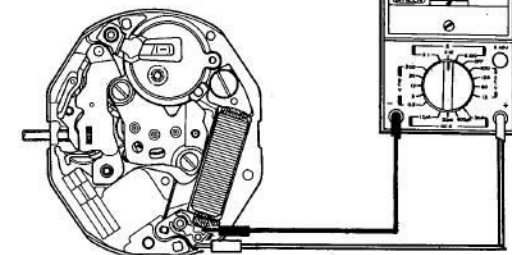


(The yoke is 200 μ in thickness, which you may find helpful when bending the two parts.)

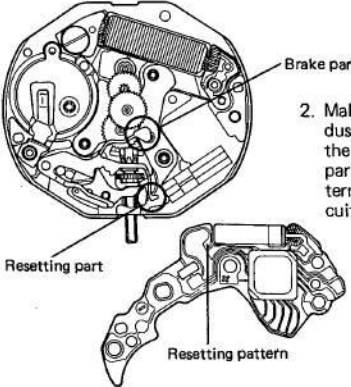
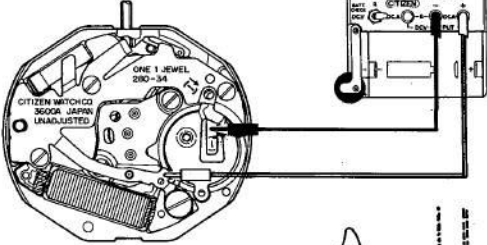
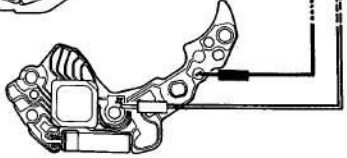
■6. TROUBLESHOOTING AND ADJUSTMENT

1) Flow chart of troubleshooting and adjustment



Checking items	How to check	Result and treatment
<p>1 Measurement of power cell voltage</p>	<p>●Be careful not to touch the power cell strap when putting the tester lead pin on the minus pattern.</p> <p><Range of tester: D.C. 3V></p> 	<p>Over 1.5V → Nondefective</p> <p>Under 1.5V → Replacement of the power cell with a new one</p>
<p>2 Confirmation of output signal</p>	<p><Range of tester: D.C. 0.3V></p> 	<p>If the tester pointer swings back and forth around "0" every second, there is no problem.</p>
<p>3 Check of connection parts</p>	<p>In case the output signal is not detected at the time of confirmation, dust or dirt may have affected the electronic circuit and connection parts.</p> <p>When the screw for fixing the electronic circuit is loose, the output signal may sometimes not be transmitted. So, fasten the screw surely enough so that it won't become loose.</p>	<p>Dust, dirt → Cleaning</p> <p>Failure in detecting the output signal even after cleaning → Replacement of the electronic circuit with a new one.</p>
<p>4 Measurement of coil resistance</p>	<p><Range of tester: $\times 10\Omega$></p> 	<p>Coil resistance: Between 2.1 and 2.7KΩ → Nondefective</p> <p>Beyond the above range → Replacement of the coil unit with a new one</p>

Checking items	How to check	Result and treatment
5 Check of train wheel	<ol style="list-style-type: none"> 1. Make sure that the transmission goes smoothly with each gear with an appropriate clearance and with no backlash. 2. Make sure that no foreign matter gets in the gears. (It is especially necessary to confirm that no cuttings adhere to the rotor part.) 3. Make sure that the gears are fully lubricated with no shortage of oil and also that they are not oil-stained. 4. Make sure that each hole jewel has no crack or slant. 	<p>Backlash → Replacement of the existing gear with a new one</p> <p>Improper clearance → Adjustment of clearance</p> <p>Bad lubrication → Washing and then lubrication</p>
6 Check of dial-side mechanism	<ol style="list-style-type: none"> 1. Check that the hands go around in an expected manner and also that date and day can be reset smoothly. 2. Check that quick setting of date and day goes smoothly. <p><When something wrong happens with operation> Make sure that no parts get out of place or change in shape. Also make sure that lubrication is in good condition.</p>	<p>Turning of the hands does not go smoothly → Lubrication of the cannon pinion with driving wheel with CH-1</p> <p>Any part is deformed → Replacement of the part with a new one</p>
7 Measurement of time rate	<p>This caliber uses the D.F.C. Set CQT-101 and CQT-210 at 10 seconds for measurement.</p> <p>(Do not measure time rate in direct sunlight or under incandescent light. A shift in time rate may cause incorrect measurement.)</p>	<p>The watch gains or loses time substantially → Replacement of the existing electronic circuit with a new one</p>
8 Confirmation of using condition of watch	<p>Make sure that the watch has been used in an appropriate environment, checking the following points:</p> <ol style="list-style-type: none"> 1. If the watch has been used outside the effective temperature range. 2. If the watch has been brought near an intense magnetism (health-care equipment, an electric mahjong table, a magnetic door, etc.) 	<p>Bad environments as described left may cause damage to the watch</p>

Checking items	How to check	Result and treatment
<p>9 Check of resetting mechanism</p>	<p>1. Make sure that the resetting and brake parts of the yoke are not deformed.</p>  <p>Brake part</p> <p>Resetting part</p> <p>Resetting pattern</p> <p>2. Make sure that there is no dust or dirt attached on the tip of the resetting part and the resetting pattern of the electronic circuit.</p>	<p>When the resetting and brake parts become distorted, they should be bent back to their proper shape, or replaced with new ones.</p> <p>When they become damaged, replace them with new ones.</p> <p>Dust, dirt → Cleaning</p>
<p>10 Measurement of current</p>	<p>1. Measurement of the completed movement's current</p> <p><Range of tester: D.C. 12μA></p>  <p>ONE 1 JEWEL 500-34 CITIZEN WATCHES SHOEN JAPAN UNADJUSTED</p> <p>2. Measurement of only the electronic circuit's current</p> 	<p>Under 1.1μA</p> <p>→ Nondefective</p> <p>Over 1.1μA</p> <p>→ Measurement of only the electronic circuit's current</p> <p>* Do not measure in direct sunlight or under incandescent light. If measurement is carried out under these circumstances, current value may increase.</p> <p>Under 0.4μA</p> <p>→ The electronic circuit is functioning properly</p> <p>Over 0.4μA</p> <p>→ Replacement of the existing electronic circuit with a new one</p>
<p>11 Check of appearance and functions</p>	<ol style="list-style-type: none"> 1. Make sure that the dial has no dust or dirt on its surface. 2. Check that the crown operates in a smooth and correct way. 3. With the crown remaining pulled out in the second clicking position, check that the second hand stopping and time setting go smoothly with no problems. 4. With the crown remaining pulled out in the first clicking position, make sure that quick setting of date and day is possible without causing any malfunctions. 	

CITIZEN WATCH CO., LTD.

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