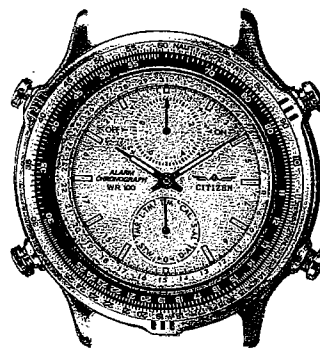


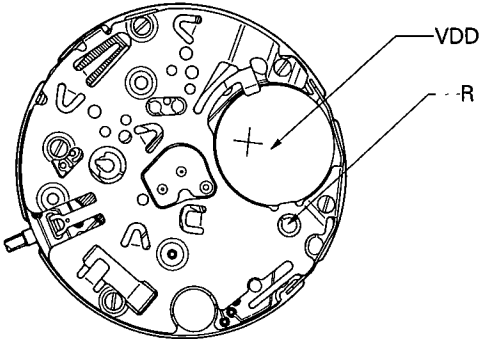
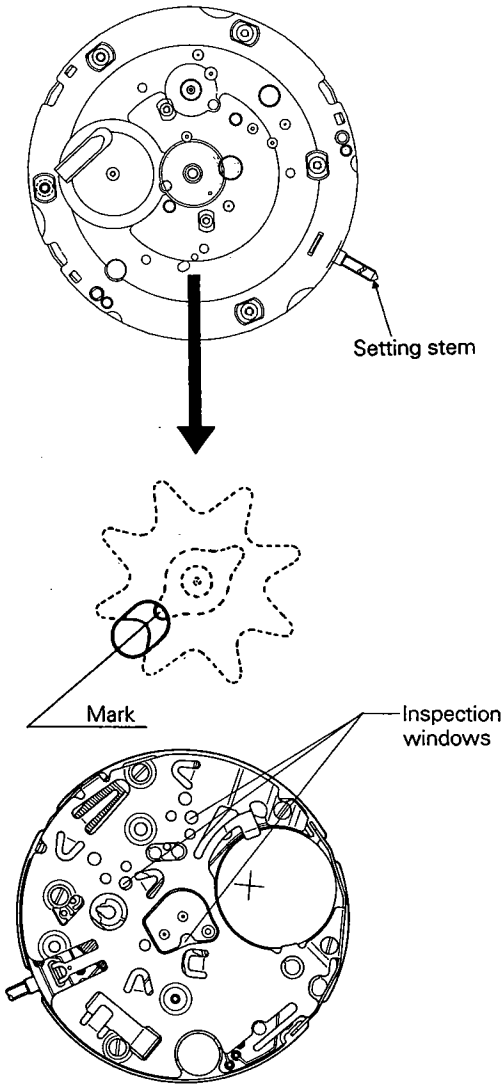
TECHNICAL INFORMATION

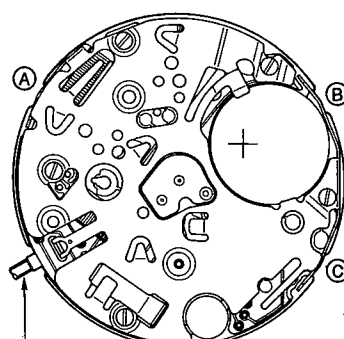
CITIZEN QUARTZ

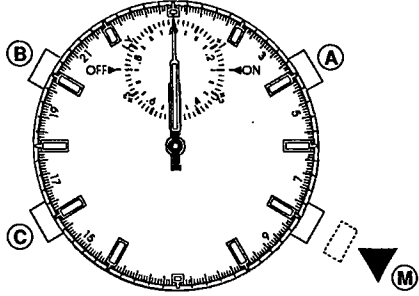
Cal. No. 6820



Fitting Procedure of Hands

Step	Explanatory illustration	Remarks
<p>① Perform all reset.</p>		<p>Electrically connect position (+) side of power cell (VDD) to (R) pattern form more than 2 seconds.</p>
<p>② Set module to "0" position confirmation mode.</p>		<p>a) Push the switch stem until the mark of the mode wheel is set as shown in the figure, watching through the inspection windows on the underside of the plate.</p> <p>b) Confirm that the train wheel is stopped, watching through the inspection windows on the train wheel bridge side. If it is moving, push the switch stem four times, then confirm the mode wheel mark again.</p> <p>* After setting, do not push the switch stem until the mode hand has been fitted.</p>


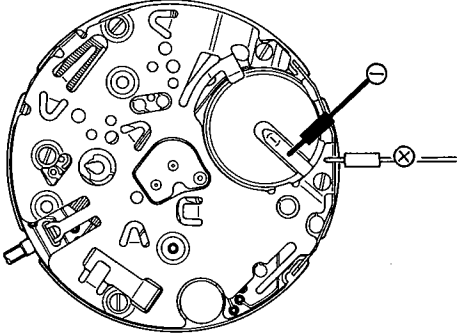
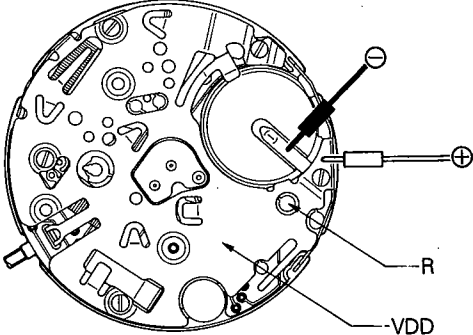
Step	Explanatory illustration	Remarks
<p>③ Assemble parts related to hour wheel.</p>		<p>Assemble the hour wheel and dial washer.</p>
<p>④ Install the dial.</p>		
<p>⑤ Install the second hand.</p>		<p>Install the second hand to any second division.</p>
<p>⑥ Confirm the 0 mode. "0" position confirmation mode</p>	 <p>Switch stem</p>	<p>With switch stem at the normal position, push any one of (A), (B), and (C) button to confirm the demonstrative movement of the second hand.</p> <p>* If the second hand does not demonstrate:</p> <p>a) Push the switch stem one time.</p> <p>b) Push any one of (A), (B), and (C) buttons.</p> <p>b) Repeat a) and b) above until the second hand demonstrates at b).</p>
<p>⑦ Install the mode hand.</p>		<p>Install the mode hand to the center of print of ► 0 ◀</p>
<p>⑧ Install the hour and minute hands.</p>		<p>Install the hour and minute hands to any hour and minute divisions since they will move independently.</p>

Step	Explanatory illustration	Remarks
<p>⑨ Install the module to the case.</p>		<p>Assemble the hour wheel and dial washer.</p>
<p>⑩ Perform "0-position setting".</p>		<ol style="list-style-type: none"> 1) Pull the (M) button to first click. 2) Push the (A) button to set the second hand to 0 second position (top of the dial), and the (B) button to set the hour hand to 0 hour position (top of the dial), and the (C) button to set the minute hand to 0 minute position (top of the dial). 3) Securely return the (M) button to the normal position.
<p>⑪ Set the watch to the present calendar and time.</p>		


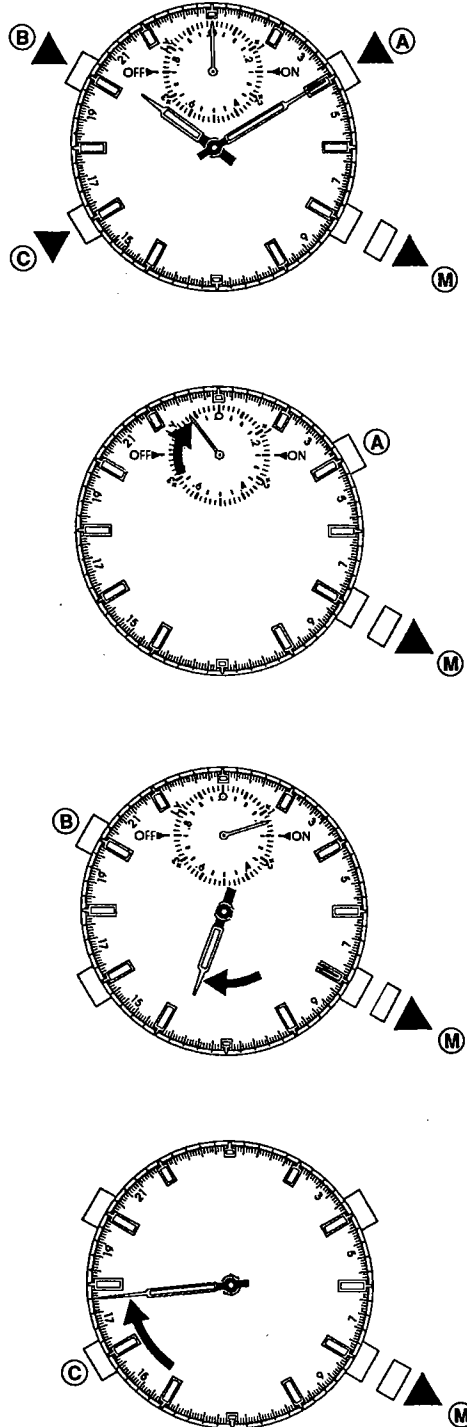
Power cell Replacement Procedure


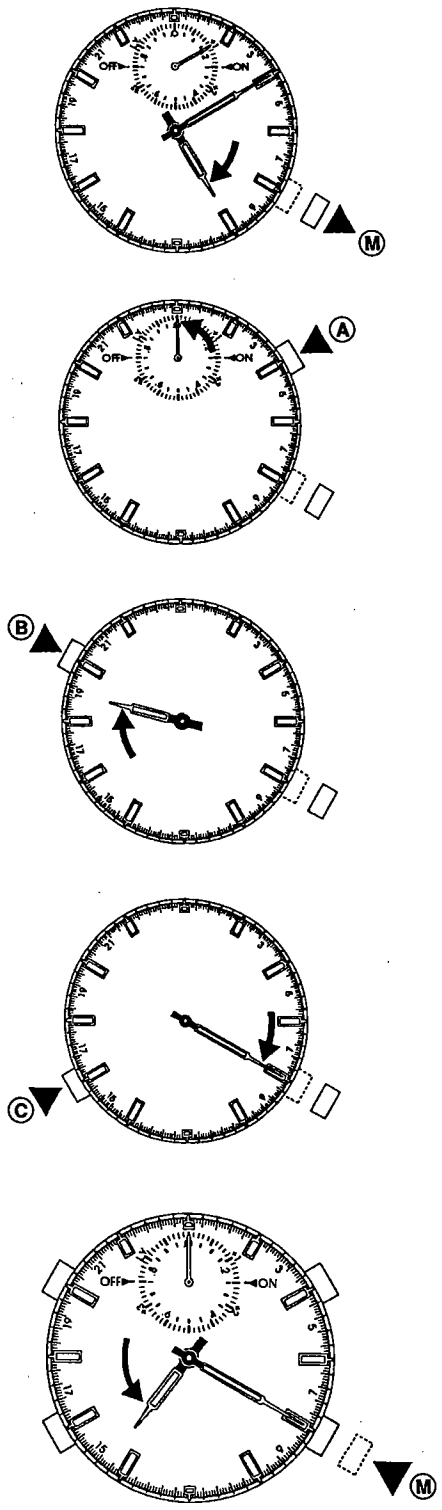
When replacing the power cell, be sure to measure the power consumption of the watch, without taking the module out of the case.


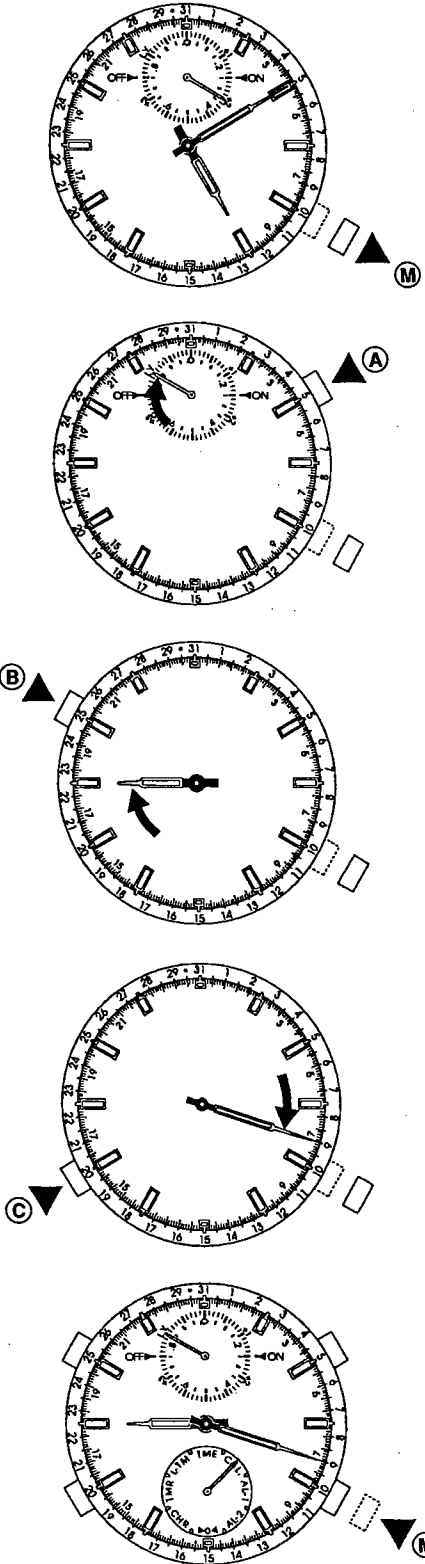
I. Measurement of current consumption

Step	Explanatory illustration	Remarks
<p>① Set the watch to the time mode.</p>		
<p>② Set the tester for measuring current consumption, and apply the lead bars of the tester to ⊕ and ⊖ of the module.</p>		<p>Keep the lead bars applied until the measurement is finished.</p> <p>⊕: Power cell strap ⊖: Power cell connector spring</p>
<p>③ Perform all reset.</p>		<p>Keep the lead bars applied, securely short the R terminal to power cell strap with pincers, etc. for more than 2 seconds.</p>
<p>④ Measure the current consumption.</p>	<p>* If there is any dirt or dust on any connecting part of the train wheel or circuit, the current consumption may be increased. Note this when measuring.</p>	<p>Read the current when the tester pointer is stabilized.</p> <p>2.0 μA max. → OK</p>
<p>⑤ Operation after power cell replacement.</p>	<p>After the power cell is replaced, the information in the IC in the watch is wrong. Perform the "0-position setting" to make each function work correctly. (See ⑥ to ⑪ on following pages.)</p>	

II.0-position setting

Step	Explanatory illustration	Remarks
<p>6 Set the watch to the 0-position confirmation mode.</p>		
<p>7 Pull the (M) button to the first click.</p>		<p>a) Pull the (M) button to the first click.</p> <p>b) Push and keep the (A), (B), and (C) buttons at the same time for more than 2 seconds.</p> <p>c) If the (A), (B), and (C) buttons are released, a peeping alarm sound comes and the second, hour, and minute hands move a little. After the above operation is confirmed, perform the "0-position setting".</p> <p>d) Push the (A) button to set the second hand to 0 second position (top of the dial), and the (B) button to set the hour hand to 0 hour position (top of the dial), and the (C) button to set the minute hand to 0 minute position (top of the dial).</p> <p>e) Securely return the (M) button to the normal position.</p>

Step	Explanatory illustration	Remarks
<p>8 Set the watch to the time mode.</p>		
<p>9 Set the watch to the present time.</p>		<p>a) Pull the (M) button to the first click.</p> <p>*The hour hand indicates the hour in 24-hour system. 1 o'clock position → AM 2 o'clock position 6 o'clock position → PM 12 o'clock position 12 o'clock position → AM 12 o'clock position</p> <p>b) Push the (A) button to return the second hand to 0.</p> <p>*When the (A) button is pushed, the minute hand moves as follows according to the position of the second hand.</p> <p>0 – 29 seconds: Minute hand does not advance. 20 – 59 seconds: Minute hand moves by 1 minute.</p> <p>c) The hour hand can be corrected with the (B) button.</p> <p>d) The minute hand can be corrected with the (C) button.</p> <p>e) Securely return the (M) button to the normal position.</p>

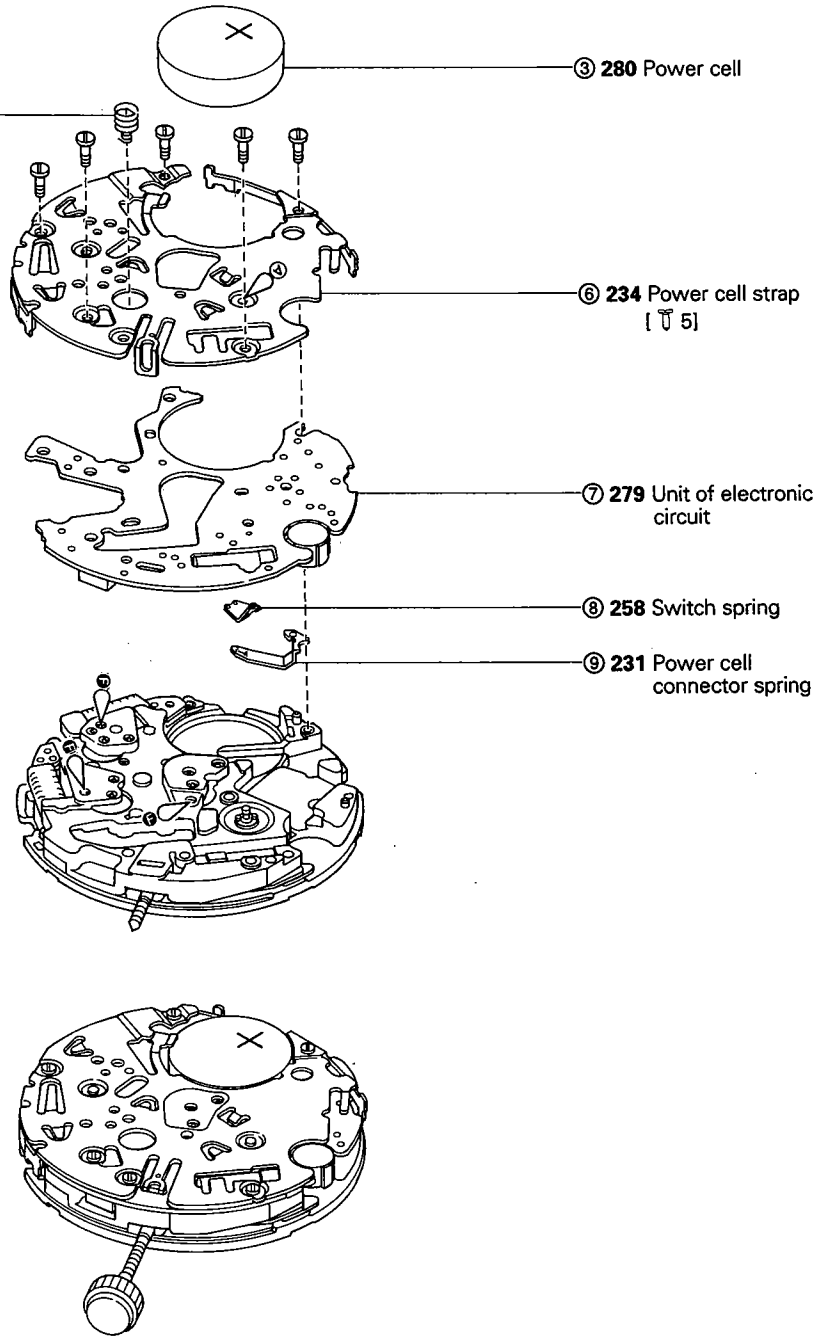
Step	Explanatory illustration	Remarks
<p>⑩ Set the watch to the calendar mode.</p>		<p>Second hand Year hand Hour hand Month hand Minute hand Date hand</p>
<p>⑪ Set the watch to the present calendar.</p>		<p>a) Pull out the M button to the first click.</p> <p>b) Correct the year hand with the A button. Calculate how many years after the last leap year, and set the watch to the result.</p> <p>* See the leap years list on the 6 page. L.Y: Leap year +1: First year after a leap year +2: Second year after a leap year +3: Third year after a leap year</p> <p>c) Correct the month hand with the B button.</p> <p>* 1 o'clock position: January 2 o'clock position: February ⋮ 12 o'clock position: December</p> <p>d) Correct the date hand with the C button.</p> <p>e) Securely return the M button to the normal position.</p>

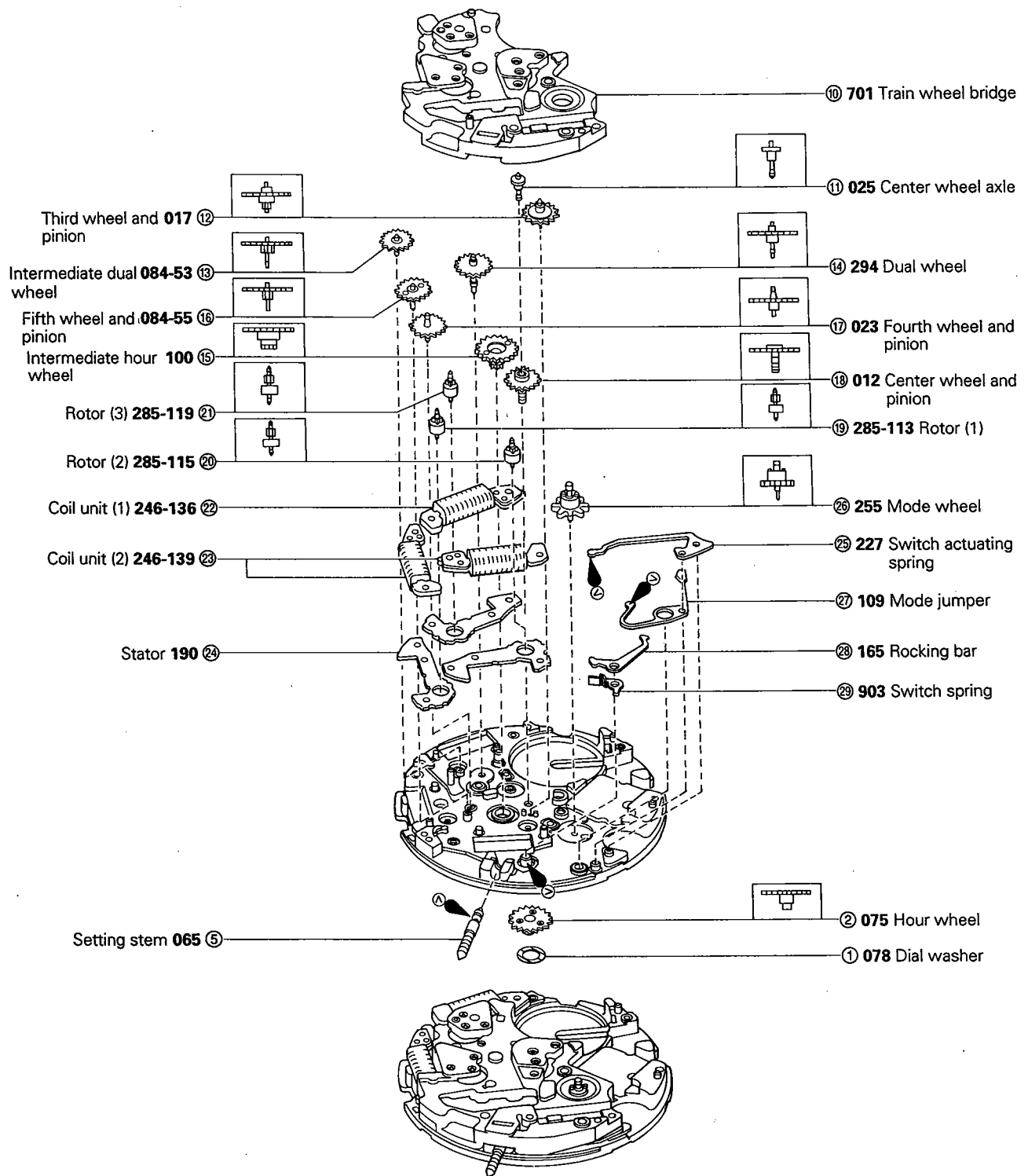
DISASSEMBLY AND ASSEMBLY OF THE MODULE

● Lubrication narjubgs

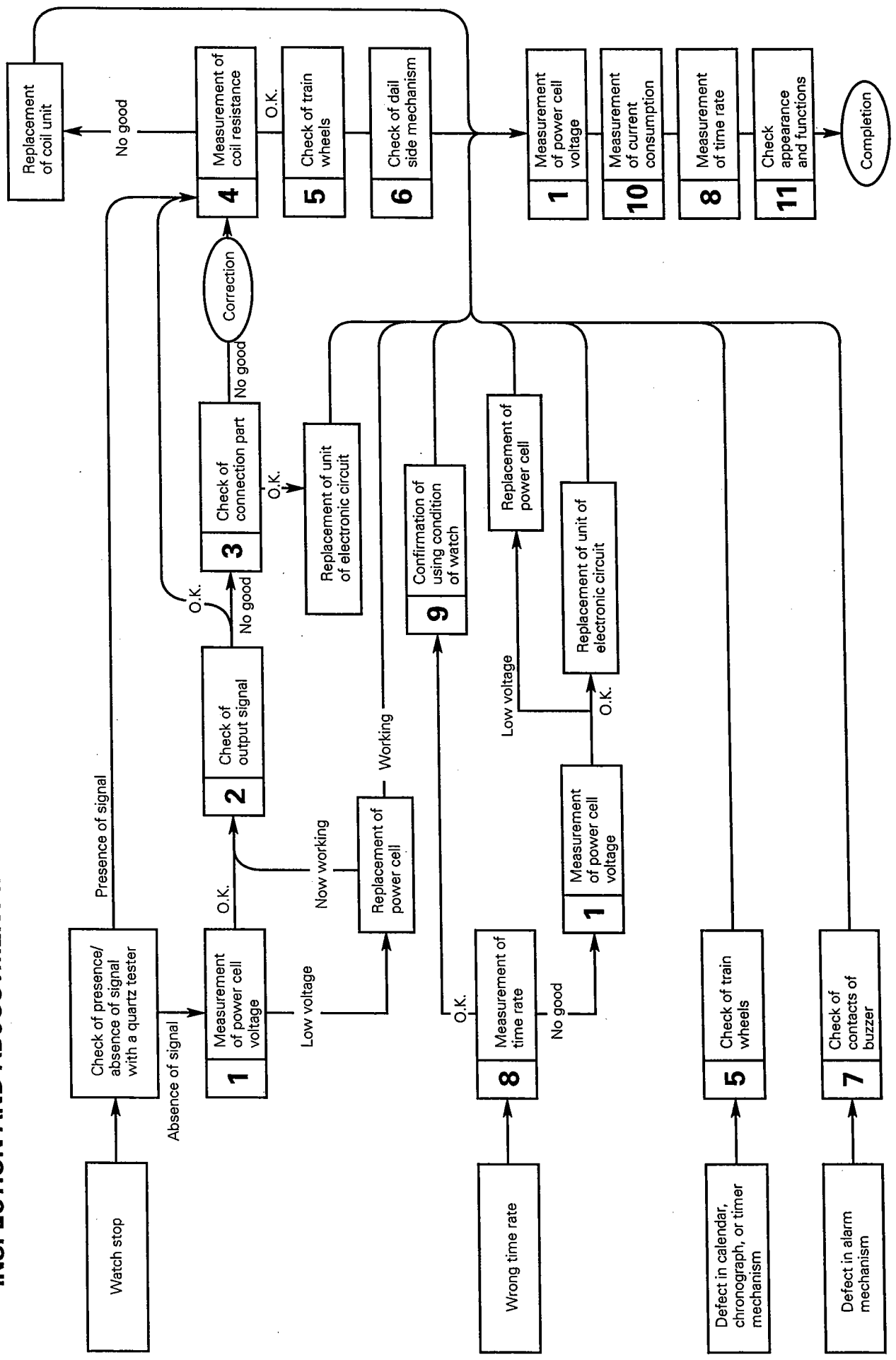
- Ⓐ : A-Lube oil
- Ⓑ : V-Lube oil
- Ⓒ : CH-1 oil
- Ⓓ : F-Lube oil

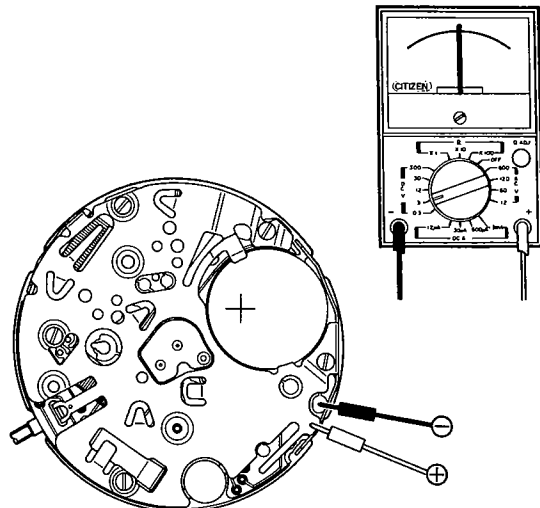

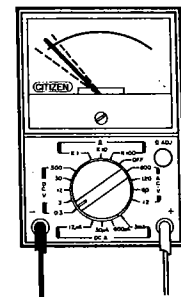
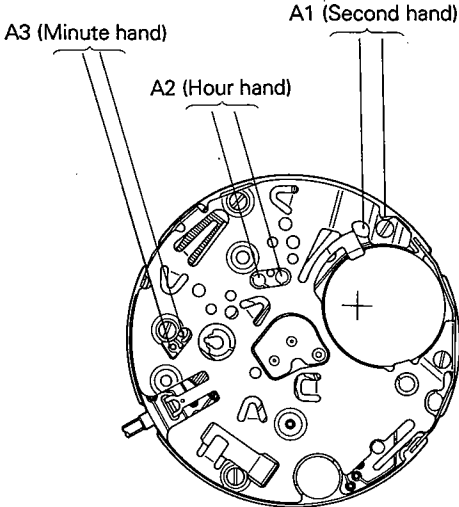
Wire spring 902 ④

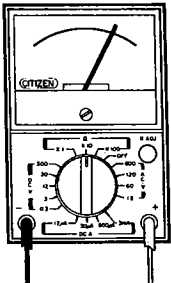



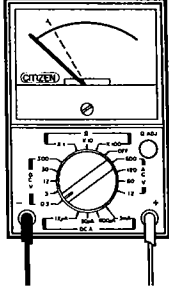
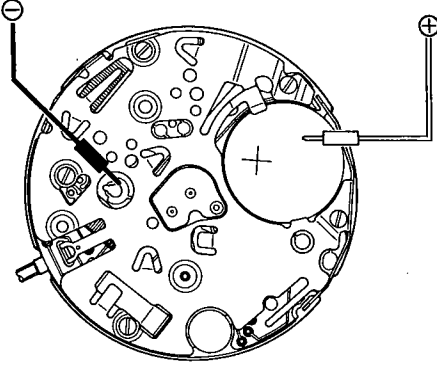



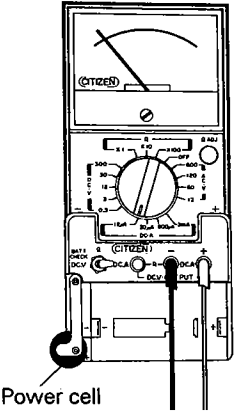
INSPECTION AND ADJUSTMENT METHOD OF MODULE



Check item	Method	Results and procedure
<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><Tester range: DC 3V></p> 	<ul style="list-style-type: none"> ● Over 1.5 V → OK ● Under 1.5 V → OK
<p>② Check of output signal</p> <p>* Set watch to zero position confirmation mode.</p> 	<p>* Refer to Technical Manual, Basic Course II-1-b for the setting procedure of the tester.</p> <p><Tester range: DC 0.3 V></p>  <p>(Measuring method) With the lead bars applied, push the push button.</p> 	<ul style="list-style-type: none"> ● A1 output signal Tester pointer swings. → OK ● A2 output signal Tester pointer swings. → OK ● A3 output signal Tester pointer swings. → OK

Check item	Method	Results and procedure
<p>③ Check of connection parts</p>	<p>*Refer to the analog part of Technical Manual, Basic Course II-2-a.</p> <p>If the output signal cannot be obtained for checking, dust may be caught between electronic circuit unit and each part.</p> <p>When the fixing screws of the electronic circuit unit are loosened, the output signal may not be obtained. Tighten those screws securely.</p>	<p>● Dust and dirt → Remove</p>
<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> <p style="text-align: center;"><Tester range: x 10Ω></p> <div style="text-align: center;">  </div>	<p>Resistance</p> <ul style="list-style-type: none"> ● Coil unit (1) 2.1 kΩ ~ 2.5 kΩ → OK ● Coil unit (2) 1.2 kΩ ~ 1.5 kΩ → OK
<p>⑤ Check of train wheel</p>	<p>* Refer to Technical Manual, Basic Course II-2-b.</p> <ul style="list-style-type: none"> ● Confirm each part of the plastic gears are not be bent or broken. 	<ul style="list-style-type: none"> ● If the train wheel is normal, replace the electronic circuit unit.
<p>⑥ Check of dial side</p>	<p>* Refer to Technical Manual, Basic Course II-2-c.</p> <ul style="list-style-type: none"> ● Each part of the plastic gears and pinions must not be bent or broken. 	

Check item	Method	Results and procedure
<p>⑦ Check of contacts of buzzer</p> <p>* Set the watch to either alarm 1 or 2 mode.</p> 	<p>* Refer to Technical Manual, Basic Course II-1-c for the setting procedure of the tester</p> <p><Tester range: DC 3V></p>  <p>(Measuring method) Set the watch to either alarm 1 or 2 mode and set the alarm monitor, then apply the ⊕ lead bar of the tester to the top of the battery and the ⊖ one to the buzzer contact spring.</p>  <ul style="list-style-type: none"> ● If the part of the piezo-electric element stuck directly to the case back to which the buzzer contact spring will touch is cracked or broken, the alarm does not sound normally. ● Check the buzzer contact spring for deformation and fatigue. 	<ul style="list-style-type: none"> ● Tester pointer swings → OK ● Tester pointer does not swing at all → Replace the electronic circuit unit.
<p>⑧ Measurement of time rate</p> <p>* Set the watch to the time mode.</p> 	<p>* Refer to Technical Manual, Basic Course II-2-d.</p> <p>Measure the time with CITIZEN QUARTZ TESTER.</p> <ul style="list-style-type: none"> ● Measurement of time rate The time can be measured with the tester in any range. <p>Do not measure the time rate under the direct sunlight or incandescent lamp. If measured under them, the time rate may shift and may not be measured correctly.</p>	

Check item	Method	Results and procedure
<p>⑨ Check of using condition</p>	<p>* Refer to Technical Manual, Basic Course II-2-e.</p> <ul style="list-style-type: none"> ● Since the accuracy may be affected by the environment of the watch, confirm the using condition of the watch (Magnetism, extremely high or low temperature and humidity, impacts, etc). ● Confirm how many days have passed after the time was set last time. 	
<p>⑩ Measurement of current consumption</p> <p>* If there is any dirt or dust on any connecting part of the train wheel or circuit, the current consumption may be increased.</p>	<p>* Refer to Technical Manual, Basic Course II-1-f for the setting procedure of the tester.</p> <p style="text-align: center;"><Tester range: DC 12μA></p> <div style="text-align: center;">  <p>Power cell</p> </div> <p>(Measuring method) Refer to the measurement of current consumption in Battery replacement procedure I.</p>	<ul style="list-style-type: none"> ● Under 2.0 μA → OK ● Over 2.0 μA → Replace the electronic circuit unit.
<p>⑪ Check of appearance and functions</p>	<p>* Refer to Technical Manual, Basic Course II-2-f.</p> <ul style="list-style-type: none"> ● Confirm there is not duct, dirt, etc. on the dial. ● Confirm each push button works securely. 	