

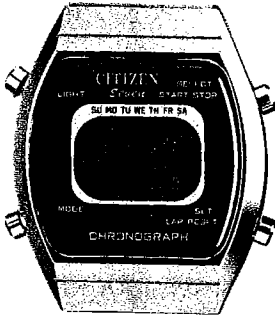
***TECHNICAL
INFORMATION***

CITIZEN QUARTZ

Cal. No. 485※※

 **CITIZEN**

■1. OUTLINE



This is a ladies' digital quartz watch and especially developed to be one of the leading models on the market of the ladies' digital quartz watches with reasonable prices.

It features multiple functions which are exactly identical with Cal. No. 4830A with exclusion of both alarm and chime functions.

■2. FEATURES

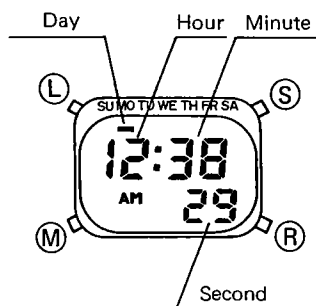
- (1) A compact and thin-gage digital quartz watch for ladies:
A unique and fascinating design is possible with a compact and thin-gage structure of module.
- (2) Multiple functions of display:
"Hour", "minute", "second", "AM/PM" and "day" are displayed on a display screen of a limited space. And these displays can be got at a look with no operation of buttons.
- (3) Fully automatic calendar:
The calendar is automatically corrected and set for "month" and "date" excepting February 29 of a leap year.
- (4) Instant manual return:
The ordinary time display mode is secured in any mode of correction with a manual operation of a mode button.
- (5) 12/24-hour switching function:
The switching is possible between the 12-hour and 24-hour display modes according to the mode of living of the user. The alarm display mode is also switched in coupling to the 12/24-hour mode switching.
- (6) Stopwatch of 1/100 sec. timing:
The stopwatch is capable of timing down to 1/100 second. The timing changes to the 60-minute count along with a switch of display among "hour", "minute" and "second" after the timing of 30 minutes.
- (7) Illumination lamp:
An illumination lamp is incorporated to facilitate an easy readout of time even in a dark place.
- (8) Easy disassembly and assembly of module:
The disassembly and assembly of the module is facilitated since the number of component parts is extremely decreased with the grouping of these parts into blocks.
- (9) Nonstop working of about 2 years by a single unit of silver oxide cell:
The watch works continuously about 2 years by a single unit of the silver oxide cell thanks to the low power consumption of the electronic circuit.

■3. SPECIFICATIONS

Caliber Nos.		4830A-00	4850A-00
Type		Digital quartz watch	
Size of module (mm)		18φ x 5.15 ^t	18φ x 5.05 ^t
Accuracy		±20 sec./month at normal temp.	
Oscillation		32,768Hz	
Method of display		FE twist-type nematic IC (liquid crystal) display	
Integrated circuit		C/MOS-LSI (1 unit)	
Effective temp. range		0°C ~ +55°C (32°F ~ 131°F)	
Adjustment of time rate		By trimmer condenser	
Functions of display	Time	Hour, minute, second, AM/PM day	←
	Calendar	Month, date & day	←
	Alarm	Hour, minute, A/P & set mark	X
	Stopwatch	Minute, second & 1/100 sec. (hour, minute & second after 30-min. timing)	←
	Chime	Set mark	X
Additional functions	Instant manual return		←
	Fully automatic calendar (Feb. 28)		←
	12/24-hour switching function		←
	Alarm monitor		X
	Illumination lamp		←
Power cell (Silver oxide)	Code : SR920W (Ag ₂ O/KOH) Size (mm) : 9.5φ x 2.1 ^t Nominal voltage : 1.55V Nominal capacity : 39mAH Maker : Hitachi Maxel Parts No. : 280-51 (1 unit) Lifetime : About 2 years (3 sec. lamp lighting per day)		

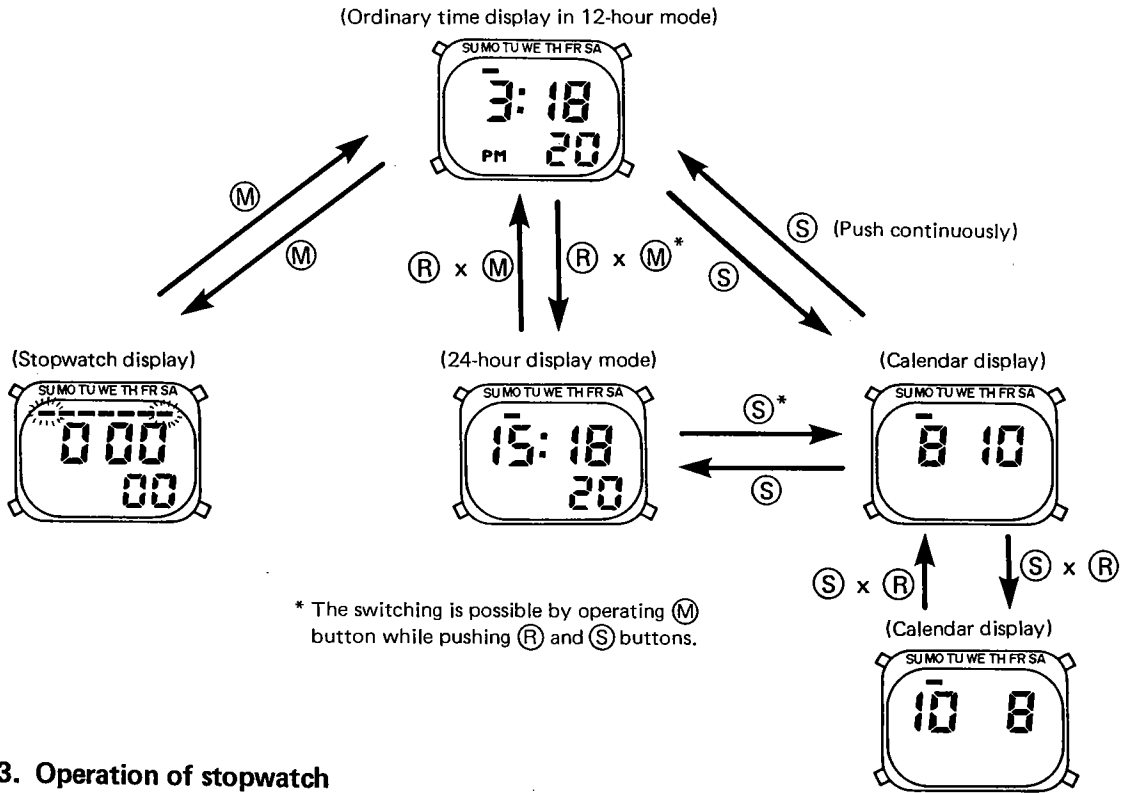
■4. HANDLING INSTRUCTIONS

4-1. Nomenclature and functions of push-buttons

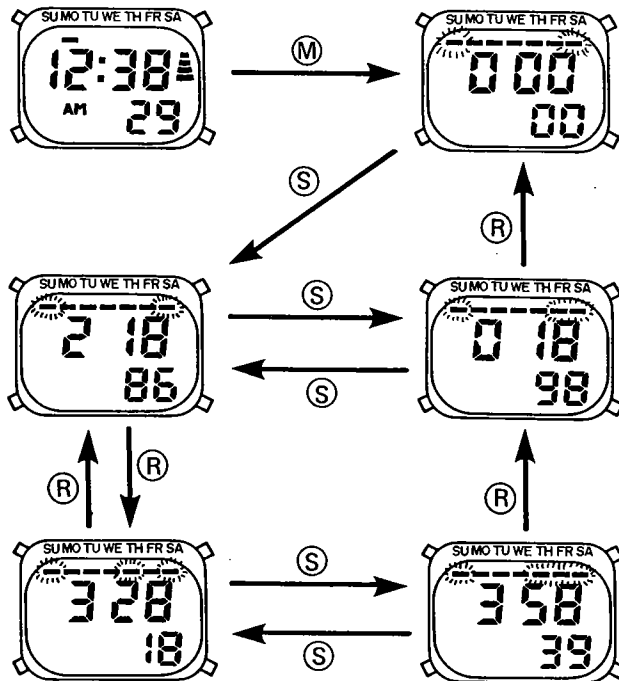


- Ⓢ button: Selection of correcting digit; Calendar display; Start/stop of stopwatch
- Ⓡ button: Time setting; Lap/reset of stopwatch
- Ⓜ button: Switching of mode; Shift of correcting digit; Instant manual return
- Ⓛ button: Illumination lamp

4-2. Switching of display



4-3. Operation of stopwatch



Note:

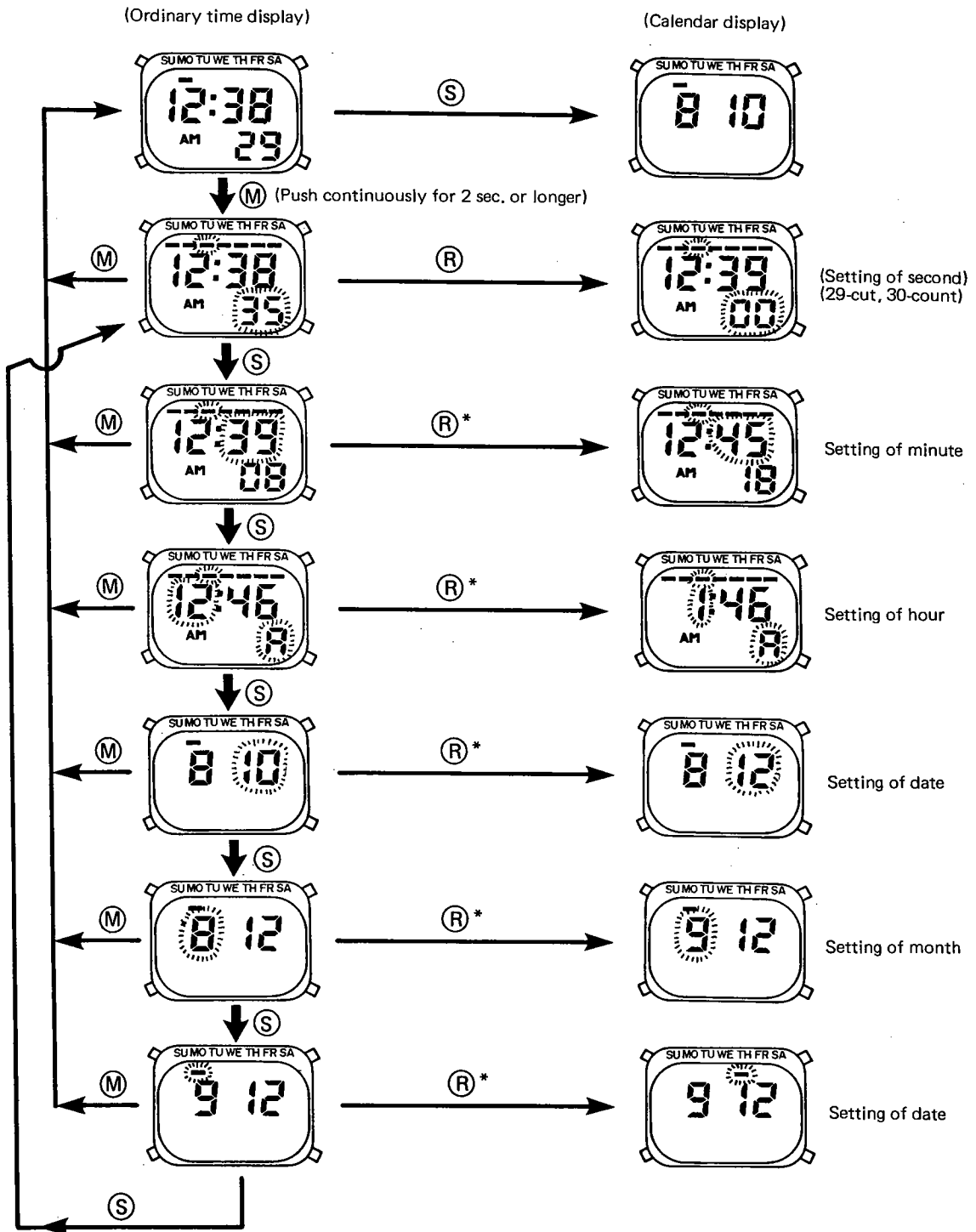
The left diaphragms show the timing states changing from 0'00''00/100'' to 29'59''99/100''. The displays after 0:30'00/100'' are shown below.

- Running mode Flashing of Sunday; Glowing of colon
- Lap running mode Flashing of Sunday, & Thursday; Glowing of colon
- Lap stop mode Flashing of Sunday, Thursday & Friday; Glowing of colon
- Stop mode Flashing of Sunday & Friday; Glowing of colon

Reset	0'	00''	00/100''
Start	0	00	01/100
	0	59	99/100
	1	59	00/100
	29	59	99/100
	0	: 30'	00''
	23	: 59	59
	0	: 00	00
			(Per day)

4-4. Setting method

- Setting of time and calendar



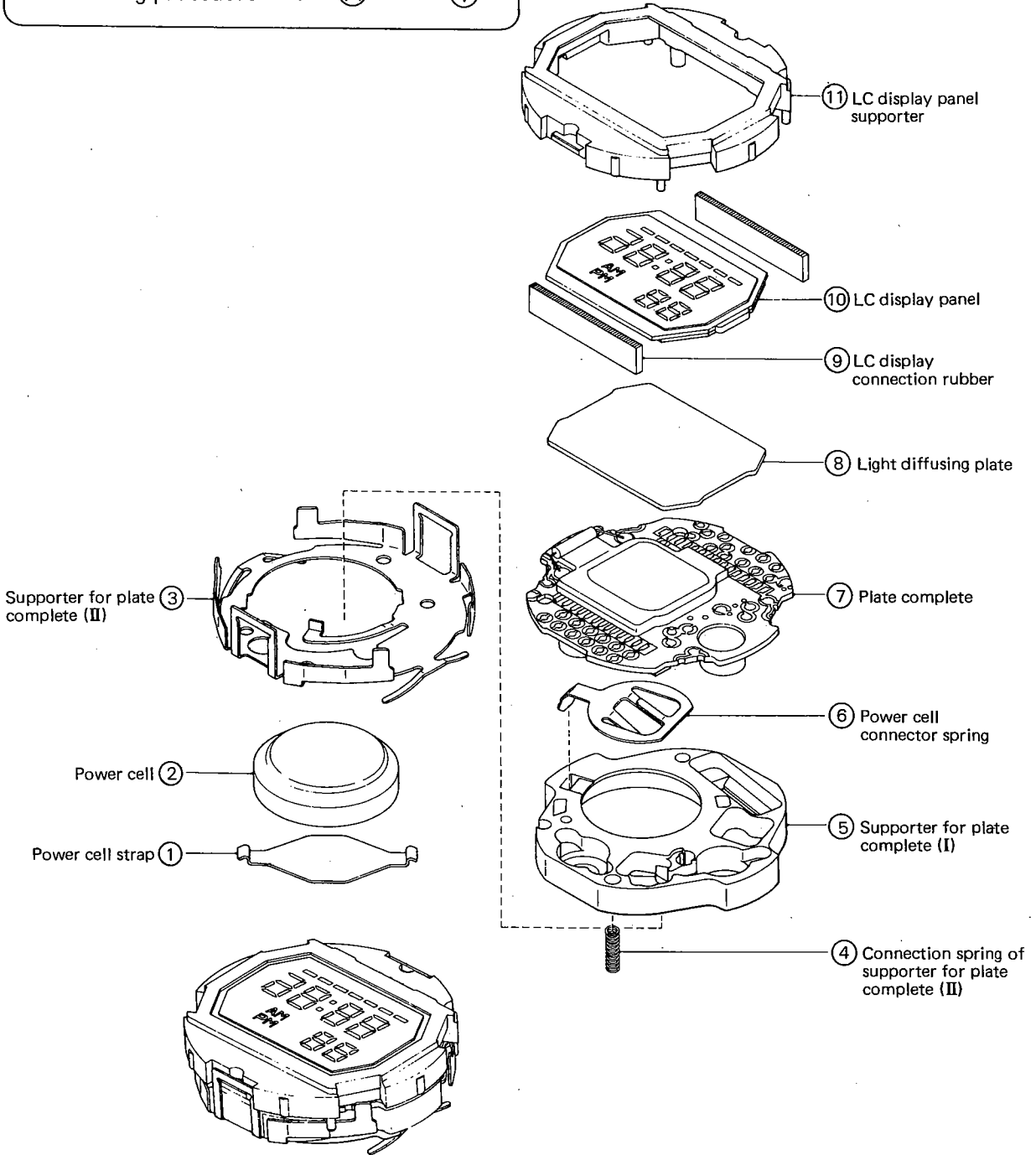
Note: Setting order of month-date calendar: → Date • Month
 Setting order of date-month calendar: → Month • Date

* The switching is possible by operating (M) button while pushing (R) and (S) buttons.

5. DISASSEMBLY/ASSEMBLY OF MODULE

Disassembling procedure : ① → ⑪

Assembling procedure : ⑪ → ①



■6. NOTES ON DISASSEMBLY/ASSEMBLY

1) Handling of supporter for plate complete

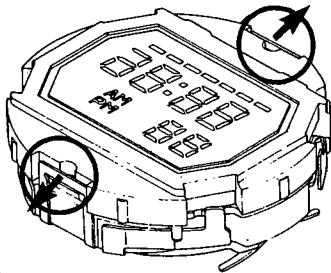


Fig. 1

- The LC display panel supporter is hooked and fixed at two areas of a supporter for plate complete (II).

As illustrated in Fig. 1, the supporter for plate complete (II) is unset by using a tweezers or the like to pry the supporter toward the arrow marks from the side of the LC display panel.

2) Handling of power cell strap

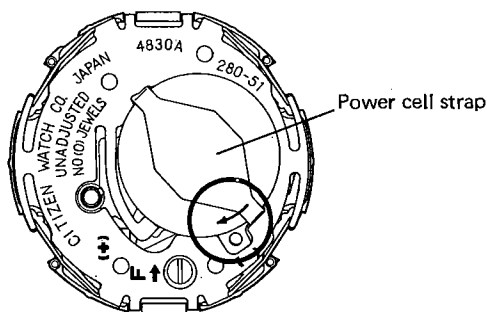


Fig. 2

- As illustrated in Fig. 2, the power cell strap is unset by sliding it toward an arrow mark.

3) Connection spring of supporter for plate complete (II)

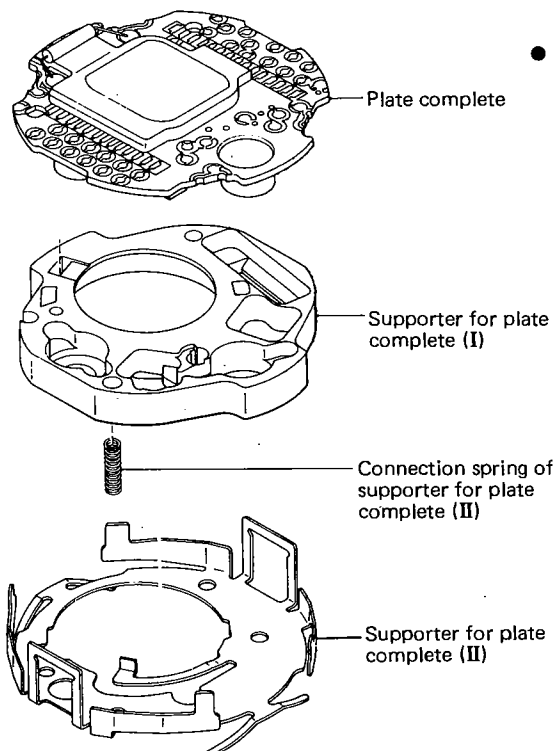


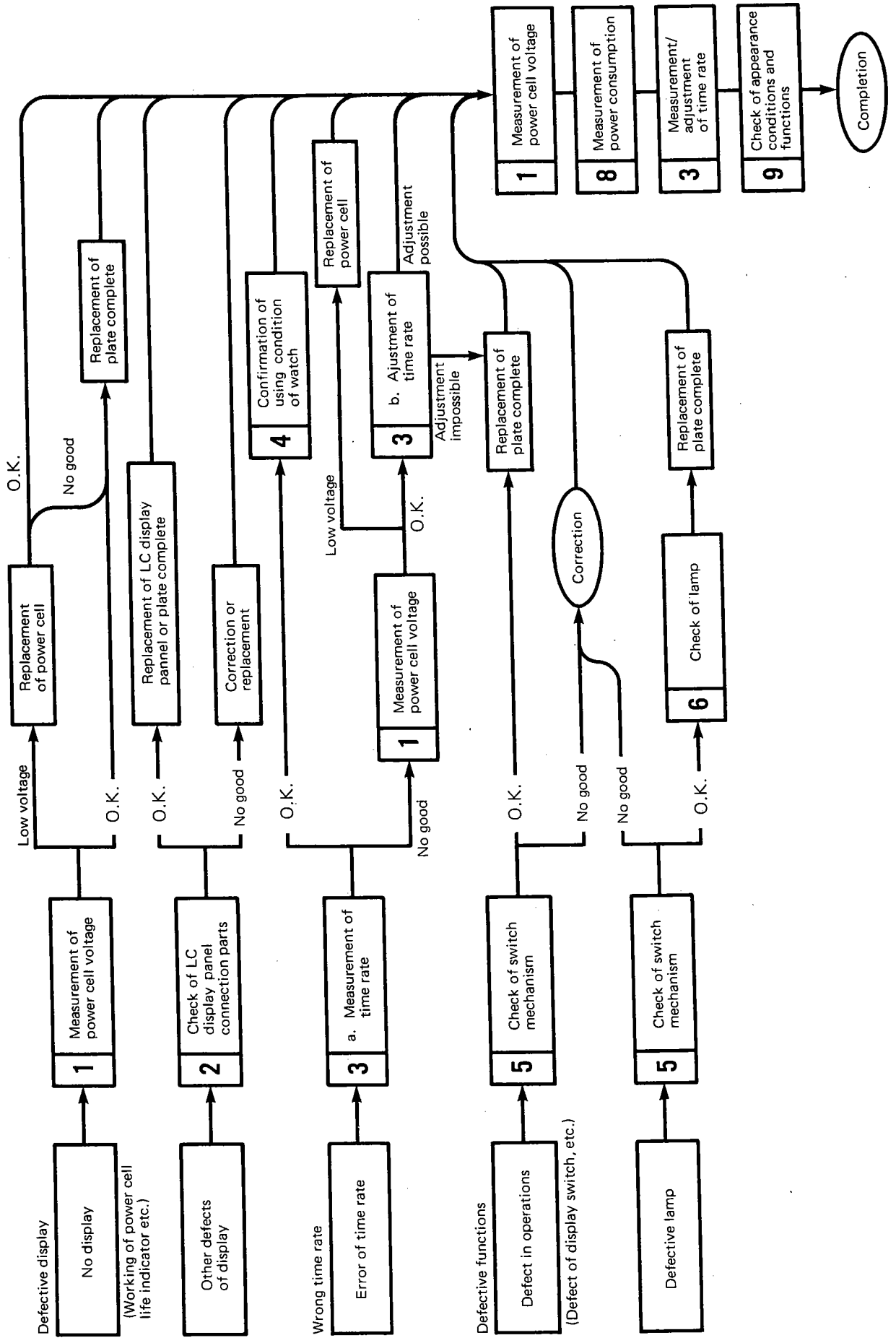
Fig. 3

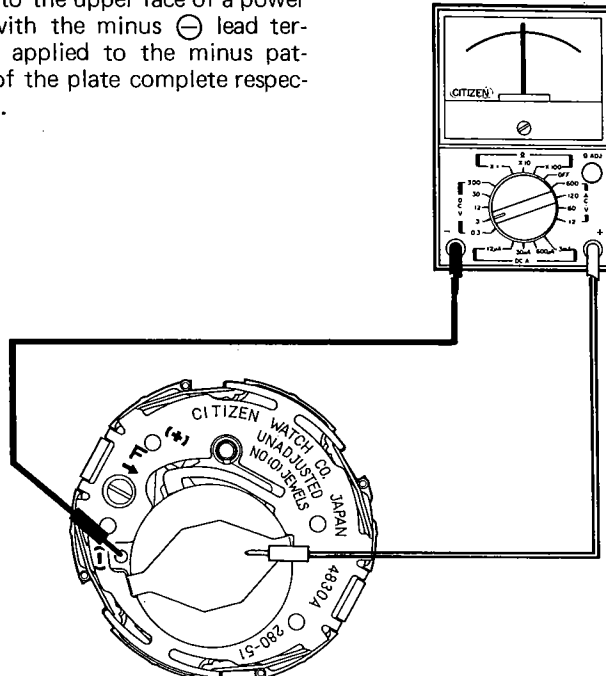
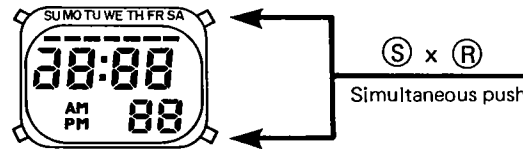
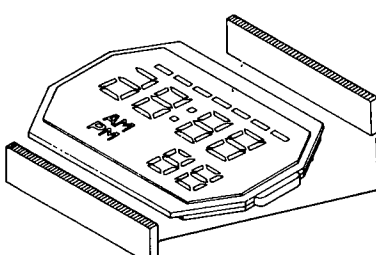
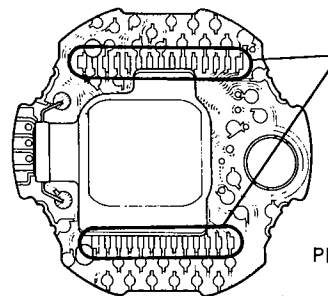
- The connection spring of supporter for plate complete (II) functions to apply the plus (+) side of a power cell to the plate complete.

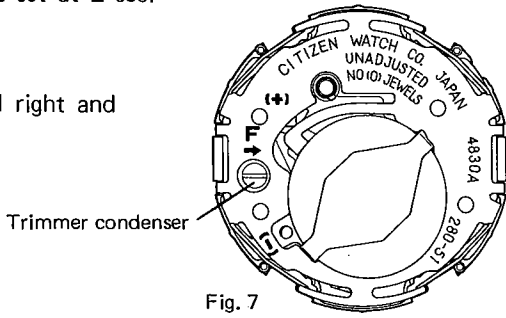
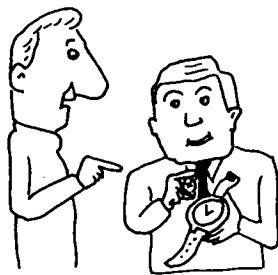
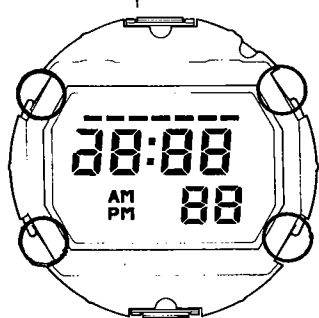
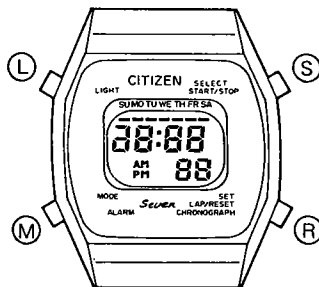
In this connection, the spring is put into a hole of the supporter for plate complete (I) to secure the conduction between the plate complete and the supporter for plate complete (II).

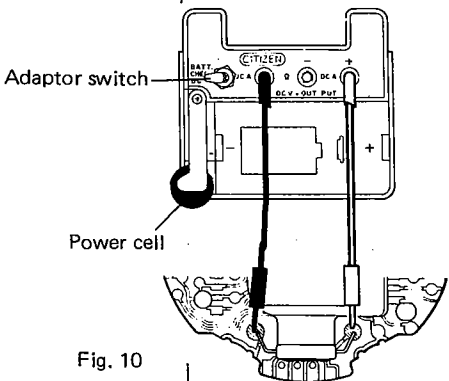
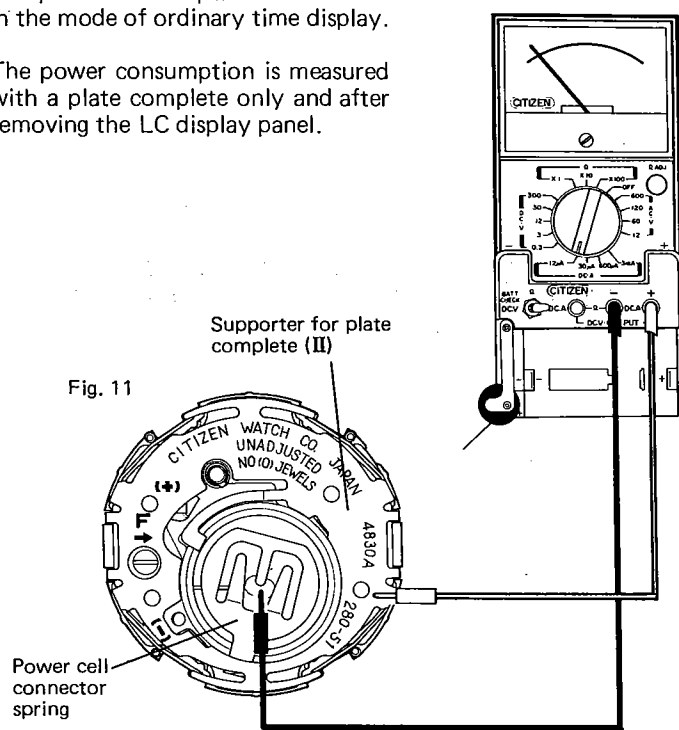

Thus good attention must be paid when handling this connection spring.

7. TROUBLESHOOTING AND ADJUSTMENT



Checking items	How to check	Results and treatment
<p>1 Measurement of power cell voltage</p>	<p>●As illustrated in Fig. 4, the plus ⊕ lead terminal of a tester is applied to the upper face of a power cell with the minus ⊖ lead terminal applied to the minus pattern of the plate complete respectively.</p>  <p style="text-align: center;">Fig. 4</p>	<p>Over 1.5V → Nondefective</p> <p>Under 1.5V → Replacement of power cell</p>
<p>2 Check of connection part of LC display panel</p>	<p>●All display elements on the display screen glow up with a simultaneous push of both (S) and (R) buttons in the mode of ordinary time display.</p> <p>Under such conditions, an inspection is given to the defective segment.</p> <p>●Make sure that the LC display panel connection rubber is set in a correct way with no wear at all.</p> <p>●Make sure that each of the contact points (between a pattern of the plate complete and the LC display panel connection rubber as well as between the LC display panel and the connection rubber) is completely free from the dust, stains, cracks, flaws and the like defects.</p>  <p style="text-align: center;">Fig. 5</p>   <p style="text-align: center;">Fig. 6</p>	<p>Dust stains, etc. → To be removed away</p> <p>Cracks, flaws, etc. → Replacement of connection rubber</p>

Checking items	How to check	Results and treatment
<p>3 Measurement/adjustment of time rate</p>	<ul style="list-style-type: none"> ●Measurement of time rate The unit time of measurement is set at 2 sec. with a Quartz Tester. ●Adjustment of time rate The trimmer condenser is turned right and left to adjust the time rate. 	
<p>4 Confirmation of using condition of watch</p>	 <p>The using condition of a watch is examined with the user of the watch as follows.</p> <ol style="list-style-type: none"> 1) Check whether or not the user handled his or her watch in a wrong way. 2) Check whether or not the user his or her watch outside its effective temperature range. 3) How long does it pass since the time rate was adjusted last? 	
<p>5 Check of switch mechanism</p>	<p>At the outset, have an inspection in the single unit of a module to discriminate whether the push-button or the module is defective.</p> <ol style="list-style-type: none"> 1) Check of module The switch function is checked by pressing the switch part of the supporter for plate complete (II) with a tweezers or the like to secure a contact with the connection part of the plate complete. Check whether or not the switch part of the supporter for plate complete (II) has a malformation. 2) Check of push-buttons Check whether or not the push-button or the case has some malformation, stains or the like defects.  	<p>Switch function workable → Check of push-buttons</p> <p>Switch function unworkable → Clear-off of dust and stains sticking at each connection part</p> <p>Malformation of switch part → To be corrected</p> <p>Malformation of push-button → Replacement of push-button</p> <p>Dust or stains sticking around push-button → To be removed away</p>

Checking items	How to check	Results and treatment
<p>6 Check of illumination lamp</p>	<p>●As illustrated in Fig. 10, the power cell of a watch is set into a tester. The lead terminals are connected to the DC.V. OUTPUT terminals, and then the adaptor switch is turned to DC.V. Thus the illumination is checked.</p> <p>No lighting of lamp → Replacement of plate complete</p>	 <p>Fig. 10</p>
<p>7 Measurement of power consumption</p>	<p>●The power consumption is measured in the mode of ordinary time display.</p> <p>●The power consumption is measured with a plate complete only and after removing the LC display panel.</p>  <p>Fig. 11</p> <p>Note: The measurement will be defective if the connection spring of supporter for plate complete (II) is not set at a correct position since this spring functions to secure the connection between the plate complete and the support for plate complete (II).</p>	<p>Under 2.0μA → Nondefective</p> <p>Over 2.0μA → Measurement of power consumption with plate complete only</p> <p>Over 1.6μA → Replacement of plate complete</p> <p>Under 1.6μA → Replacement of LC display panel</p>
<p>8 Check of appearance and functions</p>	<p>●The following points are checked with a finished watch.</p> <ol style="list-style-type: none"> 1) The display has no malfunction at all. 2) Each push-button has no defect. 3) The display screen of the LC display panel is completely free from the dust, stains and other defects. 	 <p>Fig. 12</p>

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