

TECHNICAL GUIDE

AND PARTS LIST

CAL. V601A

ANALOGUE QUARTZ

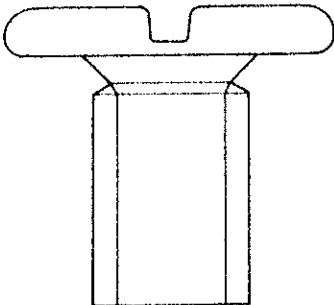
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I. SPECIFICATIONS

Item		Cal. No.	V601A
Time indication		Three hands (hour, minute, second) + Multi function hand	
Driving system		Step motor 3 pcs. (Fixed pulse system)	
Display system		● Hands adjust display ● Stopwatch display ● Time display	
Loss/gain		Monthly rate: Less than 20 seconds at normal temperature range	
Movement size	Casing diameter	φ30.0 mm	
	Height	3.7 mm (with battery clamp)	
Regulation system		Trimmer condenser	
Quartz Tester measuring gate		Any gate is available	
Battery		SEIKO SR1130W, MAXELL SR1130W, SONY EVEREADY 389, U.C.C. 389 Voltage: 1.55V Battery life: Approx. 2 years	
Jewels		0 jewel	

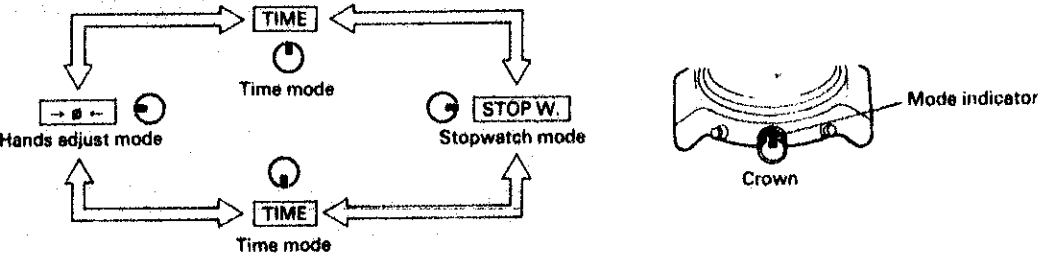
II. LIST OF SCREWS USED

	Battery clamp screw (1 pce.) Switch spring screw (5 pcs.) Coil block screw (3 pcs.) Screw for additional train wheel bridge (2 pcs.) Train wheel bridge screw (2 pcs.) Center wheel bridge screw (1 pce.)
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III. OPERATION (Major Functions)

1. MODE AND BUTTON OPERATION

Mode change is made by turning the crown clockwise or counterclockwise as follows:

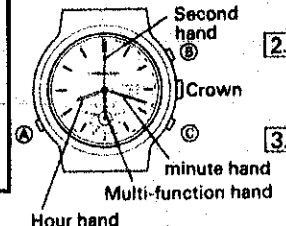


NOTES:

- The crown can not be pulled out or pushed in.
- "STOP W.", "TIME" and "→φ←" marks are printed on the case or dial of your watch to indicate the respective mode positions.

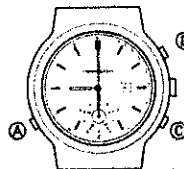
2. NECESSARY STEPS AFTER BATTERY REPLACEMENT

After replacing the battery, there will be a discrepancy between the information stored in the integrated circuit (IC) within the watch and the position the hands indicate. Be sure to follow right [1] to [3] steps to adjust:

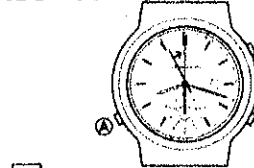


- Turn the crown to set the mode indicator at the "TIME" position and keep the three buttons pressed simultaneously for a few seconds. When the second hand stops, proceed to the following steps.
- Turn the crown to set the mode indicator at the "→φ←" position. Set the hour hand and minute hand at the 12 o'clock position and the second hand and multi-function hand at the "12" position. (For hands setting, refer to item 3. [1] to [4] in this page.)
- Turn the crown to set the mode indicator at the "TIME" position and set the current time. (For details, see "HOW TO SET THE TIME")

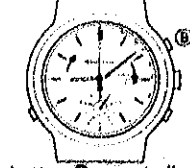
3. HOW TO CHECK AND ADJUST FOR HANDS POSITION



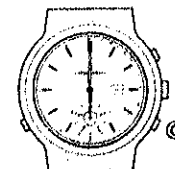
- A: Second hand reset
B: Hour and minute hands reset
C: Multi-function hand reset



1. Press button A repeatedly to set the second hand to the 12 o'clock position.



2. Press button B repeatedly to set the hour and minute hand to the 12 o'clock position.



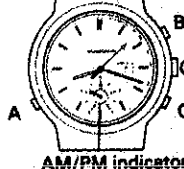
3. Press button C repeatedly to set the multi-function hand to the 12 o'clock position.



4. After all the adjustments are completed, turn the crown to set the watch to the desired mode.

Before setting to other mode, turn the mode indicator at the "→φ←" position. Minute, second, and multi-function hands should point to the 12 o'clock position as above. If not, follow right [1] to [4] steps adjust:

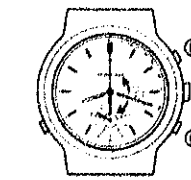
4. HOW TO SET THE TIME



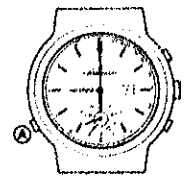
- A: Lock/Unlock
B: Hour and minute hands setting (clockwise)
C: Hour and minute hands setting (counterclockwise)



1. After the hands stop, press A continuously for 1 second. The second hand is reset to the 12 o'clock position and the watch is unlocked for the time setting function.



2. Press B (clockwise setting) or C (counterclockwise setting) repeatedly to set the hour and minute hands.
* If the buttons are kept pressed, the hands move automatically. To stop them, press B or C.
** When setting the hour hand, check that AM/PM is correctly set.



3. After setting the desired time, press A in accordance with a time signal and the second hand will start immediately. The watch is locked for the "TIME" mode.

NOTE: REGARDING HOW TO USE THE STOP WATCH, REFER TO THE INSTRUCTION BOOKLET.

IV. DISASSEMBLING, REASSEMBLING AND LUBRICATING

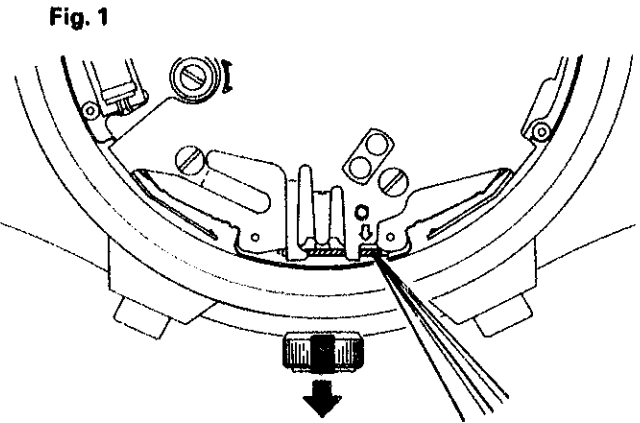
● Precautions on Disassembly/Reassembly

Removing/Assembling the Crown (with winding stem)

The crown (with winding stem) should be removed/assembled in the "TIME" mode.

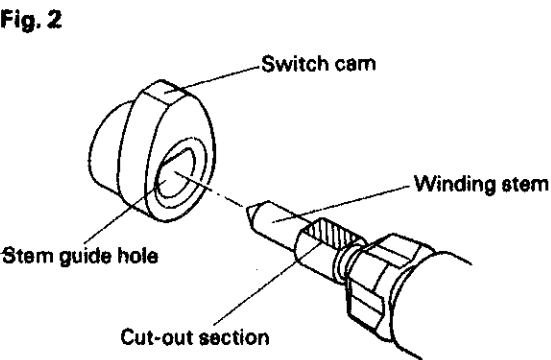
● How to remove

- Procedure 1 Turn the crown to set the mode indicator at the "TIME" position.
- Procedure 2 Push the winding stem holder gently with tweezers or screwdriver. The point to be pushed is indicated by the arrow (⇒) located at the 3 o'clock position on the switch spring. (fig. 1)
- Procedure 3 Pull out the crown in the "TIME" position.



● How to assemble

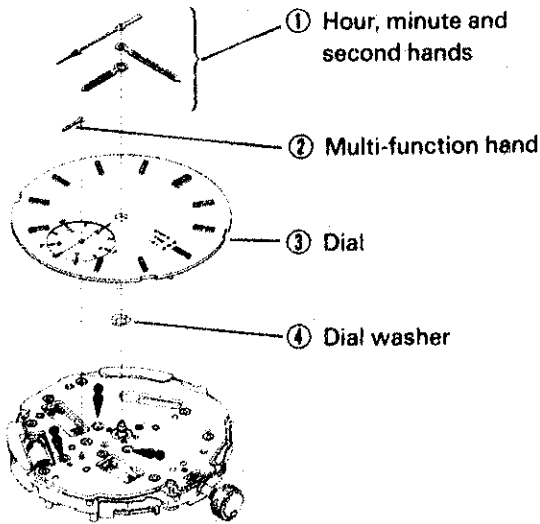
Phase should be matched between the crown (winding stem) and the switch cam. Confirm the setting position so that the stem guide hole of the switch cam matches with the cut-out section of the winding stem, before assembling.



Disassembling procedures: Figs. ① → ④⑨
Reassembling procedures: Figs. ④⑨ → ①

Types of oil		Oil quantity	
Moebius A	●	Small	○
Seiko watch oil S-6	○	Standard	○

● Hands ~ Battery connection (→)



Note: Hands installation
Install the hands in the order of multi-function, hour, minute and second hand at the 12 o'clock position. At that care not to misalign the hands.

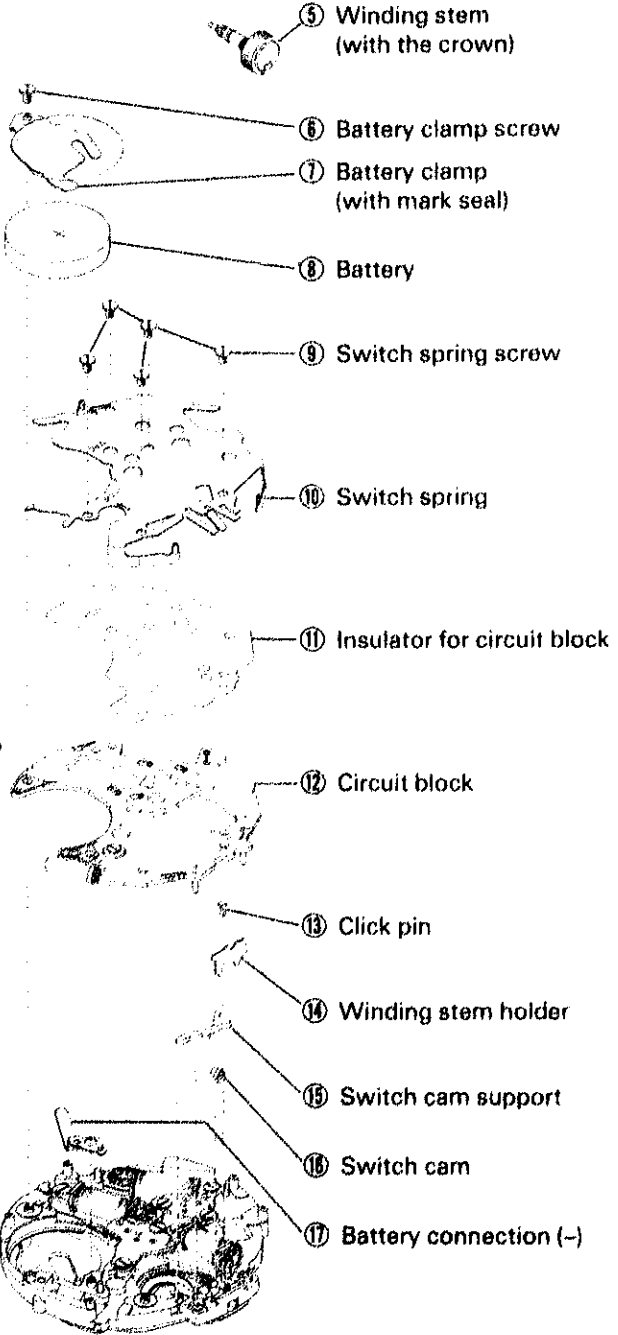
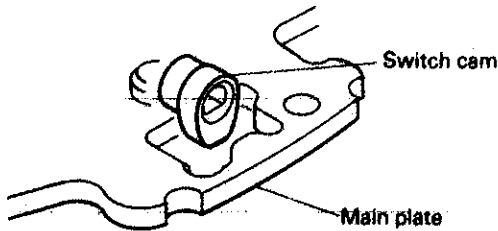
(SYSTEM RESET AFTER REPLACING THE BATTERY)

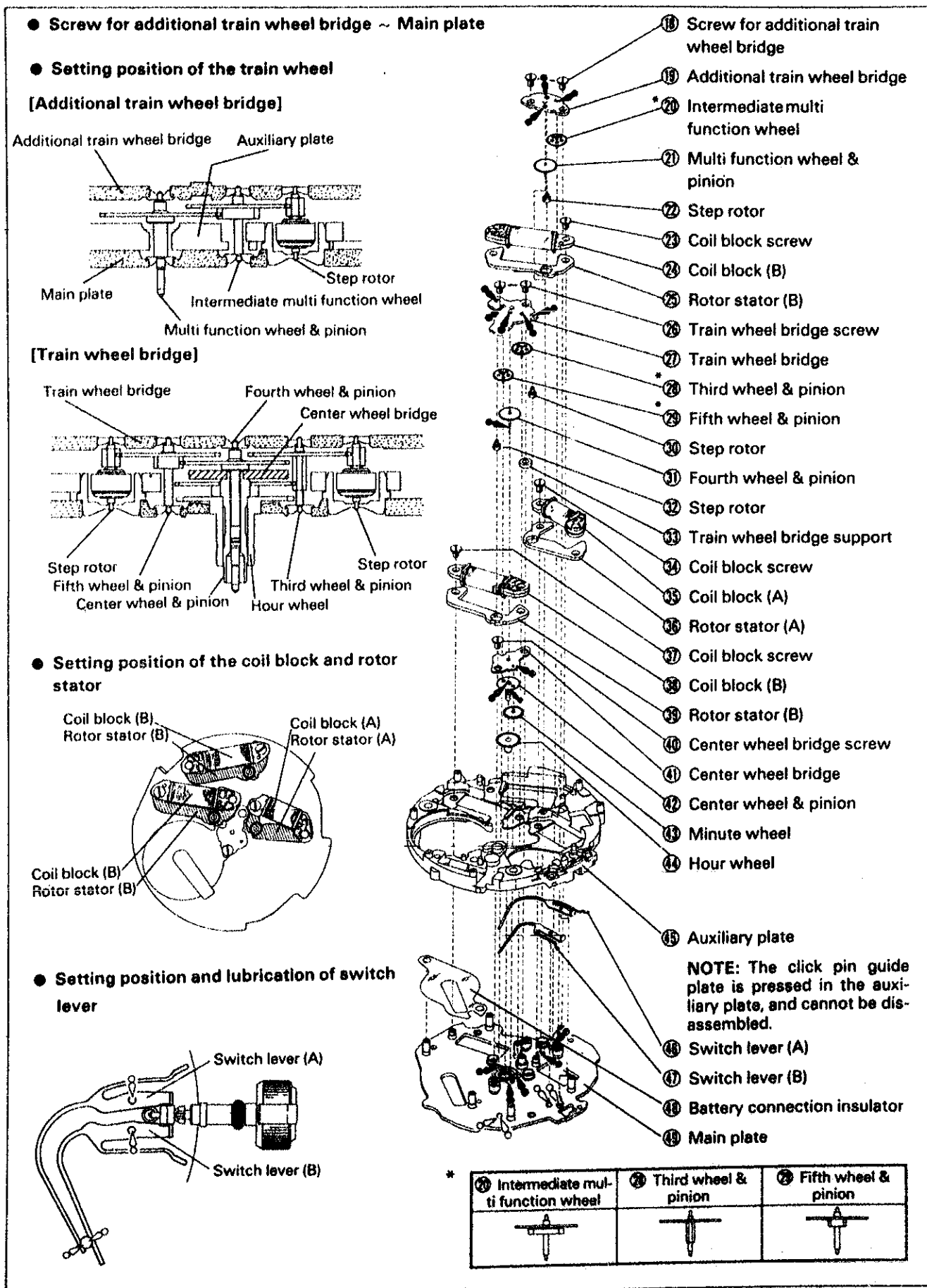
Immediately after the battery is replaced, be sure to act the system reset according to any one of the following manners:

1. Keep the three buttons pressed simultaneously for a few seconds.
2. Short-circuit the AC (all clear) terminal and switch spring of the circuit block with conductive tweezers to reset the circuit.

● How to assemble the switch cam

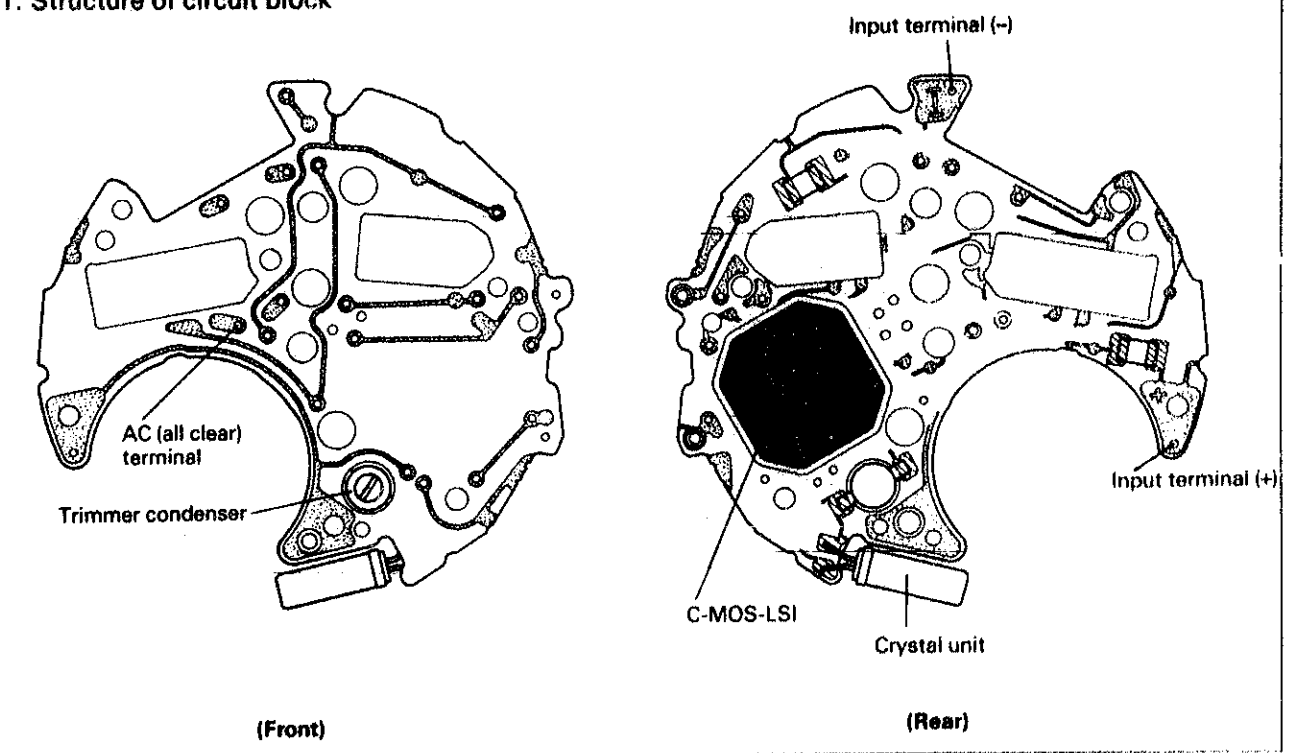
Assemble the switch cam with the protruded section facing toward the main plate.





V. CHECKING AND ADJUSTMENT

1. Structure of circuit block



2. Procedure for checking and adjustment

- This section only gives the checking and adjustment procedure which is exclusive for this cal. V601A. For the normal checking and adjustment, refer to the "TECHNICAL GUIDE GENERAL INSTRUCTION, Analogue Quartz".

COIL BLOCK

Check the coil blocks (A) and (B) for broken wire and short circuit using the SEIKO Digital Multi Tester S-840A.
Range to be used: Ω

Result:	
Coil block (A)	
1.2 ~ 1.6k Ω : Normal	
Less than 1.2k Ω (short circuit):	Defective
More than 1.6k Ω (broken wire):	Defective
Replace the coil block (A) with a new one	
Result:	
Coil block (B)	
1.9 ~ 2.3k Ω : Normal	
Less than 1.9k Ω (short circuit):	Defective
More than 2.3k Ω (broken wire):	Defective
Replace the coil block (B) with a new one	

CURRENT CONSUMPTION

Use the SEIKO Digital Multi Tester S-840A (with Multi Adaptor MA-40A)

Range to be used: mA \rightarrow μ A

Follow the procedures below also when using a S-831 volt-ohm-meter.

NOTE: When measuring, be sure to perform in the following manner:

① CHECK THE CURRENT CONSUMPTION FOR THE WHOLE OF THE MOVEMENT

NOTE: Set the crown to the TIME mode in either Complete or Movement condition before measurement.

[Procedures]

- (1) First set the Digital Multi Tester S-840A to mA range.
- (2) Connect and set the probes as shown in Fig. 1.
- (3) With condition (2), perform *SYSTEM RESET as shown in Fig. 2.
* This operation is to initialize the IC data forcibly.
- (4) When the current value of the digital multi-tester becomes stable, set the range from mA to μ A and read the value of the current consumption.

Fig. 1

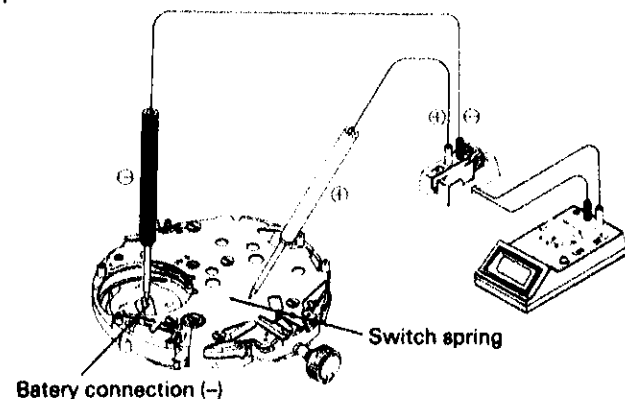
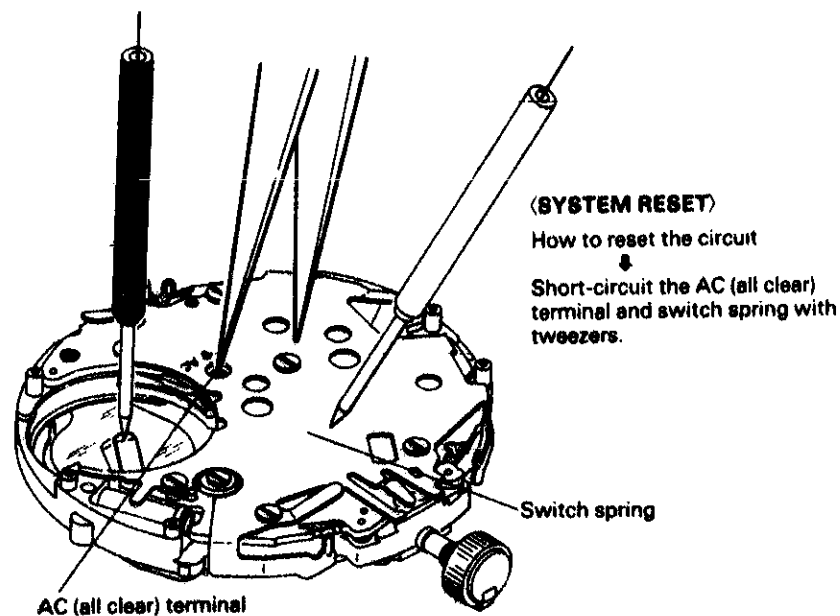


Fig. 2



Result:

Less than 4.0 μ A: Normal

More than 4.0 μ A: Defective

Replace the circuit block.

② CHECK THE CURRENT CONSUMPTION OF THE CIRCUIT BLOCK ALONE.

[Procedures]

1. First set the Digital Multi Tester S-840A to mA range.
2. After setting as shown in Fig. 3, reset the circuit by connecting the AC (all clear) terminal and red probe using the lead wire as shown below (Fig. 4).
3. When the current reading of the Digital Multi tester is stabilized, set the range from mA to μ A and measure the current consumption.

Fig. 3

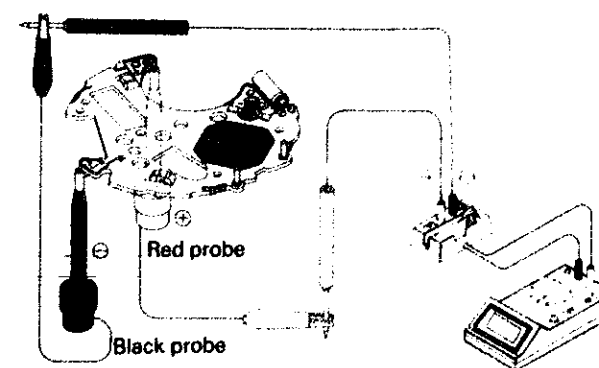
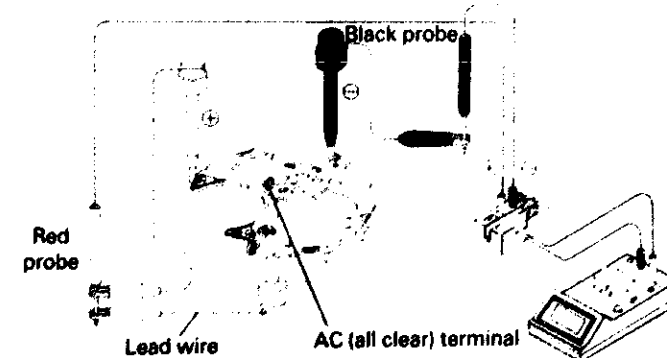


Fig. 4



(SYSTEM RESET)

Turn the circuit block upside down and connect the AC terminal and red probe.

Result:

Less than 1.8 μ A: Normal

More than 1.8 μ A: Defective

Replace the circuit block.

VI. PARTS LIST

Cal. V601 A			
PARTS NO.	PARTS NAME	PARTS NO.	PARTS NAME
102 035	Auxiliary plate	4245 085	Switch spring
121 083	Center wheel bridge	4270 082	Battery connection (-)
125 083	Train wheel bridge	4283 006	Switch cam support
126 083	Additional train wheel bridge	4295 005	Switch cam
* 221 039	Center wheel & pinion	4450 013	Switch lever (A)
231 039	Third wheel & pinion	4450 014	Switch lever (B)
* 241 097	Fourth wheel & pinion	012 201	Center wheel bridge screw
261 039	Minute wheel	012 201	Train wheel bridge screw
* 271 086	Hour wheel	012 201	Screw for additional train wheel bridge
354 101	Winding stem	012 201	Coil block screw
426 002	Train wheel bridge support	012 201	Switch spring screw
491 220	Dial washer	012 201	Battery clamp screw
701 013	Fifth wheel & pinion	032 048	Tube for battery clamp screw
735 036	Winding stem holder	032 048	Tube for switch spring screw
817 022	Intermediate multi function wheel	032 049	Tube for coil block screw
1002 011	Multi function wheel & pinion	032 050	Tube for train wheel bridge (A)
4000 357	Circuit block	032 051	Tube for train wheel bridge (B)
4002 025	Coil block (B)	032 052	Tube for center wheel bridge
4002 357	Coil block (A)	033 084	Click pin
4146 034	Step rotor		
4216 069	Battery connection insulator	● SEIKO SR1130W	Battery
4216 073	Insulator for circuit block	● MAXELL SR1130W	
4225 068	Battery clamp	● U.C.C. 389	
4239 042	Rotor stator (A)	● SONY EVEREADY 389	
4239 043	Rotor stator (B)		

REMARKS:

SWITCH SPRING FOR PULSAR WATCHES

4245084 (Pulsar marking)