SEIKO

DIGITAL QUARTZ

Cal. L823A

PARTS CATALOGUE

Cal. L823A

354 068

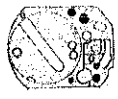
735 008

4001 207

4238 001

4270 035

4313 034



4398 209

4450 009

☆4510 006

☆Maxell SR916SW

012 153

017 603

2/1

☆⇨Please see remarks on the next page.

Cal. L823A

Characteristics

Casing diameter : 11.5 × 15.5 mm

Maximum height : 4.1 mm without battery

Frequency of quartz crystal oscillator : 32,768 Hz (Hz=Hertz . . . . . Cycles per second)

Time and calendar display : Digital Display System showing hour, minute, second, month, date and day of the week.

Display medium : Nematic Liquid Crystal, FE-Mode.

Regulation system : Trimmer condenser

Battery life indicator : All the digits in the display begin flashing.

PART NO.	PART NAME	PART NO.	PART NAME
354 068	Winding stem		
735 008	Winding stem holder		
4001 207	Circuit block		
4238 001	Switch lever spring		
4270 035	Battery connection (−)		
4313 034	Connector		
4398 209	Battery guard		
4450 009	Switch lever		
☆**4510 006**	Liquid crystal panel (Silver)		
☆4510 007	Liquid crystal panel (Gold)		
012 153	Winding stem holder screw		
017 603	Switch lever pin		
☆Maxell SR916SW	Silver oxide battery		

Remarks :

Liquid crystal panel

☆4510 006 } .....Be sure that combination between the color of panel cover and Liquid crystal panel
☆4510 007 } should be matched according to the **"SEIKO Quartz Casing Parts Catalogue."**

Battery

☆Maxell SR916SW·····The substitutive battery might be added to the applied battery in the future. In that case, Please refer to separate **"BATTERY LIST FOR SEIKO QUARTZ WATCHES"**.

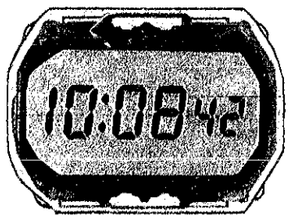
☆⇨Please see remarks.
Part numbers in light letters are not shown in photos.

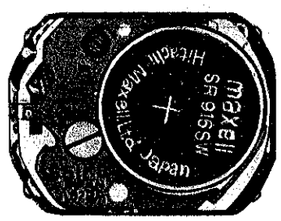
TECHNICAL GUIDE

SEIKO

DIGITAL QUARTZ

CAL. L823A



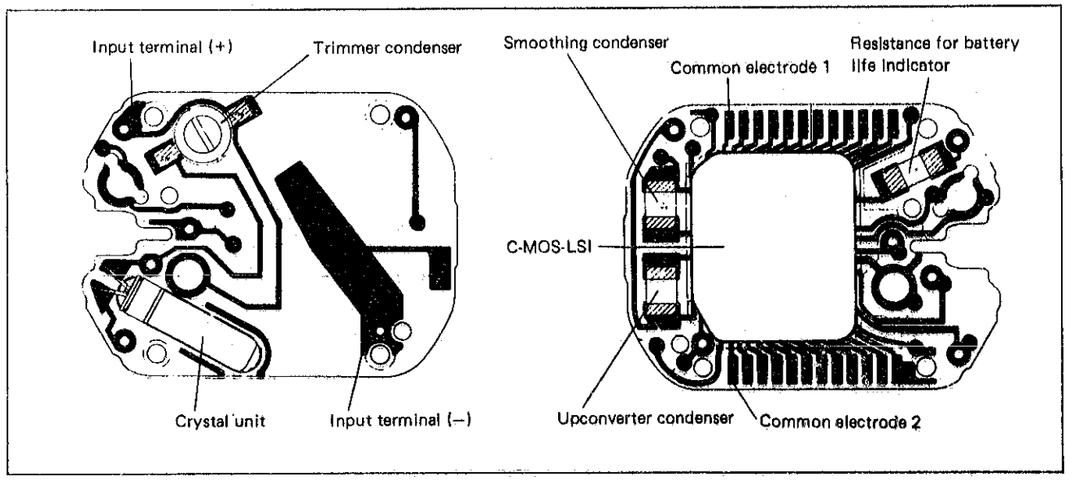


CONTENTS

I. SPECIFICATIONS

Item \ Cal. No.	L823A
Display medium	Nematic Liquid Crystal, FEM (Field Effect Mode)
Liquid crystal driving system	Multiplex driving system
Display system	• Time display • Month and date display • Day display
Additional mechanism	• Automatic calendar system (adjusts automatically for odd and even months except February of leap years) • Battery life indicator
Loss/gain	Loss/gain at normal temperature range Monthly rate: less than 15 seconds (Annual rate: less than 3 minutes)
Casing diameter	ϕ 16 mm (11.5 mm between 6 o'clock and 12 o'clock sides; 15.5 mm between 3 o'clock and 9 o'clock sides.)
Height	4.1 mm
Regulation system	Trimmer condenser
Measuring gate by Quartz Tester	Any gate is available.
Battery	Maxell SR916SW Battery life is approximately 2 years. Voltage: 1.55V

II. STRUCTURE OF THE CIRCUIT BLOCK



III. DISASSEMBLING, REASSEMBLING AND LUBRICATING OF THE CASE

Disassembling procedures Figs.: ① ~ ⑥

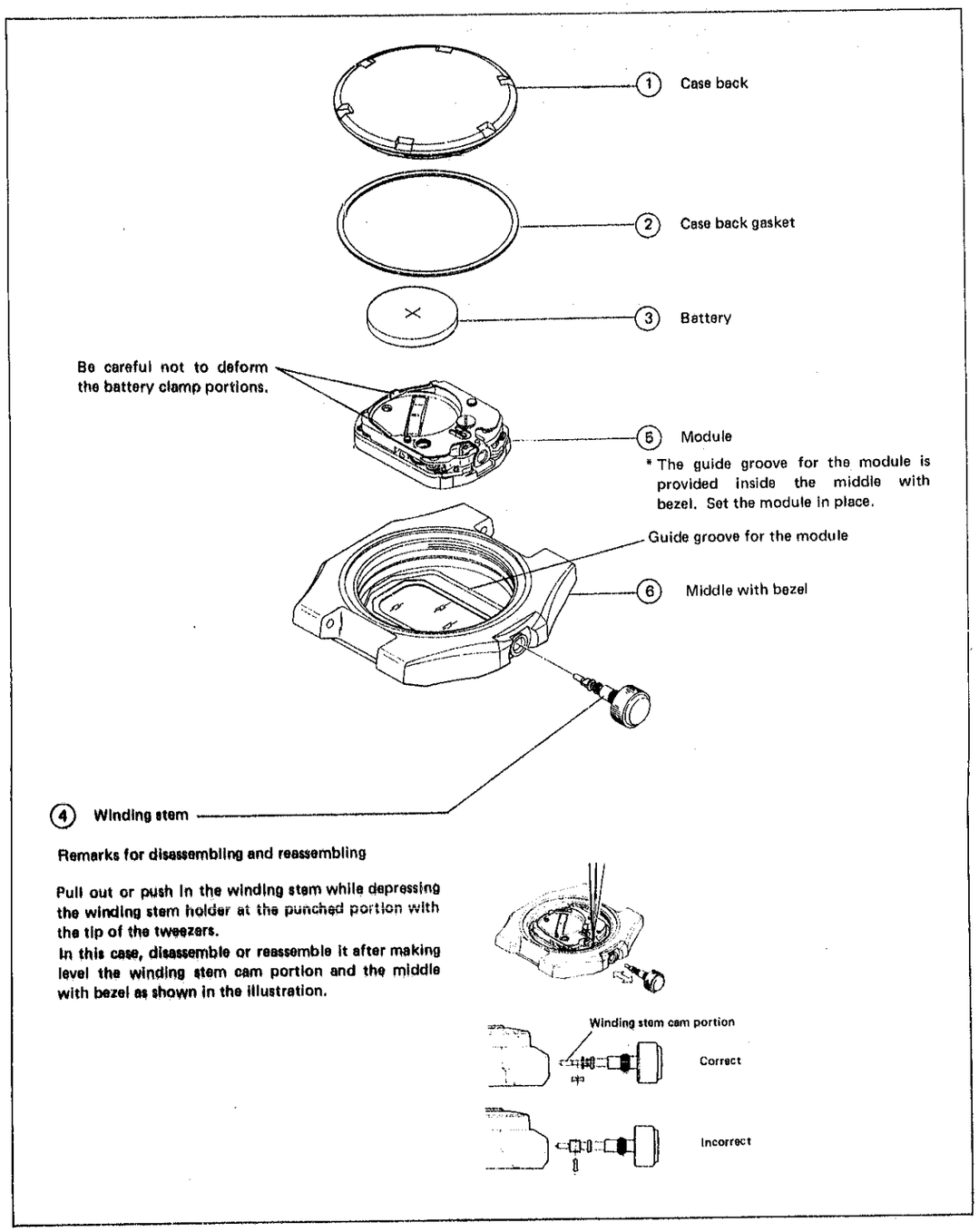
Reassembling procedures Figs.: ⑥ ~ ①

Lubricating

Type of oil — Oil quantity

SEIKO Watch Oil S-6 — Normal

Silicone grease



Remarks for disassembling and reassembling

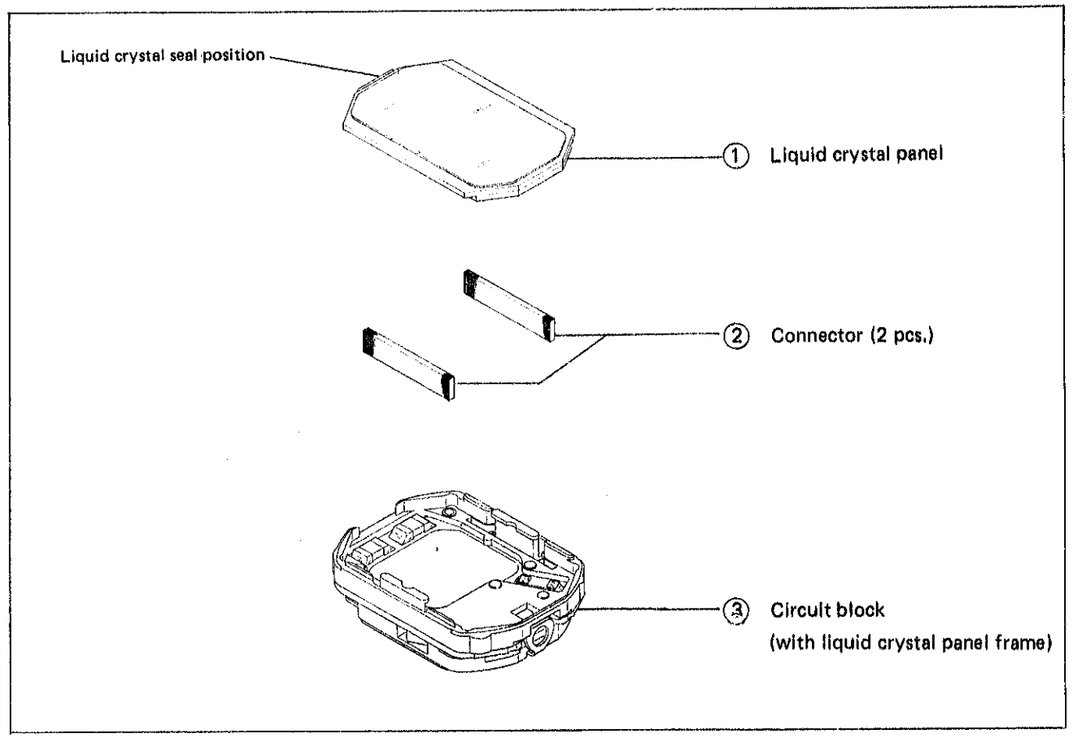
Pull out or push in the winding stem while depressing the winding stem holder at the punched portion with the tip of the tweezers.
In this case, disassemble or reassemble it after making level the winding stem cam portion and the middle with bezel as shown in the illustration.

IV. DISASSEMBLING AND REASSEMBLING OF THE MODULE

Disassembling procedures Figs.: ① ~ ⑪

Reassembling procedures Figs.: ⑪ ~ ①

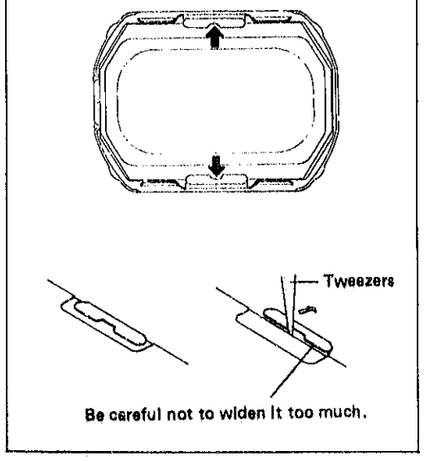
1. Liquid crystal panel side



① Liquid crystal panel

- How to disassemble

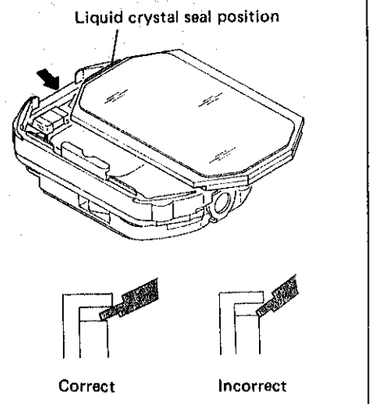
Put the tip of the tweezers at the arrow marked position (⬅) and push the liquid crystal panel in the direction indicated by the arrow (⇦) to take out. Be careful not to scratch the liquid crystal panel.



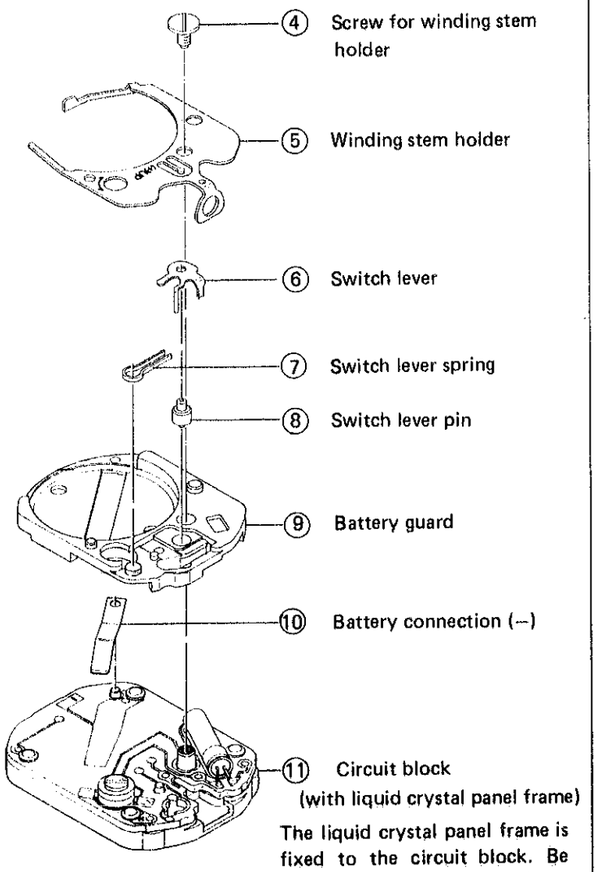
• How to reassemble

① Set the liquid crystal panel so that the liquid crystal seal position faces the notch (arrow marked portion) of the liquid crystal panel frame.

② First set the liquid crystal panel on one side between the liquid crystal panel frame and the connector and then put the other side in place while pushing the liquid crystal panel frame outwards with the tweezers.

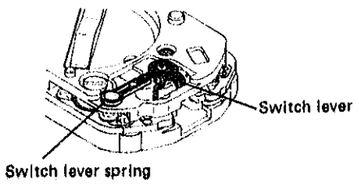


2. Battery side

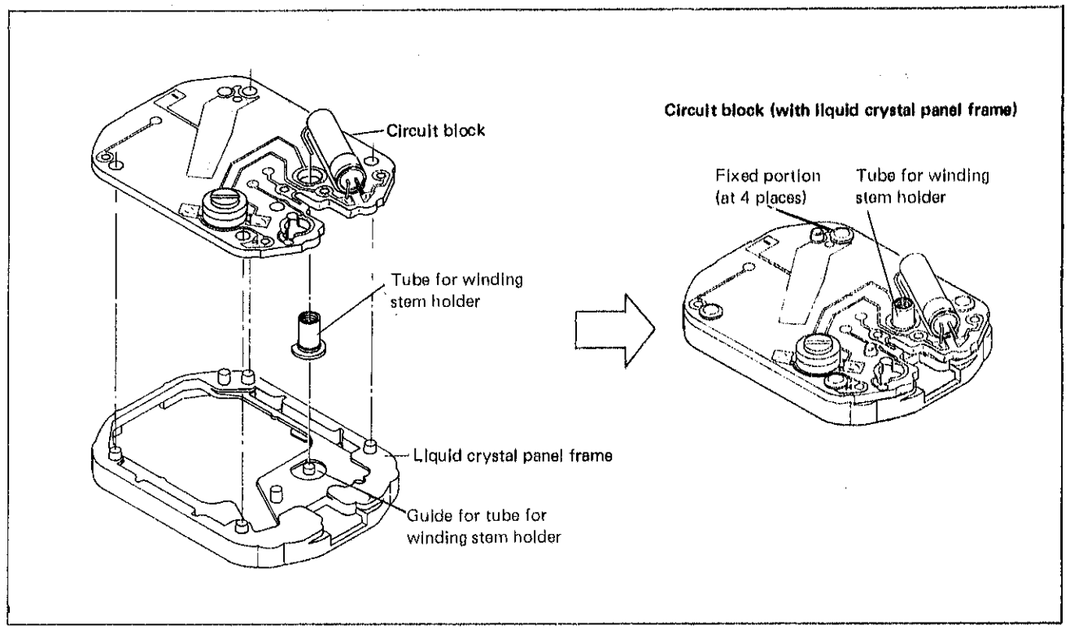


The liquid crystal panel frame is fixed to the circuit block. Be careful not to disassemble them.

• How to reassemble the switch lever and the switch lever spring.



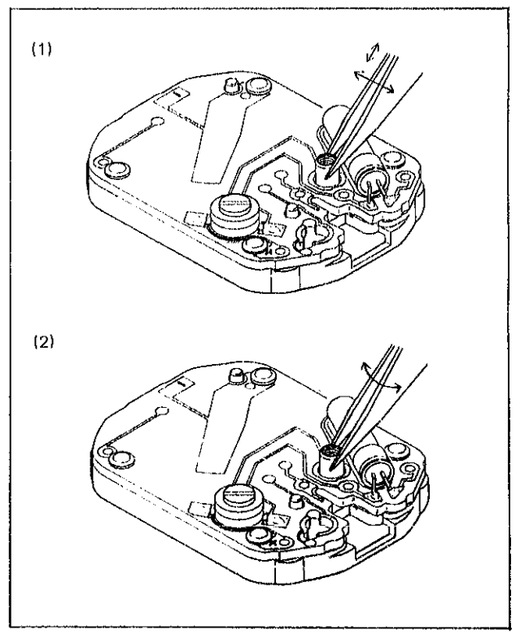
• Remarks for reassembling the circuit block



The circuit block of Cal. L823 is heat-combined at 4 places with the liquid crystal panel frame after setting the tube for winding stem holder in the liquid crystal panel frame and placing the circuit block on it.
The tube for winding stem holder is set in the guide for the tube for winding stem holder, preventing it from turning. However, it may be out of position in rare cases while disassembling or reassembling.
Once the tube for winding stem holder is set out of position, the time adjusting may be impossible.
Be sure to check the setting condition by following the procedures below.

(1) Hold the tube for winding stem holder with tweezers, move it up and down, to the right and left, and check to see if there is any clearance or looseness. If it is set out of position, there is no clearance and looseness.

(2) If the tube for winding stem holder is set out of position, turn it with tweezers to set it so that clearance and looseness occur.



V. CHECKING AND ADJUSTMENT

Procedure

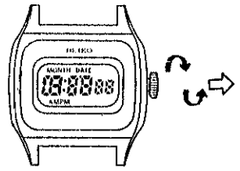
CHECK BATTERY VOLTAGE

Range to be used: DC3V

Result:
More than 1.5V: Normal
Less than 1.5V: Defective

CHECK PATTERN SEGMENT CHECKING SYSTEM

Turn the crown clockwise and counterclockwise quickly and pull it out. All the segments should light up. Check to see if there is any defective segment.



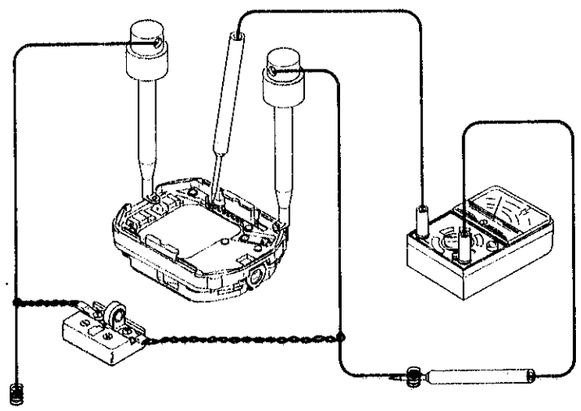
CHECK BATTERY CONDUCTIVITY

CHECK CONTACT BETWEEN C-MOS-LSI AND LIQUID CRYSTAL PANEL

CHECK CIRCUIT BLOCK

- Check the output voltage of the circuit block.

Range to be used: DC3V



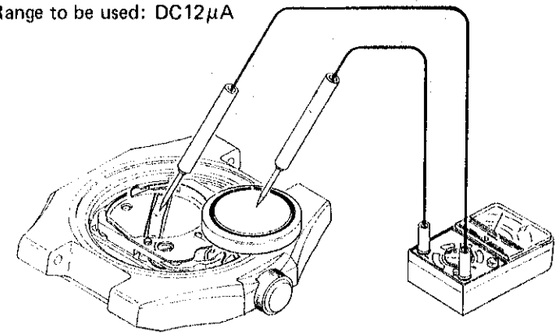
Result:
More than 0.8V: Normal
Less than 0.8V: Defective
Replace the circuit block with a new one.

Procedure

CHECK CURRENT CONSUMPTION

- Current consumption for the whole of the module.

Range to be used: DC12μA



Result:
Less than 1.1μA: Normal
More than 1.1μA: Defective
Replace the liquid crystal panel or circuit block.

Take note of the remarks below when checking the current consumption.

(1) Check the current consumption with the watch case reassembled: with the module alone, the crown is not settled, which will result in incorrect measurement. (Be sure to measure the current consumption with the crown at the normal position.)
(2) When the Volt-ohm-meter is connected to the battery as shown in the illustration above, it indicates a higher reading for several seconds and then drops to a lower reading.

- How to check if the liquid crystal panel or the circuit block is defective when the current consumption is more than 1.1μA.

Disassemble the liquid crystal panel and connectors from the module and check the current consumption for the circuit block alone.

Result:
Less than 0.95μA – circuit block: Normal
Replace the liquid crystal panel.
More than 0.95μA – circuit block: Defective
Replace the circuit block.

CHECK ACCURACY

Light up all the segments. That will facilitate measuring the daily rate.

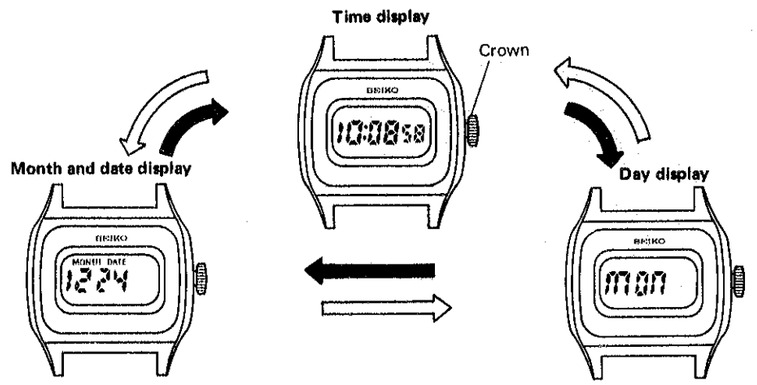
CHECK CONDUCTIVITY OF SWITCH COMPONENTS

CHECK WATER RESISTANCE

Procedure

CHECK FUNCTIONING AND ADJUSTMENT

- Check to see if the display changes correctly. The display changes as shown below as the crown is turned clockwise (⇨) or counterclockwise (➡).



- Pull out the crown and check to see that when crown is turned quickly, the digits or the day change quickly, and that when turned slowly, they change one by one.

- In the month and date display or day display, if the crown is not turned, the time display will return automatically in 1 to 2 minutes.

All procedures of Disassembling, Reassembling, Checking and Adjustment are completed.