

TECHNICAL GUIDE

AND
PARTS LIST

CAL. Y800A

DIGITAL QUARTZ

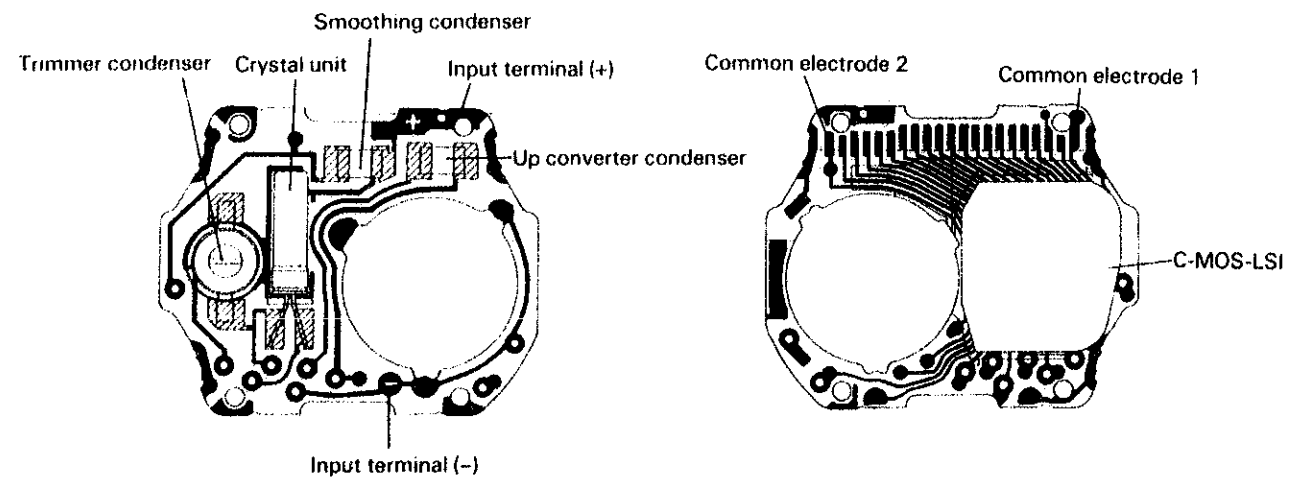
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I. SPECIFICATIONS

Item	Cal. No.	Y800A
Display medium		Nematic Liquid Crystal, FEM (Field Effect Mode)
Liquid crystal panel drive system		Multiplex
Display system		Time (hour and minute) Day/Date or Second is displayed by depressing a button.
Additional mechanism		12 or 24 hour indication
Loss/gain		Loss/gain at normal temperature range Monthly rate: Less than 20 seconds
Size of panel frame		φ18.2 mm (12H-6H: 14.0 mm/3H-9H: 17.0 mm)
Casing diameter		φ17.2 mm
Height		4.2 mm (4.6 mm including battery)
Regulation system		Trimmer condenser
Quartz tester measuring gate		Any gate is available
Battery		MAXELL SR726SW, TOSHIBA SR726SW or SEIZAIKEN TR726SW Battery life: Approx. 3 years Voltage: 1.55V

II. CIRCUIT BLOCK SCHEMATIC



III. DISASSEMBLING AND REASSEMBLING

Disassembling procedures: Figs. ① - ⑨
Reassembling procedures: Figs. ⑨ - ①

② Switch spring

- Removing Switch spring
Pry out the switch spring with a screwdriver inserted into the portion marked with (→).

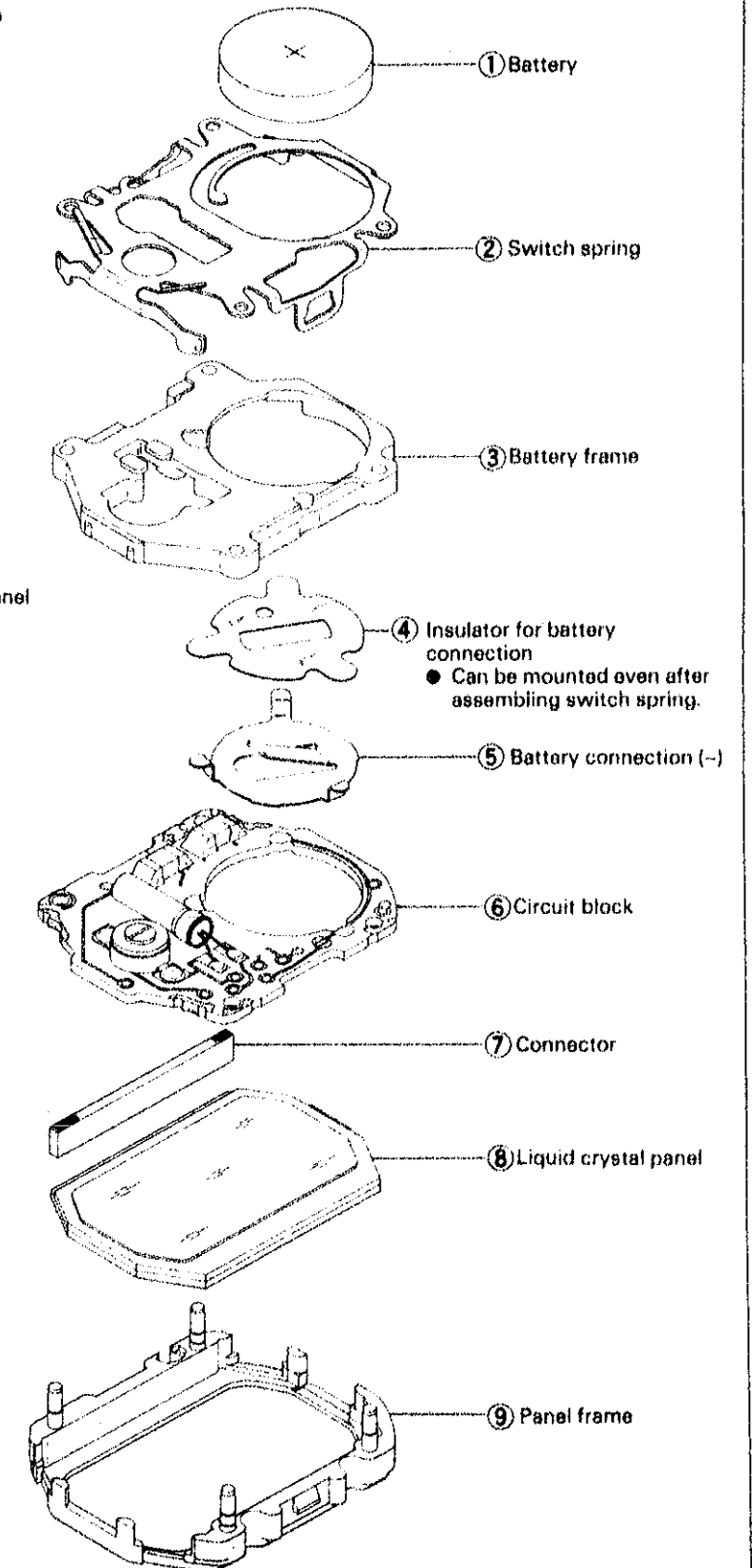


⑧ Liquid crystal panel

- Mounting liquid crystal panel
Insert edge of liquid crystal panel into groove located at 12 o'clock position of panel frame.



Caution:
There are four long pins on panel frame.
DO NOT break them during disassembling/reassembling.

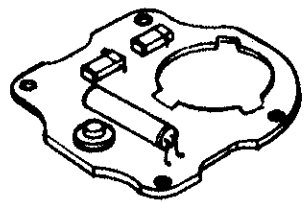


IV. CLEANING

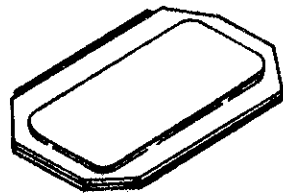
1. How to clean

Name of parts	Cleaning	Drying	Solution	Remarks
Connector	Rinse or wash with a soft brush.	Warm air	Alcohol	<ul style="list-style-type: none"> • Never use benzene or trichloroethylen as these will melt the connector. • Check the contamination between connector and liquid crystal panel and circuit block.
Plastic parts	Rinse or wash with a soft brush.	Warm air	Alcohol, benzene	
Other parts (Excluding parts that must not be cleaned).	Cleaning with a cleaner, rinse or gently wash with a soft brush.	Warm air	Benzene, alcohol	

2. Parts that must not be cleaned



Circuit block



Liquid crystal panel

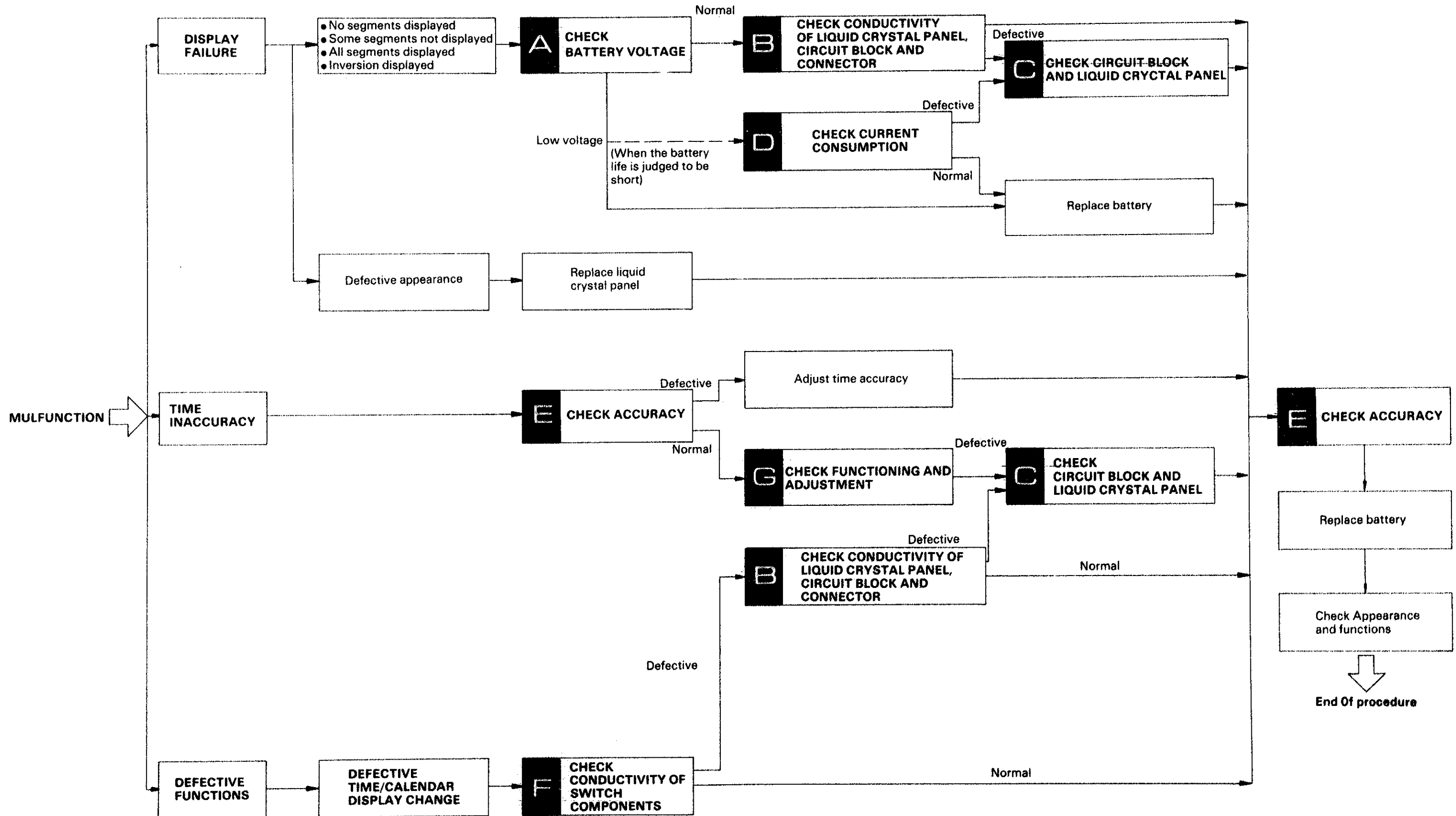


Battery

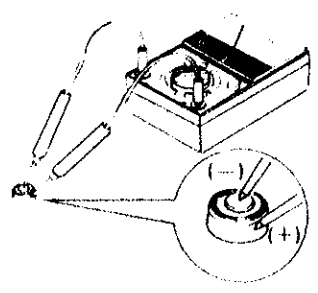
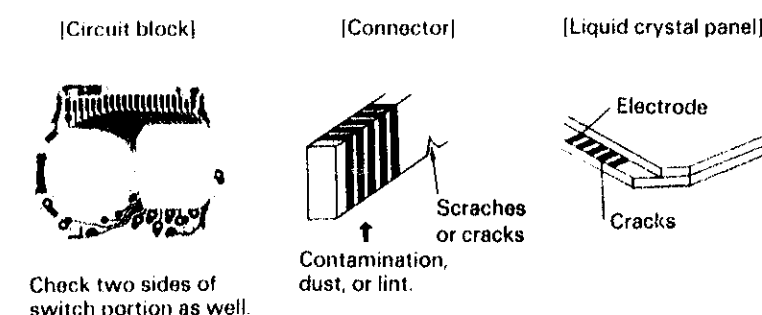
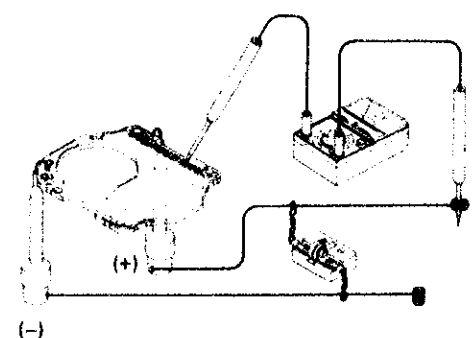
- Only the conductive portions should be wiped with a cloth moistened with benzene and dried with warm air.
- Remove dust and lint with a brush.
- Be careful not to scratch the front surface of the reflecting mirror.

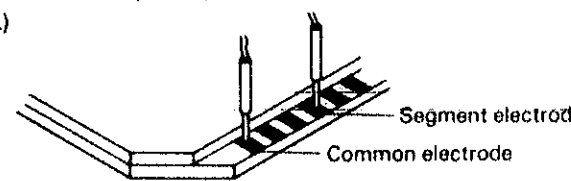
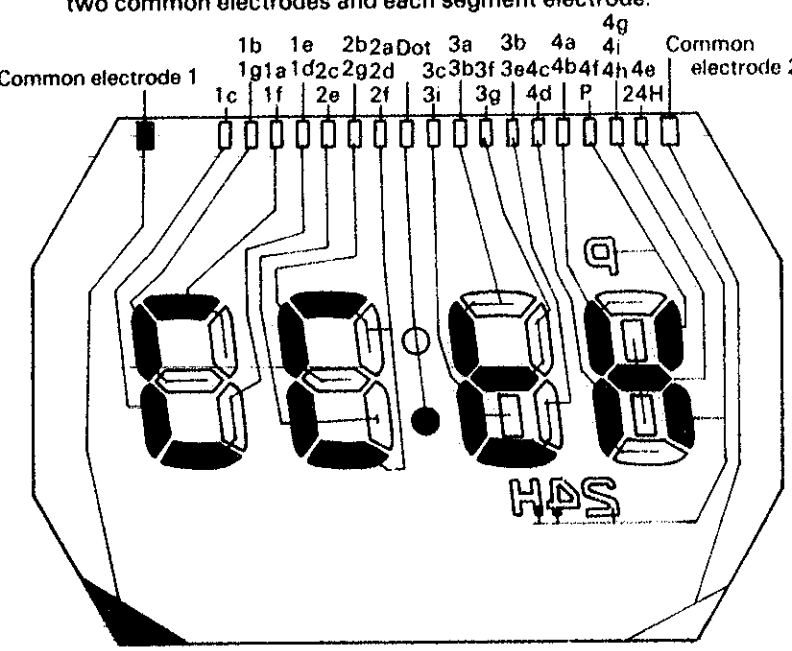


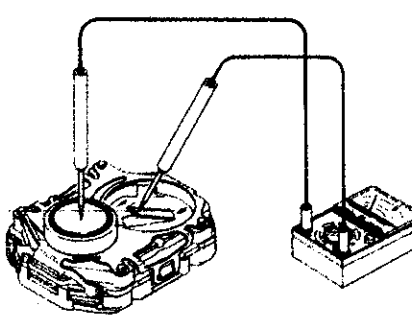
V. CHECKING AND ADJUSTMENT

1. Guide table for checking and adjustment



2. Procedures for checking and adjustment

	Procedure	Result and repair
CHECK BATTERY VOLTAGE	<p>Check battery voltage.</p> <ul style="list-style-type: none"> Set up the Volt-ohm-meter. Range to be used: DC 3V Measuring Red probe (+)... Battery surface (+) Black probe (-)... Battery surface (-) 	<p>1.5V or more: Normal Less than 1.5V: Defective Replace the battery</p>
CHECK CONDUCTIVITY OF LIQUID CRYSTAL PANEL, CIRCUIT BLOCK AND CONNECTOR	<p>Check for dust, lint, contamination, cracks and breaks on the conductive portions.</p>  <p>[Circuit block] [Connector] [Liquid crystal panel]</p> <p>Check two sides of switch portion as well.</p>	<p>Uncontaminated: Normal Contaminated: Defective Wipe off any foreign matter.</p> <p>No scratches, cracks or breaks: Normal Scratches, cracks or breaks: Defective Replace the parts with new ones.</p>
CHECK CIRCUIT BLOCK AND LIQUID CRYSTAL PANEL	<p>(1) Check the circuit block output signal.</p> <ol style="list-style-type: none"> Remove the circuit block from the module. Attach the electricity supplier and Volt-ohm-meter as shown in the illustration. <p>Set up the Volt-ohm-meter. Range to be used: 3V DC Red probe (+) ... Power supply (+) Black probe (-) ... Segment electrode</p> 	<p>0.8V or more: Normal Less than 0.8V: Defective Replace the circuit block with a new one.</p>

	Procedure	Result and repair
CHECK CIRCUIT BLOCK AND LIQUID CRYSTAL PANEL	<p>(2) Check the liquid crystal panel for broken wire and short-circuit.</p> <ol style="list-style-type: none"> Turn liquid crystal panel to the reverse side. Set up the Volt-ohm-meter. Range to be used: OHMS R x 1 (Any range will do if more than 3V is applied to the terminal of the Volt-ohm-meter.) Attach the probes to the common electrode and segment electrodes of the liquid crystal panel. (Either red or black probe will do.)  <ul style="list-style-type: none"> The liquid crystal panel has two common electrodes. Each segment is displayed with the potential difference between one of two common electrodes and each segment electrode.  <p>[Common electrode 1 connected electrically with  segment.] [Common electrode 2 connected electrically with  segment.]</p>	<p>Displayed: Normal Not displayed: Defective Replace the liquid crystal panel with a new one.</p>
CHECK CURRENT CONSUMPTION	<p>Check if the current consumption is normal.</p> <p>Set up the Volt-ohm-meter. Range to be used: DC 12 μA Red probe (+)...Battery connection (-) Black probe (-)...Battery surface (-)</p> 	<p>1.0 μA or less: Normal More than 1.0 μA: Defective Replace the circuit block or liquid crystal panel with a new one.</p>

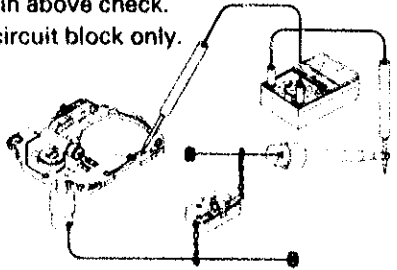
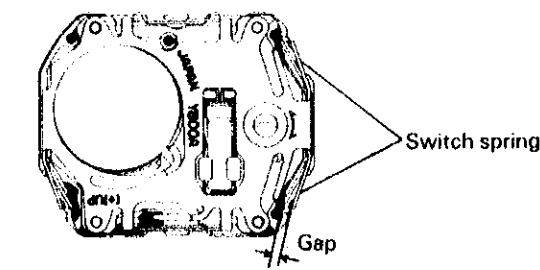
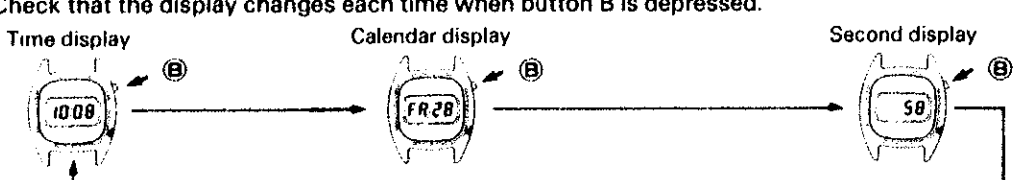
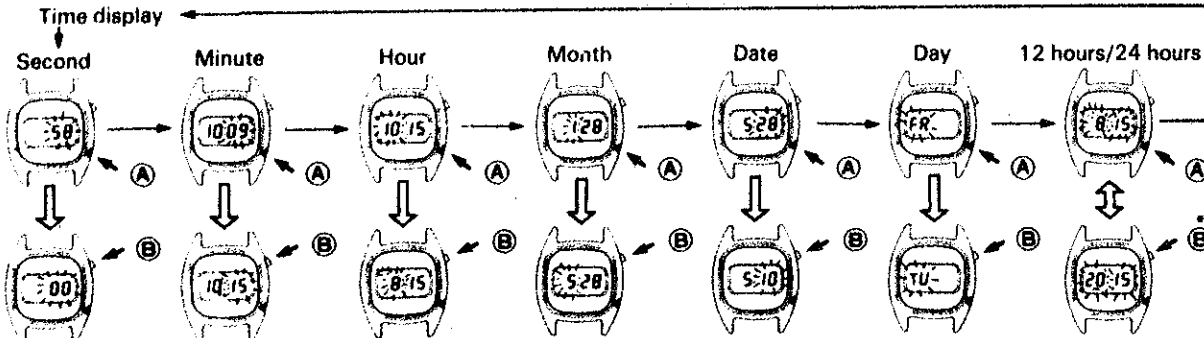
PARTS LIST

CAL. Y800A

Cal. Y800A	
PART NO.	PART NAME
4001 221	Circuit block
4219 188	Battery connection insulator
*4245 045	Switch spring
4270 182	Battery connection (-)
4313 038	Connector
4398 222	Battery guard
4398 223	Liquid crystal panel frame
4510 361	Liquid crystal panel (Normal)
4510 362	Liquid crystal panel (Gold)
MAXELL SR726SW	Battery
TOSHIBA SR726SW	
SEIZAIKEN TR726SW	

REMARKS:

* Switch spring for Pulsar Watches:
4245048 (Pulsar marking)

	Procedure	Result and repair
	<p>* If power consumption is too large in above check. Measure current consumption of circuit block only.</p> 	<p>0.8 μA or less: Normal Replace the liquid crystal panel. More than 0.8 μA: Defective. Replace the circuit block.</p>
CHECK ACCURACY	<ul style="list-style-type: none"> Check gain and loss of time. <ol style="list-style-type: none"> Set up the Quartz tester. Use electric field detecting microphone for liquid crystal watches. Set the watch on the microphone. 	<p>Does not gain or loss: Normal Gains or losses: Defective Adjust the time accuracy by turning the trimmer condenser.</p>
CHECK CONDUCTIVITY OF SWITCH COMPONENTS	<ul style="list-style-type: none"> Check contact between switch portion and circuit block. Push switch portion of switch spring with tweezers and release it for clearance checking. 	<p>Gap exists: Normal No gap: Defective Replace the switch spring.</p>
CHECK FUNCTIONING AND ADJUSTMENT	<ol style="list-style-type: none"> Check that the display changes each time when button B is depressed.  Check that different position of displays will start blinking, each time when button A is depressed. Check that blinking digits can be set, each time when button B is depressed.  <p>* 12-hour indication and 24-hour indication will be altered each time when button B is depressed.</p> <ol style="list-style-type: none"> Check that the display returns to time display when button A is kept depressed over 2 seconds while setting. Check that display automatically returns to time display from the other modes 1 ~ 2 minutes after the watch is left. 	