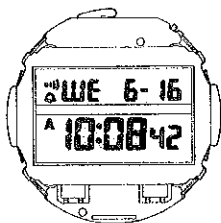


# PARTS CATALOGUE

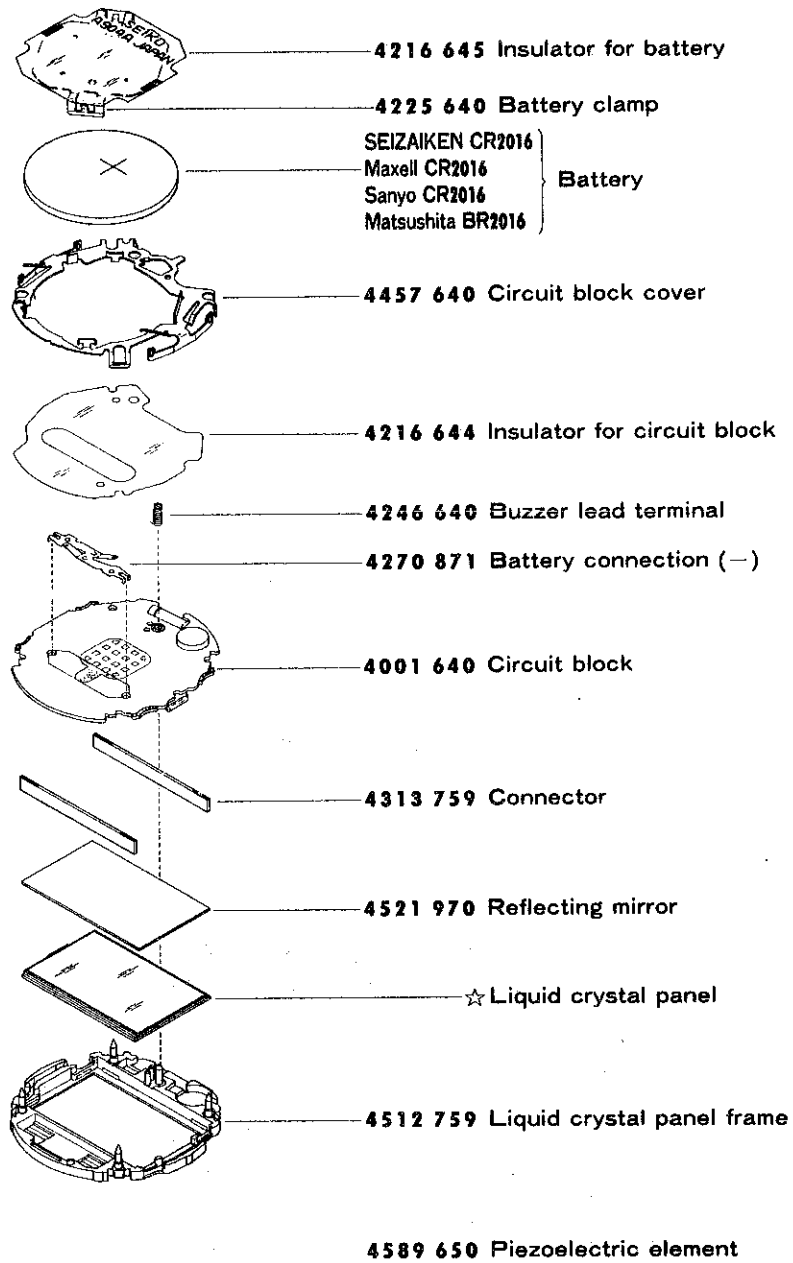
## Cal. A904A

### Cal. A904A



HATTORI SEIKO CO., LTD.

# Cal. A904A



**Remarks :**

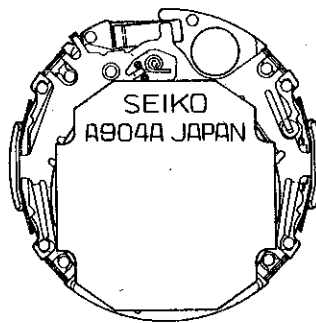
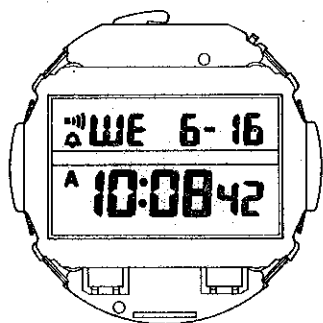
**Liquid crystal panel**

☆ 4510 747 (Silver) } ..... Be sure that combination between the colour of panel cover and liquid  
 ☆ 4510 748 (Gold) } crystal panel should be matched according to the "SEIKO Quartz  
**Casing Parts Catalogue".**

# TECHNICAL GUIDE

## SEIKO DIGITAL QUARTZ

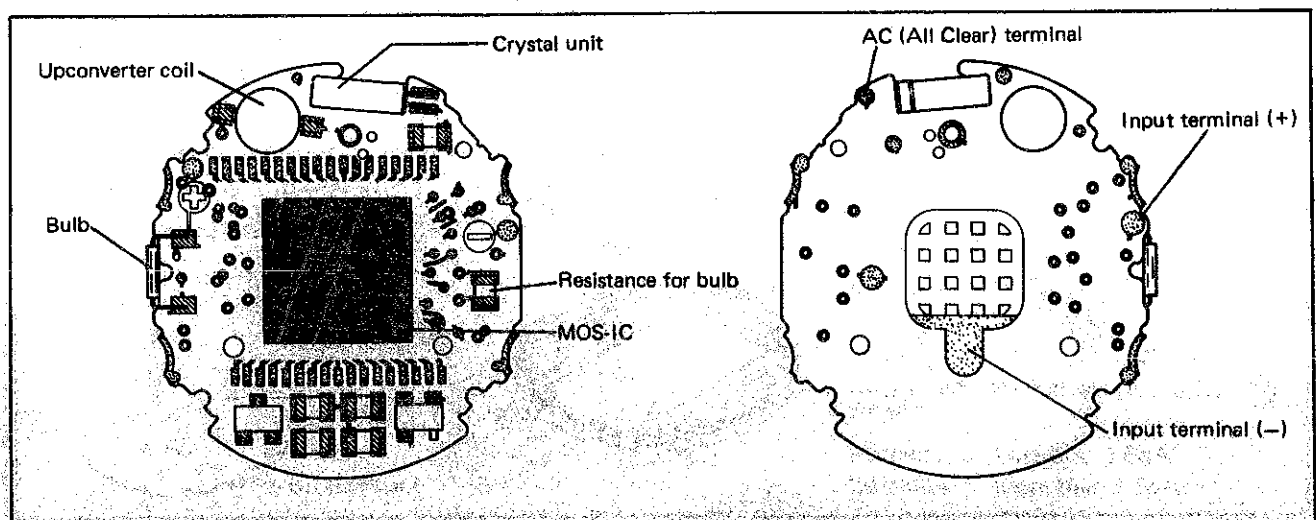
CAL. A904A



## I. SPECIFICATIONS

Cal. No.		A904A
Item		
Display medium	Nematic Liquid Crystal, FEM (Field Effect Mode)	
Liquid crystal driving system	Multiplex driving system	
Display system	<ul style="list-style-type: none"> <li>• Time and calendar display (12- or 24-hour indication)</li> <li>• Alarm display</li> <li>• Stopwatch display</li> <li>• Time and calendar setting display</li> </ul>	
Additional mechanism	<ul style="list-style-type: none"> <li>• Alarm test system</li> <li>• Hourly time signal</li> <li>• Auto-return system</li> <li>• Automatic calendar</li> <li>• Illuminating light</li> <li>• All segments light-up system</li> </ul>	
Loss/gain	Monthly rate at normal temperature range: less than 20 seconds	
Movement size	Outside diameter	φ27.4 mm
	Height	4.8 mm
Measuring gate by quartz tester	Any gate can be used.	
Battery	Lithium battery SEIKO (SEIZAIKEN) CR2016, Maxell CR2016, Sanyo CR2016, and Matsushita BR2016. Battery life is approximately 7 years. Voltage: 3.0V	

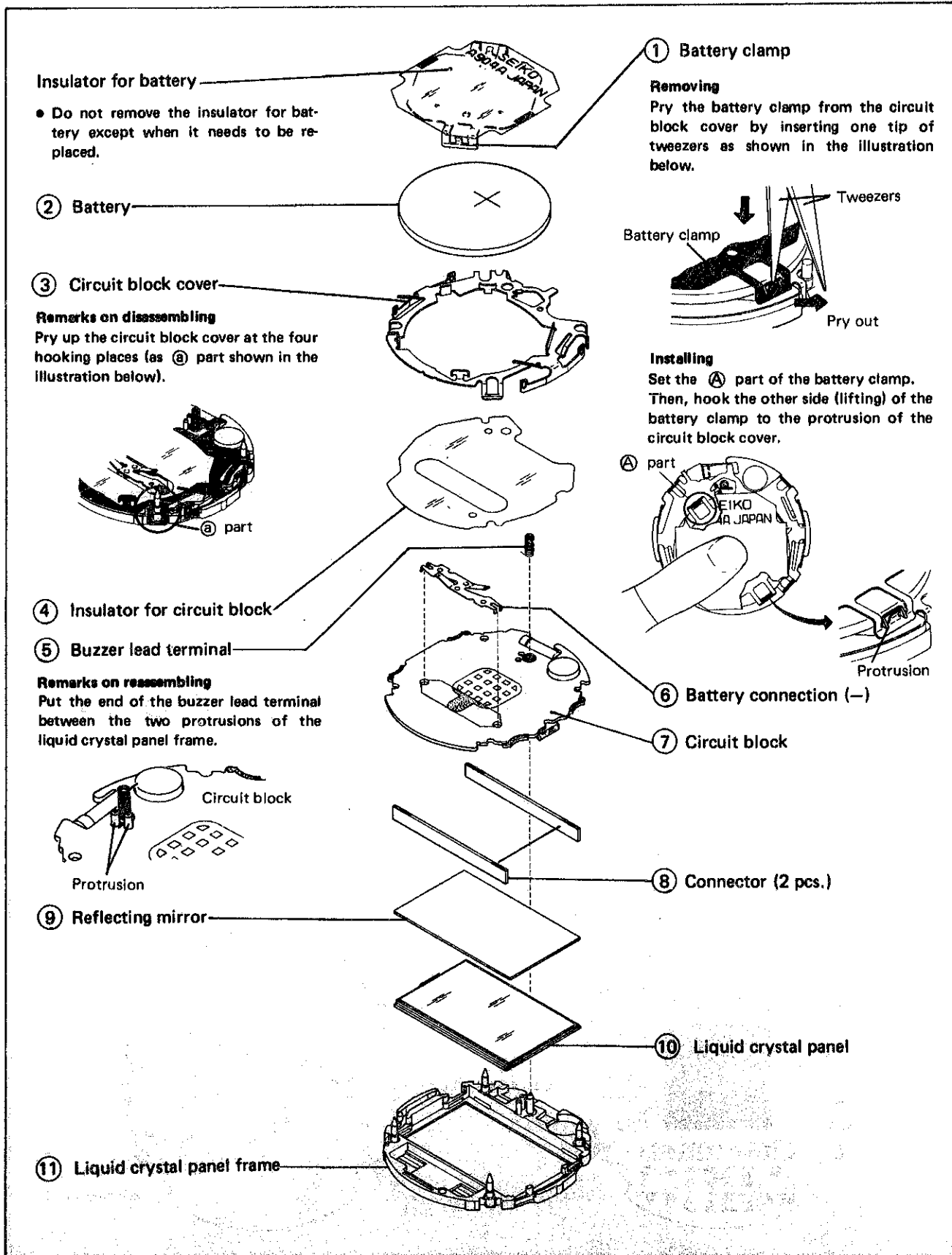
## II. STRUCTURE OF THE CIRCUIT BLOCK



### III. DISASSEMBLING, REASSEMBLING, AND LUBRICATING

Disassembling procedures Figs.: ① → ⑪

Reassembling procedures Figs.: ⑪ → ①



## IV. CHECKING AND ADJUSTMENT

- The explanation here is only for the particular points of Cal. A904A.  
Refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTION" for SEIKO Digital Quartz for details.

### Procedure

#### • Remarks on replacing the battery

After installing the battery, short-circuit the AC (All Clear) terminal and the circuit block cover with tweezers.

### CHECK BATTERY VOLTAGE

Use the Digital Multi-Tester S-840A.  
Mode to be used: DC V

#### Result:

[When SEIKO CR2016, Maxell CR2016, or Sanyo CR2016 is used]

Normal : More than 2.9V

Defective : Less than 2.9V

[When Matsushita BR2016 is used]

Normal : More than 2.8V

Defective : Less than 2.8V

#### Note:

The battery voltage slightly differs between CR2016 and BR2016. The performance of the watch, however, is not affected by this difference in voltage.

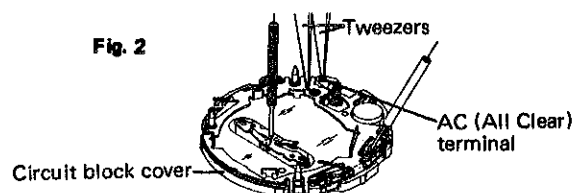
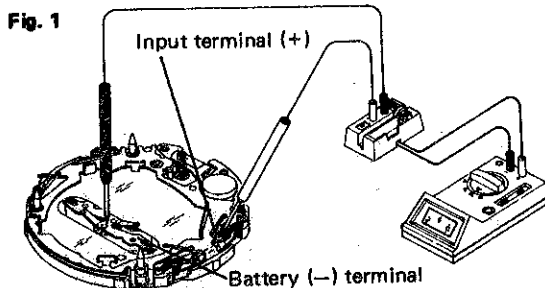
### CHECK CURRENT CONSUMPTION

Use the Digital Multi-Tester S-840A.  
Mode to be used:  $\mu\text{A}$

- Read the stable display after resetting the circuit.

#### 1. Current consumption for the whole of the module

After setting as shown in Fig. 1, reset the circuit by applying metal tweezers to the circuit block as shown in Fig. 2 and then release the tweezers.



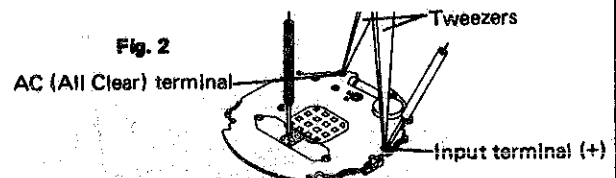
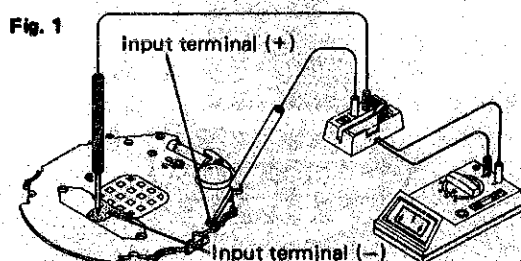
#### Result:

Normal : Less than  $1.7\mu\text{A}$

Defective : More than  $1.7\mu\text{A}$

#### 2. Current consumption for the circuit block alone

After setting as shown in Fig. 1, reset the circuit by applying metal tweezers to the circuit block as shown in Fig. 2 and then release the tweezers.



#### Result:

Normal : Less than  $1.5\mu\text{A}$

Defective : More than  $1.5\mu\text{A}$

## Procedure

### CHECK ALARM TEST SYSTEM

In the time/calendar display, check to see if the alarm rings by keeping buttons C and D pressed at the same time.



### CHECK BULB CONDITION

Check to see if the bulb lights up by pressing button B.

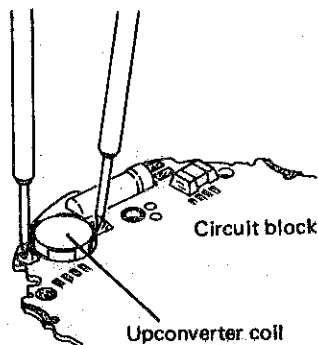
### CHECK ACCURACY

The daily rate can be measured easily when all segments are lit up. Press buttons C and D at the same time in the time/calendar setting function, and all the segments light up.

### CHECK ALARM CONDITION

1. Check to see if there is any contamination on the piezoelectric element and the buzzer lead terminal. And, check for any deformation of the buzzer lead terminal.
2. Measure the resistance for the upconverter coil of the circuit block and check it for any broken wire and short circuit.

Use the Digital Multi-Tester S-840A.  
Mode to be used:  $\Omega$



#### Result:

Normal :  $50\Omega \sim 90\Omega$   
Defective — { Less than  $50\Omega$   
(Short circuit)  
More than  $90\Omega$   
(Broken wire)