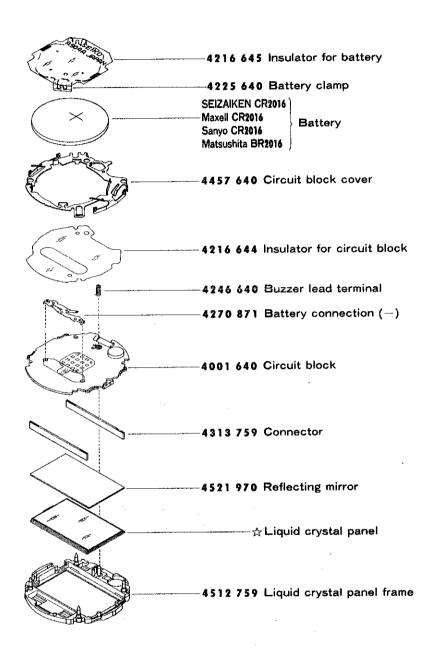
PARTS CATALOGUE Cal. A904A

Cal. A904A





HATTORI SEIKO CO., LTD.



4589 650 Piezoelectric element

Remarks :

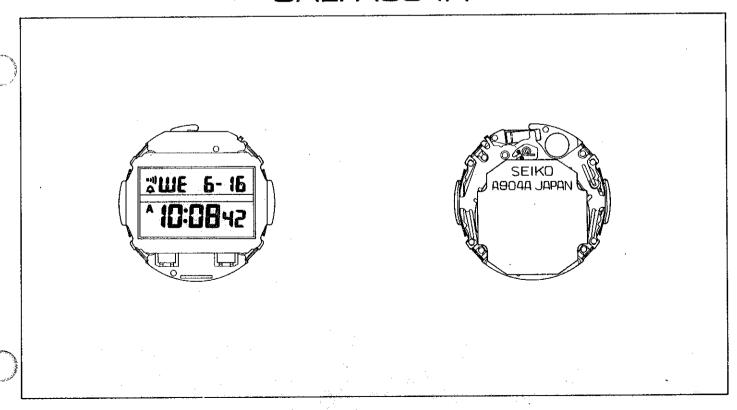
Liquid crystal panel

 Be sure that combination between the colour of panel cover and liquid crystal panel should be matched according to the "SEIKO Quartz Casing Parts Catalogue".

TECHNICAL GUIDE

SEIKO DIGITAL QUARTZ

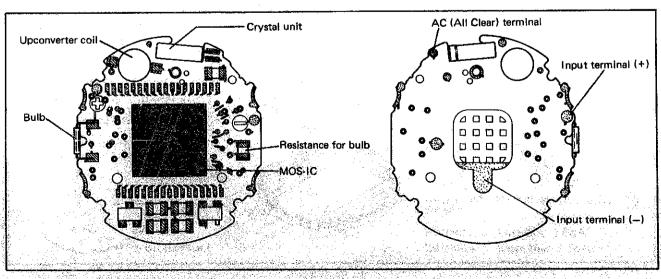
CAL. A904A



I. SPECIFICATIONS

	Cal. No.	A904A
item		
Display medium		Nematic Liquid Crystal, FEM (Field Effect Mode)
Liquid crystal driving system		Multiplex driving system
Display system		Time and calendar display (12- or 24-hour indication)
		Alarm display
		Stopwatch display
		Time and calendar setting display
Additional mechanism		Alarm test system
		Hourly time signal
		Auto-return system
		Automatic calendar
		• Illuminating light
		All segments light-up system
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.: Reassembling procedures Figs.: 1) Battery clamp Insulator for battery -Removing Pry the battery clamp from the circuit • Do not remove the insulator for batblock cover by inserting one tip of tery except when it needs to be retweezers as shown in the illustration placed. Tweezers (2) Battery-Battery clamp (3) Circuit block cover-Remarks on disassembling Pry out Pry up the circuit block cover at the four hooking places (as (a) part shown in the Installing illustration below). Set the (A) part of the battery clamp. Then, hook the other side (lifting) of the battery clamp to the protrusion of the circuit block cover. (4) Insulator for circuit block (5) Buzzer lead terminal-Remarks on reassembling 6 Battery connection (-) Put the end of the buzzer lead terminal between the two protrusions of the liquid crystal panel frame. (7) Circuit block 8 Connector (2 pcs.) (9) Reflecting mirror-10) Liquid crystal panel (1) Liquid crystal panel frame

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: μA

- 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.

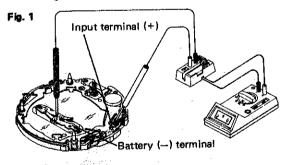


Fig. 2

AC (All Clear) terminal

Result:

Normal : Less than 1.7μA
Defective : More than 1.7μA

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.

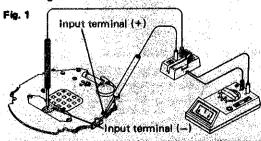


Fig. 2
AC (All Clear) terminal input terminal (+)

Result:

Normal : Less than 1.5μΑ Defective : More than 1.5μΑ

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.

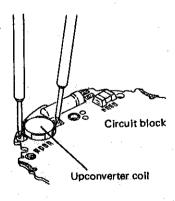
Press buttons C and D at the same time in the time/calendar setting function, and all the segments light up.

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: $\,\Omega\,$



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Result:

Normal : $50\Omega \sim 90\Omega$ Less than 50Ω Defective (Short circuit)

More than 90Ω (Broken wire)