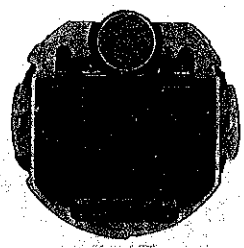
SEIKO

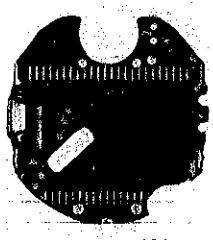
DIGITAL QUARTZ

Cal. A359A

PARTS LIST

Cal. A359A





4001 531

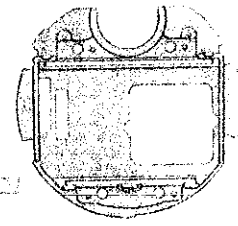
4242 530

4242 531

4245 530

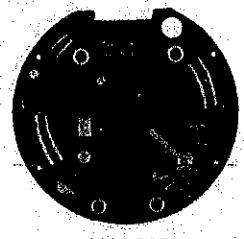
4313 530

4313 531



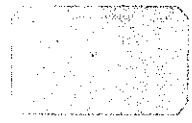
4398 530

4408 530

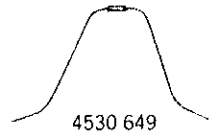


4410 535

4510 540



4521 580



4530 649

4540 530

4540 860

4580 530

☆Maxell SR1120W

T

022 493

2/1

☆⇨Please see remarks on the next page.

Cal. A359A

Characteristics

Casing diameter: ϕ 30.2 mm
Maximum height: 4.8 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, A.M./P.M., month, date and day of the week.
Alarm display: Can be set to operate at any desired hour and minute.
Timer display: Can be set to countdown any number of minutes from 1 to 100.
Stopwatch display: Digital Display System showing 12-hour, minute, second and 1/100 second. The lap time is displayed in the upper row and the accumulated elapsed time is displayed in the lower row at the same time by simply depressing a button.
Display medium: Nematic Liquid Crystal, FE-Mode
Regulation system: Trimmer condenser
Time signal: It can be set to ring every hour on the hour.
Illuminationg light: Illuminates the display in the dark.
Battery life indicator: All the digits in the display begin flashing.

PART NO.	PART NAME	PART NO.	PART NAME
4001 531	Cuircuit block		
4242 530	Plus terminal of battery connection		
4242 531	Speaker block lead terminal		
4245 530	Switch spring		
4313 530	Connector A		
4313 531	Connector B		
4398 530	Liquid crystal panel frame		
4408 530	Bulb rest		
4410 535	Circuit cover		
4510 540	Liquid crystal panel		
4521 580	Reflecting mirror		
4530 649	Bulb		
4540 530	Liquid crystal panel holder A		
4540 860	Liquid crystal panel holder B		
4580 530	Speaker block		
022 493	Liquid crystal panel holder screw		
☆Maxell SR1120W ☆U.C.C.391	Silver oxide battery		

Remarks:

Battery

☆U.C.C.391
☆Maxell SR1120W
..... The applied battery for this calibre might be added the substitutive in the future. In that case, please refer to sparate **"BATTERIES FOR SEIKO QUARTZ WATCHES"**.

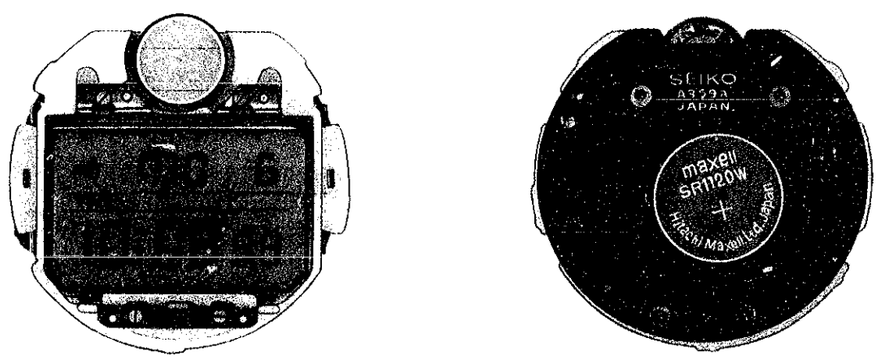
☆ ⇨ Please see remarks.
Part numbers in light letters are not shown in photos.

TECHNICAL GUIDE

SEIKO

DIGITAL QUARTZ

CAL. A359A



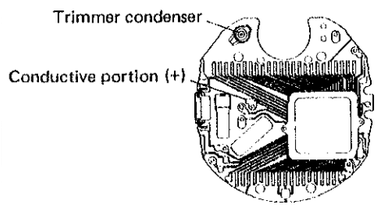
CONTENTS

The repairing procedures for Cal. A359A are the same as those for Cal. A358A with some exceptions. In repairing this calibre, refer to the "Technical Guide of Cal. A358A" and the "SEIKO WATCH CASING GUIDE" by calibre.

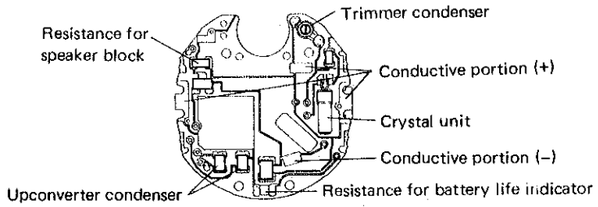
I. SPECIFICATIONS

Item \ Cal. No	A359A
Display medium	Nematic Liquid Crystal, FEM (Field Effect Mode)
Display system	• Time and calendar function • Timer function • Alarm time setting function • Stopwatch function • Time/calendar setting function
Additional mechanism	• Alarm test system • Time signal • Illuminating light • Battery life indicator • Pattern segment checking system (also transmits the signal for measuring the daily rate.)
Loss/gain	Loss/gain at normal temperature range Mean monthly rate : less than 10 seconds (Annual rate : less than 2 minutes)
Casing diameter	ϕ30.2 mm
Height	4.8 mm (5.0 mm with battery)
Liquid crystal driving system	Multiplex driving system
Regulation system	Trimmer condenser
Measuring gate by Quartz Tester	Any gate is available.
Battery power	U.C.C. 391 or Maxell SR1120W Battery life is approximately 2 years. Voltage: 1.55V

II. STRUCTURE OF THE CIRCUIT BLOCK



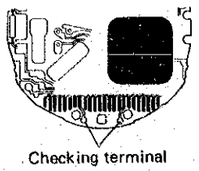
Liquid crystal panel side



Battery side

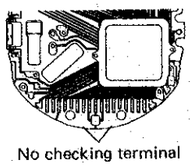
How to distinguish the circuit block of Cal. A359A from Cal. A358A
They are identified by checking if there is the checking terminal.

(Cal. A358A)



Checking terminal

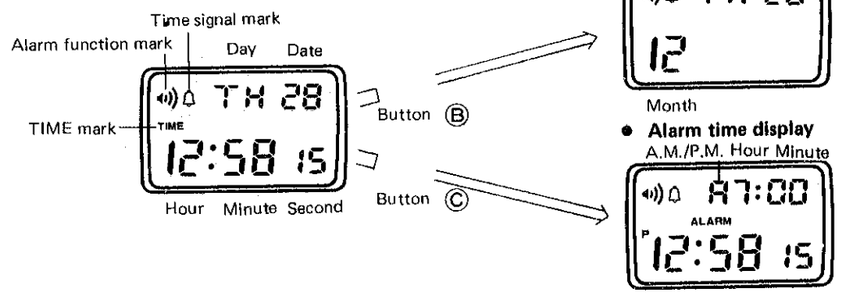
(Cal. A359A)



No checking terminal

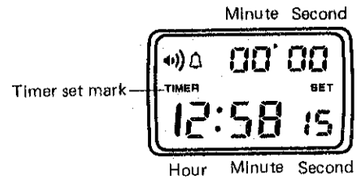
III. DISPLAY FUNCTION

- **Time and calendar display**

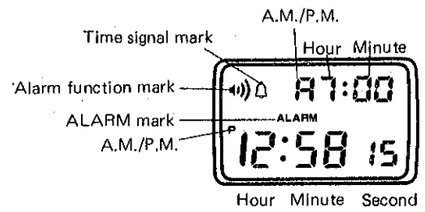


- **Calendar display**
- **Alarm time display**

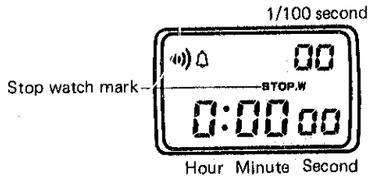
- **Timer display**



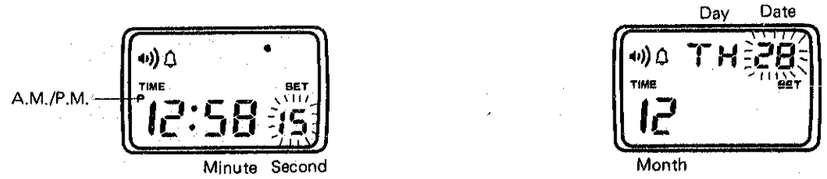
- **Alarm display**



- **Stopwatch display**



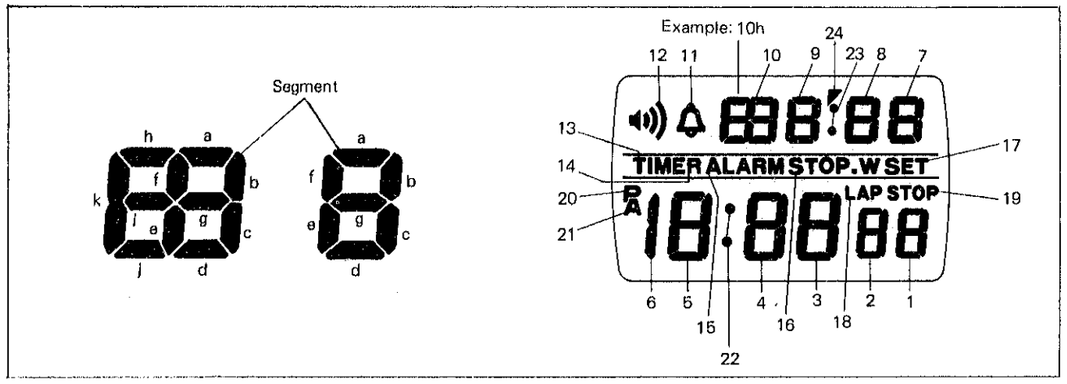
- **Time/calendar setting display**



IV. RELATIONSHIP BETWEEN THE SEGMENT (LIQUID CRYSTAL PANEL ELECTRODE) AND THE C-MOS-LSI OUTPUT TERMINAL

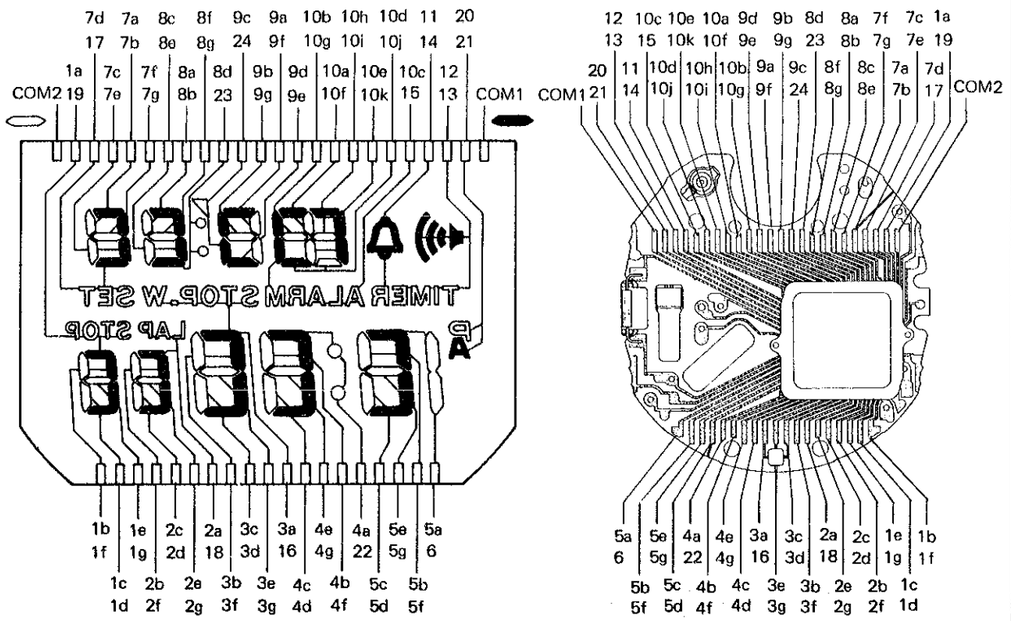
A complete knowledge of how the segment (Liquid Crystal Panel Electrode) works with the C-MOS-LSI output terminal will provide the proper procedures for checking and adjustment.

- **Designation of segment**



- **Relationship between the segment and the C-MOS-LSI output terminal**

The liquid crystal panel electrode is connected electrically with each segment which forms a digital figure as shown in the illustration on the panel pattern below. (The panel pattern can be seen if the panel is slightly tilted and looked at in an angular position.) Also, the liquid crystal panel electrode is connected electrically with the C-MOS-LSI output terminal by the connector.



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