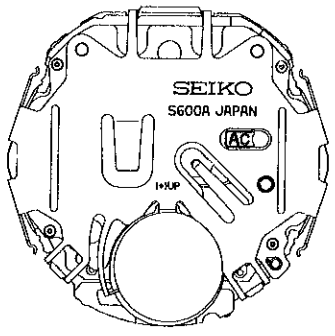
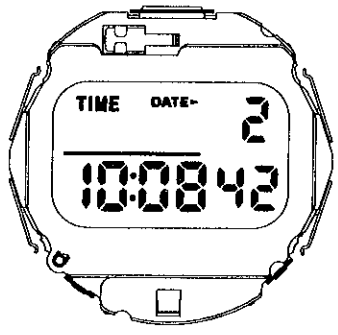
PARTS CATALOGUE/TECHNICAL GUIDE

Cal. S600A

[SPECIFICATIONS]

Item \ Cal. No.		S600A
Module		  (x 1.5)
Module size	Outside diameter	ϕ28mm
	Casing diameter	—
	Height	4.3mm
Display medium		Nematic Liquid Crystal, FEM (Field Effect Mode)
Liquid crystal driving system		Multiplex driving system
Display system		• Time/calendar display (12-hour indication) • Stopwatch display · Accumulated elapsed time measurement : Up to 100 hours in 1/100 seconds · Lap time measurement : Hour, minutes and seconds · Lap No. display : 100 laps from "01" to "00" · Lap time memory : 10 lap times
Additional mechanism		• Illuminating light
Loss/gain		Monthly rate at normal temperature range: less than 20 seconds
Regulation system		Nil
Measuring gate by quartz tester		Any gate can be used.
Battery		SEIKO SR927W, Maxell SR927W, SONY SR927W, EVEREADY 399 Battery life is approximately 3 years. Voltage: 1.55V

HATTORI SEIKO CO., LTD.

PARTS CATALOGUE

Cal. S600A

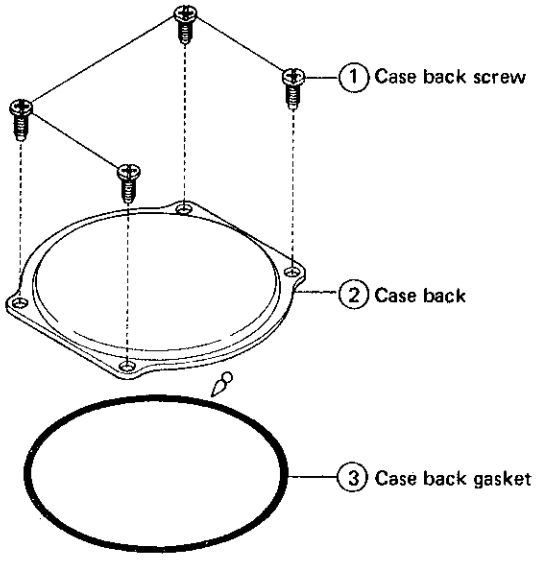
Disassembling procedures Figs.: ① → ⑮

Reassembling procedures Figs.: ⑮ → ①

Lubricating: Types of oil — Silicone oil 500,000 cs

Oil quantity — Normal quantity

○⇨ Please see the remarks on the following pages.



① Case back screw

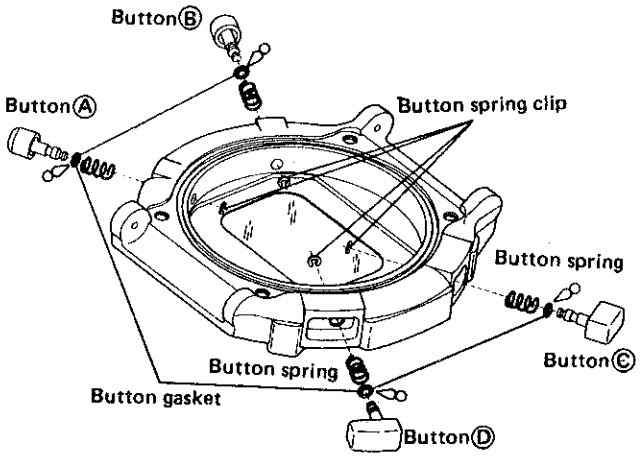
② Case back

③ Case back gasket

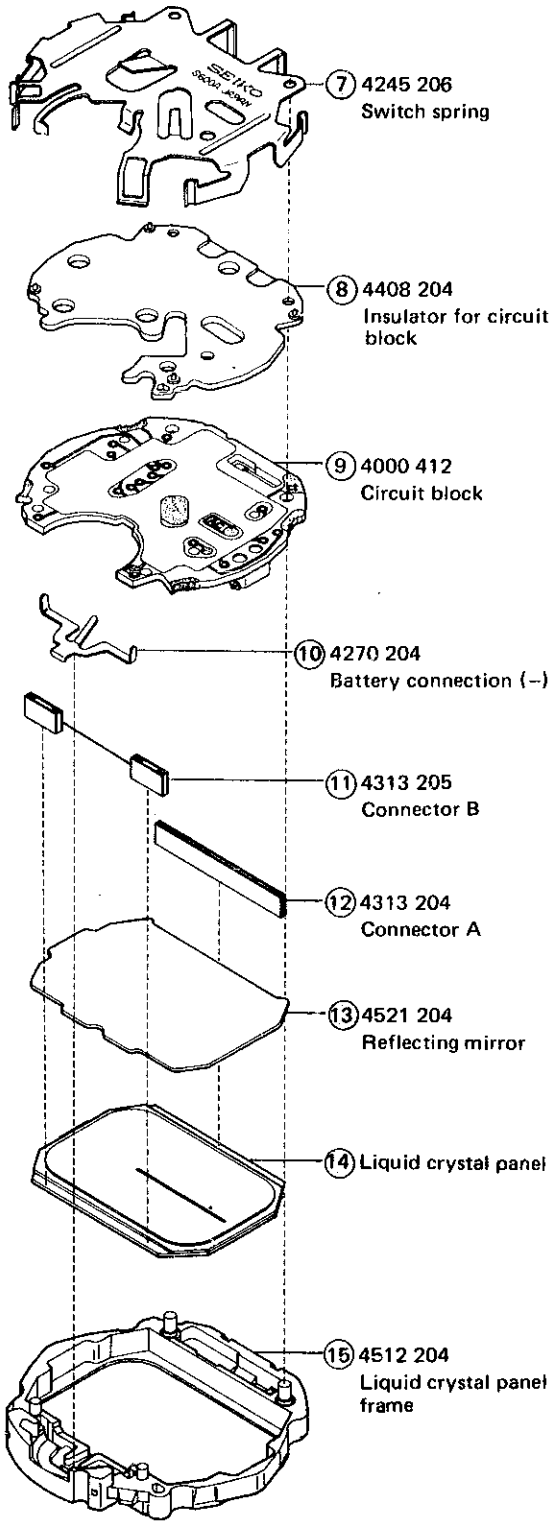
④ 4246 104
Case back lead terminal

⑤ Battery
(See the front page.)

⑥ Module



* Do not disassemble the buttons except when they need to be replaced.



⑦ 4245 206
Switch spring

⑧ 4408 204
Insulator for circuit block

⑨ 4000 412
Circuit block

⑩ 4270 204
Battery connection (–)

⑪ 4313 205
Connector B

⑫ 4313 204
Connector A

⑬ 4521 204
Reflecting mirror

⑭ Liquid crystal panel

⑮ 4512 204
Liquid crystal panel frame

Remarks:

(14) Liquid crystal panel 4510 096 (Gold), 4510 204 (Silver)

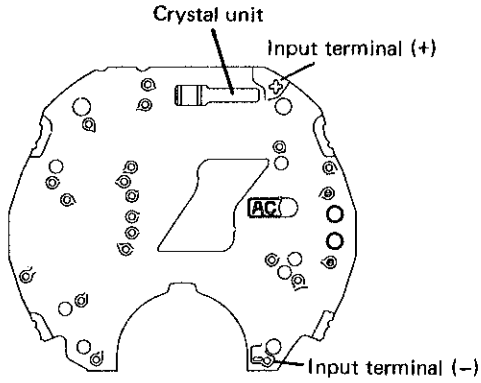
The type of the liquid crystal panel is determined based on the cases. Refer to "SEIKO Casing Parts Catalogue" to choose a corresponding liquid crystal panel.

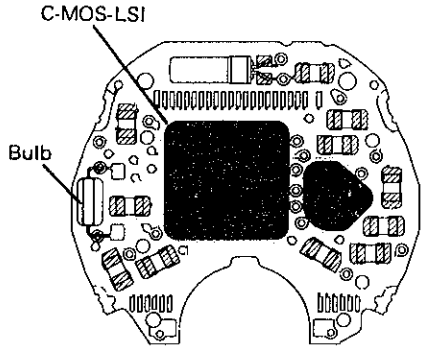
- Other parts

  Bulb 4530 017
  The bulb is soldered to the circuit block. However, it is available for supply separately from the circuit block.

- The explanation here is only for the particular points of Cal. S600A.
- For the repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

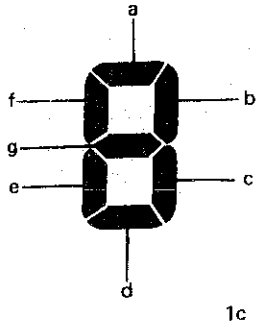
I. STRUCTURE OF THE CIRCUIT BLOCK

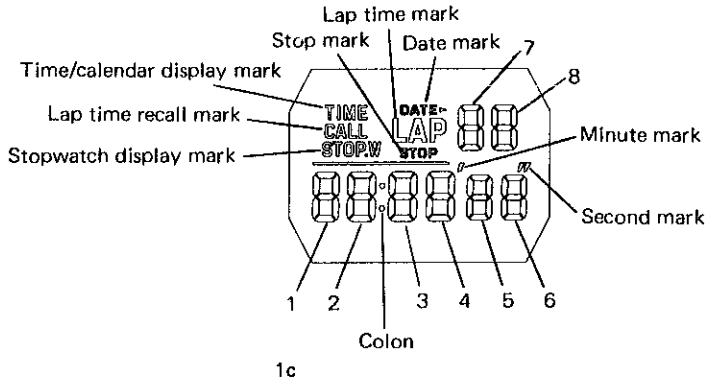


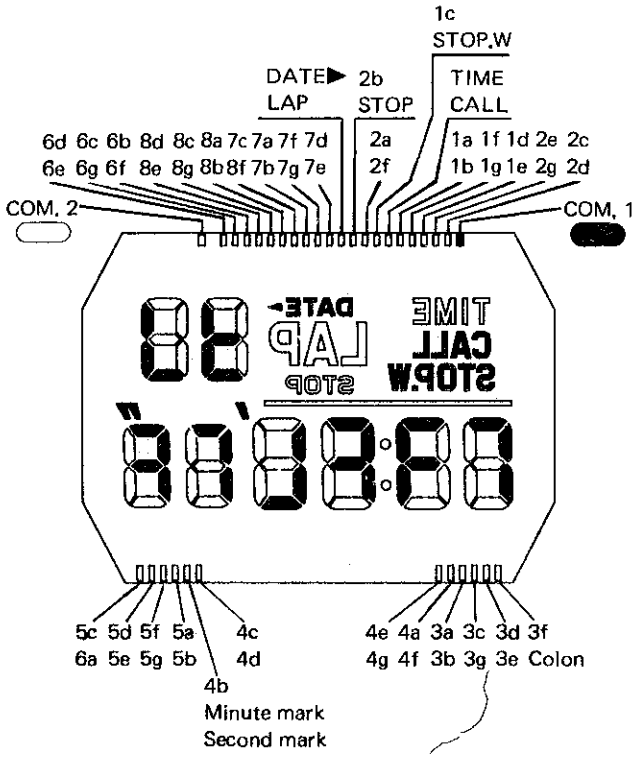


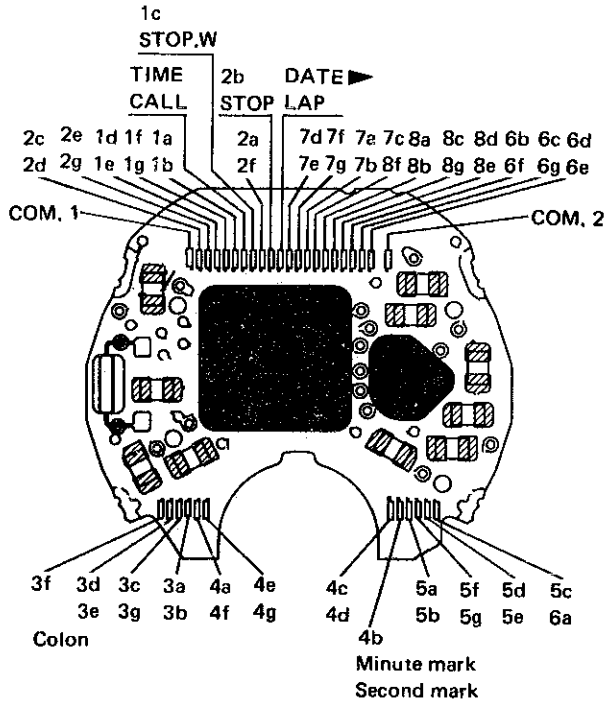
II. RELATIONSHIP BETWEEN THE SEGMENT (LIQUID CRYSTAL PANEL ELECTRODE) AND THE C-MOS-LSI OUTPUT TERMINAL

- Designation of the segment



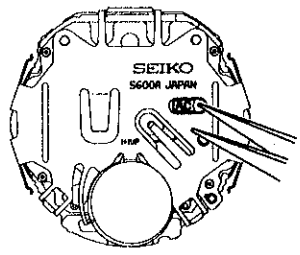






III. REMARKS ON INSTALLING THE BATTERY

After the battery is replaced with a new one, or after the battery is re-installed following the repairing procedures, be sure to short-circuit the AC terminal of the circuit block and the switch spring with conductive tweezers as illustrated at right to reset the circuit.

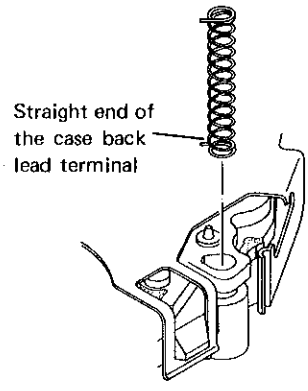


IV. REMARKS ON DISASSEMBLING AND REASSEMBLING

④ Case back lead terminal

- **How to remove**

Turn the case back lead terminal to release the straight portion of its end from the groove of the insulator for circuit block and remove it.



- **How to install**

Hook the straight portion at the end of the case back lead terminal to the groove of the insulator for circuit block, and then turn it to set it in position.

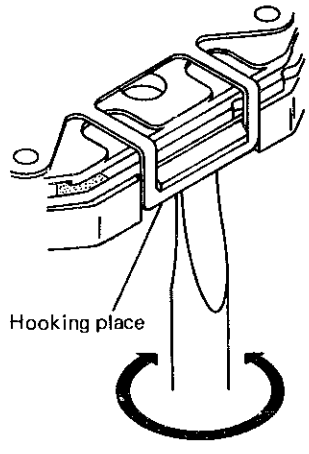
⑥ Module

When installing the module to the case, make sure that the partition line of the liquid crystal panel and the panel frame are not distorted.
In doing so, also check that the module is set in the proper position of the case. (Note that the battery is set at the 6 o'clock position.)

⑦ Switch spring

- **How to remove**

Pry up the switch spring lightly at the three hooking places by using the tip of a screwdriver.



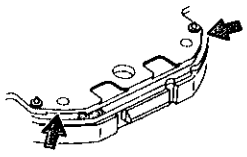
- **How to install**

Set the guide holes of the switch spring to the guide pins of the liquid crystal panel frame located at 11 o'clock and 1 o'clock positions, and then set the three hooking places to the liquid crystal panel frame.

⑧ Insulator for circuit block

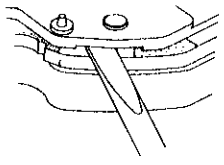
- **How to remove**

Pry up the insulator for circuit block lightly at the two recessed parts of the liquid crystal panel frame located near the two guide pins (at 11 o'clock and 1 o'clock positions) using the tip of a screwdriver.
Since the insulator for circuit block is made of plastics, take care not to apply undue force to it, as this will cause deform or scratches.



- **How to install**

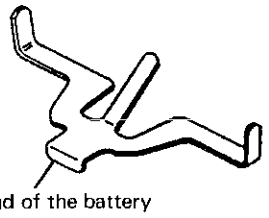
The guide holes of the insulator for circuit block have some elasticity in the contact with the two guide pins of the liquid crystal panel frame located at 11 o'clock and 1 o'clock positions. Therefore, make sure that the insulator for circuit block is well seated on the liquid crystal panel frame when installing it.



⑩ Battery connection (−)

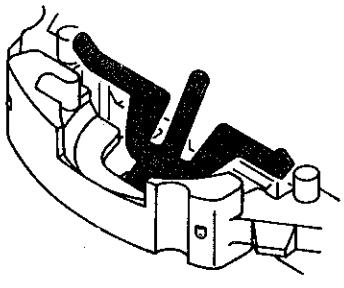
- **How to install**

Insert the bent end of the battery connection (−) aslant into the notched part of the liquid crystal panel frame where the battery is to be installed. Then, securely set the battery connection (−) into the guide groove.
In doing so, make sure that the battery connection (−) is set in position.
If the battery is installed with the battery connection (−) outside the guide groove, short circuit may be caused.



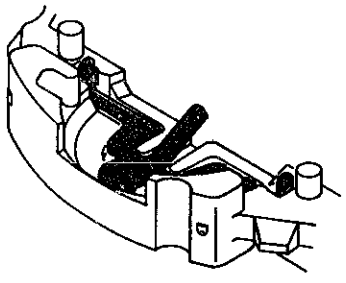
Bent end of the battery connection (−)

Correct



The battery connection (−) is properly set in the guide groove of the liquid crystal panel frame.

Incorrect

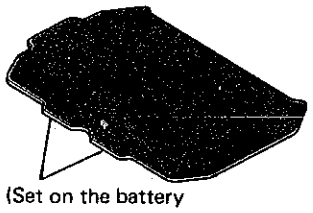


The bent end of the battery connection (−) has slipped out of the guide groove of the liquid crystal panel frame.

⑬ Reflecting mirror

- **How to install**

To install the reflecting mirror to the liquid crystal panel frame, set its two protrusions on the side of the guide groove for the battery connection (−) with its black surface up (facing to the circuit block).

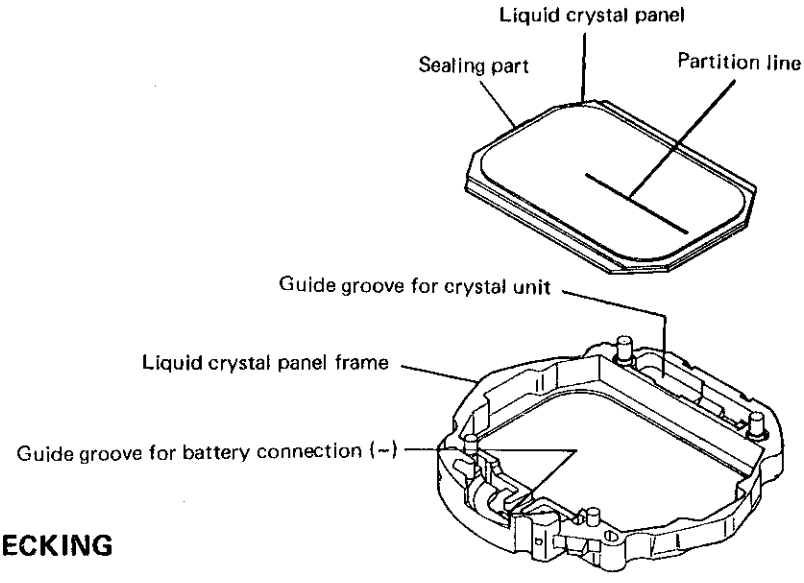


Protrusions (Set on the battery connection (−) side.)

⑭ Liquid crystal panel

- **Setting position**

Place the liquid crystal panel frame as shown in the illustration, and set the liquid crystal panel with its sealing part on the left-hand side and its partition line on the right-hand side.



V. VALUE CHECKING

- Current consumption

  For the whole of the module: less than 1.5μA

Note: Before measuring current consumption, be sure to reset the circuit. Otherwise, all the segments will light up or the display will become disordered, and as a result, current consumption cannot be measured properly.