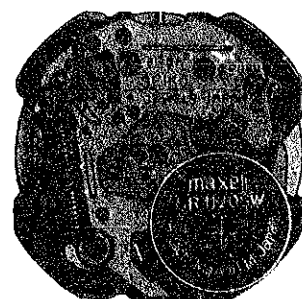
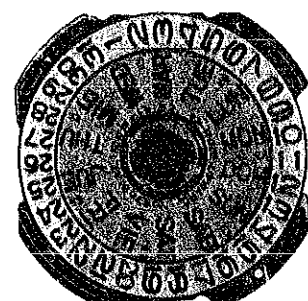


# TECHNICAL GUIDE

**SEIKO**  
QUARTZ

CAL. 8122A  
CAL. 8123A



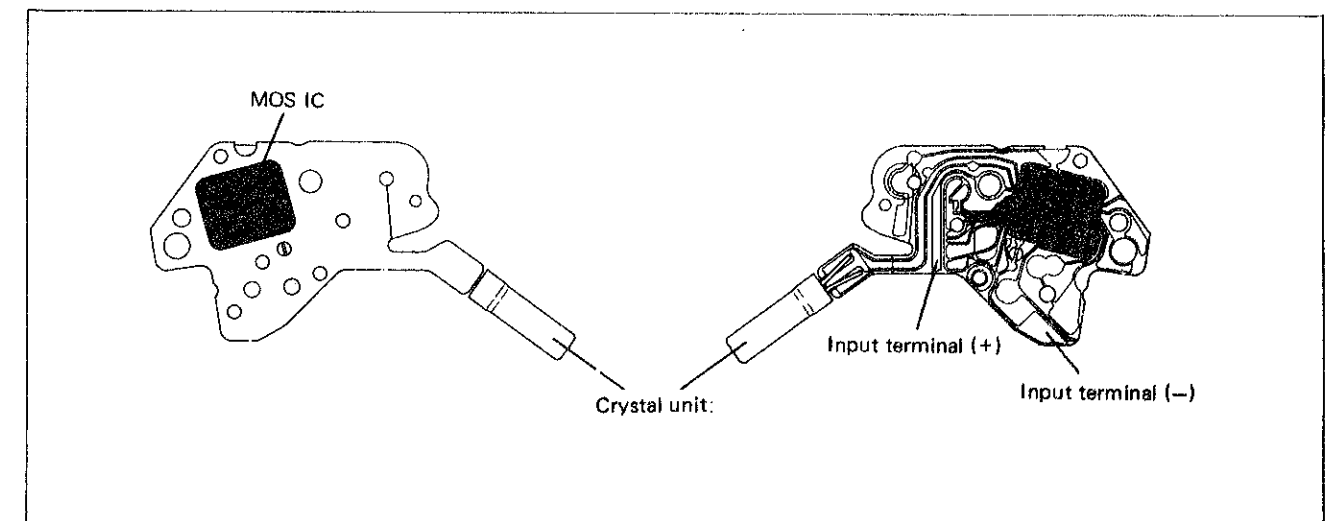
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## I. SPECIFICATIONS

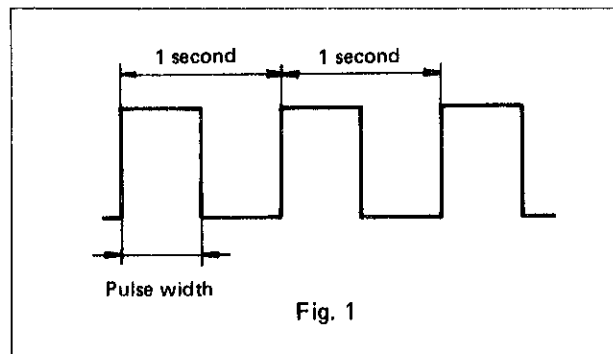
Cal. No.		8122A	8123A
Item			
Time indication		3 hands	
Additional mechanism		Date	Day and date
		Instant date setting device	Instant day and date setting device
		Train wheel setting device	
		Electronic circuit reset switch	
		Battery life indicator	
Loss/gain		Loss/gain at normal temperature range Monthly rate: Less than 15 seconds	
Movement size	Outside diameter	$\phi 26.4$ mm (23.5 mm between 6 o'clock and 12 o'clock and between 3 o'clock and 9 o'clock)	
	Casing diameter	$\phi 25.6$ mm (23.5 mm between 6 o'clock and 12 o'clock and between 3 o'clock and 9 o'clock)	
	Height	2.9 mm without battery	
Regulation system		Regulating switch lever	
Measuring gate by quartz tester		Use the gate of 10-second	
Battery		Maxell SR1120SW, SEIKO (SEIZAIKEN) SR1120SW Battery life is approximately 5 years Voltage: 1.55 V	
Jewels		5 jewels	

## II. STRUCTURE OF CIRCUIT BLOCK

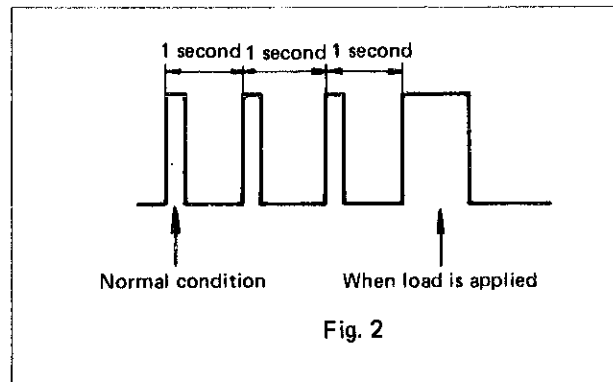


### III. LOAD-COMPENSATING DRIVING PULSE SYSTEM

- In the conventional analogue quartz watch, the pulse width supplied from the electric circuit to step motor is constant (Fig. 1).



- In the Cal. 8122A and Cal. 8123A, the drive pulse width changes according to the load required to drive the step motor. In normal conditions, the circuit supplies the minimum power to drive the hands. If an extra load is applied (to drive calendar, or watch is subjected to low ambient temperature), sufficient pulse is supplied to overcome the load (Fig. 2).



- As only minimum pulse width is required to drive the step rotor in normal conditions, only minimum current consumption results. (For checking of the current consumption, refer to page 6.)

### IV. LIST OF SCREWS USED

Shape	Part No.	Part Name	Quantity	Shape	Part No.	Part Name	Quantity
	022 247	Train wheel bridge screw	2 pcs.		022 248	Date dial guard screw	3 pcs.
		Battery connection (+) screw	4 pcs.				
		Battery connection (-) screw	1 pc.				
		Setting lever spring screw	1 pc.				

### V. DISASSEMBLING, REASSEMBLING AND LUBRICATING

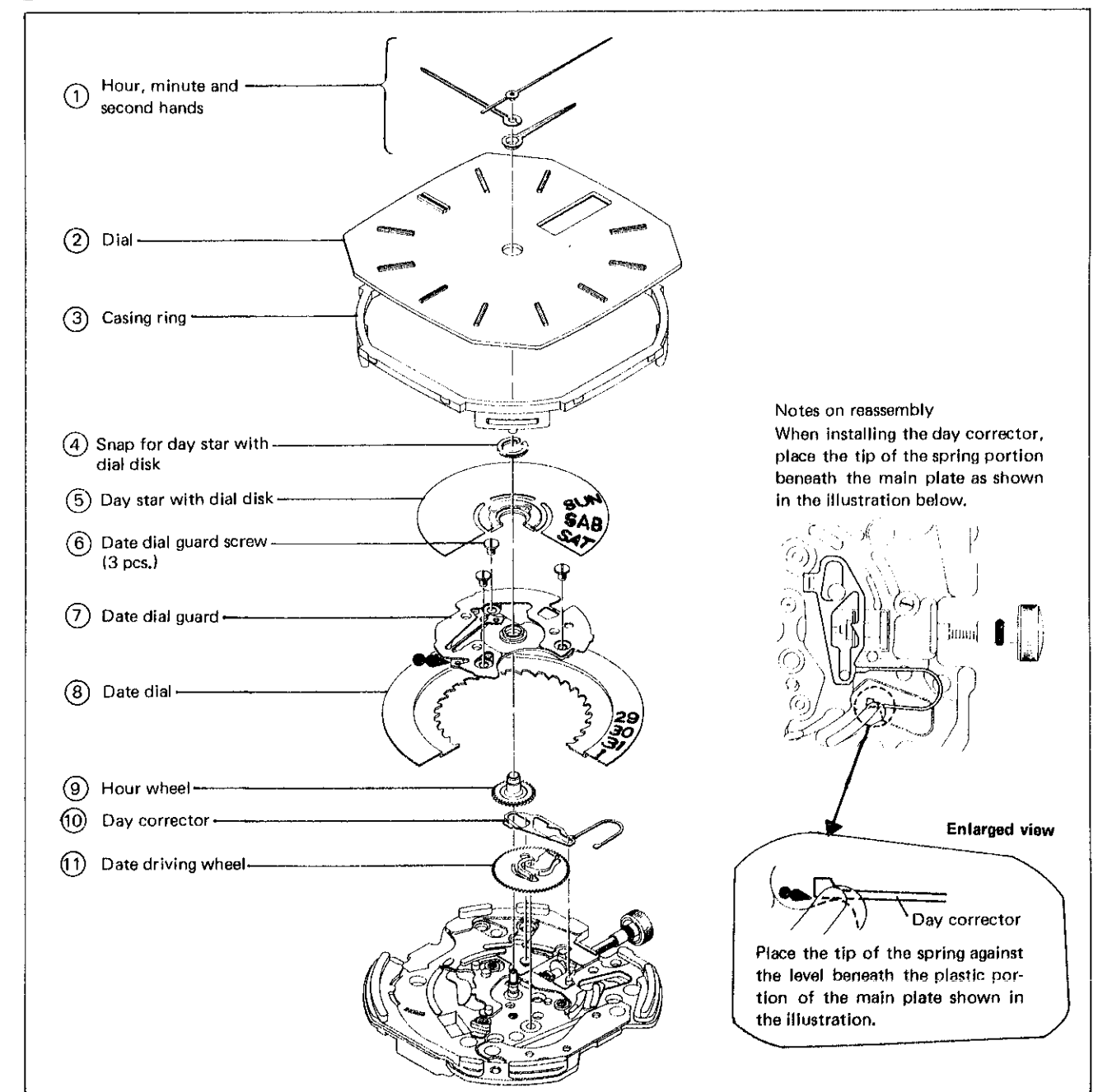
Disassembling procedures: Figs. ① ~ ③⑤  
 Reassembling procedures: Figs. ③⑤ ~ ①

Lubricating:

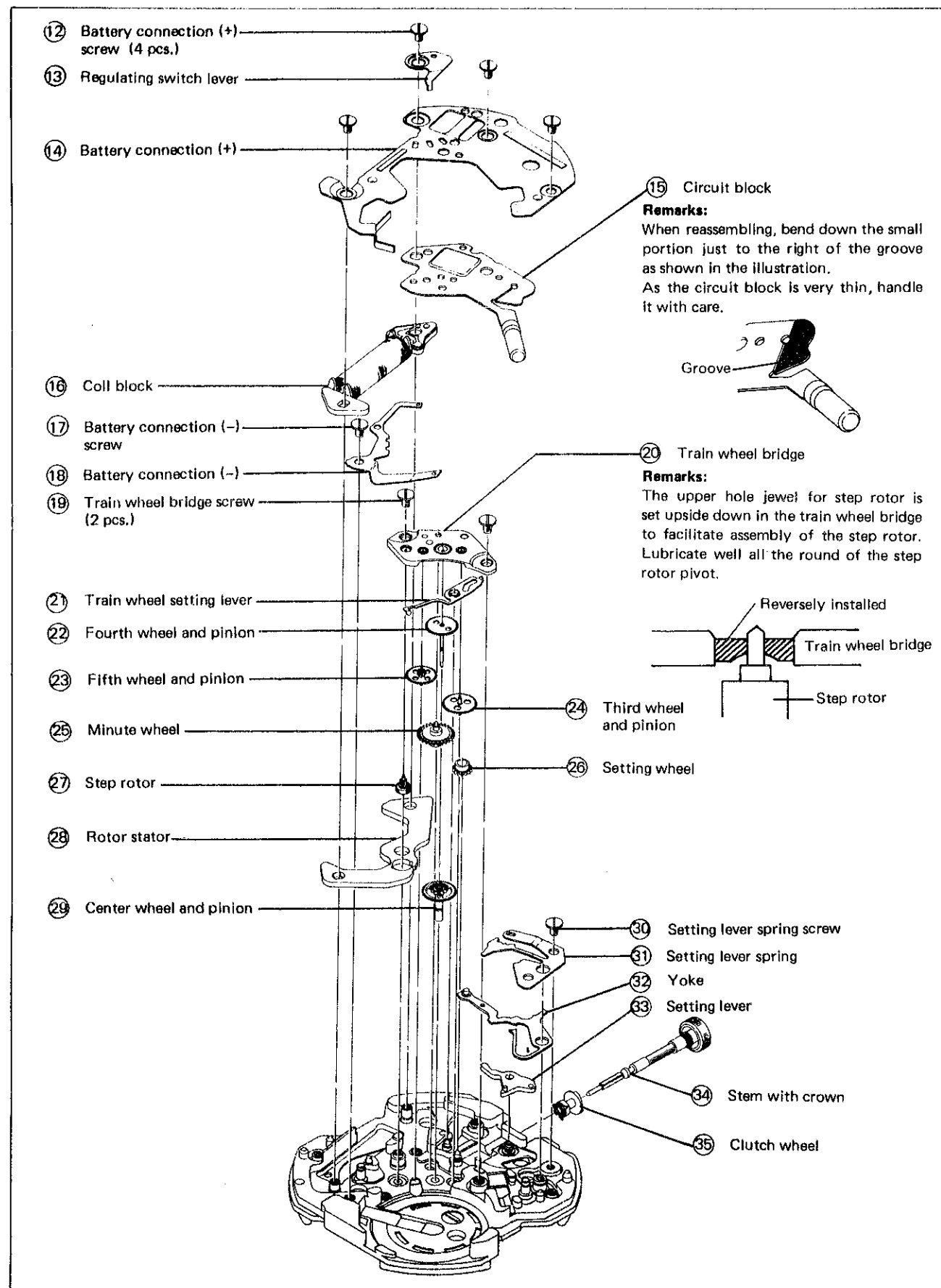
● Moebius A

- Use the universal movement holder.

#### ① Hour, minute and second hands ~ ①① Date driving wheel



⑫ Battery connection (+) screw ~ ⑳ Clutch wheel



VI. CHECKING AND ADJUSTMENT

- The explanation here is only for the particular points of Cal. 8122A and Cal. 8123A. Refer to the "TECHNICAL GUIDE GENERAL INSTRUCTION" for SEIKO Analogue Quartz for details.

Procedure	
<b>CHECK OUTPUT SIGNAL</b>	
Use the Quartz Tester. Range to be used: 2-second gate	Result: Normal: Input indicator blinks every second. Defective: Input indicator does not blink every second.
<b>CHECK HAND SETTING CONDITION</b>	
<b>CHECK BATTERY VOLTAGE</b>	
Set up the Volt-ohm-meter. Range to be used: DC 3V	Result: Normal: More than 1.5V Defective: Less than 1.5V
<b>CHECK BATTERY CONDUCTIVITY</b>	
<b>CHECK CIRCUIT BLOCK CONDUCTIVITY</b>	
<b>CHECK COIL BLOCK</b>	
Set up the Volt-ohm-meter. Range to be used: OHMS x 100	Result: Normal: 2.3kΩ ~ 2.8kΩ Defective: Less than 2.3kΩ (Short circuit) More than 2.8kΩ (Broken wire)
<b>CHECK GEAR TRAIN MECHANISM</b>	

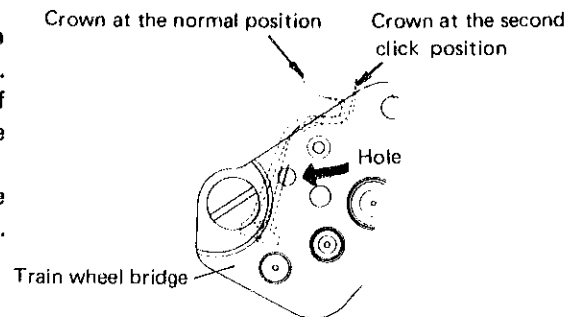
## Procedure

### CHECK RESET AND TRAIN WHEEL SETTING CONDITION

1. Check to see if second hand stops immediately after the crown is pulled out fully and it starts promptly after one second when the crown is pushed in to the normal position.

2. Look at the train wheel setting lever through the hole on the train wheel bridge to check if it functions correctly.

- When the crown is fully pulled out, the spring portion of the train wheel setting lever can be seen through the hole on the train wheel bridge.
- When the crown is pushed in to the normal position, the train wheel setting lever cannot be seen through the hole.



3. When the crown is fully pulled out, check to see if the output signal is transmitted.

Result:

Normal: The output signal is not transmitted.

Defective: The output signal is transmitted.

### CHECK ACCURACY

Use the 10-second gate of the Quartz Tester.

#### Adjusting time accuracy

1. Unscrew the screw which holds the regulating switch lever in place.
2. Remove the regulating switch lever.
3. To gain time, turn the regulating switch lever to engage its tip with the hole marked with "+", and to lose time, turn the regulating switch lever to engage its tip with the hole marked with "-".
4. Set and tighten the screw.

\* The range to be regulated by the above manner is approximately  $\pm 0.5$  sec./day.

### CHECK CURRENT CONSUMPTION

Use the Volt-ohm-meter.  
Range to be used: DC  $12\mu A$

Result:

Normal: Less than  $1.3\mu A$

Defective: More than  $1.3\mu A$

- Since the circuit which adopts the load-compensated driving pulse system is used in this watch, measure the current consumption when the watch is not loaded. While applying the probes to the battery, pull out the crown 2 ~ 3 times to make the watch in reset condition, and then check current consumption.

### CHECK CONDUCTIVITY OF SWITCH COMPONENTS

### CHECK WATER RESISTANCE

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