

# **TECHNICAL GUIDE**

**AND**  
**PARTS LIST**

CAL. Y520A

**ANALOGUE QUARTZ**

---

## **CONTENTS**

---



<b>I. SPECIFICATIONS .....</b>	<b>1</b>
<b>II. DISASSEMBLING, REASSEMBLING AND LUBRICATING .....</b>	<b>2</b>
1. Hour and minute hands ~ Minute wheel .....	2
2. Battery ~ Clutch wheel.....	3
3. Train wheel bridge screw ~ Main plate.....	4
<b>III. CHECKING AND ADJUSTMENT .....</b>	<b>5 ~ 6</b>
<b>IV. PARTS LIST.....</b>	<b>7</b>

## I. SPECIFICATIONS

Item	Cal. No.	Y520A
Time indication	2 hands (Hand motion: 20-second step)	
Driving system	Step motor	
Additional mechanism	—	
Loss/gain	Monthly rate at normal temperature range: less than 20 seconds	
Movement size	Size of main plate	φ11.5 mm
	Casing diameter	φ11.0 mm
	Height (including battery)	2.8 mm (3.1 mm)
Regulation system	—	
Measuring gate by quartz tester	Use the 10-second gate.	
Battery	<ul style="list-style-type: none"> <li>● SEIKO SR516SW</li> <li>● MAXELL SR516SW</li> </ul> Battery life is approximately 2 years. Voltage: 1.55V	
Jewels	1 jewel	

## II. DISASSEMBLING, REASSEMBLING, AND LUBRICATING

### List of the screws used

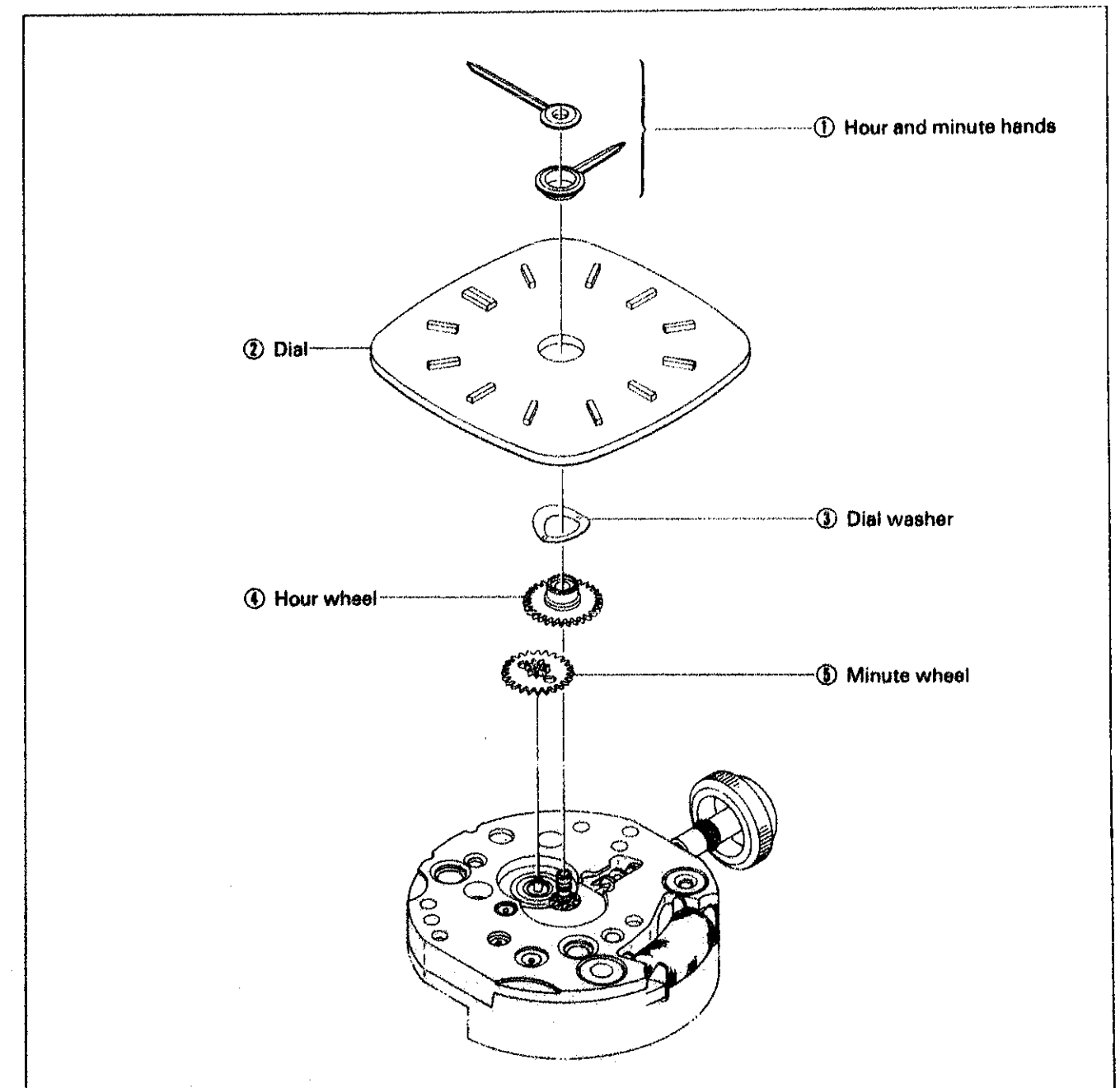
Shape	Part No.	Name	Shape	Part No.	Name
	022 342	Train wheel bridge screw (2 pcs.)		022 346	Coil block screw (1 pcs.)
		Setting lever spring screw (1 pcs.)			
		Battery connection (+) screw (1 pcs.)			

Disassembling procedures Figs.: ① → ⑩

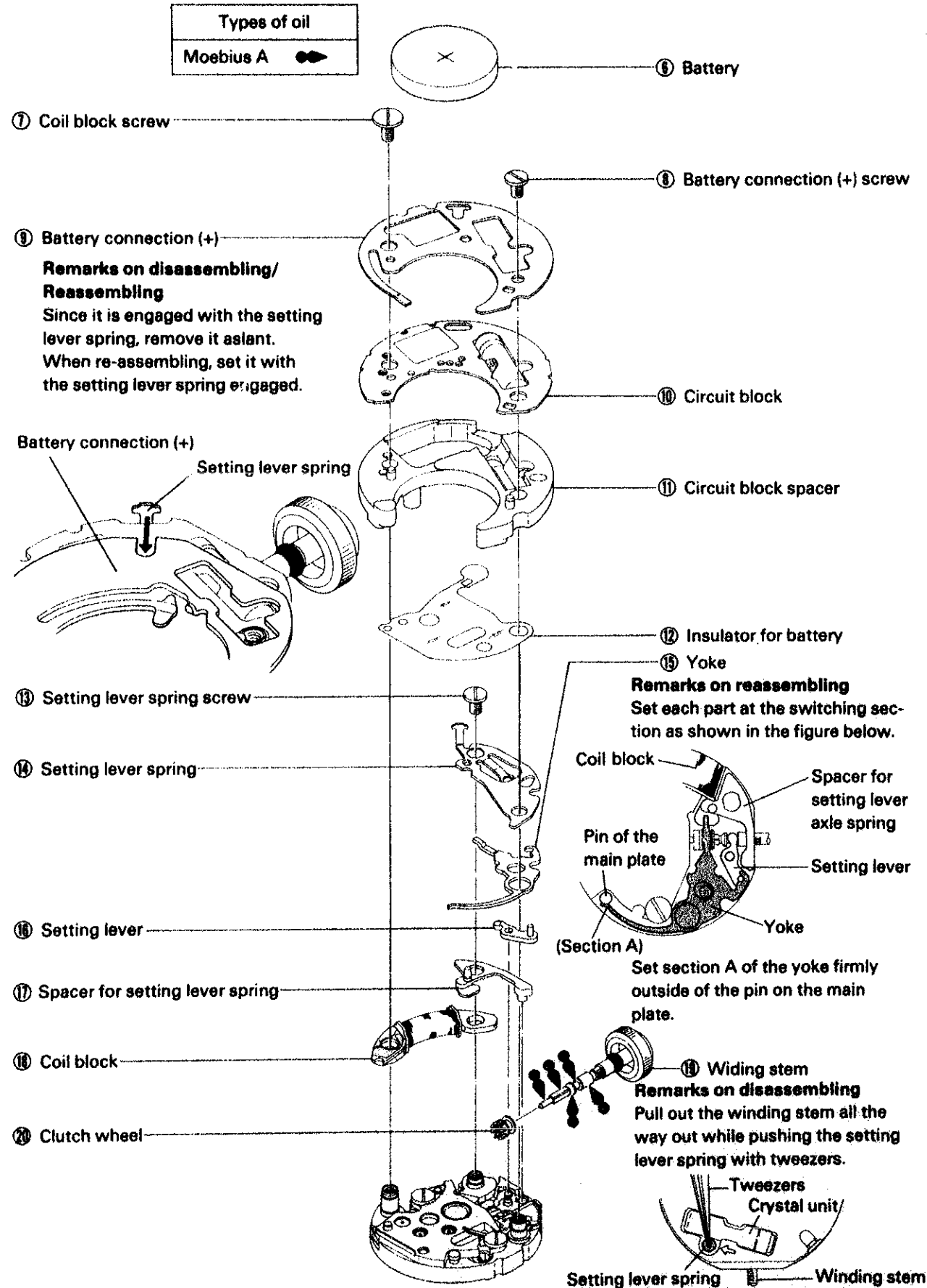
Reassembling procedures Figs.: ⑩ → ①

Used movement holder: UNIVERSAL MOVEMENT HOLDER

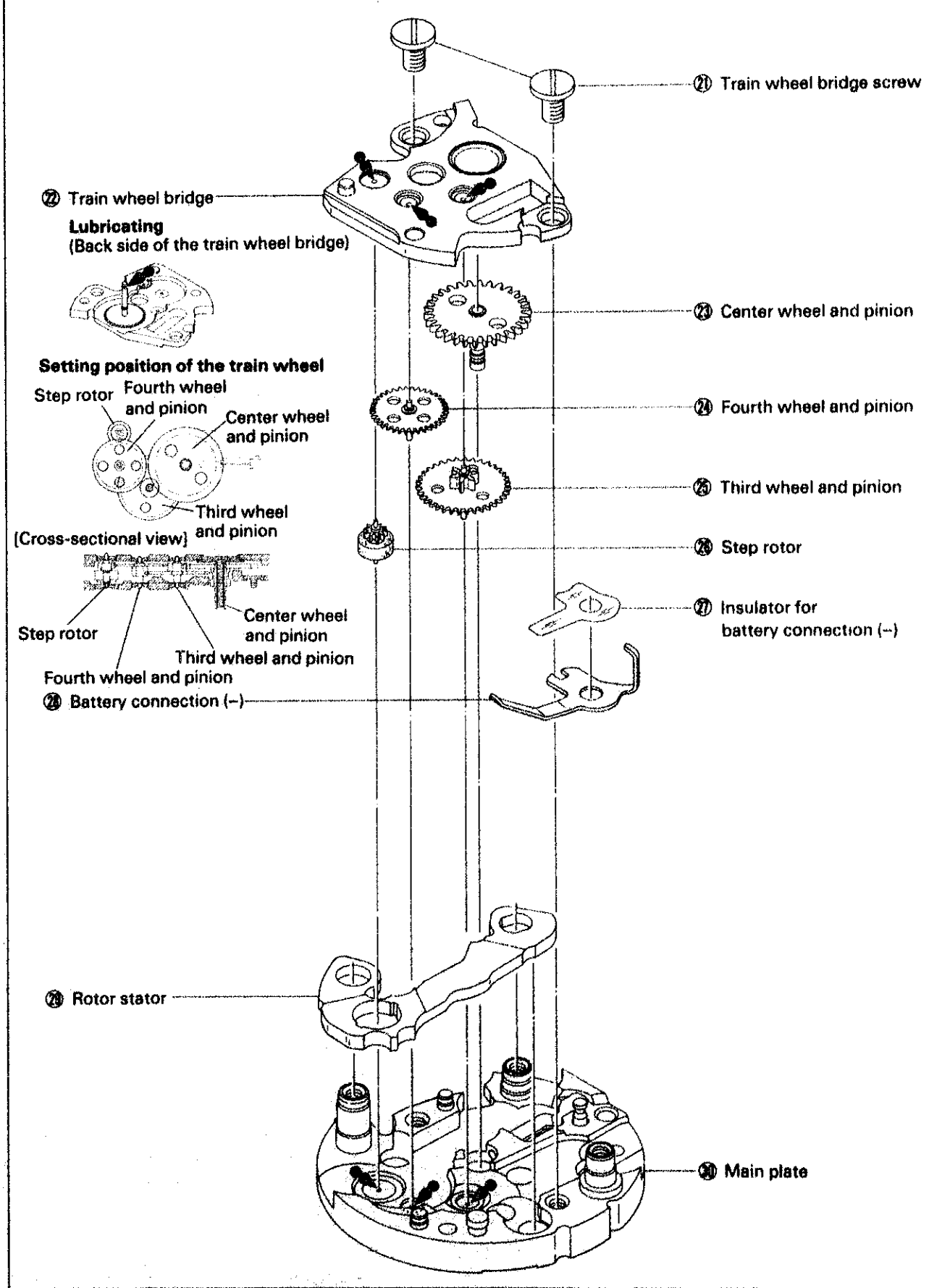
### 1. Hour and minute hands ~ Minute wheel



● Battery ~ Clutch wheel

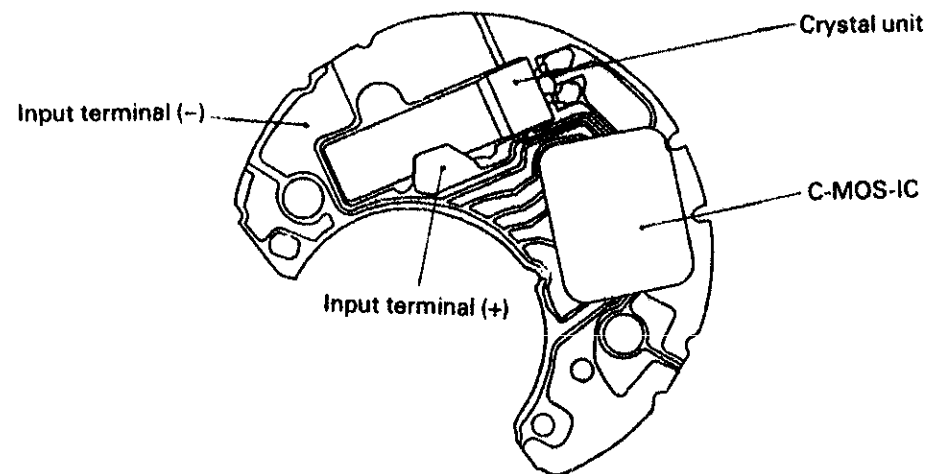


● Train wheel bridge screw ~ Main plate



### III. CHECKING AND ADJUSTMENT

#### 1. Structure of circuit block



#### 2. Procedure for checking and adjustment

- This section only gives the checking and adjustment procedure which is exclusive for this cal. Y520A. For the normal checking and adjustment, refer to the "TECHNICAL GUIDE GENERAL INSTRUCTION, Analogue Quartz".

#### OUTPUT SIGNAL

Quartz Tester Measuring gate: 10 seconds gate	Result: Output signal: Normal No output signal: Defective
--	---

#### BATTERY VOLTAGE

SEIKO Digital Multi Tester S-840A Range to be used: DC V	Result: More than 1.57V: Normal less than 1.57V: Defective Replace the battery.
---	--

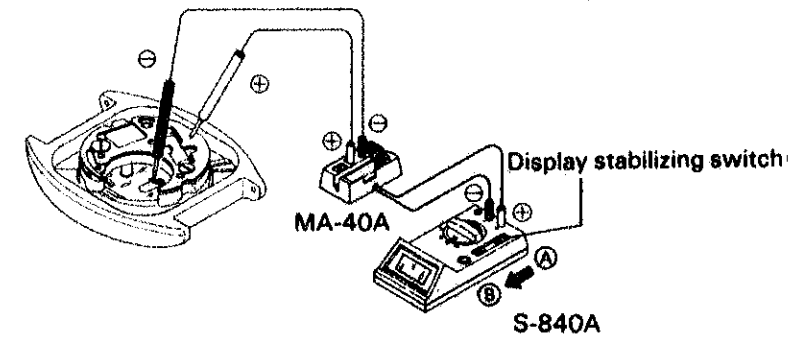
#### COIL BLOCK

SEIKO Digital Multi Tester S-840A. Range to be used: $\Omega$	Result: 1.9 ~ 2.5 k $\Omega$ : Normal Less than 1.9 k $\Omega$ (short circuit): Defective More than 2.5 k $\Omega$ (broken wire): Defective Replace the coil block with a new one
--	---

#### CURRENT CONSUMPTION

Use the SEIKO Digital Multi Tester S-840A (with Multi Adaptor MA-40A)  
Mode to be used:  $\mu A$

Red probe: Battery connection (+)  
Black probe: Battery connection (-)



Result:  
Less than 0.6  $\mu A$ : Normal  
More than 0.6  $\mu A$ : Defective

#### Notes on the current consumption measurement

- (1) Set the display stabilization switch to B position (in the direction of the arrow shown in the above figure).
- (2) Apply the red (+) and black (-) probes of the tester as shown in the above figure. The tester displays a value, indicating that electric current is flowing in the IC.
- (3) In addition to above, the measured value increases once every 20 seconds, since the step motor drive pulse is supplied to move the hand.
- (4) After approximately 60 seconds, the maximum figure at this time (hand moves every 20 seconds) indicates the average current consumption.

#### IV. PARTS LIST

Cal. Y520 A			
PARTS NO.	PARTS NAME	PARTS NO.	PARTS NAME
• 125 934	Train wheel bridge	4146 505	Step rotor
• 125 935	Train wheel bridge	4216 505	Insulator for battery
• 221 930	Center wheel & pinion	4216 506	Insulator for battery connection (-)
• 221 931	Center wheel & pinion	4239 505	Rotor stator
231 930	Third wheel & pinion	4270 506	Battery connection (-)
241 930	Fourth wheel & pinion	4271 510	Battery connection (+)
261 930	Minute wheel	4408 932	Circuit block spacer
• 271 930	Hour wheel	011 568	Upper hole jewel for step rotor
• 271 931	Hour wheel	022 342	Train wheel bridge screw
282 931	Clutch wheel	022 342	Setting lever spring screw
• 361 930	Winding stem	022 342	Battery connection (+) screw
383 930	Setting lever	022 346	Coil block screw
384 931	Yoke		
389 932	Setting lever spring		
491 930	Dial washer	Battery	SEIKO SR516SW
767 931	Spacer for setting lever spring		MAXELL SR516SW
4001 507	Circuit block		Battery life: Approx. 2 years
4002 505	Coil block		

**Remarks:**

• **Winding stem**

The type of winding stem is determined based on the design of case. Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.

• **Train wheel bridge, Center wheel & pinion, Hour wheel**

There are two different types as specified below:

**Combination:**

Type	Train wheel bridge	Center wheel and pinion	Hour wheel
S	125 934	221 930	271 930
M	125 935	221 931	271 931

\* abbreviation      M... Standard type  
(Movement type)      S... Short type