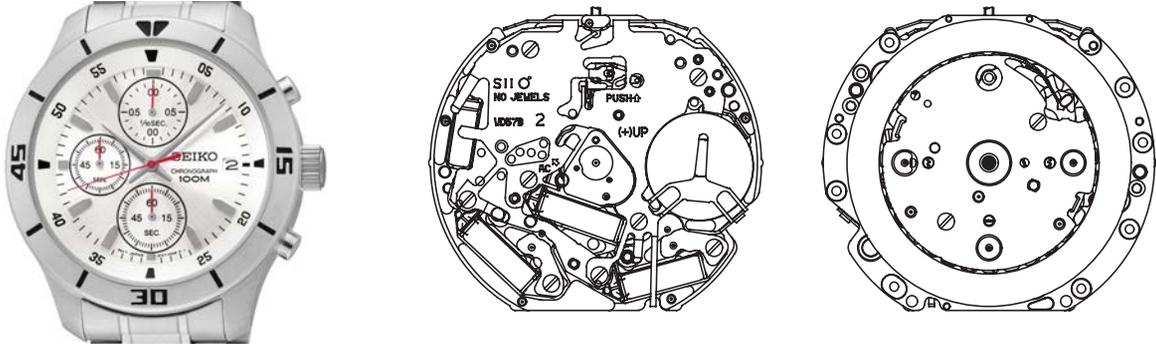


# PARTS LIST/TECHNICAL GUIDE

## ANALOGUE QUARTZ Cal. 4T57A

### [SPECIFICATIONS]

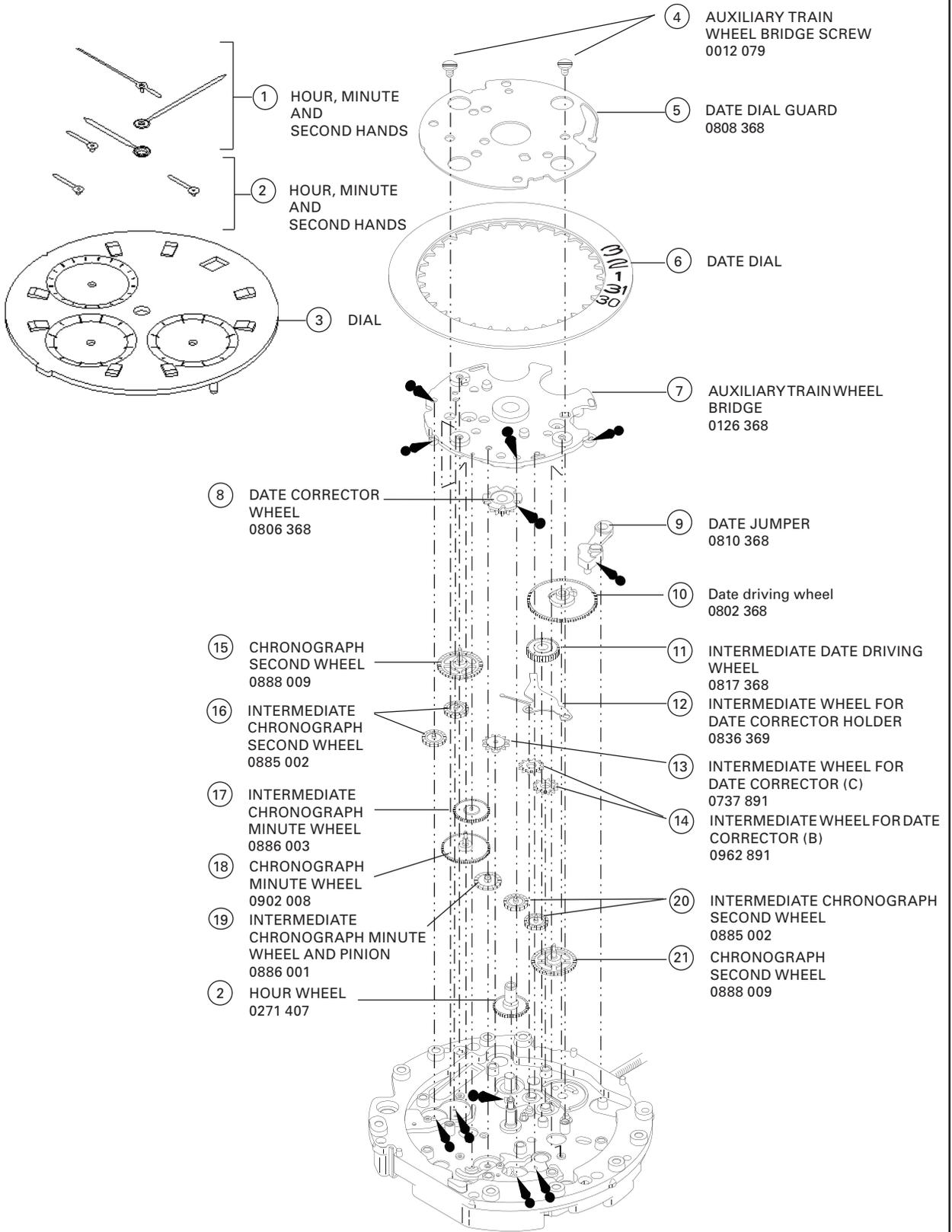
Item	Cal. No.	4T57A
 <ul style="list-style-type: none"> <li>• 3 Hands (Hour, Minute, Second)</li> <li>• Chronograph (Minute, Second, 1/10 second)</li> <li>• Calendar</li> <li>• Diameter               <ul style="list-style-type: none"> <li>Outside : Ø29.50 mm (12H - 6H) × 26.00 mm</li> <li>Casing: Ø28.80 mm (12H - 6H)</li> </ul> </li> <li>• Height: 4.57 mm</li> </ul>		
Interval of hands movement		1 second
Driving system		Two pole stepping motor, Step motor 3 pieces
Additional function		<ul style="list-style-type: none"> <li>• Electronic circuit reset switch</li> <li>• Train wheel setting device</li> <li>• [Time] Indicated by the Hour, Minute, Second and Calendar</li> <li>• [Stopwatch] Up to 1 minutes in 1/10 second (2 seconds per round) Up to 60 minutes in 1 second split time</li> </ul>
C r o w n operation	Normal position	Free
	1st click position	Date setting(clockwise)
	2nd click position	Time setting, hand position adjustment / resetting the circuit
Loss/gain		Monthly rate: Less than 20 seconds (at normal temperature range)
Regulation system		Nil
Gate time for rate measurement		Use 10-second gate
Current consumption		Movement: Less than 2.20 µA Circuit block: Less than 1.04 µA
Coil resistance		4002004 (COIL BLOCK A) 1.0 - 1.2 KΩ ..... 4002923 (COIL BLOCK B) 1.28 - 1.48 KΩ
Power supply	Battery No.	SEIKO SR920SW(SEIZAIKEN) Silver oxide battery
	Battery voltage	1.55 V
	Battery life	Approx. 2 years
Number of jewels		0 jewels

SEIKO WATCH CORPORATION

# PARTS LIST

Cal. 4T57A

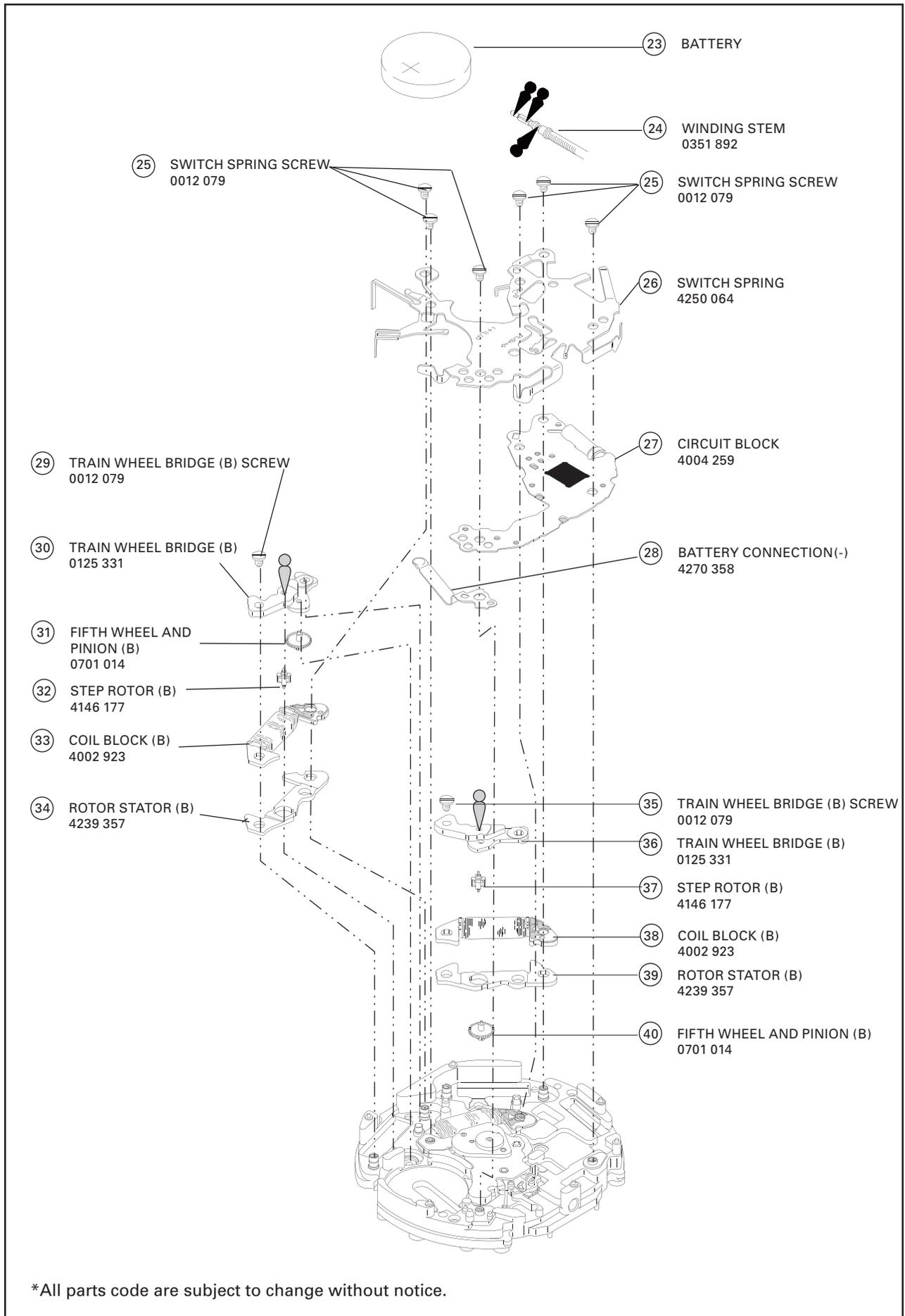
Order of disassembly:	①	→	⑤⑤	Types of oil 	Oil quantity Normal quantity Liberal quantity
Order of assembly:	⑤⑤	→	①		



\*All parts code are subject to change without notice.

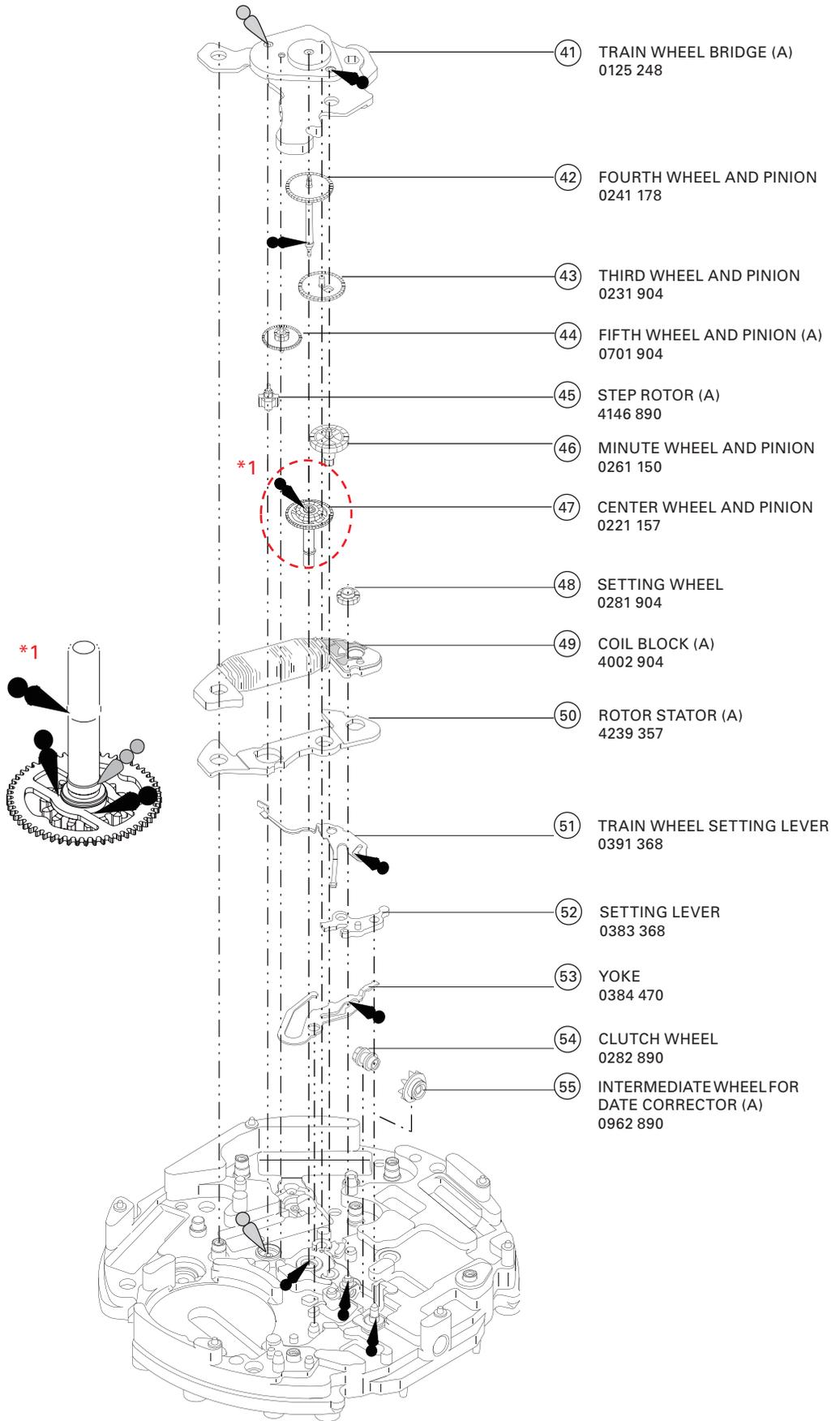
# PARTS LIST

Cal. 4T57A



# PARTS LIST

Cal. 4T57A



\*All parts code are subject to change without notice.

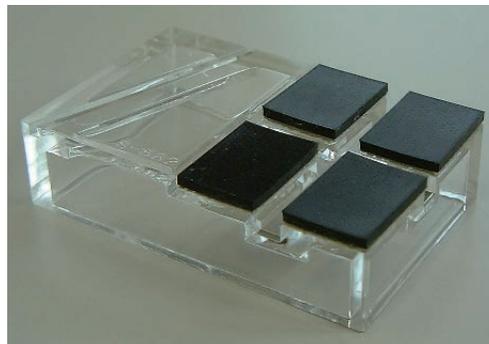
# PARTS LIST

Cal. 4T57A

- **Tools and consumables required for disassembling/reassembling**

- **Movement holder**

UNIVERSAL MOVEMENT HOLDER (S-682)



- **Watch oils**

SEIKO watch oils (AO-3 and AO-2)

AO-3



AO-2



**Remarks**

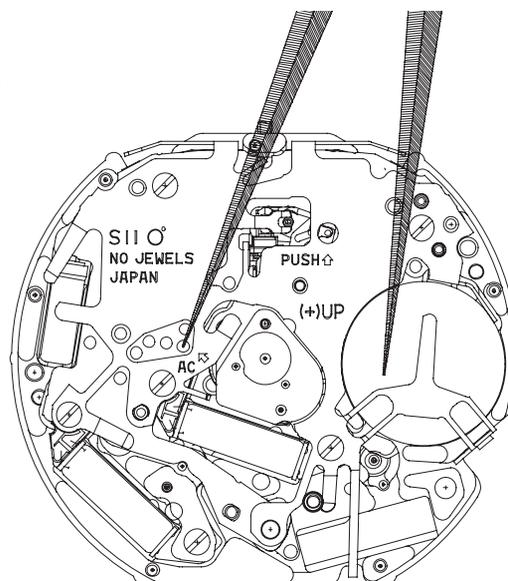
⑥ DATE DIAL

Part code	Position of crown	Position of calendar frame	Color of figure	Color of background
0878 220	3 o'clock	3 o'clock	Black	White
0878 221	3 o'clock	3 o'clock	White	Black

The explanation here is only for the particular point of Cal.4T57A.

● **Remarks on installing the battery**

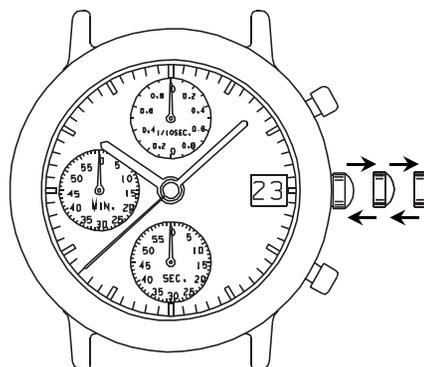
- 1) After the battery is replaced with a new one, or after the battery is reinstalled following the repairing procedures, be sure to touch the AC terminal of circuit block and the switch spring with conductive tweezers to reset the circuit as illustrated at right.



- 2) When the battery is replaced with a new one, the information stored in the built-in IC does not correspond with the time actually displayed. Before using the watch, therefore, be sure to reset the IC following the procedure below.

If any of the stopwatch hands should move improperly, also follow the same procedure.

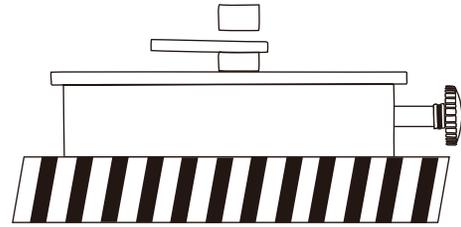
1. Pull out the crown to the second click position.
  2. Press the buttons "A" and "B" simultaneously for 2 seconds, and then, release the buttons. The stopwatch second hand turns counterclockwise and stopwatch 1/10 second hand turns clockwise, and then return to where they were.
  3. Press button "A" or "B" to reset the stopwatch hands to "0" position.
- \* By pressing button "A" , set the stopwatch 1/10 second hand.
  - \* By pressing button "B", set the stopwatch second and minute hands.
4. Turn the crown to set the hour, and minute and 24-hour hands to the desired time, and push the crown back to the normal position.



① HOUR, MINUTE AND SECOND HANDS

● **How to install**

1. Place the movement directly on a movement holder or the like and press in the hands.
2. Install the hour, minute and second hands at the "12" o'clock position.
3. Install the chrono minute and second hands at the "0" o'clock position.



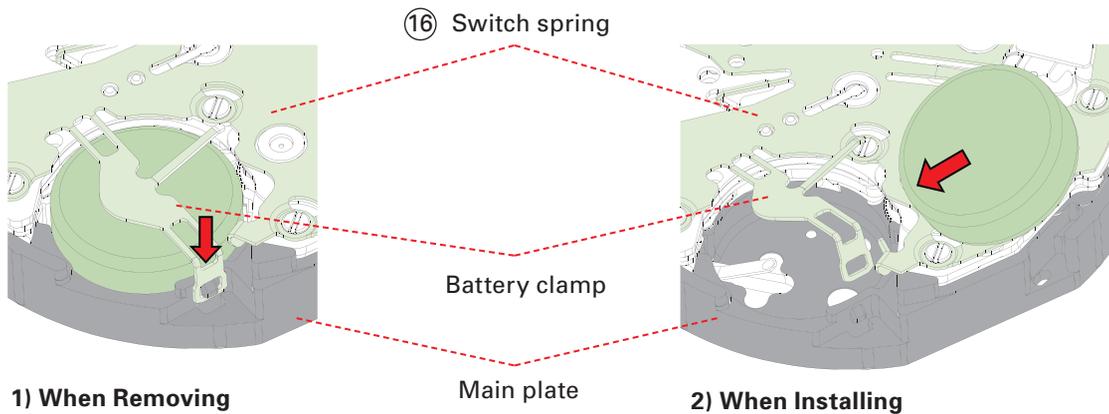
[ Reference ] **The power of press hands**

Minute & Hour Hands	< 5kg
Second Hand	< 5kg
Chrono Minute & Second Hands	< 3kg

②3 BATTERY

● **How to remove or install the battery**

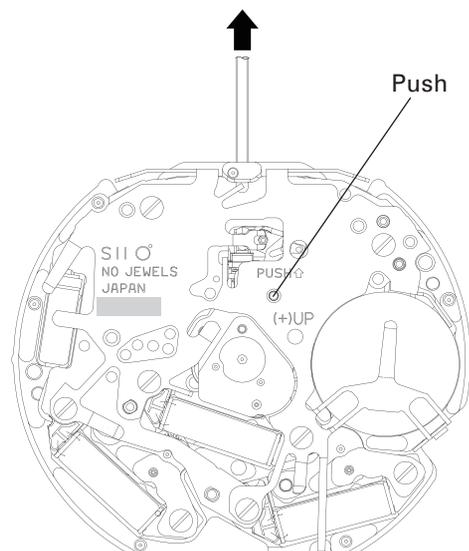
- 1) Remove the hook of the switch spring's battery clamp.
- 2) Insert the battery sideways, and have the hook of the switch spring's battery clamp catch the main plate.



③1 SETTING STEM

● **How to remove**

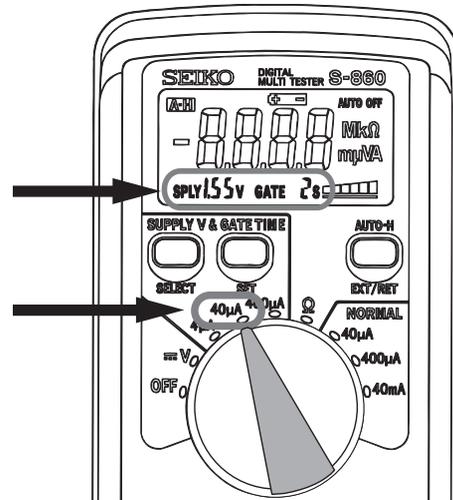
While pushing the indented portion of the arrow, pull out the setting stem.



## REMARKS ON INSPECTION AND MEASUREMENT

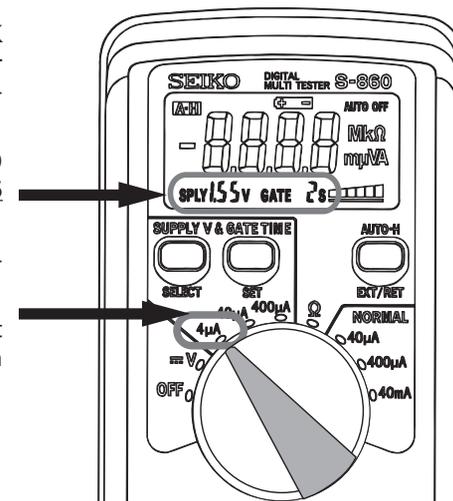
### ● How to measure the current consumption for the whole movement

1. To measure the current consumption for the whole movement, connect the (-) probe to the battery connection (-) and (+) probe to the other metal part of the movement, such as battery clamp or circuit block cover.
- \* When measuring the current consumption using the SEIKO digital multi-tester (S-860), use the range of 40  $\mu$  A of SUPPLY V (= 1.55 V) & GATE TIME (2 S).
2. Connect the AC component to the positive terminal for 2 seconds until a short circuit occurs to reset the integrated circuit.
3. After the integrated circuit is reset, wait approximately for 10 seconds until a stable measurement is obtained, and then read the measurement.
4. Make sure the read value is less than 2.2  $\mu$  A.

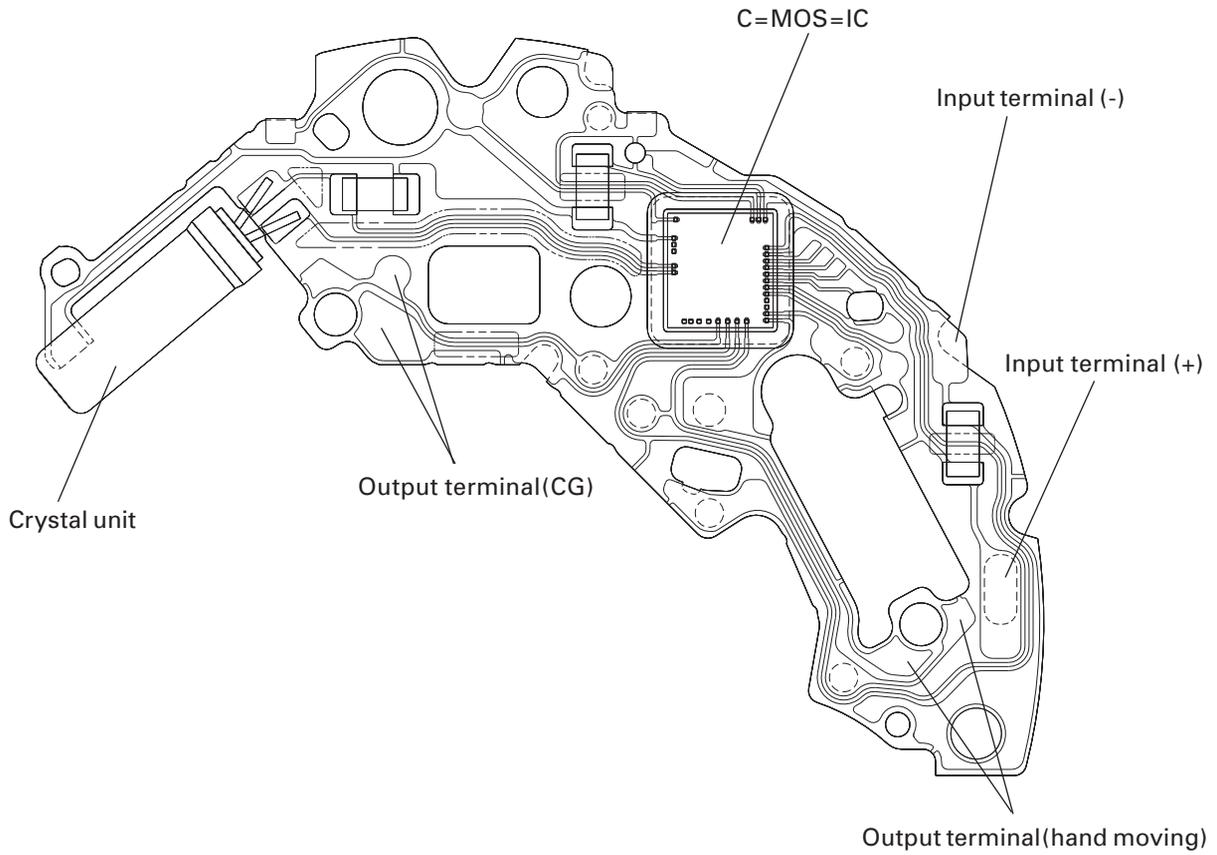


### ● How to measure the current consumption for the CIRCUIT BLOCK alone

1. To measure the current consumption for the CIRCUIT BLOCK alone, connect each probe to the appropriate positive (+) or negative (-) input terminal of the CIRCUIT BLOCK (please refer to "Structure of the CIRCUIT BLOCK" below).
- \* When measuring the current consumption using the SEIKO Multi-Tester S-860, use the range of 4  $\mu$  A of SUPPLY V (= 1.55 V) & GATE TIME (2 S).
2. Repeat the same procedures as 2. and 3. of measuring current consumption for the whole movement above.
- \* When measuring the current consumption for the circuit block alone, be careful not to damage or deform the pattern of the circuit block.
3. Make sure the read value is less than 1.04  $\mu$  A.



**[Structure of the CIRCUIT BLOCK]**

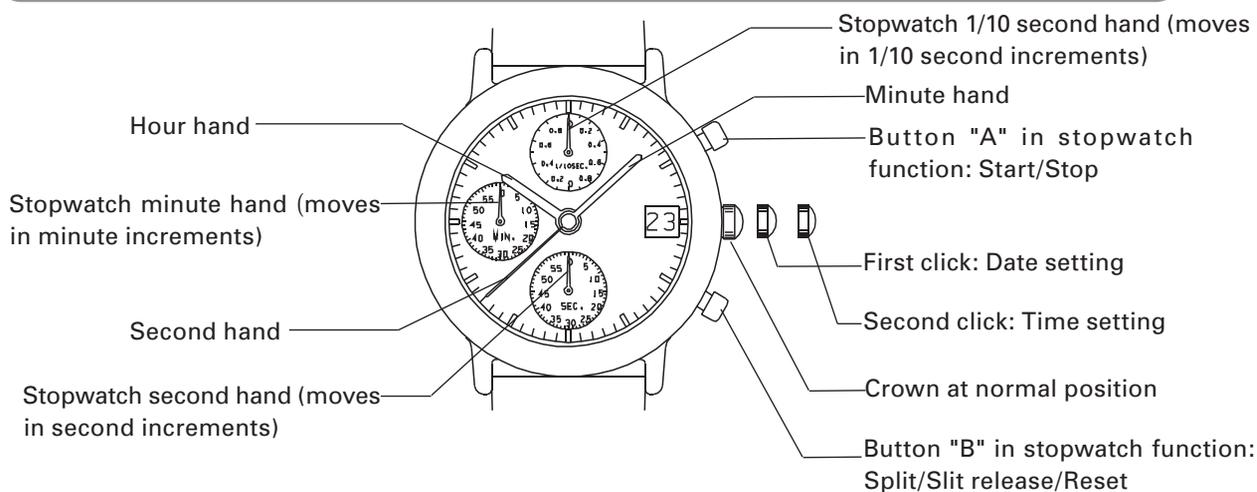


● **Value checking – coil resistance (coil blocks)**

Check the resistance of each coil block if they are within the range in the following table.

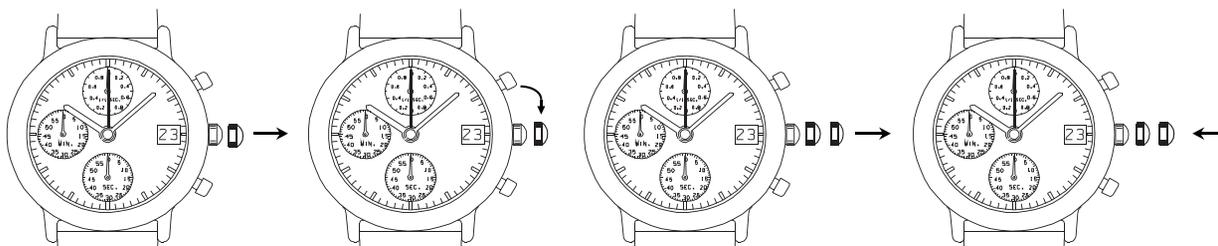
COIL BLOCK (A)	4002904	1.0 K $\Omega$ – 1.2 K $\Omega$
COIL BLOCK (B)	4002923	1.28 K $\Omega$ – 1.48 K $\Omega$

## DISPLAY AND CROWN/BUTTON OPERATION



- \* The measurement time indicated by the stopwatch hands that move independently of center hands.
- \* Stopwatch 1/10 second hand moves for a first minute. After one minute, it indicates the measurement time when it is stopped.

## TIME SETTING



1. Pull out the crown to the first click.
2. Turn the crown clockwise until the previous day's date appears.
3. Pull out the crown to the second click when the second hand is at the 12 o'clock position. It will stop on the spot and advance the hour and minute hands by turning the crown. (Check that AM/PM is set correctly.)
4. Push the crown back in to the normal position in accordance with a time signal.

\* When the crown is at the second click position, do not press any button. Otherwise, the chronograph hands will move.

\* Do not set the date between 9:00 P.M. and 1:00 A.M.

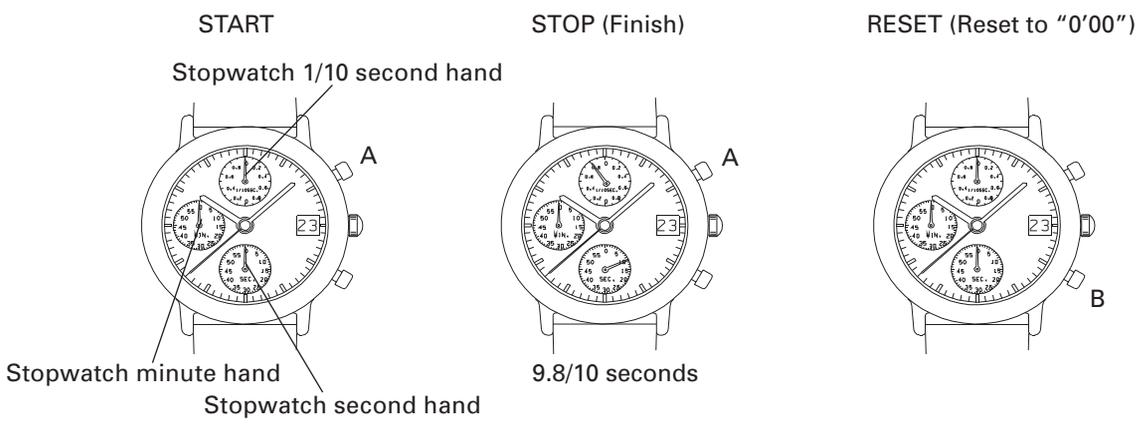
Otherwise, the day may not change properly. If it is necessary to set the date during that time period, First change the time to any time outside it, set the date and then reset to the correct time.

## HOW TO USE THE STOPWATCH

- The measurement time is indicated by the stopwatch hands that move independently of the center hands.
- The stopwatch can measure up to 60 minutes in second. (The watch indicates the measurement time in second increments by ignoring off the 1/10 seconds obtained.)

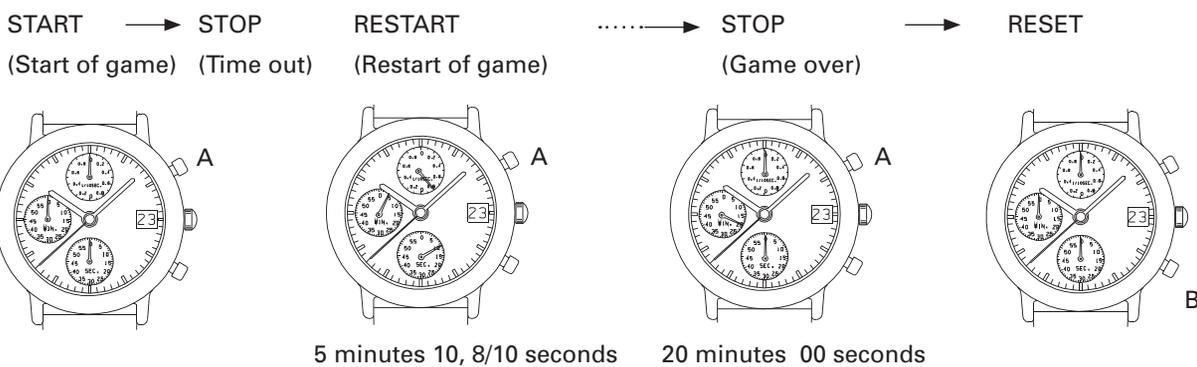
### Standard measurement

Ex) 100m race (Press the buttons in the following order: A → A → B)



### Accumulated elapsed time measurement

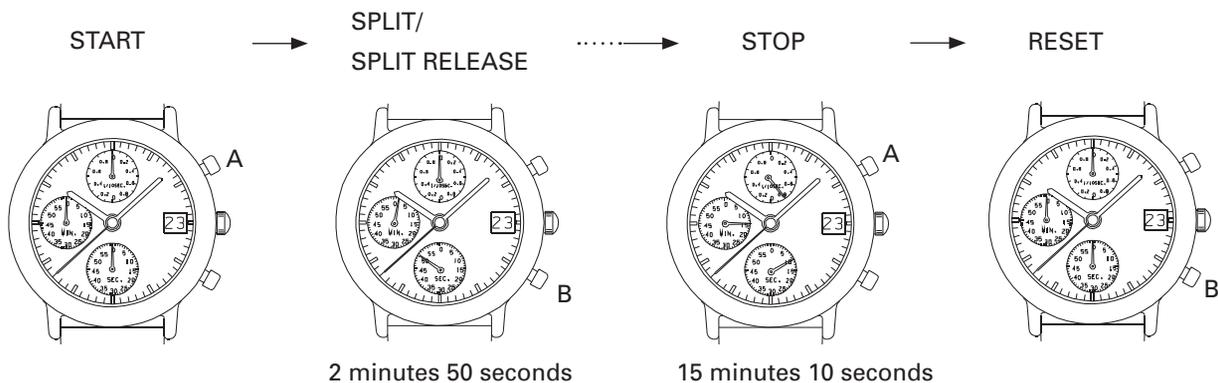
Ex) Basketball game (Press the buttons in the following order: A → A/A ..... → A → B)



\*Restart and stop of the stopwatch can be repeated as many times as necessary by pressing button A

### Split time measurement

Ex) 5,000m race (Press the buttons in the following order: A → B/B ..... → A → B)



\*Measurement and release of the split time can be repeated as many times as necessary by pressing button B.