


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. Y187A

[SPECIFICATIONS]

Item		Cal. No.	Y187A
Movement		 <p style="text-align: right;">(x 1.0)</p>	
Movement size	Outside diameter	φ27.6mm 24.0mm between 3 o'clock and 9 o'clock sides	
	Casing diameter	φ27.0mm 24.0mm between 3 o'clock and 9 o'clock sides	
	Height	3.2mm (including the battery portion)	
Time indication		Main time	Stopwatch function
		Hour, minute, small second and 24-hour hands	Minute and 1/5 second hands
Driving system		Step motor, 4 pieces	
Additional mechanism		<ul style="list-style-type: none"> • Electronic circuit reset switch • Train wheel setting device • Battery life indicator (Small second hand moves at two-second intervals.) • Date calendar • Instant setting device for date calendar • Stopwatch function (Up to 30 minutes in 1/5 seconds) <ul style="list-style-type: none"> • Accumulated elapsed time measurement • Split time measurement 	
Loss/gain		Monthly rate at normal temperature range: less than 20 seconds	
Regulation system		Nil	
Measuring gate by quartz tester		Use 10-second gate.	
Battery		SEIKO SR927SW, Maxell SR927SW, SONY SR927SW, EVEREADY 395 Battery life is approximately 2 years. Voltage: 1.55V	
Jewels		0 jewel	

HATTORI SEIKO CO., LTD.




PARTS CATALOGUE

Cal. Y187A



Disassembling procedures Figs.: ① → ⑥⑥

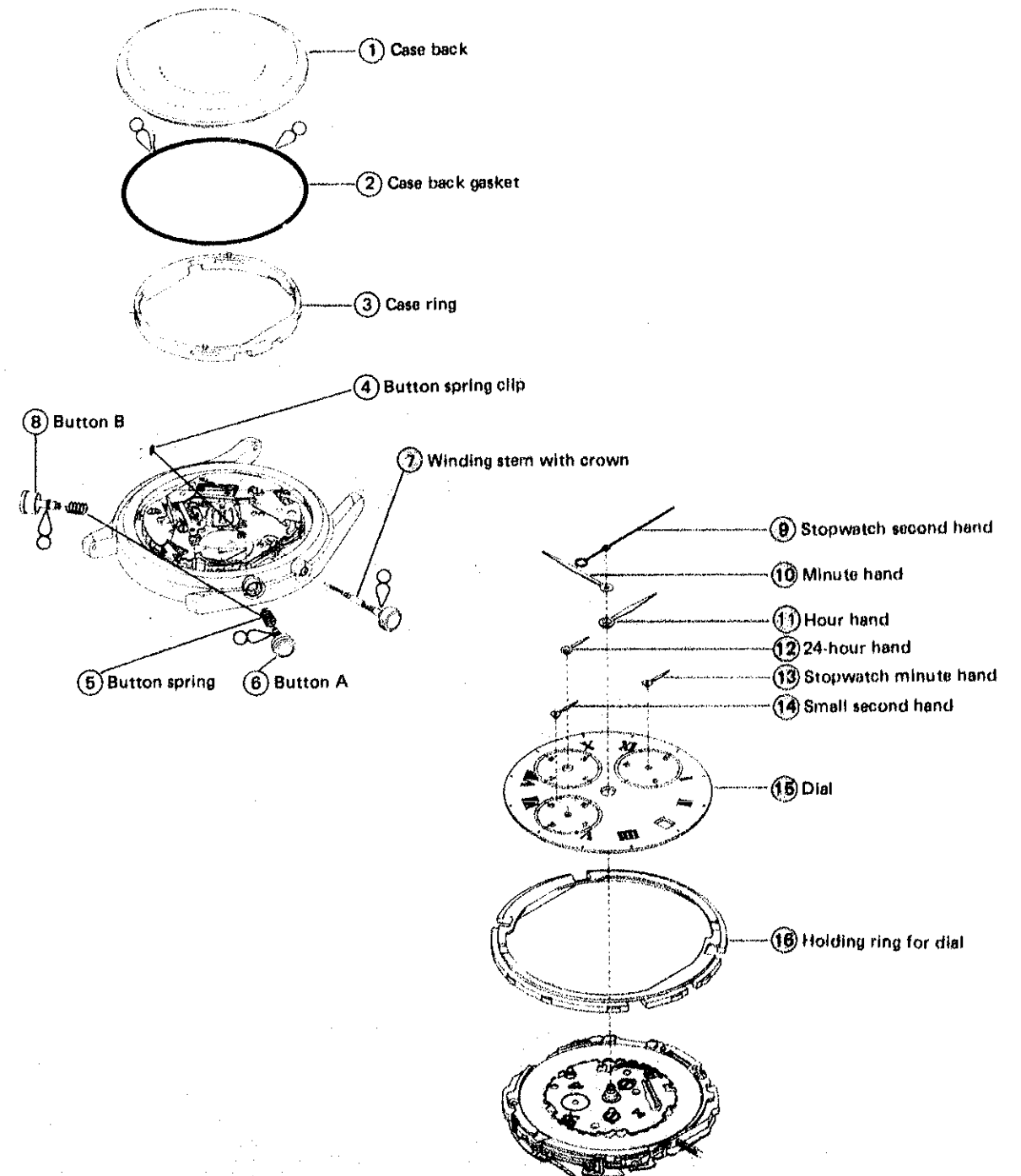
Reassembling procedures Figs.: ⑥⑥ → ①

Lubricating: Types of oil

-  Moebius A
-  SEIKO Watch Oil S-6
-  Silicone oil 500,000 c.s.

Oil quantity

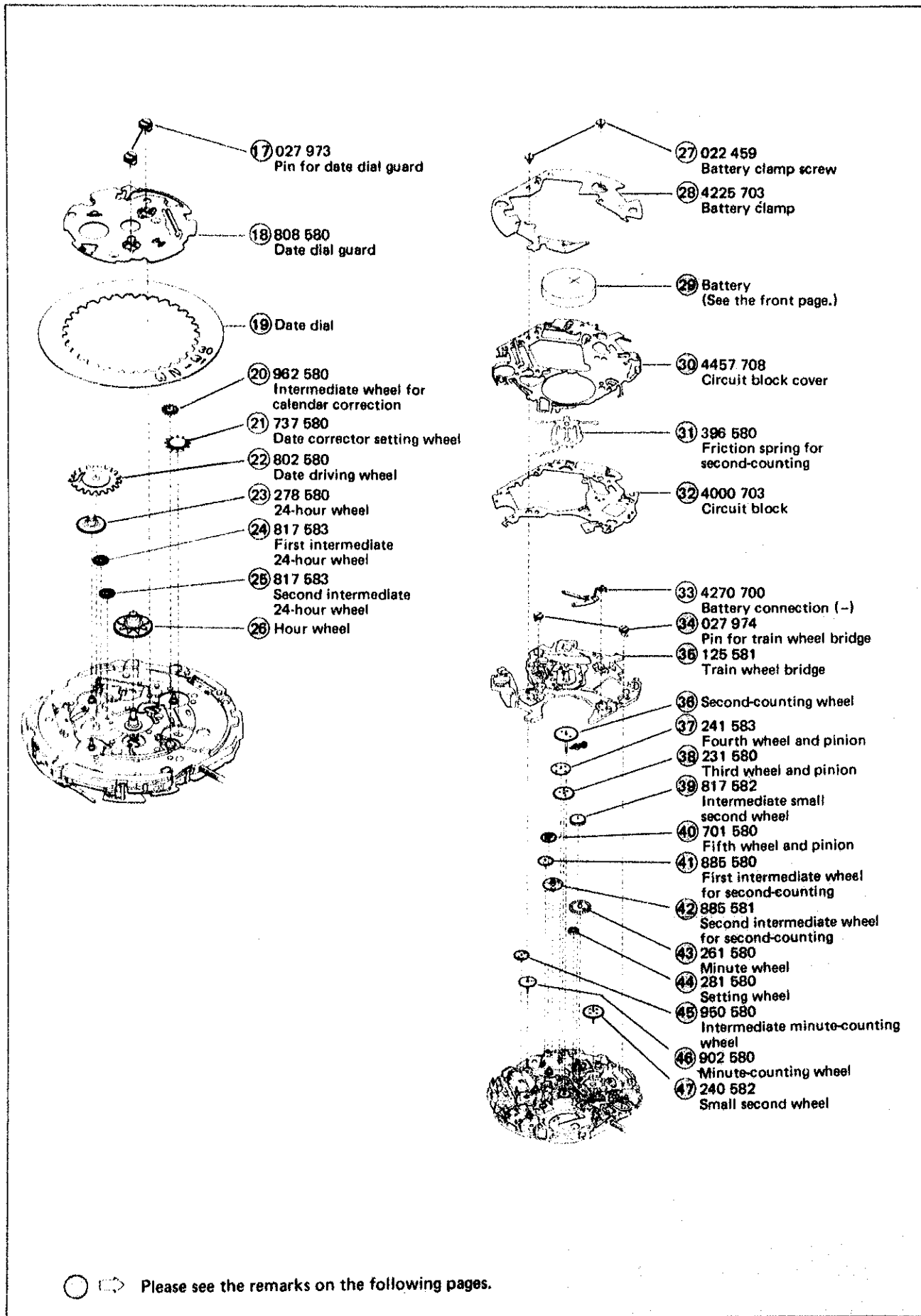
-  Normal quantity
-  Extremely small



 Please see the remarks on the following pages.

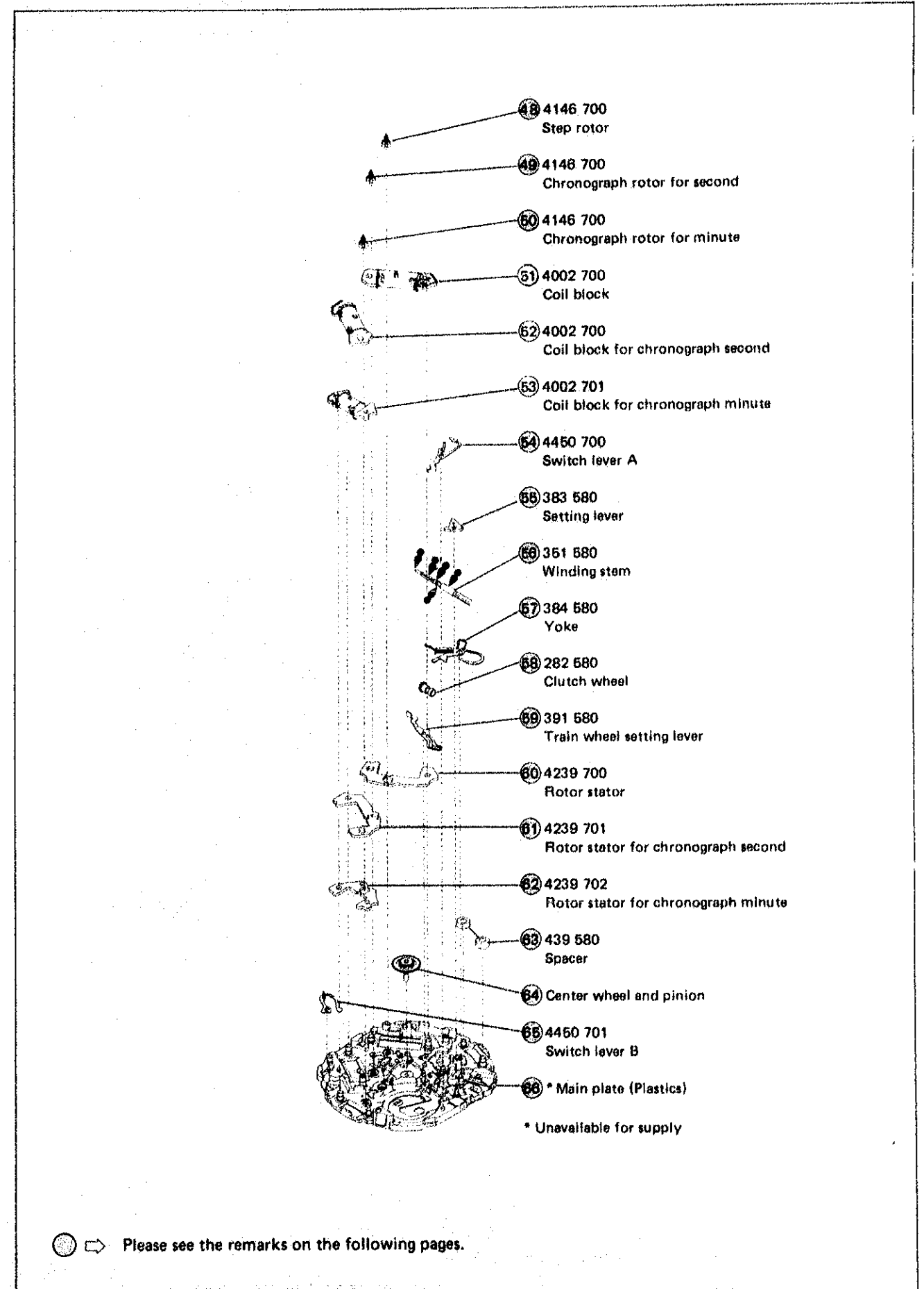
PARTS CATALOGUE

Cal. Y187A



PARTS CATALOGUE

Cal. Y187A



Remarks:

- ⑩ Holding ring for dial 866 589, 866 595

The type of holding ring for dial is determined based on the design of cases.
Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding holding ring for dial.

- ⑪ Pin for date dial guard
- ⑬ Pin for train wheel bridge

For distinction between the pins, see the illustration below.

[Pin for date dial guard]



027 973

[Pin for train wheel bridge]



027 974

- ⑰ Date dial

Part No.	Figure color	Background color	Crown position	Calendar frame position
878 527	Black	White	3 o'clock	3 o'clock
878 536	White	Black	3 o'clock	3 o'clock

If any other type of date dial is required, check the case number and refer to "Casing Parts Catalogue" or "List of Date Dial" to choose a corresponding date dial.

- ⑲ First intermediate 24-hour wheel
- ⑳ Second intermediate 24-hour wheel

The first intermediate 24-hour wheel and second intermediate 24-hour wheel can be used interchangeably.

- ⑳ Hour wheel
- ㉑ Second-counting wheel
- ㉒ Center wheel and pinion

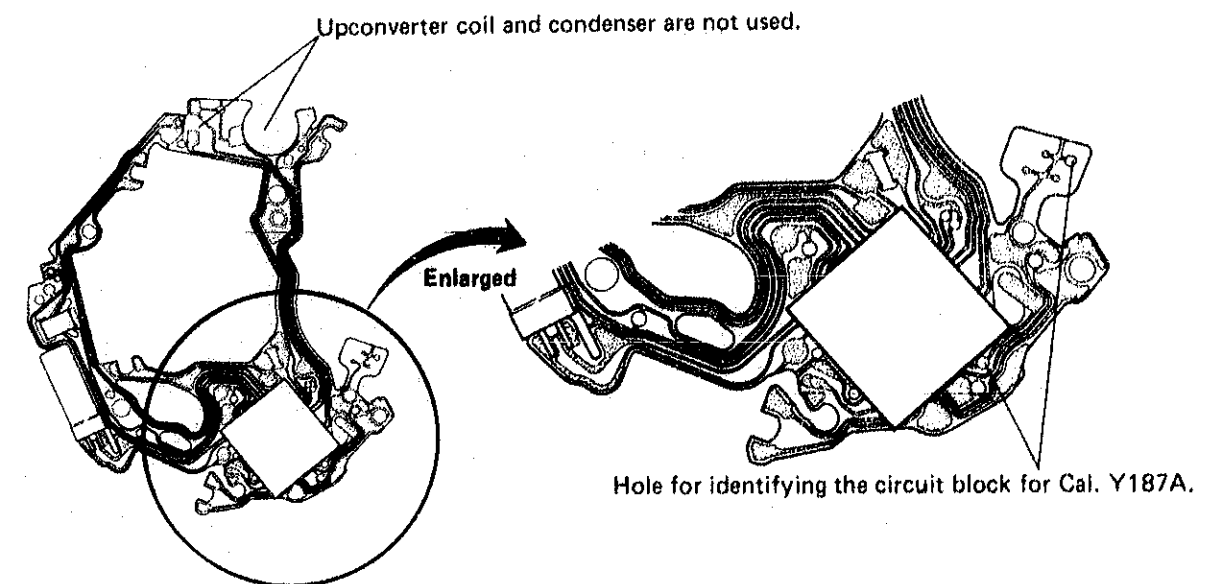
Combination

Parts name Type*	Hour wheel	Second-counting wheel	Center wheel and pinion
M	271 593	888 580	221 580
S	271 582	888 581	221 582

* Abbreviation (Movement type)
M Standard type
S Short type

- ㉓ Circuit block

The circuit block doesn't have an upconverter coil and condenser.

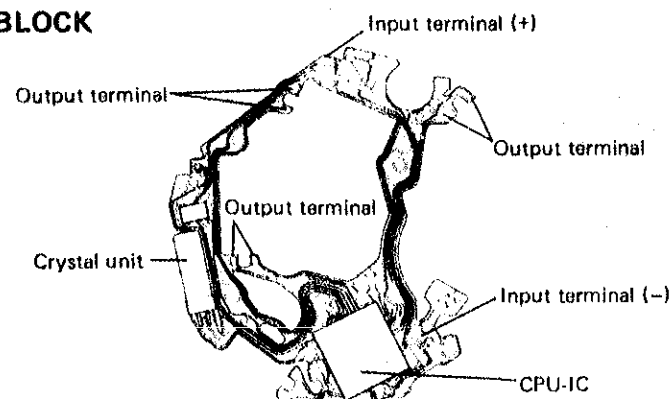


- ㉔ Winding stem 351 580

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

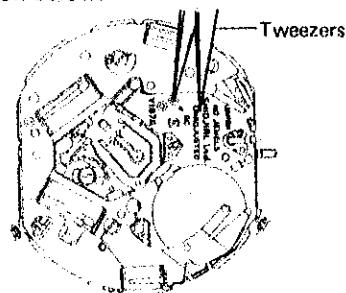
- The explanation here is only for the particular points of Cal. Y187A.
- For the repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

I. STRUCTURE OF THE CIRCUIT BLOCK



II. REMARKS ON INSTALLING THE BATTERY

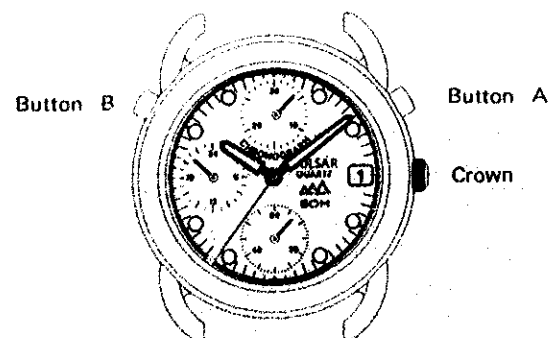
- A necessary step after installing the battery
- After the battery is replaced with a new one, or after the battery is re-installed following the repairing procedures, be sure to short-circuit the AC terminal and the circuit block cover with tweezers to reset the circuit as shown in the illustration below.



- After resetting the circuit, be sure to reset the stopwatch hands to the 12 o'clock position.

- 1) Pull out the crown at the 3 o'clock side to the second click.
- 2) Press button "B" to reset the stopwatch second hand to "0".
- 3) Press button "A" to reset the stopwatch minute hand to "0".

*With each press of buttons "B" and "A", the stopwatch second and minute hands move 0.2 seconds and 0.5 minutes, respectively. They move automatically while the buttons are kept pressed and stop when they are released.



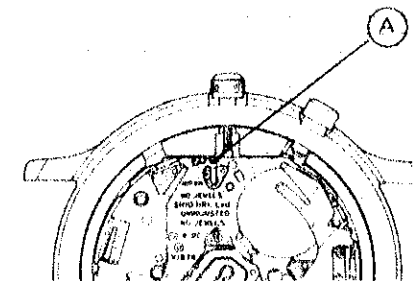
III. REMARKS ON DISASSEMBLING AND REASSEMBLING

Use the universal movement holder for disassembling and reassembling.

- ⑦ Winding stem with crown

• How to remove

Pull out the crown to the first click, and then push the setting lever by inserting the tip of tweezers into hole "A" in the illustration below.



- ⑨ Stopwatch second hand
- ⑩ Minute hand
- ⑪ Hour hand
- ⑫ 24-hour hand
- ⑬ Stopwatch minute hand
- ⑭ Small second hand

• How to install

- 1) Pull out the crown to the second click.
- 2) Install the small second hand, checking that it accurately points to the second scale on the dial.
- 3) Install the stopwatch minute hand, checking that it accurately points to the stopwatch minute scale on the dial.
- 4) Turn the crown clockwise until the date changes.
- 5) Install the 24-hour hand, checking that it accurately points to the 24-hour scale.
- 6) Turn the crown counterclockwise to move back the 24-hour hand to 23:00.
- 7) Turn the crown slowly clockwise to set the 24-hour hand exactly at the 24 o'clock position.
- 8) Gently install the hour hand at the 12 o'clock position, taking care not to give any shock to the movement.
- 9) Install the minute hand.
- 10) Install the stopwatch second hand at the 12 o'clock position.
- 11) Check that there are proper clearances among the hands and that they accurately point to the corresponding scales.

TECHNICAL GUIDE

Cal. Y187A

15 Dial

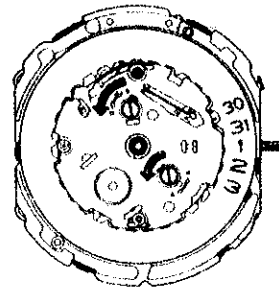
• How to install

When installing the dial, make sure that its center is securely set at the proper position.

17 Pin for date dial guard

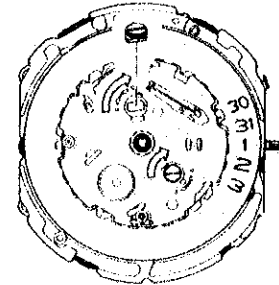
• How to remove

- 1) Turn the pins 90° counterclockwise to loosen them using a screwdriver.
- 2) Remove the pins with tweezers.



• How to install

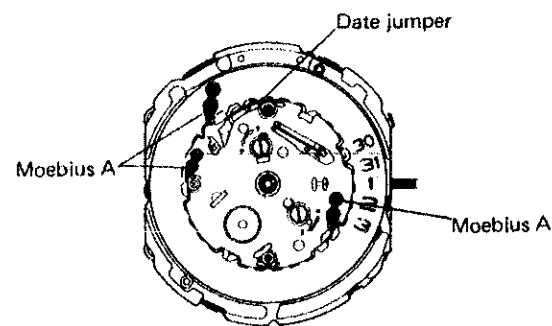
- 1) Set the pins properly into the grooves.
- 2) Turn the pins 90° clockwise using a screwdriver to fix them.



- Notes:**
- Never turn the pins more than 90° clockwise or counterclockwise.
 - Never apply undue force to the pins in turning them using a screwdriver.
 - Be sure to use a screwdriver that fits in with the slot of the pin head.

• Lubricating

Lubricate the date jumper and the tips of the date dial as shown in the illustration below.



TECHNICAL GUIDE

Cal. Y187A

26 Hour wheel

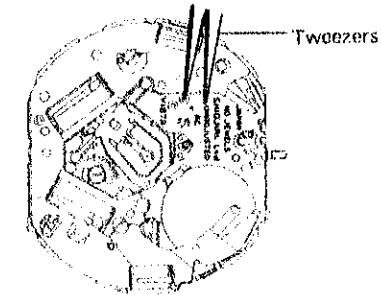
• Remarks on installing

When installing the hour wheel, be sure to engage it securely with the pinion of the minute wheel.

29 Battery

• Remarks on installing

After installing the battery, be sure to reset the circuit with tweezers as shown in the illustration below.

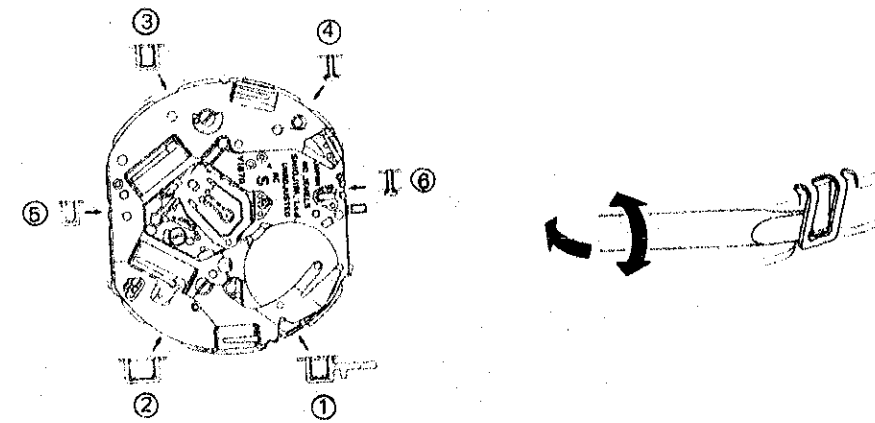


30 Circuit block cover

- Disassembling procedures ① → ⑥
- Reassembling procedures ⑥ → ①

• How to install

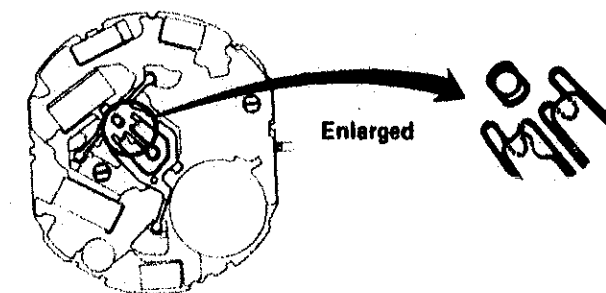
Be sure to install the circuit block cover securely at the hooking portion of the main plate.



31 Friction spring for second-counting

• Setting position

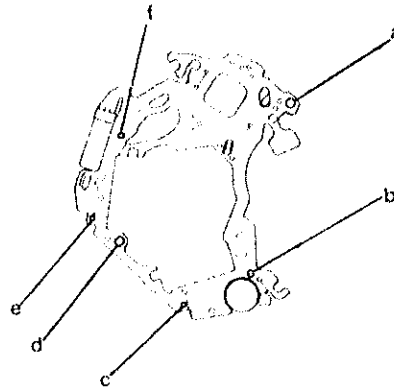
Slip the friction spring for second-counting into the gap under the train wheel bridge.



32 Circuit block

• How to install

Set the guide holes (a ~ f in the illustration) of the circuit block securely onto the corresponding collars of the train wheel bridge.



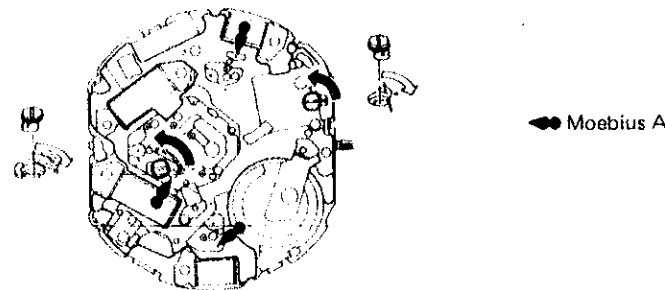
34 Pin for train wheel bridge

• How to remove

Turn the pin 90° counterclockwise to loosen them, and remove them with tweezers.

• How to install

Set the pins properly into the groove as shown in the illustration, and turn them 90° clockwise with a screwdriver to fix them.



- Notes:**
- Never turn the pins more than 90° clockwise or counterclockwise.
 - Never apply undue force to the pins in turning them using a screwdriver.
 - Be sure to use a screwdriver that fits in with the slot of the pin head.

• Lubricating of the upper pivot for rotor

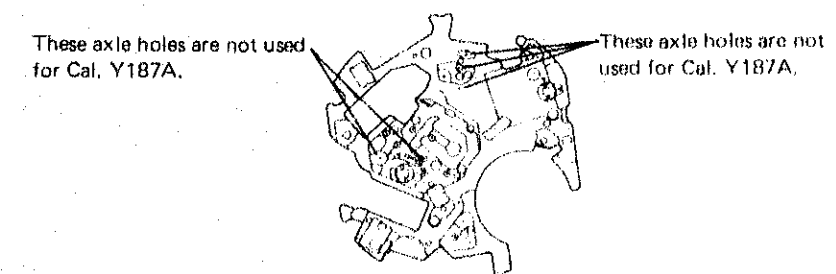
After installing the train wheel bridge, lubricate the step rotor, chronograph rotor for minute and chronograph rotor for second.

35 Train wheel bridge

• Remarks on installing

- Before installing the train wheel bridge, check if the wheels are set in the proper position. Also, check if their lower pivots are securely set in position using tweezers.
- Check that the pinion of each rotor securely engages with the proper gear, so that the upper pivots can be easily set in position when the train wheel bridge is installed.
- To set the upper pivots in position, first use a microscope and hold slightly down the train wheel bridge with tweezers. Then, lightly shake the train wheel bridge so that the pivots are put into position.

- Notes:**
- If the upper pivots cannot be set smoothly into the train wheel bridge, check the following points.
 - 1) Check if the lower pivot of each wheel is set in position.
 - 2) Check if the pinion of each rotor securely engages with the proper gear.
 - Do not press down the train wheel bridge forcibly.
 - Note that some of the axle holes are not used, depending on calibres. For Cal. Y187A, the axle holes indicated in the illustration are not used.

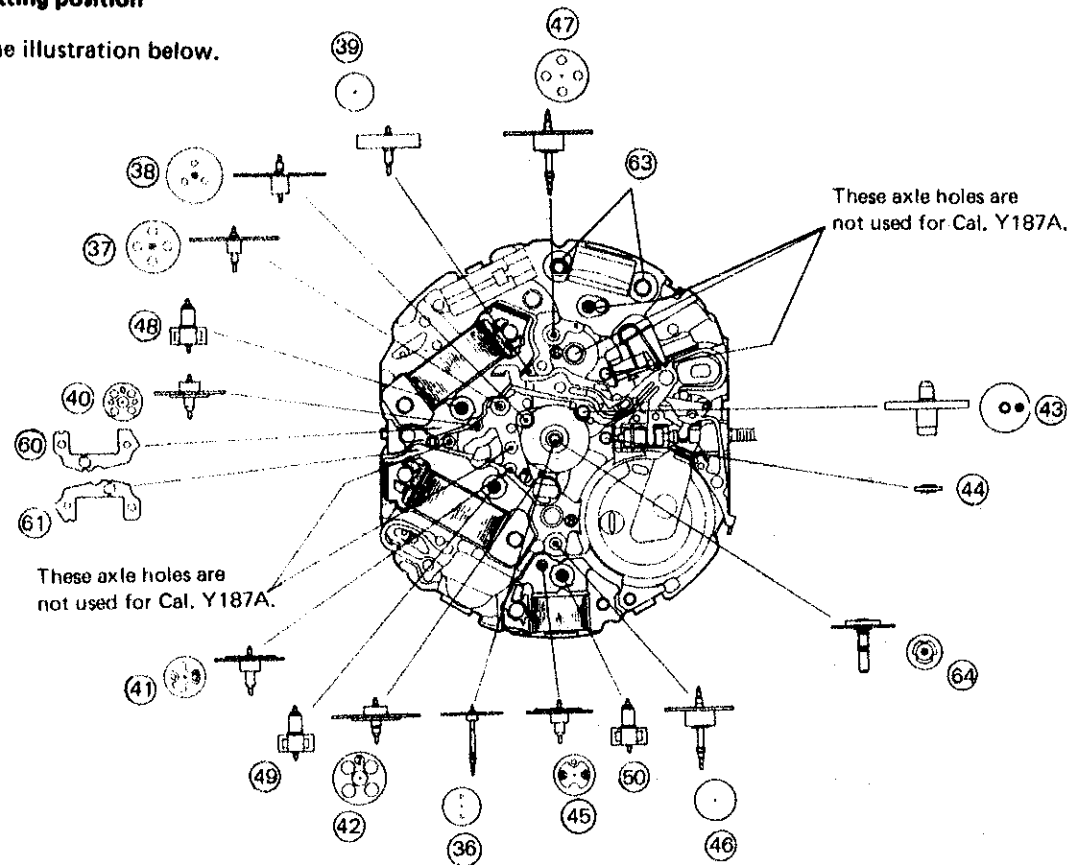


③⑥ Second-counting wheel ~ ⑤⑩ Chronograph rotor for minute

After disassembling the wheels and rotors, arrange them as indicated in the illustration below to facilitate the reassembling procedures. However, the rotors should be kept separately from each other, as they emit magnetism.

● Setting position

Set the illustration below.



[Reassembling procedures]

● Reassemble the parts below in the following order.

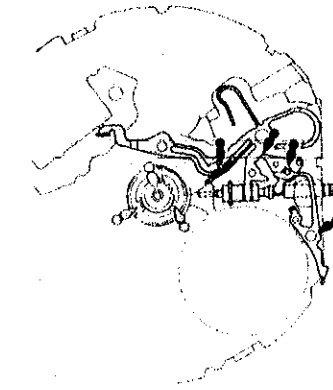
- | | |
|---|---|
| 1) ⑤⑩ 4146 700
Chronograph rotor for minute
(Plastic: white) | 9) ④② 885 581
Second intermediate wheel for second-counting (Plastic: green) |
| 2) ④⑨ 4146 700
Chronograph rotor for second
(Plastic: white) | 10) ④① 885 580
First intermediate wheel for second-counting (Plastic: white) |
| 3) ④⑧ 4146 700
Step rotor (Plastic: white) | 11) ④⑦ 701 580
Fifth wheel and pinion (Plastic: green) |
| 4) ④⑦ 240 580
Small second wheel (Metal: gold) | 12) ③⑨ 817 582
Intermediate small second wheel
(Metal: silver) |
| 5) ④⑥ 902 580
Minute-counting wheel (Metal: gold) | 13) ③⑧ 231 580
Third wheel and pinion (Metal: gold) |
| 6) ④⑤ 950 580
Intermediate minute-counting wheel
(Plastic: white) | 14) ③⑦ 241 583
Fourth wheel and pinion (Metal: gold) |
| 7) ④④ 281 580
Setting wheel (Metal: silver) | 15) ③⑥ 888 580
Second-counting wheel (Metal: gold) |
| 8) ④③ 281 580
Minute wheel (Plastic: white) | |

* The numerals inscribed on the main plate and plastic wheels refer to the block No.

⑤④ Switch lever A

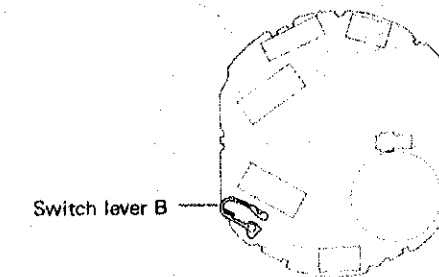
⑥④ Center wheel and pinion

● Setting position and lubricating



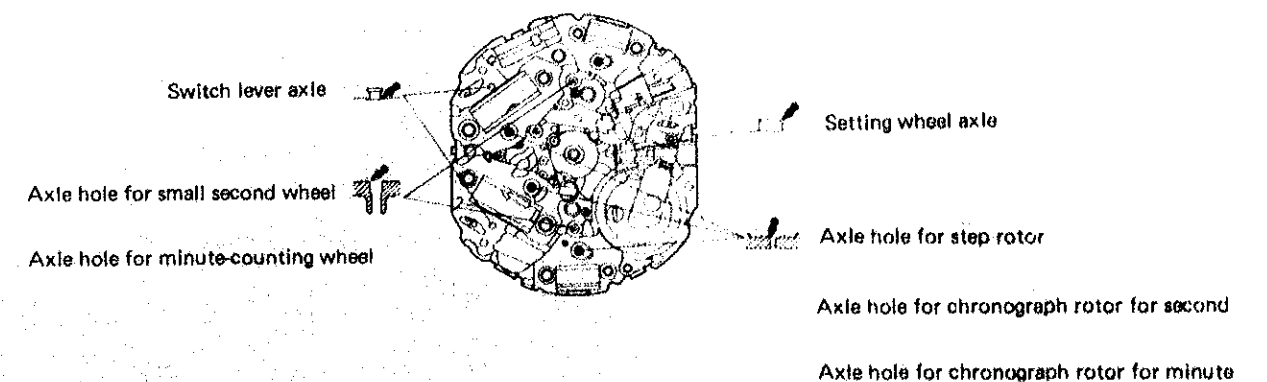
⑥⑤ Switch lever B

● Setting position

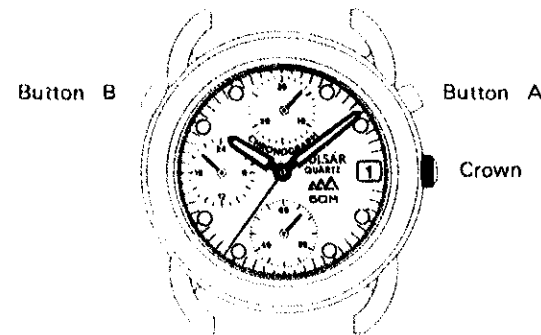


⑥⑥ Main plate

● Lubricating



IV. CHECKING OF THE FUNCTIONS



• ϕ -reset adjustment of the chronograph hands

- 1) Pull out the crown all the way to the second click.
- 2) Press button "B" to reset the stopwatch second hand to "0".
- 3) Press button "A" to reset the stopwatch minute hand to "0".

* With each press of buttons "B" and "A", the stopwatch second and minute hands move 0.2 seconds and 0.5 minutes, respectively. They move automatically while the buttons are kept pressed and stop if they are released.

• Checking of the stopwatch function

- 1) Push back the crown in to the normal position.
- 2) Press button "A" repeatedly to check if the stopwatch hands start and stop with each press of the button.
- 3) Press button "A" to stop the stopwatch, and then, press button "B" to check if the stopwatch second and minute hands reset to "0".
- 4) Press button "A" to start the stopwatch second hand, and then, press button "B" to check if the stopwatch second hand stops. After that, press button "B" again to check if the stopwatch second hand automatically advances the time elapsed while it was stopped and resumes the measurement.

* If the crown is pulled out all the way to the second click while the stopwatch is in use, the measurement is stopped and the stopwatch second and minute hands return to "0". However, even if the crown is pulled out to the first click to change the date, the stopwatch will not stop measuring.

V. VALUE CHECKING

• Coil block resistance

Coil block for chronograph minute :	1.8K Ω ~ 2.4K Ω
Coil block for chronograph second :	2.0K Ω ~ 2.6K Ω
Coil block :	2.0K Ω ~ 2.6K Ω

• Current consumption

Before measuring current consumption, be sure to reset the circuit.
* Refer to "A necessary step after installing the battery" on page 7.

For the whole of the movement

Time mode :	less than 2.5 μ A
Stopwatch mode :	less than 9.5 μ A

For the circuit block alone

Time mode :	less than 1.8 μ A
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• Time accuracy

When measuring the accuracy, make sure that the stopwatch is stopped. Otherwise, the accuracy cannot be measured.