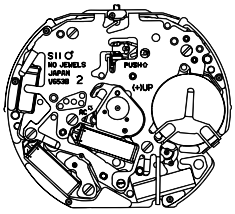
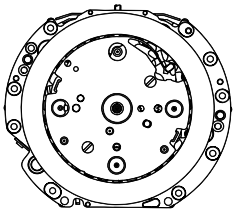
PARTS CATALOGUE / TECHNICAL GUIDE

Cal. V653B

[SPECIFICATIONS]

Item \ Cal. No.		V653B
Movement		  (x 1.0)
Movement size	Outside diameter	ø29.5 mm 26.0 mm between 3 o'clock and 9 o'clock sides
	Casing diameter	ø28.8 mm
	Height	3.7 mm (Including the battery portion)
Time/calendar indication		• Three hands (hour, minute and second hands) • Chronograph hands (minute and second hands) • 24-hour hand • Date calendar
Driving system		Step motor (2 pcs.)
Additional mechanism		• Date calendar • Instant setting device for date calendar • Stopwatch function · Measures up to 60 minutes in 1 second increments · Split time measurement • Train wheel setting device • Electronic circuit reset switch • Demonstration movement of the hands
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	Battery No.	SEIKO SR920SW
	Voltage	1.55 V
	Battery life	Approx. 2 years

PARTS CATALOGUE

Cal. V653B

Disassembling procedures Figs. : (1) → (50)

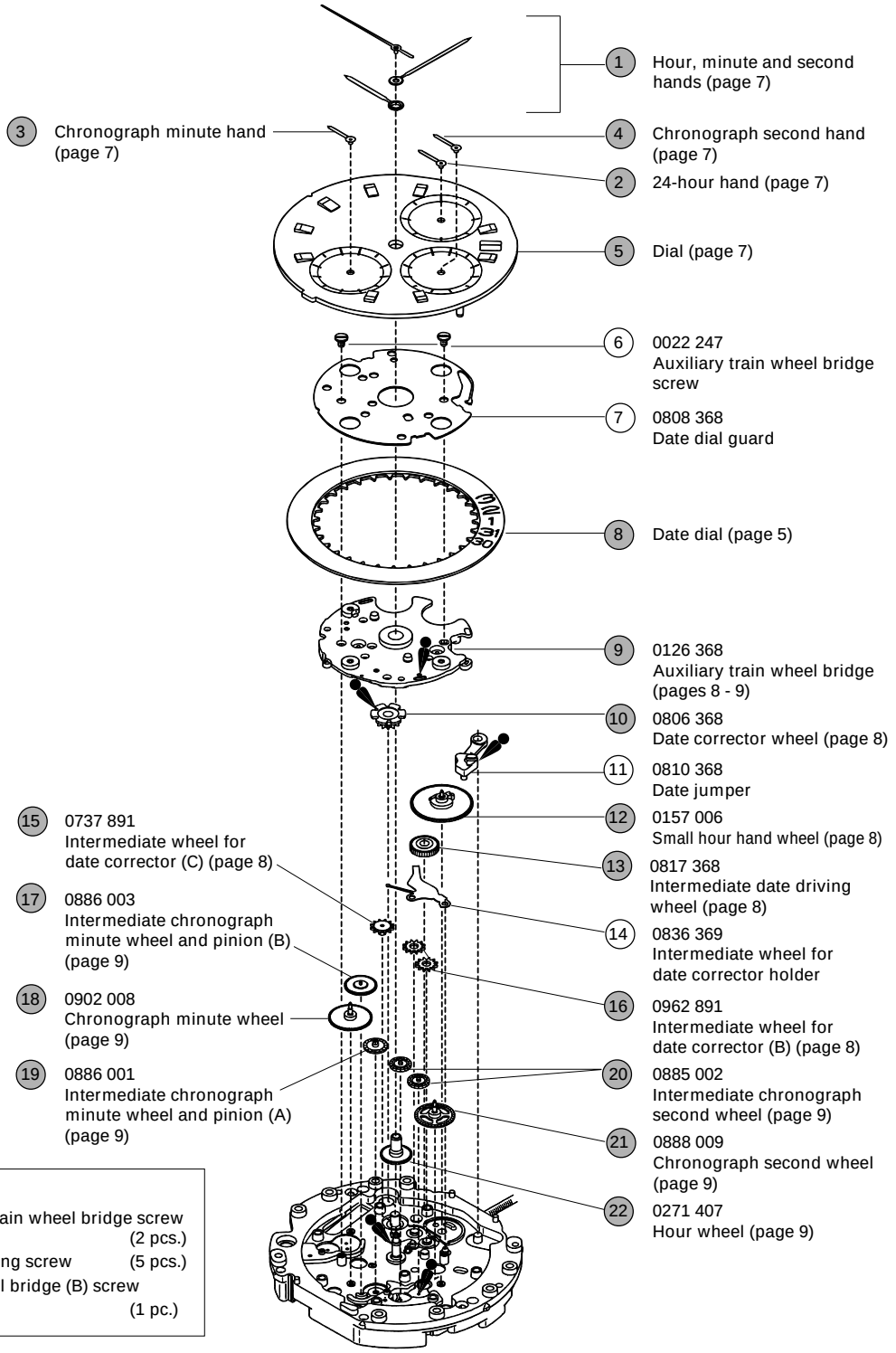
Reassembling procedures Figs. : (50) → (1)

Lubricating: Types of oil

- Moebius A
- Moebius V
- Moebius F

Oil quantity

- Normal quantity



1 Hour, minute and second hands (page 7)

2 24-hour hand (page 7)

3 Chronograph minute hand (page 7)

4 Chronograph second hand (page 7)

5 Dial (page 7)

6 0022 247
Auxiliary train wheel bridge screw

7 0808 368
Date dial guard

8 Date dial (page 5)

9 0126 368
Auxiliary train wheel bridge (pages 8 - 9)

10 0806 368
Date corrector wheel (page 8)

11 0810 368
Date jumper

12 0157 006
Small hour hand wheel (page 8)

13 0817 368
Intermediate date driving wheel (page 8)

14 0836 369
Intermediate wheel for date corrector holder

15 0737 891
Intermediate wheel for date corrector (C) (page 8)

16 0962 891
Intermediate wheel for date corrector (B) (page 8)

17 0886 003
Intermediate chronograph minute wheel and pinion (B) (page 9)

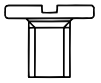
18 0902 008
Chronograph minute wheel (page 9)

19 0886 001
Intermediate chronograph minute wheel and pinion (A) (page 9)

20 0885 002
Intermediate chronograph second wheel (page 9)

21 0888 009
Chronograph second wheel (page 9)

22 0271 407
Hour wheel (page 9)

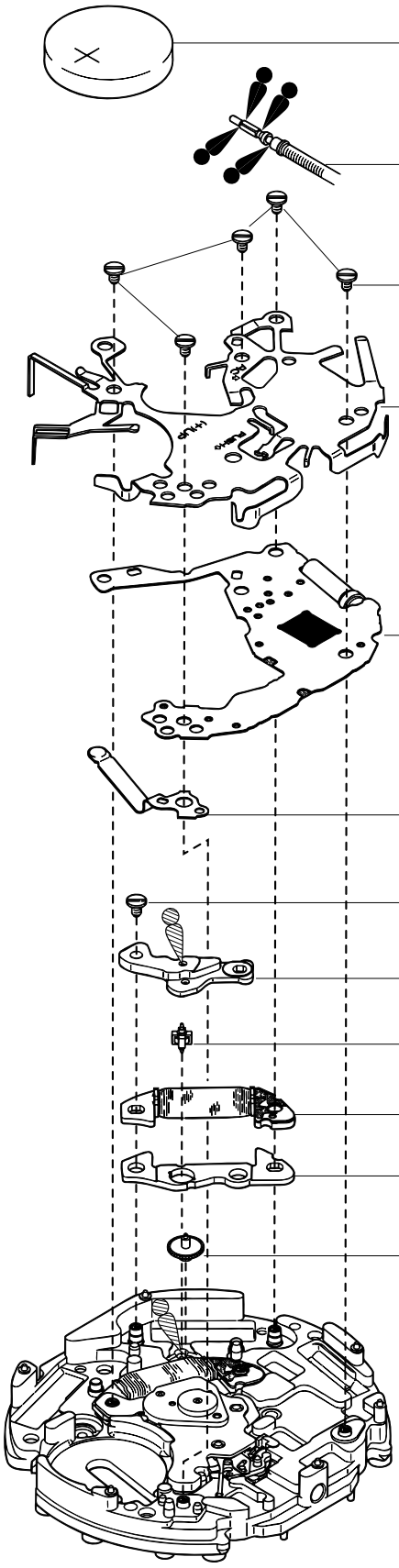


0022 247
- Auxiliary train wheel bridge screw (2 pcs.)
- Switch spring screw (5 pcs.)
- Train wheel bridge (B) screw (1 pc.)

Please see the page shown after the part name.

PARTS CATALOGUE

Cal. V653B



23 Battery
(pages 1 and 9)

24 Winding stem (pages 5 and 10)

25 0022 247
Switch spring screw

26 4245 349
Switch spring

27 4003 348
Circuit block

28 4270 357
Battery connection (–)

29 0022 247
Train wheel bridge (B) screw

30 0125 331
Train wheel bridge (B) (page 10)

31 4146 177
Step rotor (B)

32 4002 923
Coil block (B)

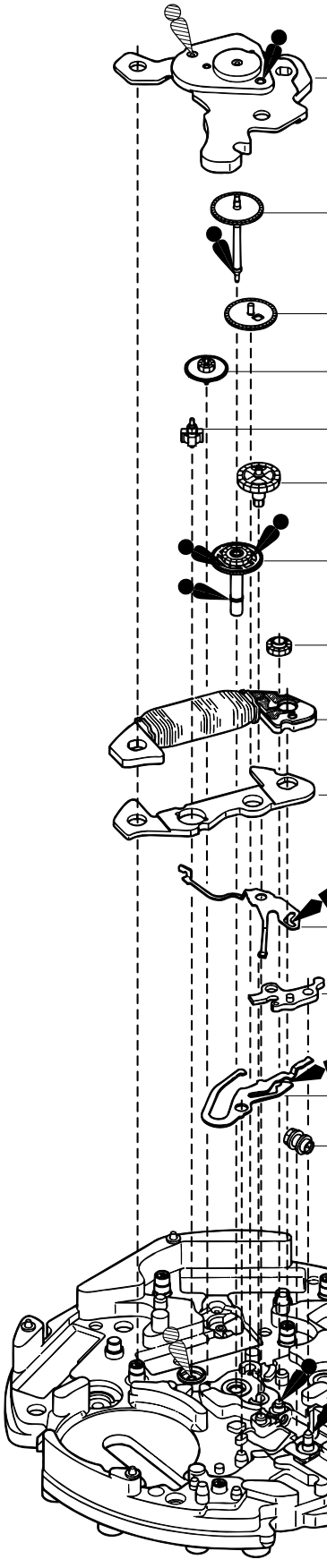
33 4239 357
Rotor stator (B)

34 0701 014
Fifth wheel and pinion (B)

● ⇨ Please see the page shown after the part name.

PARTS CATALOGUE

Cal. V653B



35 0125 248
Train wheel bridge (A) (page 10)

36 0241 178
Fourth wheel and pinion

37 0231 904
Third wheel and pinion

38 0701 904
Fifth wheel and pinion (A)

39 4146 890
Step rotor (A)

40 0261 176
Minute wheel and pinion

41 0221 157
Center wheel and pinion

42 0281 904
Setting wheel

43 4002 904
Coil block (A)

44 4239 357
Rotor stator (A)

45 0391 368
Train wheel setting lever (page 12)

46 0383 368
Setting lever (page 12)

47 0384 470
Yoke (page 12)

48 0282 890
Clutch wheel

49 0962 890
Intermediate wheel for
date corrector (A) (page 8)

50 Main plate

● ⇨ Please see the page shown after the part name.

PARTS CATALOGUE

Cal. V653B

Remarks:

(8) Date dial

Part code	Position of crown	Position of calendar frame	Color of figure	Color of background
0878 220	3 o'clock	4 o'clock	Black	White

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

(24) Winding stem 0351 880

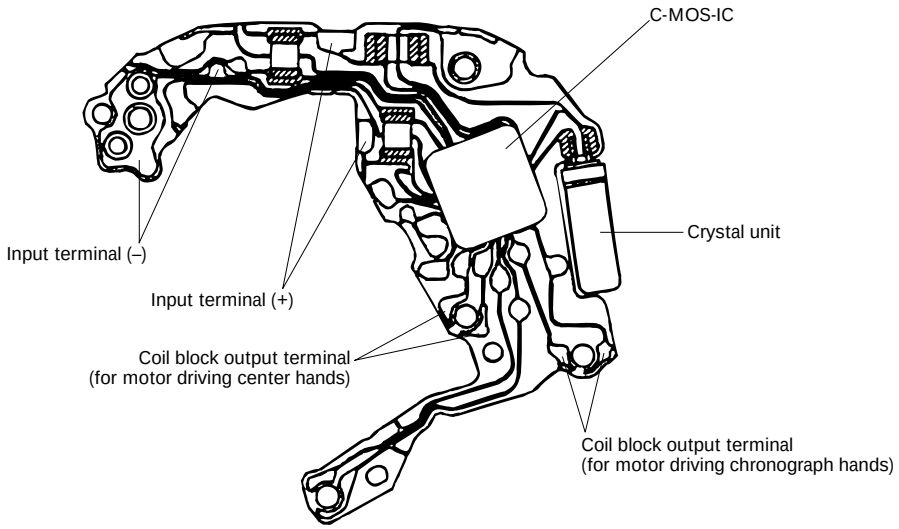
The type of winding stem is determined based on the design of cases.
Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.

TECHNICAL GUIDE

Cal. V653B

- The explanation here is only for the particular points of Cal. V653B.
- For the repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

I. STRUCTURE OF THE CIRCUIT BLOCK



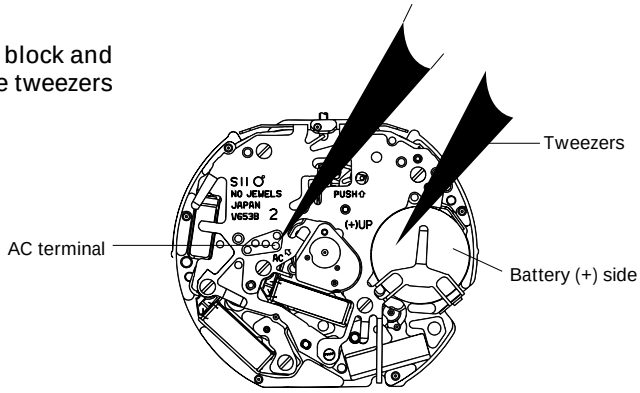
II. REMARKS ON INSTALLING THE BATTERY

After the battery is replaced with a new one, or after the battery is re-installed following the repairing procedures, be sure to follow either of the two methods below to reset the circuit.

- **METHOD 1**

  To reset the circuit of a movement:

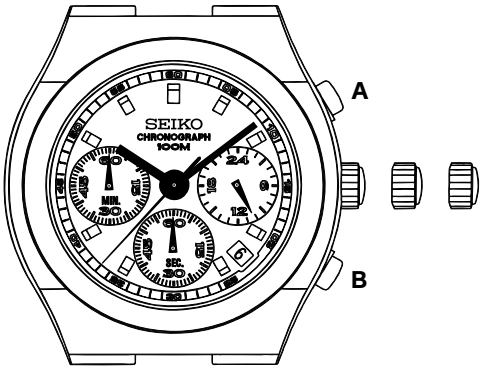
  Short-circuit the AC terminal of the circuit block and the battery positive surface with conductive tweezers as illustrated at right.



- **METHOD 2**

  To reset the circuit of a complete watch:

  1) Pull out the crown to the second click.
  2) Press and hold buttons “A” and “B” at the same time for approximately 2 seconds.
     * The chronograph second hand turns half a circle counterclockwise and returns where it was.
  3) Press button “A” or “B” repeatedly to reset the chronograph second and minute hands to the “0” position.
     * The chronograph minute hand moves correspondingly with the chronograph second hand.
     * The hands move quickly if the respective buttons are kept pressed.
  4) Turn the crown to set the desired time and push the crown back in to the normal position.



III. REMARKS ON DISASSEMBLING AND REASSEMBLING

Use the universal movement holder for disassembling and reassembling.

(1) Hour, minute and second hands

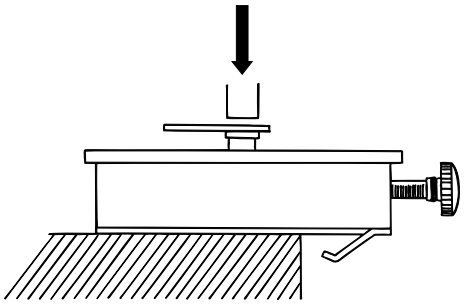
(2) 24-hour hand

(3) Chronograph minute hand

(4) Chronograph second hand

- **How to install**

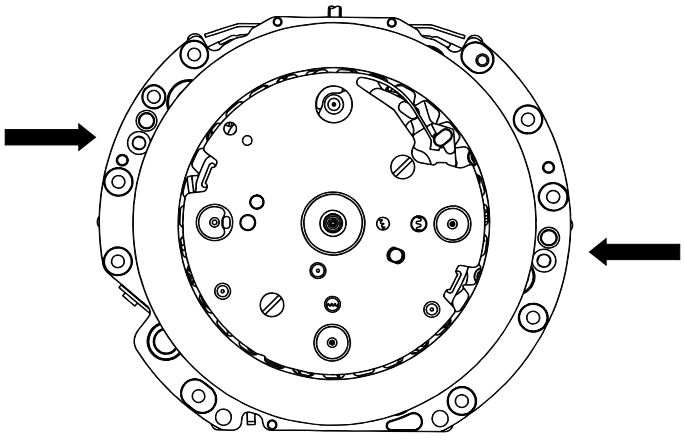
  Since the plastic main plate is used, place the movement on a flat metal plate or the like, and then install the hands.



(5) Dial

- **How to remove**

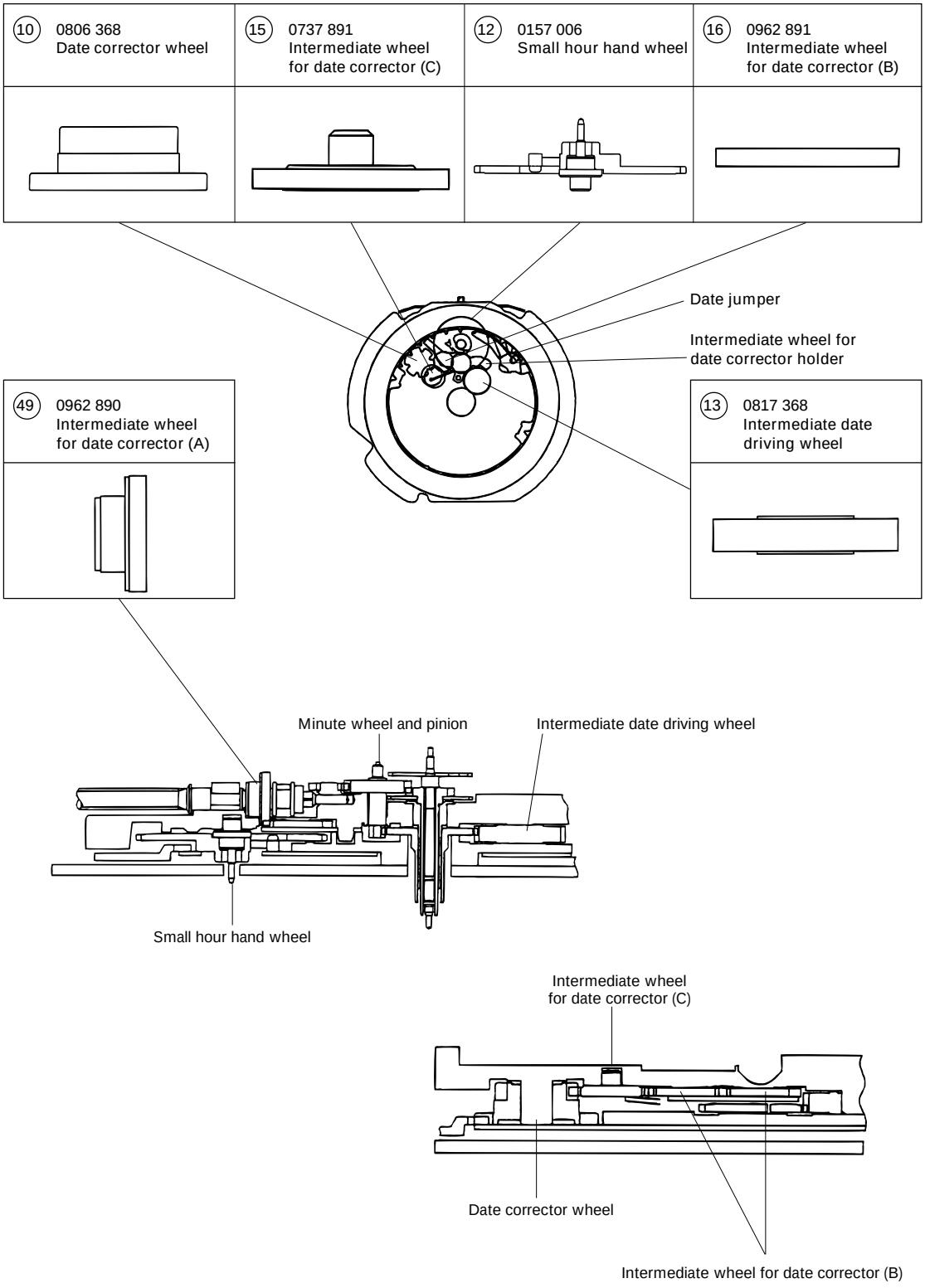
  Pry up the dial at the two recessed portions indicated in the illustration using a screwdriver.



⑨ Auxiliary train wheel bridge

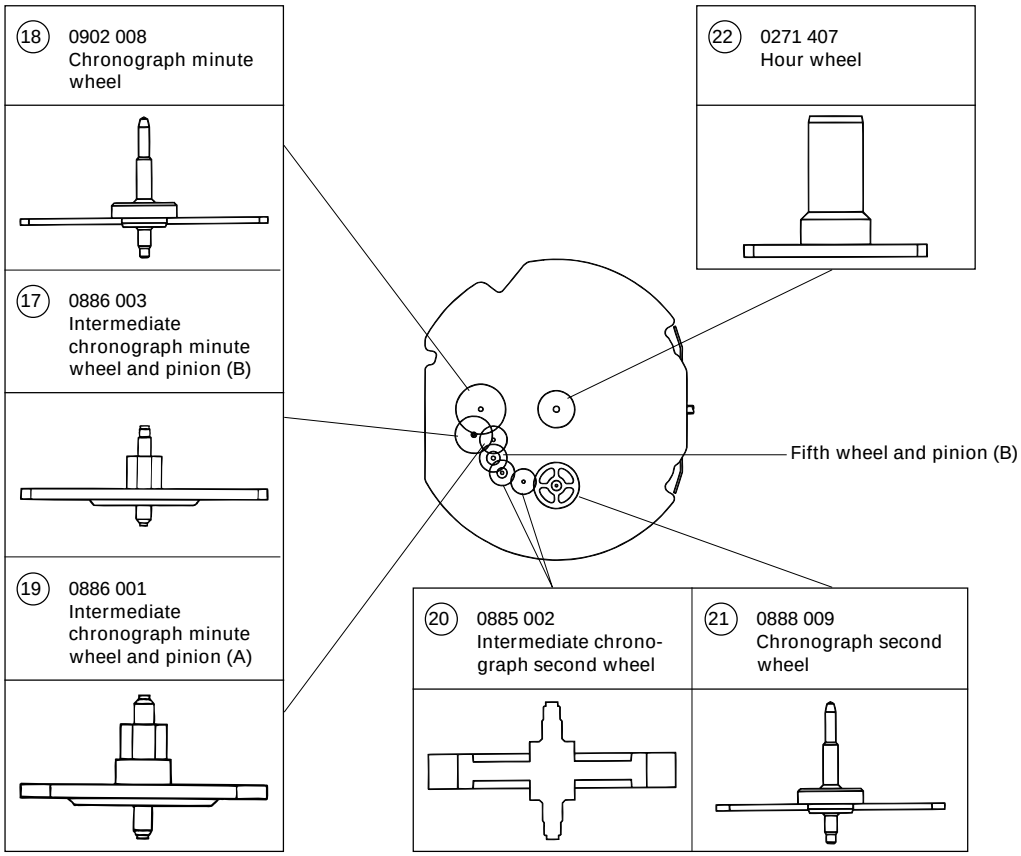
- **Setting position**

  Refer to the illustrations below to check where to install the respective wheels.



(9) Auxiliary train wheel bridge

- **Setting position (Stopwatch mechanism)**



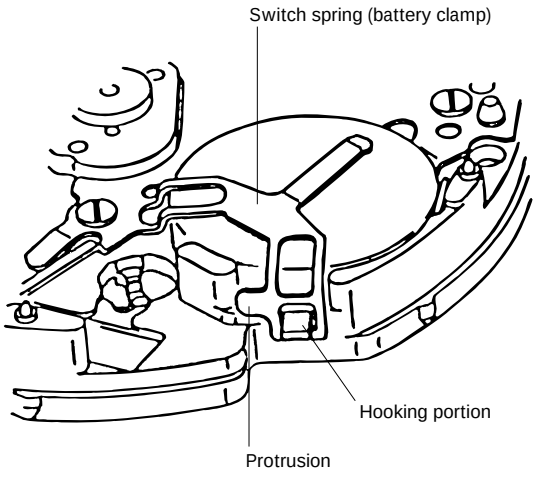
(23) Battery

- **How to remove**

  Using tweezers, catch the protrusion of the switch spring indicated in the illustration below, and detach the hooking portion from the main plate. Then, remove the battery.

- **How to install**

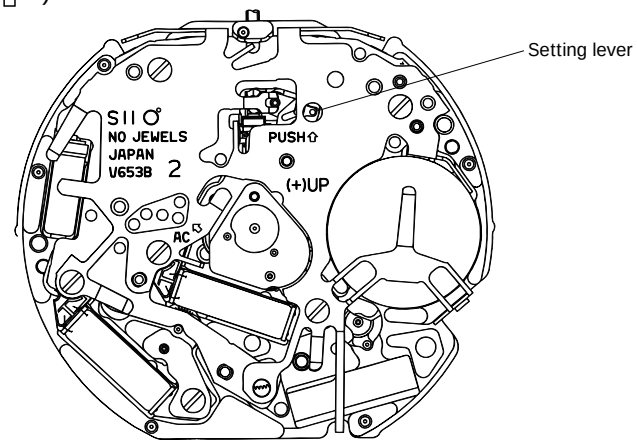
  Slip the battery sideways into the gap under the battery clamp of the switch spring. Then, push the battery clamp so that the hooking portion catches the main plate securely.



(24) Winding stem

- **How to remove**

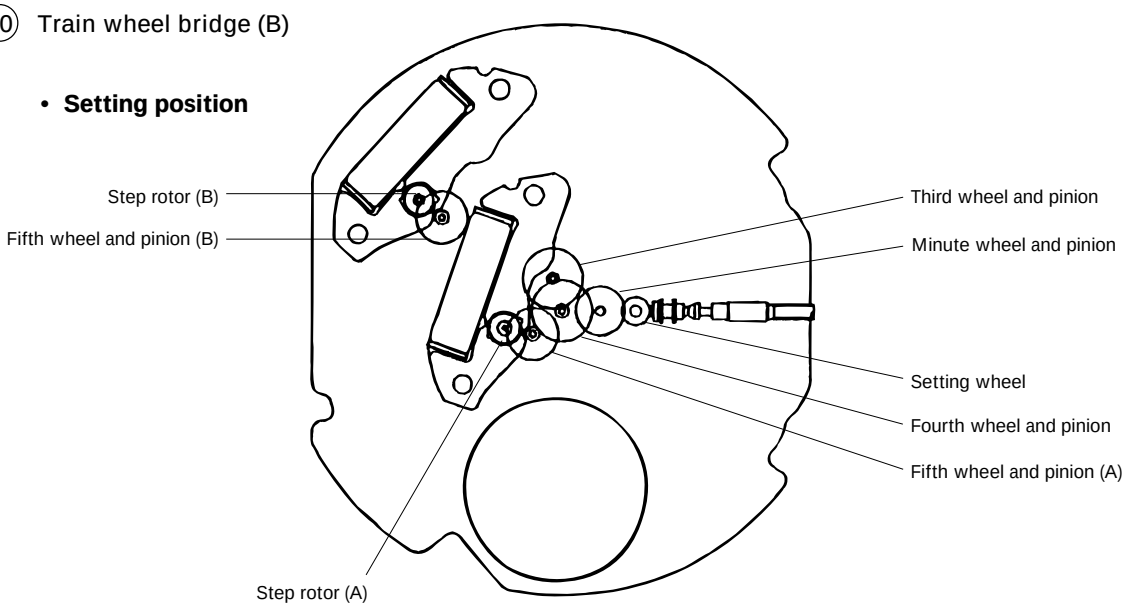
Remove the winding stem with the crown at the normal position while pushing the setting lever (marked with “PUSH ⇧ “).



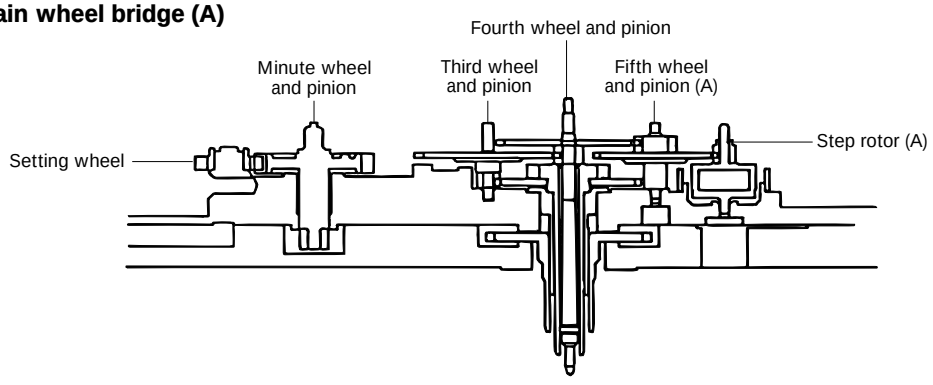
(35) Train wheel bridge (A)

(30) Train wheel bridge (B)

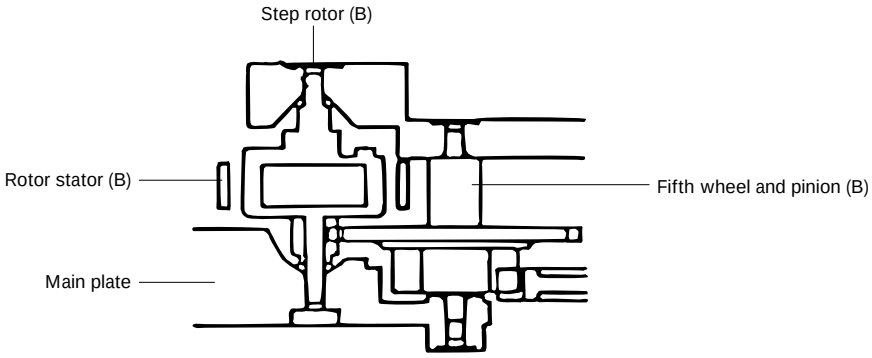
- **Setting position**



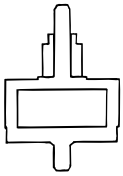
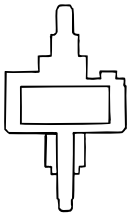
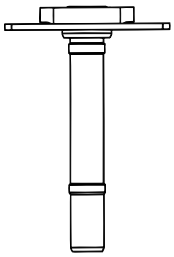
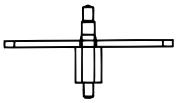
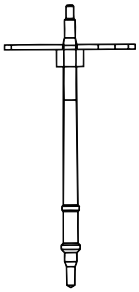
- **Train wheel bridge (A)**

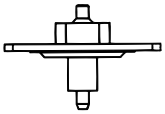
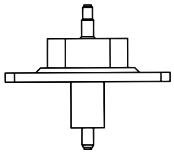
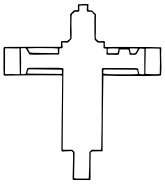
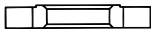


- **Train wheel bridge (B)**



- **Distinction of wheels**

Parts	Step rotor (A)	Step rotor (B)	Center wheel and pinion	Third wheel and pinion	Fourth wheel and pinion
Shape					
Parts No.	4146 890	4146 177	0221 157	0231 904	0241 178

Parts	Fifth wheel and pinion (A)	Fifth wheel and pinion (B)	Minute wheel and pinion	Setting wheel
Shape				
Parts No.	0701 904	0701 014	0261 176	0281 904

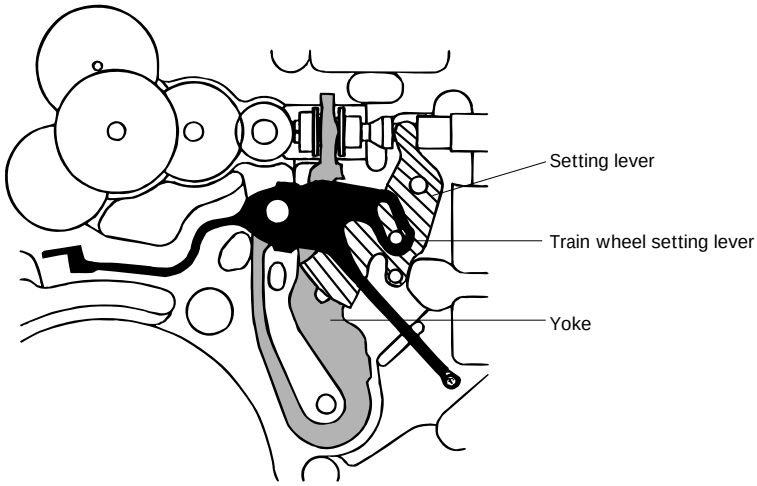
Note: Reassemble the step rotor (B) with its pinion facing the main plate side.

(45) Train wheel setting lever

(46) Setting lever

(47) Yoke

- **Setting position**



Note: Take care not to deform the spring portion of the yoke.

IV. VALUE CHECKING

● Coil block resistance

Coil block (A) : 0.9 KΩ ~ 1.3 KΩ
Coil block (B) : 1.2 KΩ ~ 1.6 KΩ

● Time accuracy

When measuring time accuracy, make sure that the stopwatch is stopped. Otherwise, correct accuracy cannot be obtained.

● Current consumption

For the whole movement : Less than 2.8 μA
For the circuit block alone : Less than 1.4 μA

Notes:

* Before measuring the current consumption, short-circuit the AC terminal of the circuit block and battery positive surface with conductive tweezers.
* When the current consumption for the whole movement exceeds the standard value while the current consumption for the circuit block alone is within the standard value range, a driving pulse may be generated to compensate for the heavy load applied on the gear train, etc. In that case, overhaul and clean the movement parts, and then, measure the current consumption for the whole movement again.