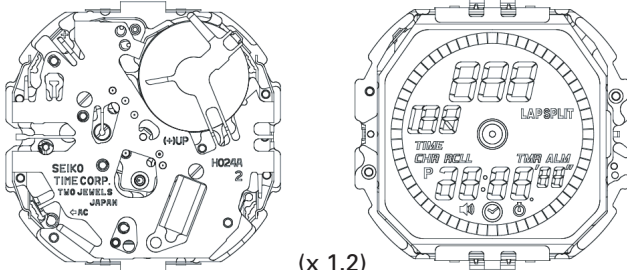


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. H024A

[SPECIFICATIONS]

Item		Cal. No.	H024A
Movement			
Movement size	Outside diameter	ø31.0 mm 29.0 mm between 3 o'clock and 9 o'clock sides 28.5 mm between 12 o'clock and 6 o'clock sides	
	Casing diameter	ø30.0mm 29.0 mm between 3 o'clock and 9 o'clock sides 28.5 mm between 12 o'clock and 6 o'clock sides	
	Height	5.5 mm	
Time indication		Analogue section	Digital section
		2 hands (Hour and minute hands)	Nematic Liquid Crystal, FEM (Field Effect Mode)
Driving system		Step motor, 1 piece	Multiplex driving system
Display system		<ul style="list-style-type: none"> • Time display <ul style="list-style-type: none"> • Hour and minute hands, two hands straight 10-second increments 	<ul style="list-style-type: none"> • Time/calendar display <ul style="list-style-type: none"> • Hour, minute and second • Selection of 12h/24h-format indication • Year, month, date, day of the week and fully automatic calendar between the year 2006 and 2055 • Stopwatch display <ul style="list-style-type: none"> • Hour, minutes, seconds and 1/1000 seconds • Up to 23 hours 59 minutes 59 seconds and 999 • Data recall function • Alarm display <ul style="list-style-type: none"> • Daily alarm (2 channels) • Timer <ul style="list-style-type: none"> • Up to 23 hours and 59 minutes
Additional mechanism		—	<ul style="list-style-type: none"> • Hourly time signal • Alarm test system • Sound for button operation confirmation • Battery life indicator
Loss/gain		Monthly rate within normal temperature range: less than 15 seconds	
Regulation system		Nil	
Measuring gate by quartz tester		Use 10-second gate.	
Battery		SB-BU (SR1130W) Battery life is approximately 3 years. Voltage: 1.55V	
Jewels		2 jewels	





SEIKO WATCH CORPORATION

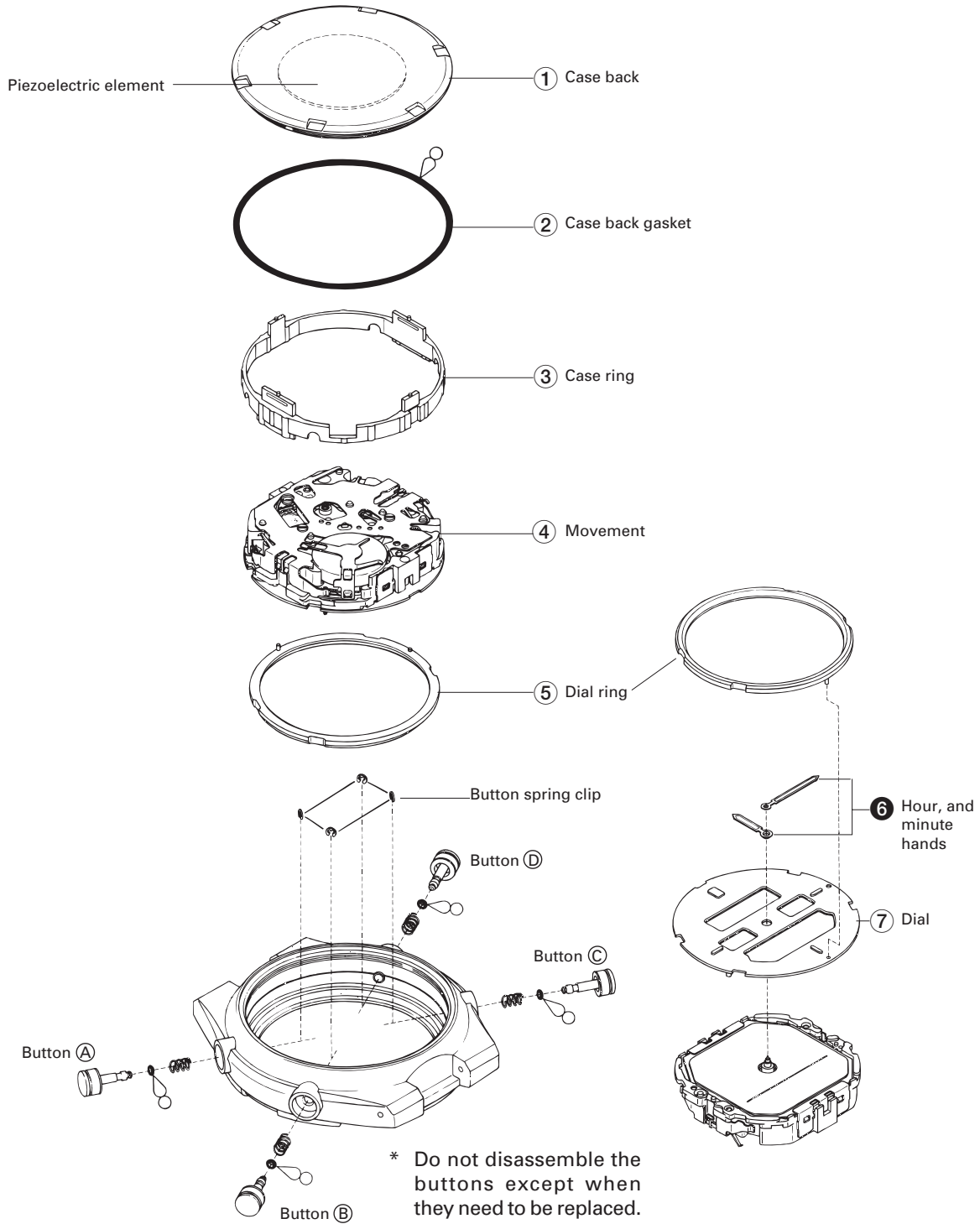
PARTS CATALOGUE

Cal. H024A

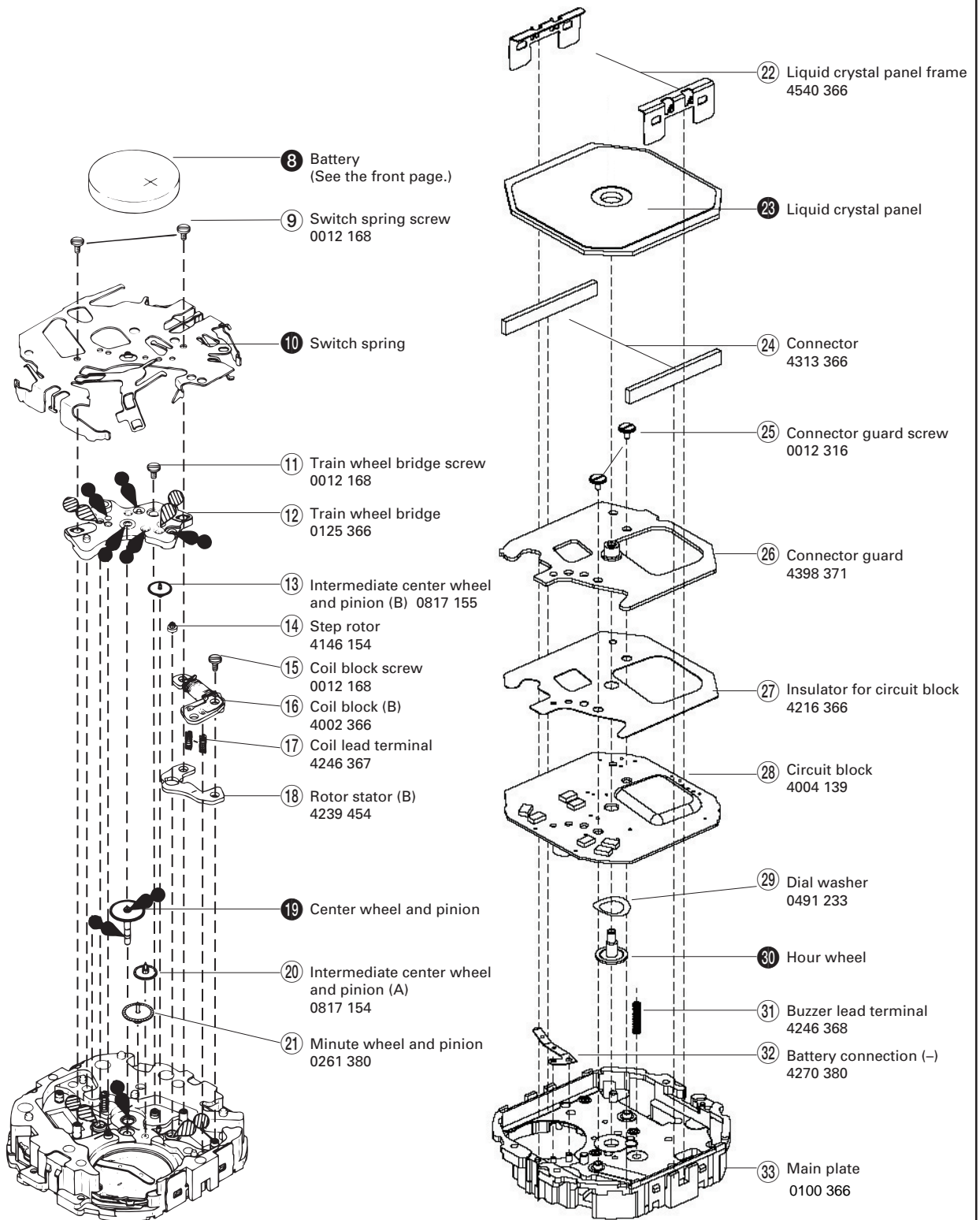
Disassembling procedures Figs. : ① → ③③
 Reassembling procedures Figs. : ③③ → ①



Lubricating : Types of oil Oil quantity

	Moebius A (AO-3)		Normal quantity
	Moebius F (AO-2)		
	Silicone Oil 500,000 c.s.		



● For the part ⑥, please see the remarks on the following pages.



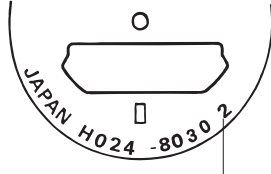
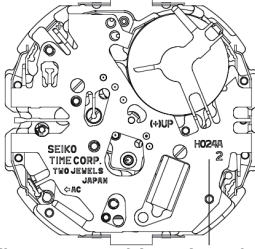
	<p>0012 168</p> <ul style="list-style-type: none"> • Switch spring screw (2 pcs.) • Train wheel bridge screw (1 pc.) • Coil block screw (1 pc.) 		<p>0012 316</p> <ul style="list-style-type: none"> • Connector guard screw (2 pcs.)
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● For the parts 8, 10, 19, 23 and 30, please see the remarks on the following pages.

Remarks

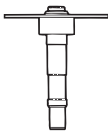

• **Discrimination of the hand installation height**

The caliber H024A has numerals to indicate the hand installation height, which is printed on the dial and movement.

Discrimination	Height	Standard type	Standard type
	Numeral for discrimination	2	2
Printed on		Dial	Movement
Printed position		 <p>The numeral is printed at the right end.</p>	 <p>The numeral is printed below the caliber number.</p>

①⑨ **Center wheel and pinion** ③⑩ **Hour wheel**

These parts are determined by the hand installation height. Refer to the table below to choose the appropriate part.

Numeral for discrimination	①⑨ Center wheel and pinion	③⑩ Hour wheel
2		
Part code	0221 607	0271 489

- In a case where the numeral for discrimination is not printed on the movement (switch spring), see the numeral printed on the dial or refer to the table above to identify each part by its shape.

⑩ **Switch spring (standard type)**
4250 010

②③ **Liquid crystal panel**

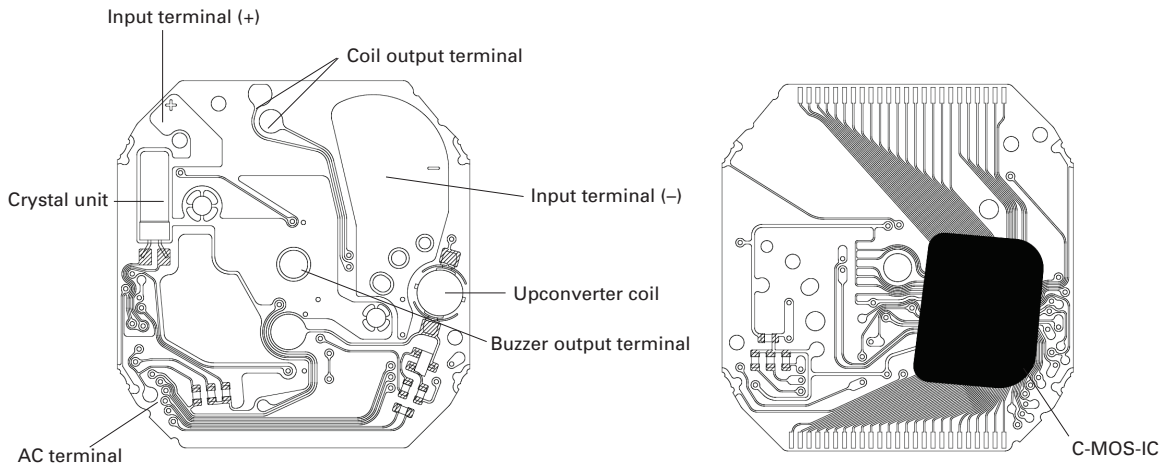
The type of liquid crystal panel differs depending on the model. Refer to "SEIKO Watch Parts Catalogue (CD-ROM)" or "Watch Parts Catalogue (SEIKO Watch Service Site)" to choose the appropriate type of the crystal panel.

● **Piezoelectric element 4589 006**

Piezoelectric element, which is adhered to the case back, can be provided independently.

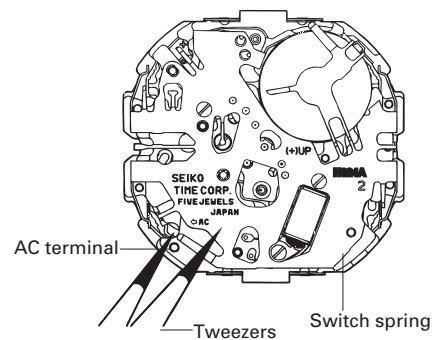
- The explanation here is only for the particular points of Cal. H024A.
- For the repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS."

I. STRUCTURE OF THE CIRCUIT BLOCK



II. REMARKS ON INSTALLING THE BATTERY

1. 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 of the circuit block and the switch spring with conductive tweezers to reset the circuit as illustrated at right.



2. To reset the circuit of the watch with its case back closed, press the buttons "A", "B", "C" and "D" at the same time and hold them for 2 to 3 seconds until the display becomes blank. Then release the buttons and check that the display shows "12:00'00" AM, Sunday, January 1st" .

* Before closing the case back, apply a small quantity of silicon oil to the contact portion of the case back with the buzzer lead terminal (piezoelectric element).

3. Be sure to set the digital time first before setting the analogue time, as the analogue section is governed by the "second" of the digital section.

* For time/calendar setting, refer to the instruction booklet of each caliber.



III. REMARKS ON DISASSEMBLING AND REASSEMBLING

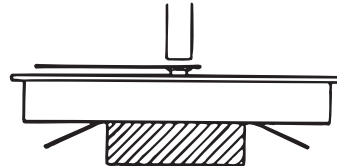
Use the universal movement holder for disassembling and reassembling.

⑥ Hour and minute hands

• Remarks on installing

After installing the battery in the movement, place the movement on a flat metal plate or the like to install the hands.

- * Install the hour and minute hands at the 12 o'clock position within 60 seconds after resetting the circuit.



• Remarks on removing the hands

When using a tool such as a bow-shaped hand remover, exercise care so as not to damage the dial with the tool during the hand removing process. Remove the hands either in the direction of 2 o'clock and 8 o'clock or in the directions of 4 o'clock and 10 o'clock.

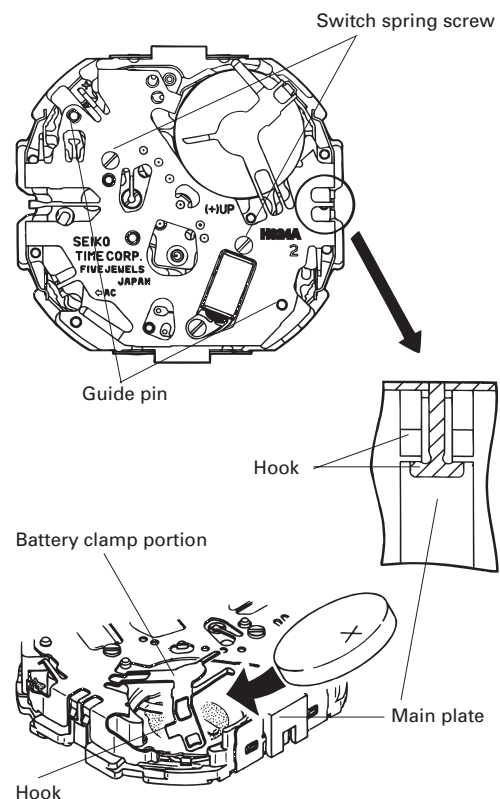


⑧ Battery

⑩ Switch spring

• How to install

1. Set the switch spring in position, taking care not to damage the two guide pins for the main plate. Then, tighten the two switch spring screws.
2. Make sure the two hooks of the switch spring engage the main plate.
3. Insert the battery sideways, and have the hook of the switch spring's battery clamp portion catch the main plate.



IV. VALUE CHECKING

- **Time accuracy**

To measure the accuracy, light up all the segments. To do so, press buttons "C" and "D" at the same time in the TIME/CALENDAR SETTING display.

After the measurement, press any one of the button "A", "B", "C" or "D" to return to the TIME/CALENDAR display.

- **Upconverter coil resistance**

140Ω ~ 200Ω

- **Coil block resistance**

1.3KΩ ~ 1.5KΩ

- **Current consumption**

For the whole movement : less than 3.76μA

For the circuit block alone : less than 1.3μA

Notes:

- Before measuring the current consumption, be sure to reset the circuit. Otherwise, current consumption cannot be measured properly.
- When the current consumption for the whole movement exceeds the standard value, measure the current consumption for the circuit block alone. If the result is within the standard value range of the current consumption for the circuit block alone, overhaul and clean the movement parts and then measure the current consumption for the whole movement again.