



**Seiko 4F32A,8F32A,8F33A,8F35A Movement Parts (1)**

*Compiled by EmmyWatch - <https://www.emmywatch.com>*

# PARTS CATALOGUE/TECHNICAL GUIDE



## Cal. 4F32A, 8F32A

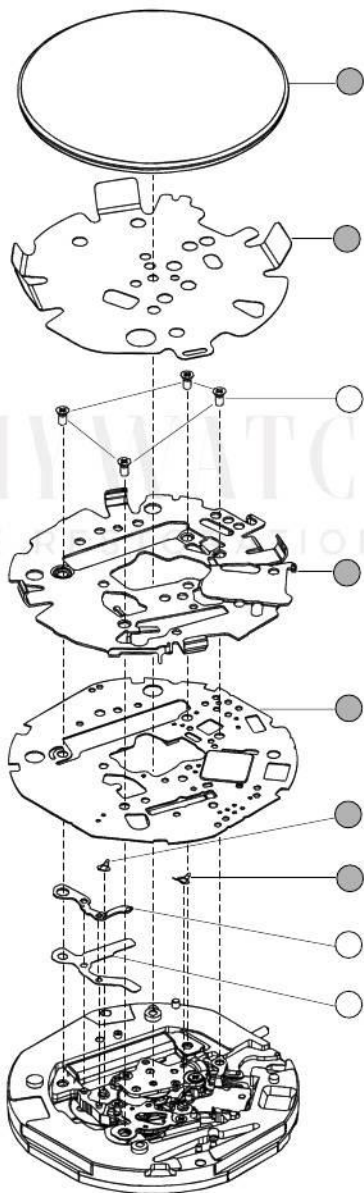
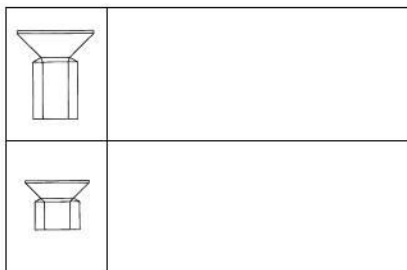
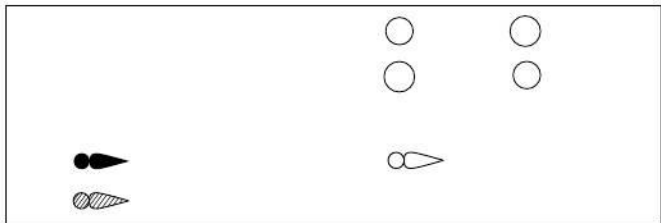
## Cal. 8F33A, 8F35A

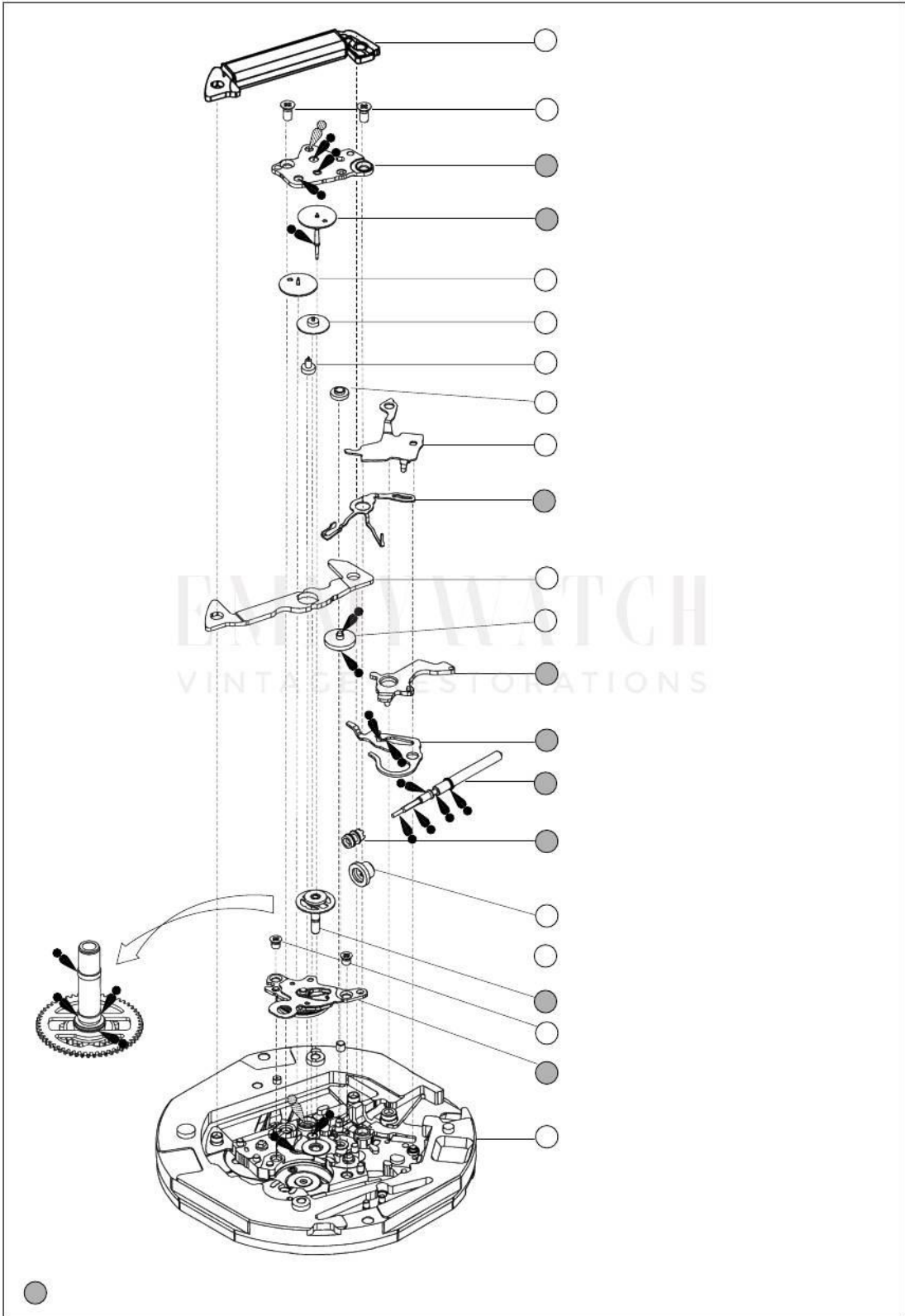
PARTS CATALOGUE/ TECHNICAL GUIDE (p. 1–22)

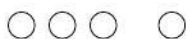
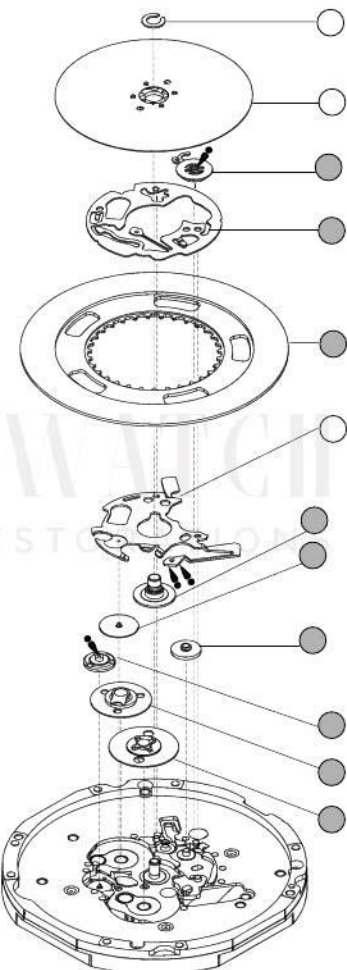
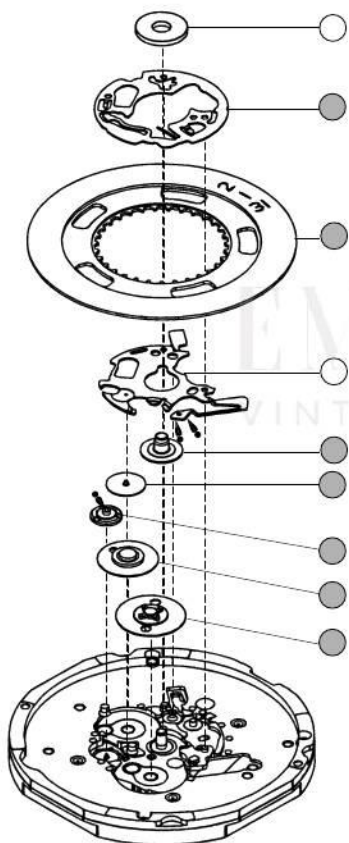
CATÁLOGO DE PARTES/ GUÍA TÉCNICA (p. 23–44)

### [SPECIFICATIONS]

Item		Cal. No.	4F32A	8F32A	8F33A	8F35A
Movement						
			The illustrations refer to Cal. 8F32A.		(x 1.0)	
Movement size	Outside diameter		ø18.5 mm 17.7 mm x 18.5 mm	ø26.4 mm 25.6 mm x 25.6 mm		
	Casing diameter		ø18.5 mm 17.1 mm x 18.5 mm	ø26.4 mm 24.8 mm x 24.8 mm		
	Height (Including the battery portion)		3.9 mm	4.3 mm		
Time indication			3 hands (hour, minute and second hands)			
Driving system			<ul style="list-style-type: none"> <li>• Step motor (for hour, minute and second hands)</li> <li>• Ultrasonic motor (for calendar indication)</li> </ul>			
Additional mechanism			<ul style="list-style-type: none"> <li>• Calendar (Leap year indication, month and date) Perpetual calendar up to February 28, 2100</li> <li>• Train wheel setting device</li> <li>• Electronic circuit reset switch</li> <li>• Battery life indicator</li> <li>• Day calendar (Cal. 8F33A)</li> <li>• Instant calendar (day) setting device (Cal. 8F33A)</li> </ul>			
Loss/gain			Annual rate at normal temperature range: less than 20 seconds			
Regulation system			Logical regulation (Pattern cutting system: 3 steps)			
Measuring gate by quartz tester			Use 10-second gate.			
Battery	Battery No.		SEIKO CR1612, Sony CR1612, Matsushita CR1612	SEIKO CR2412, Matsushita CR2412		
	Voltage		3.0 V			
	Battery life		Approx. 5 years	Approx. 10 years		Approx. 8 years
Jewels			4 jewels			







**Remarks:**

● **Back plate**

Some models do not use the back plate.

● **Case ring**

The type of case ring is determined based on the design of cases.

Check the case number and refer to "SEIKO Casing Parts Catalogue" to choose a corresponding case ring.

④ Day star with dial disk (Only for Cal. 8F33A)

Cal. No.	Part code	Position of crown and calendar frame	Color of figure	Color of background
8F33A	0170 072	3 o'clock	Black	White

The type of day star with dial disk is determined based on the design of cases.

Check the part code printed on the disk.

⑦ Circuit block cover

⑩ Fourth wheel and pinion

③① Center wheel and pinion

③⑤ Hour wheel







● **Discrimination of the hand installation height**




Cal. 4F and 8F Series watches have numerals printed on movement to indicate the hand installation height. When repairing, refer to the table below.






Numeral for discrimination

[ Cal. 4F32A ]

Numeral for discrimination	Circuit block cover	Center wheel and pinion	Fourth wheel and pinion	Hour wheel
1	4461 021	 0221 116	 0241 449	 0273 118
2	4461 020	 0221 114	 0241 448	 0273 117

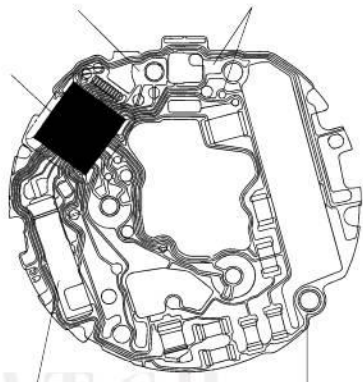
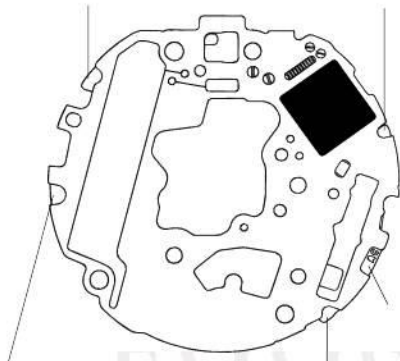
			

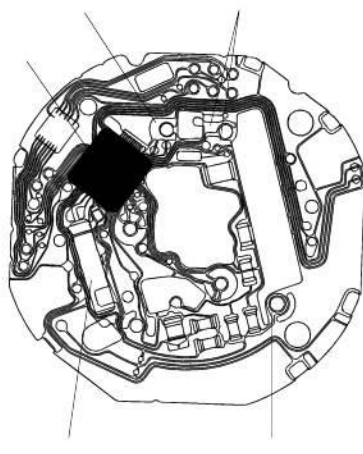
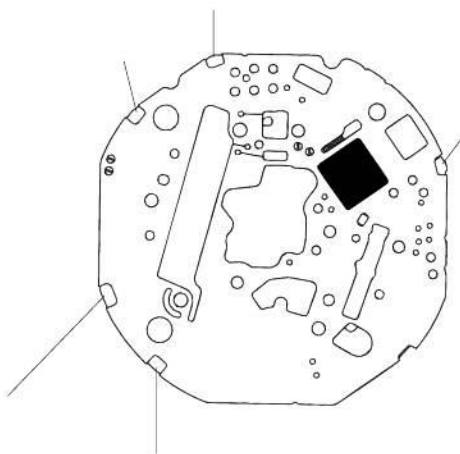


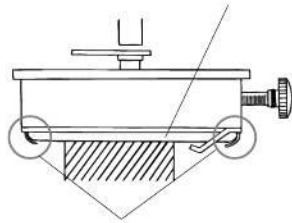
EMMYWATCH  
VINTAGE RESTORATIONS



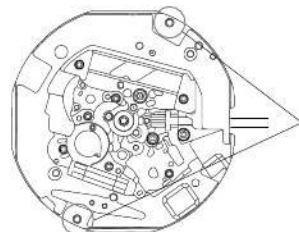
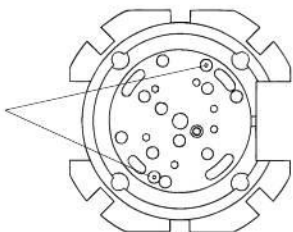
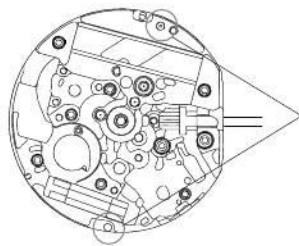
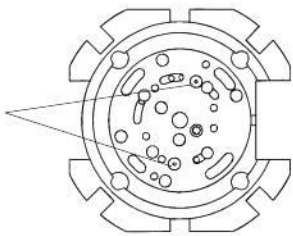
EMMYWATCH  
VINTAGE RESTORATIONS



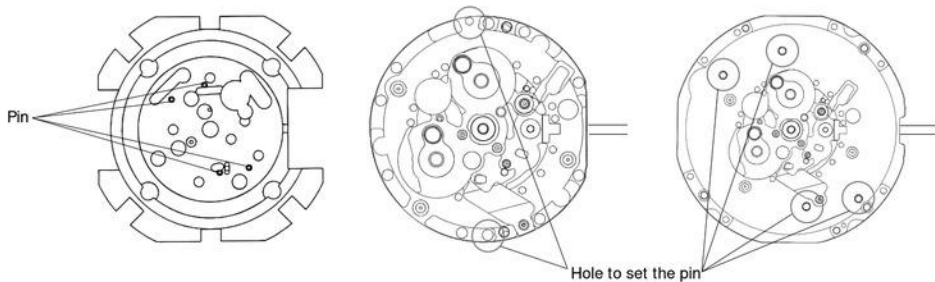


# EMMYWATCH

VINTAGE RESTORATIONS



[ Movement holder 4F8F-C for the case back side of all Cal. 4F and 8F Series movements ]



- ② Battery
- ⑤ Insulator for battery (A)

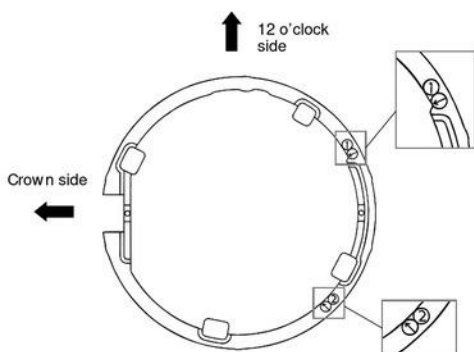
• **How to replace the battery**

- **Be sure to complete the battery replacement work within three minutes. Otherwise, the calendar data stored in the built-in IC will be erased.**
- Before removing the old battery, be sure to keep a new battery at hand.
- When installing the new battery, take utmost care not to short-circuit the battery connection (-) and the circuit block cover, as this will also erase the calendar data.

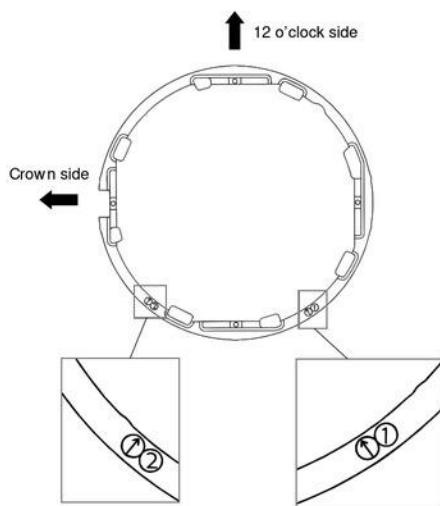
• **How to remove the battery**

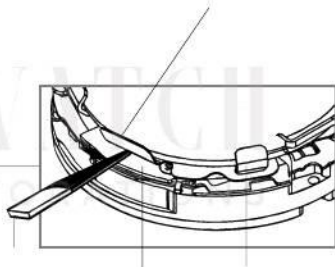
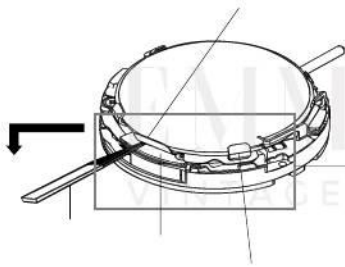
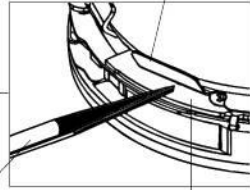
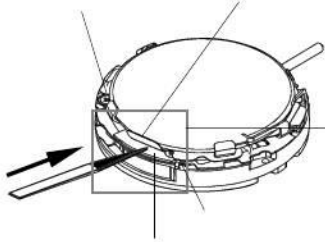
The case ring has numerals printed on it to show the order of disengaging the hooking portions of the circuit block cover using the tips of the tweezers.

[ Case ring for Cal. 4F32A ]

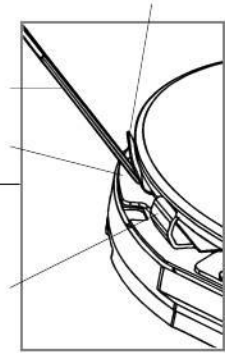
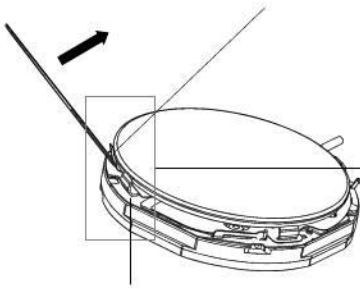


[ Case ring for Cal. 8F32A, 8F33A and 8F35A ]



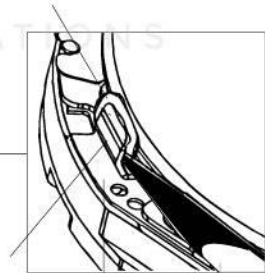
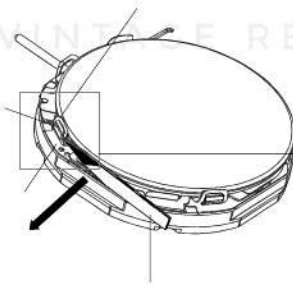


WALBY WATCH  
WATCH RESTORATION



# EMMYWATCH

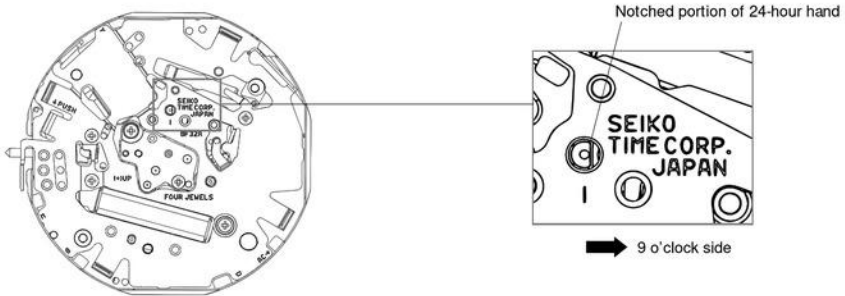
WINTERS RESTORATIONS



- **How to install the battery (For Cal.4F32A, 8F32A, 8F33A and 8F35A)**

[A] When the dial and hands are installed, set the time to 6:00 AM or PM.

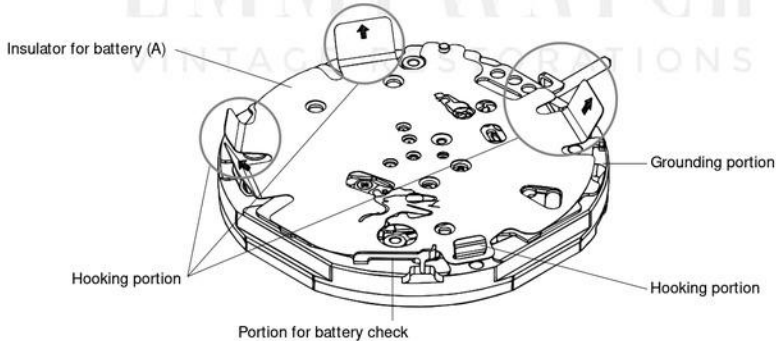
[B] When the dial and hands are not installed, direct the notched portion of the 24-hour hand toward the 9 o'clock side.



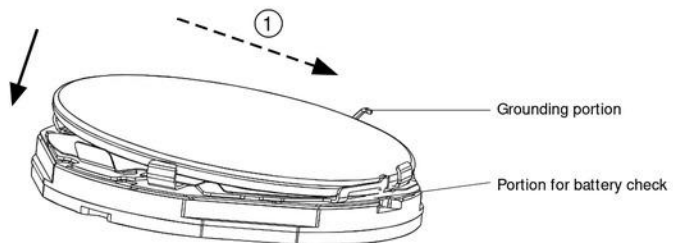
**Note:** When installing the battery, take care lest the battery connection (–) should touch the four hooking portions of the circuit block cover, the grounding portion and the portion for battery check.

1. Before installing the battery, straighten the three hooking portions of the insulator for battery (A).

**Note:** Set the insulator for battery (A) securely in position, as it easily gets out of position.



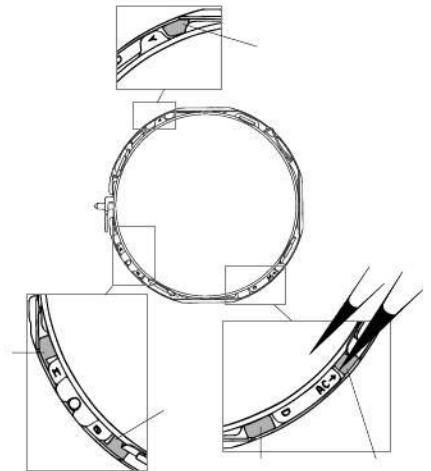
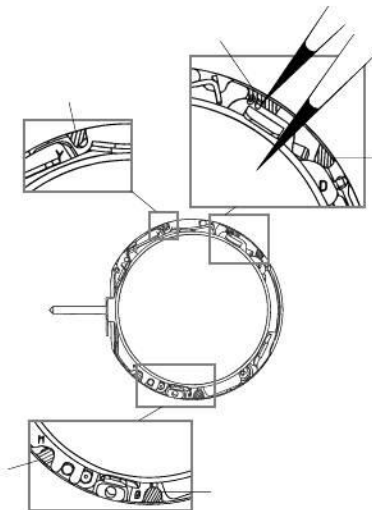
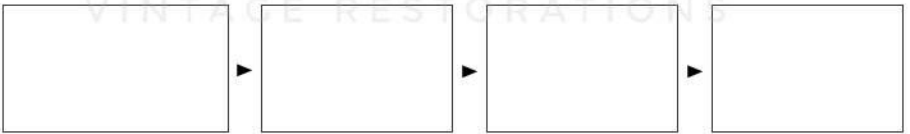
2. First, set a part of the battery into the portion for battery check in the direction indicated by the arrow ①, and then, press it down to install it completely.





# EMMYWATCH

VINTAGE RESTORATIONS





5. Set the date. (D)

Contact the "D" terminal and the (+) surface of the battery with conductive tweezers to activate the date setting mode. "1" appears in the calendar frame. Then, contact the two portions repeatedly with tweezers until the current date appears in the calendar frame.

**Notes:**

- \* The date dial only advances and will not turn back in the date setting mode.
- \* If any data has already been input before the date setting mode is activated, a numeral other than "1" may appear in the calendar frame.

6. Check if the day dial is reset to "1".

Contact the "ø" terminal and the (+) surface of the battery with conductive tweezers once to check that "1" appears in the calendar frame. If not, repeat the procedure again starting from step "2" above.

7. Push back the crown in to the normal position, and check if the number of years since the last leap years, month and date are correctly set. (See "How to check the calendar" below)

● **How to check the calendar**

Pull out the crown to the first click, and push it back in to the normal position within a second.

- \* Take care not to pull out the crown all the way to the second click. The calendar cannot be checked.

The calendar will be shown in the frame in the following order.



(1) The second hand moves at 5-second intervals and stops. The number of seconds it has advanced indicates the number of years that have passed since the last leap year. Five seconds correspond to one year.

- \* Before pulling out the crown to the first click, check and remember where the second hand is so that you can read how many seconds it has advanced.
- \* If the second hand has advanced 20 seconds (four times of five seconds), the current year is the leap year.

<b>Quick movement of the second hand</b>	5 seconds	10 seconds	15 seconds	20 seconds
<b>Number of years since the last leap years</b>	1 year	2 years	3 years	4 years (leap year)

(2) After the second hand indicates the number of years since the last leap year, the numeral in the calendar frame changes to indicate the current month for five seconds.

(3) After the current month is shown, the current date is indicated in the calendar frame.

- \* When the month and date are represented by the same numeral as in the case of "January 1st", "February 2nd" and so on, the numeral in the calendar frame quickly advances and moves back by one to indicate that the month and date numerals are identical.

(4) After the current date is shown, the second hand quickly moves to catch up with the current second and starts moving at normal one-second intervals thereafter.

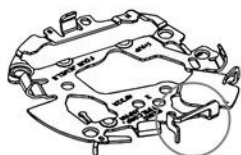
(5) If the calendar is correctly set as you intended, set the desired time.

\* If the year, month or date is not correctly set, repeat the procedure of inputting the calendar data starting from step "1".

⑦ Circuit block cover

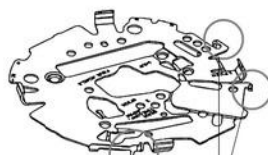
When setting the circuit block cover, take care not to press down the terminal for battery check and the grounding terminal.

[ Cal. 4F32A ]



Terminal for battery check

[ Cal. 8F32A, 8F33A and 8F35A ]



Terminal for battery check

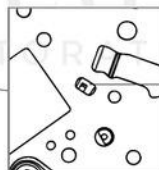
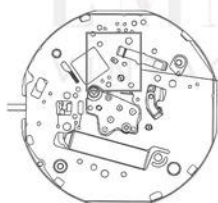
Grounding terminal

⑧ Circuit block

Before replacing the circuit block, make sure that the crown is pulled out to the first click.

Also, check that the tip of the reset lever is positioned at the center of the eye-hole as shown in the illustration below, and then, reassemble the circuit block.

**Note:** When setting the circuit block, take care not to press down on the reset lever.

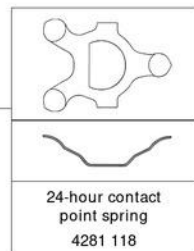
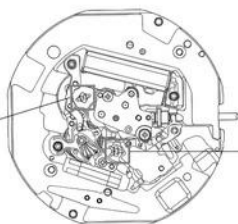
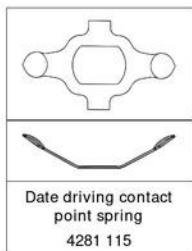


Reset lever terminal

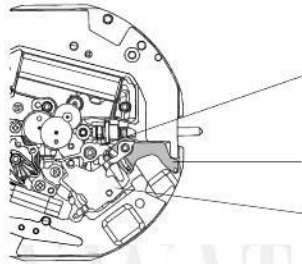
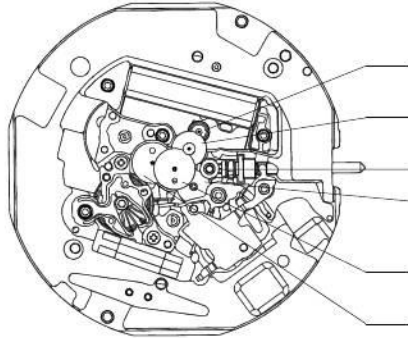
⑨ Date driving contact point spring

⑩ 24-hour contact point spring

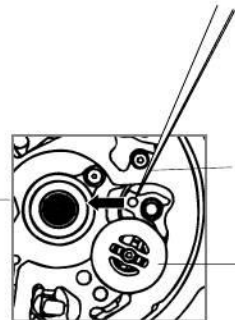
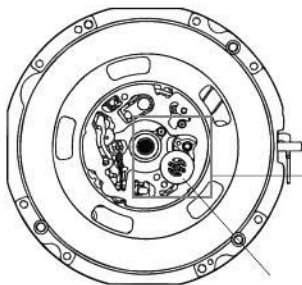
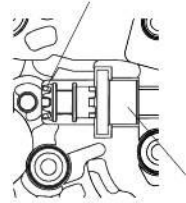
• Setting position

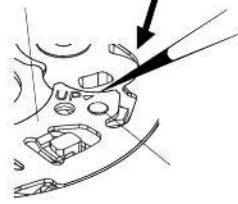
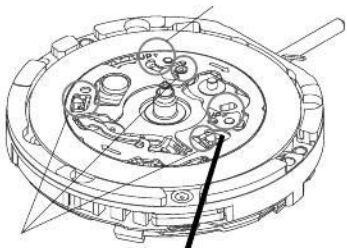


**Note:** The date driving contact spring and the 24-hour contact point spring contact with the circuit block to drive and control the ultrasonic motor. Handle them with care so as not to bend or straighten these parts, as this will cause defective contact with the circuit block, resulting in a malfunction of the ultrasonic motor and defective calendar indication.

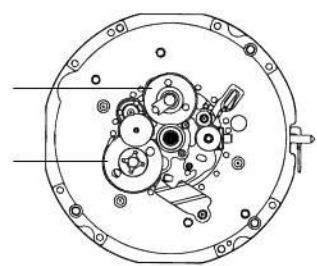
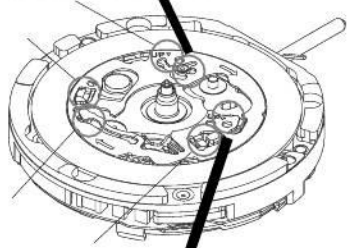
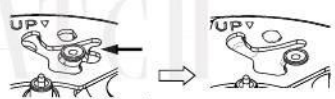


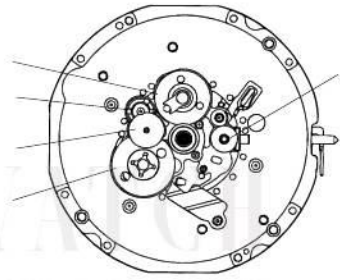
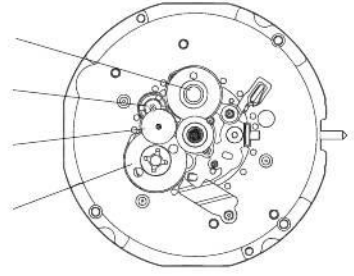
EMMYWATCH  
VINTAGE RESTORATIONS



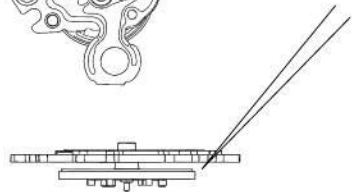
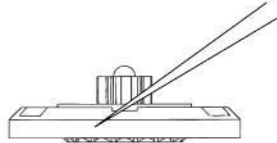
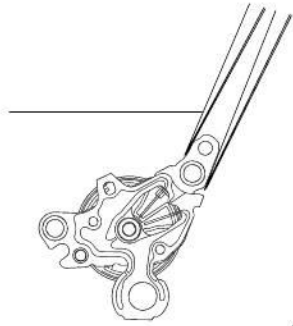
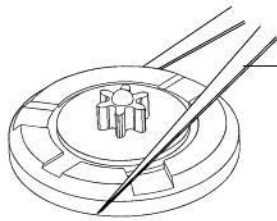


ENEMY WATCH  
VINTAGE RESTORATIONS





EMMY WATSON  
VINTAGE RESTORATIONS





## ● Time accuracy

- The time accuracy measurement should be made in an environment with the temperature at the range of  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$  and humidity between 50% and 60%.

**Normal loss/gain at a normal temperature ( $23^{\circ}\text{C}$ ) :  $+0.020 \sim +0.140 \text{ sec./day}$**

- [A] Check the loss/gain of the watch with the case back closed following the procedure below, and determine the method of adjustment and repair.

Measuring procedure	Measured loss/gain (-/+)	Method of adjustment/repair
① Set the gate of the quartz tester to "10".		
② Pull the crown to the second click to stop the second hand.		
③ Place the watch on the microphone with its 3 o'clock side up, and read the loss/gain.	Normal : $+0.020 \sim +0.140$ Defective : $-0.012 \sim +0.019$ $+0.141 \sim +0.204$  Defective : $-0.013$ or smaller $+0.205$ or greater	➡ Time accuracy adjustment is not necessary. ➡ Adjust the time accuracy.  ➡ Replace the circuit block with a new one. ↓ Check the time accuracy. ↓ (Then, adjust the time accuracy.)

### Notes:

- \* The loss/gain indicated by the tester varies slightly from measurement to measurement. Therefore, make several measurements to get an average loss/gain.
- \* When measuring time accuracy, leave the watch untouched for 30 minutes after it is placed on the microphone. Then, start the measurement.

## [B] Time accuracy adjustment by pattern cutting

Cut and remove the overhanging pattern with tweezers to adjust the time accuracy.

### Notes:

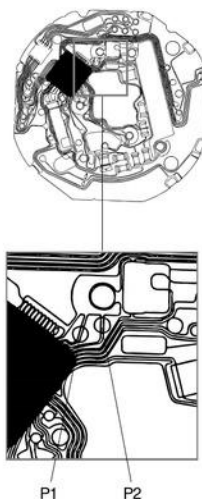
- \* After cutting the pattern, check that it is completely detached.
- \* Take care not to let the cut pattern get inside the movement.

### Pattern cutting combination and adjustment range

By cutting one or both of the patterns P1 and P2, the loss/gain of the watch can be adjusted by an amount between  $-0.064$  and  $+0.032 \text{ sec./day}$ .

Pattern		Amount of loss/gain from base accuracy
P2	P1	
×	○	$-0.064$
○	×	$-0.032$
×	×	$+0.032$

× : Cut  
○ : Connected



**Note:** Once the patterns are cut off, reconnecting them by soldering may not adjust the loss/gain by the amount specified in the table above and may also change the temperature characteristics of the watch. Adjust the loss/gain, therefore, only by cutting the patterns.

[C] Example of the time accuracy adjustment

- Step 1** Measure the loss/gain of the watch with the case back closed.  
Obtained loss/gain: +0.180 sec./day
- Step 2** Find the amount of deviation from the allowable range of loss/gain between +0.020 and +0.140 sec./day.  
Deviation from the allowable accuracy:  $+0.180 - (+0.140) = +0.040$  sec./day
- Step 3** Remove the circuit block and adjust the accuracy.  
Find a value of loss/gain from the table above that can offset the deviation obtained in Step 2 and bring the loss/gain within the allowable range. In this example, -0.064 sec./day is adequate, so cut the pattern P2.
- Step 4** Install the circuit block you have adjusted to the movement, and measure the loss/gain of the watch with the case back closed to check if the obtained loss/gain is within the allowable range between +0.020 and +0.140 sec./day.

[D] Remarks on measuring the time accuracy

- Measure the loss/gain at a temperature range of  $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$  with humidity between 50% and 60%.
- If you hold the watch in your hand for a long time before measuring the accuracy, the temperature of the watch itself will rise and a stable measurement may not be obtained even in the environment specified above. In that case, leave the watch untouched in the above environment for a sufficient period of time, and then, start the measurement.
- Use a quartz tester QT-2100 that can measure a loss/gain up to 0.001 sec./day.

EMMY WATCH  
VINTAGE RESTORATIONS

■ Tips on repairing

The following are the troubleshooting guide for the problems particular to Cal. 4F32A, 8F32A, 8F33A and 8F35A.

Problem	Possible cause	Remedies
The date dial will not move or the date does not change properly.	1) Wrong calendar data was input. 2) Defects in the ultrasonic motor 3) Defects in the circuit block and contact point springs	1) Newly input the calendar data. 2) Check the wheels around the ultrasonic motor. 3) Replace the circuit block, 24-hour contact point spring and date driving contact point spring all in a set.