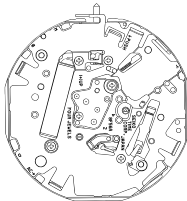
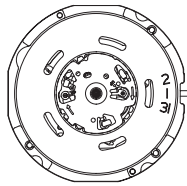


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. 4F56A, 8F56A, 8F58A

[SPECIFICATIONS]

| Item | | Cal. No. | 4F56A | 8F56A | 8F58A |
|---------------------------------|--|----------|--|--|-----------------|
| Movement | | |   | | |
| | | | The illustrations refer to Cal. 8F56A. | | (x 1.0) |
| Movement size | Outside diameter | | ø18.5 x 17.7 (3H - 9H) x 18.5 (12H - 6H) | ø26.4 x 25.6 (3H - 9H) x 25.6 (12H - 6H) | |
| | Casing diameter | | 17.1 (3H - 9H) | 24.8 (3H - 9H) x 24.8 (12H - 6H) | |
| | Height (Including the battery portion) | | 4.8 | 4.8 | |
| Time indication | | | 3 hands (hour, minute and second hands) + 24-hour hand | | |
| Driving system | | | <ul style="list-style-type: none"> • Step motor (for 24-hour, hour, minute and second hands) • Ultrasonic motor (for calendar indication) | | |
| Additional mechanism | | | <ul style="list-style-type: none"> • Calendar (Leap year indication, month and date) Perpetual calendar up to February 28, 2100 • Independent adjustment of hour hand • Train wheel setting device • Electronic circuit reset switch • Battery life indicator | | |
| Loss/gain | | | Annual rate within 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. | | CR1612 | BR2412 | |
| | Voltage | | 3.0 V | | |
| | Battery life | | Approx. 5 years | Approx. 10 years | Approx. 8 years |
| Jewels | | | 4 jewels | | |

SEIKO WATCH CORPORATION

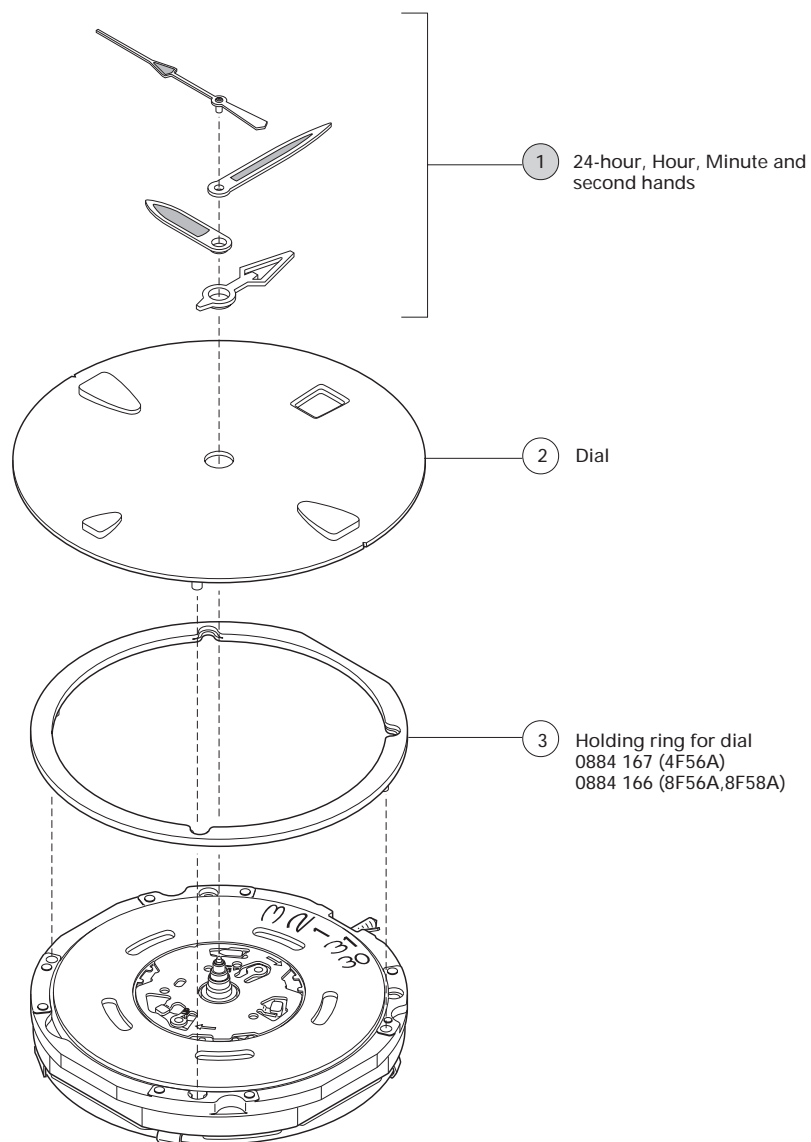
Disassembling procedures Figs.: (1) fi (49)

Reassembling procedures Figs.: (49) < (1)

| Lubricating: | Types of oil | Oil quantity |
|--------------|--------------|-----------------|
| Moebius A | | Normal quantity |
| Moebius V | | |
| Moebius F | | |

Cal. 4F56A, 8F56A & 8F58A

Ex. : Cal. 8F56A



Please see the remarks on the following pages.

Note Pull out the crown to the first click before starting disassembling or reassembling.

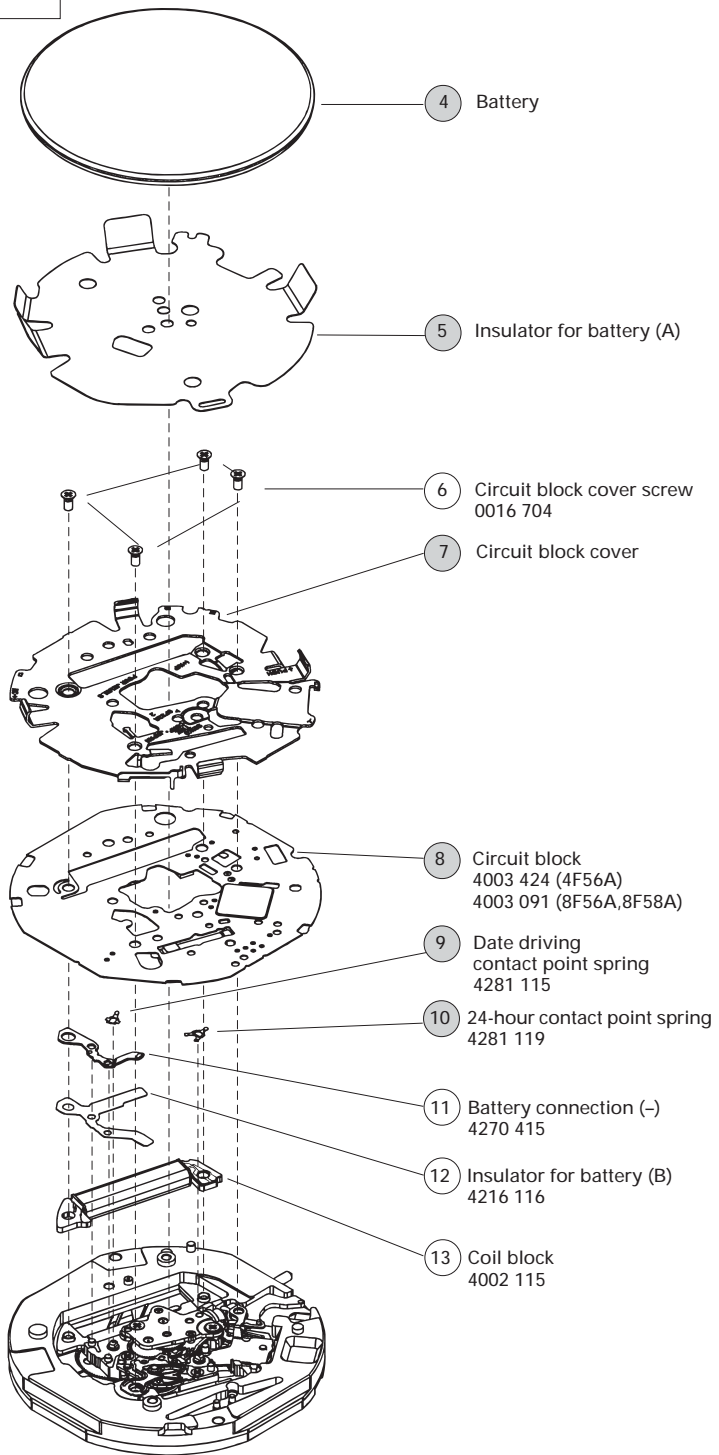
It is highly recommended that the exclusive movement holder (S-680) be used for disassembly or reassembly. Contact SEIKO SERVICE CENTER to purchase this tool.

Cal. 4F56A, 8F56A & 8F58A
Ex. : Cal. 8F56A

④ Battery
 For removing or installing the battery and inputting calendar data, refer to page 11 to 16.

② Battery
 ⑤ Insulator for battery (A)
 A battery with ⑤ Insulator for battery (A) (red) may be installed in some models. Discard this type of battery after replacing it with a new battery of the latest model, to which the insulator for battery (white) is attached.

| | |
|--|---|
| | 0016 704 • Circuit block cover screw (4 pcs.) • Train wheel bridge screw (2 pcs.) |
| | 0016 705 • Ultrasonic motor screw (2 pcs.) |



● Please see the remarks on the following pages.

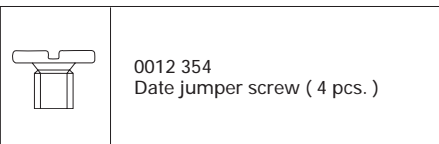
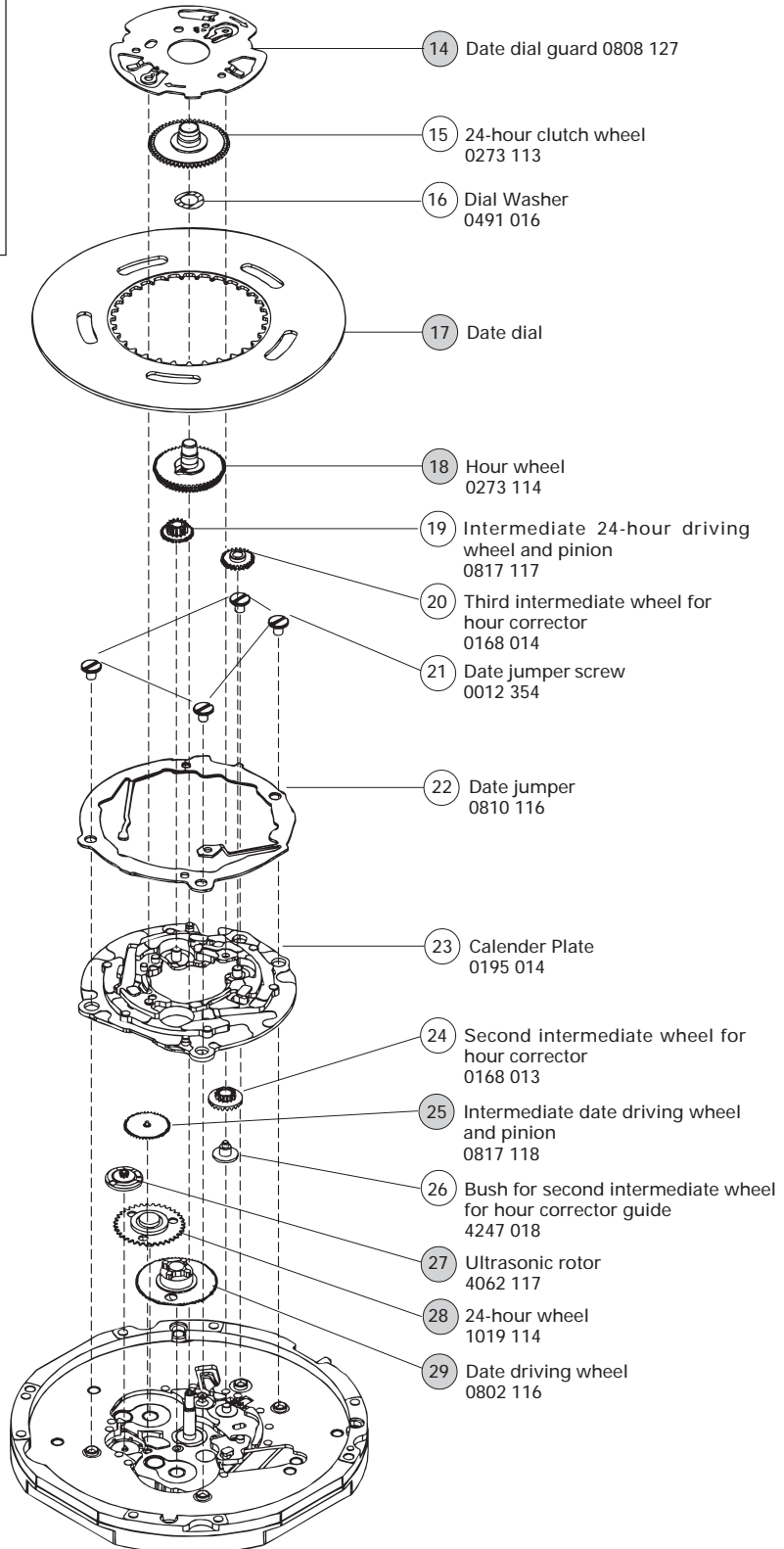
PARTS CATALOGUE

Cal. 4F56A, 8F56A, 8F58A

Cal. 4F56A, 8F56A & 8F58A

Ex. : Cal. 8F56A

Note Never remove the 24-hour wheel and date driving wheel while working on the date dial replacement (without disassembling the train wheel side), as the date driving contact point spring and 24-hour contact point spring may drop off.



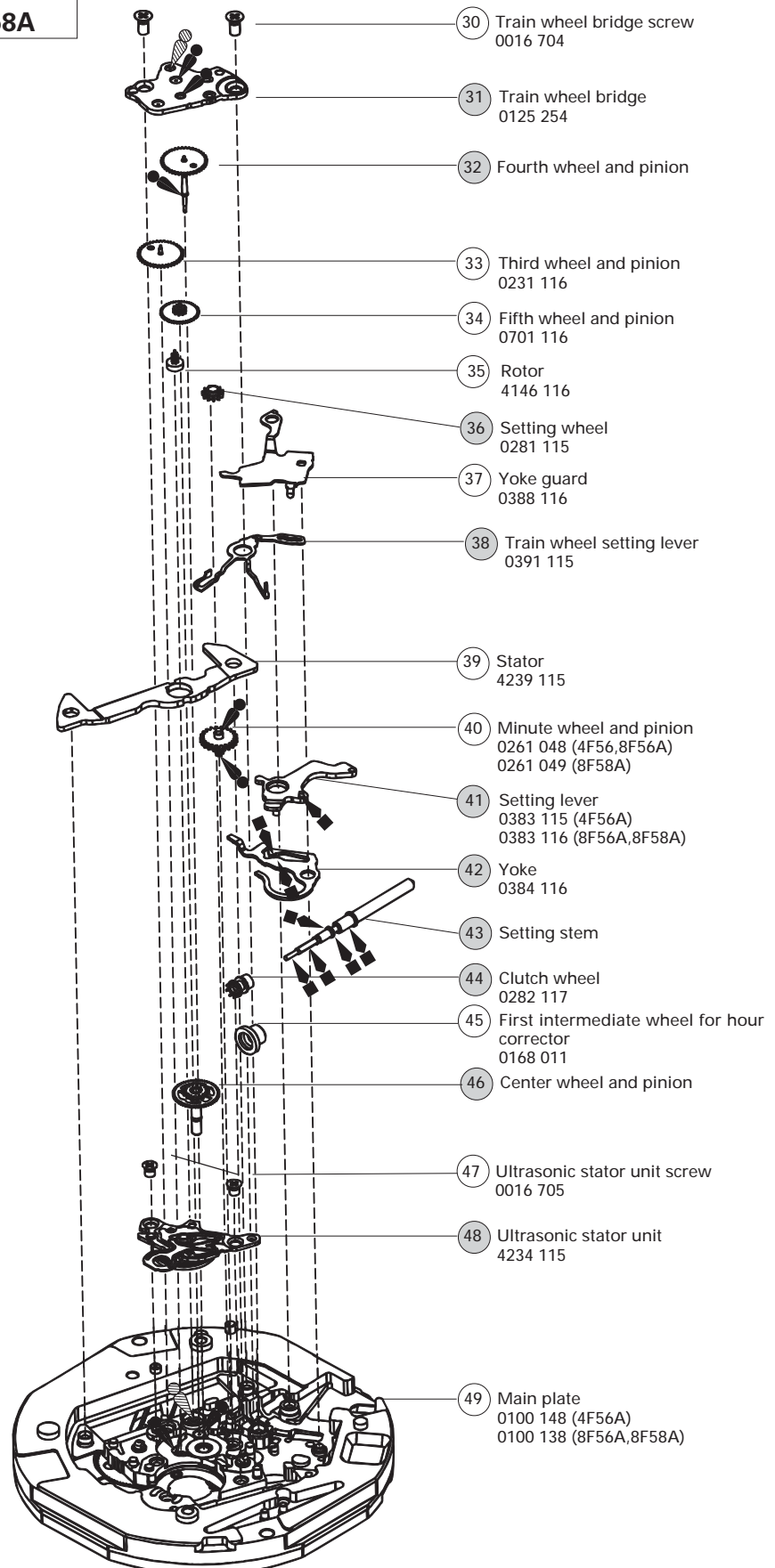
● Please see the remarks on the following pages.

PARTS CATALOGUE

Cal. 4F56A, 8F56A, 8F58A

Cal. 4F56A, 8F56A & 8F58A

Ex. : Cal. 8F56A



● Please see the remarks on the following pages.

PARTS CATALOGUE

Cal. 4F56A, 8F56A, 8F58A

Remarks

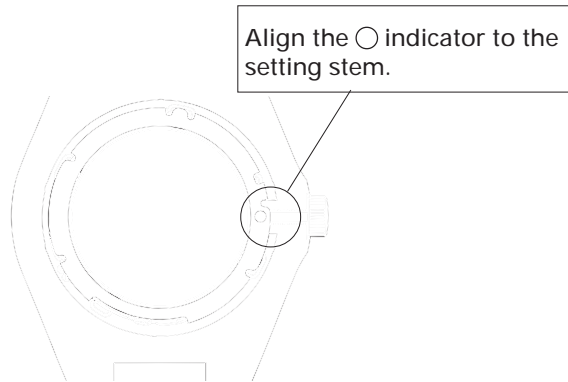
● Back plate

For some models which use the back plate, refer to the illustration at the right to mount it.

● Case ring

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

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



7 Circuit block cover

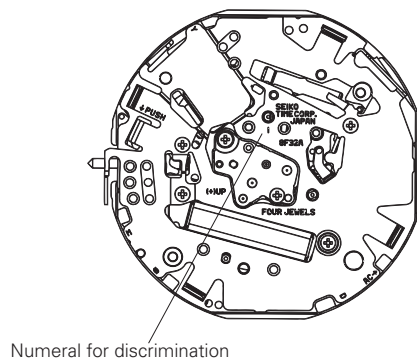
32 Fourth wheel and pinion

46 Center wheel and pinion

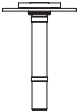
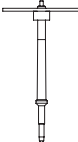
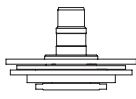
18 Hour wheel

• Discrimination of the hand installation height

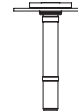

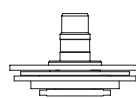
Cal. 4F and 8F Series watches have numerals printed on movement to indicate the hand installation height. When repairing, refer to the table below.



4F56A

| Numeral for discrimination | Circuit block cover | Center wheel and pinion | Fourth wheel and pinion | Hour wheel |
|----------------------------|---------------------|---|---|---|
| 2 | 4461 034 |  0221 122 |  0241 167 |  0273 114 |

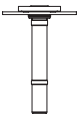
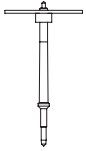
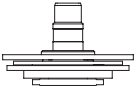
8F56A

| Numeral for discrimination | Circuit block cover | Center wheel and pinion | Fourth wheel and pinion | Hour wheel |
|----------------------------|---------------------|---|---|---|
| 2 | 4461 026 |  0221 122 |  0241 167 |  0273 114 |

PARTS CATALOGUE

Cal. 4F56A, 8F56A, 8F58A

8F58A

| Numeral for discrimination | Circuit block cover | Center wheel and pinion | Fourth wheel and pinion | Hour wheel |
|----------------------------|---------------------|---|---|---|
| 2 | 4461 035 |  0221 124 |  0241 167 |  0273 114 |

17 Date dial

| Cal. No. | Part code | Position of crown and calendar frame | Color of figure | Color of background |
|----------------|-----------|--------------------------------------|-----------------|---------------------|
| 4F56A | 0878 320 | 3 o'clock | Black | White |
| 8F56A 8F58A | 0878 356 | 3 o'clock | Black | White |

The type of date dial is determined based on the case design.

* Not all the types of date dial are shown in the table above.

Check the case number and refer to "SEIKO Casing Parts Catalogue" to choose the appropriate date dial.

43 Setting stem 0351 196

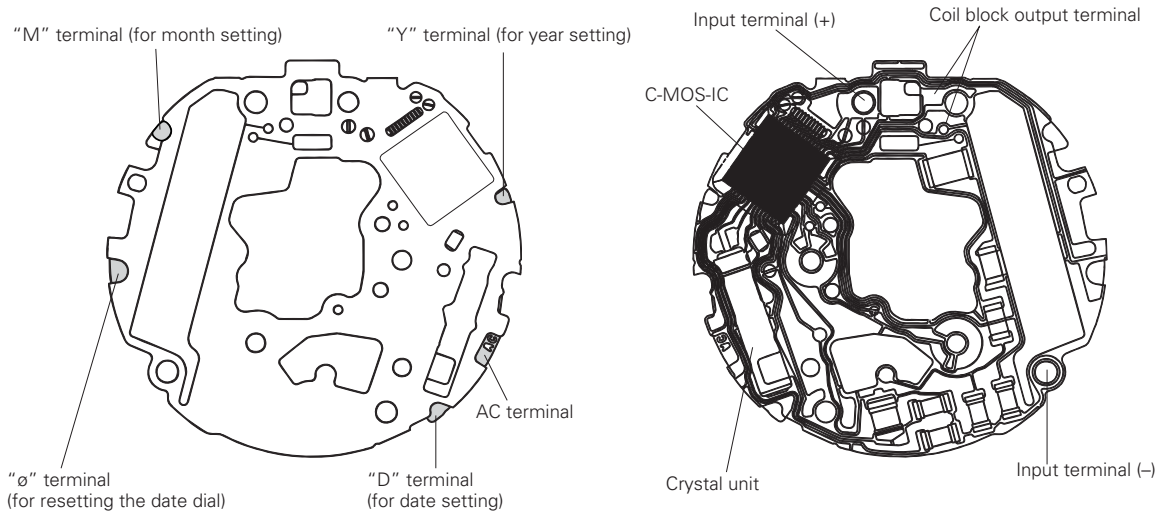
The type of setting stem is determined based on the case design.

Check the case number and refer to "SEIKO Casing Parts Catalogue" to choose the appropriate setting stem.

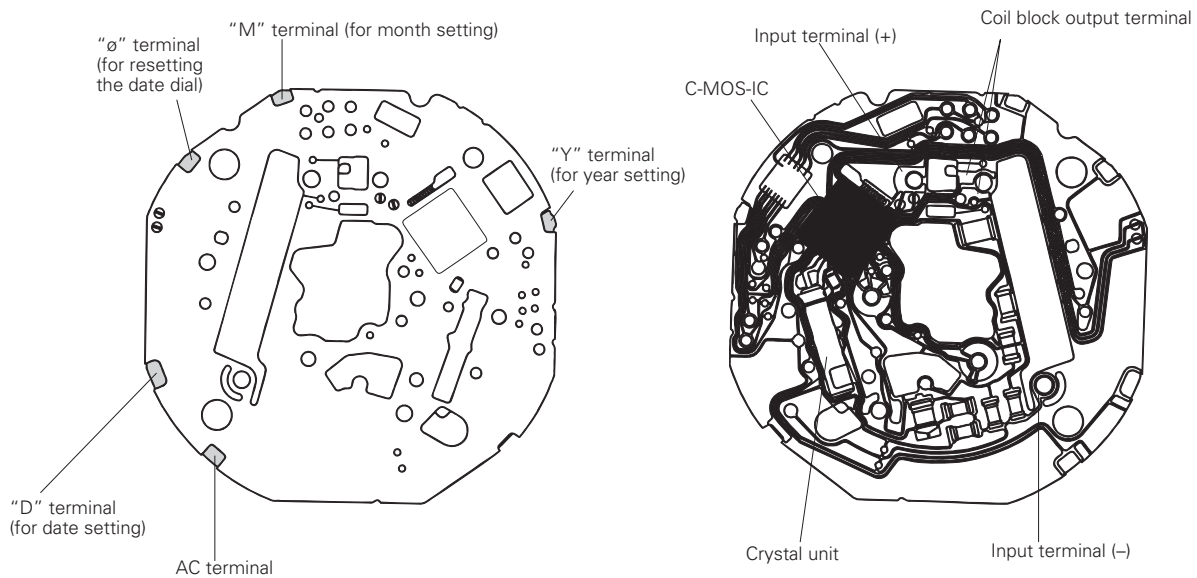
- The explanation here is only for the particular points of Cal. 4F56A, 8F56A and 8F58A.
- For repairing, checking or measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".

I. STRUCTURE OF THE CIRCUIT BLOCK

[Cal. 4F56A]



[Cal. 8F56A, 8F58A]



II. REMARKS ON DISASSEMBLING AND REASSEMBLING

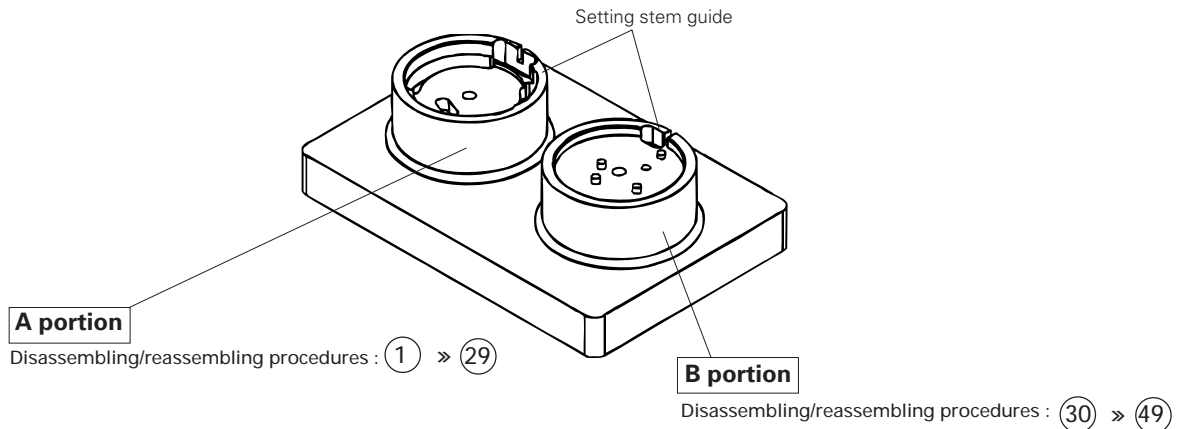
It is highly recommended that the exclusive movement holder (S-680) be used to disassemble or reassemble the watch.

Use of other movement holders may make unreliable the screw pins (the gold part) of the main plate. Be careful not to press the main plate too hard when screwing or unscrewing the pins.

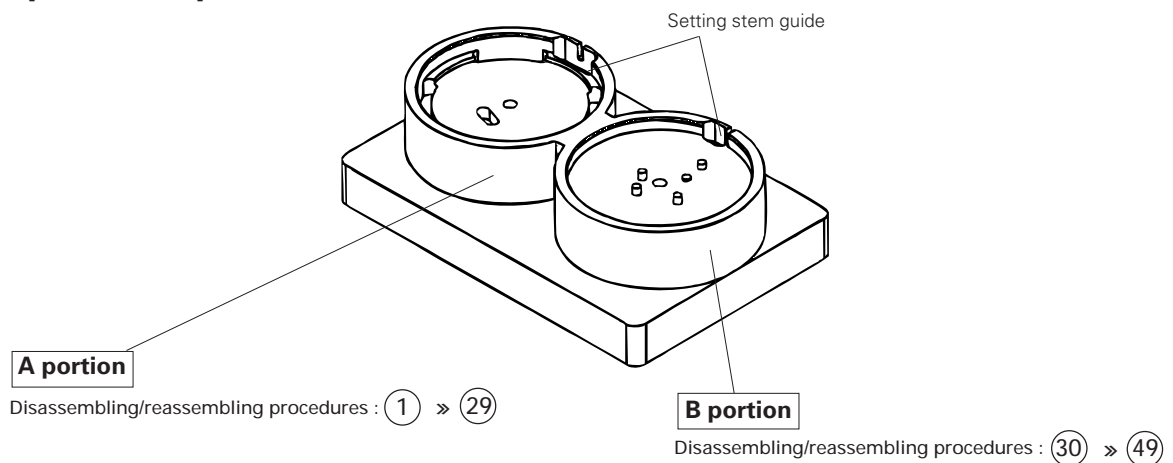
To prevent deformation of the main plate, never use the movement holder which is designed to hold the movement with only two side guides.

◆ How to use the exclusive movement holder

[Cal. 4F Series]



[Cal. 8F Series]

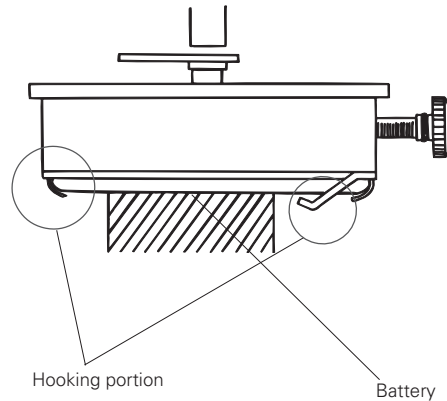


① 24-hour, hour, minute and second hands

Always set the hands with the battery installed.

Set the movement to the A portion of the exclusive movement holder.

If any other movement holder is used, be certain to place the movement on a secure, flat plate. Pay special attention not to damage the hooking portion.



◆ How to set the hands

1. Set ④ Battery. (Refer to page 12.)
2. Set ③ Holding ring for dial.
3. Set ② Dial.
4. Go to "Necessary procedure after a battery change".
*Refer to page 12 for details.
5. Input the calendar data.
*Refer to page 13 to 16 for details.

Installation of the hands

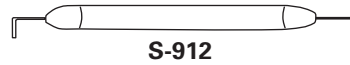
Turn the crown clockwise until the date changes, then set the hands to point at the 12 o'clock position.

To set the hands more accurately,

- 1) Turn the crown clockwise until the date changes.
- 2) Give the crown four counterclockwise turns until the previous date appears.
- 3) Slowly turn the crown clockwise until the date changes again.
- 4) Set the hands to point at the 12 o'clock position.

4 Battery

It is highly recommended that the exclusive tool (S-912) be used for removing or installing the battery, resetting the built-in IC or inputting the calendar data. Contact SEIKO SERVICE CENTER to purchase this exclusive tool.



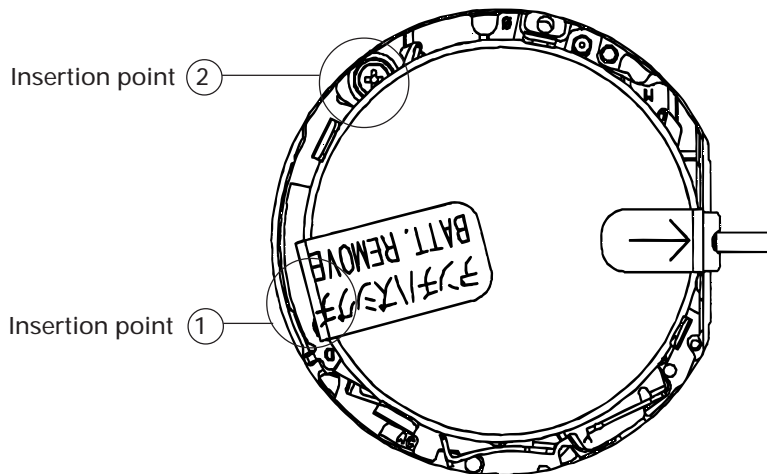
S-912

◆ How to remove the battery

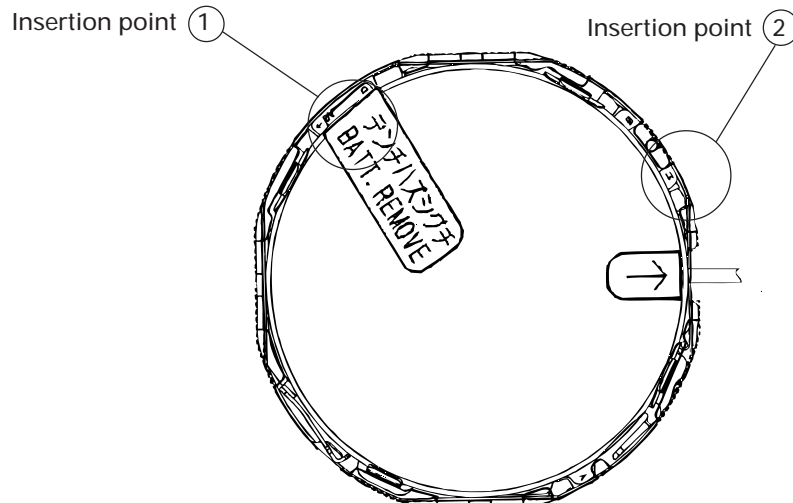
1. Insert the tip of the tweezers into the gap between the battery and the circuit block cover at the insertion point 1 in the illustrations below to gently lift up the battery.
2. Insert the tip of the tweezers into the gap between the battery and the circuit block cover at the insertion point 2 in the illustrations below to gently lift up the battery.
3. Remove the battery with due care not to damage the coil.

The illustrations below show the new battery installed. (The battery is a new model with the new white battery insulator.) (In a case where the red insulator is installed, insert the tweezers between the red insulator and the circuit block cover in the order of the numbers illustrated below.) Take care not to insert the tweezers too deep into the gap as this may damage the coil.


[Cal. 4F56A]



[Cal. 8F56A, 8F58A]

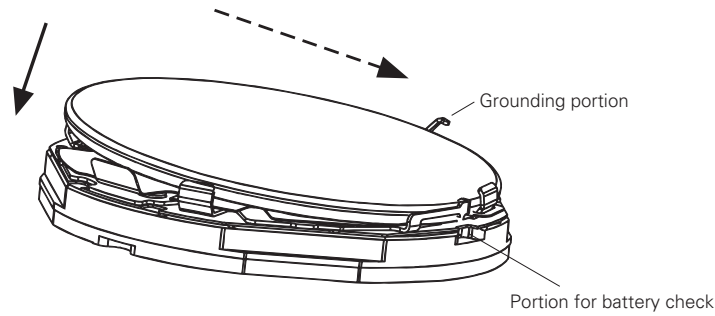


◆ How to install the battery

1. In a case where a red battery insulator is installed, remove and discard it.
2. To install a new battery with a battery insulator, align the tip of the arrow mark  on the seal attached to the battery with the crown. Then press it towards the portion for a battery check. Be careful not to deform the portion for battery check.

*Make sure that the battery is securely fixed by the four hooking portions.

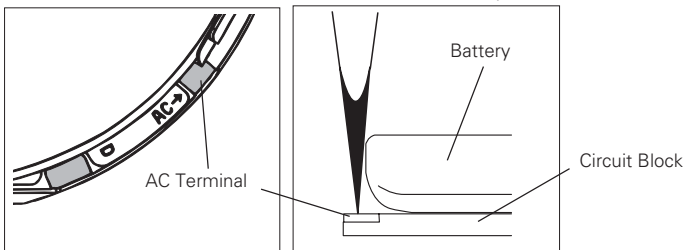
3. After the battery is installed, turn to the "Necessary procedure after a battery change".
4. After completing the "Necessary procedure after a battery change", turn to "How to input the calendar data."



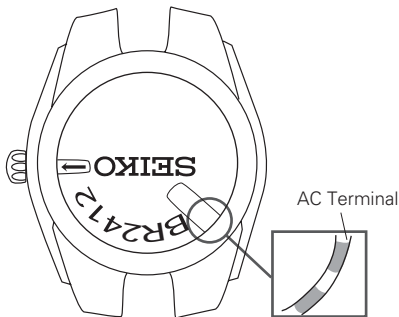
◆ Necessary procedure after a battery change

1. After the battery is replaced with a new one, push the crown back to its normal position.
2. Contact the "AC" terminal of the circuit block and the (+) surface of the battery with a S-912 tool or conductive tweezers for more than three seconds to reactivate the built-in IC.

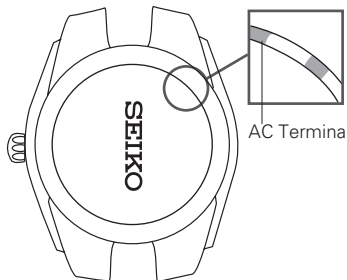
Be careful not to damage the circuit block. (To prevent any damage to the circuit block, it is highly recommended the exclusive tool S-912 be used.)



Reactivate the built-in IC by contacting the AC terminal and the side face of the battery with the tip of the tool.



[Position of AC terminal of Cal. 8F (Gent's) Series]



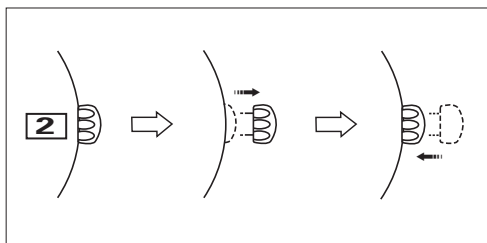
[Position of AC terminal of Cal. 4F (Ladies') Series]

◆How to input the calendar data

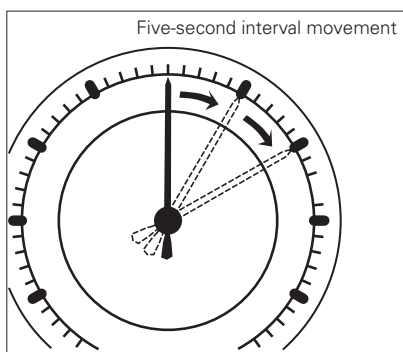
A How to check the calendar data (after battery change)

1. Pull out the crown to the first (or the second) click, then immediately push it back to its original position.

Gently support the battery with fingers and securely hold the movement.



2. Check the movement of the second hand and follow the flowchart below.



One-second interval movement :

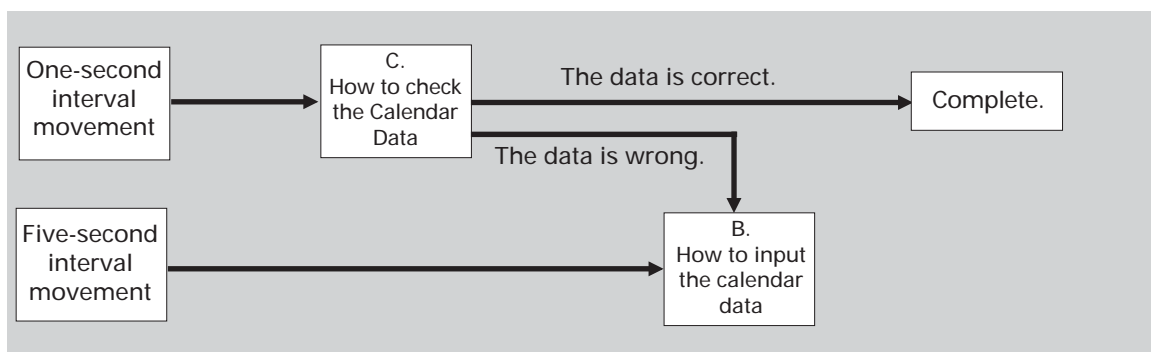
The data is retained securely.

Go to **C. How to check the calendar data.**

Five-second interval movement :

The data has been erased.

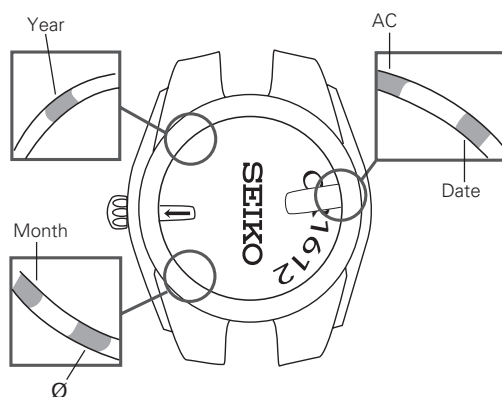
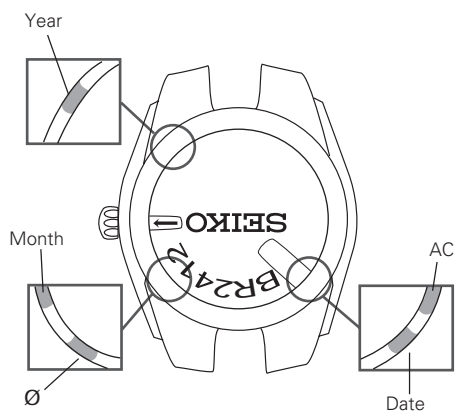
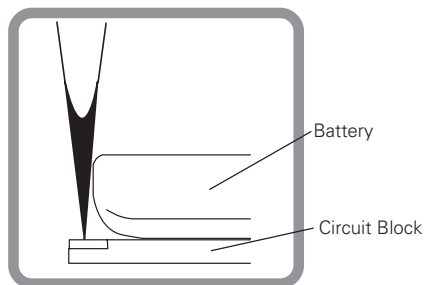
Go to **B. How to input the calendar data.**



If the second hand shows neither one-second interval movement nor five-second interval movement, return to the "Necessary procedure after a battery change" followed by **A. How to check the calendar data (after battery change).**

B How to input the calendar data

To input the calendar data, activate the circuit by contacting each terminal and the side face of the battery repeatedly with tweezers. Be careful not to damage the circuit block.



[Position of the terminals of Cal. 8F (Gent's) Series] [Position of the terminals of Cal. 4F (Ladies') Series]

- Input each calendar data item in the following order.

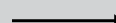
Ø



Y



M



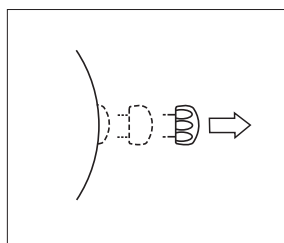
D

Resetting the date dial position
Set the date dial to "1".

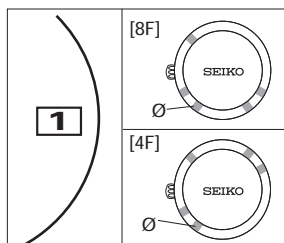
Year setting
Set the date dial to the current year.

Month setting
Set the date dial to the current month.

Date setting
Set the date dial to the current date.



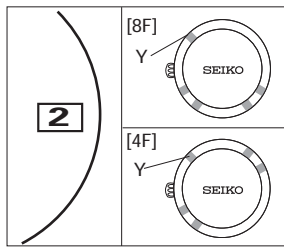
1. Pull out the crown to the second click.



2. Contact the "Ø" terminal with the tip of tweezers until "1" appears in the calendar frame.

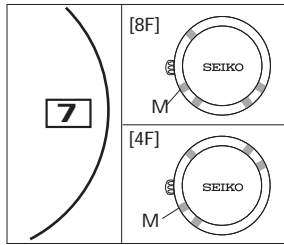
TECHNICAL GUIDE

Cal. 4F56A, 8F56A, 8F58A



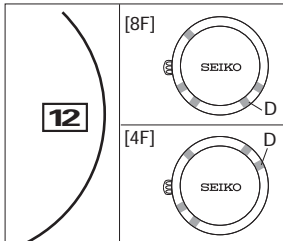
3. Contact the "Y" terminal with the tip of tweezers until the year number representing the current year appears in the calendar frame. (Refer to the table below for the year number.)

[Ex. : July]

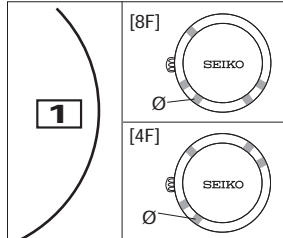


4. Contact the "M" terminal with the tip of tweezers until the current month appears in the calendar frame.

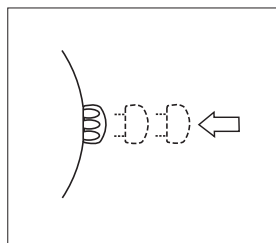
[Ex. : 12th.]



5. Contact the "D" terminal with the tip of tweezers until the current date appears in the calendar frame.



6. Contact the "Ø" terminal with the tip of tweezers once to check if "1" appears in the calendar frame. If "1" does not appear in the calendar frame, redo the whole procedures from 1 to 6 once again.



7. Push the crown back to its original position.

For the year number which represent the current year in the calendar frame, refer to the table below.

| Year number in the calendar frame | | | |
|-------------------------------------|------------------------------------|--------------------------------------|--------------------------------|
| 1 | 2 | 3 | 4 |
| One year since the last leap year | Two years since the last leap year | Three years since the last leap year | Leap year |
| Year 2001 2005 2009 · · | 2002 2006 2010 · · | 2003 2007 2011 · · | 2004 2008 2012 · · |

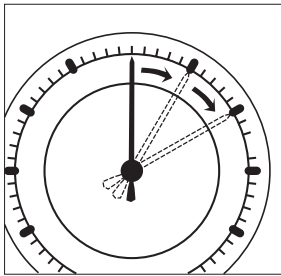
C How to check the calendar data (After inputting the data)

Ex.: July 12, 2002

Pull out the crown to the first click, then immediately push it back to its original position. Gently support the battery with fingers to securely hold the movement.

Each calendar data item will be shown in the following order.

Year

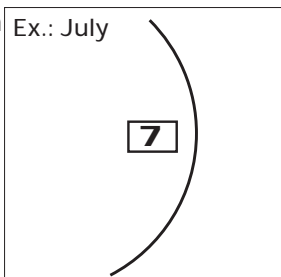


The number of times that the second hand moves in five-second intervals indicates the number of the year which has passed since the last leap year.

Ex. Year 2002:

The year number 2 ; the second hand moves twice in five-second intervals.

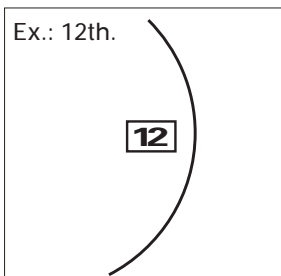
Month



Ex.: July

The current month will be displayed for a while in the calendar frame.

Date



Ex.: 12th.

Subsequently the current date will be displayed in the calendar frame.

If all the data items are correct, proceed to the time setting.
When setting the time, make sure that AM/PM is properly set.

Note

This watch does not feature an Automatic Calendar Function.

Date is interlocked to the movement of the hands.

Be certain that AM/PM is properly set when setting the time to prevent the wrong date from appearing.

If any data item is not correct, return to **B. How to input the calendar data** and repeat the whole procedures once again.

Note Pull out the crown to the first click before starting disassembling or reassembling.

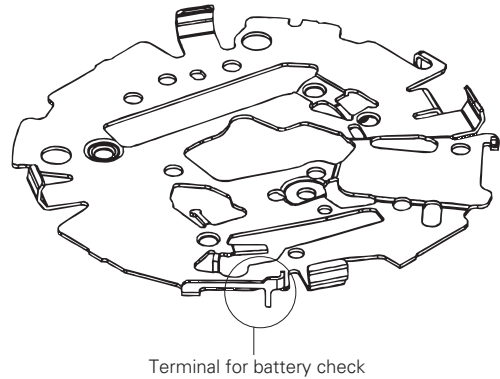
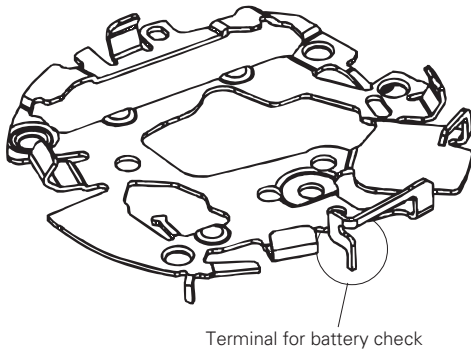
7 Circuit block cover

Reassembling :

When setting the circuit block cover, take care not to deform the terminal for battery check.

[Cal. 4F56A]

[Cal. 8F56A, 8F58A]



8 Circuit block

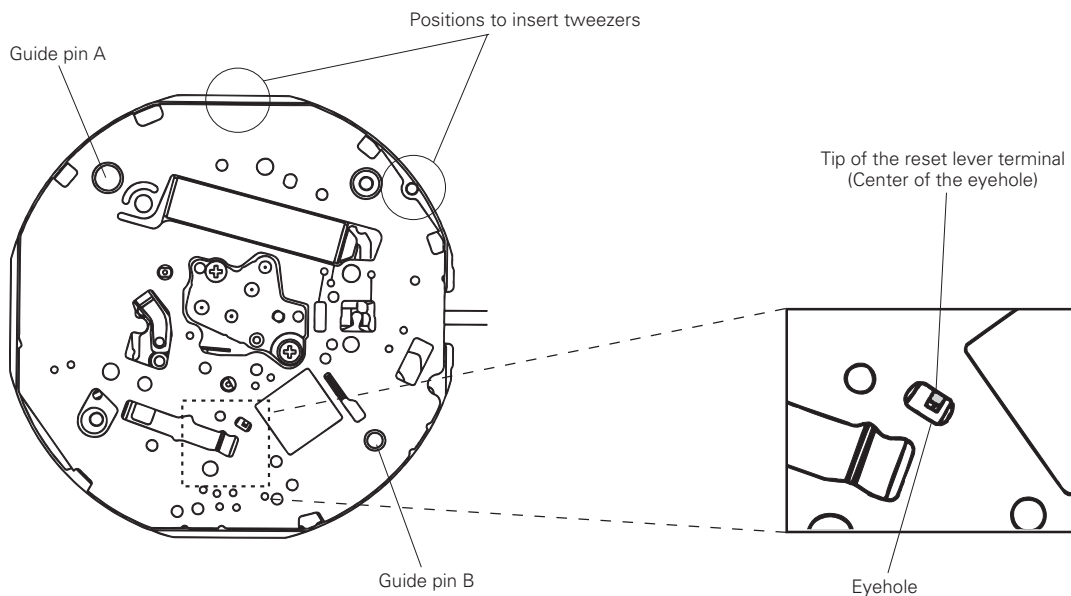
Disassembling :

Insert tweezers from the positions indicated in the illustration below to remove the circuit block.

Reassembling :

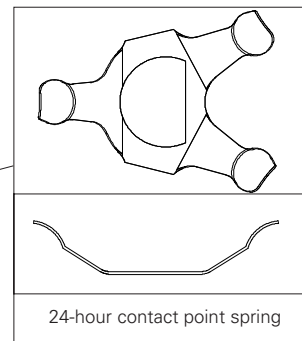
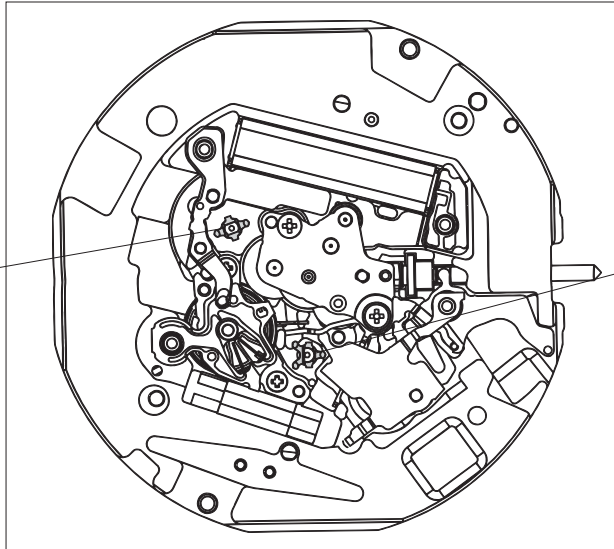
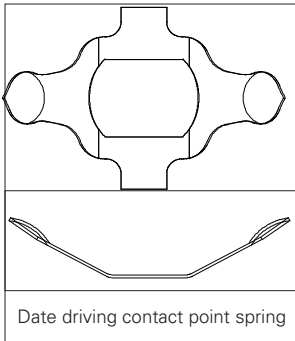
Locate the circuit block using the guide pin A on the coil side. Then gently press down the guide pin B under the 24-hour wheel to fix the circuit block.

When mounting the circuit block, make sure that the date driving contact point spring and 24-hour contact point spring are correctly mounted and that the tip of the reset lever is positioned at the center of the eyehole as shown in the illustration below.



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. Failure of this electric contact will cause a malfunction of the ultrasonic motor or defective calendar display. To guard against this problem, carefully handle the contact point springs not to bend or straighten them.

To prevent a problem caused by deformation of the springs, it is recommended that the springs be replaced with new ones at the time of disassembling or reassembling.

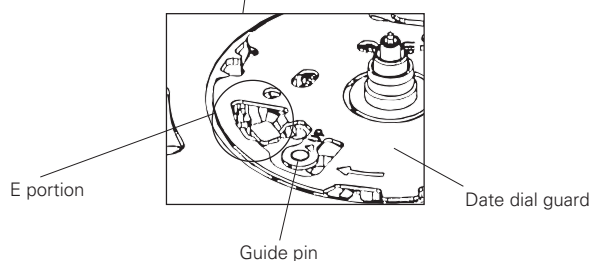
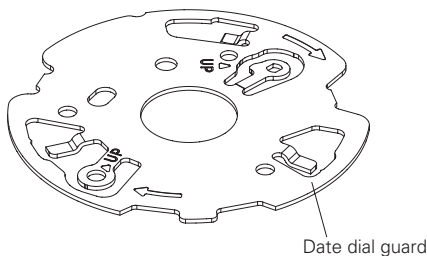
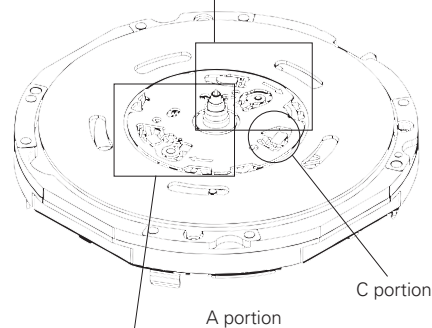
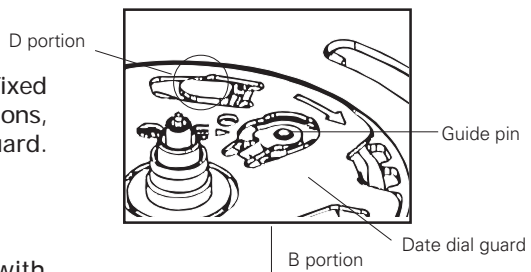
14 Date dial guard

Unlike conventional movements, the date dial guard is not fixed with screws. It is set to the main plate with the three protrusions, which are caught under the main plate by turning the guard. Then, it is fixed by the two guide pins.

• How to remove

1. Gently lift up the A portion of the date dial guard with tweezers to clear it from the guide pin, and then, move it in the clockwise direction until it gets on the guide pin.
2. Release the B portion of the date dial guard in the same manner as you release the A portion, and then, move it in the clockwise direction until it gets on the guide pin.
3. Check that all the three protrusions of the date dial guard have come off the main plate. Then, remove the date dial guard.

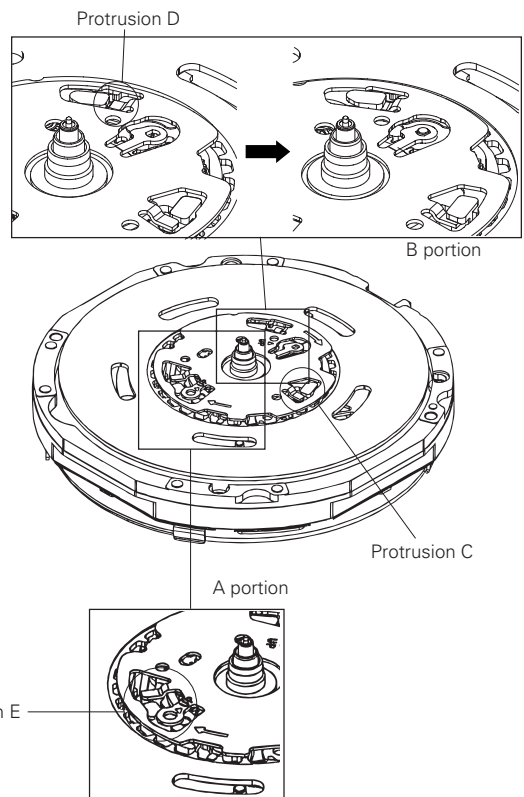
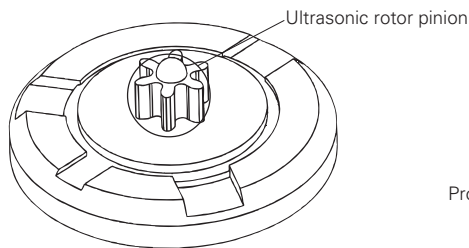
Note Take care not to deform the date dial guard, as it is softly built.



• **How to install**

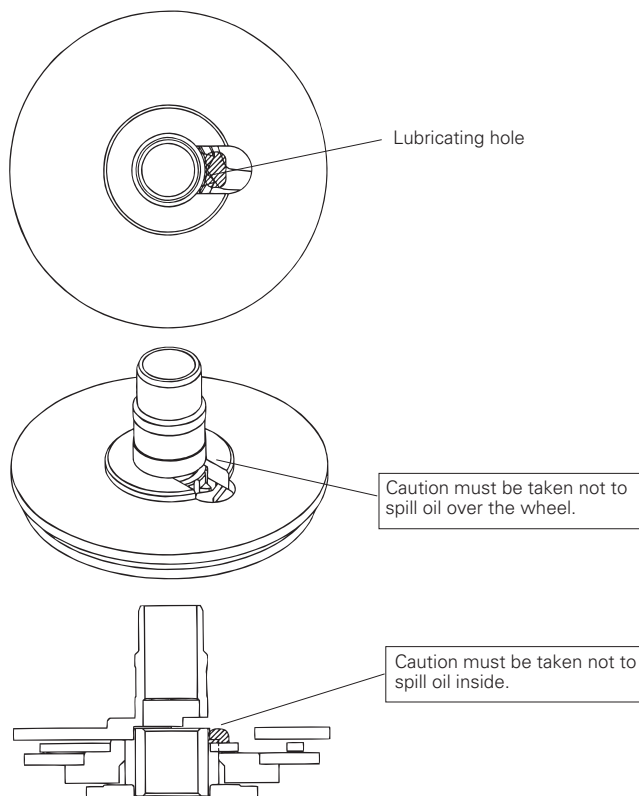
1. Put the date dial guard on the main plate so that the A and B portions are over the guide pins, as shown in the illustrations at the right.
2. Move protrusion D of the date dial guard in the counterclockwise direction so that it is caught under the main plate.
3. Slightly move protrusions C and E in the counterclockwise direction alternately to set them under the main plate. While doing so, set the A and B portions of the date dial guard to the guide pins.

Note Take care not to press down the ultrasonic rotor pinion while installing the date dial guard.



18 Hour wheel

Refer to the illustration below for lubricating.



25 Intermediate date driving wheel and pinion

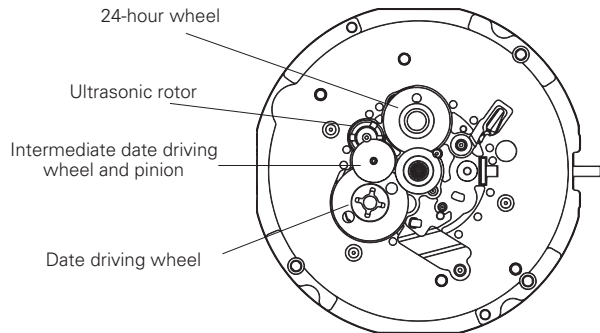
27 Ultrasonic rotor

28 24-hour wheel

29 Date driving wheel

• **Setting position**

Refer to the illustration at the right.

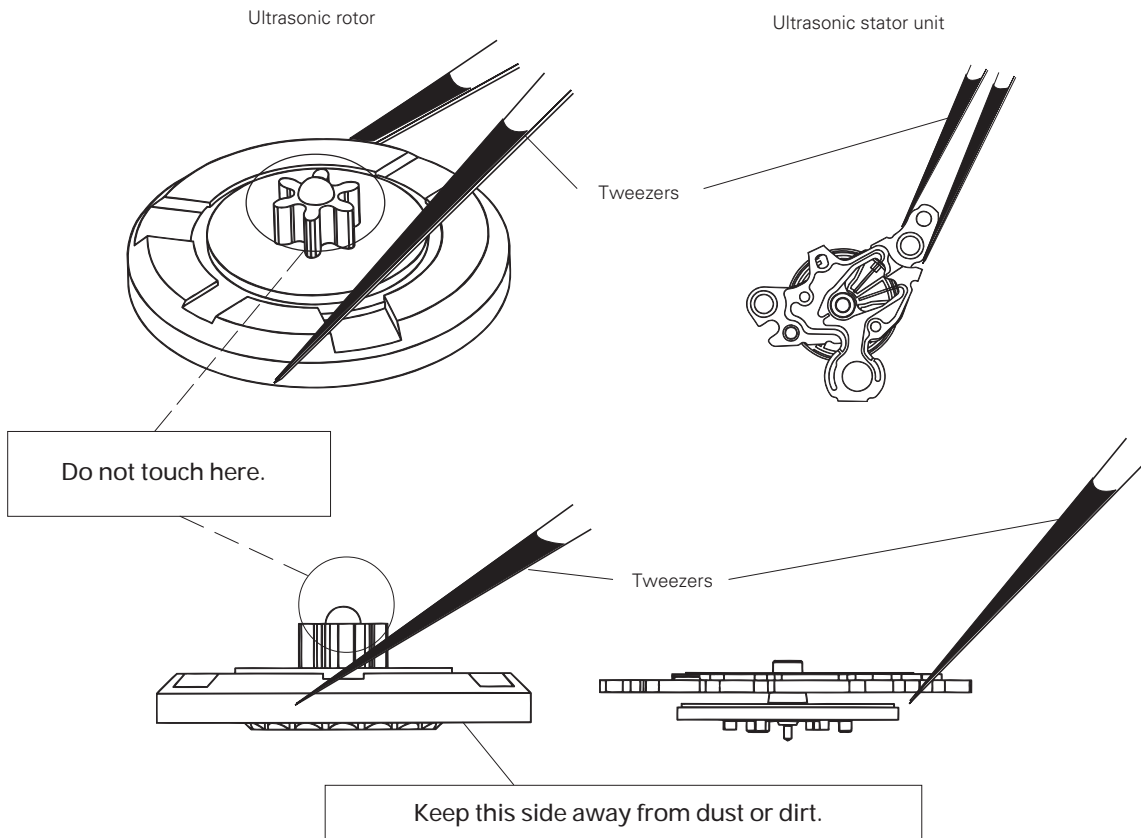


Note The pinions of the ultrasonic rotor and date driving wheel are made of plastic. Be careful not to damage or deform them while working on reassembling or disassembling.

27 Ultrasonic rotor

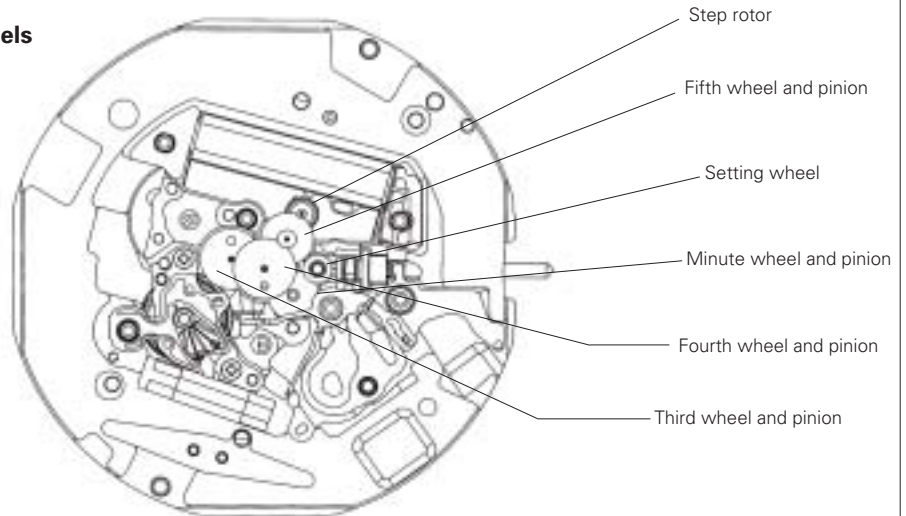
48 Ultrasonic stator unit

Note When holding the ultrasonic rotor and ultrasonic stator unit with tweezers, be sure to catch the portions illustrated below. Failure to do so may adversely affect their functions.



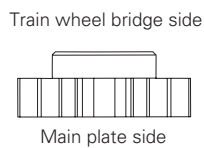
31 Train wheel bridge

- Setting position of the wheels



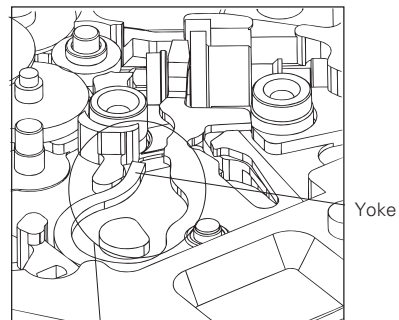
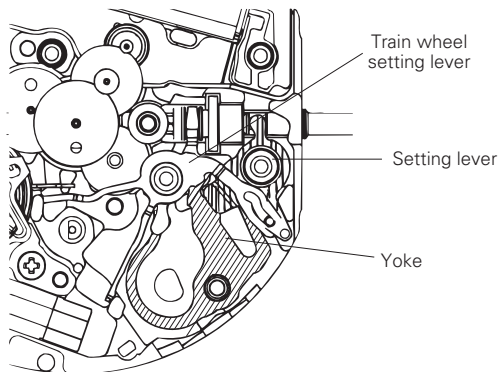
36 Setting wheel

Make sure that the top face is up.



38 Train wheel setting lever 41 Setting lever 42 Yoke

- Setting position

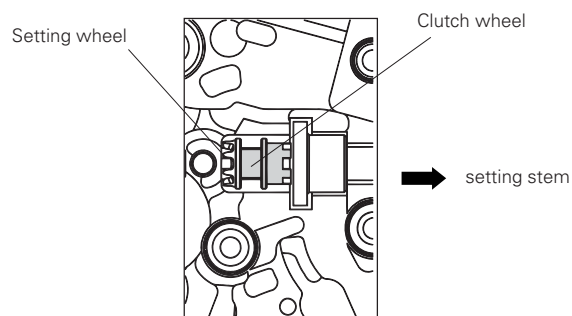


Make sure that the spring of the yoke is appropriately fit into the frame of the main plate.

Note Handle with care not to deform the spring of the yoke.
When the circuit block cover is missing, do not pull out or push back the crown.

44 Clutch wheel

To mount the clutch wheel, set the smaller face width of the wheel toward the center of the setting wheel.



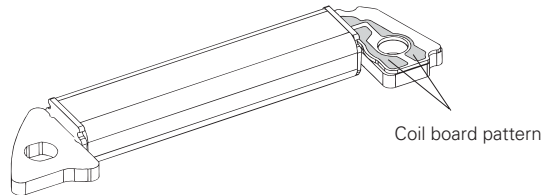
III. VALUE CHECKING

● Coil block resistance

3.6 KW ~ 4.0 KW

Measuring the coil block resistance

1. Measure the resistance with the coil block installed on the main plate.
2. Apply the red and black probes of the tester to the patterns of the coil lead terminal. While doing so, take care not to touch the end portion of the coil lead terminal, as this will break the coil wire.



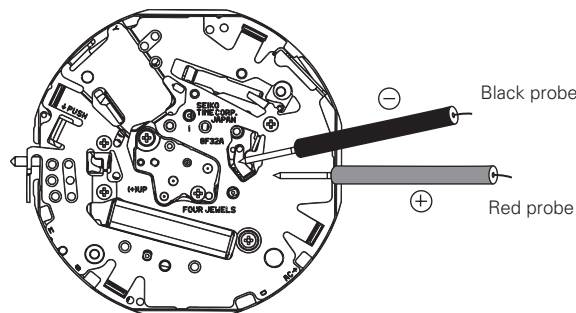
● Current consumption

For the whole movement : Less than 1.3 mA (with voltage of 3.0 V supplied from a battery)

For the circuit block alone : Less than 0.9 mA (with voltage of 3.0 V supplied from a battery)

Measuring the current consumption for the whole movement

1. Check that the crown is in the normal (pushed in) position.



2. Apply the red and black probes of the tester to the circuit block cover and the pattern of the (-) terminal of the circuit block, respectively.
3. After connecting the tester, contact the "AC" terminal of the circuit block and the circuit block cover with conductive tweezers. Then, after approximately 20 seconds, start measurement, checking that a stable measurement is obtained.

Measuring the current consumption for the circuit block alone

1. Connect the tester to the input terminals (+) and (-), and contact the "AC" and (+) terminals with conductive tweezers. Then, after approximately 10 seconds, start the measurement, checking that a stable measurement is obtained.

* While measuring current consumption, be sure to protect the circuit block from light with black cloth or the like, as the light may increase the current consumption, resulting in an inaccurate measurement.

Note 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.

Tips on repairing the perpetual calendar (4F,8F Series)

- **Be aware that incorrectly-input calendar data will cause a wrong calendar display.**
- **For troubleshooting problems with the calendar, refer to the table below.**

| Symptoms | Problems | Solutions | Reference |
|--|--|--|-----------|
| <ul style="list-style-type: none"> • The calendar does not work. | <ul style="list-style-type: none"> • The battery is running low. | <ul style="list-style-type: none"> • Replace the battery. | p.11,12 |
| | <ul style="list-style-type: none"> • The insulator for the battery is out of alignment and the battery has shorted. | <ul style="list-style-type: none"> • Set correctly the insulator for the battery. • Use a new battery with the battery insulator. | p.3 |
| | <ul style="list-style-type: none"> • The battery is not securely set to the battery holder of the circuit block cover. | <ul style="list-style-type: none"> • Securely set the battery to the battery holder of the circuit block cover. | p.11,12 |
| | <ul style="list-style-type: none"> • Problems with parts of the date dial or the date dial guard, or the date dial or the date dial guard is incorrectly mounted. | <ul style="list-style-type: none"> • Check the parts of the date dial or the date dial guard and replace them with new ones as necessary or remount them correctly. | p.18,19 |
| | <ul style="list-style-type: none"> • The date driving contact point spring or 24-hour contact point spring is not contacted with the circuit block. | <ul style="list-style-type: none"> • Remove all dust or dirt on contact points of the date driving contact point spring, 24-hour contact point spring or the circuit block. • Replace the date driving contact point spring or 24-hour contact point spring with new ones. | p.18 |
| | <ul style="list-style-type: none"> • The calendar data is incorrectly input. | <ul style="list-style-type: none"> • Refer to the technical guide to correctly input the calendar data. | p.13-16 |
| <ul style="list-style-type: none"> • The second hand moves at a five-second interval. | <ul style="list-style-type: none"> • The calendar data is incorrectly input. | <ul style="list-style-type: none"> • Refer to the technical guide to correctly input the calendar data. | p.13-16 |
| | <ul style="list-style-type: none"> • The insulator for battery is out of alignment and the battery is shorted out. | <ul style="list-style-type: none"> • Set correctly the insulator for battery. • Use a new battery with battery insulator. | p.3 |
| <ul style="list-style-type: none"> • The calendar display is wrong. | <ul style="list-style-type: none"> • The calendar data is incorrectly input. | <ul style="list-style-type: none"> • Refer to the technical guide to correctly input the calendar data. | p.13-16 |
| | <ul style="list-style-type: none"> • The date driving contact point spring, 24-hour contact point spring or the circuit block are dirty. | <ul style="list-style-type: none"> • Remove all dust or dirt on the contact points of the date driving contact point spring, 24-hour contact point spring or the circuit block. | p.18 |
| | <ul style="list-style-type: none"> • The date dial or the date dial guard is incorrectly mounted. | <ul style="list-style-type: none"> • Refer to the technical guide to correctly remount them. | p.18 |
| | <ul style="list-style-type: none"> • The date dial or the date dial guard is deformed or deteriorated. | <ul style="list-style-type: none"> • Replace the date driving contact point spring or 24-hour contact point spring with new ones. | p.18 |
| | <ul style="list-style-type: none"> • The train wheel setting lever is out of alignment. | <ul style="list-style-type: none"> • Check if the train wheel setting lever operates normally or remount it as necessary. Note that it must be mounted with the crown at the first click position. | p.21 |
| | <ul style="list-style-type: none"> • The portion for battery check of the circuit block cover is deformed. | <ul style="list-style-type: none"> • Reshape the deformed part. Replace the circuit block cover with a new one as necessary. | p.17 |
| <ul style="list-style-type: none"> • A character(s) of the calendar is out of the calendar frame. | <ul style="list-style-type: none"> • Problems with parts of the date dial or the date dial guard, or the date dial or the date dial guard is incorrectly mounted. | <ul style="list-style-type: none"> • Check the parts of the date dial or the date dial guard and replace them with new ones as necessary or remount them correctly. | p.18,19 |

* **For troubleshooting of the general defects of conventional quartz watches, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS".**

