



Seiko 5C20A,5C23A Movement Parts (1)

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

SEIKO

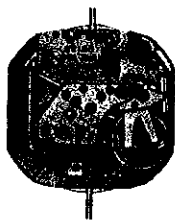
QUARTZ

**(Cal. 5C20A)
(Cal. 5C23A)**

EMMYWATCH
VINTAGE RESTORATIONS

**PARTS
CATALOGUE**

Cal. 5C20A, 5C23A



Cal. 5C23A



122 854



125 800



221 800



231 855



241 801



261 800



271 801



281 800



☆282 858



☆354 800



☆354 856



383 800



383 855



384 800



384 856



388 800



389 855



391 801



☆470 720



604 800



610 800



644 800



701 855



712 801



737 800



766 800



☆801 635



808 800



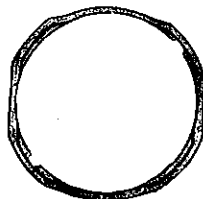
810 800



816 800



837 800



☆866 526



948 800



950 800



962 855



963 725



986 855



4001 525



4002 855



4146 855



4216 525



4225 525



4239 525



4246 525



4246 526



4259 855



4270 525



4281 525



4457 530



☆Maxell SR721W



022 427



022 436



022 780

2/1

Cal. 5C20A, 5C23A

Characteristics

| | 5C20A | 5C23A |
|--|--|--------|
| Casing diameter | 24.0 × 21.0 × 22.0 mm | |
| Maximum height | 2.9 mm | 3.3 mm |
| Jewels | 5 j | |
| Frequency of quartz crystal oscillator | 32,768 Hz (Hz=Hertz Cycles per second) | |
| Driving system | Step motor (2 poles) | |
| Regulation system | Rotary step switch | |
| Train wheel setting | | ○ |
| Instant setting device for day and date calendar | — | ○ |

| PART NO. | PART NAME | PART NO. | PART NAME |
|----------|--|----------------|---|
| 122 854 | Center wheel bridge | 4002 855 | Coil block |
| 125 800 | Train wheel bridge | 4146 855 | Step rotor |
| 221 800 | Center wheel & pinion (Cal.5C23A) | 4216 525 | Insulator for alarm lead terminal |
| 221 802 | Center wheel & pinion (Cal.5C20A) | 4225 525 | Battery clamp |
| 231 855 | Third wheel & pinion | 4239 525 | Rotor stator |
| 241 801 | Fourth wheel & pinion (Cal.5C23A) | 4246 525 | Buzzer lead terminal |
| 241 859 | Fourth wheel & pinion (Cal.5C20A) | 4246 526 | Alarm lead terminal |
| 261 800 | Minute wheel | 4259 855 | Anti-magnetic shield plate |
| 271 801 | Hour wheel (Cal.5C23A) | 4270 525 | Battery connection (—) |
| 271 802 | Hour wheel (Cal.5C20A) | 4281 525 | Alarm setting spring |
| 281 800 | Setting wheel | 4283 530 | Alarm wheel clamp (Cal.5C20A) |
| ☆282 855 | Clutch wheel (Cal.5C20A) | 4457 530 | Circuit block cover (Cal.5C23A) |
| ☆282 858 | Clutch wheel (Cal.5C23A,5C20A) | 4457 534 | Circuit block cover (Cal.5C20A) |
| ☆354 800 | Winding stem (For alarm) | 011 570 | Lower hole jewel for step rotor |
| ☆354 856 | Winding stem | 011 537 | Upper hole jewel for fourth wheel |
| 383 800 | Setting lever (For alarm) | 011 568 | Upper hole jewel for step rotor |
| 383 855 | Setting lever | 011 570 | Upper hole jewel for third wheel |
| 384 800 | Yoke (For alarm) | 011 570 | Upper hole jewel for fifth wheel |
| 384 855 | Yoke (Cal.5C20A) | 022 427 | Battery clamp screw |
| 384 856 | Yoke (Cal.5C23A) | 022 436 | Train wheel screw |
| 388 800 | Setting lever spring (For alarm) | 022 436 | Alarm set indicate lever screw |
| 389 855 | Setting lever axle spring | 022 436 | Circuit block cover screw |
| 391 801 | Train wheel setting lever | 022 436 | Setting wheel plate complete screw |
| ☆470 720 | Day star with dial disk (Cal.5C23A) | 022 436 | Setting lever spring screw (For alarm) |
| 604 800 | Minute wheel bridge | 022 780 | Date dial guard screw (Cal.5C23A) |
| 610 800 | Alarm set indicate lever (Cal.5C23A) | 022 780 | Alarm wheel Clamp screw (Cal.5C20A) |
| 610 801 | Alarm set indicate lever (Cal.5C20A) | ☆022 197 | Tube for train wheel bridge (A) |
| 644 800 | Alarm setting jumper | ☆027 198 | Tube for train wheel bridge (B) |
| 701 855 | Fifth wheel & pinion | ☆027 199 | Tube for circuit block cover screw (B) |
| 712 801 | Guide plate for date dial (Cal. 5C23A) | ☆027 200 | Tube for circuit block cover screw (A) |
| 737 800 | Date corrector setting wheel (Cal. 5C23A) | 027 201 | Tube for battery clamp screw |
| 766 800 | Intermediate minute wheel | ☆027 202 | Tube for setting wheel plate complete screw (A) |
| ☆801 635 | Date dial (Cal.5C23A) | ☆027 203 | Tube for setting wheel plate complete screw (B) |
| 808 800 | Date dial guard (Cal.5C23A) | 027 204 | Setting lever spring screw pin (For alarm) |
| 810 800 | Date jumper (Cal.5C23A) | ☆027 205 | Tube for date dial guard screw (A) |
| 816 800 | Date driving wheel (Cal.5C23A) | ☆027 206 | Tube for date dial guard screw (B) |
| 837 800 | Alarm set indicate lever guard | 027 300 | Alarm switch pin |
| ☆866 526 | Holding ring for dial (Cal.5C23A) | 027 305 | Guide pin for battery clamp |
| 948 800 | Alarm wheel (Cal.5C23A) | 027 796 | Setting lever pin |
| 948 801 | Alarm wheel (Cal.5C20A) | 027 797 | Yoke pin |
| 950 800 | Intermediate alarm wheel | 027 798 | Setting lever pin (For alarm) |
| 962 855 | Intermediate wheel for calendar correction (Cal.5C23A) | 027 799 | Alarm set indicate lever pin |
| 963 725 | Snap for day star with dial disk (Cal.5C23A) | ☆Maxell SR721W | Silver oxide battery |
| 986 855 | Day-date corrector wheel rocking lever | ☆SEIKO TR721W | Silver (II) oxide battery |
| 4001 525 | Circuit block | 4589 801 | Piezoelectric element |

☆⇨ Please see remarks on the reverse page.

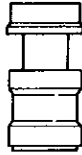
Part numbers in light letters are not shown in photos.

Cal. 5C20A, 5C23A

Remarks :

Clutch wheel (Cal. 5C20A)

- ☆282 855 } There are two types of clutch wheel in Cal. 5C20A.
 ☆282 858 } Refer to the illustration below.



☆282 855.....at 9 o'clock position.



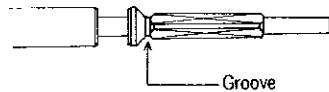
☆282 858.....at 3 o'clock position.

Winding stem

- ☆354 800 (For alarm) } The type of winding stem is determined based on the design of cases and dials.
 ☆354 856 } Check the case number and refer to "SEIKO Quartz Casing Parts Catalogue" to choose a corresponding winding stem.



☆354 856.....at 9 o'clock position.



☆354 800 (For alarm).....at 3 o'clock position.

Day star with dial disk (Cal. 5C23A)

- ☆470 720 (English-Spanish, Black figures on white background).....
 Used when the crown, winding stem (For alarm) and calendar frame are located at 3 o'clock position, and winding stem 9 o'clock position.
 If any other type of day star with dial disk is required, specify the number printed on the disk.

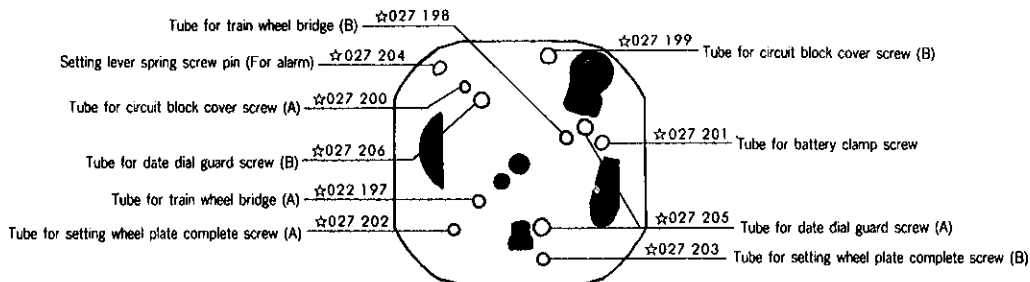
Date dial (Cal. 5C23A)

- ☆801 635 (Black figures on white background).....
 Used when the crown, winding stem (For alarm) and calendar frame are located at 3 o'clock position, and winding stem is 9 o'clock position.
 If any other type of date dial is required, specify ① Cal. No. ② Jewels ③ The crown position ④ The calendar frame position and ⑤ Dial No.

Holding ring for dial (Cal. 5C23A)

- ☆866 526.....The type of holding ring for dial is determined based on the design of cases and dials.
 Check the case number and refer to "SEIKO Quartz Casing Parts Catalogue" to choose an appropriate holding ring for dial.

Tube for train wheel bridge A, B, Tube for circuit block cover screw A, B,
 Tube for setting wheel plate complete screw A, B, Tube for date dial guard screw A, B.



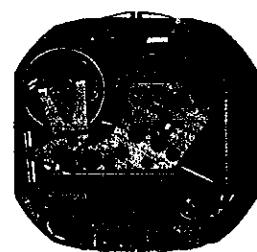
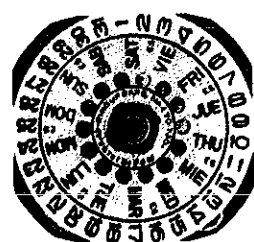
Battery

- ☆Maxell SR721W } The substitutive battery might be authorized in the future.
 ☆SEIKO (SEIZAIKEN) TR721W } In that case, please refer to separate "BATTERY LIST FOR SEIKO QUARTZ WATCHES".
 Note that SEIKO battery is marked with "SEIZAIKEN" on its (+) side.

TECHNICAL GUIDE

SEIKO
QUARTZ

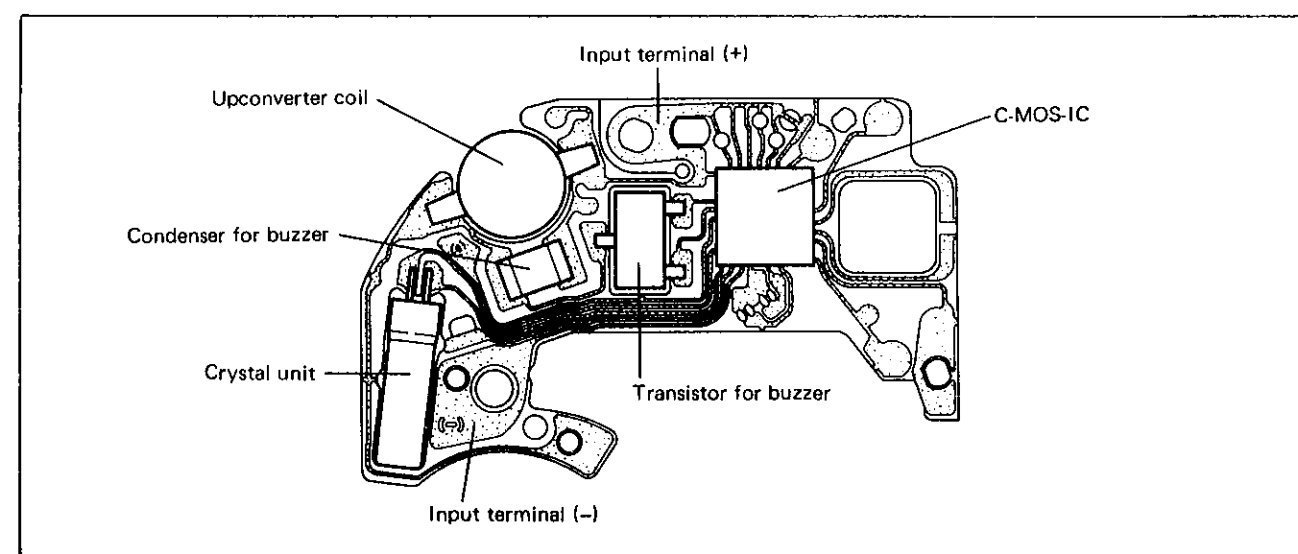
CAL. 5C20A
CAL. 5C23A



I. SPECIFICATIONS

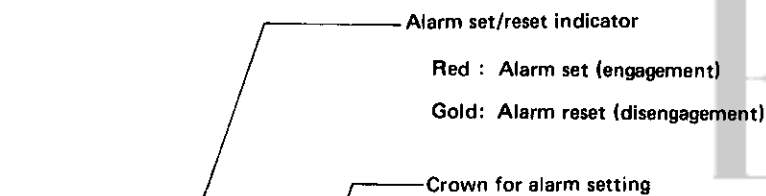
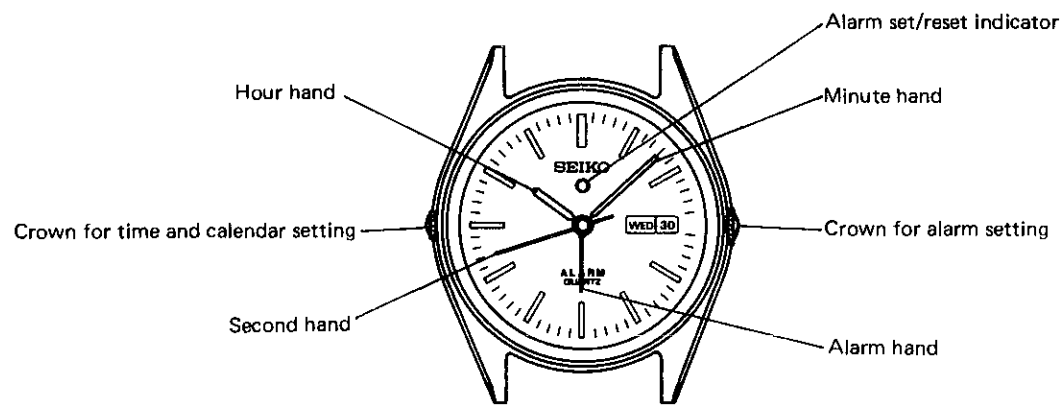
| Cal. No. | 5C20A | 5C23A | |
|---------------------------------|--|---|--------|
| Item | | | |
| Time indication | 2 hands | 3 hands | |
| Alarm time indication | Alarm index hand | | |
| Additional mechanism | <ul style="list-style-type: none"> • Alarm function (Rings for 20 seconds) • Electronic circuit reset switch | | |
| | — | <ul style="list-style-type: none"> • Day & date calendar • Train wheel setting device • Battery life indicator | |
| Loss/gain | Monthly rate at normal temperature range: less than 15 seconds | | |
| Movement size | Outside diameter | 24.6 mm 21.0 mm between 3 o'clock and 9 o'clock sides 22.0 mm between 6 o'clock and 12 o'clock sides | |
| | Casing diameter | 24.0 mm 21.0 mm between 3 o'clock and 9 o'clock sides 22.0 mm between 6 o'clock and 12 o'clock sides | |
| | Height | 2.9 mm | 3.3 mm |
| Regulation system | Pattern cutting system | | |
| Measuring gate by quartz tester | Use 10-second gate. | | |
| Battery | SEIKO (SEIZAIKEN) TR721W, Maxell SR721W Battery life is approximately 2 years. Voltage: 1.55V | | |

II. STRUCTURE OF THE CIRCUIT BLOCK



III. DESIGNATION AND OPERATION

Ex.: Cal. 5C23A



Red : Alarm set (engagement)
Gold: Alarm reset (disengagement)

| Crown for alarm setting | Alarm set/reset indicator |
|--|---------------------------|
| Normal position: Alarm reset (disengagement) | Gold |
| 1st click: Alarm engagement | Red |
| 2nd click: Alarm time setting | Red |

Crown for time and calendar setting

Normal position: Free

1st click: Calendar (day and date) setting

2nd click: Time setting

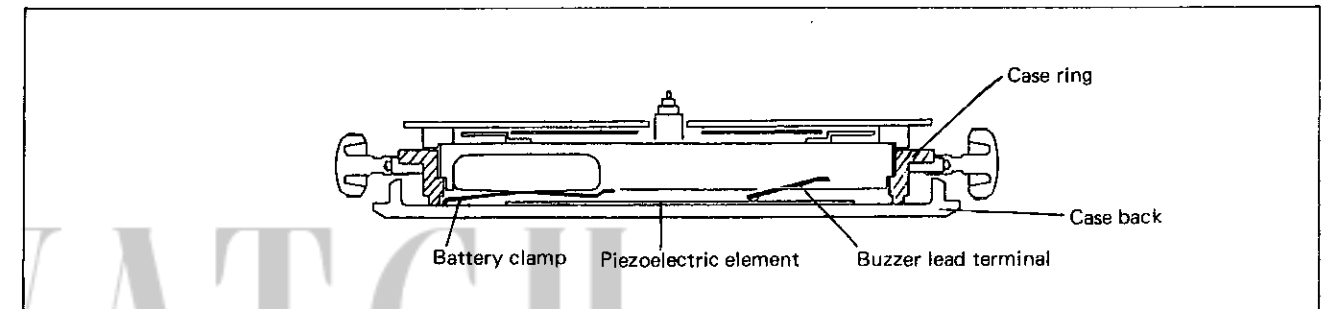
* The two crowns can be operated independently of each other.

IV. DISASSEMBLING, REASSEMBLING, AND LUBRICATING

1. How to install the hands



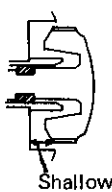
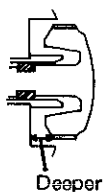
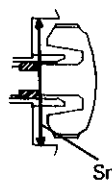
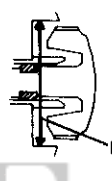
Since the alarm hand is installed, the hands setting procedure is different from that of ordinary analogue quartz watches. Install the hands, following the steps below.

- 1) Push in the 9 o'clock position crown completely and confirm that the step rotor is moving.
- 2) (Only for models with calendar)
Pull out the 9 o'clock position crown all the way and turn it counterclockwise until the date has just changed to the next.
- 3) Install the case ring into the inside of the case back, and then set the movement on it so that the buzzer lead terminal touches the piezoelectric element and the end of the battery clamp also touches the case back.

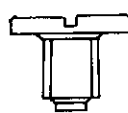
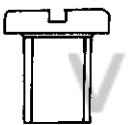

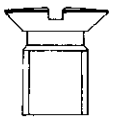


- 4) Pull out the 3 o'clock position crown all the way, then turn it slowly so that the alarm hand turns counterclockwise click by click, and stop turning it when the alarm starts ringing.
- 5) With the 9 o'clock position crown pulled out completely, turn it clockwise to turn back the minute hand approximately 30 minutes and then turn it counterclockwise to advance the hands slowly until the alarm starts ringing.
- 6) Keeping the crowns at these positions, install the alarm, hour, and minute hands on the 12 o'clock position of the dial.
- 7) Turn back the hour and minute hands a little, and then advance them slowly to locate their positions where the alarm starts ringing.
- 8) Install the second hand on the 12 o'clock position.

2. How to distinguish the stem and the case between their respective two types

| | | 9 o'clock side | 3 o'clock side |
|------|----------------------------|--|--|
| Stem | |  |  |
| Case | Cal. 5C20A |  The case's groove for a crown is shallower than that of 3 o'clock side. Shallower |  The case's groove for a crown is deeper than that of 9 o'clock side. Deeper |
| | Cal. 5C23A (with calendar) |  The case's groove for a crown is smaller than that of 3 o'clock side. Smaller |  The case's groove for a crown is larger than that of 9 o'clock side. Larger |

3. List of the screws used

| Shape | Part No. | Name | Shape | Part No. | Name |
|---|----------|--|---|----------|--------------------------------------|
|  | 022 436 | Circuit block cover screw (2 pcs.) |  | 022 427 | Battery clamp screw (1 pc.) |
| | | Setting lever spring screw (for alarm) (1 pc.) | | | |
|  | 022 436 | Screw for alarm set indicate lever guard (1 pc.) |  | 022 780 | Date dial guard screw (Cal. 5C23A) |
| | | Train wheel bridge screw (2 pcs.) | | | Alarm wheel clamp screw (Cal. 5C20A) |
| | | Setting wheel plate complete screw (2 pcs.) | | | (3 pcs.) |

4. Disassembling, reassembling, and lubricating of the module

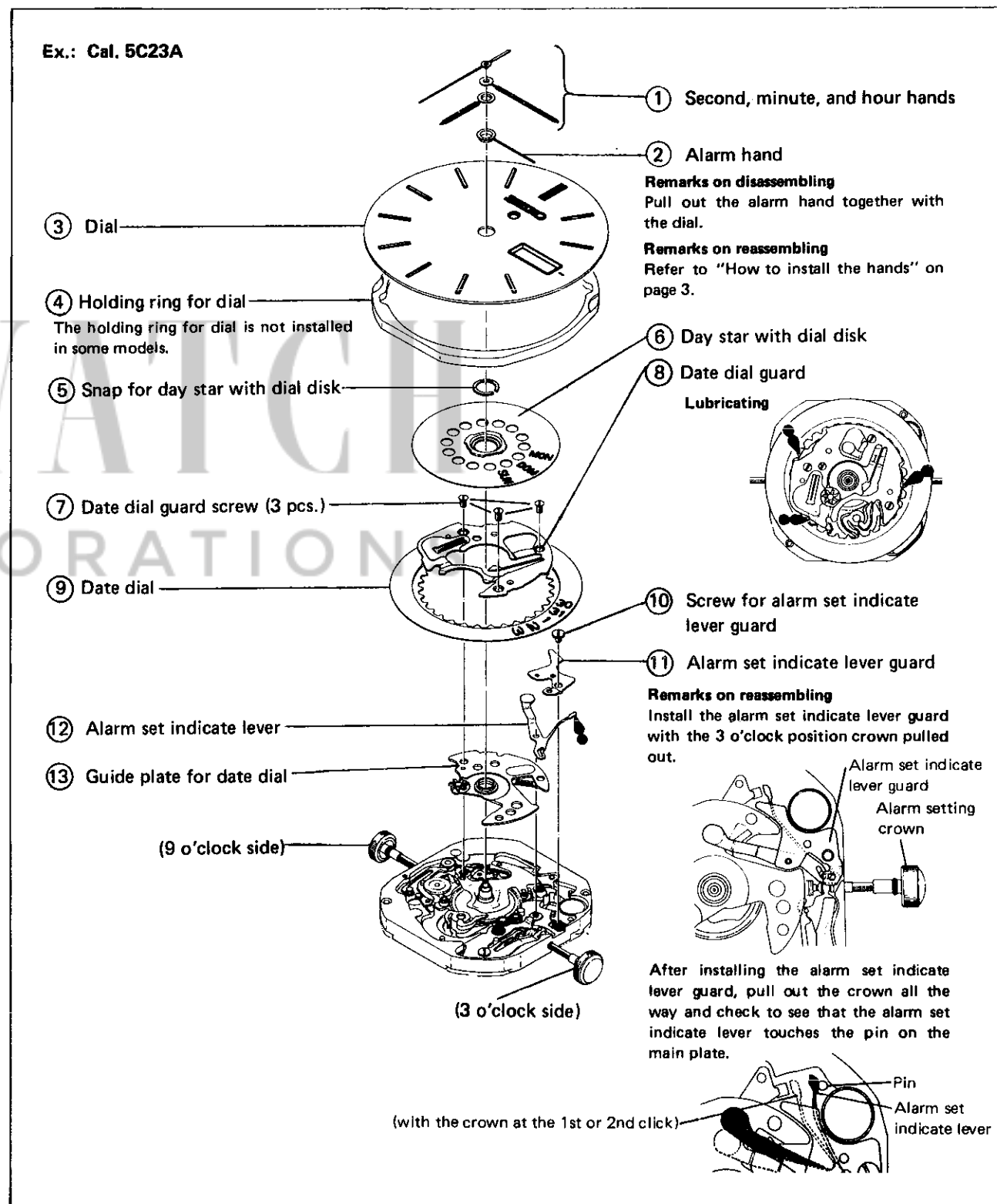
(1) Disassembling, reassembling, and lubricating of the setting mechanism

Disassembling procedures Figs.: ① → ③①

Reassembling procedures Figs.: ③① → ①

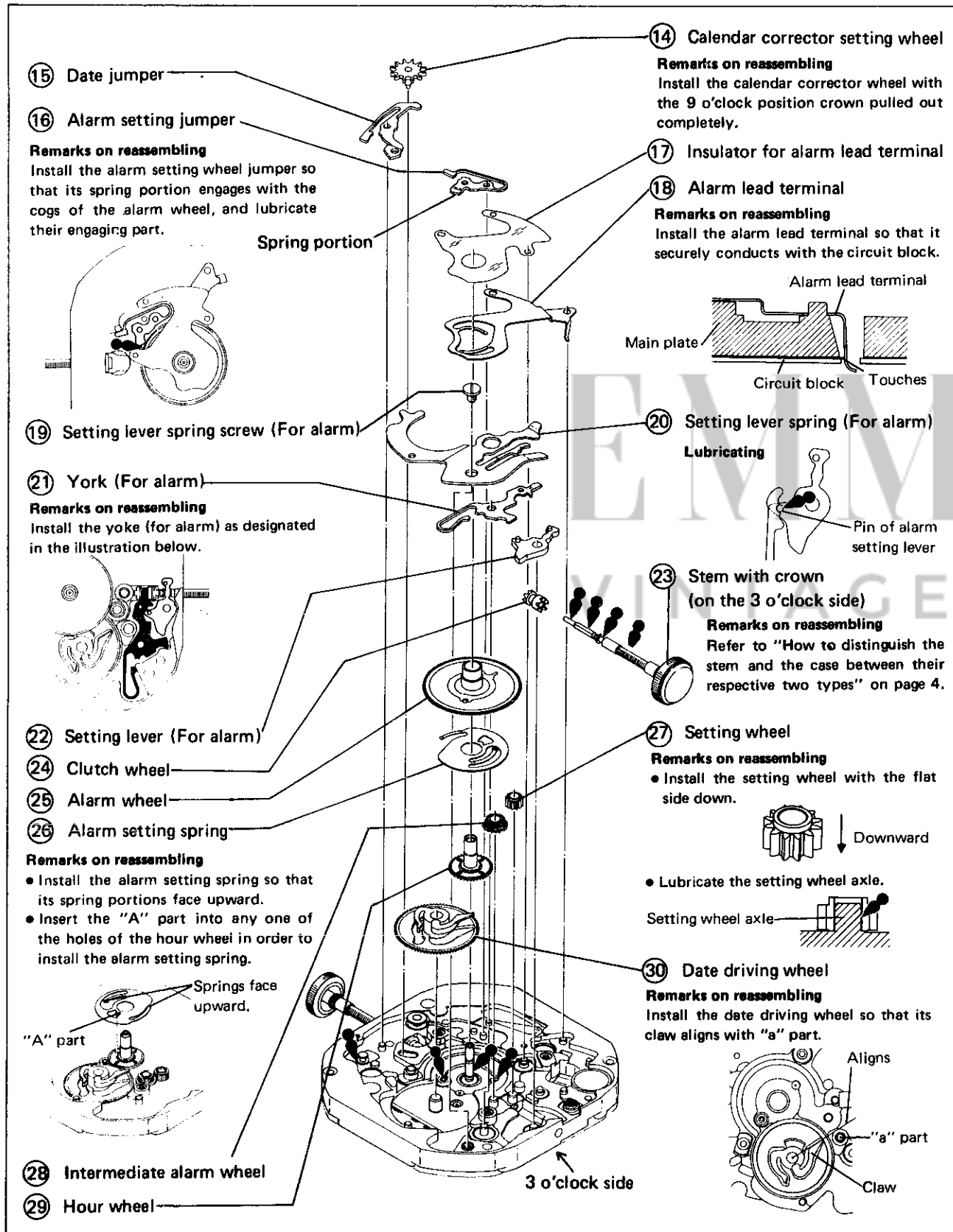
Lubricating: ● Moebius A
Normal quantity

● Second hand ~ Guide plate for date dial



• Calendar corrector setting wheel ~ Date driving wheel

Lubricating: ● Moebius A
Normal quantity

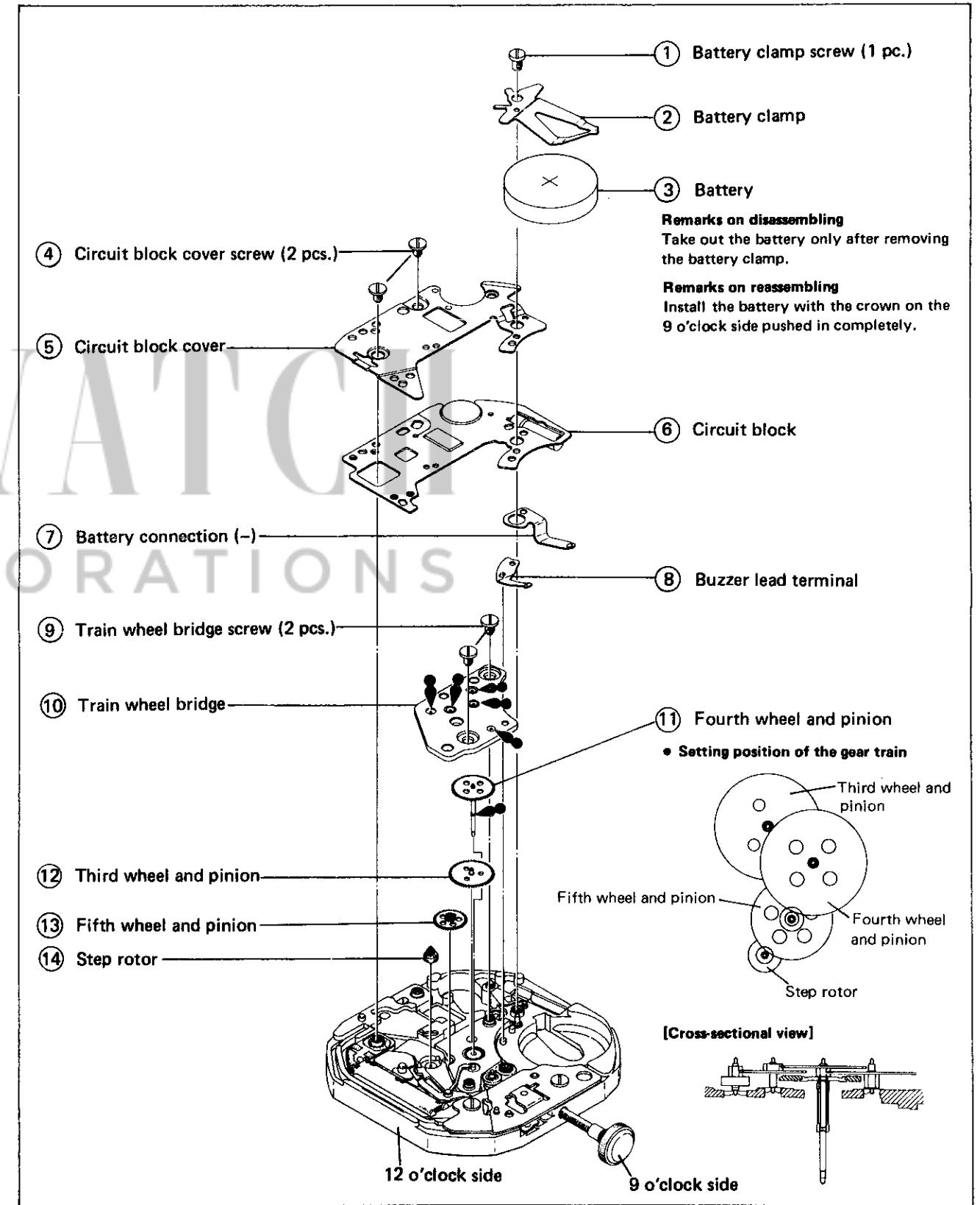


(2) Disassembling, reassembling, and lubricating of the gear train mechanism

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

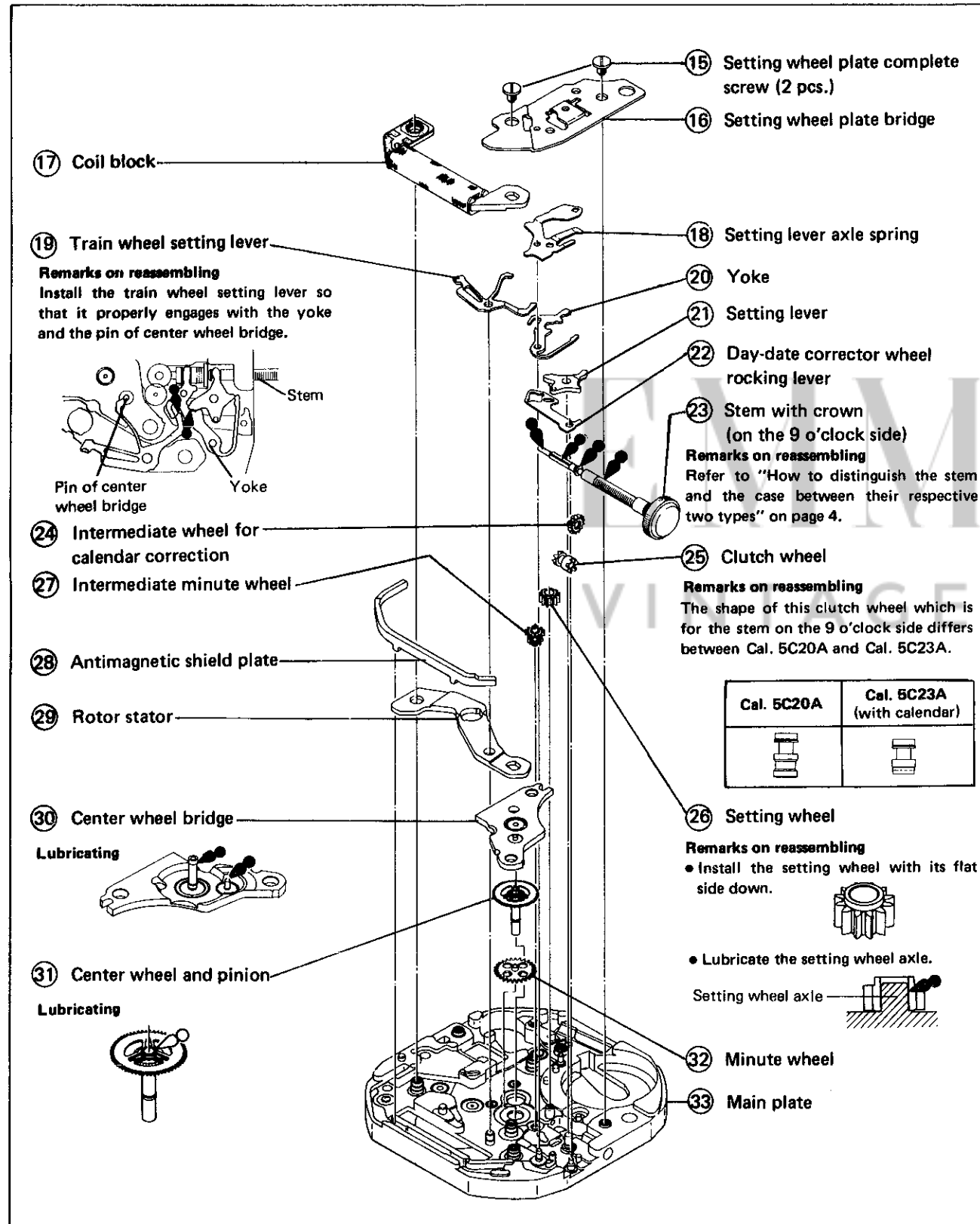
Lubricating: ● Moebius A
Normal quantity

• Battery clamp screw ~ Rotor stator



● Setting wheel plate complete screw ~ Main plate

Lubricating: ● Moebius A
 ○ SEIKO Watch Oil S-6
 Normal quantity



V. CHECKING AND ADJUSTMENT

● The explanation here is only for the particular points of Cais. 5C20A and 5C23A.
 Refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTION" for SEIKO Analogue Quartz for details.

| Procedure | |
|---|--|
| CHECK OUTPUT SIGNAL | |
| Use the quartz tester. Range to be used: 10-second gate | |
| CHECK HANDS SETTING CONDITION | |
| CHECK BATTERY VOLTAGE | |
| Use the Digital Multi-Tester. Mode to be used: DC V | |
| ● When taking out the battery, remove the battery clamp in advance. | |
| CHECK COIL BLOCK | |
| Use the Digital Multi-Tester. Mode to be used: Ω | |
| Result: Normal : More than 1.57V Defective : Less than 1.57V | |
| CHECK ALARM SET CONDITION (by using the 3 o'clock position crown) | |
| Crown position | Alarm |
| Normal position | Alarm set indicator is gold. |
| 1st click | Alarm set indicator turns red. |
| 2nd click | Alarm hand turns both clockwise and counter-clockwise smoothly. Alarm rings when the alarm hand corresponds with the hour hand. |
| Result: Normal : 2.7KΩ ~ 3.4KΩ Defective : Less than 2.7KΩ More than 3.4KΩ | |

Procedure

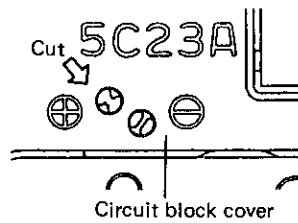
CHECK ACCURACY

Use the 10-second gate of the quartz tester.

How to adjust time accuracy
(Pattern cutting regulation system)

1. Confirm the appropriate pattern to be cut over the circuit block cover.
(-) pattern: to lose approximately 0.26 sec./day
(+) pattern: to gain approximately 0.26 sec./day
2. Take off the circuit block cover.
3. Cut the pattern.
4. Remove the sludge completely.

Ex.: The illustration below (Cal. 5C23A) shows that the (+) pattern is cut to gain time.

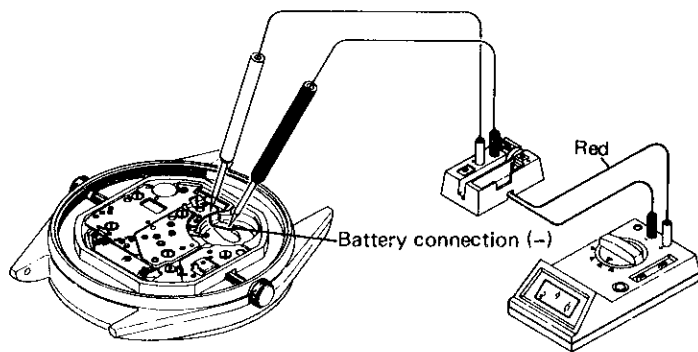


CHECK CURRENT CONSUMPTION

- Be sure to protect the movement from light with black paper while measuring.
- Do not check current consumption under an incandescent lamp, since strong light may cause a watch to consume excess current.

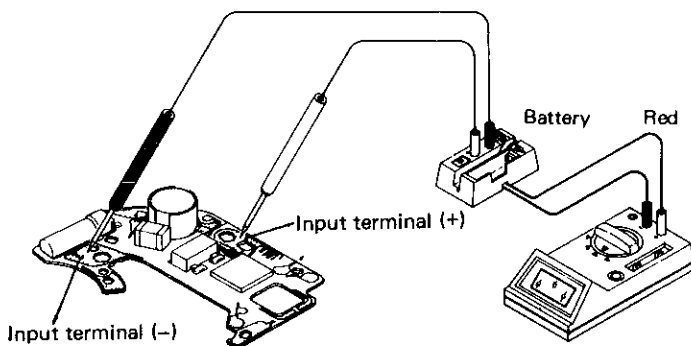
Use the Digital Multi-Tester.
Mode to be used: μA

1. Current consumption for the whole of the module



Result:
Normal : Less than $1.3\mu A$
Defective : More than $1.3\mu A$

2. Current consumption for the circuit block alone



Result:
Normal : Less than $0.4\mu A$
Defective : More than $0.4\mu A$

Procedure

CHECK ALARM TEST SYSTEM

Pull out the 3 o'clock position crown completely and turn it counterclockwise.
Check to see that the alarm rings when the alarm hand coincides with the hour hand.



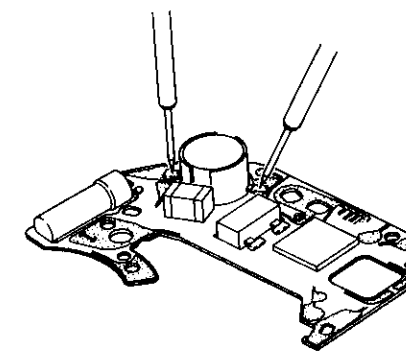
CHECK ALARM CONDITION

1. Check to see if there is any contamination on the piezoelectric element on the inside surface of the case back and the connecting portion of the buzzer lead terminal and if there is any deformation of the buzzer lead terminal.

Result:
Normal : Neither contamination nor deformation
Defective — Contaminated
Wipe of contamination.
Deformed
Rectify the shape with tweezers or replace the buzzer lead terminal with a new one.

2. Measure the resistance for the upconverter coil of the circuit block.

Use the Digital Multi-Tester.
Mode to be used: Ω



Result:
Normal : $40\Omega \sim 90\Omega$
Defective — Less than 40Ω
(Short circuit)
More than 90Ω
(Broken wire)

All procedures of Disassembling, Reassembling, Lubricating, Checking and Adjustment are completed.