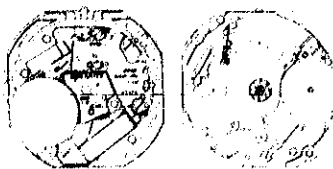
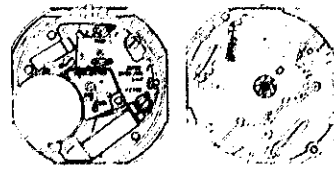


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. V33FA Cal. V33GA

[SPECIFICATIONS]


Item	Cal. No.	V33FA	V33GA
Movement			
Movement size		Outside diameter φ24.0 mm 21.5 mm between 3 o'clock and 9 o'clock sides 22.1 mm between 6 o'clock and 12 o'clock sides Casing diameter φ23.3 mm 21.3 mm between 3 o'clock and 9 o'clock sides 21.5 mm between 6 o'clock and 12 o'clock sides Height 3.05 mm (Including battery portion)	Outside diameter φ24.0 mm 21.5 mm between 3 o'clock and 9 o'clock sides 21.5 mm between 6 o'clock and 12 o'clock sides
Time indication		Three hands	
Driving system		Step motor (Load compensated driving pulse type)	
Additional mechanism		Date calendar (Date hand) Day calendar (Day hand) Month calendar (Month hand) 24-hour dial disk Instant date setting device Instant month setting device Electronic circuit reset switch Train wheel setting device	24-hour hand
Loss/gain		Monthly rate at normal temperature range: less than 20 seconds	
Regulation system		Nil	
Measuring gate by quartz tester		Use 10-second gate	
Battery		SEIKO SR916SW MAXELL SR916SW MATSUSHITA SR916SW Battery life is approximately 3 years. Voltage: 1.55V	
Jewels		1 jewel	

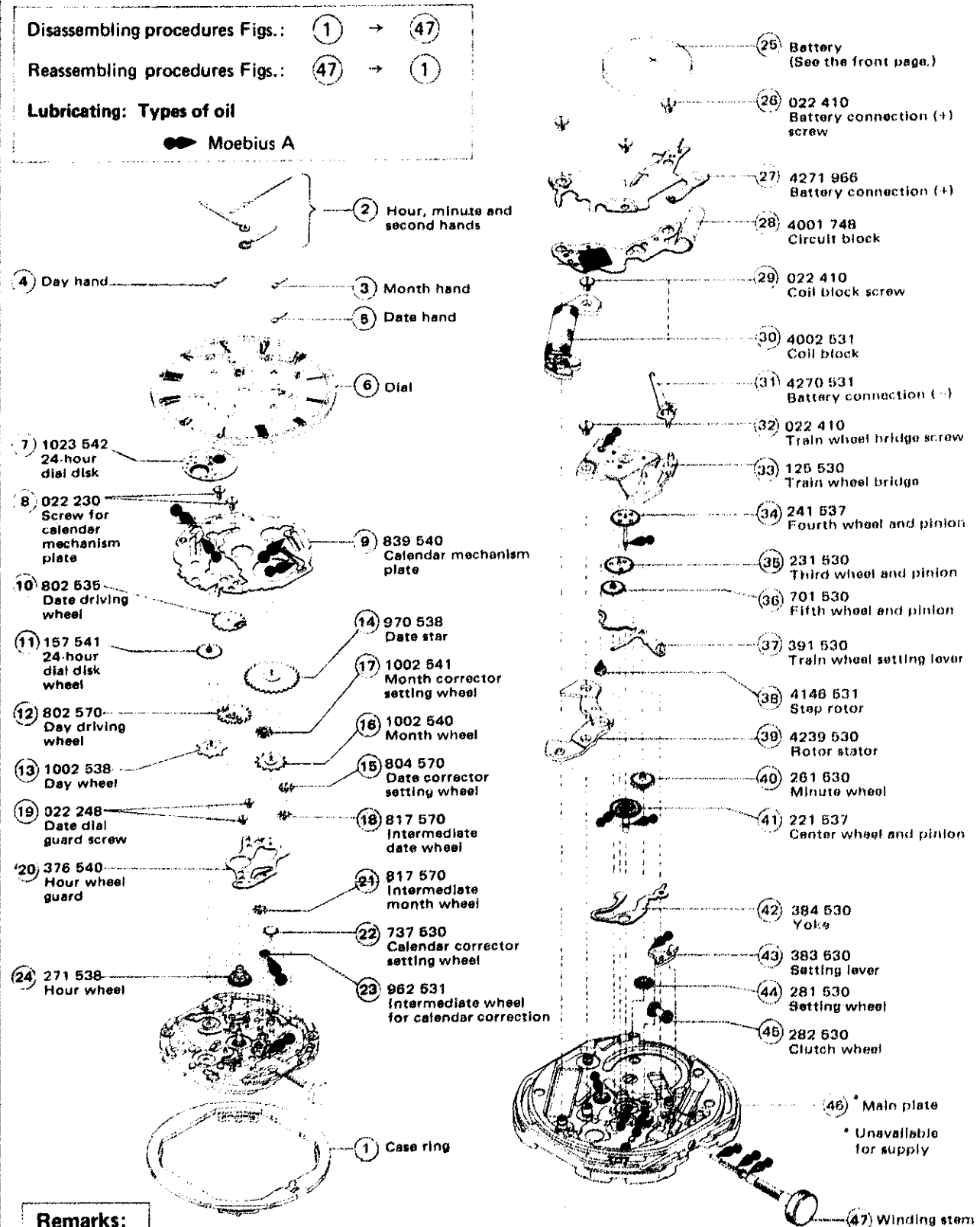
HATTORI SEIKO CO., LTD.

PARTS CATALOGUE


Cal. V33FA

Disassembling procedures Figs.: ① → ④⑦
 Reassembling procedures Figs.: ④⑦ → ①

Lubricating: Types of oil
 Moebius A



① Case ring
 ② Hour, minute and second hands
 ③ Month hand
 ④ Day hand
 ⑤ Date hand
 ⑥ Dial
 ⑦ 1023 542 24-hour dial disk
 ⑧ 022 230 Screw for calendar mechanism plate
 ⑨ 839 540 Calendar mechanism plate
 ⑩ 802 535 Date driving wheel
 ⑪ 157 541 24-hour dial disk wheel
 ⑫ 802 570 Day driving wheel
 ⑬ 1002 538 Day wheel
 ⑭ 970 538 Date star
 ⑮ 804 570 Date corrector setting wheel
 ⑯ 1002 540 Month wheel
 ⑰ 1002 541 Month corrector setting wheel
 ⑱ 022 248 Date dial guard screw
 ⑲ 022 248 Date dial guard screw
 ⑳ 376 540 Hour wheel guard
 ㉑ 817 570 Intermediate date wheel
 ㉒ 817 570 Intermediate month wheel
 ㉓ 737 530 Calendar corrector setting wheel
 ㉔ 271 538 Hour wheel
 ㉕ 982 531 Intermediate wheel for calendar correction
 ㉖ 282 530 Clutch wheel
 ㉗ 281 530 Setting wheel
 ㉘ 383 530 Setting lever
 ㉙ 384 530 Yoke
 ㉚ 221 537 Center wheel and pinion
 ㉛ 261 530 Minute wheel
 ㉜ 4239 530 Rotor stator
 ㉝ 4148 531 Step rotor
 ㉞ 391 530 Train wheel setting lever
 ㉟ 701 530 Fifth wheel and pinion
 ㊱ 231 530 Third wheel and pinion
 ㊲ 241 537 Fourth wheel and pinion
 ㊳ 125 530 Train wheel bridge
 ㊴ 022 410 Train wheel bridge screw
 ㊵ 4270 531 Battery connection (-)
 ㊶ 4002 531 Coil block
 ㊷ 022 410 Coil block screw
 ㊸ 4001 748 Circuit block
 ㊹ 4271 966 Battery connection (+)
 ㊺ 022 410 Battery connection (+) screw
 ㊻ Battery (See the front page.)
 ㊼ * Main plate
 ㊽ * Unavailable for supply
 ㊾ Winding stem

Remarks:
 ㊿ Winding stem 354 530
 The type of winding stem is determined based on the design of case.
 Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.
 Please see the remarks on the following pages.

PARTS CATALOGUE

Cal. V33GA

TECHNICAL GUIDE

Cal. V33FA, V33GA

Disassembling procedures Figs.: 1 → 47
 Reassembling procedures Figs.: 47 → 1
 Lubricating: Types of oil
 ● Moebius A

1 Case ring
 2 Hour, minute and second hands
 3 24 hour hand
 4 Month hand
 5 Day hand
 6 Date hand
 7 Dial
 8 022 230 Screw for calendar mechanism plate
 9 839 541 Calendar mechanism plate
 10 802 535 Date driving wheel
 11 157 540 24-hour hand wheel
 12 802 570 Day driving wheel
 13 1002 538 Day wheel
 14 970 538 Date star
 15 804 570 Date corrector setting wheel
 16 1002 540 Month wheel
 17 1002 541 Month corrector setting wheel
 18 817 570 Intermediate date wheel
 19 022 248 Date dial guard screw
 20 376 540 Hour wheel guard
 21 817 570 Intermediate month wheel
 22 737 530 Calendar corrector setting wheel
 23 862 531 Intermediate wheel for calendar correction
 24 271 538 Hour wheel
 25 Battery (See the front page.)
 26 022 410 Battery connection (+) screw
 27 4271 969 Battery connection (+)
 28 4001 748 Circuit block
 29 022 410 Coll block screw
 30 4002 531 Coll block
 31 4270 531 Battery connection (-)
 32 022 410 Train wheel bridge screw
 33 125 530 Train wheel bridge
 34 241 537 Fourth wheel and pinion
 35 231 530 Third wheel and pinion
 36 701 530 Fifth wheel and pinion
 37 391 530 Train wheel setting lever
 38 4146 531 Step rotor
 39 4239 530 Rotor stator
 40 261 530 Minute wheel
 41 221 537 Center wheel and pinion
 42 384 530 Yoke
 43 383 530 Setting lever
 44 281 530 Setting wheel
 45 282 530 Clutch wheel
 46 * Main plate
 * Unavailable for supply
 47 Winding stem

Remarks:
 47 Winding stem 354 530
 The type of winding stem is determined based on the design of case.
 Check the case number and refer to "Casing Parts Catalogue" to choose a corresponding winding stem.
 ○ □ Please see the remarks on the following pages.

- The explanation here is only for the particular points of Cal. V33FA and V33GA.
- For repairing, checking and measuring procedures, refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTIONS". For an explanation of items that are not mentioned here, refer to the "TECHNICAL GUIDE for Cal. V3 SERIES".

I. REMARKS ON DISASSEMBLING AND REASSEMBLING

Hands

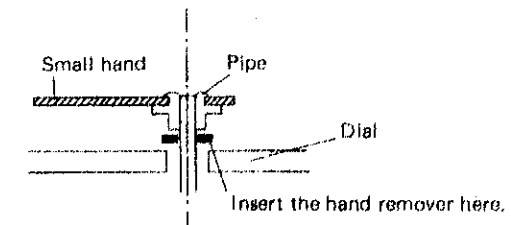
• How to install

- 1) Pull out the crown to the second click and turn it until the date driving wheel becomes completely disengaged with the date star. Then, set the dial.
- 2) Install the date, day and month hands in order.
- 3) With the crown at the second click, turn it until the date hand shifts.
- 4) Install the 24-hour hand.*
- 5) Install the hour, minute and second hands.

* 4) is only for Cal. V33GA.

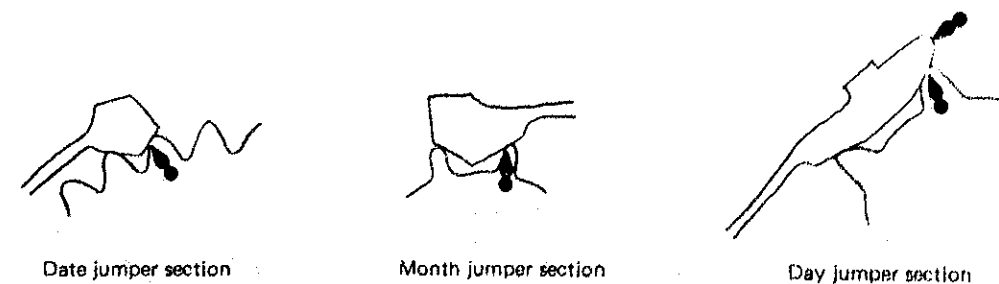
• Remarks on removing the small hands (Date, day, month and 24-hour hands)

- When pulling out the small hands, be sure to hold the dial while pulling them out.
- When pulling out a small hand, put the hand remover under the pipe of the hand and remove it.



9 Calendar mechanism plate

• Lubricating

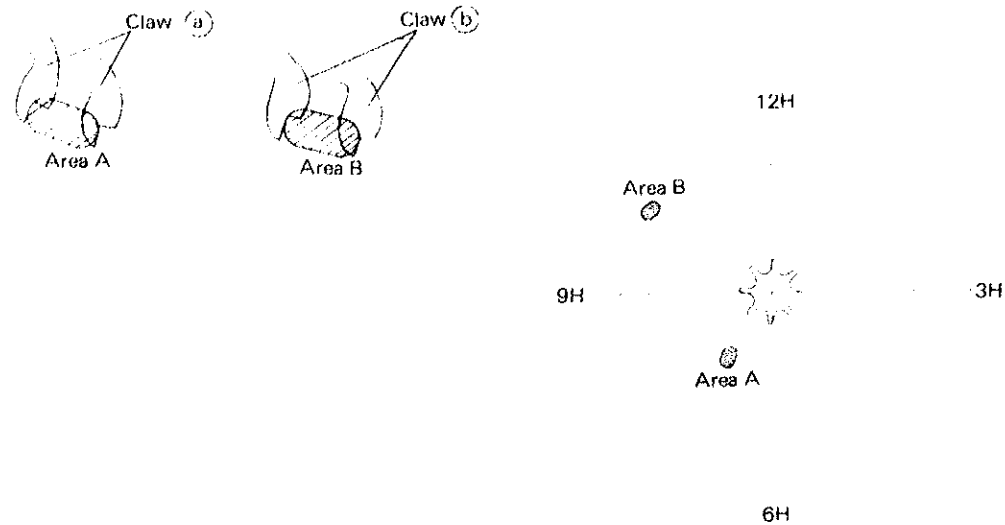


(10) Date driving wheel

(12) Day driving wheel

• **Setting position**

Set the date driving wheel (10) so that its claw (a) is in shaded area A. (See the illustration below.)
Set the day driving wheel (12) so that its claw (b) is in shaded area B. (See the illustration below.)

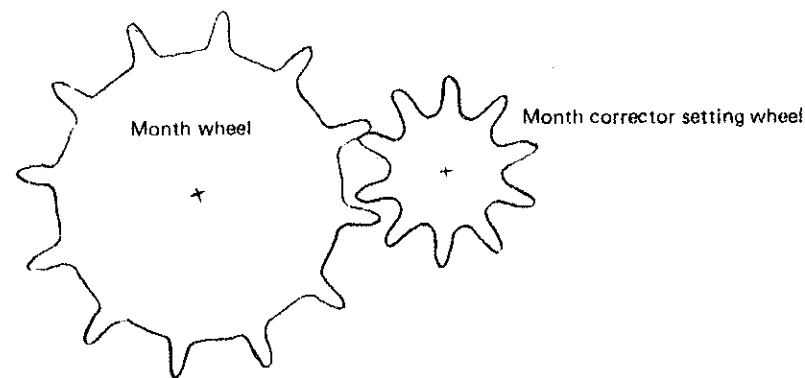


(16) Month wheel

(17) Month corrector setting wheel

• **Setting position**

Set the month wheel and month corrector setting wheel so that two teeth of the month corrector setting wheel are meshed with a tooth of the month wheel.



(10) Date driving wheel

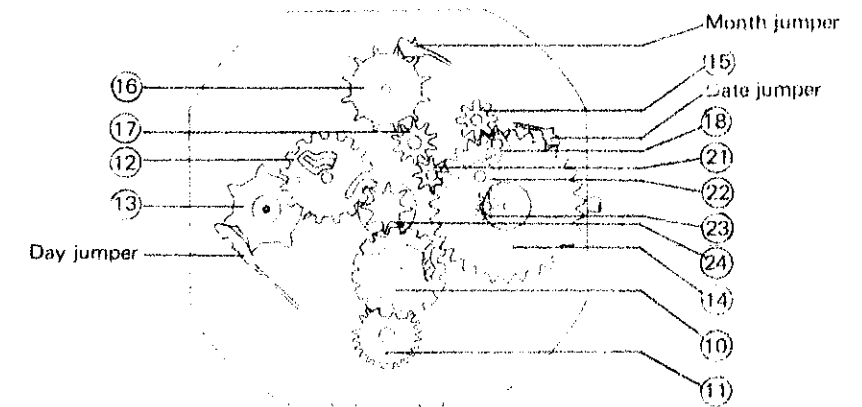
(18) Intermediate date wheel

(21) Intermediate month wheel

(24) Hour wheel

• **How to install**

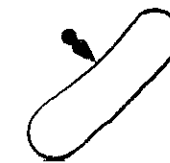
When setting the calendar wheels, refer to the illustration below.
Set the jumpers to mesh with the teeth.



(22) Calendar corrector setting wheel

• **Lubricating**

Lubricate the sliding surfaces of the calendar corrector setting wheel and main plate.



(23) Intermediate wheel for calendar correction

• **Lubricating**



II. VALUE CHECKING

• **Coil block resistance**

3.0KΩ ~ 3.4KΩ

• **Current consumption**

For the whole of the movement: Less than 1.2μA
For the circuit block alone : Less than 0.4μA