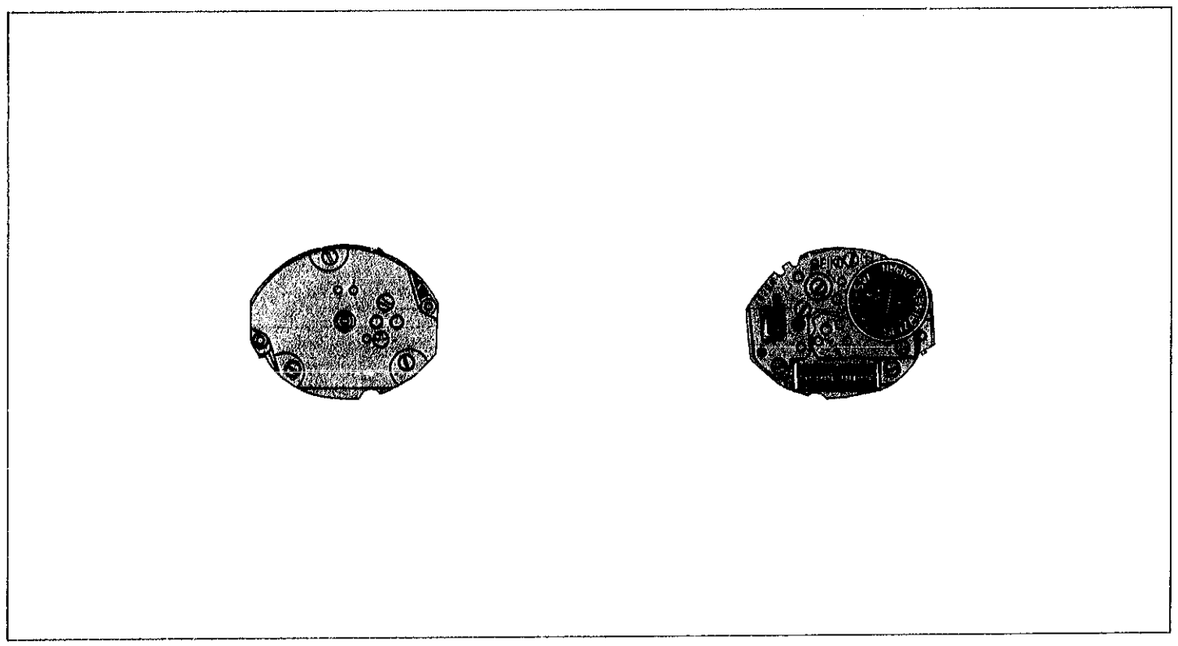
TECHNICAL GUIDE

SEIKO

QUARTZ

CAL. 1421A
CAL. 1428A

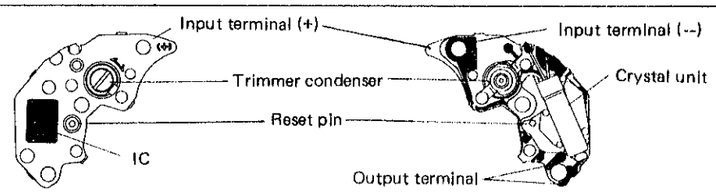


CONTENTS

I. SPECIFICATIONS

Item \ Cal. No.	1421A	1428A
Time indication	3 hands	2 hands (with a small second hand)
Additional mechanism	• Train wheel setting device • Electronic circuit reset switch • Battery life indicator	
Loss/gain	Loss/gain at normal temperature range Monthly rate: less than 15 seconds (Annual rate: less than 3 minutes)	
Casing diameter	15.1mm between 6 o'clock and 12 o'clock sides; 13.0mm between 3 o'clock and 9 o'clock sides.	
Height	2.8mm without battery	3.2mm without battery
Regulation system	Trimmer condenser	
Measuring gate by Quartz Tester	Any gate is available.	
Battery	Silver oxide battery SEIKO (SEIZAIKEN) TR621SW or SB-DG, Maxell SR621SW, Toshiba SR621SW Battery life is approximately 2 years. Voltage: 1.55 V	
Jewels	2 jewels	

II. STRUCTURE OF THE CIRCUIT BLOCK



- **List of screws used**

				
Cal. 1421A	Third wheel bridge screw Circuit block screw Lower end-piece screw for third wheel Coil block screw	York spring holder screw	—	Dial screw
Cal. 1428A	Third wheel bridge screw Circuit block screw Lower end-piece screw for third wheel Coil block screw Additional train wheel bridge screw A	York spring holder screw	Additional train wheel bridge screw B	Dial screw

III. DISASSEMBLING, REASSEMBLING AND LUBRICATING

- **Disassembling and reassembling**

  Disassembling procedures Figs.: ① — ㉜

  Reassembling procedures Figs.: ㉜ — ①

- **Lubricating**

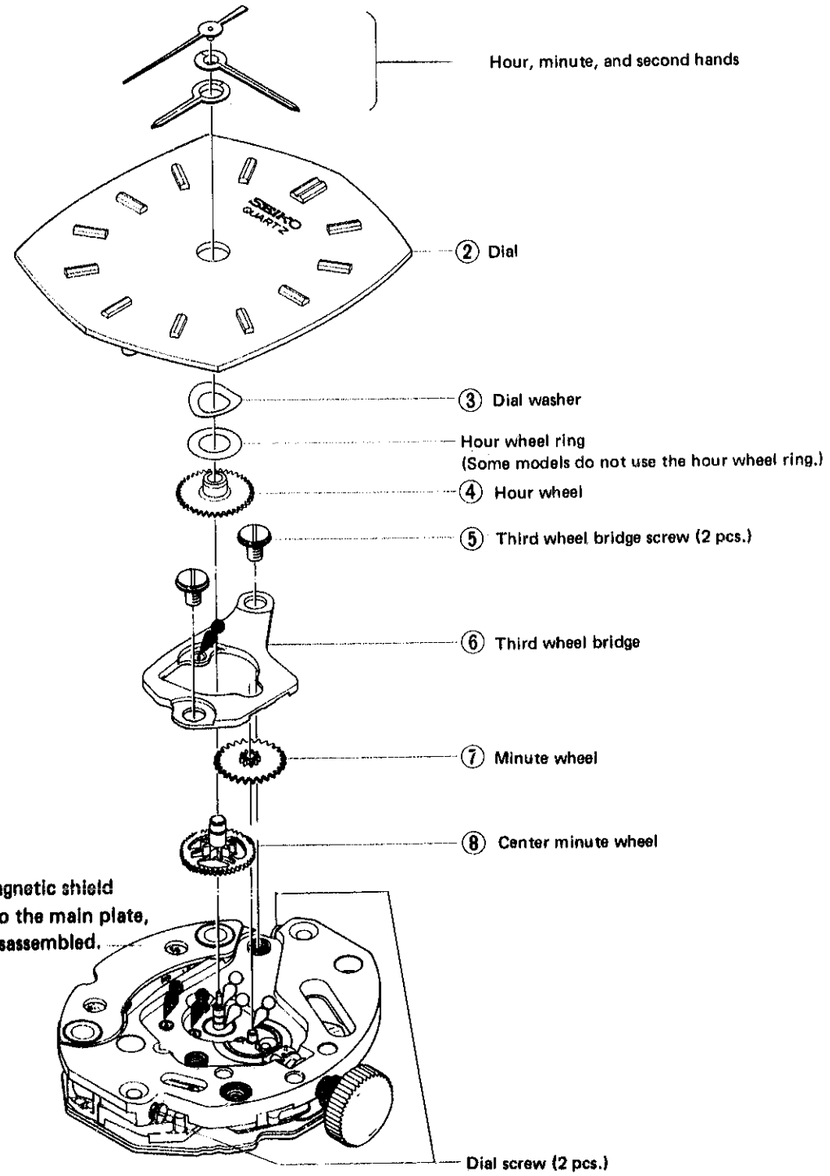
  Types of oil
  - Moebius A
  - SEIKO Watch Oil S-6

  Oil quantity
  - Normal
  - Extremely small

- Use the movement holder S-664.
- Cal. 1428A, based upon Cal. 1421A, is provided with a small second hand at the 6 o'clock position. The explanation for Cal. 1421A is first given and then the different features of Cal. 1428A are described.

1. Indicating mechanism

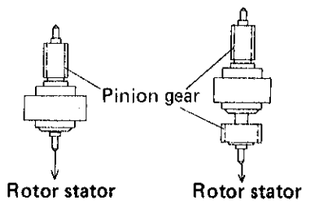
[Cal. 1421A]



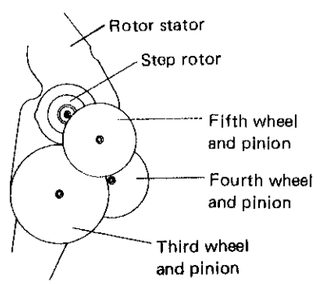
2. Circuit block and gear train mechanism

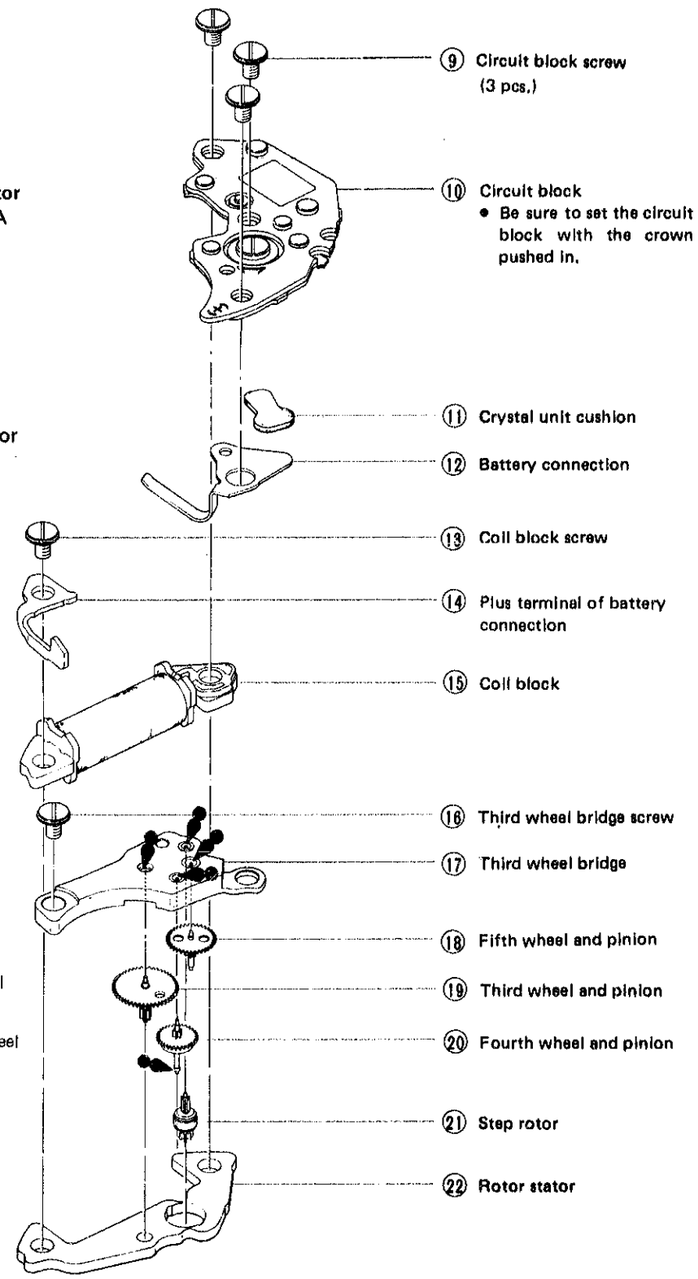
- **Setting direction of the step rotor**

  Cal. 1421A Cal. 1428A



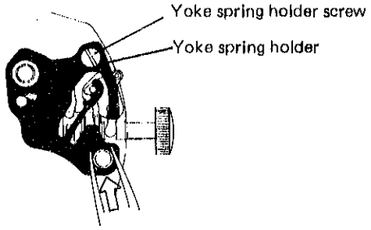
- **Setting position of the gear train**



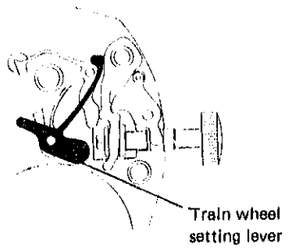


3. Setting mechanism

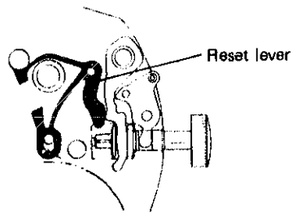
- **Setting of the Yoke spring holder**
  When the setting lever spring screw is tightened, the arrow-marked portion (⇦) is raised. Tighten the screw while holding the raised portion as shown in the illustration below.

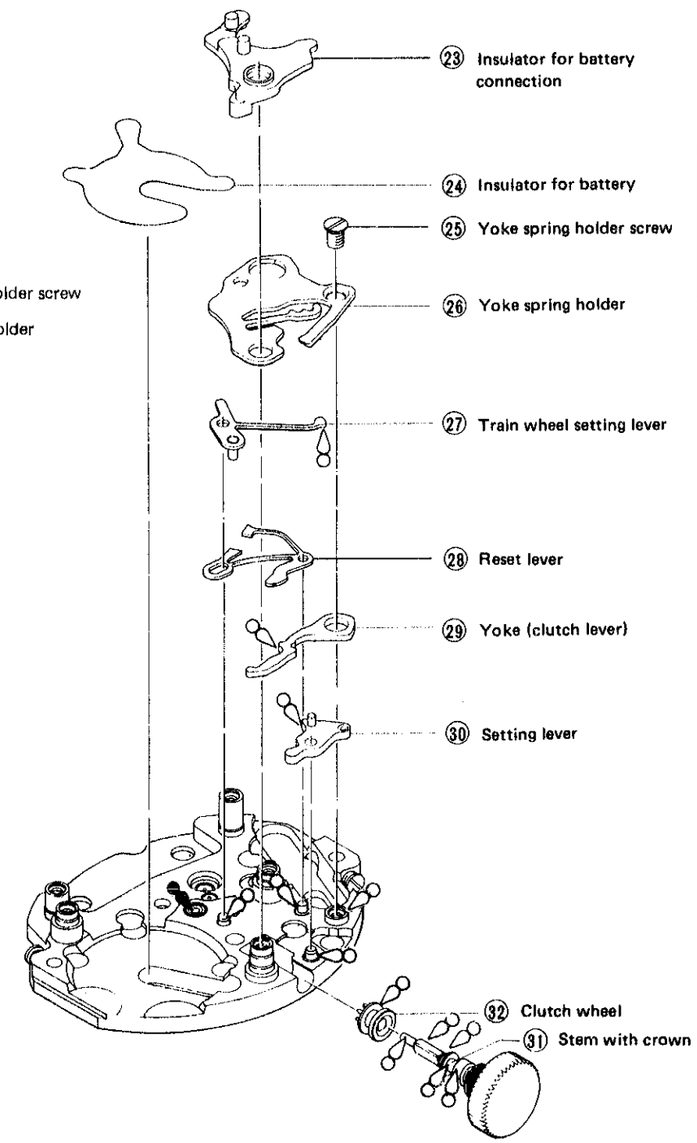


- **Setting position of the train wheel setting lever**
  Pull the crown out to the first click position and set the train wheel setting lever as shown in the illustration below.



- **Setting position of the reset lever**





To facilitate reassembling the third wheel and pinion, reassemble ⑧ center minute wheel, ⑦ minute wheel, ⑥ third wheel bridge and ⑤ third wheel bridge screw before reassembling the clutch wheel.

[Cal. 1428A]

- **Indicating mechanism**

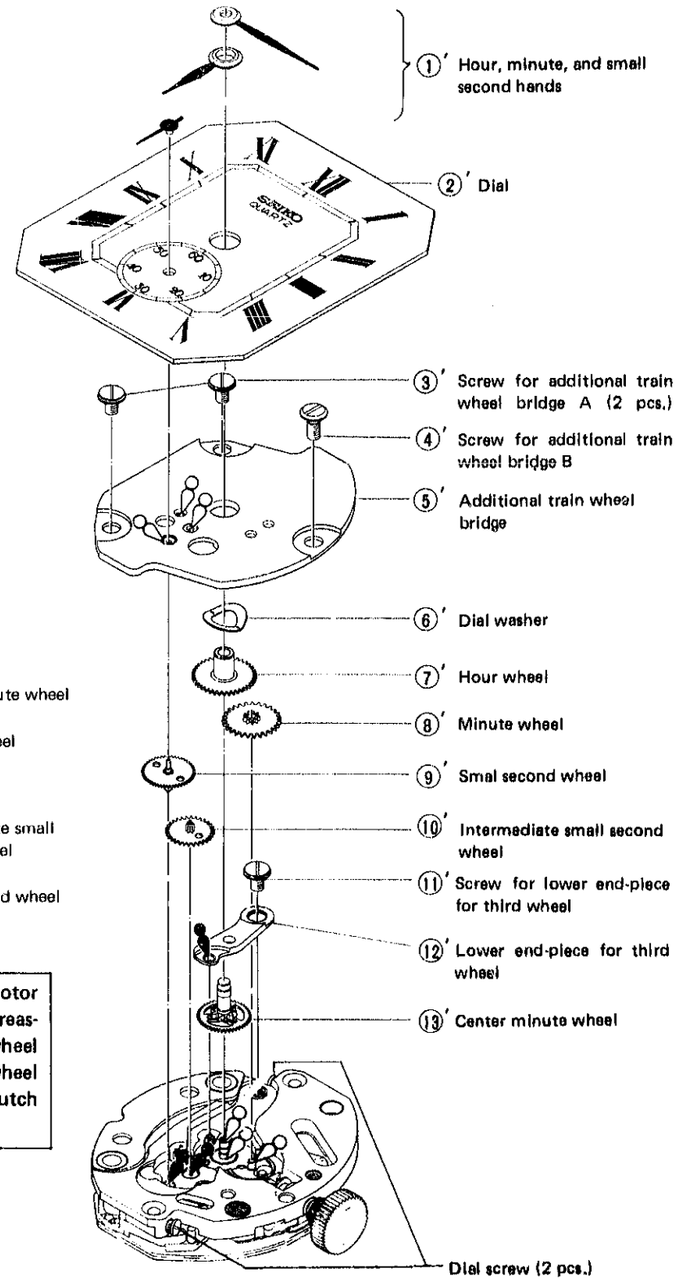
Disassembling procedures Figs.: ① ′ – ⑬ ′

Reassembling procedures Figs.: ⑬ ′ – ① ′

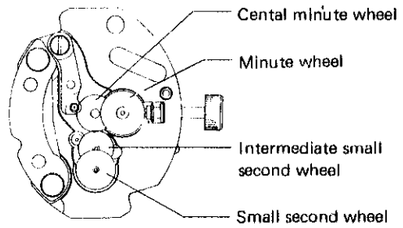
As for disassembling and reassembling of the circuit block and gear train setting mechanism, refer to that of Cal. 1421A.

How to disassemble the small hand

1. Disassemble the hour and minute hands.
2. Unscrew the two dial screws.
3. Lift up the dial and at the same time disassemble the small second hand.



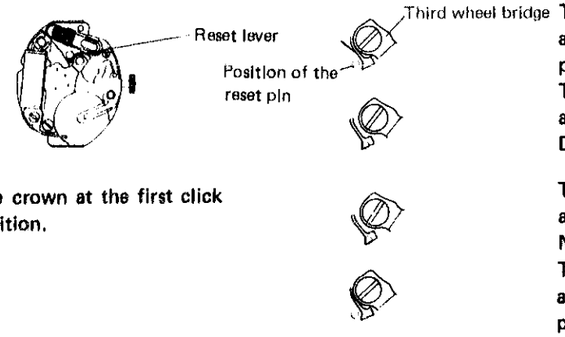
- **Setting position of the gear train**

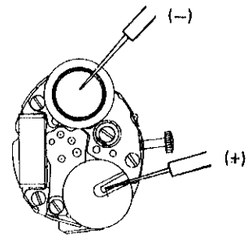


To facilitate reassembling the step rotor and the third wheel and pinion, reassemble from ⑬ ′ center minute wheel to ③ ′ screw for additional train wheel bridge before reassembling the clutch wheel.

IV. CHECKING AND ADJUSTMENT

- The explanation here is only for the particular points of Cal. 1421A and Cal. 1428A.
  Refer to the "SEIKO QUARTZ TECHNICAL GUIDE, GENERAL INSTRUCTION" for analogue watches for details.

Procedure	
CHECK OUTPUT SIGNAL	**Result:** 1-second blinking: Normal No 1-second blinking: Defective
CHECK BATTERY VOLTAGE	**Result:** More than 1.5V: Normal Less than 1.5V: Defective
CHECK BATTERY CONDUCTIVITY	
CHECK CIRCUIT BLOCK CONDUCTIVITY	
CHECK RESET AND TRAIN WHEEL SETTING CONDITIONS	
• Check to see if the second hand stops immediately when the crown is pulled out to the first click position and if it starts promptly one second after the crown is pushed back to the normal position.	**Result:** Stops completely and starts moving after one second: Normal Does not stop or move irregularly: Defective
• Check reset condition. Check for the motion of the reset lever by using the position of the reset pin on the circuit block as a guide. (Check with the circuit block disassembled.)	
① The crown at the normal position.	 The tip of the reset lever is located at the outer circumference of the position of the reset pin: Normal The tip of the reset lever is located at the position of the reset pin: Defective
② The crown at the first click position.	The tip of the reset lever is located at the position of the reset pin: Normal The tip of the reset lever is located at the outer circumference of the position of the reset pin: Defective

Procedure	
• Check train wheel setting condition. Reassemble the second hand to the movement and check to see if the train wheel setting lever is sure to set the fourth wheel and pinion. Pull the crown out to the first click position and turn it clockwise and counterclockwise.	**Result:** The second hand does not move: Normal The second hand moves: Defective Replace the train wheel setting lever.
CHECK COIL BLOCK	
Range to be used: OMS R x 100	2.5 kΩ – 4.5 kΩ: Normal Less than 2.5 kΩ (Short) / More than 4.5 kΩ (Broken wire) — Defective Replace the coil block.
CHECK CURRENT CONSUMPTION	
Range to be used: DC 12μA 	**Result:** • Cal. 1421A Less than 0.8μA : Normal More than 0.8μA : Defective Check the circuit block. • Cal. 1428A Less than 0.9μA : Normal More than 0.9μA : Defective Check the circuit block.
CHECK ACCURACY	
Be sure to adjust time accuracy after checking accuracy.	
CHECK APPEARANCE AND FUNCTIONING	

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