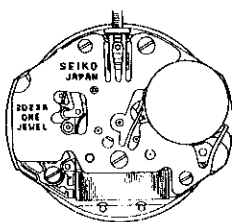


PARTS CATALOGUE

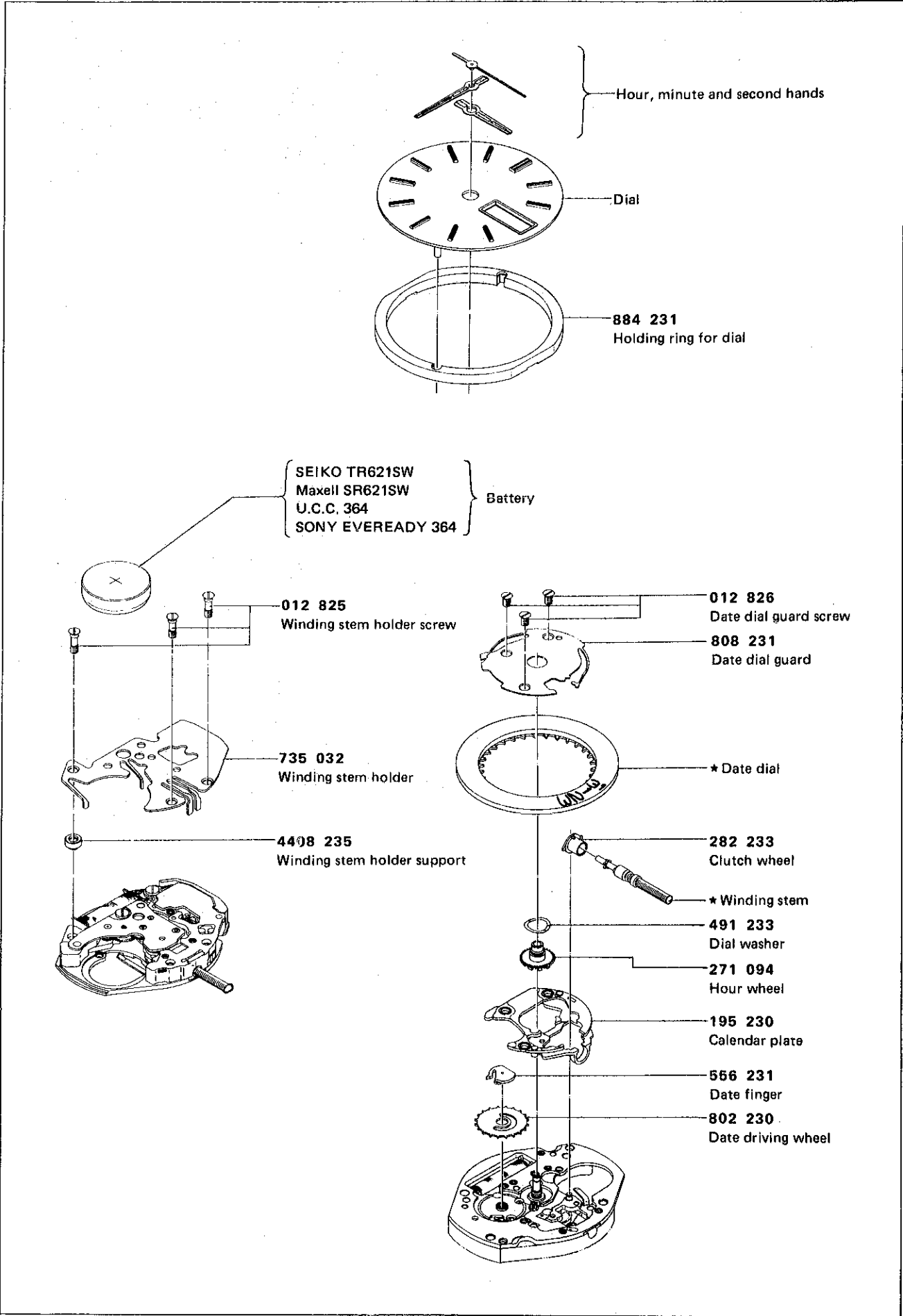
Cal.2D22A

Cal.2D22A (1j)

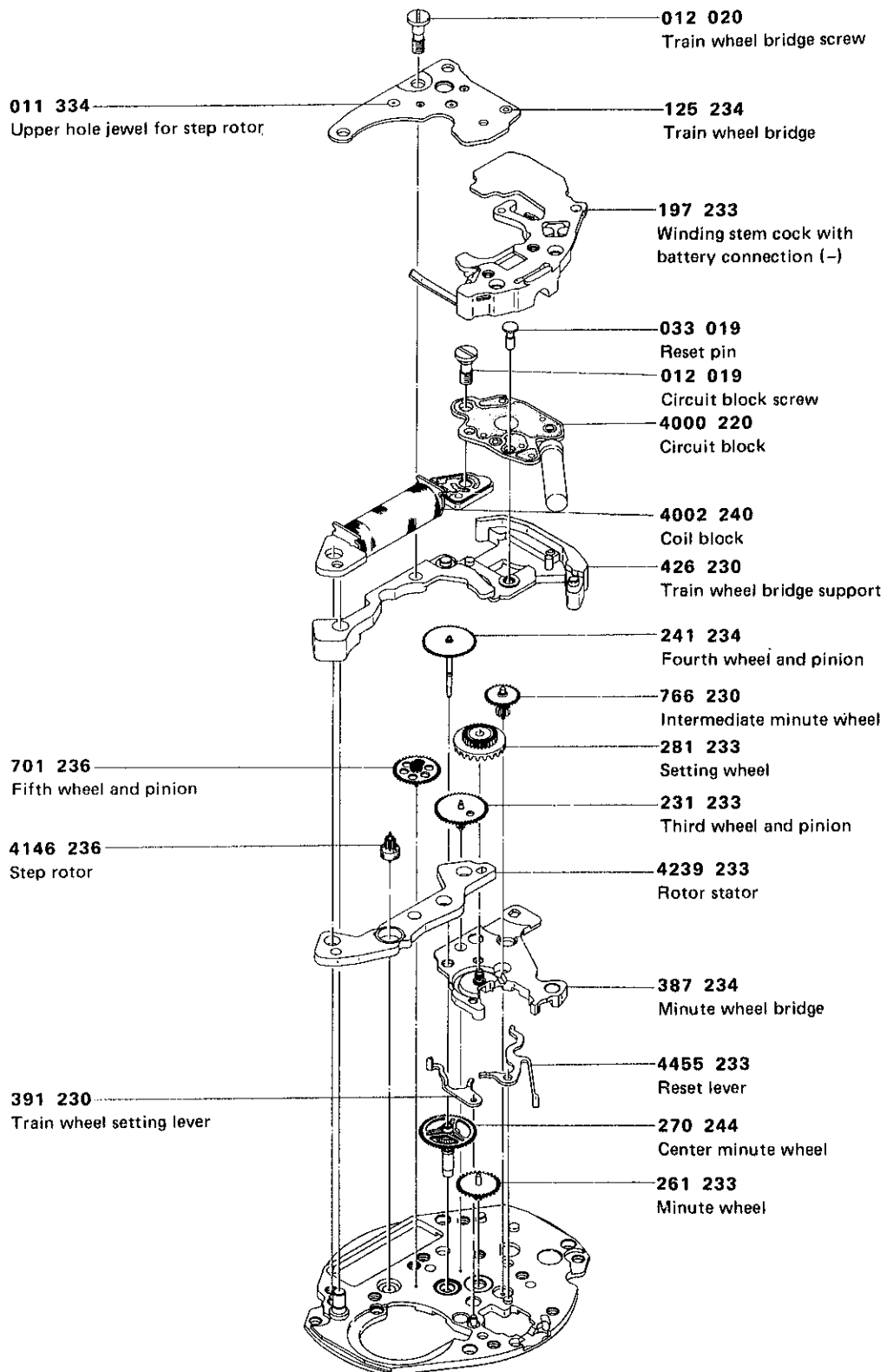


HATTORI SEIKO CO., LTD.

Cal.2D22A



* → Please see remarks on the last page.



Remarks:

Winding stem

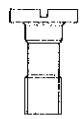
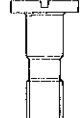
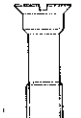

*354232 The type of winding stem is determined based on the design of cases and dials.
Check the case number and refer to "SEIKO Quartz Casing Parts Catalogue" to choose a corresponding winding stem.


Date dial

*801130 (Black figures on white background) Used when both the crown and the calendar frame are located at 3 o'clock position.
*801315 (White figures on black background)
*801131 (Black figures on white background) Used when the crown is located at 3 o'clock position and the calendar frame is at 6 o'clock position.
*801324 (White figures on black background)

Holding ring for dial

*884231 The type of a holding ring for dial is determined based on the design of cases.
If the shape of holding ring for dial is different from the photograph, check the case number and refer to "SEIKO Quartz Casing Parts Catalogue" to choose a corresponding holding ring for dial.

 012 019	Circuit block screw
 012 020	Train wheel bridge screw
 012 825	Winding stem holder screw
 012 826	Date dial guard screw

 033 019	Reset pin
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TECHNICAL GUIDE

SEIKO

QUARTZ

CAL. 2D22A

CONTENTS

I. SPECIFICATIONS	1
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1. Structure of circuit block.....	6
2. Procedure for checking and adjustment.....	6

I. SPECIFICATIONS

Cal. No.		2D22A
Item		
Indication system	Three hands	
Driving system	Step motor (Load compensated driving pulse type)	
Additional Mechanism	Date Instant date setting device Train wheel setting device Electronic circuit reset switch	
Loss/gain	Monthly rate: Less than 20 seconds at normal temperature range	
Movement size	Size of main plate	18.4 mm (6 – 12 o'clock) x 15.3 mm (3 – 9 o'clock)
	Casing diameter	φ17.8 mm
	Height (including battery)	2.7 mm
Regulation system	—	
Measuring gate	10-second gate	
Battery	SEIKO TR621SW, MAXELL SR621SW, or SONY EVEREADY, UCC364 Voltage: 1.55V Battery life: SEIKO TR621SW approx. 2 years MAXELL SR621SW SONY EVEREADY 364 } approx. 1.5 years UCC 364	
Jewels	1 jewel	





II. DISASSEMBLING, REASSEMBLING AND LUBRICATING

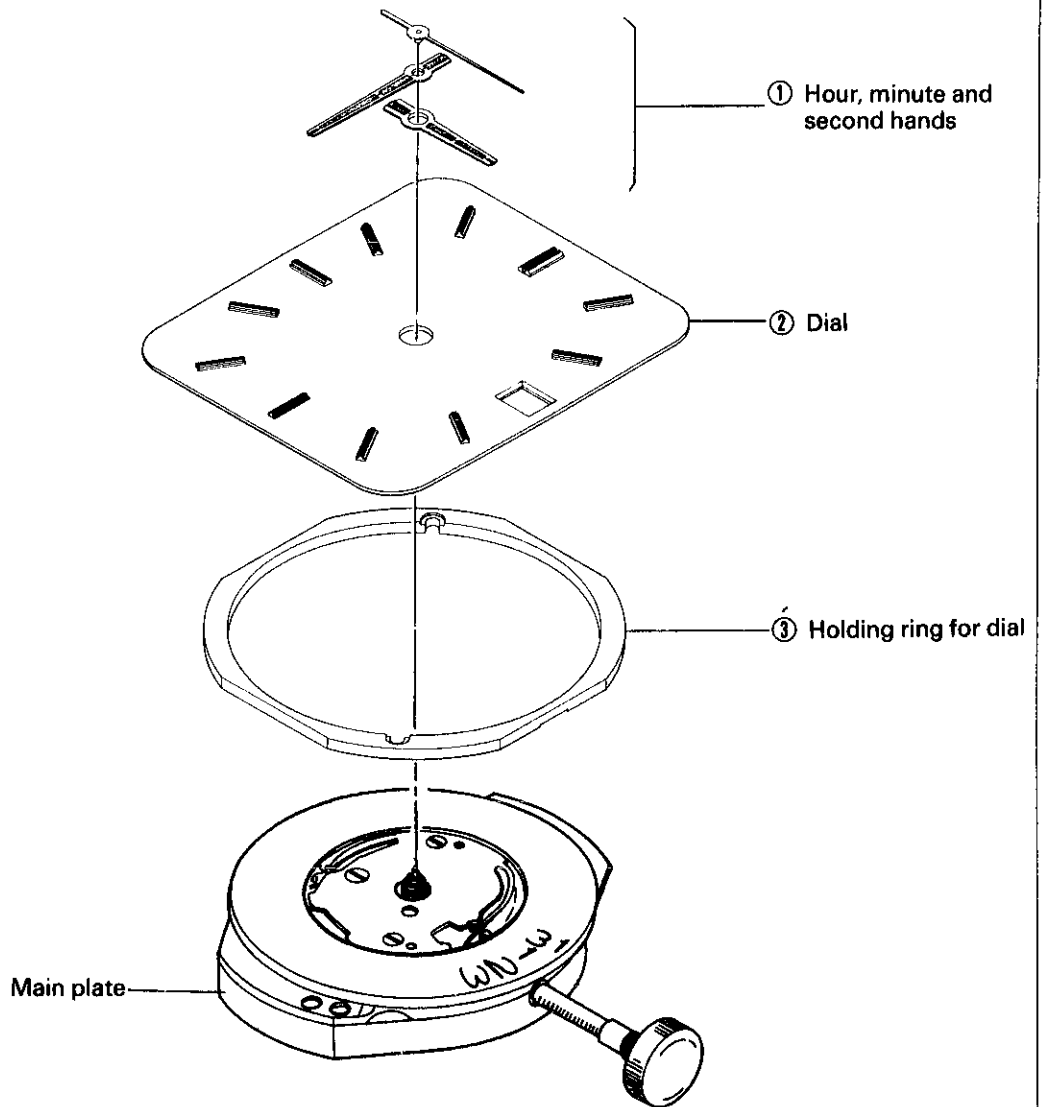
Disassembling procedures: Figs ① ~ ③

Reassembling procedures: Figs ③ ~ ①

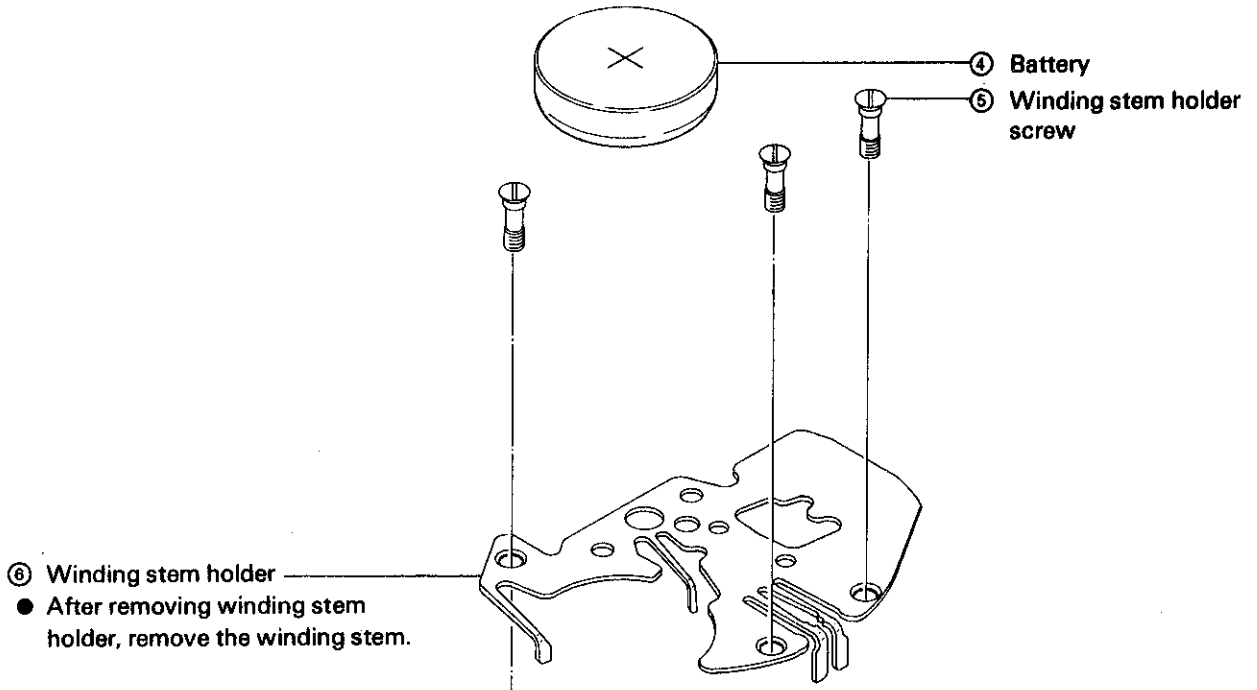
● Hands ~ Holding ring for dial

Lubricating

Types of oil	Oil quantity
Moebius A 	Small 
Seiko watch oil S-6 	Standard 



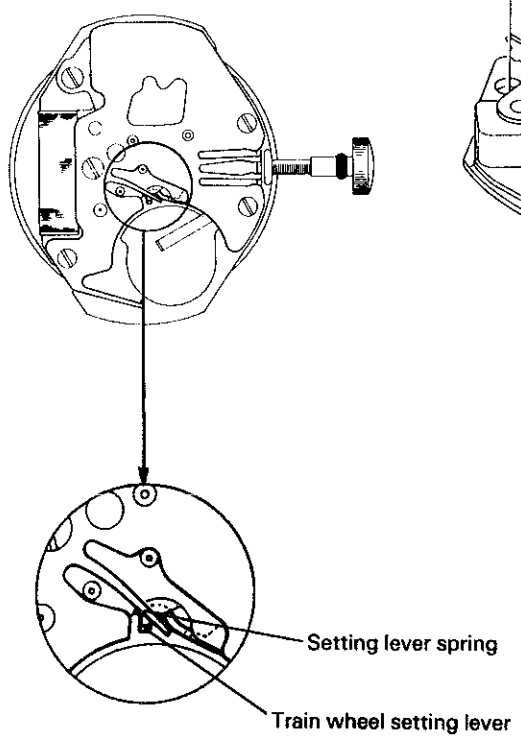
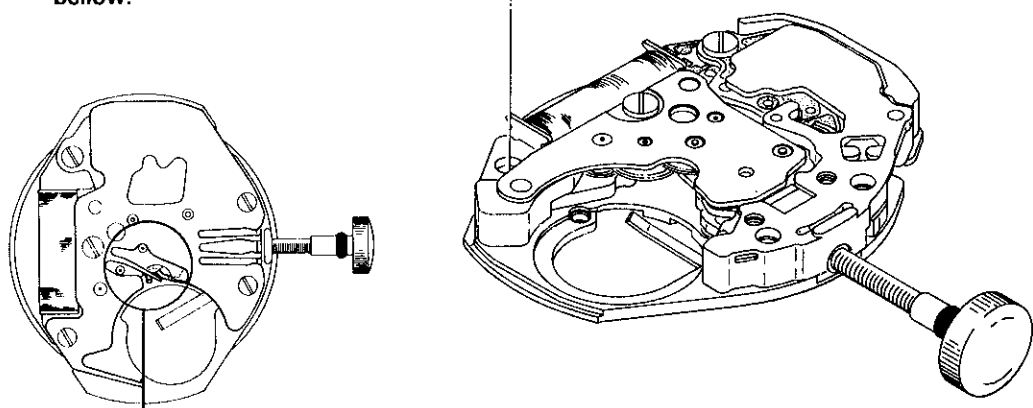
● Battery ~ Winding stem holder support



⑥ Winding stem holder
 ● After removing winding stem holder, remove the winding stem.

● When installing winding stem holder, place its setting lever spring portion out of the train wheel setting lever as illustrated below.

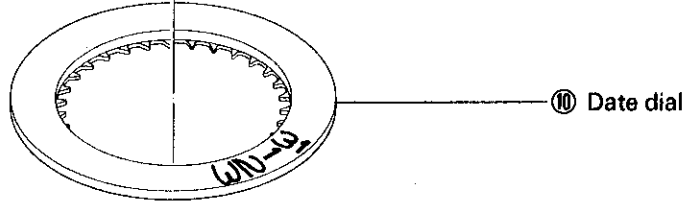
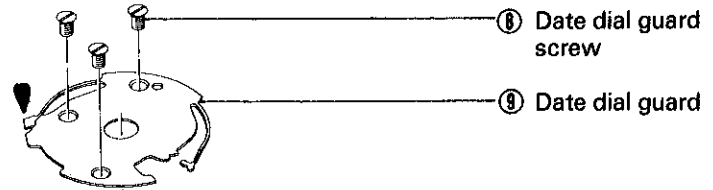
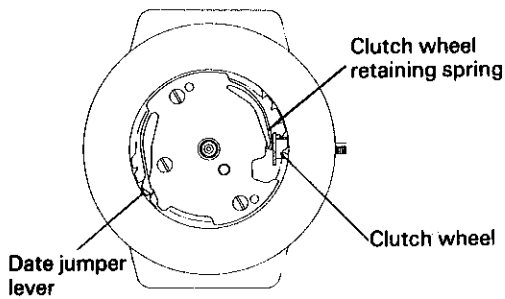
⑦ Winding stem holder support



● Date dial guard screw ~ Date driving wheel

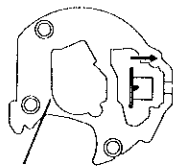
⑨ Date dial guard

When installing date dial guard, place the clutch wheel retaining spring within the clutch wheel. As the date jumper lever is forcibly moved to the center, the spring does not function correctly. Be sure to engage the date jumper lever with the date dial teeth correctly.



⑪ Clutch wheel

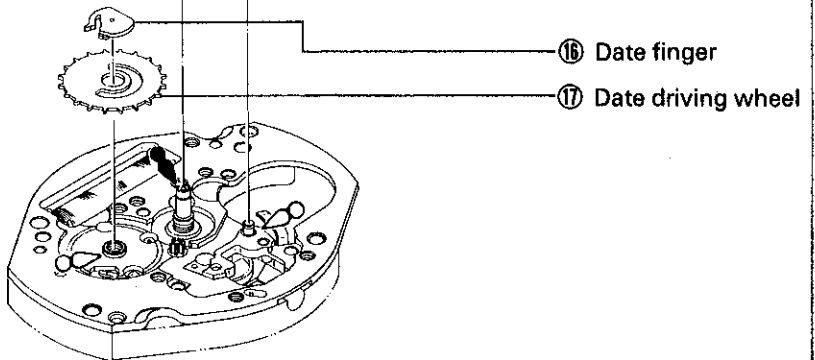
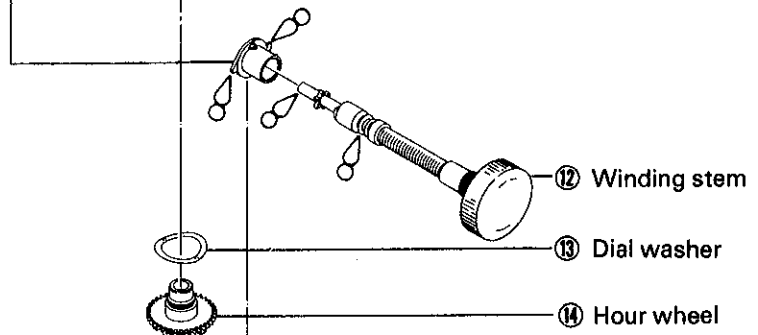
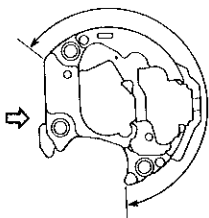
Slide the clutch wheel in the direction of the arrow to set the clutch wheel.



Calendar plate

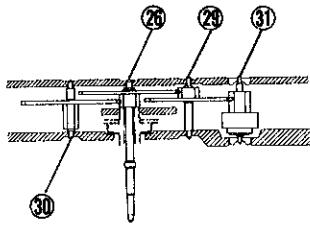
⑮ Calendar plate

Hold the calendar plate at the place marked with an arrow (⇒) in order to avoid the tweezers making scratches on the circumference which is marked with a fine arrow. If this portion is scratched, the date dial does not rotate correctly.

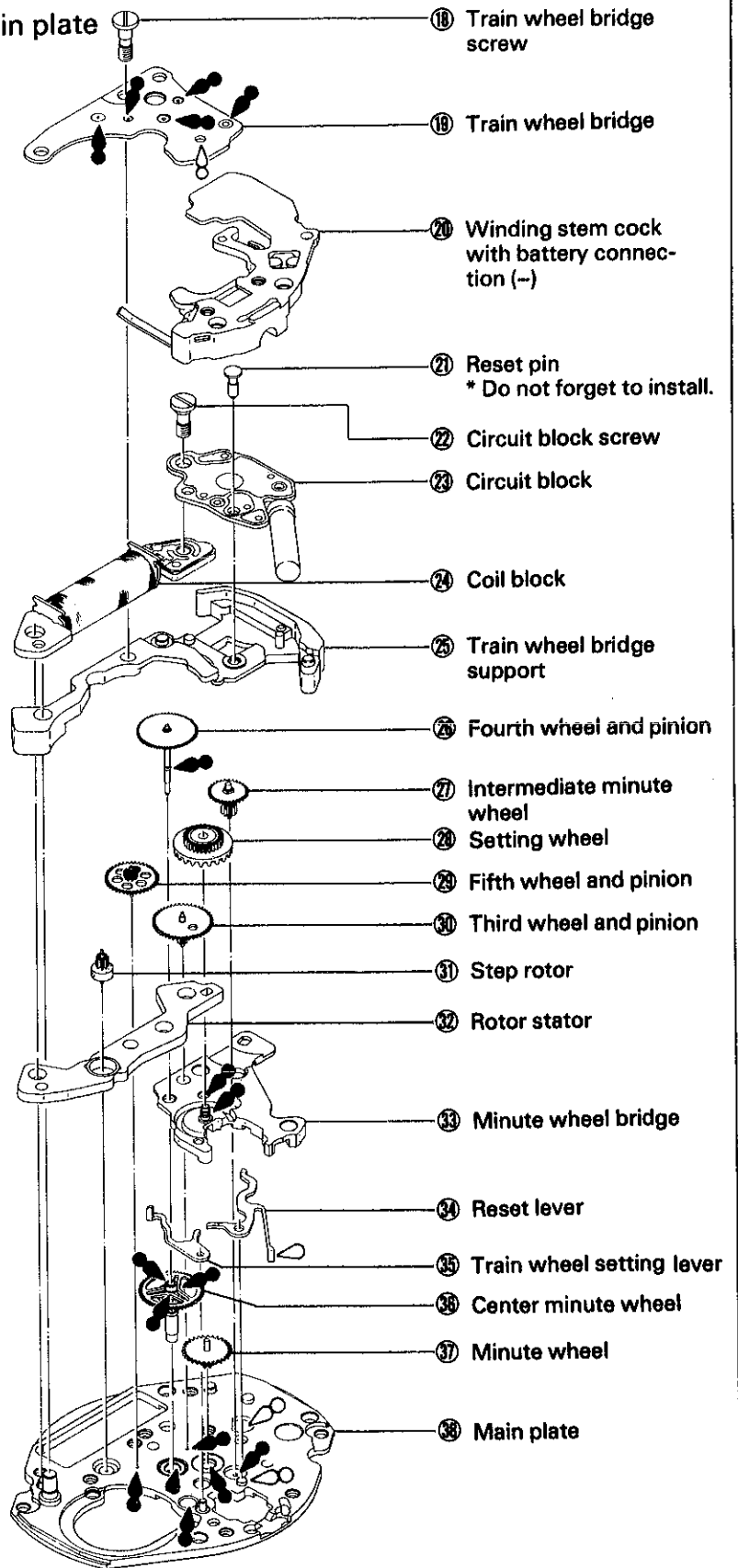
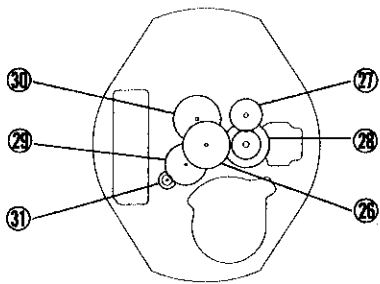


● Train wheel bridge screw ~ Main plate

Reassembly diagram of wheels (cross sectional view)

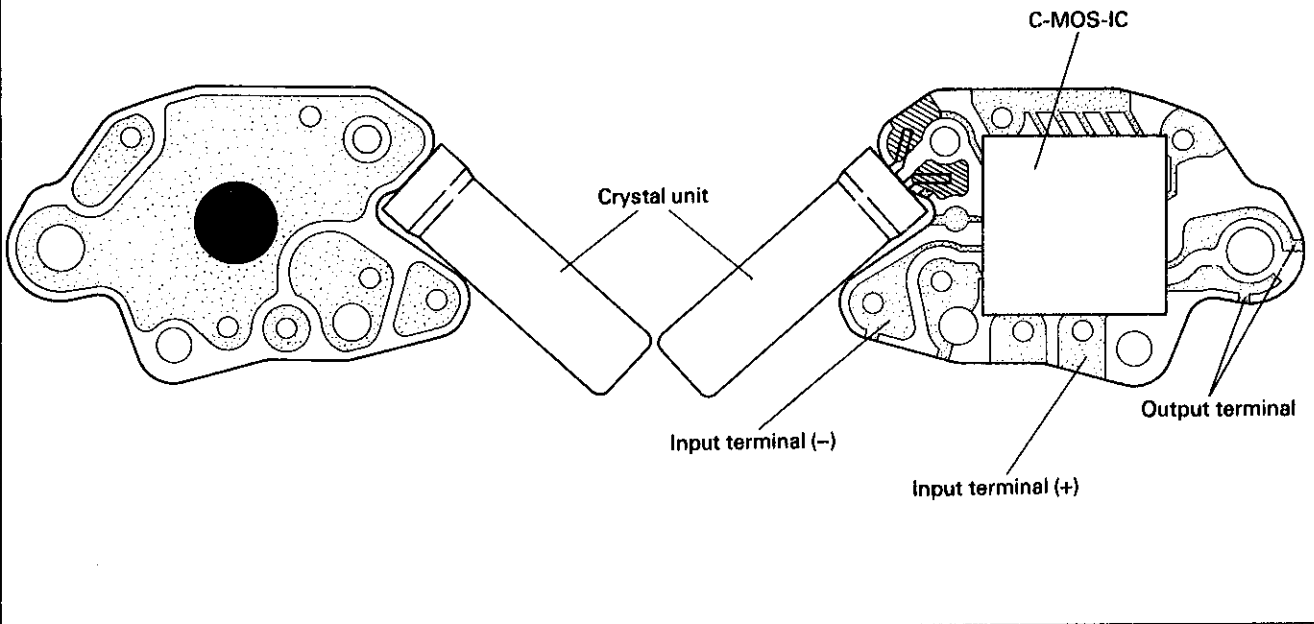


Reassembly diagram of 31 ~ 26



III. CHECKING AND ADJUSTMENT

1. Structure of circuit block



2. Procedure for checking and adjustment

- This section only gives the checking and adjustment procedure which is exclusive for this watch.
- For the normal checking and adjustment, refer to the "TECHNICAL GUIDE GENERAL INSTRUCTION, Analogue Quartz".
- The page numbers in the item correspond to those in the "TECHNICAL GUIDE GENERAL INSTRUCTION, Analogue Quartz".

CHECK OUTPUT SIGNAL p.6	
	Result: Output signal: Normal No output signal: Defective
BATTERY VOLTAGE p.7	
Use the Digital Multi Tester S-840A. Range to be used: DC V	Result: 1.57V or more: Normal Less than 1.57V: Defective Replace the battery.
NOTE: Before measuring, short circuit the probes and confirm that the tester reads AUTO 00.0 mV or AUTO 00.1 mV.	
BATTERY CONDUCTIVITY p.9	
Check that the battery voltage is correctly applied to the circuit.	
CIRCUIT BLOCK CONDUCTIVITY p.9	
Check for short circuit and defective conductivity of the conductive portions of the circuit block.	

COIL BLOCK p.10

Check the coil block for broken wire and short circuit.
Use the Digital Multi Tester S-840 A.
Range to be used: Ω

NOTE:

- Before measuring, short circuit the probes and check to see if the tester sounds and reads from AUTO 00.2 Ω to AUTO 00.4 Ω . The actual resistance can be obtained by subtracting the initial value (00.2 – 00.4) from the measured value.
- When measuring, take care not to break the coil block leads.

Result:

2.4 ~ 2.8 k Ω : Normal

Less than 2.4 k Ω (Short circuit):

More than 2.8 k Ω (Broken wire):

Defective

Replace the coil block.

FRONT GEAR TRAIN MECHANISM p.11

Check the front gear train mechanism for play of rotor and wheels and pinions, mis-installation, dust, lint, foreign matter, lubrication, etc.

BACK GEAR TRAIN MECHANISM p.11

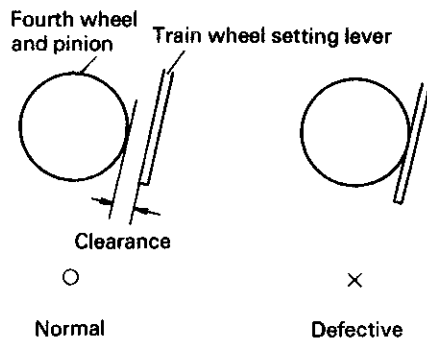
Check the back gear train mechanism for lubrication leakage, play, dust, lint, etc.

RESET CONDITION

With the movement installed, check that the reset condition is normal.

1. Check the clearance between the train wheel setting lever and fourth wheel and pinion.

- (1) Check the clearance with the crown at normal position.



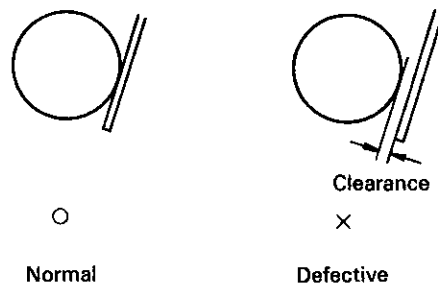
Result:

Clearance: Normal

No clearance: Defective

Replace the train wheel setting lever.

- (2) Check the clearance with the crown at second click position.



Result:

No clearance: Normal

Clearance: Defective

Replace the train wheel setting lever.

2. Check the output signal with the battery installed.
 (1) Check the output signal with the crown at normal position.

Result:
 Output signal: Normal
 No output signal: Defective
 Replace the reset lever

- (2) Check the output signal with the crown at second click position.

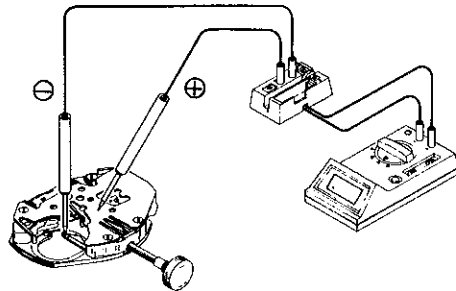
Result:
 No output signal: Normal
 Output signal: Defective
 Replace the reset lever.

ACCURACY p.13

Use an electromagnetic microphone.

CURRENT CONSUMPTION

1. Use the Digital Multi Tester S-840A and Multi Adapter MA-40.



Result:
 1.2 μA or less: Normal
 More than 1.2 μA : Defective
 Proceed to 2

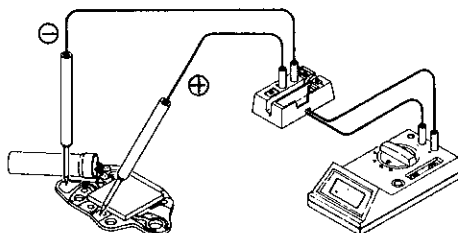
NOTE:

Press the reset switch to read 00.0 μA and measure the current consumption.

- Red probe → Winding stem holder
- Black probe → Battery connection (-)

When measuring the current consumption under the incandescent lamp, cover the movement with black cloth. Otherwise the measured value sometimes becomes higher than the actual value.

2. Check the current consumption of the circuit block.



Result:
 0.3 μA or less: Circuit block is normal.
 Check the gear train mechanism.
 More than 0.3 μA : Circuit block is defective.
 Replace the circuit block.