

TECHNICAL GUIDE AND PARTS LIST

CAL. V267A

ANALOGUE QUARTZ

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


I. SPECIFICATIONS

Item		Cal. No.	V267A
Indication system		Three hands	
Driving system		Step motor	
Additional mechanism		Date Date quick resetting device Second setting device Electronic reset switch	
Loss/gain		Monthly rate: less than 20 seconds at normal temperature range	
Movement size	Size of main plate	φ20.7 mm (6H - 12H 19.5 mm, 3H - 9H 15.3 mm)	
	Casing diameter	φ20.0 mm	
	Height	2.7 mm	
Regulation system		—	
Quartz Tester measuring gate		10-second gate	
Battery		SEIKO (SEIZAIKEN) TR621SW, Maxell SR621SW, SONY EVEREADY 364 Voltage: 1.55V	
Battery life		Approx 2 years for SEIKO (SEIZAIKEN) TR621SW Approx 1.5 years for MAXELL SR621SW and SONY EVEREADY 364	
Jewels		1 jewel	

II. DISASSEMBLING, REASSEMBLING AND LUBRICATING

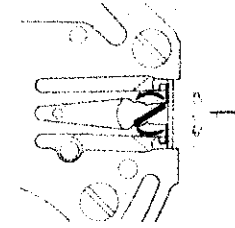
Disassembling procedures: Figs ① ~ ③
Reassembling procedures: Figs ③ ~ ①

Lubricating:

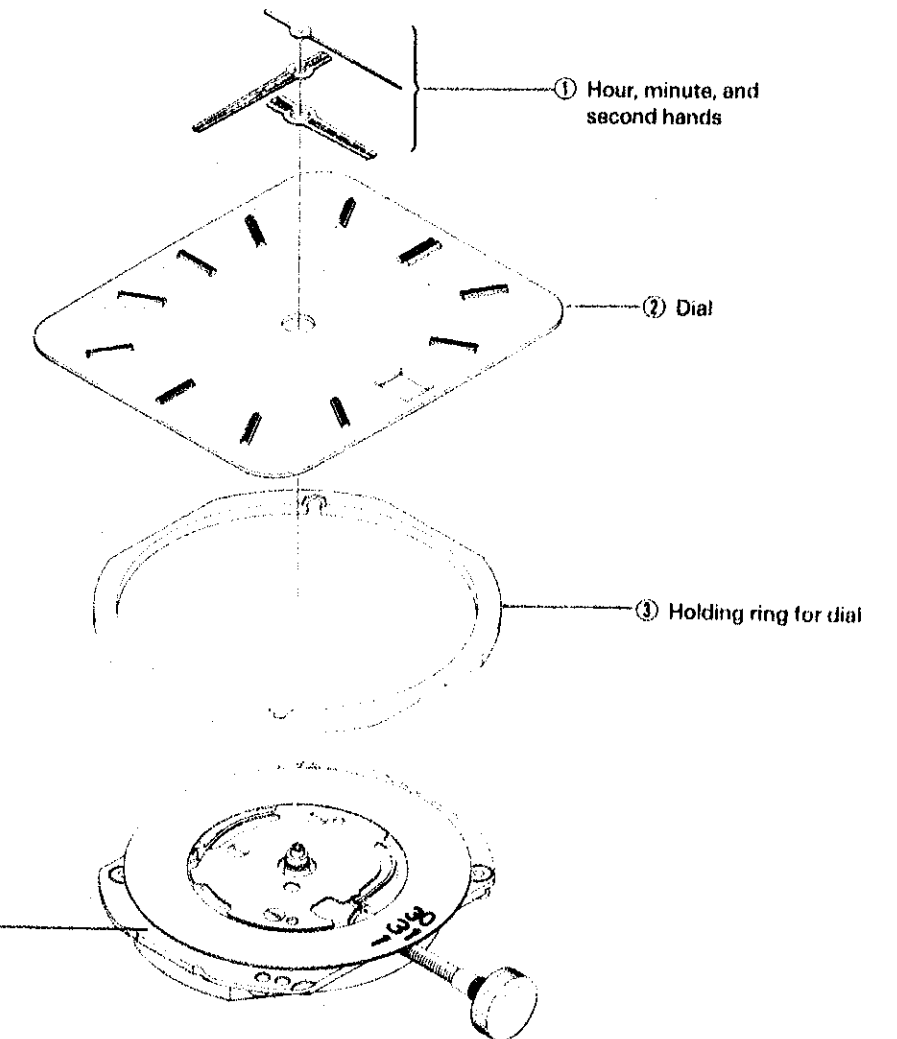
Types of oil	Oil quantity
Moebius A 	Standard 
Seiko watch oil S-6 	Small 

● Hands ~ Holding ring for dial

● How to remove the winding stem

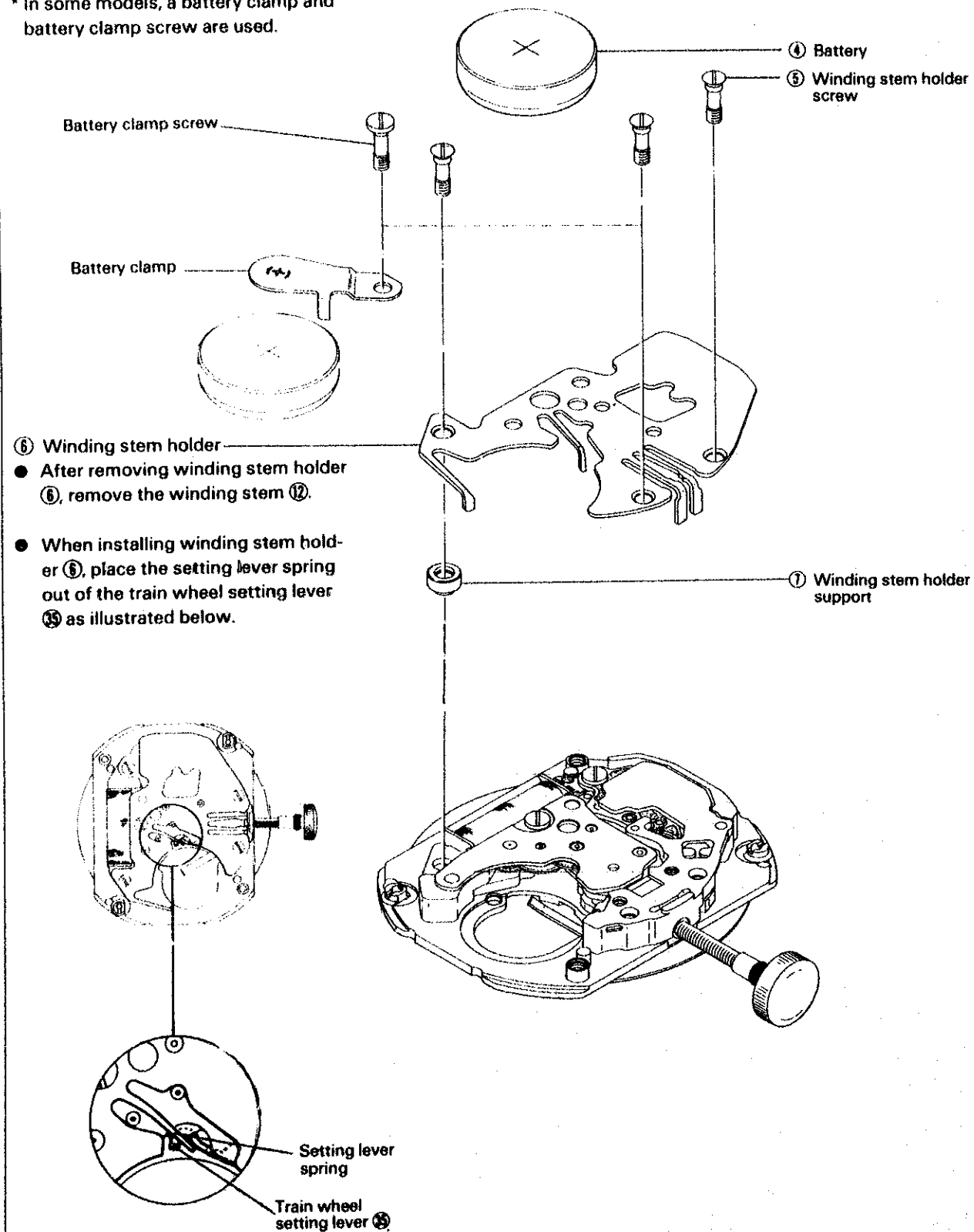


Insert a little bit large (-) screwdriver and turn it to right and left (in the direction of the arrow shown in the above figure) to remove the winding stem.



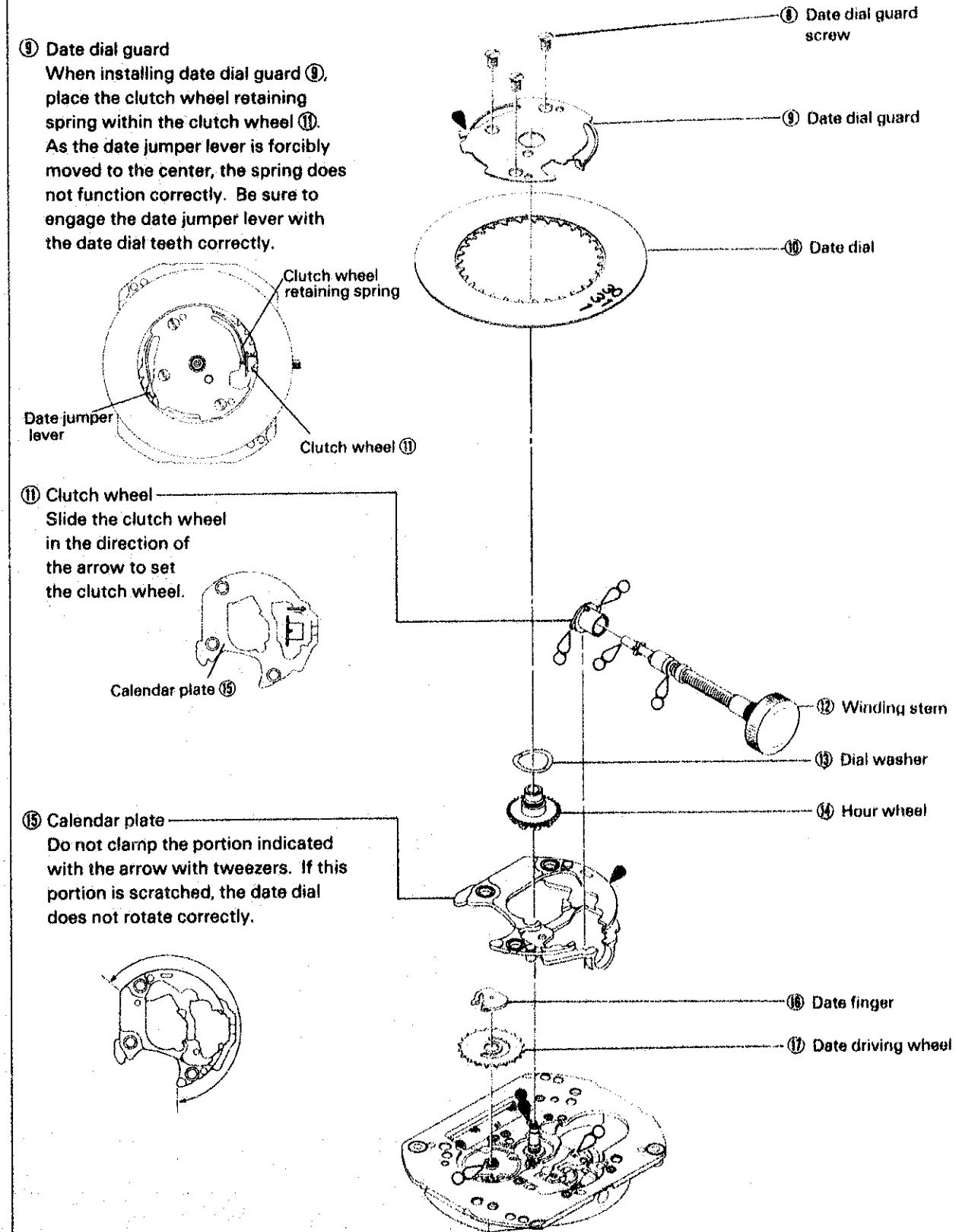
● Battery ~ Winding stem holder support

* In some models, a battery clamp and battery clamp screw are used.



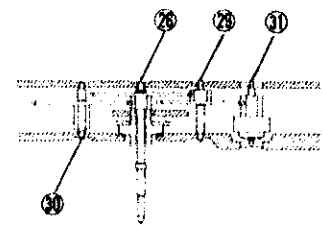
● Date dial guard screw ~ Date driving wheel

⑧ Date dial guard
When installing date dial guard ⑧, place the clutch wheel retaining spring within the clutch wheel ⑪. 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.

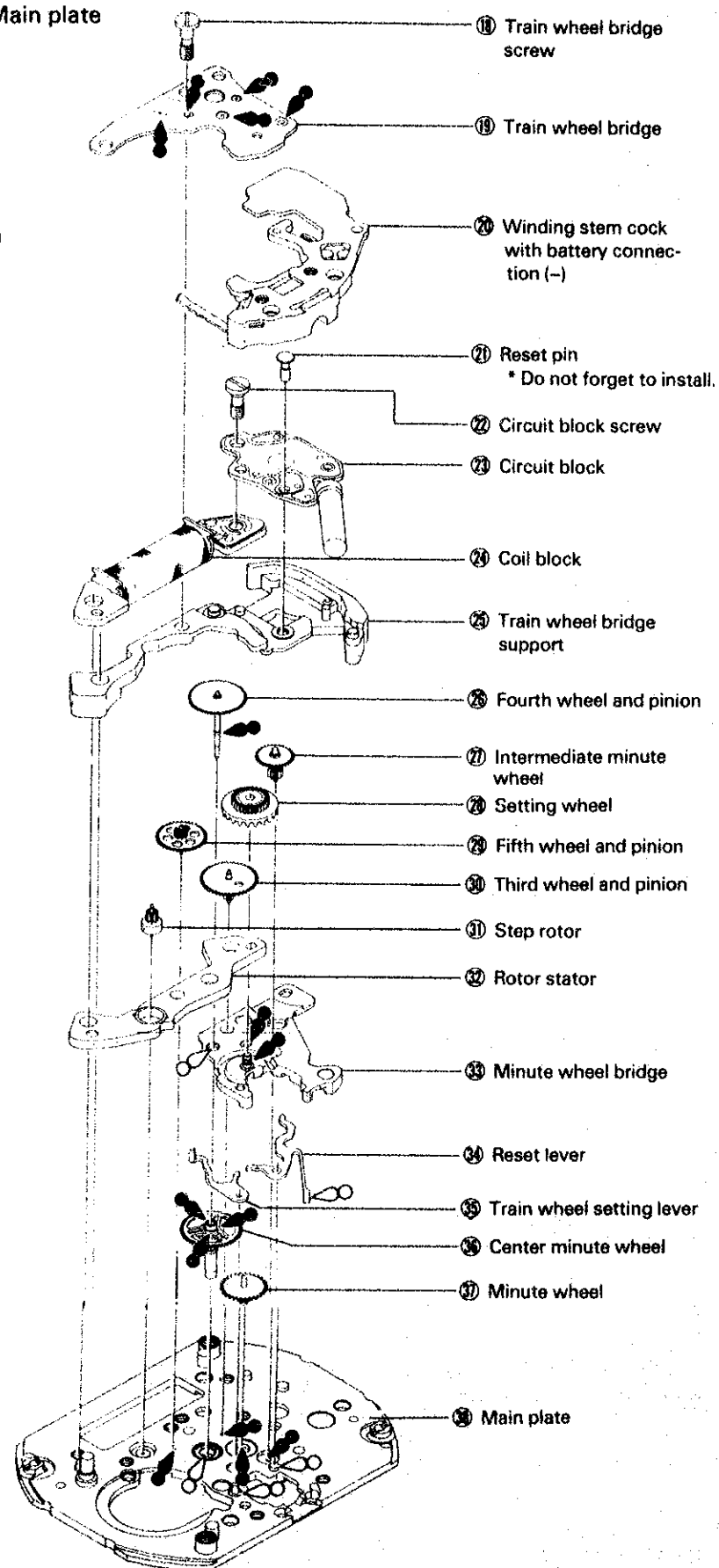
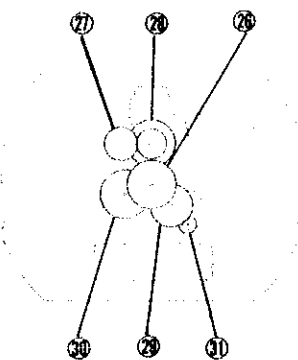


● Train wheel bridge screw ~ Main plate

● Cross sectional view of gear train

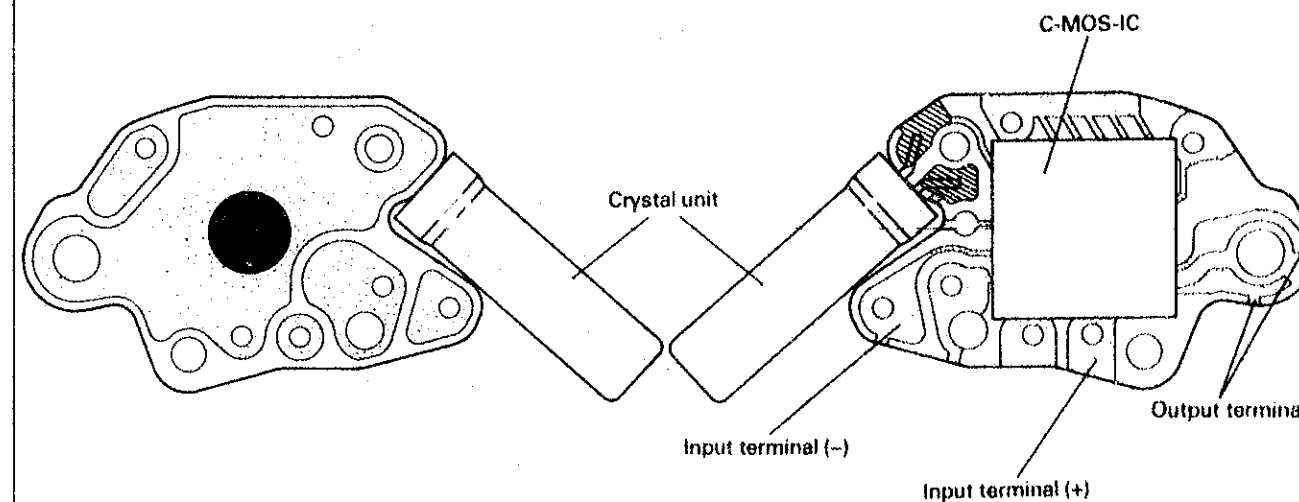


● Plan figure of gear train



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".

OUTPUT SIGNAL p.6

1. Use the Quartz Tester.
2. Turn the measuring time selection switch to the "10-second" gate.

NOTE:
 Checking should be made with the crown set to normal position.

Result:
 Output signal: Normal
 No output signal: Defective

BATTERY VOLTAGE

Use the SEIKO Digital Multi Tester S-840A
 Range to be used: DC V

NOTE:
 Before measuring, short circuit the probes and confirm that the tester reads AUTO 00.0 mV or AUTO 00.1 mV.

Result:
 1.57V or more: Normal
 Less than 1.57V: Defective
 Replace the battery.

BATTERY CONDUCTIVITY p.9

Check the conductivity between battery and battery connection (-), etc to see if the battery voltage is correctly applied to the circuit.

CIRCUIT BLOCK CONDUCTIVITY p.9

Check the output terminal and pattern section contamination in the circuit block and check if the circuit is broken or short.

COIL BLOCK p.10

Check the coil block for broken wire and short circuit using the SEIKO Digital Multi Tester S-840A.
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): Defective
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

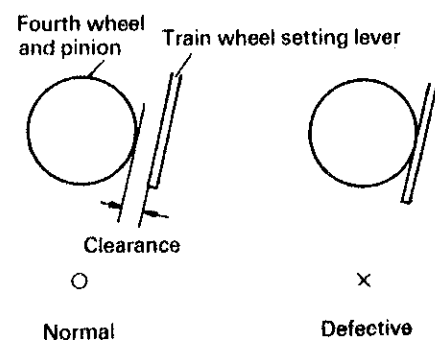
Check the back gear train mechanism for lubrication leadkage, play, dust, lint, etc.

RESET CONDITION

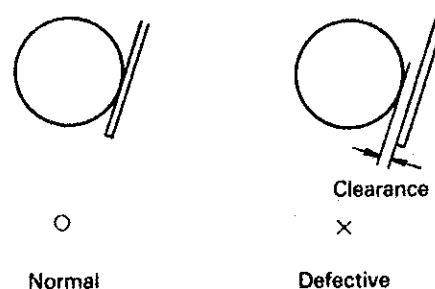
With the movement installed, check that the reset condition is normal.

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

(1) Check the clearance with the crown at normal and first click position.



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



Result:
Clearance: Normal
No clearance: Defective
Replace the train wheel setting lever.

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 and first click 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

Check accuracy using Quartz Tester and an electromagnetic microphone (DM-1).

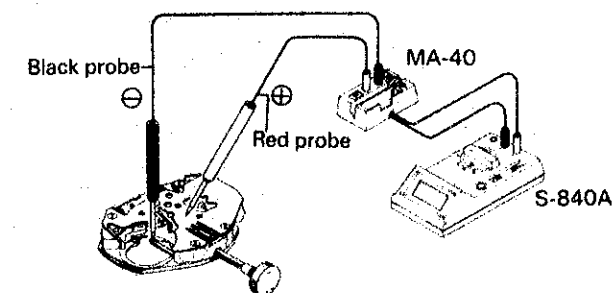
Result:
Monthly rate (at normal temperature range)
Less than 20 seconds: Normal
More than 20 seconds: Defective
Replace the circuit block.

NOTE:

Check accuracy with the crown at normal position.

CURRENT CONSUMPTION

1. Use the SEIKO Digital Multi-Tester S-840A (with Multi Adaptor MA-40)



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

NOTE:

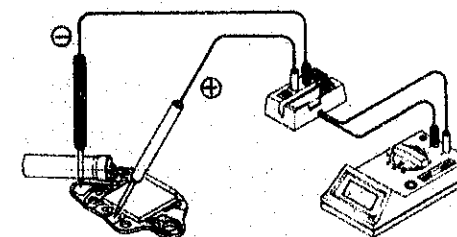
Press the reset switch to read 00.0 μ A and measure the current consumption.

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

IV. PARTS LIST

PARTS NO.	PARTS NAME	PARTS NO.	PARTS NAME
125 234	Train wheel bridge	* 801 328	Date dial
195 230	Calendar plate	* 801 329	Date dial
197 233	Winding stem cock with battery connection (-)	* 801 336	Date dial
231 233	Third wheel & pinion	802 230	Date driving wheel
* 241 231	Fourth wheel & pinion	808 231	Date dial guard
* 241 234	Fourth wheel & pinion	884 147	Holding ring for dial
261 233	Minute wheel	4000 220	Circuit block
* 270 051	Center minute wheel	4002 240	Coil block
* 270 052	Center minute wheel	4146 236	Step rotor
* 271 066	Hour wheel	4225 233	Battery clamp
* 271 067	Hour wheel	4239 233	Rotor stator
281 233	Setting wheel	4408 235	Winding stem holder support
282 233	Clutch wheel	4455 233	Reset lever
* 354 232	Winding stem	011 334	Upper hole jewel for step rotor
* (354 233)	(Winding stem)	012 015	Case screw
* (354 234)	(Winding stem)	012 019	Circuit block screw
387 234	Minute wheel bridge	012 020	Train wheel bridge screw
391 230	Train wheel setting lever	012 023	Battery clamp screw
426 230	Train wheel bridge support	012 825	Winding stem holder screw
491 233	Dial washer	012 826	Date dial guard screw
556 231	Date finger	032 032	Case screw pin
701 236	Fifth wheel & pinion	033 019	Reset pin
* 735 012	Winding stem holder	033 050	Eccentric dial pin
766 230	Intermediate minute wheel	● SEIKO (SEIZAIKEN) TR621SW	Battery
* 801 136	Date dial	● MAXELL SR621SW	Battery
* 801 137	Date dial	● SONY EVEREADY	Battery
* 801 327	Date dial	364	

Remarks:

* Fourth wheel & pinion, Center minute wheel, Hour wheel
There are two different types as specified below.

Combination:

*Type	Fourth wheel & pinion	Center minute wheel	Hour wheel
L	241 231	270 052	271 067
M	241 234	270 051	271 066

*abbreviation L.....Long type
(Movement type) M.....Standard type

* Winding stem holder for Pulsar Watches....735018 (Pulsar marking)

* Winding stem

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

* Date dial

Parts No.	Crown Position	Calendar frame Position	Specifications
801136	3 o'clock	3 o'clock	Black figures on white background
801137	3 o'clock	6 o'clock	Black figures on white background
801327	3 o'clock	3 o'clock	White figures on black background
801328	3 o'clock	3 o'clock	Black figures on gold background
801329	3 o'clock	6 o'clock	White figures on black background
801336	3 o'clock	6 o'clock	Black figures on gold background