
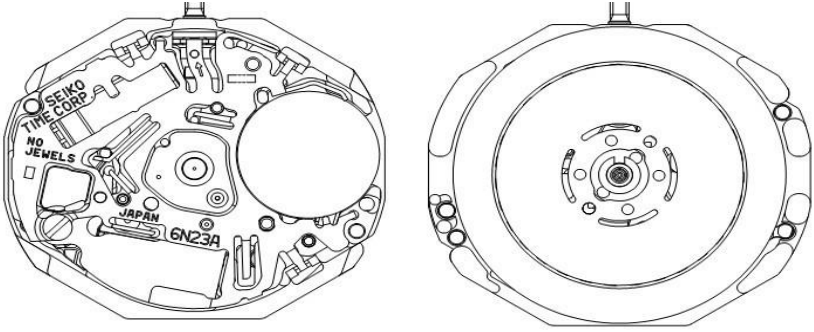


# PARTS LIST / TECHNICAL GUIDE

## ANALOGUE QUARTZ Cal. 6N23A

Cal. No.		6N23A	
Item			
			
<ul style="list-style-type: none"> <li>• 3 Hands (Hour, Minute, Second)</li> </ul>		<p><b>Movement Size</b></p> <ul style="list-style-type: none"> <li>• Outside diameter: <math>\varnothing</math> 18.50 mm</li> <li>3H - 9H : 16.10</li> <li>12H - 6H : 18.20</li> <li>Casing diameter : <math>\varnothing</math> 18.10 mm</li> <li>3H - 9H : —</li> <li>12H - 6H : 17.80</li> <li>• Height : 3.05 mm</li> </ul>	
Driving system		Step motor (Load compensated driving pulse system type)	
Additional function		<ul style="list-style-type: none"> <li>• Electronic circuit reset switch</li> <li>• Train wheel setting device</li> <li>• Day and Date setting</li> <li>• Battery life indicator</li> </ul>	
Crown operation	Normal position	Free	
	1st click position	Date setting (counter clockwise), Day setting (clockwise)	
	2nd click position	Time setting, hand position adjustment / resetting the circuit	
Loss/Gain		Monthly rate : Less than 15 seconds (at normal temperature range)	
Regulation system		Nil	
Current consumption		<ul style="list-style-type: none"> <li>• Movement: Less than 0.95 <math>\mu</math>A</li> <li>• Circuit block: Less than 0.20 <math>\mu</math>A</li> </ul>	
Gate time for rate measurement		Use 10-second gate *Set the crown at the normal position	
Coil resistance		4004 317 2.15 - 2.35K $\Omega$	
Power supply	Battery No.	SEIKO SB-AG SR621SW (Silver oxide battery)	
	Battery voltage	1.55V	
	Battery life	Approximately 3 years	
Jewels		0 jewels	

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# PARTS LIST

Cal. 6N23A

Disassembling procedures Figs. ① → ③③

Reassembling procedures Figs. ③③ → ①

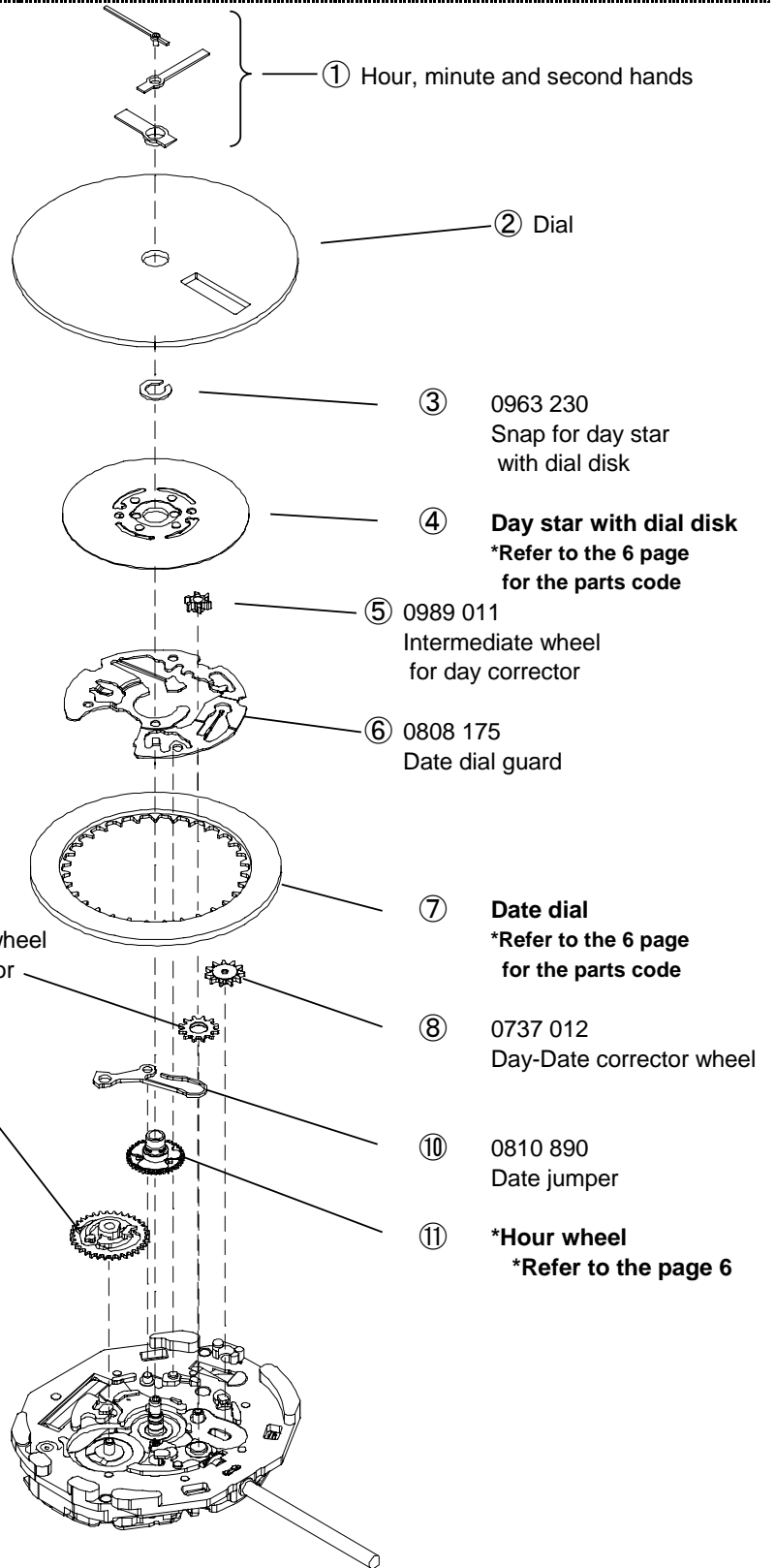
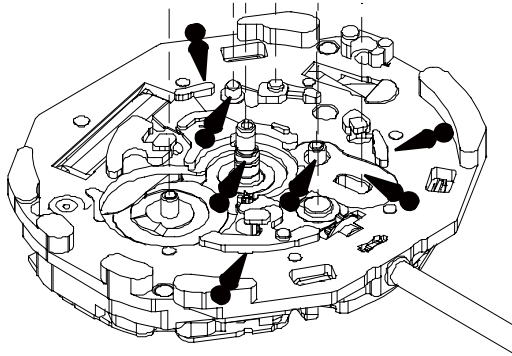
### Lubricating : Types of oil

- AO-3
- AO-2

### Oil quantity

- Normal Quantity
- Sufficieet Quantity

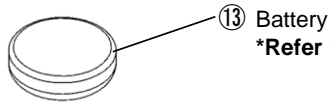
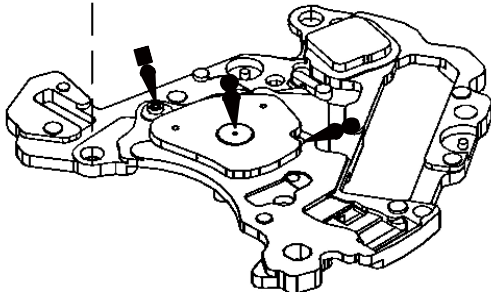
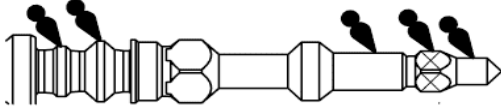
\* Oiling position



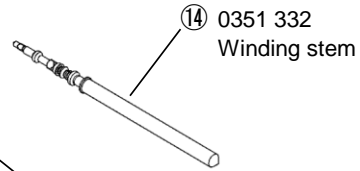
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Lubricating : Types of oil		Oil quantity	
●	AO-3	●	Normal Quantity
■	AO-2	●●	Sufficieet Quantity

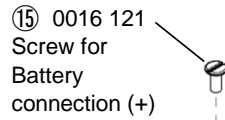
\* Oiling position



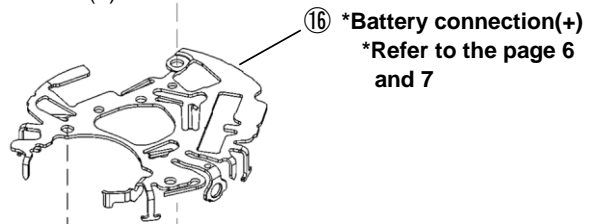
⑬ Battery  
\*Refer to the page 7



⑭ 0351 332  
Winding stem



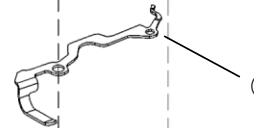
⑮ 0016 121  
Screw for  
Battery  
connection (+)



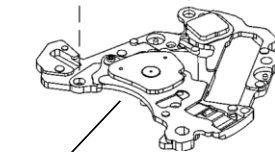
⑯ \*Battery connection(+)  
\*Refer to the page 6  
and 7







⑰ 4216 088  
Insulator  
\*Refer to the page 8



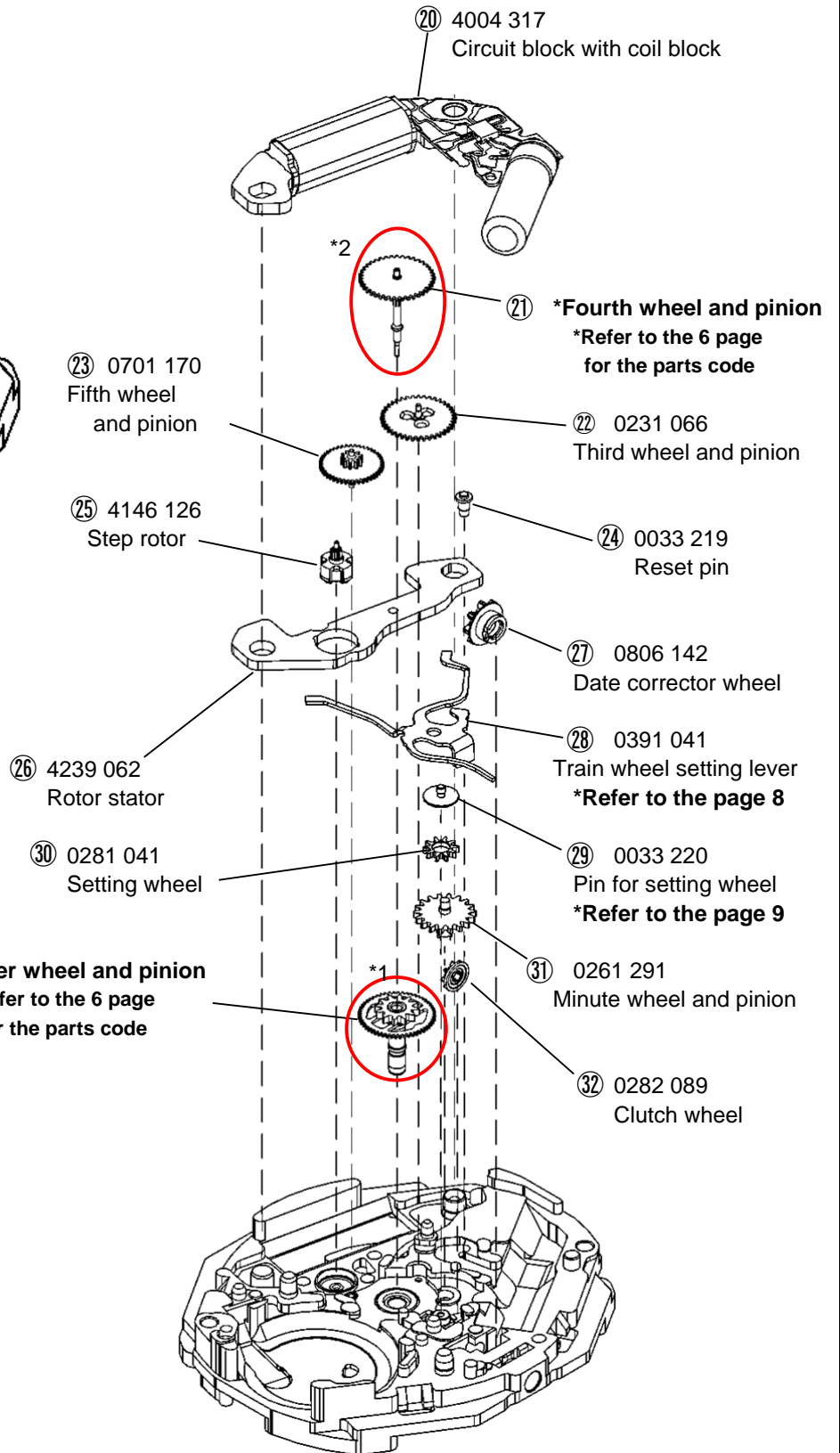
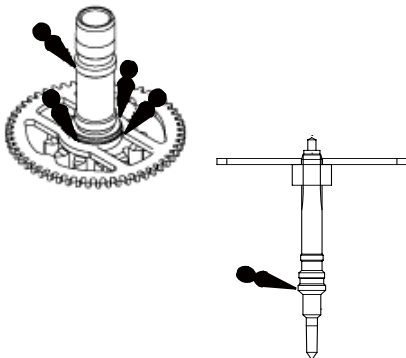
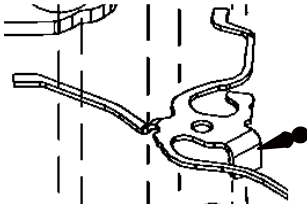
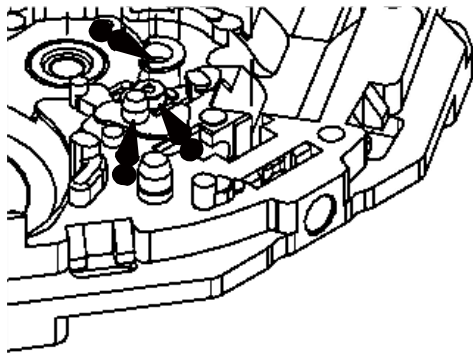
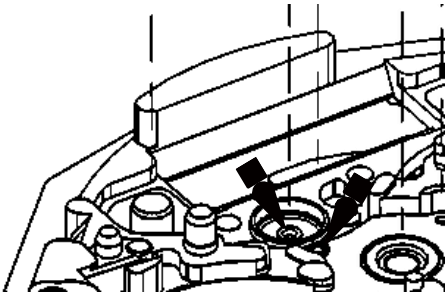
⑱ 4270 385  
Battery connection(-)



⑲ 0125 407  
Train wheel bridge  
\*Refer to the page 8

Lubricating : Types of oil	Oil quantity
 AO-3	 Normal Quantity
 AO-2	 Sufficieet Quantity

\* Oiling position



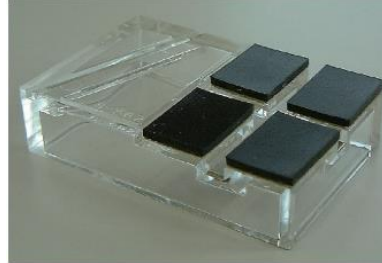
# PARTS LIST

Cal. 6N23A

## ● Tools and consumables required for disassembling/reassembling

### ▪ Movement Holder

UNIVERSAL MOVEMENT HOLDER (S-682)



### ▪ Watch oils

SEIKO watch oil AO-2 and AO-3

AO-2



AO-3



# TECHNICAL GUIDE

Cal. 6N23A

## Remarks :

Date dial

Part code	Positing of crown	Positing of date frame	Color of figure	Color of Background
0148 092	3H	3H	Black	White
0878 172	3H	3H	White	Black

Day star with dial disk

Part code	Positing of crown	Positing of date frame	Color of figure	Color of Background	Language
0150 007	3H	3H	Mon~Sat : Black Sun : Red	White	English / Spanish
0150 008	3H	3H	Mon~Sat : White Sun : Red	Black	English / Spanish

## ● How to find the correct parts, if not determined by 4 digit caliber number

Please refer to the following table in order to find the correct parts number.

Parts name	Standard type	Long type	Special type
⑪ Hour wheel	0273 017	0273 054	-
⑫ Battery connection(+)	4268 140	4268 141	-
⑬ Fourth wheel and pinion	0144 102	0144 144	-
⑭ Center wheel and pinion	0221 061	0221 068	-

**\* All parts code are subject to change without notice.**

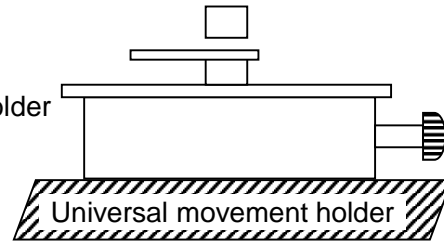
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## REMARKS ON DISASSEMBLING AND REASSEMBLING THE MOVEMENT

① Hands

How to install

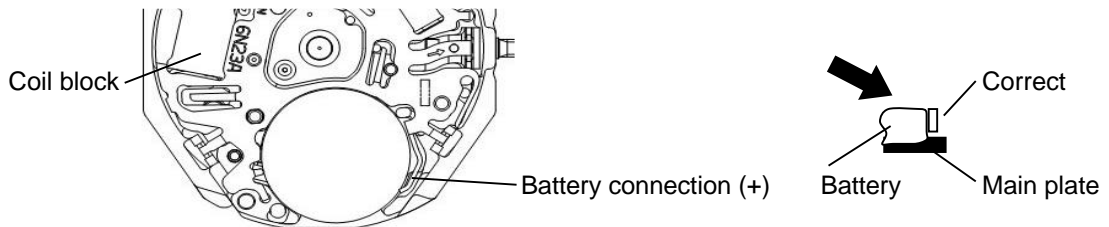
Place the movement directly on an universal movement holder to install the hands.



⑬ Battery

How to install battery

Insert the battery aslant in the direction shown by the arrow. Check the battery connection (+) securely touches the side of the battery.

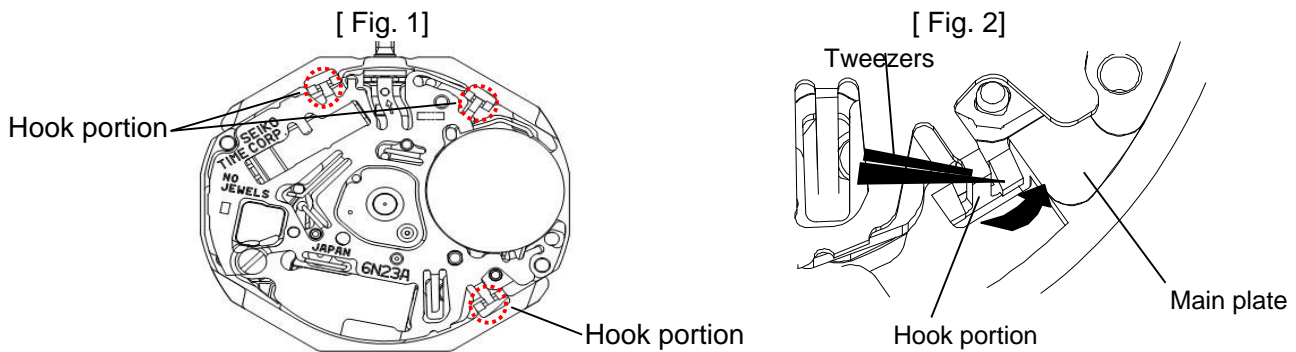


⑯ Battery connection (+)

How to install

Set the hook portions (3 places) with tweezers like (Fig.2), and make sure that the hooks catch the main plate.

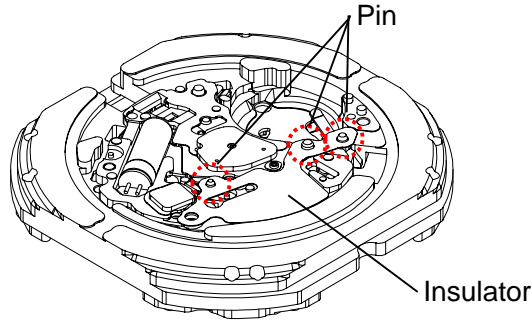
In disassembling and reassembling , take care not to deform the hook portions.



## REMARKS ON DISASSEMBLING AND REASSEMBLING THE MOVEMENT

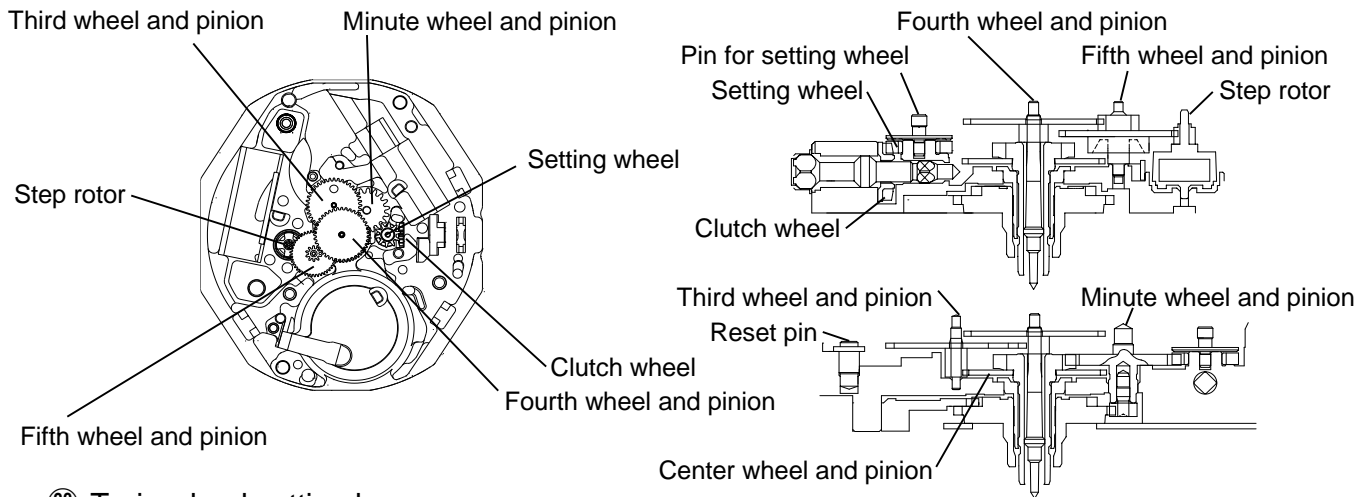
**⑰ Insulator**  
Setting position

Notes: In order to insulate the battery connection (+) and the battery connection (-), the insulator should be put at the three pins securely as below.



**⑱ Train wheel bridge**  
Setting position

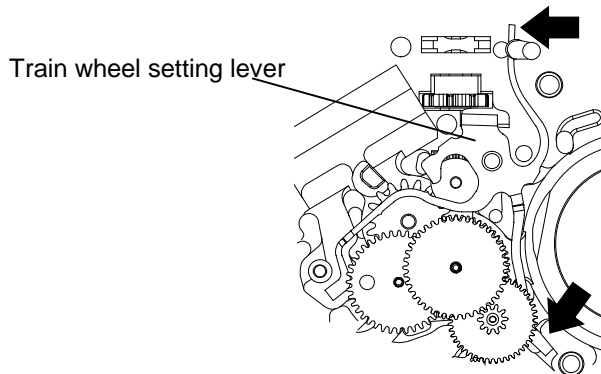
Notes: Since the fifth wheel and pinion and step rotor are made of plastic, take care not to damage them in disassembling and reassembling.



**⑳ Train wheel setting lever**  
Setting position

Notes:

- Set the spring part of the train wheel setting lever to the pin as below.
- Take care not to deform the spring part.



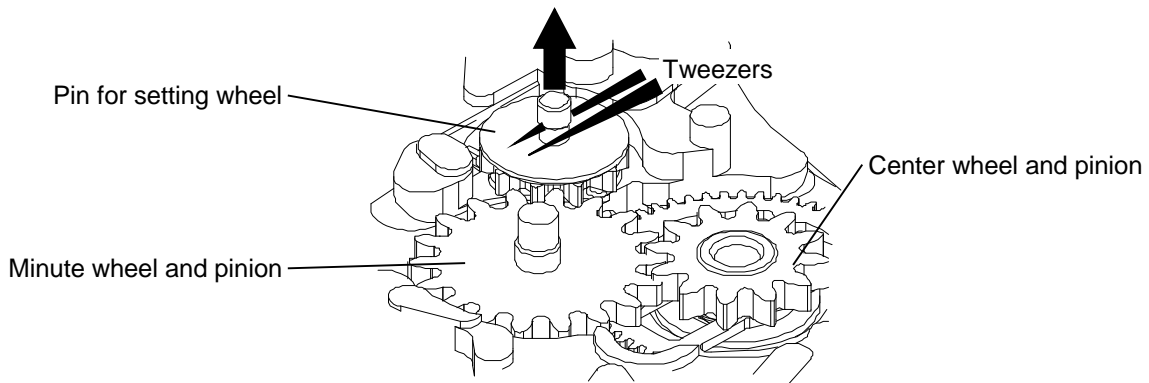


## REMARKS ON DISASSEMBLING AND REASSEMBLING THE MOVEMENT

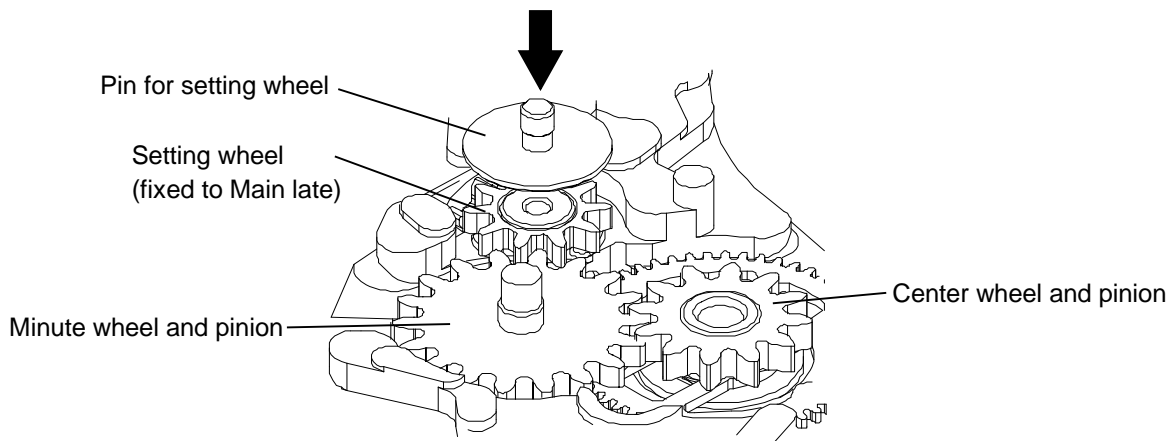
### ②9 Pin for setting wheel

Notes:

- In disassembling and reassembling, take care not to damage the pin, since it is made of plastic and easily damaged.
- In disassembling, pick the pin up vertically from the main plate with care.



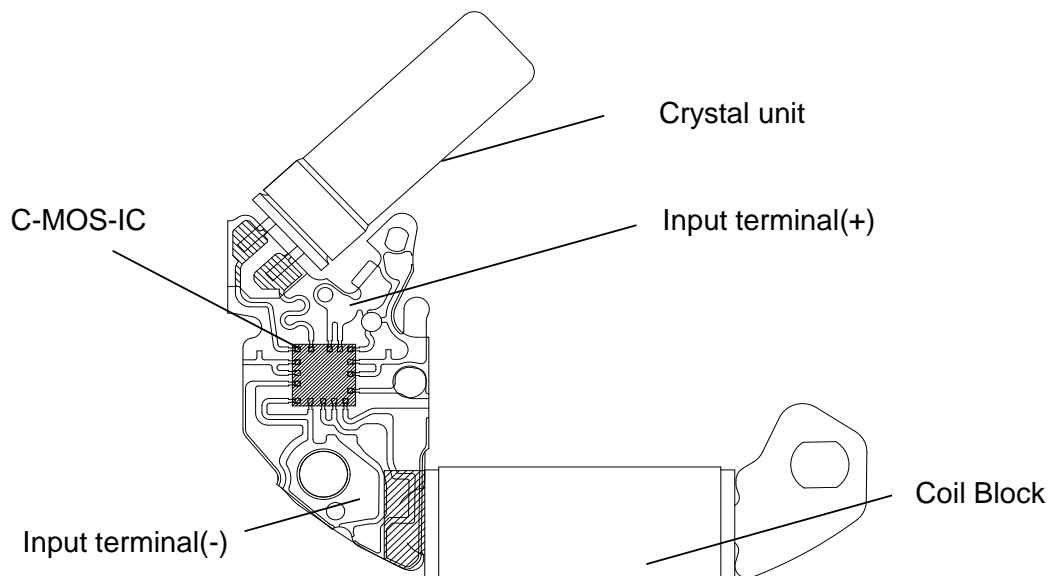
- In reassembling, push the pin toward the main plate vertically with care.



## [STRUCTURE OF THE CIRCUIT BLOCK]

**Notes:**

Since the circuit block and coil block are an integrated structure, take care not to cut the coil wire while disassembling and reassembling



● **Value checking -coil resistance (coil block)**

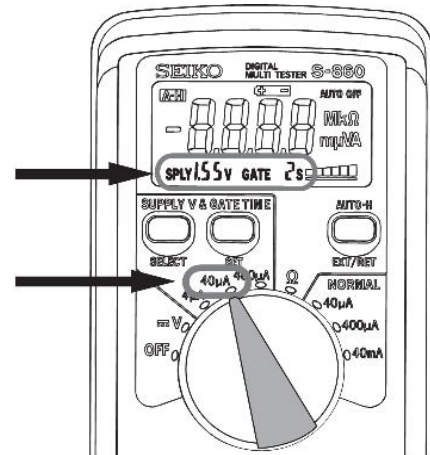
Check the resistance of each coil block if they are within the range in the following table.

CIRCUIT BLOCK (WITH COIL BLOCK)	4004 317	2.15 - 2.35KΩ
---------------------------------	----------	---------------

## REMARKS ON INSPECTION AND MEASUREMENT

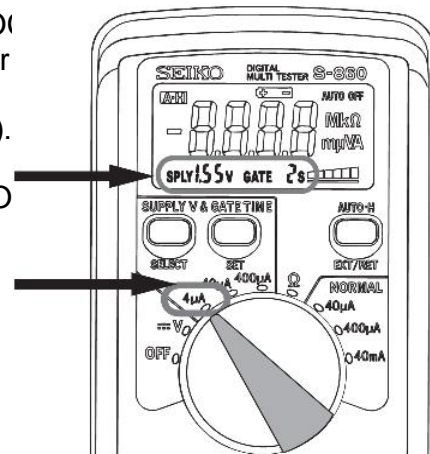
### ● How to measure the current consumption for the whole movement

- To measure the current consumption for the whole movement, connect the (-) probe to the battery connection (-) and (+) probe to the other metal part of the movement, such as battery clamp or circuit block cover.
  - \* When measuring the current consumption using the SEIKO digital multi-tester (S-860), use the range of 40  $\mu$  A of SUPPLY V (= 1.55 V) & GATE TIME (2 S).
- Connect the AC component to the positive terminal for 2 seconds until a short circuit occurs to reset the integrated circuit.
- After the integrated circuit is reset, wait approximately for 10 seconds until a stable measurement is obtained, and then read the measurement.
- Make sure the read value is less than 0.95  $\mu$  A.



### ● How to measure the current consumption for the CIRCUIT BLOCK alone

- To measure the current consumption for the CIRCUIT BLOCK alone, connect each probe to the appropriate positive (+) or negative (-) input terminal of the CIRCUIT BLOCK (please refer to "Structure of the CIRCUIT BLOCK" below).
  - \* When measuring the current consumption using the SEIKO Multi-Tester S-860, use the range of 4  $\mu$  A of SUPPLY V (= 1.55 V) & GATE TIME (2 S).
- Repeat the same procedures as 2. and 3. of measuring current consumption for the whole movement above.
  - \* When measuring the current consumption for the circuit block alone, be careful not to damage or deform the pattern of the circuit block.
- Make sure the read value is less than 0.20  $\mu$  A.



# TECHNICAL GUIDE

Cal. 6N23A

## ●Water resistance test

Check the water resistance according to the designated specification of the watch

Marking on the case back	Test method	Applied pressure
WATER RESISTANT(WATER RESIST)	Air leak test	3 BAR
WATER RESIST 5BAR	Water pressure test	5 BAR
WATER RESIST 10BAR		10 BAR
WATER RESIST 15BAR		15 BAR
WATER RESIST 20BAR	Condensation test	20 BAR
SCUBA DIVERIS (AIR DIVERIS) 150 m	Condensation test	$18.75 \text{ BAR} = 150(\text{m}) \times 0.125$
SCUBA DIVERIS (AIR DIVERIS)200 m	Water pressure test	$25 \text{ BAR} = 200(\text{m}) \times 0.125$
He-GAS DIVERIS 300 m		$37.5 \text{ BAR} = 300(\text{m}) \times 0.125$
He-GAS DIVERIS 600 m		$75 \text{ BAR} = 600(\text{m}) \times 0.125$
He-GAS DIVERIS1000m	Condensation test	$125 \text{ BAR} = 1000(\text{m}) \times 0.125$

SEIKO WATCH CORPORATION

# TECHNICAL GUIDE

Cal. 6N23A

## TROUBLESHOOTING

	Symptom	Possible causes	Solutions
Movement	The watch stops operating.	The battery has been depleted.	Measure the battery voltage. Replace the battery with a new one.
		The hour wheel and the pinion of the minute wheel are not properly engaged. (Or the teeth of the hour wheel and/or minute wheel have been broken.)	Check the relevant parts, and replace the damaged parts with new ones.
		The hooking portions of the circuit block cover are not properly engaged, resulting in poor conductivity.  The coil is broken.	Securely attach the hooks of the circuit block cover to the main plate.  Measure the coil block resistance. Replace the coil with a new one.
		One or more wheels have been contaminated with dirt, dust or other particles.  An excessive amount of oil in the movement has caused adhesive forces among the parts. (wringing)	Remove dirt or dust and clean the contaminated wheels. Be careful so as not to damage the teeth of the plastic parts while cleaning.
	The current consumption for the whole movement exceeds the standard value.	Dirt, dust or foreign particles are adhered to the movement. The driving pulse is generated in order to compensate the excessive load applied to the wheels. (The oil has deteriorated, leaked or run out.)	Remove dirt, dust or foreign particles and clean the movement. If the current consumption for the circuit block alone is within the standard value range, overhaul and clean the movement parts, and then make the measurement again.
	The current consumption for the circuit block alone exceeds the standard value.	The light from outside the movement is affecting the measurement.  There is a defect in the IC (integrated circuit).	Shut out the light, and make the measurement again.  Replace the circuit block with a new one.
Exterior Parts	The crown falls off.	The winding stem is not securely installed. (The setting lever and yoke are disengaged.)	Check the main plate, winding stem, setting lever and yoke. Replace the defective parts with new ones.
	The current consumption exceeds the standard value.	An excessive load is being applied due to friction among the hour, minute and STOP-WATCH hands.	Adjust or remount the relevant hands.
	Small amount of water/blur inside of the glass persists.	Water resistance is deteriorated. The watch has been subjected to water pressure that exceeds the guaranteed degree.	Investigate the causes to take necessary measures, while cleaning inside of the watch.

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