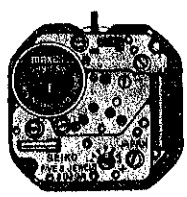
SEIKO

QUARTZ

Cal. 9020, 9021, 9029

PARTS CATALOGUE

Cal. 9020, 9021, 9029



Cal. 9029A

122 856

125 854

☆221 842

☆221 843

☆221 845

231 855

☆241 845

241 853

261 856

☆271 845

☆271 848

281 856

282 855

282 858

354 856

383 855

384 855

389 855

391 856

491 589

491 840

604 854

701 855

737 855

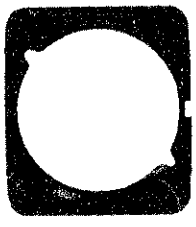
766 855

☆801 543

802 855

808 855

810 855



☆884 985

962 855

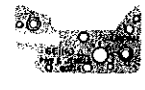
986 855

4001 851

4002 855

4050 876

4050 878



4050 882

4146 855

4216 858

4239 855

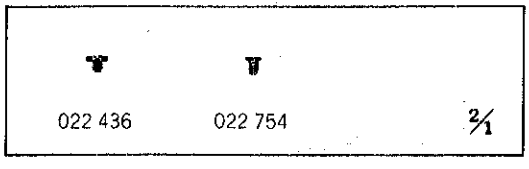
4259 855

4270 856

4271 855

4408 856

4450 855



022 436

022 754

2/1

☆SEIKO TR916SW

Cal. 9020, 9021, 9029

Characteristics

	Cal. 9020	Cal. 9021	Cal. 9029
Casing diameter		ϕ 23.3 mm	
Maximum height (without battery)	1.8 mm		2.2 mm
Jewels		5 j	
Frequency of quartz crystal oscillator		32,768 Hz (Hz=Hertz ..... Cycles per second)	
Driving system		Step motor (2 poles)	
Regulation system		Rotary step switch	
Train wheel setting	○	○	○
Calendar (Date)			○
Instant setting device			○
Battery life indicator		○	

PART NO.	PART NAME
122 856	Center wheel bridge
125 854	Train wheel bridge
☆**221 842**	Center wheel & pinion (Cal. 9020)
☆221 843	Center wheel & pinion (Cal. 9020,9029)
☆221 845	Center wheel & pinion (Cal. 9021)
☆221 853	Center wheel & pinion (Cal. 9029)
☆221 848	Center wheel & pinion (Cal. 9021)
☆221 857	Center wheel & pinion (Cal. 9021)
231 855	Third wheel & pinion
☆**241 845**	Fourth wheel & pinion (Cal. 9021)
☆241 848	Fourth wheel & pinion (Cal. 9021)
☆241 853	Fourth wheel & pinion (Cal. 9020,9029)
☆241 857	Fourth wheel & pinion (Cal. 9021)
261 856	Minute wheel
☆**271 845**	Hour wheel (Cal. 9020,9021)
☆271 846	Hour wheel (Cal. 9021)
☆271 848	Hour wheel (Cal. 9029)
☆271 856	Hour wheel (Cal. 9021,9020)
☆271 857	Hour wheel (Cal. 9029)
281 856	Setting wheel
282 855	Clutch wheel (Cal. 9020,9021)
282 858	Clutch wheel (Cal. 9029)
354 856	Winding stem
383 855	Setting lever
384 855	Yoke (Cal. 9020,9021)
384 856	Yoke (Cal. 9029)
389 855	Setting lever spring
391 856	Train wheel setting lever
491 589	Dial washer (Cal. 9020,9021)
491 840	Dial washer (Cal. 9029)
604 854	Setting wheel plate complete
701 855	Fifth wheel & pinion
737 855	Date corrector setting wheel (Cal. 9029)
766 855	Intermediate minute wheel
☆**801 543**	Date dial (Cal. 9029)
802 855	Date driving wheel (Cal. 9029)
808 855	Date dial guard (Cal. 9029)
810 855	Date jumper (Cal. 9029)
☆**884 985**	Holding ring for dial (Cal. 9029)
962 855	Intermediate wheel for calender correetion (Cal. 9029)
986 855	Date corrector wheel rocking lever (Cal. 9029)
4001 851	Circuit block
4002 855	Coil block
4050 876	Circuit bridge plate (Cal. 9020)
4050 878	Circuit bridge plate (Cal. 9029)

PART NO.	PART NAME
4050 882	Circuit bridge plate (Cal. 9021)
4146 855	Step rotor
4216 858	Insulator for battery
4239 855	Rotor stator
4259 855	Anti-magnetic shield plate
4270 856	Battery connection (−)
4271 855	Battery connection (+)
4408 854	Circuit block spacer (Cal. 9020,9021)
4408 856	Circuit block spacer (Cal. 9029)
4450 855	Regulating switch lever
011 568	Upper hole jewel for step rotor
011 570	Lower hole jewel for step rotor)
011 570	Upeer hole jewel for center wheel
011 570	Upper hole jewel for third wheel
011 570	Upper hole jewel for fourth wheel
022 436	Train wheel bridge screw
022 436	Circuit bridge plate screw
022 436	Setting wheel plate complete screw
022 754	Date dial guard screw (Cal. 9029)
023 340	Date corrector wheel rocking lever pin (Cal. 9029)
023 377	Date dial guard tube (Cal. 9029)
027 127	Tube for setting wheel plate complete screw
027 134	Tube for train wheel bridge
☆027 145	Tube for circuit bridge (A)
☆027 157	Tube for circuit bridge (B)
027 744	Setting lever pin (Cal. 9020,9021)
027 750	Setting lever pin (Cal. 9029)
027 745	Train wheel setting lever pin
027 746	Yoke pin
027 747	Regulating switch lever pin
☆Maxell SR916SW	Silver oxide battery
☆SEIKO TR916SW	Silver (II) oxide battery

☆⇨Please see remarks on the reverse page.
Part numbers in light letters are not shown in photos.

Cal. 9020, 9021, 9029

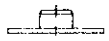
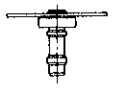
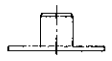
Remarks :

Center wheel & pinion, Fourth wheel & pinion, Hour wheel

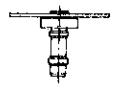
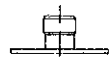
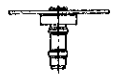
There are some different types as specified below.

Combination

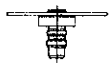
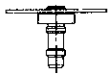
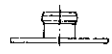
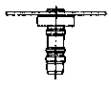
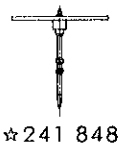
Cal. 9020

Type	Center wheel & pinion	Hour wheel
a	 ☆221 842	 ☆271 845
b	 ☆221 843	 ☆271 856

Cal. 9029

Type	Center wheel & pinion	Hour wheel
a	 ☆221 843	 ☆271 848
b	 ☆221 853	 ☆271 857

Cal. 9021

Tape	Center wheel & pinion	Fourth wheel & pinion	Hour wheel
a	 ☆221 845	 ☆241 845	 ☆271 845
b	 ☆221 857	 ☆241 857	 ☆271 846
c	 ☆221 848	 ☆241 848	 ☆271 856

Date dial (Cal. 9029A)

☆801 543 (Black figures on silver background)
☆801 547 (Black figures on gold background) } ..... Used when both the crown and the calendar frame are located at 3 o'clock position.

If any other type of date dial is required, specify ① Cal. No. ② The crown position ③ The calendar frame position and ④ Dial No.

Holding ring for dial (Cal. 9029A)

☆884 985 ..... 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.

Tube for circuit bridge (A), (B)

☆027 145
☆027 157 } ..... Refer to the illustration on the right.


☆027 145


☆027 157

Battery

☆Maxell SR916SW
☆SEIKO TR916SW } .....The substitutive battery might be added to the applied battery in the future.

In that case, please refer to separate **"BATTERY LIST FOR SEIKO QUARTZ WATCHES".**

Note that SEIKO battery is marked with "SEIZAIKEN" on its (+) side.

TECHNICAL GUIDE

SEIKO

QUARTZ

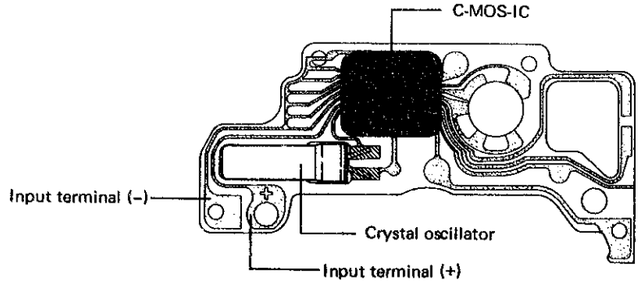
CAL. 9020A
CAL. 9021A
CAL. 9029A

CONTENTS

I. SPECIFICATIONS

Item \ Cal.	9020A	9021A	9029A
Time indication	2 hands	3 hands	2 hands
Additional mechanism	—		Date
			Instant date setting device
	Train wheel setting device		
	—	Battery life indicator	—
	Electronic circuit reset switch		
Loss/gain	Monthly rate: Less than 15 seconds		
Movement size — Outside diameter	ϕ24.0mm (22.0mm between 6 o'clock and 12 o'clock sides; 19.0mm between 3 o'clock and 9 o'clock sides)		ϕ24.6mm (22.0mm between 6 o'clock and 12 o'clock sides; 21.0mm between 3 o'clock and 9 o'clock sides)
Movement size — Casing diameter	ϕ23.3mm (21.0mm between 6 o'clock and 12 o'clock sides; 19.0mm between 3 o'clock and 9 o'clock sides)		
Movement size — Height	1.8mm		2.2mm
Regulation system	Rotary step switch		
Measuring gate by Quartz Tester	Use the gate of 10 seconds.		
Battery	SEIKO (SEIZAIKEN) TR916SW Maxell SR916SW Battery life is approximately 3 years.		
Jewels	5 jewels		

II. STRUCTURE OF CIRCUIT BLOCK



III. DISASSEMBLING, REASSEMBLING AND LUBRICATING

Types of oil

● Moebius A
○ SEIKO Watch Oil S-6

List of screws used

Shape	Part No.	Part Name	Shape	Part No.	Part Name
	022436	Train wheel bridge screw (2 pcs.) Circuit bridge plate screw (2 pcs.) Setting wheel plate complete screw (2 pcs.)		022754	Date dial guard screw (3 pcs.)

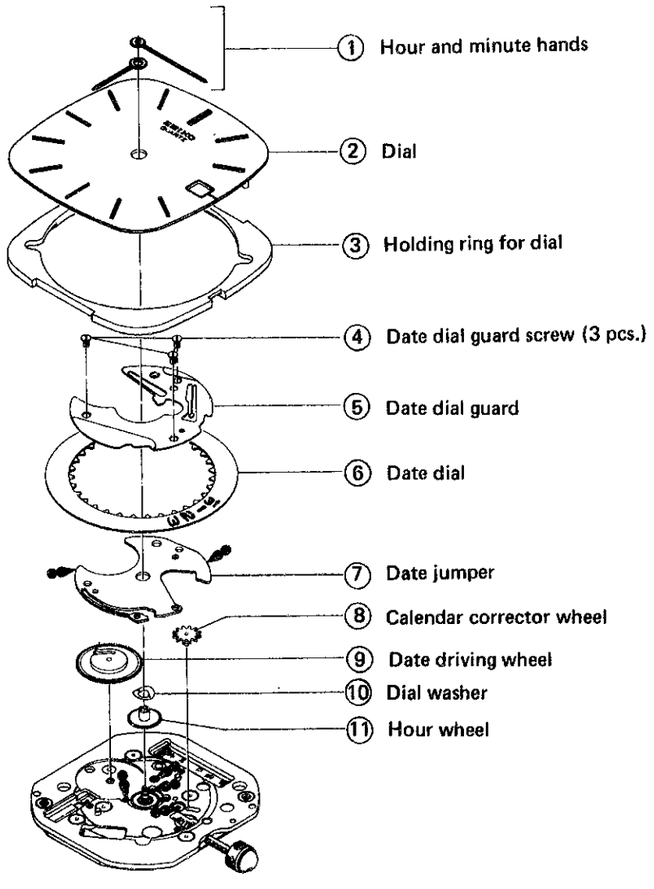
Disassembling procedures ① → ㊸

Reassembling procedures ㊸ → ①

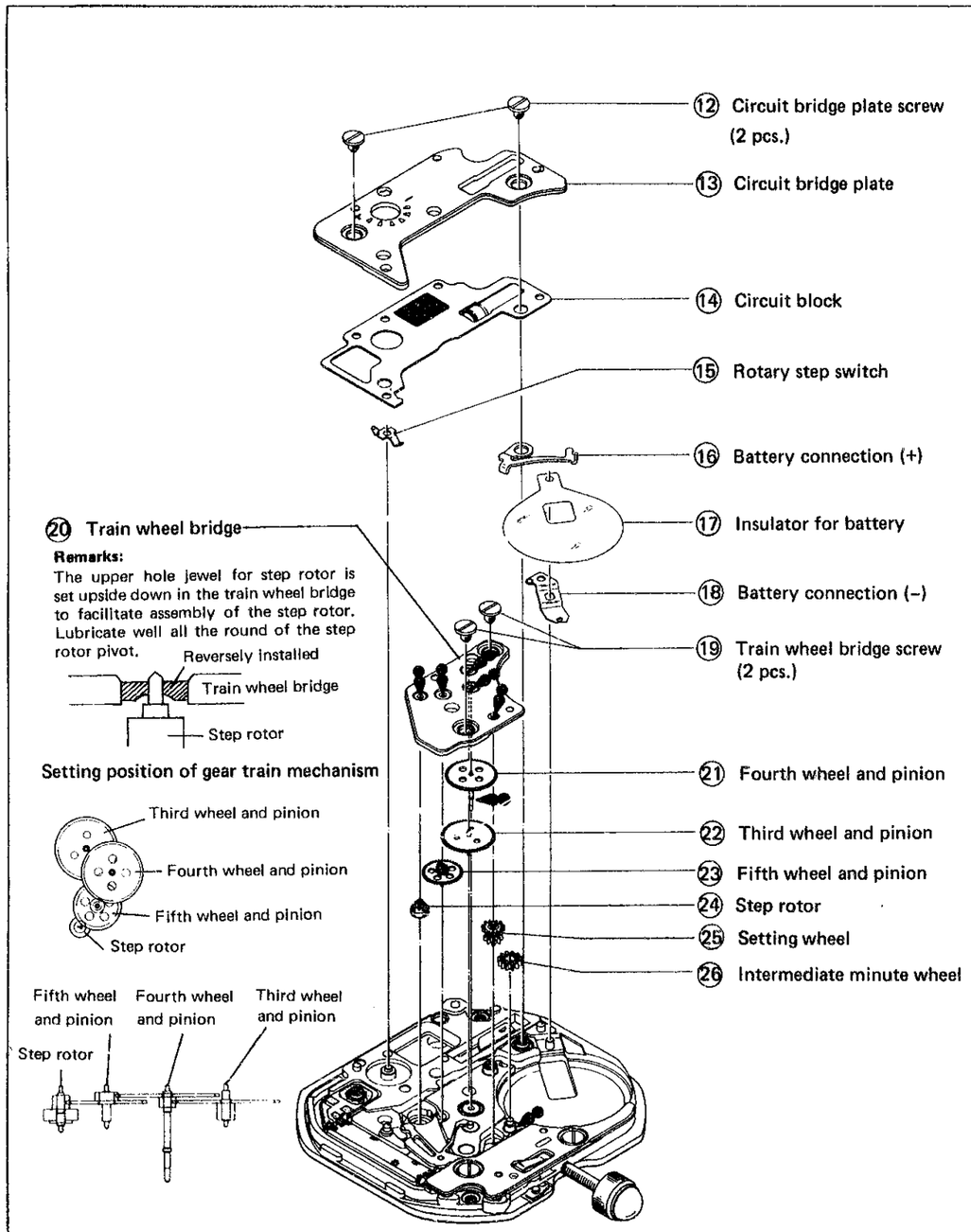
● Use the universal movement holder for disassembling and reassembling.

1. Hour and minute hands ~ hour wheel

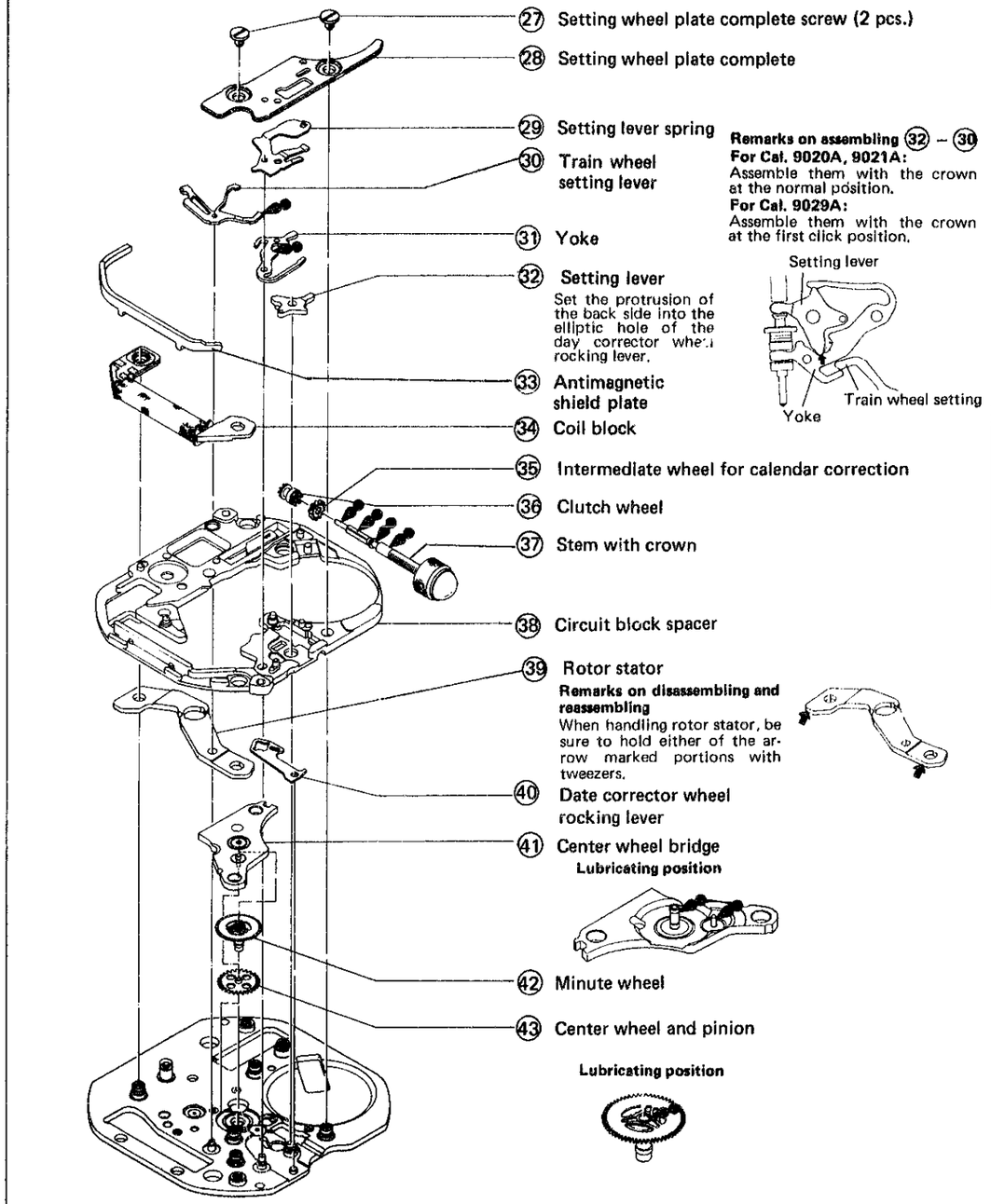
ex. Cal. 9029A



2. Circuit bridge plate screw ~ intermediate minute wheel



3. Setting wheel plate complete screw ~ center wheel and pinion



IV. CHECKING AND ADJUSTMENT

- The explanation here is only for the particular points of Cal. 9020A, 9021A and 9029A. Refer to the "TECHNICAL GUIDE, GENERAL INSTRUCTION" for SEIKO Analogue Quartz for details.

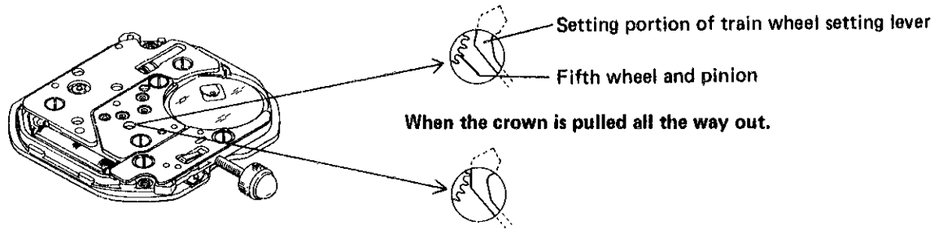
Procedure	
CHECK OUTPUT SIGNAL	
Use the quartz tester. Range to be used: 10-second gate	**Result:** Normal : Input indicator blinks every 1 second. Defective: Input indicator does not blink every 1 second.
CHECK HAND SETTING CONDITION	
CHECK BATTERY VOLTAGE	
Set up the volt-ohm-meter Range to be used: DC 3V	**Result:** Normal : More than 1.5V Defective: Less than 1.5V
CHECK BATTERY CONDUCTIVITY	
CHECK CIRCUIT BLOCK CONDUCTIVITY	
CHECK COIL BLOCK	
Set up the volt-ohm-meter Range to be used: OHMS x 100	**Result:** Normal : 2.7KΩ ~ 3.4KΩ Defective: Less than 2.7KΩ (Short circuit); More than 3.4KΩ (Broken wire)

Procedure
CHECK RESET AND TRAIN WHEEL SETTING CONDITIONS

1. Check to see if the step rotor stops promptly when the crown is pulled all the way out and if it starts 1 second after the crown is pushed back to the normal position by using a microscope.

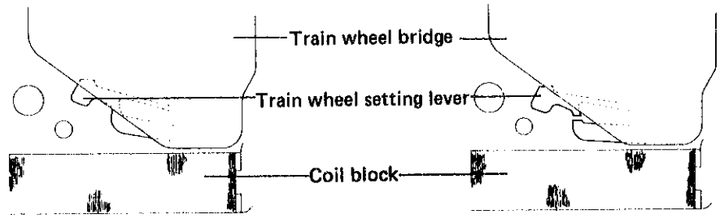
2. Check the clearance between train wheel setting lever and fifth wheel and pinion by looking through the hole of train wheel bridge.

When the crown is pushed back to the normal position.



3. Check the position of train wheel setting lever after disassembling the circuit block.

When the crown is pushed back to the normal position. **When the crown is pulled all the way out.**



CHECK GEAR TRAIN MECHANISM

CHECK SETTING MECHANISM

CHECK ACCURACY

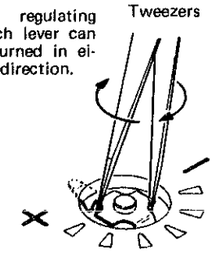
Measuring time accuracy

- Use the 10-second gate of the quartz tester.
- Be sure to protect the C-MOS-IC from light with case back or black paper, etc. while measuring.
- Do not measure accuracy under an incandescent lamp, since strong light adversely affects time accuracy.

Adjusting time accuracy

- When adjusting time accuracy, turn the rotary step switch by tweezers and correspond either end of rotary step switch with a mark on circuit bridge plate.
- The range to be regulated by the regulating switch lever is ±0.26 sec./day.

The regulating switch lever can be turned in either direction.



Procedure

CHECK CURRENT CONSUMPTION

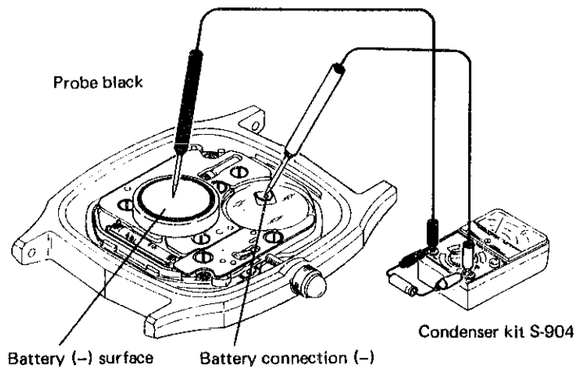
- Be sure to protect the C-MOS-IC from light with black paper, etc. while measuring.
  Do not check current consumption under an incandescent lamp, since strong light causes a watch to consume excess current.

Set up the volt-ohm-meter

Range to be used: DC 12μA

Result:

Normal : Less than 0.9μA
Defective: More than 0.9μA



CHECK WATER RESISTANCE

CHECK CONDUCTIVITY OF SWITCH COMPONENTS

CHECK APPEARANCE AND FUNCTIONING

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