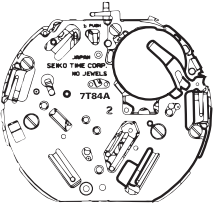
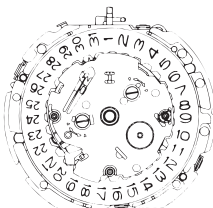


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. 7T84A

[SPECIFICATIONS]

Item		Cal. No.	7T84A
Movement			  (x 1.0)
Movement size	Outside diameter		Ø 27.6 mm
	Casing diameter		Ø 27.0 mm
	Height		3.3 mm
Time indication (Movement intervals)			<p>Main time: Hour, minute and small second hands (1 second)</p> <ul style="list-style-type: none"> • Mode dial (12 o'clock position) Mode indicator • TIMER (center position) Timer hands (TIMER minute and second hands, also used as a STOPWATCH 1/5-second hand and a STOPWATCH second hand) • Small watch for alarm (6 o'clock position) Alarm hour and minute hands (also used as a TIMER minute hand a TIMER second hand, STOPWATCH hour and minute hands, and hour and minute hands in the LOCAL TIME display)
Driving system			Step motor 4 pcs.
Additional mechanism			<ul style="list-style-type: none"> • Electronic circuit reset switch • Train wheel setting device • Date calendar • Instant setting device for date calendar • Battery life indicator (The small second hand moves at two-second intervals.) • System reset <ul style="list-style-type: none"> • TIMER mode Maximum of 15-minute measurement time in 1-minute increments • YACHTING TIMER mode 5-, 6- & 10-minute preset timers, Automatic relay function of the stopwatch (maximum of 12 hour measurement time in 1-second increments), Restart setting function • STOPWATCH mode Maximum of 12 hour measurement time in 1/5-second increments, Hour, minute and 1/5-second hands • ALARM mode Single-time alarm and regular alarm on a 12-hour basis • LOCAL TIME mode Local time display in 1-minute increments on a 12-hour basis
Loss/gain			Monthly rate at normal temperature range: less than 15 seconds
Regulation system			Nil
Measuring gate by quartz tester			Use 10-second gate.
Battery	Battery No.		SR927W
	Voltage		1.55 V
	Battery life		Approx. 3 years
Jewels			0 jewel

SEIKO WATCH CORPORATION

REMARKS ON REPAIRING CAL. 7T84A

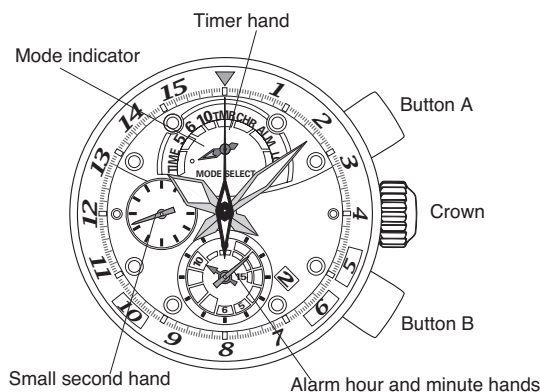
Cal. 7T84A has a new structure employing one crown and two buttons, but the basic movement structure of Cal. 7T84A is similar to the previous Cal. 7T Series watches, and the knowledge and technique you have gained in handling the previous Cal. 7T Series watches will come in handy when you repair Cal. 7T84A.

When repairing, however, you are requested to have full knowledge of the features characteristic of these watches and strictly observe the repairing and checking instructions provided in this guide so that the watches will be repaired correctly.

I. FEATURES

Cal. 7T84A is a multifunctional analogue watch that features various functions including a yachting timer function, a stopwatch function and an alarm function. To select each mode, the mode indicator located at the 12 o'clock position is used.

Cal. 7T84A multifunctional yachting timer



1. YACHTING TIMER MODE

Yachting timer combines the functions of a count down timer and a stopwatch that starts operating automatically when the timer finishes counting down. This function is particularly useful in yacht racing. 5-, 6- & 10-minute preset timers are available.

- **Button operation (Crown position: First click)**

Button A: mode selection (selectable among 5-minute, 6-minute and 10-minute preset timers) (crown position: normal position)

Button A: START/STOP

Button B: RESET

2. ALARM MODE

The single-time alarm that sounds only once at a designated alarm time, and the regular alarm that can be set to sound at a designated time everyday are available.

The alarm time for the single-time alarm can be set within 12 hours from the current time in 1-minute increments.

3. STOPWATCH MODE

The stopwatch can measure 12 hours in 1/5-second increments. When the measurement reaches 12 hours, the stopwatch automatically stops.

- **Button operation (Crown position: First click)**

Button A: mode selection CHR (crown position: normal position)

Button A: START/STOP

Button B: SPLIT/SPLIT RELEASE/RESET

REMARKS ON REPAIRING CAL. 7T84A

4. SYSTEM RESET

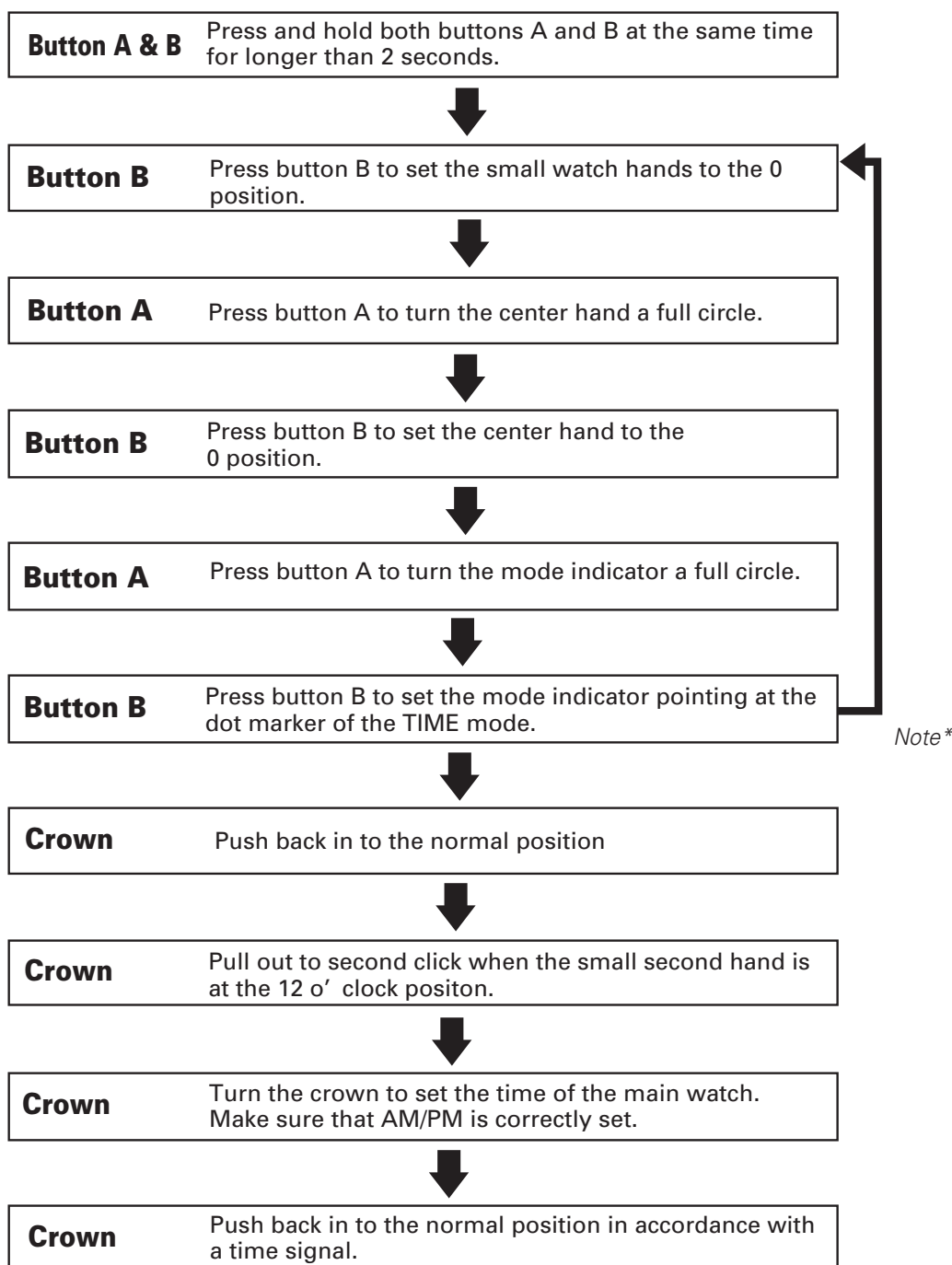
When an abnormal display appears, reset the built-in integrated circuit. The watch will resume its normal operation.

- **Button operation (Crown position: Second click)**

Press and hold buttons A and B at the same time for longer than 2 seconds.

II. NECESSARY PROCEDURE AFTER BATTERY CHANGE

After installing the battery, pull out the crown to the second click position. And then follow the instructions below to correct the hand positions and set the time.



*Note** Pressing Button A for longer than 2 seconds here will allow you to resume the procedure again as indicated by the arrow if necessary.

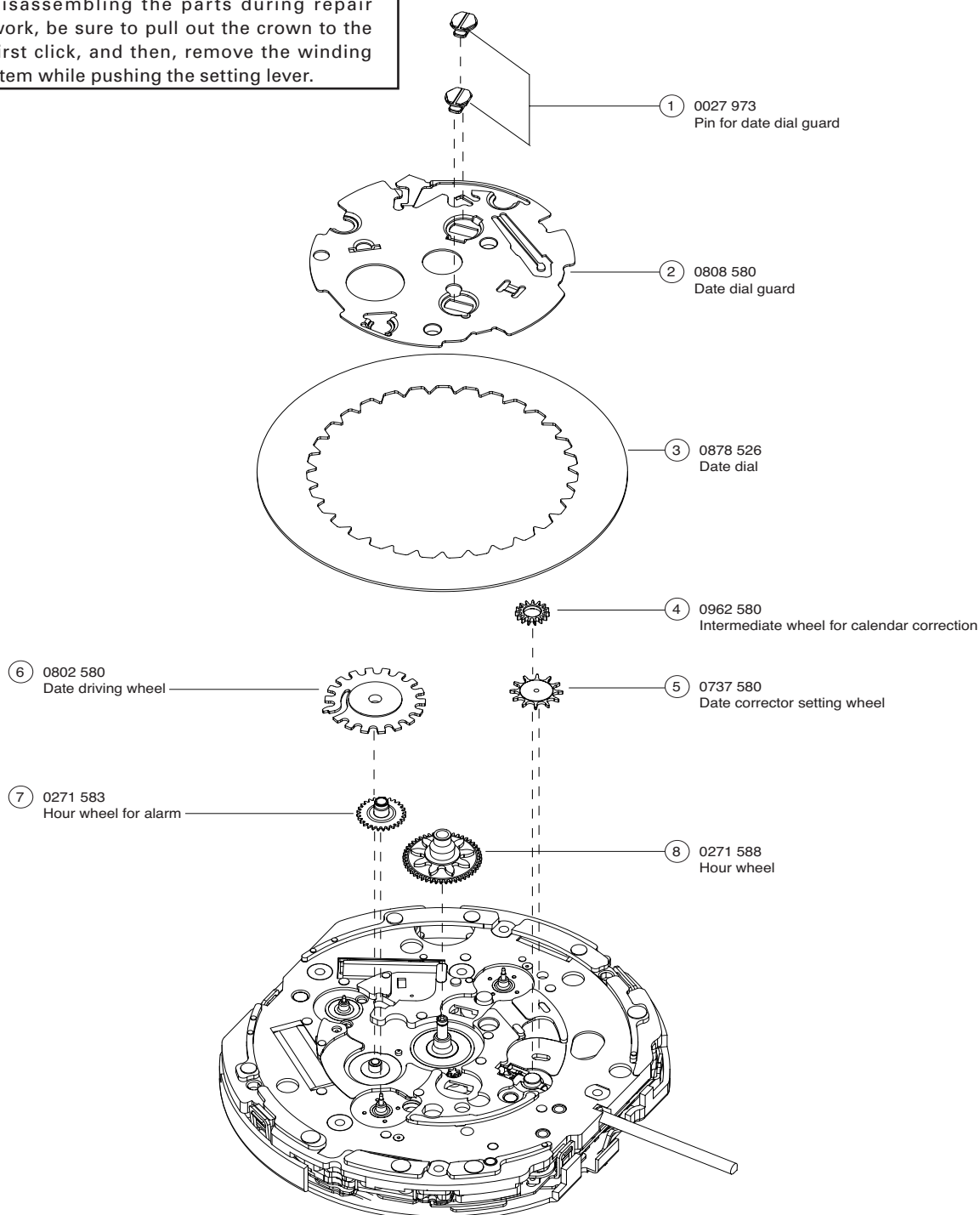
Disassembling procedures Figs. : (1) → (57)

Reassembling procedures Figs. : (57) → (1)

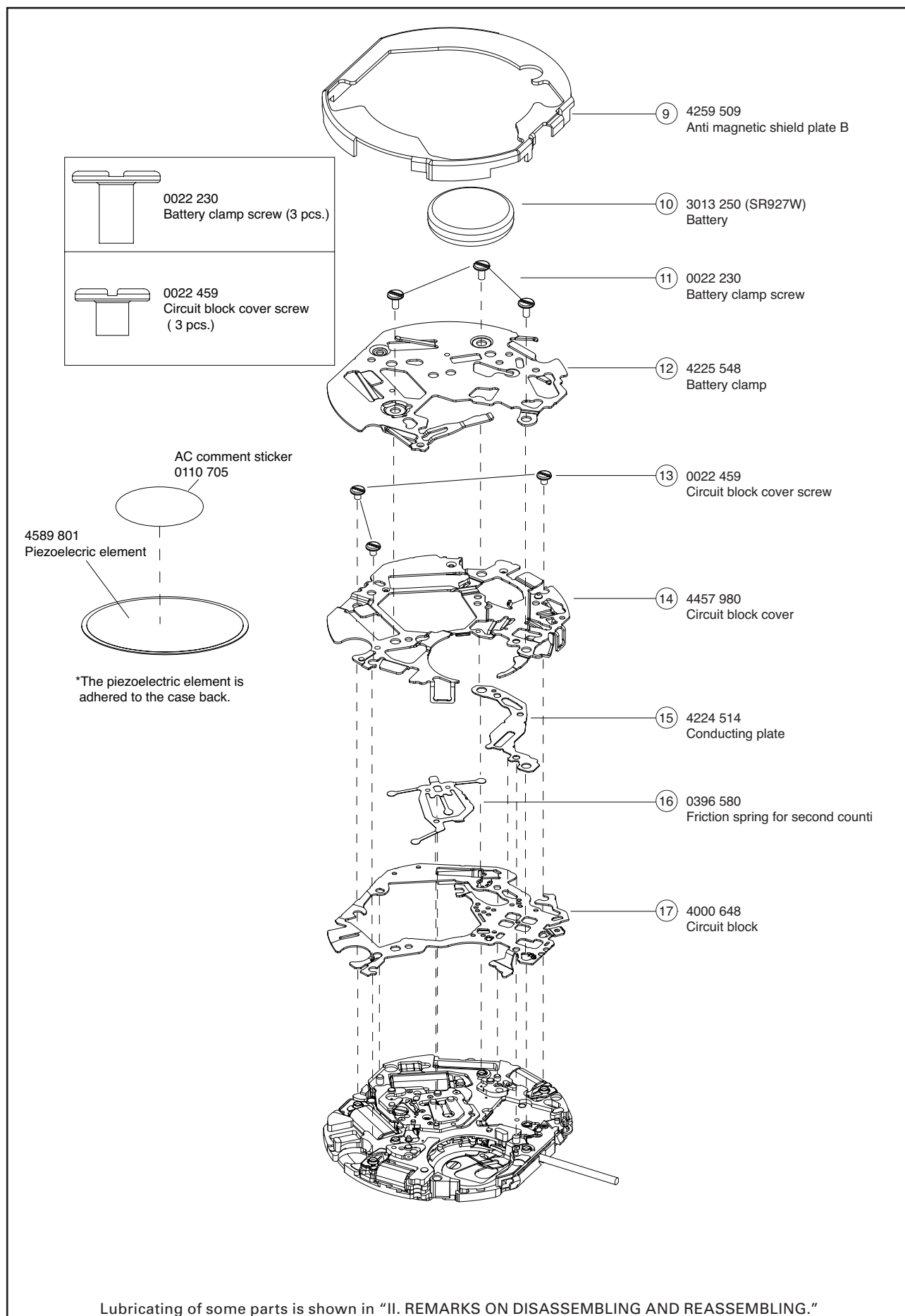
* For the type of oil and quantity of lubrication, refer to the following TECHNICAL GUIDE section.

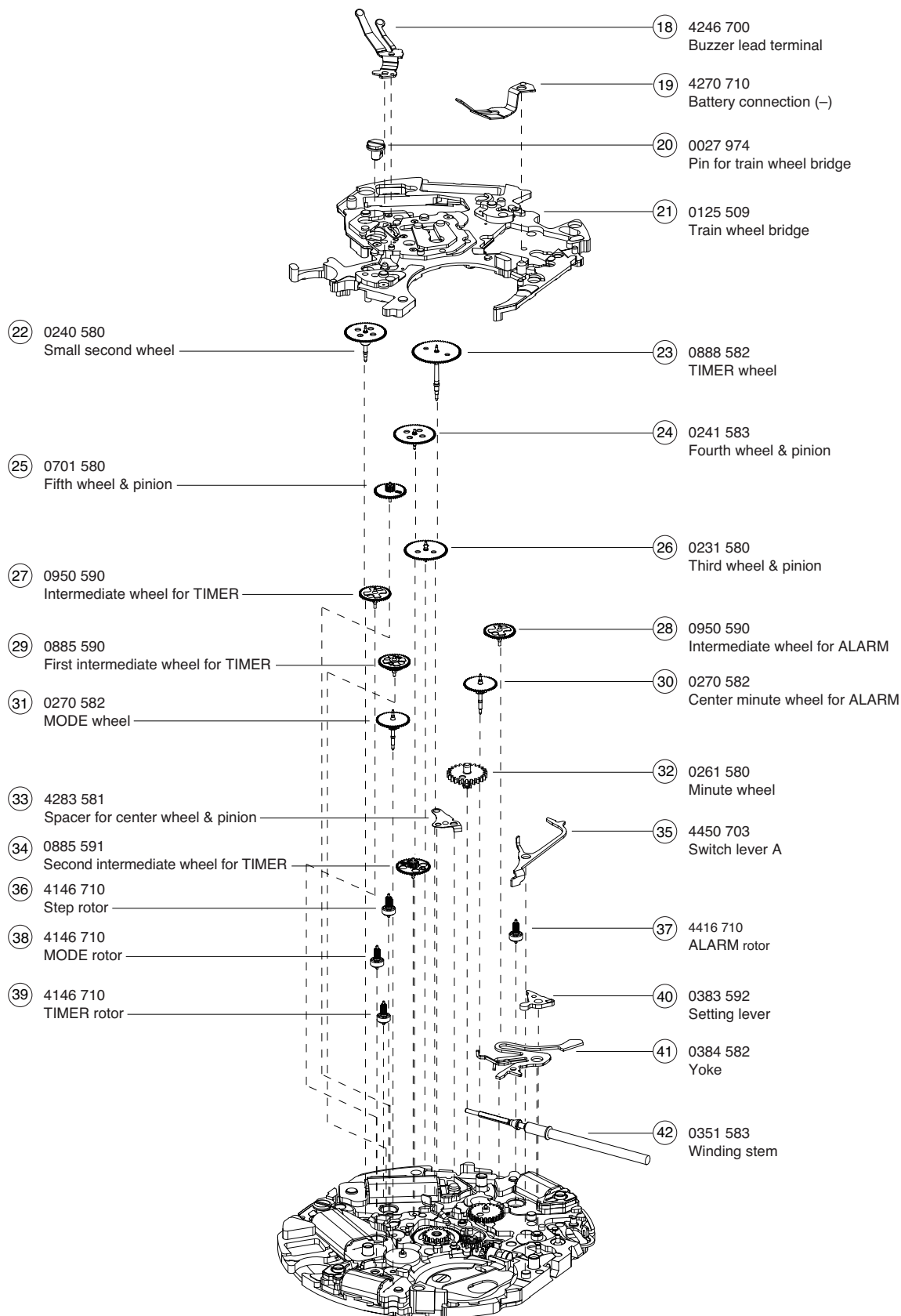
Remarks on removing the winding stem

To remove the winding stem when taking out the movement from the case or while disassembling the parts during repair work, be sure to pull out the crown to the first click, and then, remove the winding stem while pushing the setting lever.



Lubricating of some parts is shown in "II. REMARKS ON DISASSEMBLING AND REASSEMBLING."

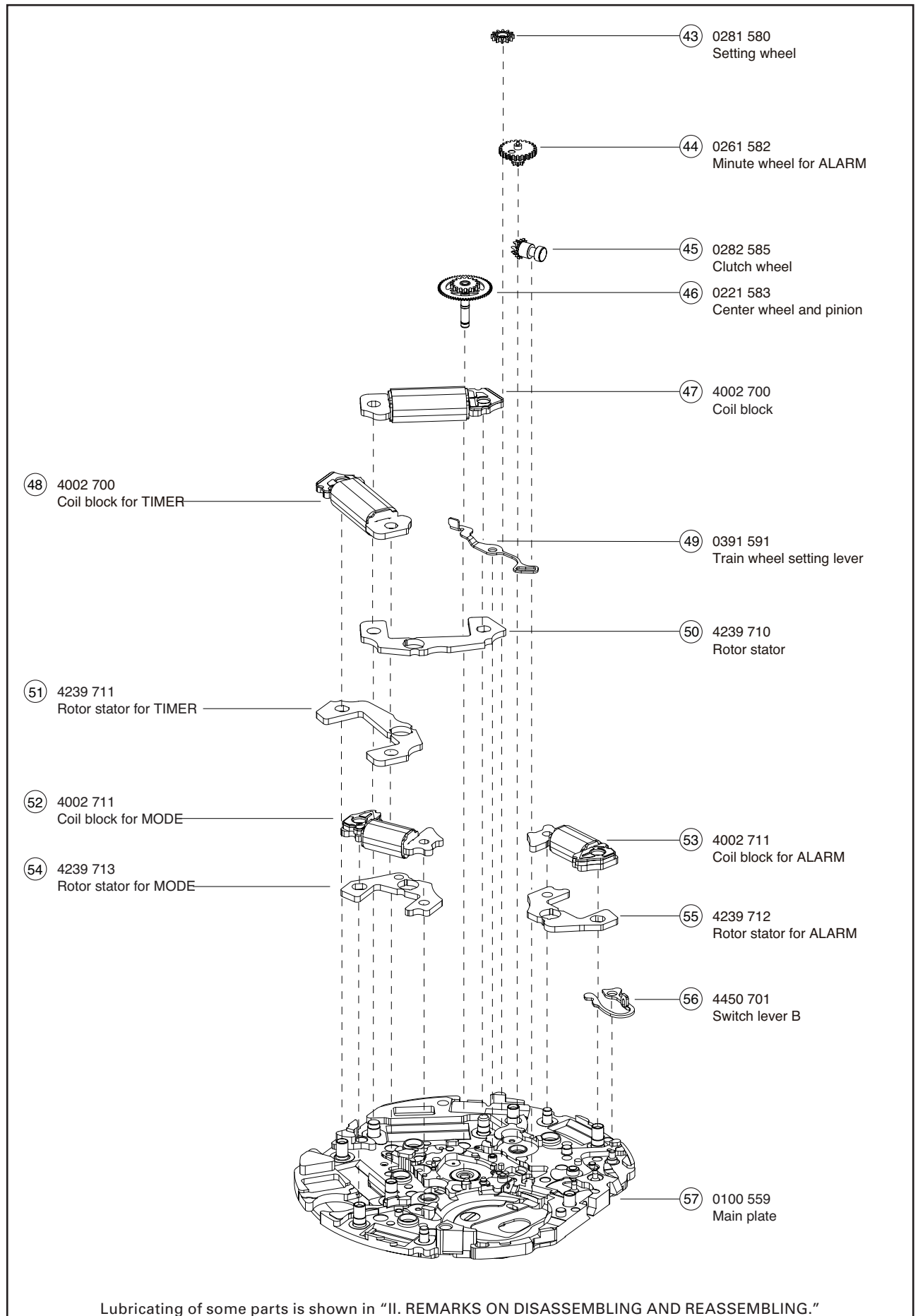




Lubricating of some parts is shown in "II. REMARKS ON DISASSEMBLING AND REASSEMBLING."

PARTS CATALOGUE

Cal. 7T84A



Remarks

The correct parts for the followings are determined based on the design of cases. Check the case number, and refer to "Watch Parts Catalogue CD-ROM" or CPC web to choose corresponding parts.

* Holding ring for dial (0866 650)

③ Date dial (0878 ***)

④② Winding stem (0351 583)

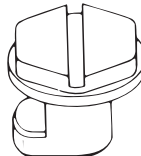
• Point of distinction

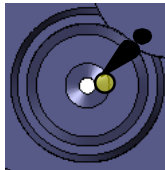
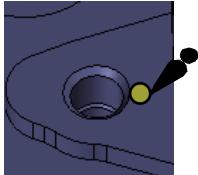
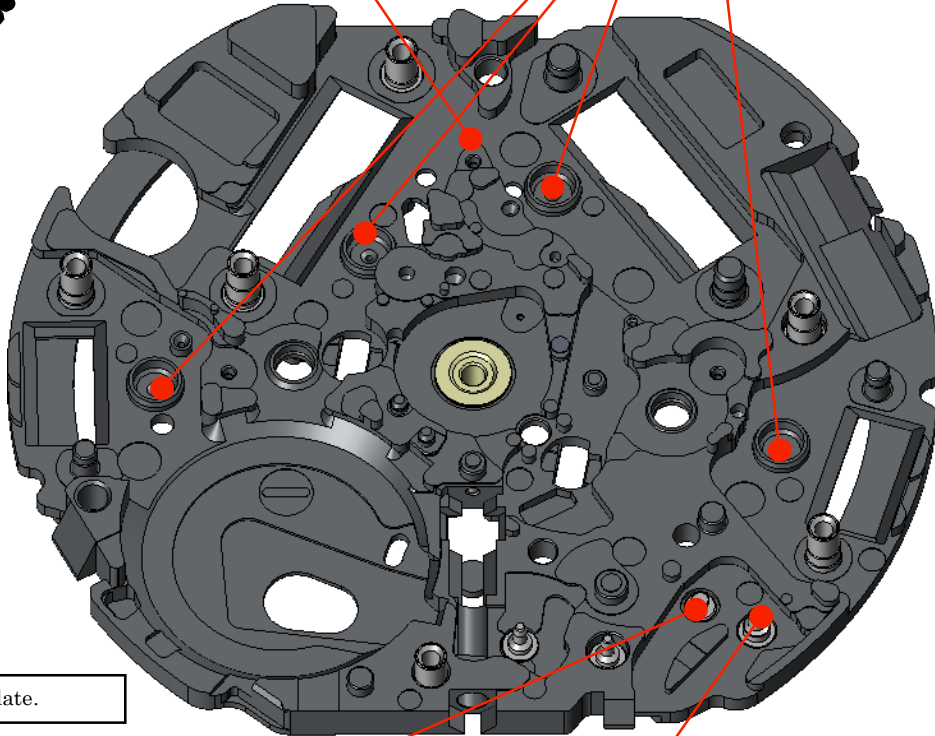
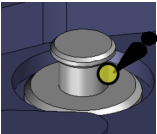
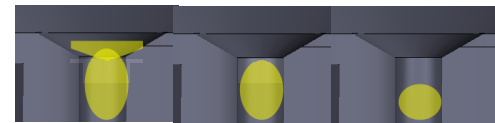
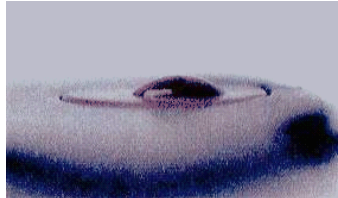
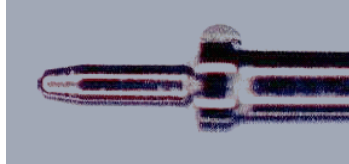

Refer to the illustrations below to see the difference between those two types of pins.

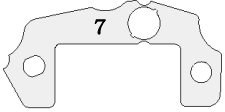
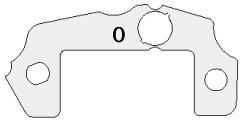
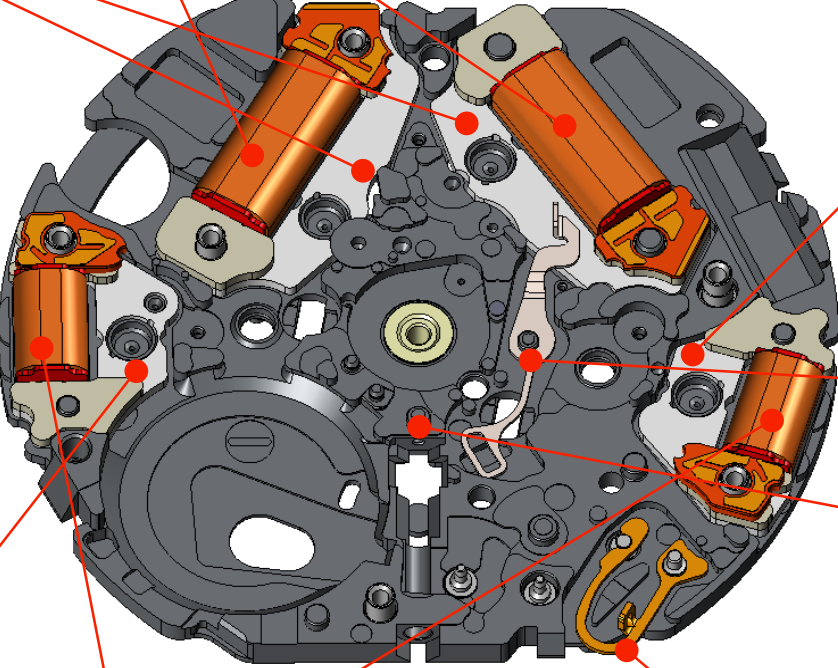
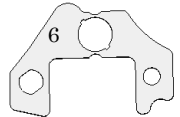
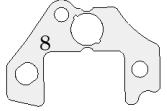
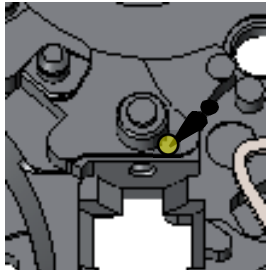
① Pin for date dial guard
0027 973

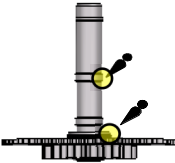
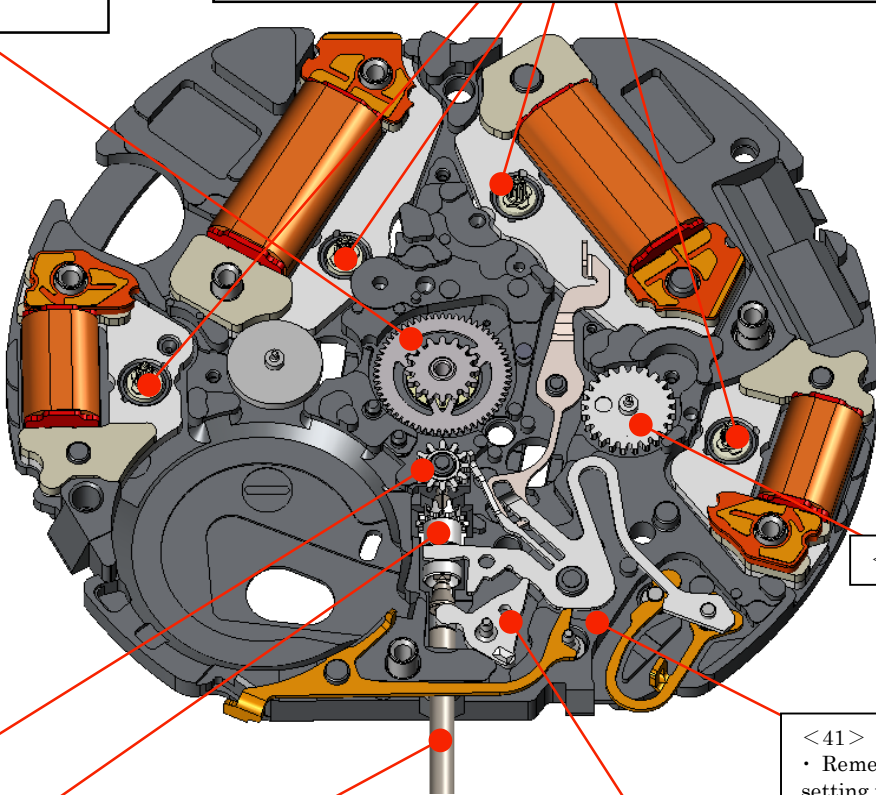




②① Pin for train wheel bridge
0027 974

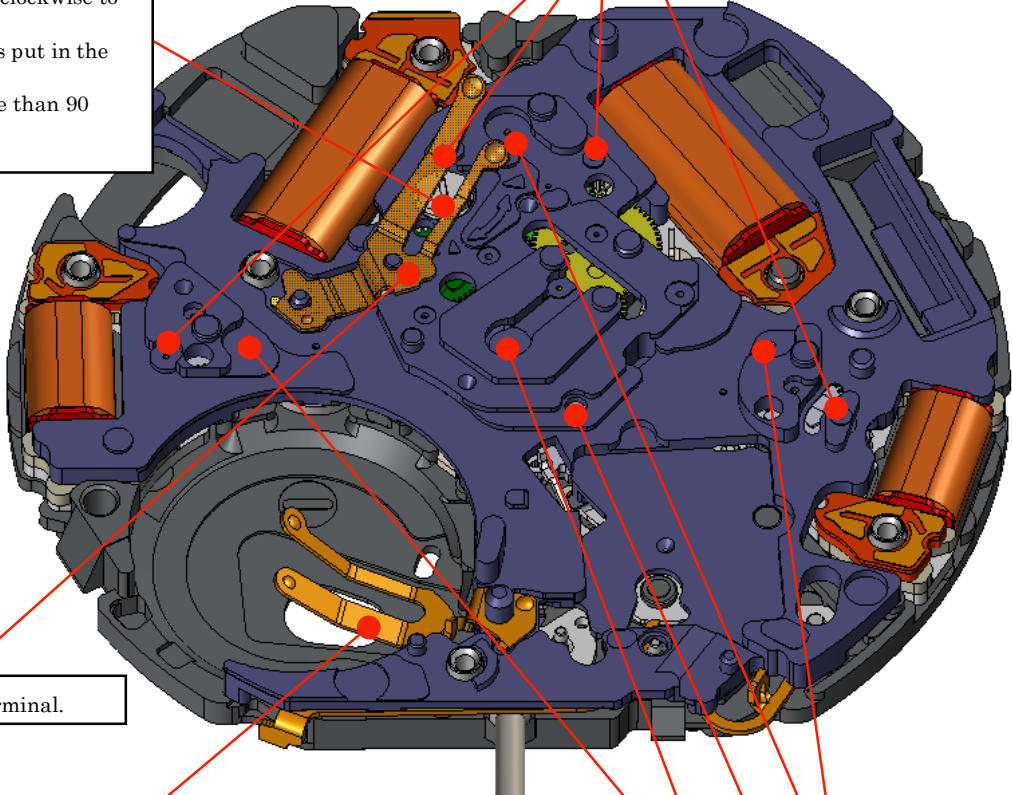

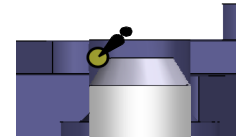
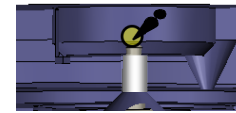


No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
57	Assembling the switching unit and wheels Set the main plate.	<div data-bbox="405 193 931 264"> Lubricate the contact area between the small second wheel and main plate: Moebius F or AO-2 </div> <div data-bbox="994 177 1158 347">  </div> <div data-bbox="1218 193 1879 264"> Lubricate the lower pivots of the rotors: Moebius F or AO-2 </div> <div data-bbox="439 316 636 491">  </div> <div data-bbox="622 368 1554 1107">  </div> <div data-bbox="405 1043 748 1094"> <57> Set the main plate. </div> <div data-bbox="439 1177 595 1310">  </div> <div data-bbox="607 1134 1032 1214"> Lubricate the point of engagement of switch lever B: S-6 </div> <div data-bbox="904 1222 1527 1283"> Lubricate the axis of switch lever B: Moebius V or AO-3 </div> <div data-bbox="1576 316 2130 1417"> <div data-bbox="1599 316 1834 344"> <Amount of lubricant> </div> <div data-bbox="1599 357 2063 411"> Refer to the illustrations below to see the right amount of lubricant. </div> <div data-bbox="1599 427 2092 549">  </div> <div data-bbox="1599 564 2018 671"> (a) Overlubricated× (b) Appropriately lubricated◎ (c) Underlubricated× </div> <div data-bbox="1599 692 1935 724"> Appropriate amount◎ (Stone) </div> <div data-bbox="1599 724 1935 922">  </div> <div data-bbox="1599 922 1995 954"> Appropriate amount◎ (Convex part) </div> <div data-bbox="1599 954 1946 1118">  </div> <div data-bbox="1599 1118 1912 1150"> Appropriate amount◎ (S-6) </div> <div data-bbox="1644 1150 1946 1299">  </div> </div>

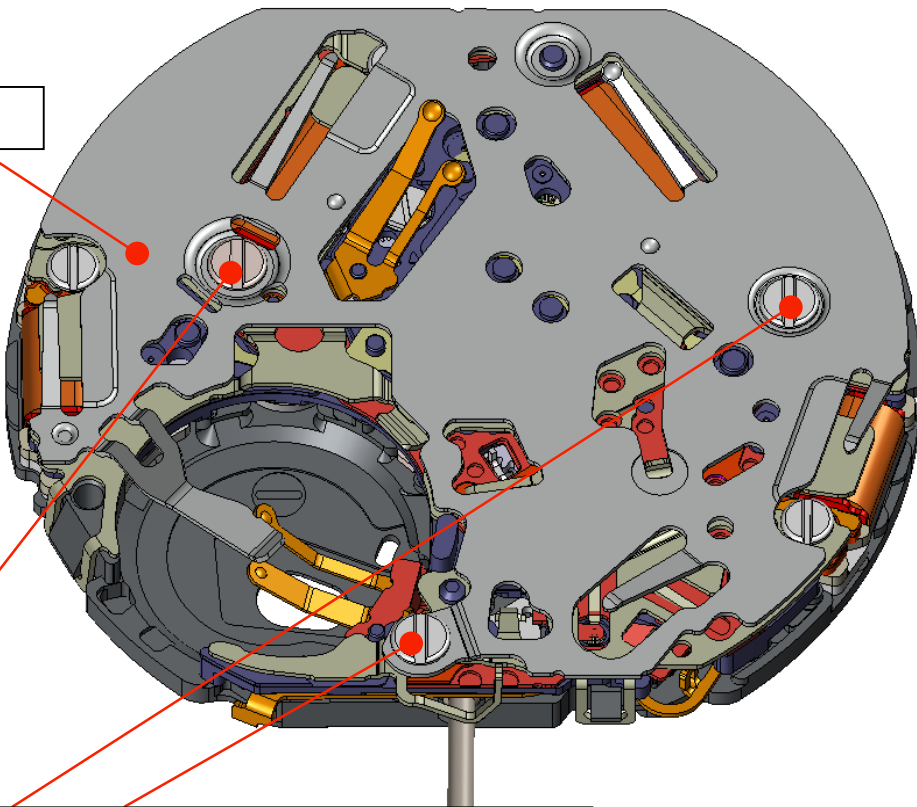
NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
56	Set switch lever B. ↓	<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p><51, 50> Rotor stator for TIMER</p>  <p>Discrimination number : 7 Set the rotor stator.</p>  <p>Discrimination number : 0</p> </div> <div style="width: 35%; text-align: center;">  </div> <div style="width: 30%;"> <p><54> Set the rotor stator for ALARM.</p>  <p>Discrimination number : 6</p> <p><49> Set the train wheel setting lever.</p> <p>Lubricate the axis of the setting wheel: Moebius V or AO-3</p> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><48, 47> Set the coil block for TIMER and the coil block (A). Coil resistance: 2.10 KΩ ~ 2.70 KΩ</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><55> Set the rotor stator for MODE.</p>  <p>Discrimination number : 8</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><53, 52> Set the coil blocks for MODE and ALARM. Coil resistance: 1.80 KΩ ~ 2.40 KΩ</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><56> Set switch lever B.</p> </div> <div style="text-align: right; margin-top: 20px;">  </div>
55	Set the rotor stator for ALARM ↓	
	Lubricate the axis of the setting wheel. ↓	
54	Set the rotor stator for MODE. ↓	
53, 52	Set the coil blocks for MODE and ALARM. ↓	
51, 50	Set the rotor stator for TIMER, and rotor stator. ↓	
49	Set the train wheel setting lever. ↓	
48, 47	Set the coil block for TIMER and the coil block (A).	

NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
46	Set the center wheel & pinion and lubricate its convex part and inner edge of the ring.	<div data-bbox="472 188 976 328"> <p><46> Set the center wheel & pinion and lubricate as illustrated below. (2 points) : Moebius AII or AO-3</p>  </div> <div data-bbox="1079 215 2179 296"> <p><39, 38, 37,36> Set the rotor for city setting, MODE rotor, ALARM rotor and step rotor.</p> </div> <div data-bbox="869 296 1742 1094">  </div> <div data-bbox="1715 834 2179 882"> <p><44> Set the minute wheel for ALARM.</p>  </div> <div data-bbox="1648 1010 2179 1257"> <p><41> Set the yoke. • Remember to install the winding stem before setting the yoke. Otherwise the spring of yoke will lift the clutch wheel upward. The reset spring of the yoke is easily deformable. Handle it with extra care as deformation of the spring can cause reset failure as well as mode change malfunction.</p> </div> <div data-bbox="931 1110 1489 1209"> <p><42> Set and lubricate the winding stem: Lubricate the entire profile of the winding stem with Moebius V or AO-3.</p>  </div> <div data-bbox="1411 1278 1789 1353"> <p><40> Set the setting lever. • Crown at the normal position.</p> </div> <div data-bbox="488 1074 851 1137"> <p><43>Set the setting wheel.</p> </div> <div data-bbox="501 1265 866 1334"> <p><45>Set the clutch wheel.</p> </div>
	↓	
45	Set the clutch wheel.	
	↓	
44	Set the minute wheel for ALARM.	
	↓	
43	Set the setting wheel.	
	↓	
42	Set and lubricate the winding stem.	
	↓	
41	Set the yoke.	
	↓	
40	Set the setting lever.	
	↓	
39, 38	Set the rotor for TIMER and the MODE rotor.	
37, 36	Set the ALARM rotor and step rotor.	

NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
34	Set the second intermediate wheel for TIMER.	<div data-bbox="465 188 1061 236" data-label="Text"> <p><29> Set the first intermediate wheel for TIMER.</p> </div> <div data-bbox="1245 212 1650 260" data-label="Text"> <p><22> Set the small second wheel.</p> </div> <div data-bbox="1637 288 2154 371" data-label="Text"> <p><26, 25>Set the fifth wheel and pinion and third wheel and pinion.</p> </div> <div data-bbox="1693 405 2154 448" data-label="Text"> <p><24>Set the fourth wheel & pinion.</p> </div> <div data-bbox="1776 501 2154 620" data-label="Text"> <p><31, 30> Set the MODE wheel and center minute wheel for ALARM.</p> </div> <div data-bbox="1890 660 2007 812" data-label="Image"> </div> <div data-bbox="1845 847 2085 895" data-label="Caption"> <p>Center minute wheel for ALARM</p> </div> <div data-bbox="1765 940 2154 1031" data-label="Text"> <p><28> Set the intermediate wheel for ALARM.</p> </div> <div data-bbox="1709 1058 2098 1099" data-label="Text"> <p><32>Set the minute wheel.</p> </div> <div data-bbox="1498 1129 2072 1171" data-label="Text"> <p><33> Set the spacer for center wheel & pinion.</p> </div> <div data-bbox="891 1203 1606 1350" data-label="Text"> <p><23> Set and lubricate the TIMER wheel as illustrated. Lubricate the point of contact of the spacer for center wheel & pinion: Moebius A or AO-3.</p> </div> <div data-bbox="465 384 938 453" data-label="Text"> <p><34> Set the second intermediate wheel for TIMER.</p> </div> <div data-bbox="539 312 633 341" data-label="Text"> <p>White</p> </div> <div data-bbox="721 256 833 368" data-label="Image"> </div> <div data-bbox="539 557 665 584" data-label="Text"> <p>Dark Green</p> </div> <div data-bbox="683 472 801 592" data-label="Image"> </div> <div data-bbox="465 628 864 692" data-label="Text"> <p><27> Set the intermediate wheel for MODE.</p> </div> <div data-bbox="607 748 676 774" data-label="Text"> <p>White</p> </div> <div data-bbox="705 711 779 788" data-label="Image"> </div> <div data-bbox="465 820 875 911" data-label="Text"> <p>Lubricate the point of contact of the spacer for center wheel & pinion : Moebius A or AO-3</p> </div> <div data-bbox="479 943 801 1123" data-label="Image"> </div> <div data-bbox="712 1166 864 1378" data-label="Image"> </div>
	↓	
33	Set the spacer for center wheel & pinion.	
	↓	
32	Set the minute wheel.	
	↓	
31, 30	Set the MODE wheel and center minute wheel for ALARM.	
	↓	
	Lubricate the point of contact of the spacer for center wheel & pinion.	
	↓	
29	Set the first intermediate wheel for TIMER.	
	↓	
28	Set the intermediate wheel for ALARM.	
	↓	
27	Set the intermediate wheel for TIMER.	
	↓	
26, 25	Set the fifth wheel and pinion and third wheel and pinion.	
	↓	
24	Set the fourth wheel and pinion.	
	↓	
23	Set and lubricate the TIMER wheel.	
	↓	
22	Set the small second wheel.	

No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
21	Set the train wheel bridge. ↓	<div data-bbox="403 199 840 255"> <p><21> Set the train wheel bridge.</p> </div> <div data-bbox="1086 207 2116 303"> <p>Lubricate the upper pivots of the rotor for TIMER, MODE rotor, and ALARM rotor and step rotor : Moebius F or AO-2 ※Lubricate the upper pivot of each rotor (at four points) illustrated below.</p> </div>  <div data-bbox="1792 343 2049 454">  <p>Upper pivot of the rotor</p> </div> <div data-bbox="1814 598 2049 734">  <p>Minute wheel</p> </div> <div data-bbox="1814 861 2049 973">  <p>Other portions</p> </div>
20	Set the pin for train wheel bridge. ↓	
19	Set the battery connection (-) ↓	
	Lubricate the upper pivots of the rotor for TIMER, MODE rotor, and ALARM rotor and step rotor. ↓	
18	Set the buzzer lead terminal. ↓	
*1	Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, TIMER wheel, center minute wheel for MODE and small second wheel.	<div data-bbox="403 1005 806 1053"> <p><18> Set the buzzer lead terminal.</p> </div> <div data-bbox="403 1149 840 1204"> <p><19> Set the battery connection (-).</p> </div> <div data-bbox="896 1125 2094 1197"> <p>Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, TIMER wheel, minute wheel for MODE and small second wheel: Moebius F or AO-2.</p> </div>

NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
	Assembling the circuit unit	
17	Set the circuit block.	<div data-bbox="425 215 824 284" data-label="Text"> <p><16> Set the friction spring for second counting.</p> </div> <div data-bbox="1030 215 1715 359" data-label="Text"> <p><17> Set the circuit block. Make sure that the circuit block is securely engaged with the two guide pins of the train wheel bridge. Take care so as not to deform these parts while setting the circuit block.</p> </div> <div data-bbox="1736 239 2072 558" data-label="Image"> </div> <div data-bbox="470 311 1086 837" data-label="Image"> </div>
	↓	
16	Set the friction spring for second counting.	
	↓	
15	Set the conducting plate.	
	↓	
14	Set the circuit block cover.	<div data-bbox="1422 734 2083 810" data-label="Text"> <p><13> Tighten the circuit block cover screws (3 positions.)</p> </div> <div data-bbox="425 861 893 914" data-label="Text"> <p><15> Set the conducting plate.</p> </div> <div data-bbox="1097 949 1507 1026" data-label="Text"> <p><14> Set the circuit block cover. Securely engage the four hooks.</p> </div> <div data-bbox="403 1053 1456 1401" data-label="Text"> <p>Remarks on installing the circuit block cover. (hooking portions)</p> <ul style="list-style-type: none"> • Take care so as not to deform the rotor stator or coil block. • Make sure that the circuit block cover is correctly aligned with the two pins of the train wheel bridge. * Inaccurate alignment of the circuit block cover can cause malfunction of the yoke, resulting in defects of date correcting function. • The hook of the circuit block cover is easily disengaged. Make sure that it is securely engaged with the pins all the way in at the four locations. • Unhook the circuit block cover from a side angle using a pair of tweezers or a screwdriver while gently pressing it down. • <u>The conductive spring of the circuit block cover is easily deformable. Handle it with care so as not to deform it.</u> </div> <div data-bbox="1512 877 2139 1412" data-label="Image"> </div>
	Securely engage the four hooks.	
	↓	
13	Tighten the circuit block cover screws. (3 positions)	

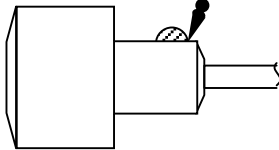
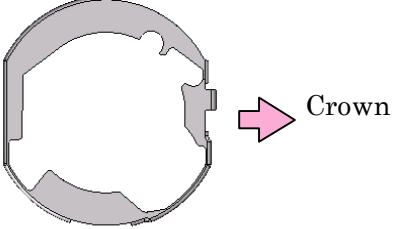
NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
12	Set the battery clamp.	 <p>< 12 > Set the battery clamp.</p> <p>< 11 > Tighten the battery clamp screws. (3 positions)</p> <p>*(10, 9) Install the battery and anti magnetic shield plate B when setting the case.</p>
	↓	
11	Tighten the battery clamp screws. (3 positions)	
	↓	
	Measure the current consumption.	
(10)	*Battery	
(9)	*Anti magnetic shield plate B	

[illegible]

No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
2	Set the date dial guard. ↓ Set the jumper. ↓	<div data-bbox="427 309 1093 405"> <p><1> Set the date dial guard. (2 positions)</p> <ul style="list-style-type: none"> • Turn the pin 90-degree clockwise to fix it using a screwdriver. ※ Never turn the pin more than 90 degrees. </div> <div data-bbox="1357 240 2148 384"> <p>Lubricating points of the calendar wheels: contact points between</p> <ul style="list-style-type: none"> ① Date dial and date jumper: Moebius F or AO-2 ② Main plate and date jumper: Moebius F or AO-2 ③ Date dial guard and date jumper: Moebius F or AO-2 </div> <div data-bbox="622 480 1541 1273"> </div> <div data-bbox="1592 424 2063 767"> </div> <div data-bbox="427 1238 880 1299"> <p><2> Set the date dial guard.</p> </div>

[illegible]

No.	PROCESS	SPECIFICATIONS (QUALITY SPECIFICATIONS, HANDLING METHODS ETC.)	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
			<p>< 7T84A MULTIFUNCTIONAL YACHTING TIMER ></p>
	(12 o'clock position)		
	Set the MODE hour hand.		
	Check the hand position and hand installation height.		
	↓		
	(9 o'clock position)		
	Set the small second hand.		
	Check the hand position and hand installation height.		
	↓		
	(6 o'clock position)		
	Set the ALARM hour hand.		
	Set the ALARM minute hand.		
	Check the hand position and hand installation height.		
	↓		
	(Center)		
	Set the hour hand.		
	Set the minute hand.		
	Check the hand position and hand installation height.		
	Set the TIME hand.		
	Check the hand position and hand installation height.		

No.	PROCESS	SPECIFICATIONS (QUALITY SPECIFICATIONS, HANDLING METHODS ETC.)	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
42	Remove the winding stem.	Pull out the crown temporarily to the first click position when removing the winding stem.	<p>< 42 ></p> <ul style="list-style-type: none"> • Be careful so as not to deform the winding stem conducting spring of the circuit block cover while removing or installing the winding stem. <p>< 42 > Set the winding stem.</p> <ul style="list-style-type: none"> • For a watch with a screw lock type crown, apply silicone grease (100,000 to 500,000 c.s.) to the point of contact between the winding stem and gasket of the crown. <p>A sufficient amount of silicone should be applied so that the entire surface becomes wet. (See the illustration below.)</p>  <p>< 9 > Set the anti magnetic shield plate B.</p>  <p>Close the case back.</p> <ul style="list-style-type: none"> • Make sure that the circuit block cover is securely hooked before closing the case back.
	↓		
	Set the movement with dial and hands into the case.	Remove dust and dirt on the movement with dial and hands and inside of the case before casing	
	↓		
42	Set the winding stem.		
	↓		
*1	Set the buttons. (2 pieces)	*1: Only some models require this process. Whether a watch requires this process or not depends on the design of its case.	
	↓		
9	Set the antimagnetic shield plate B.	Make sure that it is securely set in the correct direction.	
	↓		
	Close the case back.		

Functional Inspection

Operational Specifications (Reference)

7T84

	Rotation	Button to press					
		Mode	TIME	YACHTING TIMER (5-, 6- & 10-minute preset timers)	TIMER	ALARM	LOCAL TIME
Normal position	Free	Button A	Alarm preview Stop single-time alarm	START/STOP RESTART (after stopwatch starts operating)	START/STOP	Alarm preview Stop regular alarm	Null
		Button B	Set the single-time alarm Stop single-time alarm	RESET SPLIT/SPLIT RELEASE (after stopwatch starts operating)	RESET	Stop regular alarm	Null
First click position	Turn clockwise: date setting	Button A: Mode change TIME ⇄ 5-minute yachting timer ⇄ 6-minute yachting timer ⇄ 10-minute yachting timer ⇄ TIMER ⇄ STOPWATCH ⇄ ALARM ⇄ LOCAL TIME					
		Button B	Null	Null	Null	Set the regular alarm time	Set the local time
Second click position	System reset	Press and hold both Buttons A & B at the same time for 2 seconds → Button B: Adjust the alarm hour and minute hands position. Keep pressing down to fast-forward. → Button A → Button B: Adjust the timer hand position. Keep pressing down to fast-forward. → Button A → Button B: Adjust the mode indicator position. Keep pressing down to fast-forward.					
	Set the main watch time	After installing the battery, reset the built-in integrated circuit, push the crown back to the normal position, and then set the time of the main watch.					

[illegible]

IV. VALUE CHECKING

● Coil block resistance

Coil block (4002 700)	2.10 K Ω ~ 2.70 K Ω
Coil block for TIMER (4002 700)	2.10 K Ω ~ 2.70 K Ω
Coil block for ALARM (4002 711)	1.80 K Ω ~ 2.40 K Ω
Coil block for MODE (4002 711)	1.80 K Ω ~ 2.40 K Ω

● **Upconverter coil resistance :** 150 Ω ~ 180 Ω

● Current consumption

For the whole movement	Less than 1.10 μ A (with 1.55 V supplied from a battery) (when the stopwatch is not used)
For the circuit block alone	Less than 0.30 μ A (with 1.55 V supplied from a battery)

● How to measure the current consumption

1. To measure the current consumption for the circuit block alone or for the whole movement, connect each tester of S-860 to the appropriate positive (+) or negative (-) input terminal of the circuit block.

* When measuring the current consumption using the SEIKO Multi-Tester S-860, select the measurement range as follows:

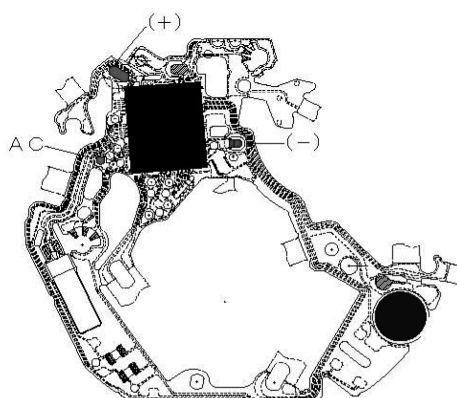
For the whole movement:

Use the range of 40 μ A of SUPPLY V (= 1.55 V) & GATE TIME (2 S)

For the circuit block alone:

Use the range of 4 μ A of SUPPLY V (= 1.55 V) & GATE TIME (2 S)

2. Connect the AC component to the positive terminal for 2 seconds until a short circuit occurs to reset the integrated circuit.
 3. After the integrated circuit is reset, wait approximately for 10 seconds until a stable measurement is obtained, and then read the measurement.
- * When measuring the current consumption for the circuit block alone, be sure to protect the integrated circuit from light.
- * Refer to the illustration below to measure the current consumption for the circuit block alone.



V. 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.	Securely attach the hooks of the circuit block cover to the main plate.
		The coil is broken.	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.	Remove dirt, dust or foreign particles and clean 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.)	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.	Shut out the light, and make the measurement again.
		There is a defect in the IC (integrated circuit).	Replace the circuit block with a new one.
	The date dial shows an abnormal movement.	The date dial has become improperly engaged with the date driving wheel or disengaged from the date driving wheel.	Check the rotation and engagement of the date dial. Bend the date dial downward to adjust the clearance. Or replace the date dial with a new one.
	The date dial does not move.		
	The date does not change.		

TECHNICAL GUIDE

	Symptom	Possible causes	Solutions
Stopwatch/ Alarm	One or more hands of the stopwatch or alarm have stopped moving or show an abnormal movement.	The relevant coil is broken.	Measure the coil block resistance. Replace the coil with a new one if necessary.
		An excessive load is being applied to the chronograph wheels due to dust or foreign particles adhering to them or oil starvation.	Clean the relevant parts and lubricate with an adequate amount of oil.
	The step motor shows an abnormal movement	There is a crack on the circuit block switch pattern.	Replace the circuit block with a new one.
		The step motor has been deformed.	Replace the stator with a new one.
	The buttons do not operate normally.	The amount of oil around the buttons is insufficient.	Clean the buttons and lubricate appropriately.
		The circuit block pattern has been broken or bent.	Adjust the circuit block pattern or replace the circuit block with a new one.
	When operating in the stopwatch mode, the stopwatch minute hand counts another minute before the stopwatch second hand counts sixty seconds.	All these symptoms may happen when starting operation of stopwatch after the following series of operations which are not supposed to occur in normal use. 1)The previous measurement of stopwatch had started. 2)The mode had been changed while the stopwatch had counting up to 12 hours until it had automatically stopped. 3)Changing the mode back to the stopwatch mode and pressing button A to start without resetting (The stopwatch hands go back to "0" position after automatically)	Reset the stopwatch by pressing button B.
	After pushing button A, stopwatch second hand counts the first 1/5 second then stops. It may start working when pressing button A repeatedly.		
	While operating the split time measurement, the stopwatch second hand gains seconds after pressing button B to release split time measurement.		
	The alarm does not sound.	The upconverter coil is broken.	Replace the circuit block with a new one.
	The alarm sound is too small.	The piezoelectric element is broken or out of alignment.	Remount the piezoelectric element or replace it 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 chronograph 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.