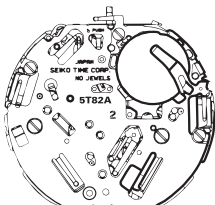
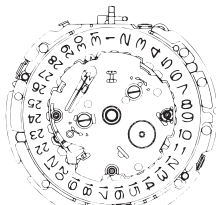


PARTS CATALOGUE/TECHNICAL GUIDE

Cal. 5T82A

[SPECIFICATIONS]

Item		Cal. No.	5T82A
Movement			  <p style="text-align: right;">(x 1.0)</p>
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"> • WORLD TIME: City hand (24 cities), WORLD TIME hour hand, WORLD TIME minute hand • ALARM: ALARM hour hand ALARM minute hand
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"> • WORLD TIME 24 cities WORLD TIME hand position adjustment • ALARM function Single-time ALARM
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			Nil

REMARKS ON REPAIRING CAL. 5T82A

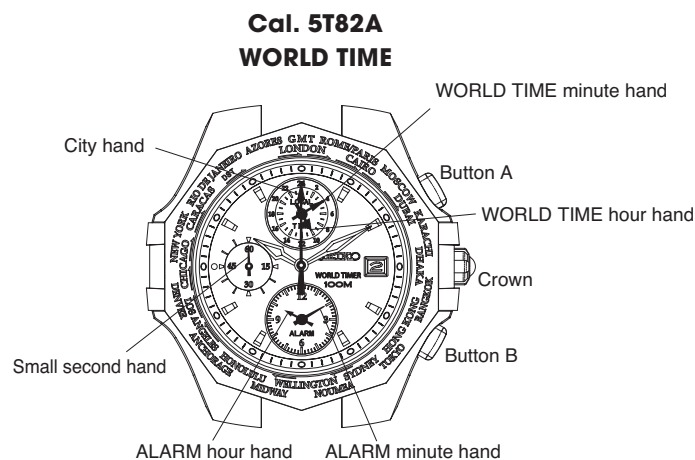
The basic movement structures of Cal. 5T82A is similar to the previous Cal. 7T Series watches, and the knowledge and technique you have gained in handling the previous Cal. 7T Series watches will come in handy when you repair Cal. 5T82A.

When repairing, however, you are requested to have the 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

As Cal. 5T82A has new movement structures, the operating procedures for ALARM setting, time setting, and ALARM hand position adjustment differ from those of the previous Cal. 7T Series watches.

As a result of this structure change, the battery life of Cal. 5T82A has increased to 3 years as compared with that of the previous Cal. 7T series watches.



1. ALARM FUNCTION

- The ALARM sounds only once at a designated time within the coming 12 hours and it is automatically disengaged.
- Pushing the crown back into the normal position after setting the ALARM will prevent the set ALARM time from changing by an accidental pressing of the button.

2. WORLD TIME FUNCTION

- Apart from the main time, the time in the city selected by the city hand is displayed with the designated WORLD TIME hands.
- The time in 24 cities is displayed in the 24-hour indication.
- **Button operation (Crown position: Original position)**
 - WORLD TIME city selection (turn clockwise)
 - WORLD TIME city selection (turn counterclockwise)

3. 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.

REMARKS ON REPAIRING CAL. 5T82A

II. NECESSARY PROCEDURE AFTER BATTERY CHANGE

After installing the battery, reset the built-in integrated circuit, and then **set the time and adjust the ALARM and WORLD TIME hand positions** following the procedure below.

Crown Pull out to the 2nd click when the small second hand is at the 12 o' clock position.

Crown Turn to set the main time.
* Check that AM/PM is correctly set.

System Reset Pull out the crown to the 2nd click.
Press and hold both buttons A and B at the same time for longer than 2 seconds.

Button B Press Button B to set the ALARM hands to the current time.

Button A Press Button A for longer than 2 seconds.
The city hand turns a full circle.

Button B Press Button B to set the city hand to point to the city of which you know the current time.

Button A Press Button A for longer than 2 seconds.
The WORLD TIME hand turns a full circle.

Button B Press Button B to set the WORLD TIME hands to the time of the city you have selected by the city hand.

Note*

Crown Push back in to the normal position in accordance with a time signal.

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.

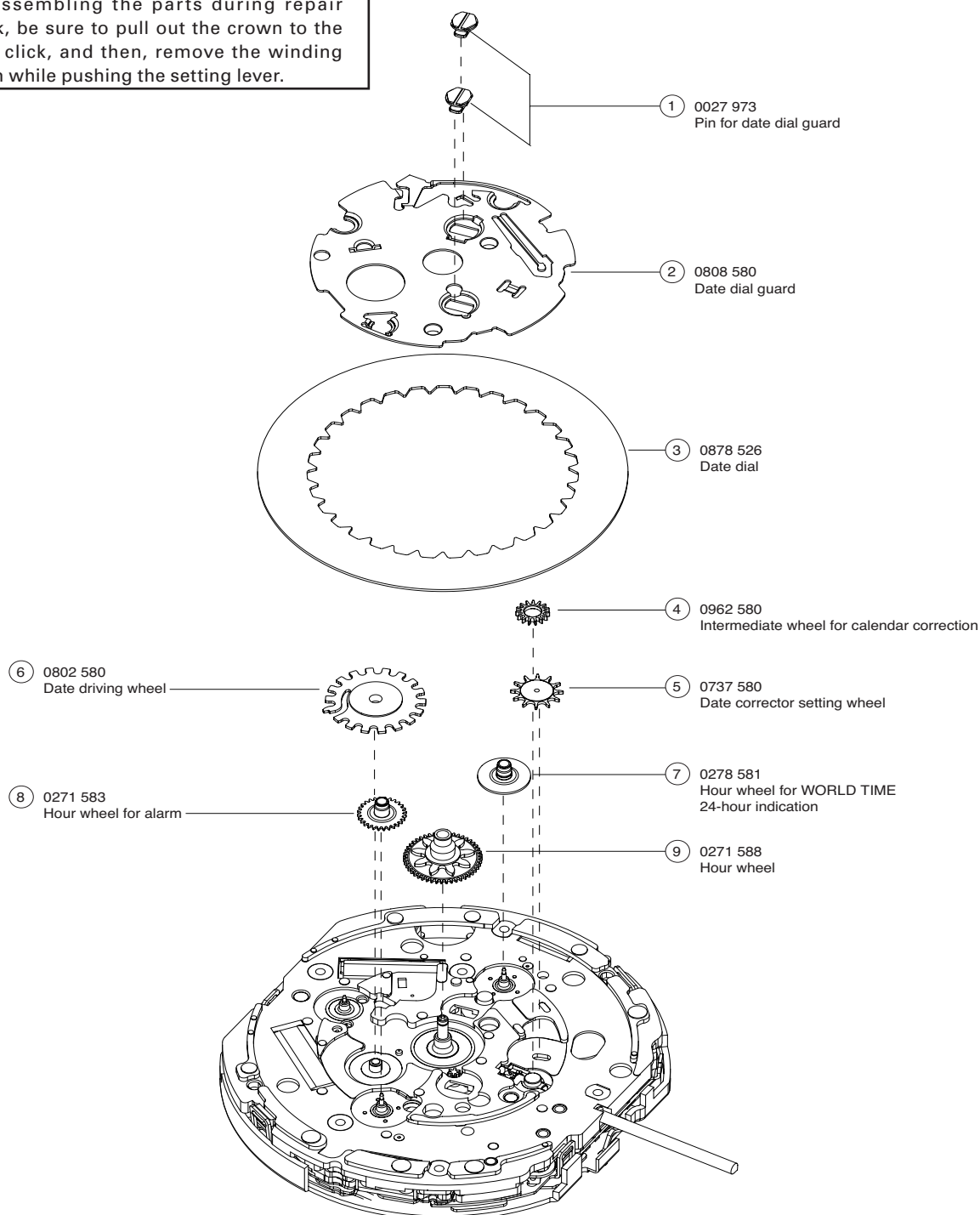
Disassembling procedures Figs. : 1 → 59

Reassembling procedures Figs. : 59 → 1

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

Remarks on removing the winding stem

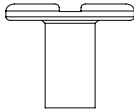
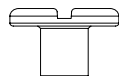
To remove the winding stem when taking out the movement from the case or while disassembling the parts during repair work, be sure to pull out the crown to the first click, and then, remove the winding stem while pushing the setting lever.

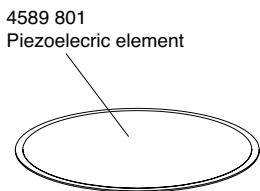


Lubricating of some parts is shown in "II. REMARKS ON DISASSEMBLING AND REASSEMBLING."

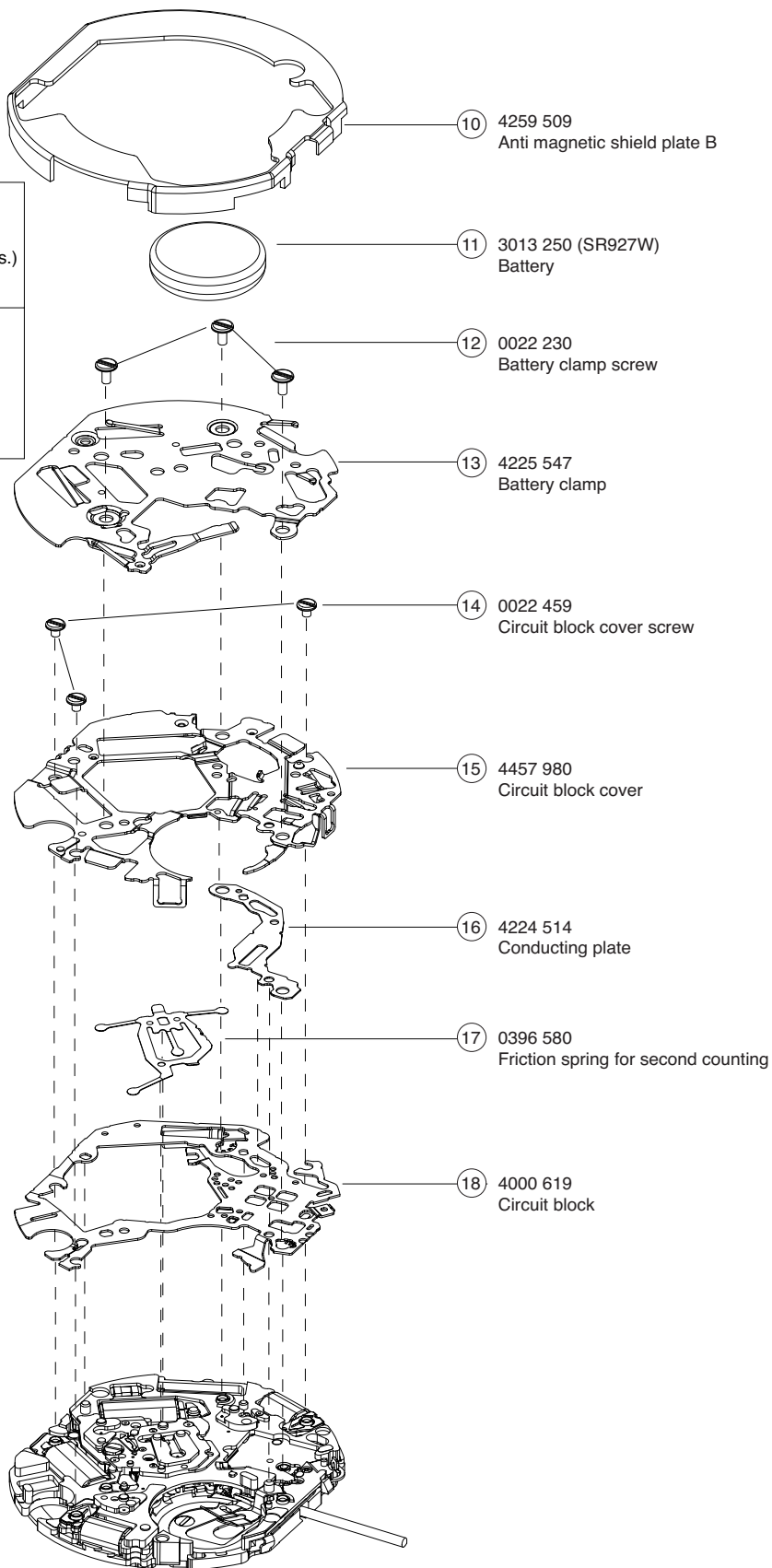
PARTS CATALOGUE

Cal. 5T82A

	0022 230 Battery clamp screw (3 pcs.)
	0022 459 Circuit block cover screw (3 pcs.)



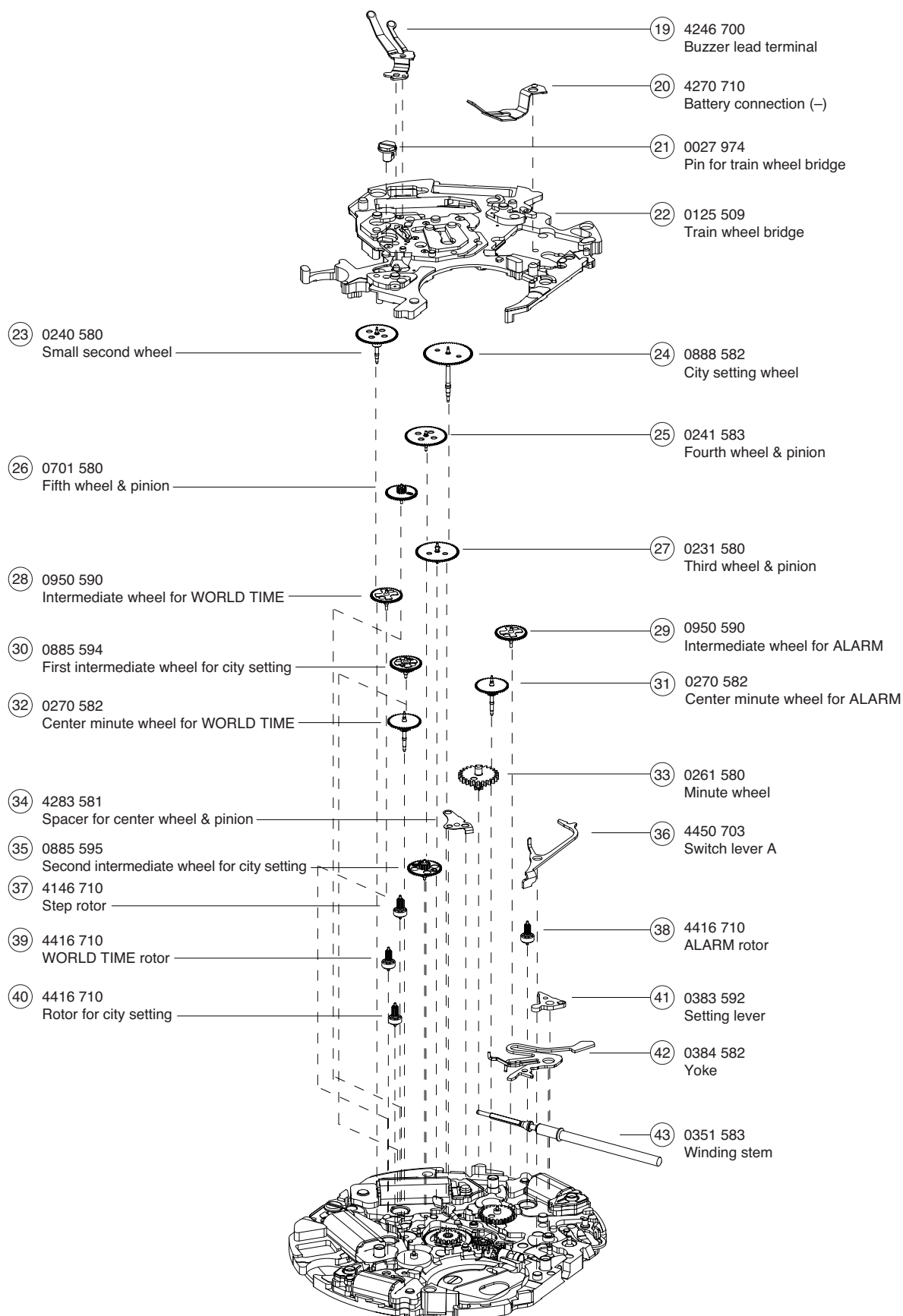
*The piezoelectric element is adhered to the case back.



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

PARTS CATALOGUE

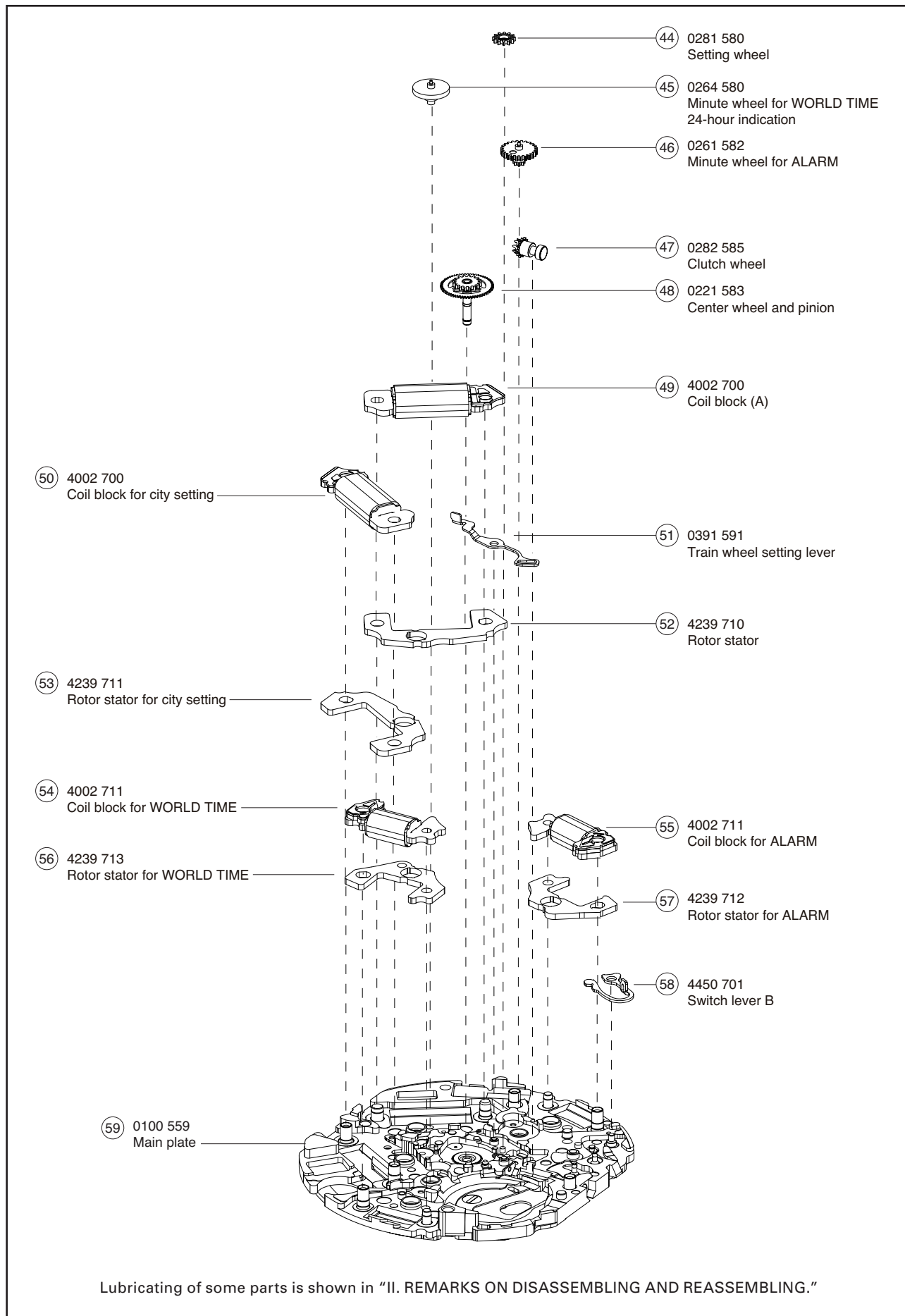
Cal. 5T82A



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

PARTS CATALOGUE

Cal. 5T82A



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" to choose corresponding parts.

* Holding ring for dial (0866 651)

③ Date dial (0878 526)

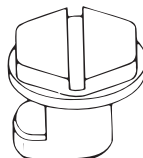
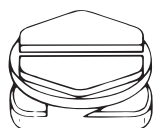
④③ Winding stem (0351 583)

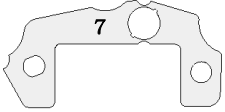
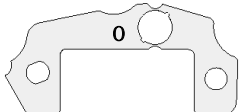
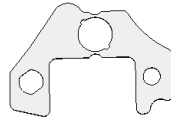
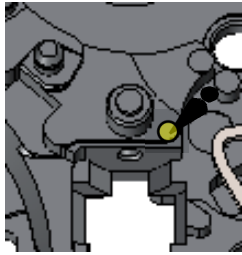
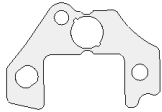
• Point of distinction

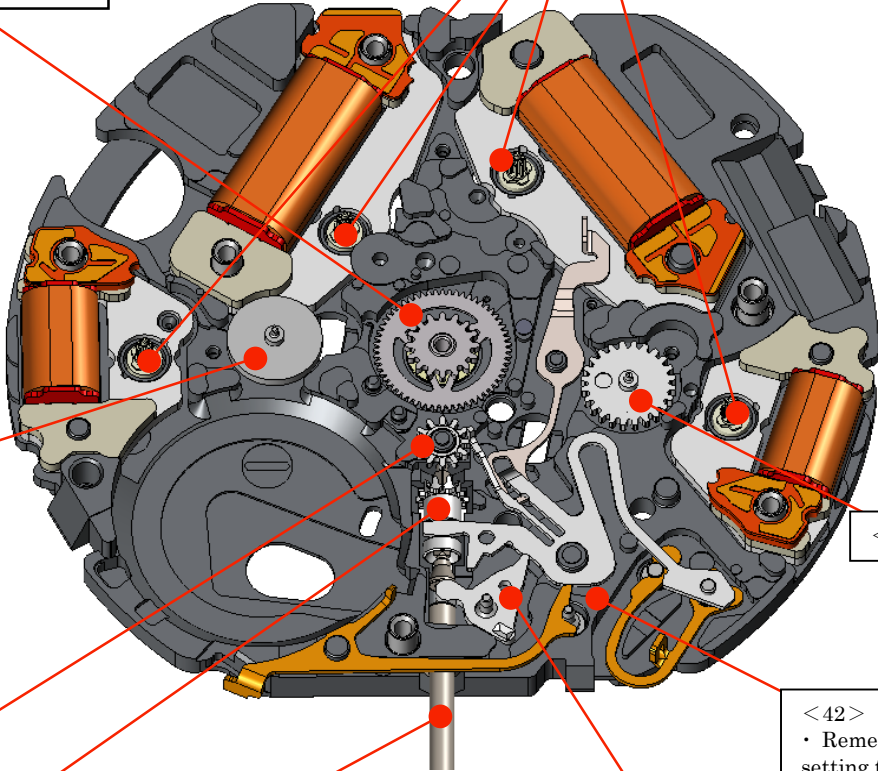
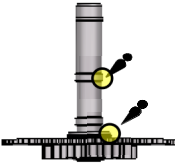


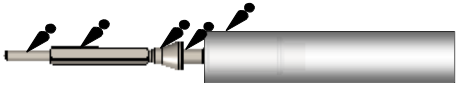
Refer to the illustrations below to see the difference between those two types of pins.


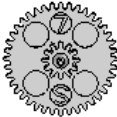

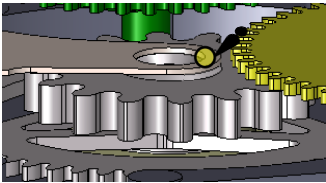
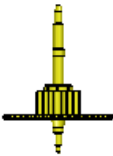
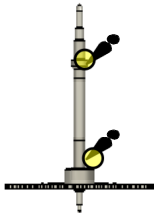
① Pin for date dial guard
0027 973

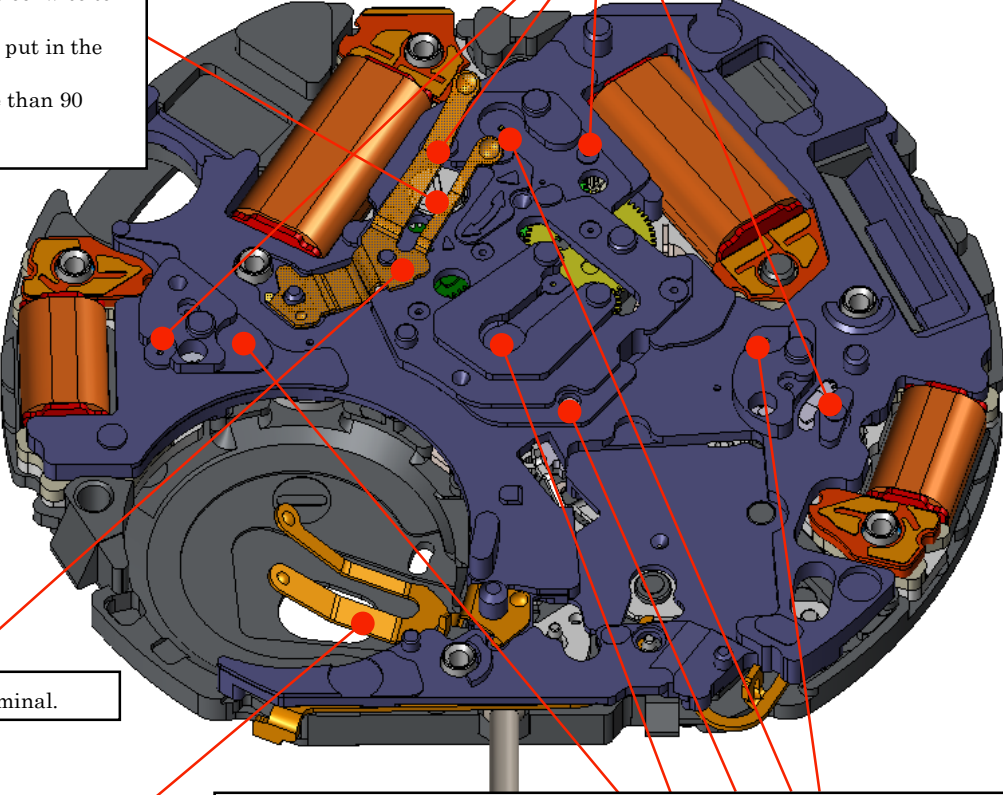

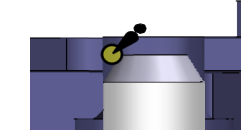
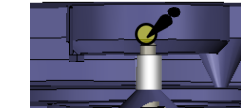
22 Pin for train wheel bridge
0027 974

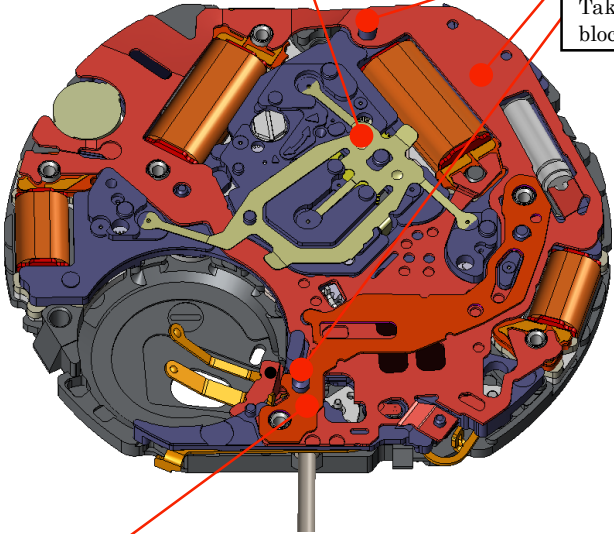
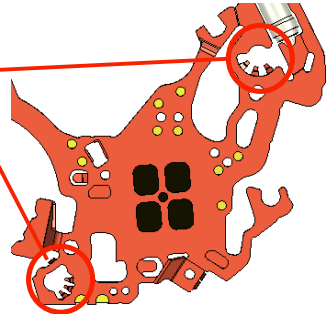
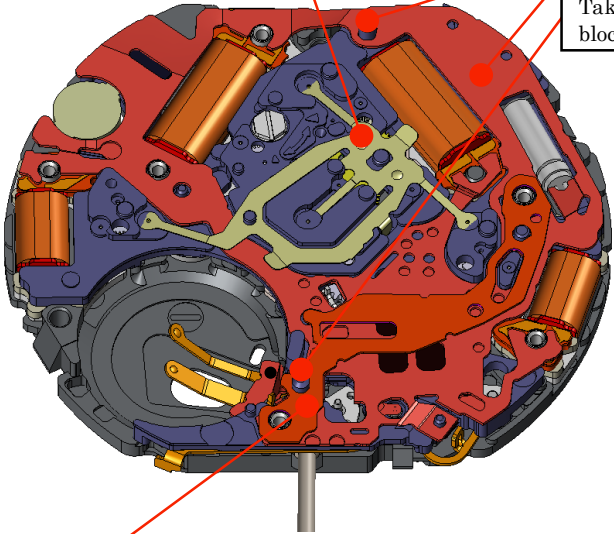
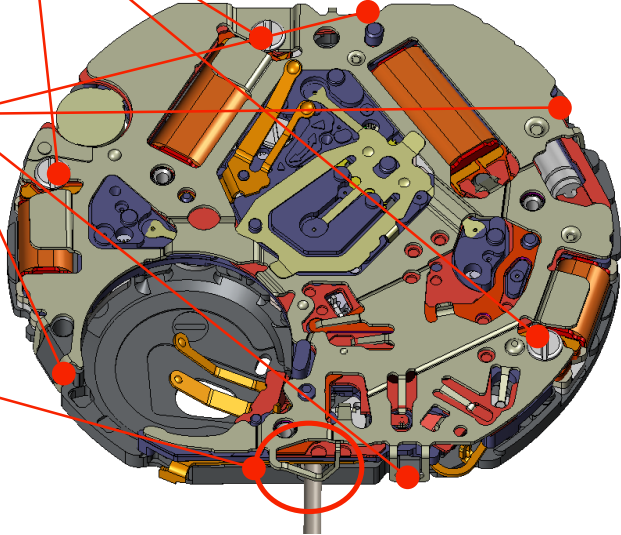


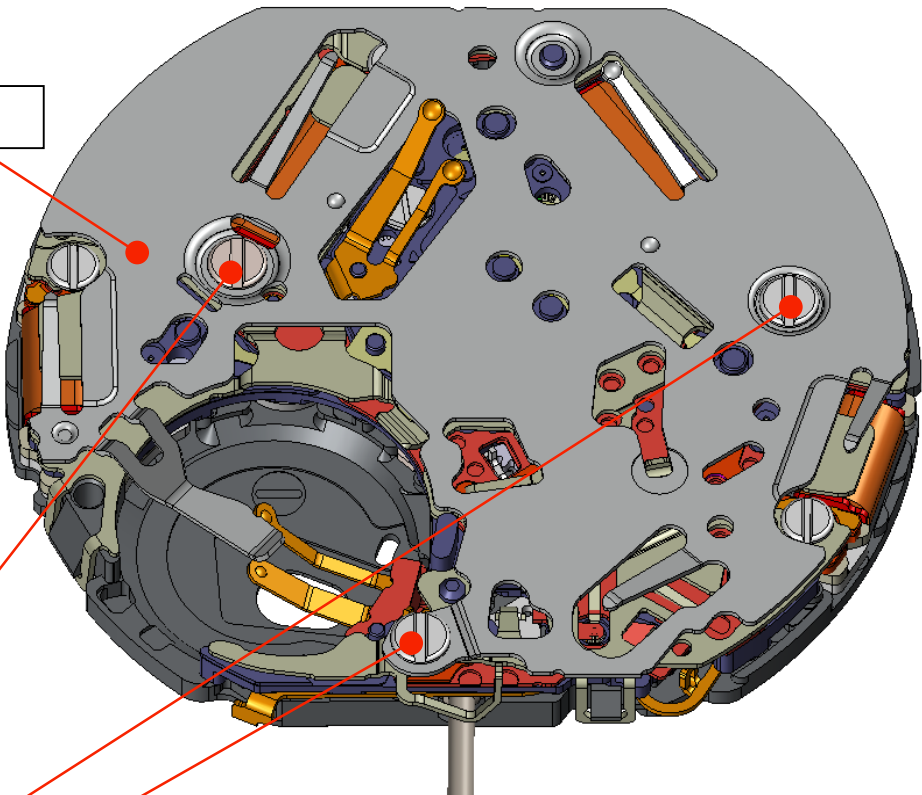
NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.		
58	Set the switch lever B. ↓	<p data-bbox="517 204 790 252">< 53, 52 > Rotor stator for city setting</p>  <p data-bbox="517 459 790 507">Discrimination number : 7 Set the rotor stator.</p>  <p data-bbox="517 715 790 738">Discrimination number : 0</p>	<p data-bbox="943 220 1592 284">< 50, 49 > Set the coil block for city setting and the coil block (A). Coil resistance: 2.10 KΩ ~ 2.70 KΩ</p>	
56	Set the rotor stator for WORLD TIME ↓		<p data-bbox="1762 384 2085 432">< 57 > Set the rotor stator for ALARM.</p> 	<p data-bbox="1762 730 2085 778">< 51 > Set the train wheel setting lever.</p>
57	Set the rotor stator for ALARM. ↓		<p data-bbox="1762 855 2085 903">Lubricate the axis of the setting wheel: Moebius V or AO-3</p>	
55, 54	Set the coil blocks for ALARM and WORLD TIME. ↓		<p data-bbox="517 935 750 1023">< 56 > Set the rotor stator for WORLD TIME.</p> 	<p data-bbox="898 1142 1408 1214">< 55, 54 > Set the coil blocks for ALARM and WORLD TIME. Coil resistance: 1.80 KΩ ~ 2.40 KΩ</p>
53, 52	Set the rotor stator for city setting, and rotor stator. ↓	<p data-bbox="1561 1050 1789 1098">< 58 > Set the switch lever B.</p>		
51	Set the train wheel setting lever. ↓			
50, 49	Set the coil block for city setting and the coil block (A).			



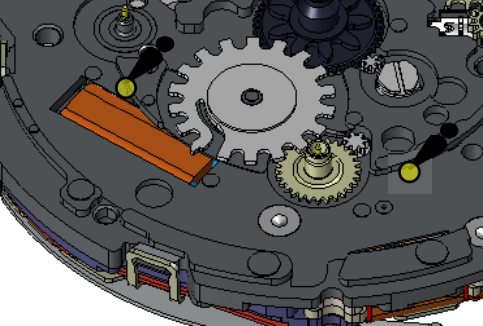
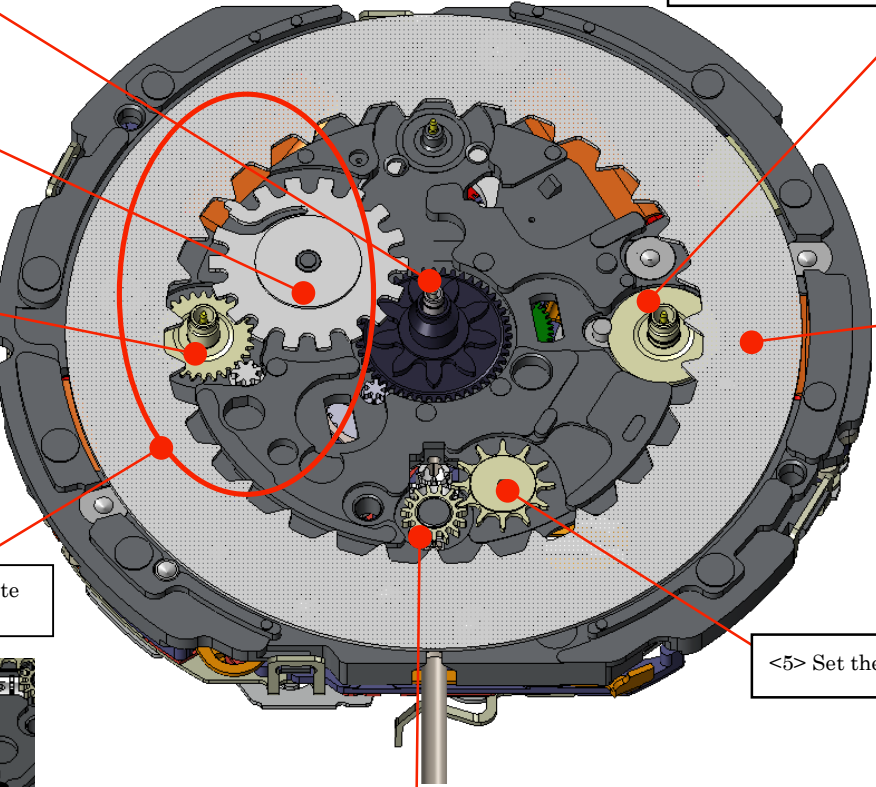
NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
48	Set the center wheel & pinion and lubricate its convex part and inner edge of the ring.	<div data-bbox="472 193 976 328" style="border: 1px solid black; padding: 5px;"> <48> Set the center wheel & pinion and lubricate as illustrated below. (2 points) : Moebius AII or AO-3 </div> <div data-bbox="1077 217 2181 296" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <40, 39, 38, 37> Set the rotor for city setting, WORLD TIME rotor, ALARM rotor and step rotor. </div> 
	↓	
47	Set the clutch wheel.	
	↓	
46	Set the minute wheel for ALARM.	
	↓	
45	Set the minute wheel for WORLD TIME 24-hour indication.	<div data-bbox="501 655 837 823" style="border: 1px solid black; padding: 5px;"> <45> Set the minute wheel for WORLD TIME 24-hour indication. </div>
	↓	
44	Set the setting wheel.	
	↓	
43	Set and lubricate the winding stem.	 <p data-bbox="524 975 591 999">White</p>
	↓	
42	Set the yoke.	
	↓	
41	Set the setting lever.	<div data-bbox="488 1070 853 1139" style="border: 1px solid black; padding: 5px;"> <44>Set the setting wheel. </div>
	↓	
40, 39	Set the rotor for city setting and the WORLD TIME rotor.	<div data-bbox="931 1107 1487 1211" style="border: 1px solid black; padding: 5px;"> <43> Set and lubricate the winding stem: Lubricate the entire profile of the winding stem with Moebius V or AO-3. </div>
38, 37	Set the ALARM rotor and step rotor.	<div data-bbox="1648 1011 2181 1259" style="border: 1px solid black; padding: 5px;"> <42> 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. </div>
	↓	
		<div data-bbox="501 1262 869 1331" style="border: 1px solid black; padding: 5px;"> <47>Set the clutch wheel. </div>
		 <div data-bbox="1408 1275 1789 1355" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <41> Set the setting lever. • Crown at the normal position. </div>

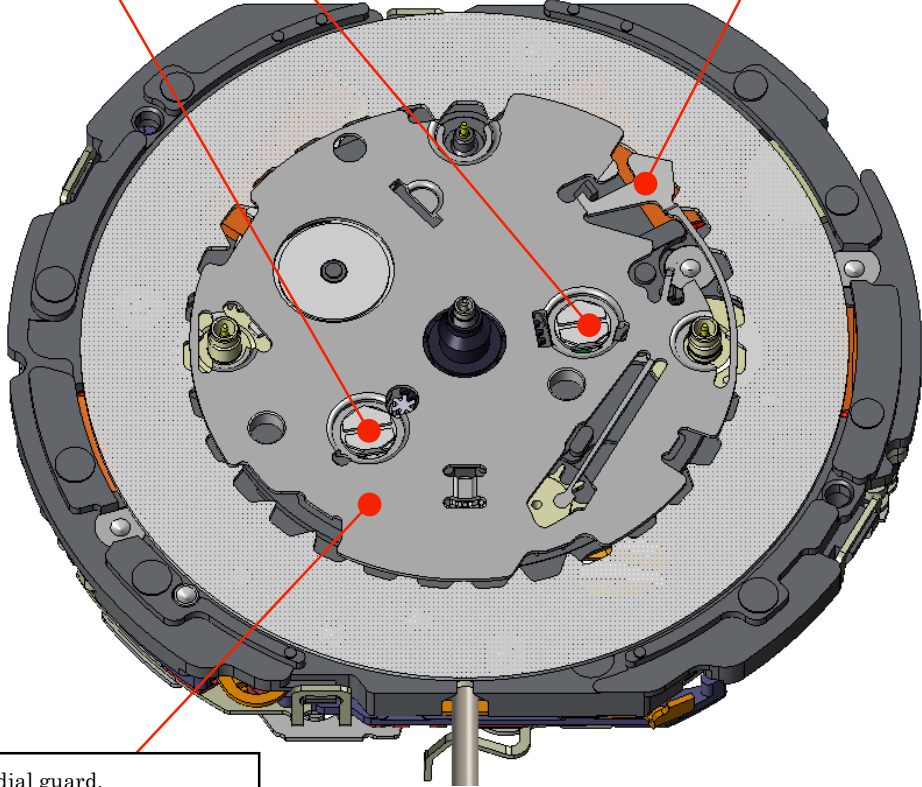
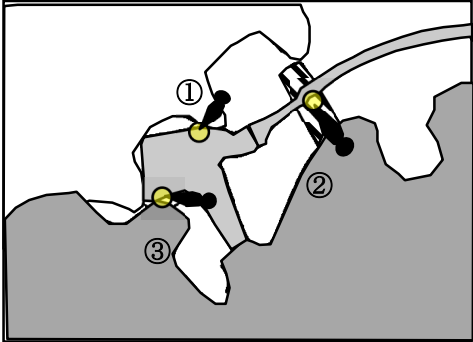
NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
35	Set the second intermediate wheel for city setting.	<div data-bbox="465 188 1061 236" style="border: 1px solid black; padding: 2px;"> < 30 > Set the first intermediate wheel for city setting. </div> <div data-bbox="1245 212 1648 260" style="border: 1px solid black; padding: 2px;"> < 23 > Set the small second wheel. </div>
34	Set the spacer for center wheel & pinion.	<div data-bbox="568 316 685 341" style="display: inline-block;">Dark green</div> <div data-bbox="725 256 833 368" style="display: inline-block; vertical-align: middle;">  </div> <div data-bbox="1637 288 2152 371" style="border: 1px solid black; padding: 2px;"> < 27, 26 > Set the fifth wheel and pinion and third wheel and pinion. </div>
33	Set the minute wheel.	<div data-bbox="465 384 936 456" style="border: 1px solid black; padding: 2px;"> < 35 > Set the second intermediate wheel for city setting. </div> <div data-bbox="1693 403 2152 451" style="border: 1px solid black; padding: 2px;"> < 25 > Set the fourth wheel & pinion. </div>
32, 31	Set the center minute wheel for WORLD TIME and center minute wheel for ALARM.	<div data-bbox="595 555 658 580" style="display: inline-block;">White</div> <div data-bbox="685 475 801 592" style="display: inline-block; vertical-align: middle;">  </div> <div data-bbox="1776 504 2152 619" style="border: 1px solid black; padding: 2px;"> < 31, 32 > Set the center minute wheel for WORLD TIME and center minute wheel for ALARM. </div>
	Lubricate the point of contact of the spacer for center wheel & pinion.	<div data-bbox="465 627 864 699" style="border: 1px solid black; padding: 2px;"> < 28 > Set the intermediate wheel for WORLD TIME. </div>
30	Set the first intermediate wheel for city setting.	<div data-bbox="609 746 672 772" style="display: inline-block;">White</div> <div data-bbox="707 715 779 786" style="display: inline-block; vertical-align: middle;">  </div>
29	Set the intermediate wheel for ALARM.	<div data-bbox="465 818 875 914" style="border: 1px solid black; padding: 2px;"> Lubricate the point of contact of the spacer for center wheel & pinion : Moebius A or AO-3 </div>
28	Set the intermediate wheel for WORLD TIME.	<div data-bbox="479 943 804 1126" style="border: 1px solid black; padding: 2px;">  </div>
27, 26	Set the fifth wheel and pinion and third wheel and pinion.	<div data-bbox="1895 659 2007 815" style="display: inline-block; vertical-align: middle;">  </div> <div data-bbox="1850 847 2085 895" style="display: inline-block; vertical-align: middle;"> Center minute wheel for WORLD TIME </div>
25	Set the fourth wheel and pinion.	<div data-bbox="1704 938 2152 1034" style="border: 1px solid black; padding: 2px;"> < 29 > Set the intermediate wheel for ALARM. </div>
24	Set and lubricate the city setting wheel.	<div data-bbox="1704 1058 2096 1106" style="border: 1px solid black; padding: 2px;"> < 33 > Set the minute wheel. </div>
23	Set the small second wheel.	<div data-bbox="712 1166 864 1382" style="display: inline-block; vertical-align: middle;">  </div> <div data-bbox="1496 1129 2074 1177" style="border: 1px solid black; padding: 2px;"> < 34 > Set the spacer for center wheel & pinion. </div>
		<div data-bbox="891 1201 1603 1350" style="border: 1px solid black; padding: 2px;"> < 24 > Set and lubricate the city setting wheel as illustrated above. Lubricate the point of contact of the spacer for center wheel & pinion: Moebius A or AO-3. </div>

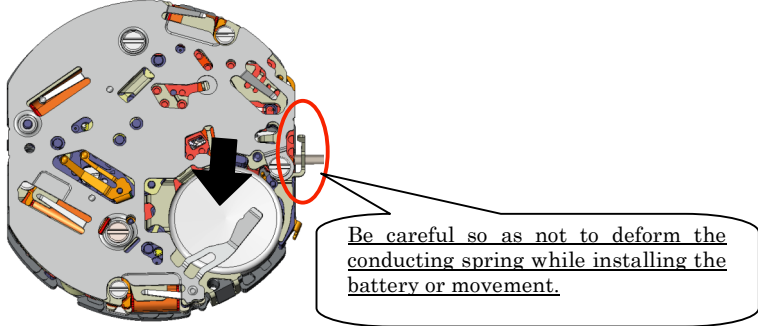
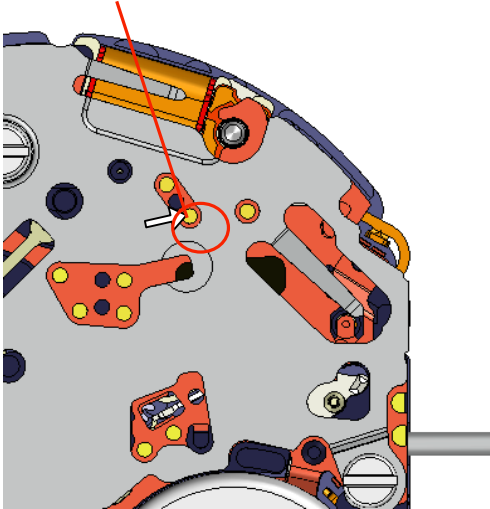
No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
22	Set the train wheel bridge. ↓	<div data-bbox="405 197 835 252" style="border: 1px solid black; padding: 2px;"> <22> Set the train wheel bridge. </div>
21	Set the pin for train wheel bridge. ↓	<div data-bbox="405 272 835 499" style="border: 1px solid black; padding: 2px;"> <21> Set the pin for train wheel bridge. • Turn the pin 90-degree clockwise to fix it using a screwdriver. • Make sure that the pin is put in the correct direction. ※ Never turn the pin more than 90 degrees. </div>
20	Set the battery connection (-) ↓	<div data-bbox="1088 209 2114 304" style="border: 1px solid black; padding: 2px;"> Lubricate the upper pivots of the rotor for city setting, WORLD TIME rotor, and ALARM rotor and step rotor : Moebius F or AO-2 ※Lubricate the upper pivot of each rotor (at four points) illustrated below. </div>
	Lubricate the upper pivots of the rotor for city setting, WORLD TIME rotor, and ALARM rotor and step rotor. ↓	
19	Set the buzzer lead terminal. ↓	<div data-bbox="1800 352 2040 453" style="border: 1px solid black; padding: 2px;">  </div>
	Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, city setting wheel, center minute wheel for WORLD TIME and small second wheel. ↓	<div data-bbox="1800 600 2040 730" style="border: 1px solid black; padding: 2px;">  </div>
* 1	Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, city setting wheel, center minute wheel for WORLD TIME and small second wheel. ↓	<div data-bbox="1800 863 2040 970" style="border: 1px solid black; padding: 2px;">  </div>
	Set the buzzer lead terminal. ↓	<div data-bbox="405 1007 808 1054" style="border: 1px solid black; padding: 2px;"> <19> Set the buzzer lead terminal. </div>
	Set the battery connection (-). ↓	<div data-bbox="405 1150 835 1206" style="border: 1px solid black; padding: 2px;"> <20> Set the battery connection (-). </div>
	Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, city setting wheel, minute wheel for WORLD TIME and small second wheel: Moebius F or AO-2. ↓	<div data-bbox="904 1126 2092 1198" style="border: 1px solid black; padding: 2px;"> Lubricate the upper pivots of the minute wheel, center minute wheel for ALARM, city setting wheel, minute wheel for WORLD TIME and small second wheel: Moebius F or AO-2. </div>
		<div data-bbox="913 1225 1850 1278" style="border: 1px solid black; padding: 2px;"> *1 : The upper pivot of the minute wheel for WORLD TIME should be additionally lubricated. 5 points to be lubricated as illustrated above. </div>

NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
	Assembling the circuit unit	
18	Set the circuit block.	<div data-bbox="427 188 824 261" style="border: 1px solid black; padding: 2px;"> <17> Set the friction spring for second counting. </div> <div data-bbox="1032 188 1715 331" style="border: 1px solid black; padding: 2px;"> <18> 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. </div>  
17	Set the friction spring for second counting.	
16	Set the conducting plate.	
15	Set the circuit block cover.	
	Securely engage the four hooks.	
14	Tighten the circuit block cover screws. (3 positions)	<div data-bbox="1267 624 1928 697" style="border: 1px solid black; padding: 2px;"> <14> Tighten the circuit block cover screws (3 positions.) </div>  
		<div data-bbox="427 839 893 887" style="border: 1px solid black; padding: 2px;"> <16> Set the conducting plate. </div> <div data-bbox="1072 839 1476 912" style="border: 1px solid black; padding: 2px;"> <15> Set the circuit block cover. Securely engage the four hooks. </div>
		<div data-bbox="427 938 1469 1275" style="border: 1px solid black; padding: 5px;"> Remarks on installing the circuit block cover. (hooking portions) <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>

NO.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
12	Set the battery clamp.	 <p data-bbox="425 343 824 402"><12> Set the battery clamp.</p> <p data-bbox="470 1066 1370 1125"><11> Tighten the battery clamp screws. (3 positions)</p>
	↓	
11	Tighten the battery clamp screws. (3 positions)	
	↓	
	Measure the current consumption.	

No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
	Assembling the calendar unit.	
9	Set the hour wheel. ↓	<div data-bbox="421 188 824 252" style="border: 1px solid black; padding: 2px;"><9> Set the hour wheel.</div> <div data-bbox="421 268 824 371" style="border: 1px solid black; padding: 2px;"> <ul style="list-style-type: none"> The hour wheel is made of plastic. Make sure that the gear teeth are properly engaged when setting the hour wheel. </div> <div data-bbox="1541 209 2145 272" style="border: 1px solid black; padding: 2px;"><7> Set the Hour wheel for WORLD TIME 24-hour indication.</div>
8	Set the hour wheel for ALARM. ↓	<div data-bbox="1798 308 2112 331" style="border: 1px solid black; padding: 2px;">The number of gear teeth is 48.</div> 
7	Set the Hour wheel for WORLD TIME 24-hour indication. ↓	<div data-bbox="421 387 824 451" style="border: 1px solid black; padding: 2px;"><6> Set the date driving wheel.</div>
6	Set the date driving wheel. ↓	<div data-bbox="421 528 824 592" style="border: 1px solid black; padding: 2px;"><8> Set the hour wheel for ALARM.</div> <div data-bbox="421 608 824 632" style="border: 1px solid black; padding: 2px;">The number of gear teeth is 28.</div> 
5	Set the date corrector setting wheel. ↓	<div data-bbox="1798 563 2145 627" style="border: 1px solid black; padding: 2px;"><3> Set the date wheel.</div>
4	Set the intermediate wheel for calendar correction. ↓	<div data-bbox="421 850 920 914" style="border: 1px solid black; padding: 2px;">Lubricate the point of contact between the date dial and main plate: Moebius A or AO-3</div> 
	Lubricate the point of contact between the date dial and main plate. ↓	<div data-bbox="1619 914 2101 978" style="border: 1px solid black; padding: 2px;"><5> Set the date corrector setting wheel.</div>
3	Set the date dial.	<div data-bbox="1122 1137 1742 1201" style="border: 1px solid black; padding: 2px;"><4> Set the intermediate wheel for calendar correction.</div>
		

No.	PROCESS	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
2	Set the date dial guard.	
	↓	
	Set the jumper.	
	↓	
1	Set the pins for date dial guard. (2 positions)	<div data-bbox="430 311 1093 406" style="border: 1px solid black; padding: 5px;"> <p><1> Set the date dial guard. (2 positions) • Turn the pin 90-degree clockwise to fix it using a screwdriver. ※ Never turn the pin more than 90 degrees.</p> </div>
	Lubricate the points of contact between:	<div data-bbox="1355 236 2148 383" style="border: 1px solid black; padding: 5px;"> <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>
	① Date dial and date jumper.	
	② Main plate and date jumper.	
	③ Date dial guard and date jumper.	
		
		
		<div data-bbox="430 1236 878 1300" style="border: 1px solid black; padding: 5px;"> <p><2> Set the date dial guard.</p> </div>

No.	PROCESS	SPECIFICATIONS (QUALITY SPECIFICATIONS, HANDLING METHODS ETC.)	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
	Assembling the case		
11	Set the battery.	Pay extra attention so as not to short-circuit the battery.	<p>< 11 > Set the battery.</p> <ul style="list-style-type: none"> Install the battery in the direction shown by the arrow in the illustration below. Installing the battery from any other angle may result in bending or deforming the battery connection (-). 
	↓		
	AC	Connect the AC component to the circuit block cover until a short circuit occurs to reset the integrated circuit.	
	↓		
	Set the movement.	Do not press the date dial down when handling the movement.	
	↓	※Be careful so as not to deform the conducting spring of the movement.	
	↓		
	Check that the date changes correctly.	Make sure that the date changes smoothly without dragging.	
	↓		
	Set the holding ring for dial.	When installing the holding ring for dial, be careful so as not to unhook it.	
	↓		
	Set the dial.		<p>System Reset</p> <ul style="list-style-type: none"> Connect the AC component to the circuit block cover until a short circuit occurs to reset the integrated circuit.
	↓		
	Preparation for installing the hands	Follow the instructions below before installing the hands.	
		(It is necessary to adjust the backlash in a certain direction in order to ensure the proper hand positions before installing the hands.)	
		Activate the city hand in the hand adjustment mode.	
		(→Press and hold Button A for 3 seconds or longer with the crown at the second click position.)	
		(Adjust the backlash by turning the city hand, which is located at the center, clockwise.)	

No.	PROCESS	SPECIFICATIONS (QUALITY SPECIFICATIONS, HANDLING METHODS ETC.)	ILLUSTRATIONS AND SPECIAL INSTRUCTIONS ETC.
	(12 o'clock position)		<p style="text-align: center;">< 5T82A WORLD TIME ></p> <p>The diagram shows a circular watch face with several sub-dials and hands. At the top, it says '< 5T82A WORLD TIME >'. On the right side, there are two buttons labeled 'Button A' and 'Button B', and a crown. The hands are labeled as follows: 'WORLD TIME hour hand & WORLD TIME minute hand' (the longest hands), 'Small second hand' (a thin hand), 'ALARM hour hand & ALARM minute hand' (hands with a small sub-dial), and 'City hand' (a hand with a small sub-dial). Arrows point from the labels to the corresponding parts of the watch face.</p>
	Set the WORLD TIME hour hand.		
	Set the WORLD TIME minute hand.		
	↓		
	(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 city hand.		
	Check the hand position and hand installation height.		

Functional Inspection

Operational Specifications (Reference)

	Rotation	Button to press
Normal position	Free	Button A: adjusting the WORLD TIME hands in the clockwise direction (stopping the ALARM while it is ringing)
		Button B: adjusting the WORLD TIME hands in the counterclockwise direction (stopping the ALARM while it is ringing)
First click position	Clockwise: Date setting	Button A: activating the ALARM demonstration function
		Button B: setting the ALARM time (setting the ALARM time to the current time can reset the ALARM) (keep pressing Button B will quickly advance the ALARM hands.)
Second click position	Hand position adjustment (Main time setting)	<p>Button B: setting the ALARM time (keep pressing it to quickly advance the ALARM hands) →</p> <p>Button A (2 seconds) →</p> <p>Button B: setting the city hand position (keep pressing it to quickly advance the city hand) →</p> <p>Button A (2 seconds) →</p> <p>Button B: setting the WORLD TIME hands (keep pressing it to quickly advance the WORLD TIME hands) →</p> <p>Button A (2 seconds)</p>
	System reset	<p>↑</p> <p>Press and hold both Buttons A and B at the same time for longer than 2 seconds.</p>

IV. VALUE CHECKING

● Coil block resistance

Coil block (A) (4002 700)	2.10 K Ω ~ 2.70 K Ω
Coil block for city setting (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 WORLD TIME (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)
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 the 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)

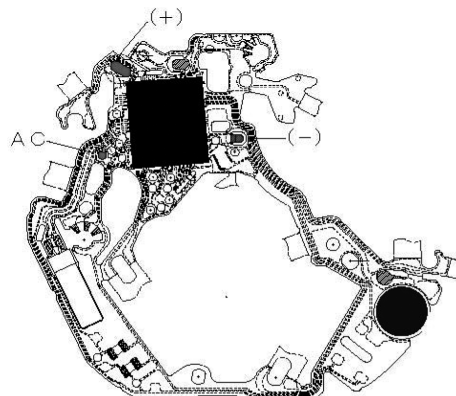
* When measuring the current consumption for the circuit block alone, be careful not to damage or deform the pattern of the circuit block.

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.	The date jumper has been disengaged.		

TECHNICAL GUIDE

Cal. 5T82A

	Symptom	Possible causes	Solutions
ALARM/ WORLD TIME	One or more ALARM hands, WORLD TIME hands or city hand 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 ALARM and/or WORLD TIME 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.
	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 ALARM and/or WORLD TIME 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.