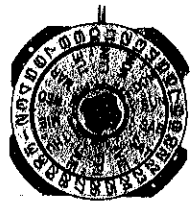
# SEIKO

## QUARTZ

### Cal. 65 series

# PARTS CATALOGUE

# Cal. 65 series



〔Cal. 6533A〕

125 775

221 ***

231 755

241 ***

261 755

271 ***

281 755

282 ***



354 765

383 755

384 755

388 765



391 755



399 755

☆470 632

491 ***

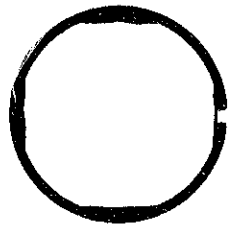
701 755

719 755

☆801 ***

802 ***

808 ***



☆884 ***

963 781

4001 756

4002 755



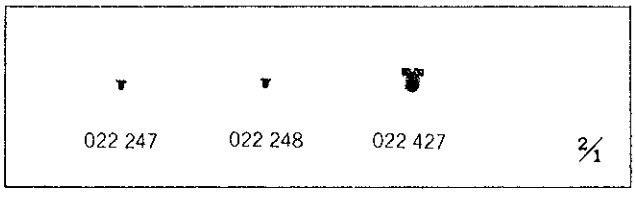
4146 755

4239 755

4270 755

4271 ***

4450 775




☆Maxell SR920SW

# Cal. 65 series

## Characteristics

| | 6530A | 6531A | 6532A | 6532B | 6533A | 6539A |
|---|---|---|---|---|---|---|
| Casing diameter | ϕ23.3 mm | | | | | |
| Maximum height (without battery) | 2.3 mm | | 2.7 mm | 2.9 mm | | 2.7 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 | Regulating switch lever | | | | | |
| Train wheel setting | ○ | ○ | ○ | ○ | ○ | ○ |
| Calendar | — | — | Date | Date | Day/Date | Date |
| Instant setting device | — | — | Date | Date | Day/Date | Date |
| Battery life indicator | — | ○ | ○ | ○ | ○ | — |

| PART NO. | PART NAME |
|---|---|
| **125 775** | Train wheel bridge |
| **221 ***** | Center wheel & pinion |
| **231 755** | Third wheel & pinion |
| **241 ***** | Fourth wheel & pinion |
| **261 755** | Minute wheel |
| **271 ***** | Hour wheel |
| **281 755** | Setting wheel |
| **282 ***** | Clutch wheel |
| **354 765** | Winding stem |
| **383 755** | Setting lever |
| **384 755** | Yoke |
| **388 765** | Setting lever spring |
| **391 755** | Train wheel setting lever |
| **399 755** | Casing clamp |
| ☆**470 632** | Day star with dial disk (for cal. 6533A) |
| **491 ***** | Dial washer |
| **701 755** | Fifth wheel & pinion |
| **719 755** | Day corrector (for cal. 6533A) |
| ☆**801 ***** | Date dial |
| **802 ***** | Date driving wheel |
| **808 ***** | Date dial guard |
| ☆**884 ***** | Holding ring for dial |
| **963 781** | Snap for day star with dial disk (for cal. 6533A) |
| **4001 756** | Circuit block |
| **4002 755** | Coil block |
| **4146 755** | Step rotor |
| **4239 755** | Rotor stator |
| **4270 755** | Battery connection (−) |
| **4271 ***** | Battery connection (+) |
| **4450 775** | Regulating switch lever |
| 011 325 | Upper hole jewel for fourth wheel |
| 011 542 | Upper hole jewel for third wheel |
| 011 542 | Upper hole jewel for fifth wheel |
| 011 547 | Lower hole jewel for step rotor |
| 011 568 | Upper hole jewel for step rotor |
| **022 247** | Train wheel bridge screw |
| **022 247** | Battery connection (−) screw |
| **022 247** | Battery connection (+) screw |
| **022 247** | Setting lever spring screw |
| 022 *** | Date dial guard screw |
| **022 427** | Casing clamp screw |
| ☆027 112 | Tube for train wheel bridge (A) |
| ☆027 113 | Tube for train wheel bridge (B) |
| ☆027 114 | Tube for battery connection (+) screw (A) |
| ☆027 115 | Tube for battery connection (+) screw (B) |
| ☆027 116 | Tube for battery connection (+) screw (C) |
| ☆027 117 | Tube for battery connection (+) screw (D) |
| 027 118 | Tube for setting lever spring screw |
| 027 *** | Tube for date dial guard screw |
| 027 120 | Tube for battery connection (−) screw |
| 027 121 | Tube for casing clamp screw |
| 027 739 | Setting lever pin |
| 027 740 | Day corrector pin (for cal. 6533A) |
| ☆Maxell SR920SW | Silver oxide battery |

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

# Cal. 65 series

**Remarks :**

**Refer to the Parts with "＊＊＊" mark in the parts No. at the page of Parts List.**
**Select a suitable one by refferring to the combination chart below.**

| Parts No. / Parts name / Cal | 6530A | 6531A | 6532A | 6532B | 6533A | 6539A |
|---|---|---|---|---|---|---|
| 221 *** Center wheel & pinion | 221 778 | 221 776 | 221 775 | 221 756 | 221 756 | 221 777 |
| 241 *** Fourth wheel & pinion | 241 769 | 241 776 | 241 775 | 241 766 | 241 766 | 241 769 |
| 271 *** Hour wheel | 271 776 | 271 776 | 271 775 | 271 766 | 271 766 | 271 775 |
| 282 *** Clutch wheel | 282 765 | 282 765 | 282 763 | 282 763 | 282 761 | 282 763 |
| 491 *** Dial washer | 491 589 | 491 589 | ··· | | | |
| 801 *** Date dial | ··· | | 801 540 | 801 539 | 801 539 | 801 540 |
| 802 *** Date driving wheel | ··· | | 802 756 | 802 756 | 802 755 | 802 756 |
| 808 *** Date dial guard | ··· | | 808 756 | 808 756 | 808 755 | 808 756 |
| 884 *** Holding ring for dial | ··· | | 884 967 | 884 967 | 884 967 | 884 967 |
| 4271 *** Battery connection (+) | 4271 800 | 4271 796 | 4271 794 | 4271 792 | 4271 790 | 4271 798 |
| 022 *** Date dial guard screw | ··· | | 022 248 | 022 248 | 022 248 | 022 248 |
| 027 *** Tube for date dial guard screw | ··· | | 027 119 | 027 119 | 027 119 | 027 119 |

**Day star with dial disk (Cal. 6533A)**

☆470 632(English-Spanish, black figures on white background)
·····Used when both the crown and the calendar frame are located at **3** o'clock position.
If any other type of day star with dial disk is required, specify the number printed on the disk.

**Holding ring for dial (Cal. 6532A, 6532B, 6533A, 6939A)**

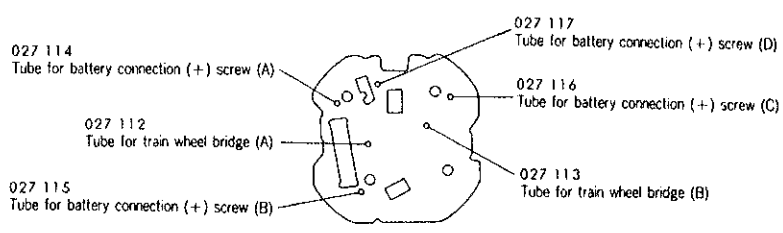
☆884 967·····The type of a holding ring for dial is determined based on the design of cases.
If the shape of holding ring for dial is different from the photograph, check the case number and refer to **"SEIKO Quartz Casing Part Catalogue"** to choose a corresponding holding ring for dial.

**Date dial**

☆801 539(Black figures on white background) (Cal. 6532B)
☆801 540(Black figures on white background) (Cal. 6532A, 6539A)
☆801 622(Black figures on white background) (Cal. 6533A)
·····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.

**Tube for train wheel bridge (A), Tube for train wheel bridge (B), Tube for battery connection (+) screw (A), Tube for battery connection (+) screw (B), Tube for battery connection (+) screw (C), Tube for battery connection (+) screw (D).**

☆027 112
☆027 113
☆027 114
☆027 115
☆027 116
☆027 117
·····Refer to the illustration below for the position of the above parts.




**Battery**

☆Maxell SR920SW·····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".**

82. 11 Printed in Japan

# TECHNICAL GUIDE

SEIKO

QUARTZ

CAL. 6530A CAL. 6531A
CAL. 6532A CAL. 6532B
CAL. 6533A CAL. 6539A

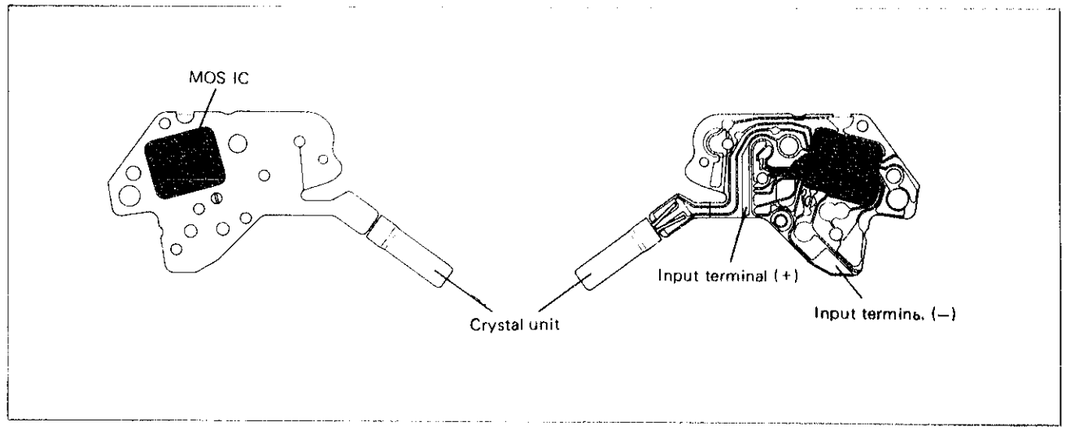


CONTENTS

## I. SPECIFICATIONS

| Item | | Cal. No. 6530A | 6531A | 6539A | 6532A | 6532B | 6533A |
|---|---|---|---|---|---|---|---|
| Time indication | | 2 hands | 3 hands | 2 hands | 3 hands | | |
| Additional mechanism | Day | | | | | | V |
| | Date | | | V | V | V | V |
| | Train wheel setting device | V | V | V | V | V | V |
| | Electronic reset switch | V | V | V | V | V | V |
| | Battery life indicator | | V | | V | V | V |
| Movement size | Loss/gain | Monthly rate at normal temperature range: Less than 15 seconds | | | | | |
| | Outside diameter | φ24.0mm (21.0mm between 6 o'clock and 12 o'clock side: 19.00mm between 3 o'clock and 9 o'clock sides) | | | | φ25.3mm (22.5mm between 6 o'clock and 12 o'clock sides; 21.5mm between 3 o'clock and 9 o'clock sides) | |
| | Casing diameter | φ23.3mm | | (21.0mm between 6 o'clock and 12 o'clock sides<br>19.0mm between 3 o'clock and 9 o'clock sides) | | | |
| | Height | 2.3mm without battery | | 2.7mm without battery | | 2.9mm without battery | |
| Regulation system | | Regulating switch lever | | | | | |
| Measuring gate by quartz tester | | Use the gate of 10 seconds. | | | | | |
| Battery | | Maxell SR920SW and U.C.C. 371<br>Battery life is approximately 3 years.<br>Voltage 1.55 V | | | | | |
| Jewels | | 5 jewels | | | | | |

## II. STRUCTURE OF CIRCUIT BLOCK



## III. DISASSEMBLING, REASSEMBLING AND LUBRICATING

Cal. 6533A is taken as an example to describe the disassembling, reassembling, and lubricating procedures of the movement.

**List of screws used**

| Shape | Part No. | Part Name | Shape | Part No. | Part Name |
|---|---|---|---|---|---|
|  | 022 247 | Train wheel bridge screw 2 pcs.<br>Battery connection (+) screw 4 pcs.<br>Battery connection (–) screw 1 pc.<br>Setting lever spring screw 1 pc. |  | 022 248 | Date dial guard screw 3 pcs. |

Disassembling procedures: Figs. ① ~ ㉟

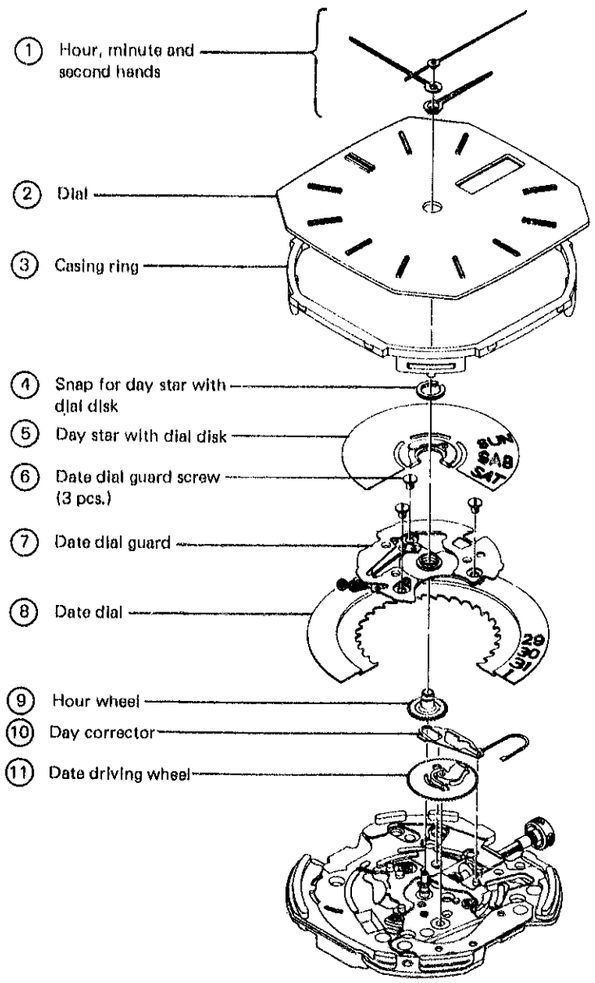
Reassembling procedures: Figs. ㉟ ~ ①

**Lubricating:**

Moebius A

- Use the universal movement holder.

### ① Hour, minute and second hands ~ ⑪ Date driving wheel

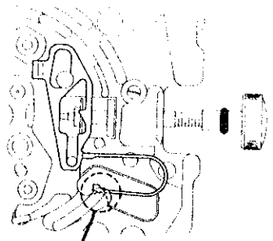



* The dial washer is provided in Cal. 6530A and Cal. 6531A.

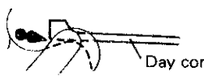
⑩ Day corrector

Notes on reassembly

When installing the day corrector, place the tip of the spring portion beneath the main plate as shown in the illustration below.



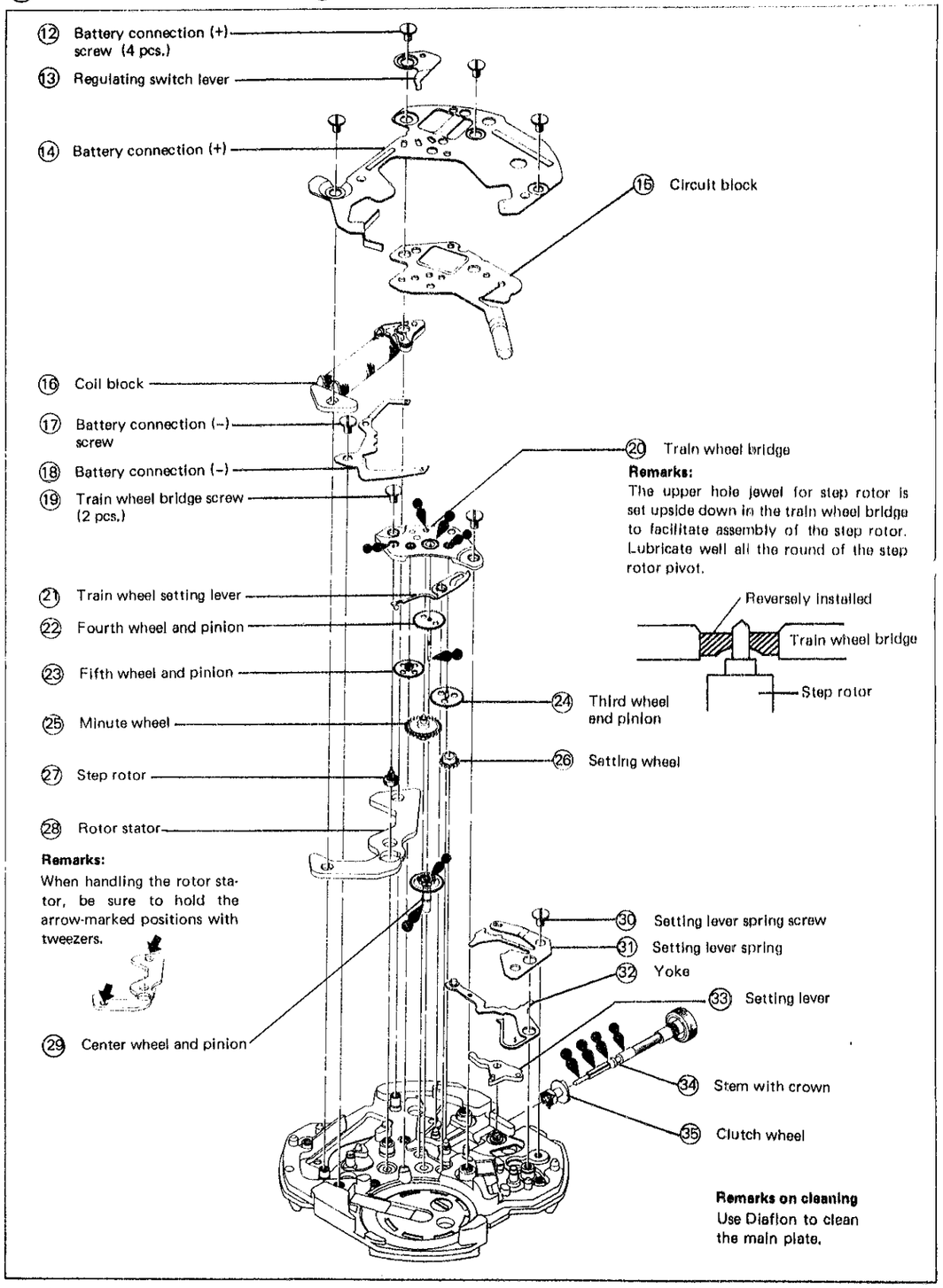
**Enlarged view**




Place the tip of the spring against the level beneath the plastic portion of the main plate shown in the illustration.



### ⑫ Battery connection (+) screw ~ ㉟ Clutch wheel




**Remarks:**

When handling the rotor stator, be sure to hold the arrow-marked positions with tweezers.

**Remarks:**

The upper hole jewel for step rotor is set upside down in the train wheel bridge to facilitate assembly of the step rotor. Lubricate well all the round of the step rotor pivot.

**Remarks on cleaning**

Use Diaflon to clean the main plate.

## IV. CHECKING AND ADJUSTMENT

- The explanation here is only for the particular points of the Calibres this booklet deals with.
  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: 2-second gate

Result:
Normal: Input indicator blinks every second.
Defective: Input indicator does not blink every 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: 2.3kΩ ~ 2.8kΩ
Defective: Less than 2.3kΩ (Short circuit)
Defective: More than 2.8kΩ (Broken wire)

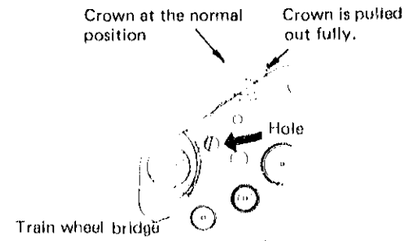
### CHECK GEAR TRAIN MECHANISM



**Procedure**

### CHECH RESET AND TRAIN WHEEL SETTING CONDITION

1. Check to see if second hand stops immediately after the crown is pulled out fully and it starts promptly after one second when the crown is pushed in to the normal position.
2. Look at the train wheel setting lever through the hole on the train wheel bridge to check if it functions correctly.
   - When the crown is fully pulled out, the spring portion of the train wheel setting lever can be seen through the hole on the train wheel bridge.
   - When the crown is pushed in to the normal position, the train wheel setting lever cannot be seen through the hole.
3. When the crown is fully pulled out, check to see if the output signal is transmitted.




**Result:**
Normal: The output signal is not transmitted.
Defective: The output signal is transmitted.

### CHECK ACCURACY

Use the 10-second gate of the Quartz Tester.

- Be sure to protect the C-MOS-LSI from light with case back or black paper, etc. while measuring.
  Do not check current consumption under an incandescent lamp, since strong light adversely affects time accuracy.

**Adjusting time accuracy**

1. Unscrew the screw which holds the regulating switch lever in place.
2. Remove the regulating switch lever.
3. To gain time, turn the regulating switch lever to engage its tip with the hole marked with "+", and to lose time, turn the regulating switch lever to engage its tip with the hole marked with "–".
4. Set and tighten the screw.

* The range to be regulated by the above manner is approximately ±0.5 sec./day.

### CHECK CURRENT CONSUMPTION

Use the Volt-ohm-meter
Range to be used: DC 12μA

**Result:**
Normal: Less than 1.3μA
Defective: More than 1.3μA

- Be sure to protect the C-MOS-LSI from light with case back or black paper, etc. while measuring.
  Do not check current consumption under an incandescent lamp, since strong light causes a watch to consume excess current.
- Since the circuit which adopts the load-compensated driving pulse system is used in this watch, measure the current consumption when the watch is not loaded.
  While applying the probes to the battery, pull out the crown 2 ~ 3 times to make the watch in reset condition, and then check current consumption.

### CHECK CONDUCTIVITY OF SWITCH COMPONENTS

### CHECK WATER RESISTANCE

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