PARTS LIST / TECHNICAL GUIDE
Cal.6R15C / 6R15D

[SPECIFICATION]

<table>
<thead>
<tr>
<th>Item</th>
<th>Cal. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>·3 Hands (Hour, minute and second hand)</td>
<td>6R15C / 6R15D</td>
</tr>
<tr>
<td>·Calendar (Date: Date disk)</td>
<td></td>
</tr>
<tr>
<td>Movement size</td>
<td></td>
</tr>
<tr>
<td>·Diameter</td>
<td></td>
</tr>
<tr>
<td>·Outside: φ27.4 mm</td>
<td></td>
</tr>
<tr>
<td>·Casing: φ27.0 mm</td>
<td></td>
</tr>
<tr>
<td>·Height: 5.25 mm</td>
<td></td>
</tr>
</tbody>
</table>

Driving system
Automatic winding with manual winding mechanism

Additional function
·Instant date setting device
·Second hand stop function

Crown position
Normal position: 1st click position
Manual winding (clockwise only)
Date setting (counter clockwise only )
2nd click position: Time setting /Second hand stop function

Vibrations per hour
21,600 (6 beats per second)

Loss/Gain
Daily rate
Between +25/-15 seconds per day
(worn on the wrist at temperature-range between 5°C and 35°C)

Standard rate for measurement

<table>
<thead>
<tr>
<th>Testing positions</th>
<th>Instantaneous rate at T0 (Fully wound condition)</th>
<th>Isochronous fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dial upward</td>
<td>6 o'clock at the top</td>
<td>Dial upward</td>
</tr>
<tr>
<td>Measurement (daily rate in seconds:s/d)</td>
<td>±10 s/d</td>
<td>±10 s/d</td>
</tr>
<tr>
<td>9 o'clock at the top</td>
<td>±15 s/d</td>
<td>±15 s/d</td>
</tr>
</tbody>
</table>

Regulation system
ETACHRON system

Lift angle of the escapement
53°

Power reserve
From fully wound to stoppage: Approximately 50 hours

Number of Jewels
23 Jewels

SEIKO WATCH CORPORATION
1/18
SEIKO Automatic Mechanical Cal. 6R15C/D are replacement caliber of Cal. 6R15A/B. Cal. C is provided with additional Casing spring at 8H position to set into the case for Cal. A and B. However, Cal. D is not provided with the Casing spring at 8H position. For the movement replacement, be careful that Cal. D is not installed to the case for Cal. A and B.

### Parts difference between Cal. C and Cal. D

<table>
<thead>
<tr>
<th>No.</th>
<th>Parts name</th>
<th>6R15C</th>
<th>6R15D</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Oscillating weight with ball bearing</td>
<td>0509 400</td>
<td>1509 100</td>
</tr>
<tr>
<td>53</td>
<td>Main plate</td>
<td>0104 164</td>
<td>0104 165</td>
</tr>
</tbody>
</table>

### Parts code (depends on type)

<table>
<thead>
<tr>
<th>No.</th>
<th>Parts name</th>
<th>Type</th>
<th>Normal</th>
<th>Special</th>
<th>Special2</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Hour wheel</td>
<td>Normal</td>
<td>0273 182</td>
<td>0273 184</td>
<td>0273 182</td>
</tr>
<tr>
<td>15</td>
<td>Cannon pinion</td>
<td>Normal</td>
<td>0225 420</td>
<td>0225 426</td>
<td>0225 449</td>
</tr>
<tr>
<td>36</td>
<td>Fourth wheel and pinion</td>
<td>Special</td>
<td>0241 010</td>
<td>0144 185</td>
<td>0241 382</td>
</tr>
<tr>
<td>43</td>
<td>Center wheel and pinion</td>
<td>Special2</td>
<td>0224 203</td>
<td>0224 205</td>
<td>0224 339</td>
</tr>
</tbody>
</table>
### Type of oil
- AO-3 (Moebius-A)

### Oil quantity mark
- S-6: NORMAL QUANTITY
- S-4: SUFiCIENT QUANTITY

### Parts List

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0012 354</td>
<td>Date dial guard screw</td>
</tr>
<tr>
<td>0808 183</td>
<td>Date dial maintaining plate</td>
</tr>
<tr>
<td>0810 183</td>
<td>Date jumper</td>
</tr>
</tbody>
</table>

Cal.6R15C/D

SEIKO WATCH CORPORATION
3/18
PARTS LIST

Type of oil

AO-3(Moebius-A)  S-6  S-4

Oil quantity mark

NORMAL QUANTITY  SUFFICIENT QUANTITY

11 Hour wheel
*Refer to the page 2 for the each parts code

12 0261 190
Minute wheel and pinion

13 0817 300
Intermediate date driving wheel and pinion

14 0802 183
Date indicator driving wheel

15 Cannon pinion
*Refer to the page 2 for the each parts code

5 0962 025
Intermediate wheel for date setting E

6 0012 485
Guard for date corrector setting transmission wheel screw

7 0836 183
Guard for date corrector setting transmission wheel

8 0962 185
Intermediate wheel for date setting C

9 0962 023
Intermediate wheel for date setting B

10 0737 183
Date setting wheel

1 53-1
Lower shock absorbing spring

2 53-2
Lower shock absorbing cap jewel

3 53-3
Lower hole jewel frame for shock-absorber

SEIKO WATCH CORPORATION
4/18
### Type of Oil

- AO-3 (Moebius-A)
- S-6
- S-4

### Oil Quantity Mark

- NORMAL QUANTITY
- SUFFICIENT QUANTITY

---

#### Oscillating weight with ball bearing

*Refer to page 2 for each parts code

*Refer to page 11 for setting position

---

#### Key Parts

- **0012 100**: Balance cock screw
- **0171 354**: Balance cock
- **0310 185**: Balance complete with stud
- **0285 051**: Ratchet wheel screw
- **0514 183**: Second reduction wheel and pinion
- **0012 354**: Automatic train bridge screw
- **0191 183**: Automatic train bridge
- **0161 300**: Pallet bridge
- **0301 009**: Pallet fork
- **0012 919**: Ratchet wheel

---

#### Accessories

- **23-1**: Upper shock absorbing spring
- **23-2**: Upper shock absorbing cap jewel
- **23-3**: Upper hole jewel frame for shock-absorber

---

**SEIKO WATCH CORPORATION**

5/18
- **Type of oil**
  - AO-3 (Moebius-A)
  - S-6
  - S-4
- **Oil quantity mark**
  - NORMAL QUANTITY
  - SUFFICIENT QUANTITY

1. **0511 010**
   - First reduction wheel
   - *Refer to page 10 for oiling spot
   - *Refer to page 12 for disassembling/reassembling

2. **0831 183**
   - Pawl lever

3. **0836 002**
   - Reduction wheel holder

4. **0830 294**
   - Fourth wheel and pinion
   - *Refer to the page 2 for the each parts code

5. **0012 100**
   - Barrel and train wheel bridge screw

6. **29-1**
   - Cap jeweled spring

7. **29-2**
   - Cap jewel

8. **0363 184**
   - Sliding crown wheel spring
   - *Refer to page 12 for disassembling/reassembling

9. **0114 183**
   - Barrel and train wheel bridge
   - *Refer to page 10 for oiling spot

10. **0436 166**
    - Lower plate for barrel and train wheel bridge

11. **0012 354**
    - Lower plate for barrel and train wheel bridge screw

12. **0231 070**
    - Third wheel and pinion

13. **0381 004**
    - Click

14. **0201 164**
    - Barrel complete
### CROSS-SECTION VIEW OF THE SCREW PARTS

<table>
<thead>
<tr>
<th>Parts No</th>
<th>Name</th>
<th>Parts No</th>
<th>Name</th>
<th>Parts No</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0012 919</td>
<td>Ratchet wheel screw</td>
<td>0012 485</td>
<td>Guard for date corrector setting transmission wheel screw</td>
<td>0012 354</td>
<td>Date dial guard screw (×4)</td>
</tr>
<tr>
<td>0012 168</td>
<td>Setting lever jumper screw</td>
<td>0012 100</td>
<td>Balance cock screw</td>
<td></td>
<td>Automatic train wheel bridge screw (×2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hole Jewel Cap Jewel</td>
<td></td>
<td>Pallet bridge screw (×2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hole Jewel Cap Jewel</td>
<td></td>
<td>Lower plate for barrel and train wheel bridge screw</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Center wheel bridge screw</td>
</tr>
</tbody>
</table>

### LOCATION OF THE JEWELS

<table>
<thead>
<tr>
<th>Hole Jewel</th>
<th>Cap Jewel</th>
<th>Hole Jewel</th>
<th>Cap Jewel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center wheel &amp; pinion</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Forth wheel &amp; pinion</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Third wheel &amp; pinion</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Escape wheel &amp; pinion</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Pallet fork</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Balance spring</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Crown wheel</td>
<td>○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First reduction wheel &amp; arbor</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Second reduction wheel &amp; pinion</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>Entry pallet jewel</td>
<td>○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit pallet jewel</td>
<td>○</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roller jewel</td>
<td>○</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total 23 jewels

### Remarks

The correct parts for the following are determined based on the design of the cases. Refer to "SEIKO Watch Parts Catalogue (SEIKO WATCH SERVICE SITE)" to choose corresponding parts.

- Holding ring for dial
- Date dial
- Winding stem
PARTS LIST

- Tools and consumables required for disassembling/reassembling

  - Movement holder
    UNIVERSAL MOVEMENT HOLDER
    (S-682)

  - Watch oils
    SEIKO Watch grease S-6 and S-4. Watch oil AO-3 (or Moebius A)

S-6

AO-3

S-4
1. Oiling spot

- **2** Barrel and train wheel bridge (Top side)

- **3** Barrel and train wheel bridge (back side)

Note:

*2 After lubrication, set lower plate for barrel and train wheel bridge & screw.

*4 After lubrication, set First reduction wheel, Pawl lever & Reduction wheel holder.
2. Setting position of Oscillating weight
When fixing the Oscillating weight, an alignment with the First reduction wheel is necessary in order to wind the Mainspring most efficiently. Rotate the First reduction wheel manually until its hole aligns with the guide pin for Balance cock (gilt dot) and set the Oscillating weight vertically at the stem side, and then tighten the screw. Refer to the figure below.

3. Disassembling the winding stem
1) Set the winding stem at normal position.
2) Pull out the winding stem, while pushing "A"
4. Disassembling / assembling of the First reduction wheel

**<< Disassembling >>**

- 33 First reduction wheel
- 31 Reduction wheel holder
- 29 Barrel and train wheel bridge (back side)

**<< Assembling >>**

Set the part to the Barrel and train wheel bridge and push the hook from the top with tweezers so that it will be engaged securely.

5. Disassembling / assembling of the Ratchet sliding wheel spring.

**<< Disassembling >>**

- 30 Sliding crown wheel spring
- 29 Barrel and train wheel bridge

**<< Assembling >>**

Remove the hook of the Sliding crown wheel spring from Barrel and train wheel bridge.
6. Accuracy adjustment

Note:
- Regulator … Time adjustment
- Stud support … Beat error adjustment
- Regulator pin … Gap adjustment of balance spring and regulator pin

Anticlockwise rotation

No clockwise rotation

Cal.6R15C/D
### How to remove and install the Balance complete with stud

<table>
<thead>
<tr>
<th>How to remove</th>
<th>How to install</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Initial phase</strong>&lt;br&gt;Move the stud support toward the arrow marked direction until it touches the balance cock.</td>
<td><strong>1. Initial phase</strong>&lt;br&gt;Set a new balance complete with stud to the main plate.</td>
</tr>
<tr>
<td><strong>2. Make sure that the outer coil is not removed from the regulator arm.</strong></td>
<td><strong>2. Set the Balance cock and tighten the balance cock screw.</strong></td>
</tr>
<tr>
<td><strong>3. Using sturdy tweezers, push the stud outward from the direction of the arrow shown in the illustration until it is removed from the stud support.</strong></td>
<td><strong>3. Temporarily set the stud to the stud support. Make sure that the balance spring passes outside the regulator pin.</strong>&lt;br&gt;* Be careful not to damage the balance spring.</td>
</tr>
<tr>
<td><strong>4. Unscrew the Balance cock screw and remove the Balance cock.</strong></td>
<td><strong>4. Using sturdy tweezers, set the stud to the stud support and press it down.</strong>&lt;br&gt;Make sure that the outer coil passes through the regulator pin slot.&lt;br&gt;* Be careful not to damage the balance spring.</td>
</tr>
</tbody>
</table>
How to regulate the isochronous fault by adjusting the position of the balance-spring

This caliber has the Etachron system for fine regulation of the isochronous fault.
The watch shows a gain trend as amplitude decreases and loses time badly near the end of its useful power reserve.
The isochronous fault can be adjusted easily by turning the Regulator pin to make the gap in the slot either larger or smaller.

1) Make sure that the Regulator pin is aligned in a vertical position to the Regulator and the balance-spring passes parallel through the slot of the Regulator pin before fine-tuning the STUD and the Regulator pin.

![REGULATOR PIN](image1)

![Top side view](image2) ![Back side view](image3) ![Angled view](image4)

2) Rotate the STUD in order to align the position of the balance-spring passes through the center of the slot of the Regulator pin.

![STUD](image5) ![REGULATOR PIN](image6)

![Top side view](image7) ![Back side view](image8)

3) Rotate the REGULATOR PIN counterclockwise in order to fine-tune the clearance of the balance-spring passing through the slot of it. Set it to moderate gap to get the stable trend.

![REGULATOR PIN](image9)

![Top side view](image10) ![Back side view](image11)

(Maximum clearance) (Minimum clearance)
1. How to manually wind the mainspring by turning the crown
   1) Slowly turn the crown clockwise (in the 12 o'clock direction) to wind the mainspring.
   2) Continue to turn the crown until the mainspring is sufficiently wound. The second hand will start moving.
   3) Set the time and date before putting the watch on your wrist.

2. How to set the time and date
   • Check that the watch is operating, and then set the time and date.
   • The watch is provided with a date function and is so designed that the date changes once every 24 hours.
     The date changes around 12 o'clock midnight. If AM/PM is not properly set, the date will change around 12 o'clock noon.

   1) Pull out the crown to the first click. (The second hand continues moving and the accuracy of the watch is unimpaired.)
   2) The date can be set by turning the crown counterclockwise. Turn it until the previous day’s date appears.
      Ex.) If today is the 6th of the month, first set the date to "5" by turning the crown counterclockwise.
   3) Pull out the crown to the second click when the second hand is at the 12 o’clock position.
      (The second hand stops on the spot.)
      Turn the crown to advance the hands until the date changes to the next.
      The time is now set for the a.m. period. Advance the hands to set the correct time.
   4) Push the crown back in to the normal position in accordance with a time signal.

CAUTION
• Do not set the date between 10:00 p.m. and 1:00 a.m.
  If you do, the date may not change properly / it may cause a malfunction.
• The mechanism of mechanical watches is different from that of quartz watches.
  When setting the time, be sure to turn back the minute hand a little behind the desired time and then advance it to the exact time.
**Water resistance test**

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

<table>
<thead>
<tr>
<th>Marking on the case back</th>
<th>Test method</th>
<th>Applied pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER RESISTANT(WATER RESIST)</td>
<td>Air leak test</td>
<td>3 BAR</td>
</tr>
<tr>
<td>WATER RESIST 5BAR</td>
<td>Water pressure test</td>
<td>5 BAR</td>
</tr>
<tr>
<td>WATER RESIST 10BAR</td>
<td></td>
<td>10 BAR</td>
</tr>
<tr>
<td>WATER RESIST 15BAR</td>
<td>Condensation test</td>
<td>15 BAR</td>
</tr>
<tr>
<td>WATER RESIST 20BAR</td>
<td></td>
<td>20 BAR</td>
</tr>
<tr>
<td>SCUBA DIVERIS (AIR DIVERIS) 150 m</td>
<td>Condensation test</td>
<td>18.75 BAR = 150(m) x 0.125</td>
</tr>
<tr>
<td>SCUBA DIVERIS (AIR DIVERIS) 200 m</td>
<td></td>
<td>25 BAR = 200(m) x 0.125</td>
</tr>
<tr>
<td>He-GAS DIVERIS 300 m</td>
<td>Water pressure test</td>
<td>37.5 BAR = 300(m) x 0.125</td>
</tr>
<tr>
<td>He-GAS DIVERIS 600 m</td>
<td></td>
<td>75 BAR = 600(m) x 0.125</td>
</tr>
<tr>
<td>He-GAS DIVERIS 1000m</td>
<td>Condensation test</td>
<td>125 BAR = 1000(m) x 0.125</td>
</tr>
</tbody>
</table>
● Accuracy test

Measure the rate in three different positions within 30 minutes after the watch is fully wound up (wait approximately for 5 minutes after winding up in order to get a stable oscillation of the balance) and make sure the value shows within the range in the table below.

Measure the rate in dial-up position after 24 hours from fully wound up (T24) and check the rate difference with the rate in dial-up position when it is fully wound up (T0). Make sure that the value of T24-T0 shows within the range of the isochronism in the table below.

<table>
<thead>
<tr>
<th>Standard rate for measurement</th>
<th>Testing positions</th>
<th>Instantaneous rate at T0 (Fully wound condition)</th>
<th>Isochronous fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement</td>
<td>Dial upward</td>
<td>6 o'clock at the top</td>
<td>DIAL upward</td>
</tr>
<tr>
<td>(Daily rate in seconds:s/d)</td>
<td>± 20 s/d</td>
<td>± 30 s/d</td>
<td>±30 s/d</td>
</tr>
<tr>
<td></td>
<td>9 o'clock at the top</td>
<td>± 30 s/d</td>
<td></td>
</tr>
</tbody>
</table>

● Accuracy of Mechanical Watches

✦ The accuracy of mechanical watches is indicated by the daily rates of one week or so.

✦ The accuracy of mechanical watches may not fall within the specified range of time accuracy because of loss/gain changes due to the conditions of use, such as the length of time during which the watch is worn on the wrist, arm movement, whether the mainspring is wound up fully or not, etc.

✦ The key components in mechanical watches are made of metals which expand or contract depending on temperatures due to metal properties. This exerts an effect on the accuracy of the watches. Mechanical watches tend to lose time at high temperatures while they tend to gain time at low temperatures.

✦ In order to improve accuracy, it is important to regularly supply energy to the balance that controls the speed of the gears. The driving force of the mainspring that powers mechanical watches varies between when it is fully wound and immediately before it is unwound. As the mainspring unwinds, the force weakens. Relatively steady accuracy can be obtained by wearing the watch on the wrist frequently for the selfwinding type and winding up the mainspring fully everyday at a fixed time to move it regularly for the wind-up mechanical type.

✦ When affected by external strong magnetism, a mechanical watch may loss/gain time temporarily. The parts of the watch may become magnetized depending on the extent of the effect. In such a case, consult the retailer from whom the watch was purchased since the watch requires repair, including demagnetizing.

● Duration time test

Check the Power reserve of the watch after the r 10/16 condition with the dial-up position. Make sure that the watch runs approximately 41 hours until it stops.