
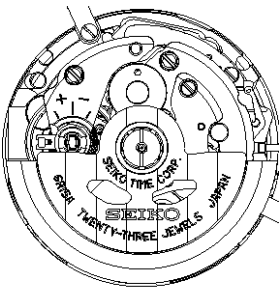
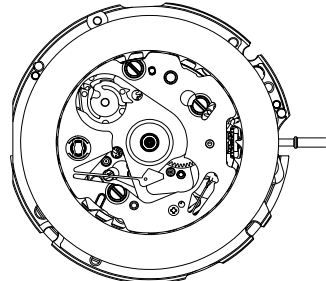


PARTS LIST / TECHNICAL GUIDE

Cal.6R15A / 6R15B

[SPECIFICATION]

Item		Cal. No.	6R15A / 6R15B			
  						
<ul style="list-style-type: none"> • 3 Hands (Hour, minute and second hand) • Calendar (Date: Date disk) 		Movement size		<ul style="list-style-type: none"> • Diameter Outside : ϕ 27.4 mm Casing : ϕ 27.0 mm • Height : 5.25 mm 		
Driving system		Automatic winding with manual winding mechanism				
Additional function		<ul style="list-style-type: none"> • Instant date setting device • Second hand stop function 				
Crown position	Normal position	Manual winding (clockwise only)				
	1st click position	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	Instantaneous rate at T0 (Fully wound condition)			Isochronous fault	
		Testing positions	Dial upward	6 o'clock at the top	9 o'clock at the top	Dial upward
Measurement (daily rate in seconds:s/d)		± 10 s/d	± 15 s/d	± 15 s/d	± 10 s/d	
Regulation system		ETACHRON system				
Lift angle of the escapement		53°				
Continuous operating time		From fully wound to stoppage: Approximately 50 hours				
Number of Jewels		23 Jewels				

SEIKO WATCH CORPORATION

PARTS LIST

Cal.6R15A/B

FEATURES

SEIKO Automatic Mechanical Cal. 6R15B is replacement caliber of Cal. 6R15A.

Construction of the B series are the same as A series, but using new parts.






Since the size of movement is same as A series, the complete movement can be assembled into the watches which originally have the A series movement; however, as the parts are not convertible, please use the appropriate parts for each caliber.

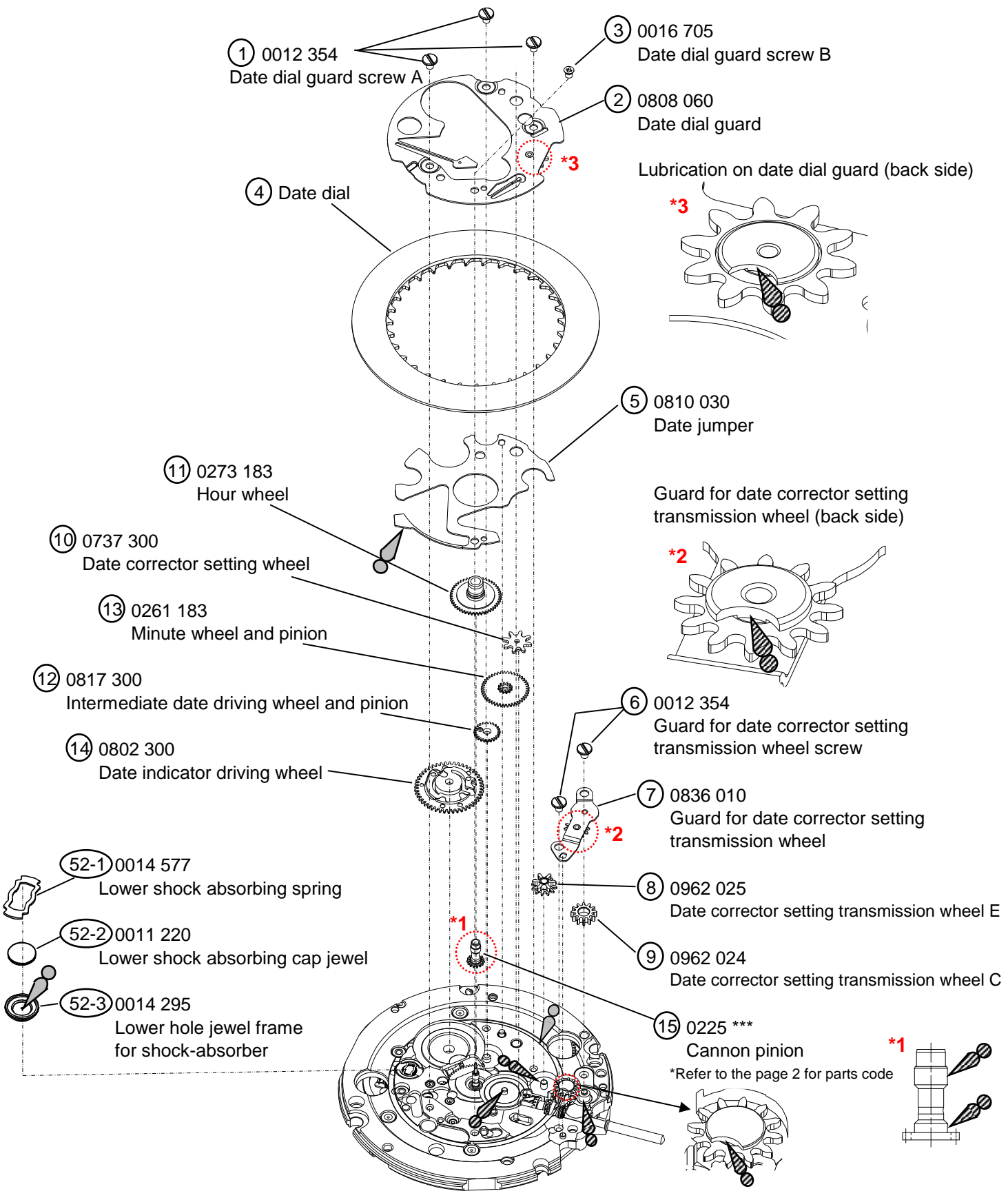
Parts Differences Between A series and B series

Parts Name / Cal. No.		6R15A	6R15B	
Hands height		Standard	Standard	Special
15	CANNON PINION	0225 005	0225 005	0225 330
16	OSCILLATING WEIGHT	0509 264	0509 267	
20	RATCHET WHEEL SCREW	0012 080	0012 919	
21	RATCHET WHEEL	0285 050	0285 051	
29	BARREL AND TRAIN WHEEL BRIDGE	0112 379	0114 348	
36	FOURTH WHEEL AND PINION	0241 010	0241 010	0241 382
39	BARREL COMPLETE	0201 070	0201 267	
43	CENTER WHEEL AND PINION WITH CANNON PINION	0224 083	0224 086	0224 330

PARTS LIST

Cal.6R15A/B

Disassembling procedures Figs. ① → ⑤②	Type of oil	Oil quantity mark
	 AO-3  S-6  S-4	 NORMAL QUANTITY  SUFFICIENT QUANTITY



SEIKO WATCH CORPORATION

PARTS LIST

Cal.6R15A/B

Type of oil

AO-3(Moebius-A)



Oil quantity mark

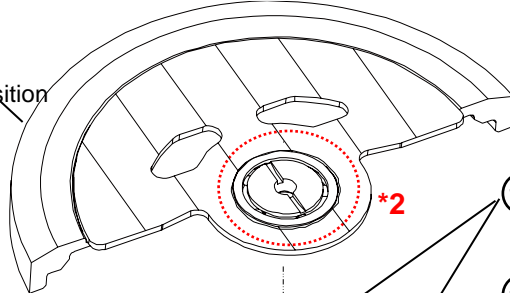
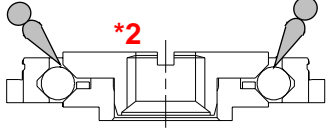
NORMAL QUANTITY
SUFFICIENT QUANTITY

①⑥ 0509 ***

Oscillating weight

*Refer to the page 2 for parts code

*Refer to the page 10 for assembling position

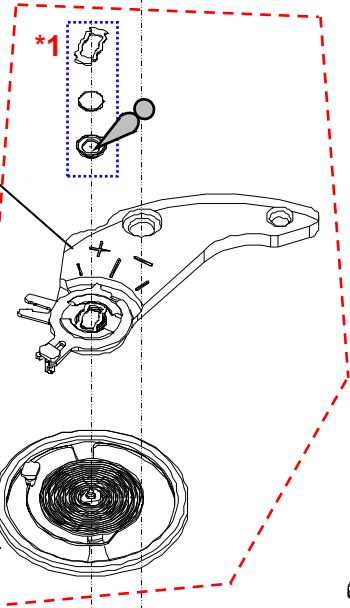


①⑦ 0012 354
Automatic train bridge screw

②② 0012 100
Balance cock screw

①⑧ 0191 023
Automatic train bridge

②③ 0171 354
Balance cock



①⑨ 0514 010
Second reduction wheel and pinion

whole tooth

②⑩ 0012 ***
Ratchet wheel screw
*Refer to the page 2 for parts code

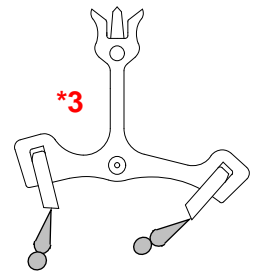
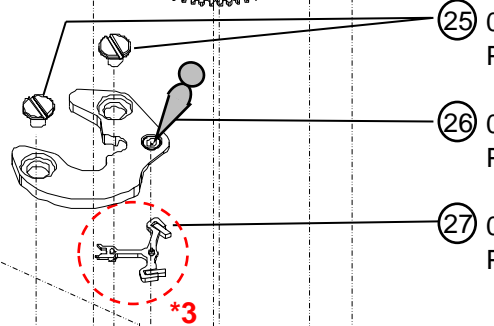
②① 0285 ***
Ratchet wheel
*Refer to the page 2 for parts code

②⑤ 0012 354
Pallet bridge screw

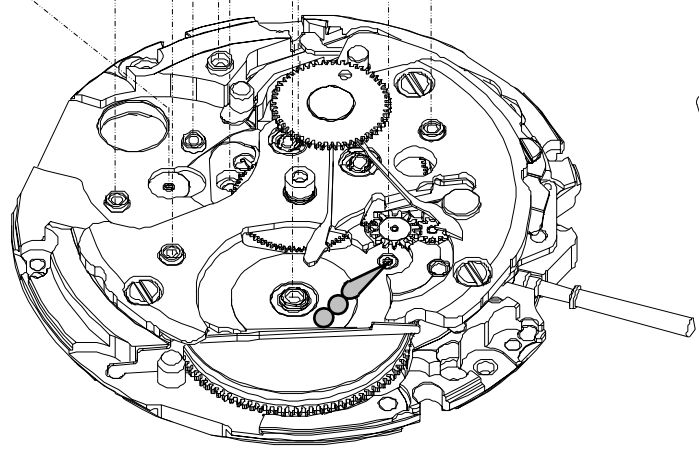
②⑥ 0161 300
Pallet bridge

②⑦ 0301 009
Pallet fork

②④ 0310 185
Balance complete
with stud



- *1 ②③-② 0014 577
Upper shock absorbing spring
- ②③-③ 0011 220
Upper shock absorbing cap jewel
- ②③-④ 0014 295
Upper hole jewel frame
for shock-absorber



SEIKO WATCH CORPORATION

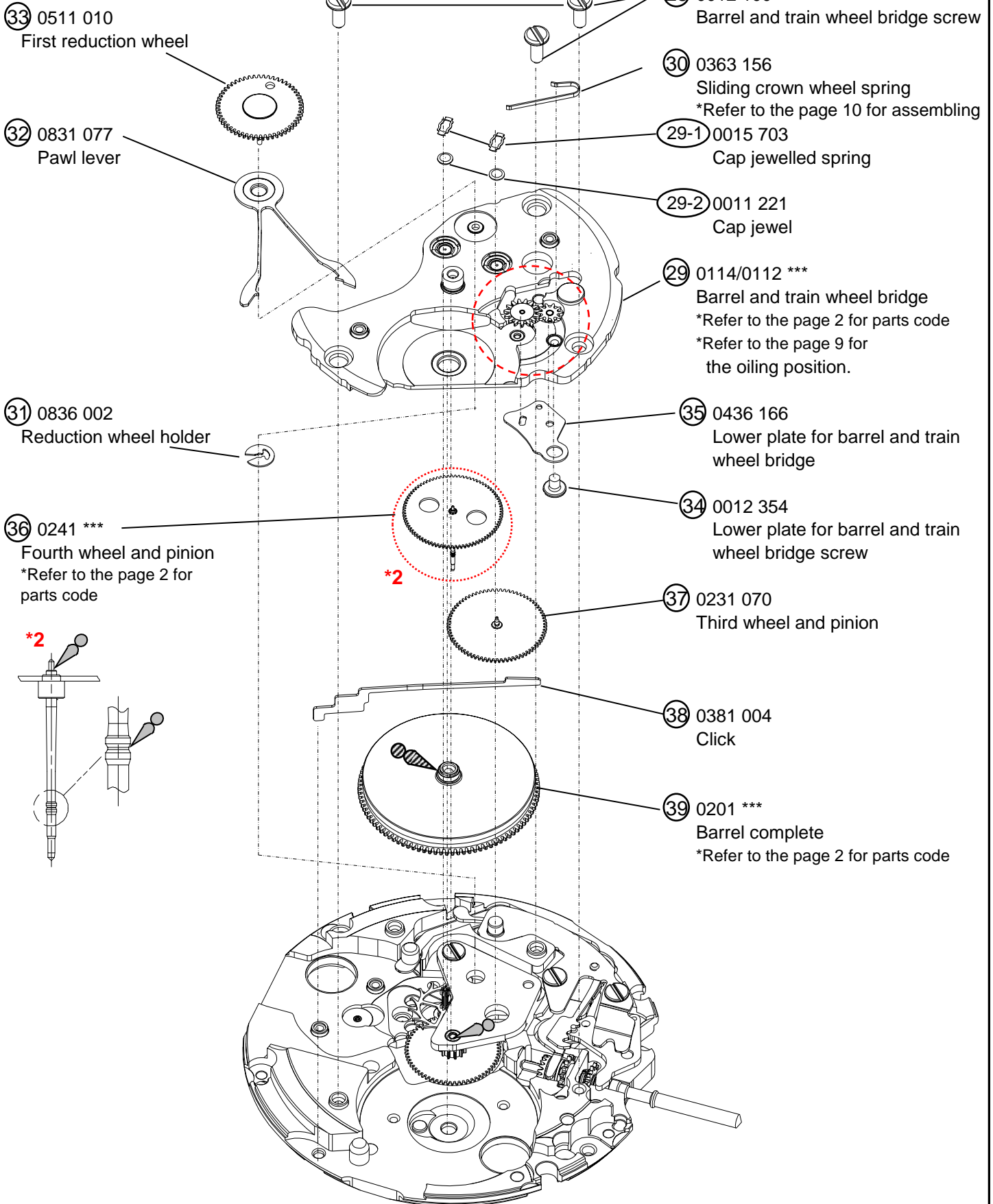
PARTS LIST

Cal.6R15A/B

Type of oil




Oil quantity mark



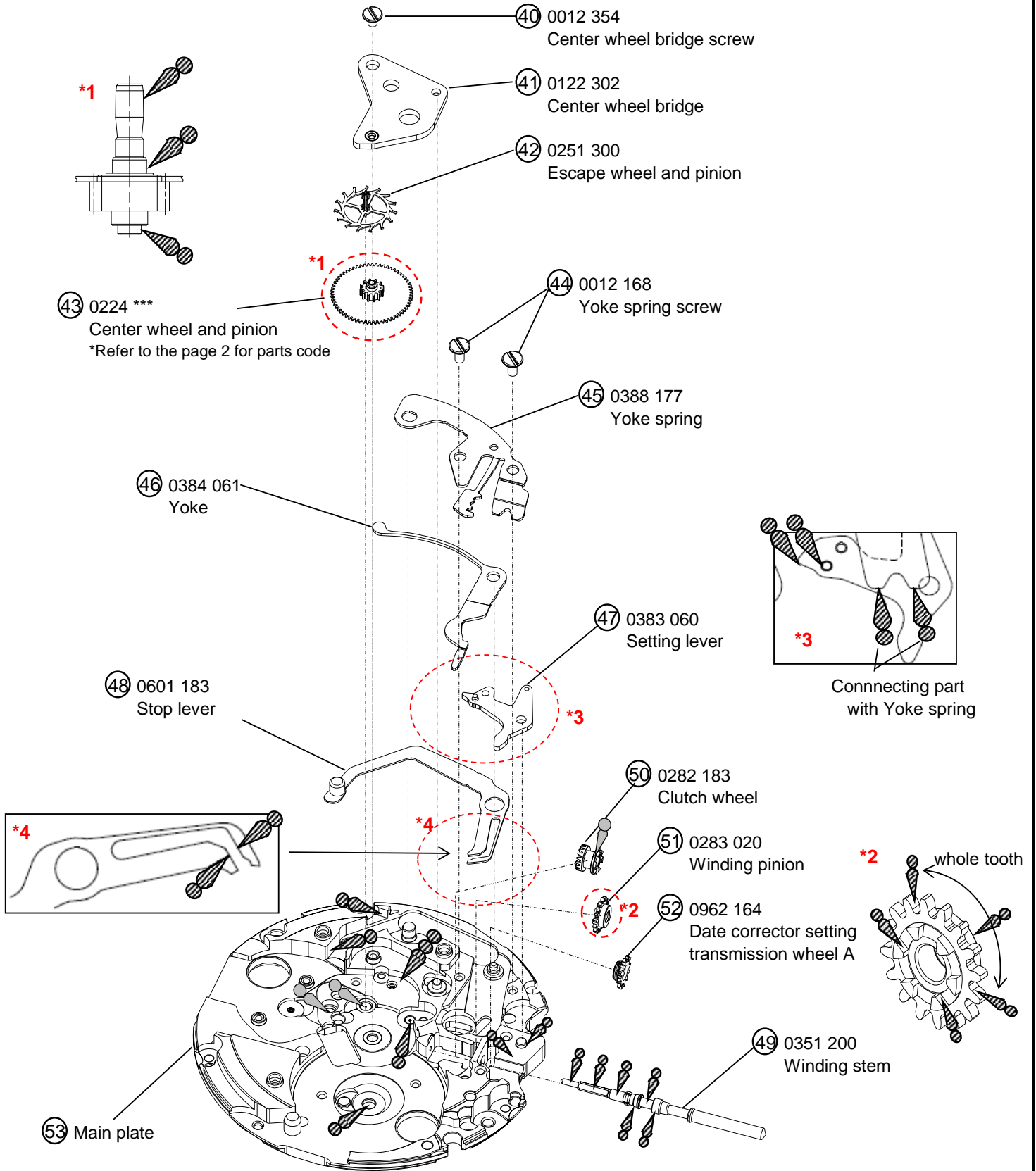
PARTS LIST

Cal.6R15A/B

Type of oil
 AO-3

 S-6
 S-4

Oil quantity mark
 NORMAL QUANTITY
 SUFFICIENT QUANTITY



SEIKO WATCH CORPORATION

PARTS LIST

Cal.6R15A/B

● CROSS-SECTION VIEW OF THE SCREW PARTS

Parts No	Name	Parts No	Name	Parts No	Name
0012 080 (6R15A) 0012 919 (6R15B)	②① Ratchet wheel screw	0016 705	③ Date dial guard screw B	0012 354	④① Center wheel bridge screw
		0012 100	Barrel and train wheel bridge screw (x3) ②② Balance bridge screw		① Date dial guard screw A (x3)
0012 168	④④ Yoke spring screw (x2)				⑥ Guard for date corrector setting transmission wheel screw (x2)
				②⑤ Pallet bridge screw (x2)	
				③④ Lower plate for barrel and train wheel bridge screw	
				①⑦ Automatic train bridge screw (x2)	

● LOCATION OF THE JEWELS

	Upper		Lower	
	Hole Jewel	Cap Jewel	Hole Jewel	Cap Jewel
Center wheel & pinion	○		○	
Fourth wheel & pinion	○			
Third wheel & pinion	○	○	○	
Escape wheel & pinion	○	○	○	
Pallet fork	○		○	
Balance sprinb	○	○	○	○
Crown wheel	○			
First reduction wheel	○		○	
Second reduction wheel	○		○	
Entry pallet jewel			○	
Exit pallet jewel			○	
Roller jewel			○	
Total			23 jewels	

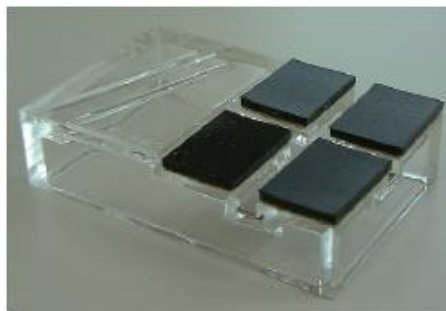
Remarks

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

- Holding ring for dial
- Date indicator
- Winding stem

- 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

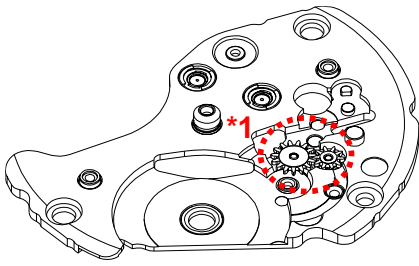


S-4

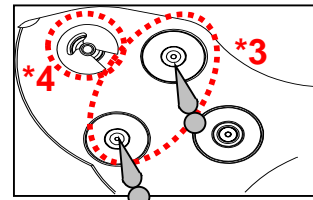
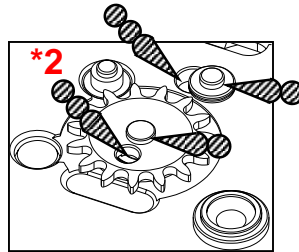
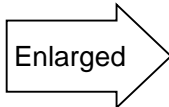
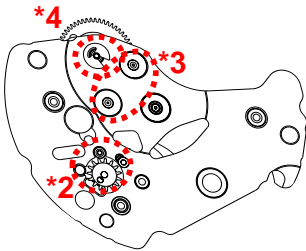
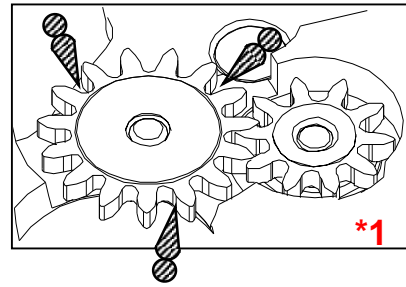
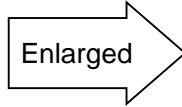


● **Barrel and train bridge**

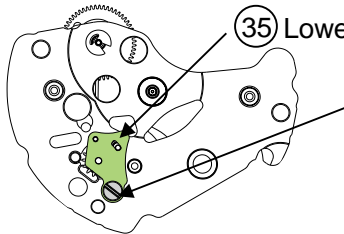
②⑨ Barrel and train wheel bridge jewel frame



Back side



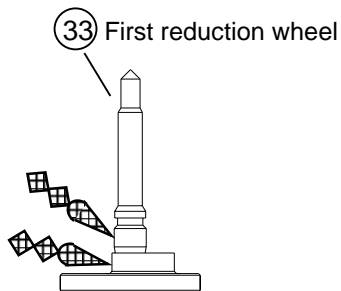
***2** After lubricating, set lower plate for barrel and train wheel bridge & screw



③⑤ Lower plate for barrel and train wheel bridge

③④ Lower plate for barrel and train wheel bridge screw

***4** After lubricating, set First reduction wheel, Pawl lever & Reduction wheel holder

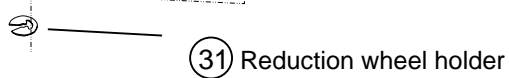
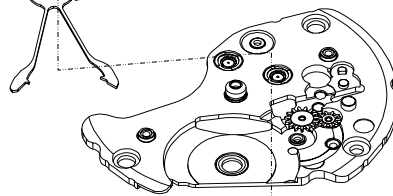


③③ First reduction wheel



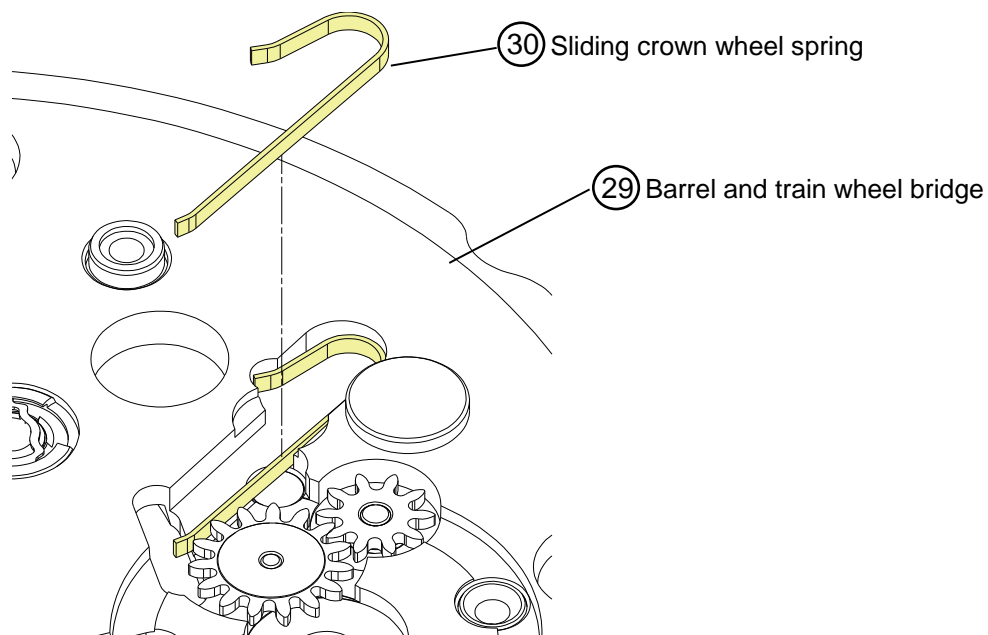
③③ First reduction wheel

③② Pawl lever



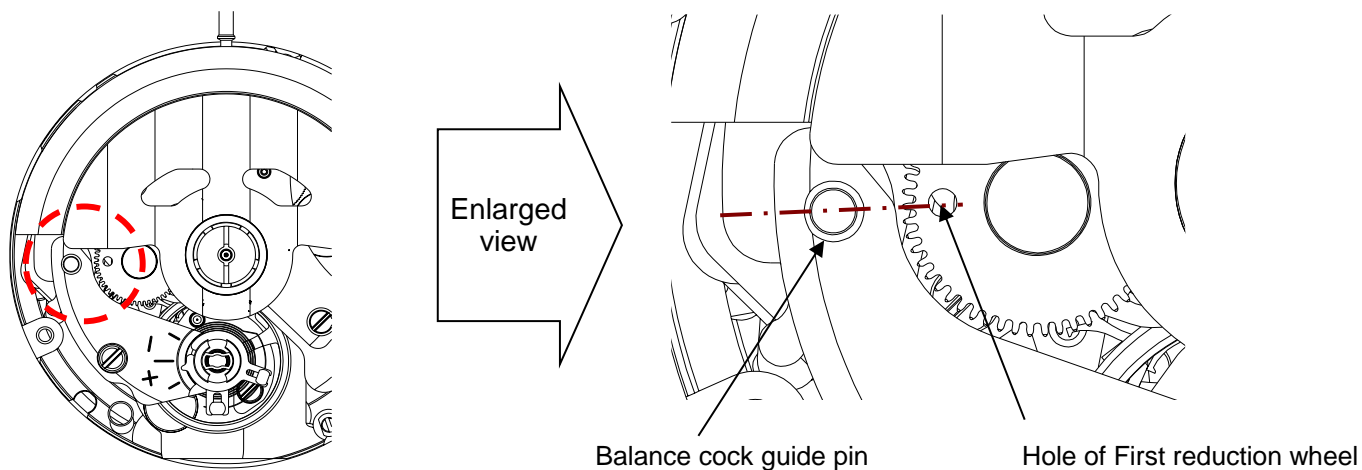
③① Reduction wheel holder

● Sliding crown wheel spring



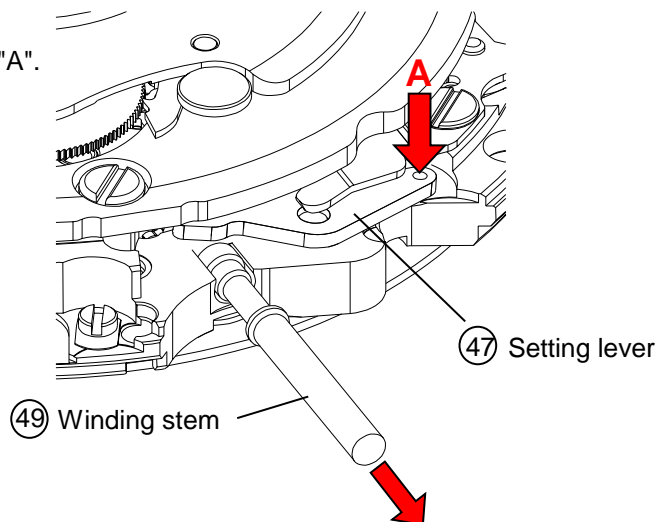
● Oscillating weight

Rotate the First reduction wheel manually until its hole aligns with the guide pin for Balance cock (gilt dot)
Then, set the Oscillating weight vertically at the stem side, and tighten the oscillating weight screw.



● How to remove the winding stem

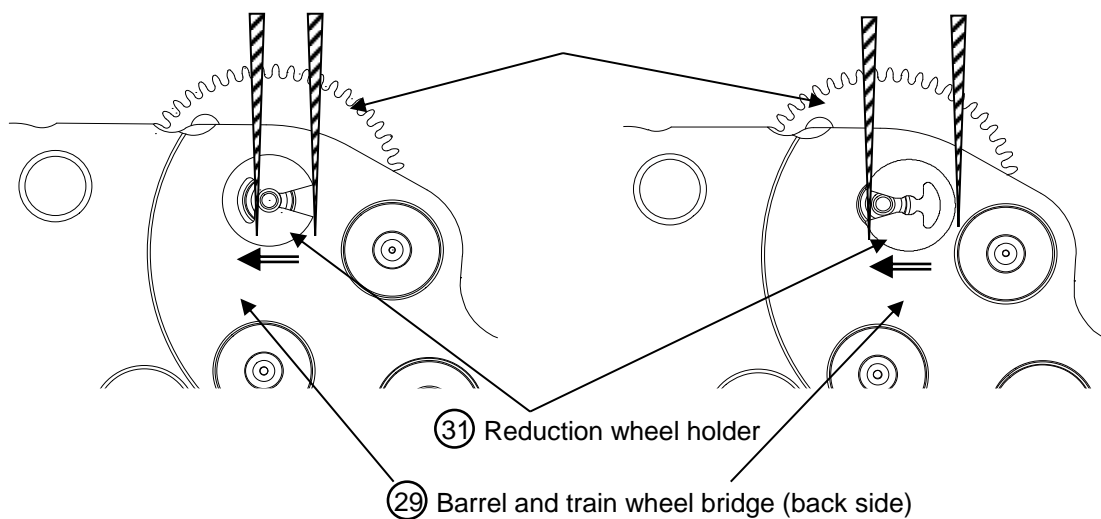
- 1) Set the winding stem to normal position.
- 2) Pull out the winding stem, while pushing "A".



● Disassembling/Reassembling of the First reduction wheel

<< Disassembling >>

<< Assembling >>

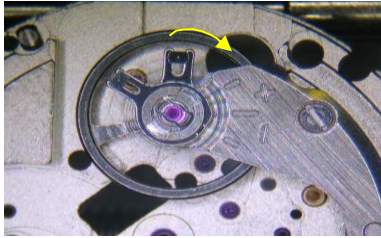


● How to remove and install the Balance complete with stud

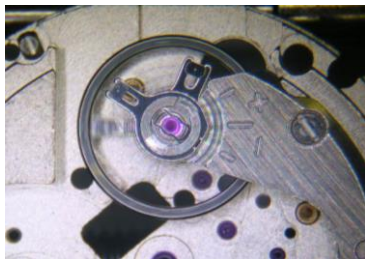
How to remove

1. Initial phase

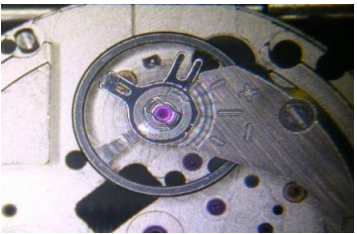
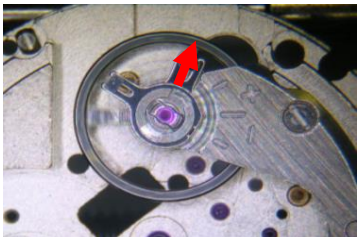
Move the stud support toward the arrow marked direction until it touches the balance cock.



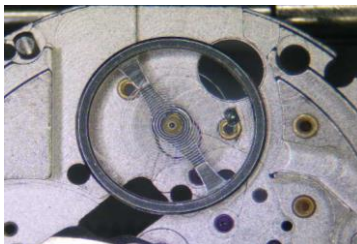
2. Make sure that the outer coil is not removed from the regulator arm.



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.



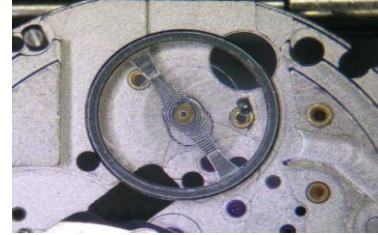
4. Unscrew the Balance cock screw and remove the Balance cock.



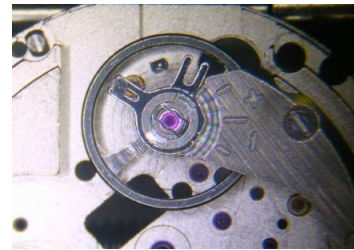
How to install

1. Initial phase

Set a new balance complete with stud to the main plate.



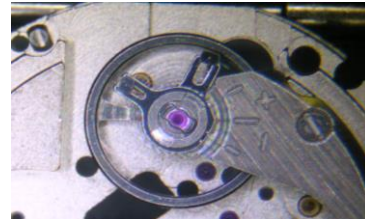
2. Set the Balance cock and tighten the balance cock screw.



3. Temporarily set the stud to the stud support.

Make sure that the balance spring passes outside the regulator pin.

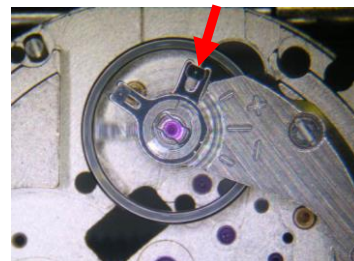
* Be careful not to damage the balance spring.



4. Using sturdy tweezers, set the stud to the stud support and press it down.

Make sure that the outer coil passes through the regulator pin slot.

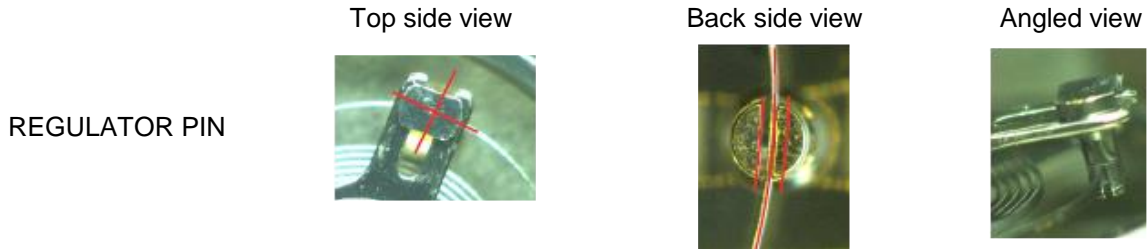
* Be careful not to damage the balance spring.



● 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.

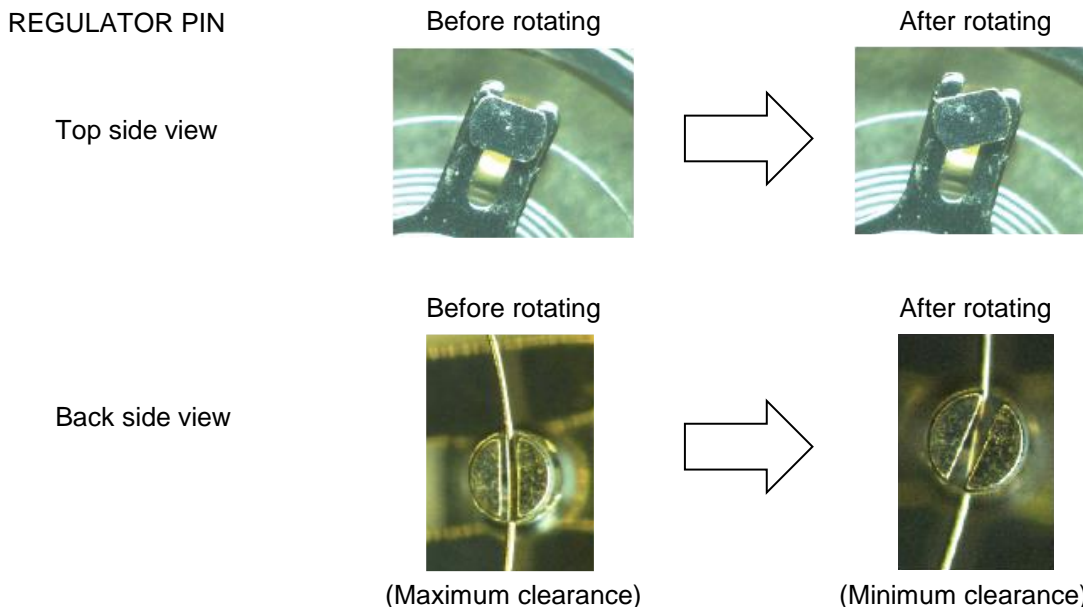
- 1) Make sure that the Regulator pin is aligned in a vertical position to the Regulator and the balance-spring passes parallel through the slot of the Regulator pin before fine-tuning the STUD and the Regulator pin.



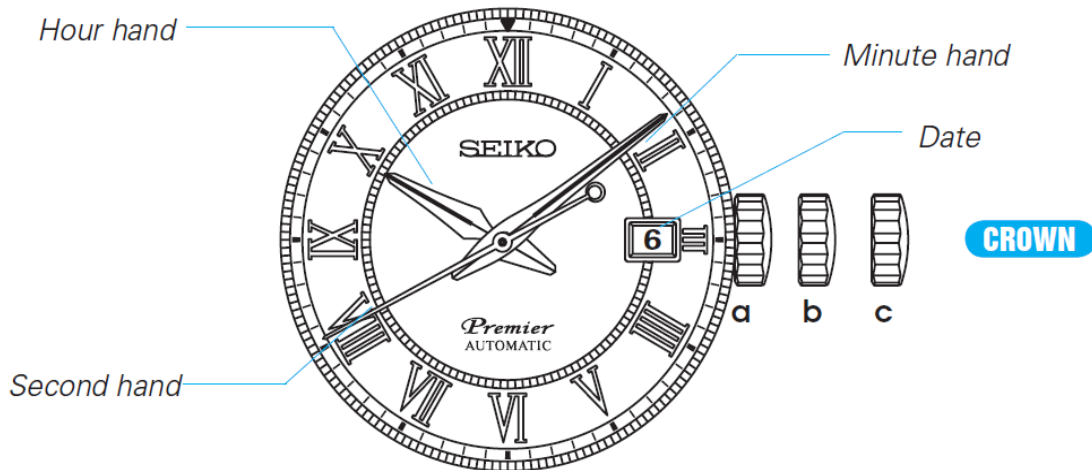
- 2) Rotate the STUD in order to align the position of the balance-spring passes through the center of the slot of the Regulator pin.



- 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.



【6R15 operation manual】



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

Marking on the case back	Test method	Applied pressure
WATER RESISTANT(WATER RESIST)	Air leak test	3 BAR
WATER RESIST 5BAR	Water pressure test	5 BAR
WATER RESIST 10BAR		10 BAR
WATER RESIST 15BAR		15 BAR
WATER RESIST 20BAR	Condensation test	20 BAR
SCUBA DIVERIS (AIR DIVERIS) 150 m	Condensation test	$18.75 \text{ BAR} = 150(\text{m}) \times 0.125$
SCUBA DIVERIS (AIR DIVERIS)200 m		$25 \text{ BAR} = 200(\text{m}) \times 0.125$
He-GAS DIVERIS 300 m	Water pressure test	$37.5 \text{ BAR} = 300(\text{m}) \times 0.125$
He-GAS DIVERIS 600 m		$75 \text{ BAR} = 600(\text{m}) \times 0.125$
He-GAS DIVERIS1000m	Condensation test	$125 \text{ BAR} = 1000(\text{m}) \times 0.125$

● 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.

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

● 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 lose/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.