TIME MODULE

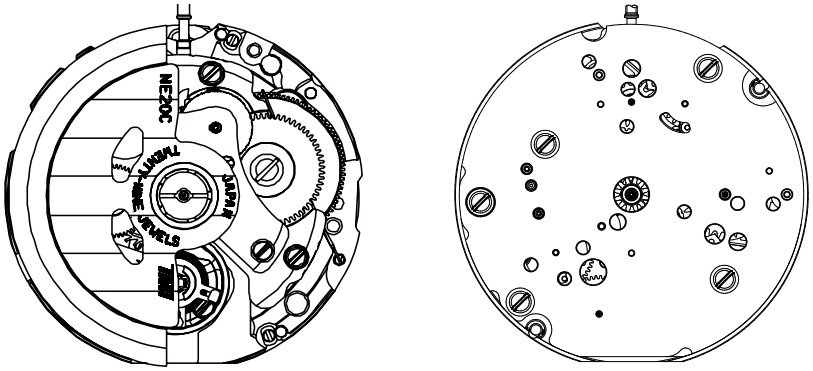
31032022

TECHNICAL GUIDE
&
PARTS CATALOGUE

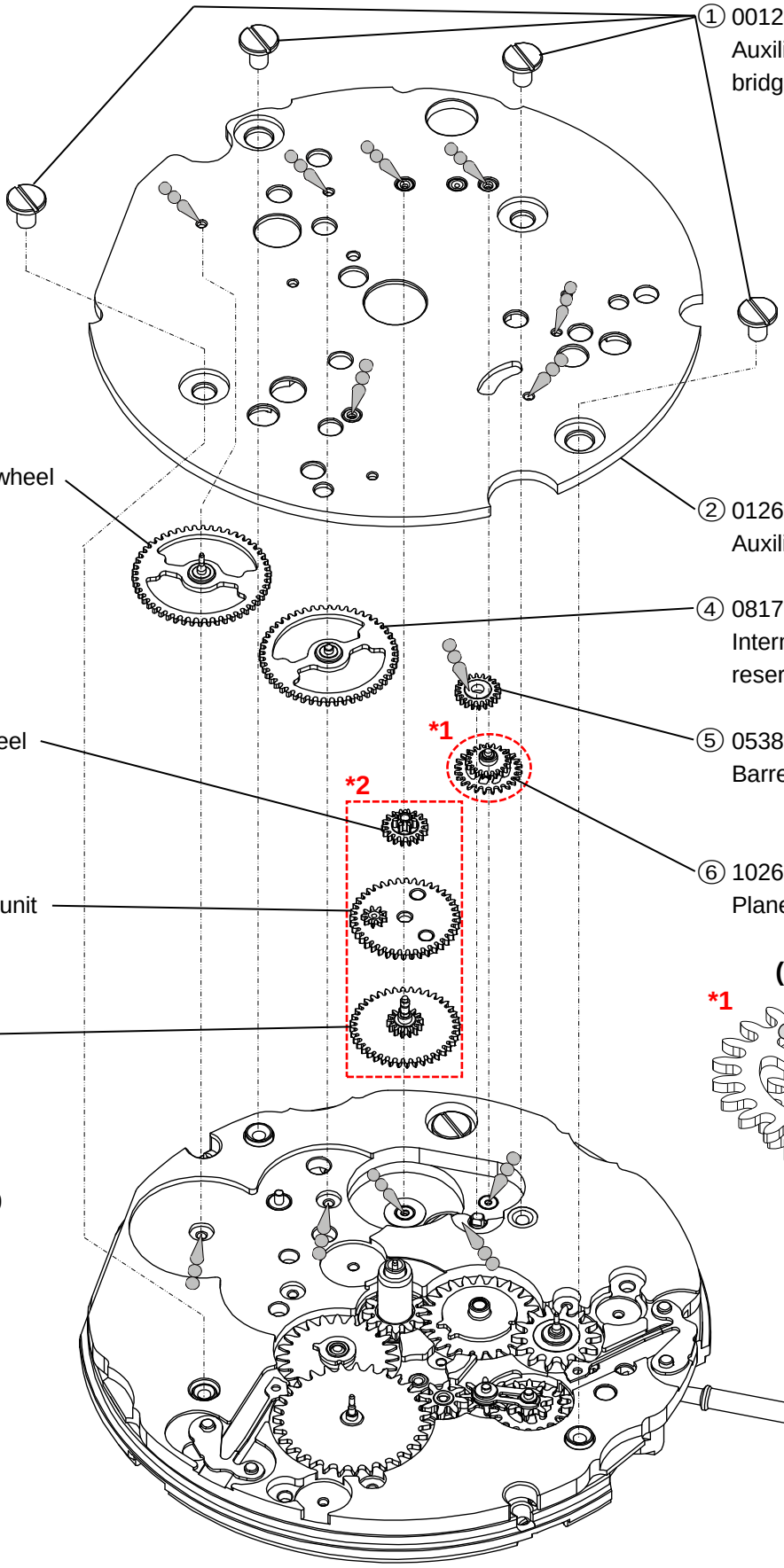
Cal.NE20C

AUTOMATIC MECHANICAL

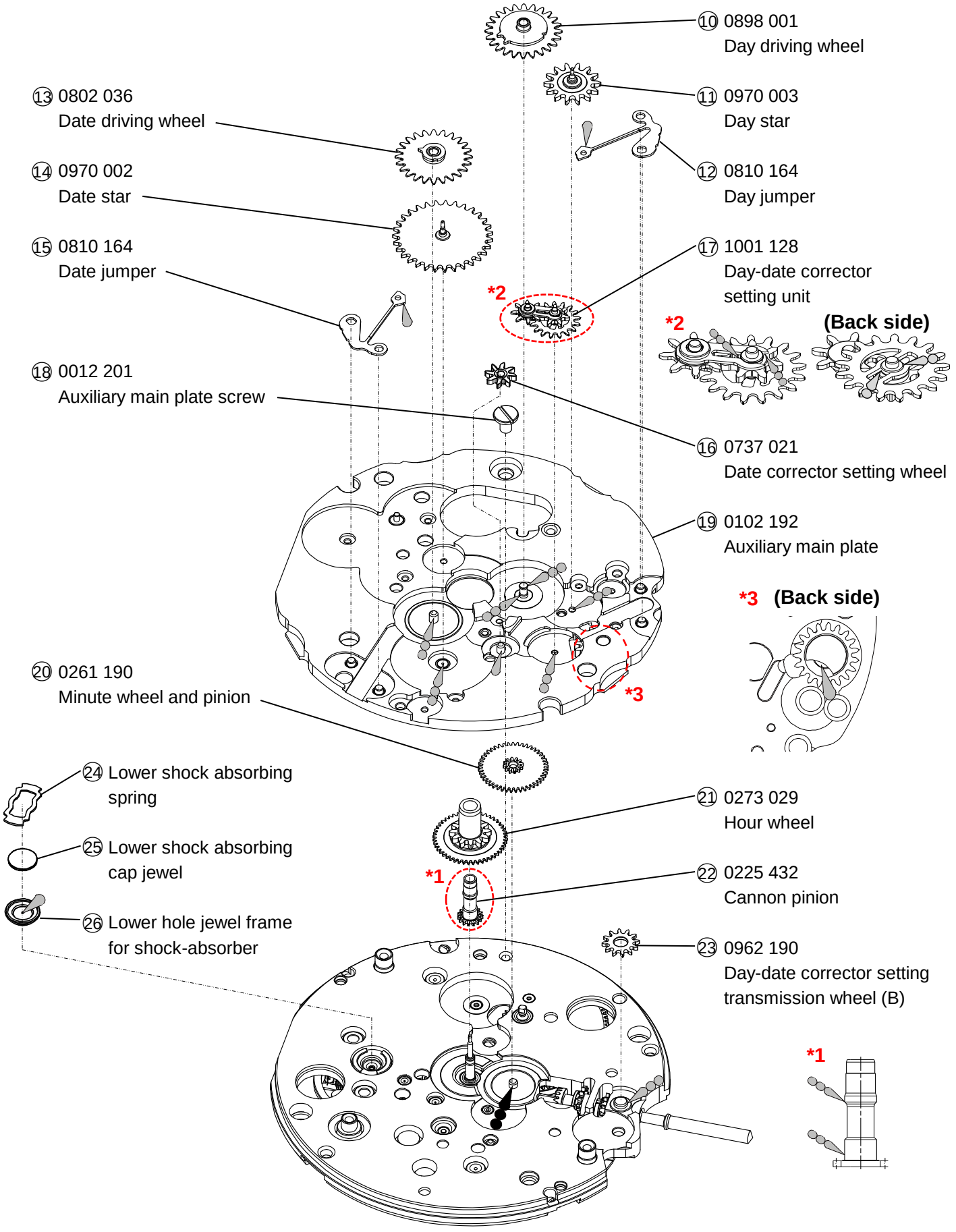
SPECIFICATION

Item \ Cal. No.		NE20C	
Movement			
Movement size	Outside diameter	Φ27.4 mm	
	Casing diameter	Φ27.0 mm	
	Total height	6.15 mm	
Time indication		3 Hands (Hour, Minute, Second) Day-date calendar hands Power reserve hand	
Basic function		Manual winding Automatic winding with ball bearing Stop-second device Quick day-date correction	
Frequency		28,800 vibrations per hour	
Accuracy	Static accuracy	- 15 ~ + 25 seconds per day * Measurement should be done within 10 ~ 60 minutes after fully wound up. * All measurements are made without the calendar in function.	
	Measurement position	Direction of 3 positions (1) Dial up (2) 9 o'clock up (3) 6 o'clock up	
	Lift angle	52 deg	
	Measurement time	20 seconds * Equipment to be used : Witschi WATCH EXPERT	
	Posture difference	Difference is under 45 seconds within maximum value and minimum value. * Measurement should be done within 10 ~ 60 minutes after fully wound up. * Direction of 4 positions. (1) 12 o'clock up (2) 9 o'clock up (3) 6 o'clock up (4) 3 o'clock up	
	Isochronisms (24h-0h)	- 10 ~ + 20 seconds per day * Direction position : Dial up * Difference of static accuracy of 24 h and 0 h	
Duration time		More than 45 hours (Mainspring after fully wound up) * Posture to confirmation : Dial up	
Winding the mainspring		<< Movement >> ・Fully wound up by turning the crown minimum 55 times. ・Fully wound up by turning the ratchet wheel screw 8 times. << Complete Watch >> A winding machine is needed to wind up the mainspring. *Full wind up conditions (Reference information) (1) Rotary speed : 30 rpm (2) Operating time : 60 minutes	
Jewels		29 jewels	
Crown position		Counterclockwise	Clockwise
	Normal position	Free	Manual winding
	First click	Date setting	Day setting
	Second click	Time setting	Time setting

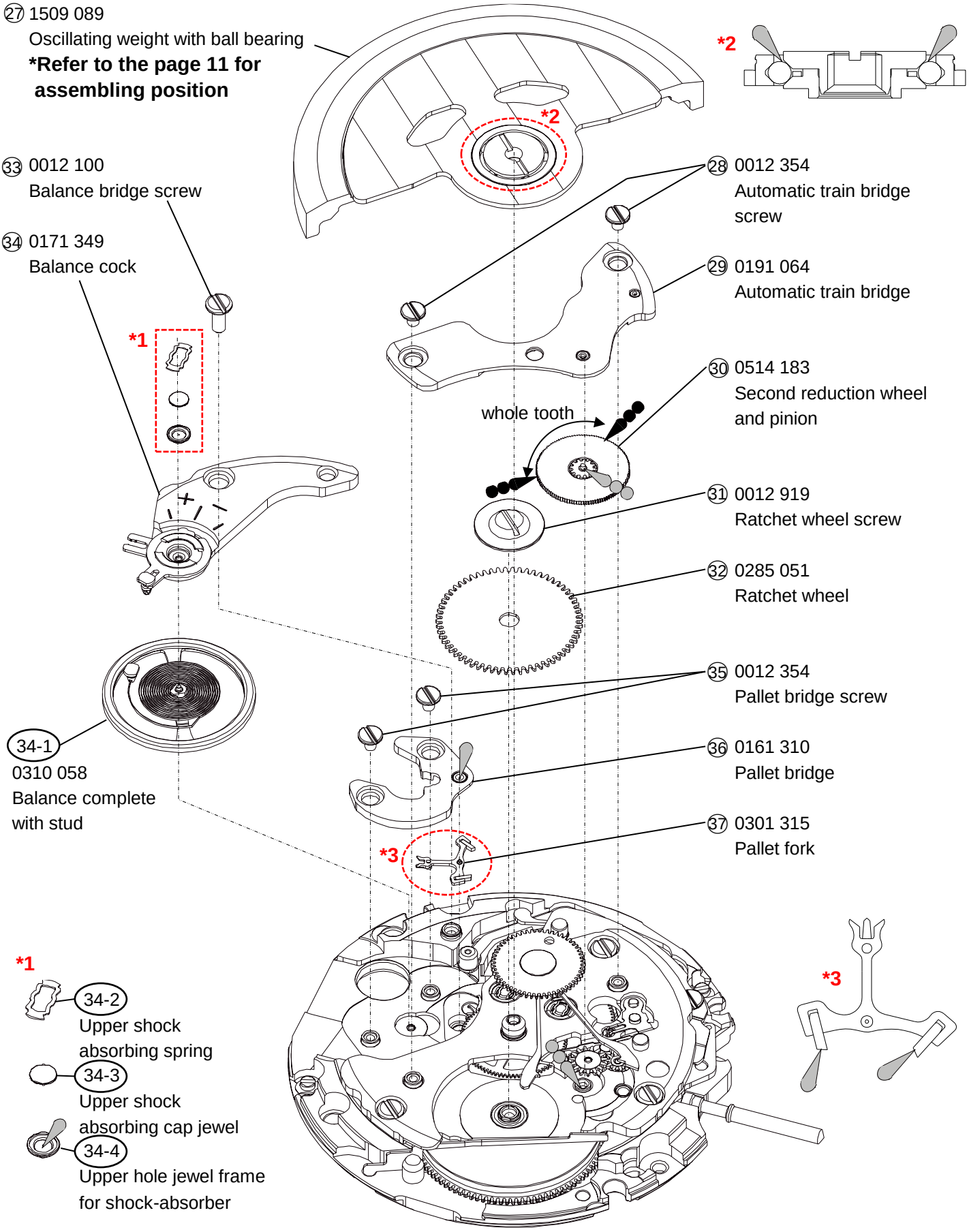
Disassembling procedures Figs. ① → ⑫ Reassembling procedures Figs. ⑫ → ①	**Type of oil** Moebius 9010 A9a (S-4) A9a (S-6) A8a (S-6) **Oil quantity mark** Normal quantity Sufficient quantity



Disassembling procedures Figs. ① → ⑥② Reassembling procedures Figs. ⑥② → ①	**Type of oil** Moebius 9010 A9a (S-4) A9a (S-6) A8a (S-6) **Oil quantity mark** Normal quantity Sufficient quantity



Disassembling procedures Figs. ① → ⑥② Reassembling procedures Figs. ⑥② → ①	**Type of oil** Moebius 9010 A9a (S-4) A9a (S-6) A8a (S-6) **Oil quantity mark** Normal quantity Sufficient quantity



27 1509 089
Oscillating weight with ball bearing
***Refer to the page 11 for assembling position**

33 0012 100
Balance bridge screw

34 0171 349
Balance cock

28 0012 354
Automatic train bridge screw

29 0191 064
Automatic train bridge

30 0514 183
Second reduction wheel and pinion

31 0012 919
Ratchet wheel screw

32 0285 051
Ratchet wheel

35 0012 354
Pallet bridge screw

36 0161 310
Pallet bridge

37 0301 315
Pallet fork

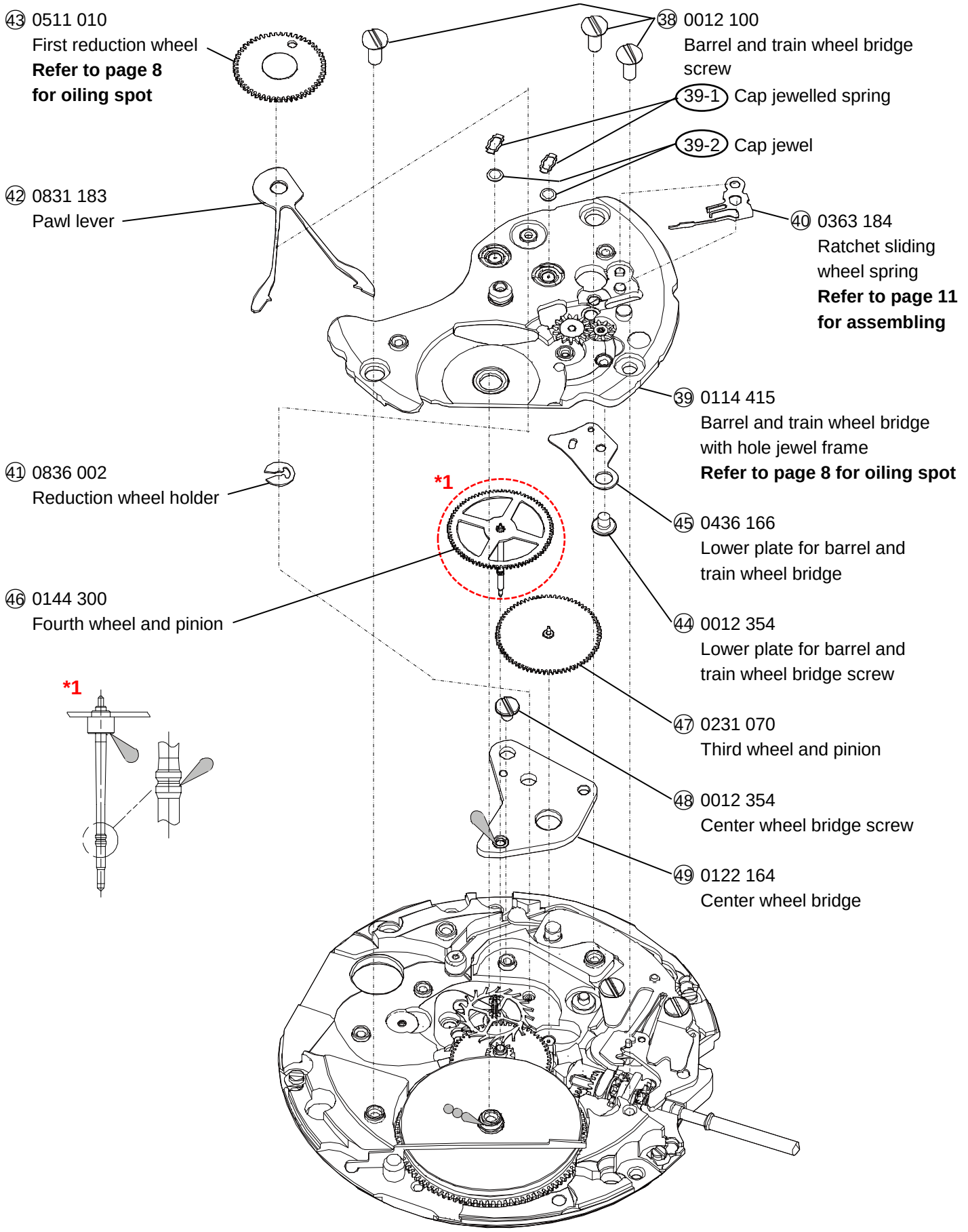
34-1
0310 058
Balance complete with stud

*1
34-2
Upper shock absorbing spring
34-3
Upper shock absorbing cap jewel
34-4
Upper hole jewel frame for shock-absorber

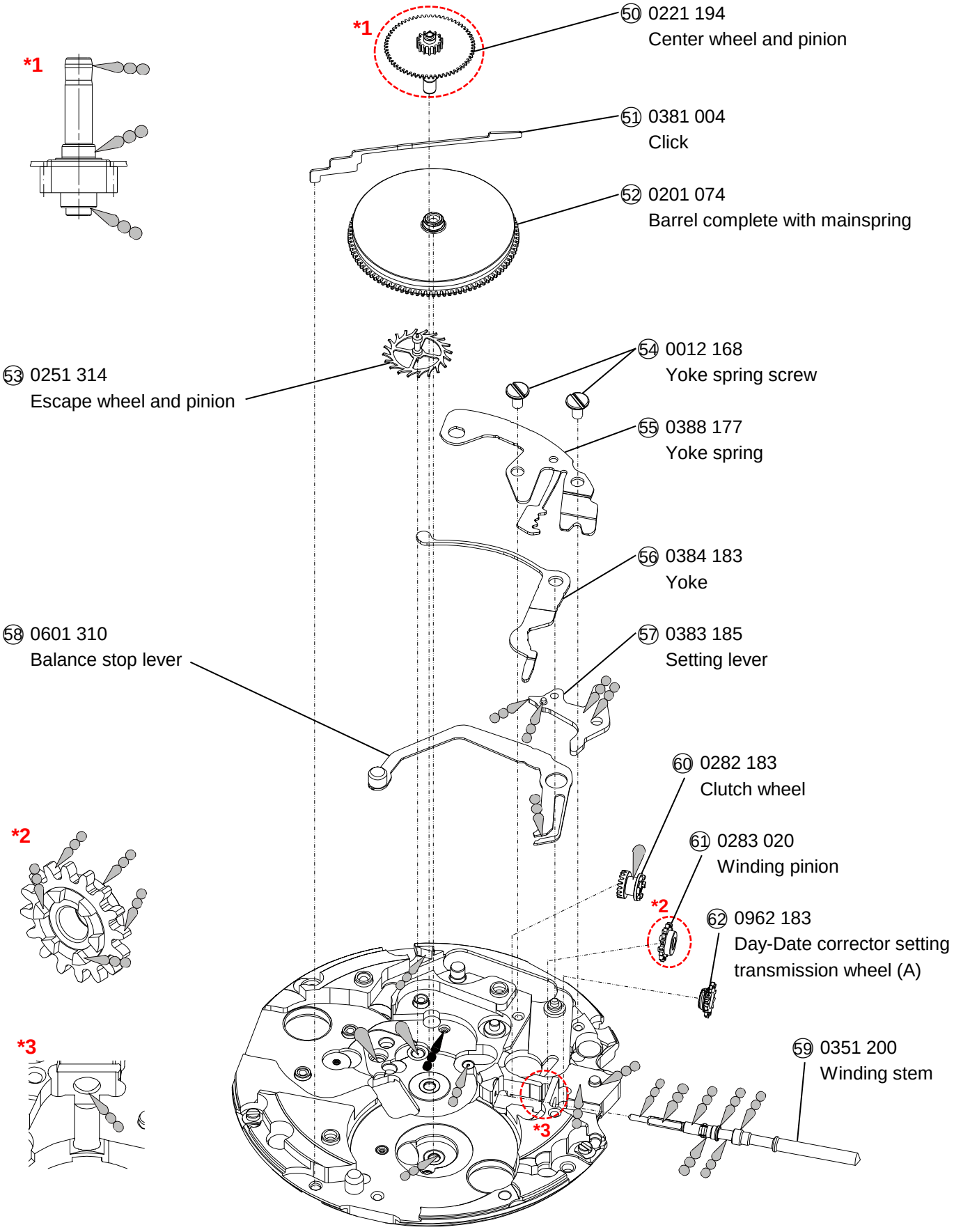
Disassembling procedures Figs.
① → ⑥②
Reassembling procedures Figs.
⑥② → ①

Type of oil
Moebius 9010
A9a (S-4)
A9a (S-6)
A8a (S-6)

Oil quantity mark
Normal quantity
Sufficient quantity

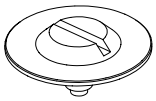
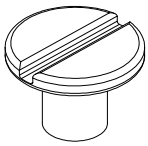
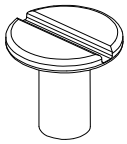
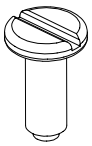


Disassembling procedures Figs. ① → ⑥② Reassembling procedures Figs. ⑥② → ①	**Type of oil** Moebius 9010 — A9a (S-6) A9a (S-4) — A8a (S-6) **Oil quantity mark** Normal quantity — Sufficient quantity



Remarks

● **List of screws**

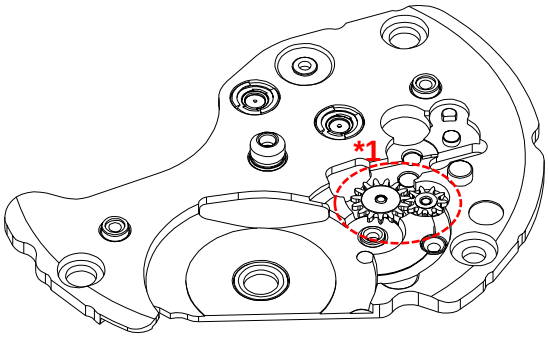
Parts No	Name	Parts No	Name
0012 919 	㉛ Ratchet wheel screw	**0012 354** 	㊽ Center wheel bridge screw
			㉟ Pallet bridge screw (×2)
0012 168 	㊹ Yoke spring screw (×2)		㊹ Lower plate for barrel and train wheel bridge screw
			㉘ Automatic train bridge screw (×2)
0012 100 	㊳ Barrel and train wheel bridge screw (×3)	**0012 201** 	⑱ Auxiliary main plate screw
	㉝ Balance bridge screw		① Auxiliary train wheel bridge screw (×4)

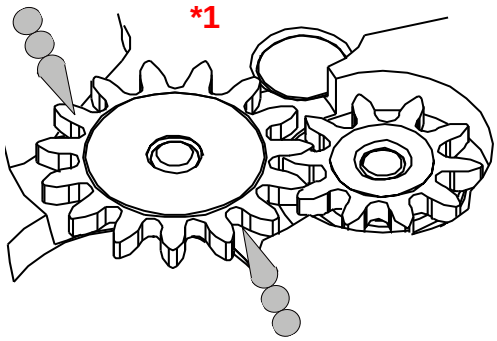
<u>*All parts code are subject to change without notice.</u>

Type of oil	
Moebius 9010	A9a (S-6)
A9a (S-4)	A8a (S-6)
Oil quantity mark	
Normal quantity	Sufficient quantity

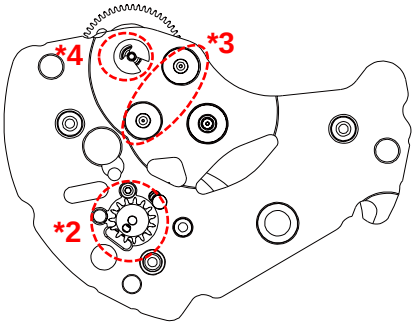
1.Oiling spot

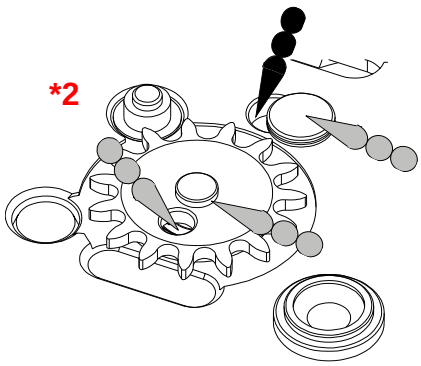
(1) ㊴ Barrel and train wheel bridge with hole jewel frame

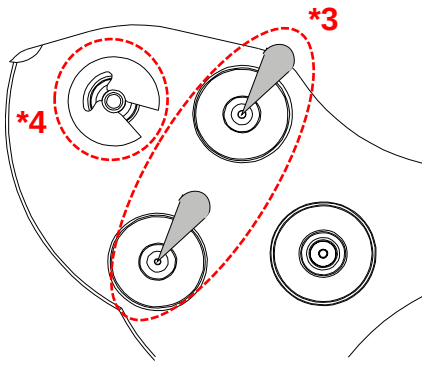




Barrel and train wheel bridge with hole jewel frame (back side)

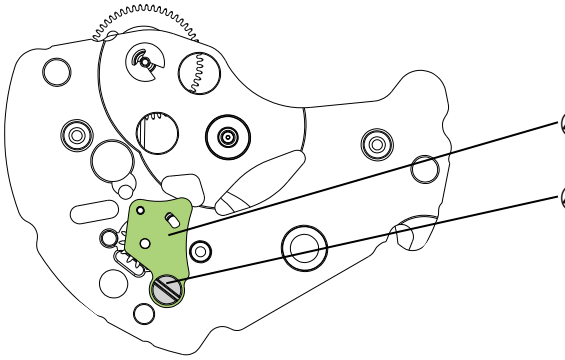






Note

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

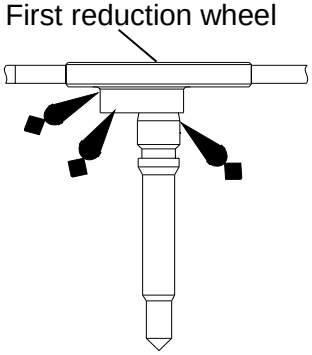


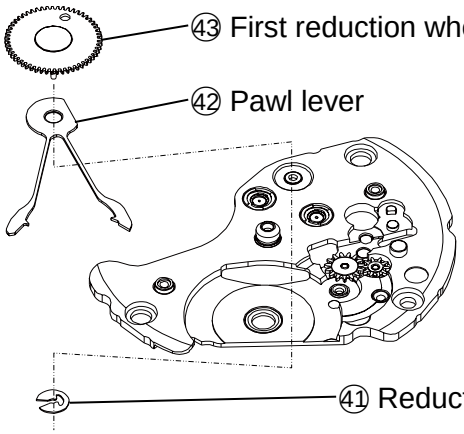
㊺ Lower plate for barrel and train wheel bridge

㊹ Lower plate for barrel and train wheel bridge screw

***4** After oiling, set <u>first reduction wheel</u> & <u>pawl lever</u> & <u>reduction wheel holder.</u>

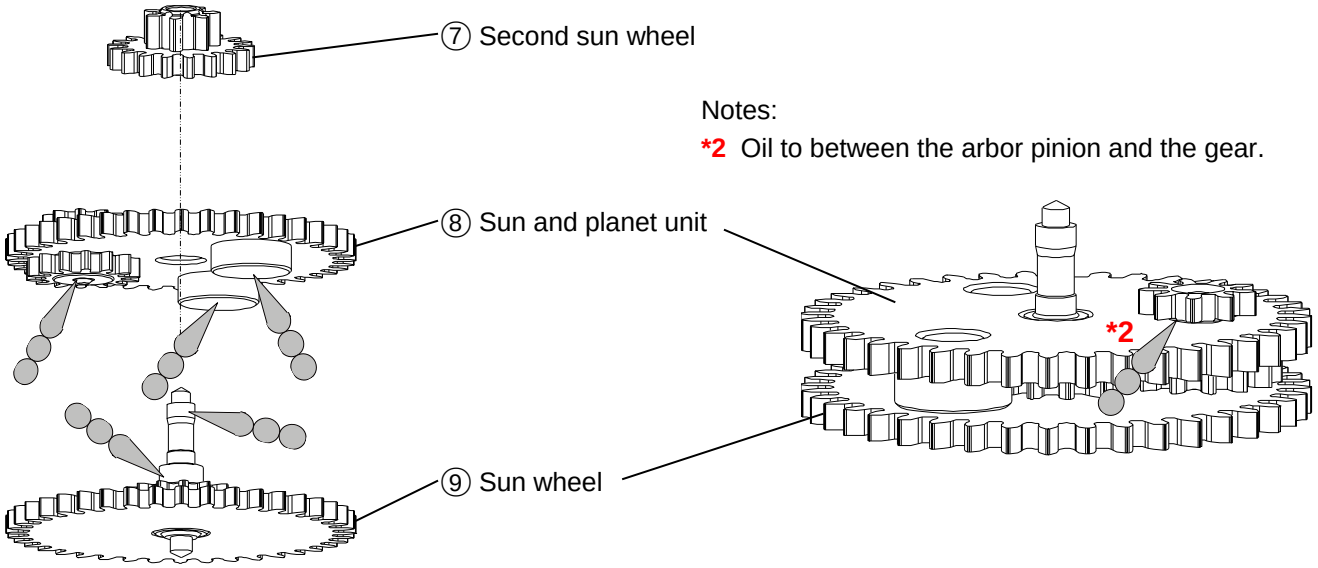
㊸ First reduction wheel





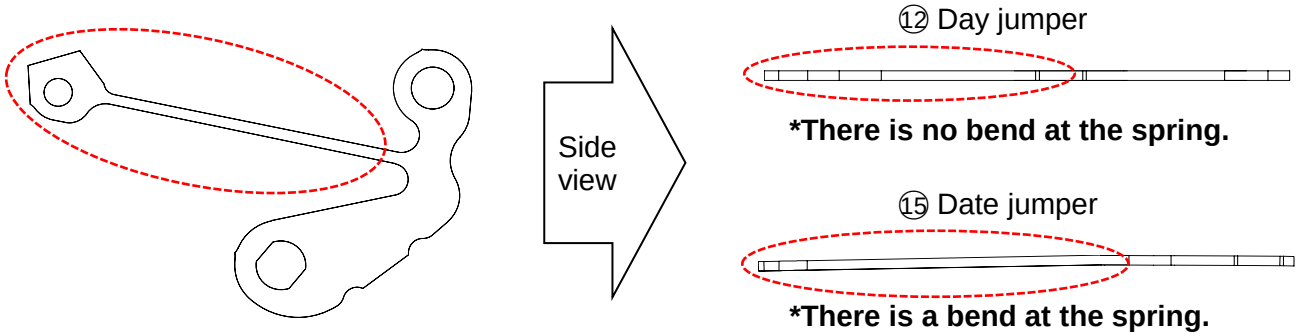
Type of oil	
Moebius 9010	A9a (S-6)
A9a (S-4)	A8a (S-6)
Oil quantity mark	
Normal quantity	Sufficient quantity

(2) Planet unit

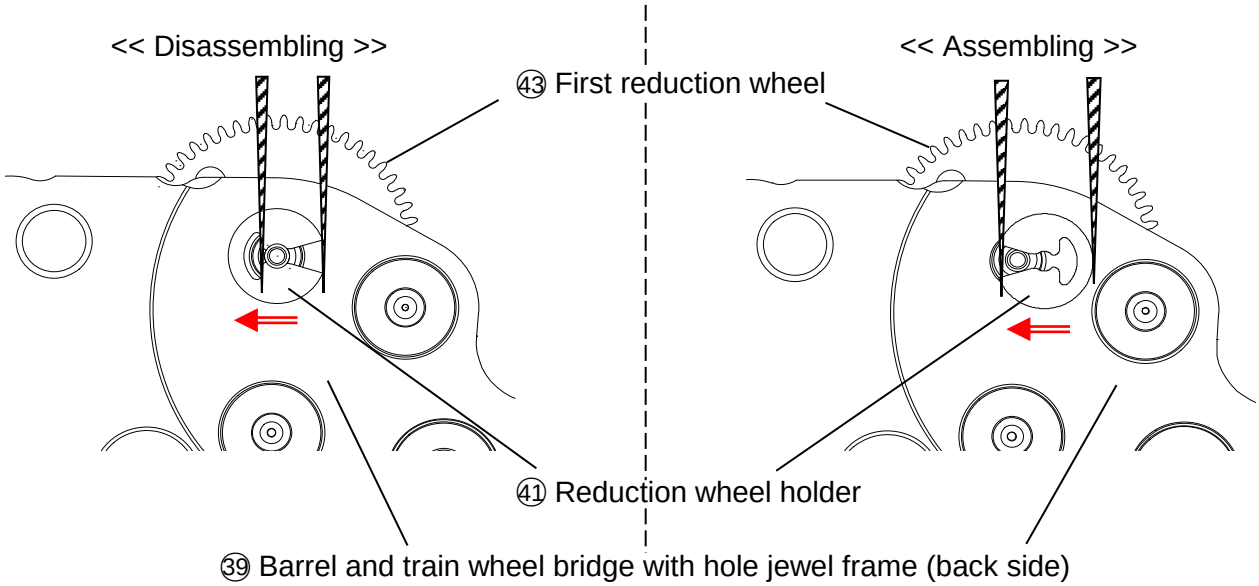


Notes:
*2 Oil to between the arbor pinion and the gear.

2.Method of identifying day jumper and date jumper



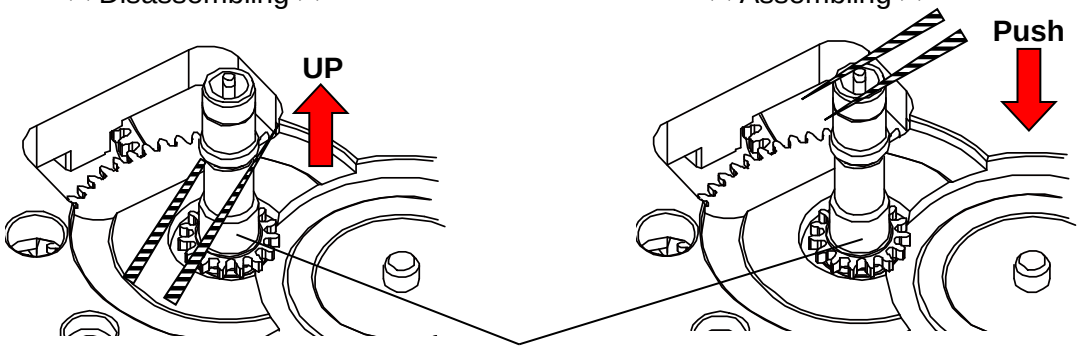
4.Disassembling / assembling of the First reduction wheel



4.Disassembling / assembling of the cannon pinion

<< Disassembling >>

<< Assembling >>

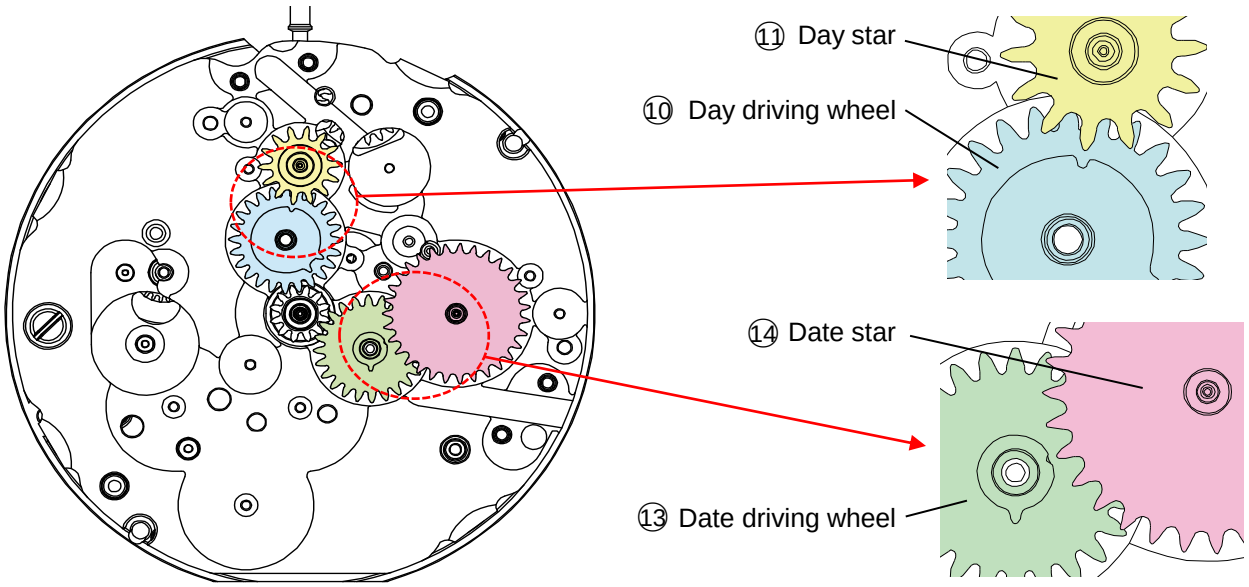


㉒ Cannon pinion

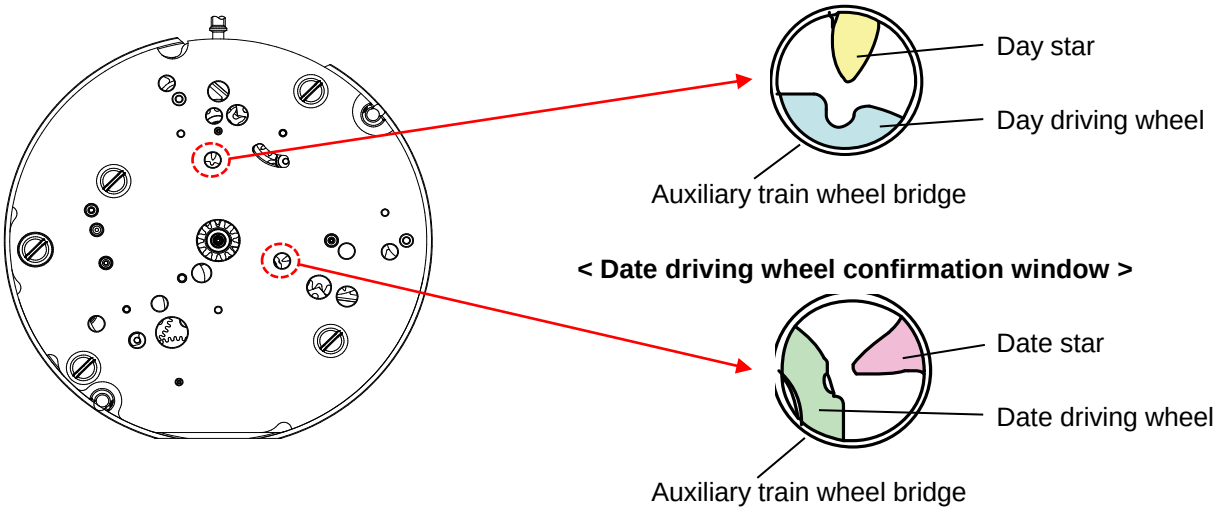
5.Setting position (Refer at the time of disassembling and reassembling)

・Date driving wheel & Day driving wheel setting position

Notes : Set a tooth of Day / Date stars toward the notch of Day / Date driving wheels.



・Position confirmation by the movement



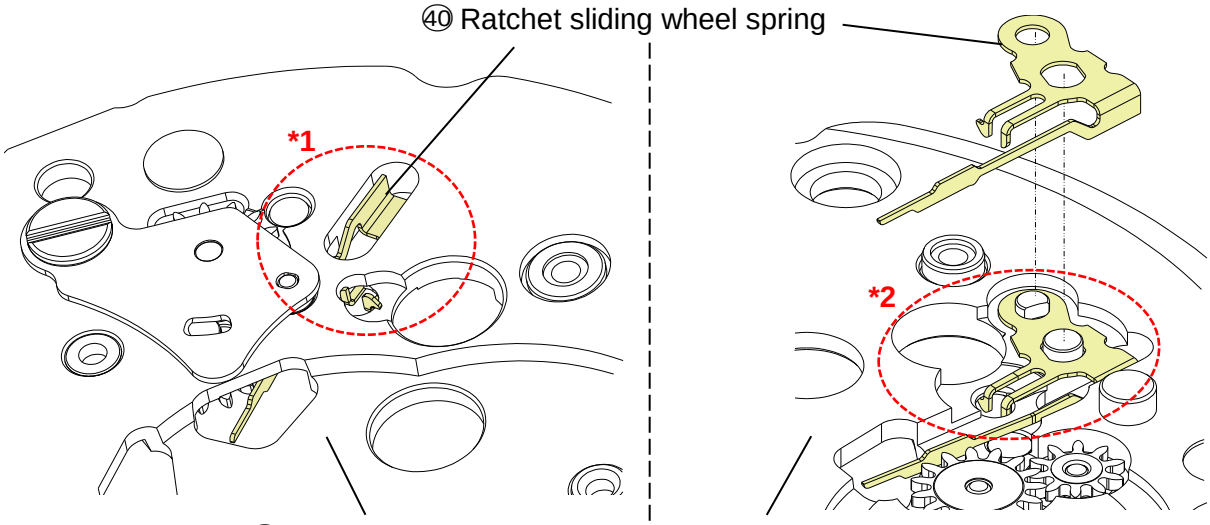
*The correct positions of Day / Date stars and Day / Date driving wheels should be confirmed from the confirmation window at the same time.

6.Disassembling / assembling of the Ratchet sliding wheel spring

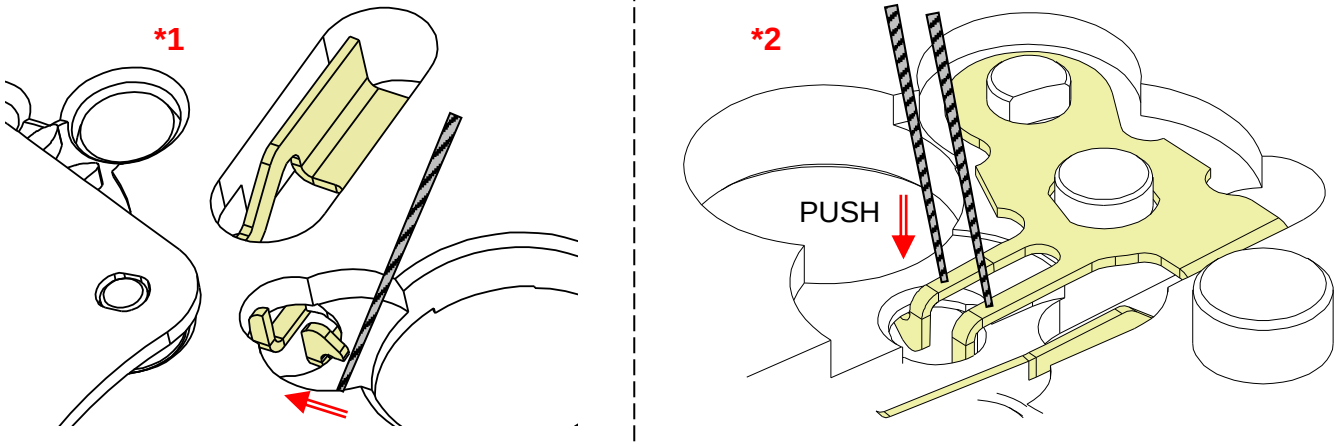
<< Disassembling >>

<< Assembling >>

㊵ Ratchet sliding wheel spring



㊴ Barrel and train wheel bridge with hole jewel frame



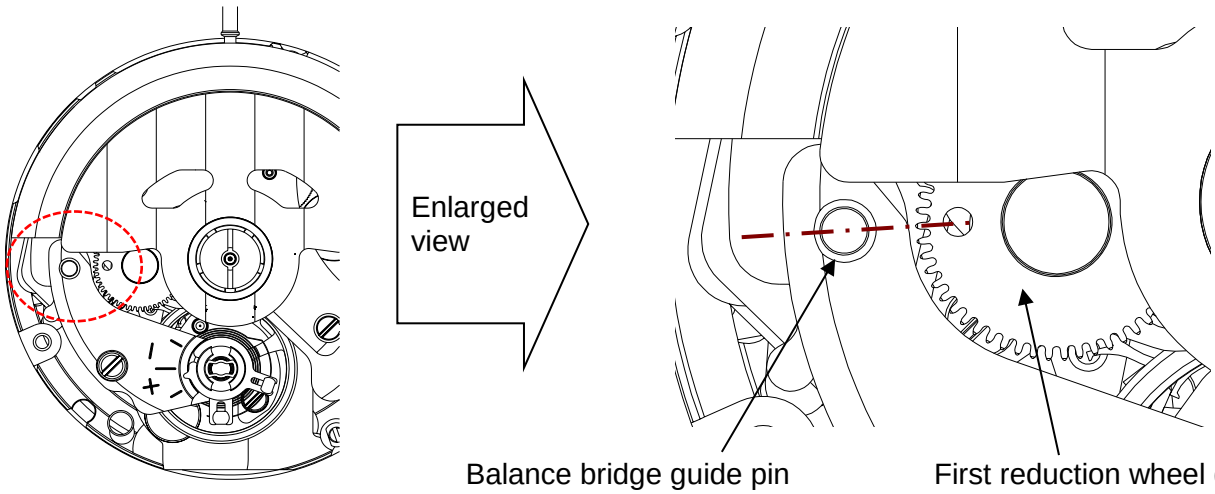
Remove the hook of the ratchet sliding wheel spring from barrel and train wheel bridge with hole jewel frame.

The hooks of ratchet sliding wheel spring are hung up on barrel and train wheel bridge with hole jewel frame.

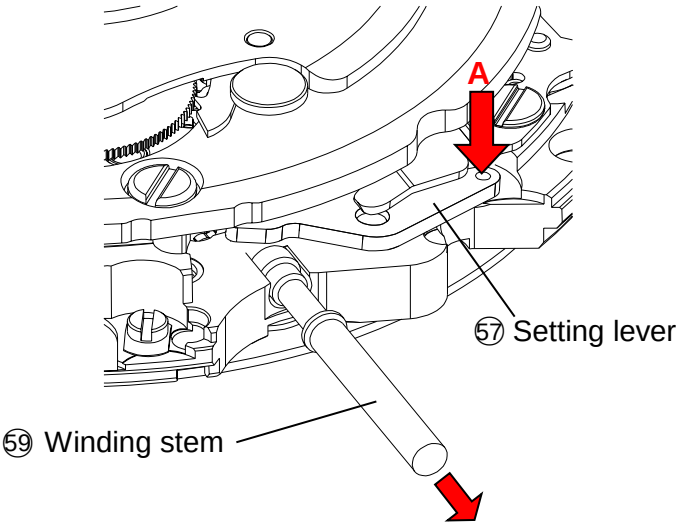
7.Setting position of oscillating weight

・Before assembling oscillating weight

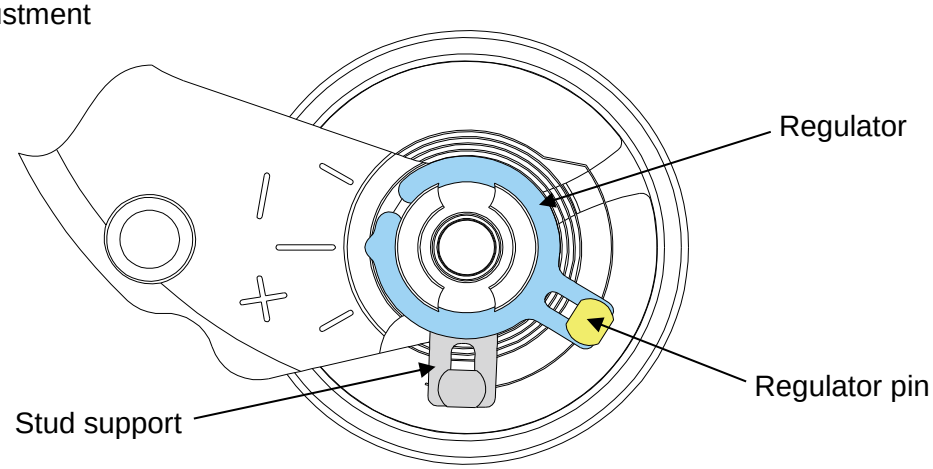
Match the center of the oscillating weight and winding stem. Set the hole of first reduction wheel gear on the imaginary line toward the balance bridge guide pin.



8.To remove the winding stem
1) Set the winding stem to normal position
2) Pull out the winding stem, while pushing "**A**"

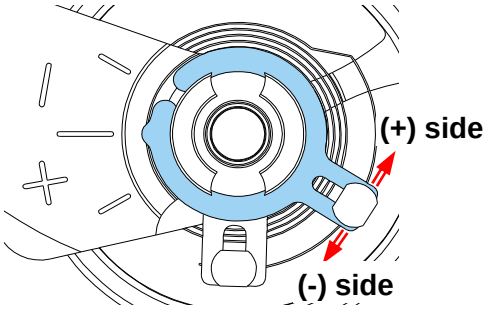


9.Accuracy adjustment

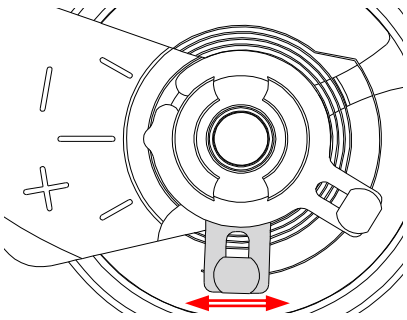


Note:

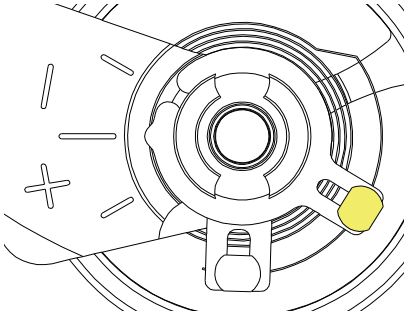
・Regulator (Time adjustment)



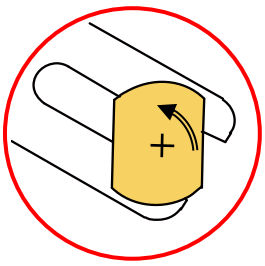
・Stud support (Beat error adjustment)



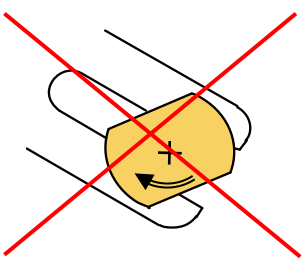
・Regulator pin (Gap adjustment of balance spring and regulator pin)



Anticlockwise rotation



No clockwise rotation



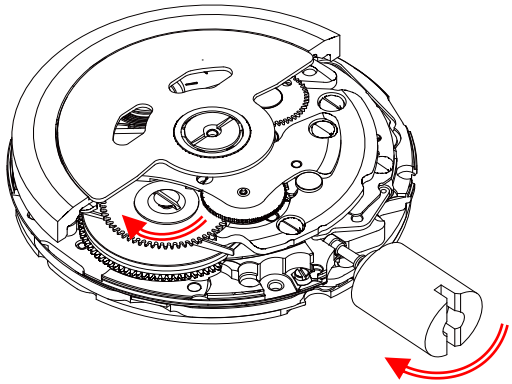
10.To wind up the mainspring

<<Movement>>

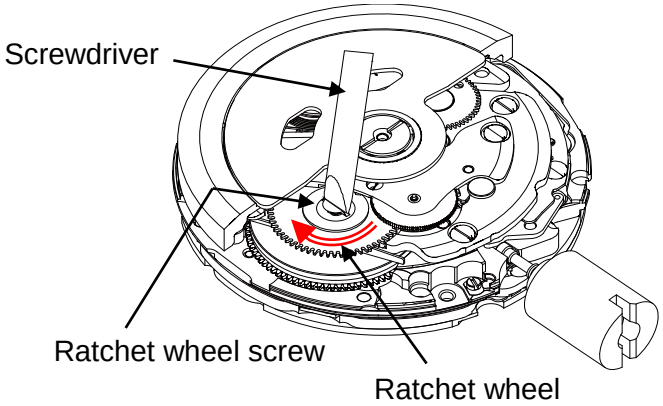
・Manual winding (Fully wound up by turning the crown minimum 55 times)

・Screwdriver winding (Fully wound up by turning the ratchet wheel screw 8 times)

[Manual winding]



[Screwdriver winding]



11.How to install hands

Place the movement directly on a flat metal plate or something similar to install the hands.

We recommend the use of movement holder to install hands.

For hands attachment, please use a special equipment.

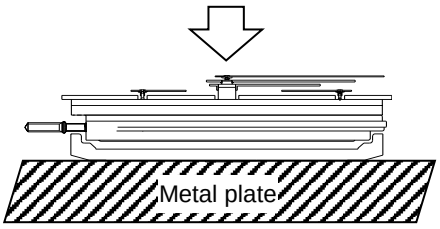
When the movement receives a strong shock, it may be damaged.

<<Note : Power reserve hand setting>>

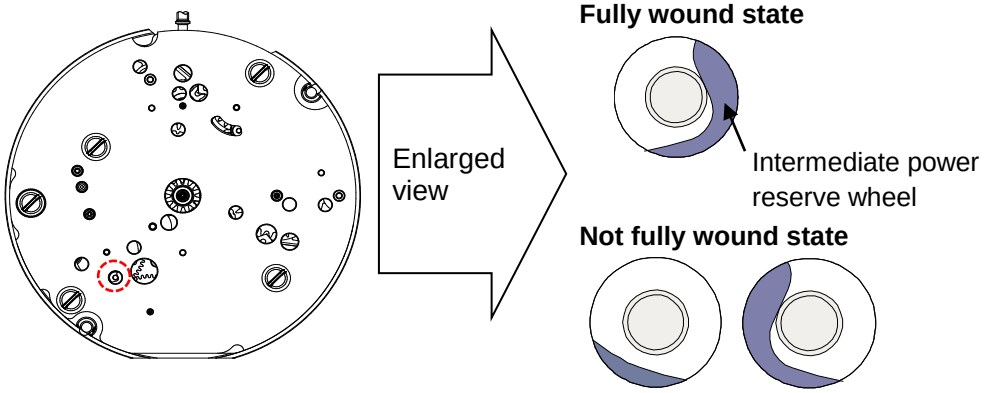
(1) The mainspring should be fully wound up before setting power reserve hand.

(2) Set power reserve hand at the fully wound up position of the dial graduation.

Static weighting

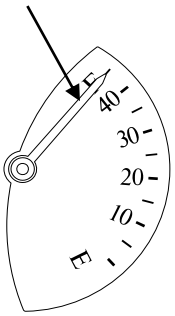


[How to Check]



[Hand setting position]

Setting position of power reserve hand



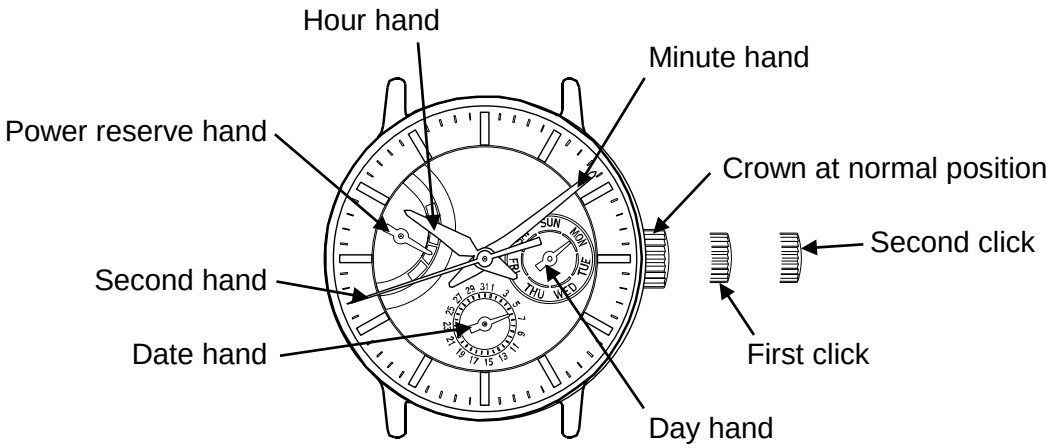
12.Accuracy measurement condition

Static Accuracy : - 15 ~ + 25 seconds per day

Measurement Conditions

1) Measurement should be done within 10 ~ 60 minutes after fully wound up.
2) Lift angle : 52 deg
3) Measurement position : (1) Dial up (2) 9 o'clock up (3) 6 o'clock up
4) Minimum measurement Time : 20 seconds
5) Stabilizing Time :
   Leave the watch for at least 20 seconds to stabilize after you change its measurement position.

[Operation manual]



1.How to set the time

1) Pull out the crown to the second click position.
2) Turn the crown to set hour and minute hands.
(Check that AM/PM is set correctly)
3) Push the crown back into the normal position.
*When time setting is performed in counterclockwise, day and date hands reverses.
Please reset by day-date correction.

2.How to set the Day-date

1) Pull out the crown to the first click position.
2) Turn the crown to left for date setting.
3) Turn the crown to right for day setting.
* Do not set the calendar between 9:00 P.M. and 2:00 A.M. If the setting of the calendar is made during this period, the day or date will not change to the next day or date.
Please set the calendar after changing the time other than the above period.
4) Push the crown back into the normal position.

3.To wind up the mainspring

a) Manual winding (Rotate the crown clockwise at normal position)
Fully wound up by turning the crown minimum 55 times. It will start to move naturally after shaking slightly.

b) To wind up with winding machine.
Full wind up conditions (Reference information)
・Rotary speed : 30 rpm
・Operating time : 60 minutes