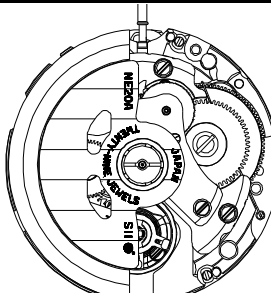
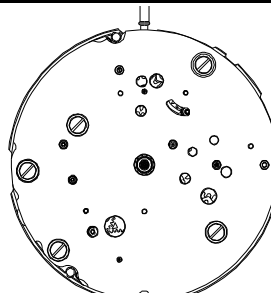


**TECHNICAL GUIDE  
&  
PARTS CATALOGUE**

**Cal.NE20**

**AUTOMATIC MECHANICAL**

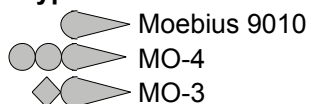
**SII Products**

Cal. No.		NE20	
Item			
Movement		 	
Movement size	Outside diameter	Φ27.40mm	
	Casing diameter	Φ27.00mm	
	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 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 max value and min 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 of position. : Dial up * Difference of static accuracy of 24h and 0h	
Duration time		More than 45 hours ... Mainspring after fully wound up. * Posture to confirmation : Dial up	
Winding the mainspring		<< Movements >> • Fully wound up by turning the crown min 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 • Rotary speed : 30 rpm • Operating time: 60 minutes	
Jewels		29 jewels	
Crown position		Left rotation	Right rotation
	Normal position	Free	Manual winding
	First click	Date setting	Day setting
	Second click	Hand setting	Hand setting

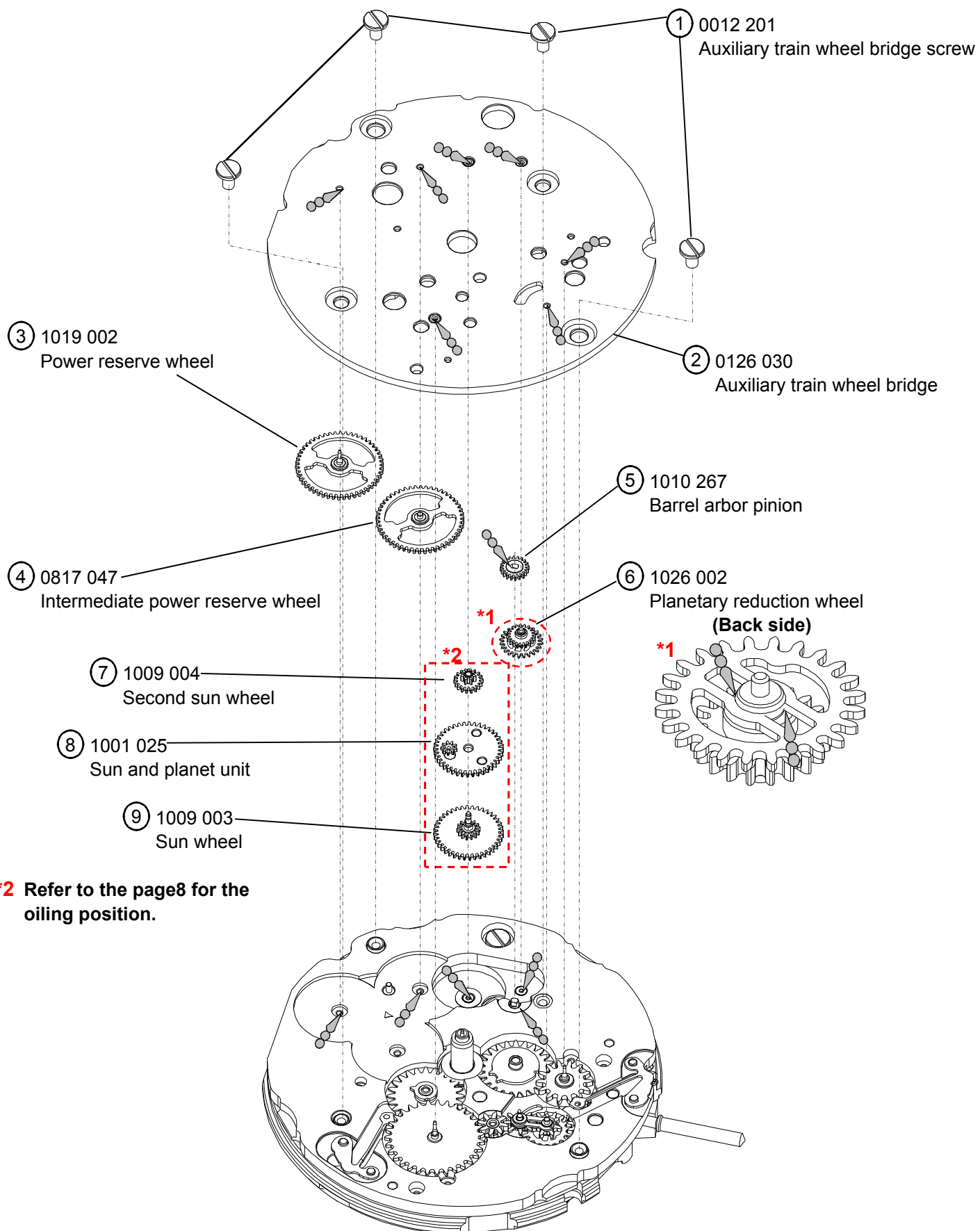
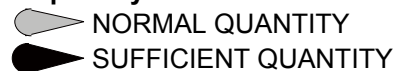
Disassembling procedures Figs. ① → ⑤⑧

Reassembling procedures Figs. ⑤⑧ → ①

## Type of oil



## Oil quantity mark



**\*2** Refer to the page8 for the oiling position.

## Type of oil

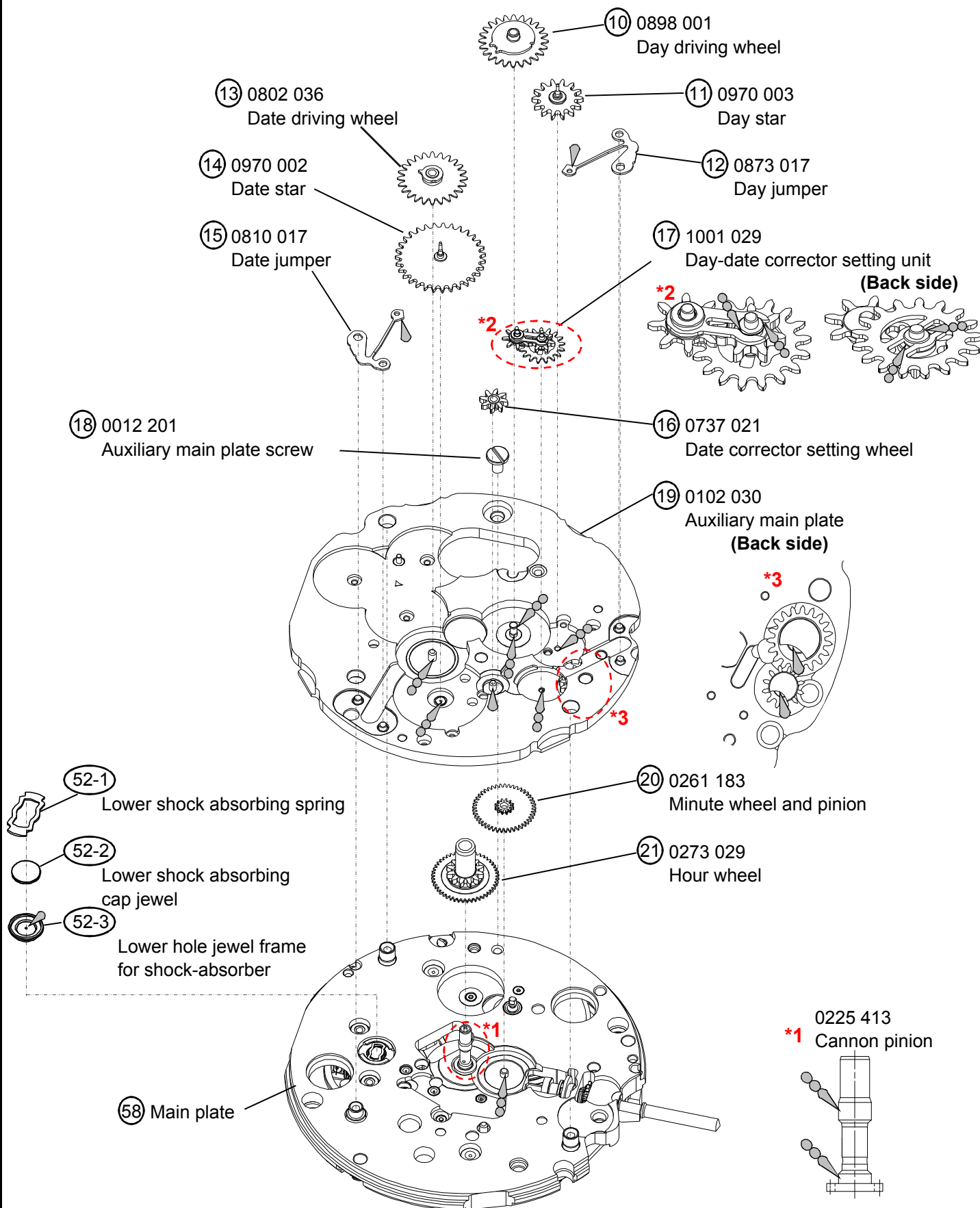
Moebius 9010

MO-4  
MO-3

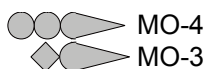
## Oil quantity mark

NORMAL QUANTITY

SUFFICIENT QUANTITY



Type of oil  
Moebius 9010

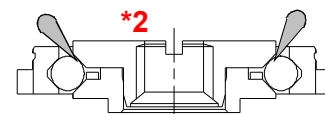
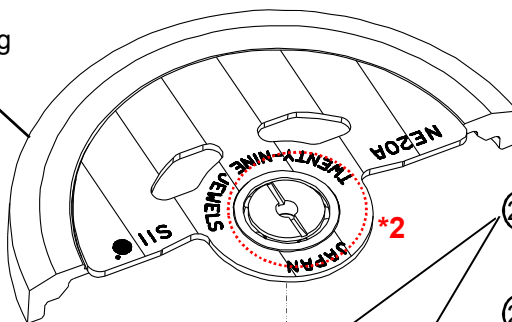


Oil quantity mark  
NORMAL QUANTITY  
SUFFICIENT QUANTITY

(22) 0509 414

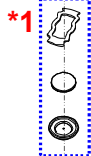
Oscillating weight with ball bearing

\*Refer to the page10 for assembling position



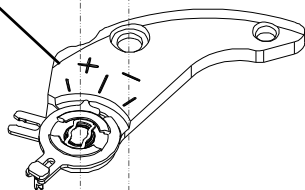
(28) 0012 420

Balance bridge screw



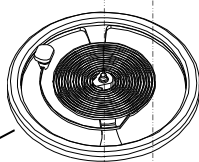
(29) 0171 349

Balance cock



(29-1) 0310 048

Balance complete with stud

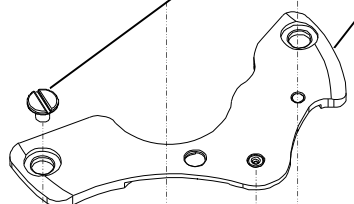


(23) 0012 354

Automatic train wheel bridge screw

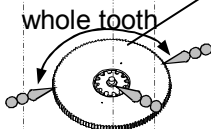
(24) 0191 025

Automatic train wheel bridge



(25) 0514 010

Second reduction wheel and pinion



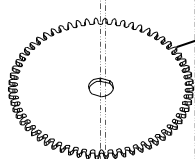
(26) 0012 919

Ratchet wheel screw



(27) 0285 051

Ratchet wheel

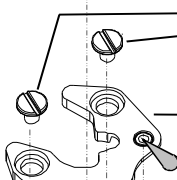


(30) 0012 354

Pallet bridge screw

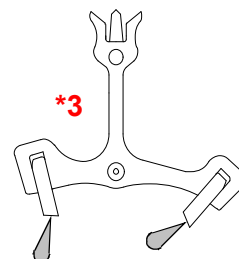
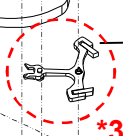
(31) 0161 310

Pallet bridge



(32) 0301 310

Pallet fork



\*1

(29-2)

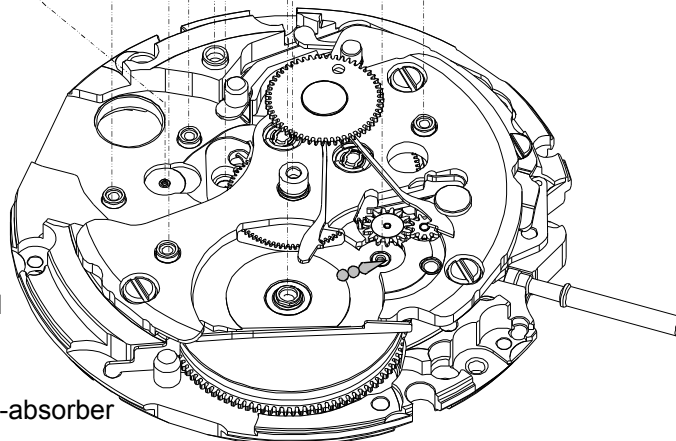
Upper shock absorbing spring

(29-3)

Upper shock absorbing cap jewel

(29-4)

Upper hole jewel frame for shock-absorber



## Type of oil

Moebius 9010

MO-4  
MO-3

## Oil quantity mark

NORMAL QUANTITY

SUFFICIENT QUANTITY

(38) 0511 010

First reduction wheel and arbor

(37) 0831 077

Pawl lever

(36) 0836 002

Reduction wheel holder

(41) 0241 216

Fourth wheel and pinion

\*1

\*1

(33) 0012 420

Barrel and train wheel bridge screw

(35) 0363 156

Ratchet sliding wheel spring

**\*Refer to the page10 for assembling**

(34-1)

Cap jewelled spring

(34-2)

Cap jewel

(34) 0114 387

Barrel and train wheel bridge

**\*Refer to the page8 for the oiling position.**

(40) 0436 164

Lower plate for barrel and train wheel bridge

(39) 0012 354

Lower plate for barrel and train wheel bridge screw

(42) 0231 070

Third wheel and pinion

(43) 0012 354

Center wheel bridge screw

(44) 0122 302

Center wheel bridge

## Type of oil

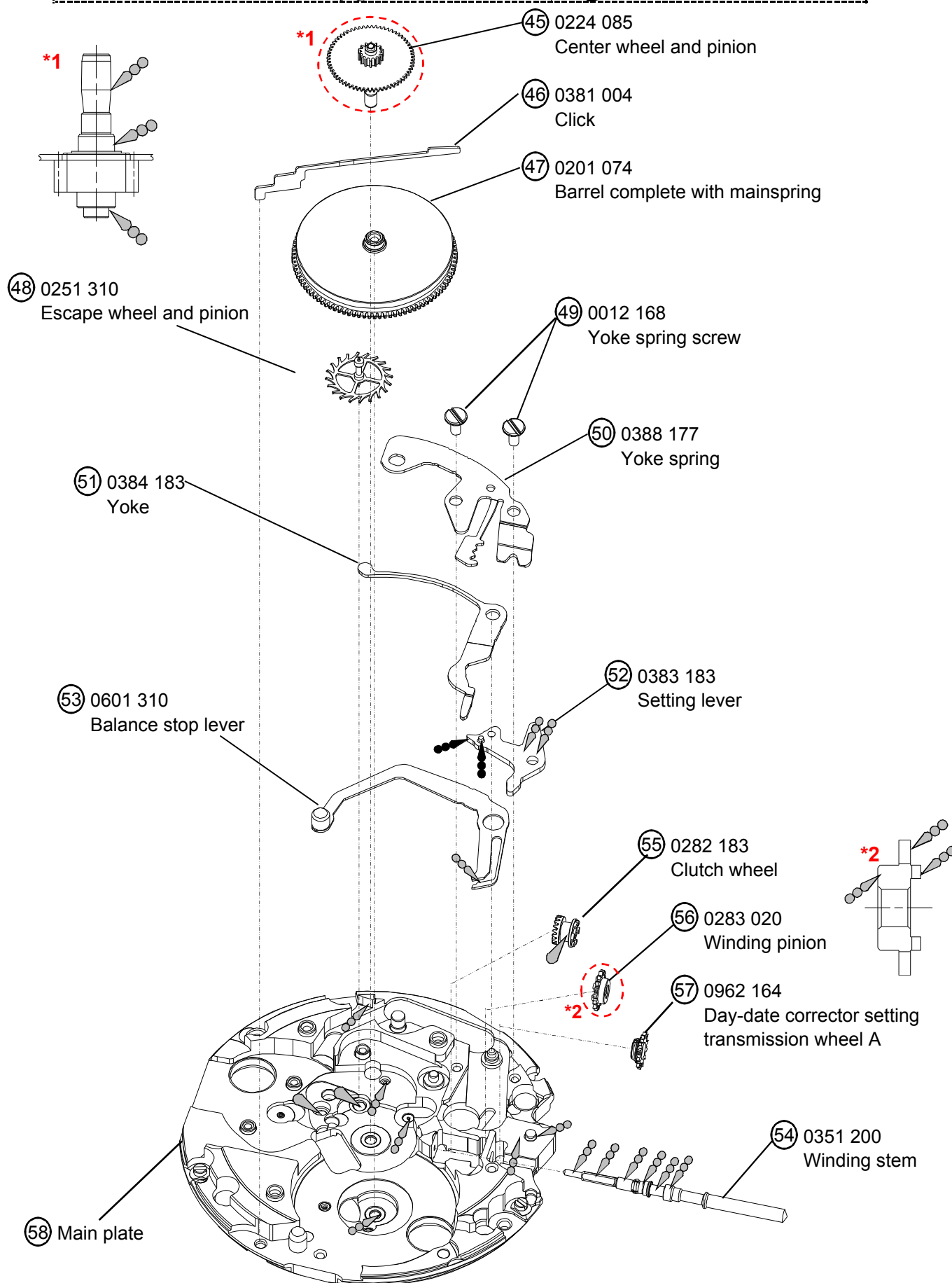
Moebius 9010

MO-4  
MO-3

## Oil quantity mark

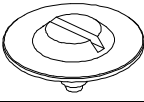
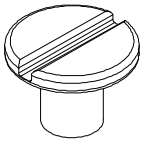
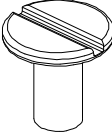
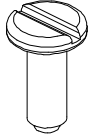
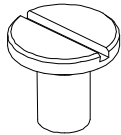
NORMAL QUANTITY

SUFFICIENT QUANTITY



## Remarks

### ● List of screws

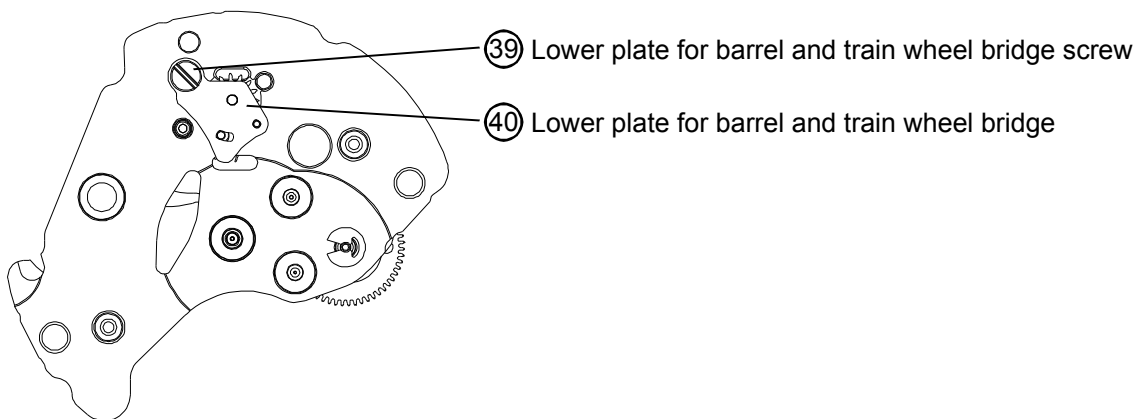
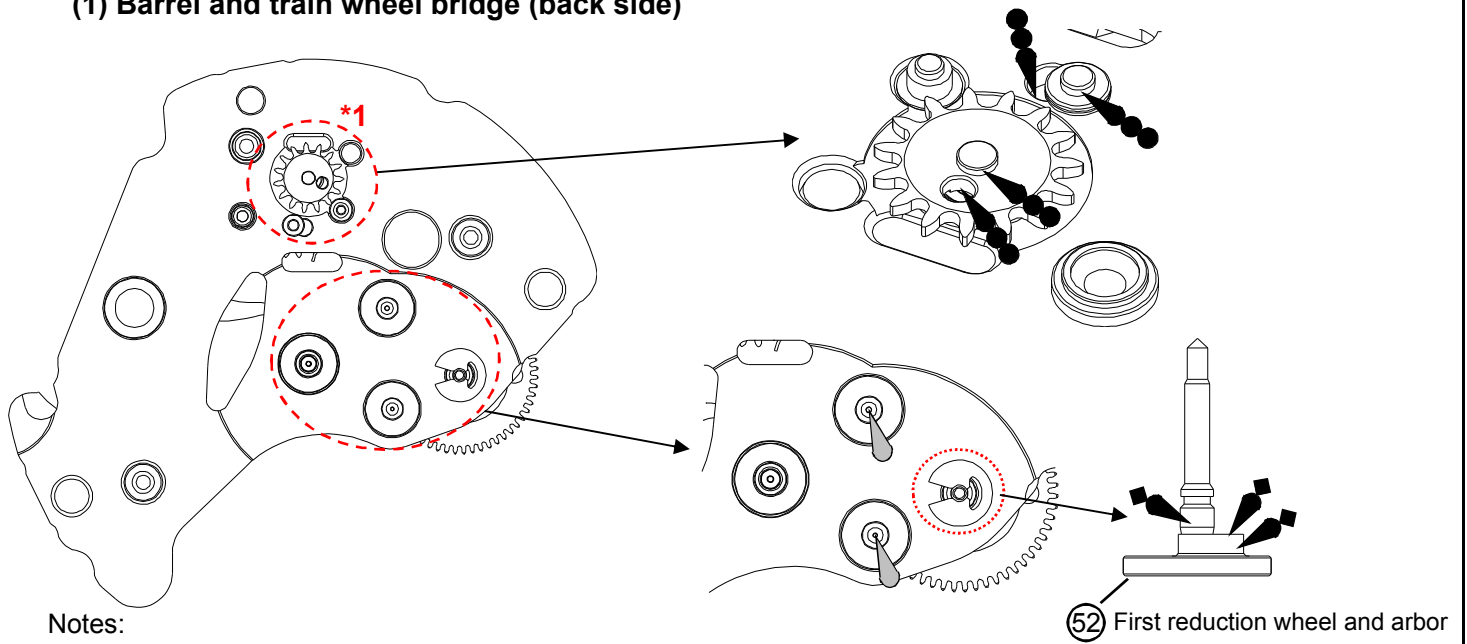
Parts No	Name	Parts No	Name
<b>0012 919</b> 	②⑥ Ratchet wheel screw	<b>0012 354</b> 	④③ Center wheel bridge screw
<b>0012 168</b> 	④⑨ Yoke spring screw (×2)		③⑩ Pallet bridge screw (×2)
<b>0012 420</b> 	③③ Barrel and train wheel bridge screw (×3)		③⑨ Lower plate for barrel and train wheel bridge screw
	②⑧ Balance bridge screw	<b>0012 201</b> 	②③ Automatic train wheel bridge screw (×2)
			①⑧ Auxiliary main plate screw
			① Auxiliary train wheel bridge screw (×4)

\*All parts code are subject to change without notice.

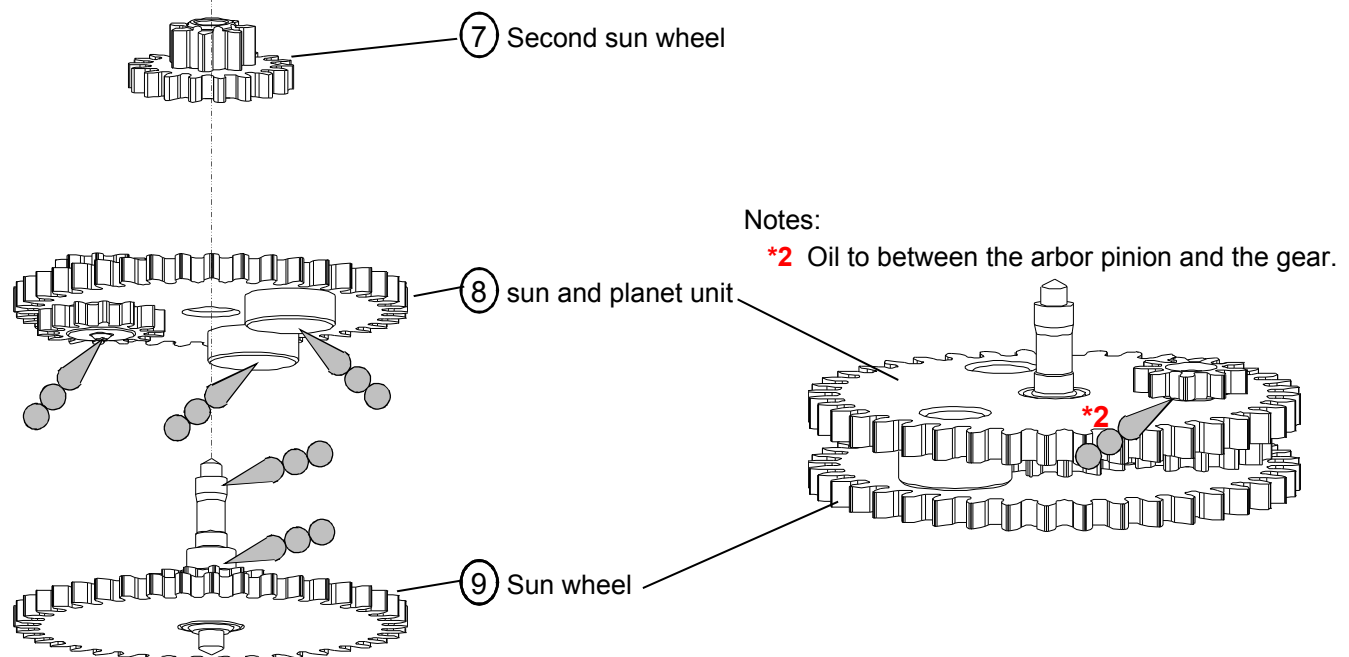


● Oiling position

(1) Barrel and train wheel bridge (back side)



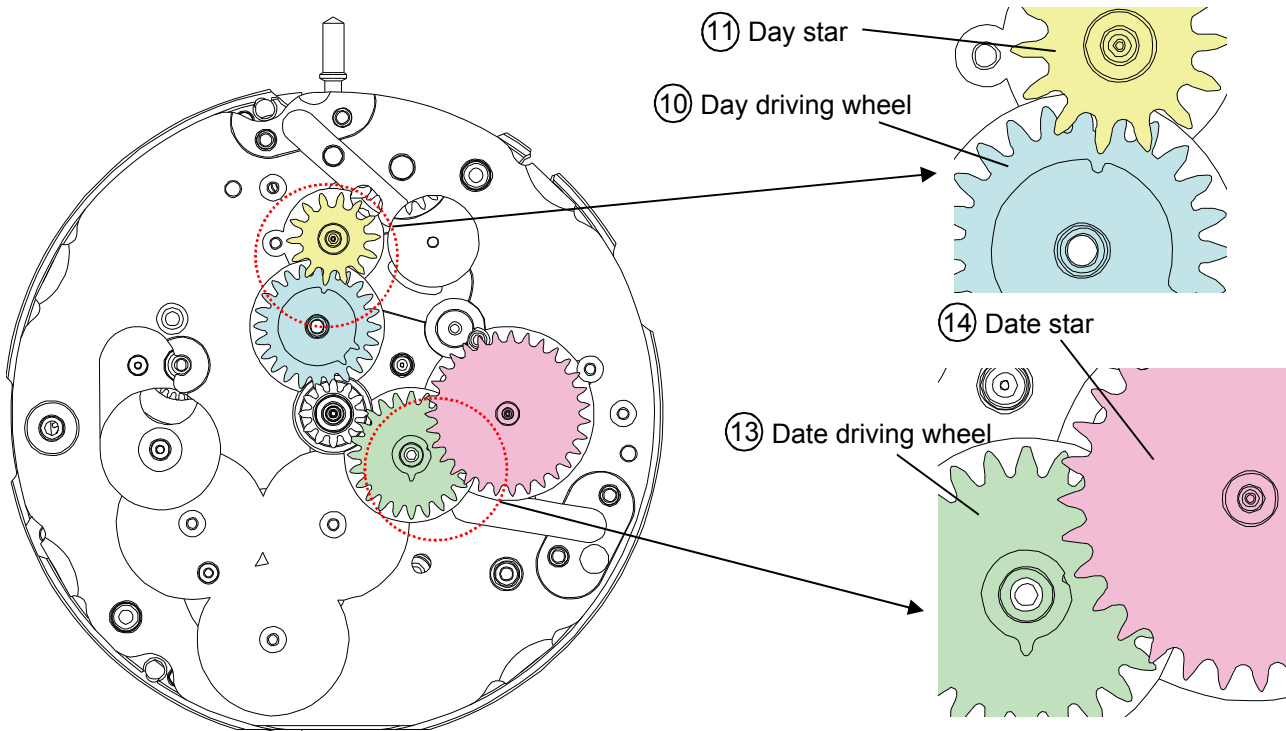
(2) Planet unit



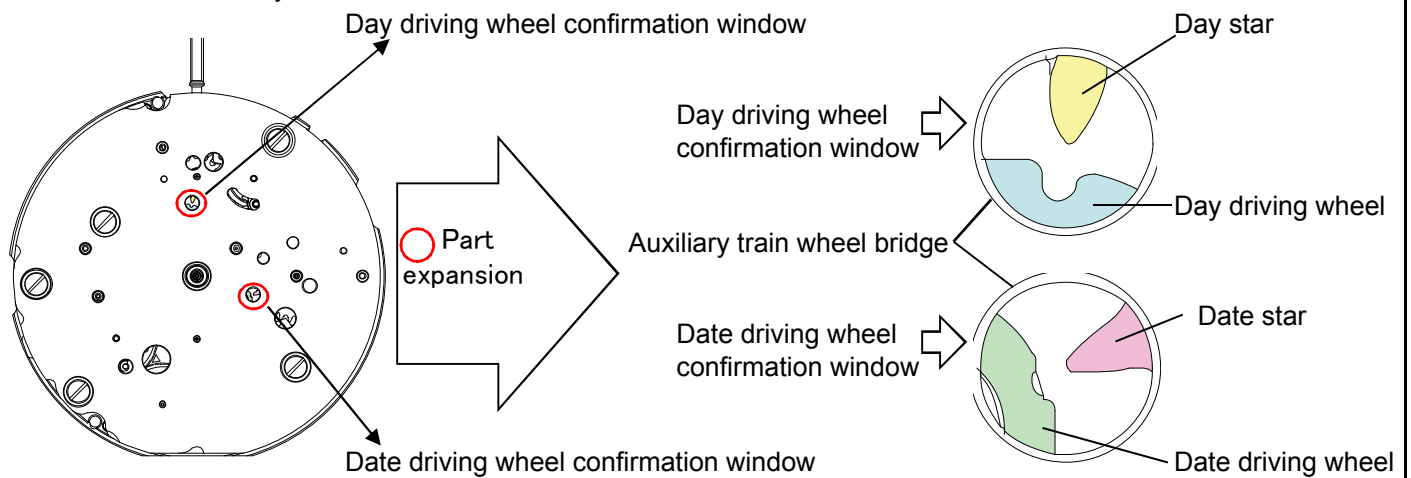
## 1. Setting position (Refer at the time of disassembling and reassembling)

• To Date / Day driving wheels setting position

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

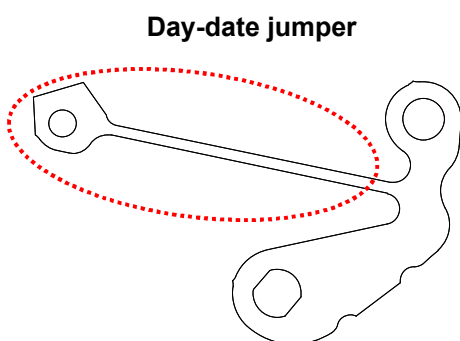


• Position confirmation by the movement

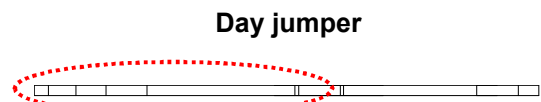


\*The correct positions of Day / Date stars and Day / Date driving wheels should be confirmed from the confirmation window at the same time.

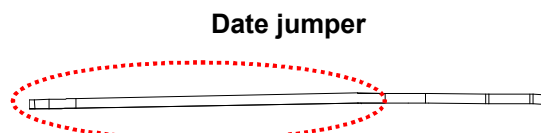
## 2. Method of identifying day jumper and date jumper



Side view

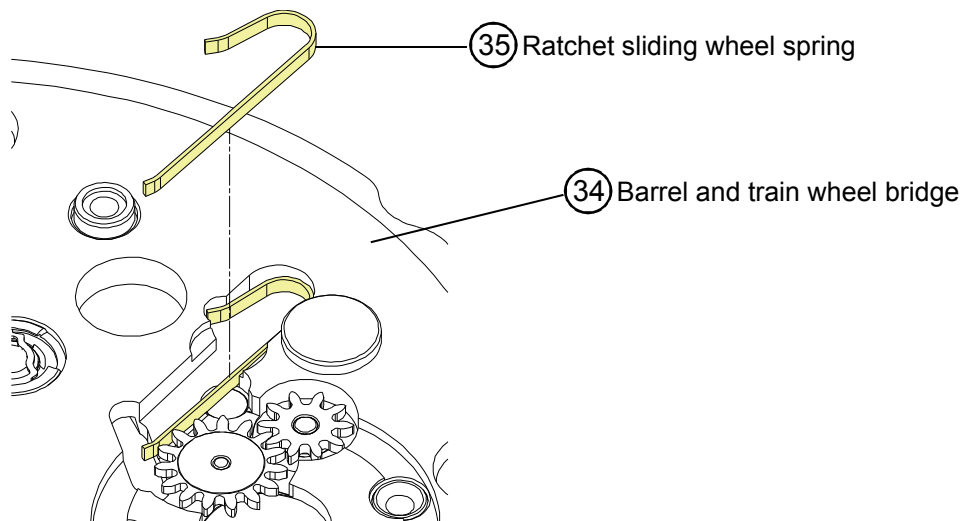


\*There is no bend at the spring.



\*There is a bend at the spring.

### 3.Rachet sliding wheel spring setting

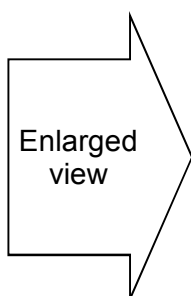
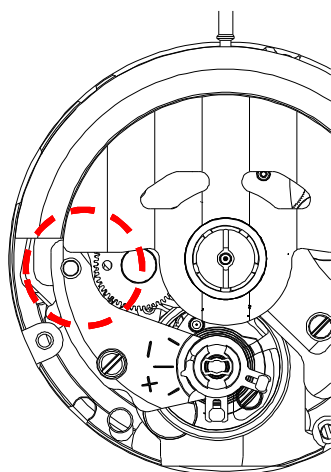


### 4.Setting position of oscillating weight

•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.

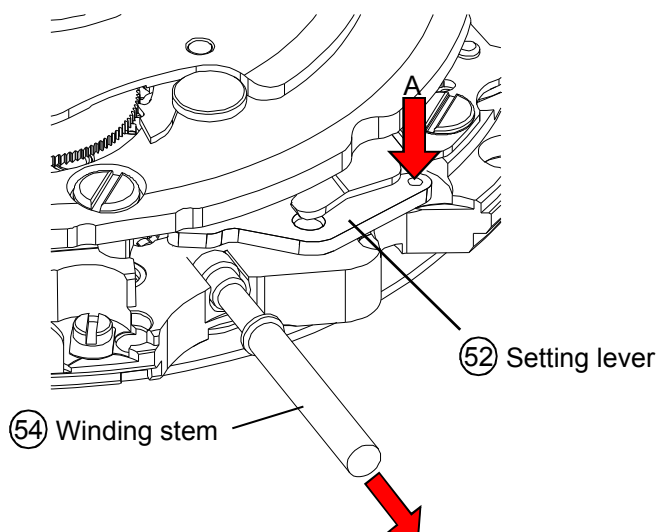


Balance bridge guide pin

First reduction wheel gear

### 5.To remove the winding stem

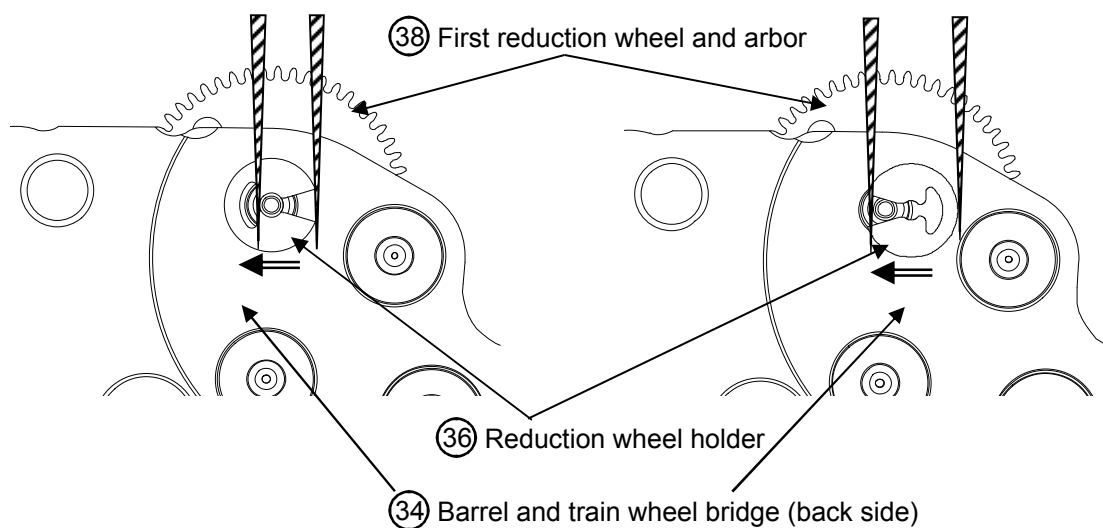
- 1) Set the winding stem to normal position.
- 2) Pull out the winding stem, while pushing "A"



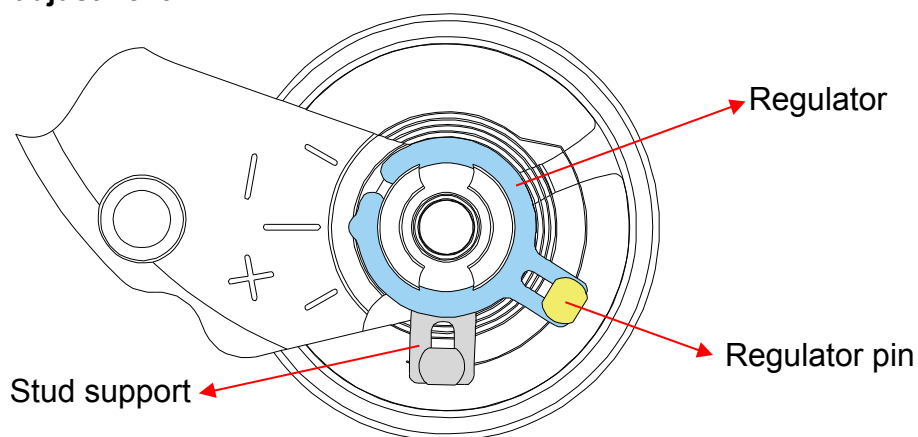
## 6. Disassembling / assembling of the First reduction wheel

<< Disassembling >>

<< Assembling >>



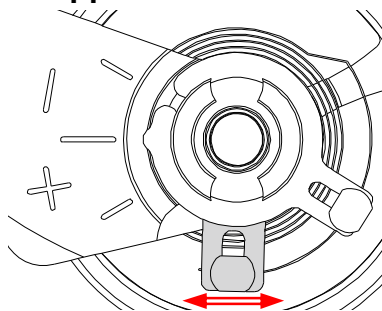
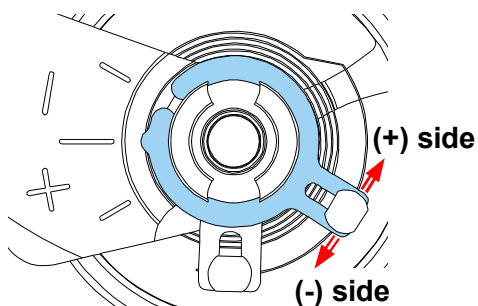
## 7. Accuracy adjustment



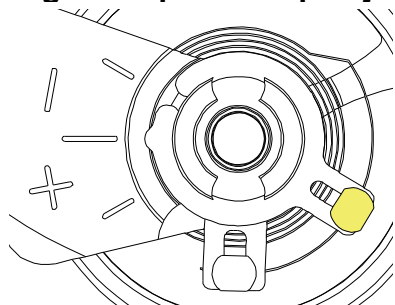
### Note:

•Regulator ... Time adjustment

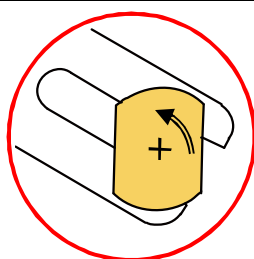
•Stud support ... Beat error adjustment



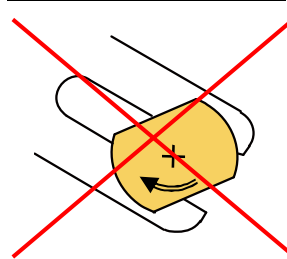
•Regulator pin ... Gap adjustment of balance spring and regulator pin



Anticlockwise rotation



No clockwise rotation



## 8.To wind up the mainspring

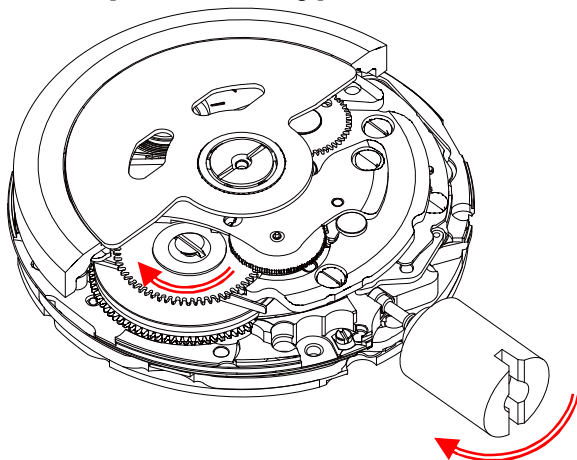
<<Movement>>

The mainspring would be fully wound up by turning the ratchet wheel screw 8 times clockwise. (Manual winding or Screwdriver)

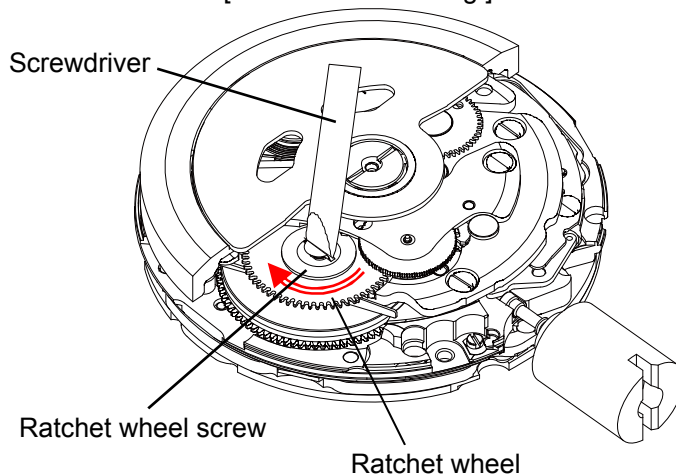
Manual winding ... Rotate crown clockwise at normal position by min 55 times. (Equal to ratchet wheel screw 8 times )

Screwdriver winding ... Turn the ratchet wheel screw 8 times clockwise.

[ Manual winding ]



[ Screwdriver winding ]



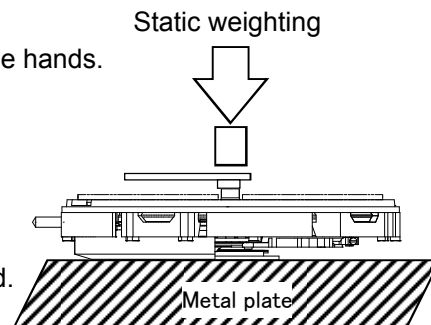
## 9.How to attach hands

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

We recommend the use of movement holder to attach hands.

For hands attachment, please use a special equipment.

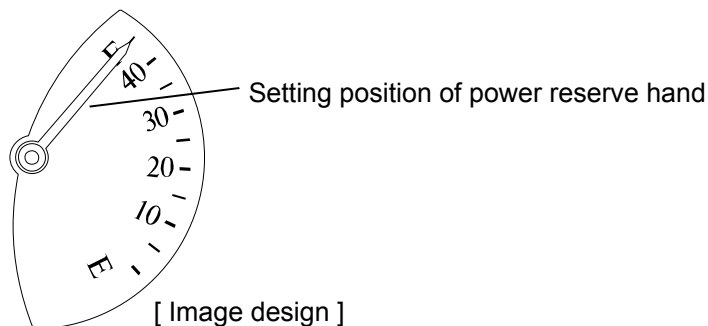
When the movement receives a strong shock, it may be damaged.



### <<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.



[ Image design ]

## 10.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.

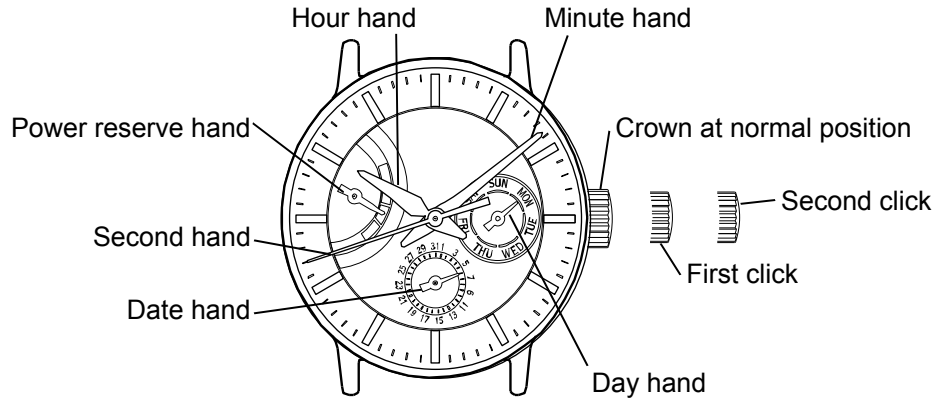
3) Measurement position : (1) Dial up (2) 9 o'clock up (3) 6 o'clock up

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.

## [ NE20 operation manual ]



### 1. Time setting

- 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. Day-date hands setting

- 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.  
Wind turning the ratchet wheel screw 8 times. It will start to move naturally after shaking slightly.
- b) To wind up with winding machine.  
Full wind up conditions
  - Rotary speed : 30 rpm
  - Operating time : 60 minutes