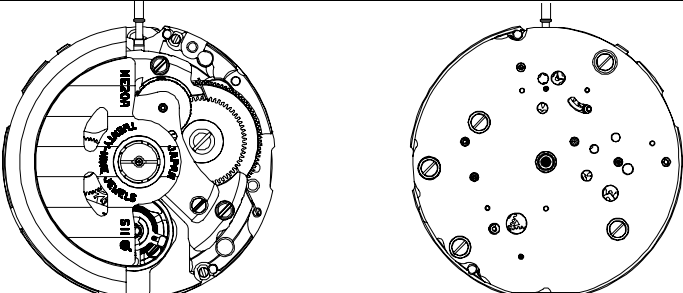


TECHNICAL GUIDE
&
PARTS CATALOGUE

Cal.NE20

AUTOMATIC MECHANICAL




SII Products

Item		Cal. No.	NE20	
Movement				
Movement size	Outside diameter	Φ 27.40mm		
	Casing diameter	Φ 27.00mm		
	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 wounded up by turning the crown min 55 times. •Fully wounded 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	Normal position	Left rotation	Right rotation	
	First click	Free	Manual winding	
	Second click	Date setting	Day setting	
	Third click	Hand setting	Hand setting	



Disassembling procedures Figs. ① → ⑤②

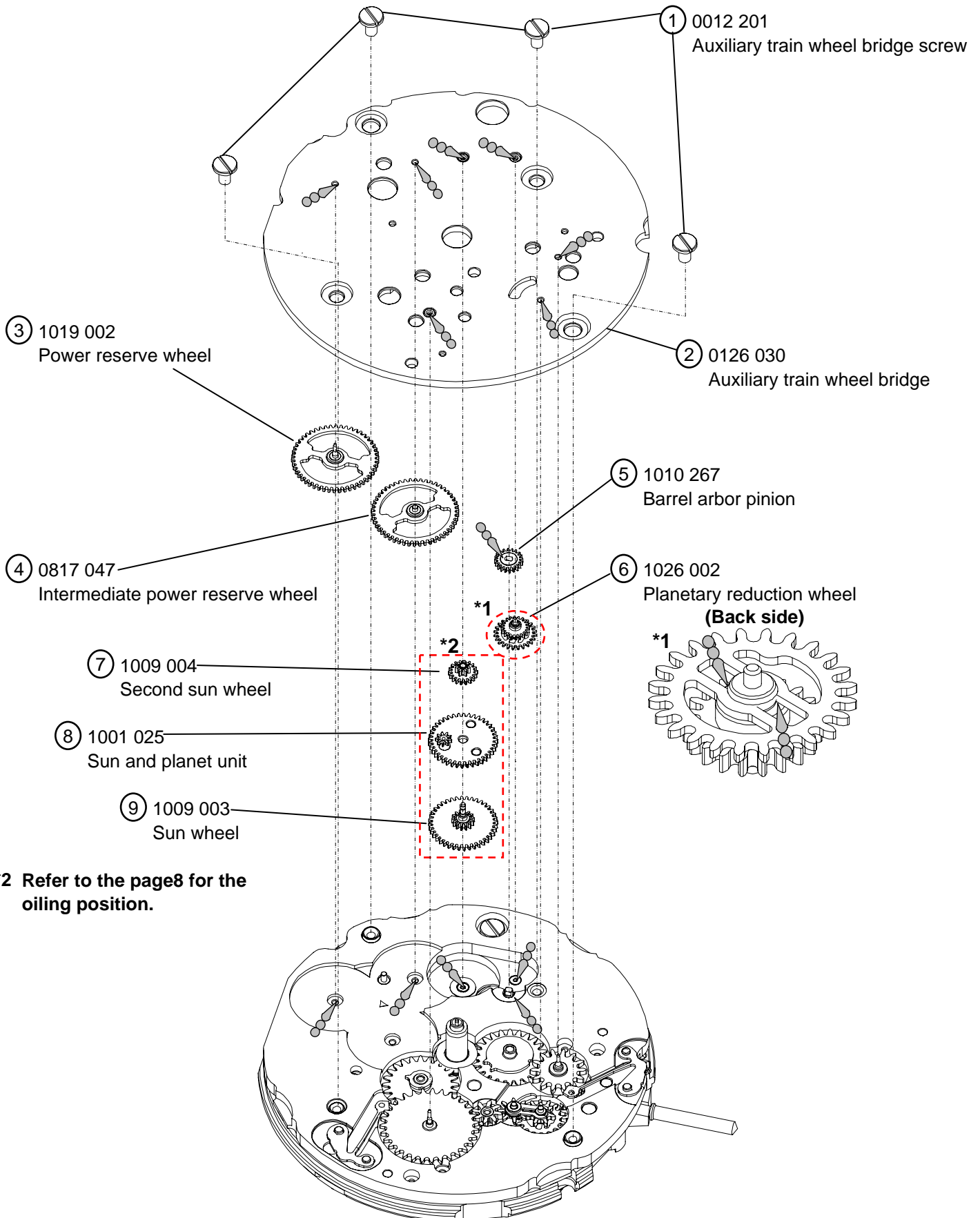
Reassembling procedures Figs. ⑤② → ①

Type of oil

-  Moebius 9010
-  MO-4
-  MO-3

Oil quantity mark

-  NORMAL QUANTITY
-  SUFFICIENT QUANTITY

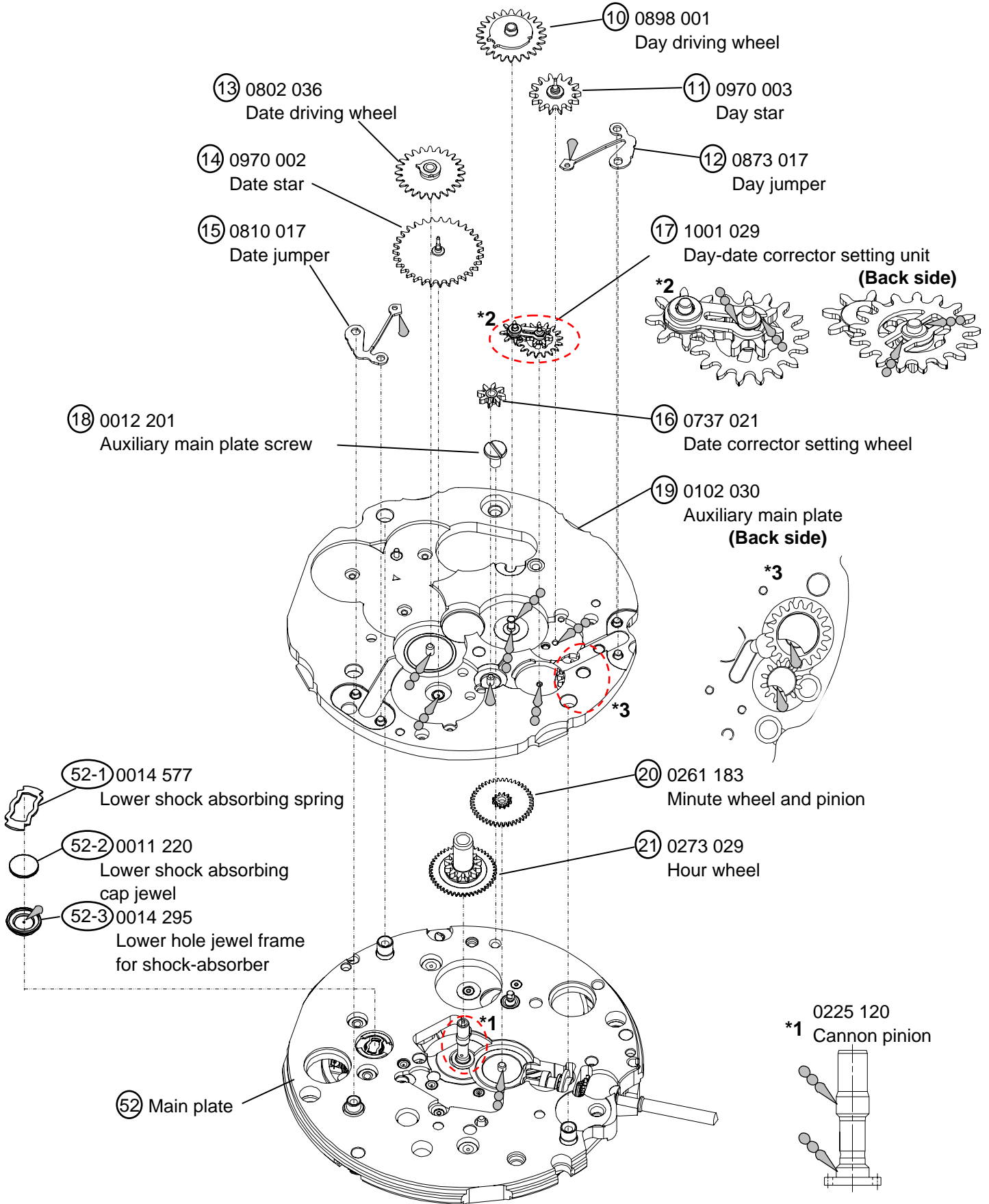


***2 Refer to the page8 for the oiling position.**

Type of oil
Moebius 9010



Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY



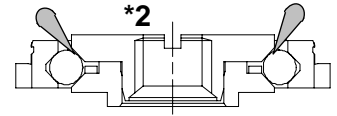
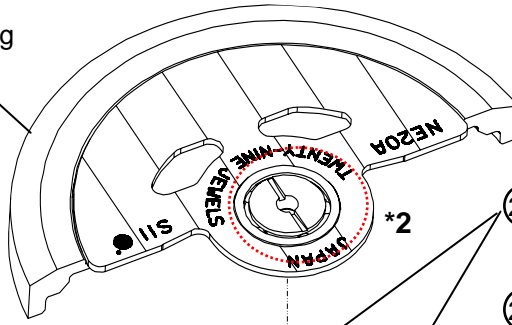
Type of oil
Moebius 9010



Oil quantity mark
NORMAL QUANTITY (one triangle)
SUFFICIENT QUANTITY (two triangles)

22 0509 414
Oscillating weight with ball bearing

*Refer to the page 10 for assembling position

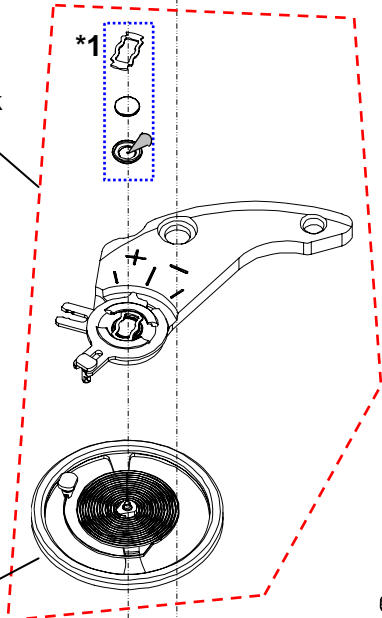


23 0012 354
Automatic train wheel bridge screw

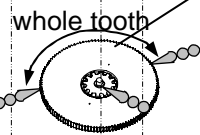
24 0191 025
Automatic train wheel bridge

28 0012 420
Balance bridge screw

29 0171 198
Balance cock

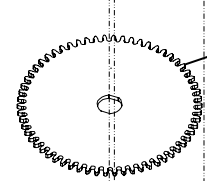


25 0514 010
Second reduction wheel and pinion



26 0012 919
Ratchet wheel screw

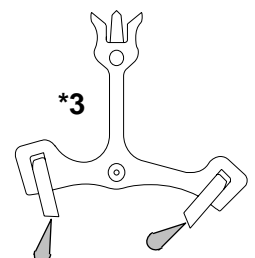
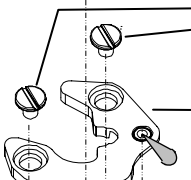
27 0285 051
Ratchet wheel



30 0012 354
Pallet bridge screw

31 0161 310
Pallet bridge

32 0301 310
Pallet fork

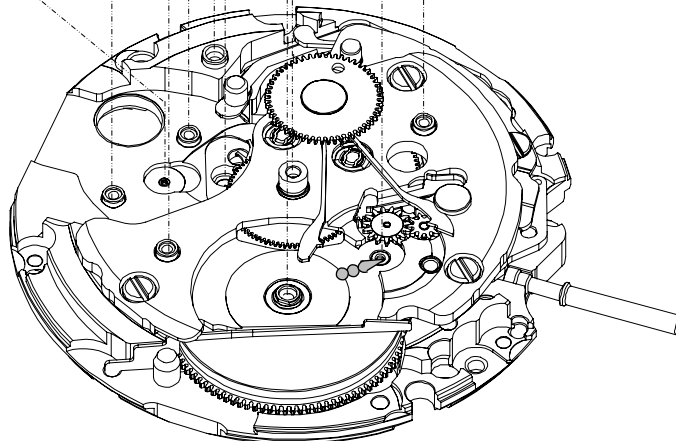


29-1 0311 310
Balance complete with stud

*1 29-2 0014 577
Upper shock absorbing spring

29-3 0011 220
Upper shock absorbing cap jewel

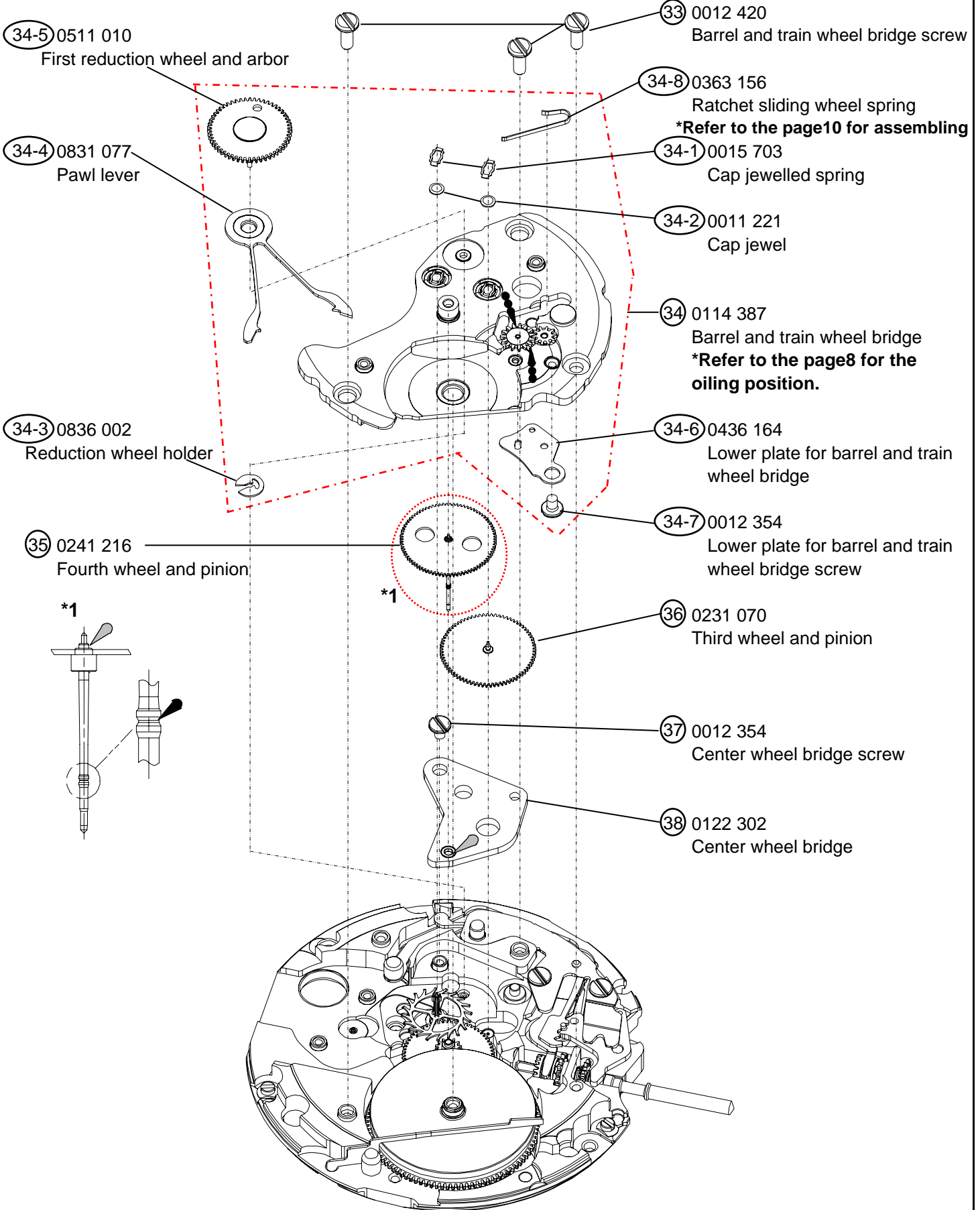
29-4 0014 295
Upper hole jewel frame for shock-absorber



Type of oil
Moebius 9010



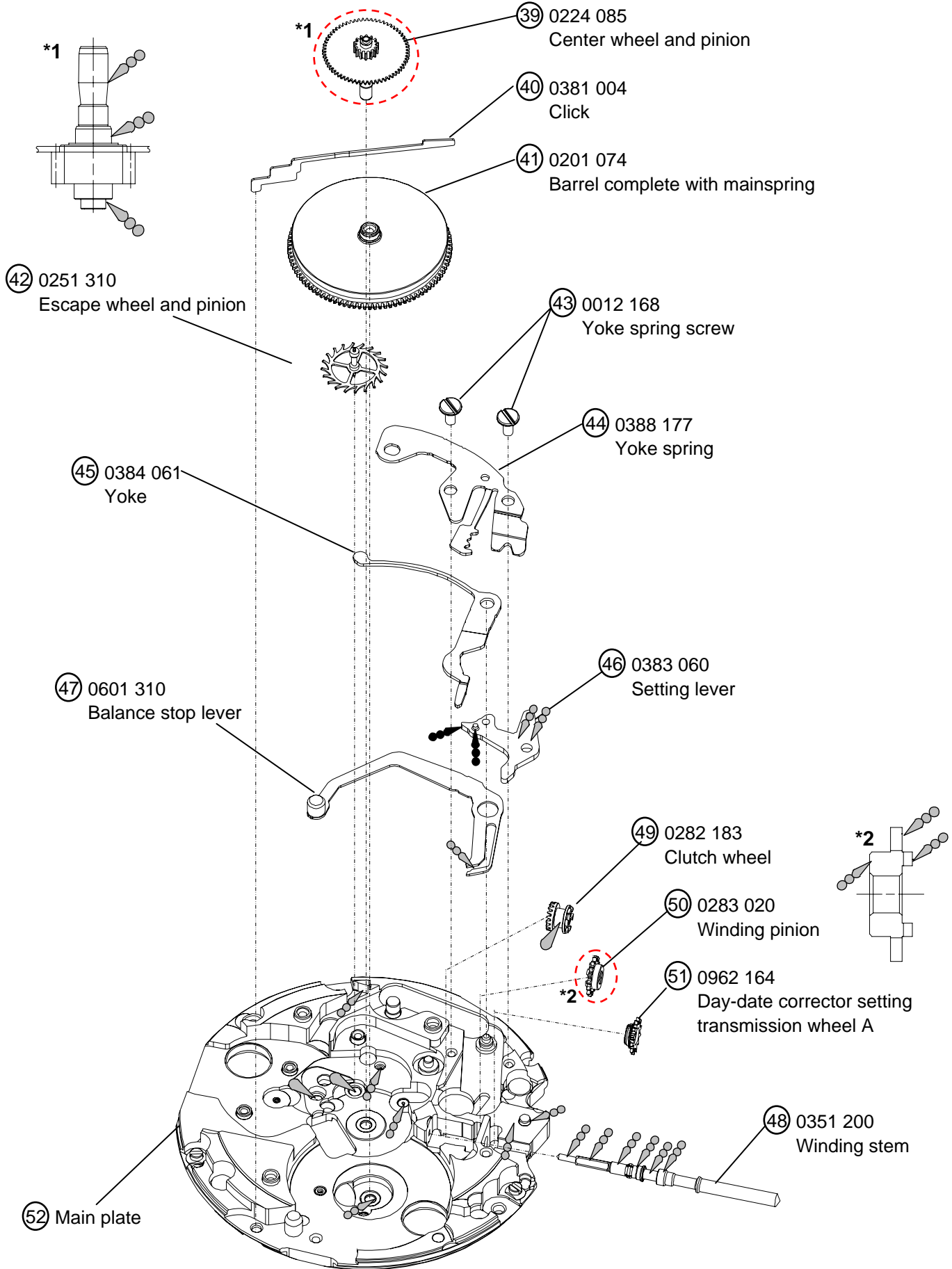
Oil quantity mark
NORMAL QUANTITY (small triangle)
SUFFICIENT QUANTITY (large triangle)



Type of oil
Moebius 9010

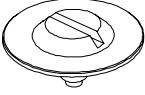
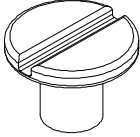
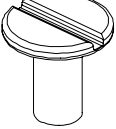
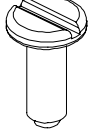
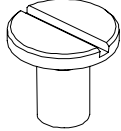


Oil quantity mark
NORMAL QUANTITY (triangle)
SUFFICIENT QUANTITY (filled triangle)



Remarks

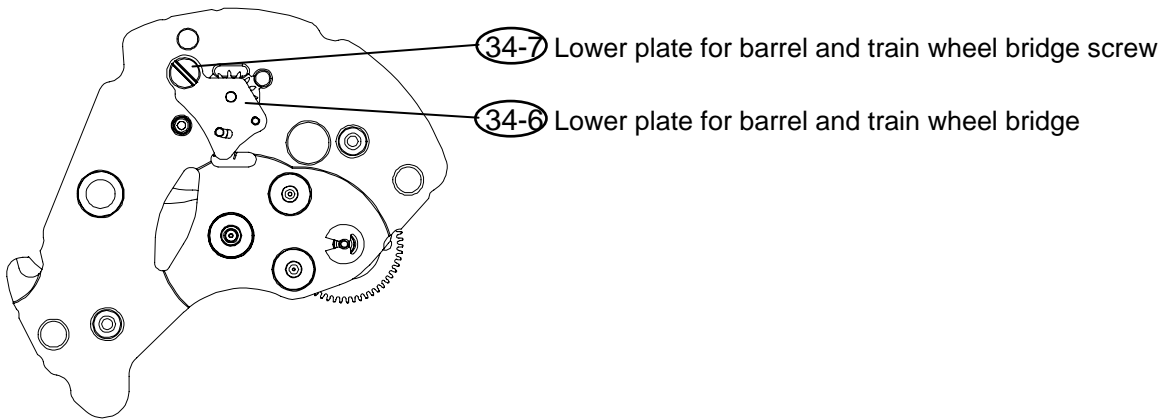
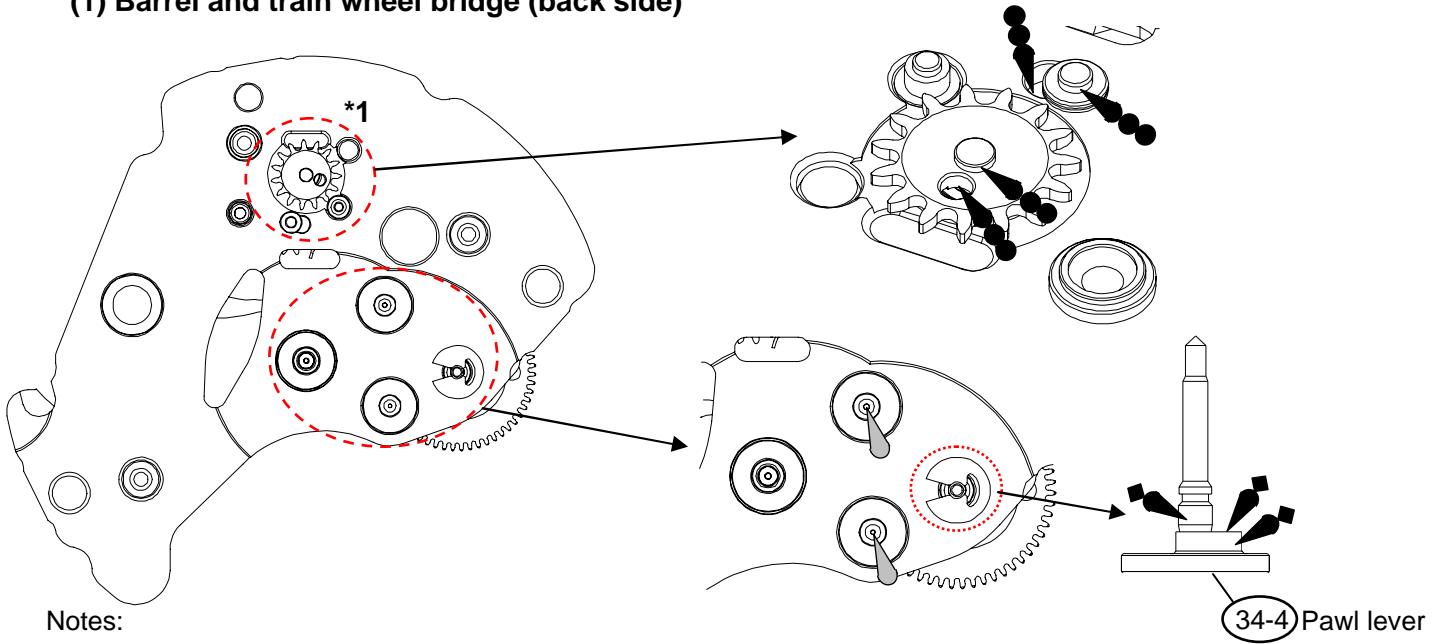
● List of screws

Parts No	Name	Parts No	Name
0012 919 	②⑥ Ratchet wheel screw	0012 354 	③⑦ Center wheel bridge screw
0012 168 	④③ Yoke spring screw (x2)		③⑩ Pallet bridge screw (x2)
0012 420 	③③ Barrel and train wheel bridge screw (x3)	0012 201 	③④-⑦ Lower plate for barrel and train wheel bridge screw
	②⑧ Balance bridge screw		②③ Automatic train wheel bridge screw (x2)
			①⑧ Auxiliary main plate screw
			① Auxiliary train wheel bridge screw (x4)

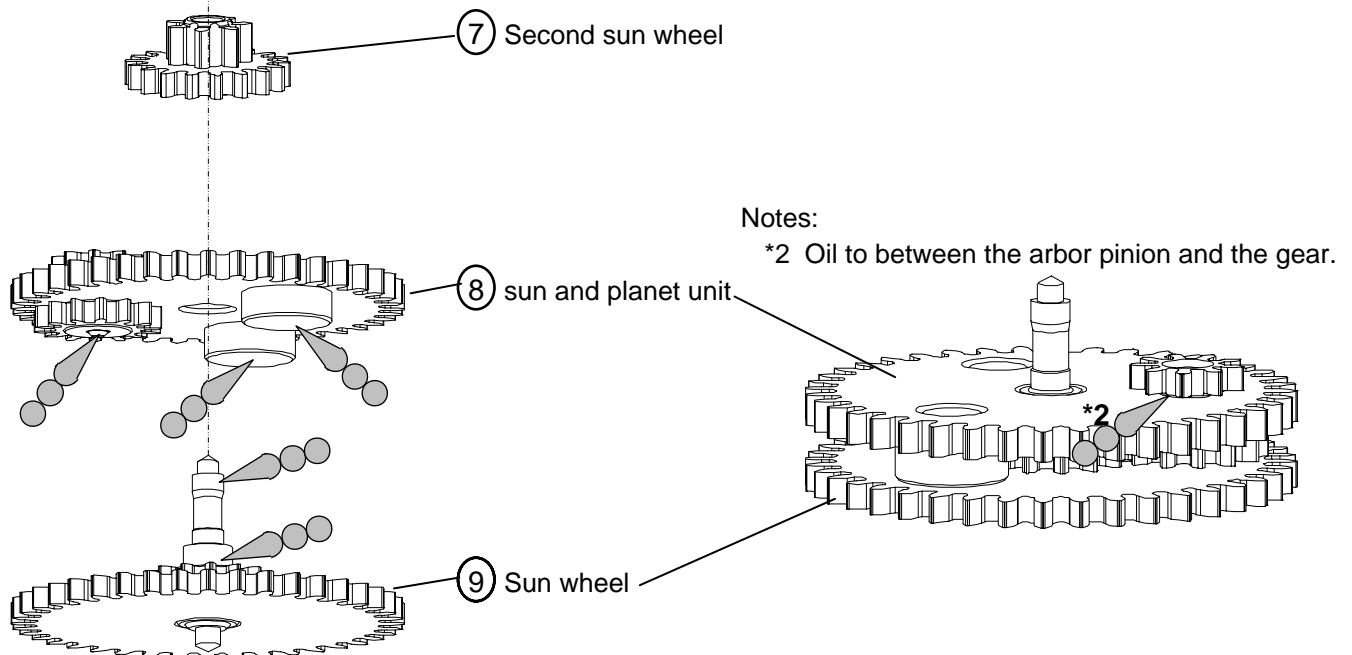
***All parts code are subject to change without notice.**

● Oiling position

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



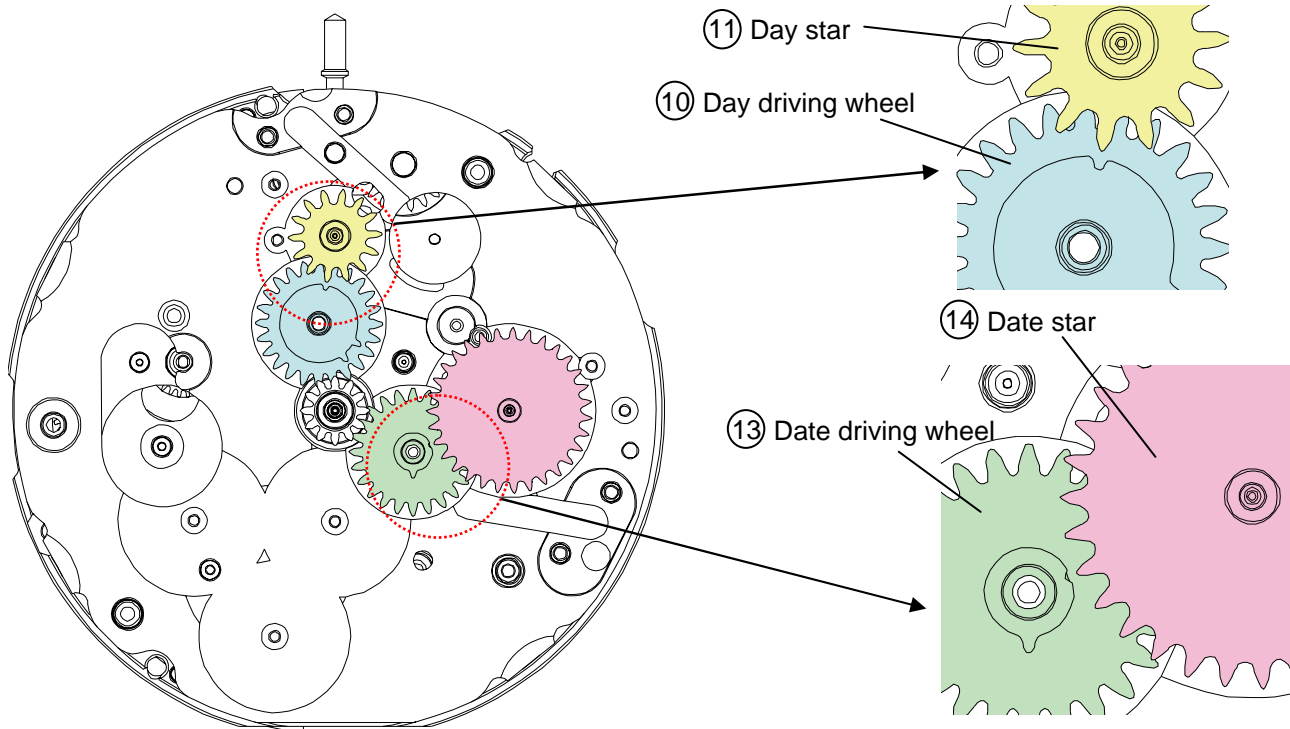
(2) Planet unit



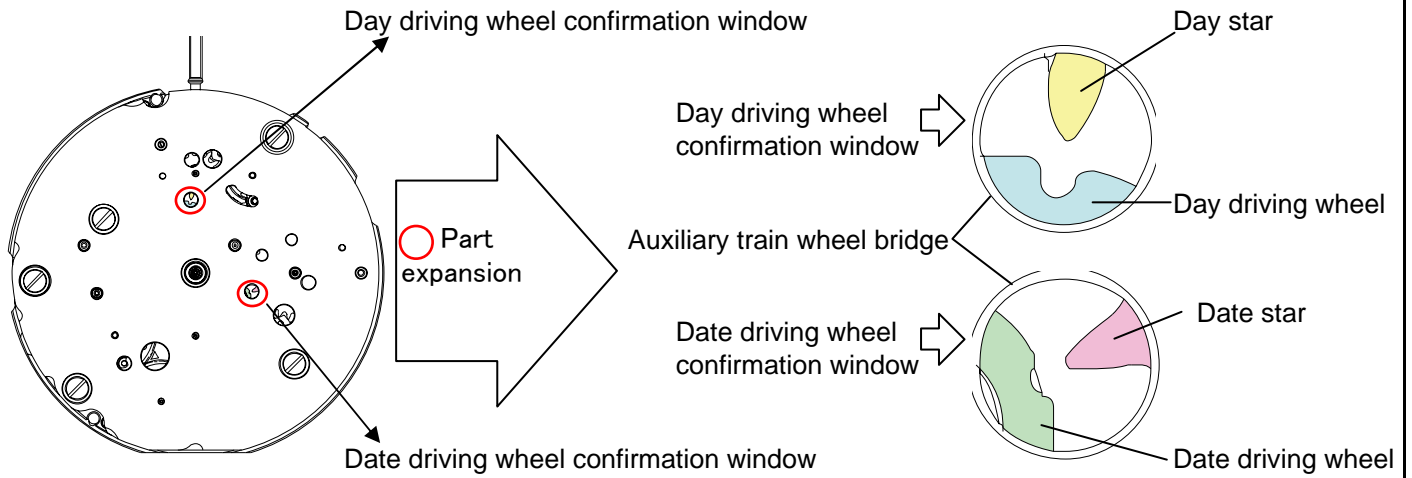
1. Setting position (Refer at the time of disassembling and reassembling)

•To Date / Day driving wheels setting position

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

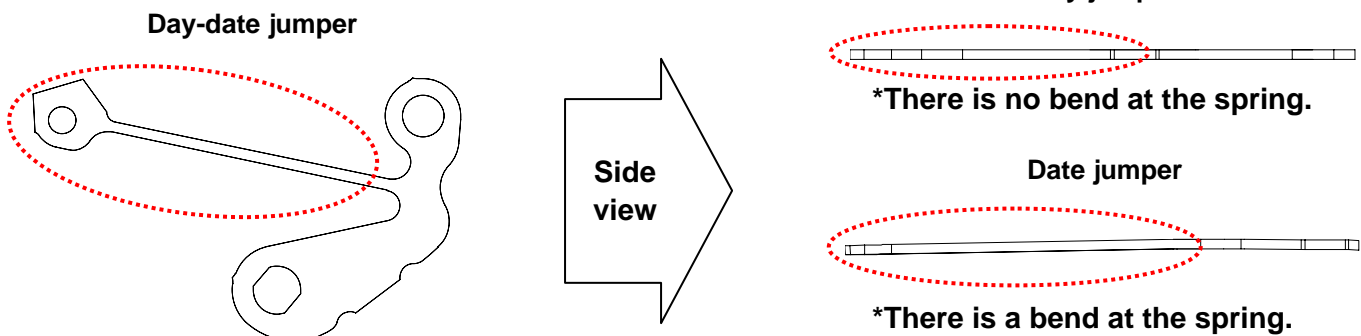


•Position confirmation by the movement



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

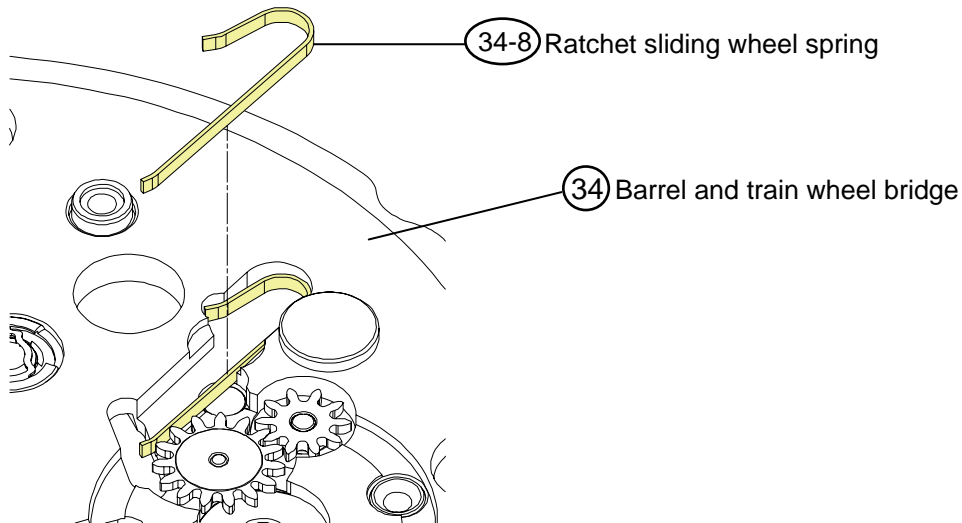
2.Method of identifying day jumper and date jumper



*There is no bend at the spring.

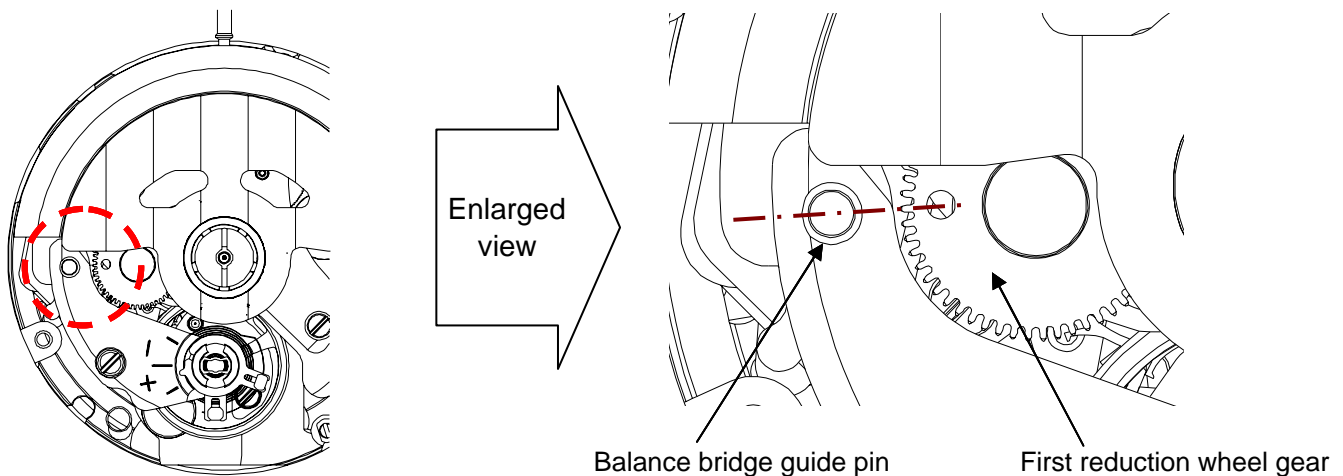
*There is a bend at the spring.

3. Ratchet sliding wheel spring setting



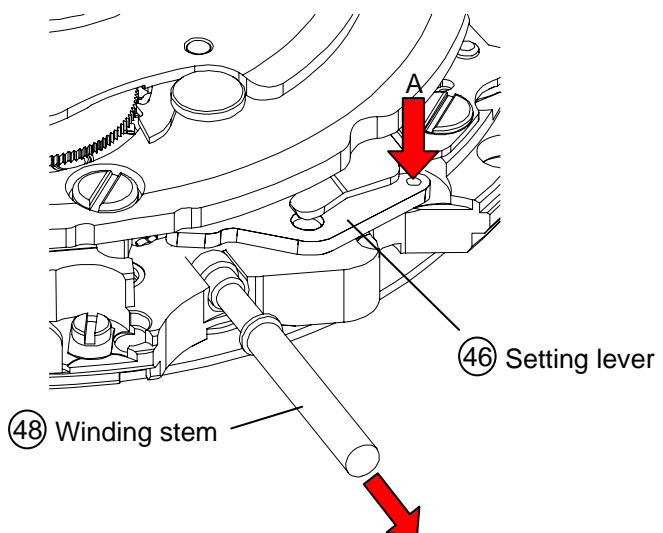
4. Setting position of oscillating weight

- 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.



5. To remove the winding stem

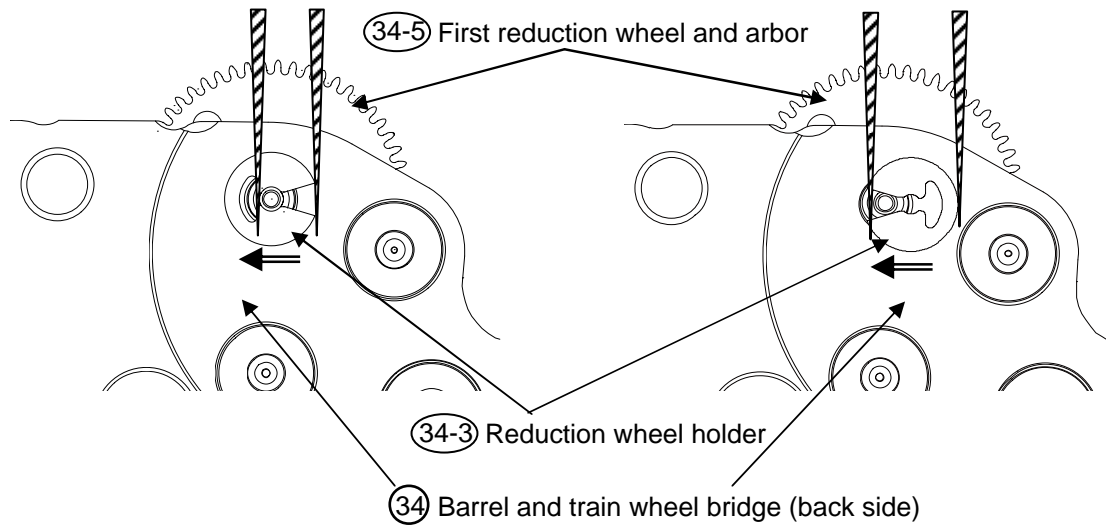
- 1) Set the winding stem to normal position.
- 2) Pull out the winding stem, while pushing "A"



6. Disassembling / assembling of the First reduction wheel

<< Disassembling >>

<< Assembling >>

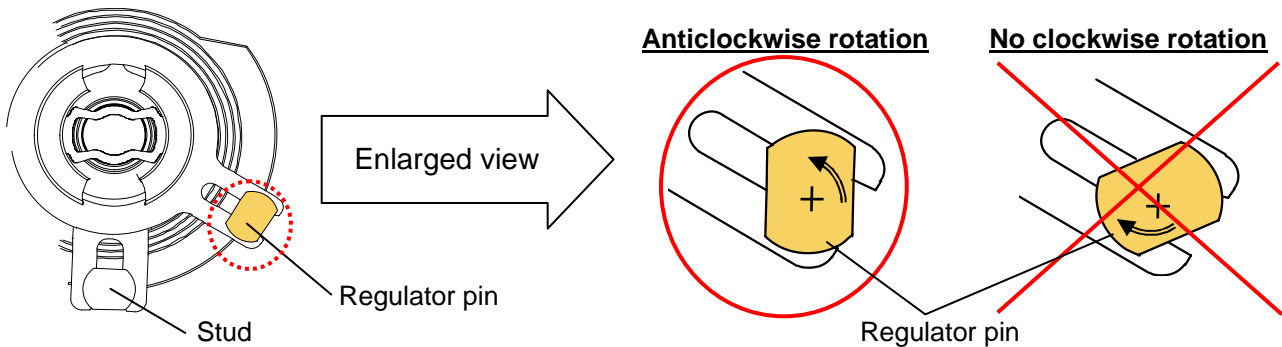


7. Rotative direction of regulator pin

- Rotative direction of regulator pin : Anticlockwise only
- Hair spring can be damaged by clockwise rotation.

<Note>

Please do the following when a movement's accuracy is out of the guaranteed range, or after disassembly.



8. To wind up the mainspring

<<Movement>>

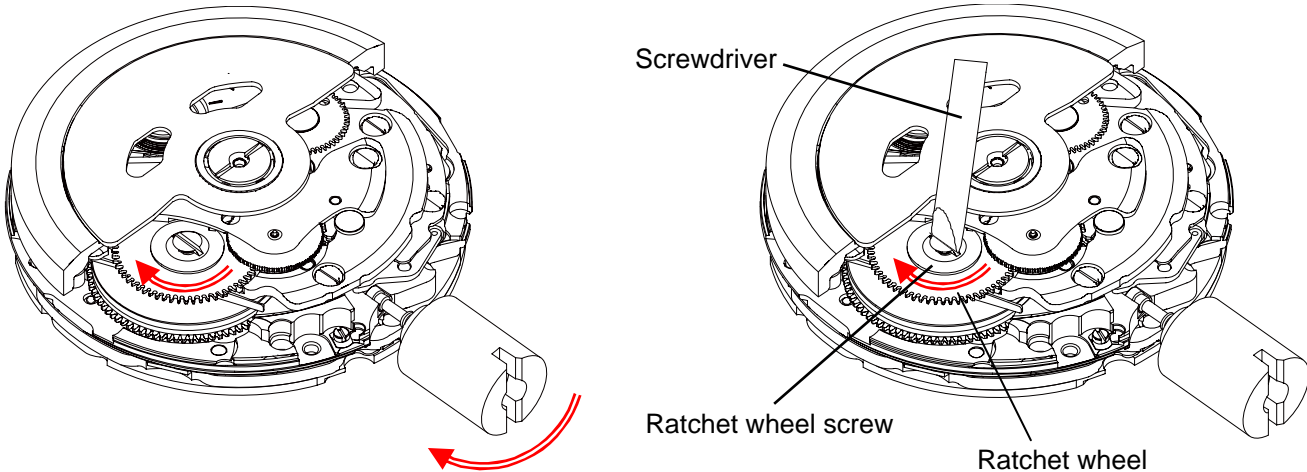
The mainspring would be fully wound up by turning the ratchet wheel screw 8 times clockwise. (Manual winding or Screwdriver)

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.

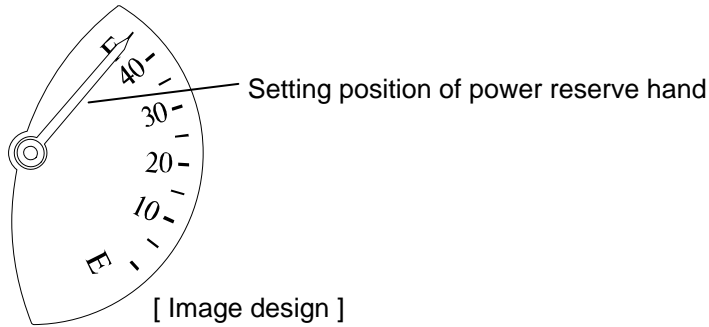
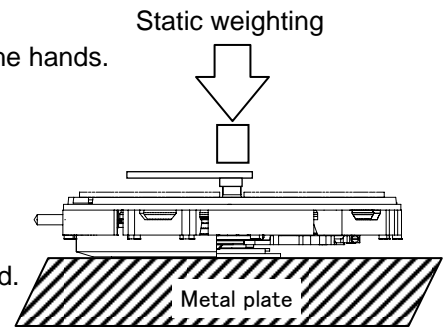
For hands attachment, please use a special equipment.

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.

**10.Accuracy measurement condition**

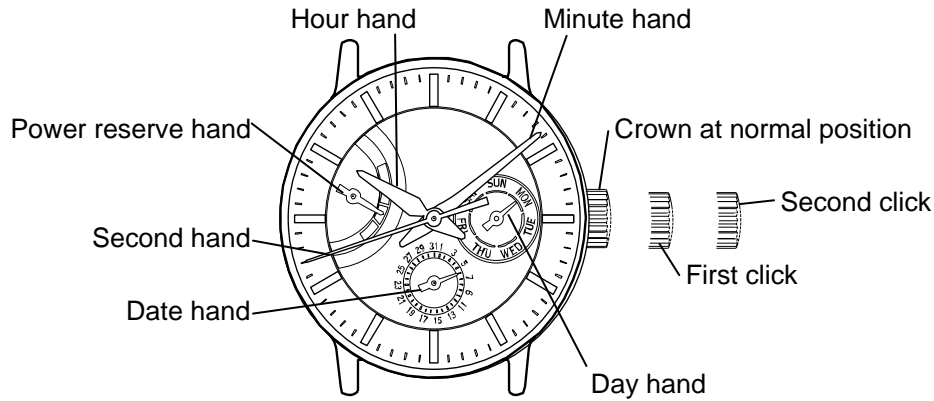
Static Accuracy : -15~+25 seconds per day

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 reverse.
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