TIME MODULE

Revised on : 16. Sep. 2014

TECHNICAL GUIDE

&

PARTS CATALOGUE

Cal.NE88

AUTOMATIC MECHANICAL

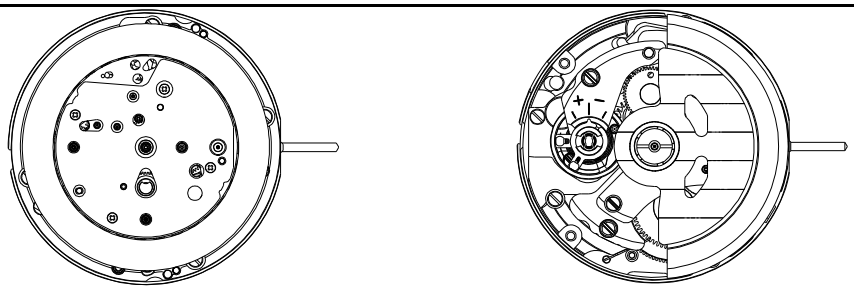
SII Products

PARTS CATALOGUE / TECHNICAL GUIDE
Cal.NE88

TIME MODULE

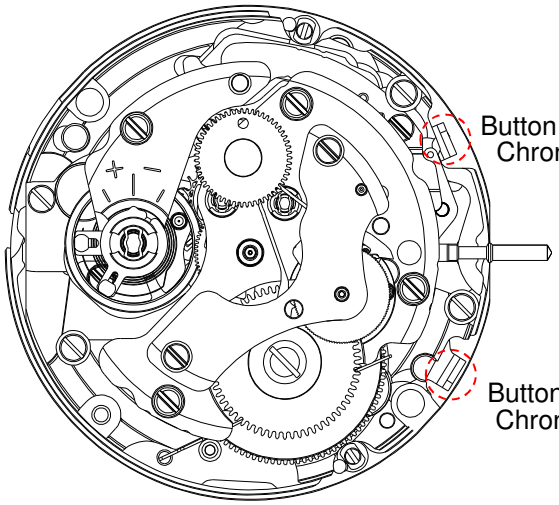
[SPECIFICATION]

Version-01

Item \ Cal. Code		NE88	
Movement			
Movement size	Outside diameter	Φ28.60mm	
	Casing diameter	Φ28.00mm	
	Total height	7.62mm	
Time indication		2 Hands (Hour , Minute) Small Second hand / 3 o'clock Date Calendar Chronograph 60 seconds counter / Center 30 minutes counter / 9 o'clock 12 hours counter / 6 o'clock	
Basic function		Manual winding Automatic winding with ball bearing Stop second device Date display with quick 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. * All measurements are made without the chronograph in function.	
	Measurement position	Direction of 3 positions. (1) Dial up (2) 9 o'clock up (3) 6 o'clock up	
	Lift angle	51 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 * Measurements are made without the chronograph in function.	
Winding the mainspring		<< Movement >> ・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		34 jewels	
Crown position		Left rotation	Right rotation
	Normal position	Free	Manual winding
	First click	Date setting	Free
	Second click	Hand setting	Hand setting
Button position	2 o'clock	Chronograph Start & Stop	
	4 o'clock	Chronograph Reset	

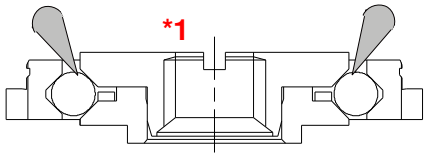
Disassembling procedures Figs. ① ⇒ ⑨③	**Type of oil** Moebius 9010 S-6 S-4	**Oil quantity mark** NORMAL QUANTITY SUFFICIENT QUANTITY
Reassembling procedures Figs. ⑨③ ⇒ ①		

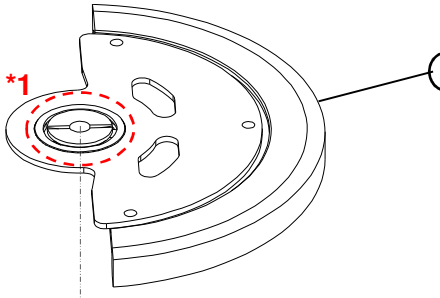
[NOTE]
Some parts cannot move when the chronograph is at RESET position.
Please press button A to START the chronograph before assembly / disassembly.



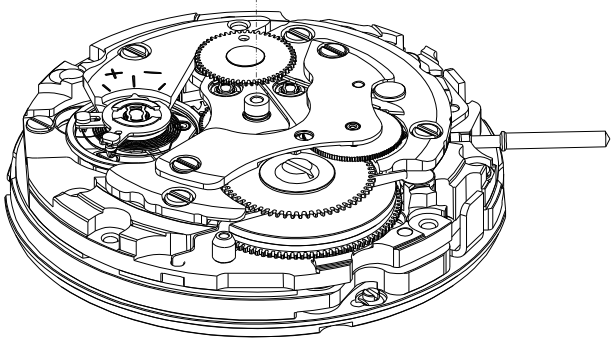
Button B
Chronograph RESET

Button A
Chronograph START / STOP



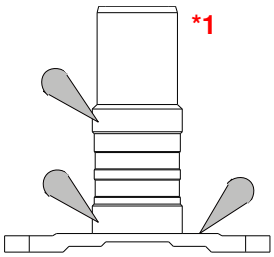


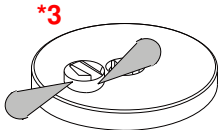
① 0509 286
Oscillating weight with ball bearing

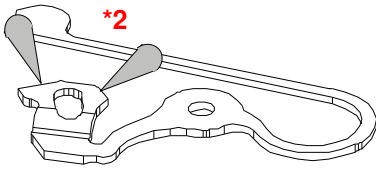


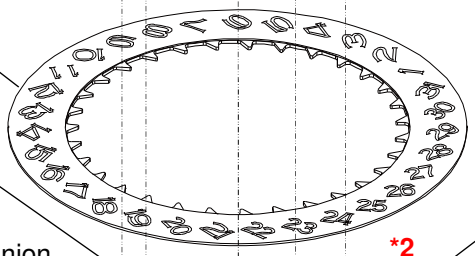
Type of oil
Moebius 9010
S-6
S-4

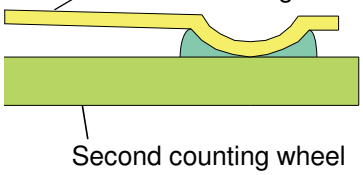
Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY

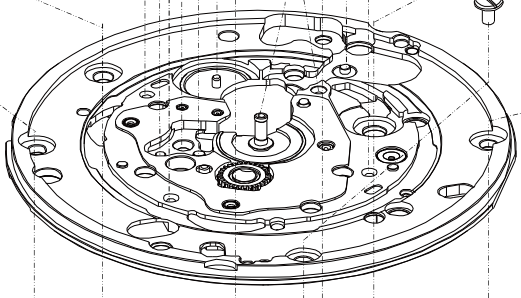


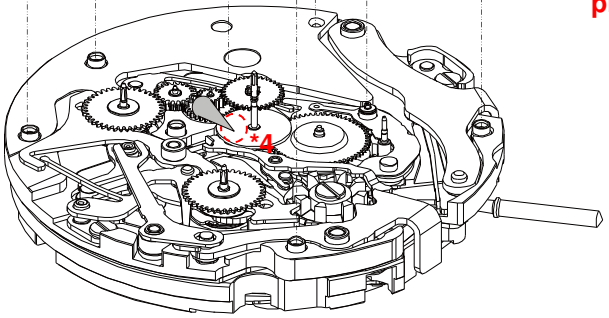


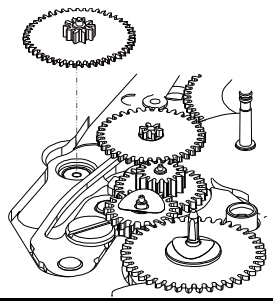












2 0016 709
Hour wheel guard screw

3 0376 178
Hour wheel guard

4 0491 184
Dial washer A

6 0270 443
Center wheel

5 0273 277
Hour wheel

*1

7 0016 709
Date indicator maintaining plate screw

8 0808 178
Date indicator maintaining plate

9 Date dial

11 0802 178
Date indicator driving wheel

12 0817 179
Intermediate date wheel and pinion

15 0012 092
Second counting wheel spring screw

16 0353 177
Second counting wheel spring

17 0012 092
Chronograph bridge screw

10 0810 177
Date jumper

*2

13 0595 177
Date corrector lever

14 0732 177
Date corrector cam

*3

*5

17 0012 092
Chronograph bridge screw

***4 Oiling position**

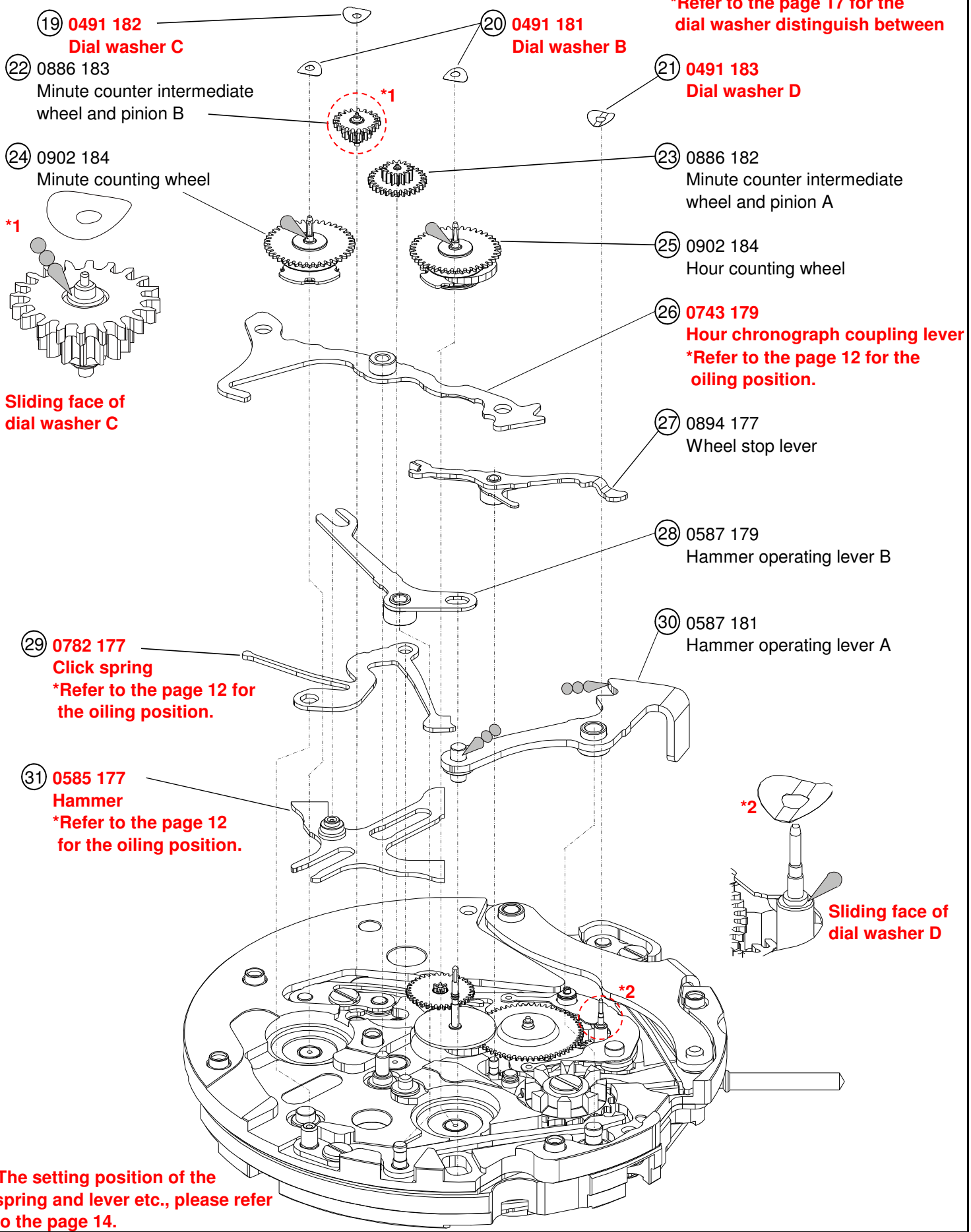
18 0190 193
Chronograph bridge
***Refer to the page 13 for the oiling position.**

***5 Intermediate date wheel and pinion setting position.**

Type of oil
Moebius 9010
S-6
S-4

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY

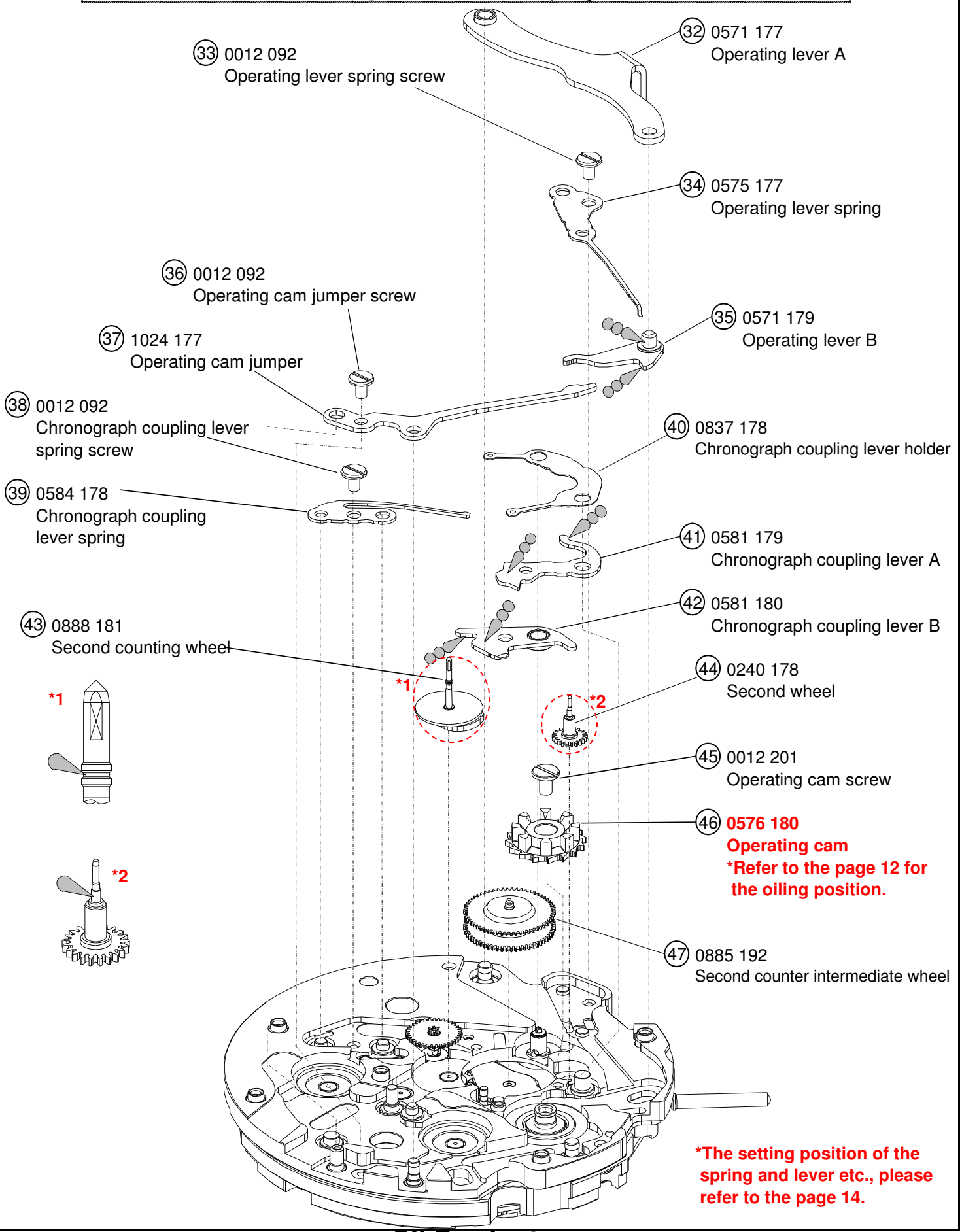
*Refer to the page 17 for the dial washer distinguish between



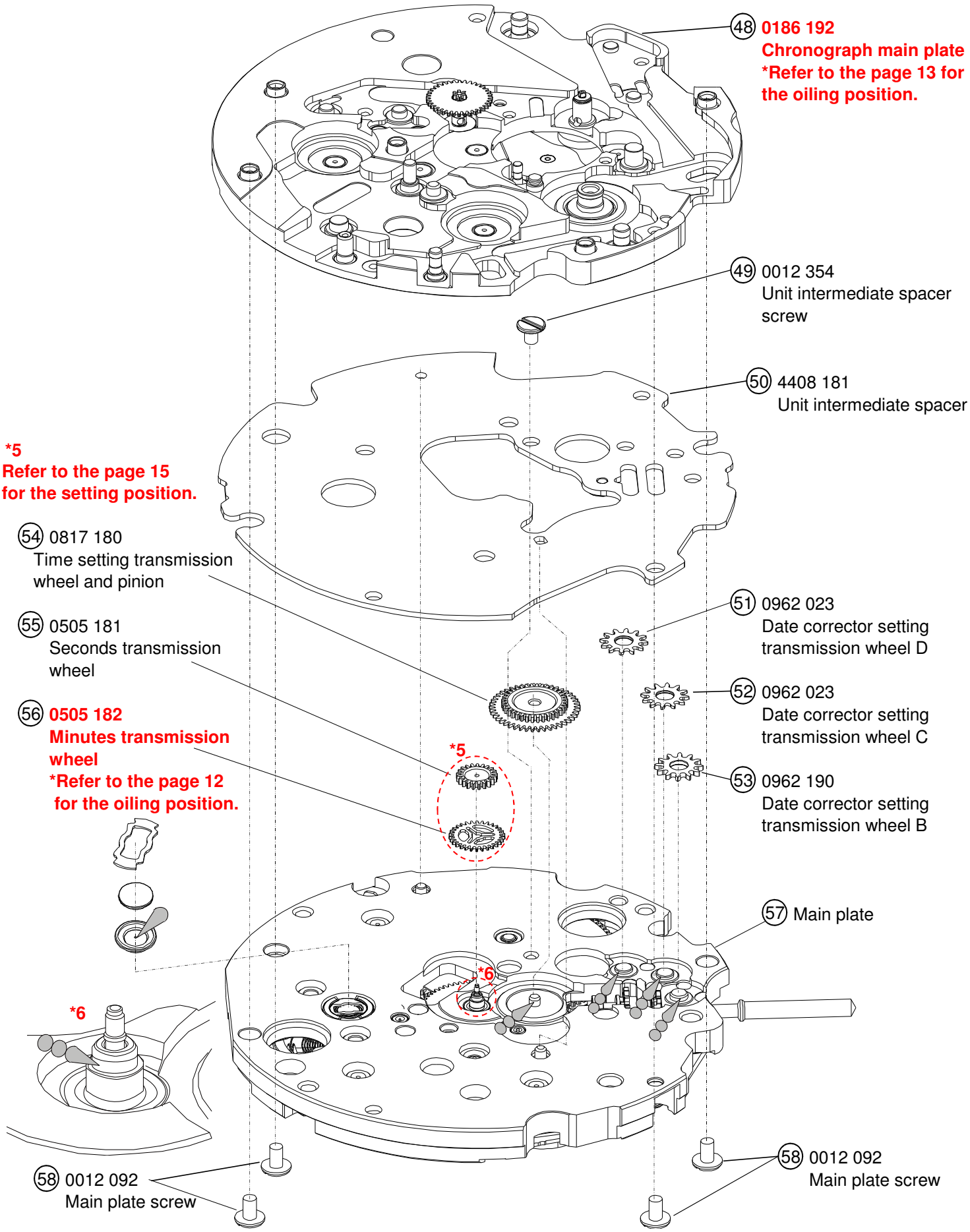
*The setting position of the spring and lever etc., please refer to the page 14.

Type of oil
Moebius 9010
S-6
S-4

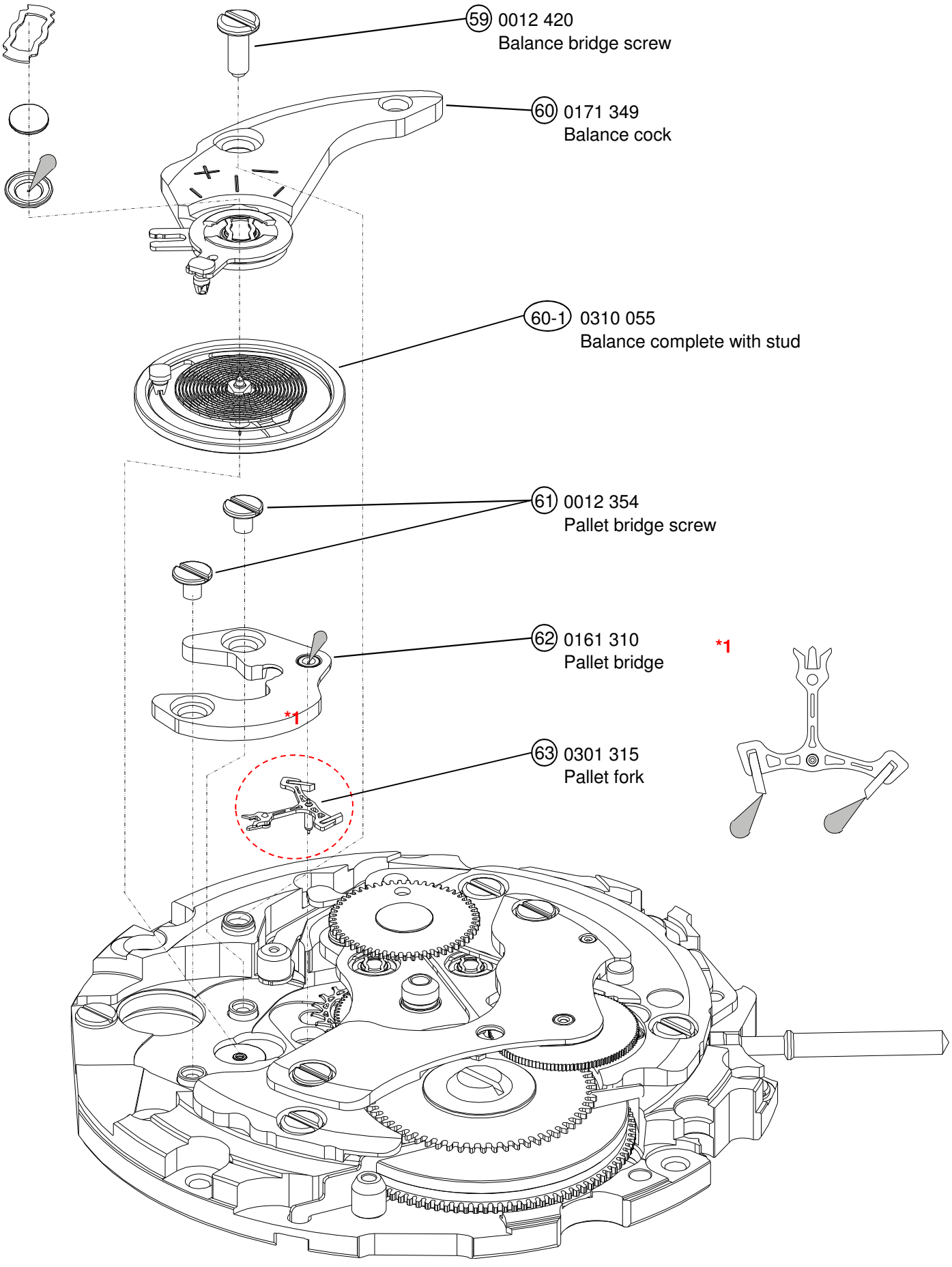
Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY



Type of oil	Oil quantity mark
Moebius 9010	NORMAL QUANTITY
S-6	SUFFICIENT QUANTITY
S-4	

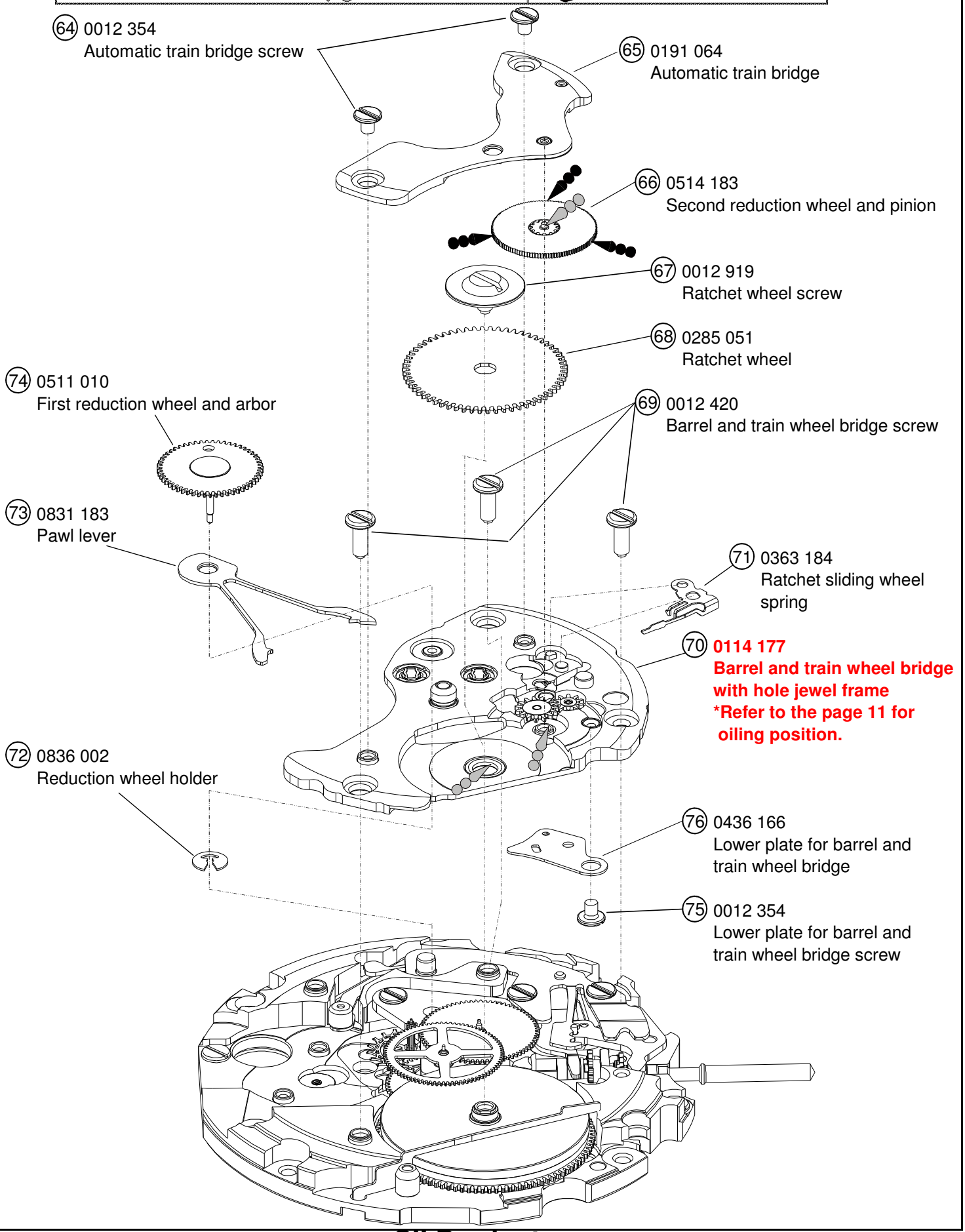


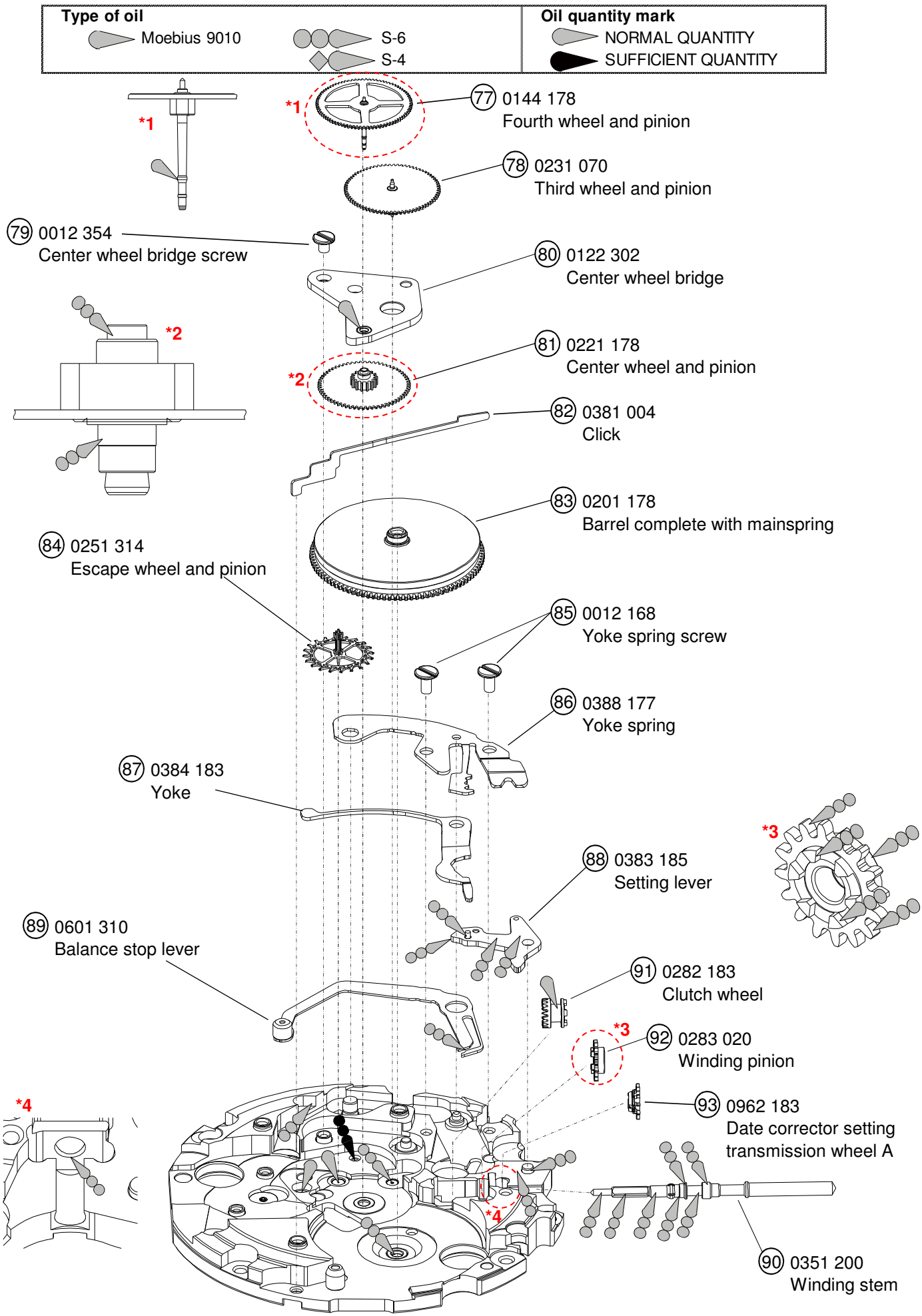
Type of oil	Oil quantity mark
Moebius 9010	NORMAL QUANTITY
S-6	SUFFICIENT QUANTITY
S-4	



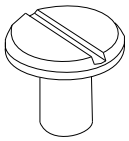
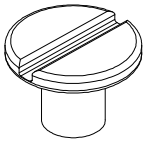
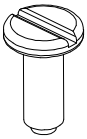
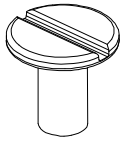
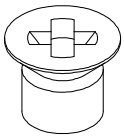
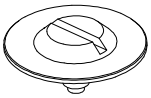
Type of oil
Moebius 9010
S-6
S-4

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY




Type of oil
Moebius 9010
S-6
S-4
Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY
*1
77 0144 178
Fourth wheel and pinion
78 0231 070
Third wheel and pinion
79 0012 354
Center wheel bridge screw
80 0122 302
Center wheel bridge
*2
81 0221 178
Center wheel and pinion
82 0381 004
Click
83 0201 178
Barrel complete with mainspring
84 0251 314
Escape wheel and pinion
85 0012 168
Yoke spring screw
86 0388 177
Yoke spring
87 0384 183
Yoke
*3
88 0383 185
Setting lever
89 0601 310
Balance stop lever
91 0282 183
Clutch wheel
92 0283 020
Winding pinion
*4
93 0962 183
Date corrector setting
transmission wheel A
90 0351 200
Winding stem

● **List od screw**

Parts code	Parts name	Parts code	Parts name	Parts code	Parts name
0012 092 	(15) Second counting wheel spring screw	**0012 354** 	(49) Unit intermediate spacer screw	**0012 420** 	(59) Balance bridge screw
	(17) Chronograph bridge screw (x5)		(61) Pallet bridge screw (×2)		(69) Barrel and train wheel bridge screw (×3)
	(33) Operation lever spring screw		(64) Automatic train bridge screw (×2)	**0012 168** 	(85) Yoke spring screw (×2)
	(36) Operation cam jumper screw		(75) Lower plate for barrel and train wheel bridge screw		
	(38) Chronograph coupling lever spring screw		(79) Center wheel bridge screw	**0016 709** 	(2) Hour wheel guard screw (x3)
	(58) Main plate screw (x4)	**0012 201** 	(45) Operating cam screw		(7) Date indicator maintaining plate screw
0012 919 	(67) Ratchet wheel screw				

(9) **Date dial**

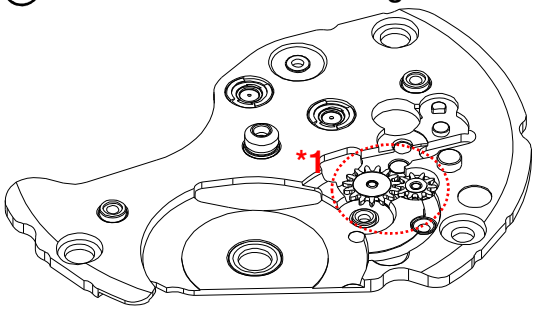
Parts code	Position of crown	Position of date frame	Color of numbers	Color of background
0878 109	3H	3H	Black	Silver (Plain metal)
0878 108	3H	3H	White	Black

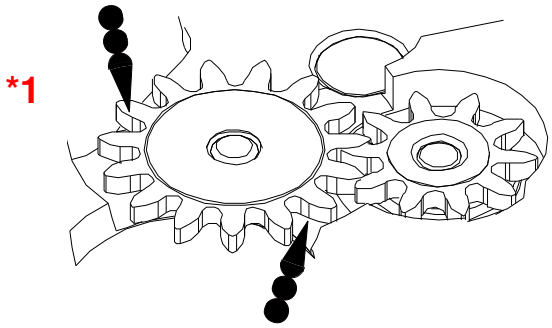
***All parts code are subject to change without notice.**

Type of oil		Oil quantity mark
Moebius 9010	S-6	NORMAL QUANTITY
	S-4	SUFFICIENT QUANTITY

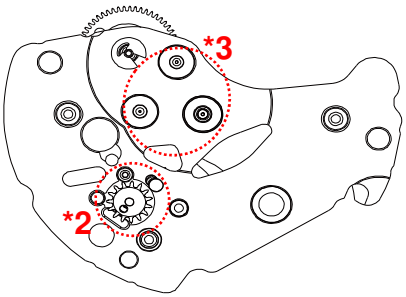
1.Oiling spot

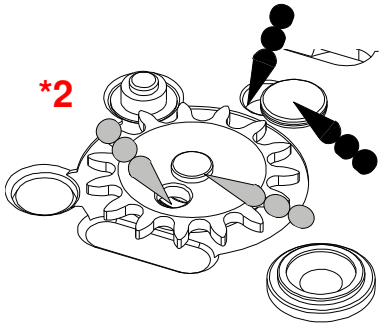
(1) (70) Barrel and train wheel bridge with hole jewel frame

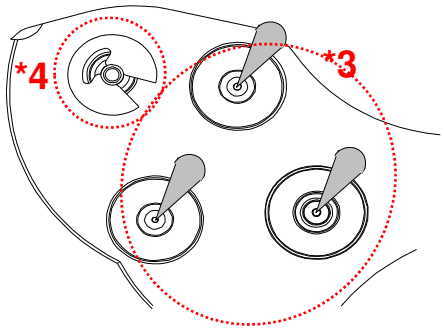




Barrel and train wheel bridge with hole jewel frame (back side)

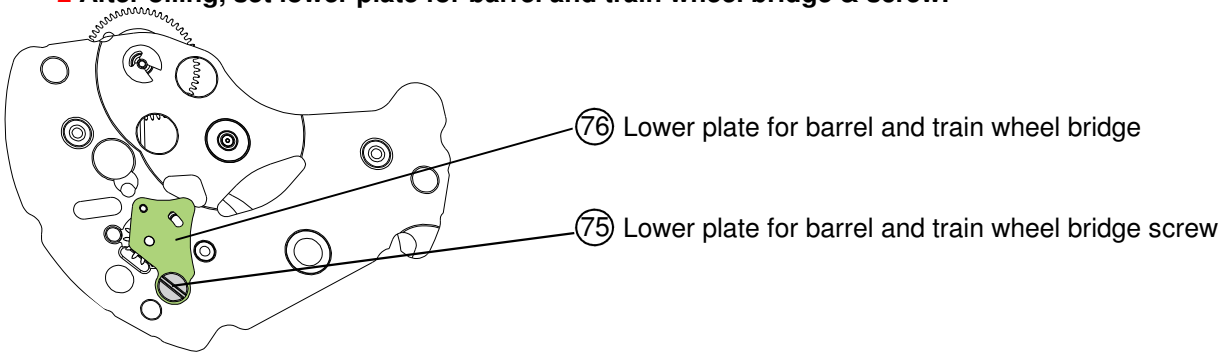






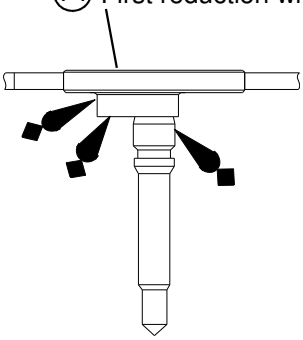
Note

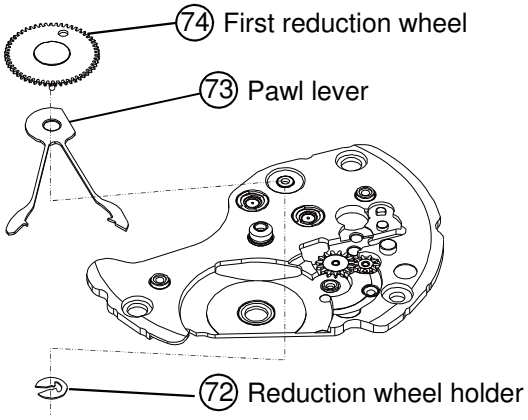
***2 After oiling, set lower plate for barrel and train wheel bridge & screw.**



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

(74) First reduction wheel





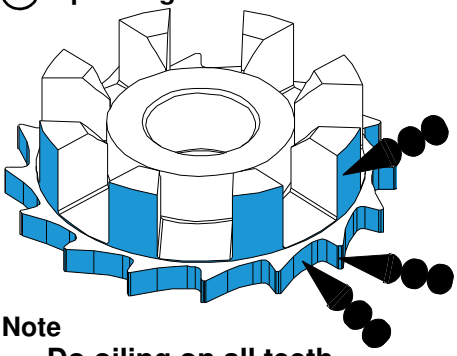
Note

***Refer to the page 16 for disassembling and reassembling.**

Type of oil	Oil quantity mark
Moebius 9010	NORMAL QUANTITY
S-6	SUFFICIENT QUANTITY
S-4	

1.Oiling spot

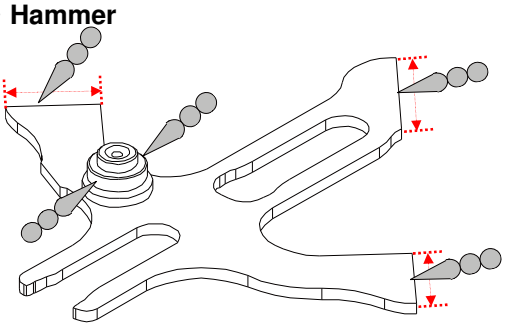
(2) 46 Operating cam



Note

Do oiling on all teeth

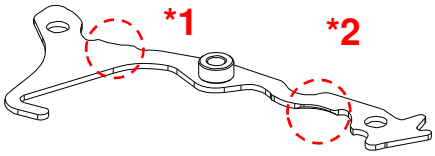
(3) 31 Hammer

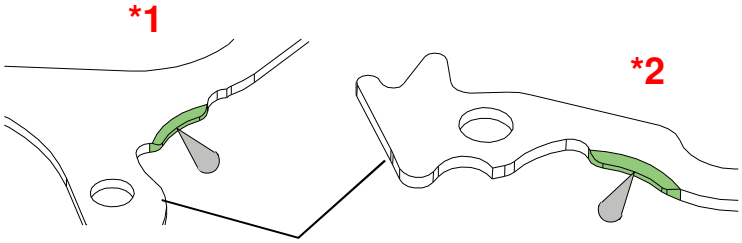


Note

There must be oil within the range of the arrow.

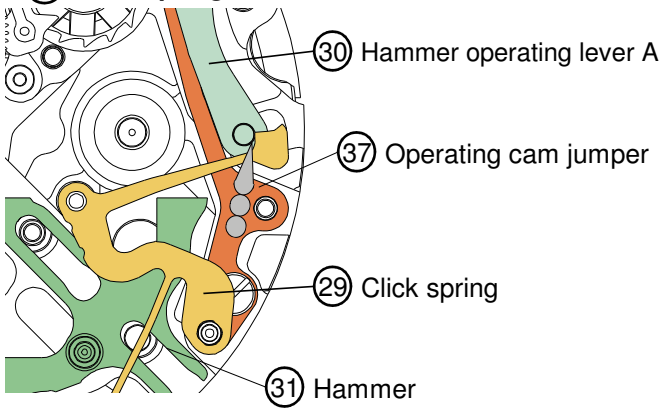
(4) 26 Hour chronograph coupling lever

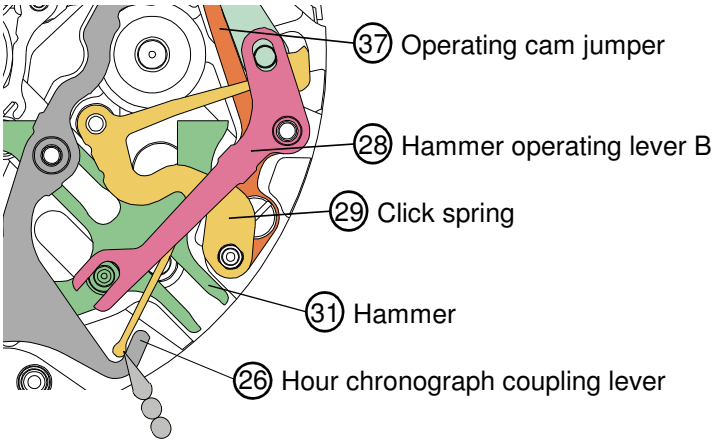




Back side

(5) 29 Click spring

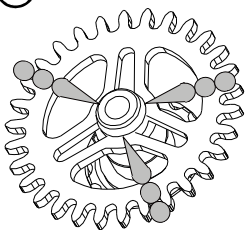




Note

There must be oil within the range of the arrow.

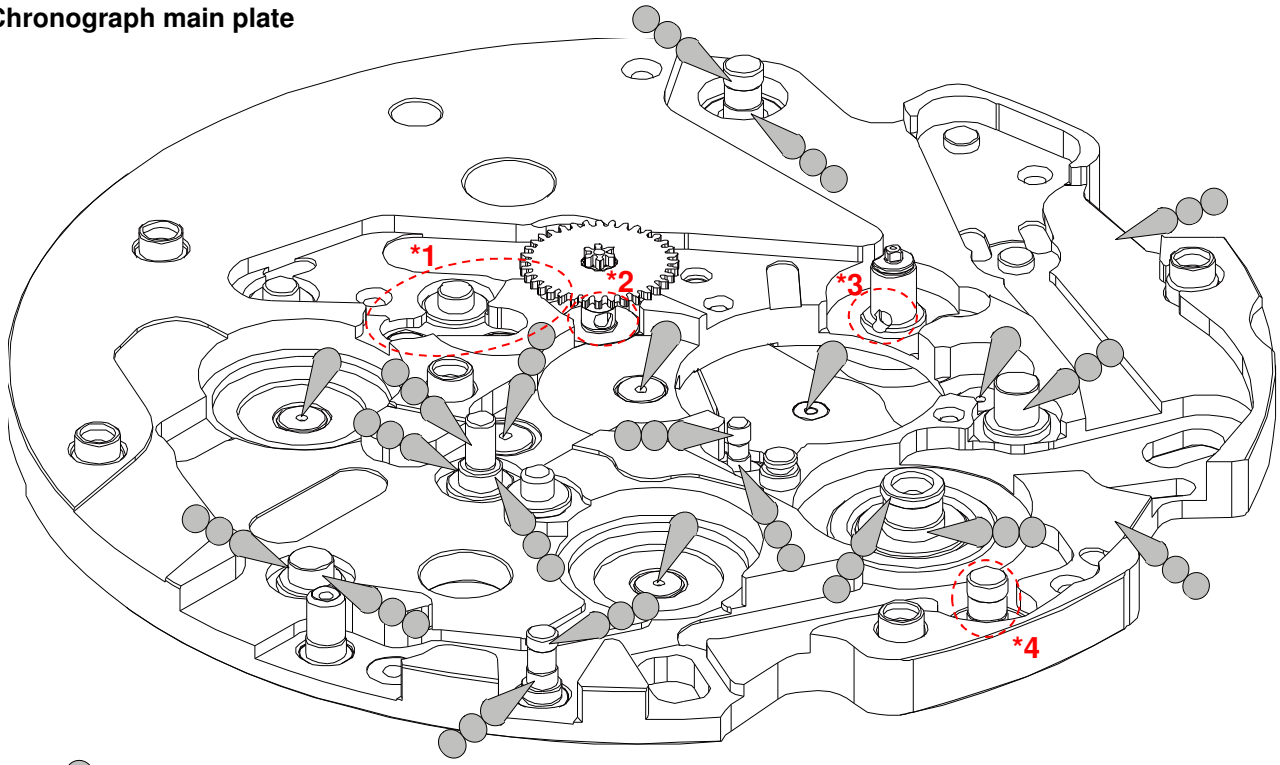
(6) 56 Minutes transmission wheel

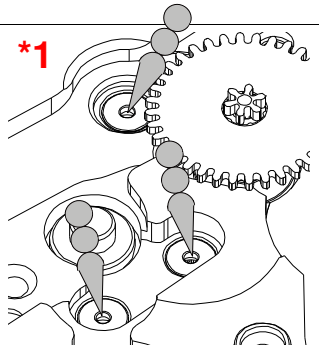


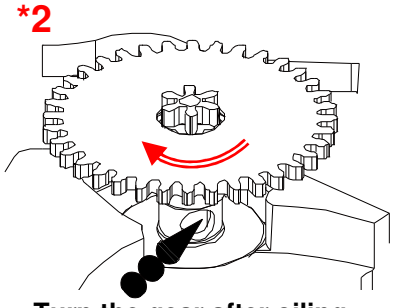
Type of oil	Oil quantity mark
Moebius 9010	NORMAL QUANTITY
S-6	SUFFICIENT QUANTITY
S-4	

1.Oiling spot

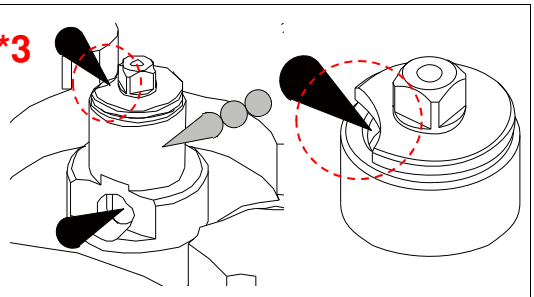
(7) ㊽ Chronograph main plate



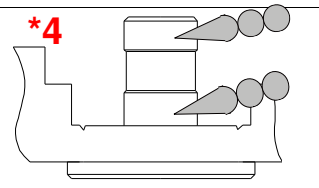




Turn the gear after oiling



Turn the gear after oiling

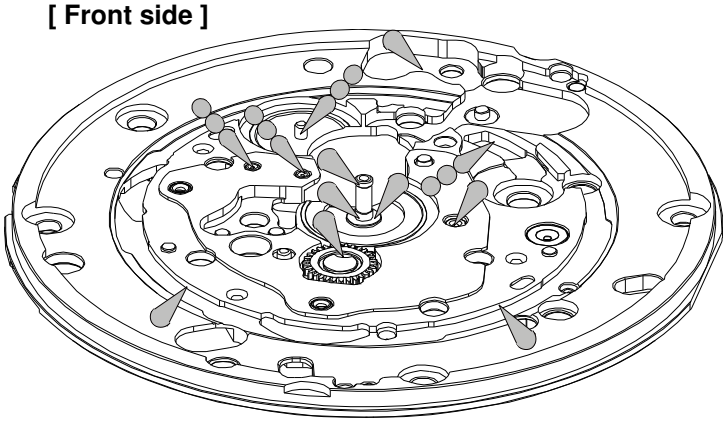


Note

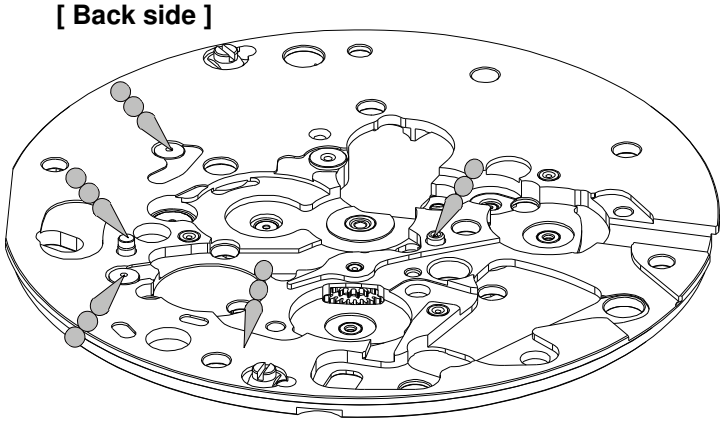
There must be oil within the range of the arrow.

(8) ⑱ Chronograph bridge

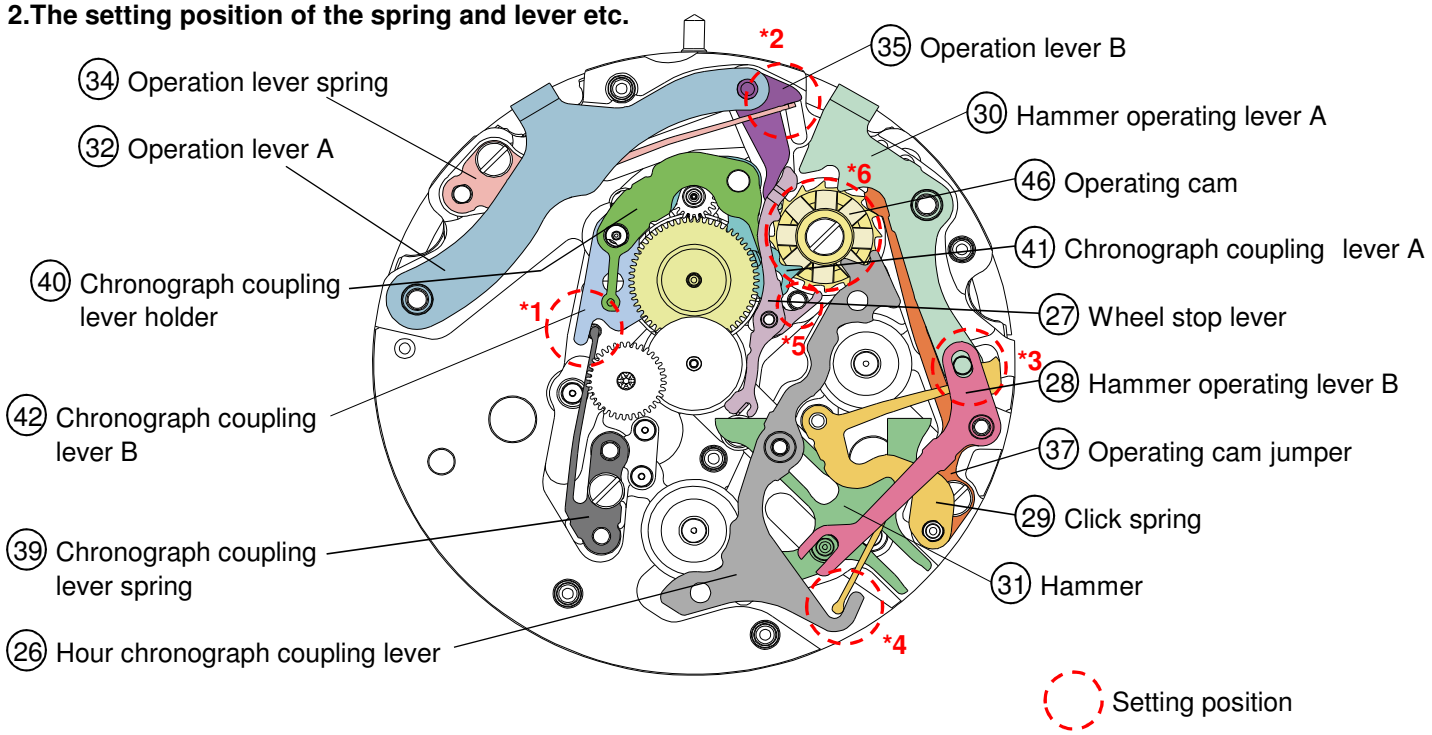
[Front side]

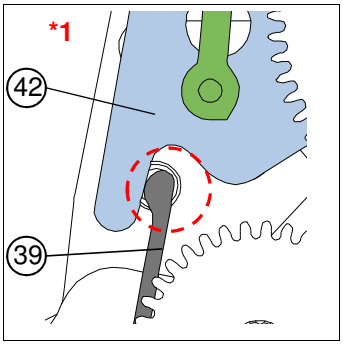


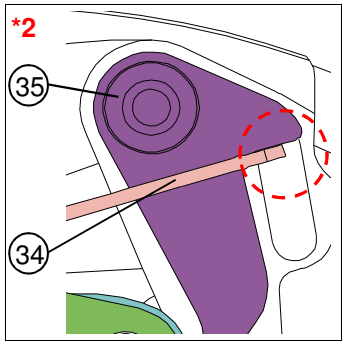
[Back side]

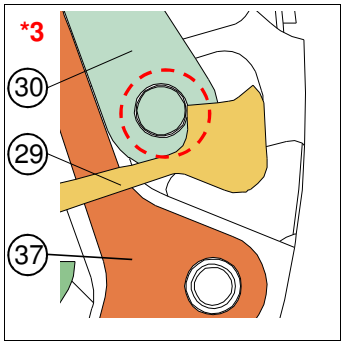


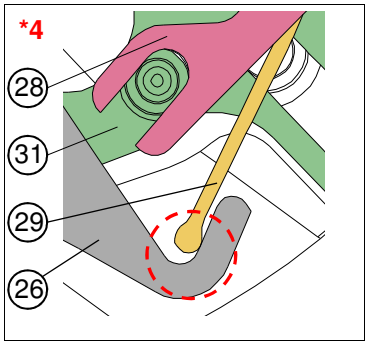
2.The setting position of the spring and lever etc.



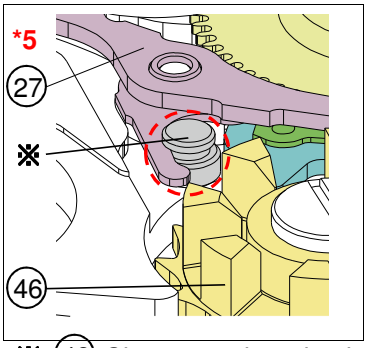


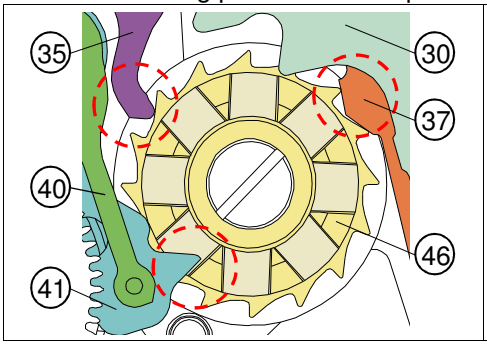


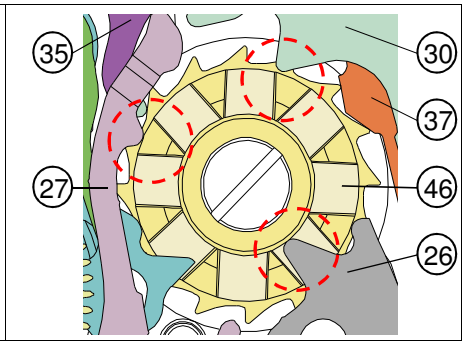




*6 The setting position of the operation cam with and lever.







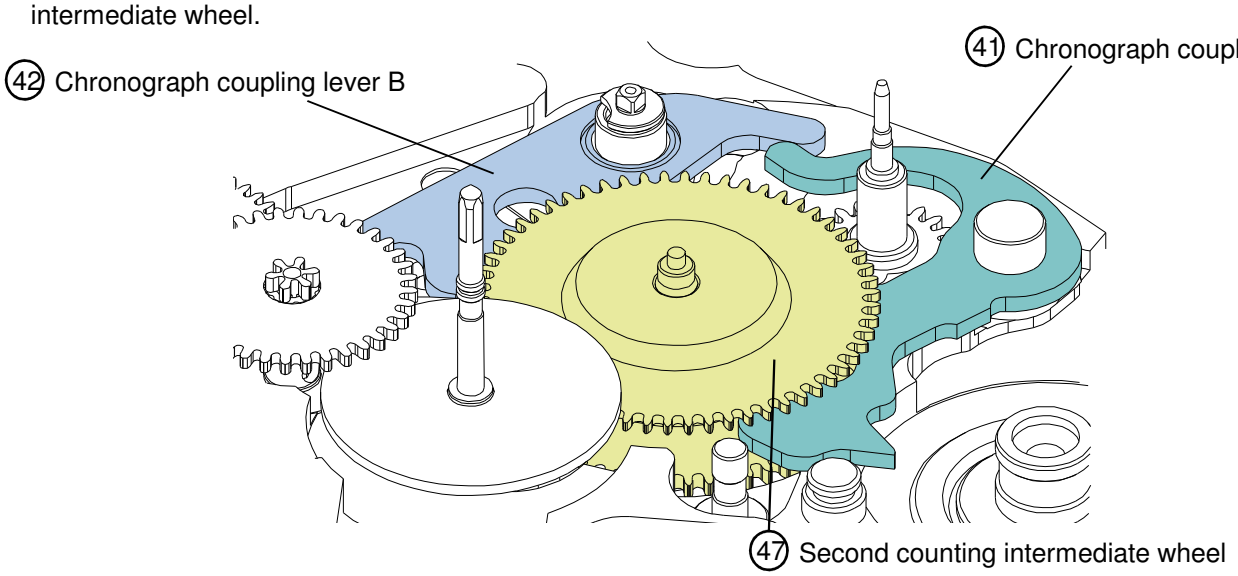
※ (48) Chronograph main plate

Note

After assembling the movement, if is not possible to button operation, please recheck the spring position.

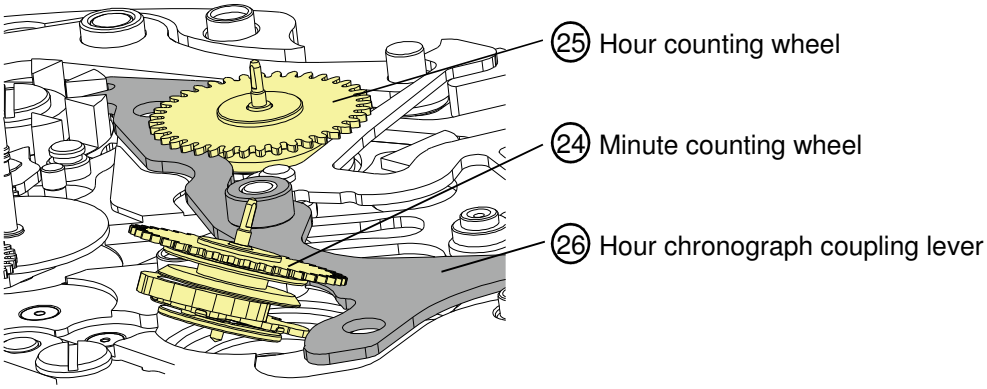
3.Chronograph coupling A and B setting position

Set chronograph coupling lever A and chronograph coupling lever B between the gears of second counting intermediate wheel.



4.Hour chronograph coupling lever setting position

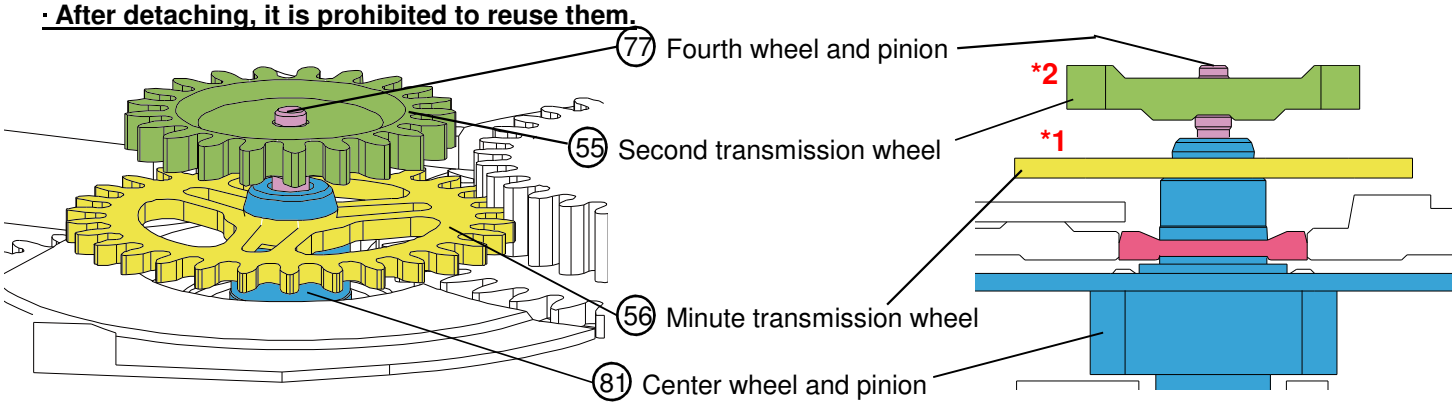
Hour and minute counting wheel need to be inclined when setting.

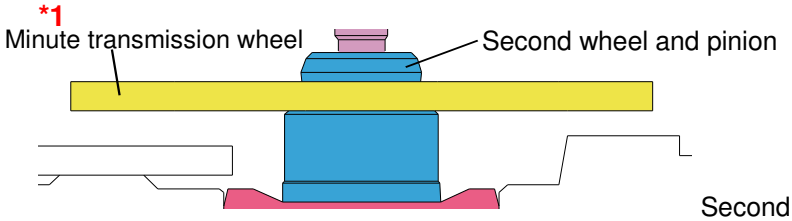


5.Second transmission wheel and minute transmission wheel setting position

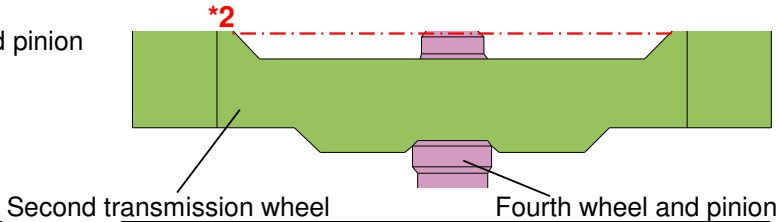
· Second transmission wheel and minute transmission wheel should be set parallel to main plate.

· After detaching, it is prohibited to reuse them.





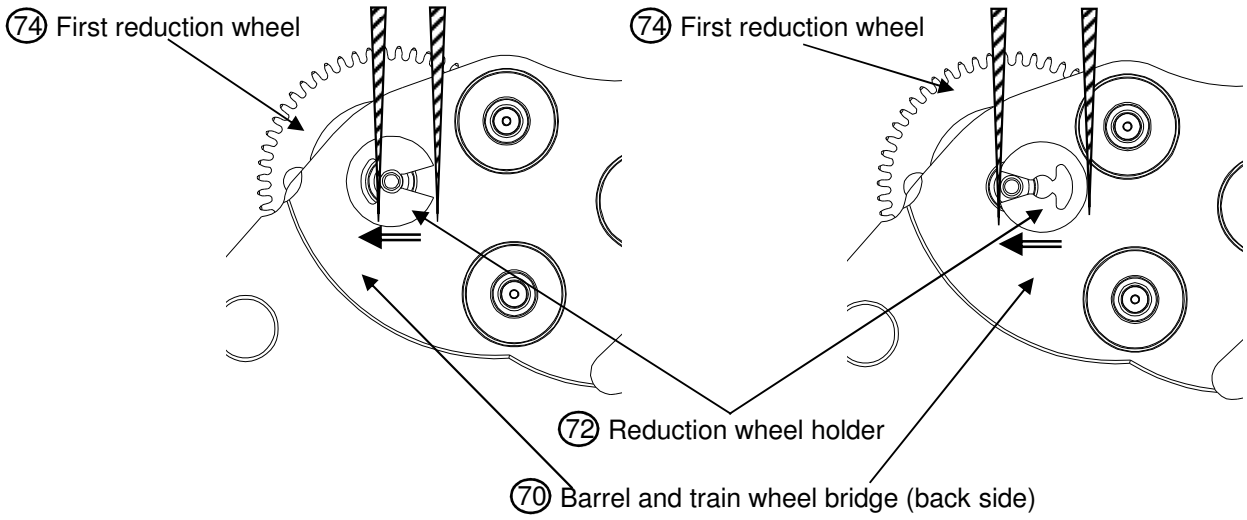
· Make sure to parallel with the main plate.
· But even if it is inclining a little, there is no problem if there are no other parts interfering together.



· The second transmission wheel top surface should be set parallel with the fourth wheel and pinion tip.
· But even if it is inclining a little, there is no problem if there are no other parts interfering together.

6.Disassembling / assembling of the first reduction wheel

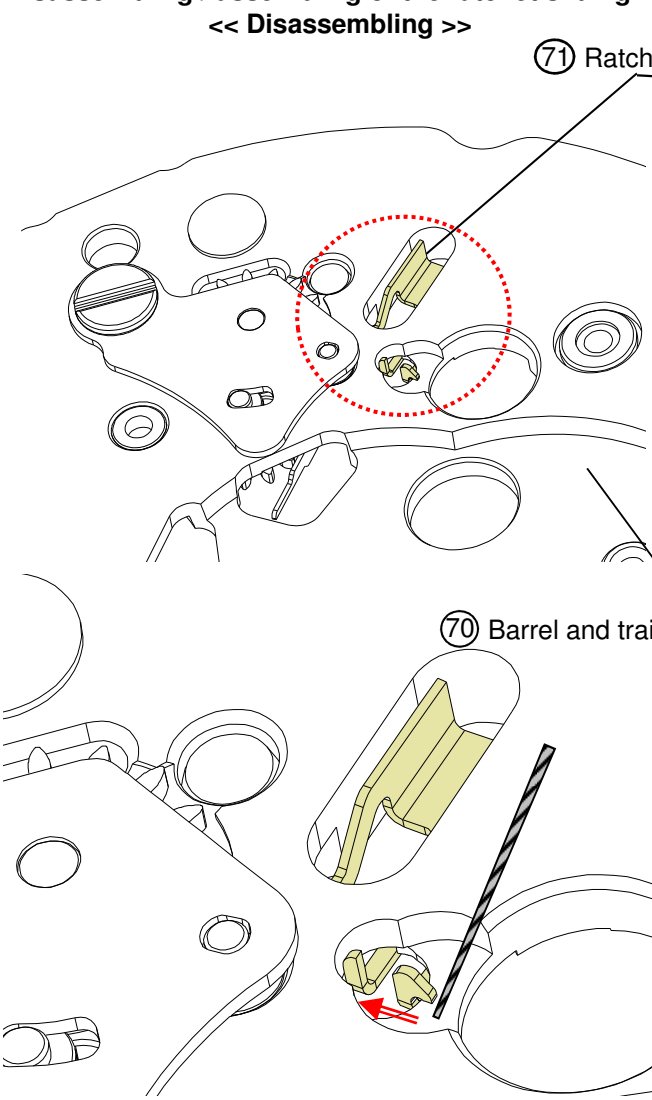
<< Disassembling >>



<< Assembling >>

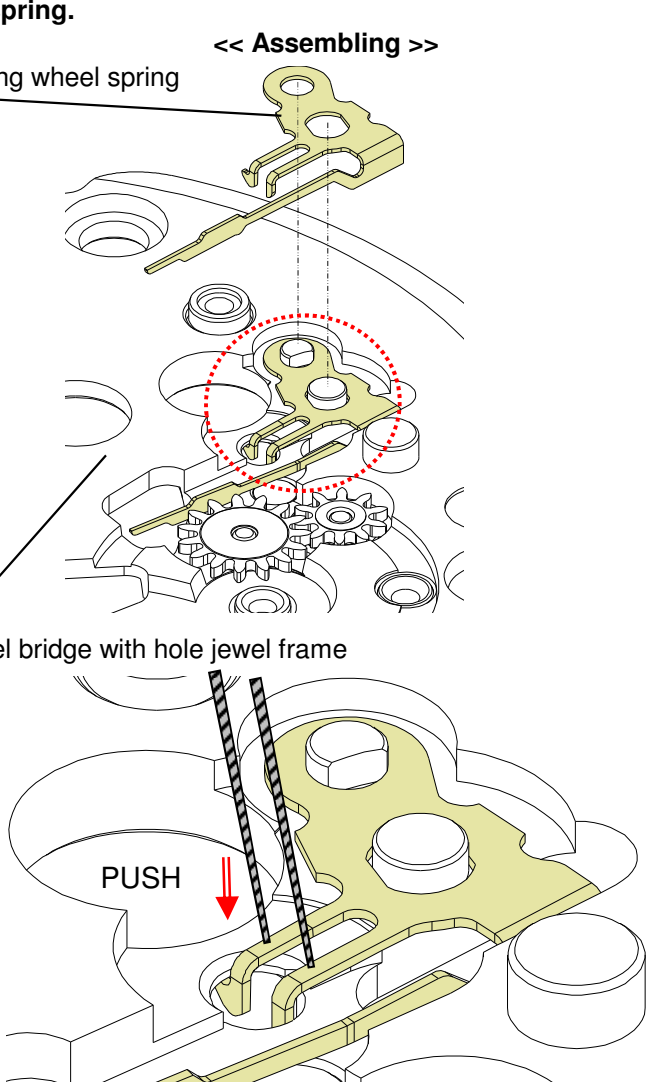
7.Disassembling / assembling of the ratchet sliding wheel spring.

<< Disassembling >>



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

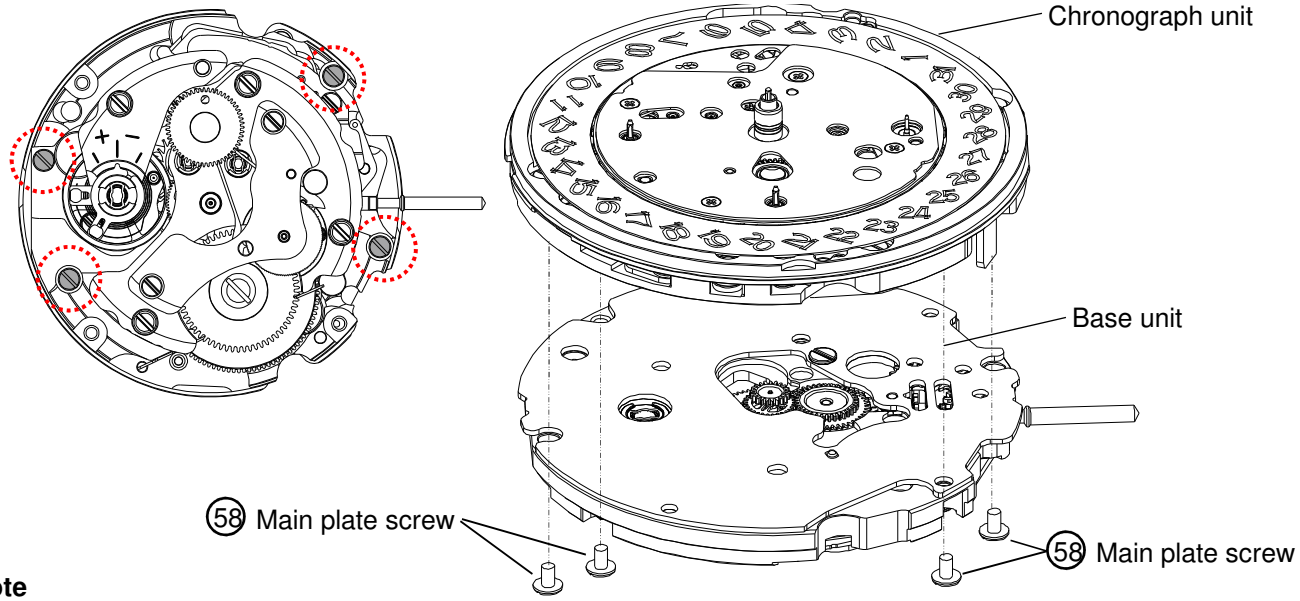
<< Assembling >>



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

8.Chronograph unit and Base Unit (Disassembling and Reassembling)

Detachment of the chronograph unit and base unit by taking off the screws (4pcs.)
Attachment of the chronograph unit with the base unit.



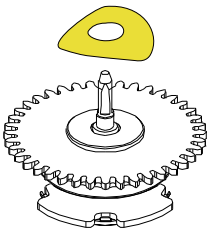
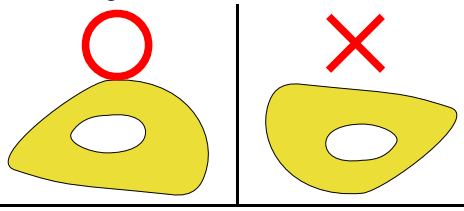
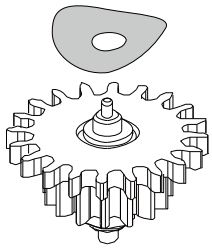
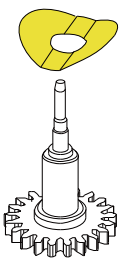
Note

When attaching chronograph unit on base unit, set the push button A in START position, in order to ensure that the following wheels mesh perfectly with one another.

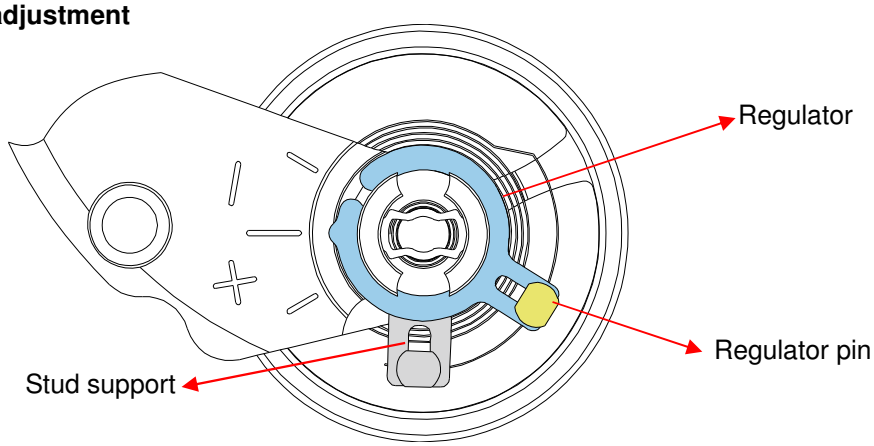
Crown position	Base unit	Chronograph unit	Check point
First position	(51) Date corrector setting transmission wheel D	Date corrector setting transmission wheel E	Date display with quick correction
Second position	(56) Minutes transmission wheel	Minute wheel pinion A	Hand setting
	(55) Seconds transmission wheel	Seconds counter intermediate wheel	Driving

Before attaching the chronograph unit, check that base unit operates correctly.

9.Method to distinguish between dial washers

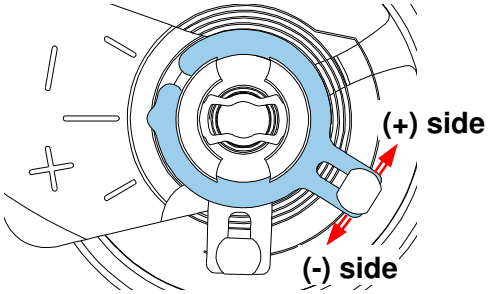
Parts name	Parts code	Set position		Note
(20) Dial washer B (X2)	0491 181		Minute counting wheel Hour counting wheel	· Color of Brass · Handling caution 
(19) Dial washer C	0491 182		Minute counter intermediate wheel and pinion B	· Color of Silver
(21) Dial washer D	0491 183		Second wheel	· Color of Brass

10.Accuracy adjustment

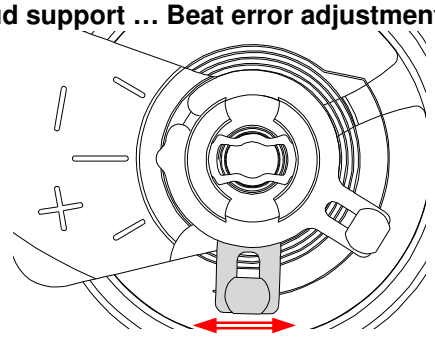


Note:

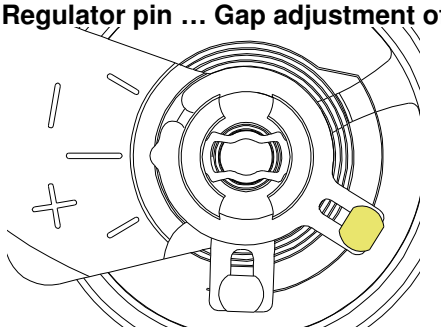
・Regulator … Time adjustment



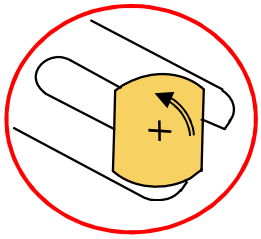
・Stud support … Beat error adjustment



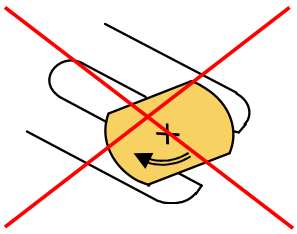
・Regulator pin … Gap adjustment of balance spring and regulator pin



Anticlockwise rotation



No clockwise rotation



11.Setting position of oscillating weight

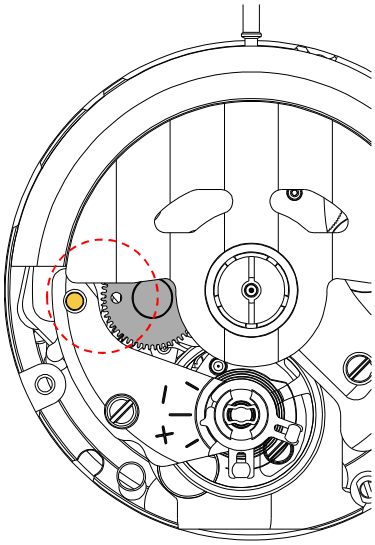
·Before assembling oscillating weight.

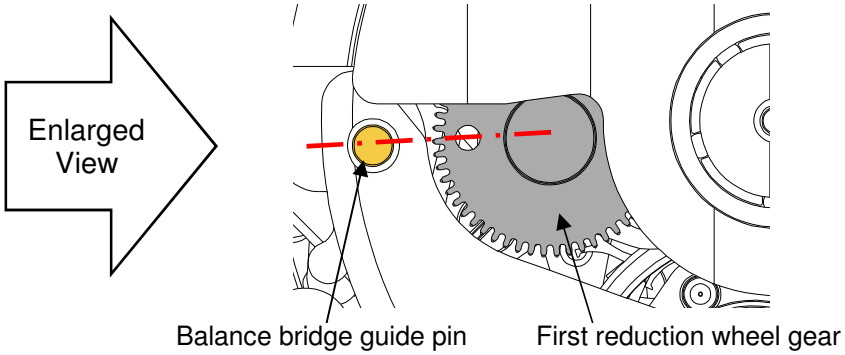
Match the center of oscillating weight and winding stem.

Set the hole of first reduction wheel gear on the imaginary line toward balance bridge guide pin.

Note

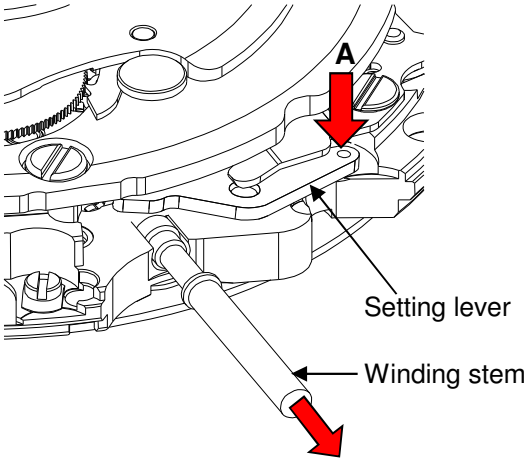
This procedure is necessary to maximize the performance of automatic winding.





12.To remove winding stem

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



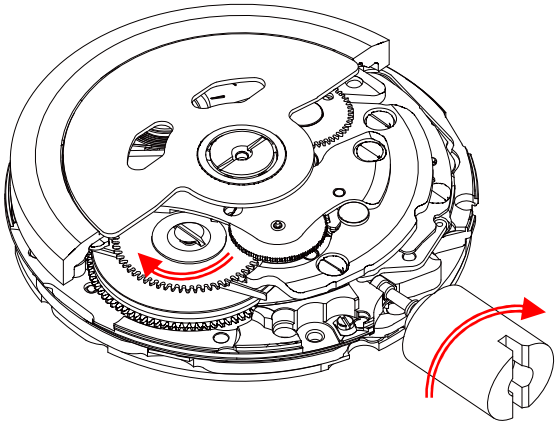
13.To wind up the mainspring

The mainspring would be fully wounded up by turning ratchet wheel screw 8 times clockwise.

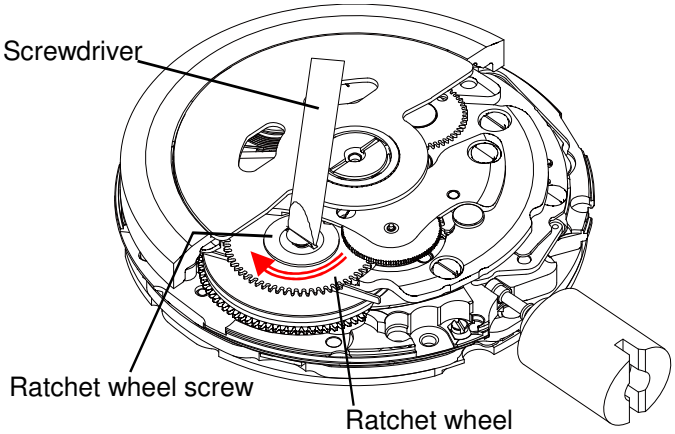
· Manual winding … Rotate crown clockwise at normal position by min 55 times.(Equal to ratchet wheel screw 8 times)

· Screwdriver winding … Turn ratchet wheel screw 8 times clockwise.

[Manual winding]

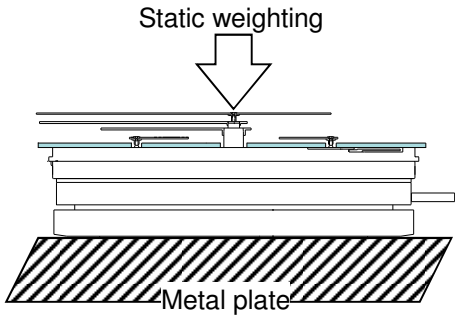


[Screwdriver winding]



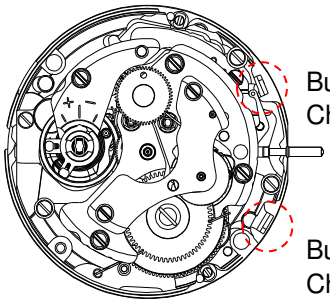
14.How to attach hands

Place the movement directly on a flat metal plate or something similar to attach 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: Second / minute / Hour chronograph hands setting

(1) Push button A (chronograph start)
(2) Push button A (chronograph stop)
(3) Push button B (chronograph reset)
(4) After (1)~(3), install the second and hour hands at "12" o'clock, minute hand at "30"minute position.



***Do not reuse the chronograph hands once detached. Please change and use new hands.**

Note

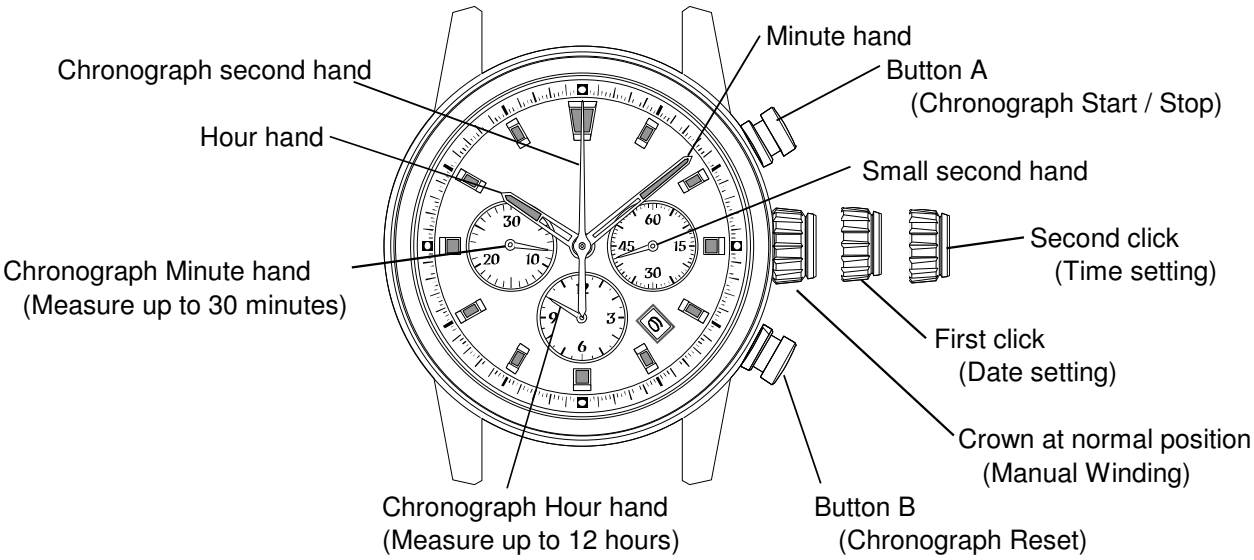
During time setting, if the chronograph is started, chronograph hour and minute hands will rotate simultaneously.
This is not a malfunction. Please reset chronograph by pushing button B.
Chronograph hour and minute hands will return to their reset positions.

15.Accuracy measurement condition

Static accuracy : -15~+25 second per day
Measurement conditions

(1) Measurement should be done within 10~60 minutes after fully wound up.
(2) Lift angle : 51 deg.
(3) Measurement position : ① Dial up ② 9 o'clock ③ 6 o'clock
(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.

DISPLAY AND CROWN / BUTTON OPERATION



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.

Note

During time setting, if the chronograph is started, chronograph hour and minute hands will rotate simultaneously. This is not a malfunction. Please reset chronograph by pushing button B.
Chronograph hour and minute hands will return to their reset positions.

2.How to set the date

1) Pull out the crown to the first click position.
2) Turn the crown to left for date setting.
   *Do not set the date between 8:00 P.M. and 2:00 A.M. as this will cause a malfunction.
3) Push the crown back into the normal position.

3.To wind up the mainspring

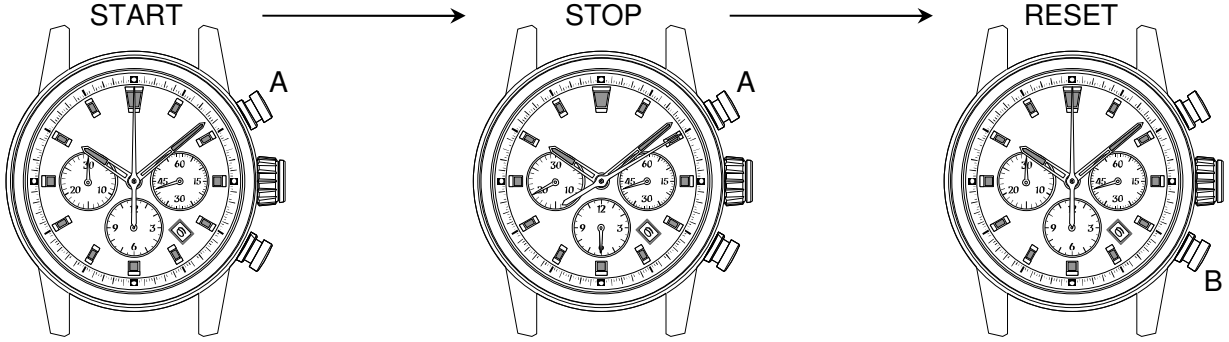
1) Manual winding … Rotate the crown clockwise at normal position.
   · Fully wounded up by turning the crown minimum 55 times.
   · Fully wounded up by turning the ratchet wheel screw 8 times.
   It will start to move naturally shaking slightly.
2) To wind up with winding machine.
   ·Rotary speed : 30 rpm
   ·Operating time : 60 minutes

HOW TO USE THE CHRONOGRAPH

[Standard measurement]

Press the buttons in the following order : A → A → B

START → STOP → RESET



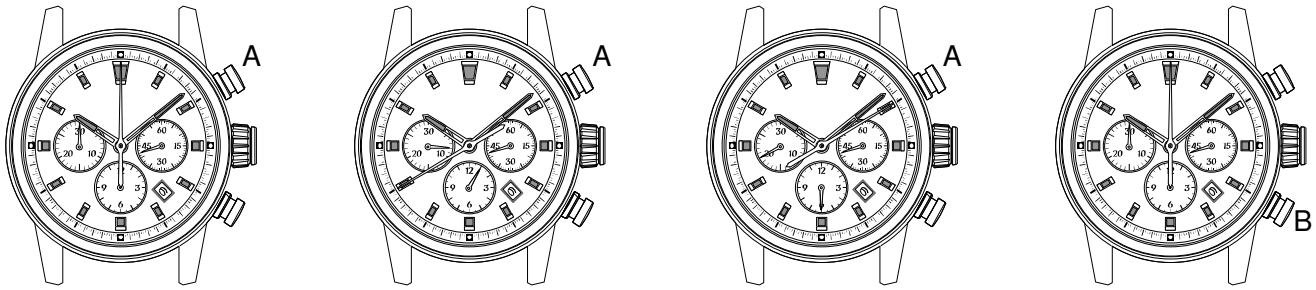
(6 hours 20 minutes 10 seconds)

- Press button A to start chronograph. Chronograph second hand will start moving.
- Press button A again to stop chronograph. Chronograph hands stop to indicate the elapsed time.
- Press button B to reset chronograph. All chronograph hands will be reset to "0" position.

[Accumulated elapsed time measurement]

Press the buttons in the following order : A → A / A ··· → A → B

START → STOP / RESTART → STOP → RESET



(1 hours 8 minutes 40 seconds) (6 hours 20 minutes 10 seconds)

*Restart and stop of chronograph can be repeated as many times as necessary by pressing button A