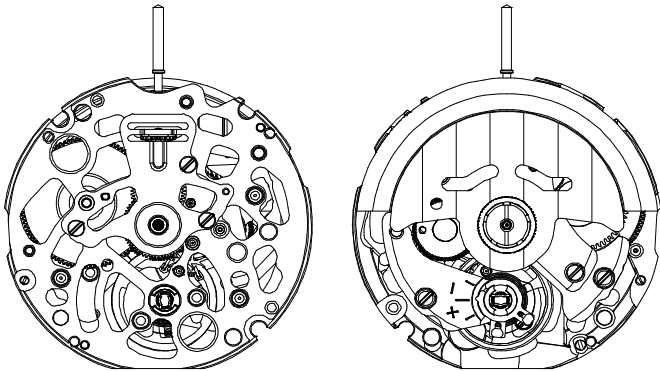


**TECHNICAL GUIDE
&
PARTS CATALOGUE**

**Cal.NH7 Series
(NH70A/71A/72A)**

AUTOMATIC MECHANICAL

Cal. No.		NH70A	NH71A	NH72A
		Silver	Gilt	Ruthenium grey
Item				
Movement				
Movement size	Outside diameter	Φ27.4 mm		
	Casing diameter	Φ27.0 mm		
	Total height	5.32 mm		
Time indication		3 Hands (Hour, Minute, Second)		
Basic function		Manual winding Automatic winding with ball bearing Stop-second device		
Frequency		21,600 vibrations per hour		
Accuracy	Static accuracy	- 20 ~ + 40 seconds per day * Measurement should be done within 10 ~ 60 minutes after fully wound up.		
	Measurement position	Direction of 3 positions (1) Dial up (2) 9 o'clock up (3) 6 o'clock up		
	Lift angle	53 deg		
	Measurement time	20 seconds * Equipment to be used : Witschi WATCH EXPERT		
	Posture difference	Difference is under 60 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)	- 20 ~ + 40 seconds per day * Direction position : Dial up * Difference of static accuracy of 24 h and 0 h		
Duration time		More than 41 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		24 jewels		
Crown position	Normal position	Counter clockwise	Free	
		Clockwise	Manual winding	
	First click	Time setting		

Disassembling procedures Figs.


① → ④③


Reassembling procedures Figs.

④③ → ①


Type of oil


 Moebius 9010

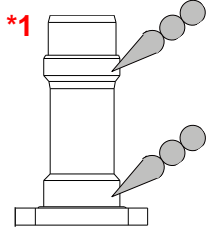
 A9a (S-4)

 A9a (S-6)

Oil quantity mark

 Normal quantity

 Sufficient quantity



① 0012 354
Hour wheel guard screw

② Hour wheel guard
Refer to page 6 for each parts code

③ 0273 183
Hour wheel

***2**

⑥ Lower shock absorbing spring

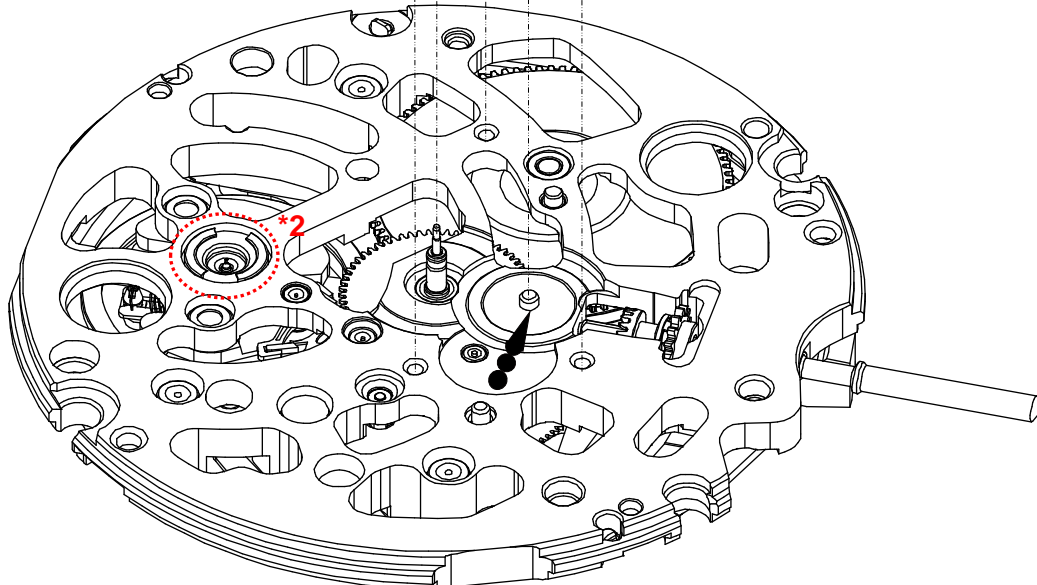
⑦ Lower shock absorbing cap jewel

⑧ Lower hole jewel frame for shock-absorber

④ 0261 190
Minute wheel and pinion

***1**

⑤ 0225 425
Cannon pinion



Disassembling procedures Figs.


① → ④③


Reassembling procedures Figs.

④③ → ①


Type of oil


 Moebius 9010

 A9a (S-4)

 A9a (S-6)

Oil quantity mark

 Normal quantity

 Sufficient quantity

⑨ Oscillating weight with ball bearing
Refer to page 6 for each parts code

⑮ 0012 100
Balance bridge screw

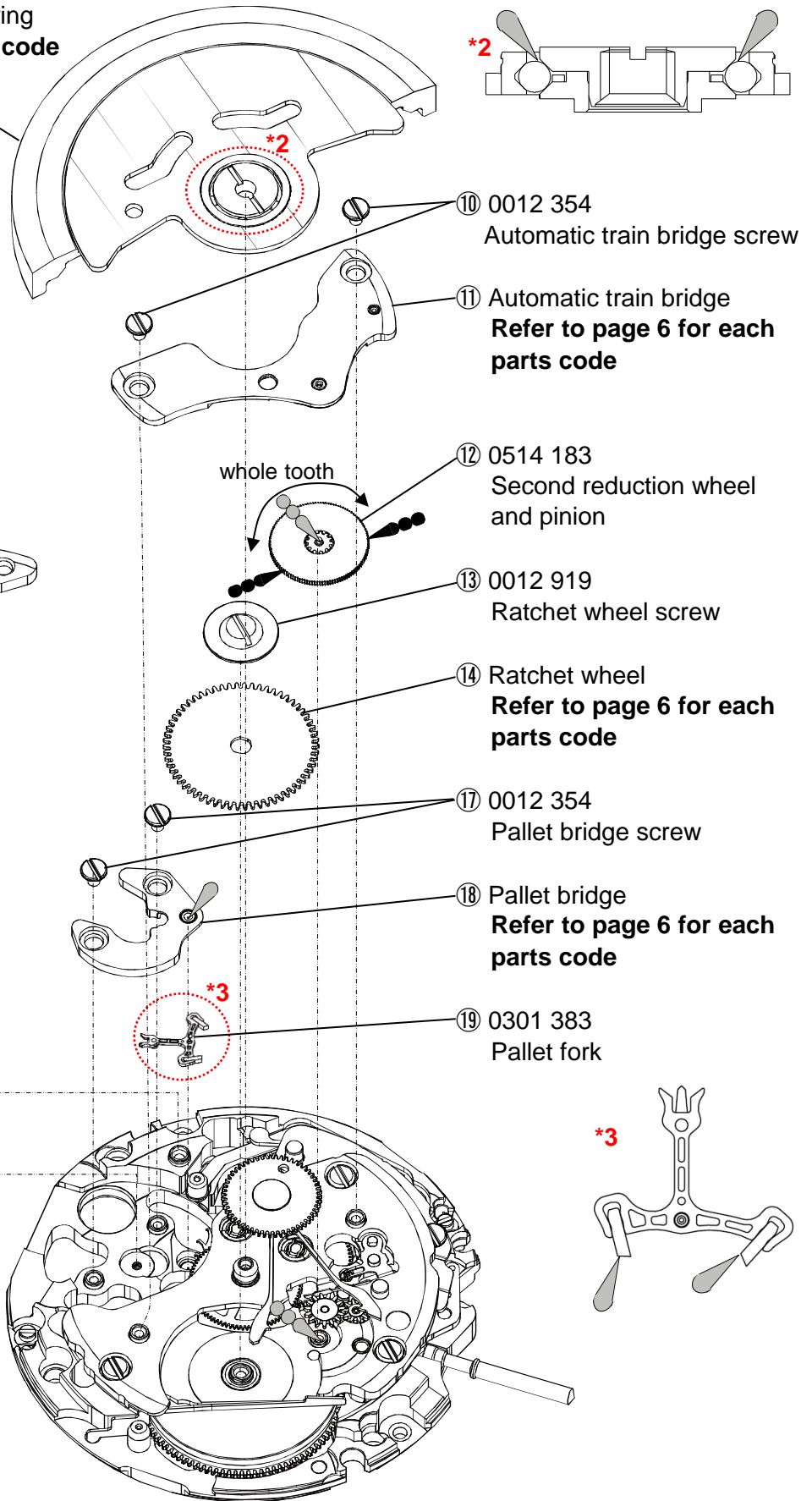
⑯ Balance cock
Refer to page 6 for each parts code

16-1
Balance complete with stud
Refer to page 6 for each parts code

*1
16-2
Upper shock absorbing spring

16-3
Upper shock absorbing cap jewel

16-4
Upper hole jewel frame for shock-absorber



Disassembling procedures Figs.

① → ④③


Reassembling procedures Figs.

④③ → ①


Type of oil


 Moebius 9010

 A9a (S-4)

 A9a (S-6)

Oil quantity mark

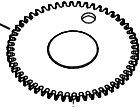
 Normal quantity

 Sufficient quantity

②⑤ 0511 010

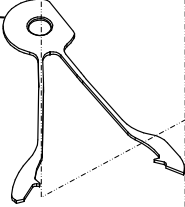
First reduction wheel

Refer to page 7 for oiling spot



②④ 0831 183

Pawl lever



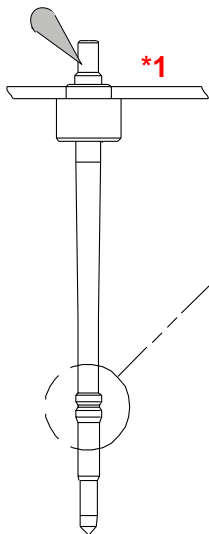
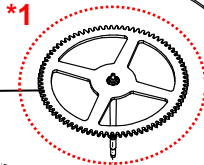
②③ 0836 002

Reduction wheel holder



②⑧ 0144 184

Fourth wheel and pinion



②⑩ 0012 100

Barrel and train wheel bridge screw



②①-1 Cap jewelled spring

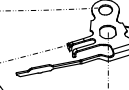


②①-2 Cap jewel



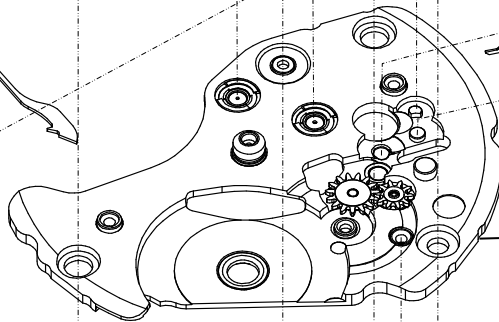
②② 0363 184

Ratchet sliding wheel spring



Refer to page 9 for the assembling method

②① Barrel and train wheel bridge with hole jewel frame

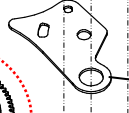


Refer to page 6 for each parts code

Refer to page 7 for oiling spot

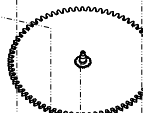
②⑥ 0436 166

Lower plate for barrel and train wheel bridge



②⑦ 0012 354

Lower plate for barrel and train wheel bridge screw



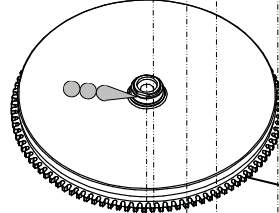
②⑨ 0231 070

Third wheel and pinion



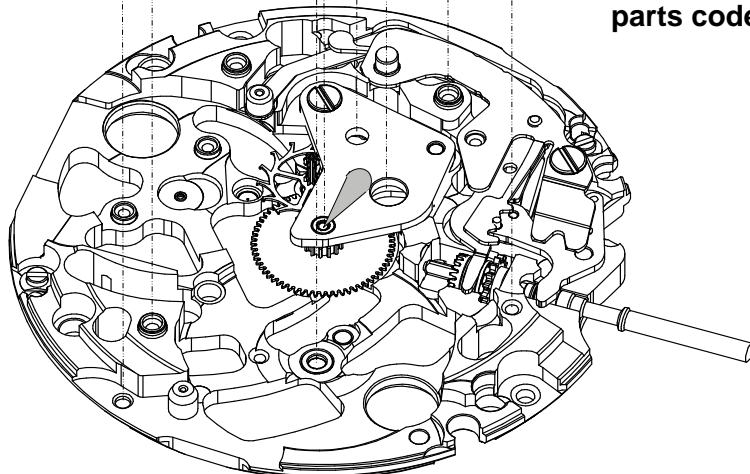
③⑩ 0381 004

Click



③① Barrel complete with mainspring

Refer to page 6 for each parts code



Disassembling procedures Figs.


① → ④③


Reassembling procedures Figs.

④③ → ①


Type of oil


 Moebius 9010

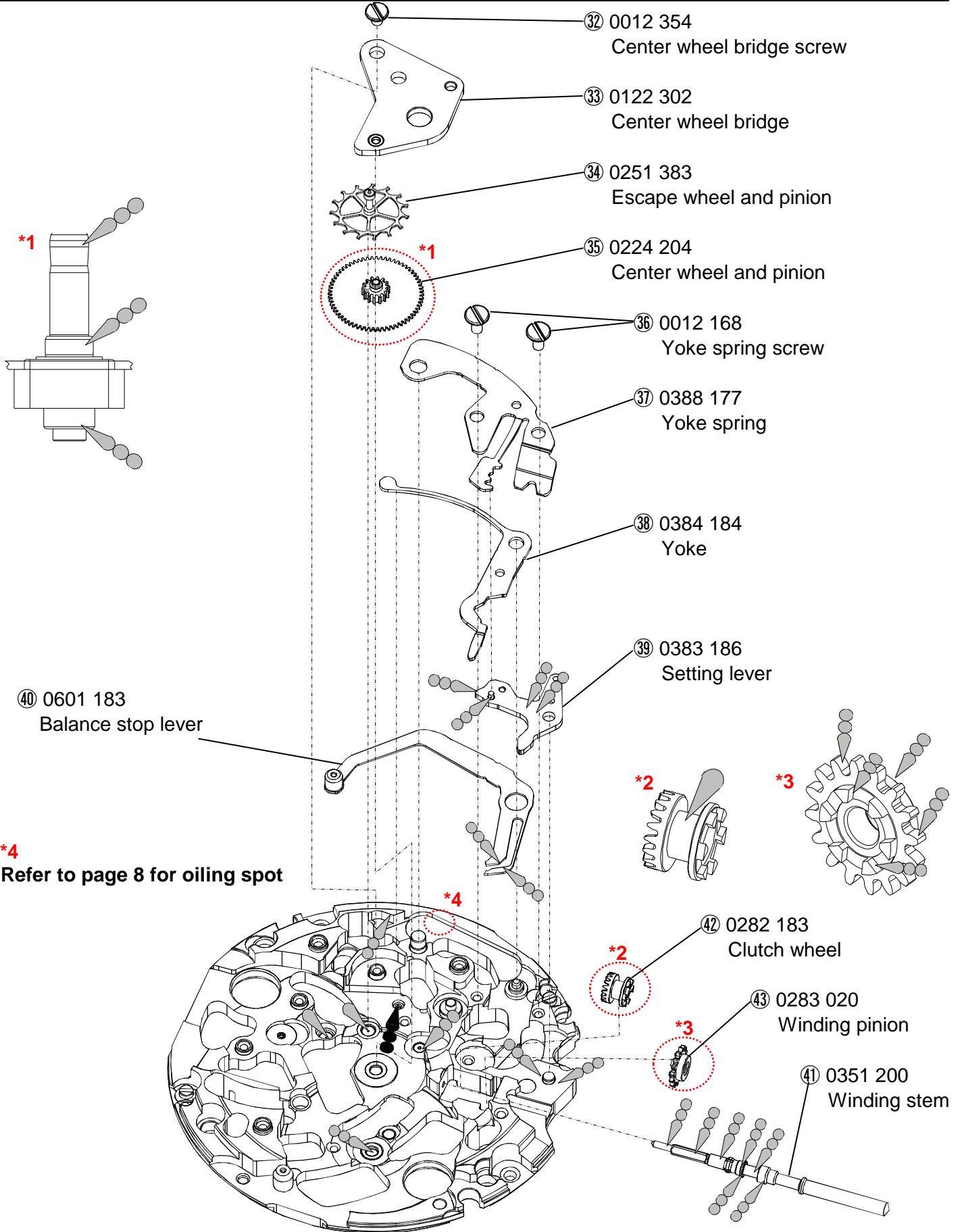
 A9a (S-4)

 A9a (S-6)

Oil quantity mark

 Normal quantity

 Sufficient quantity



② Hour wheel guard (Page 2)

Cal.	Parts code	Cal.	Parts code	Cal.	Parts code
NH70	0376 199	NH71	0376 299	NH72	0376 399

⑨ Oscillating weight with ball bearing (Page 3)

Cal.	Parts code	Marking	Cal.	Parts code	Marking	Cal.	Parts code	Marking
NH70	1509 195	Japan mark	NH71	1509 189	Japan mark	NH72	1509 181	Japan mark
	1509 196	Malaysia mark		1509 187	Malaysia mark		1509 183	Malaysia mark

⑪ Automatic train bridge (Page 3)

Cal.	Parts code	Cal.	Parts code	Cal.	Parts code
NH70	0191 183	NH71	0191 288	NH72	0191 398

⑭ Ratchet wheel (Page 3)

Cal.	Parts code	Cal.	Parts code
NH70 NH72	0285 051	NH71	0285 199

⑯ Balance cock (Page 3)

Cal.	Parts code	Cal.	Parts code	Cal.	Parts code
NH70	0171 353	NH71	0171 295	NH72	0171 395

⑯-⑰ Balance complete with stud (Page 3)

Cal.	Parts code	Cal.	Parts code
NH70 NH71	0310 184	NH72	0310 183

⑱ Pallet bridge (Page 3)

Cal.	Parts code	Cal.	Parts code
NH70 NH72	0161 300	NH71	0161 298

⑳ Barrel and train wheel bridge with hole jewel frame (Page 4)






Cal.	Parts code	Cal.	Parts code	Cal.	Parts code
NH70	0114 183	NH71	0114 299	NH72	0114 399

㉑ Barrel complete with mainspring (Page 4)

Cal.	Parts code	Cal.	Parts code
NH70 NH72	0201 083	NH71	0201 199

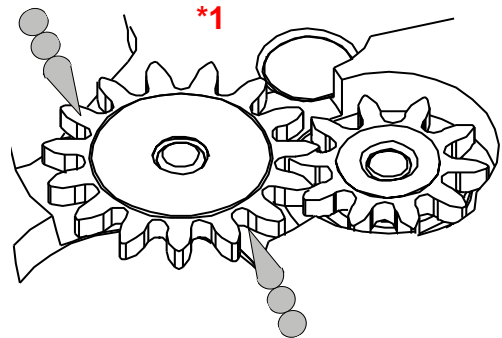
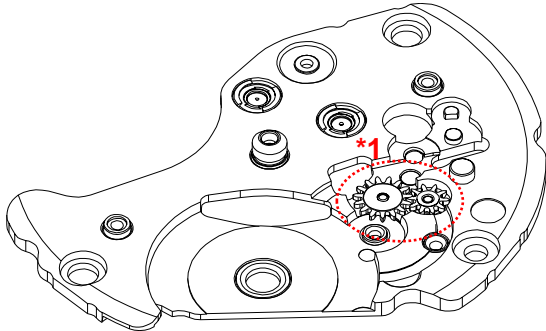
■ List of screw

Page	No	Parts code	Parts name	Parts form	Page	No	Parts code	Parts name	Parts form
2	①	0012 354	Hour wheel guard screw (x3)		3	⑬	0012 919	Ratchet wheel screw	
3	⑩		Automatic train bridge screw (x2)		3	⑮	0012 100	Balance bridge screw	
	⑰		Pallet bridge screw (x2)			⑳		Barrel and train wheel bridge screw (x3)	
4	⑳		Lower plate for barrel and train wheel bridge screw		4	㉑	0012 100	Barrel and train wheel bridge screw (x3)	
5	㉒		Center wheel bridge screw						
5	㉓	0012 168	Yoke spring screw (x2)						

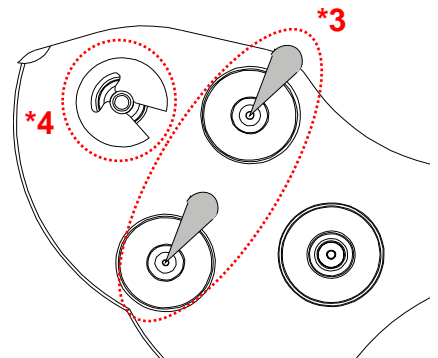
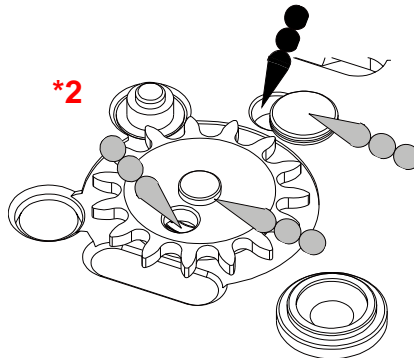
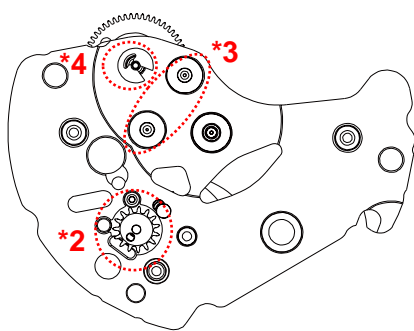
Type of oil	
 Moebius 9010	 A9a (S-6)
 A9a (S-4)	
Oil quantity mark	
 Normal quantity	 Sufficient quantity

1. Oiling spot

⑳ Barrel and train wheel bridge with hole jewel frame

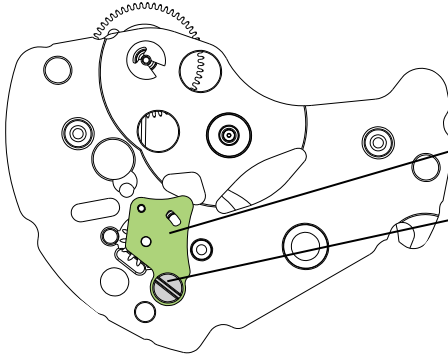


Barrel and train wheel bridge with hole jewel frame (back side)



Note

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

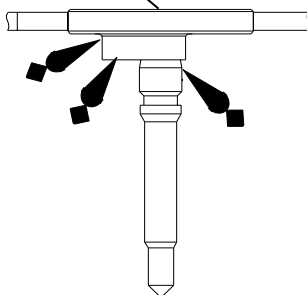


⑳ Lower plate for barrel and train wheel bridge

㉑ Lower plate for barrel and train wheel bridge screw

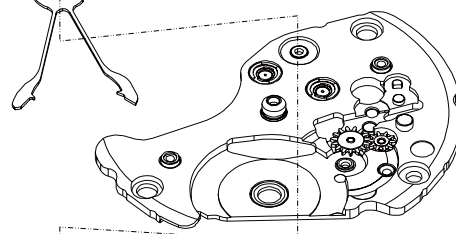
***4** After oiling, set first reduction wheel & pawl lever & reduction wheel holder.

㉒ First reduction wheel



㉒ First reduction wheel

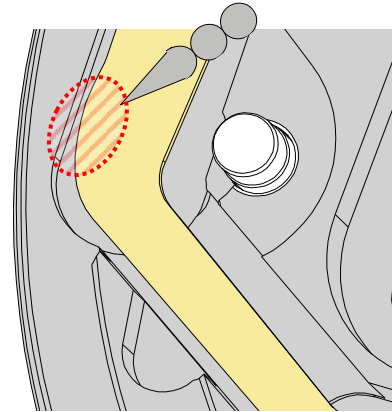
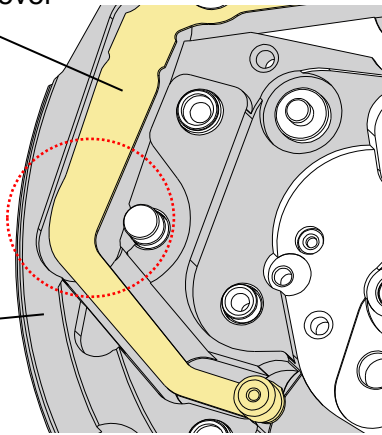
㉓ Pawl lever



㉑ Reduction wheel holder

④⑩ Balance stop lever

Main plate

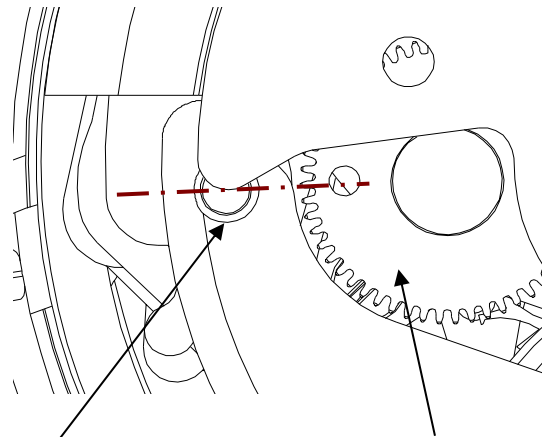
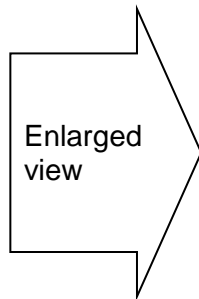
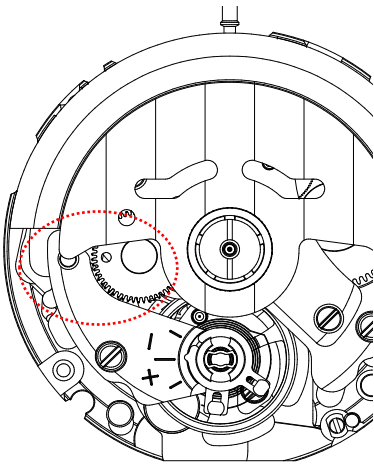


Contact part of main plate and balance stop lever

2. 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.

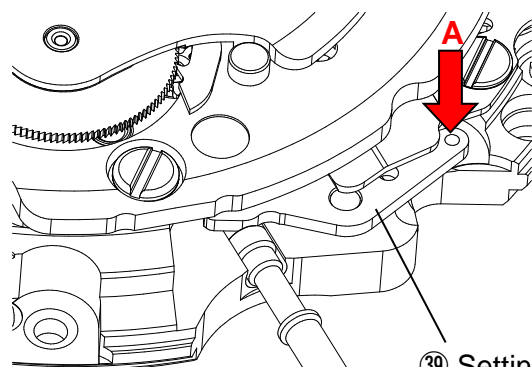


Balance bridge guide pin

First reduction wheel gear

3. To remove the winding stem

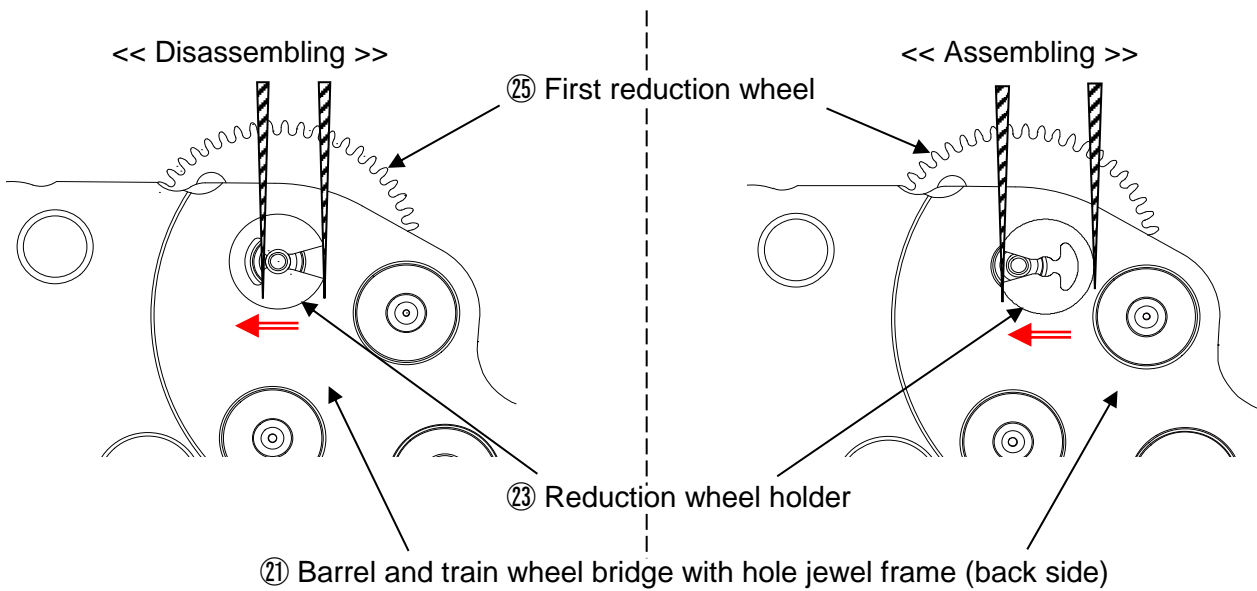
- 1) Set the winding stem to normal position
- 2) Pull out the winding stem, while pushing "A"



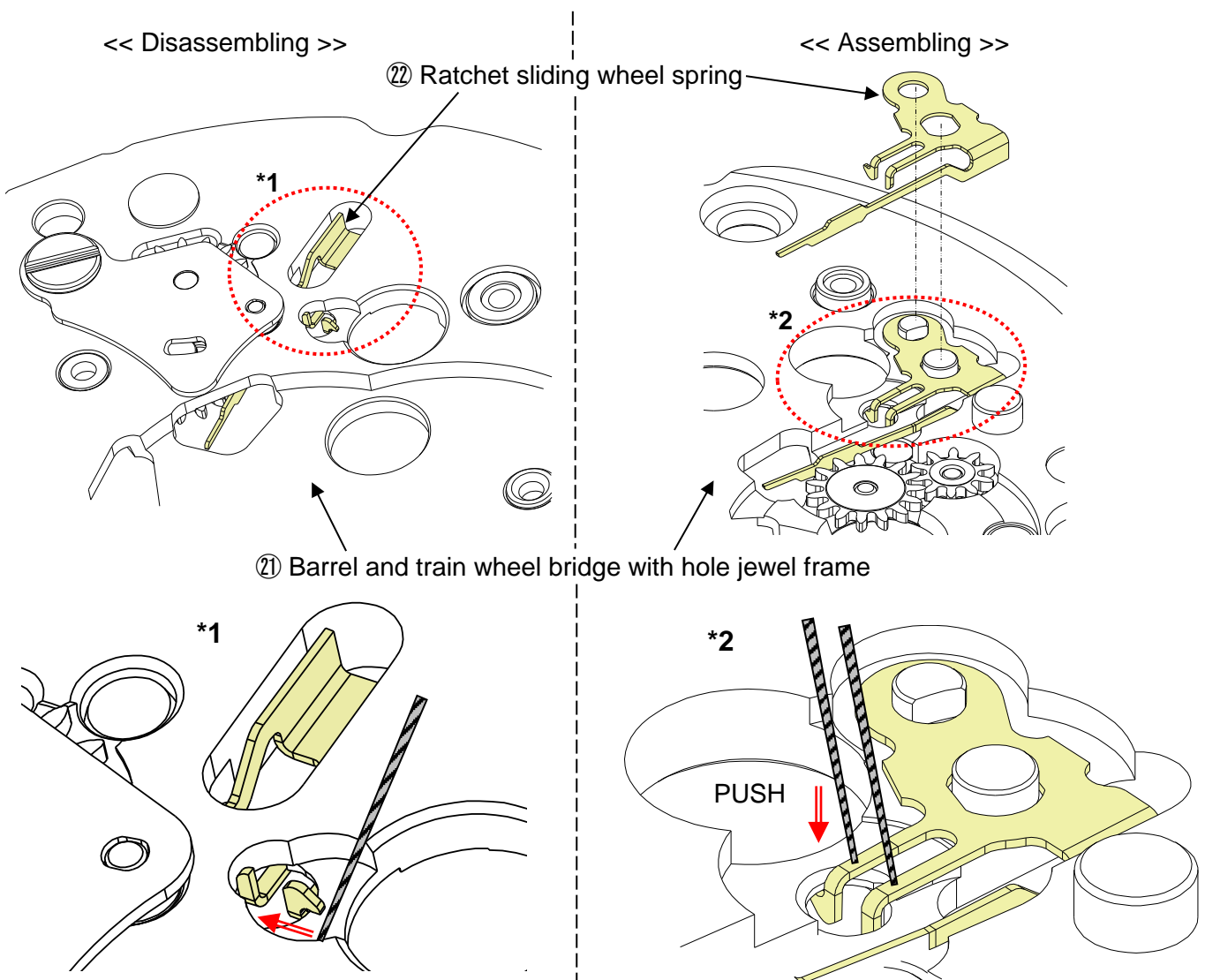
③⑨ Setting lever

④① Winding stem

4. Disassembling / assembling of the First reduction wheel



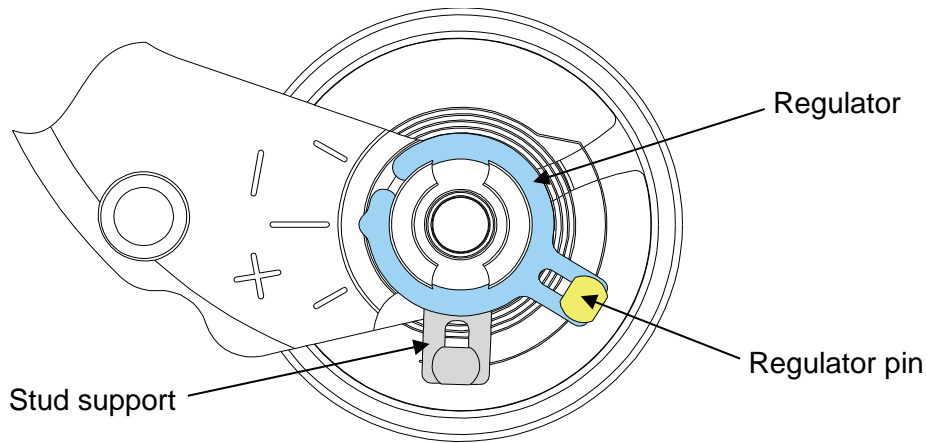
5. Disassembling / assembling of the Ratchet sliding wheel spring



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.

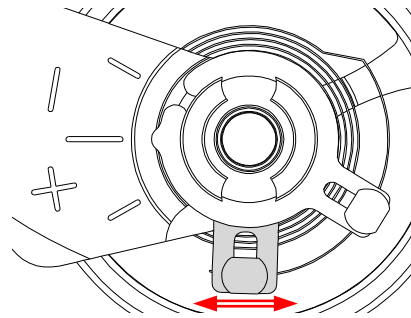
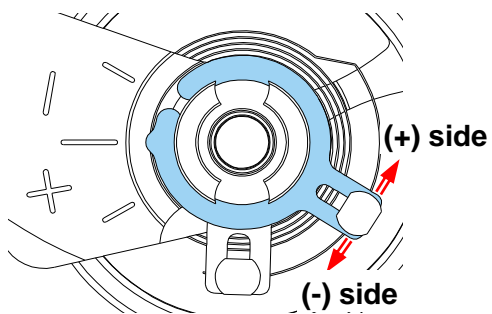
6. Accuracy adjustment



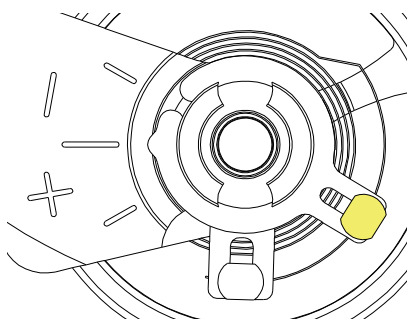
Note:

• Regulator (Time adjustment)

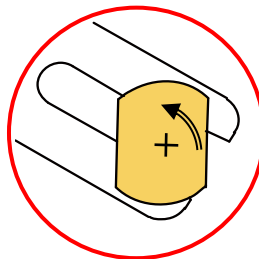
• Stud support (Beat error adjustment)



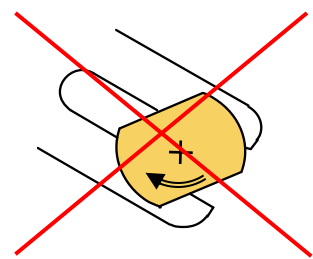
• Regulator pin (Gap adjustment of balance spring and regulator pin)



Anticlockwise rotation



No clockwise rotation

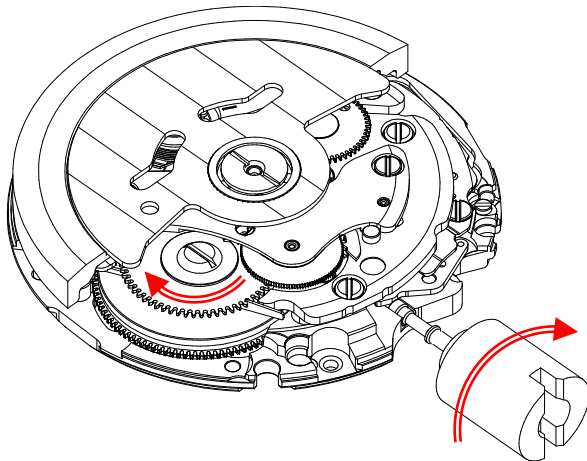


7.To wind up the mainspring

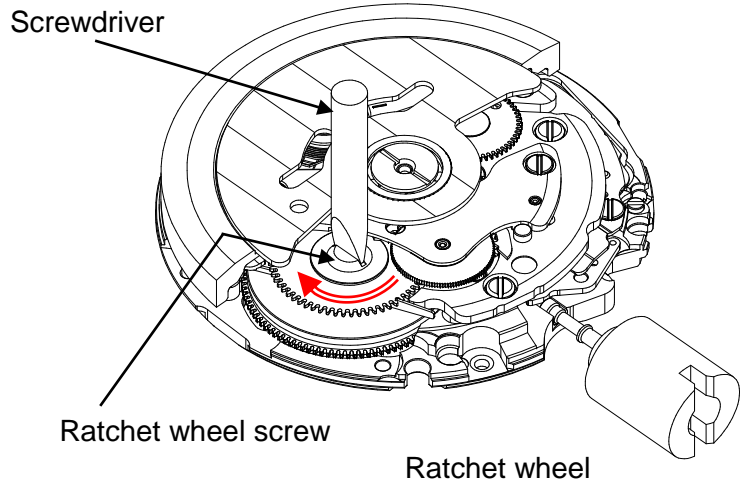
<<Movement>>

- 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]

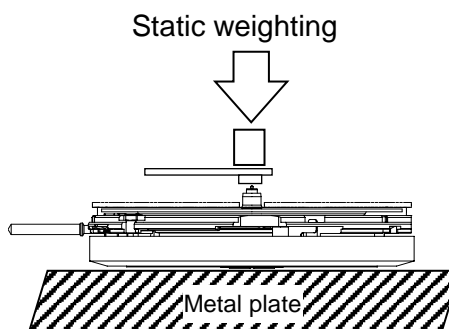


[Screwdriver winding]



8.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.



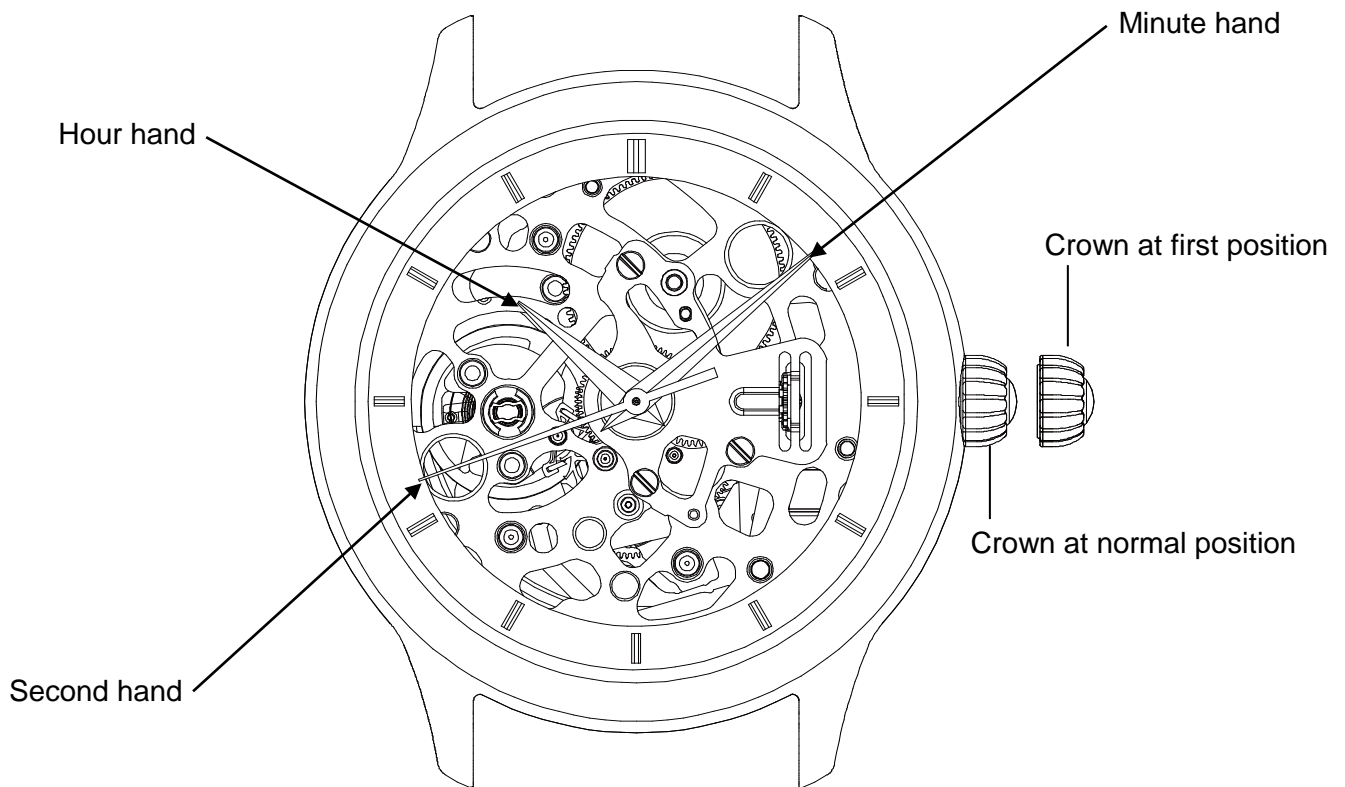
9.Accuracy measurement condition

Static Accuracy : - 20 ~ + 40 seconds per day

Measurement Conditions

- 1) Measurement should be done within 10 ~ 60 minutes after fully wound up.
- 2) Lift angle : 53 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.



1.How to set the time

- 1) Pull out the crown to the first click position.
- 2) Turn the crown to set hour and minute hands.
- 3) Push the crown back into the normal position.

2.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