TIME MODULE

Issued on: 7-Jun-2011

TECHNICAL GUIDE

&

PARTS CATALOGUE

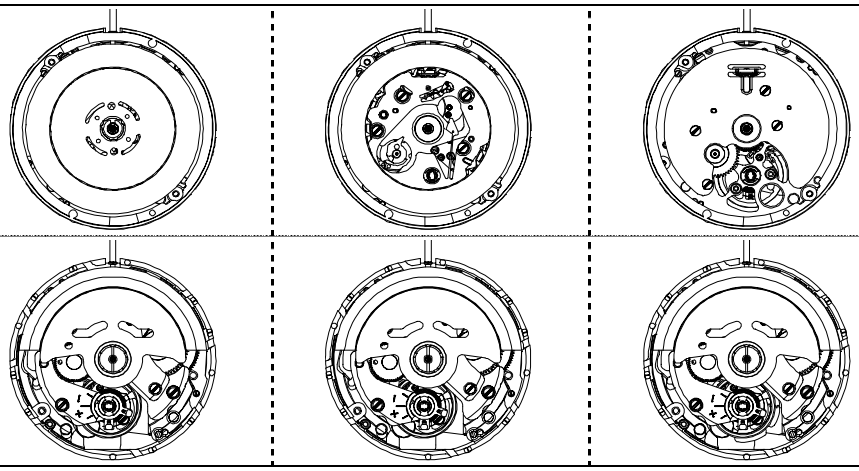
Cal.NH3 Series

AUTOMATIC MECHANICAL

SII Products

PARTS CATALOGUE / TECHNICAL GUIDE
Cal.NH3 Series

[SPECIFICATION]

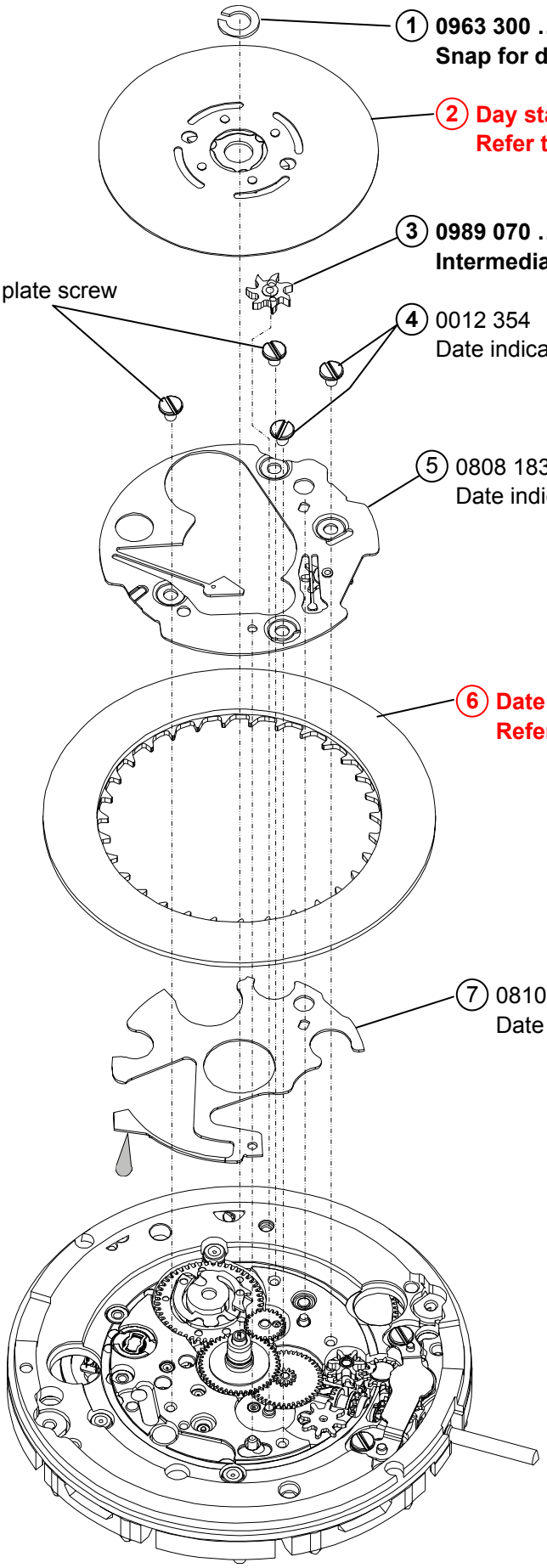
Movement							
Movement size	Outside diameter		Φ27.40mm				
	Casing diameter		Φ29.36mm (with dial holding spacer)				
	Total height		5.32mm				
Cal. No.			NH35	NH36	NH37	NH38	NH39
Time indication	3Hands (hour, minute, second)		O	O	O	O	O
	Date calendar		O	O	O	-	-
	Day calendar		-	O	-	-	-
	24hour indicator		-	-	O	-	O
Basic function	Manual winding		O	O	O	O	O
	Automatic winding with ball bearing		O	O	O	O	O
	Time setting with stop-second device		O	O	O	O	O
	Date display with quick change		O	O	O	-	-
	Day display with quick change		-	O	-	-	-
Frequency			21,600 vibrations per hour				
Accuracy	Static accuracy		-25~+35 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		53 deg.				
	Measurement time		20 seconds * Equipment to be used : Witschi WATCH EXPERT				
	Posture difference		Difference is under 60 seconds within max 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. * Measurement position : Dial up * Difference of static accuracy of 24h and 0h				
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 ・Rotary speed : 30 rpm ・Operating time: 60 minutes				
Jewels			24 jewels				
Crown position	Normal position	Left rotation	Free				
		Right rotation	Manual winding				
	First click	Left rotation	Date setting	Date setting	Date setting	Time setting with stop-second device	
		Right rotation	Free	Day setting	Free		
	Second click		Time setting with stop-second device			-	

Disassembling procedures Figs.
NH35/37 ④ → ⑲ NH36 ① → ⑲
Reassembling procedures Figs.
NH35/37 ⑲ → ④ NH36 ⑲ → ①

Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY

<<NH35/36/37>>



① **0963 300 …Cal.NH36 only**
Snap for day star with dial disk

② **Day star with dial disk …Cal.NH36 only**
Refer to page 8 for each parts code

③ **0989 070 …Cal.NH36 only**
Intermediate wheel for day corrector

④ 0012 354
Date indicator maintaining plate screw

④ 0012 354
Date indicator maintaining plate screw

⑤ 0808 183
Date indicator maintaining plate

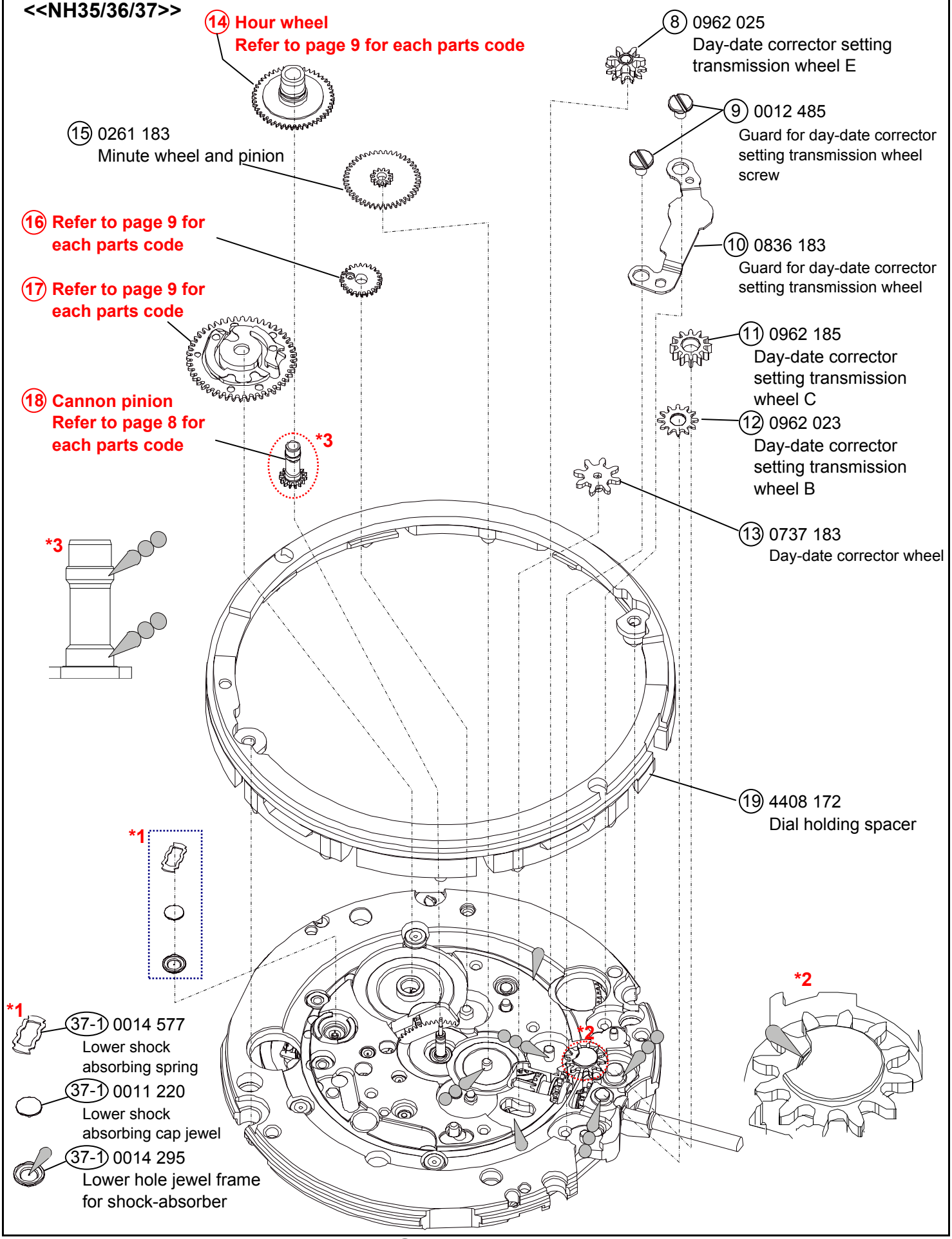
⑥ **Date dial**
Refer to page 8 for each parts code

⑦ 0810 183
Date jumper

Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY

<<NH35/36/37>>

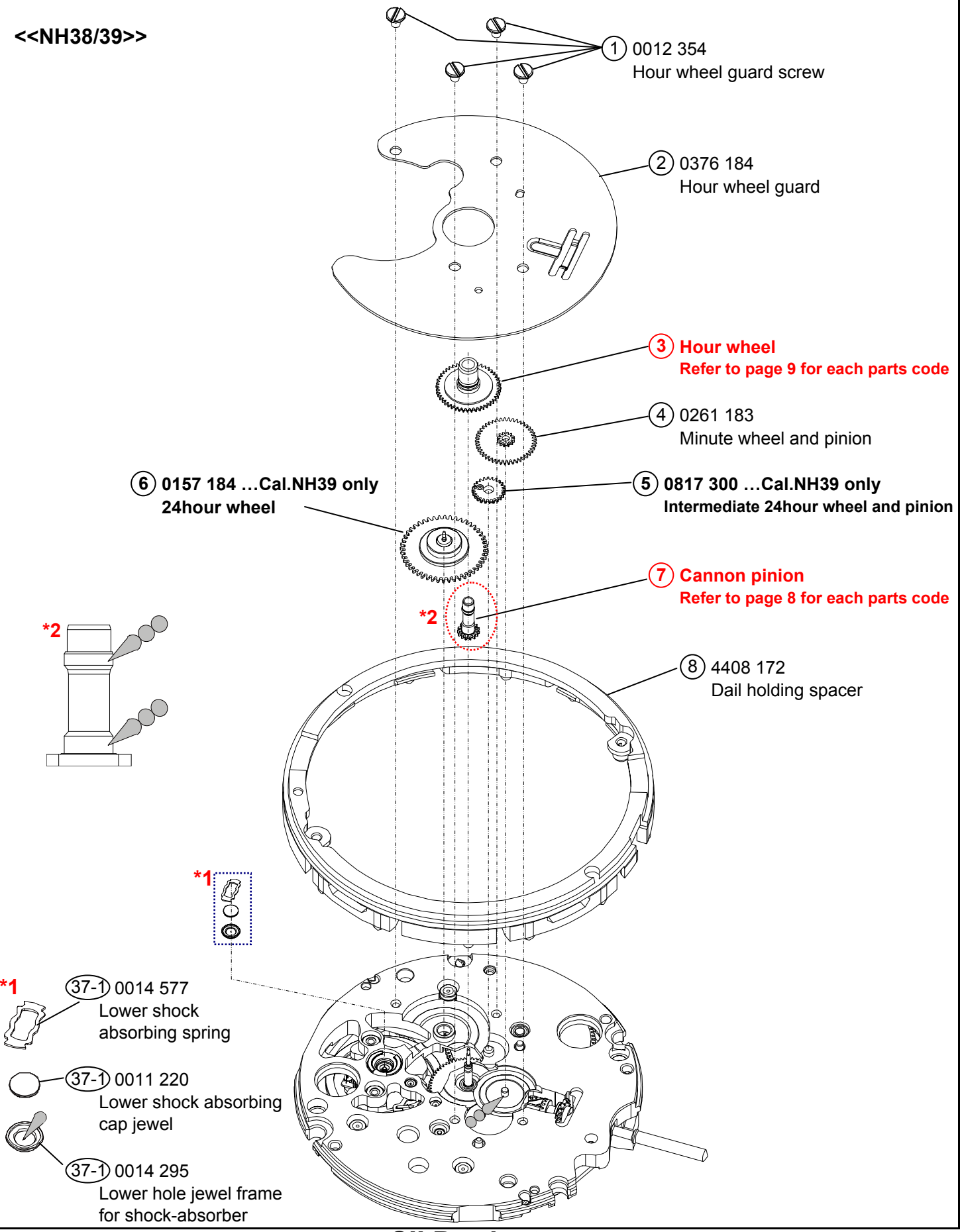


Disassembling procedures Figs.
NH38/39 (1) → (8)
Reassembling procedures Figs.
NH38/39 (8) → (1)

Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY

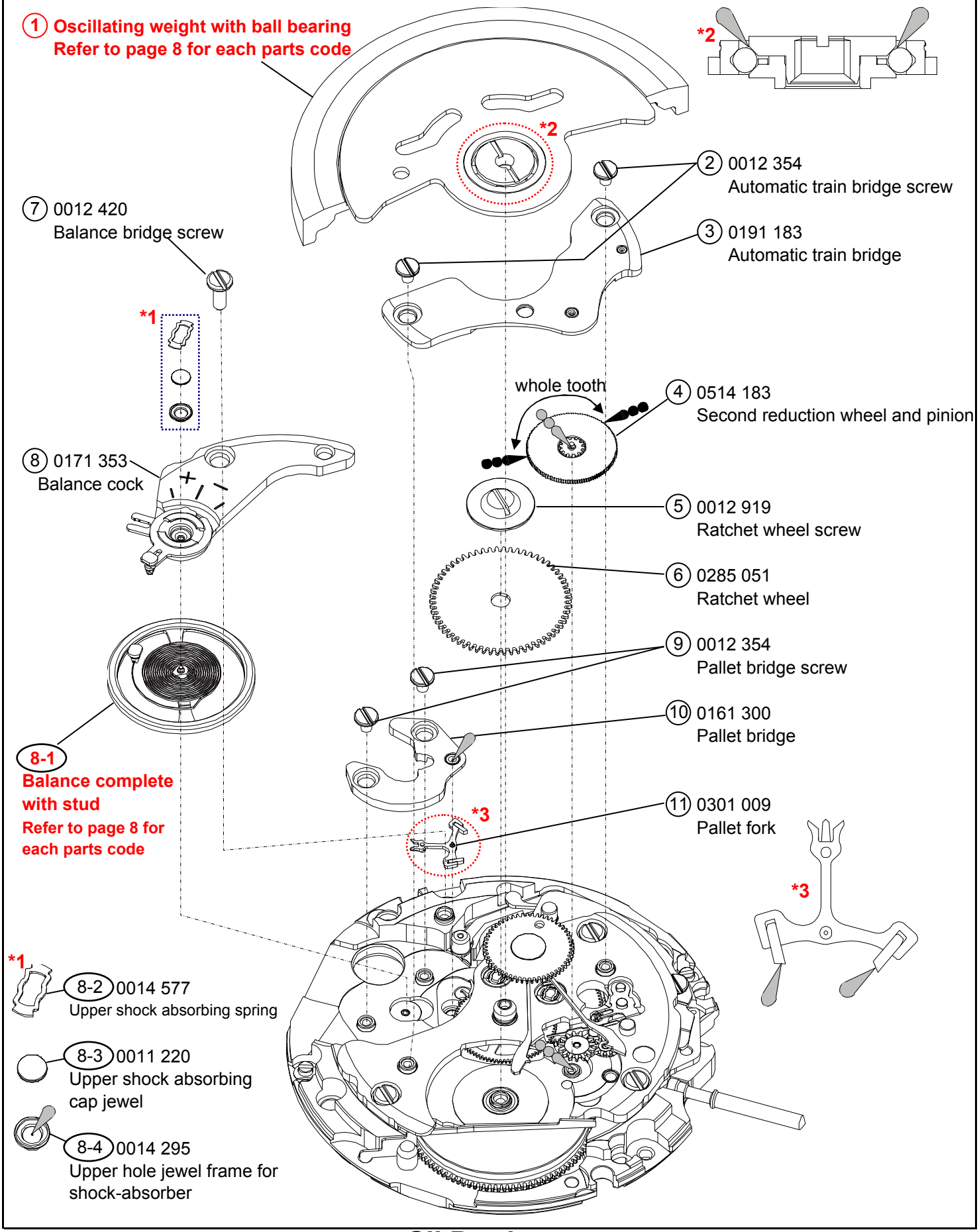
<<NH38/39>>



Disassembling procedures Figs.
① → ㊲
Reassembling procedures Figs.
㊲ → ①

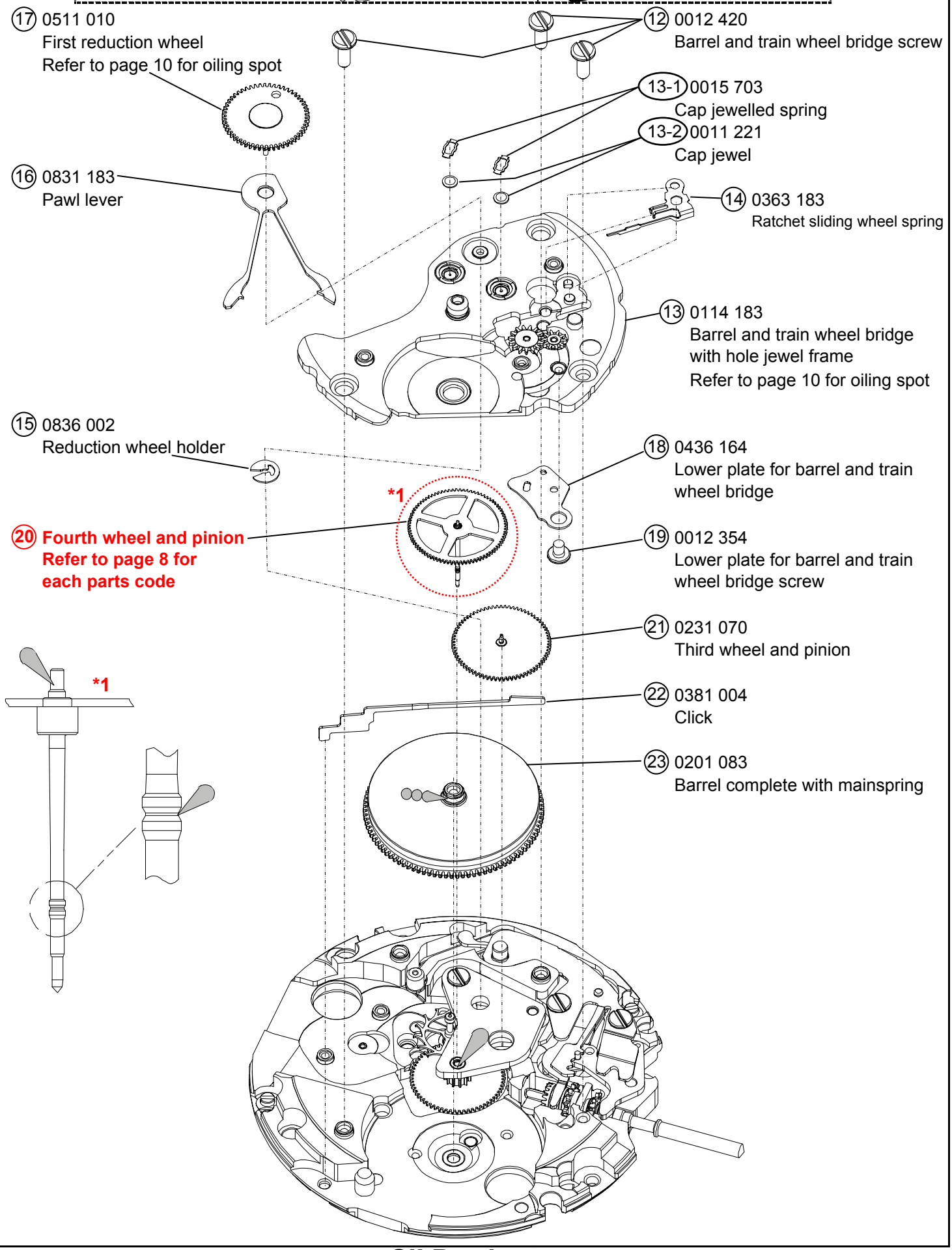
Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY



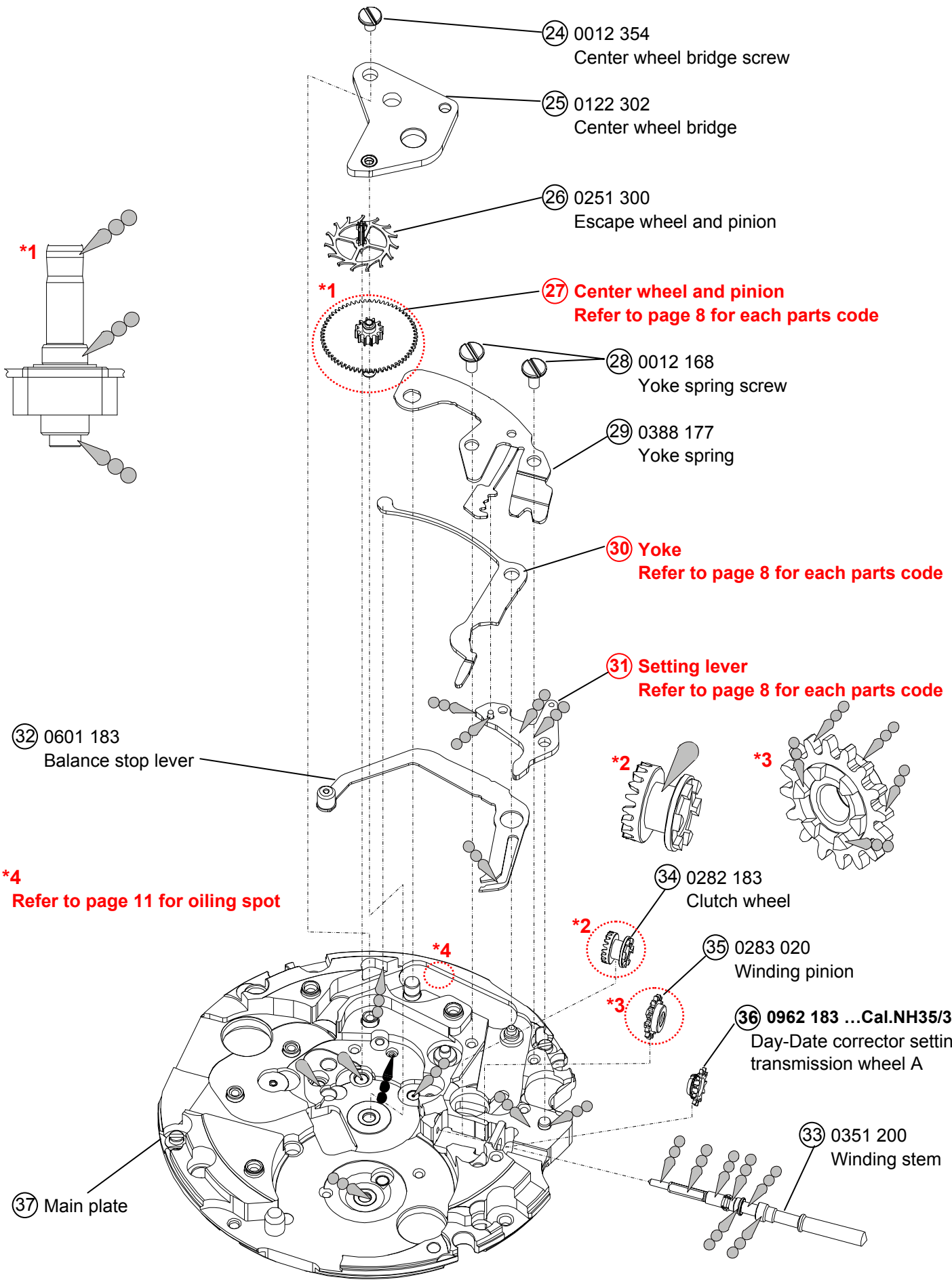
Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY



Type of oil
Moebius 9010
MO-4
MO-3

Oil quantity mark
NORMAL QUANTITY
SUFFICIENT QUANTITY



② Day star with dial disk …Cal.NH36 only (P-2)

Parts code	Position of crown	Position of day frame	Color of letters	Color of background	Language
0160 242	3H	3H	MON～FRI : Black SAT : Blue SUN : Red	White	English & Spanish

⑥ Date dial … Cal.NH35 / NH36 / NH37 (P-2)

Cal.	Parts code	Position of crown	Position of day frame	Color of letters	Color of background
NH35 NH37	0878 208	3H	3H	Black	White
NH36	0878 206	3H	3H	Black	White

⑱ Cannon pinion …NH35/36/37 (P-3)

Cal.	Parts code	Cal.	Parts code
NH35 NH36	0225 414	NH37	0225 417

⑦ Cannon pinion …NH38/39 (P-4)

Cal.	Parts code	Cal.	Parts code
NH38	0225 414	NH39	0225 417

① Oscillating weight with ball bearing (P-5)

Cal.	Parts code	Marking
NH35	0509 467	Japan mark
	0509 468	Malaysia mark

Cal.	Parts code	Marking
NH36	0509 463	Japan mark
	0509 464	Malaysia mark

Cal.	Parts code	Marking
NH37	0509 470	Japan mark
	0509 471	Malaysia mark

Cal.	Parts code	Marking
NH38	0509 476	Japan mark
	0509 477	Malaysia mark

Cal.	Parts code	Marking
NH39	0509 473	Japan mark
	0509 474	Malaysia mark

⑧-① Balance complete with stud (P-5)

Cal.	Parts code	Cal.	Parts code
NH35 NH36 NH37	0310 197	NH38 NH39	0310 198

⑳ Fourth wheel and pinion (P-6)

Cal.	Parts code	Cal.	Parts code
NH35 NH36 NH38	0241 010	NH37 NH39	0144 185

㉗ Center wheel and pinion (P-7)

Cal.	Parts code	Cal.	Parts code
NH35 NH36 NH38	0221 183	NH37 NH39	0221 185

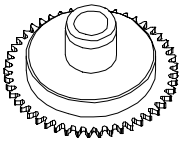
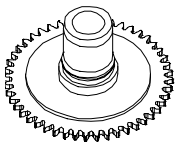
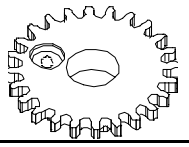
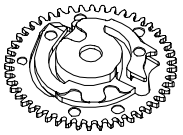
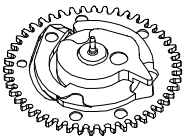
㉚ Yoke (P-7)

Cal.	Parts code	Cal.	Parts code
NH35 NH36 NH37	0384 183	NH38 NH39	0384 184

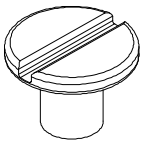
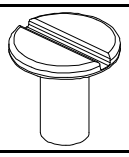
㉛ Setting lever (P-7)

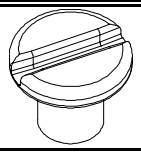
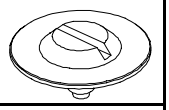
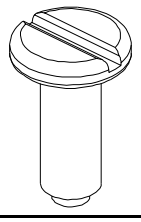
Cal.	Parts code	Cal.	Parts code
NH35 NH36 NH37	0383 183	NH38 NH39	0383 184

Remarks: Different parts for each CAL.

Page	No	Cal. NH35	NH36	NH37	NH38	NH39	Parts code	Parts name	Parts form
P-3	⑭	O	-	-	-	-	0273 182	Hour wheel 0273 182 ⇒ 0273 184 (Height difference)	0273 182 &184 
		-	O	-	-	-	0273 183		
		-	-	O	-	-	0273 184		
P-4	③	-	-	-	O	-	0273 183	0273 183 ⇒ 0273 185 (Height difference)	0273 183 & 185 
		-	-	-	-	O	0273 185		
P-3	⑯	O	O	-	-	-	0817 300	Intermediate date driving wheel and pinion	
		-	-	O	-	-		Intermediate 24hour wheel and pinion	
P-3	⑰	O	O	-	-	-	0802 183	Date indicator driving wheel	
		-	-	O	-	-	0157 182	24hour wheel	

■ **List of screw**

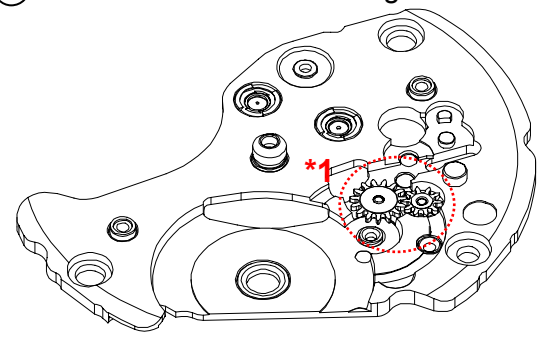
Page	No	Parts code	Parts name	Parts form
P-2	④	0012 354	Date indicator maintaining plate screw (x4)	
P-4	①		Hour wheel guard screw (x4)	
P-5	②		Automatic train bridge screw (x2)	
	⑨		Pallet bridge screw (x2)	
P-6	⑲		Lower plate for barrel and train wheel bridge screw	
P-7	㉔		Center wheel bridge screw	
P-7	㉘	0012 168	Yoke spring screw (x2)	

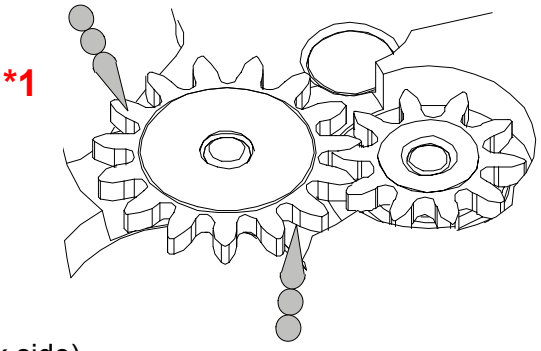
Page	No	Parts code	Parts name	Parts form
P-3	⑨	0012 485	Guard for day-date corrector setting transmission wheel screw (x2)	
P-5	⑤	0012 919	Ratchet wheel screw	
P-5	⑦	0012 420	Balance bridge screw	
P-6	⑫		Barrel and train wheel bridge screw (x3)	

Type of oil	Oil quantity mark
Moebius 9010	NORMAL QUANTITY
MO-4	SUFFICIENT QUANTITY
MO-3	

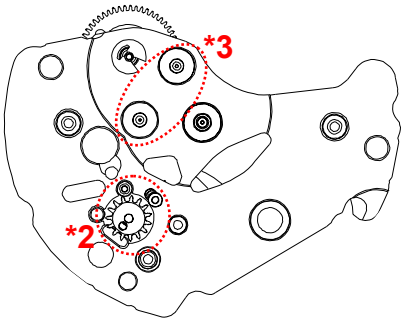
1.Oiling spot

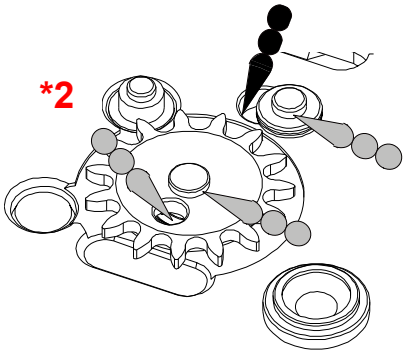
(13) Barrel and train wheel bridge with hole jewel frame

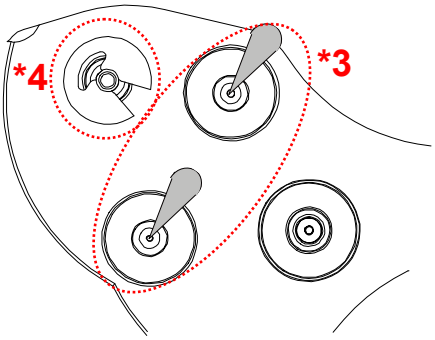




Barrel and train wheel bridge with hole jewel frame (back side)

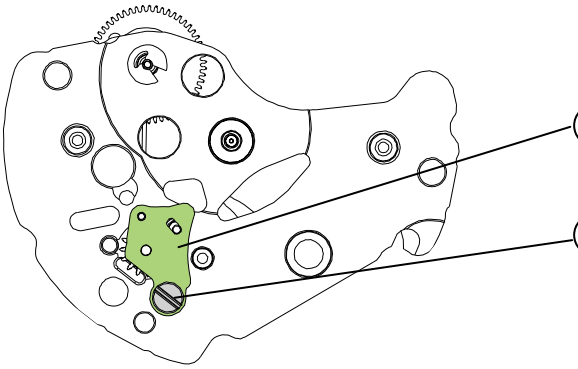






Note

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

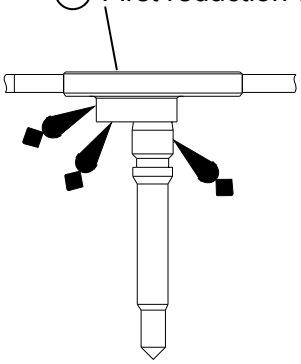


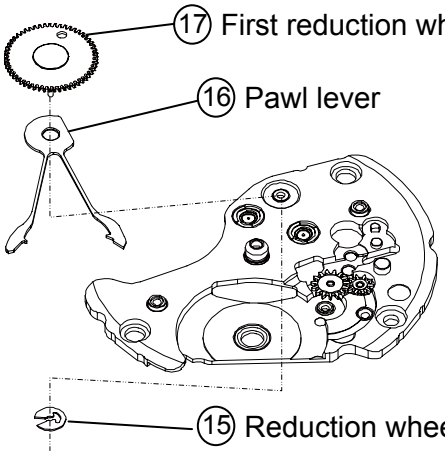
(18) Lower plate for barrel and train wheel bridge

(19) 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>.**

(17) First reduction wheel



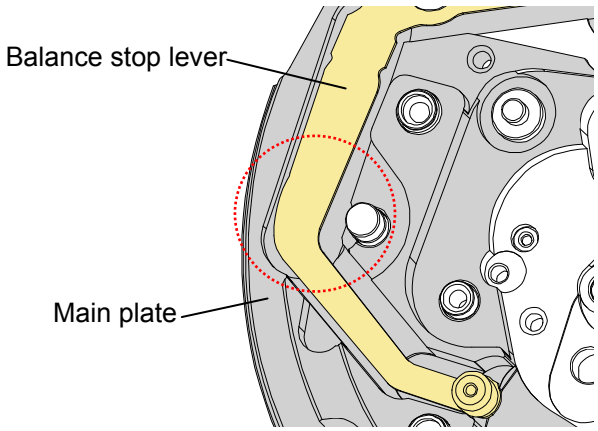


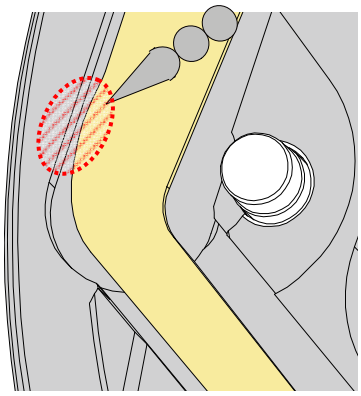
(17) First reduction wheel

(16) Pawl lever

(15) Reduction wheel holder

㉜ Balance stop lever



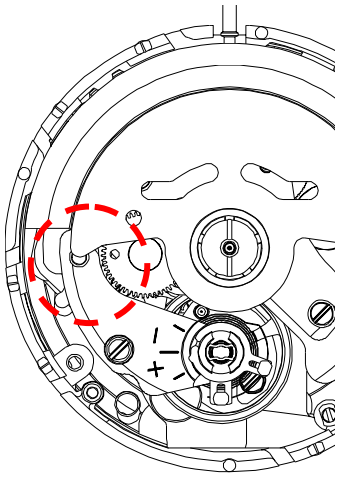


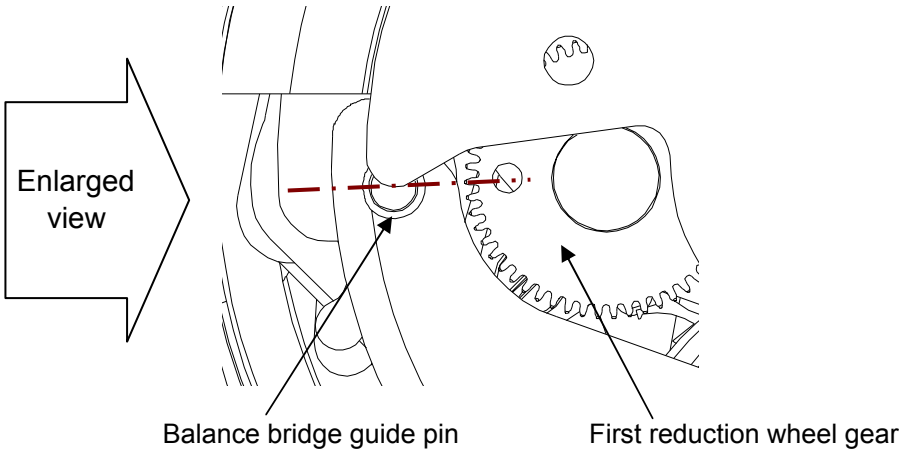
Contact part of main plate and balance stop lever

2.Setting position of oscillating weight

・Before assembling oscillating weight.

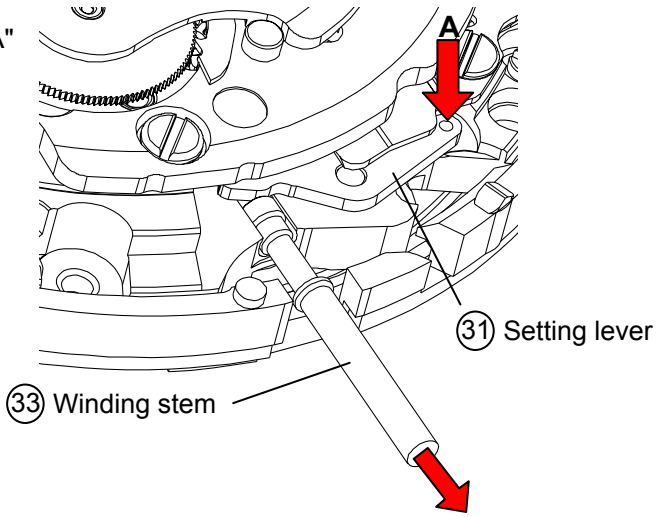
Match the center of the oscillating weight and winding stem. Set the hole of first reduction wheel gear on the imaginary line toward the balance bridge guide pin.





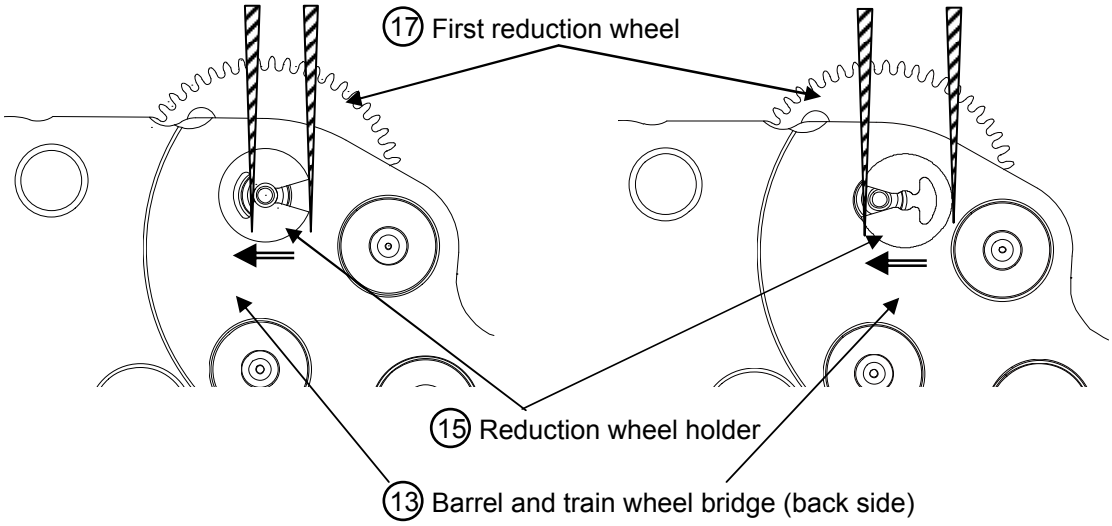
3.To remove the winding stem

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



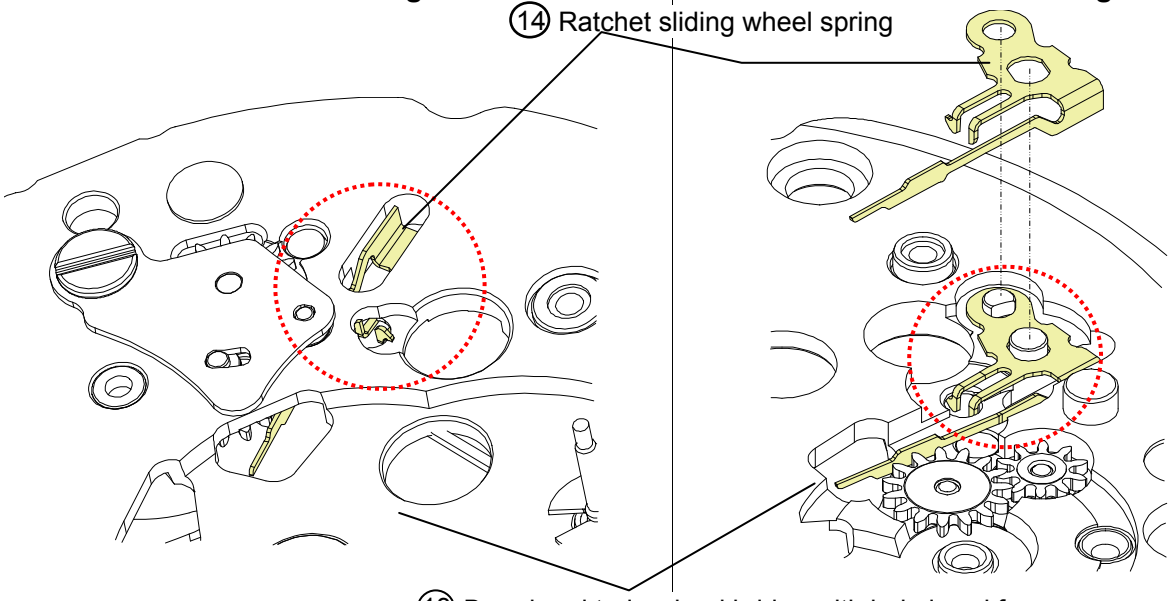
4.Disassembling / assembling of the First reduction wheel

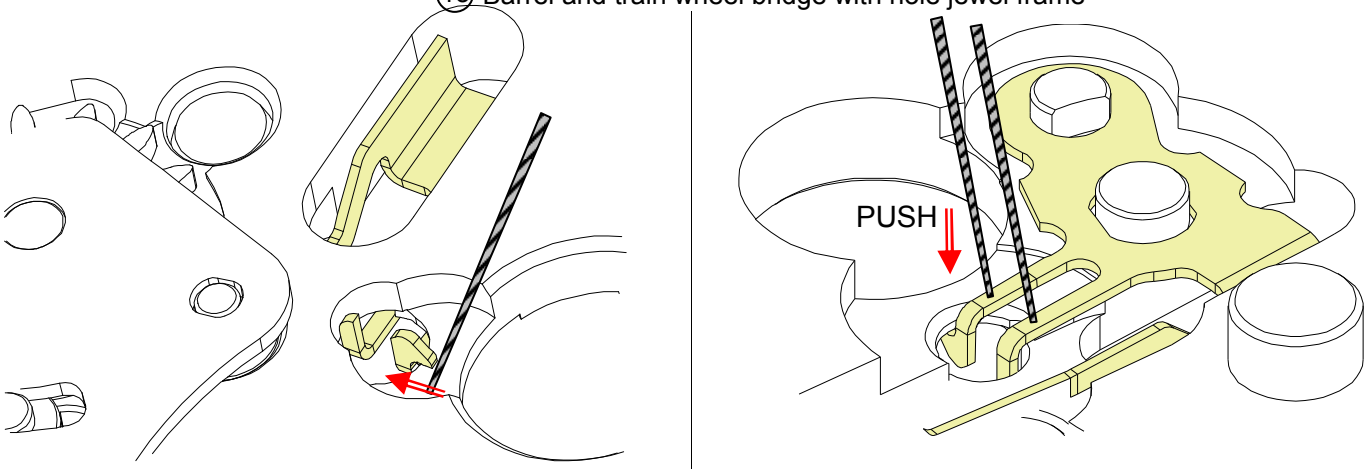
<< Disassembling >> **<< Assembling >>**



5.Disassembling / assembling of the Ratchet sliding wheel spring

<< Disassembling >> **<< Assembling >>**

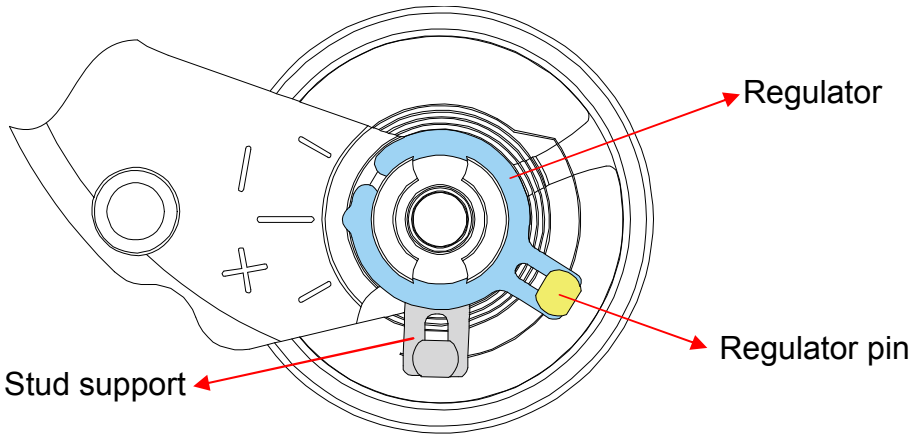




Remove the hook of the ratchet sliding wheel spring from barrel and train wheel bridge with hole jewel frame.

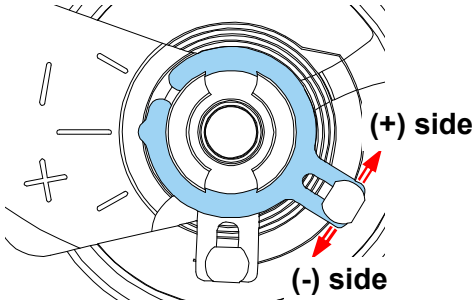
The hooks of ratchet sliding wheel spring are hung up on barrel and train wheel bridge with hole jewel frame.

6.Accuracy adjustment

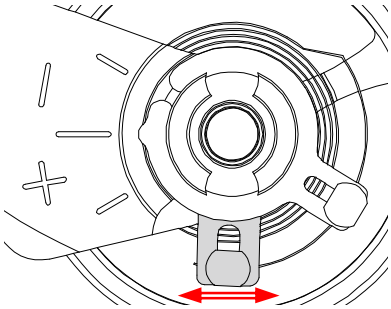


Note:

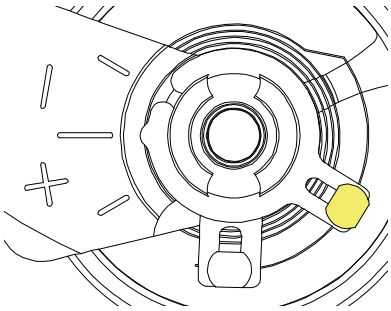
・Regulator … Time adjustment



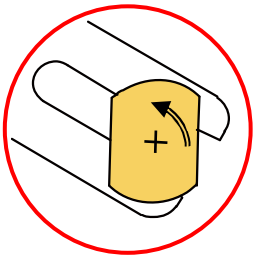
・Stud support … Beat error adjustment



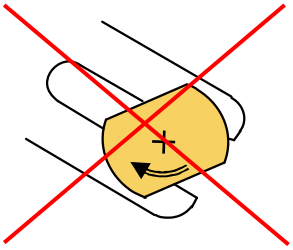
・Regulator pin … Gap adjustment of balance spring and regulator pin



Anticlockwise rotation



No clockwise rotation



7.To wind up the mainspring

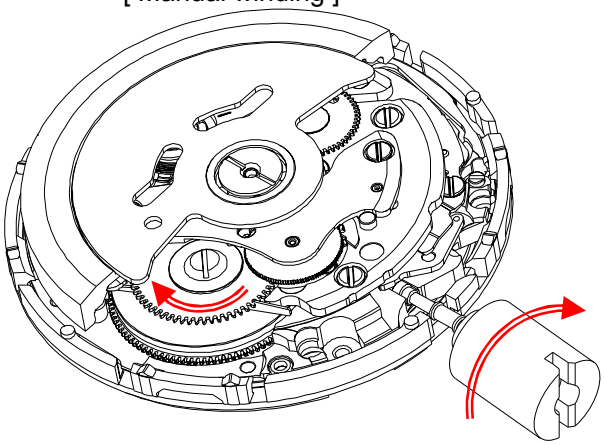
<<Movement>>

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

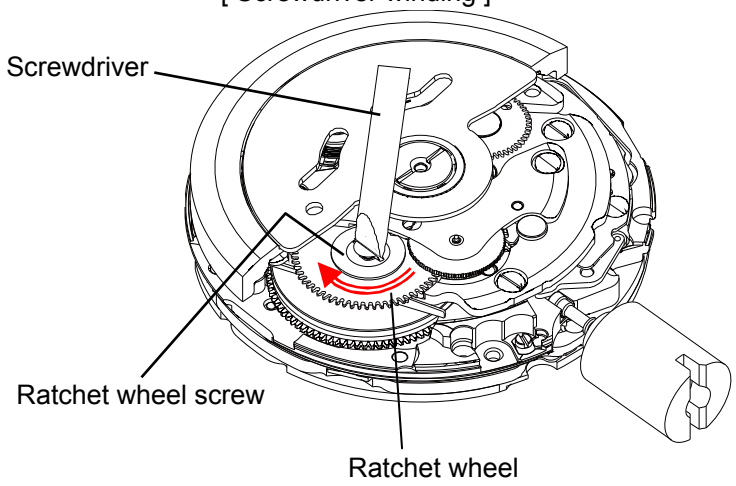
Manual winding … Rotate crown clockwise at normal position by min 55 times. (Equal to ratchet wheel screw 8 times)

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

[Manual winding]



[Screwdriver winding]



8.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.

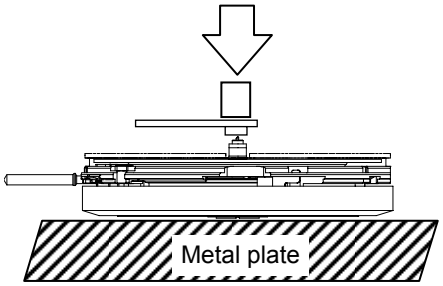
For hands attachment, please use a special equipment.

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

***Install the 24hour hand. …Cal.NH37 & NH39**

Pull out the crown to the second click position and rotation it clockwise to install 24hour hand.

Static weighting



9.Accuracy measurement condition

Static Accuracy : -25~+35 seconds per day

Measurement Conditions

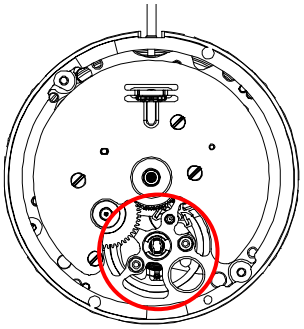
1) Measurement should be done within 10~60 minutes after fully wound up.
2) Lift angle : 53 deg
3) Measurement position : (1) Dial up (2) 9 o'clock up (3) 6 o'clock up
4) Minimum measurement Time : 20 seconds
5) Stabilizing Time :

Leave the watch for at least 20 seconds to stabilize after you change its measurement position.

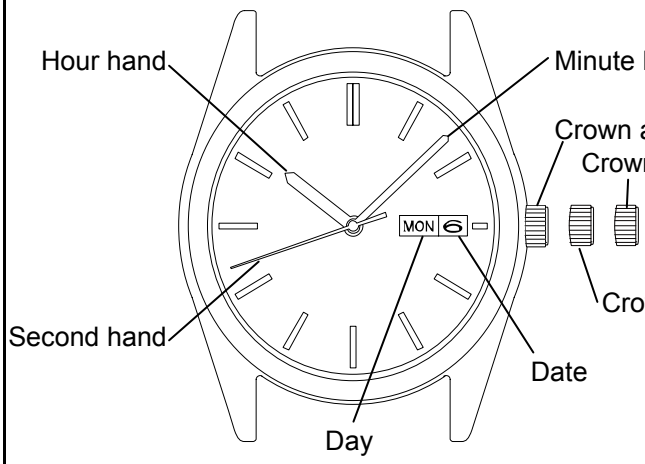
10.About the handling ...Cal.NH38 & 39

○ Part is processed as a mirror surface. It is damaged when touching with tweezers.

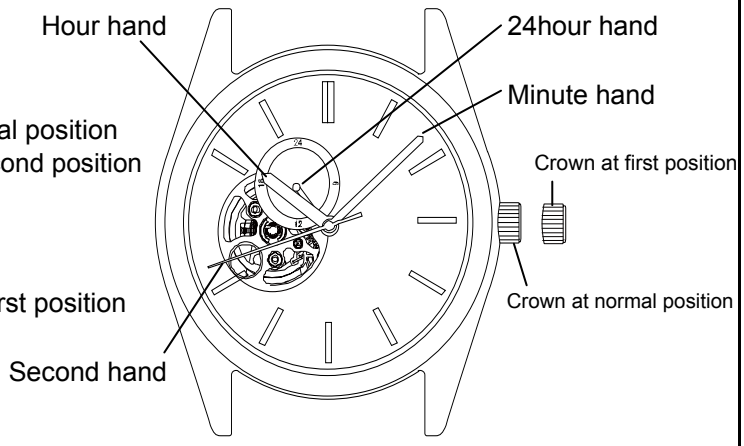
Please be careful about the handling.



NH35 / NH36 / NH37



NH38 / NH39



Time indication	NH35	NH36	NH37	NH38	NH39
3Hands (hour, minute, second)	O	O	O	O	O
Date calendar	O	O	O	-	-
Day calendar	-	O	-	-	-
24hour indicator	-	-	O	-	O

1.How to set the time

1) Pull out the crown to the second click position. …Cal.NH35 & NH36 & NH37
   Pull out the crown to the first click position. …Cal.NH38 & NH39
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.

2.How to set the Date …Cal.NH35 & NH36 & NH37

1) Pull out the crown to the first click position.
2) Turn the crown to left for date setting. …Cal.NH35 & NH37
3) Turn the crown to right for day setting. …Cal.NH36 only
   *Do not set the date between 9:00 P.M. and 4:00 A.M. as this will cause a malfunction.
3)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 rpm