En

CALIBRE 4130

Automatic chronograph



2000

ROLEX

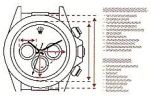
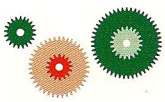
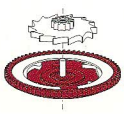
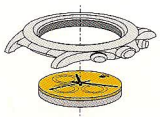
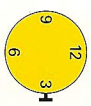
MONTRES ROLEX S.A.
CH - 1211 Genève 24

Technical Information
Service

Technical Manual A
Technical Info. No. 61

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Summary

		Page
	Recommendations	1
	Symbols and legends	2 - 3
	Technical characteristics	4 - 5
	Working principle of the chronograph	6 - 7
	Maintenance procedure	8
	Disassembling the movement	9 - 16
	Assembling the movement - *preparation*	17 - 19
	- *basic movement*	20 - 25
	- *chronograph 1*	21
	Regulating: rate, amplitude, beat	26 - 27
	Assembling the movement, cont. - *chronograph 2*	28
	- *chronograph 3*	29-31
	Assembling the automatic module	32 - 33
	Preparing for casing-up and casing-up	34 - 35
	Performance test	36 - 37
	Spare parts index	38 - 39

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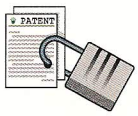


Our technical information exists in the following languages:

Français	**English**	**Español**
Deutsch	**Italiano**	**日本語**

Please use the summary of the technical manuals **A** and **B** to order by fax any missing technical information.

This technical information is intended for watchmakers who are responsible for the maintenance of the quality of Rolex watches.



Patents: the design of the calibre 4130 is protected by several patents.



Only use original spare-parts which must be ordered from the Spare Parts Department.



Any modification made to a Rolex watch by adding or substituting components and parts that are not original, automatically cancels the guarantee.



The maintenance of our watches is reserved for qualified watchmakers who have been trained by Rolex.
We ensure regular basic and special courses on our products both here in our professional training center in Geneva and other parts of the world.



Note: this technical information is an integral part of the material intended to assist our After-Sales Service and remains the property of Montres Rolex S.A.



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4:1
2:1

The basic drawings are at scale 2:1

The enlargements are at scale 3:1, 4:1 or 10:1

Indicates that additional information exists in our Technical Information Service.

Support
Ref. 2247

Recommended specific Rolex tool: in blue
See technical information No. 63

160

Indicates the type of screw-driver tip to use

1 Escape wheel
4130-410

2 Second wheel
4130-360

1 2 3 4 ..... correct order of assembly!

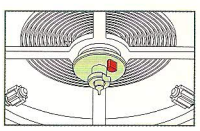
Spare part: - designation
- reference

(Bridle for height adjustment balance bridge)
2230-478

(.....) indicate that disassembling, assembling or any other operation is optional.

Pre-assembled train-wheel bridge

Pre-assembled components.



Part, driven or riveted, available as a spare part.

0.02/0.06

Endshake with minimum and maximum value indication (in mm).

s/d

Seconds per day.
Units of instantaneous or daily rate.

Test
- Freedom of gear train
- Functions...

Instructions concerning tests: in green

Important recommendations.

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Lubricants and epilame

See technical information No. 56



Epilame, surface treatment to avoid oil from spreading:
pallets, escape wheel, automatic reversing wheel...



Oil for moving wheels with low pressure in jewelled bearings:
second (ladies calibres), escape wheel and balance wheel.



Oil for moving wheels with high pressure in bearings:
second (gents calibres), barrel arbor, first and second wheel, automatic....



Grease for impulse-faces of pallets and escape wheel for high frequency calibres, 28800 Alt/h.



Grease for mechanical friction system:
cannon pinion, winding and setting mechanism, calendar mechanism, mainspring....



Grease for barrel-drum:
sliding surface of mainspring bridle.



⊖ Added to lubrication symbol means that you must lubricate sparingly.

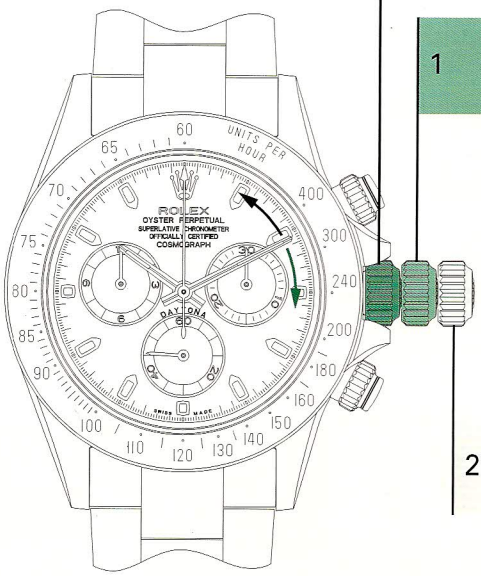
Example 



Do not lubricate.

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Manual winding and setting the time



0 Crown and pushers screwed down: **Waterproof watch**

1 Manual winding in one direction, other direction inactive.

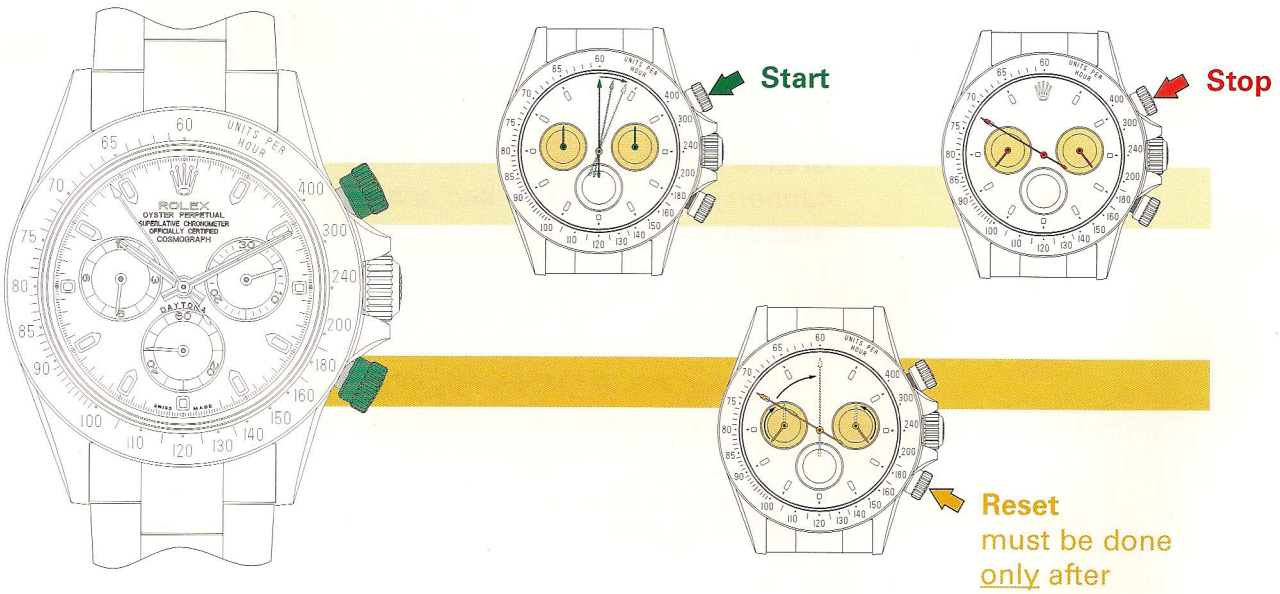
Positions

0 1 2

Unscrew and pull

2 Second stop: reset in either direction.

Chronograph functions

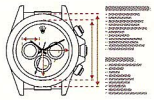


Minute counter: increases every 60 seconds.

Hour counter: increases every minute.

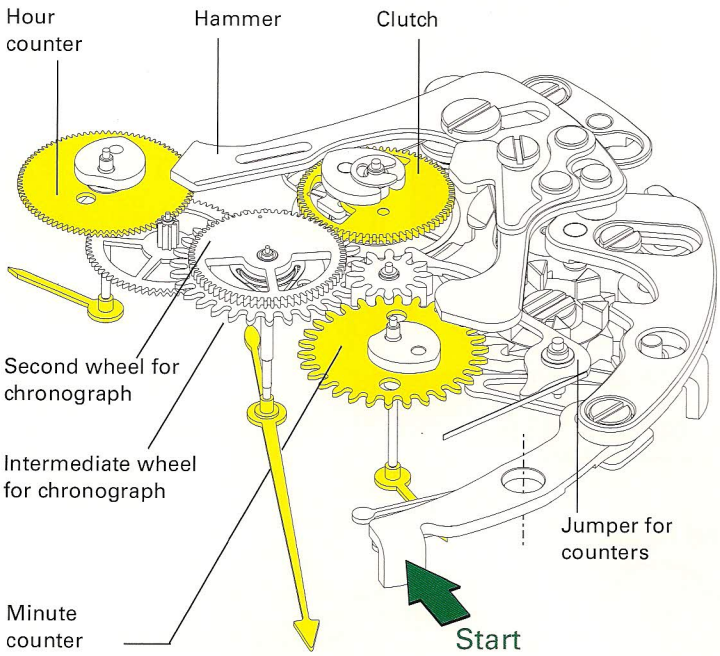
Screw down the push buttons after use.

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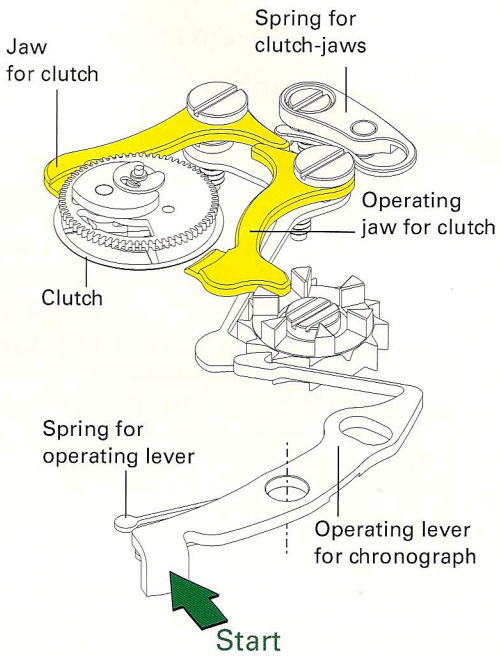


	Cal. 4130
Dimensions in (mm)	
- Total diameter	30.50
- Case-fitting diameter	30.00
- Total height	6.50
Interchangeability with calibre 4030	
- Dial and movement	no
- Chronograph second hand : former/new version	no/yes
- Hands: hour, minute, second and counters	yes
Display:	
- Hour, minute, chronograph second hand	center
- Second hand	6 o'clock
- Counters 30 minutes / 12 hours	3 / 9 o'clock
Jewelling functional jewels	44
Barrel	
- Power reserve: chronograph disengaged / engaged	approx. 72h / 65h
- Rotation speed	1 rotation / 7 hours
Mechanism winding stem	2 positions
- Time-setting	second stop
- Number of stem rotations for full winding	45
Automatic device winds in both directions	independant module
Chronograph operated by 2 pushers	start-stop/reset
- Selecting the functions	by column wheel
- Chronograph activated by one clutch only	axial clutch
Oscillator hairspring	Breguet
- Frequency	28800 Alt/h - 4 Hz
- Lift angle	52°
- Balance with adjustable inertia	4 Microstella nuts
- Balance protected by	shock absorbers
- Endshake adjustment of the balance	micrometric screw
- Beat adjustment	mobile stud-support
Escapement with solid bankings on pallet bridge	wheel with 20 teeth combined in-settings
Precision according to chronometer	NIHS 95-11, ISO 3159

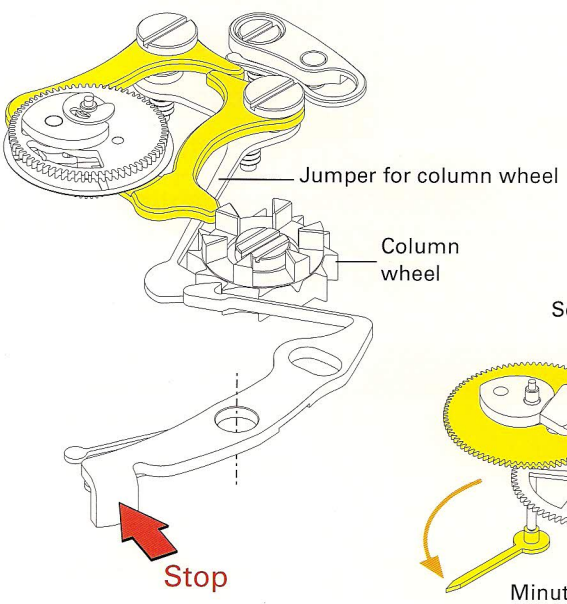
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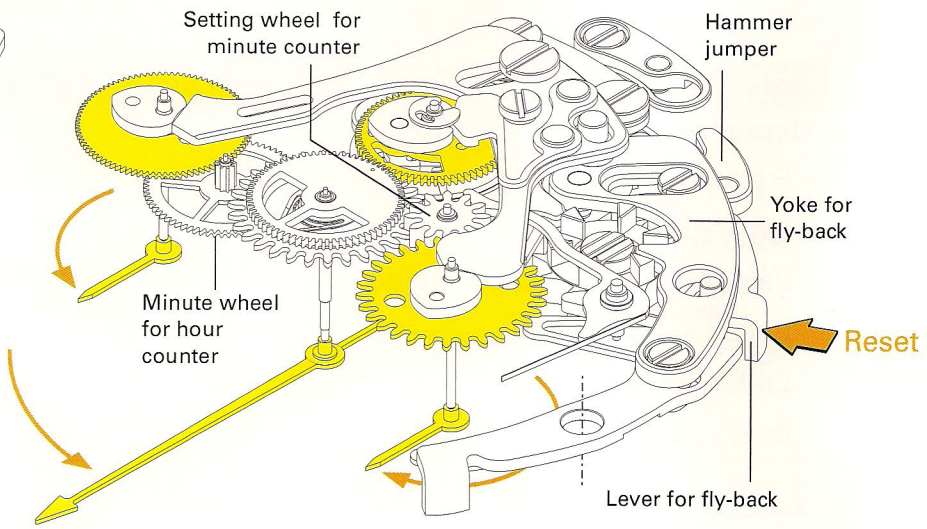
Engaged



Disengaged

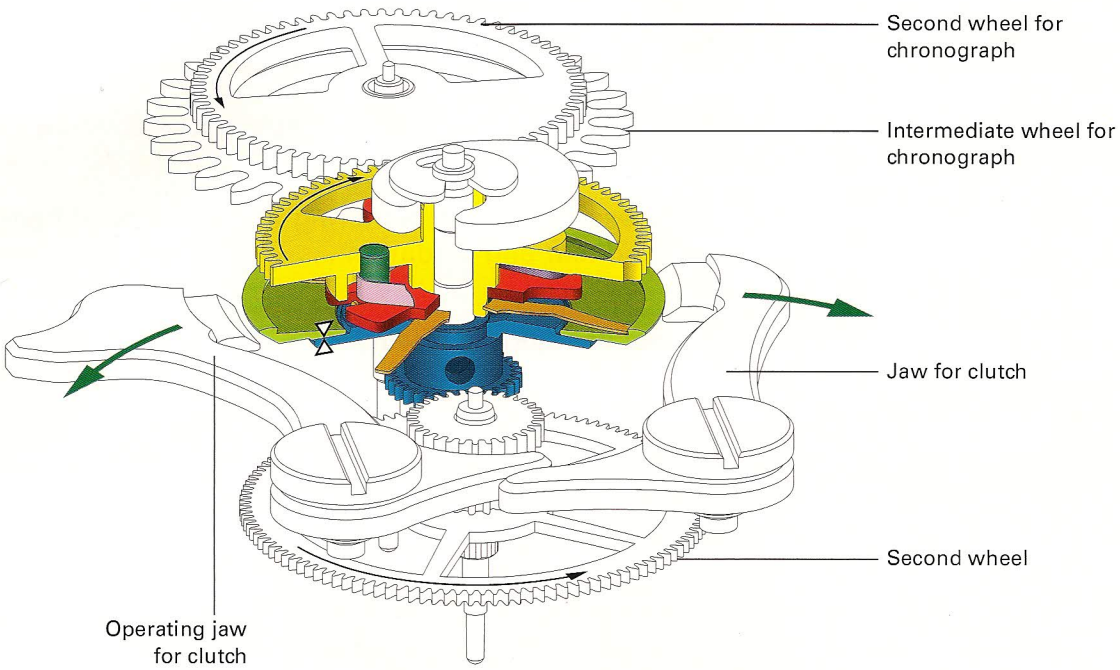


Reset

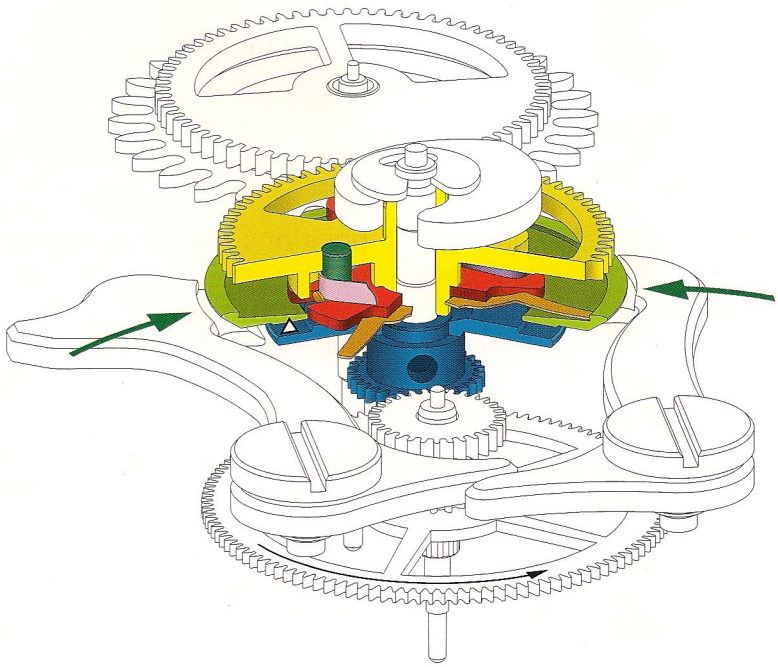


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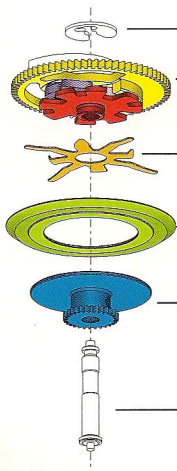
Engaged



Disengaged



Clutch



Do not dismantle

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Remove hands and dial

Do not wash

1st cleaning with ultrasound

Basic movement
Automatic module
Oscillating weight

Unwind the mainspring

Repairs are to be carried out during disassembling, inspect the individual parts as well as their function:

- endshake, freedom, roundness of wheels, centering and flatness of hairspring, escapement, wear and tear and oxidation.....

Change all parts which are not of standard quality

Apply minimum/maximum endshake to all wheels

Use pegwood to clean all jewels

2nd cleaning with ultrasound

All spare-parts separately

Wash apart

Barrel dismantled
Jumper for counters for chronograph
Friction-spring for chrono. second wheel

Epilame: use epilame for specific spare-parts, see page 18

Preparation, assembling the basic movement and chronograph - part 1

Demagnetization

Timing in 5 positions fully wound and unwound after 24h: rate, amplitude and beat.

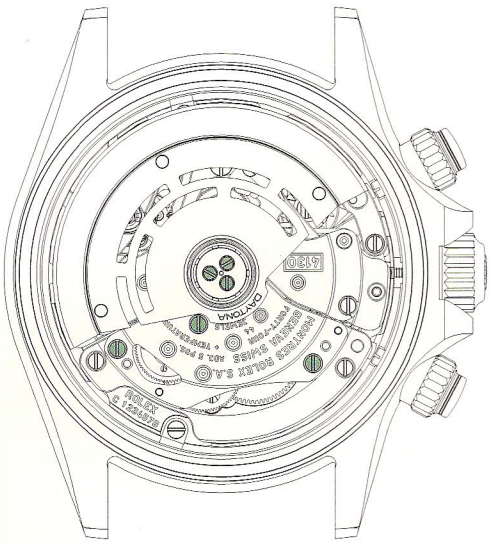
Assembling the chronograph - parts 2 and 3

Assembling the automatic module

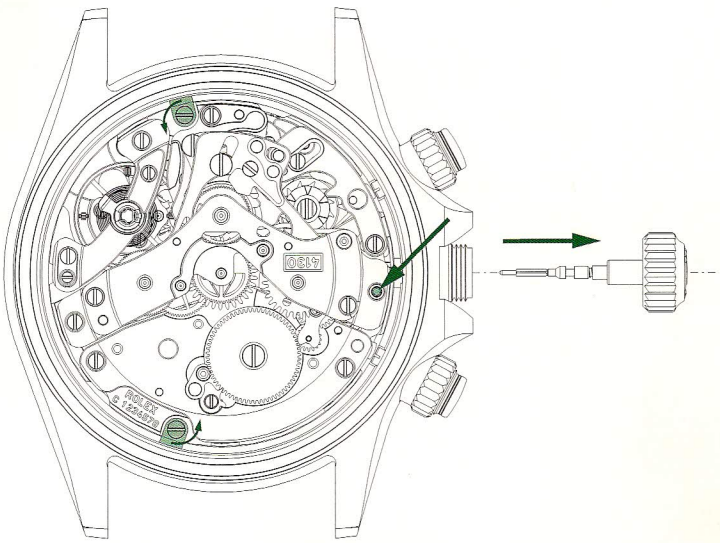
Fitting of dial + hands, casing up, fitting of automatic module and oscillating weight

Check and observations: chronograph engaged and disengaged.

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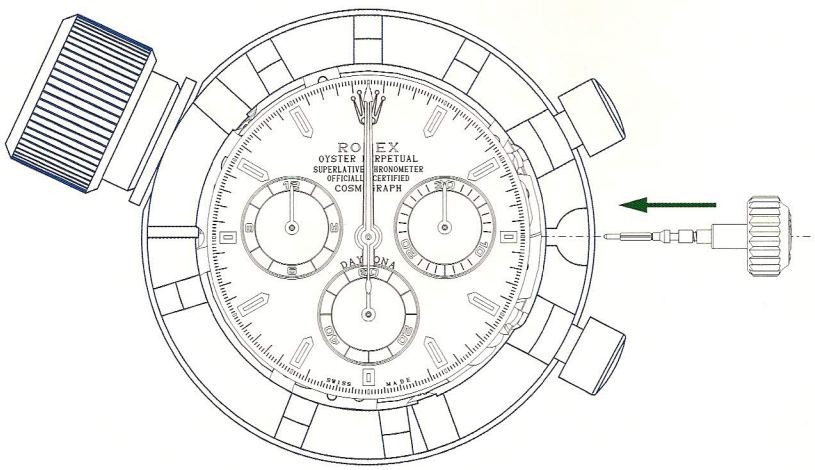


1. Screw for oscillat. weight (3x)
2. Oscillating weight
3. Screw for autom. module (3x)
4. Automatic module



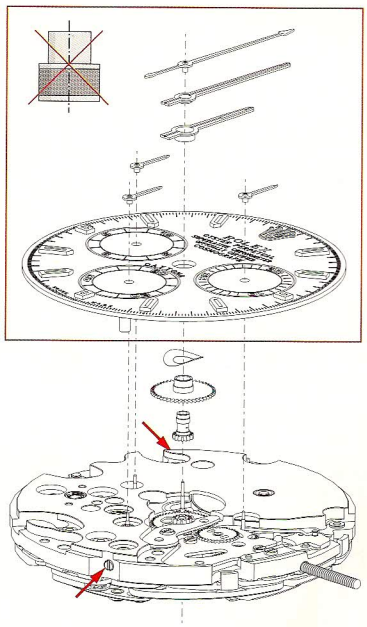
5. Stem
6. Screw and bridle (2x)
7. Basic movement

See Techn. Info. No. 63



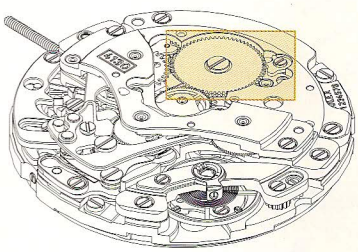
Movement-holder
Ref. 2240

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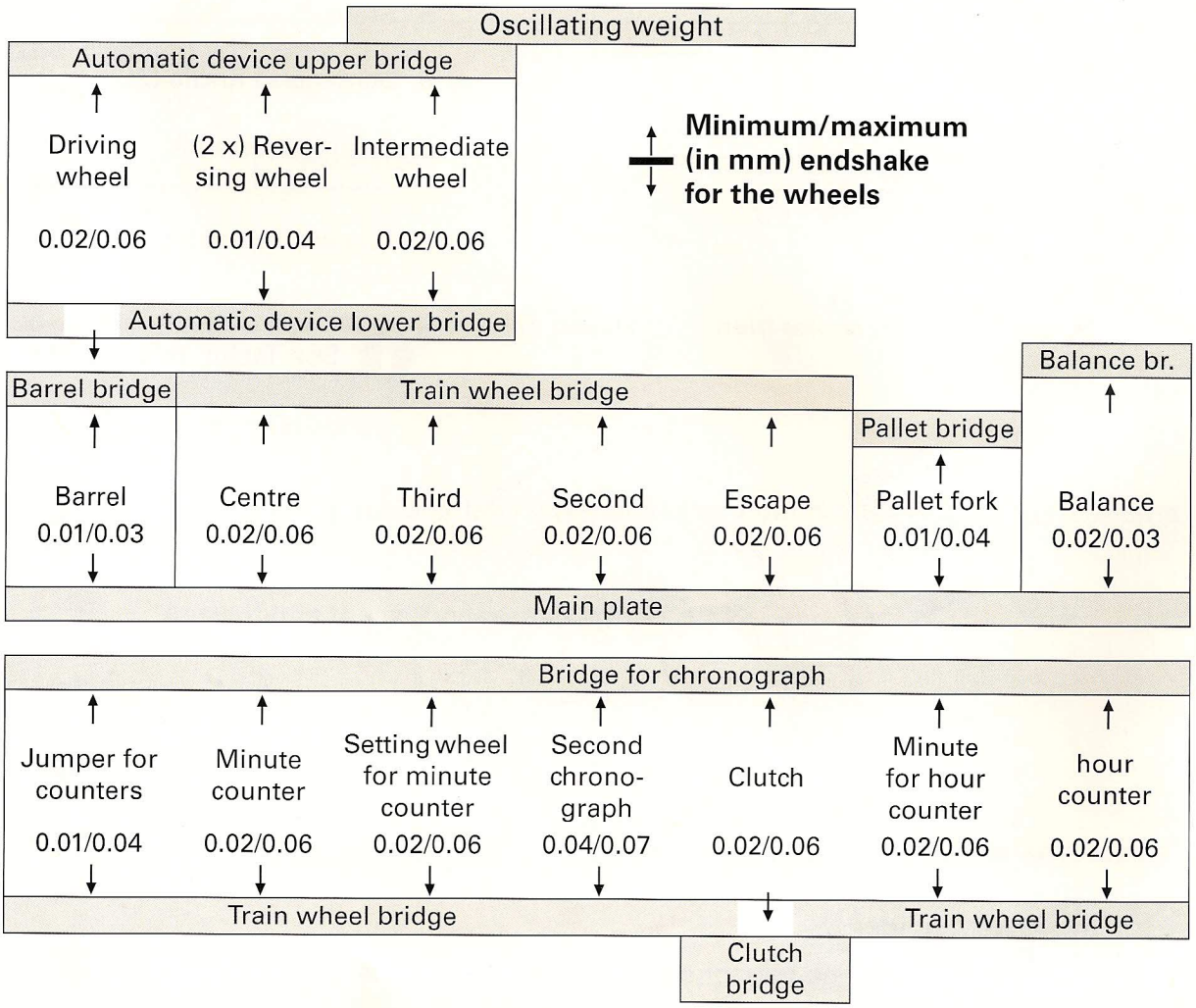
Secure the dial screws

Unwind the mainspring



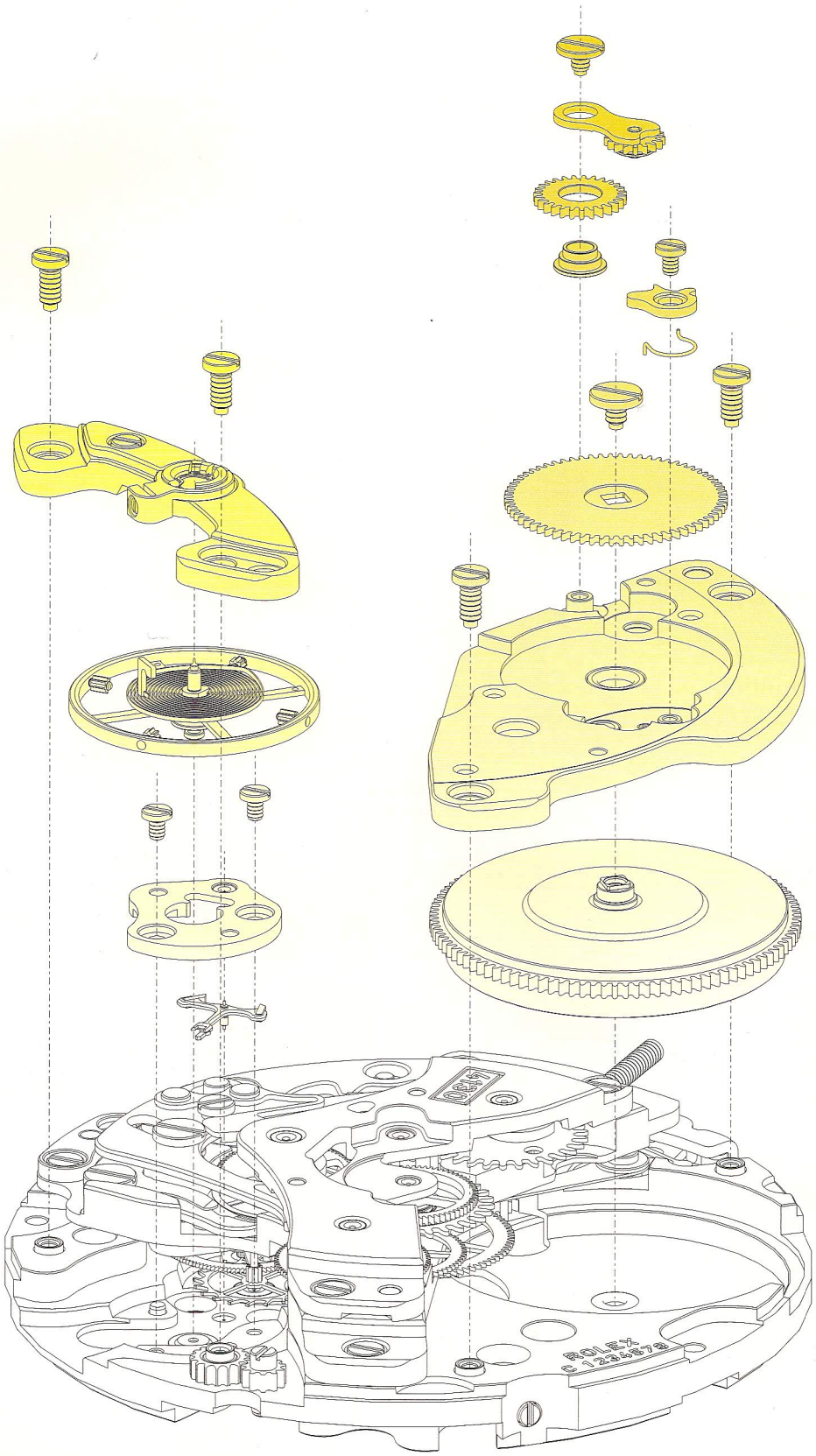
Pre-cleaning: Before establishing a general diagnosis, always start by pre-cleaning the complete movement without dial and hands.

While disassembling, inspect all parts and their function



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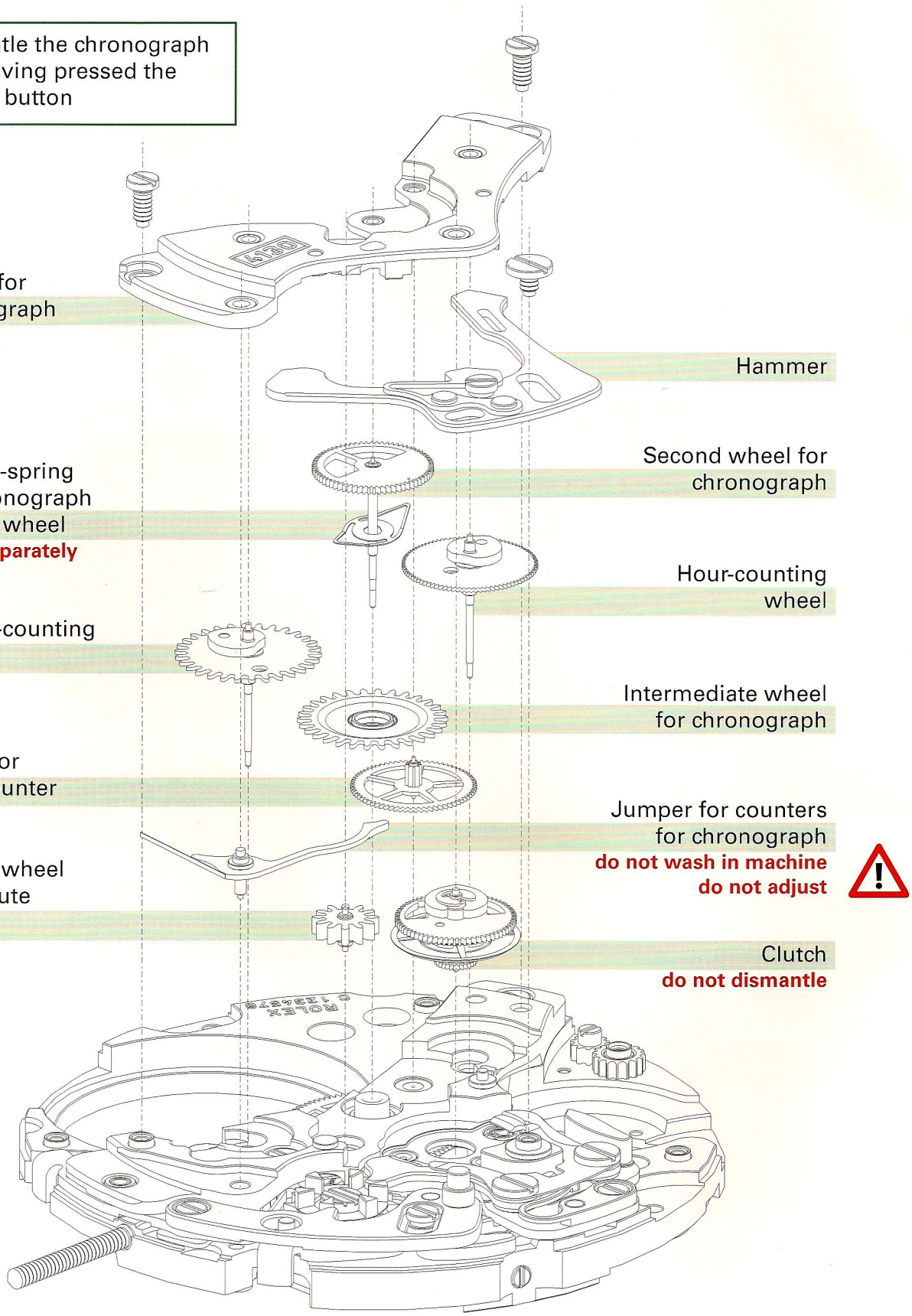
These parts can be dismantled with the movement cased-up



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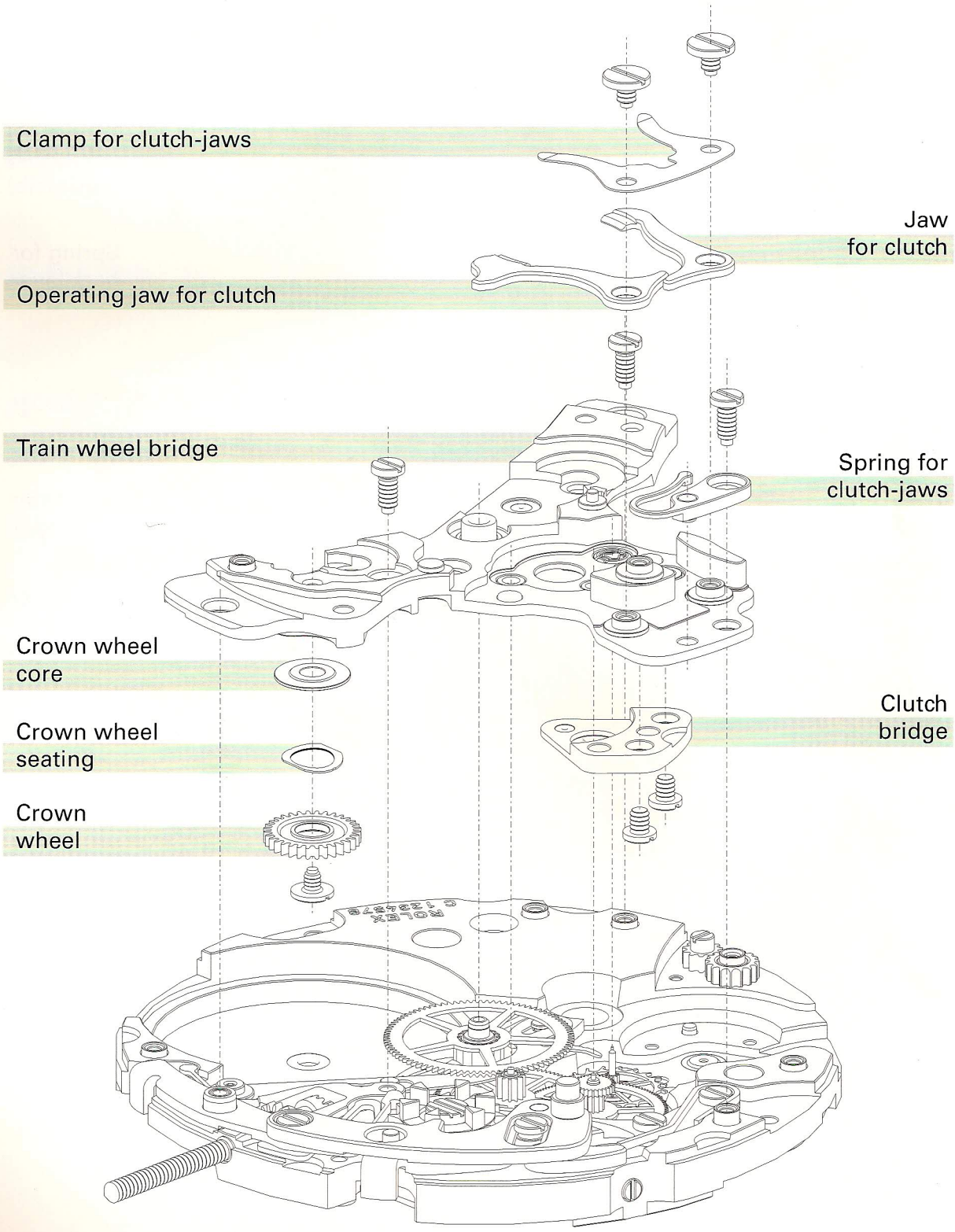
Chronograph - part 3

Dismantle the chronograph after having pressed the "**start**" button



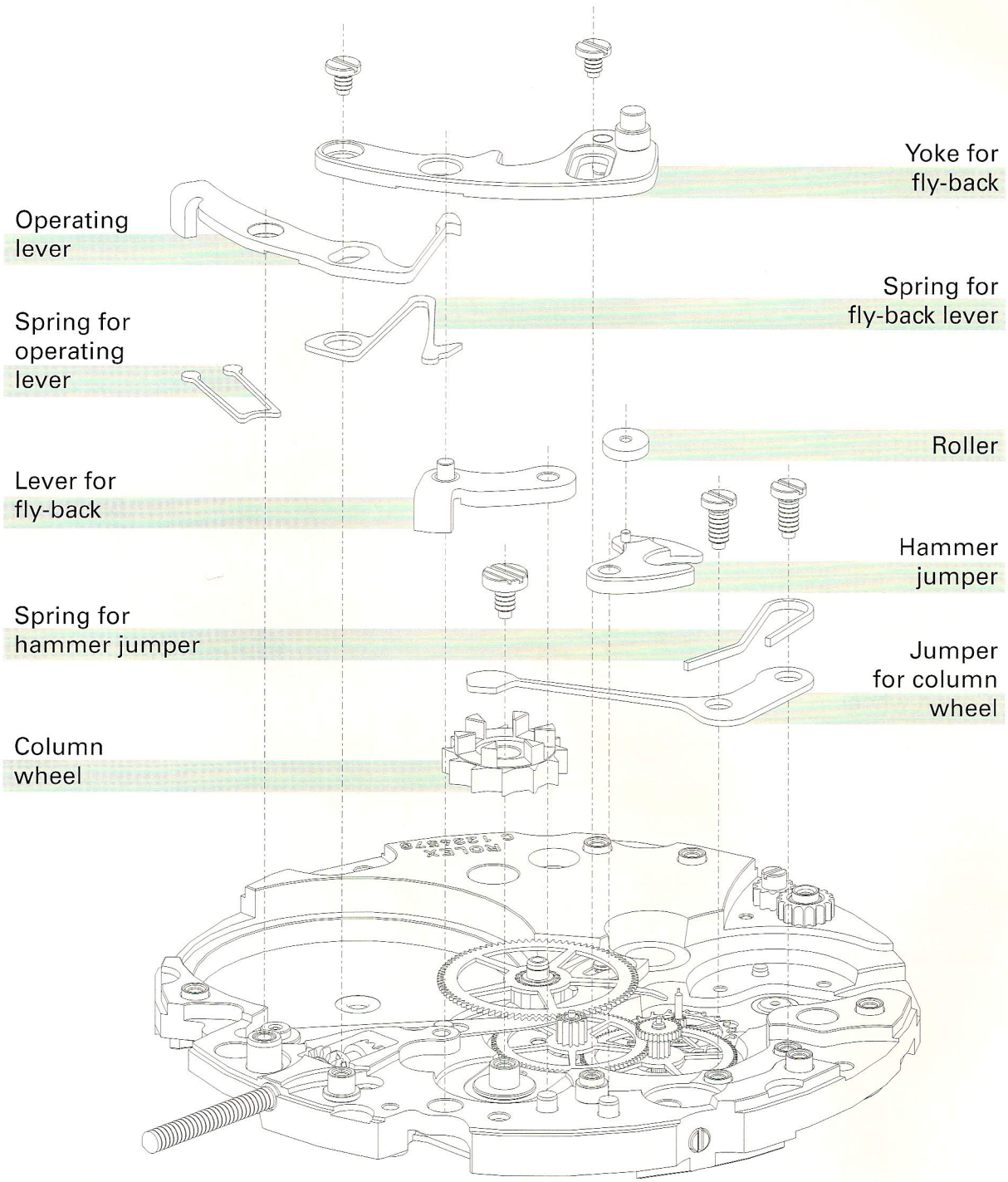
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Chronograph - part 2



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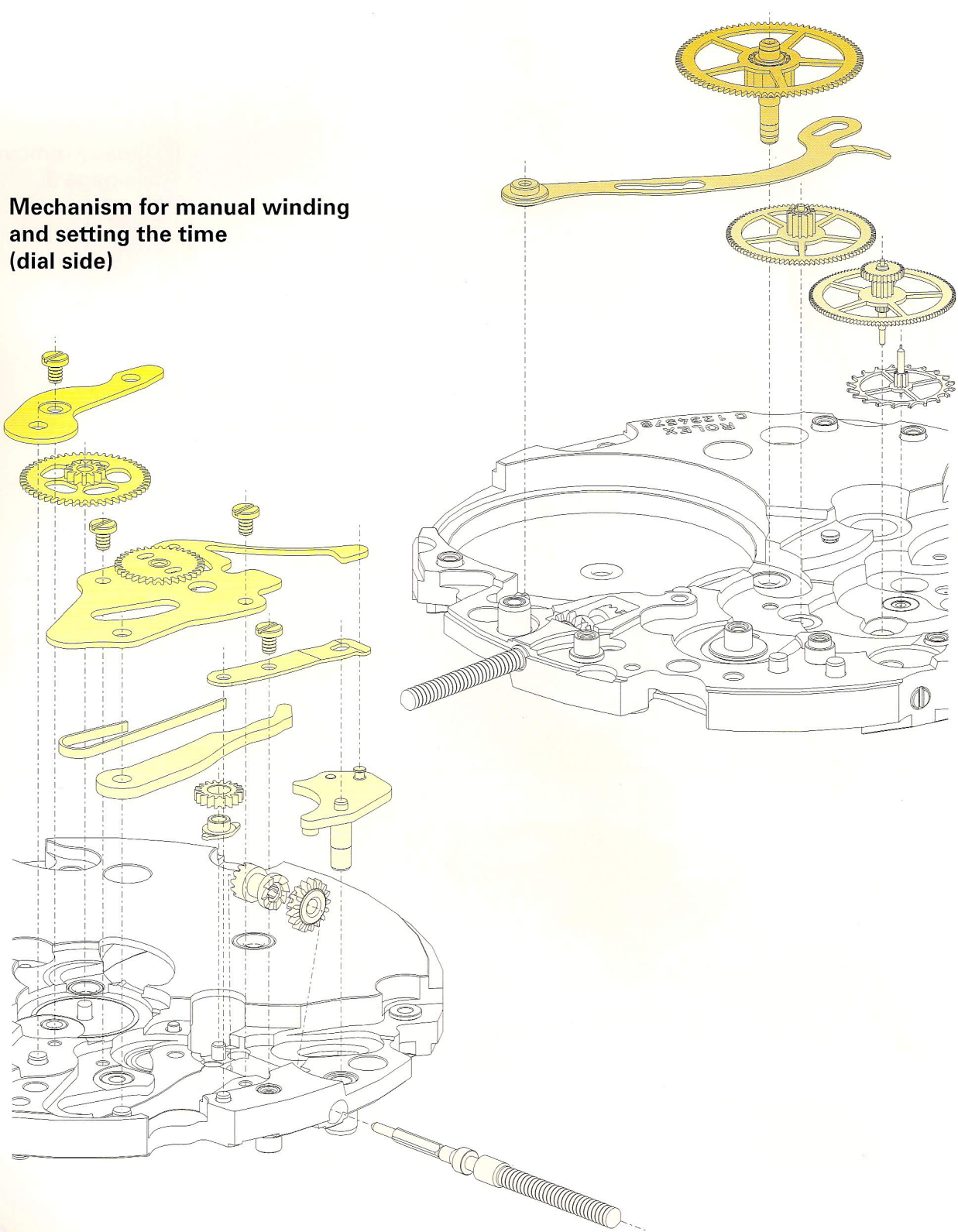
Chronograph - part 1



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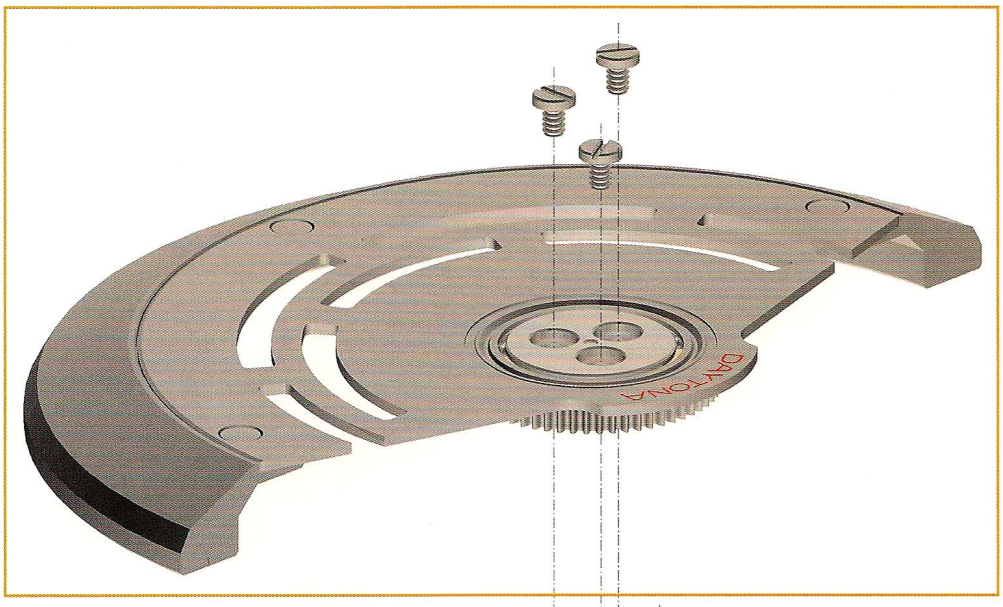
Train wheel (bridge side)

Mechanism for manual winding and setting the time (dial side)

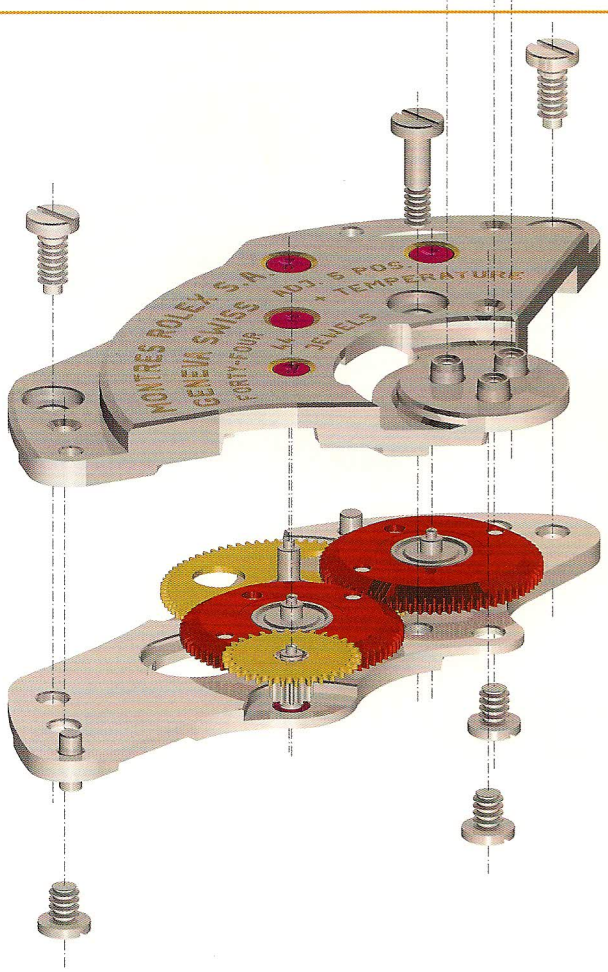


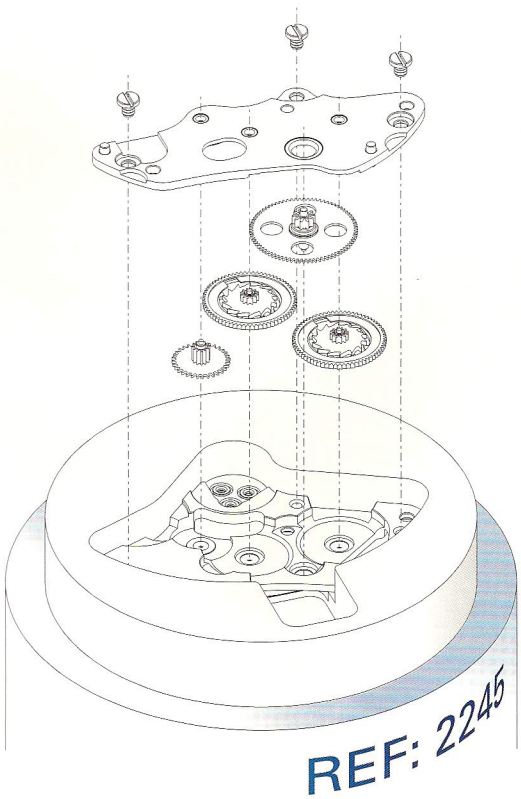
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Automatic module



Already removed
see page 9

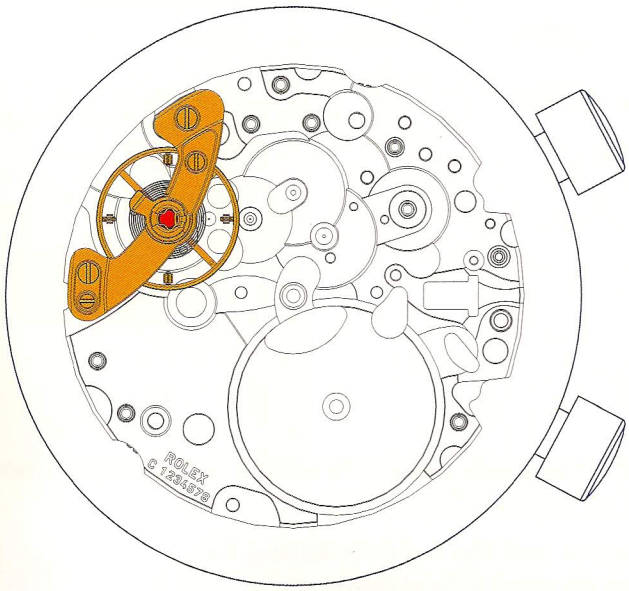




REF: 2245

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Main plate
4130-100

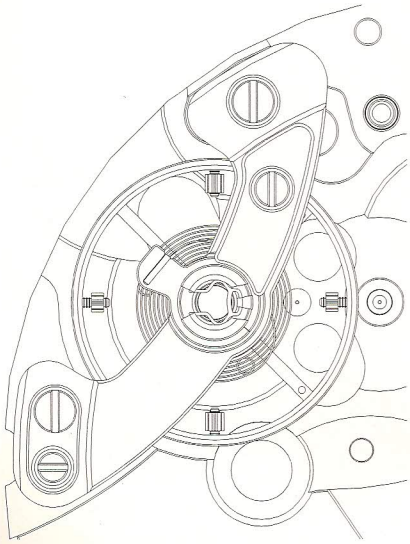


Balance with
Breguet hairspring
timed
4130-432
+
Balance bridge
4130-120

2 x Screw
4130-5110 140

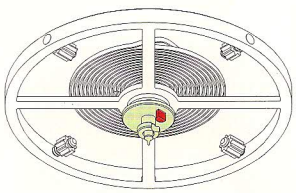
Checking and adjusting the hairspring

1. Centering and flatening the hairspring at the collet (on truing calipers)
2. Centering and flatening the hairspring
3. Concentricity of the Breguet hairspring



Roller 2130-425

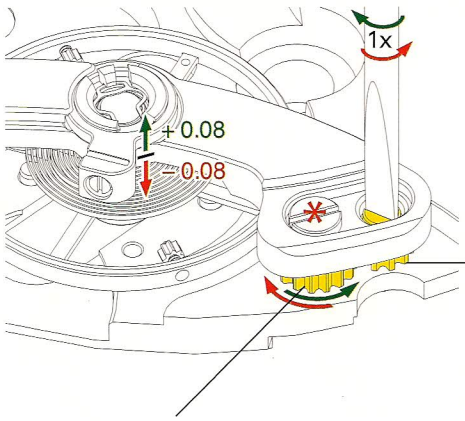
Balance staff 4130-429



I.T. 49-1

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Checking and adjusting endshake of balance wheel: 0.02 to 0.03mm



Regulating nut for balance bridge height adjustment 2230-5120

* Unscrew before regulating
Screw tightly after regulating

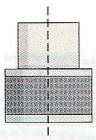
140

± 1 rotation = ± 0.08

Driving pinion for height adjustment of the balance bridge 2230-475

100

The jumper for counters for chronograph must not be washed by machine



2nd cleaning ultrasound — **- wash the barrel and the friction-spring for chronograph second wheel separately**

Spare parts to be treated with epilame

- escape wheel and pallets only;
- reversing wheel 2 x;
- operating jaw for clutch;
- jaw for clutch;
- hammer.

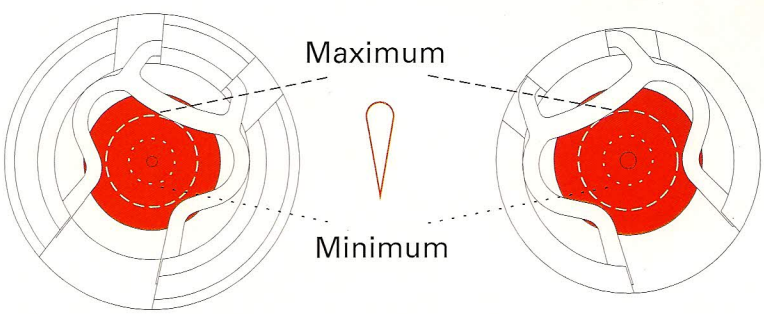
I.T. 56 Flask applicator for FIXODROP Ref. 3109

Apply a drop of FIXODROP using tweezers for the jewel for centre wheel: inside only: see page 19 and page 22.

Lubricating

Shock-absorber for balance
upper 95019 (3035)
lower 95019-1 (3035)

Combined in-setting for escape wheel upper/lower
2130-0913



Kif

Duokif

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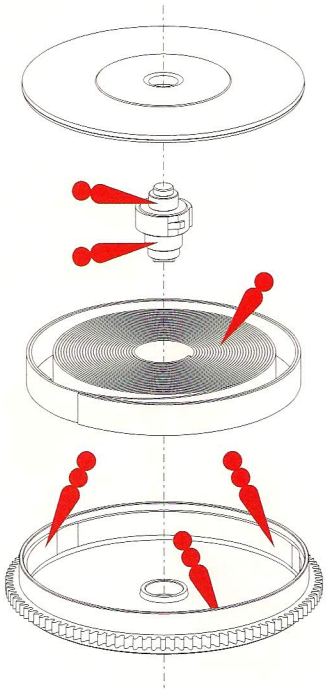
Assembling and lubricating the barrel

Barrel **with** arbor
4130-310

Barrel arbor
4130-307

Mainspring
4130-311

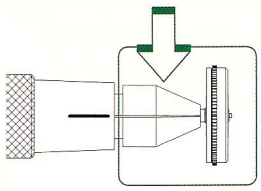
Pre-lubricated mainspring delivered in ring



Inspection

- mainspring locking;
- sliding of bridle;
- maximum winding: *10.5 revolutions*;
- arbor:

  0.01/0.03 mm
- minimum lateral shake of arbor.



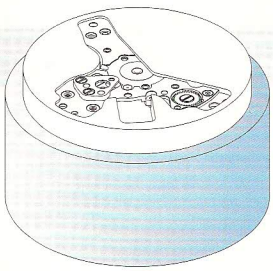
I.T. 40-1

Mainspring winder (rights)
Ref. 1080-13

Tool to close barrels:
Ref. 1450

Barrel arbor holder
Ref. 2152

Assembling and lubricating: train wheel bridge, clutch bridge and crown wheel

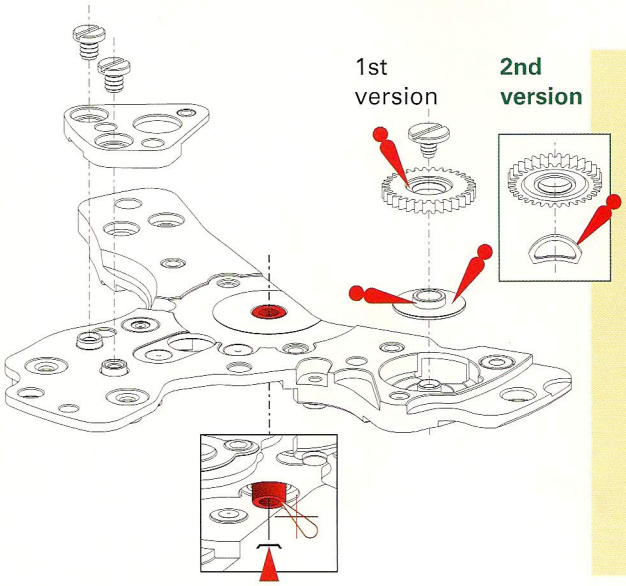


Support Ref. 2246

140 2 x Screw
4130-5135

Clutch bridge
4130-193

Train wheel bridge
4130-110



180 Screw
4130-5210

Crown wheel
4130-210

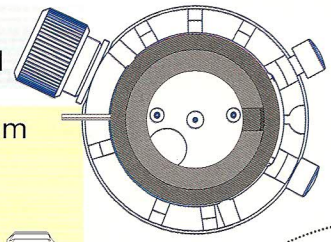
Crown wheel seating
4130-209

Crown wheel core
4130-211

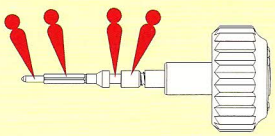
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Dial side

Insert
Ref. 2240-1

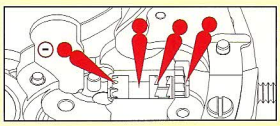


Winding stem
4130-201

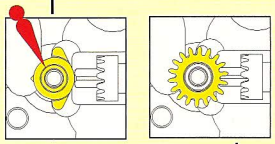


Winding pinion
4130-204

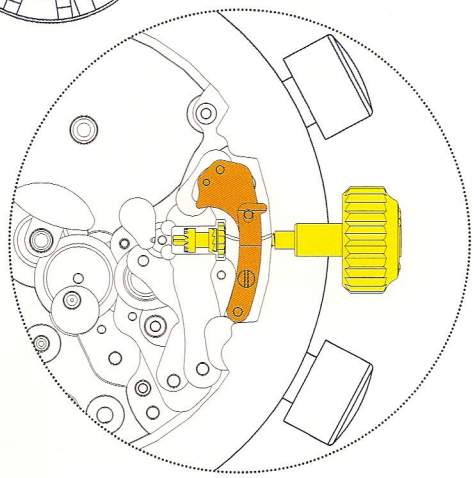
Sliding pinion
4130-205



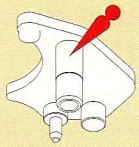
Setting wheel core
4130-249



Setting wheel
4130-250



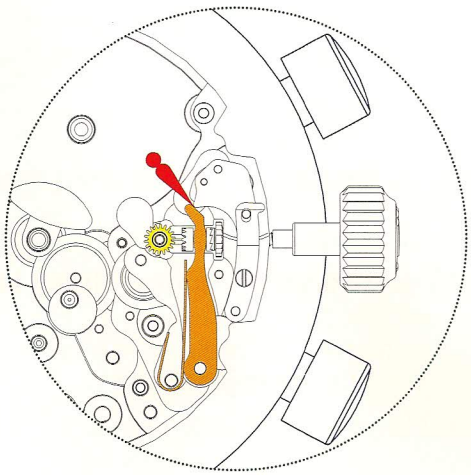
Setting lever
4130-220



Spring for
setting lever
4130-225

1 x Screw
4130-5115

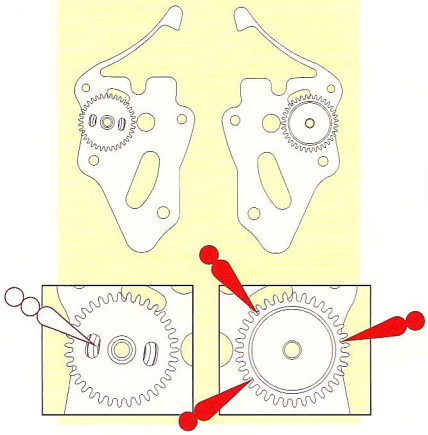


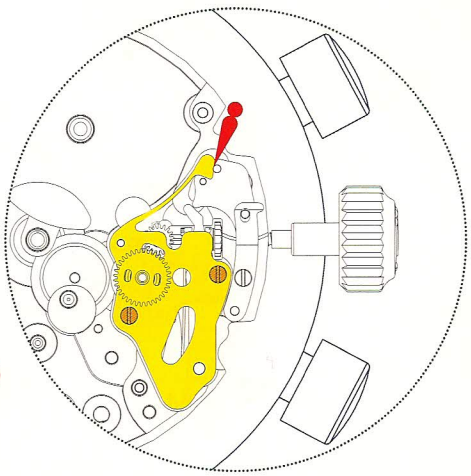


Yoke for
sliding pinion
4130-240

Spring for
yoke
4130-241

Jumper for
setting lever
4130-231





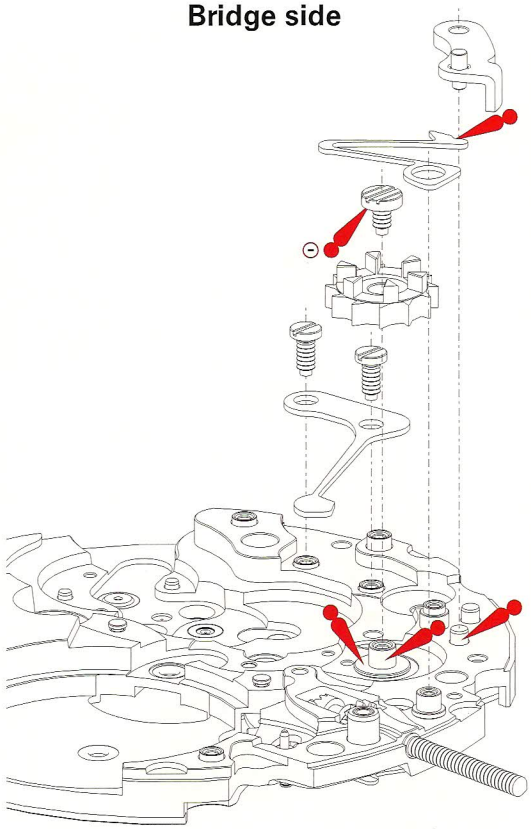
2 x Screw
4130-5115



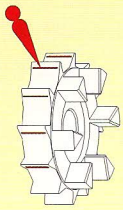
Check
functions and
aspect

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Bridge side



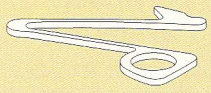
1. Jumper for column wheel 4130-856
2. 2 x Screw 4130-5110 — 140



lubricate all the teeth

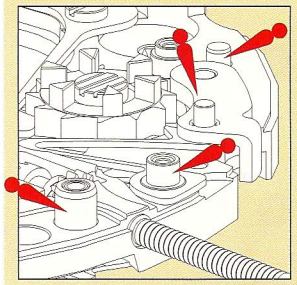
3. Column wheel 4130-855
4. 1 x Screw (left hand screw) 4130-5855 — 180

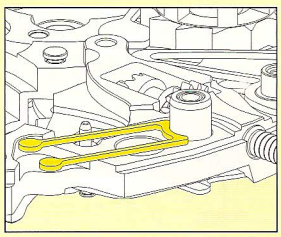
5. Spring for fly-back lever 4130-871



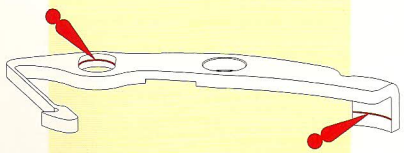
6. Lever for fly-back 4130-870



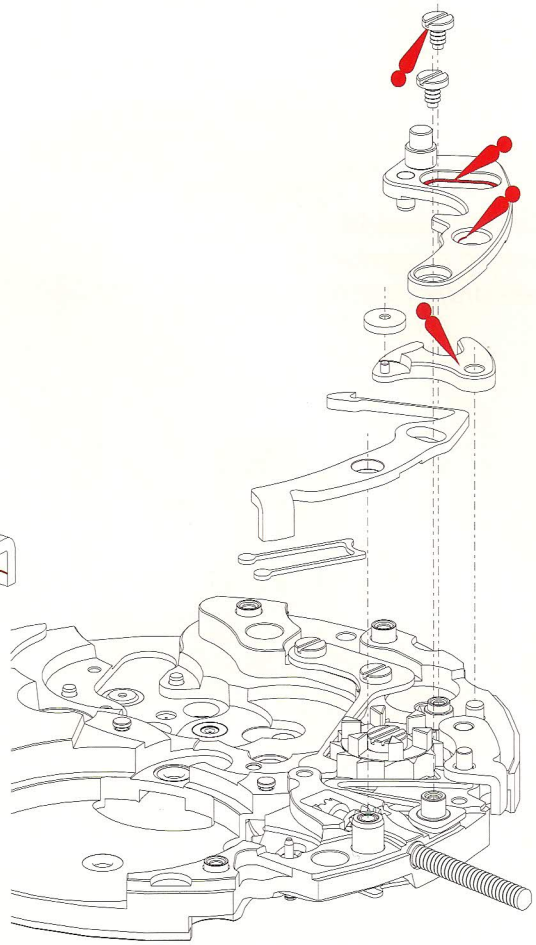




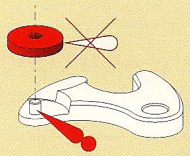
7. Spring for operating lever 4130-861



8. Operating lever for chronograph 4130-860



9. Hammer jumper 4130-883
10. Roller 4130-9883



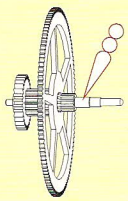
11. Yoke for fly-back 4130-875
12. 2 x Screw 4130-5875 — 140

Check functions and aspect

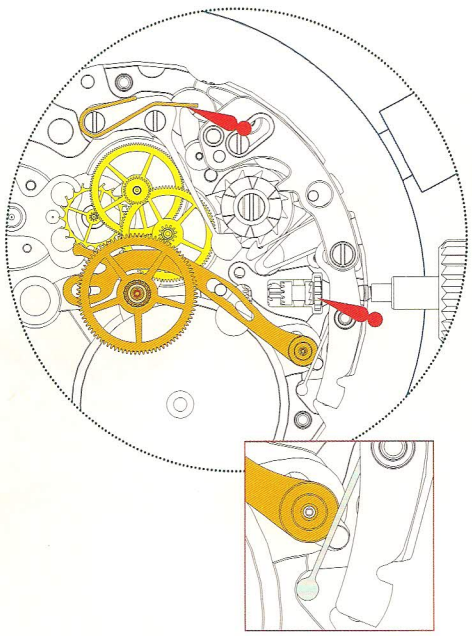
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Bridge side

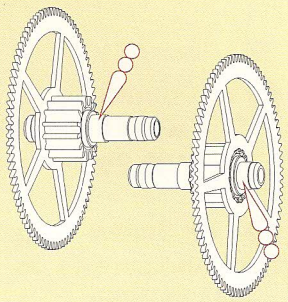
1. Escape wheel 4130-410
2. Second wheel 4130-360



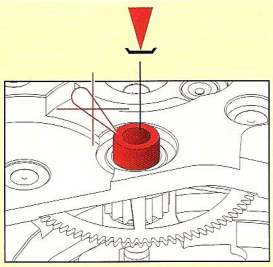
3. Third wheel 4130-340
4. Remove the spring for operating lever



5. Spring for balance stop 4130-244
6. Put the spring for operating lever back again
7. Centre wheel



8. Spring for hammer jumper 4130-881

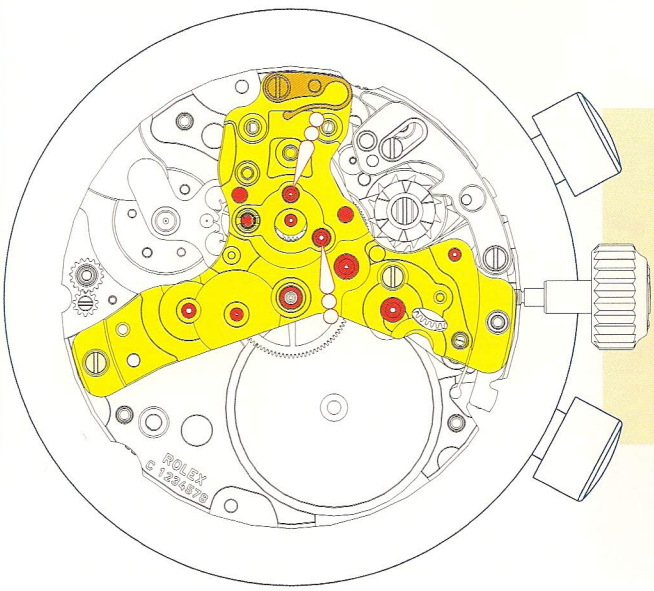


Train wheel bridge preassembled

140 2 xScrew 4130-5110

Coat the **inside** of the jewel before assembling:
see preparation on page 19.

1 2 3 7 0.02/0.06



Spring for clutch-jaws 4130-865

1 x Screw 4130-5110 140

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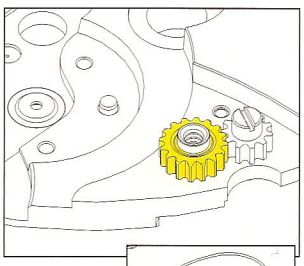
Bridge side

Tool
Ref. 2200



(Regulating nut for balance bridge height adjustment)
2230-5120

(Optional dismantling)



Assemble the balance bridge before the bridle and its screw

Dial side

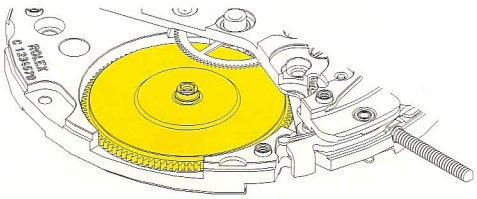
(Driving pinion)
2230-475

(Bridle for balance bridge height adjustment)
2230-478

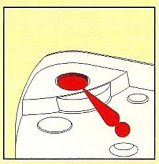
(Screw)
4130-5115 110

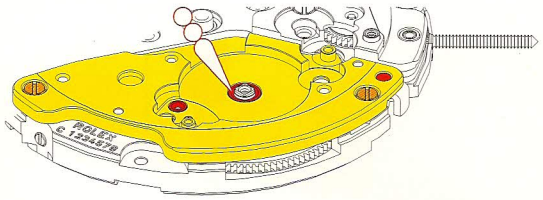
Bridge side

Assembled barrel



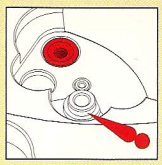
Barrel bridge
4130-105



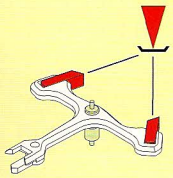


Barrel 0.01/0.03

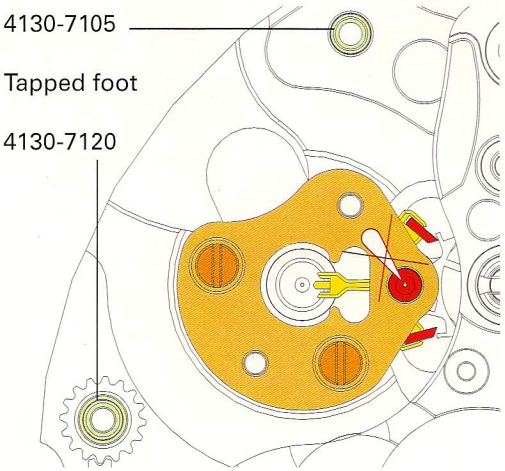
2 x Screw
4130-5110 140



Pallet fork
4130-421



Pallet staff
4130-419



Pallet bridge
4130-115

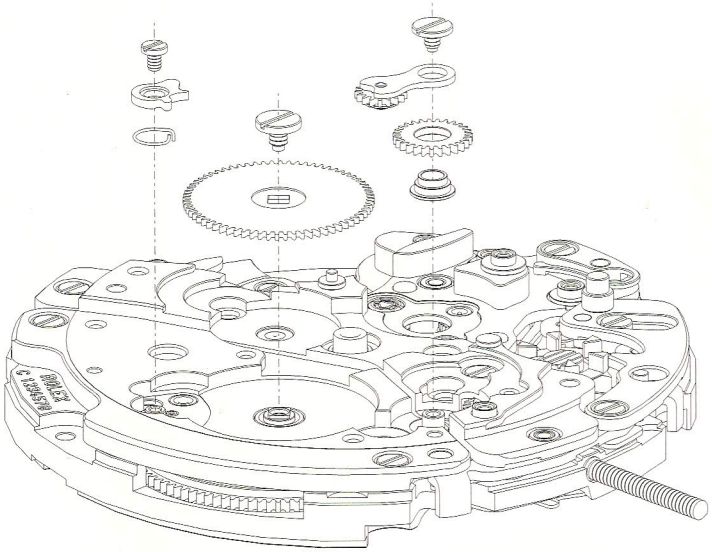
2 x Screw
4130-5115 110

Pallet fork
0.01/0.04

Check functions and aspect

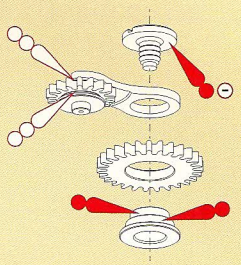
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Bridge side



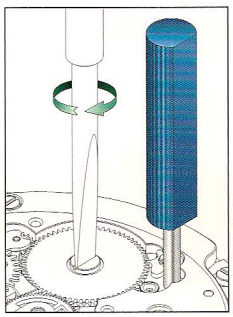
1 x Screw 180
4130-5210

Yoke for sliding gear
4130-217

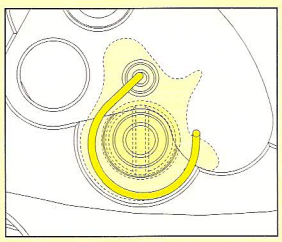


Intermediate crown wheel
4130-213

Core for intermediate crown wheel
4130-212

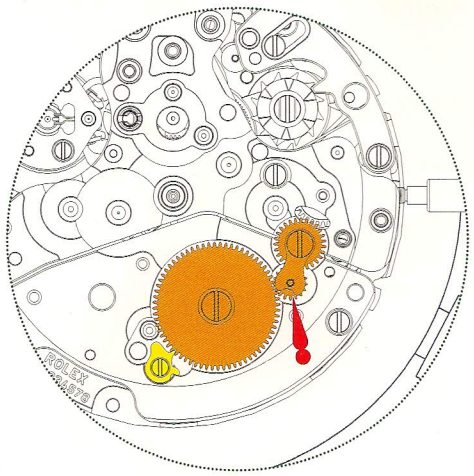


Spring for click
4130-301



Click
4130-300

110 1 x Screw
4130-5115



Tool Ref. 2249
to block the click

Ratchet wheel
4130-305

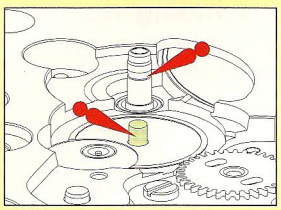
1 x Screw 200
4130-5305

Check functions and aspect

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Dial side

Minute wheel stud
4130-7260

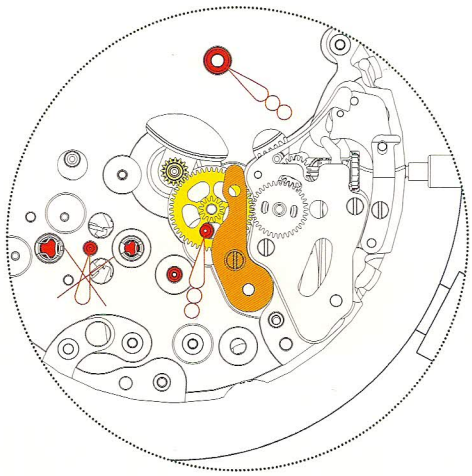


Cannon pinion
4130-270

Centre wheel with cannon pinion
4130-335

Minute wheel
4130-260

KIF



Bridge for minute train
4130-256

when screwing down the bridge, hold it in place

1 x Screw
4130-5115
110

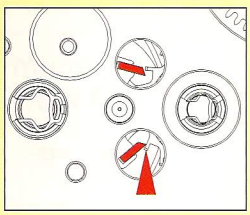
Check functions

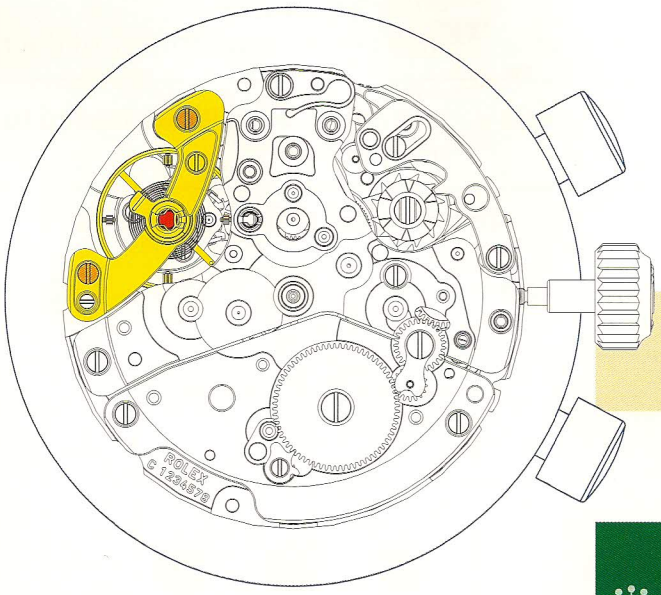
Bridge side

Balance with Breguet hairspring timed
4130-432

0.02/0.03

Balance bridge
4130-120





2 x Screw
4130-5110
140

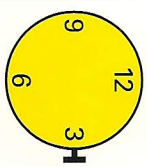
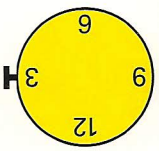
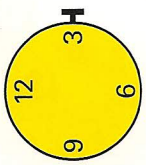
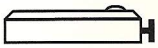
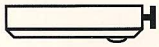
Check balance stop function

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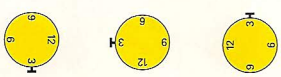
Technical characteristics:

Frequency	Lift angle	Max. winding (approx. 72h)	24h unwinding
28800 alternations/hour	52°	ratchet = 10.5 rotations winding stem = 45 rotations	ratchet = 3.5 rotations winding stem = 14 rotations

Test positions:

Watch (or movement position)					

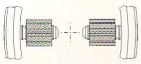
Regulating tolerances of the basic movement:

TESTS	METHODES	TOLERANCES
Rate	1st criteria = maximum difference in the positions: -after maximum winding -after 24h unwinding (3.5 anti-clockwise turns of the ratchet)	maximum 10 s/d
	2nd criteria = average of 5 positions wound to maximum.	-2 / + 4 (s/d)
Amplitude	3 positions — after 24h unwinding 	minimum 200°
	2 positions — maxi winding 	maximum 310°
Beat	5 positions 	maximum 0.8 ms 

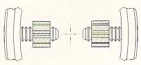
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This balance wheel is equipped with two pairs of gold Microstella nuts which can be adjusted to regulate the moment of inertia: a pair of long nuts, a pair of short nuts.

See technical info. "MICROSTELLA KEY, REF. 2019"



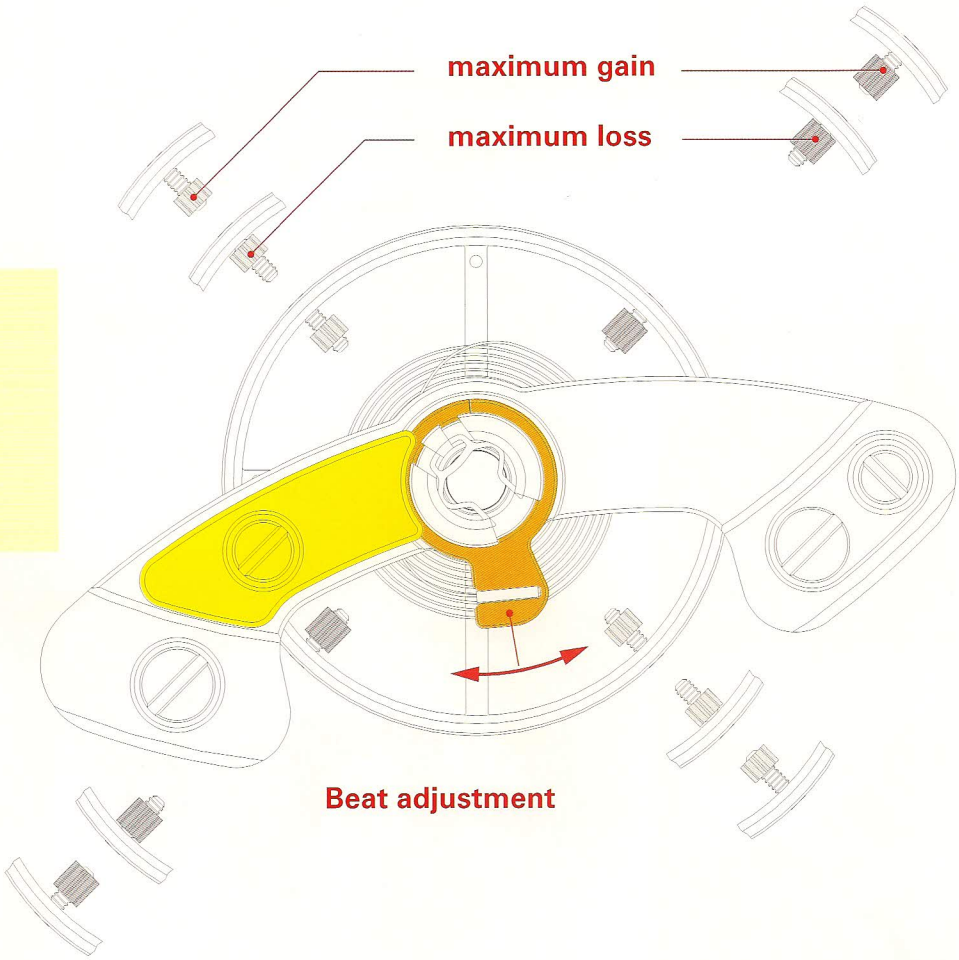
Long nuts: 1 division = 1.0 s/d (approx.)



Short nuts: 1 division = 0.7 s/d (approx.)

Adjustment range approx. ± 150 s/d

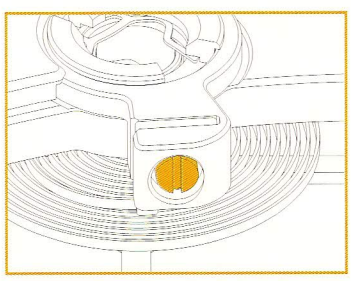
It is essential that the adjustment of the two Microstella nuts be identical, short or long, so as not to modify the balance wheel poising.



Beat adjustment

Bridle for stud support 4130-451

110 Screw 4130-5115



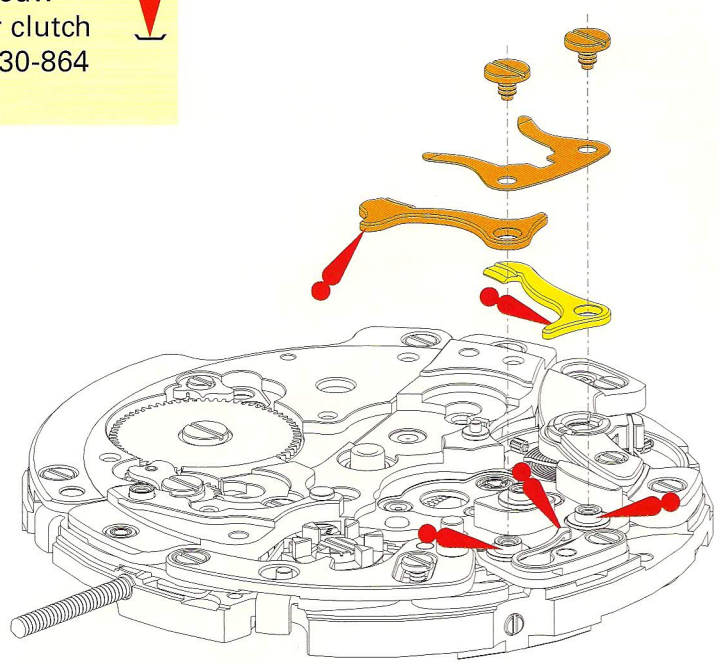
Stud support 4130-450

Screw for hairspring bridle 60 2230-5450

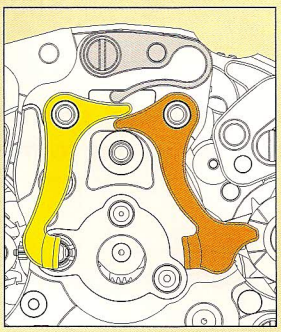
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Bridge side

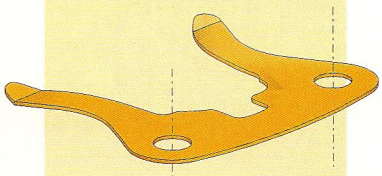
1 Jaw for clutch 4130-864



2 Operating jaw for clutch 4130-863



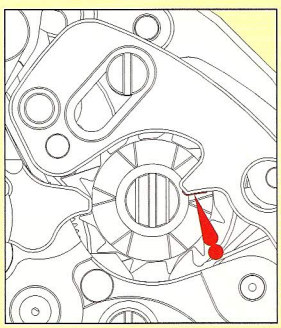
3 Clamp for clutch-jaws 4130-867

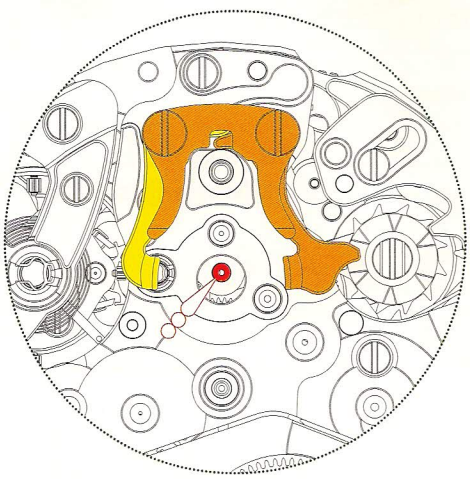


Correct side up

4 2 x Screw 4130-5305 200

Move the yoke for fly-back in order to grease the beak



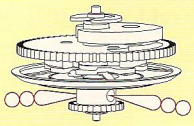


Check functions and aspect

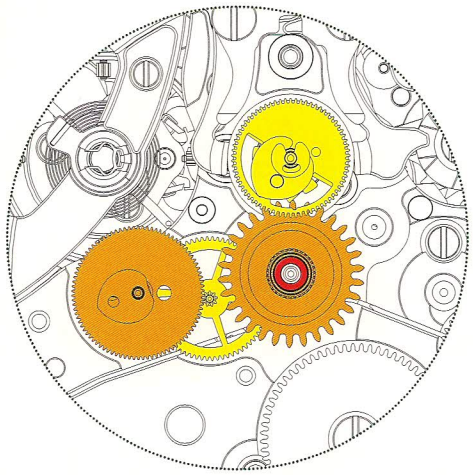
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Bridge side - *time setting position (stop second)*
chronograph engaged

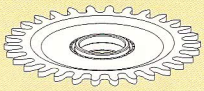
1 Clutch
4130-815



2 Minute wheel for hour counter
4130-845



3 Intermediate wheel for chronograph
4130-825

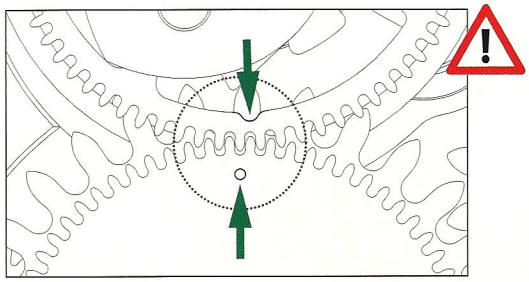


4 Wheel for hour counter
4130-850

5 Setting wheel for minute counter
4130-830

special coating



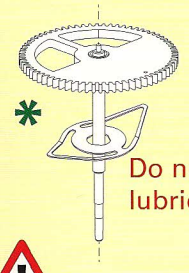


Align as closely as possible to balance the moving parts

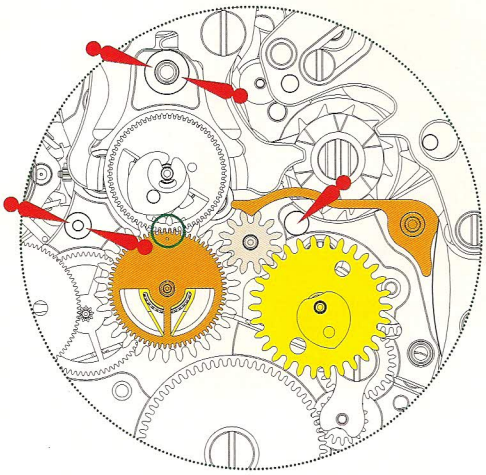
6 Minute-counting wheel
4130-840

7 Friction-spring
4130-822

8 and second wheel for chronograph
4130-820



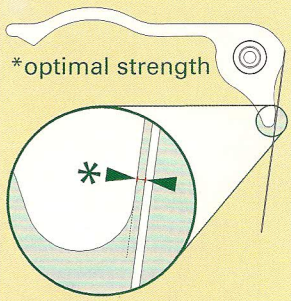
Do not lubricate



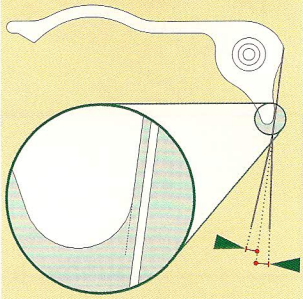
Do not adjust

9 Jumper for counters
4130-834

2 versions



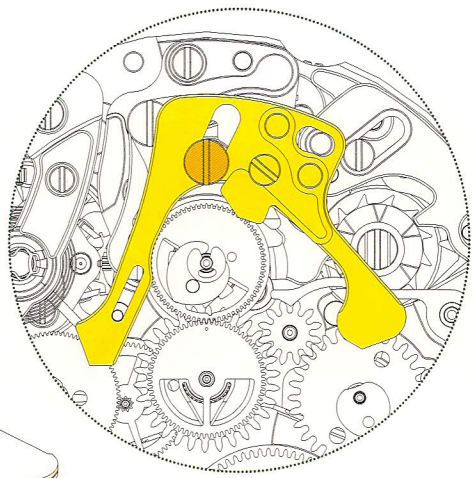
fragile - handle with care



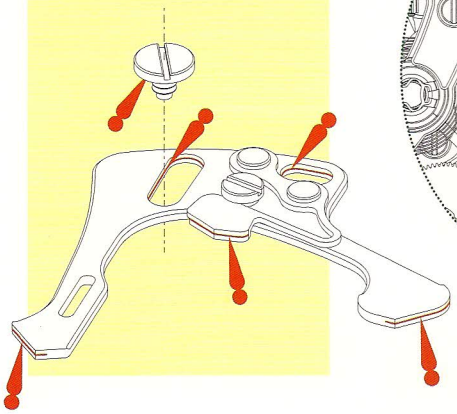
*ends pointing upwards

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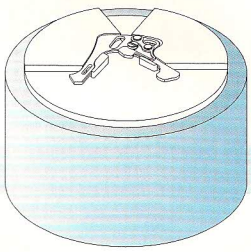
Bridge side



10 Hammer 4130-880

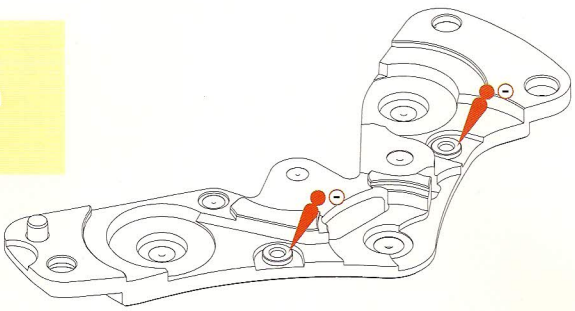


11 Screw 4130-5305 200

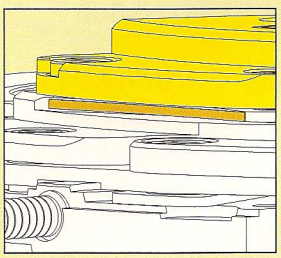


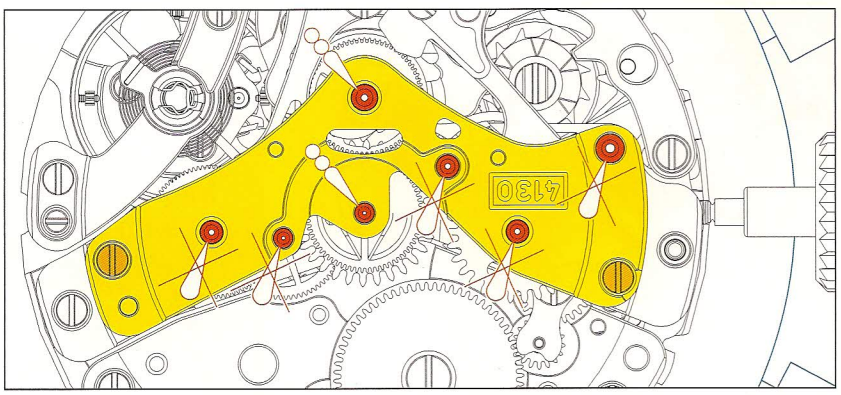
Support for hammer Ref. 2247 (for lubricating)

12 Bridge for chronograph 4130-190



Do not damage the blade of the jumper of the chrono-graph counters





13 2 x Screw 4130-5110 140

Do not lubricate the following pivots: wheel for hour and minute counters, minute wheel for hour counters, setting wheel for minute counter, jumper for counters.

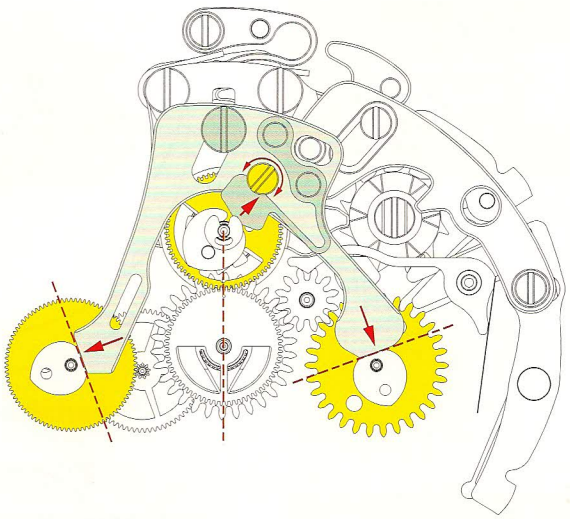
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Adjusting the hammer
after assembling the chronograph bridge

1. Press the reset button

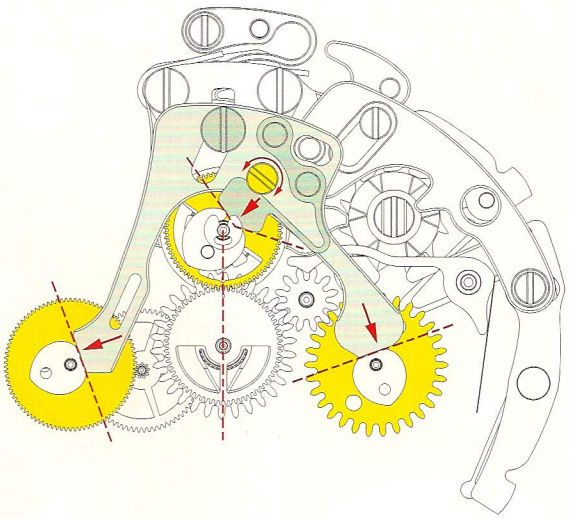
2. Release the clutch pane using the eccentric screw so that the panes of the minute and hour counters are resting on the heart-pieces.

   Check the locking of the hour and minute counters.



3. Adjust the clutch pane support without moving back the other panes.

   Check the locking of the moving parts.



The three panes of the hammer should rest simultaneously on the heart-pieces of the counters and the clutch.

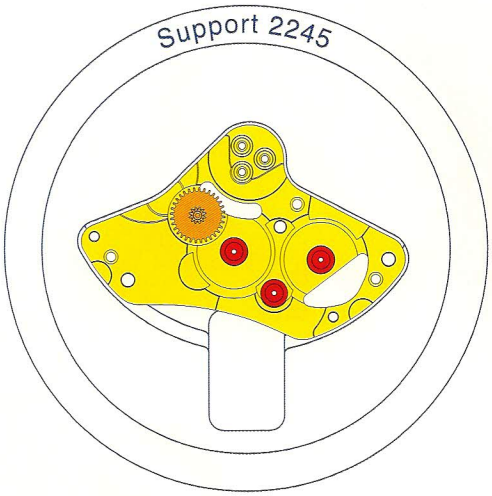
Checks

Chronograph: - start - stop - reset functions
- indexing of the counters

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The oscillating weight, 4130-570, is assembled after casing up

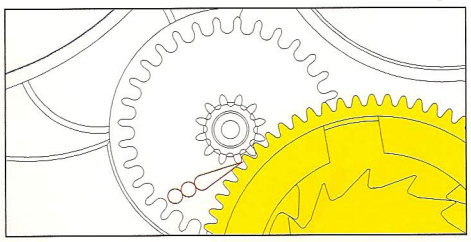
Upper bridge for automatic module 4130-140

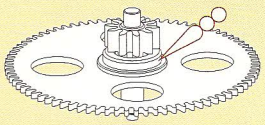


Automatic intermediate wheel 4130-520

Lubricate the toothing

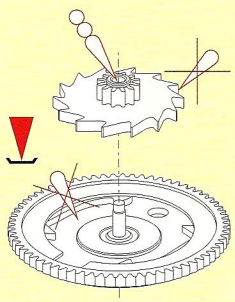
Reversing wheel, mounted 2x 4130-540



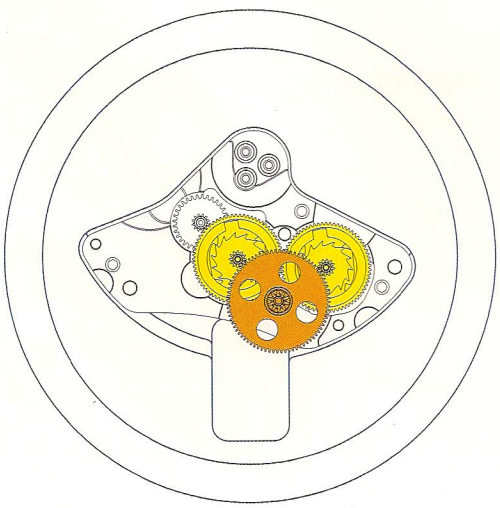


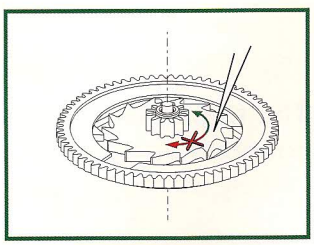
Driving wheel for ratchet wheel 4130-510

Reverser



Mobile click-holder

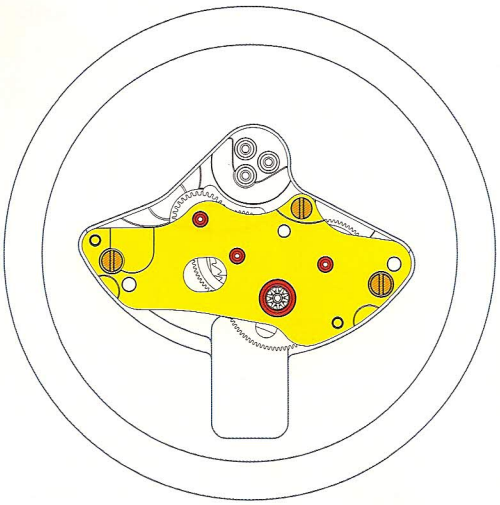




Before mounting on the upper bridge of the automatic module, check the freedom of the reverser and the proper functioning of the clicks, *with an oiler.*

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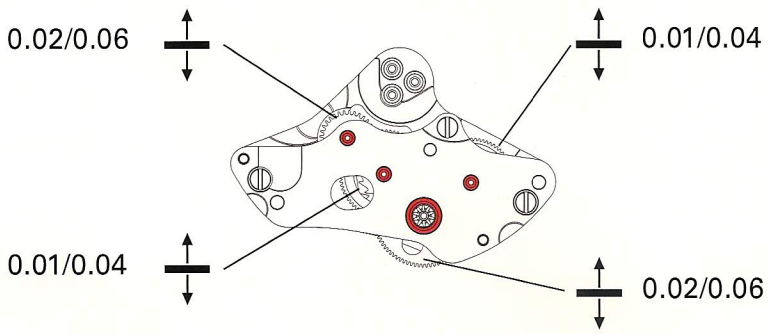
Lower bridge for automatic module 4130-135



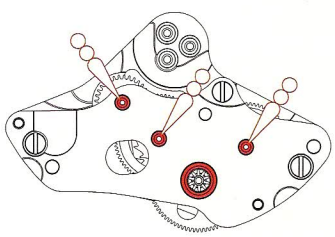
3 x Screw 4130-5135 140

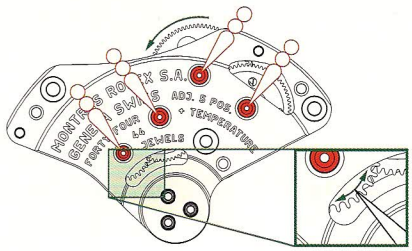
Checking endshake

The endshake must be adjusted during the 1st inspection when disassembling the movement.



Oiling

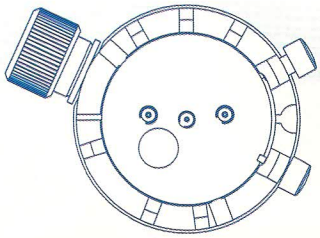




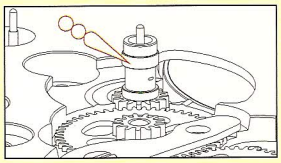
Inspect the rotation of the driving wheel for ratchet wheel by rotating, *with an oiler,* the intermediate wheel in both directions.

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Movement-holder
Ref. 2240



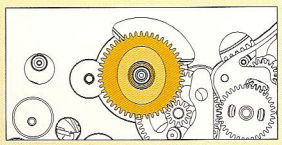
hand support
side



Dial with
feet

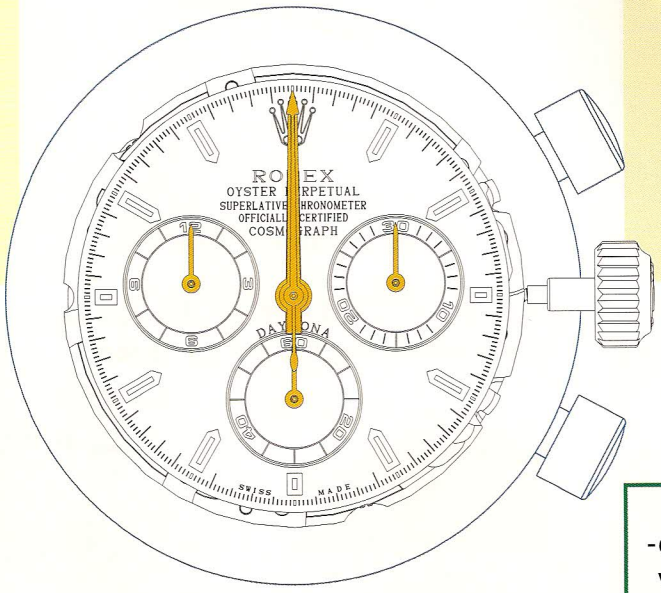


Screw (sides)
2 x 3135-5013



Hour
wheel
4130-280

Friction
spring
4130-0945



Tests
-endshake of hour
wheel
-centering of dial

Hand-pushers
Ref. 2089
with suitable
tips



Fitting of hands:
hour, minute, chronograph second hand,
hands for second and counters

Tests

Hands: - 360° clearance and parallelism;
- synchronisation of hour/minute hands at 12h = +/- 1 min;

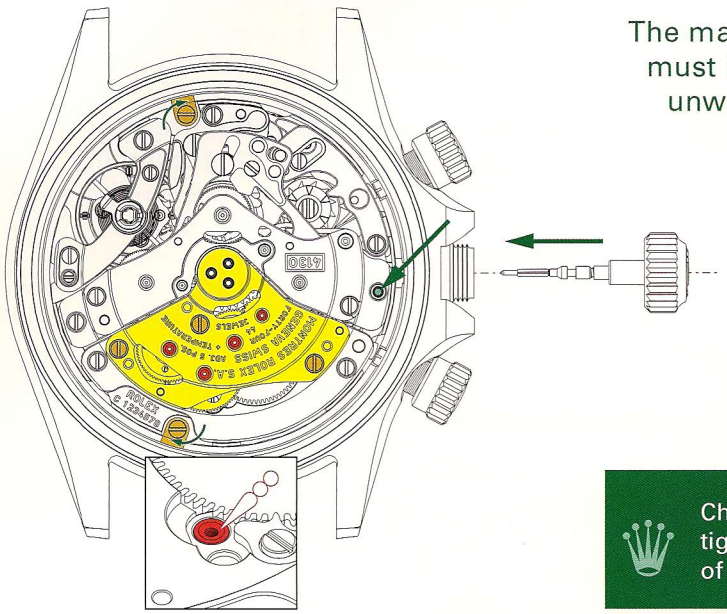
Chronograph: - start - stop - reset functions
- minutes and hours counting

General appearance

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Casing-up movement-holder Ref. 2243

Mechanism in manual winding position



The mainspring must be fully unwound.

Check the tightening of the screws

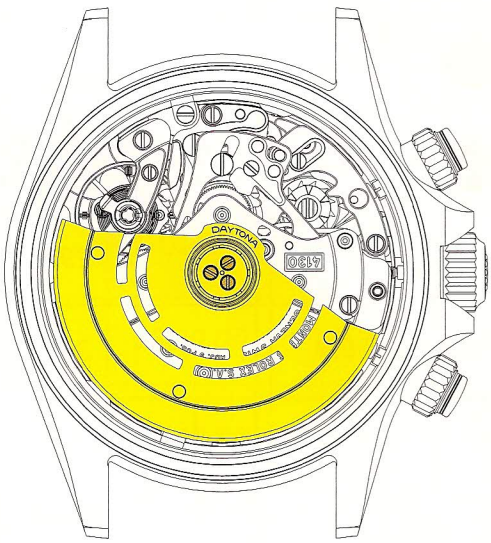
Centering the movement

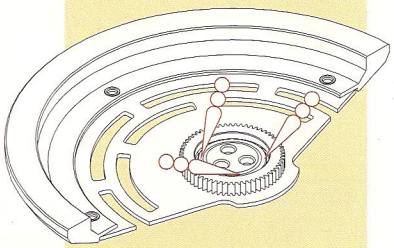
Bridle
2 x 146

2 x Screw
166 160

Automatic module

Screw
1 x 4130-5142
2 x 4130-5110 140





Oscillating weight
4130-570

3 x Screw
4130-5570 110

Tests

- position and freedom of oscillating weight.
- rotation of the ratchet wheel.
- manual winding and setting the time.
- chronograph functions: start - stop - reset - hours and minutes counting.

After closing and locking of caseback:
- acoustic test of automatic system, the oscillating weight must not rub against the caseback or the bridges.

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Procedure

Frequency	Lift angle	Max. winding (approx. 72h)	24h unwinding
28800 alternations/hour	52°	ratchet = 10.5 rotat. winding stem = 45 rotations	ratchet = 3.5 rotat. winding stem = 14 rotations

Instantaneous timing control: *example*

Chronograph disengaged

Position	Beat (ms)	Rate at 24h (s/d)	Ampli-tude (°)
12	*0.2*	*+ 3*	*215*
3	*0.1*	*+ 6*	*220*
6	*0.2*	*+ 2*	*210*
9	*0.3*	*- 2*	
crown	*0.3*	*0*	

mini 200°

maxi 0,8 ms

Position	Beat (ms)	Rate at 0h (s/d)	Ampli-tude (°)
12	*0.2*	+ 6	
3	*0.1*	- 1	
6	*0.2*	+ 4	
9	*0.3*	+ 3	*290*
crown	*0.3*	+ 4	*300*

maxi 310°

Maximum variation 10 s/d

1st criteria: -2 / + 6 = 8 s/d

2nd criteria: +3.2 s/d
(average = +6-1+4+3+4 = 16 : 5 = +3.2)

Tol. -2/+4 s/d

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Instantaneous timing control: *continued*

Chronograph engaged:

Current amplitude measurement devices do not give correct results. Special equipment is being developed: a technical information sheet will follow.

Position	Beat (ms)	Rate at 24h (s/d)	Amplitude (°)
	0.2	*+ 3*	*200*
	0.1	*+ 6*	*190*
	0.2	*+ 2*	*195*
	0.3	*- 2*	
	0.3	*0*	

Loss of amplitude maxi 30°

Observation during 4 days - case back locked: *example*

	Date	Hour	Chronograph	Test position/ Duration	State (s)	Difference (s)
0	*23.10.00*	*8h30*	**disengaged**	Manual maxi winding	*0*	----
1	*24.10.00*	*8h45*	**disengaged**	/ 24 h	*+ 3*	*+ 3*
2	*25.10.00*	*8h35*	**engaged**	Reglomat / 24 h	*+ 2*	*- 1*
3	*26.10.00*	*8h40*	**disengaged**	/ 24 h	*+ 4*	*+ 2*

2nd criteria: Tol. -2/+4 s/d

average = (+3-1+2= 4 : 3 = +1,3)

+ 1,3

4	*27.10.00*	Test the power reserve **chronograph engaged:** **approximately 65h**

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Cal. 4130		
Reference	**Designation**	**Qty**
4130-100*	Main plate	1
4130-105	Barrel bridge	1
4130-110	Train wheel bridge	1
4130-115	Pallet bridge	1
4130-120	Balance bridge	1
4130-135	Automatic device, lower bridge	1
4130-140	Automatic device, upper bridge	1
4130-142*	Automatic device module	1
4130-190	Bridge for chronograph	1
4130-193	Clutch bridge	1
4130-201	Winding stem	1
4130-204	Winding pinion	1
4130-205	Sliding pinion	1
4130-209	Crown wheel seating	1
4130-210	Crown wheel	1
4130-211	Crown wheel core	1
4130-212	Core for intermediate crown wheel	1
4130-213	Intermediate crown wheel	1
4130-217	Yoke for sliding gear	1
4130-220	Setting lever	1
4130-225	Spring for setting lever	1
4130-231	Setting lever jumper	1
4130-240	Yoke for sliding pinion	1
4130-241	Spring for yoke	1
4130-244	Balance stop spring	1
4130-249	Setting wheel core	1
4130-250	Setting wheel	1
4130-256	Bridge for minute train	1
4130-260	Minute wheel	1
4130-270	Cannon pinion	1
4130-280	Hour wheel	1
4130-300	Click	1
4130-301	Spring for click	1
4130-305	Ratchet wheel	1
4130-307	Barrel arbor	1
4130-310	Barrel with arbor	1
4130-311	Mainspring	1
4130-335	Centre wheel with cannon pinion	1
4130-340	Third wheel	1
4130-360	Second wheel	1
4130-410	Escape wheel	1
4130-419	Pallet staff	1
4130-421	Pallet fork	1

Cal. 4130 (continuation)		
Reference	**Designation**	**Qty**
2130-425	Roller	1
4130-429	Balance staff	1
4130-432	Balance Breguet hairspring, timed	1
4130-450	Stud support	1
4130-451	Bridle for stud support	1
4130-510	Driving wheel for ratchet wheel	1
4130-520	Automatic intermediate wheel	1
4130-540	Reversing wheel, mounted	2
4130-570	Oscillating weight	1
2230-475	Driving pinion for height adjustment balance bridge	1
2230-478	Bridle for height adjustment balance bridge	1
4130-0945	Friction spring for hour wheel	1
Chronograph mechanism		
4130-815	Clutch	1
4130-820	Second wheel for chronograph	1
4130-822	Friction-spring for chronograph second wheel	1
4130-825	Intermediate wheel for chronograph	1
4130-830	Setting wheel for minute counter	1
4130-834**	Jumper for counters for chronograph	1
4130-840	Minute-counting wheel	1
4130-845	Minute wheel for hour counter	1
4130-850	Hour-counting wheel	1
4130-855	Column wheel	1
4130-856	Jumper for column wheel	1
4130-860	Operating lever for chronograph	1
4130-861	Spring for operating lever for chronograph	1
4130-863	Operating jaw for clutch	1
4130-864	Jaw for clutch	1
4130-865	Spring for clutch-jaws	1
4130-867	Clamp for clutch-jaws	1
4130-870	Lever for fly-back	1
4130-871	Spring for fly-back lever	1
4130-875	Yoke for fly-back	1
4130-880	Hammer	1
4130-881	Spring for hammer jumper	1
4130-883	Hammer jumper	1

* **Available on exchange basis only**

** special packing

Upper = bridge side

Lower = dial side

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Cal. 4130 (continuation)		
Reference	**Designation**	**Qty**
Nut, Screw, Tapped foot, Stud		
146 (4130)	Casing-up bridle	2
166 (3055)	Casing-up bridle screw	2
2230-5120	Regulating nut for balance bridge height adjustment	1
2230-5450	Screw for hairspring bridle	1
3135-5013	Screw for dial	2
4130-5000	Set of screws	1
4130-5110	- bridge for chronograph	2
	- jumper for column wheel	2
	- automatic module	2
Screw	- barrel bridge	2
	- train wheel bridge	3
	- balance bridge	2
4130-5115	- pallet bridge	2
	- bridle for stud support	1
	- bridle for height adjustment for balance bridge	1
Screw	- setting lever jumper	2
	- click	1
	- bridge for minute	1
	- setting lever spring	1
4130-5135	- clutch bridge	2
Screw	- automatic module lower bridge	3
4130-5142	Screw (long) for automatic module	1
4130-5210	- crown wheel	1
Screw	- intermediate crown wheel	1
4130-5305	- ratchet wheel	1
	- collet for clutch	2
Screw	- hammer	1
4130-5570	Screw for oscillating weight	3
4130-5855	Screw for column wheel	1
4130-5875	Screw for yoke for fly-back	2
4130-7260	Minute wheel stud	1
4130-7105	- barrel bridge	2
	- train wheel bridge	2
Tapped foot	- balance bridge	1
	- bridge for chronograph	1
	- jumper for column wheel	2
4130-7120	Tapped foot - balance bridge	1
4130-7855	Tapped foot - column wheel	1
4130-7864	Tapped foot for jaw for clutch	2
4130-7875	Tapped foot - yoke for fly-back	1
4130-7880	Tapped foot - clutch bridge and for hammer	1

Cal. 4130 (continuation)		
Reference	**Designation**	**Qty**
Shock absorber and combined in-setting		
4494	Spring for combined in-setting	2
95019	Shock absorber for balance - upper	1
95019-1	Shock absorber for balance - lower	1
95019-2	In-setting for balance upper/lower	2
95019-3	Cap jewel for balance upper/lower	2
95019-4	Spring for shock absorber for balance - upper/lower	2
2130-0913	In-setting for escape wheel upper/lower	2
2130-0913-2	Cap jewel for escape wheel upper/lower	2
Jewel		
2130-9330	Reversing wheel - lower	2
	Intermediate wheel - upper/lower	2
2130-9421	Jewel for pallet fork - upper/lower	2
2235-9100	Jaw for clutch support -	2
	Operating lever support	1
3135-9310	Barrel arbor - upper	1
3135-9510	Driving wheel for ratchet wheel support	1
4130-9311	Barrel arbor - lower	1
4130-9321	Centre wheel - upper	1
4130-9322	Centre wheel - lower	1
4130-9340	- Third wheel - upper	1
	- Driving wheel for ratchet wheel upper	1
	- Reversing wheel - upper	1
	- Clutch wheel - upper	1
4130-9341	- Third wheel - lower	1
	- Second wheel - upper	1
4130-9361	- Second wheel - lower	1
	- Minute counting wheel lower	1
	- hour counting - lower	1
4130-9511	Driving wheel for ratchet w. - lower	1
4130-9816	Clutch wheel - lower	1
4130-9820	Minute wheel for hour counter	2
4130-9835	Jumper for counters - lower	1
4130-9840	- Minute-counting wheel upper	1
	- Wheel for hour counting - upper	1
	- Setting wheel for minute counter upper - lower	2
4130-9883	Roller for hammer jumper	1

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