
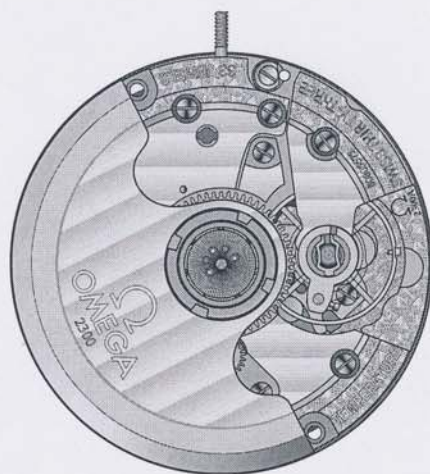
	Technical Guide		TG-19-C-035-E	B
	Made by: pelrom	Date: 21.11.2007		

CALIBRE 2300 A

$11\frac{1}{2}'''$ $\varnothing 25,60 \text{ mm}$	Version A
	
Height on movement	4.85 mm
Power reserve	48 h
Number of jewels	33
Frequency	3.5 Hz (25'200 A/h)



Automatic movement with Co-Axial escapement, date, COSC certified,
Omega balance system without index. Display with 3 hands, hours, minutes and seconds.



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General Information for Calibre 2300

Date correction

Date correction is not recommended between 10.00 pm and 02.00 am.

Balance bridge complete (ref. 10.05824°)

The balance bridge is not available.
(see CS-Info Calibre No 33).

Type of intervention and the required «Measure Instruments»

Intervention	Required minimum equipment	Comments
Complete or partial maintenance service Co-Axial 3.5 Hz	- Watch Expert II (white case) - Chronoscope M1 (up-dated version)	
Rate adjustment on a new watch: (Co-Axial 3.5 Hz)	- Watch Expert (red case) - Wicomètre Professionnel - Chronoscope M1 (old version) - Chronoscope S1	Important: The amplitude will not be correctly indicated. For rate adjustment only, this can be accepted!

Tightening and untightening torque according to screw-thread size

Screw Ø	Tightening torque target cNm	Untightening torque mini cNm
Ø threads ≤ S 0.50 mm	1.0	0.7
Ø threads S 0.6 mm	1.4	0.8
Ø threads S 0.7 mm	1.8	0.9
Ø threads S 0.8 mm	2.2	1.1
Ø threads S 0.9 mm	2.6	1.3
Ø threads S 1.0 mm	3.0	1.6
Ø threads S 1.2 mm	3.5	2.0
Ø threads S 1.4 and >	4.0	2.5

Fitting of hands

It is mandatory for the hand fitting to use the corresponding adjusted movement holder.

Tools

Ref.

Ball bearing set	502 S03 SET
Movement holder for hand fitting	502 120 5023
Mainspring winder	502 150 0009
Rate adjustment key	502 200 0501
Tool for checking the escapement function	506 0002
Kit of tool for hand-setting	507 0011

Lubricants

Ref.

Moebius SYNT-A-LUBE 9010 (2ml)	504 200 0001
Moebius D5	504 200 0013
Moebius HP-500	504 5012
Moebius SYNT HP-1300 Sans Colorant	504 5013
Moebius 9504	504 5014

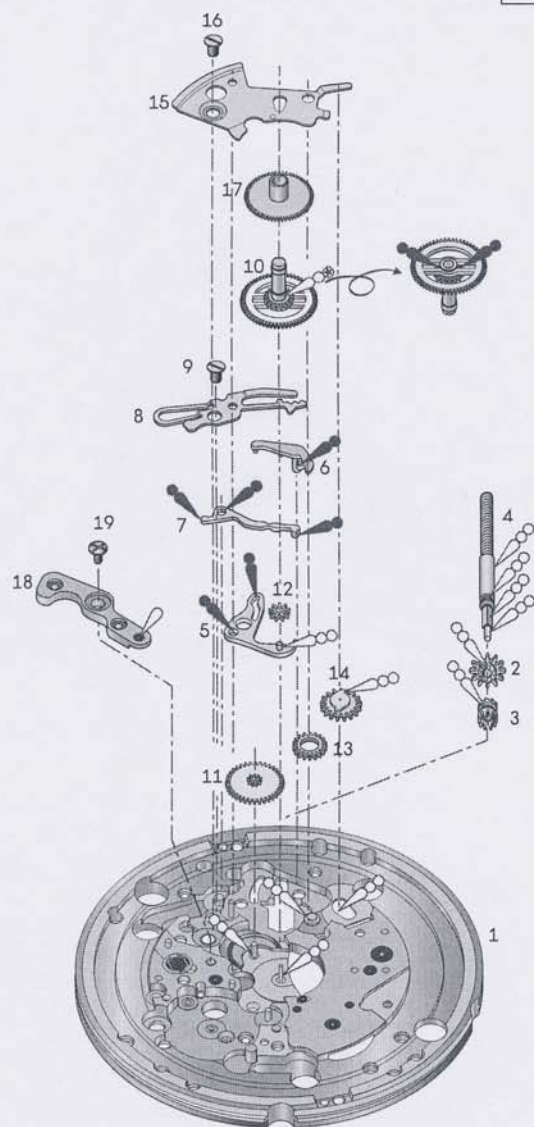


Exploded view - Dial side for Calibre 2300

Parts listed in order of assembly

1 = 1002007	10 = 31083*
2 = 31120	11 = 31041
3 = 31121	12 = 31100
4 = 5101021	13 = 31101
5 = 53022	14 = 53200
6 = 5108006	15 = 10062
7 = 51050	16 = 3503 (1x)
8 = 51091	17 = 31046*
9 = 3503	18 = 10055
	19 = 3514 (1x)

- Moebius SYNT HP-1300 Sans Colorant
- Moebius SYNT HP-1300 Sans Colorant
- Moebius 9504
- Moebius SYNT-A-LUBE 9010

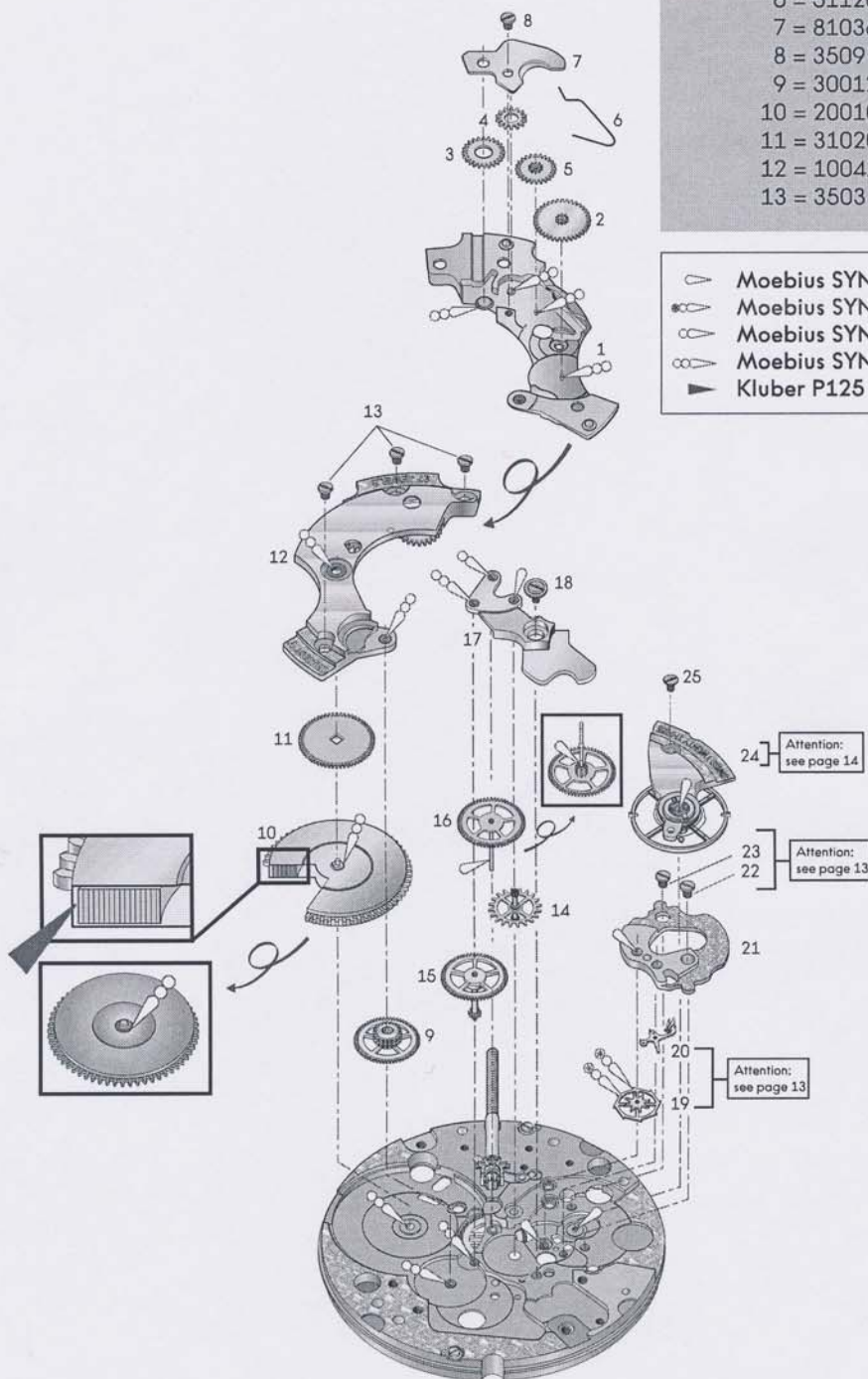


Exploded view - Movement side for Calibre 2300

Parts listed in order of assembly

1 = 1004107	14 = 30039
2 = 32033	15 = 30025
3 = 31023	16 = 30027*
4 = 31024	17 = 1004807
5 = 31021	18 = 3505 (1x)
6 = 51120	19 = 30040
7 = 81036	20 = 40010
8 = 3509 (1x)	21 = 1005707
9 = 30012	22 = 3511 (1x)
10 = 20010	23 = 3511 (1x)
11 = 31020	24 = 1005824
12 = 1004107	4005021
13 = 3503 (3x)	25 = 3503 (1x)



- Moebius SYNT-A-LUBE 9010
- Moebius SYNT HP-1300 Sans Colorant
- Moebius SYNT HP-500
- Moebius SYNT HP-1300 Sans Colorant
- Kluber P125

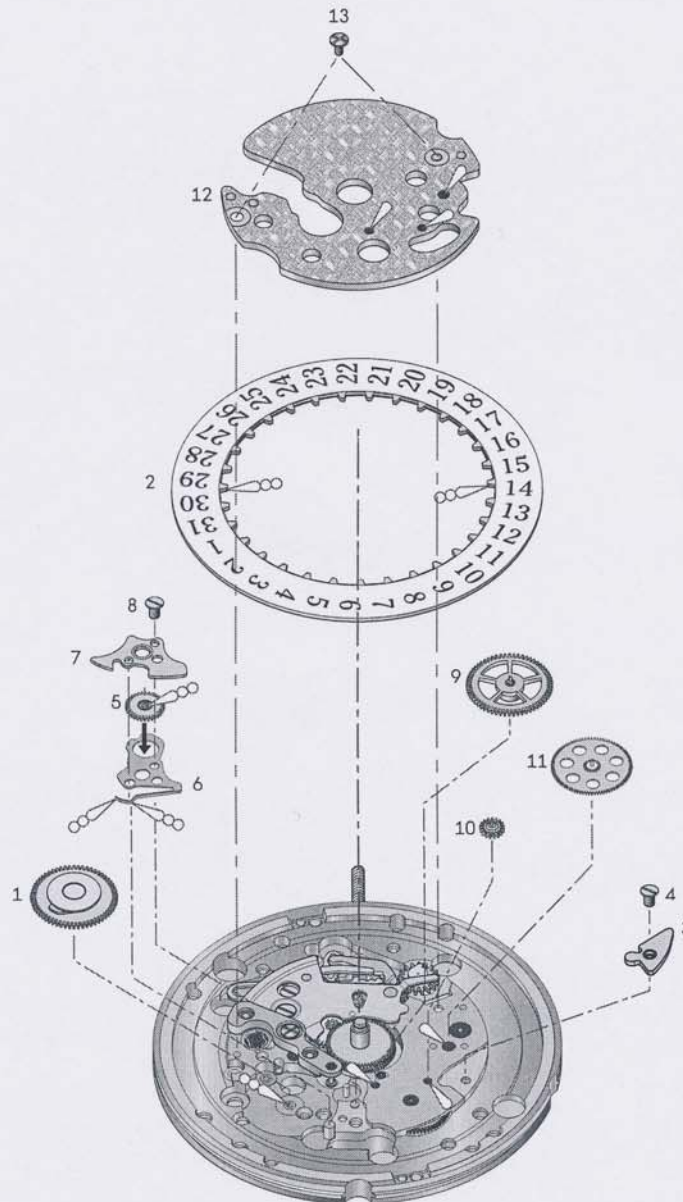


Exploded view - Dial side for Calibre 2300

Parts listed in order of assembly

1 = 33020	8 = 3503 (1x)
2 = 91440	9 = 30029
3 = 13105	10 = 30031
4 = 3562 (1x)	11 = 30030*
5 = 33011	12 = 1005007
6 = 53080	13 = 3514 (2x)
7 = 13111	

 Moebius SYNT-A-LUBE 9010
 Moebius SYNT HP-1300 Sans Colorant



Exploded view - Movement side for Calibre 2300

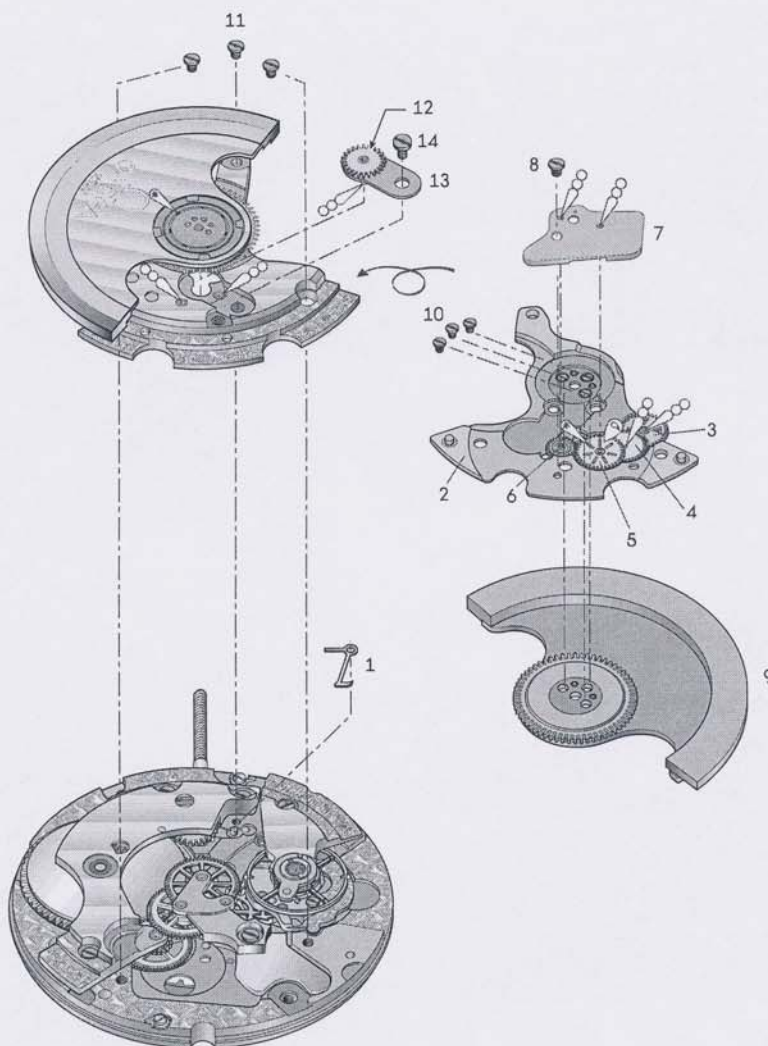
Parts listed in order of assembly

1 = 56070	8 = 3504 (1x)
2 = 1203007	9 = 2201006
3 = 32032	10 = 3507 (3x)
4 = 32031	11 = 3503 (3x)
5 = 32037	12 = 52041
6 = 52040	13 = 12124
7 = 1205107	14 = 3506 (1x)



















See CS-Info Calibre No 26 Lubeta V105

Moebius SYNT-A-LUBE 9010

























Moebius SYNT HP-1300 Sans Colorant








Lists & Spare parts lists for Calibre 2300

Main plate, jewelled, assembled	Version	Reference	Automatik bridge, jewelled	Version	Reference
	2300A	7222300A1002007		2300A	7222500B1203007
Barrel bridge, jewelled	Version	Reference	Automatik device lower bridge	Version	Reference
	2300A	7222300A1004107		2300A	72211201205107
Wheel train bridge, jewelled	Version	Reference	Reverser maintaining plate	Version	Reference
	2300A	7222500B1004807		2300A	722112012124
Additional wheel train bridge, jewelled	Version	Reference	Date indicator maintaining plate	Version	Reference
	2300A	7222300A1005007		2300A	7222300A13105
Intermediate escape wheel bridge	Version	Reference	Date jumper maintaining plate	Version	Reference
	2300A	7222300A10055		2300A	7222300A13111
Pallet bridge	Version	Reference	Barrel, complete	Version	Reference
	2300A	72225001005707		2300A	722250020010
Balance bridge, complete	Version	Reference	Barrel drum and cover	Version	Reference
	2300A			2300A	722112020030
Minute train bridge	Version	Reference	Barrel arbor	Version	Reference
	2300A	722112010062		2300A	722112020060
Dial fastener	Version	Reference	Mainspring	Version	Reference
	2300A	722112010300		2300A	7222500C20102

Lists & Spare parts lists for Calibre 2300

Oscillating weight, assebled	Version	Reference	Intermediate ratchet wheel	Version	Reference
	2300A	7222300A2201006		2300A	722112031021
Ball bearing	Version	Reference	Crown wheel	Version	Reference
	2300A	722112022040		2300A	722112031023
Oscillating weight bolt	Version	Reference	Intermediate crown wheel	Version	Reference
	2300A	722112022042		2300A	722112031024
Intermediate wheel	Version	Reference	Minute wheel	Version	Reference
	2300A	7222500C30012		2300A	722112031041
Third wheel	Version	Reference	Hour wheel, assembled	Version	Reference
	2300A	722112030025		2300A	7222300A31046*
Second wheel	Version	Reference	Cannon pinion with driving	Version	Reference
	2300A	7222300A30027*		2300A	7222300A31083*
Intermediate second wheel	Version	Reference	Setting wheel	Version	Reference
	2300A	7222300A30029		2300A	722112031100
Additional second wheel	Version	Reference	Intermediate setting wheel	Version	Reference
	2300A	7222300A30030		2300A	722112031101
Additional intermeddiate wheel	Version	Reference	Winding pinion	Version	Reference
	2300A	7222300A30031		2300A	722112031120
Intermediate escape wheel	Version	Reference	Sliding pinion	Version	Reference
	2300A	7222300A30039		2300A	7221120311211
Co-Axial wheel	Version	Reference	Reduction wheel	Version	Reference
	2300A	7222500C30040		2300A	722112032031
Ratchet wheel	Version	Reference	Intermediate reduction wheel	Version	Reference
	2300A	722112031020		2300A	722112032032

Lists & Spare parts lists for Calibre 2300

Ratchet wheel driving wheel	Version	Reference	Date corrector operating lever	Version	Reference
	2300A	722112032033		2300A	722112053022
Reversing wheel	Version	Reference	Date jumper	Version	Reference
	2300A	722112032037		2300A	722112053080
Intermediate date wheel	Version	Reference	Date corrector	Version	Reference
	2300A	7222300A33011		2300A	722112053200
Date indicator driving wheel	Version	Reference	Stop lever	Version	Reference
	2300A	7222300A33020		2300A	7222500C56070
Pallet fork	Version	Reference	Jewelled shock-absorber, top	Version	Reference
	2300A	7222500C40010		2300A	7222500C70530
Balance complete with stud	Version	Reference	Jewelled shock-absorber, bottom	Version	Reference
	2300A	7222500C4005021		2300A	7222500C70531
Stud support	Version	Reference	In settings, upper	Version	Reference
	2300A	7222500B40200		2300A	7222500C70640
Winding stem	Version	Reference	In settings, lower	Version	Reference
	2300A	72211205101021		2300A	7222500C70641
Setting lever, assembled	Version	Reference	Cap jewels, upper	Version	Reference
	2300A	72211205108006		2300A	722112070900
Yoke	Version	Reference	Cap jewels, lower	Version	Reference
	2300A	722112051050		2300A	722112070901
Setting lever jumper	Version	Reference	Incabloc-spring, upper	Version	Reference
	2300A	722112051091		2300A	722112078004
Click	Version	Reference	Incabloc-spring, lower	Version	Reference
	2300A	722112051120		2300A	722112078005
Reverser	Version	Reference	Centre tube	Version	Reference
	2300A	722112052040		2300A	722112080400
Auxiliary reverser	Version	Reference	Click plate	Version	Reference
	2300A	722112052041		2300A	722112081036

Lists & Spare parts lists for Calibre 2300


















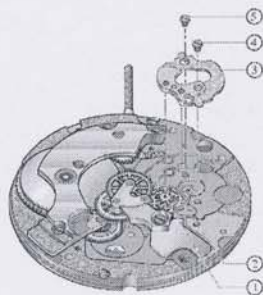
Date indicator	Version	Reference
	2300A	7222300A91440* * Several versions available
Screw for setting	Version	Reference
	2300A	72211203503
Screw for minute train bridge	Version	Reference
	2300A	72211203503
Screw for automatic device framework	Version	Reference
	2300A	72211203503
Screw for barrel bridge	Version	Reference
	2300A	72211203503
Screw for balance bridge	Version	Reference
	2300A	72211203503
Screw for date jumper maintaining plate	Version	Reference
	2300A	72211203503
Screw for automatic device lower bridge	Version	Reference
	2300A	72211203504
Screw for wheel train bridge	Version	Reference
	2300A	72211203505
Screw for reverser maintaining plate	Version	Reference
	2300A	72211203506
Screw for ball bearing	Version	Reference
	2300A	72211203507
Screw for click plate	Version	Reference
	2300A	72211203509
Screw for pallet bridge	Version	Reference
	2300A	72225003511
Screw for stud	Version	Reference
	2300A	72225003512
Screw for escape	Version	Reference
	2300A	72222003514
Screw for additional wheel train bridge	Version	Reference
	2300A	72222003514
Screw for date indicator maintaining plate	Version	Reference
	2300A	7222300A3562



Fig. 1.0



1.0 Assembling of the escapement system

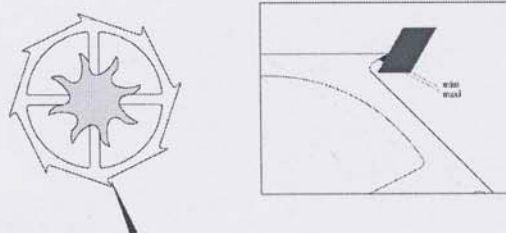
Key points

The order of assembly must be respected (see page 5). After assembling, the escapement functions must be checked accurately with the corresponding tool.

The pallet bridge positions the co-axial wheel and the pallet fork. To ensure the functioning of the escapement it is necessary to respect the following order of assembly:

1. Position the co-axial wheel.
2. Position the pallet fork.
3. Position the pallet bridge, screw no 4 must be correctly placed in their beds.
4. To position the pallet bridge, screw no 4 must be fixed first.
5. The second screw (5) fixes the bridges.

Fig. 1.1



8x Moebius SYNT HP-1300 Sans Colorant

1.1 Lubrication of the escapement

The escapement lubrication must be checked with a microscope. We recommend lubricating the escapement directly under the microscope.

Escape wheel:

Place a very small drop of Moebius SYNT HP-1300 Sans Colorant on the position indicated on your left side. Repeat this procedure 8x in order to lubricate all teeth.

Quantity:

The tolerances for the lubrication quantities are shown on Fig. 1.1.

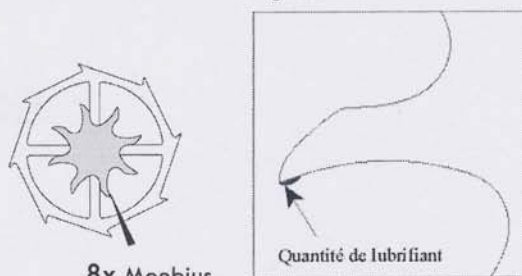
Pinion:

Place a very small drop of Moebius SYNT HP-1300 Sans Colorant on the tip of two teeth. Move the escapement 3-4 teeth after having placed the first drop then place the second.

Quantity:

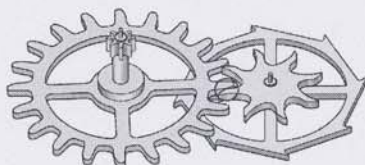
On Fig. 1.2 the required quantity of lubricant is shown.

Fig. 1.2



8x Moebius SYNT HP-1300 Sans Colorant

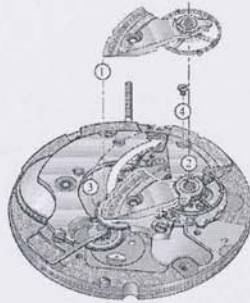
Fig. 1.3



Important:

There must be no lubricant between tooth and pinion (see Fig. 1.3).

Fig. 2.0

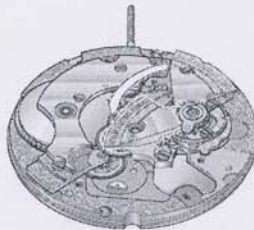


2.0 Assembling of the balance bridge

As the table roller is under the pallet fork, the balance must be assembled carefully.

1. Position the complete balance bridge (with balance).
The bridge is pointing towards the center of the movement.
2. Check the position of the balance. The pivot of the balance-staff must be correctly placed in its bed.
3. Carefully turn the bridge to its normal position.
4. Fix the bridge with its screw.

Fig. 2.1



2.1 Disassembling of the balance bridge

The balance bridge must be disassembled by removing the parts in the opposite order of procedure 2.0. To avoid any risk of damaging the balance, the bridge has to be turned towards the center of the movement. In this position the bridge may be removed without any risk.

2.2 Hand-fitting height

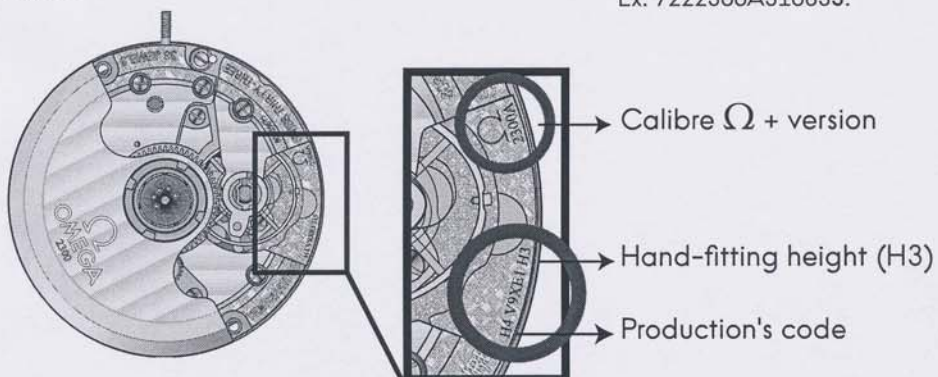
A Star (*) next to the reference in the spare parts lists indicate that there are several hand-fitting heights available.

E.g.: 7222300A31083*.

For a correct order, replace the star (*) with the number of hand-fitting height:

Ex: 7222300A310833.

Fig. 2.2













3.0 Runners for hand setting and hand setting force

Designation	Movement holder for hand setting	No of runner for hand setting	Minimum force (N)	Maximum force (N)	Support (pivot)
Hour hand	507 0017	5	10	50	non
Minute hand		1	10	50	non
Second hand (small)		1	10	30	non

4.0 Epilame

4.1 Components not to be coated with epilame after cleaning

Designation	Reference	
Balance assembled on balance bridge	4005021 + 1005824°	
Balance complete	4005021	
Pallet fork Co-Axial	40010	
In settings, upper *	70640	
In settings, lower *	70641	
Pallet bridge	1005707	
Barrel complete	20010	
Mainspring	20102	
Reversing wheel	32037	 

* Do not coat with epilame the in-settings, but you can coat the cap jewels.



5.0 Rate control

5.1 Checking the rate

Demagnetize the movement before the checks, see Working Instruction No 34.

The rate can be checked with a Chronoscope M1 or S1 or a similar instrument. It is **important** to set the lift angle to 38 degrees.

For the designations and tolerances please consult Working Instructions No 5 & 28.

Measure particularities according to instrument type used

Instrument type	Co-Axial version 3.5 Hz	Comments
Old Witschi measuring instrument - Watch Expert (red case) - Wicomètre Professionnel - Chronoscope M1 (old version)	Lift angle to be set at 38°	Version 3.5 Hz: The frequency (25'200 A/h), has to be set manually in order to have the rate correctly indicated.
	Amplitude not correctly measured	
New Witschi measuring instruments - Watch Expert II (white case) - Chronoscope M1 (up-dated version) - Chronoscope S1	Lift angle to be set at 38°	Test mode: «Spe1» must be set!
	All measures good	

Fig. 5.0

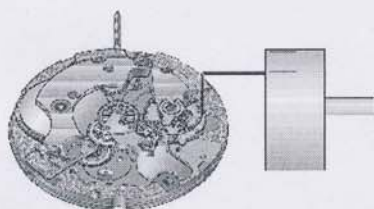
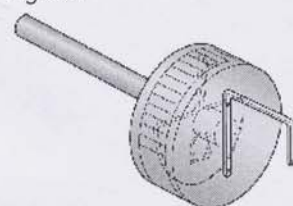
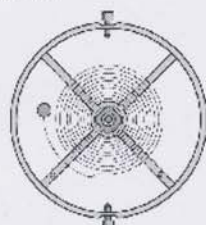


Fig. 5.1



REF. 502 200 0501

Fig. 5.2



5.2 Adjustment key

To adjust the rate on an encased movement, a special correction tool has been developed. One complete revolution of both regulating screws of the balance represents a rate correction see table underneath. The correction can be read on the scale of the circumference of the tool. One division of the scale represents see also table underneath.

One of the regulating screws is between two arms of the annular balance which are marked with dots (see fig. 5.2) making it easy to distinguish one screw from the other during the correction.

Balance

The annular balance carries two regulating screws. If the watch is running slow it can be adjusted by screwing in both screws (towards the balance center). Screwing in reduces the moment of inertia which results in a faster rate. If the watch is running fast it can be adjusted by unscrewing the screws (away from the balance center).

Important:

To avoid an imbalance, the adjustments must always be made with both screws.

One complete revolution = 86 seconds

One division = 1.5 seconds



Modifications of Technical Guide for Calibre 2300A

Technical Guide versions				
Date of first edition:	19.04.2006	Version A	Made by:	Pelrom
Date of last edition:	03.08.2007	Version B		

Modifications of Technical Guide version B
New (version B)
Adds:
- Runners for hand setting and hand setting force
All modification are mentionned in red.

