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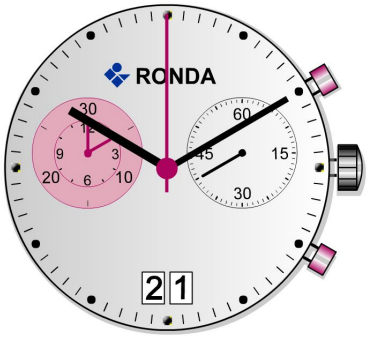
Technical Instructions 5020.B

Specification

12 ½'''

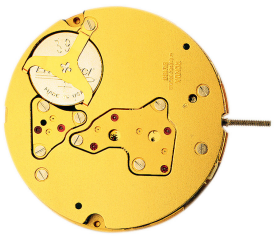


Dimensions and battery

ø Total	28.60 mm
ø Case fitting	28.00 mm
Movement height	4.40 mm
Movement rest	0.60 mm
Height of stem	1.90 mm
Stem: Thread / Distance	0.90 mm / 0.90 mm
Battery / Autonomy	Nr. 395 / 48 Months

Performances

	Small second (M1): 4.0 - 6.7 µNm
Torque T	Minute hand (M1): 200 - 300 µNm
	Counter (M2, M4): 3.0 - 4.6 µNm
Operating temperature	0 infinite C - 50 infinite C
Res. against magn. fields	18.8 Oe = 1500 A/m
Resistance against shock	NIHS 91 - 10



Functions

Position I (crown)	Neutral
Position II (crown)	Setting the date (quick mode)
Position III (crown)	Setting time and adjusting chrono hands
Pusher A	START / STOP / ADD
Pusher B	ZERO POSITIONING / SPLIT

CE

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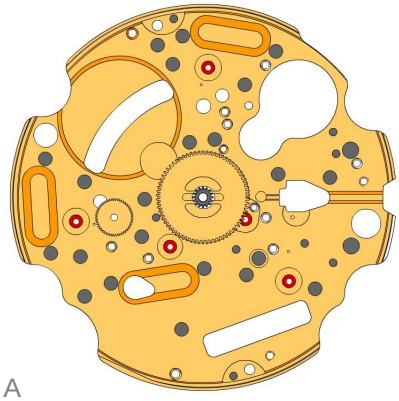
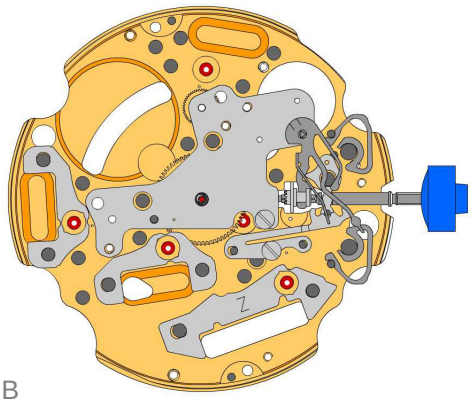
Assembling

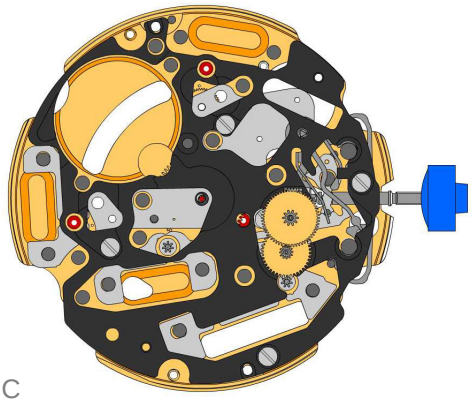


A

2000.574



B



C

1. 3305.282.CO — Cannon pinion with driver (Aig 2)

Moebius 8200 greace must be placed between the steel tube and the brass wheel. The steel tube must be placed into the center hole of the main plate.

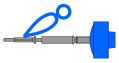
2. 3301.244 — Hour wheel (counter 24h)


3. 2030.017.CO — Centre bridge

Use one screw 4000.250 to fix the center bridge.

4. 3001.041 — Sliding pinion

The sliding ponion must be holded using a tweezers, untill the stem is inserted.

5. 3000.177.CO — Handsetting stem

Prior to the insertion of the stem, some greace must be placed on the square part of the stem.

6. 3017.049 — Setting lever

The cam on the setting lever must be inserted into the cut out on the stem. (the setting lever must be greaced)

7. 3905.049 — Setting lever jumper (3 positions)

The setting lever jumper (3 positions) must be tensioned and inserted into the setting lever. Use one screw 4000.250 to fix the setting lever.

8. 4000.250 — Screw

9. 3015.070 — Yoke (3 positions)

The yoke must be inserted below, into the cutout of the sliding pinion. The oposite end of the yoke must be positioned arround the pillar of setting lever. (Use Moebius 8200 to greaced the yoke)

10. 3406.030 — Pusher jumper

2 pieces. Use Jismaa 124 to greace the pusher jumper.

11. 3622.040 — Stator


12. 3622.039 — Stator (counter 6h and chrono)

2 pieces

13. 3603.065 — Plastic bracket

Use 4 screws 4000.250

14. 4000.250 — Screw

15. 3715.094.RK — Rotor (centre and chrono)

Use an antimagnetic tweezers to place the 2 rotors.

16. 3147.046.CO — Intermediate wheel


17. 3136.142.CO — Second wheel (long)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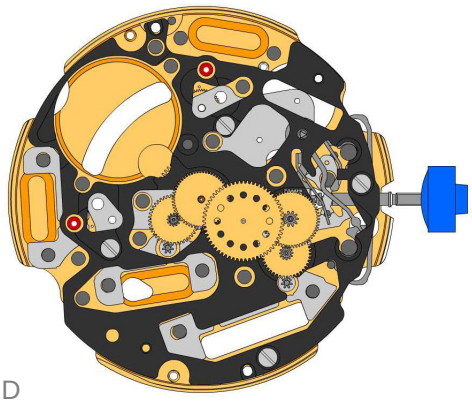


D

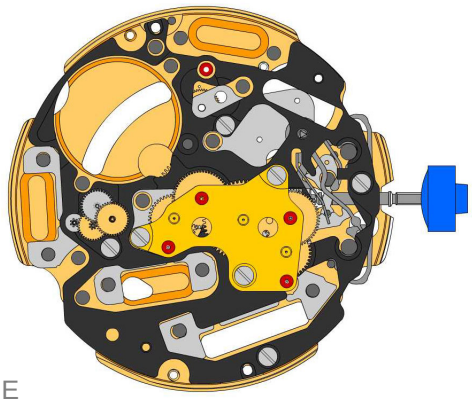
18. 3147.047.CO — Intermediate wheel (chrono)

19. 3136.144.CO — Chronograph wheel (Aig 2)

20. 3122.056.CO — Third wheel

21. 2020.148 — Train wheel bridge
Attention: Prior to the fastening process of the bridge, all 7 pins of the wheels must be visible in the 7 holes in the bridge. Use 3 screws 4000.250.

22. 3715.095.RK — Rotor (counter 6h and 9h)
Use an antimagnetic tweezers to place the rotor.



E

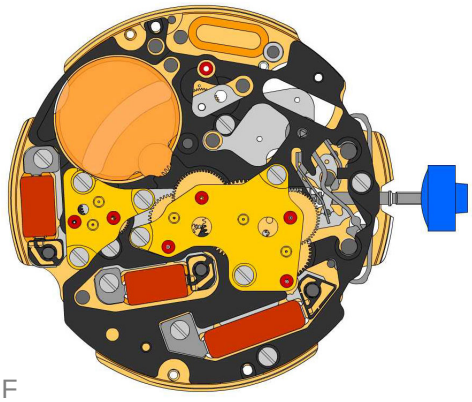
23. 3147.048.CO — Intermediate wheel (counter)

24. 3007.056.CO — Minute wheel (counter 24h)

25. 3402.008.CO — Minute counting wheel (24h)

26. 2020.149 — Counter train wheel bridge
Attention: Prior to the fastening process of the bridge, all 4 pins of the wheels must be visible in the 4 holes of the bridge. Use 3 screws 4000.250.

27. 4000.250 — Screw



F

28. 9014.000 — Moebius 9014
Use Moebius 9014 on bearing of all rubis

29. 3621.053.RK — Coil
The wire of the coil (red area) is very sensitiv to mechanical impacts. Hold the coil only ouside the red area. Fix the coil by 1screw 4000.250.

30. 3621.054.RK — Coil (counter 9h and chrono)
The wire of the coil (red area) is very sensitiv to mechanical impacts. Hold the coil only ouside the red area.

31. 3621.054.RK — Coil (counter 9h and chrono)
The wire of the coil (red area) is very sensitiv to mechanical impacts. Hold the coil only ouside the red area.

32. 4000.250 — Screw

33. 3503.054 — Tube

34. 3603.034 — Battery insulator

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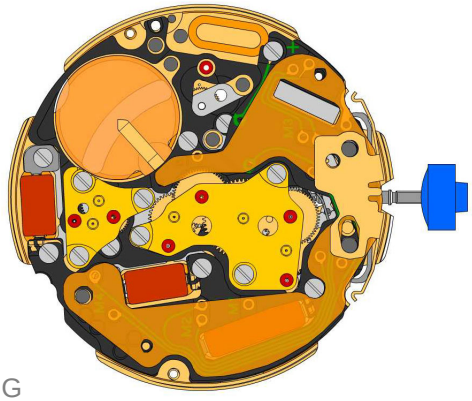
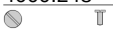


G

35. 3612.144.5020 Electronic module

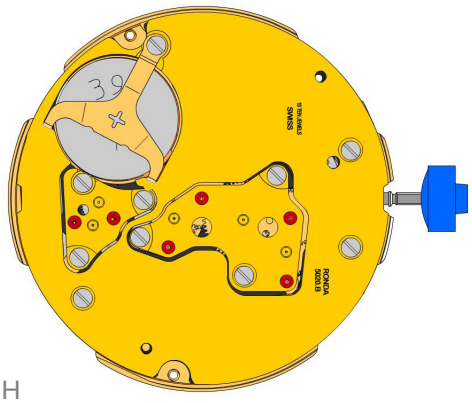
After assembly of the electronic module it is the best time to perform the electrical measurements. Use 5 screws 4000.248 to fix the electronic module.

36. 4000.248 Screw


37. 3603.069 Circuit insulator


38. 3601.107 Pusher contact spring

Make shure, that the pusher contact spring is placed correctly onto the pillars.



H

39. 2130.138.5020.B Electronic module cover (counter 6h)

Make shure, that the pusher contact spring is not displaced during attachment of the electronic module cover. Use 3 screws 4000.250 to fix the electronic module cover

40. 3600.010 Battery

Use a plastic tweezers to place the battery (to avoid short circuit of battery).

41. 3601.109 Bridle +

Insert the two brackets of the battery bridle under the electronic module cover and fasten the battery bridle by 1 screw 4000.250.

42. 4000.250 Screw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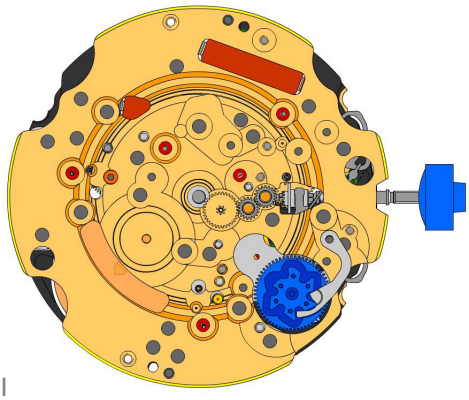
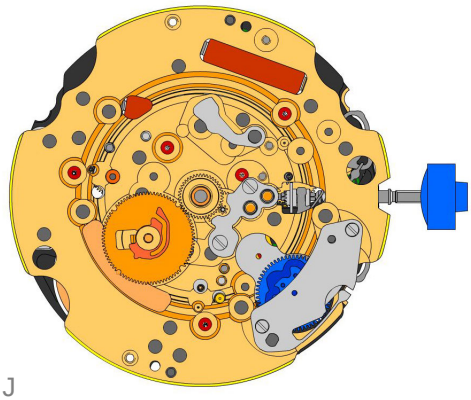


I



J

43. 9014.000 — Moebius 9014
Use Moebius 9014 on bearing of all rubis

44. 3004.164 — Setting wheel
Use Moebius 9020 on both setting wheels

45. 3007.054.CO — Minute wheel
Use Moebius 9020

46. 2130.143 — Minute train bridge
Use 2 screws 4000.305

47. 4000.305 — Screw

48. 3004.181 — Tens indicator driving wheel
The short tooth of the tens indicator driving wheel must point to the center of the movement.

49. 3500.059 — Tens jumper
Moebius 8200 greace must be placed between the tens jumper and the tens indicator driving wheel.

50. 2130.142 — Tens jumper maintaining plate
Make shure, that the tens indicator driving wheel is not blocked prior to the fastening process. Use 2 screws 4010.306. Place the spring loaded bracket outside of the tens jumper.

51. 4010.306 — Screw

52. 3301.242 — Hour wheel (Aig 2)
Use Moebius 9020

53. 3315.016 — Hour wheel friction spring
Must be placed onto the hour wheel

54. 3004.176.CO — Date indicator driving wheel
Moebius 9020 must be used in the center of this wheel

55. 3500.049 — Date jumper
Moebius 8200 greace must be placed between the date jumper and the date jumper spring

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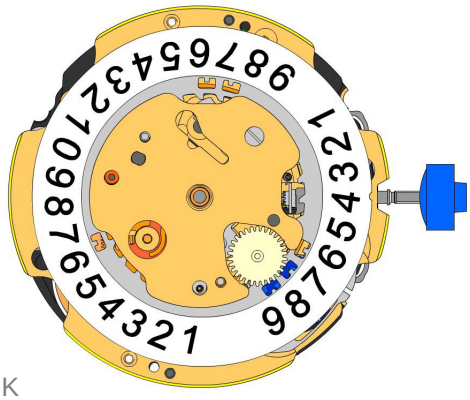
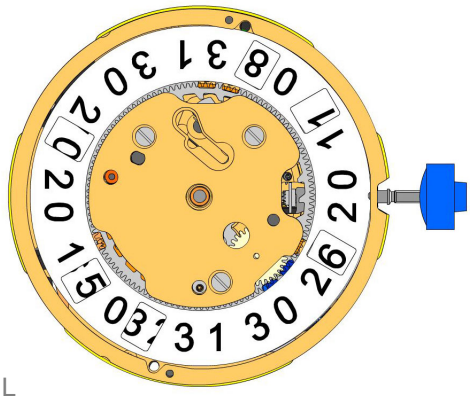


K



L

56. 3504.214.AD — Units indicator

Teaths must be greaced using Moebius 8200. The "half moon" cut out on the unit indicator must point to the stem (position 3h).

57. 3147.054 — Tens intermediate wheel


58. 2130.141 — Date indicator maintaining plate

use 1 screw 4000.250

59. 3905.050 — Date jumper spring

Insert the spring into the opening of the date indicator maintaining plate

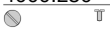
60. 3504.215.AD — Tens indicator (T3/G12)

The "half moon" cut out on the tens indicator must point to the stem (position 3h).

61. 2130.140 — Date mechanism maintaining plate

Assure that the tens intermediate wheel is not blocked, prior to the fastening process. Use 2 screws 4000.250 to fix the date indicator maintaining plate

62. 3506.072 — Dial support


63. 4000.250 — Screw


64. 9010.000 — Moebius 8200

Microgliss D5 can be used

65. 9018.000 — Jismaa 124

Greace Moebius or Microgliss D5 an be used

66. 9020.000 — Moebius 9020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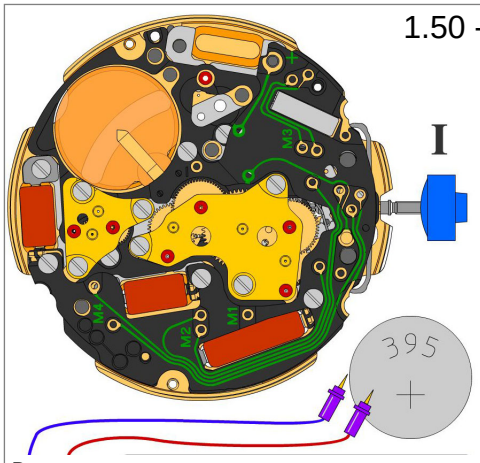
Electrical checking

Voltage of battery

1.50 - 1.55 V

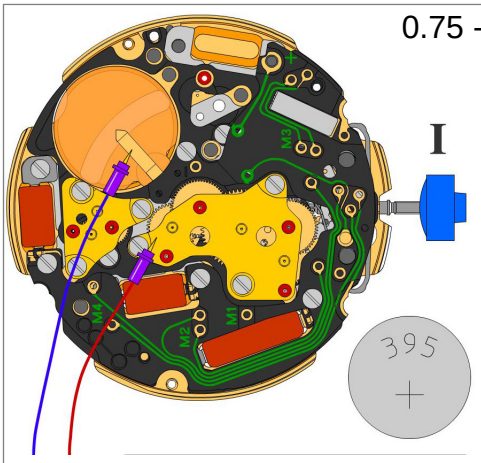


Battery test

Battery must be removed from movement

Consumption (M1) of movem. (Pos. I)

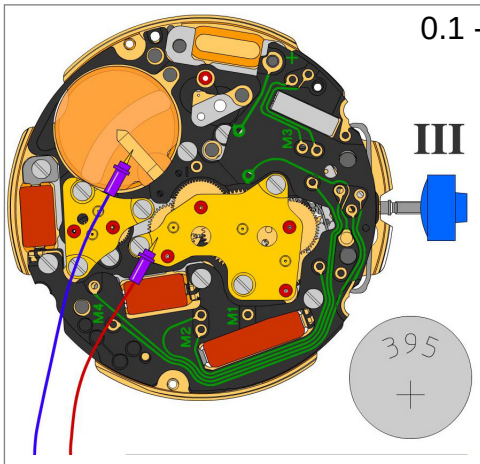
0.75 - 1.3 µA



Supply power from measurement equipment (1,55 V)

Consumption (M1) of movem. (Pos. III)

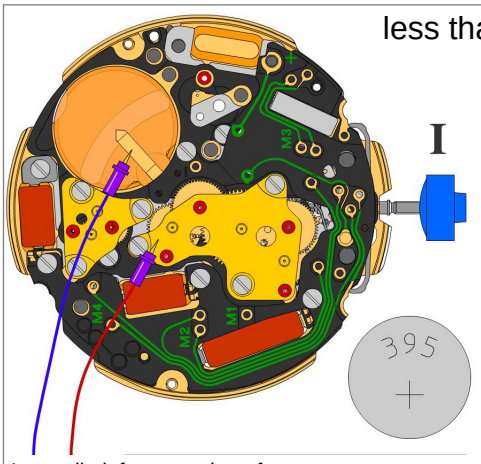
0.1 - 0.3 µA



Supply power from measurement equipment (1,55 V)

Lowest voltage for movement (M1)

less than 1.3V

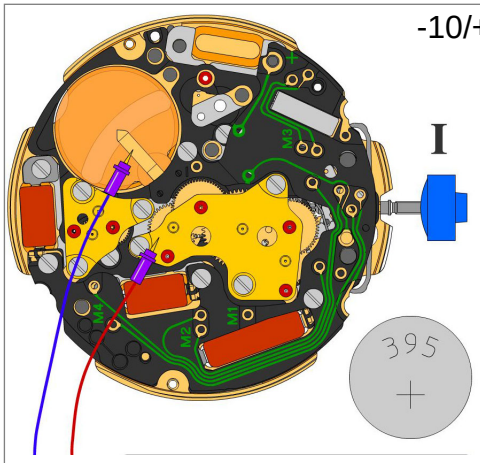


Lower limit for operation of movement

Adjust voltage on the measuring eqipement to 1.55 V. The slowly reduce the tension untill the movement stops

Accuracy (seconds / month)

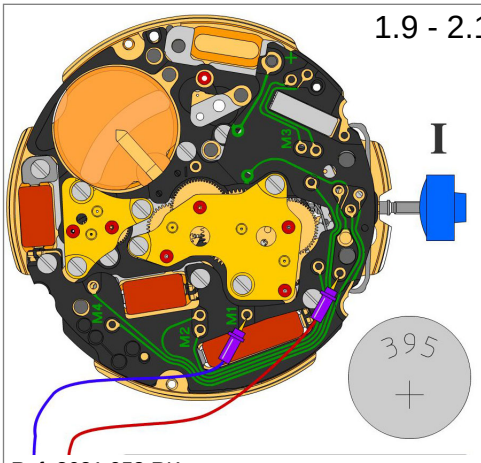
-10/+20 s/M



Check for a time of minimal 60 seconds

Resistance of the coil: motor 1 (movem.)

1.9 - 2.1 kOhm



Ref. 3621.053.RK

The resistance of the coil can be measured on the electronics (M1) or directly on the coils (electronic module must be removed).

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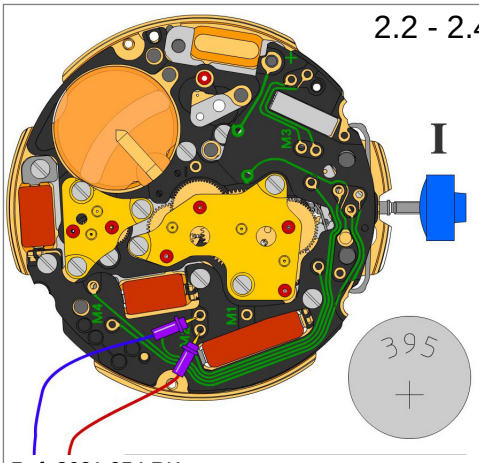
Electrical checking

Resistance of the coil: motor 2 (counter)

2.2 - 2.4 kOhm

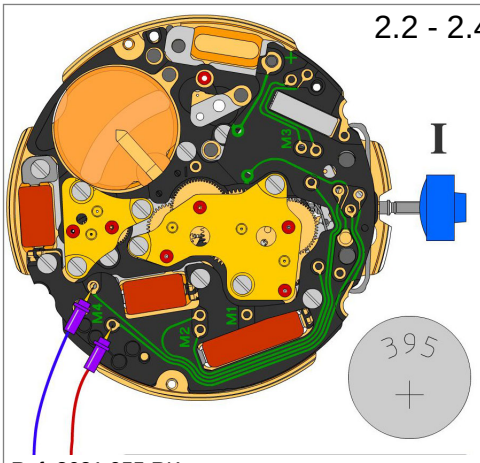


Ref. 3621.054.RK

The resistance of the coil can be measured on the electronics (M2) or directly on the coils (electronic module must be removed).

Resistance of the coil: motor 4 (counter)

2.2 - 2.4 kOhm

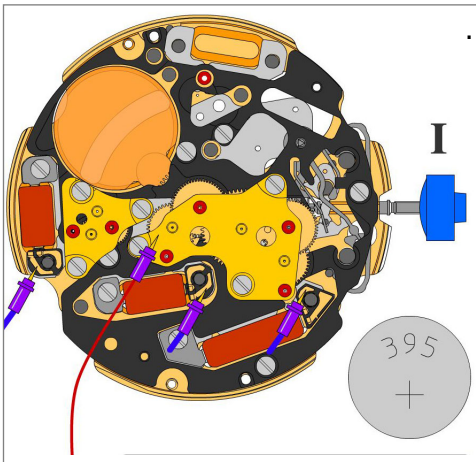


Ref. 3621.055.RK

The resistance of the coil can be measured on the electronics (M3) or directly on the coils (electronic module must be removed).

Coil insulation: motor 1, 2 and 4

... kOhm



indefinite high

The resistance between each coil and +pole must be measured (electronic module must be removed)

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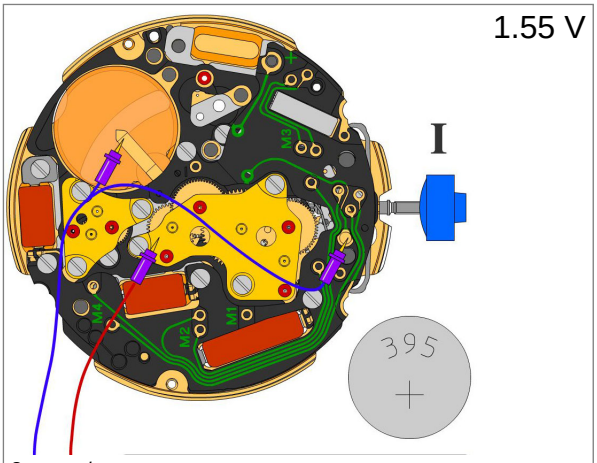
Test of the motors

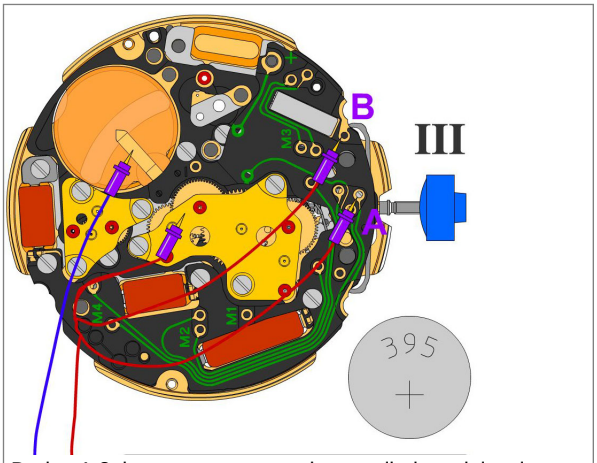
Accelerated test of movement (M1)



8 steps / sec.

To activate this test mode, the corresponding test point must be connected to the -Pole

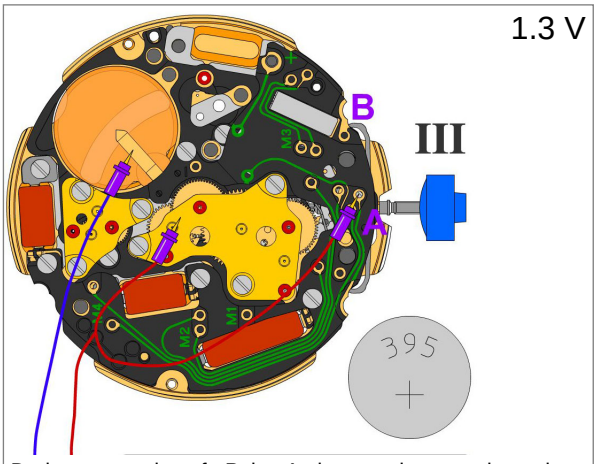
1. Activation of control mode (pos III)



During 1-3 the movement must by supplied continiously

Connect points A + B simultaneous for min. 2 seconds to the +Pol. Do not interrupt the supply voltage - stem pos III)

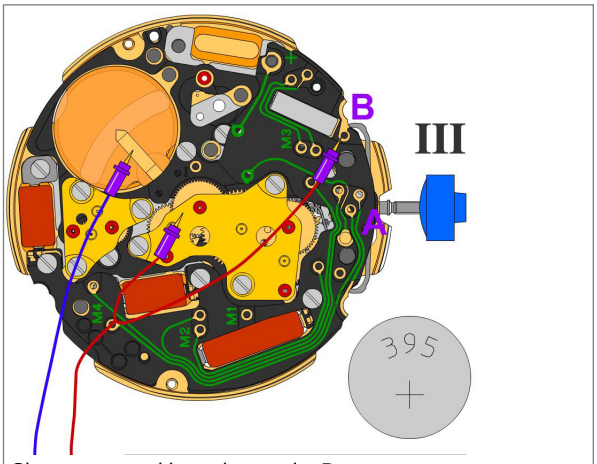
2. Check of active counter



During connection of +Pol to A, the actual counter is turning.

Reduced the supply voltage to 1.3V to check the proper function of the counter. If the power supply is disconnected, the control mode must be starded again - section 1.

3. Change to the next counter



Short contact with +pole to point B

Change of active counter: M2-M3-M4-M2-M3- .After a timout of approx. 30 seconds since last contact, the control mode will be terminated.